1. Legal Ad

    Documents:

        PB LEGAL AD 7-10-18.PDF

2. Agenda

    Documents:

        PB AGENDA 7-10-18.PDF

3. 190 And 222 St. John Street

    Documents:

        ST. JOHN ST - 190 AND 222 (MEMO).PDF
        ST. JOHN ST. - 190 AND 222 (MEMO ATTACHMENTS).PDF
        ST. JOHN ST. - 190 AND 222 (APPLICANTS SUBMITTAL).PDF
        ST. JOHN ST. - 190 AND 222 (PUBLIC COMMENT).PDF
        ST. JOHN ST. - 190 AND 222 (PLANS).PDF

    3.I. Powerpoint Presentation By MMC

        Documents:

            POWERPOINT PRESENTATION BY MMC.PDF

4. 100 Fore Street

    Documents:

        FORE ST. - 100 (REPORT).PDF
        FORE ST. - 100 (REPORT ATTACHMENTS).PDF
        FORE ST. - 100 (PUBLIC COMMENT).PDF
        FORE ST. - 100 (APPLICANTS SUBMITTAL AND PLANS).PDF

    4.I. Additional Public Comment

        Documents:

            KRISTIN LAWSON 7-9-18.PDF
            PATRICIA RYAN 7-9-18.PDF
            STEPHEN GAAL 7-10-18.PDF
            RAE COUSINS 7-10-18.PDF
            MARK HOLDEN 7-10-18.PDF
            SANDRA GUAY 7-10-18.PDF
            MELISSA SWEET 7-10-18.PDF

5. 128 Cassidy Point Drive

    Documents:

        CASSIDY POINT DRIVE - 128 (REPORT AND ATTACHMENTS).PDF

6. 121 Cassidy Point Drive

Documents:

CASSIDY POINT DRIVE - 121 (REPORT AND ATTACHMENTS).PDF

7. Hotel Linkage

Documents:

PB MEMO - HOTEL LINKAGE.PDF

7.I. Public Comment

Documents:

MARK ROBINSON 7-10-18.PDF
BRENT MAURICE 7-10-18.PDF

LEGAL ADVERTISEMENT - PORTLAND PLANNING BOARD

The Portland Planning Board will hold a meeting on Tuesday, July 10, 2018, **Room 24, Basement Level,** 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; Parking Garage; 222 St. John Street; Maine Medical Center, Applicant. (4:30 - 5:30 p.m. estimated time) The Board will hold a workshop to consider a plan by Maine Medical Center for a parking garage at 222 St. John Street. The 812,797 sq. ft. garage is proposed to include 2,400 parking spaces, with 52 parking spaces in an adjacent surface lot. Access to the garage is proposed behind the existing building at 222 St. John and at the D Street intersection. The site lies within the Maine Medical Center Institutional Overlay Zone. The project is subject to the site plan standards of the land use code.

ii. Zoning Map Amendment to B-5 Height Overlay Map; 100 Fore Street; 100 Fore Street, LLC., Applicant.
(5:30 - 6:30 p.m. estimated time) The Board will hold a workshop to consider a proposal for a map amendment of the B-6 height overlay to allow building heights of 45 feet with extensions to 55 feet. The map amendment proposes measuring height from average grade, rather than from the floodplain. The proposed building height extension would allow 55 feet building heights for the applicant's portion of the building envelop with the following exceptions: within 70 feet of Fore Street building height heights of 55 feet would be limited to a maximum width of 125 feet, and within 40 feet of Fore Street building heights would be limited to a maximum of 35 feet. The application is sought to allow for a mixed-use project that includes a parking garage with approximately 600 spaces, retail, and office space.

Public Hearing - 7:30 p.m. (PLEASE NOTE CHANGE IN START TIME)

i. Conditional Use and Site Plan Review; 128 Cassidy Point Drive; Tod Dana, representing Kennebec Street Properties, Applicant. (7:30 - 8:15 p.m. estimated time) The Board will hold a public hearing on a proposal to change the use of the existing 13,880 sf building at 128 Cassidy Point Drive. The proposed uses include a warehouse for an import business and an office on the second floor. Other potential uses include small industrial and light manufacturing uses. The site is in the WPDZ zone and the proposed uses are subject to conditional use review and an administrative authorization site plan review.

ii. Conditional Use and Administrative Authorization Review; 121 Cassidy Point Drive; Cyrus Hagge, representing Project Management, Inc., Applicant. (8:15 - 9:00 p.m. estimated time) The Board will hold a public hearing on a proposal for the reuse of the CoachWorks facility at 121 Cassidy Point Drive. The proposal is to convert the 5,105 square foot building for a marine repair services, yacht brokerage, boat storage and the storage and repair of fishing equipment. Other users will include low impact industrial or light manufacturing. The site is in the Waterfront Port Development Zone and subject to review under Portland's conditional use and site plan standards.

Evening Workshop - (Immediately following the public hearing)

iii. Proposed Hotel Linkage Project; City of Portland, Applicant. The Planning Board will hold an evening workshop to discuss the proposal for a hotel linkage project referred to the Planning Board by the Housing Committee.

SEAN DUNDON , CHAIR - PORTLAND PLANNING BOARD

CITY OF PORTLAND, MAINE

PLANNING BOARD

Sean Dundon, Chair
Brandon Mazer, Vice Chair
David Eaton
David Silk
Austin Smith
Maggie Stanley
Lisa Whited

AGENDA
PORTLAND PLANNING BOARD MEETING

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PUBLIC HEARING – 7:30 p.m. (Please note change in start time)

1. ROLL CALL AND DECLARATION OF QUORUM
2. COMMUNICATIONS AND REPORTS
3. REPORT OF ATTENDANCE AT THE MEETING HELD ON JUNE 26, 2018:

Workshop: Dundon, Mazer, Silk, Smith, and Stanley,. Eaton and Whited absent
Public Hearing: Dundon, Mazer, Silk, Smith, and Stanley,. Eaton and Whited absent

4. REPORT OF DECISIONS AT THE MEETINGS HELD ON JUNE 26, 2018:

i. Old Business: Zoning Map Amendment, IL to B-2, 1006 Congress Street and adjoining Congress Street Lots, Richard Packer, Applicant. Mazer moved and Stanley seconded a motion to find the proposed map amendment consistent with the comprehensive plan for the properties located at 1000,

1002/1004, 1006, and 1020 Congress Street, as shown on the map, subject to the determination of the permitted uses of Atlantic Hardwoods, 1002/1004 Congress Street. Vote: 5-0, Eaton and Whited absent.

i. New Business: Level III Subdivision/Site Plan, 977 Brighton Avenue; Avesta Housing, Applicant. Mazer moved and Stanley seconded a motion to table this item to July 24, 2018 at 7:00 p.m. Vote: 5-0, Eaton and Whited absent.

ii. Subdivision Plat Amendment; 415 Cumberland Avenue; 415 CA, LLC., Applicant. Mazer moved and Stanley seconded a motion to approve the amended subdivision plan for 9 residential units. Vote: 5-0, Eaton and Whited absent.

iii. Subdivision, Site Plan and Conditional Use Application, 383 Commercial Street, Deering Property Management, LLC, applicant. Mazer moved and Stanley seconded a motion to waive the maximum number of driveways in the Technical Manual (1.7.2.8) to allow three driveways, subject to the access from Commercial Street being one-way into the site. Vote: 5-0, Eaton and Whited absent. Mazer moved and Stanley seconded a motion to waive the parking aisle widths from 24 feet to 1 or 2 feet narrower on the York Street parking level. Vote: 5-0, Eaton and Whited absent. Mazer moved and Stanley seconded a motion to approve the Traffic Movement Permit subject to two (2) conditions of approval. Vote: 5-0, Eaton and Whited absent. Mazer moved and Stanley seconded a motion to approve the subdivision plan subject to twelve (12) conditions of approval. Vote: 5-0, Eaton and Whited absent. Mazer moved and Stanley seconded a motion to approve the site plan subject to twelve (12) conditions of approval. Vote: 5-0, Eaton and Whited absent.

5. NEW BUSINESS

i. Conditional Use and Site Plan Review; 128 Cassidy Point Drive; Tod Dana, representing Kennebec Street Properties, Applicant. (7:30 – 8:15 p.m. estimated time) The Board will hold a public hearing on a proposal to change the use of the existing 13,880 sf building at 128 Cassidy Point Drive. The proposed uses include a warehouse for an import business and an office on the second floor. Other potential uses include small industrial and light manufacturing uses. The site is in the WPDZ zone and the proposed uses are subject to conditional use review and an administrative authorization site plan review.

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6. EVENING WORKSHOP (Immediately following the public hearing)

iii. Proposed Hotel Linkage Project; City of Portland, Applicant. The Planning Board will hold an evening workshop to discuss the proposal for a hotel linkage project referred to the Planning Board by the Housing Committee.

MEMORANDUM
PLANNING AND URBAN DEVELOPMENT DEPARTMENT
PLANNING DIVISION

To: Sean Dundon, Chair, and Members of the Portland Planning Board
From: Nell Donaldson, Senior Planner
Date: July 6, 2018
Re: MMC Employee Garage & Associated Site Improvements, 190 & 222 St. John Street
Project #: 000207-2018 **CBLs:** 64-A-2, 64-A-8, 64-A-11, 75-A-6, 74-A-7, 68-D-13, 68-D-14, 68-D-16
Meeting Date: July 10, 2018

I. INTRODUCTION

Maine Medical Center (MMC) appears before the Planning Board for a workshop on their proposal to construct a 2,400 space employee parking garage with associated surface parking, landscaping, utilities, and right-of-way improvements at 190 and 222 St. John Street in the city's St. John/Valley Street neighborhood. The proposal is subject to the standards of the Maine Medical Center Institutional Overlay Zone (MMC IOZ) and qualifies for Level III site plan review under the city's land use code. Advertisement of this workshop appeared in the *Portland Press Herald on* July 2 and 3, 2018. In addition, 99 notices were sent to property owners within 500 feet and the interested citizens list.

Applicant: Maine Medical Center
Consultants: David Senus, Woodard & Curran; Mark Wilcox, Winton Scott Architects; Randy Dunton, Gorrill-Palmer; Gretchen Guimarro, Michael Boucher Landscape Architects; Owen Haskell

II. REQUIRED REVIEWS

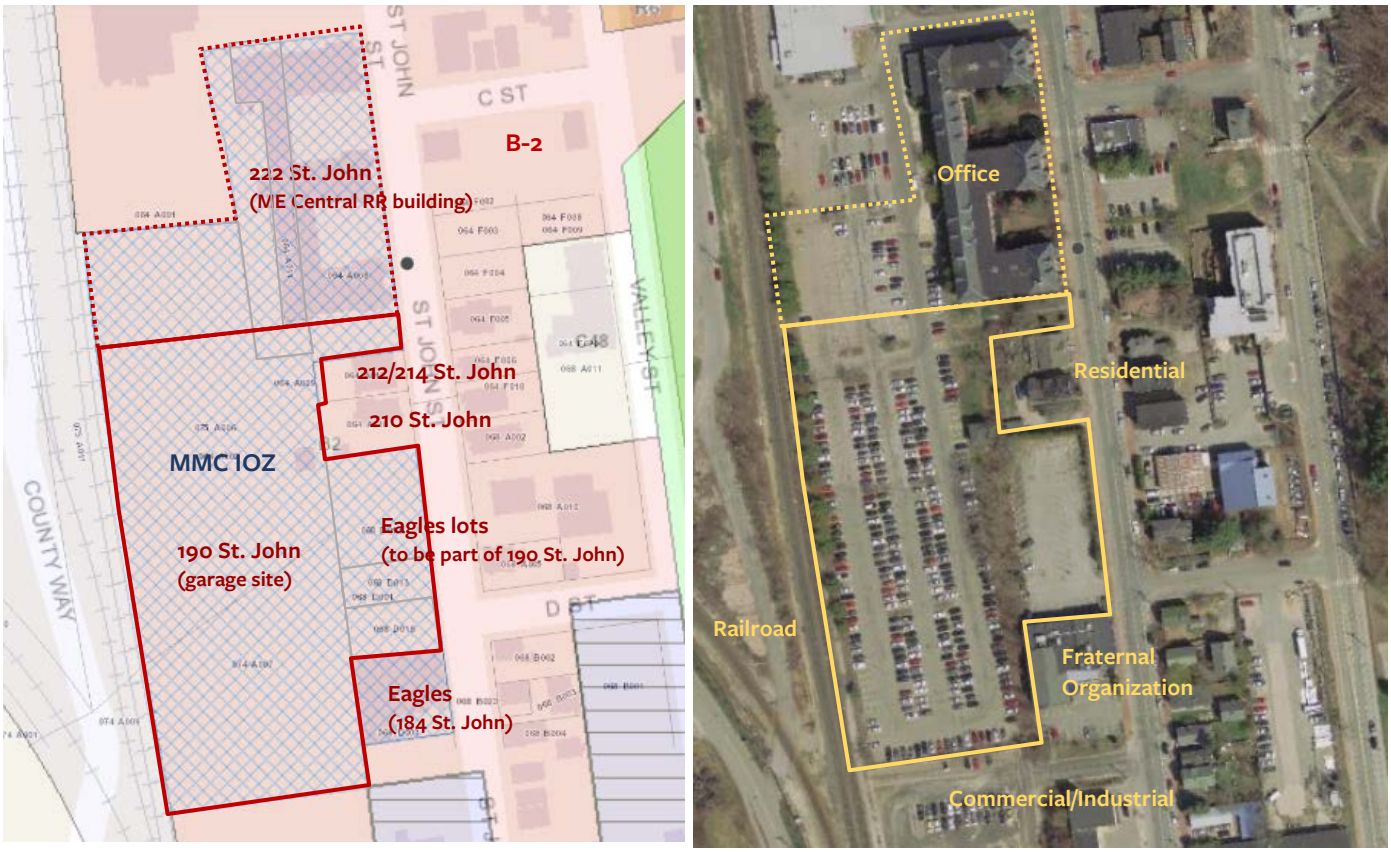
Waiver Requests	*Applicable Standards*
Bicycle parking – to allow 40 bicycle parking spaces on site, less required.	*Section 14-526(a)4.b.* Bicycle parking for non-residential uses required at a ratio of 2 bike spaces:10 vehicular spaces required (for first 100 spaces), and 1:20 thereafter.
Driveway width – to allow a 30' wide driveway from St. John St. at D St.	*Technical Manual,* Section 1.7.2.4. Two-way driveways to commercial developments shall be a maximum of 24' in width.

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

III. PROJECT DATA

Existing Zoning	Institutional Overlay Zone
Existing Use	Surface parking
Proposed Use	Structured and surface parking
Parcel Size	Approximately 5.5 acres (including 190 St. John and 222 St. John)

	Existing	*Proposed*	*Net Change*
Building Footprint	480 SF (190 St. John only)	92,334 SF	92,334 SF
Building Floor Area	960 SF (190 St. John only)	812,797 SF	812,797 SF
Impervious Surface Area	190,582 SF	176,076 SF	-14,506 SF
Parking Spaces	283	2,452	2,169
Bicycle Parking Spaces	0	40	40



Figures 1 & 2: Project site zoning context (left) and land use context (right).

IV. CONTEXT

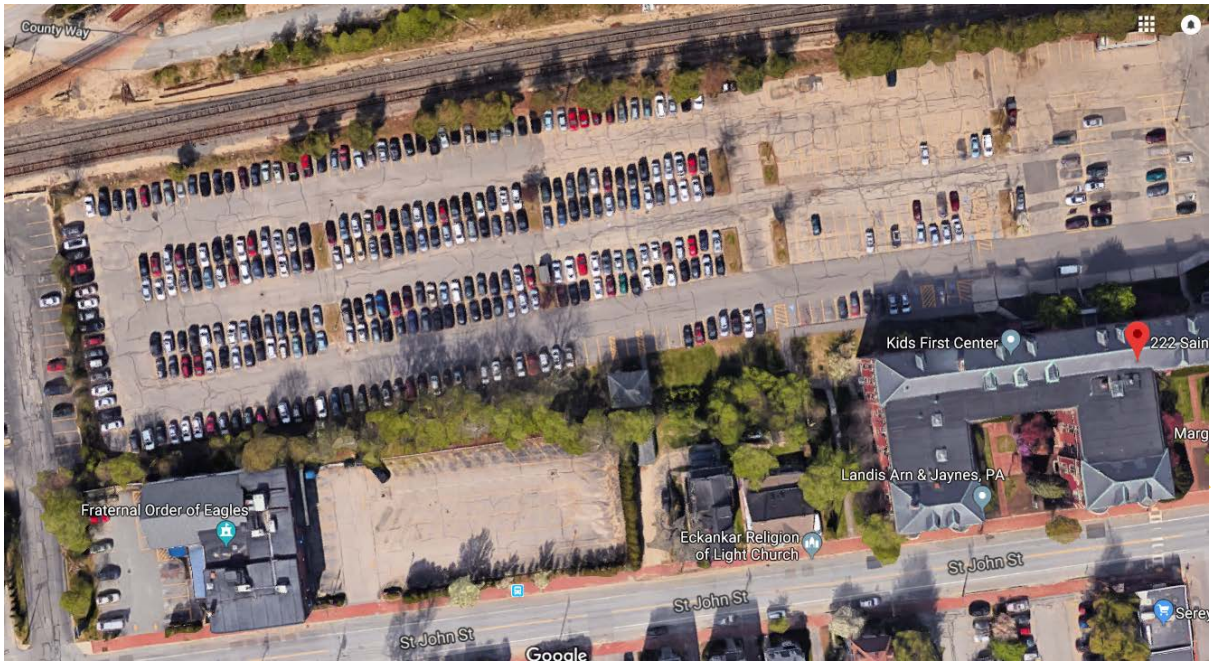
Maine Medical Center's approximately 6,000 existing employees currently park in a number of parking facilities, including lots and garages both on-campus and in remote locations in the vicinity. For almost 50 years, one of the hospital's primary employee parking locations has been a 1,274 space garage at the southeast corner of Gilman and Congress Streets. The Gilman garage was originally permitted in the 1970s and is now nearing the end of its useful life. For this reason, MMC has been planning for the construction of a replacement employee garage for several years, with the goals of eliminating a current deficit in parking supply, concentrating employee parking in one location, and accommodating projected employee growth. In their initial Institutional Development Plan (IDP) proposal, submitted in conjunction with their application for an Institutional Overlay Zone (IOZ) designation, MMC proposed a new employee garage at the southwest corner of Gilman and Congress Streets, directly opposite Gilman Street from the existing employee garage. In response to strong concerns from neighbors about this location, MMC looked, through the IDP review process, for an alternate site. Ultimately, MMC was able to find an alternative in the St. John Street lot which is the subject of this site plan application. The final IDP, submitted in October of 2017 and approved by the Planning Board, laid the framework for an employee garage in this location *(Attachment X)*.

The project site consists of nine existing parcels, including the historic Maine Central Railroad office building parcels, two parcels which are currently occupied by MMC surface parking, and three parcels used as surface parking by the adjacent Fraternal Order of Eagles. In the site plan application, these parcels have been consolidated into two lots, with a new lot line running perpendicular to St. John Street between the Maine Central Railroad building and the adjacent property at 212/214 St. John Street *(Figure 1)*. The northerly of these two lots, 222 St. John Street, has been designed around the Maine Central Railroad building and its parking. The southerly, with a new address of 190 St. John Street, is the site of the proposed garage.

The project site lies on the western side of the city's St. John/Valley neighborhood *(Figure 2)*. The site is bounded by a Portland Terminal Company railroad line and Mercy Hospital on the west, industrial and commercial uses to the south, residential properties and an auto service business to the east along St. John Street, and residential and commercial to the north. There are two residential properties with frontage on St. John Street, 210 St. John Street and 212/214 St. John Street, that are effectively surrounded by the site. The site also sits behind the Fraternal Order of Eagles at 184 St. John Street.

As noted above, the project site includes the Maine Central Railroad office building, which fronts St. John Street, as well as a small associated building which sits at the bottom of a slope behind 210 St. John Street. The Maine Central Railroad building is listed on the National Register; the second building has not been deemed historic.

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



Figures 3 & 4: 190 St. John Street from the D Street intersection (left) and project site from above, showing existing MMC surface parking, Eagles' parking, and the Maine Central Railroad building at bottom right.

V. PROPOSED DEVELOPMENT

The proposed MMC employee garage would include 2,400 parking spaces on nine floors of parking, one of which would be located below grade from St. John Street *(Figure 5)*. Vehicular access to the lowest two of these floors is proposed via an entrance north of the existing Maine Central Railroad building, the "Margarita's entrance." MMC has proposed access to the seven upper parking decks via a new driveway from St. John Street directly opposite D Street. All access to the garage would be controlled with an electronic reader system akin to an EZ pass.

The site plan also includes 52 additional surface parking spaces to the north of the garage, most of which would lie on the 222 St. John Street lot. A stormwater storage and treatment unit is proposed below this parking area. Stormwater treatment is also proposed on the St. John Street side of the building. Utilities are generally proposed from St. John Street.

The parking structure is proposed to sit back from St. John Street by approximately 120', with primary pedestrian access to level 1 via concrete pathways to a door fronting St. John Street, and secondary pedestrian access to the ground level at the northeast corner of the building. The preliminary plans show significant landscaping around the site, including a broad landscaped area in the space between the garage's main pedestrian entrance and St. John Street.

Under the proposed plans, the garage would operate as a remote parking facility for MMC, meaning that staff would park and then access the main hospital campus, at a distance of approximately ¼ mile, by either shuttle or by foot. The site plan application includes modifications to the Margarita's entrance and to St. John Street to accommodate employee and shuttle traffic, as well as to various sidewalks in the area to accommodate pedestrian access to the hospital.

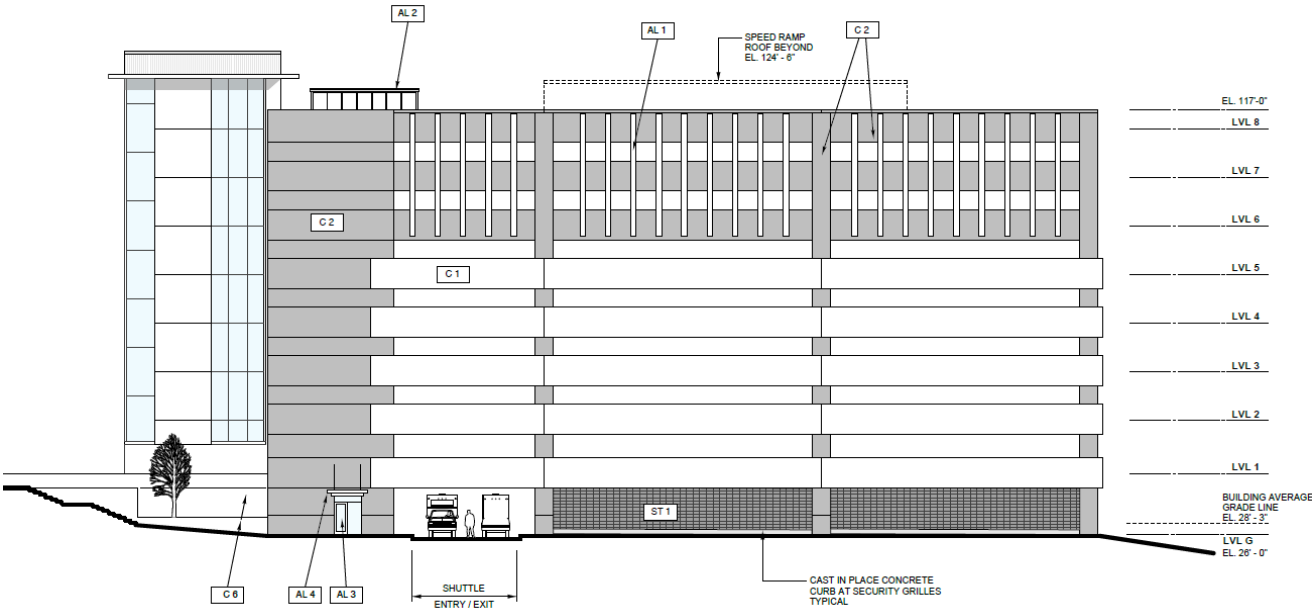
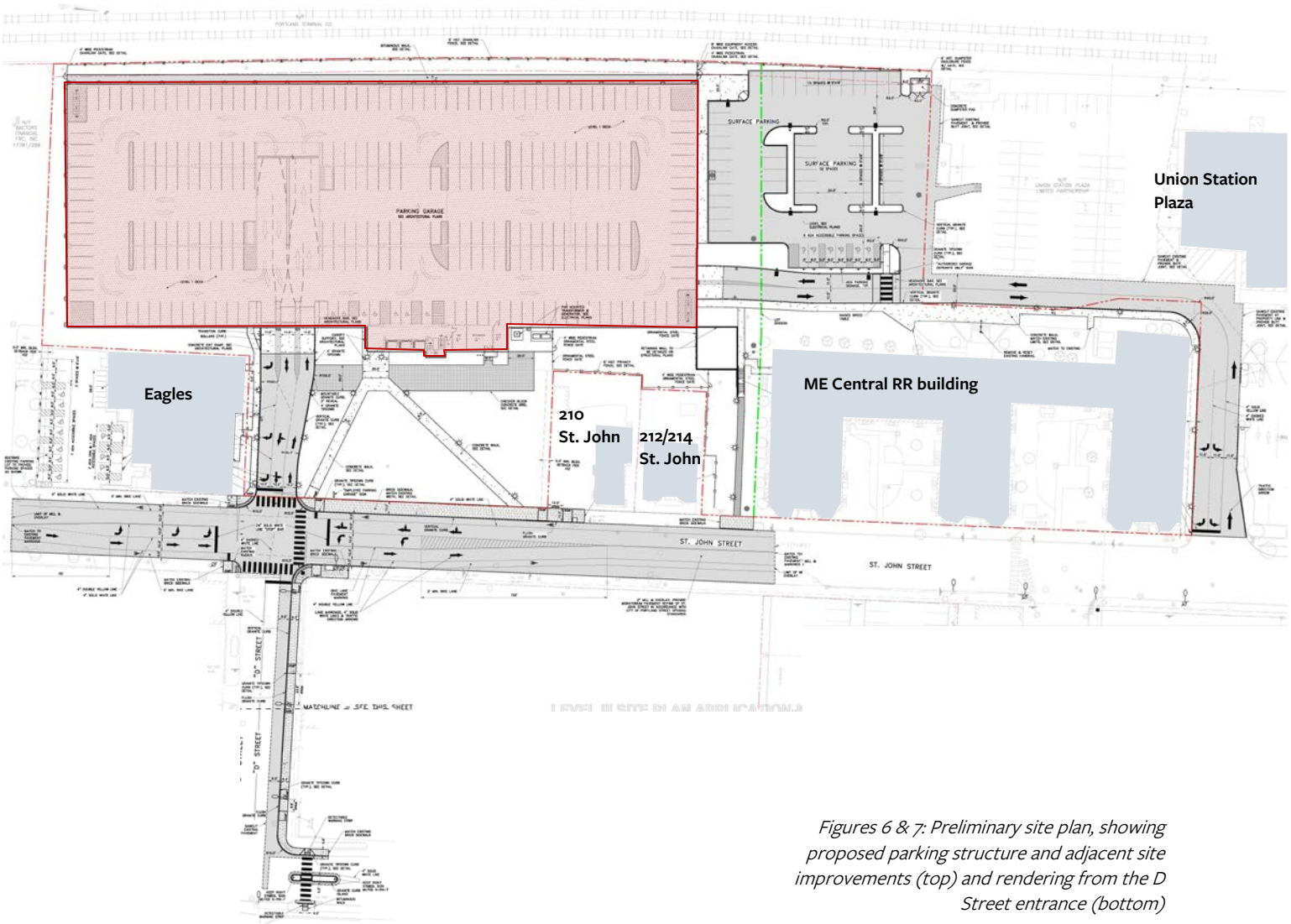


Figure 5: North elevation of the proposed garage, showing the below grade level and Level 1, which would lie at grade with St. John Street.



Figures 6 & 7: Preliminary site plan, showing proposed parking structure and adjacent site improvements (top) and rendering from the D Street entrance (bottom)

Figures 8 & 9: Rendering from St. John Street (top) and from Union Station Plaza (bottom)

VI. PUBLIC COMMENT

The applicant hosted a neighborhood meeting on June 25, 2018 and has provided written notes as documentation *(Attachment V).* The notes reflect questions from attendees regarding traffic movement from nearby driveways to and from St. John Street, loss of on-street parking, plant selections, site grading, soils, and the possibility of alternative access points for construction vehicles. The Planning Division has also received a number of public comments on the application *(Attachments PC 1 – PC 7).* These comments raise concerns regarding construction impacts to adjacent buildings, the design of the St. John Street bike lanes and signal timing at the proposed D Street garage entrance, and the loss of on-street parking due to the proposed reconfiguration of St. John Street near the project site.

VII. RIGHT, TITLE, & INTEREST

The MMC IOZ is only applicable to properties to which MMC has right, title, or interest. As noted above, the project site includes nine parcels, including six originally held under single ownership by Cowcatcher, LLC and three originally held by the Fraternal Order of Eagles. The Cowcatcher lots have been split into two parcels, one retained by Cowcatcher (222 St. John Street) and one now owned by Caste Cow, LLC (190 St. John Street). MMC holds a long-term land lease for 190 St. John Street. MMC also holds a purchase and sale agreement for the three parcels owned by the Fraternal Order of Eagles. Staff has requested that, in the final submittal, the applicant provide additional documentation with respect to the Eagles purchase and sale agreement.

In addition to the construction of the parking structure on 190 St. John Street, the site plan application includes improvements to 222 St. John Street, minor improvements to the Eagles lot, some grading and planting on the 210 St. John Street lot, and some improvements to the Union Station Plaza parcel as well. Staff has requested evidence of rights to make improvements to all of these lots in the revised submittal.

The project site is both subject to and benefits from several easements, including access and stormdrain easements across the Union Station Plaza lot to the north of the site. In the revised submittal, staff has requested that the applicant provide documentation of these easements with the abutting landowner. The applicant has provided evidence of an access easement between the 190 and 222 St. John Street lots; under the terms of the lot split, the 190 St. John Street parcel retains an access easement over the 222 St. John Street lot and is obligated to provide parking for up to 400 vehicles for the benefit of tenants of the Maine Central Railroad building either in the proposed parking structure or the adjacent surface lot together with rights of ingress and egress. Staff has requested that the applicant provide documentation of a drainage easement for stormwater infrastructure associated with the garage across the 222 St. John Street lot as well.

VIII. FINANCIAL & TECHNICAL CAPACITY

The applicant has provided a description of the project team and a letter regarding their financial capacity *(Attachment I).*

IX. ZONING ANALYSIS

As noted above, the site lies within the Maine Medical Center Institutional Overlay Zone, which establishes use, dimensional, and development standards for MMC projects within its bounds. The project has been reviewed for conformance with these standards. Staff comments are below.

a. Use

Parking lots and parking garages are permitted uses within the IOZ.

b. Dimensional Requirements

The project appears to meet requirements related to building height, length, and setbacks.

c. *Design*

New buildings within the IOZ are required to adhere to the design guidelines of the IDP, which are intended to promote campus cohesion, activation of the public-realm and the creation of pedestrian-scaled edges, compatibility with neighborhood context, quality of materials, and quality of long-views. In their preliminary submittal, the applicant has provided elevations, renderings, and a design narrative reflecting these guidelines *(Attachment D)*.

The proposed building is of significant size, approximately 480' long and almost 100' in height. The primary point of access faces St. John Street, with a broad landscaped area between it and the street edge. The building itself is proposed with precast reinforced concrete of two tones, clear anodized aluminum windows in the stair tower and at the entrance, extruded aluminum fins, and black metal security grilles. The mass of the building is broken by the stair and elevator tower, which signifies the main entrance.

Caitlin Cameron, the city's Urban Designer, has documented the results of the city's design review *(Attachment 7)*, and writes,

> *The new construction is a large garage with no other uses on-site and is set back from the street. Therefore, the design evaluation is focuses on the impact on the overall campus design, long views, safety and CPTED, and the St. John Streetscape.*

Outstanding comments can be summarized as follows,

> *Staff recommend in order for the garage to be visually cohesive with the MMC campus and the surrounding context, the material color palette should be coordinated to include warm tones of the grey and white....though staff are supportive of the grey and white materials, the level of contrast may bring too much attention to the garage that otherwise is intending to be recessive.*
>
> *Staff suggest more emphasis can be brought to both entrances – increase scale of entrances, canopies, lobby area, etc. to increase scale of these entrances in relationship with the scale of the building and the distance from the street.*
>
> *The gap between floors has uneven spacing – would suggest that the spaces should be consistent with the spandrel modifying in height instead.*
>
> *What is the material of the ramp roof? Is that depicted in the renderings?*
>
> *Are the ramp and circulation tower roofs adequately depicted in the renderings? It is difficult to tell how visible these will be with the materials provided.*
>
> *Concern about the visibility of the roof lighting poles and light levels, especially the impact on the Western Promenade.*
>
> *The project proposes limited activity at the ground floors – the building use is garage only and is set back from the street....Consider ways of introducing more "eyes on the street" facing St. John Street, whether that be more glass on the circulation tower, increasing the size of the entrance lobby, adding windows to the security/utility area of the façade (clerestory, 2nd level waiting lobby, etc.).... Staff suggest the lobby entrance facing St. John Street could increase in size, include more fenestration, and/or include additional lighting.*

Staff request more information regarding the screening of cars. Screening methods include solid concrete spandrel wall with metal mesh railing on the ground floor. It is not clear whether the spandrel panels will conceal the headlights of cars. Will cars be screened from view on the top floor, from the Western Prom?

Rather than extend a wood fence to the street between the Railroad Building and the residential building, staff recommend using landscape.
Clarify whether there is building lighting above the ground level.

Concern about light trespass on neighboring residential properties and level of light visible from the Western Promenade at night. More information is requested regarding the impact of site lighting from the long views, especially light trespass and visibility of the lighting on the upper stories and roof from the Western Promenade.

The rooftop design including light poles, ramp and circulation tower roofs, and any mechanicals should be accurately demonstrated in these renderings. It appears in the materials given that these rooftop appurtenances have minimal visual impact and are integrated into the design but staff would like to clarify whether all these features have been included in the rendering images.

d. *Signs*

Signs within the IOZ are required to conform to a unified, campus-wide signage plan and relate in proportion and character to building facades and adjacent street typology. MMC most recently submitted a campus-wide sign plan in 2008 *(Attachment W)*. The fonts and graphics in the proposed employee garage sign are generally consistent with the sign plan, although the color and base design diverge. Staff has requested that the applicant refer to the campus-wide signage plan and provide a design explanation for proposed discrepancies.

e. *Transportation*

The IOZ requires the submission of a TDM plan. Because MMC had not yet hired a TDM coordinator at the time of the preceding site plan review for the visitor garage and East Tower expansion, that site plan was approved with a condition that the applicant submit a TDM plan prior to issuance of a certificate of occupancy for the East Tower. In an effort to satisfy this condition, a TDM plan has been included within this application *(Attachment K)*. This most recent version of the TDM plan includes a summary of current employee commuting behavior, an analysis of baseline employee parking demand, proposed targets for employee parking demand reduction, and a series of strategies designed to achieve those targets. Staff has previously reviewed several draft iterations of the TDM plan and has provided comments on the proposed data collection plan, the efficacy of proposed mode-specific strategies, and the proposed marketing and education strategies *(Attachment 8)*. According to MMC, the hiring of a TDM coordinator is imminent. As a result, staff has recommended that further discussion of the TDM plan occur at the next workshop after this hire is able to review comments and contribute to the plan.

Per the IOZ, parking requirements are to be established at the time of site plan review based on a parking study that examines campus-wide supply and demand. In their preliminary submittal, MMC speaks to existing and projected parking demand and supply in both their traffic and parking analysis and in their TDM plan *(Attachment K)*. Staff has requested that the applicant review these two sources for consistency with the approved IDP.

According to the applicant's submittal, the proposed garage has been designed to achieve multiple purposes: to address existing employee parking shortfalls experienced by the hospital, to consolidate a number of existing employee parking facilities in use by MMC, and to accommodate future projected parking demand. Based on data provided in the IDP, in 2016, MMC hosted an average of 4,615 employees, students, and contractors on campus on a typical weekday, and served these employees, students, and contractors with a total of 2,027 on-campus and

Table 1: Existing and Projected MMC Employees, Students, and Contractors: Average Weekday

	2016	2026	Change
Shift 1	*3,640*	*3,900*	*260*
Shift 2	*210*	*220*	*10*
Shift 3	*520*	*550*	*30*
Total Employees	4,370	4,670	300
Med Students	100	110	10
Nursing Students	100	100	-
Other Students	20	25	5
Non-MFP Related Contractors	25	25	-
Total	*4,615*	*4,930*	*315*

Table 2: Existing and Projected Parking Facilities Used by MMC Employees

2016/2018		Post-Garage Construction	
First Atlantic Lot (222 St. John St.)	283 spaces	Employee Garage (190 St. John St.)	2,252 spaces*
Gilman Garage	1,274		
Sportsman Lot (905 Congress)	60		
Gateway Garage (181 High St.)	100		
Classic Lot (993 Congress St.)	97		
321 Brackett St.	9		
Forest Street Garage	178	To remain in use by MMC	178
7 Bramhall St.	26		26
On-Street Parking (estimated)	200	Not to remain in use by MMC	0
Total	*2,227 spaces*		*2,456 spaces*

* 200 spaces in the Employee Garage and adjoining surface lot will be allocated to the Eagles Lodge (50 spaces) and to tenants of 222 St. John (150 spaces)

remote parking spaces *(Tables 1 & 2)*. These spaces include the existing lot at 222 St. John Street (the First Atlantic Lot, which will be replaced by the garage), the existing Gilman Garage (which will be demolished to make room for a new hospital building), and a number of lots and garages located remotely to campus. Given the total parking supply available to MMC in 2016 and the total average weekday employee population cited above, the hospital currently supplies parking at a ratio of .44 spaces/average weekday employee.

Per the applicant's traffic and parking analysis, the hospital's existing system operates at or above capacity during weekday daytime hours. MMC's IDP estimates that approximately 150-200 additional parking spaces are required to address existing employee parking shortfalls. Per the TDM plan, MMC parking staff has estimated the existing employee parking deficit at a larger amount: 200-300 spaces. It should be noted that MMC acknowledges that a number of employees are currently using on-street spaces for all-day parking, and estimates that this accounts for approximately 200 occupied spaces in the neighborhoods surrounding the campus on an average weekday. For reference, the TDM plan cites an observed *total* parking demand, including patients and visitors, during weekday peak hours of 3,122. This figure is approximately 250 spaces higher than the 2,877 total parking spaces provided by the hospital.

The IDP and traffic submittals for this application also speak to future demand. The IDP estimates a projected increase of approximately 300 employees, students, and contractors on an average weekday over the next ten years. Per the applicant's traffic and parking analyses, approximately 500 to 600 additional employee parking spaces are required to meet projected demand associated with growth in employees. Again, staff has requested that MMC review the existing and projected employee demand figures to ensure consistency with the IDP.

It should be noted that the parking structure and adjacent surface lot have been designed to serve not only MMC, but tenants of the Maine Central Railroad building and the Eagles as well. Together, these users are proposed to occupy approximately 200 spaces in the garage and adjoining surface lot. Tom Errico, the city's consulting traffic engineer, has requested additional information regarding use by the Maine Central Railroad building tenants in particular. He writes,

> *The applicant should provide a parking analysis for the parking demand and supply condition for 222 St. John Street.*

f. Environment

The IOZ requires that development proposed by MMC be designed to integrate with the surrounding context. Review comments related to this standard can be found under site plan review below.

g. Mitigation Measures

The IOZ requires that MMC mitigate impacts to off-premise infrastructure in a manner proportionate to those impacts. Review comments related to this standard can be found under site plan review below.

h. Neighborhood Integration & Neighborhood Engagement

The IOZ also requires that MMC engage neighbors consistently through ongoing community engagement and through periodic and more intensive engagement during construction periods. MMC continues to hold regular expansion group meetings and use their website, www.mmc.org/modernization, to communicate with surrounding neighborhoods and the public more broadly.

i. Construction Management

The applicant has provided a construction management plan in the preliminary submittal *(Attachment J)*. This construction management plan identifies points of contact, establishes a construction schedule, outlines measures to be taken to ensure public safety, and describes construction logistics. Staff has reviewed the plan and requested additional information on methods for mitigating impacts to neighboring properties, the need for construction easements, delivery timing, temporary parking for both MMC and tenants of the Maine Central Railroad building, the occupation of on-street parking, pedestrian detour routes, and neighborhood communication measures.

It should be noted that the preliminary construction management plan includes provisions for quarterly updates, including updates on construction schedule, delivery impacts to traffic, off-hours work, and notice of impactful work, to the city and neighbors. The plan also includes provisions for pre-construction surveys of neighboring properties.

j. Other

The IOZ also requires MMC to provide neighborhood parking during snow bans, much as the hospital currently does. Staff has requested further information about how snow ban parking will be handled in the proposed garage.

X. SITE PLAN SUBMISSION REQUIREMENTS (Section 14-527)

The application has been reviewed against the submittal requirements of the site plan ordinance. In the preliminary submittal, MMC has identified several required state and federal permits, including a Maine Construction General Permit and an FAA Aeronautical Study for Determination of Hazard for height. These permits will be required prior to the issuance of a building permit. Staff has requested that the applicant confirm that lighting does not need to be reviewed by the FAA as well.

XI. SITE PLAN REVIEW *(Section 14-526)*

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

1. Transportation Standards

a. Impact on Surrounding Street Systems

The applicant has projected traffic volumes entering and exiting the proposed garage and evaluated potential impacts to the adjacent roadway network. These projections are based largely on traffic counts at existing MMC employee parking facilities, the First Atlantic Lot at 222 St. John Street and the existing Gilman Garage, which will be replaced by the proposed employee garage. The analysis assumes that the proposed garage will experience much the same traffic pattern as these facilities, which the exception that the Gilman Garage peaks may shift modestly to account for the increased travel time associated with a walk or shuttle ride from the proposed parking structure to the hospital campus. The garage is projected to generate peak traffic from 6:00 to 7:00 AM (with 1,097 trip ends) and 4:15 to 5:15 PM (with 571 trip ends). The AM peak hour of the garage is offset significantly from the peak hour of the adjacent street, St. John Street, which experiences its peak hour from 7:30 to 8:30 AM. The projected PM garage peak is closer to the PM peak hour of St. John Street, which occurs between 4:00 and 5:00 PM.

Because the proposed garage is not technically anticipated to generate new traffic, but instead to shift existing traffic from other locations, no Traffic Movement Permit (TMP) is required. It is assumed that under the site plan review for the future Congress Street hospital building, the TMP requirement will be triggered.

As proposed, all of the vehicles parking on the ground level and first deck of the garage, including visitors to the Maine Central Railroad building and the Eagles, some MMC employees, and all shuttles providing access to and from the campus, would use the "Margarita's entrance" at the north end of the Maine Central building. All vehicles parking on the second deck and above would use a separate entrance directly off St. John Street at D Street. Given projected traffic volumes entering and exiting at D Street, MMC has suggested a traffic signal in this location. It should be noted that, technically, the traffic evaluation finds that the intersection of the garage entrance at D Street and St. John Street does not warrant a signal. Staff has requested confirmation that MaineDOT approves of the installation of this signal without a warrant.

Mr. Errico has reviewed the plans for this traffic signal and writes,

> *A traffic signal is proposed at the St. John Street/D Street/Garage Driveway location. I support the installation of a traffic signal given vehicle volume conditions and anticipated pedestrian movements. I would note that the applicant is responsible for development of design plans and equipment specifications for review and approval by the City. All cost associated with the installation of the traffic signal is the responsibility of the applicant.*

The applicant has conducted capacity analyses at nearby intersections, and found that, in the post-development condition, movements at studied intersections are forecasted to operate at a level of service of C or higher during the AM and PM peak hours of the garage. This includes all approaches to the Congress Street/St. John Street and Congress Street/Valley Street intersections. The only level of service below C in the post-development condition is forecasted for eastbound vehicles exiting the Margarita's entrance during the AM peak hour of the garage, when there will be heavy conflicting southbound volumes on St. John Street. Changes in shuttle routing may resolve this issue. Mr. Errico has reviewed the level of service analysis and writes,

> *The applicant has provided a traffic evaluation and my initial comments are noted below:*
> - *I have requested the Synchro traffic model for review.*

- *I have requested the traffic count data collection reports for review.*
- *I find the methods used to estimate traffic volumes associated with the garage to be reasonable. I would note that additional review is required. The evaluation notes that a broader review of the area transportation system and parking garage will occur during Phase 3 of MMC's expansion.*
- *From a vehicle capacity perspective, I would recommend a shared through/right shared lane configuration on the southbound St. John Street approach.*
- *Some of the intersection level of service conclusions seem better than actual field conditions. I would suggest the applicant field confirm intersection delays and queues.*

It should be noted that, at the city's request, the applicant did pursue the possibility of providing access to the garage from Fore River Parkway as a means of minimizing impacts to Congress, St. John, and Valley Streets *(Attachment K).* This analysis found that there are significant grade and right, title, and interest issues associated with access from Fore River Parkway, which would inherently require a railroad crossing. The analysis found that a connection through the Mercy Hospital campus is the most feasible of the three options studied. This connection would require easements from both Mercy Hospital and the Portland Terminal Company. It could also have significant implications for Mercy's long-term plans. While this connection is therefore not being pursued at this time, it is staff's understanding that the garage has been designed in such a manner so as not to preclude a connection should it be possible at some point in the future.

b. Access and Circulation

As noted above, primary vehicular access is proposed at a modified curb cut at the intersection of St. John and D Street. Secondary access is proposed at an existing access point north of the Maine Central Railroad building, the "Margarita's entrance." Tenants of the Maine Central Railroad building, the Eagles, some MMC employees, and shuttles destined for the ground floor and first deck of the garage are proposed to use the Margarita's entrance. The remainder of the employees would use the primary D Street entrance. The D Street entrance has been designed with three lanes, including a reversible center lane. A driveway width waiver is required.

Bruce Hyman, the city's Transportation Program Manager, has reviewed the plans for this driveway and writes,

> *The pavement markings and labels for the reversible center lane for the garage exit/entrance are to be revised to be clearer.*
>
> *The driveway [apron], as shown, does not conform with the Technical Manual's Sidewalk Material Policy - it is to be brick.*

Mr. Errico has also reviewed the layout of the St. John Street/D Street intersection and writes,

> *The…layout of the St. John Street/D Street/Garage Driveway intersection is generally acceptable. It should be noted that the City is currently reviewing bicycle facility recommendations and final direction will be provided in the future. Some initial comments are provided below:*
>
> - *The number of pavement marking arrows is excessive and should meet either City of MaineDOT standards (they may be for traffic flow reasons). I would suggest the through lane arrows be eliminated on St. John Street.*
> - *A crosswalk on the St. John Street southerly approach shall be provided.*
> - *I continue to review the garage approach as it relates to providing a three-lane section with a reversible center lane and traffic control design elements.*

The preliminary site plan shows some significant changes to the configuration of St. John Street along the front of the site near the D Street entrance, including the addition of left-turn lanes in both the northbound and southbound directions. In order to accommodate these turn lanes, through movements, and bicycle lanes, the elimination of approximately 13 on-street parking spaces is proposed. As noted above, neighbors have raised concerns about this proposed loss of on-street parking. Neighbors have also raised concerns about access to and from adjacent residential driveways, particularly at 210 St. John and 212/214 St. John.

The applicant has proposed to provide shuttle service at 15-minute headways during peak hours. Given the garage's proximity to the main campus, however, there is a high likelihood that employees will walk between the proposed garage and the hospital. Pedestrians electing to walk would exit the garage at either the front door on the first parking deck or at the ground floor on the northeast corner of the building, and from there proceed either up the stairs adjacent to the Maine Central Railroad building or on a sidewalk around the north side of this building. The preliminary plans show concrete sidewalks from all pedestrian entrances to public sidewalks on St. John Street. Mr. Errico has reviewed these internal sidewalks and write,

> *The sidewalk from St. John Street to the rear of 222 St. John Street [the Maine Central Railroad building] should be ADA compliant and continuous.*

Mr. Hyman adds,

> *I would suggest a crosswalk be provided across the 222 St. John Street [the Maine Central Railroad building] driveway.*
>
> *The walkway along the driveway from the garage/Eagles building should provide a full usable width of 5′ exclusive of the lighting poles/fixtures. The sidewalk should be widened or the poles moved out of the sidewalk.*

From the internal sidewalk network, pedestrians could either traverse adjacent neighborhood streets or access the hospital via the Western Promenade. In order to improve this access, a new 6.5' brick sidewalk is proposed on the north side of D Street, and a new crosswalk with median treatment is proposed at D Street and Valley Street near the base of an existing path up the Western Promenade. Staff has requested that street trees be considered in the D Street sidewalk. In addition, Mr. Hyman has reviewed this sidewalk design and writes,

> *The sidewalk proposed along D Street should have a wider effective/usable width given the likely location of lighting poles within the sidewalk and the potential for moderate to high numbers of pedestrians using the sidewalk (6.5′ is too narrow)*
>
> *Consideration should be given to curb the south side of D Street as well to establish a standard width street of approximately 38′ curb-to-curb to better organize its likely increased use and accommodate a future sidewalk*
>
> *The curb ramps at at the NE and NW corners of the entrance/exit and D Street may need to be reconfigured and may not be be as large as shown (potentially reduce the length of flush curb and detectable warning panels)*
>
> *It is unclear whether the plans for D St account for the two driveways that currently exist today on the north side.*

The curb ramp on the west side of Valley Street at D Street may warrant a different configuration that does not use a flare - the proposed configuration is less traversable by those with disabilities

Valley Street will be under moratorium later this year after it is paved via a MaineDOT project and the timing and impact of the construction of the proposed pedestrian crossing (ramps, refuge island) need to be considered.

Jeremiah Bartlett, the city's Transportation Systems Engineer, adds,

The proposed sidewalk facility on the north side of D Street shall be placed as close to the right-of-way as possible, and provide the maximum width without reducing the street to less than 36 feet [with 38' preferred, as above] in width.

To adequately define the street and replace on-street parking being eliminated by the proposed intersection reconfiguration with St. John Street and the primary garage entrance, curbing should be placed on the south side of D Street with existing driveways brought as close into conformance as possible. This would facilitate a future City sidewalk project in keeping with the original 1928 layout plans for D Street.

The new crossing configuration of D Street, including islands and curb ramps shall consider…an imminent MaineDOT paving project of Valley Street.

Mr. Errico further adds,

The median refuge island on Valley Street needs to be a minimum width of 6-feet to meet ADA requirements. The ramp configuration on the west side should be revised to eliminate the flare condition. Warning signs may be required and direction will be provided in the future.

The plans also show a new crosswalk at C Street and Valley Street, new brick sidewalk on the northerly side of A Street, and small areas of sidewalk repair on St. John Street *(Figure 10)*. Staff is currently reviewing these plans, but Mr. Hyman notes generally,

The Brick Sidewalk Detail is to be modified to state "2% cross slope (MAX.)" not (TYP).

Details are needed for Detectable Warning Panels (cast iron) and Driveway (showing "2% cross slope (MAX.)")

Staff has also requested that the applicant evaluate the need for additional pedestrian connections through the Western Promenade. Staff has noted desire lines that depart from the existing bituminous path network in the Western Promenade and questioned whether these should be formalized, complete with lighting. Any work within the Promenade would be subject to historic preservation review. Mr. Hyman writes,

The network of pathways and lighting from Valley Street to the Western Prom should also be assessed for its adequacy to provide safe and direct connections to/from MMC and the parking garage to encourage walking

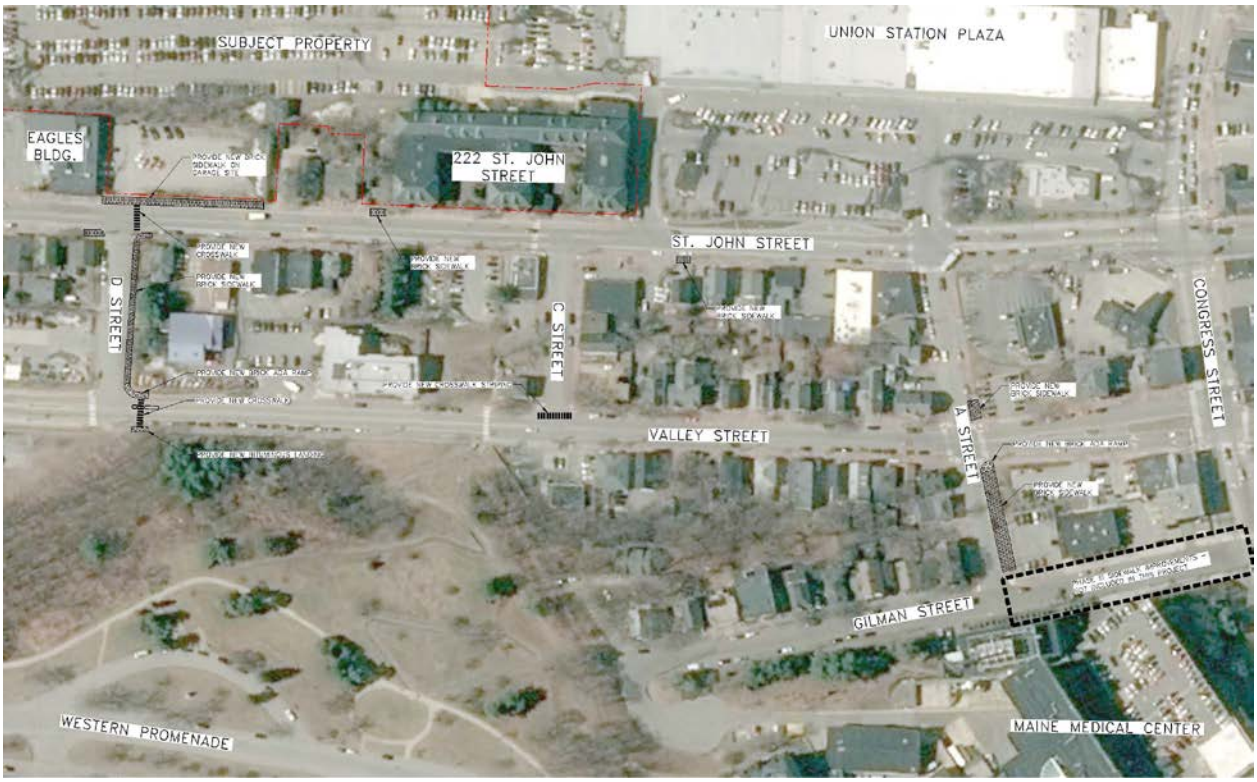


Figure 10: Proposed off-site pedestrian improvements

The plans show bicycle lanes in both the north and southbound directions on St. John Street. Staff has reviewed the configuration of these bike lanes in some detail, given concerns about the potential for conflicts between heavy southbound right turns into the garage and through bicycle movements. As noted above, this concern was also raised by members of the public. Mr. Hyman writes,

> *City staff are reviewing various bikeway/roadway configurations, pavement markings and signage along the St John Street frontage to provide the best bikeway given the high prevalence of right turns on southbound St. John St into the parking garage.*

Mr. Bartlett adds,

> *Additional detail shall be provided for pavement markings providing direction for cyclists through the proposed signalized intersection at the garage entrance, which could include skip markings, green paint, and other components. The approved plan will coordinate with DPW on the appropriate marking materials for this location.*
>
> *The traffic signal proposed for the garage entrance, upon completion, shall be capable of bicycle and pedestrian detection.*

And further, Michael Geuthle, the city's consulting civil engineer, has identified a potential bicycle conflict with a catch basin in this area, writing,

> *Catch Basin at intersection of D Street and St. John St. is located in a transition ramp next to flat curb (image to right). Applicant shall provide spot grades or detail confirming how this catch basin grate shall be constructed with the adjacent tipdown curbing, and within a bicycle lane.*

c. *Public Transit Access*

The site is located on METRO Route 1, with service to Congress Street and Munjoy Hill. There is an existing transit stop on the site's St. John Street frontage. Per the site plan standards, a transit facility is required for a project of this size if the development is proposed along a public transit route and the nearest existing transit shelter and/or pullout is further than ¼ mile from the site. In this case, there is a pullout located in front of the Union Station Plaza, approximately 700 feet to the north. Thus, no transit facility is technically required. Staff has requested that the applicant clarify how the existing transit stop will be handled. Staff has also noted that METRO is currently working on plans to install a shelter facility on Congress Street at the north end of Union Station Plaza.

d. *Parking*

As noted above, staff has requested some clarification on the parking analysis provided in the preliminary submittal. In addition, staff has reviewed the parking layout within the garage. Of this, Mr. Errico writes,

> *The parking garage has a number of spaces that do not meet the City's dimensional standards for size. The applicant should request a formal waiver with supporting documentation.*
>
> *The garage plans should include dimensions for parking aisle widths.*

John Peverada, the city's Parking Manager, has also reviewed the garage layout and raised concerns regarding the potential for extensive queuing at the two exit lanes at the D Street driveway. He writes,

> *With the size of the garage, I question if the two exit lanes onto St John St will be sufficient to "empty" the garage in a reasonable amount of time. I bring this up because many times when we boot MMC employees they say that they do not park in the existing (1,200 space ?) garage because it takes too long to exit. Additionally some employees who should currently be parking in the shuttle lot now say they don't because it takes too much time out of their day and they are not being paid while on the shuttle bus.*
>
> *I know the hospital has staggered shifts, but I am concerned that if this garage is not efficient, employees will park on the neighboring streets and we will be chasing them around. Keeping in mind that St. John St only has one travel lane in each direction, I worry that traffic may back up in the garage.*

Per the site plan standards, the applicant is required to provide two bicycle parking spaces/10 vehicular spaces required for the first 100 vehicular spaces, plus one/20 vehicular spaces over 100. The applicant has proposed to provide 40 bicycle parking spaces and requested a partial waiver from the bicycle parking standard on the grounds that most employees traveling to and from work at MMC would opt for bicycle storage on the main campus rather than bicycle to an off-campus parking location and walk or shuttle to the main campus. This waiver is supported by staff.

MMC's preliminary plans show bicycle parking on the northwest and southeast corners of the ground (below-grade) floor of the building. Staff has requested that the location of these spaces be moved closer to the building entrances, given the low likelihood that bicyclists will ride to the far corners of the ground floor of the building to store bicycles.

e. *Snow Storage*

The applicant has proposed to remove snow from the top deck of the garage with a snow melt system. This system will not encroach on parking or pedestrian areas.

f. Transportation Demand Management

The applicant has submitted a TDM plan with the preliminary submission. This TDM plan is discussed under the zoning analysis above.

2. Environmental Quality Standards

a. Preservation of Significant Natural Features

The applicant has provided documentation to confirm that there are no critical habitats, conserved lands, or protected wetlands on the site *(Attachment L)*.

b. Landscaping and Landscape Preservation

The applicant has provided a planting plan designed to feature low-maintenance and predominantly native plants. The planting is organized in four zones around the site.

The first zone encompasses the surface parking behind the Maine Central Railroad building, which lies primarily on the 222 St. John Street lot. This zone is proposed with sweet ferns and honey locust trees in the islands, which together meet the parking lot landscaping standards of the land use code. Honey locust trees are listed among the approved plant species in the city's *Technical Manual.*

The second zone, in the area between the Maine Central Railroad building and the northeast corner of the proposed garage, is proposed for major regrading such that the site and portions of the adjacent 210 St. John Street lot are brought up to the level of St. John Street along the easterly face of the garage *(Figure 11)*.

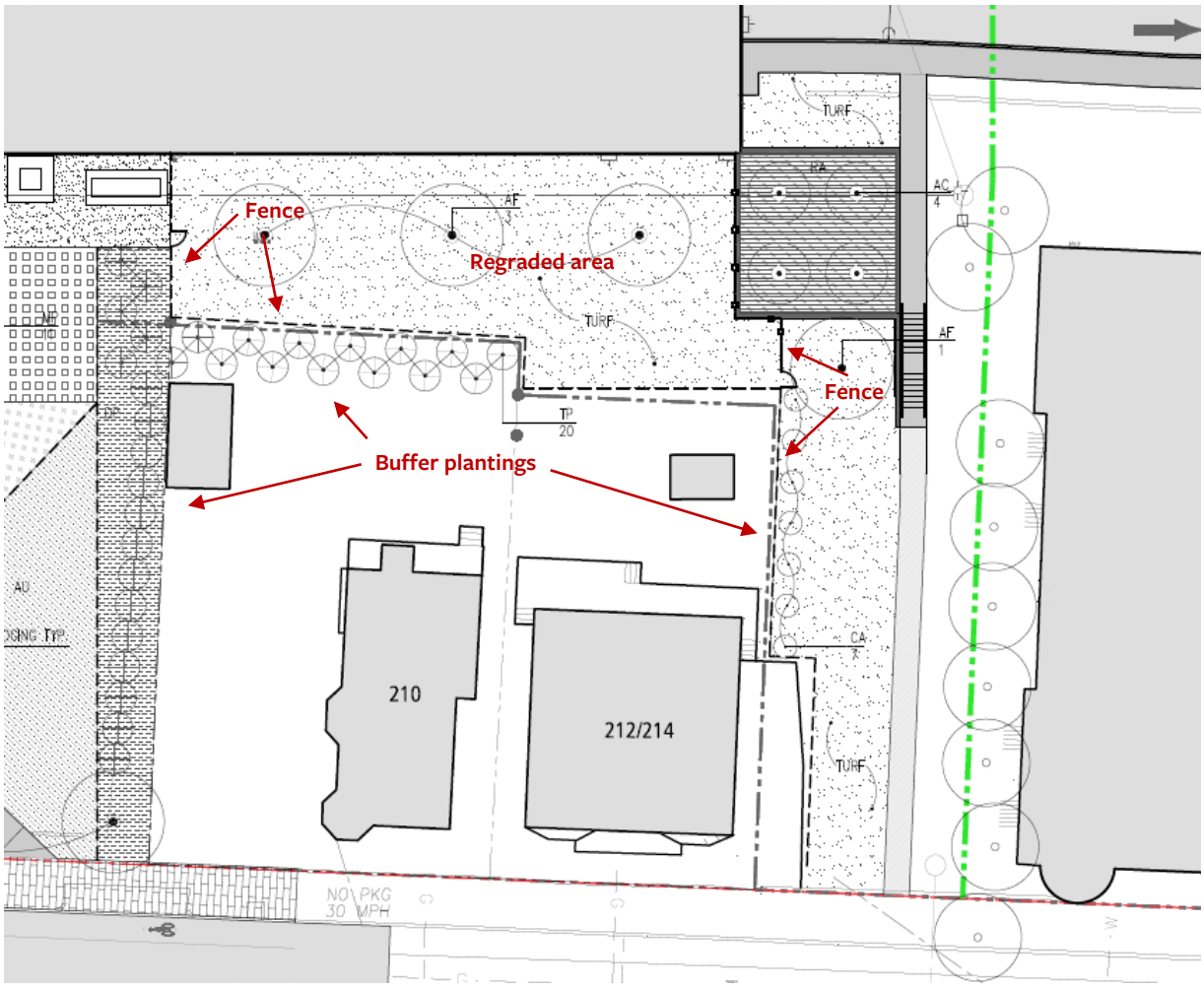


Figure 11: Proposed landscape at rear of 210 and 212/214 St. John Streets

Under the site plan, existing invasive species in this area would be removed. Shad trees, sumac, Freeman maples, and clethra are proposed with turf, as well as thuja to provide some buffering at the rear of the 210 St. John property. A metal fence detail is shown in the plans. A 6' wood fence is also proposed in this area. Staff has requested clarification on the location of both fence types. The neighbor at 210 St. John has also noted that there are existing mature trees at the rear of that property; as feasible, notes regarding efforts to save these trees should be added to the plan.

In the third zone, which occupies the approximately 120' between the garage's main pedestrian entrance and St. John Street *(Figure 12)*, the applicant has proposed bearberry, yellowroot, sweetfern, hay-scented fern, bayberry, and clethra, with turf, one shad tree, and six Princeton elms at the street line. This area will be graded with 3' berms to provide some added measure of visual interest. Thuja and hay-scented fern are proposed to augment an existing arborvitae buffer to the adjacent residential building at 210 St. John Street. Staff has requested that notes regarding measures to ensure the preservation of this buffer, which lies proximate to a proposed construction entrance, be added to the landscape plan. Staff has also requested that screening be provided for several utilities in this zone, including a pad-mounted transformer and a generator.

Checkerblock pavers with turf are proposed in a utility access corridor that runs parallel to the building at the rear of this space. Mr. Geuthle has reviewed the detail for these pavers and writes,

> *Discussion from reviewers indicated concern over winter maintenance and proposed use of this material. From review of sheet C-106, it is apparent that the Checker Block system is anticipated to be used for fire access and maintenance access, and not for stormwater treatment. It is suggested that applicant confirm the use of this material and the entry curb is confirmed as acceptable with the City Fire Department. The applicant shall submit maintenance and housekeeping information on the Checker Block system to indicate how the system will be maintained in both the summer and snow/salt conditions.*

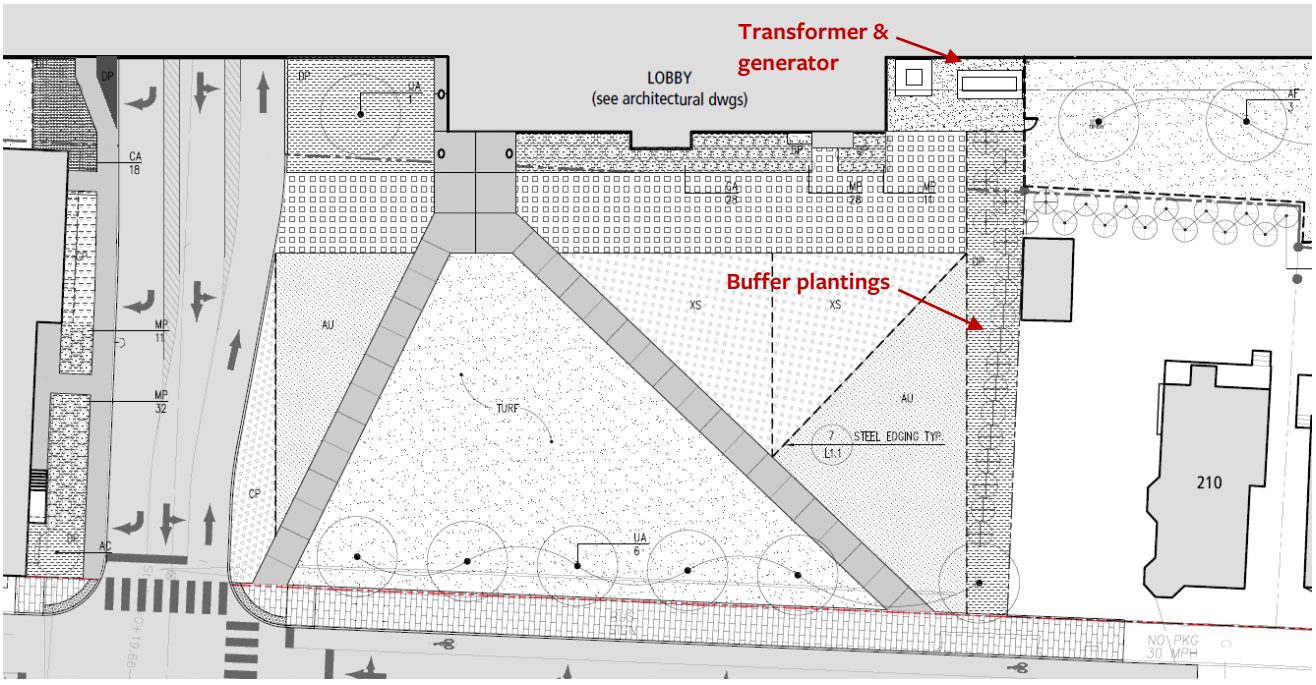


Figure 12: Proposed landscape at garage entrance and building front.

The final landscaping zone, on the south side of the building, is proposed with clethra and hedge maples to provide some buffering and limit movement through the area behind the Eagles' building.

Comments from the city's arborist on the proposed landscape plan will be available prior to the next workshop.

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

The project site is currently almost entirely impervious. The garage proposal is projected to result in a decrease of approximately 14,500 SF of impervious surface. Under the applicant's proposal, a small area of the site around the D Street entrance would drain to an existing 30" separated storm drain in St. John Street to the east of the site. The remainder of the site, including the entire area of the parking garage and the surface parking behind the Maine Central Railroad building, would drain underneath the railroad tracks to an existing 18" stormdrain. Per the applicant's stormwater management plan, the existing 18" receiving pipe is not sufficiently sized *(Attachment M).* As a result, the applicant has proposed to both store and treat runoff in this direction with R-tanks and a jellyfish filter system underneath the surface parking area on 222 St. John Street. A StormBasin catch basin filter is proposed to treat the eastbound runoff.

Mr. Geuthle has reviewed the stormwater management plan and writes,

> *The HydroCAD Subcatchments report a total drainage area of 157,512 SF conveyed to the [northwesterly] stormwater treatment unit. These values match the values reported in Table 12-1, but differ slightly from the calculations provided on Section 12, Page 13. The correct tributary area and required treatment volume to the proprietary unit shall be confirmed by the applicant.*
>
> *The MaineDEP approval letter dated January 21, 2015 for the Jellyfish Filter requires manufacturer approval for each design, as noted in item 7 of this letter (page 14 of Section 12). This letter shall be provided as part of the application.*
>
> *The applicant will be required to inspect, maintain, and report on the filter in accordance with the Chapter 32 stormwater requirements. The applicant has provided inspection, maintenance, and housekeeping information in Section 12 of the application. A stormwater maintenance agreement is required for the stormwater treatment units.*
>
> *The applicant has indicated that the existing 18" pipe can convey 20.81 CFS at 95% capacity. A calculation was not provided in Section 12 of the application, and this value was not observed in the HydroCAD output. The applicant shall provide a calculation for this flow rate. Once provided, this is anticipated to confirm that the project is in conformance with City of Portland Code of Ordinances section 14-526 (b) 3.a subsection ii regarding downstream private drainage.*
>
> *Additional data/detailing is needed to confirm that the R-Tank system and Jellyfish filter are designed in consonance with the HydroCAD model.*
>
> *CB21 on sheet C-103 calls out a 15" pipe out of the structure, but the existing pipe between CB21 and the existing CB is referenced as 18". Please confirm the existing pipe is indeed an 18" pipe.*
>
> *Pipe 22 has a 0.0% slope. Confirm this is the intended design or if the pipe should be sloped to the JellyFish Filter.*

CB12 has 1.37 feet of drop between the in and out inverts. Confirm this is the intended design or if the standard 0.1-foot drop is more appropriate.

The areas presented in the Water Quality Volume for Jellyfish Filter System calculations do not match those presented in Table 12-1 (see comment 1.b.i of this response). Please remedy.

The applicant has indicated that conversations with the City have discussed that the 30" storm drain in St. John Street has capacity to receive additional flows from the project. The applicant shall provide written or e-mail confirmation from the Department of Public Works that this work is being completed in accordance with City of Portland Code of Ordinances section 14-526 (b) 3.a, subsection iii and iv.

More information is needed to confirm that the pipe capacity and inlet capacity is adequate for each structure and pipe length.

The HydroCAD output files reference 24-hour design rainfall amounts of 3.1", 4.6" and 5.8" for the 2-, 10-, and 25-year events, respectively. Please provide the source of the rainfall amounts for review.

Section 15 of the application notes that soils were observed to have potential ash substances, and that urban infill may be likely due to the location of the project. The applicant has noted in Section 15 that a soil management plan will be provided. Final site grading will be reviewed after this soil management plan is available.

3. Public Infrastructure and Community Safety Standards

a. Consistency with Related Master Plans

Staff continues to review the application for consistency with related master plans.

b. Public Safety and Fire Prevention

As noted above, the garage is proposed to sit back over 100' from St. John Street, behind several residential properties, the Eagles, and the Maine Central Railroad building. This means that large portions of the site are not readily visible from the street or sidewalk, and that some portions of the site are in fact screened entirely from the public way. Railroad tracks lie at the property's rear.

With respect to building program, the garage has been designed such that shuttle service will be provided within the garage's ground floor, which, given topography of the site, would lie below the grade of St. John Street. This means that the pedestrian activity associated with the shuttle service will be entirely hidden from public view. The only exterior natural surveillance opportunity generated by the garage itself is from pedestrians walking to and from the building to the hospital.

Without the benefit of significant natural surveillance opportunities, the applicant has generally pursued an access control strategy in order to address crime prevention through environmental design standards. All garage decks at grade level would include security grilles. The plans show fencing in the space between 210 and 212/214 St. John and the garage *(Figure 11)*, and fencing between the garage and the railroad tracks. The applicant has proposed plantings to limit access behind the Eagles' building. The applicant has also provided a lighting plan which demonstrates the intent to amply light exterior spaces. Pedestrian-scaled light fixtures are proposed around the D Street entrance from St. John Street. Building lights are proposed on all building facades. Per the applicant's submittal, these lights would be activated continuously.

Staff has raised concerns with the applicant about the lack of natural surveillance and opportunities for territorial reinforcement around the project. In preliminary discussions, staff has questioned whether more of the active building program, including a larger entrance, lobby, or security offices, could be located above grade on the easterly façade of the garage with transparency to the adjacent open space. Further discussion of this matter is anticipated.

Mike Thompson, of the city's Fire Prevention Bureau, has reviewed the plans and notes the following,

> *A private fire hydrant will be required along the right side of the building, accessible from the lower parking lot.*
>
> *Please indicate the location of the sprinkler system fire department connection.*
>
> *Fire Department Access shall have an unobstructed vertical clearance of not less than 13 ft 6 in., to include the width of the St. John Street side access.*
>
> *The area in front of the building, St. John Street side, must be capable of supporting 20 ton.*
>
> *The main entrance of the building must be the address for the building. The address for this building will be 190 St. John Street.*

c. *Availability and Capacity of Public Utilities*

Underground electric, gas, water and telecommunication services are proposed from St. John Street under the proposed driveway at D Street. A transformer and generator are proposed north of the entrance on the east side of the building. Sewer associated with two single fixture bathrooms is proposed to leave the site to St. John Street via a pump station along the south side of the Maine Central Railroad building. An oil/water separator is proposed to filter runoff from vehicles within the garage. Regarding this runoff, Mr. Geuthle writes,

> *Additional information is requested on where floor drains from the parking garage convey surface flows. Please confirm that surface flows from the parking garage's interior levels are conveyed into the oil/water separator on Sheet C-104, and then ultimately into the sanitary sewer. Please also provide a detail for the oil/water separator, or indicate which sheet this detail may be located on.*

A dumpster is proposed at the northwest corner of the site in a chain link enclosure. Staff has requested that the applicant reconsider materials on this enclosure. Capacity to serve letters should also be provided in the revised submittal.

4. Site Design Standards

a. *Massing, Ventilation, and Wind Impact*

The bulk, location, or height of the proposed parking structure is not deemed likely to result in ventilation or wind impacts.

b. *Shadows*

The project is not anticipated to result in shadows on publicly accessible open space.

c. *Snow and Ice Loading*

The project is not anticipated to result in snow or ice accumulation on public ways or adjacent properties.

d. View Corridors

The project does not abut a protected view corridor.

e. Historic Resources

The proposed garage lies within 100 feet of the Maine Central Railroad Office Building at 222 St. John Street, which is listed as a historic landmark on the National Register. As such, the design is subject to an advisory review under the historic preservation ordinance. The city's Historic Preservation Board met on April 18, 2018 to review the preliminary design for the garage building *(Attachment 9)*. In the design review, Ms. Cameron, with the input of Deb Andrews, the city's Historic Preservation Manager, writes,

> *The design presented to the HP Board in April differed considerably from that now before the Planning Board in that the building elevations exhibited greater variety and differentiation of materials and textures. The project architect noted that this was done in an effort to visually break up the large mass of the building and make some reference to the historic MCRR office building.*
>
> *While HP Board members expressed appreciation for the effort made to visually break down the scale of the garage and relate the new building to its historic neighbor, they found the approach visually complicated and distracting rather than referential. They noted that given the very nature of the building type--the mass, form and program of which cannot be manipulated--it was not possible to effectively achieve an architectural relationship between the garage and the MCRR office building or to mask the scale of the structure through differentiation in facade treatment. They encouraged the project architect to consider a more homogeneous design approach that relied on quality materials and skillful mastery of a few key design details to provide visual interest. They argued that this would result in a more visually recessive building, but one which also had design integrity in its own right.*
>
> *It should be noted that the Historic Preservation Board has not had an opportunity to see the current design iteration. In [HP] staff's view, however, the current design is largely responsive to the input of the Historic Preservation Board and quite successful architecturally. The one aspect of the current proposal that HP staff suggests be given further consideration is the color/tonal palette. The current proposal features a high level of contrast, which is visually striking, but also demanding. In staff's view, were the colors warmer in tone and "knocked down" in terms of contrast, the building would likely achieve a greater level of compatibility with its surrounding context.*

Ms. Andrews anticipates sharing revised drawings with the Historic Preservation Board as a communication at their July 11, 2018 meeting.

f. Exterior Lighting

The applicant has provided a lighting plan which shows full cutoff building-mounted lights on all facades, as well as lights under the pedestrian entry canopies and along walkways, on poles along the entrance drives, and within the surface parking area. 18' pole-mounted lights are also proposed on the roof deck of the garage. These have been clustered at the interior of the top floor so as to minimize impact. All lights would remain on all night. Staff has requested that the applicant explore ways to mitigate the impact of lighting during night hours, particularly these top-deck lights, including the possibility of dimming or turning lights off at times of limited garage use. In addition, staff has requested that the applicant request a waiver for average illumination levels in both the north parking area and the top deck of the parking garage, which are proposed to exceed *Technical Manual* standards.

The applicant has also proposed new street lights in association with proposed sidewalk work on D Street. These lights are currently being reviewed.

g. Noise and Vibration

The applicant has requested that HVAC be reviewed as a condition of approval. Revised plans should indicate the location of proposed HVAC equipment.

In addition, neighbors have raised questions regarding the level of noise to be generated by the generator and transformer proposed on the eastern side of the building behind 210 St. John. The applicant should provide evidence of compliance with noise standards in the revised submittal.

h. Signage and Wayfinding

As noted above, the applicant has proposed a freestanding sign at the St. John entrance. This sign will require a separate permit.

i. Zoning-Related Design Standards

Review comments related to design can be found under the zoning analysis above.

XIV. NEXT STEPS

1. MMC to address staff comments;
2. MMC to address additional comments of the Planning Board;
3. MMC to prepare revised submission for review by the Planning Authority and Planning Board; and
4. Planning Board to hold second workshop in August.

XV. ATTACHMENTS

PLANNING BOARD REPORT ATTACHMENTS

1. Traffic Engineer review (memo from Thomas Errico, 7/5/18)
2. Traffic Engineer review (memo from Jeremiah Bartlett, 6/22/18)
3. Transportation Program Manager review (memo from Bruce Hyman, 7/5/18)
4. Parking Manager review (memo from John Peverada, 6/27/18)
5. Civil Engineer review (memo from Mike Geuthle, 7/2/18)
6. Fire Prevention Bureau review (memo from Mike Thompson, 7/5/18)
7. Urban Designer review (memo from Caitlin Cameron, 7/6/18)
8. TDM Plan review (memo from Nell Donaldson, Tom Errico, Bruce Hyman, 3/23/18)
9. HP Board memo (memo from Deb Andrews, 4/12/18)

PUBLIC COMMENT

PC-1. MacKenzie 3-27-18
PC-2. Holder 6-7-18
PC-3. Noddin 6-26-18
PC-4. Prosser 6-26-18
PC-5. Heald 6-26-18
PC-6. Flexon 6-27-18
PC-7. Durgin 6-28-18

APPLICANT'S SUBMITTALS

A. Cover & Table of Contents
B. Application Form
C. Application Fee

D. Project Description
E. Evidence of Right, Title, & Interest
F. Evidence of State & Federal Permits
G. Assessment of Zoning
H. Easements & Other Burdens
I. Evidence of Financial & Technical Capacity
J. Construction Management Plan
K. Traffic & Parking Analyses
L. Significant Natural Features
M. Stormwater Management Plan & Calculations
N. Consistency with Comprehensive Plan
O. Utility Capacity to Serve
P. Solid Waste
Q. Summary of Fire Codes
R. Consistency with Portland Land Use Code
S. HVAC
T. Boundary Survey
U. Soils
V. Neighborhood Meeting Documentation
W. Master Sign Plan
X. Approved Institutional Development Plan

PLANS

Plan 1. General Notes, Legend
Plan 2. Boundary & Topographic Survey
Plan 3. Existing Conditions & Demolition Plan
Plan 4. Site Layout & Materials Plan – 1
Plan 5. Site Layout & Materials Plan – 2
Plan 6. Grading & Drainage Plan – 1
Plan 7. Grading & Drainage Plan – 2
Plan 8. Utility Plan – 1
Plan 9. Utility Plan – 2
Plan 10. Fire Truck Movement Plan
Plan 11. Sidewalk Improvement Plan
Plan 12. Civil Details – 1
Plan 13. Civil Details – 2
Plan 14. Civil Details – 3
Plan 15. Civil Details – 4
Plan 16. Civil Details – 5
Plan 17. Civil Details – 6
Plan 18. Planting Plan
Plan 19. Planting Details
Plan 20. Ground Level Code Information
Plan 21. Level 1 Code Information Plan
Plan 22. Level 2 Code Information Plan
Plan 23. Building Elevations
Plan 24. Building Elevations
Plan 25. Grade Level Parking Layout
Plan 26. Level 1 Parking Layout
Plan 27. Levels 2, 4, & 6 Parking Layout

Plan 28. Levels 3 & 5 Parking Layout
Plan 29. Level 7 Parking Layout
Plan 30. Roof Deck Parking Layout
Plan 31. Site Lighting Calculation Plan - 1
Plan 32. Site Lighting Calculation Plan - 2
Plan 33. Site Lighting Calculation Plan - 3
Plan 34. Site Lighting Calculation Plan - 4
Plan 35. Roof Deck Lighting Calculation Plan
Plan 36. Electrical Site Plan - 1
Plan 37. Electrical Site Plan - 2
Plan 38. Electrical Site Plan – 3
Plan 39. Roof Deck Electrical Plan

Portland Maine | Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

MMC Garage Preliminary Traffic Comments

Tom Errico <thomas.errico@tylin.com> Thu, Jul 5, 2018 at 10:22 AM
To: Helen Donaldson <HCD@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 Nell – I have conducted an initial review of the application materials and offer the following preliminary traffic comments.

- The parking garage has a number of spaces that do not meet the City's dimensional standards for size. The applicant should request a formal waiver with supporting documentation.
- The garage plans should include dimensions for parking aisle widths.
- A traffic signal is proposed at the St. John Street/D Street/Garage Driveway location. I support the installation of a traffic signal given vehicle volume conditions and anticipate pedestrian movements. I would note that the applicant is responsible for development of design plans and equipment specifications for review and approval by the City. All costs associated with the installation of the traffic signal is the responsibility of the applicant.
- The general layout of the St. John Street/D Street/Garage Driveway intersection is generally acceptable. It should be noted that the City is currently reviewing bicycle facility recommendations and final direction will be provided in the future. Some initial comments are provided below:
    - The number of pavement marking arrows is excessive and should meet either City of MaineDOT standards (they may be for traffic flow reasons). I would suggest the through lane arrows be eliminated on St. John Street.
    - A crosswalk on the St. John Street southerly approach shall be provided.
    - I continue to review the garage approach as it relates to providing a three-lane section with a reversible center lane and traffic control design elements.
- The applicant has provided a traffic evaluation and my initial comments are noted below:
    - I have requested the Synchro traffic model for review.
    - I have requested the traffic count data collection reports for review.
    - I find the methods used to estimate traffic volumes associated with the garage to be reasonable. I would note that additional review is required. The evaluation notes that a broader review of the area transportation system and parking garage will occur during Phase 3 of MMC's expansion.
    - From a vehicle capacity perspective, I would recommend a shared through/right shared lane configuration on the southbound St. John Street approach.
    - Some of the intersection level of service conclusions seem better than actual field conditions. I would suggest the applicant field confirm intersection delays and queues.
- The applicant should provide information on the provision of temporary parking conditions for both MMC and 222 St. John Street during construction activities.
- The sidewalk from St. John Street to the rear of 222 St. John Street should be ADA compliant and continuous.
- The applicant should provide a parking analysis for the parking demand and supply condition for 222 St. John Street.
- I would suggest a crosswalk be provided across the 222 St. John Street driveway.

- The median refuge island on Valley Street needs to be a minimum width of 6-feet to meet ADA requirements. The ramp configuration on the west side should be revised to eliminate the flare condition. Warning signs may be required and direction will be provided in the future.

- It is my assumption that Bruce Hyman will provide comments as it relates to sidewalk design conditions for the entire project.

Please note that these are initial comments and additional clarifying and new comments are likely. If you have any questions, please contact me.

Best regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
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Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

MMC Employee Garage - site plan application submitted (#000207-2018)

Helen Donaldson <hcd@portlandmaine.gov> Thu, Jul 5, 2018 at 12:59 PM
To: Helen Donaldson <hcd@portlandmaine.gov>

---------- Forwarded message ----------
From: **Jeremiah Bartlett** <jbartlett@portlandmaine.gov>
Date: Fri, Jun 22, 2018 at 12:22 PM
Subject: Re: MMC Employee Garage - site plan application submitted (#000207-2018)
To: Helen Donaldson <hcd@portlandmaine.gov>
Cc: Bruce Hyman <bhyman@portlandmaine.gov>, "Thomas.Errico@tylin.com" <thomas.errico@tylin.com>

SHEET C-100

1.) Additional detail shall be provided for pavement markings providing direction for cyclists through the proposed signalized intersection at the garage entrance, which could include skip markings, green paint, and other components. The approved plan will coordinate with DPW on the appropriate marking materials for this location.

2.) The traffic signal proposed for the garage entrance, upon completion, shall be capable of bicycle and pedestrian detection.

SHEET C-107

1.) The proposed sidewalk facility on the north side of D Street shall be placed as close to the right-of-way as possible, and provide the maximum width without reducing the street to less than 36 feet in width.

2.) To adequately define the street and replace on-street parking being eliminated by the proposed intersection reconfiguration with St. John Street and the primary garage entrance, curbing should be placed on the south side of D Street with existing driveways brought as close into conformance as possible. This would facilitate a future City sidewalk project in keeping with the original 1928 layout plans for D Street.

3.) The new crossing configuration of D Street, including islands and curb ramps shall consider either a payment up front to facilitate the changes on an imminent MaineDOT paving project of Valley Street.

Jeremiah J. Bartlett, PE, PTOE, IMSA II
Transportation Systems Engineer
Department of Public Works
City of Portland, Maine
jbartlett@portlandmaine.gov
(207) 874-8891

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

PL207-2018 222 St John St - MMC Parking Garage: Street & Streetscape Preliminary Comments

Bruce Hyman <bhyman@portlandmaine.gov> Thu, Jul 5, 2018 at 10:37 AM
To: Helen Donaldson <hcd@portlandmaine.gov>
Cc: Tom Errico <thomas.errico@tylin.com>, Caitlyn C Abbott <cabbott@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

Good morning, Nell,

The following are my Preliminary Comments on the plans (dated 6/22/18) for the proposed MMC Parking Garage. Additional comments are likely.

They are as follows:
Site Layout and Materials Plan 1 (Sheet C-100)

- City staff are reviewing various bikeway/roadway configurations, pavement markings and signage along the St John Street frontage to provide the best bikeway given the high prevalence of right turns on southbound St. John St into the parking garage.
- The walkway along the driveway from the garage/Eagles building should provide a full usable width of 5' exclusive of the lighting poles/fixtures. The sidewalk should be widened or the poles moved out of the sidewalk.
- The sidewalk proposed along D Street should have a wider effective/usable width given the likely location of lighting poles within the sidewalk and the potential for moderate to high numbers of pedestrians using the sidewalk (6.5' is too narrow)
- Consideration should be given to curb the south side of D Street as well to establish a standard width street of approximately 38' curb-to-curb to better organize its likely increased use and accommodate a future sidewalk
- The curb ramps at at the NE and NW corners of the entrance/exit and D Street may need to be reconfigured and may not be be as large as shown (potentially reduce the length of flush curb and detectable warning panels)
- Consideration should be given to provide a 4th crosswalk at the intersection with D St/garage entrance-exit
- The pedestrian refuge island on Valley Street is to be a minimum of 6' in width to be ADA-compliant
- It is unclear whether the plans for D St account for the two driveways that currently exist today on the north side.
- The curb ramp on the west side of Valley Street at D Street may warrant a different configuration that does not use a flare - the proposed configuration is less traversable by those with disabilities
- Valley Street will be under moratorium later this year after it is paved via a MaineDOT project and the timing and impact of the construction of the proposed pedestrian crossing (ramps, refuge island) need to be considered
- The pavement markings and labels for the reversible center lane for the garage exit/entrance are to be revised to be clearer.
- The driveway, as shown, does not conform with the Technical Manual's Sidewalk Material Policy - it is to be brick.

Site Layout and Materials Plan 2 (Sheet C-101)

- A crosswalk across the Margarita's driveway should be provided
- A continuous sidewalk along the frontage of Margarita's should be provided - there should be an expectation of some pedestrian use of that route to/from the 1st floor of the parking garage connecting to St John St.
-

Source: Google Streetview

Sidewalk Improvement Plan (Sheet C-107)

- The network of pathways and lighting from Valley Street to the Western Prom should also be assessed for its adequacy to provide safe and direct connections to/from MMC and the parking garage to encourage walking
- A crosswalk across the driveway at 222/Margarita's is to be added.

- More comments may be forthcoming after a site visit to field verify conditions.

Civil Details (incl. Sheet C-202)

- The Brick Sidewalk Detail is to be modified to state "2% cross slope (MAX.)" not (TYP).
- Details are needed for Detectable Warning Panels (cast iron) and Driveway (showing "2% cross slope (MAX.)")

Bruce

Bruce Hyman
Transportation Program Manager
Transportation Division

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

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

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Maine Medical Center 2,400 space Garage

John Peverada <jbp@portlandmaine.gov> Wed, Jun 27, 2018 at 1:12 PM
To: tom errico <thomas.errico@tylin.com>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Helen Donaldson <hcd@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

At the end of today's review meeting I brought up an issue that I think should be looked into more deeply if it hasn't already. With the size of the garage, I question if the two exit lanes onto St John St will be sufficient to "empty" the garage in a reasonable amount of time. I bring this up because many times when we boot MMC employees they say that they do not park in the existing (1,200 space ?) garage because it takes too long to exit. Additionally some employees who should currently be parking in the shuttle lot now say they don't because it takes too much time out of their day and they are not being paid while on the shuttle bus.

I know the hospital has staggered shifts, but I am concerned that if this garage is not efficient, employees will park on the neighboring streets and we will be chasing them around. Keeping in mind that St. John St only has one travel lane in each direction, I worry that traffic may back up in the garage. MMC had discussed a second exit onto the Fore River Parkway, does anyone know why that is not included in this plan ?

I think everyones goal is have the MMC employees fully utilize this garage, but if they perceive it as problematic, everyone will become frustrated ! Just getting over the hurdle of taking a shuttle will be difficult enough.

Thanks
John

WRIGHT-PIERCE
Engineering a Better Environment

MEMORANDUM

TO:	Helen Donaldson, Senior Planner	**DATE:**	7/2/2018
FROM:	Michael Guethle, PE; Ryan Wingard, PE	**PROJECT NO.:**	13982B
SUBJECT:	St. John St. - 222; MMC Parking Garage (PL-000207-2018)		

Wright-Pierce has reviewed the Level III Site Plan Application information provided for the Employee Parking Garage redevelopment proposed at 222 St. John Street. The project will include redeveloping an existing parking lot into a nine-level parking garage with approximately 2,400 parking spaces; redeveloping another existing parking surface to provide a pedestrian access and vehicle access to levels 1-8 of the building; and redeveloping a third parking surface to provide 52 additional spaces of surface parking. Off-site improvements to St. John Street and D Street are also included in the proposed work. The work will reduce the total impervious surface square footage on the property by 14,506 SF.

Documents Reviewed by Wright-Pierce:

- Level III Site Plan application, dated (most recent) June 22, 2018.
- Engineering Permitting Plans, dated (most recent) June 25, 2018.
- Construction Management Plan, dated June 22, 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 be subject to the Basic Standard. The applicant has provided:

i. An Erosion and Sedimentation Control Plan in Section 12 of the application
ii. Inspection and Maintenance information in Section 12 of the application
iii. Erosion and Sedimentation Control Details and Notes on Sheet C-200
iv. Location of Erosion and Sedimentation Control best practices were observed on the Demolition Plan.

The proposed project meets the Basic Standard.

b. General Standard: The applicant has provided information regarding the size and scope of the project indicating that the project is subject to the Redevelopment Standard within the City of Portland, which is more stringent than the Chapter 500 requirements for redevelopment. The City requirements indicate that greater than 50% of the proposed impervious surfaces must receive stormwater quality treatment pursuant to the MaineDEP Chapter 500 requirements. The applicant has provided information that 85% of the facility impervious surfaces are conveyed to a Jellyfish Filter, a proprietary unit from Contech. The applicant shall clarify the following and provide responses:

i. The HydroCAD Subcatchments report a total drainage area of 157,512 SF conveyed to the stormwater treatment unit. These values match the values reported in Table 12-1, but differ slightly from the calculations provided on Section 12, Page 13. The correct tributary area and required treatment volume to the proprietary unit shall be confirmed by the applicant.
ii. The MaineDEP approval letter dated January 21, 2015 for the Jellyfish Filter require manufacturer approval for each design, as noted in item 7 of this letter (page 14 of Section 12). This letter shall be provided as part of the application.
iii. The applicant will be required to inspect, maintain, and report on the filter in accordance with the Chapter 32 stormwater requirements. The applicant

has provided inspection, maintenance, and housekeeping information in Section 12 of the application. A stormwater maintenance agreement is required for the stormwater treatment units.

c. Flooding Standard: The applicant has provided information indicating that the total amount of impervious surfaces at the facility is being decreased. For this and additional supporting information provided in the application, the applicant is not required to meet the Flooding Standard of Chapter 500.

2) Connection to Existing System:
   a. The existing facility currently discharges to an 18" private storm drain. The proposed condition includes retaining surface runoff in order to allow runoff from a 25-year, 24-hour rain event to pass an 18" pipe. Flows from the East Stormdrain are proposed to connect to the existing 30" pipe in St. John Street. The applicant shall provide the following:
      i. The applicant has indicated that the existing 18" pipe can convey 20.81 CFS at 95% capacity. A calculation was not provided in Section 12 of the application, and this value was not observed in the HydroCAD output. The applicant shall provide a calculation for this flow rate. Once provided, this is anticipated to confirm that the project is in conformance with City of Portland Code of Ordinances section 14-526 (b) 3.a subsection ii regarding downstream private drainage.
      ii. The applicant has indicated that conversations with the City have discussed that the 30" storm drain in St. John Street has capacity to receive additional flows from the project. The applicant shall provide written or e-mail confirmation from the Department of Public Works that this work is being completed in accordance with City of Portland Code of Ordinances section 14-526 (b) 3.a, subsection iii and iv.

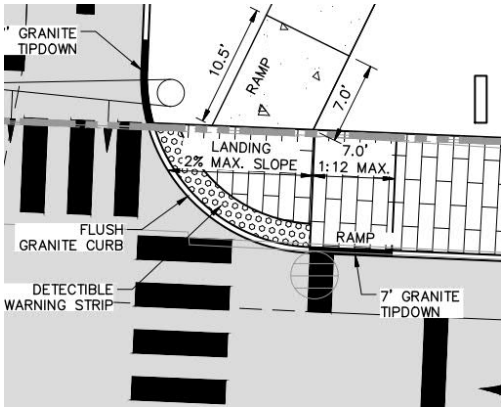
3) Proposed Drainage Design
    a. More information is needed to confirm that the pipe capacity and inlet capacity is adequate for each structure and pipe length.
    b. Additional data/detailing is needed to confirm that the R-Tank system and Jellyfish filter are designed in consonance with the HydroCAD model.
    c. CB21 on sheet C-103 calls out a 15" pipe out of the structure, but the existing pipe between CB21 and the existing CB is referenced as 18". Please confirm the existing pipe is indeed an 18" pipe.
    d. Pipe 22 has a 0.0% slope. Confirm this is the intended design or if the pipe should be sloped to the JellyFish Filter.
    e. CB12 has 1.37 feet of drop between the in and out inverts. Confirm this is the intended design or if the standard 0.1-foot drop is more appropriate.
    f. The areas presented in the Water Quality Volume for Jellyfish Filter System calculations do not match those presented in Table 12-1 (see comment 1.b.i of this response). Please remedy.
    g. The HydroCAD output files reference 24-hour design rainfall amounts of 3.1", 4.6" and 5.8" for the 2-, 10-, and 25-year events, respectively. Please provide the source of the rainfall amounts for review.
4) Capacity to Serve:
    a. The applicant has sent Capacity to Serve Letters to Utilities. Responses to these letters are required parts of the application, and the applicant has indicated that they will be provided to the City as these letters are received.
5) Parking Garage Drainage:
    a. Additional information is requested on where floor drains from the parking garage convey surface flows. Please confirm that surface flows from the parking garage's interior levels are conveyed into the oil/water separator on Sheet C-104, and then ultimately into the sanitary sewer. Please also provide a detail for the oil/water separator, or indicate which sheet this detail may be located on.

6) StormBasin Facility:
    a. The StormBasin facility will provide a level of hydrocarbon removal, and removal of other pollutants from surfaces that convey surface drainage towards St. John Stret. It is understood that this proprietary unit is currently not accepted as a stormwater treatment method under MaineDEP Chapter 500, but the applicant has provided information that Jellyfish Filter contains ample treatment volume to meet the City's Redevelopment Standard.
7) Soils:
    a. Web Soil Survey information was provided in Section 12 of the application. The information in the web soil survey was in consonance with the soil hydraulic ratings for the HydroCAD report.
    b. Section 15 of the application notes that soils were observed to have potential ash substances, and that urban infill may be likely due to the location of the project. The applicant has noted in Section 15 that a soil management plan will be provided. Final site grading will be reviewed after this soil management plan is available.
8) Snow Storage:
    a. The applicant has noted in Section 17 of the application that snow storage will be completed through means of removal and off-site storage. Snow melters will be located on the open-deck roof to the garage. It is understood that the exposed portion of the roof conveys flows to the Jellyfish Filter.
9) Details have been provided confirming the following storm drain infrastructure items that are in conformance with the City Standard Details and Technical Manual:
    a. Catch basin detail (3' sump)
    b. Manhole Frame, Cover
    c. Catch Basin Frame Cover
    d. Manhole, Manhole Steps
    e. Casco Trap

10) The following notes are provided for certain details:

a. Sheet 17: St John Street and D Street Intersection

i. Catch Basin at intersection of D Street and St. John St. is located in a transition ramp next to flat curb (image to right). Applicant shall provide spot grades or detail confirming how this catch basin grate shall be constructed with the adjacent tipdown curbing, and within a bicycle lane.



b. Sheet 17: Checker Block Concrete Grid Detail:

i. Discussion from reviewers indicated concern over winter maintenance and proposed use of this material. From review of sheet C-106, it is apparent that the Checker Block system is anticipated to be used for fire access and maintenance access, and not for stormwater treatment. It is suggested that applicant confirm the use of this material and the entry curb is confirmed as acceptable with the City Fire Department. The applicant shall submit maintenance and housekeeping information on the Checker Block system to indicate how the system will be maintained in both the summer and snow/salt conditions.

PLAN CORRECTIONS REPORT PL-000207-2018
FOR CITY OF PORTLAND

PLAN ADDRESS: 222 Saint John St
Portland, ME 04102

PARCEL: 064 A002001

APPLICATION DATE: 06/20/2018

SQUARE FEET: 0.00

DESCRIPTION: Construction of 2,400 space parking structure (ground level plus 8 tiers) plus 52 surface parking spaces and associated site improvements.

EXPIRATION DATE:

VALUATION: $0.00

CONTACTS	Name	Company	Address
Agent/Representative	David Senus	Woodard & Curran	

Corrections Required

City Arborist	Jeff Tarling
Civil Engineering - Third Party Reviewer	Lauren Swett
Fire	Robert Thompson
Parking	John Peverada
Planning	Nell Donaldson
Public Works Engineering	Jeremiah Bartlett
Public Works Water Resources Engineering	Brad Roland
Traffic - Third Party Reviewer	Tom Errico
Transportation/Planning	Bruce Hyman
Zoning	Pool Zoning

Conditions Required

General

General Condition

The street address shall be marked on the structure with Arabic numerals, rather than spelled out.

General Condition

A private fire hydrant will be required along the right side of the building, accessible from the lower parking lot.

General Condition

Please indicate the location of the sprinkler system fire department connection.

General Condition

There are sufficient public fire hydrants in the area, no additional public hydrants are required.

Life Safety: Fire Dept Access

General Condition

Fire Department Access shall have an unobstructed vertical clearance of not less than 13 ft 6 in., to include the width of the St. John Street side access.

General Condition

The area in front of the building, St. John Street side, must be capable of supporting 20 ton.

General Condition

The main entrance of the building must be the address for the building. The address for this building will be 190 St. John Street.

Planning and Urban Development Department
Planning Division

Subject: IOZ Design Review – 222 St. John Street (Maine Medical)

Written by: Caitlin Cameron, Urban Designer

Date of Review: Monday, July 2 2018

The proposed garage at 222 St. John Street for the Maine Medical Campus was reviewed for the Planning Board workshop by Caitlin Cameron, Urban Designer, Nell Donaldson, Senior Planner, Deb Andrews, Historic Preservation Program Manager, and Jean Fraser, Planner. This project is reviewed according to the adopted IOZ IDP and Regulatory Framework standards.

The new construction is a large garage with no other uses on-site and is set back from the street. Therefore, the design evaluation is focuses on the impact on the overall campus design, long views, safety and CPTED, and the St. John Streetscape.

Design Review Comments: *(Staff questions/comments and unmet guidelines in red for Planning Board consideration)*

Historic Preservation Advisory Design Review:
The Historic Preservation Board conducted an advisory review session on April 18th. The design presented to the HP Board in April differed considerably from that now before the Planning Board in that the building elevations exhibited greater variety and differentiation of materials and textures. The project architect noted that this was done in an effort to visually break up the large mass of the building and make some reference to the historic MCRR office building.

While HP Board members expressed appreciation for the effort made to visually break down the scale of the garage and relate the new building to its historic neighbor, they found the approach visually complicated and distracting rather than referential. They noted that given the very nature of the building type--the mass, form and program of which cannot be manipulated--it was not possible to effectively achieve an architectural relationship between the garage and the MCRR office building or to mask the scale of the structure through differentiation in facade treatment. They encouraged the project architect to consider a more homogeneous design approach that relied on quality materials and skillful mastery of a few key design details to provide visual interest. They argued that this would result in a more visually recessive building, but one which also had design integrity in its own right.

It should be noted that the Historic Preservation Board has not had an opportunity to see the current design iteration. In staff's view, however, the current design is largely responsive to the input of the Historic Preservation Board and quite successful architecturally. The one aspect of the current proposal that HP staff suggests be given further consideration is the color/tonal palette. The current proposal features a high level of contrast, which is visually striking, but also demanding. In staff's view, were the colors warmer in tone and "knocked down" in terms of

contrast, the building would likely achieve a greater level of compatibility with its surrounding context.

Signage:
The site plan application includes signage proposal which must be consistent with the existing MMC Sign Master Plan. A monument sign is proposed at the sidewalk; building signage is minimal with wayfinding signage only. Staff support the choice to not use upper story signage on this building. Upon review the branding is consistent with the MMC sign master plan – however, this sign deviates from the master plan in color and does not include the grid base. Staff are okay with these small deviations from the master plan given the St. John Street context is visually removed from Congress Street where the color and grid pattern are used as cohesive elements.

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.

The architectural character of the new garage is consistent with the campus vision as presented in the IDP and subsequent project proposals. In addition to furthering the transportation and campus design goals of the MMC master plan, the building architecture is intended to have a relationship with the main campus which is only really seen from long views. This is not intended to be a gateway building to the campus and MMC does not want to confuse visitors as to the orientation to the main campus. The City's priority is the long views of this building, however, staff are also considering how this project contributes to the activity and streetscape of St. John Street as stated in the IDP design guidelines and principal statements.

2. The overall composition and experience of the campus will be considered for cohesive identity from approaches along Congress Street and I-295.

The proposed building is not immediately adjacent to the main campus and the new building is primarily seen in juxtaposition with the campus and with surrounding, existing buildings in context from long views. Some design elements that correspond to the campus vision include vertical articulation elements and white material palette.

- Staff recommend in order for the garage to be visually cohesive with the MMC campus and the surrounding context, the material color palette should be coordinated to include warm tones of the grey and white.
- Consider whether the high level of contrast is appropriate – though staff are supportive of the grey and white materials, the level of contrast may bring too much attention to the garage that otherwise is intending to be recessive.

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.

The building placement is set back from the street. There are two primary entrances into the garage – one on the side accessible from St. John Street via a path along the railroad building and the other oriented to St. John Street. The standard is met with the orientation and pathways leading to these entrances. The open space between the street and the building is designed to be a pedestrian-oriented environment and provide soft-scape amenity and

successfully creates a visually interesting but also safe environment. The central circulation tower further adds emphasis to the St. John Street entrance.

- Staff suggest more emphasis can be brought to both entrances – increase scale of entrances, canopies, lobby area, etc. to increase scale of these entrances in relationship with the scale of the building and the distance from the street.

4. Building designs will relate to and be compatible with the existing, or – in areas of change – planned character of residential and commercial neighbors. Design elements and characteristics to consider include:

- Building placement and relationship to the street

- Overall massing and scale

- Roof forms

- Proportion, directional expression, and composition of facades

- Rhythm of solids to voids

- Rhythm and proportion of openings

- Rhythm of entries and projections

- Relationship of materials, texture, and color

- The building use and placement away from the street do not further the vision of improving the activity and streetscape of St. John Street. However, given the scale of the building, setting it back from the street has advantages for mitigating the scale impacts of the building.
- The overall massing and scale are largely dictated by the functional needs of the garage and the capacity needs for growth of the hospital. As seen in the long views – the height is not overwhelming and being set back from the street, allows the older and smaller scale buildings to create the street wall relationship to the sidewalk.
- The material selection and placement relates to the function of the garage but is designed in a consistent and dynamic way to bring some visual interest and texture without having gimmicks.
- There is a frequent solid to void ratio given the need to have an open garage. The vertical fins provide rhythm and bring a finer grain to the large façade.
- The gap between floors has uneven spacing – would suggest that the spaces should be consistent with the spandrel modifying in height instead.
- As stated previously, staff would like to see further detail on the material color palette in relationship with the surrounding buildings which tend to have a warmer tone and less contrast.
- The roof is simple and where projections are needed, are glass and low in height.

To help understand the scale of this development, consider the following examples:

- Building Length – the Civic Center + city garage are of comparable scale and length to this building. The Union Station Plaza adjacent is slightly longer than this garage will be.

- Building Height – the USM garage is five stories, compared with the seven stories on this garage
- Open Space – The small park on Pleasant Street between the sidewalk and the playground is of comparable scale

5. Façade materials of buildings will be of high quality, and contribute to an attractive public realm.

The proposal uses a material palette of concrete, glass, metal screen, and aluminum fins. These materials meet the quality criteria, convey the garage use, and balance the desire to mitigate the scale of the long building while providing visual interest from the long views as one enters the city. The design of the central circulation tower contributes to the public realm using height and material changes to provide an accent point along the façade and indicate to the street where to enter the building. The design and material placement were simplified in response to the Historic Preservation Board and staff review – the general direction proposed is a consistent application of materials that provide visual interest and texture without calling attention to the building.

- What is the material of the ramp roof? Is that depicted in the renderings?

*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).*

The project successfully balances the goals of being recessive while visually tying into the overall MMC campus and providing visual interest from views from I-295 and the Veterans Bridge. This is accomplished with the height being capped at seven stories and the consistent use of texture and articulation elements. There are some outstanding questions regarding the roof level design in relation to long views:

- Are the ramp and circulation tower roofs adequately depicted in the renderings? It is difficult to tell how visible these will be with the materials provided.
- Concern about the visibility of the roof lighting poles and light levels, especially the impact on the Western Promenade.
- The roofs at the top level are proposed to be glass to mitigate their visibility.

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.

The project proposes limited activity at the ground floors – the building use is garage only and is set back from the street. There is a garage entrance oriented to St. John and shuttle activity and an entrance facing the side surface parking.

- Consider ways of introducing more "eyes on the street" facing St. John Street whether that be more glass on the circulation tower, increasing the size of the entrance lobby, adding windows to the security/utility area of the façade (clerestory, 2nd level waiting lobby, etc.).

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.

Not applicable. Landscape design addresses the standard adjacent to sidewalk.

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

- Staff request more information regarding the screening of cars. Screening methods include solid concrete spandrel wall with metal mesh railing on the ground floor. It is not clear whether the spandrel panels will conceal the headlights of cars. Will cars be screened from view on the top floor, from the Western Prom?
- Visual interest is provided by the textures and composition of the materials – the angled fins provide texture, shadow lines; the contrasting color materials break up the scale of the building.
- The building is not within 20' of a public right-of-way.

Building Relationship to Public Street
Urban Commercial Arterial (St. John Street) *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. . . . To the extent possible, extend the character developed for the Congress Street frontage along St. John Street.*

The building does not contribute directly to the St. John streetscape because it is setback from the street. The open space, paths, and building entrances will enhance the existing conditions but does not go as far as to establish a street wall or introduce active uses on St. John Street. The project will provide some streetscape improvements including sidewalks, lighting, and street trees/landscape.

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*

There are several areas around this building with potential safety concerns and the potential for hiding spaces. The project uses landscape plantings and fencing to limit access to areas between the building and the property lines. Site lighting is provided with wall packs on all sides of the building. The open space between the building and the street is open and has good visibility and includes site lighting along the pedestrian paths.

- Staff suggest the lobby entrance facing St. John Street could increase in size, include more fenestration, and/or include additional lighting.
- Regarding "Eyes on the street" See Comment 7.
- Rather than extend a wood fence to the street between the Railroad Building and the residential building, staff recommend using landscape.

Mitigating Impacts Through Design

Minimizing Shadow Impacts - Shadow impacts were evaluated as part of the IDP process. Refer to Plan 13 for shadow analysis of the approved IDP building heights. This project orients its long dimensions north/south meaning the broadest sides of the buildings are oriented to cast more shadow. However, the building position is only directly adjacent to three buildings where new shadow will have some impact. The neighboring properties are primarily commercial, railroad, and prison. The two residential properties and the Eagles property on St. John Street will experience shadow impact in the afternoon from this building.

Context-Sensitive Lighting Design – Lighting at the ground level is adequate per City of Portland Technical Standards.

- Clarify whether there is building lighting above the ground level
- Concern about light trespass on neighboring residential properties and level of light visible from the Western Promenade at night. More information is requested regarding the impact of site lighting from the long views, especially light trespass and visibility of the lighting on the upper stories and roof from the Western Promenade.
- Street lighting in this location is standard cobra head – there is not a special lighting district on St. John Street. However, the pedestrian lighting within the Western Promenade, a connection between the new garage and the main campus, will be replaced with LED fixtures to be recommended by staff and the Historic Preservation Board and approved by the Planning Board at a future time.

Mitigating Wind Impact – No information was provided to evaluate this item. Staff do not anticipate significant wind impacts from the building given its height and permeability.

Preserving and Enhancing Viewsheds – The building does appear within the Western Promenade viewsheds as demonstrated in the three renderings provided from vantage points within the prom. The height of the garage is such that the building is visible from the prom but does not negatively impact the views of the river, mountains, or scenery beyond the jetport.

The garage is also rendered from multiple long views including Veterans Bridge and I-295. The renderings from the long views reveal the general design and height fit well into the context and does not stand out as overly obtrusive.

- Staff comment that the material color palette causes the building to stand out or be less recessive than desired. Therefore, the suggestion is that the grey and white materials should have a warm tone to be cohesive not only with the existing MMC campus but also the surrounding context.

- The rooftop design including light poles, ramp and circulation tower roofs, and any mechanicals should be accurately demonstrated in these renderings. It appears in the materials given that these rooftop appurtenances have minimal visual impact and are integrated into the design but staff would like to clarify whether all these features have been included in the rendering images.

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. . . .*

   The project does not provide mixed-uses or active uses. The proposal uses landscape and building entrances to address this design guideline – an open, landscaped area transitions between the sidewalk and the building entrance with direct paths to the entrance emphasized by a canopy, glass, and circulation tower. Staff has two recommendations:

   - Given the scale of the building and the set back from the street, the scale of the entrance lobby could increase to be more visible and provide a more "lively" space.
   - Consider ways of introducing more "eyes on the street" facing St. John Street whether that be more glass on the circulation tower, increasing the size of the entrance lobby, adding windows to the security/utility area of the façade (clerestory, 2nd level waiting lobby, etc.).

MMC TDM PLAN | City Review Comments 3/23/18 (Tom Errico, Bruce Hyman, Nell Donaldson)

Context

Parking

- The plan states that existing peak parking demand for patients, visitors, physicians, and staff is 3,122 parking spaces. Later, it states that the 'average weekday parking demand' in 2017 was 3,450 (1,200 for patients and visitors, and 2,250 for employees). These two figures should be reconciled - the average should be less than the peak.
- The calculation behind the baseline employee parking demand/employee figure should be clearly shown (so that the methodology can be replicated in the future). It is difficult to tell what employee parking demand figure was used. (The ratio should be based on actual observed demand.) It is also difficult to tell what employee population figure was used as a denominator. It was not 4,400 employees (which is the total estimated Bramhall employee figure used later in the plan), but 6,000? Where did that figure come from?

Bicycle and Pedestrian Infrastructure

- Based on the information submitted through the East Tower/Visitor Garage site plan review, 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 TDM plan, 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.) In the revised TDM plan, include an 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.

Current Travel Behavior

Commuting Survey

- Doublecheck terminology on frequency of survey. The plan states that the commuting survey will be completed 'bi-annually,' which means two times/year. This was the language used in the IDP, but it may be erroneous?

Geospatial Analysis

- As stated in earlier comments, is there data on usage of UCar Share?

Program Goals

- In the future, employee parking demand/employee should be measured based on actual, observed employee parking demand (rather than estimated). In the final TDM plan, please describe technologies that will be integrated into the employee and/or visitor garage in order to record actual parking demand. Note that the city's traffic engineer has suggested that tracking technology be required in the employee garage.

Parking & TDM Strategies

Current GOB Strategies

- Figure 6 should include both the existing and proposed bike network (see attached markup).
- The discounts cited in Table 2 are not calculated correctly; the Metro discount is actually 40%, not 60%, etc.
- We would continue to suggest identifying spaces on-campus for preferential carpool/vanpool parking (e.g. some spaces in the visitor garage or surface lots). Preferential spaces in the off-site employee garage are not likely to incentivize change in travel behavior in the way that preferential spaces on campus will.
- The parking cashout procedure seems unnecessarily cumbersome (e.g. submitting a form, etc.). Could this be made easier?

Enhanced (Future?) Strategies:

- As above, the system for subsidizing METRO passes seems cumbersome. Could passes be distributed up front on a monthly basis, rather than requiring employees to apply for a reimbursement? This is a barrier.
- As stated in earlier comments, are there METRO system/operational enhancements that could influence MMC employee use (e.g. in other instances, TDM plans haves included specific measures to improve headways.) The TDM plan should speak to operational changes (e.g. route changes/schedule changes/shelter

enhancements/technological enhancements) that would be most effective in capturing employee travel demand.

- As stated in earlier comments, providing incentives for those who walk or bike could be effective in inducing mode shifts. Is there a way to connect with an employee wellness program? As with above, are there specific infrastructure improvements that could be most effective in enhancing the bike/ped network for use by MMC employees?
- Is there more of a place for bike share in the TDM plan (i.e. how can MMC 'support this effort in the future')?

Education and Marketing Strategies

- As stated in earlier comments, what about challenges/incentives outside of GoMaine? MMC could provide their own.
- As noted above, what about connections to HR/employee health programs?

Comprehensive Data and Goal Monitoring

- The plan states that parking demand data will be collected on a 'semi-annual basis,' or two times/year, which will provide two parking demand/employee data points for reporting in the annual monitoring report. Please confirm.
- As above, clarify terms re the frequency of the commuting survey.

HISTORIC PRESERVATION BOARD
CITY OF PORTLAND, MAINE

WORKSHOP – ADVISORY REVIEW
222 ST. JOHN STREET

TO: Chair Sheridan and Members of the Historic Preservation Board

FROM: Deborah Andrews, Historic Preservation Program Manager

DATE: April 12, 2018

RE: April 18, 2018 – **Workshop** – Advisory Design Review of Proposed Parking Garage

Address: 222 St. John Street
(project site is located within 100 ft. of Maine Central Railroad Office Building, an individually designated landmark structure)

Applicant: Maine Medical Center (MMC)
Represented by Jeff Sanders, Chief Operating Officer

Project Architect: Mark Wilcox, Winton Scott Architects

Introduction

A workshop has been scheduled to review Maine Medical Center's preliminary proposal for a new freestanding parking garage at 222 St. John Street. The project site is located in close proximity to the landmark Maine Central Railroad Office Building and as such the site plan ordinance's "100-foot rule" applies. Under this provision, the Historic Preservation Board conducts an advisory review of the project and comments are forwarded to the Planning Board for its consideration, along with a written analysis of the proposed development's immediate context.

Beyond the required HP advisory review that addresses specifically the compatibility of the proposed development with the adjacent landmark, Planning staff and project consultants are seeking the Historic Preservation Board's general feedback about the preliminary design direction and material palette while the project is still at an early stage of design development. In this respect, Wednesday's review session is somewhat unique because most projects are well advanced in terms of design development when they come before the Board for advisory review. As the applicant is not yet scheduled for a first workshop with the Planning Board, Wednesday's HP workshop provides an opportunity to engage in a discussion about the proposed design direction at a time when the input can be most productive. The Board is encouraged to identify any particular aspects of the preliminary design that might warrant further consideration.

Background Information

The St. John Street garage is proposed by Maine Medical Center for employee parking and is one element of MMC's recently approved "Institutional Development Plan", an overall master plan for expansion and upgrade of the hospital's campus. In December, the City Council formally approved a Maine Medical Center Institutional Overlay Zone (IOZ) that establishes zoning parameters and conditions for MMC's expansion. The proposed employee parking garage is specifically addressed in the IOZ. As such, threshold dimensions for the St. John Street garage have been set by zoning. Under the IOZ, the garage is allowed a maximum height of 100 feet and a maximum building length of 500 feet. Other characteristics of the development are subject to design review.

The garage will be located on a portion of same lot occupied by the former Maine Central Railroad Office Building. The large irregular-shaped lot includes an extensive surface parking area behind and to the south of the historic structure. The garage will be positioned southwest of the railroad office building and approximately 120 feet back from St. John Street. Along the street in front of the proposed parking garage are two privately-owned residential structures and a surface parking lot currently owned by the Eagles fraternal club. The two residential structures will remain and MMC is negotiating with the Eagles to purchase or lease their lot to provide access to the garage. As shown, the principal entrance will be from St. John Street. Secondary access will be from the surface parking lot behind the MCRR office building.

Project Context

The project's immediate and general St. John Street context is decidedly mixed in terms of building type and architectural character and is generally lacking in any strong unifying development pattern, particularly on the west side of St. John where the garage is proposed.

The historic Maine Central Railroad Office Building dominates the western side of St. John Street and is an architecturally impressive three-story Romanesque Revival style brick and stone building with hip roof. Constructed over a 28-year period, the building is not only impressive architecturally, but also in size; it occupies approximately 320 feet of frontage along St. John Street. Its bulk is broken up by its E-shaped configuration. Three distinct building masses project out to the street and are separated by two landscaped courtyards. The building exhibits a distinct sense of solidity and permanence, which is achieved in part by the use of brick and stone and heavy details.

The rear elevation of the MCRR office building--the portion of the historic structure that will have the closest visual relationship to the proposed garage—is an expansive wall of masonry twenty-five bays in width. It is interrupted only by an arched entrance portico of recent construction in the middle of the elevation.

Immediately south of the historic structure are two wood-frame houses that are 1½ and 2½ stories tall. These buildings will be in front of the northern end of the new garage. Beyond these buildings is a surface parking lot with a row of arborvitae at the sidewalk edge. This row of evergreens provides screening for the open lot and continues some sense of street wall. The

brick two-story building that houses the Eagles is the last substantial structure located at the street edge. Beyond this point, the development pattern becomes even more frayed, with several industrial or commercial buildings set back a considerable distance from the street.

The eastern side of St. John Street in the vicinity of the proposed project is predominantly residential and the late 19th and early 20th century houses are in generally good condition. A one-story autobody garage (located directly across the street from the proposed development) interrupts this otherwise regular development pattern.

Proposed Structure

The applicant's submission includes aerial views of the site, general elevations, renderings and information regarding some of the building materials under consideration. The submission does not include detailed elevations or dimensional information, such as the building's distance from the street, height, length, etc. At staff's request, the applicant has provided several perspective views from various view corridors. These will be instructive in assessing relative visibility and visual impact.

Architect Mark Wilcox will make a more detailed presentation on Wednesday and answer any specific questions not addressed in the enclosed material. He is also prepared to address the project's response to applicable design guidelines.

Note that the principal entrance to the garage will located off St. John Street. The surface parking lot now occupied by the Eagles will be redeveloped to provide ingress and egress from the garage, as well other site improvements. A secondary entrance will be located on the building's north elevation, which is accessed from drive behind the MCRR office building. The north elevation of the garage will have the most direct visual relationship with the landmark structure. Here, the garage is viewed against the rear elevation of the MCRR office building, which is somewhat distinct from the building's more elaborate St. John Street façade.

Applicable Design Guidelines

In reviewing the proposed development under the applicable site plan ordinance provision, the Board should be guided by the following language:

> *"When any part of a proposed development is within 100 feet of any designated landmark, historic district or historic landscape district, ...such development shall be generally compatible with the major character-defining elements of the landmark, or portion of the district in the immediate vicinity of the proposed development. ...For the purposes of this provision, "compatible" design shall be defined as design which respects the established building patterns and visual characteristics that exist in a given setting and, at the same time, is a distinct product of its own time."*

The Board should first consider the major design characteristics of the historic MCRR office building and then determine whether the proposed development is generally compatible with one or more of those key characteristics. Design characteristics of the new building need not relate to specific features of the adjacent landmark, such as the use of brick and stone, to achieve compatibility. General characteristics, such as the relative "weightiness" of the historic structure, the tonal range of the building materials, the organization of the elevations, etc. might be considered in evaluating compatibility.

In addition to reviewing the preliminary design proposal under the "100-foot rule" provision, Planning staff and project consultants are interested in the Board's input on the proposal's response to design guidelines adopted by reference in the MMC Institutional Overlay Zone (IOZ). These guidelines were reviewed and approved by the Planning Board to guide future development within MMC's expanded campus. See ATTACHMENT 1 for the IOZ design guidelines. As you will note, the design guidelines address such issues as long views of new buildings, the impact of rooftop appurtenances, the quality of façade materials, etc. In addition to general design guidelines, there are specific guidelines for any parking structures within the IOZ.

Preliminary Comments and Questions for Consideration

*Given the nature of the building type and the fact that key characteristics of the structure such as its setback from the street, building height and building length have been predetermined by zoning, the parameters of any design review are inevitably constrained. That said, factors such as the organization of the façade, relative transparency vs. solidity of the parking decks, character and combination of exterior materials, treatment of the entry, the presence of any rooftop appurtenances, etc. will play an important role in its overall design expression.

*Given the position of the garage well back from the street edge and behind other buildings and given its size, is it preferable that it be approached as a "background building" that is relatively recessive in design or should its design be more assertive? To what extent might this building set the tone for redevelopment along this portion of St. John Street?

*To what extent can/should the building relate to the historic structure, given the offset between the two buildings and the very eclectic nature of the surrounding context?

*What characteristics of the historic structure are most appropriate to reinforce or respond to in the garage structure?

*Given the fact that the north elevation of the garage will have the most direct visual relationship with the MCRR office building, how does the new structure relate to the rear elevation of the historic structure? Are there ways that the two elevations might better relate?

Are the proposed exterior materials of high quality and are they likely to age well? Is the color or tone of the material palette compatible with the historic structure and/or larger context?

ATTACHMENTS

1. Adopted Design Guidelines applicable to proposed development within MMC's Institutional Overlay Zone
2. Cover letter from Jeff Sanders, MMC Chief Operating Officer
3. Existing and proposed aerial view of project site
4. Preliminary elevations, renderings, product information
5. Perspective views of garage in context,

AH. 1

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.

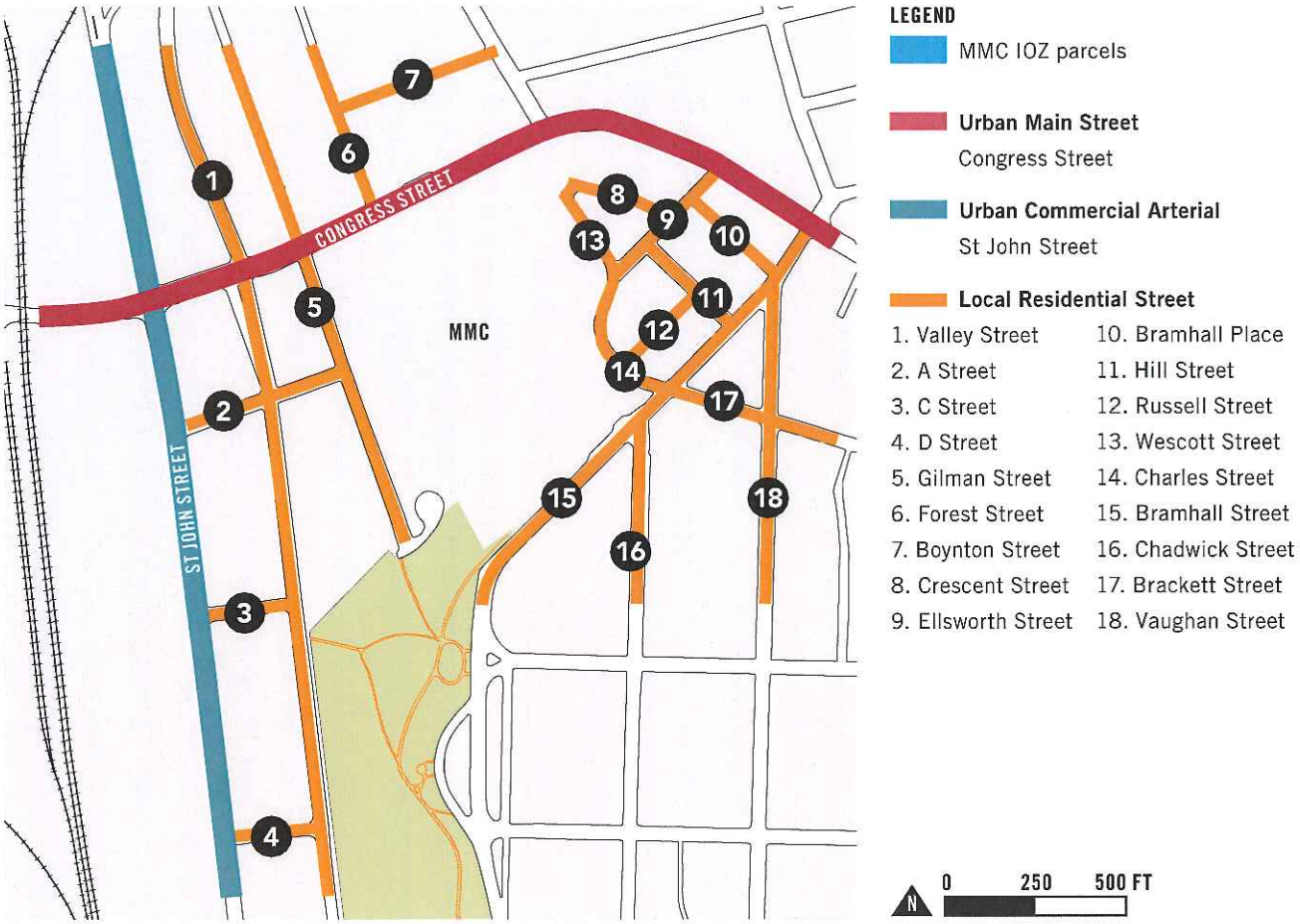
4. Buildings designs will relate to and be compatible with the existing, or—in areas of change—planned character of residential and commercial neighbors. Design elements and characteristics to consider include:
    - » Building placement and relationship to the street
    - » Overall massing and scale
    - » 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

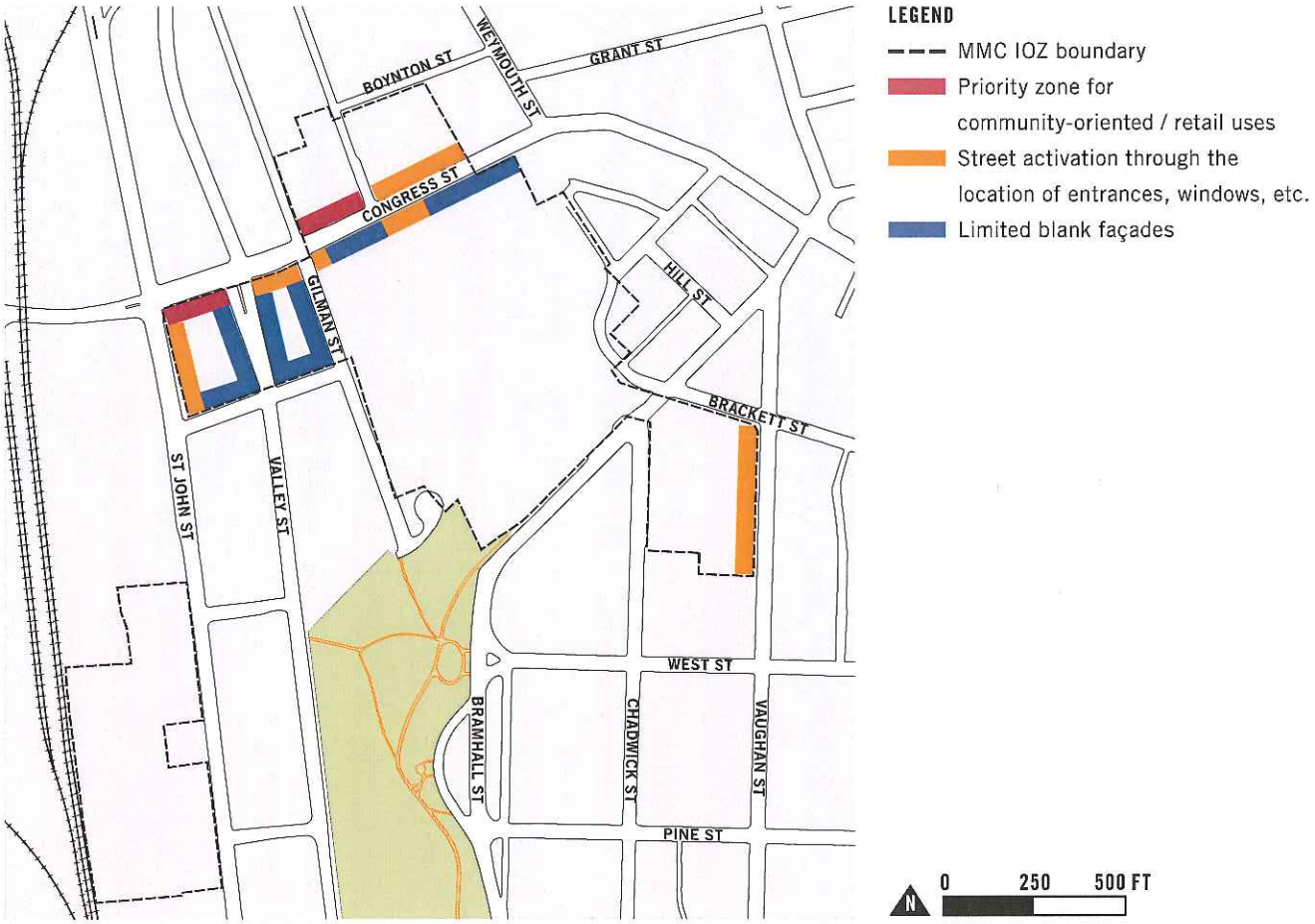


identified in the City's Comprehensive Plan. **Fig.5.15 on page 118** illustrates zones along Congress St deemed to be most suitable for community-oriented uses / retail.

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.

AH.2

Memorandum
Maine Medical Center

Maine Medical Center
MaineHealth

To:	Members of the City of Portland Historic Preservation Board
From:	Jeff Sanders, Chief Operating Officer, MMC
Date:	April 11, 2018
Re:	St John St Employee Garage Project Review

Maine Medical Center (MMC) is pleased to submit its proposed design for the St John St Employee Garage for an advisory review by the Historic Preservation Board.

BACKGROUND

Maine Medical Center, recognized as a "Best Regional Hospital" by U.S. News and World Report for 2017-2018, is a complete health care resource for the people of Greater Portland and the entire State, as well as northern New England. Incorporated in 1868, MMC is the State's largest medical center, licensed for 637 beds and employing nearly 8,000 people – roughly 2,000 of whom are Portland residents. MMC's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including an active educational program and a world-class biomedical research center. As a not-for-profit institution, Maine Medical Center provides nearly 23 percent of all the charity care delivered in Maine. MMC is a member of the MaineHealth system, a family of health care services in northern New England (www.mmc.org).

In early 2017, Maine Medical Center (MMC) applied for a zoning amendment to create an MMC-specific Institutional Overlay Zone (IOZ) to allow MMC to modernize and expand their overall campus. The IOZ is available to the City's four major medical and higher education campuses where an improved regulatory structure is needed to facilitate a consistent, predictable growth management process. The IOZ requires eligible institutions to prepare an Institutional Development Plan (IDP), a standalone document that describes the institution's tentative plans for the future, in addition to identifying a regulatory framework that establishes the parameters to allow each institution to grow as envisioned. In November 2017, the City of Portland City Council adopted an MMC-specific IOZ regulatory framework into the City's Land Use Code.

WHY WE'RE ASKING FOR YOUR REVIEW

MMC is preparing to submit a Level III Site Plan application, in compliance with the IOZ regulatory framework, to the City of Portland's Planning Department for construction of a free-standing employee parking garage at the site of an existing surface parking lot at 222 St. John Street. The proposed employee garage is within 100 feet of the Maine Central Railroad General Office Building located at 222 St. John Street which was added to the National Register of Historic Places in 1988.

MMC is submitting the proposed design to the Historic Preservation Board for an advisory review to assist the Planning Board in compliance with Article 5 of the City of Portland Land Use Code, Section 14-526 (d).5.b Design Standards, Historic Resources, Adjacency which states:

> *"Development adjacent to designated landmarks, historic districts or historic landscape districts: when any part of a proposed development is within one hundred (100) feet of any designated landmark, historic district.... or historic landscape district, such development shall be generally compatible with the major character-defining elements of the landmark... "compatible" design shall be defined as design which respects the established building patterns and visual characteristics that exist in a given setting and, at the same time, in a distinct product of its own time...to aid the planning board in its deliberations, historic preservation staff shall provide a written analysis of the proposed development's immediate context, identifying the major character-defining elements and any established building patterns that characterize the context."*

Our presentation on April 18th, 2018 will detail how the proposed project is generally compatible with the major character defining elements of the designated landmark. The Historic Preservation Board is requested to provide a review and written summary of the project to the Planning Board. Attached to this memo is a part of our presentation that includes renderings of the proposed St John St employee garage for your consideration prior to the April 18th presentation.

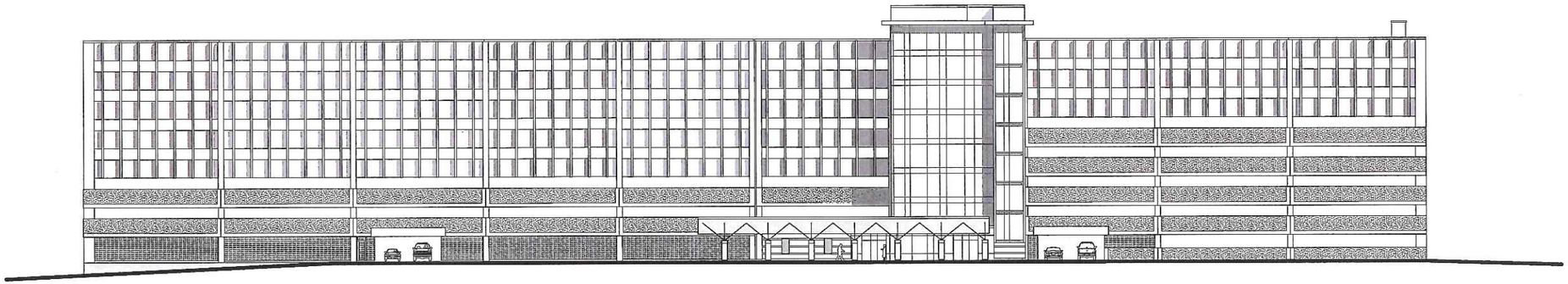
AH.3

FIGURE 1 EXISTING CONDITIONS

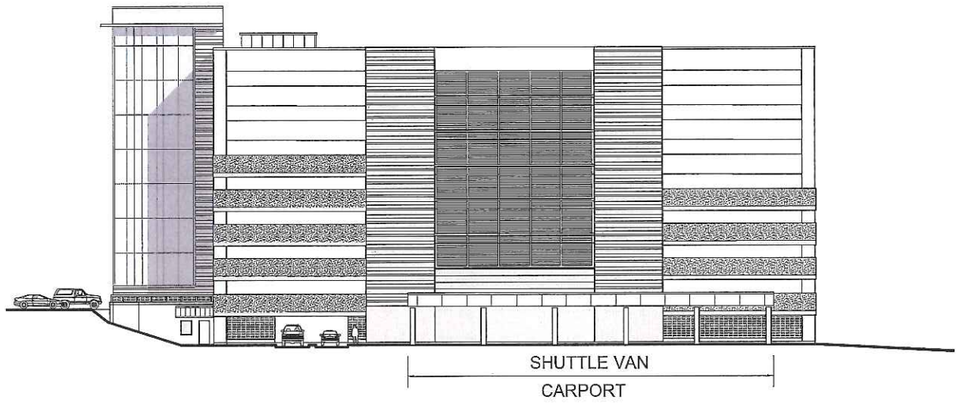
FIGURE 2 PROPOSED CONDITIONS

Att.4

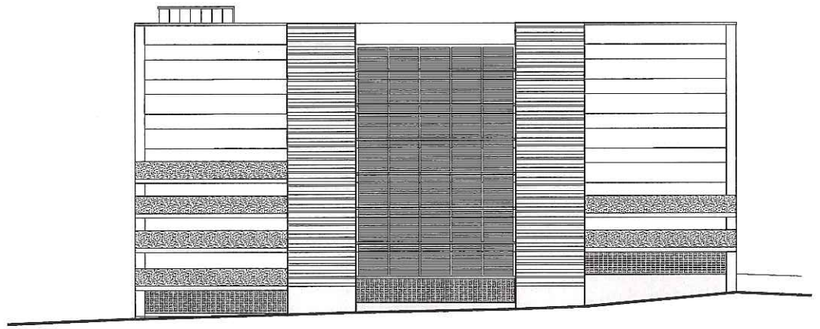
Winton Scott Architects
5 Milk Street
Portland, Maine 04101
207 774 4811
www.wintonscott.com



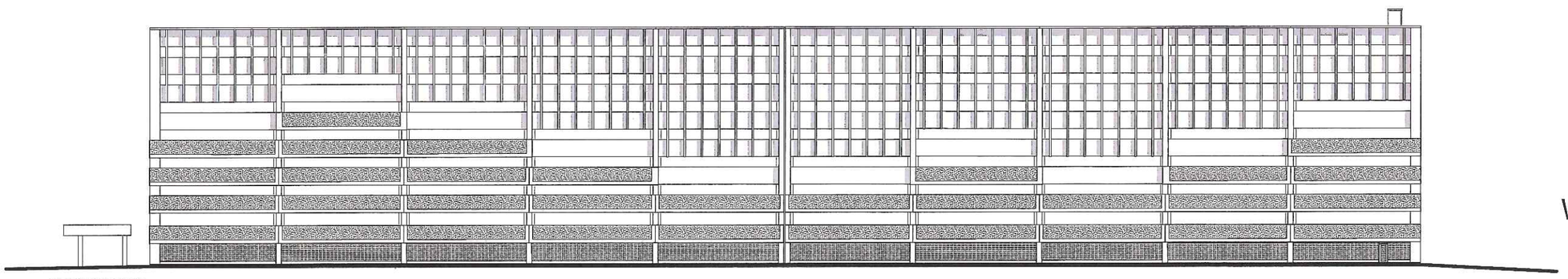
EAST



NORTH



SOUTH



WEST

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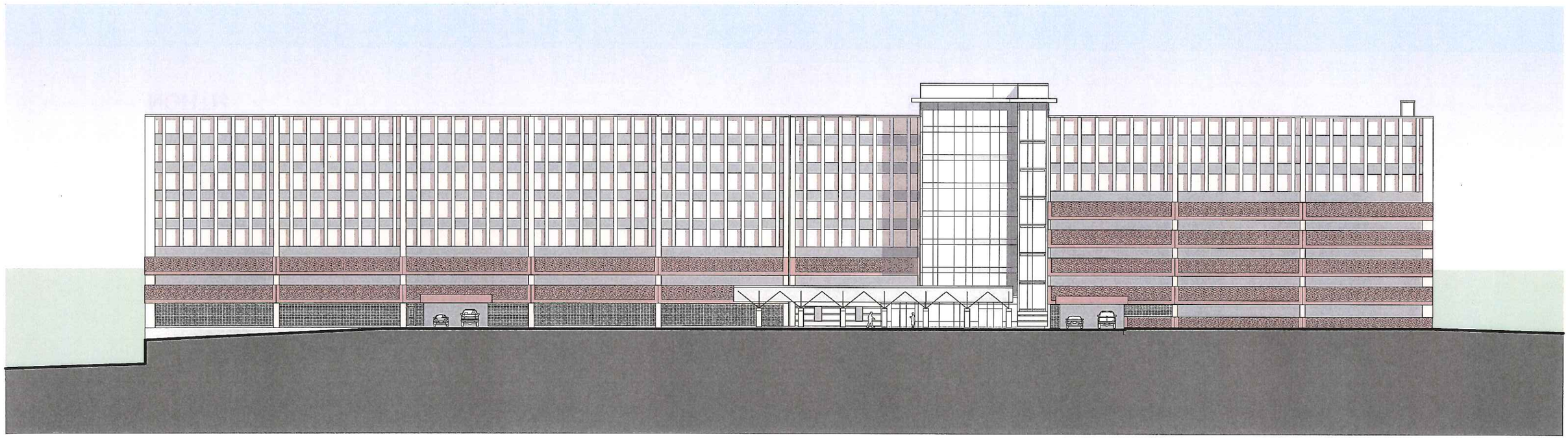
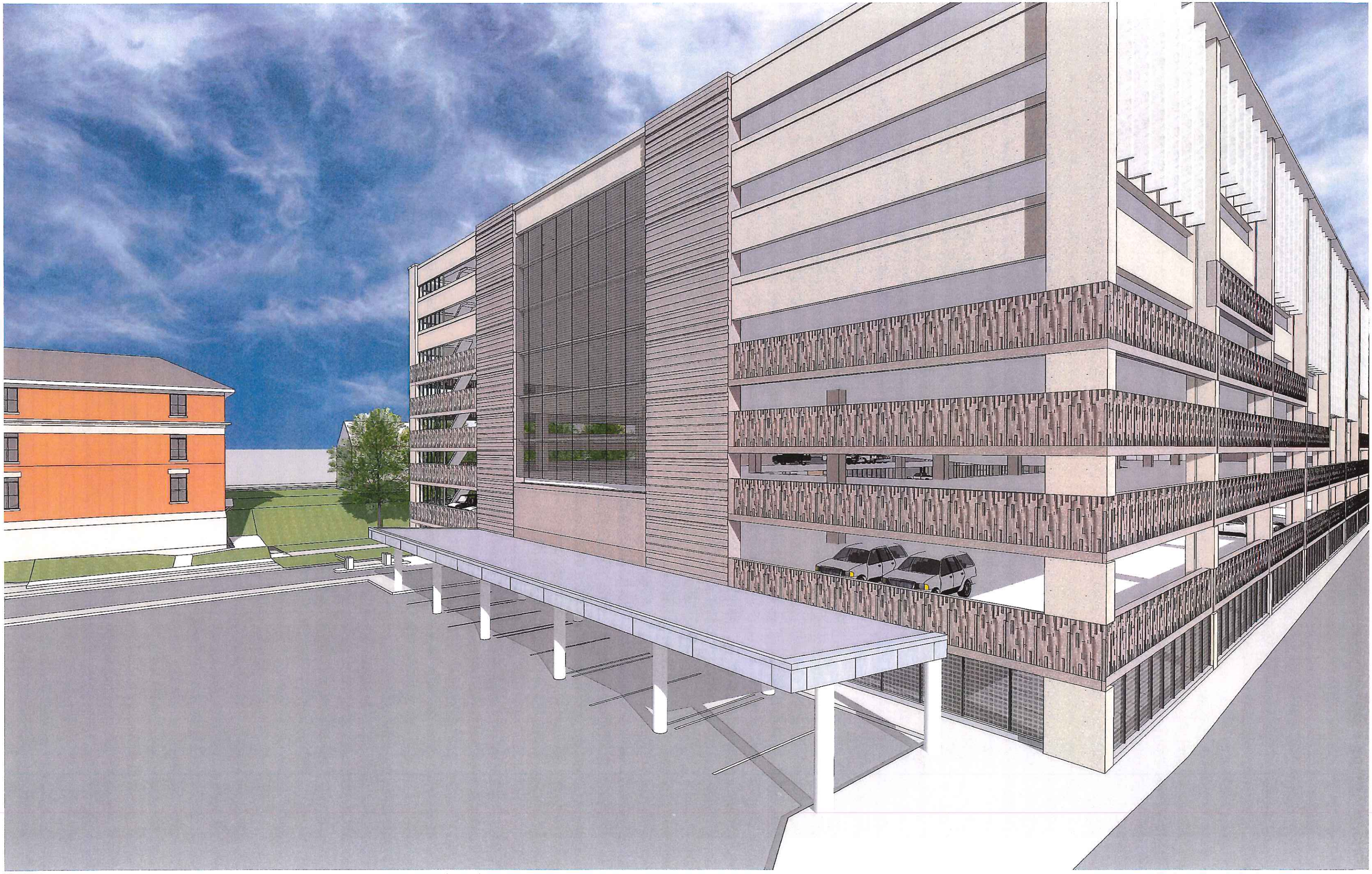
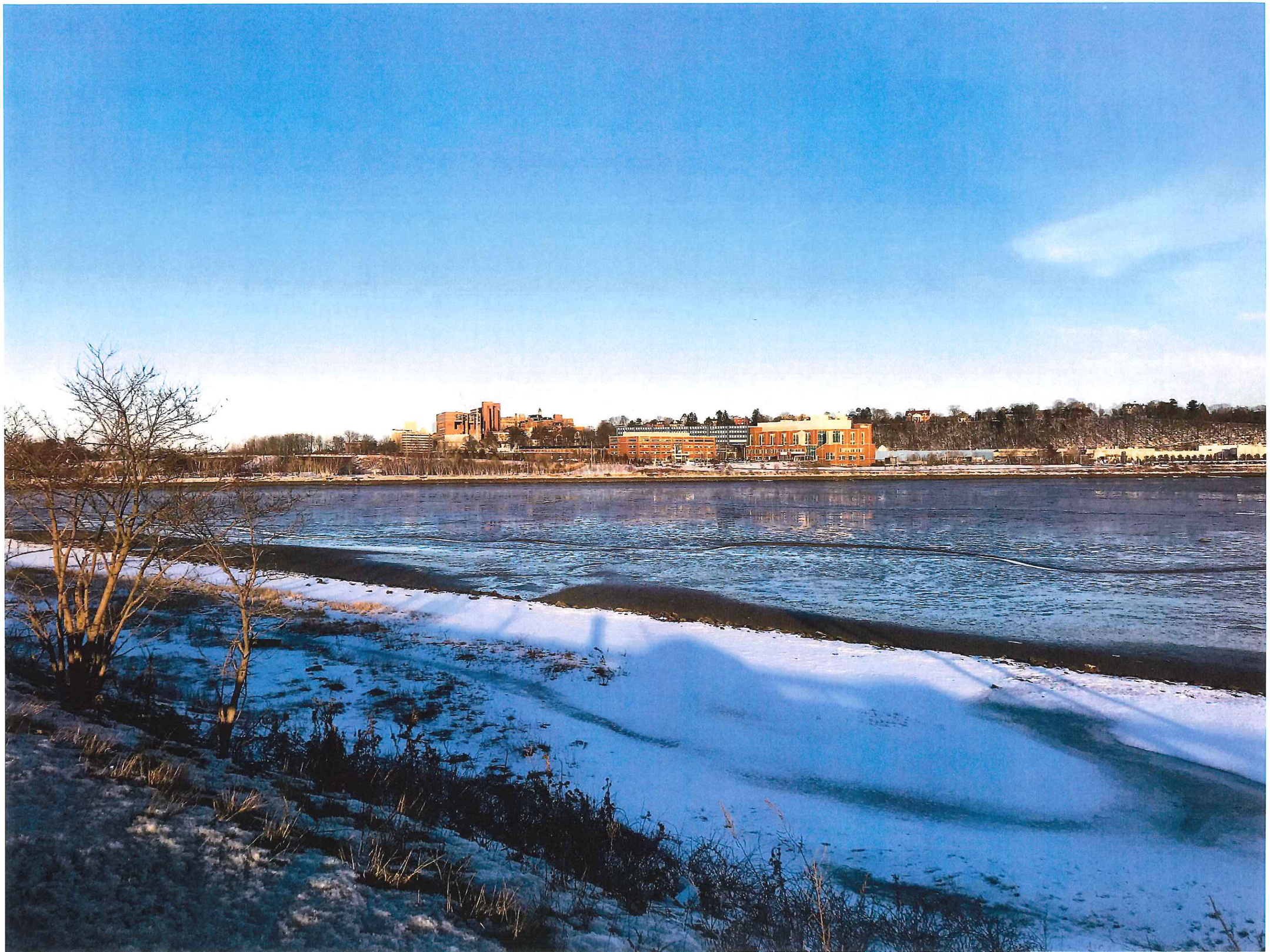
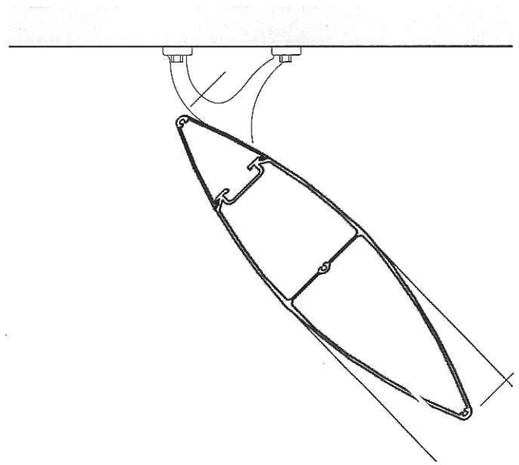


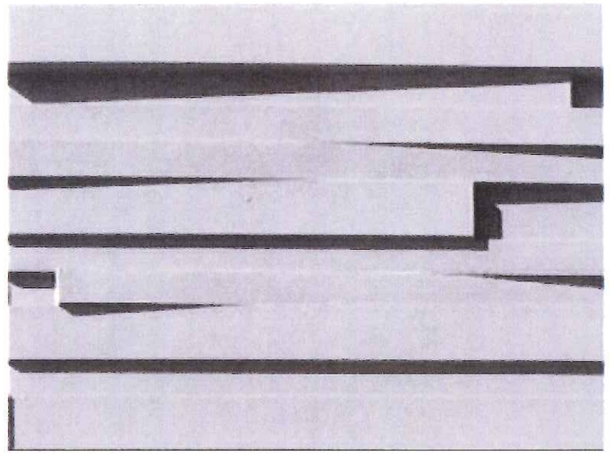
EAST ELEVATION



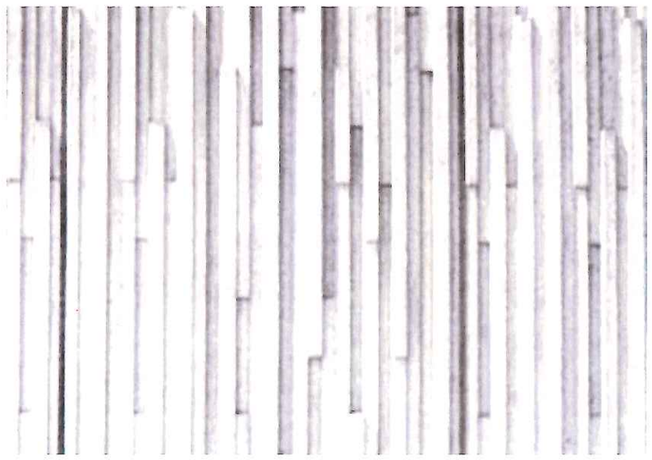




SUN CONTROL FIN



SHEAR WALL TEXTURE



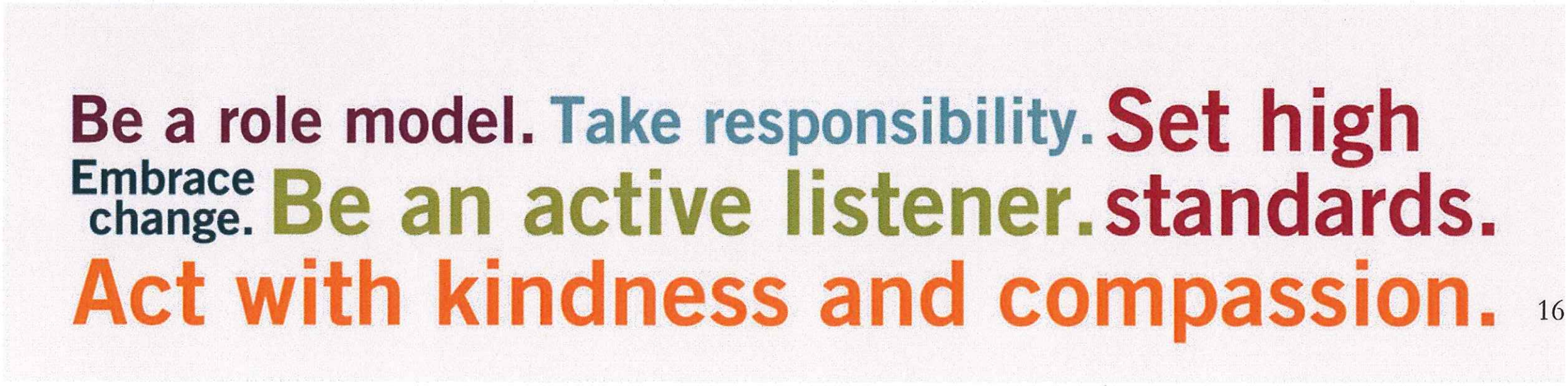
LOWER SPANDRELS TEXTURE

SECURITY GRILLES

AH.5

222 St. John Street Employee Garage
Views & Context

Mark Wilcox
Maine Registered Architect
Winton Scott Architects



View from Rear Parking Lot

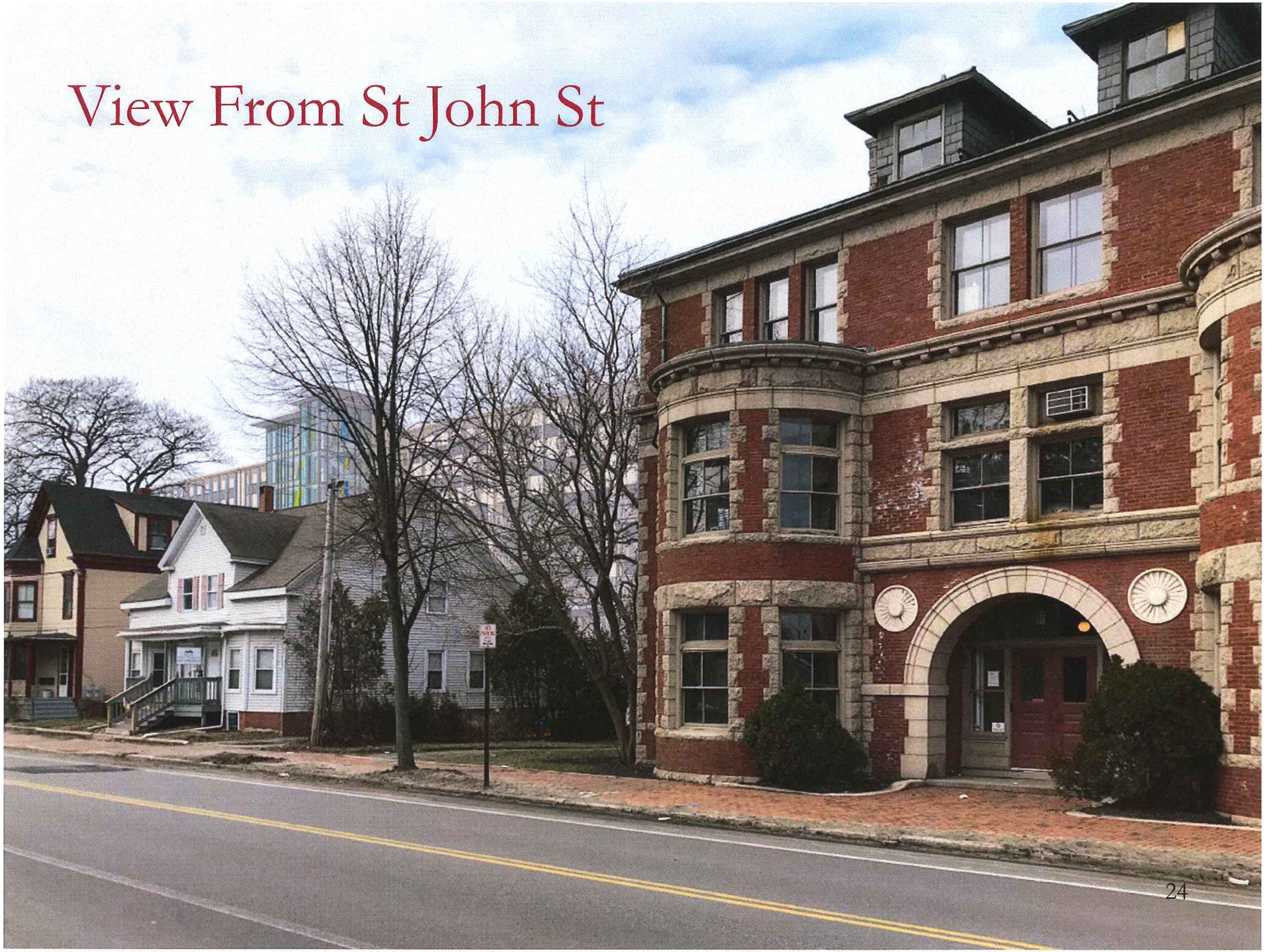
Northwest View

View from Shopping Center

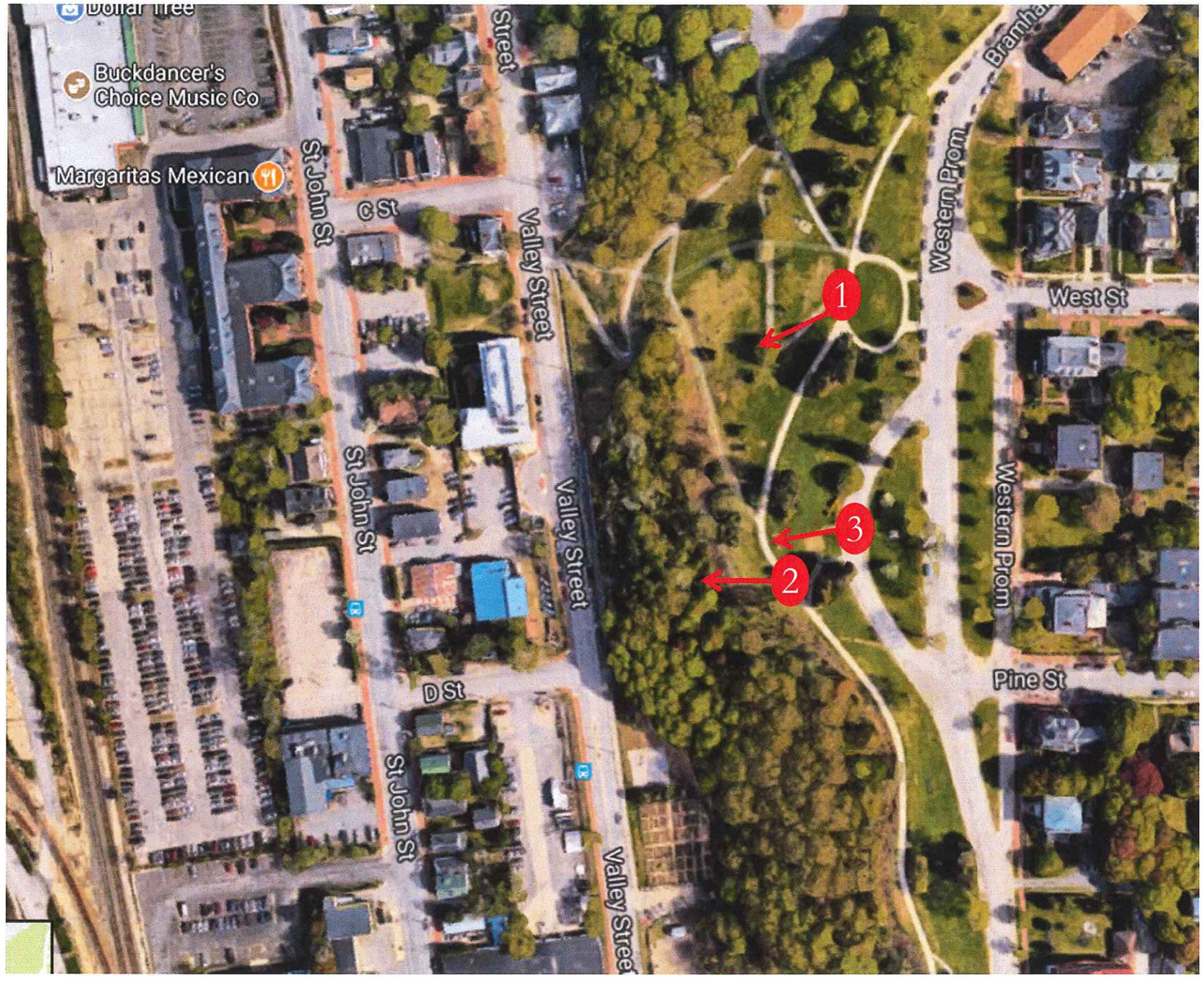
View From A St & St John St

View From St John St @ METRO Garage

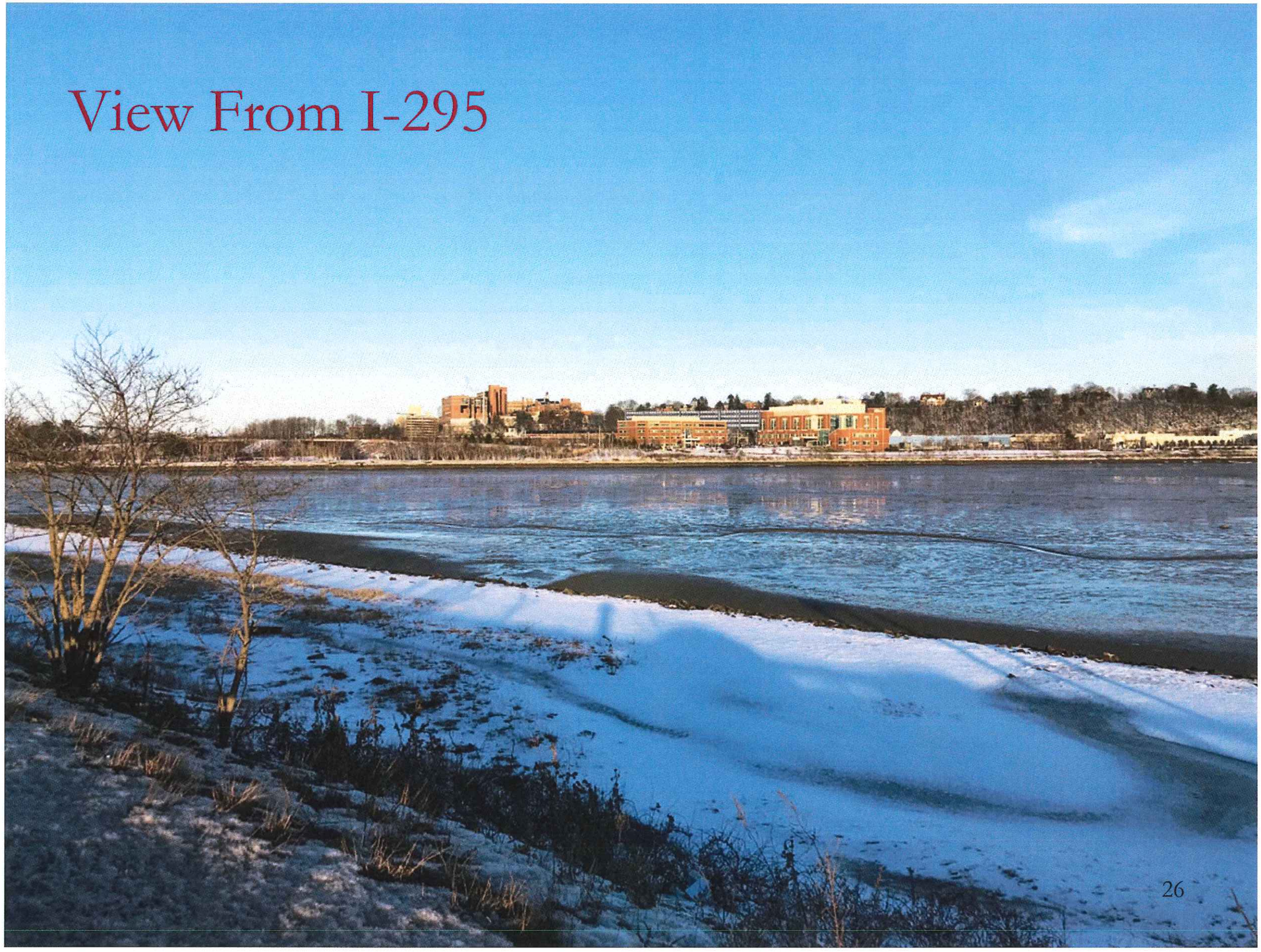
View From St John St



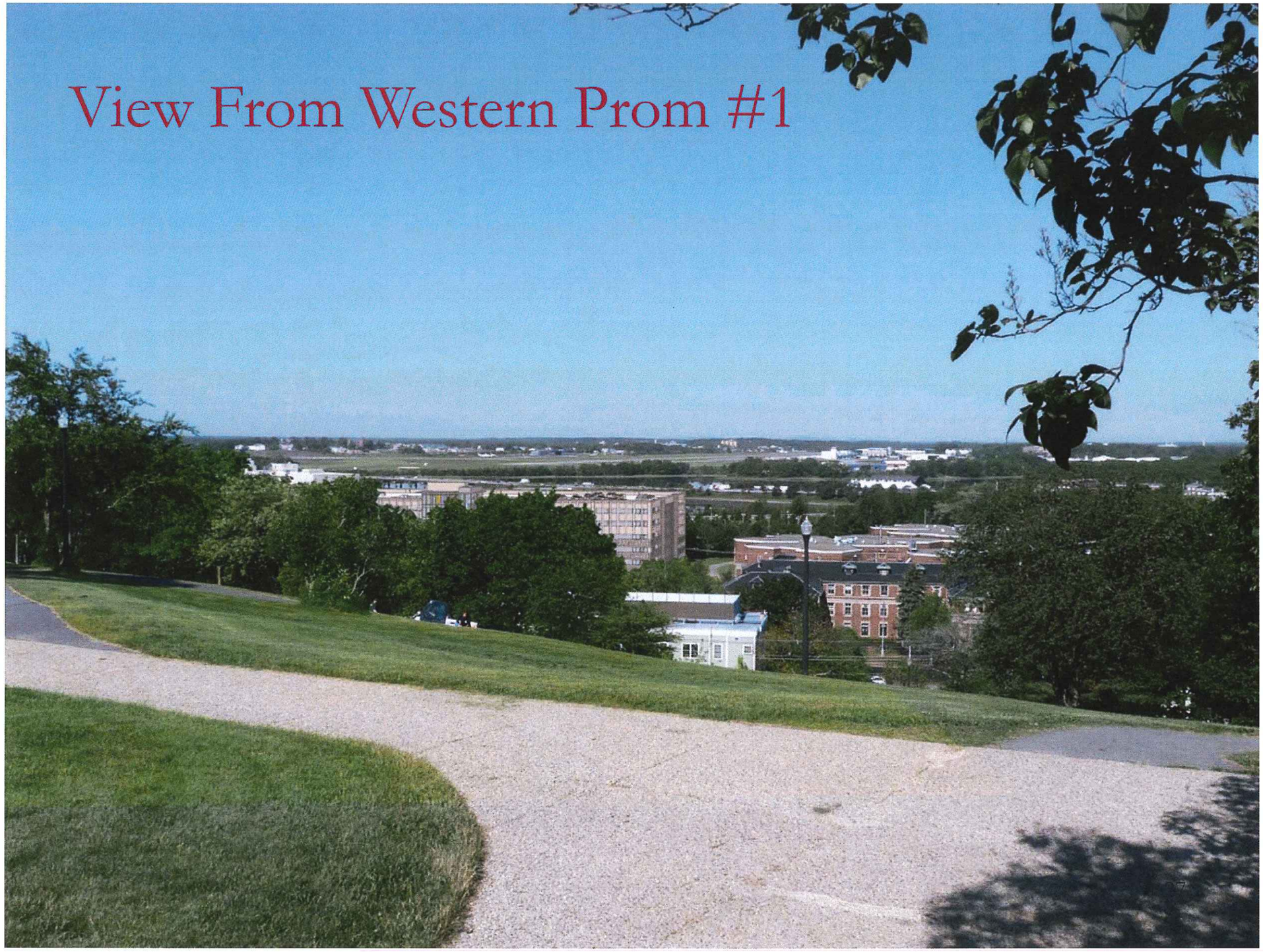
West Prom Views



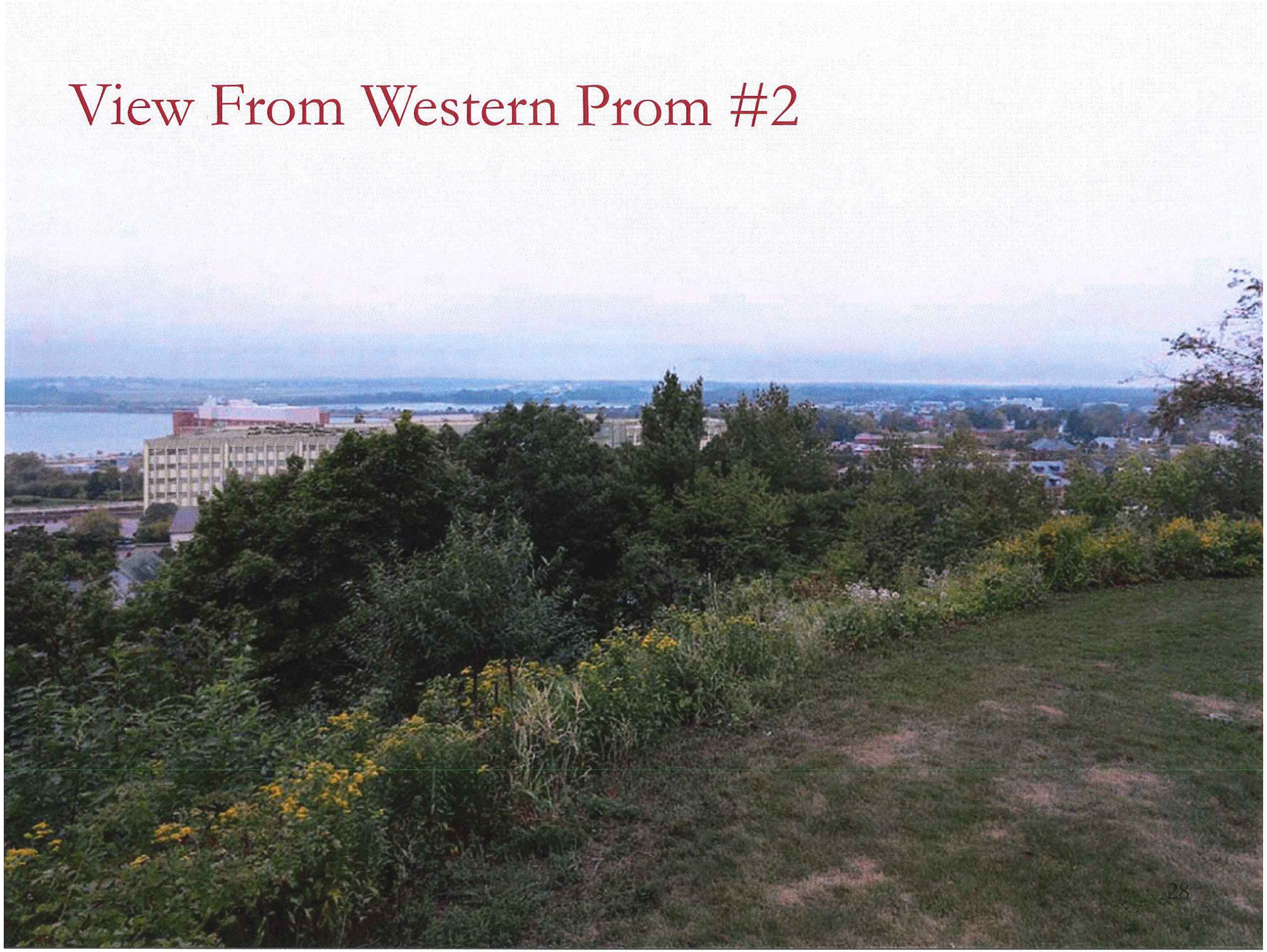
View From I-295



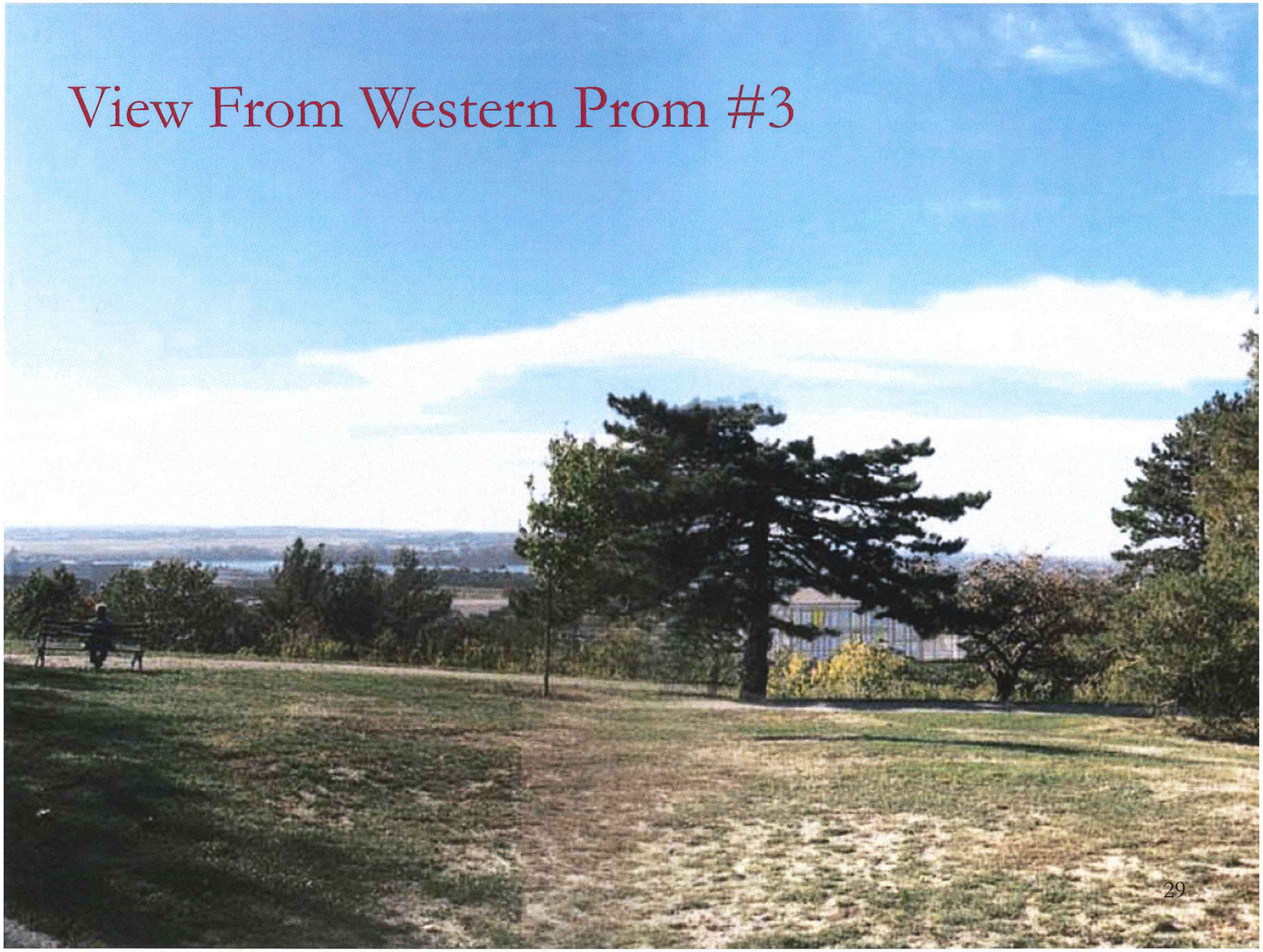
View From Western Prom #1



View From Western Prom #2



View From Western Prom #3



MAINE MEDICAL CENTER – ST. JOHN STREET STAFF PARKING GARAGE

Level III Site Plan

41 Hutchins Drive
Portland, ME 04102
800-426-4262

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

0231158.00
Maine Medical Center
June 2018

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Figure 1: Circulation Routes & Access Points

1. APPLICATION FORM

COMMITMENT & INTEGRITY
DRIVE RESULTS

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F 207.774.6635

Via Electronic Submission

June 22, 2018

Helen Donaldson
Senior Planner
City of Portland Planning Division
389 Congress Street
Portland, ME 04101

Re: Maine Medical Center
222 St. John Street Employee Parking Garage | Level III Final Site Plan Application

Dear Nell:

On behalf of Maine Medical Center (MMC), we are pleased to submit this Level III – Final Site Plan application along with supporting materials relating to a new, free-standing MMC employee parking garage at 222 St. John Street in Portland, Maine.

This submission package is intended to meet the City's submission requirements as outlined in the Level III Application procedures. The project site is located at 222 St. John Street adjacent to the Union Station Plaza and Fraternal Order of Eagles (184 St. John Street). The project involves the demolition of an existing surface parking lot at 222 St. John street currently utilized by MMC through a lease agreement and the construction of a new 2,400 space parking garage which will front toward St. John Street, and a 50-space surface parking lot north of the garage structure. MMC will purchase an existing surface parking lot currently owned and used by the Fraternal Order of Eagles at 184 St. John Street, and redevelop this lot to provide vehicle access to Levels 1 – 8 of the garage and a pedestrian entrance along St. John Street. Utilities, site features, landscaping, lighting, and stormwater management systems are included in the design documents.

The construction of the MMC garage at 222 St. John Street is identified in the Institutional Development Plan (IDP) that was prepared by MMC and approved by Portland City Council within the framework of the Institutional Overlay Zone (IOZ). Currently, employees use the Employee Garage on Congress Street with access from Gilman Street along with various other satellite lots including the 222 St. John Street surface parking lot. As part of MMCs identified short-term projects, the existing Employee Garage will be demolished and all staff parking will be consolidated to the new garage location at 222 St. John Street.

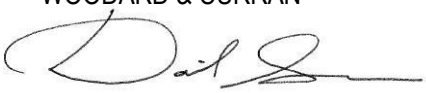
Work associated with the proposed parking garage will occur on portions of three separate properties consisting of 222 St. John Street (Cowcatcher LLC), the Fraternal Order of Eagles property at 184 St. John Street, and within an access easement from Union Station Plaza to Cowcatcher LLC. Seven separate lots are associated with these three properties which is further detailed in the table below.

Property	Lots/Parcels	Area	Building Area
222 St. John Street	064 A008, 064 A002, 075 A006, 075 A 007	4.9 acres	28,202
Fraternal Order of Eagles	068 D014, 068 D013, 068 D016	25,320 sf	0
Access Easement from Union Station Plaza to Cowcatcher LLC	N/A	11,057 sf	0

We look forward to working with your office on this project and would be glad to meet to discuss this application in greater detail. Please do not hesitate to contact me if you have any questions or require additional information.

Sincerely,

WOODARD & CURRAN



David Senus, PE
Project Manager

PN: 0231158.00

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

LEVEL II and LEVEL III APPLICATION SUBMISSION CHECKLIST

Submit each Tab as one PDF file and bookmark the items as noted below

Please confirm by electronically checking the boxes to the left

Tab 1 – General Application Documents

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

LEVEL II AND LEVEL III SITE PLAN STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.

Submit each Tab as one PDF file and bookmark the items as noted below

Tab 2 - TRANSPORTATION

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

Tab 3 - ENVIRONMENTAL AND LANDSCAPE FEATURES

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

Tab 4 - ENVIRONMENTAL AND STORMWATER

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

Tab 5 - PUBLIC INFRASTRUCTURE AND SAFETY	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Consistency with City Master Plans (14-526 (c) 1)** • Identify consistency with master plans • Proposed easements, rights and improvements to connect or continue off-premises public infrastructure, as applicable
Yes NA Plan ✔	**Public Safety and Fire Prevention (14-526 (c))** • Address Crime Prevention through Environmental Design (CPTED) (Technical Manual, Section 3) • Emergency vehicle access • Address consistency with public safety standards (Technical Manual, Section 3) • Submit a code summary referring NFPA 1 and all Fire Department standards (Technical Manual, Section 3) – Fire Checklist
Yes NA Plan ✔	**Availability and Adequacy of Public Utilities (14-526 (c) 3) (Technical Manual, Sections 2 & 9)** • Electrical services, including providing underground services • Identify existing and proposed connections for public utilities and required public utility upgrades • Sewer line connections are required, if there is a main within 200 feet • Proposed solid waste management facilities on-site and management for the site • Written evidence of the ability to serve from utility companies, as applicable

Tab 6 - SITE DESIGN	
Check list	Assess/Provide/Document:
Yes NA Plan ✔	**Massing, Ventilations and Wind Impact (14-526 (d) 1)** • Wind and ventilation impacts on adjoining structures and/or adjacent public spaces. Wind study, if applicable • Bulk, location or height impacts on adjoining structures • Identify and locate HVAC equipment and venting away from public spaces and residential properties • Identify screening and manufacturing specifications for noise, if applicable
Yes NA Plan ✔	**Shadows (14-526 (d) 2), if applicable** • Shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
Yes NA Plan ✔	**Snow and Ice Loading (14-526 (d) 3)** • Building design to prevent snow and ice from loading or falling onto adjacent properties or public ways
Yes NA Plan ✔	**View Corridors (14-526 (d) 4), if applicable** • Protection of designated view corridors (Portland Design Manual, Appendix 1)

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

Tab 7 - Construction Management Plan

Check list			
Yes	NA	Plan	**Construction Management Plan**
✔			• Construction Management Document and Plan

Level II and Level III Site Plan Checklist

Please upload the following drawings with the listed details into e-Plan

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

Must be in compliance with Technical Manual, Section 13

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

☑ Existing Conditions

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

☑ Proposed Site Plan

- Ground floor area, and grade elevations for all buildings

☑ Access, Circulation, and Parking

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

☑ Site Considerations

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

☑ **UTILITY PLAN** including:

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

☑ GRADING and DRAINAGE PLAN including:
• Existing grades and drainage • Proposed grades • Proposed stormwater management meeting Technical Manual (Section 5) standards • Location and proposed alteration of a water course • Preservation or alteration of wetlands
☑ EROSION CONTROL
• Must be in compliance with Technical Manual, Section 5
☑ LANDSCAPE PLAN including:
• Existing vegetation to be preserved and preservation measures • Proposed landscaping and buffers • Planting schedule
☐ RECORDING PLAT, if applicable
• IF SUBDIVISION: Must be in compliance with requirements of Section 14-496 (b)
☑ ARCHITECTURAL PLANS & RENDERINGS including:
• Exterior building elevations, color renderings, illustrations of all sides • Location and dimensions of all existing & proposed HVAC & mechanical equipment, all proposed screening • Provide context drawings, if applicable (Design Manual, page 1) • Floor plans

2. APPLICATION FEES

A check for $5,250 for the required application fee has been provided to the Planning Department. The application fee includes:

- Level III Development – Over 300,000 sq. ft. - $5,000
- Stormwater Quality Review - $250

We understand that the Traffic Movement payment will be made under a separate phase, the Design Review will be billed as staff time and third-party review will be billed separately.

3. PROJECT DESCRIPTION

3.1 Introduction

Maine Medical Center (MMC) is located at the western gateway into the City of Portland and fronts along Congress Street. The entire 21.8 acre MMC campus abuts a number of different neighborhood associations, the St John Valley Neighborhood, Parkside, Libbytown, Western Promenade and West End.

In addition to the main campus, MMC currently utilizes an existing surface parking lot (also known as the First Atlantic Lot) for staff parking behind 222 St. John Street in Portland. The First Atlantic Lot provides 283 parking spaces through a lease agreement with East Brown Cow. The proposed project will include the reuse of the existing surface parking lot for construction of a free-standing parking garage at 222 St. John Street. The garage consists of a ground level plus eight tiers, providing a total of 2,400 parking spaces and an additional 52 spaces are provided in a surface parking lot located north of the garage structure. The attached Location Map shows the project location which is three tenths of a mile from the Bramhall Campus. MMC has a long-term lease agreement for the development and use of this parking garage. The new St. John Street garage is intended to do the following:

- Consolidate existing satellite parking for MMC staff,
- Provide for replacement parking to support demolition of the existing staff garage,
- Accommodate expected staff growth,
- Provide additional parking for the building at 222 St John St, and
- Reduce parking by staff on surrounding neighborhood streets.

It is the intention of MMC to provide a reliable and complete parking solution for staff. Right-Of-Way improvements are being proposed to promote walking and a shuttle service will provide continuous service for MMC staff between the St. John Street Garage and the Bramhall Campus.

3.2 Project Purpose and Need

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

- Clinical
- Building
- Campus Reorganization
- Parking

The location of the proposed MMC garage at 222 St. John Street is identified in the Institutional Development Plan (IDP) that was prepared by MMC and approved by Portland City Council within the framework of the Institutional Overlay Zone (IOZ). With the IDP, the garage is identified as a short-term (0-5 years) project to help improve the efficiency of care delivery for MMC. Associated with the Institutional Development Plan (IDP) prepared by MMC is a Transportation Plan that will improve campus access, circulation and wayfinding for patients and visitors. Included in

the IDP Transportation Plan is a robust Transportation Demand Management (TDM) Plan. MMC is committed to meeting the unavoidable need for staff parking and to taking steps to reduce staff single-occupancy vehicles. Providing adequate parking for patients, families, staff and students at MMC is an essential part of providing a high-quality healthcare experience.

Currently, staff members use the staff garage on Congress Street with access from Gilman Street along with various other satellite lots outlined in the IDP Transportation Section. As part of MMCs short-term projects, the existing staff garage will be demolished and all staff parking will be consolidated to the new garage location at 222 St. John Street. In the IDP, it was documented that MMC's existing decentralized parking situation creates management challenges and is a significant dissatisfier for staff. Management challenges include multiple shuttle routes that add to traffic congestion on local streets and the high cost of servicing and operating multiple shuttles. In addition, MMC staff members have provided feedback that staff parking at the Bramhall Campus is unreliable. There are currently eight parking locations available for MMC staff. When one location is full, staff members must search other locations for available parking which adds to traffic congestion and on days when MMC is near or at capacity, finding a parking spot in a reasonable amount of time is a challenge.

As the healthcare industry continues to centralize tertiary services, MMC's staff population will continue to grow. The anticipated staff growth is well documented in MMC's IDP. As the staff population grows, parking demand will grow. The need for additional staff parking is also well documented in MMC's IDP. MMC is committed to managing this growth through its TDM program. Section 6.7 of this application expands on MMC's TDM program.

3.3 Existing Conditions

The Existing Conditions & Demolition Plan included in the drawings submitted with this application were prepared from field surveys by Owen Haskell, Inc. and depicts the existing conditions of the property located at 222 St. John Street (the Site). No portion of the development is within the 100-year flood plain; FEMA Flood Insurance Rate Map (FIRM) Panel 13 of 17, Community Panel Number 230051 0013 B effective July 17, 1986 has been attached for your reference. Also located at 222 St. John Street is a four-story professional office building that provides small and large office suites for tenants, as well as ground floor restaurant space. This building is known as the Maine Central Railroad General Office Building, an identified historic landmark with a slate roof, copper gutters and an E-shaped footprint. The parking garage and walkway are proposed within 100 feet of the Maine Central Railroad General Office Building and they have been designed to minimize impact to this building to the extent possible.

Work associated with the proposed parking garage will occur on three separate properties consisting of 222 St. John Street, the Eagles Lot at 184 St. John Street, and Union Station Plaza. The use of the Eagles parking lot will be through a land purchase between MMC and the Eagles. An access easement exists from Union Station Plaza to Cowcatcher LLC for the use of the Union Station Plaza property. This is further discussed in Section 7. Seven separate lots are associated with these three properties which is further detailed in the table below. The survey plan provided with the design drawings also includes this information.

Property	Lots/Parcels	Area	Building Area
222 St. John Street	064 A008, 064 A002, 075 A006, 075 A 007	4.9 acres	28,202
Fraternal Order of Eagles	068 D014, 068 D013, 068 D016	25,320 sf	0
Access Easement from Union Station Plaza to Cowcatcher LLC	N/A	11,057 sf	0

The overall project site is approximately 5 acres and generally flat from north to south, until it meets the back (or west side) of the 184 St. John Street property, where there is an approximate grade change of 10 feet. The existing parking lot that currently serves the Eagles is generally flat. No wetlands are present on the Site.

3.4 Proposed Development

The project involves the demolition of the existing surface parking lot at 222 St. John Street and the construction of a new 2,400 car staff parking garage fronting along St. John Street and a 52-space surface parking lot north of the garage structure. The current parking lot for the Eagles at 184 St. John Street will also be demolished and the space will be used for vehicle access to Levels 1 – 8 of the garage and pedestrian access from St. John Street.

Vehicle access will be served through a three-lane driveway from St. John Street. The driveway includes one entrance lane, one exit lane and one reversable lane that will vary as an entrance or exit depending on the time of day and needed level of service. The stair and elevator core, doorway vestibule and security office adjacent to the St. John Street entrance drive will be located on the eastern side of the parking garage to provide direct pedestrian access to Level 1. A traffic signal will be installed at the intersection of St. John Street and D Street to accommodate traffic from the primary garage entrance.

Additional access to the garage will be provided via a driveway on St John, referred to as the "Margaritas" entrance in the traffic management narratives due to its proximity to the Margaritas restaurant location at this corner. Staff traffic utilizing the Margarita's entrance will be specifically dedicated to the building at 222 St John St, and only have access to Grade Level and Level 1. Shuttle service will be provided on the internal ground level of the garage and the shuttle route will utilize access through the Margarita's entrance. Parking for shuttle busses that are not in use will be accommodated within the ground level of the garage. Surface parking will be provided in a surface lot behind 222 St. John Street to accommodate the office building needs. In addition, approximately 50 parking spaces to serve the Eagles facility will be provided in the MMC garage on Level 1. A sidewalk connection from the garage to the Eagles facility will be provided for safe pedestrian access.

Other project features include a retaining wall associated with the proposed walkway near 222 St. John Street and a raised speed table behind 222 St. John Street for vehicles entering and exiting. The lighting plan for the proposed project is designed to meet current City standards. Utilities, site features and stormwater management systems associated with the parking garage are also being proposed. A set of project design plans showing the proposed development is attached to this application. The set includes site, utility and grading and drainage plans, as well as architectural and landscaping plans. Information about site lighting is also included.

3.4.1 Site Design Approach

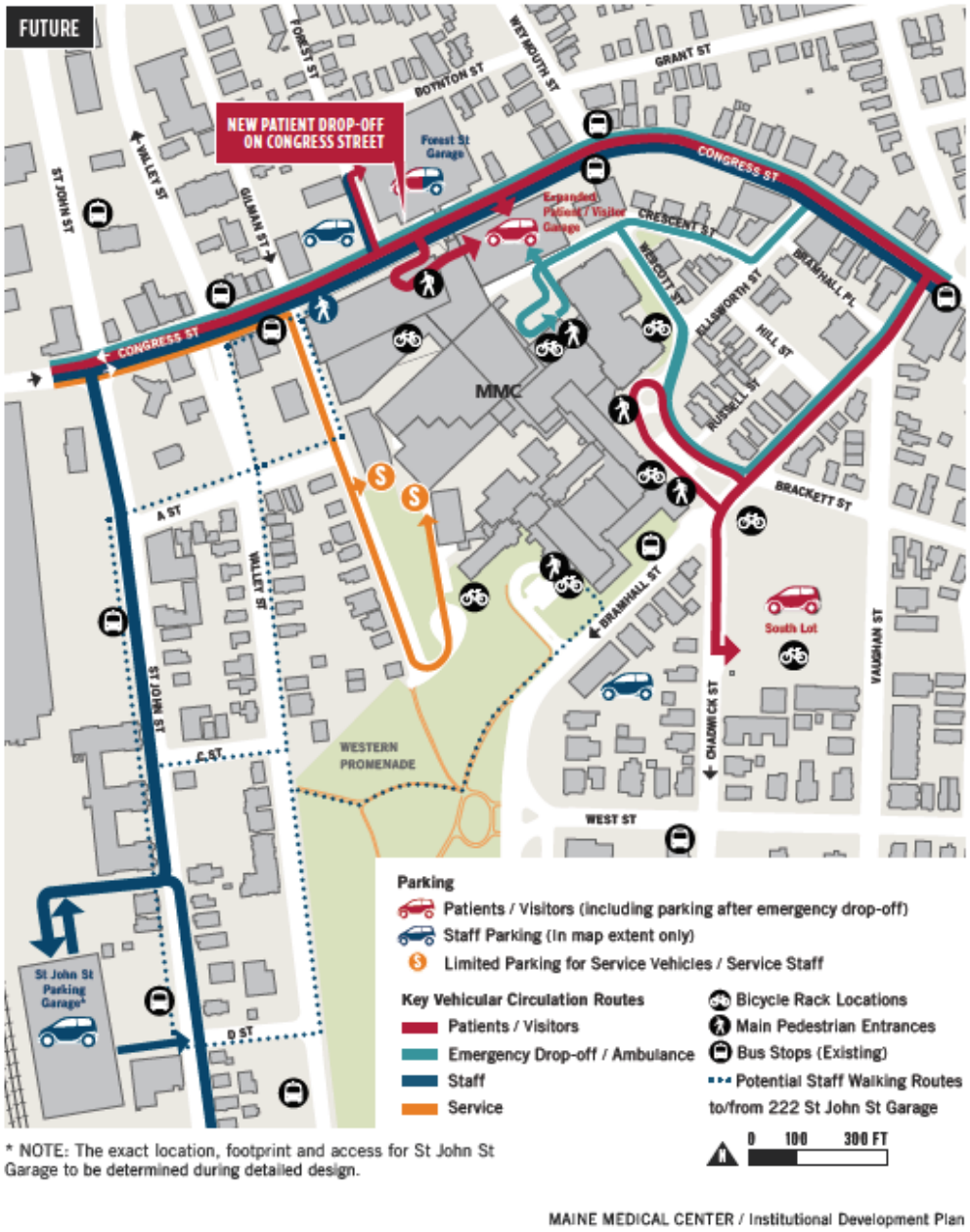
The site design approach for the MMC staff parking garage utilizes previously developed land totaling approximately 5-acres. The parking garage footprint is approximately 89,825 square feet (SF) and when combined with the lobby area, the footprint is 91,950 SF.

There will be approximately 2,400 parking spaces in the garage and those include compact, handicapped accessible and van accessible spaces and a 52-space surface parking lot north of the garage structure. There will also be 40 bicycle parking spaces within the garage and on the site. Vehicle access to the garage and movement along St. John Street will be supported by north and south travel lanes and left turn lanes which will serve north bound vehicles entering the parking garage and south bound vehicles turning onto D Street. A new traffic light will be installed at the intersection of D Street and St. John Street. New lane markings along St. John Street will be added to improve and manage the traffic flow in and out of the garage and two 5-foot bike lanes will be provided adjacent to the north and south travel lanes.

MMC has specified several routes of travel for pedestrians from the proposed St. John Street Parking Garage to MMC in their IDP (see **Figure 1**). As part of the proposed parking garage project, MMC will make improvements to ensure a safe pedestrian experience along portions of A Street, C Street, D Street, St. John Street, Valley Street, Congress Street and Gilman Street. Photos of the existing pedestrian experience and areas of improvement are attached to

Section 3. Improvements will be made in accordance with City of Portland initiatives, in consultation with the St. John Valley and Western Promenade Neighborhood Associations, and in response to further study of these pedestrian ways and their particular conditions. A survey of the boundaries of these rights of way will be required before specific streetscape improvement proposals are made.

Figure 1: Circulation Routes & Access Points



MAINE MEDICAL CENTER / Institutional Development Plan 59

Pedestrian safety and access improvements will include:

- New brick sidewalk along the front of the St. John Street pedestrian entrance and landscaped area,

- New crosswalk extending from the pedestrian entrance in front of the garage across St. John Street to D Street,
- New ADA curb ramps and crosswalk at the east end of D Street across Valley Street with an island at the midpoint for refuge,
- New brick sidewalk along the north side of D Street as depicted on Sidewalk Improvement Plan, Sheet C-107,
- New crosswalk extending across the east end of C Street as depicted on Sidewalk Improvement Plan, Sheet C-107,
- New brick sidewalk on the north side of A Street, from Valley Street to Gilman Street as depicted on Sidewalk Improvement Plan, Sheet C-107, and
- Other minor repairs to existing sidewalks as depicted on Sidewalk Improvement Plan, Sheet C-107 and as photo documented on the ROW Improvements summary attached to this Section.

The redevelopment work will result in a minimal reduction of impervious surface (approximately 14,506 sf).

3.4.2 Architectural Approach

The proposed staff parking garage for MMC staff parking has been designed by Winton Scott Architects with its relationship to the neighborhood as a primary consideration. The garage location is in a mixed-use area of St. John Street and this is reflected in the materials and elevation layouts for the project.

The parking garage use and building focus has been oriented toward the sidewalks and existing activity of St. John Street. Both primary access and building focus support an emphasis on the garage having a direct and engaging presence that also fosters pedestrian activity and walking routes from the parking garage to the main entrance of MMC. Efficient vehicle entry and exit points from the parking garage have been designed and incorporate the pedestrian movement activity. The prospect of the building from the street features a developed landscape which enhances the immediate environment.

The scale and proportion of the principal elevations of the garage have been given a hierarchical treatment, avoiding the repetitive nature of the basic building type. Along St. John Street, the principal façade of the garage features a base zone of white precast concrete spandrels with lightly-sandblasted faces which emphasize the street scale of the neighborhood. The upper tiers of the garage are constructed using charcoal colored precast concrete to continue and enhance the street level emphasis of the structure. Columns are also composed of charcoal colored precast concrete. On the south side of the St. John Street elevation, the bottom two tiers of spandrels relate to the low-rise buildings to the south. On the north side, a higher base of feature spandrels relates to a scale of City and institutional uses. The composition is deliberately varied, with an off-centered elevator core. The upper sides of each elevation feature light-catching perpendicular extruded aluminum fins, which create a softening of the mass of the structure. They also feature a horizontal precast concrete shelf cap above the top spandrels and fins along the elevations.

Materials in general will be high quality, long lasting and weather resistant, including:

- Structural Elements – Precast reinforced concrete
- Exposed Spandrels – Colored and textured precast concrete
- Window Framing – Clear anodized aluminum
- Window Glass – Clear insulating units

The Accessory Building associated with 222 St. John Street which will be removed during the project has a concrete foundation, brick exterior, metal stair pans and un-reinforced concrete block interior. The construction type was commonly found in low-rise buildings of the 1940s and 1950s and was not used when the main 222 St. John Street building was constructed.

Section 6.5 of this application explains how the proposed design aligns with the design guidelines identified in the IDP. Rendered views are included with this Section.

3.4.3 Landscaping Approach

The landscaping elements for the proposed MMC staff parking garage by Michael Boucher Landscape Architects offer the following considerations:

- **Native Low Maintenance Plantings** - Plantings proposed are low maintenance and predominately native. Street trees (six Princeton Elms) are planted on the property adjacent to the St. John Street sidewalk. The trees are an amenity to the public pedestrian way but are within a turfgrass zone rather than within the sidewalk paving which results in a healthier planting situation for these trees, and wider usable sidewalk space. Freeman Maples are sited along the north south façade and along the pedestrian way from the surface parking lot to St. John street. They will provide vibrant fall color along with good visibility beneath to ensure safety. At the northeast corner of the property, a new concrete planter contains a grid of four sculptural native Shad (serviceberry) with hayscented fern beneath. The planter and stair resolve the grade change between the upper and lower levels of the property.

- **Stabilization** - The slope between 210 and 212/214 St. John Street will be filled and retained, eliminating this steep and potentially unstable zone, and invasive species will be removed and replaced with turfgrass and Freeman Maples.

- **Screening** – A 6' wood fence is planned along the north south boundary of two neighboring properties (210 and 212/214 St. John Street) and the east/west boundary of 212/214 and the pedestrian way adjacent to 222 St. John Street, to provide safe visual screening and separation between the private properties and Maine Medical Center property. An existing arborvitae hedge along the east west boundary between 210 St. John and the Maine Medical Center property will be retained and extended with new plants to the west, and any arborvitaes damaged or removed during construction will be replanted.

- **Boundary** - Hedge maples are planned along the south façade of the parking garage at a spacing that visually demarks the property line for cars parking in the adjacent surface lot, but does not allow spaces for a person not to be seen amongst them.

- **Safety** - A security fence is indicated along the west façade, with a gate including panic hardware to ensure safety for the users on the ground level. Similarly, a fence is planned to prevent access to the north portion of the east façade.

- **Surface Parking** - Honey locusts with sweetfern beneath are planned for the landscaped islands in the north surface parking zone. These will be protected from snowplowing and salt by 7" curbs.

- **City of Portland Tree List** - All trees included in the plan are on the City of Portland Tree List.

- **Safe Pedestrian Access** - Pedestrians are led safely from the lobby of the parking garage to concrete pathways within the St. John Street entrance leading to two pedestrian routes identified in MMC's IDP. Pedestrians on the grade level are safely led via a concrete walk to an existing path to the 222 St. John Street Building, or, via a new concrete stair and new E/W walkway (in its former location) to St. John Street. An emergency egress exit on the southwest corner of the building leads to a paved egress path along the west façade.

- **Plaza & Lobby** - Turf and hardy native groundcover plantings in large scale geometric arrangements are planned for the three raised mounds in the planted zone to the east of the lobby. These plantings provide varied seasonal views for users in cars and along pathways. Adjacent to the garage entry and exit, a massing of summersweet shrubs and hayscented fern beneath are visible from car and pedestrian viewpoints. A sweetfern massing beneath a Freeman Maple at the corner of the lobby zone near the exit provides year-round interest while allowing visibility for merging traffic.

- **Eagles Building Façade** - The Eagles will continue to rent out their banquet hall at 184 St. John Street, with its main entrance on the north façade closest to the parking garage. A walkway is proposed from level one of the garage to this entrance, with subordinate access to the two less significant entrances to the east. Sweetfern plantings are planned nearest this entrance while taller bayberries screen the two eastern entrances. A loose mulitstemmed Shad (tree) is sited at the NE corner of the Eagles building anchoring the corner of St. John and the exit ramp.

3.5 Waiver Requests

The required Waiver Request Form is attached to Section 3. Waiver requests include:

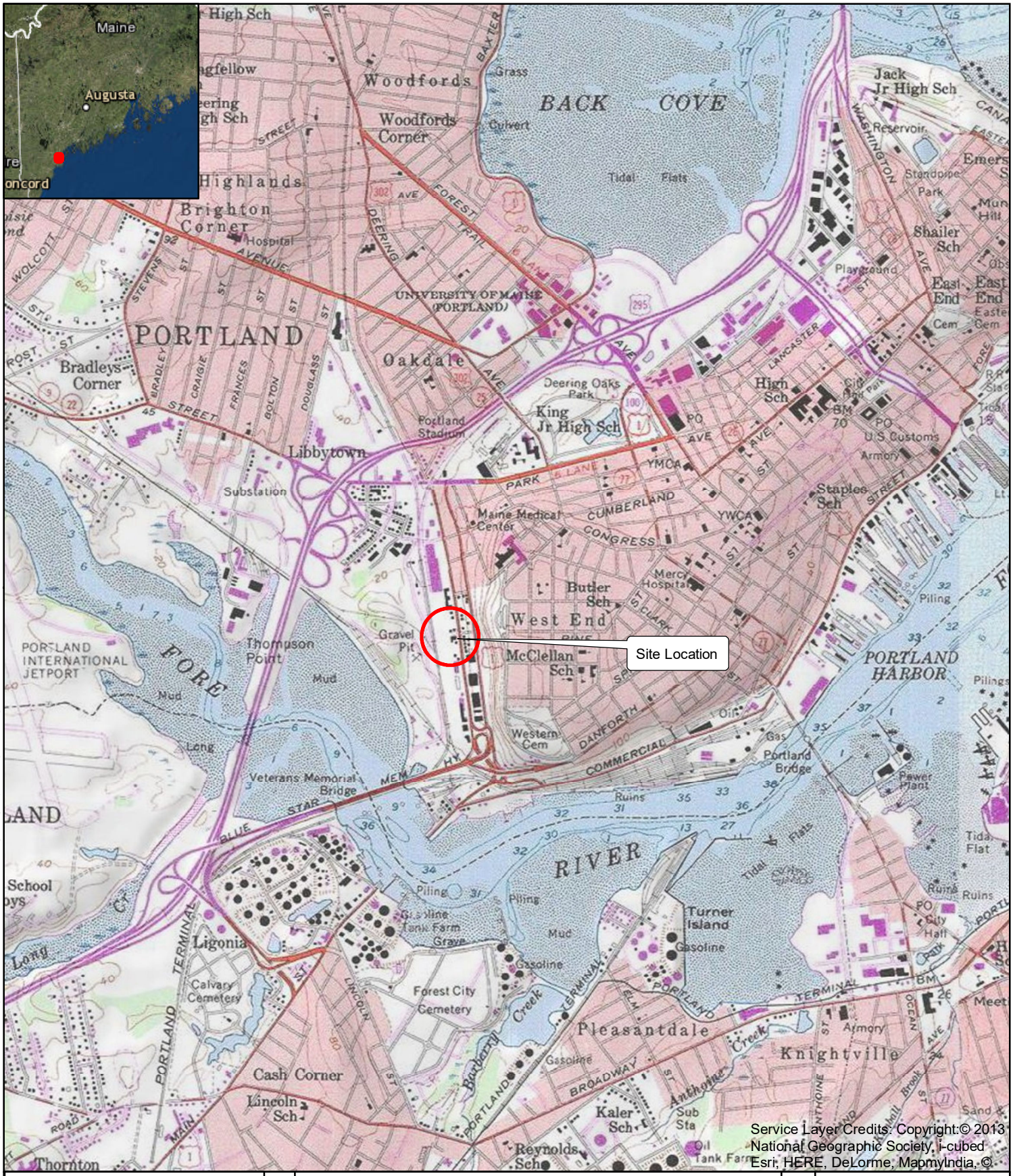
- **Bicycle Storage Spaces** - Currently, MMC has eight bike racks and ten bike lockers on its main campus for a total storage capacity of 193 bicycles. With the storage available on the main campus, we anticipate that this will be the primary destination for staff members using bicycles, and we do not anticipate as high a need for bicycle parking at the parking garage. The 222 St. John Street staff parking garage has designated a bike storage area with capacity for 40 bicycles. With this proposed bicycle parking, the total campus bicycle storage capacity will be 233 bicycles.

- **Drive Aisle Width** - Due to the proposed intersection improvements at the corner of D Street and St. John Street, the driveway is greater than the allowed 24 feet for a commercial use. A 30-foot driveway is proposed to accommodate the proposed layout of access lanes.

See the attached Waiver Request Form for more information.

3.6 Attachments

- Location Map
- FEMA FIRM
- Waiver Request Form
- Design Plans (Bound & Submitted Separately)
- Architectural Rendered Views
- Site Lighting Report
- Possible ROW Improvements



0 1,000 2,000 Feet

N

COMMERCIAL PROPERTY

222 ST. JOHN STREET
PORTLAND, ME

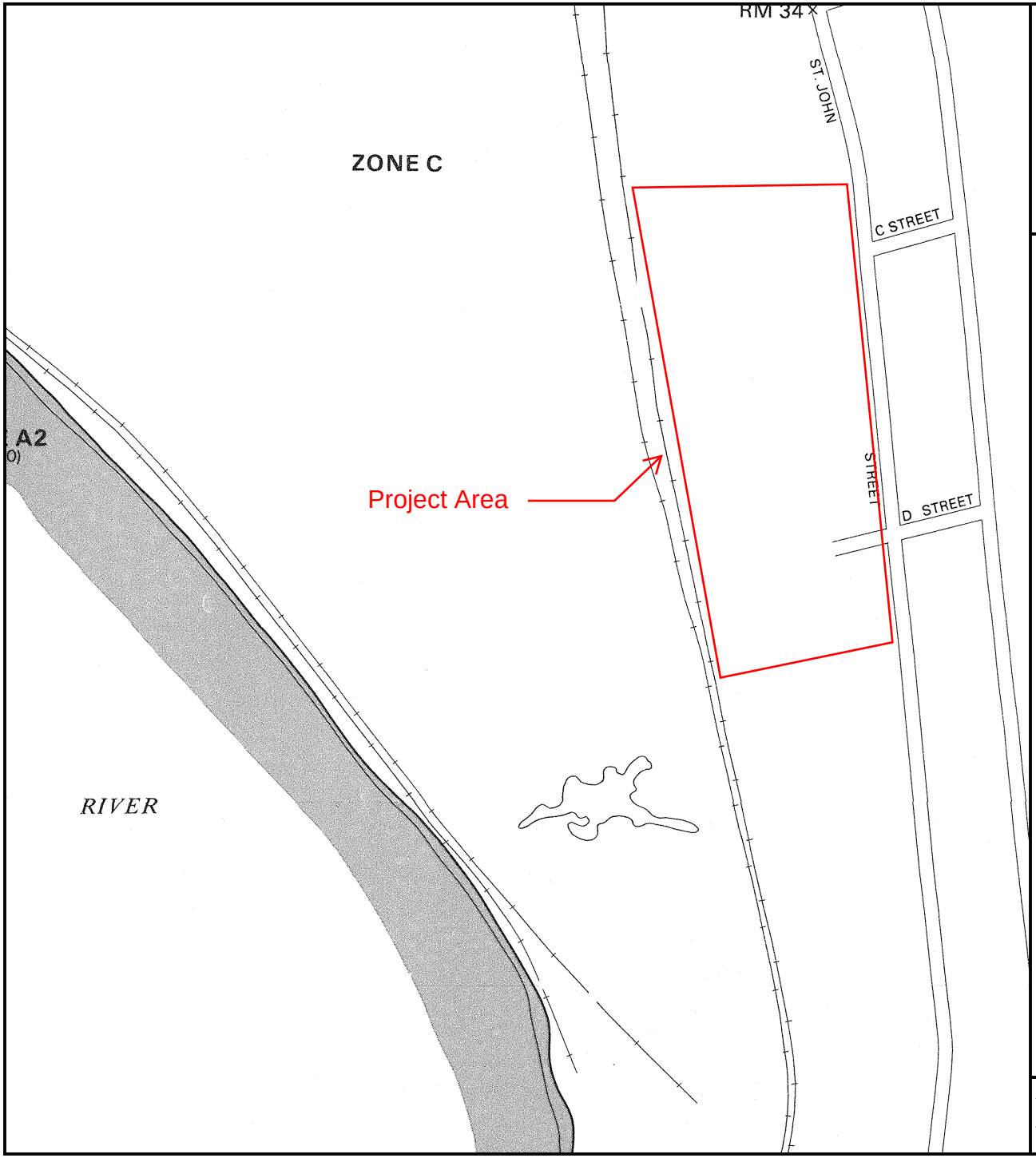
FIGURE 1 - SITE LOCATION MAP

WOODARD &CURRAN

Project #: 0231158.00
Map Created: January 2018

Figure Exported: 1/26/2018 By: alebel Using: \\woodardcurran.net\shared\Projects\0231158.00 Maine Med Ctr - Parking Garage\wip\GIS\Project Files\Figure 1 Site Location.mxd

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:** ESRI, National Geographic



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND, MAINE
CUMBERLAND COUNTY

PANEL 13 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0013 B

EFFECTIVE DATE:
JULY 17, 1986

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Standard to be Waived: Cite Ordinance or Technical Manual Standard	**Cite Standard Language:** Cite specific language of applicable Ordinance or Technical Manual Standard	**Waiver Being Sought:** Describe waiver being sought. Ex. – We are requesting a two-way parking lot drive aisle width of 20' feet.	**Justification for Waiver:** Address specific waiver criteria, if applicable, and document reasons for the waiver request.

Winton Scott Architects
Portland, Maine
www.wintonscott.com

Route 295 View

Before

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Route 295 View

After

MMC St. John Street Parking Garage

Winton Scott Architects
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www.wintonscott.com

Veterans Bridge View

Before

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Veterans Bridge View

After

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Veterans Bridge Close View

Before

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Veterans Bridge Close View

After

MMC St. John Street Parking Garage

Winton Scott Architects
Portland, Maine

michael boucher landscape architects
Freeport, Maine

St. John Street View

Before

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

View from St. John Street

Winton Scott Architects
Portland, Maine

michael boucher landscape architects
Freeport, Maine

St. John Street View

After

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

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michael boucher landscape architects
Freeport, Maine

North View

Before

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

Winton Scott Architects
Portland, Maine

michael boucher landscape architects
Freeport, Maine

North View

After

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

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A Street View

Before

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A Street View

After

MMC St. John Street Parking Garage

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Shopping Center View

Before

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Shopping Center View

After

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

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View At 222 St. John

Before

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View At 222 St. John

After

MMC St. John Street Parking Garage

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View From South

Before

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View From South

After

MMC St. John Street Parking Garage

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Western Prom View

Before

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

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Western Prom View

After

MMC St. John Street Parking Garage

Level III Site Plan Review Application 6 | 22 | 18

Winton Scott Architects
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View From Edge of Promenade

Before

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View From Edge of Promenade

After

MMC St. John Street Parking Garage

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View From TB Reed Circle

Before

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View From TB Reed Circle

After

MMC St. John Street Parking Garage

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LIGHTING & ELECTRICAL ENGINEERING
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PROPOSED SITE LIGHTING

Requirements for site lighting are addressed by the City of Portland in two documents: The City of Portland, Maine - Code of Ordinances, and the City of Portland - Technical Manual. Listed below are the issues pertaining to the proposed IMT site lighting as relates to the two city documents.

The City of Portland, Maine - Code of Ordinances
Chapter 14 – Land Use
Article III Zoning
Division 16.1 Institutional Overlay Zone
14-280 (a) Purpose

Any use conducted by an Eligible Institution and any construction by an Eligible Institution in an Institutional Overlay Zone shall be consistent with an Institutional Development Plan (IDP) approved by the planning Board in accordance with this ordinance..

RESPONSE: The proposed MMC St. John Garage site lighting has been designed to be in conformance with the approved IDP.

The City of Portland - Maine Code of Ordinances
Chapter 14 – Land Use
Article V Site Plan
14-526.6 Exterior Lighting
a. Site Lighting
(i) All exterior site lighting, including lighting of building entrances, shall be full cut-off with no light emitted above the horizontal plane or spilled onto adjacent properties and streets. Illumination levels shall be adequate but not excessive for safety, comfort and convenience of occupants and users of the site, and shall conform to applicable standards of Section 12 of the Technical Manual.

RESPONSE: All of the exterior site lighting has been selected to utilize full-cut-off optics with no light emitted above the horizontal plane. The *Illuminating Engineering Society of North America* (*IESNA*) classifies exterior luminaires according to their potential for producing uplight in the publication *IESNA* TM-15-11. The rating system is a numeric index that ranges from zero (no uplight) to five (greater than 5000 lumens direct upward). All of the proposed site lighting luminaires are classified as having a zero uplight rating.

14-526.6 Exterior Lighting
a. Site Lighting
(ii) For major or minor site plans within or abutting a residential use or zone where light from the proposed development may adversely impact adjacent residential properties, exterior lighting shall employ house-side shielding.

RESPONSE: See the Response included on page 4 for 12.2 Standards, 12.2.5 Light Trespass.

14-526.6 Exterior Lighting

c. Street Lighting

(i) Municipal street lighting shall be adequate for the safety and comfort of pedestrians and motorists and, where applicable, shall conform to specific lighting district requirements, as specified in Section 10 of the Technical Manual.

RESPONSE: At the garage entrance and exit drives that are adjacent to the intersections of St. John Street and D Street, and St. John Street and C Street, additional 66-watt, LED street lights to be leased from the *Central Maine Power Company* have been added to utility poles to meet the *IESNA* recommendations published in *IESNA* RP-8-14 Roadway Lighting. For intersections that are classified as connecting Collector streets and Local streets, and that have a high potential of pedestrian activity, the *IESNA* recommends an average of 2.1 footcandles and an average-to-minimum illuminance uniformity of 4-to-1, or better. The illuminance at the improved lighting at the intersections at St. John Street and D Street has been calculated to be as follows:

Minimum:	0.7 footcandles	Maximum:	4.0 footcandles
Average:	2.3 footcandles	Average-to-Minimum Uniformity:	3.3-to-1

The illuminance at the improved lighting at the intersection at St. John Street and C Street has been calculated to be as follows:

Minimum:	0.7 footcandles	Maximum:	4.0 footcandles
Average:	2.4 footcandles	Average-to-Minimum Uniformity:	3.5-to-1

A new sidewalk is proposed along D Street between St. John Street and Valley Street. The *American Association of State Highway and Transportation Officials* (*AASHTO*) recommends illuminance levels for streets in Roadway Lighting Guide-1984. The recommended standard for D Street, which is classified as a Local/Commercial street, is an average of 0.8 footcandles, and an average-to minimum uniformity of 6-to-1, or better. Additional 44-watt, LED street lights to be leased from the *Central Maine Power Company* have been added to utility poles to meet the *AASHTO* recommendations. The illuminance at the improved lighting along D Street has been calculated to be as follows:

Minimum:	0.3 footcandles	Maximum:	2.4 footcandles
Average:	1.8 footcandles	Average-to-Minimum Uniformity:	4.2-to-1

The *IESNA* recommends illuminance levels for sidewalks that are immediately adjacent to streets in the publication *IESNA* RP-8-14. The recommended standard for a sidewalk with a medium classification of pedestrian conflict is 0.5 footcandles average, with an average-to-minimum uniformity of 4.0-to-1, or better. The illuminance at the new D Street sidewalk has been calculated to be as follows:

Minimum:	0.3 footcandles	Maximum:	0.7 footcandles
Average:	0.5 footcandles	Average-to-Minimum Uniformity:	1.2-to-1

New crosswalks are proposed at the intersection of D Street and Valley Street, and at the intersection of C Street and Valley Street. The *IESNA* recommends an average of 1.4 footcandles and an average-to-minimum illuminance uniformity of 6-to-1, or better, for intersections that are classified as connecting two Local streets, and that have a medium potential of pedestrian. Additional 66-watt, LED street lights to be leased from the *Central Maine Power Company* have been added to utility poles to meet the *IESNA* recommendations. The illuminance at the D Street and Valley Street intersection has been calculated to be as follows:

Minimum:	0.4 footcandles	Maximum:	4.3 footcandles
Average:	2.1 footcandles	Average-to-Minimum Uniformity:	5.2-to-1

The illuminance at the C Street and Valley Street intersection has been calculated to be as follows:

Minimum:	0.6 footcandles	Maximum:	4.9 footcandles
Average:	2.9 footcandles	Average-to-Minimum Uniformity:	4.9-to-1

The City of Portland Technical Manual
Section 12 Site Lighting Standards
12.2 Standards

12.2.1. Unless otherwise specified below, exterior lighting shall conform to the recommendations put forth in Lighting for Exterior Environments RP-33-99, or its successor, published by the Illuminating Engineering Society of North America (IESNA). Proposed uses that demonstrate a need to exceed the specific site lighting limits shown below for safe and reasonable exercise of the proposed use must provide a professionally produced lighting plan which adheres to the current Illuminating Engineering Society of North America (IESNA) recommendations for the proposed use.

RESPONSE: The proposed lighting meets the recommendations of *IESNA* RP-33-99.

Section 12 Site Lighting Standards
12.2 Standards

12.2.2. Uniformity: As measured in foot candles at grade, maximum-to-minimum illumination levels shall not exceed a ratio of twenty (20) to one (1.).

RESPONSE: The north parking lot has a calculated maximum-to-minimum uniformity of 4.3-to-1. The top deck of the parking garage has a calculated maximum-to-minimum uniformity of 10.7-to-1.

12.2 Standards

12.2.3. Illumination Levels:

Minimum	*0.2 footcandles (fc*
Maximum	*5.0 footcandles (fc)*
Average	*1.25 footcandles (fc)*

RESPONSE: *IESNA* RP-20-14 Lighting for Parking Facilities recommendations for surface parking lots a minimum illuminance level at grade of 0.5 footcandles, an average-to-minimum uniformity of 4-to-1, or better, and a maximum-to-minimum uniformity of 15-to-1, or better. The illuminance at the north parking lot has been calculated to be as follows:

Minimum: 0.6 footcandles Maximum: 2.6 footcandles
Average: 1.9 footcandles

The illuminance at the top deck of the parking garage has been calculated to be as follows:

Minimum: 0.6 footcandles Maximum: 6.4 footcandles
Average: 2.4 footcandles

The lighting poles at the roof deck have been limited in height to 18 feet, and are located only within the center zone of the parking deck to minimize the visual impact as might be viewed off-site. This design restriction requires a somewhat higher maximum illuminance level at center of the roof deck than is listed in the City's design criteria, however, the design meets all of the *IESNA* lighting recommendations.

12.2 Standards

12.2.4. Wattage: No fixture shall exceed 250 watts, except in industrial areas.

RESPONSE: The maximum wattage of any of the proposed luminaires is 129.5 watts.

12.2 Standards

12.2.5. Light Trespass: The maximum illumination level at a property line shall not exceed 0.1 foot candle, as measured at grade, except where abutting industrial, or other non-sensitive uses. All residential uses and natural resource protection areas are to be considered sensitive to light trespass. In certain instances where a proposed development is adjacent to a sensitive use, house-side shielding may be necessary to comply with this standard.

RESPONSE: The only residential property that abuts the project are the residences at 210 and 214/214 St. John Street. The proposed lighting has been selected and located to avoid any point of illuminance at grade across the residential property lines that exceeds 0.1 footcandle.

12.2 Standards

12.2.6. Luminaire Types: All fixtures, including pole mounted and wall mounted luminaires, shall be a "cut-off" type where lenses, refractors or lamp sources do not extend below the surface of the fixture housing and no direct light shall be directed at or above the horizontal plane. Sites which are part of an historic district or require specific decorative lighting fixtures as means to achieve compatibility within an existing architectural context may propose non-cutoff fixtures providing that they have built in reflectors to mitigate uplighting and that photometrics fall within IESNA guidelines. Low pressure sodium bulbs are prohibited.

RESPONSE: See the Response included on page 1 for Chapter 14 – Land use, Article V Site Plan, 14-526.6 Exterior Lighting, (a) Site Lighting. All proposed luminaires are classified as having "cut-off" optical distribution with no light being emitted above the horizontal plane..

12.2 Standards

12.2.7. Fixture Height: Fixtures shall be mounted at the lowest height necessary with no fixture height to exceed twenty (20) feet above grade, except in sites proposed for large industrial and/or commercial uses, where the fixture height shall not exceed thirty (30) feet above grade. For the purposes of this standard only, a large industrial and/or commercial use is defined to have greater than fifty thousand (50,000) gross square feet of building space.

RESPONSE: The luminaire mounting height at the lighting poles in the north parking lot is 20 feet. The luminaire mounting height at the lighting poles at the top deck of the parking garage is 18 feet.

12.2 Standards

12.2.8. Lighting Curfew: For non-residential uses, lighting in vehicle parking areas containing twenty (20) or more parking spaces shall be reduced to 50% of permitted levels from one hour after the business closing to one hour before business opening. If lighting levels are already below 50% of permitted levels, no curfew adjustment is required. Motion sensor activated lighting shall be permitted during closed hours to activate additional lighting above the 50%permitted, for the purposes of public safety.

RESPONSE: The parking garage will be in continuous use (at all hours), and therefore, reducing lighting levels after business closing is not applicable.

ADDITIONAL COMMENT

It is recognized that there are locations throughout the *IMb Industrial Zone* surrounding the garage project (beyond St. John Street) where existing street and sidewalk lighting do not meet the current *IESNA* lighting standards. As part of the scope of this project, off-site lighting improvements have been limited to where physical street/sidewalk improvements are being undertaken.

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MMC St. John Street Parking Garage

Portland, Maine

June 22, 2018

PROPOSED SITE LIGHTING LUMINAIRES AND LIGHTING POLES

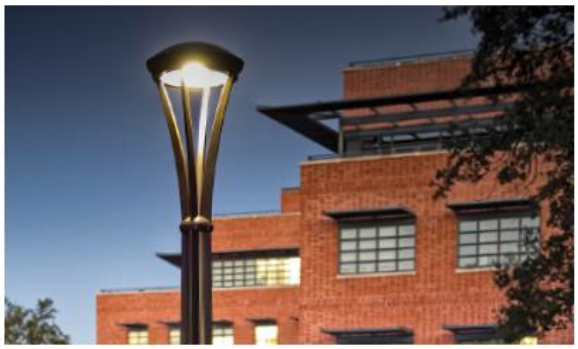
TYPE S1 & S1a:	12-FOOT TALL POST LIGHTS
TYPE S4:	WALL MOUNTED LIGHTS ABOVE WALKWAY INSTALLED WITH BOTTOM OF LUMINAIRE AT 10 FEET ABOVE GRADE
TYPE S5:	LIGHTS MOUNTED ON UNDERSIDE OF FRONT CANOPY
TYPE S6 & 6a:	WALL MOUNTED SECURITY LIGHTS INSTALLED WITH BOTTOM OF LUMINAIRE AT 10 FEET ABOVE GRADE
TYPE S7:	WALL MOUNTED LIGHTS ABOVE GARAGE ENTRANCE AND EXIT INSTALLED WITH BOTTOM OF LUMINAIRE AT 24 FEET ABOVE GRADE
TYPE S8, S9 & 9a	20 FOOT TALL PARKING LOT LIGHTING POLES
TYPE S10	18 FOOT TALL TOP GARAGE DECK LIGHTING POLES
TYPE G1:	GARAGE INSIDE LIGHTS.

TYPES S1 and S1a

landscapeforms®

ALCOTT

Product Data Sheet



The Alcott pedestrian light is a contemporary interpretation of a traditional lamppost. Its gently curved posts are topped by a domed energy-efficient LED luminaire sealed with thermoformed lens. Proprietary AWEN™ optics combined with multiple aiming angles provide directional lighting, reducing light pollution and wasted energy.

General Description

- Offered in 3 standard mounting heights (12', 14', and 16')
- Asymmetrical and symmetrical distribution types available
- Mounting template and anchor hardware included
- Alcott ships completely assembled and ready for installation
- Zero up-light, International Dark-Sky approved
- UL Listed, suitable for wet locations

Electrical

Surge protected 100V-277V 50/60 Hz, Class 2 dimmable driver mounted within integrated cast aluminum base cabinet. LED cartridge with weatherproof quick-disconnect provides ease of serviceability. Alcott ships prewired and fully assembled.

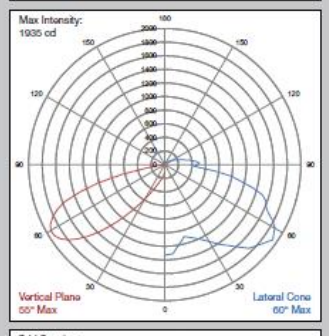
Alcott Type 3

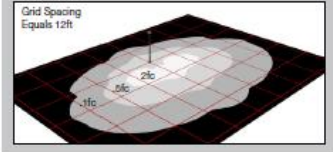
Type 3 Distribution
Structure: Housing, LED cartridge and cabinet are cast aluminum, pole is aluminum extrusion.
Lamp: 48 Cree XP-E2 LEDs
CCT: 3000K, 3500K, 4000K
L70: >100,000 hrs
Drive Current: 350mA
Optic: AWEN™ Optic
Lens: Diffused Acrylite®
Power Supply: 100V-277V
LED Driver: TRP PLED-75W
Dimmable: 0-10V
BUG Rating: B0 U0 G1
IP Rating: IP66 for LED Cartridge

Alcott Type 5

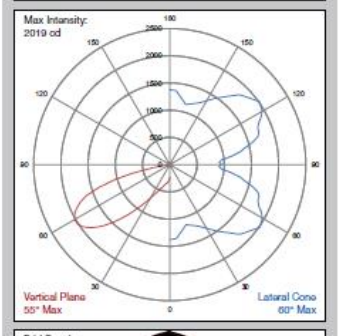
Type 5 Distribution
Structure: Housing, LED cartridge and cabinet are cast aluminum, pole is aluminum extrusion.
Lamp: 96 Cree XP-E2 LEDs
CCT: 3000K, 3500K, 4000K
L70: >100,000 hrs
Drive Current: 350mA
Optic: AWEN™ Optic
Lens: Diffused Acrylite®
Power Supply: 100V-277V
LED Driver: (2) TRP PLED-75W
Dimmable: 0-10V
BUG Rating: B3 U0 G1
IP Rating: IP66 for LED Cartridge

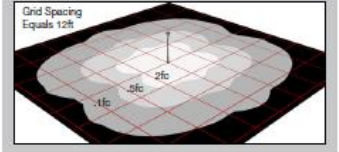
Alcott Type 3





Alcott Type 5





Type S1: Alcott Type 3
Type S1a: Alcott Type 5

TYPES S1 and S1a

Finish

Pangard II®, offered exclusively by Landscape Forms, is a 19 step program of cleaning, priming, and powdercoating that resists rusting, chipping, peeling and fading to produce the finest metal finish available for site furniture and outdoor lighting. In addition, Pangard II® contains no heavy metals and is free of Hazardous Air Pollutants.

Product	Lamp	Drive Current	Color Temp.	Input Voltage	Mounting
AC Alcott	048L3 (48 LED, Type 3) --- 096L5 (96 LED, Type 5)	035F (350 mA)	40K (4000K) 35K (3500K) 30K (3000K)	UV1 (100-277VAC)	12 (144in) 14 (168in) 16 (192in)

TYPE S4

Luminaire Led

	A	B	C
AEL 12	20.79	5.40	3.60

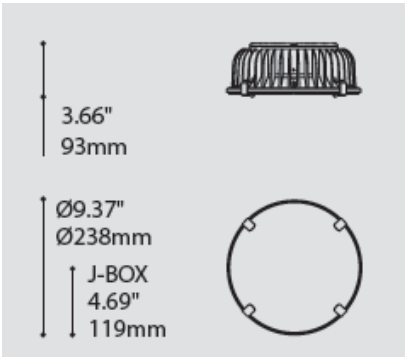
Description	The Architectural Egress Luminaire combines a unique, patented design shaped with high performance, full cut-off optics to achieve completely unobtrusive illumination of a space or path of egress. When mounted over a doorway, the fixture is perceived as an element of the building structure and, additionally, provides water protection in the form of a drip cap over the doorway. Multiple lengths are available to match a given door opening and our unique quick mount system facilitates installation and maintenance.
Housing	Marine grade heat treated extruded aluminum. Chemically primed and finished with robotically applied polyester powder coat.
Wall Mount	Marine grade heat treated extruded aluminum. Chemically primed and finished with robotically applied polyester powder coat. Designed to provide quick mounting to housing and secured with (2) captive stainless steel TORX® head screws.
Lens Frame	Marine grade heat treated extruded aluminum, clear anodized. Secured to fixture via integral concealed hinge and (3) captive stainless steel TORX® head screws.
Lens	UV stabilized diffused extruded polycarbonate.
End Caps	Die-cast marine grade aluminum continuously welded to housing. All welds ground smooth.
Reflector	Electrostatically brightened anodized aluminum PVD coated and absolutely color-free of iridescence. Shaped to provide full cutoff, LED point dispersion and maximum efficiency.
Drivers	Constant current drivers at 350mA. High output version utilizes 700mA.
LED	Samsung LM561B+ Series @ 3000K, 3500K, 4000K, or 5000K and 82 CRI wired in parallel-series. L_{70} projected life of 130,000 hours at 50°C. Tested in accordance with LM-80. Ten year warranty on LED boards against operational defects.
Gaskets	Closed cell self-adhesive neoprene to provide watertight seal between fixture and wall and between fixture and lens frame.

SERIES	LED	CCT	VOLTS	LENS	COLOR
				DP	
AEL 12	12” - 10W	3000K	120-277	DP	BKH
AEL 24	24” - 10W	3500K	347		BZH
AEL 36	24” - 20W	4000K			SVH

LUMINAIRES TO BE INSTALLED ON WALL WITH BOTTOM OF FIXTURE AT 10’-0” ABOVE GRADE

TYPE S5

EUREKA



DESIGN: Coupé is an industrial-looking shallow fixture that can be installed on low ceilings. Add a conical metal shade for a modern look and you have the Turbo.

INSTALLATION: These fixtures are perfect for indoor surface mounted applications and are easy to install due to an integrated connection box. Also designed for outdoor projects, Coupé & Turbo can be used in wet locations.

LIGHT SOURCE: 13W or 26W LED Chip-on-board (COB) emitter. Electronic dimming available on all models.

STRUCTURE: Durable die cast aluminum enclosure with stainless steel spring clips. Turbo has an additional spun aluminum shade with exterior grade fine texture powder coat finish.

DIFFUSER: Compound lens structured around layers of diffusing and conical deglaring prismatic sheet PMMA.

CERTIFIED: CSA Listed to US and Canadian safety standards; 25°C ambient and wet-locations. IP64 rated

MODEL MODÈLE

4766-SIJ	COUPÉ

LIGHT SOURCE SOURCE LUMINEUSE

(WATTAGE, LAMP TYPE, OTHER INFO)

LED.13		13W, LED
LED.26		26W, LED

COLOR TEMPERATURE TEMPÉRATURE DE COULEUR

30	3000K
35	3500K
40	4000K

VOLTAGE VOLTAGE

120V	120 VOLT
277V	277 VOLT

DIMMING OPTION OPTION DE GRADATION

DV	0-10V DIMMING (120-277V)
DP	PHASE DIMMING (120V ONLY)

LED DIMMING DRIVER IS STANDARD IN THESE PRODUCTS, PLEASE SPECIFY YOUR DIMMING TYPE.

HEATSINK FINISH FINI RADIATEUR

BLKA	BLACK ANODISED

INTERIOR DIFFUSER FINISH FINI DIFFUSEUR INTÉRIEUR

CDP	CONICAL DEGLARING PRISM

LUMINAIRES TO BE INSTALLED ON UNDERSIDE OF CANOPY

TYPE S6

ONE4TWO™

WEB PIN™ 737

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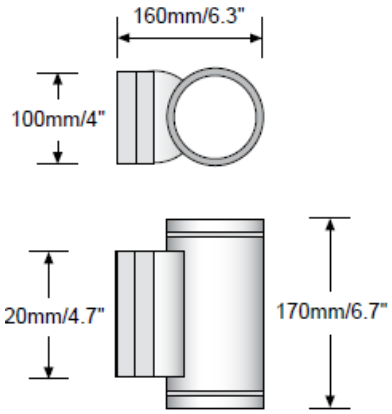

GENERAL SPECIFICATION

Housing: Die-cast and extruded aluminium.

External Screws: Stainless steel.

Lens: Clear glass.

Gaskets: One piece silicone.

Reflector: High purity aluminium, silver anodised. 14° and 40° reflectors may be adjusted to -12° from vertical.

Finish: Silver powder coated light gray or black coated as standard.

Drivers: HPF, electronic for 120-277V. Dimming 0-10V or Trailing edge 120V.

Minimum Starting Temperature: -20°C.

Weight: Maximum 8.8lb.

Approvals: ETL. Wet location, IP65.

Code:	Power:	*Delivered lms:	Distribution:
26 6033	2 x6W **LED**	932lm	10°up + 35° down
26 6013	2 x 6W **LED**	932lm	10°up + 10° down
26 6023	2 x 6W **LED**	932lm	35°up + 35° down
26 6113	6W **LED**	466lm	10°down
26 6123	6W **LED**	466lm	35° down

B SPECIFY CCT

30 3000K (min 80 CRI)

40 4000K (min 80 CRI)

C SPECIFY FINISH

BL Black

GR Light Gray

LUMINAIRES TO BE INSTALLED ON WALL WITH BOTTOM OF FIXTURE AT 10’-0” ABOVE GRADE

TYPE S6a

ONE4TWO™

WEB PIN™ 737

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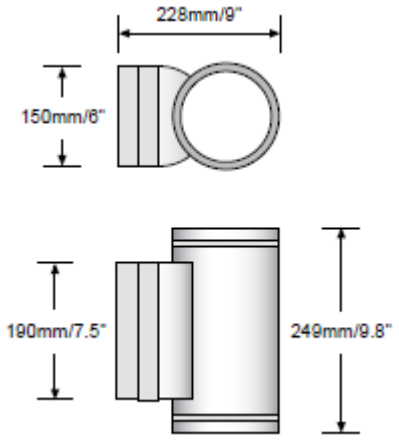


GENERAL SPECIFICATION

Housing: Die-cast and extruded aluminium.

External Screws: Stainless steel.

Lens: Clear glass.

Gaskets: One piece silicone.

Reflector: High purity aluminium, silver anodised. 14° and 40° reflectors may be adjusted to -12° from vertical.

Finish: Silver powder coated light gray or black coated as standard.

Drivers: HPF, electronic for 120-277V. Dimming 0-10V or Trailing edge 120V.

Minimum Starting Temperature: -20°C.

Weight: Maximum 8.8lb.

Approvals: ETL. Wet location, IP65.

Code:	Power:	*Delivered lms:	Distribution:
26 7033	2 x 14W LED	2098	10°up + 35° down
26 7013	2 x 14W LED	2098	10°up + 10° down
26 7023	2 x 14W LED	2098	35°up + 35° down
26 7113	14W LED	1049	10°down
26 7123	14W LED	1049	35° down

B SPECIFY CCT

30 3000K (min 80 CRI)
40 4000K (min 80 CRI)

C SPECIFY FINISH

BL Black
GR Light Gray

LUMINAIRES TO BE INSTALLED ON WALL WITH BOTTOM OF FIXTURE AT 10’-0” ABOVE GRADE

TYPE S7

HUBBELL Outdoor Lighting

SPECIFICATIONS

Intended Use:
Slender wallpack/floodlight available in two sizes for a variety of applications including building perimeter/security lighting, entrances, stairways, loading docks or facades for schools, apartments or commercial buildings.

Construction:
Rugged die-cast aluminum housing with corrosion resistant powder coat finish both protects and provides architectural appearance. Heat dissipating fins provide superior thermal performance extending the life of the electronic components.

Electrical:
- 120-277V, 50/60Hz electronic drivers
- 347V and 480V available in larger SG2 housing
- 10KA surge protection included

LED(s) Optics, CCT:
- 3000K, 4000K and 5000K CCT nominal with 70 CRI
- Smaller SG1 housing has 2 LEDs, larger SG2 housing has 3 LEDS, see page 2 for electrical and photometric data

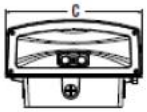
Lenses:
- Impact resistant tempered glass offers zero uplight
- Comfort lens available as an option or accessory to reduce glare (7-10% lumen reduction) and provide better uniformity

Options/Controls
- Button photocontrol for dusk to dawn energy savings. Stock versions include 120V-277V PC with a cover which provides a choice to engage photocontrol or not. PC is installed in top hub.
- Occupancy sensor available for on/off and dimming control in larger SG2 housing.
- SiteSync™ wireless lighting control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution See ordering information or visit www.hubbelllighting.com/sitesync for more details.
- Battery backup options available in larger SG2 housing rated for either 0˚ C or -30˚ C. Performance exceeds NEC requirement providing 1 fc minimum over 10'x10' at 11' mounting height
- Diffused comfort lens provides glare control and improved uniformity. Available as an option or accessory

Listings
- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at www.designlights.org
- Listed to UL1598 for use in wet location, listed for -40C to 40C applications
- IDA approved with zero uplight for 3000K and warmer CCTs
- IP65

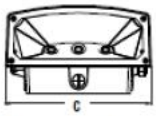
DIMENSIONS

SG1



A	B	C	Weight
4.19" 106.5 mm	7.80" 198 mm	6.61" 168 mm	4.4 lbs. 2 kg

SG2



A	B	C	Weight
5.80" 147 mm	11.14" 283 mm	9.52" 242 mm	11 lbs. 5 kg

FAMILY	CCT/CRI	DISTRIBUTION	VOLTAGE	COLOR/FINISH
SG1-20 Size 1, 20w	3K7 3000K, 70 CRI	FT Fwd Throw	UNV 120V-277V	DB Textured Dark Bronze
SG1-30 Size 1, 30w	4K7 4000K, 70 CRI		120[1] 120V	BL Textured Black
SG2-50 Size 2, 50w	5K7 5000K, 70 CRI		277[1] 277V	WH Textured White
SG2-80 Size 2, 80w			UHV[1] 347V-480V	GYS Smooth Gray
				PS Smooth Plat. Silver
				CC Custom Color

LUMINAIRES TO BE INSTALLED ON WALL WITH BOTTOM OF FIXTURE AT 20'-0" ABOVE GRADE

TYPES S8, S9 & 9a

VIPER S SERIES

SMALL VIPER LUMINAIRE

Cat.#		BEACON design . performance . technology
Job	Type	Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

Electrical:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is ≥.90 at full load.
- All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL- 217F Notice 2.
- Dimming drivers are standard, but must contact factory to request wiring leads for purpose of external dimming controls.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is certified by UL for use at 600VAC at 90°C or higher.
- Plug disconnects are certified by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- The housing is designed for an optional twist lock photo control receptacle.
- Ambient operating temperature -40°C to 40°C
- Surge protection - 20KA.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on time of night (see www.beaconproducts.com/products/energeni).
- In addition, Viper can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit www.hubbelllighting.com/sitesync for more details.

Installation:

- Mounting options for horizontal armd, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- IFS polyester powder-coat electro-statically applied and thermocured.
- IFS finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Listings:

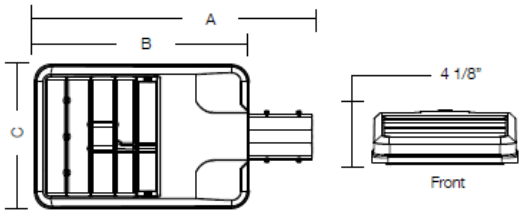
- DesignLights Consortium (DLC) qualified, consult DLC website for more details: http://www.designlights.org/QPL
- Listed to UL1598 and CSA22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 3G rated for ANSI C136.31 high vibration applications with SF2 mounting
- IDA approved

Warranty:

Five year limited warranty for more information visit:
www.hubbelllighting.com/resources/warranty

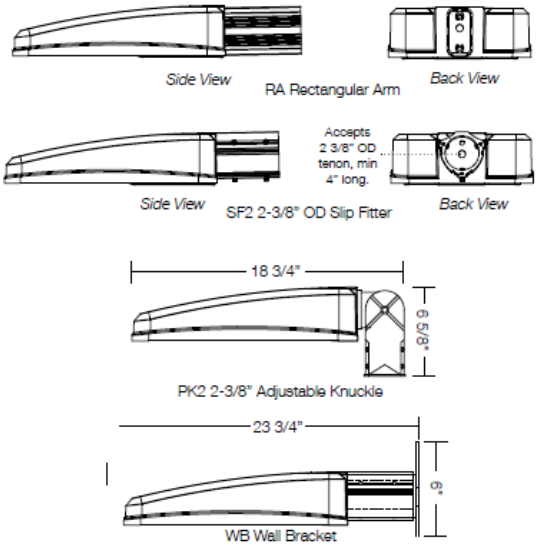
PRODUCT IMAGE(S)

DIMENSIONS



A	B	C	Weight:	EPA
22.75" (578 mm)	16.75" (425 mm)	11.25" (286 mm)	15.0 lbs (6.8 kg)	.67 ft²

MOUNTING OPTIONS



TYPES S8, S9 & 9a

SERIES
- VPS viper-small

ENGINE-WATTS
- 24NB-55 55W, LED array
- 30NB-70 70W, LED array
- 36NB-80 80W, LED array
- 48NB-110 110W, LED array
- 60NB-136 136W, LED array

LED COLOR
- 3K 3000K
- 4K 4000K
- 5K 5000K

OPTICS[4]
- T1 type I
- T2 type II
- T3 type III
- T4 type IV
- T5R type V, rectangular
- T5QM type V, square medium
- T5W type V, round wide
- FR front row auto optic

VOLTAGE
- UNV 120-277V
- 347V 347V
- 480V 480V

ELECTRICAL OPTIONS
- PCR-TL Twist lock receptacle with photo control
- PCR-SC Twist lock receptacle with short-ing cap
- PCRU Twist lock receptacle
- 2PF[7] dual power feed

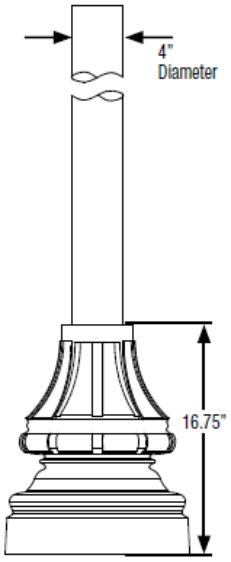
CONTROL OPTIONS
- GENI-XX[6] Energeni

HOUSE SIDE SHIELD OPTIONS
- HSS-90 house side shield 90°
- HSS-180 house side shield 180°
- BLC[3] backlight control

BIRD DETERRENT
- BSP bird spike

MOUNTING OPTIONS
- RA rectangular arm for round or square pole mount. RPA included.

FINISH
- BBT basic black textured
- BMT black matte textured
- WHT white textured
- MBT metallic bronze textured
- BZT bronze textured
- DBT dark bronze textured
- GYS gray smooth
- DPS dark platinum smooth
- GNT green textured
- MST metallic silver textured
- MTT metallic titanium textured
- OWI old world iron



APPLICATIONS

- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

CONSTRUCTION

- SHAFT: One-piece straight aluminum with fluted or smooth cross section; Extruded shafts of 6061-T6 aluminum in 1/8", 3/16", or 1/4" thickness. Decorative base of 356 cast aluminum.
- POLE CAP OR FINALS: Cap or decorative finials available for side mounted luminaires. Open top or tenons provided for post top mounted luminaires.
- HAND HOLE: Hand hole provided in cast base; Mounting provisions for grounding lug located behind cover
- ANCHOR BOLTS: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling

FINISH

- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint finish coat available in twelve standard colors; Custom colors available; RAL number preferable.

POLE HEIGHT = 20'-0"

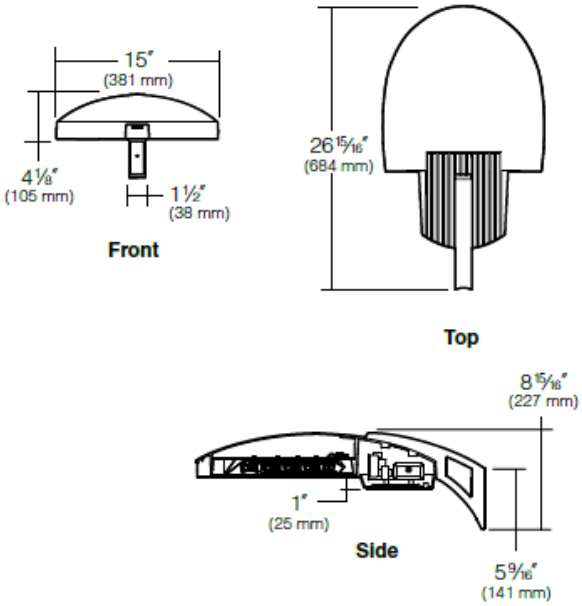
Catalog Number	Height		Nominal Shaft Dimensions	Wall Thickness	Bolt Circle (suggested)	Bolt Square	Base Plate Size	Anchor Bolt Size	Bolt Projection	Pole weight (lbs)
	Feet	Meters								
RSA-B-CENA-S-20-40-B	20	6.1	4" Round	0.188"	9.50"	6.72"	13-1/2" dia. X 16-3/4" Tall	5/8 x 24 x 3	3-1/4"	83

Type S8: TYPE T5QM OPTICAL DISTRIBUTION
Type S9: TYPE III OPTICAL DISTRIBUTION
Type S9a: TYPE II OPTICAL DISTRIBUTION

TYPE S10

WARP9® Small PicoEmitter® LED

KIM LIGHTING



Housing:

- One-piece die-cast, low copper (<0.6% Cu) aluminumalloy with integral cooling ribs over the optical chamber and electricalcompartment.
- Solid barrier wall separates optical and electrical compartments.
- Double-thick wall with gussets on the support-arm mounting end.
- Housing forms a half cylinder with 55° front face plane providing a recess to allow a flush single-latch detail.
- All hardware is stainless steel or electro-zinc plated steel.

Lens Frame:

- Integral hinges with stainless steel pins provide no-tool mounting and removal from housing.
- Single die-cast aluminum cam-latch provides positive locking and sealing of the optical chamber by a one-piece extruded and vulcanized silicone gasket to provide an IP66 rating for the optical module.
- Clear 3/8" thick tempered glass lens retained by eight steel clips with full silicone gasketing around the perimeter.

Optical Module:

- Precision, replaceable PicoEmitters are positioned to achieve directional control toward desired task.
- The entire EmitterDeck fastens to the housing as a one-piece module.
- Type I, II, III, IV, V, L (left), and R (right) standard distributions. Custom available.
- 3000K, 4000K, 5000K standard CCT. Amber and custom available.
- IP66 certified
- Die-cast, low copper aluminum heat sink modules provide thermal transfer at PCB level.
- Anodized aluminum carrier plate and heat sink modules.

Configuration			EPA
	1SA	1 Arm Side Mt.	.52
	2SB	2 Arm Side Mt.	1.0
	2SL	2 Arm Side Mt.	.82
	3ST	3 Arm Side Mt.	1.3
	3SY*	3 Arm Side Mt.	1.3
	4SC	4 Arm Side Mt.	1.5
	1W	Single Wall Mt.	n/a

Fixture

Housing	Distribution	Drive Current
WP9S Small, 60 LEDs	1 Type I	E35 350mA PicoEmitter
	2 Type II	
	3 Type III	
	4 Type IV	
	5 Type V	
	R Type R, Right	E70 700mA PicoEmitter

Electrical Module

Source	Color Temperature[2]	Voltages
60L 60 LEDs, 66W	2K[3] 580nm	120 120V
	3K 3000K	208 208V
	4K 4000K	240 240V
	5K 5000K	277 277V
		347[4] 347V
		480[4] 480V

Fixture Finish

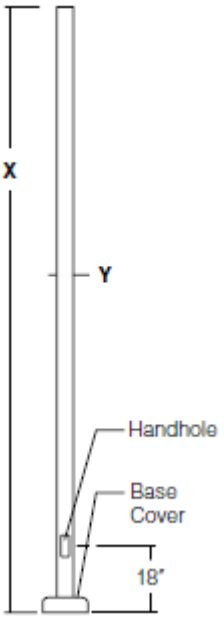
BL	Black
DB	Dark Bronze
GT	Graphite
LG	Light Gray
PS	Platinum Silver
TT	Titanium
WH	White

Photocell Options

A25-7[1]	7-pin Photocell Receptacle
A30	120V Button Photocell
A31	208V Button Photocell
A32	240V Button Photocell
A33	277V Button Photocell
A34	480V Button Photocell
A354	347V Button Photocell

TYPE S10

KIM LIGHTING



Pole Height	Pole Diameter	Bolt Circle Dia.	Anchor Bolt Projection	Anchor Bolts Size	Base Cover Size	Conduit Opening
8'-14'	4"	8½"	3¼"	¾" x 15" + 3"	11⅞"	3" dia.
8'-14'	5"	8½"	3¼"	¾" x 30" + 4"	11⅞"	3" dia.
10'-14'	3⅜"	7"	3⅛"	¾" x 15" + 3"	10⅛"	2½" dia.
12'	6"	10½"	3⅜"	¾" x 30" + 4"	11⅞"	3" dia.
14'	6"	10½"	3¼"	¾" x 30" + 4"	11⅞"	3" dia.
16'-20'	4"-5"	8½"	3¼"	¾" x 30" + 4"	11⅞"	3" dia.
16'-20'	6"	10½"	3⅜"	¾" x 30" + 4"	14"	5" dia.
25'-30'	6"	10½"	3⅜"	¾" x 30" + 4"	14"	5" dia.

19'-6"-Foot Pole Height on a Raised 6" Base

Pole Construction: Seamless round extruded aluminum tube of alloy 6061-T6, welded to top and bottom of aluminum base casting of alloy 356.

Base Cover: Base has a two-piece cast aluminum full cover of 319 alloy, secured by stainless steel screws.

Pole Cap: A flush-sided cast aluminum pole cap is provided for side arm mounted luminaires.

Handhole: 18" up from base, with a gasketed cover and ground lug. Poles with a 3⅜" O.D. include a handhole reinforcement casting welded in place.

Anchor Bolts: Four galvanized anchor bolts provided, complete with eight nuts, eight flat washers, and a presswood template.

Vibration Dampener: All poles 25' and above include an internally mounted, factory installed pendulum vibration dampener, with flush stainless steel socket head fasteners finished to match pole.

Strength: Poles will withstand wind loads as listed in chart (See page **2**) when luminaires are mounted per fixture installation instructions.

Finish: Super TGIC thermoset polyester powder coat paint applied over a titanated zirconium conversion coating. Standard colors are Black, Dark Bronze, Light Gray, Graphite Platinum Silver, Titanium and White. Custom colors are available.

Pole –

Pole Catalog Number	X	Y	Wind Map Steady Wind 85	90	100	110	120	130	140	150
☐ PRA20-4188	19.5'	4" x .188	5.33	4.37	3.74	2.48	1.52	0.91	0.63	0.42

TYPE G1
(GARAGE LUMINAIRE)

ENDURA SERIES WALL/BUILDING MOUNT	Cat.#	BEACON design . performance . technology
	Job / Type	Approvals

SPECIFICATIONS

Intended Use:
The Endura is a ceiling surface mounted or pendant mounted parking structure luminaire with a field replaceable LED light-engine & optical bezel system. Internal components are totally enclosed in a rain-tight and corrosion-resistant die cast aluminum housing. The Endura Luminaire is CSA listed and suitable for damp locations (wet location available on request).

Construction:
- Die cast aluminum two-piece housing
- Shape of the top housing is designed as a bird nesting deterrent
- Die cast main (thermal) housing provides direct-heat exchange between the LED light engine and the cool outdoor air by drawing heat through integral heat channels and out to the sculptured and functional luminaire surface.
- LED drivers are thermally isolated from the main housing, mechanically attached and heat- sinked to the top housing.
- Main housing is designed with heat dissipating fins for LED thermal management without the use of metallic screens, cages, or fans
- Main and top housings are designed to hinge open for easy mounting and easy access

LED/Optics:
- Endura luminaire is supplied with an Optical one piece cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and polycarbonate foam gasket ensures a weather-proof seal around each individual LED and allows the Endura luminaire to be rated for high-pressure hose down applications.
- Optical cartridge is secured to the extruded housing with fasteners and a heat pad to ensure thermal conductivity. The optics are held in place without the use of adhesives and the complete assemble is gasketed for high pressure hose down cleaning.
- Cartridge assembly is available in various lighting distributions using TIR designed Acrylic optical lenses over each LED.

Electrical:
- 120V through 277V, 50 Hz to 60 Hz.
- Endura comes standard with 70 CRI.
- Power factor is min 0.92 at full load.
- Optional 0 to 10 volt dimming drivers are available upon request.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher.
- Plug disconnects are listed by UL for use at 600 VAC, 15A or higher. 15A rating applies to primary (AC) side only.
- Surge protection - 20KA

Controls/Options:
- Endura is available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the wattage down to a factory preset level, reducing light level accordingly. When motion is detected, the luminaire returns to full wattage and full light output. Please contact Beacon Products if project requirements vary from the standard configurations.
- Available with Energeni for optional set dimming with simple delay, or timed dimming based on hours of operation or time of night (see Energeni product page for more details www.beaconproducts.com/products/energeni
- In addition, Endura can be specified with **SiteSync™** wireless control system for reduction in energy and maintenance cost while optimizing light quality 24/7. See ordering information or visit: www.hubbelllighting.com/sitesync/ for more details

Installation:
- Top housing is designed with various bolt patterns for mounting to a recessed, surface or rigid-pendant hung 4" junction box and rigid stem provided by others)
- After mounting the top housing to the junction box, the main housing is designed to hang and hinge closed after connecting the male and female quick connectors
- Mounting design permits a simple retrofit to existing parking structure luminaires that utilize surface mount or recessed junction boxes

Finish
- IFS polyester powder-coat electrostatically applied and thermocured.
- IFS finish consists of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, ovendry off, and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

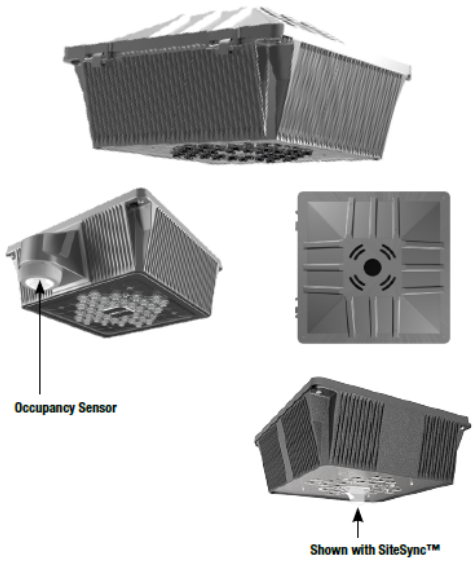
Listings:
- The luminaire shall bear a CSA label and be marked suitable for damp locations (standard). Luminaire may be specified for wet locations.
- This product is approved by the Florida Fish and Wildlife Conservation Commission. Separate spec available at: http://www.beaconproducts.com/products/endura

Warranty:
Five year limited warranty for more information visit: www.hubbelllighting.com/resources/warranty

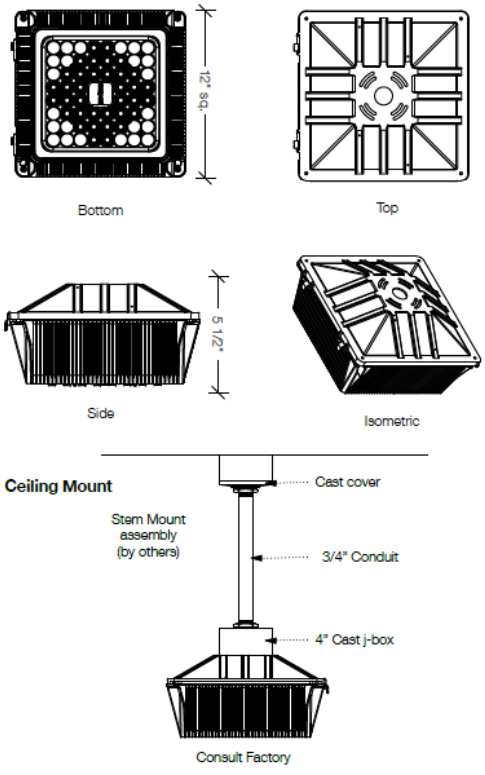
CERTIFICATIONS/LISTINGS

C SP US

PRODUCT IMAGE(S)



DIMENSIONS



TYPE G1
(GARAGE LUMINAIRE)

SERIES	
EDR	Endura

ENGINE-WATTS	
24NB-27	27 Watts - LED array
24NB-55	55 Watts - LED array
36NB-80	80 Watts - LED array
48NB-110	110 Watts - LED array

LED COLOR[11]	
3K	3000K
4K	4000K
5K	5000K (std.)

OPTICS	
T5R	Type V, rectangular
T5W	Type V, wide
T5QM	Type V, square medium
T5QN	Type V, square narrow
T5QW	Type V, square wide

HIGHER MOUNTING APPLICATIONS	
2X2	Type V Concentrated Spot
4X4	Type V Concentrated Narrow
5X5	Type V Concentrated Medium

VOLTAGE	
UNV	120-277V
347	347V
480	480V

CONTROL OPTIONS	
GENI-XX[5,9]	Energeni
SWP[6,9]	SiteSync Wireless Pre-Commission
SWPM[6,7,9]	SiteSync Wireless Pre-Commission w/ Motion Detection

ELECTRICAL OPTIONS	
PEC	Photocell, button
2PF[1,2,8]	Dual power feed
BPC[4,8]	Cold weather battery pack
BP[4,8]	0° C battery pack

SENSOR OPTIONS	
MOB[3,7,9]	Occupancy Sensor (33% or 50% dimming
OCS[9,10]	Occupancy Sensor (on/off)

FINISH	
BBT	basic black textured
BMT	black matte textured
WHT	white textured
MBT	metallic bronze textured
BZT	bronze textured
DBT	dark bronze textured
GYS	gray smooth
DPS	dark platinum smooth
GNT	green textured
MST	metallic silver textured
MTT	metallic titanium textured
OWI	old world iron
RAL	_____

LUMINAIRES THAT ARE IMMEDIATELY ADJACENT TO THE PERIMETER WALLS SHALL BE CONTROLLED WITH DAYLIGHT SENSORS

CMP Leased Street Lights

CENTRAL MAINE POWER

LED	19	2,000	High performance energy efficient solution for roadways, off ramps, residential streets and parking lots.
LED	26	3,000	
LED	44	4,500	
LED	66	6,700	
LED	85	10,000	
LED	166	15,000	

Outdoor Lighting

We have a wide variety of outdoor lighting ficture options to choose from. A CMP Key Account Manager can help you select the best lighting fixtures for your needs. Fixture installation and maintenance is included in monthly lease price.

Photo 1 – Uneven settlement along sidewalk.

Photo 2 - Uneven settlement along sidewalk.

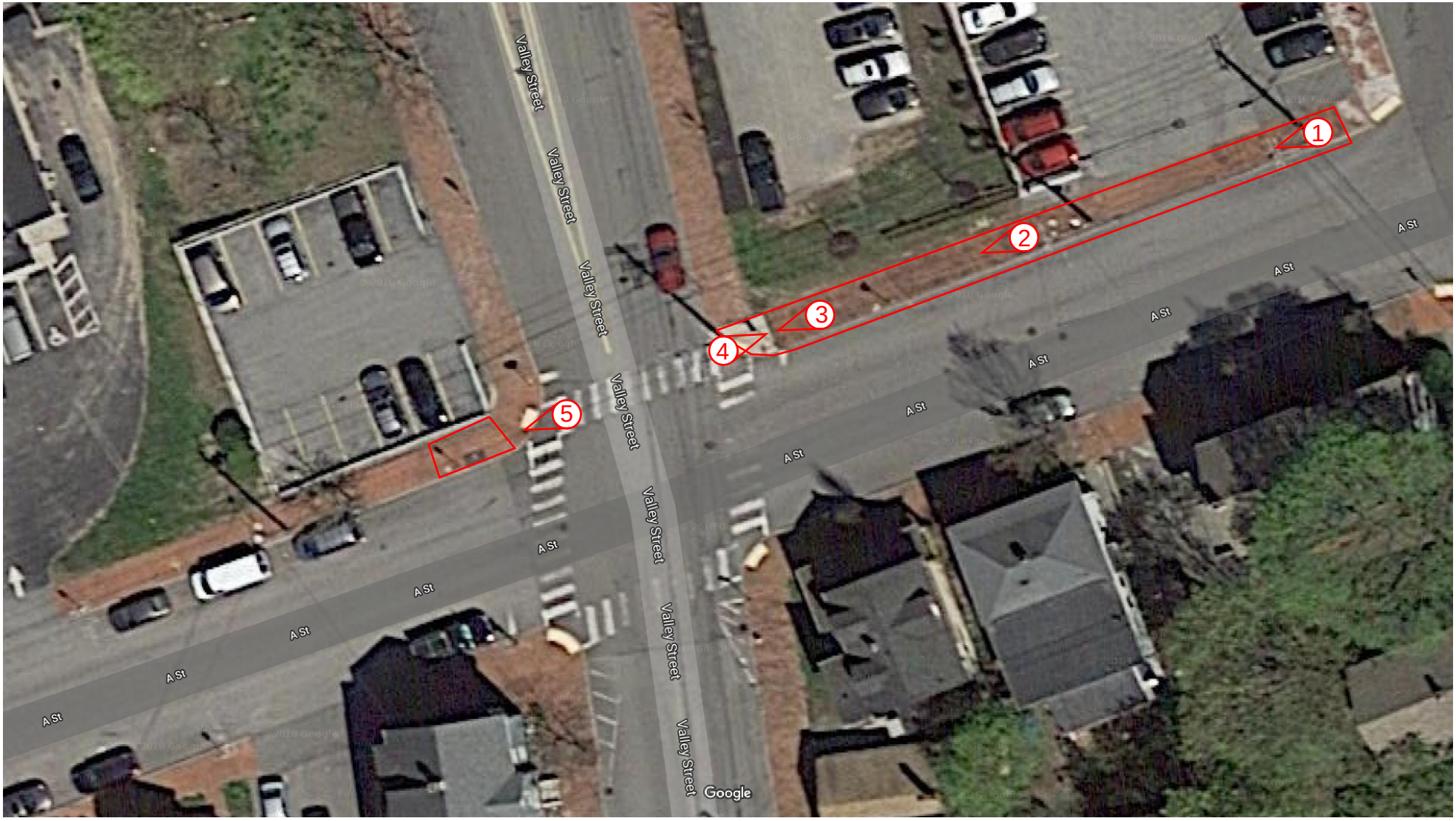
Photo 3 - Uneven settlement along sidewalk adjacent to ADA Ramp.

Photo 4 - Uneven settlement along sidewalk.

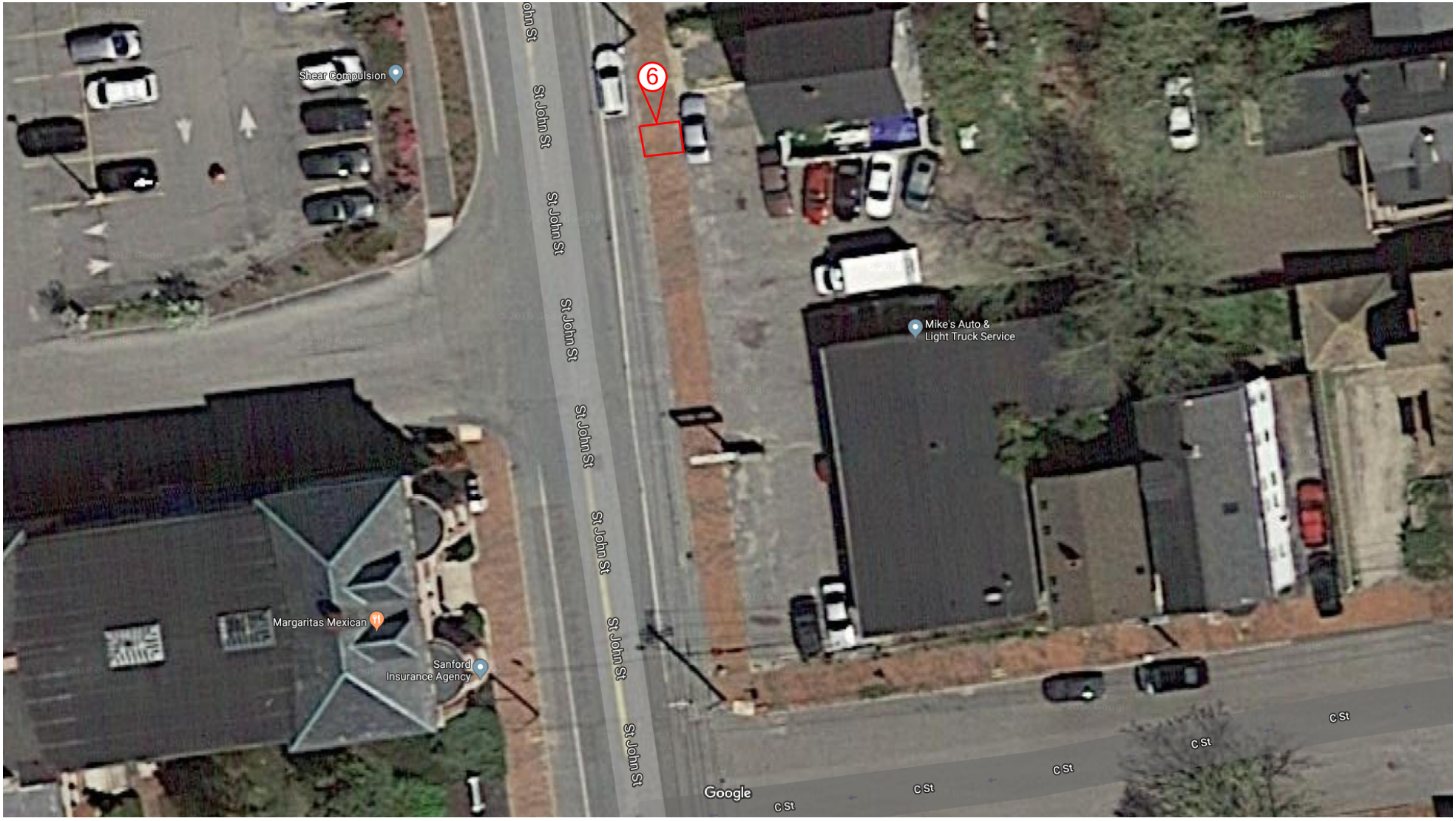
Photo 5 - Uneven settlement along sidewalk & unrepaired section from tree box removal.

Photo 6- Unrepaired sidewalk section from utility trenching.

Google Maps Gilman St



Google Maps Gilman St



4. EVIDENCE OF RIGHT, TITLE AND INTEREST

MMC has formalized property right and interest from East Brown Cow and associated holdings as well as The Fraternal Order of Eagles, respectively..

Cowcatcher LLC is splitting the 211,576 square foot existing lot associated with 222 St. John Street into two lots Cast Cow (131,351 square feet) and Cowcatcher (80,225 square feet). MMC has entered into a lease agreement with Cast Cow LLC for a land lease to construct the parking garage.

MMC has signed a purchase and sale agreement with the Fraternal Order of Eagles to purchase an approximately 25,000 square foot lot that is currently used for surface parking north of the Eagles building.

Documentation referencing MMC's Right, Title and Interest in these properties has been attached to this Section.

4.1 Attachments

- Right, Title, & Interest Documents

MEMORANDUM OF CONTRACT FOR SALE AND PURCHASE OF PROPERTY

This is a Memorandum of that unrecorded Contract for Sale and Purchase of Property ("Contract"), dated 6/7/18, between the Fraternal Order of Eagles #565, (hereinafter referred to as "Seller"), and Maine Medical Center, (hereinafter referred to as "Buyer") concerning the real property ("Property") described in Exhibit "A" attached hereto and made a part hereof by reference.

For good and valuable consideration, Seller has agreed to sell and Buyer has agreed to buy, the Property upon the terms and conditions set forth in the Contract.

This Memorandum is not a complete summary of the Contract. Provisions of this Memorandum shall not be used in interpreting the Contract. In the event of conflict between this Memorandum and the Contract, the Contract shall control.

This memorandum shall not be recorded.

IN WITNESS WHEREOF, the parties have executed this Memorandum on June 7, 2018.

SELLER: ~~FRATERNAL ORDER OF~~ EAGLES #565

BY: Patrick Thornton

ITS: Attorney

STATE OF MAINE
CUMBERLAND COUNTY

June 7, 2018

Personally appeared the above-named Patrick Thornton, duly authorized attorney ~~of~~ for the Fraternal Order of Eagles #565, and acknowledged the forgoing to be his free act and deed in that capacity and the free act and deed of the FOE #565.

Before me,

Sally Steinhagen

Notary Public/ Attorney at Law

Print Name: Sally Steinhagen

SALLY A. STEINHAGEN
Notary Public State of Maine
My Commission Expires May 3, 2020

[PURCHASER SIGNATURE PAGE TO FOLLOW]

PURCHASER: MAINE MEDICAL CENTER

BY: Lugene A. Inzana

ITS: LUGENE A. INZANA
CFO

STATE OF MAINE
CUMBERLAND COUNTY

June 7, 2018

Personally appeared the above-named Lugene Inzana, Sr VP and Chief Financial Officer of Maine Medical Center, and acknowledged the forgoing to be his free act and deed in that capacity and the free act and deed of the Maine Medical Center.

Sharon A. Hopwood
Notary

SHARON A. HOPWOOD
NOTARY PUBLIC
State of Maine
My Commission Expires
August 16, 2022

(2)

SHORT FORM QUITCLAIM DEED WITHOUT COVENANT

DLN # **1001840024222**

COWCATCHER LLC, a Maine limited liability company with a place of business in Portland, Maine ("Grantor"), FOR CONSIDERATION PAID, grants to **CASTE COW LLC**, a Maine limited liability company with a mailing address of 100 Commercial Street, Portland, Maine 04101 ("Grantee"), certain real property, together with any improvements thereon, located in the City of Portland, Cumberland County, Maine and more particularly described on Exhibit A attached hereto and made a part hereof.

Being a portion of the premises conveyed to the Grantor by Trustee's Deed from Craig G. Coffin, as successor to Daniel W. Hourihan, Trustee of the St. John Realty Trust dated September 10, 2008 and recorded in the Cumberland County Registry of Deeds in Book 26330, Page 105, and by Release Deed and Easement Deed, both from Union Station Limited Partnership dated January 12, 2009 and recorded in said Registry of Deeds in Book 26601, Pages 314 and 316 respectively.

IN WITNESS WHEREOF, Cowcatcher LLC has caused this instrument to be executed by J. Tim Soley, Manager of East Brown Cow Holdings II LLC, the Sole Member of Cowcatcher LLC thereunto duly authorized, this 4th day of April, 2018.

WITNESS:

Name: William M. Welch

COWCATCHER LLC

By: East Brown Cow Holdings II LLC
Its Sole Member

By: _____
J. Tim Soley
Its Manager

State of Maine
County of Cumberland, ss.

April 4, 2018

Personally appeared before me the above named J. Tim Soley, Manager of East Brown Cow Holdings II LLC, the Sole Member of Cowcatcher LLC, as aforesaid, and acknowledged the above instrument to be his free act and deed in his said capacity and the free act and deed of said Cowcatcher LLC.

Before me,

Name: William M. Welch
~~Notary Public~~ / Attorney at Law

EXHIBIT A

A certain lot or parcel of land with the buildings and improvements thereon, situated on the westerly side of Saint John Street, in the City of Portland, County of Cumberland and State of Maine more particularly described as follows:

Beginning at a point on the westerly sideline of St. John Street said point being the northeasterly corner of land now or formerly of Tim Q. Ly as described in deed book 17799 page 58;
Thence, S 82°23'43" W along land of said Ly 94.00 feet;

Thence, S 07°36'17" E along land of said Ly 49.99 feet to land now or formerly of Patricia P. Chase as described in deed book 9635, page 132;

Thence, S 82°23'43" W along land of said Chase 10.17 feet;

Thence, S 07°05'02" E along land of said Chase and land now or formerly of Fraternal Order of Eagles AERIE No. 565 as described in deed book 9214, page 114 a distance of 459.94 feet to land now or formerly Factors Financial FRC, Inc. as described in deed book 1778, page 288;

Thence, S 82°23'43" W along land of said Factors Financial FRC, Inc. 214.99 feet to land now or formerly of Portland Terminal Co.;

Thence, N 11°02'22" W along land of said Portland Terminal Co. 218.83 feet;

Thence, continuing along land of said Portland Terminal Co. northeasterly along a curve to the right having a radius of 5710.00 feet, an arc length of 323.02 feet, chord bearing of N 09°25'07" W and chord length of 322.998 feet to remaining land of Cowcatcher LLC;

Thence, N 80°00'00" E along remaining land of Cowcatcher LLC 207.13 feet;

Thence, N 82°23'43" E along remaining land of Cowcatcher LLC 139.73 feet to the westerly sideline of said St. John Street;

Thence, S 07°36'17" E along the westerly sideline of said St. John Street 40.00 feet to land of said Ly and the point of beginning containing 3.02 acres more or less. Being a portion of the property described in deed book 26330, page 105

Bearings are based on Maine State Plane Coordinates as provided by the City of Portland

The above described parcel of land is a portion of the property shown on "Boundary and Topographic Survey at 217, 218-238, 221 and 225 St. John Street, Portland, Maine made for Cowcatcher LLC" dated Nov. 16, 2016 by Owen Haskell, Inc.

This conveyance is made together with the benefit of a non-exclusive easement for pedestrian and motor vehicle ingress and egress to/from the above described parcel over the portion of Grantor's retained land more fully described below (the "Easement Area"). This easement shall be appurtenant to and benefit the above described parcel and the same shall run with the land. The Easement Area is more particularly bounded and described as follows:

Commencing at a point on the westerly sideline of St. John Street said point being the northeasterly corner of land now or formerly of Tim Q. Ly as described in deed book 17799 page 58;

Thence, N 07°36'17" W along the westerly sideline of said St. John Street 40.00 feet;

Thence, S 82°23'43" W along the remaining land of Cowcatcher LLC 139.73 feet;

Thence, S 80°00'00" W along the remaining land of Cowcatcher LLC 24.10 feet to the Point of Beginning;

Thence, from said Point of Beginning S 80°00'00" W along the remaining land of Cowcatcher LLC 26.00 feet;

Thence, N 09°36'17" W across the remaining land of Cowcatcher LLC 125.08 feet to land now or formerly of Union Station Plaza Limited Partnership as described in deed book 6813, page 250;

Thence, N 82°23'43" E along land of said Union Station Plaza Limited Partnership 26.02 feet;

Thence, S 09°36'17" E across the remaining land of Cowcatcher LLC 123.99 feet to the point of beginning containing 3,238 square feet more or less.

Bearings are based on Maine State Plane Coordinates as provided by The City of Portland.

This conveyance is also made together with the benefit of, and subject to the rights of Grantor and others, which are expressly reserved hereby, and the terms and conditions of, that certain easement granted by Fraternal Order of Eagles AERIE No. 565 to Daniel W. Hourihan as Trustee of the St. John Street Realty Trust by Easement Deed dated May 25, 1990 and recorded in the Cumberland County Registry of Deeds in Book 9214, Page 118.

This conveyance is also made together with the benefit of, and subject to the rights of Grantor, Union Station Limited Partnership and others, which are expressly reserved hereby, and the terms and conditions, of that certain easement granted by said Union Station Limited Partnership to Grantor by Easement Deed dated January 12, 2009 and recorded in the Cumberland County Registry of Deeds in Book 26601, Page 316.

This conveyance is also made together with the benefit of, and subject to the rights of Grantor, Union

Station Limited Partnership and others, which are expressly reserved hereby, and the terms and conditions, of that certain easement granted by Grantor to said Union Station Limited Partnership by Easement Deed dated January 12, 2009 and recorded in the Cumberland County Registry of Deeds in Book 26601, Page 321.

This conveyance is also made subject to an easement hereby reserved by Grantor for the benefit of and appurtenant to the portion of Grantor's retained land lying westerly of St. John Street, as described in that certain Trustee's Deed from Craig G. Coffin, as successor to Daniel W. Hourihan, Trustee of the St. John Realty Trust dated September 10, 2008 and recorded in the Cumberland County Registry of Deeds in Book 26330, Page 105, and in that certain Release Deed and that certain Easement Deed, both from Union Station Limited Partnership dated January 12, 2009 and recorded in said Registry of Deeds in Book 26601, Pages 314 and 316 respectively, for parking up to **400** vehicles, either in the parking structure contemplated to be constructed on the parcel conveyed hereby, or on the surface of said parcel until such time as said parking structure or other structure is constructed, together with the right of vehicular ingress and egress across the parcel conveyed hereby, from St. John Street directly and Grantor's retained land to and from such parking areas, whether located on the surface or within a parking structure, on the following terms and conditions:

1. The parking spaces shall be located as designated by Grantee.

2. Grantor shall have no right to exercise said ingress and egress rights or use any of said parking spaces so long as the ground lessee (or its successors or assigns) of Grantee (or its successors or assigns) for the entire property conveyed hereby, shall also be the lessee of Grantor for the entirety of Grantor's retained land.

3. Grantee shall have the right to use all such parking spaces for itself or its tenants or subtenants until such time as Grantor elects to use the same upon at least **30** days prior written notice to Grantee or its successors or assigns, and to Grantee's ground lessee (if applicable).

4. In the event Grantor elects to use any such parking spaces, Grantor agrees to reimburse Grantee at a zero triple net rate (i.e. the operating costs allocated to each such space, excluding capital expenses), monthly upon presentation of invoices for the same.

The Easement reserved herein is perpetual and shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto and shall burden the property conveyed hereby to Grantee and shall benefit and be appurtenant to the retained land of Grantor as described above and shall be construed as a real covenant running with the land enforceable by the parties at law and in equity.

Received
Recorded Register of Deeds
Apr 04,2018 11:34:08A
Cumberland County
Nancy A. Lane

MEMORANDUM OF LEASE

LANDLORD:	CASTE COW LLC, a Maine limited liability company with a mailing address of 100 Commercial Street Portland, Maine 04101.
TENANT:	MAINE MEDICAL CENTER, a Maine nonprofit corporation with a mailing address of 22 Bramhall Street, Portland, Maine 04102.
DESCRIPTION:	Premises in Portland, Maine and described in a deed recorded in the Cumberland County Registry of Deeds in Book 34754 Page 65.
DATE OF LEASE:	April 4, 2018
TERM:	**50 years** from the Commencement Date specified in the Lease. The parties shall record a Commencement Date certificate.
OPTION TO RENEW:	**Two** successive **25 year** options.
PURCHASE RIGHT:	Tenant's right to purchase is described in the Lease.

DATED: April 4, 2018

CASTE COW LLC

By: J. Tim Soley, Manager

STATE OF MAINE
Cumberland County

April 4, 2018

Personally appeared the above-named J. Tim Soley, Manager of Caste Cow LLC, and acknowledged the foregoing to be his free act and deed in that capacity and the free act and deed of the limited liability company.

Before me,

Notary Public/Attorney at Law
Print Name: William M. Welch, Esq

[TENANT SIGNATURE PAGE FOLLOWS]

TENANT SIGNATURE PAGE

Dated: April 4, 2018

MAINE MEDICAL CENTER

Richard W. Petersen
President & Chief Executive Officer

STATE OF MAINE
Cumberland County

April 4, 2018

Personally appeared the above-named Richard W. Petersen, President & Chief Executive Officer of Maine Medical Center, and acknowledged the foregoing to be his free act and deed in that capacity and the free act and deed of the corporation.

Before me,

~~Notary Public~~/Attorney at Law
Print Name: Benjamin Gunn

Received
Recorded Register of Deeds
Apr 04,2018 11:36:25A
Cumberland County
Nancy A. Lane

5. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS

In addition to the City's Level III Site Plan Review, the proposed project requires the following permits:

- Maine Construction General Permit (MCGP) from Maine Department of Environmental Protection prior to construction
- Federal Aviation Administration (FAA) Aeronautical Study for Determination of Hazard
    - Crane Height
    - Final Completed Building Height
- MaineDEP Stormwater Permit (reviewed under City's delegated review authority)

Permit approvals will be submitted to the City upon receipt.

6. ASSESSMENT OF ZONING

The proposed project is in alignment with the approved Maine Medical Center IDP and IOZ Regulatory Framework. The St. John Street Parking Garage is listed as a near-term project in the IDP. This project satisfies the MMC parking needs as outlined in the approved IDP Transportation Plan. As outlined in the approved IDP, the goals of this project are to provide for replacement parking to support demolition of the existing staff garage, to consolidate existing remote surface parking, to reduce parking by staff on surrounding neighborhood streets, and to accommodate expected staff growth. MMC desires to provide a reliable and complete parking solution for staff, and the proposed parking garage will meet this goal.

Compliance with the IOZ Regulatory Framework specified in the City of Portland Land Use Code (Chapter 14) and the MMC IDP is described in the following sections.

6.1 Applicability (14-282 (a))

The proposed development is within the boundaries of the MMC Institutional Overlay Zone (IOZ) specified in the IDP; therefore, the IOZ standards apply to this project.

6.2 Updates and Amendments (14-282 (b))

The proposed parking garage design is consistent with the MMC IDP approved by the Portland City Council in October 2017. No updates or amendments are proposed to the IDP as a part of this project.

6.3 Uses (14-282 (c))

Parking garages are listed as a use permitted by right within the IOZ.

6.4 Dimensional Requirements (14-282 (d))

The proposed free-standing garage will consist of approximately 2,400 parking spaces across nine levels, consisting of an at-grade level plus eight tiers, to meet parking demand and consolidation efforts as mentioned in the approved IDP. As discussed in the IDP, MMC used a multi-part methodology to determine the appropriate height profile for potential future development within the IOZ boundary, including project definition, urban design analysis, slope analysis and visioning.

- **Building Height.** The maximum height identified in the IOZ Regulatory Framework is 100 feet for the western portion of the project area including the existing MMC parking lot, and maximum height of 45 feet for the eastern portion abutting St. John Street.
    - The proposed parking garage is located within the 100-foot zone. The average building height of the proposed garage is 96.25 feet, considering an average proposed ground elevation of +28.25 MSL at the building edge and average roof elevation at the speed ramp high roof of 124.5 MSL.
- **Building Length.** The maximum length of the proposed parking garage is specified as 500 feet as measured roughly parallel to St John St in the IOZ standards.
    - The proposed length of the structure is approximately 482.5 feet.
- **Building Setbacks.** A minimum building setback of five feet is specified in three locations along the eastern border of the site, as shown on the Minimum Setbacks Map in the IOZ.

- The proposed building is located over five feet from property boundaries in these locations.

- **Transition Zone.** As identified on the Maximum Building Heights Figure in the IOZ, there are no transition zones associated with the project area.

6.5 Design (14-282 (e))

The IOZ Regulatory Framework specifies that new buildings shall adhere to the Design Guidelines set forth in Chapter 5 of the IDP and the site plans standards of the City of Portland. Compliance with City Site Plan Standards is discussed in Section 17 of this report. Consistency with the approved IDP Chapter 5 general guidelines for building design within the IOZ boundary is discussed below.

- **Contribution to Campus Vision and Organizational Goals.** The proposed project is in alignment with the Master Facility Plan and the Transportation Plan described in Chapters 2 and 3 of the IDP, by consolidating and expanding staff parking.

- **Cohesion With the Campus.** The overall composition and experience of the parking garage was considered for cohesive identity from approaches along various viewpoints. Renderings have been prepared and are included within Section 3.

- **Building Entrance.** The building entrance has been oriented toward the St. John Street sidewalk to help support the existing pedestrian-oriented, mixed use environment.

- **Incorporating Building Character into Design.** The scale and proportion of the principal elevations of the garage have been given a hierarchical treatment, avoiding the repetitive nature of the basic building type. Along St. John Street, the principal façade of the garage features a base zone of textured precast concrete spandrels with textured faces which impart detail and scale relating features. On the south side of this elevation, the bottom two tiers of spandrels relate to the low-rise buildings to the south. On the north side, a higher base of feature spandrels relates to a scale of City and institutional uses. The composition is deliberately varied, with an off-centered elevator core. The west side of the building, with no massing relief, is activated with a resolving feature of a feature infill bay. The upper sides of both east and west feature light-catching perpendicular extruded aluminum fins, which create a softening of the mass of the structure. They also feature a horizontal precast concrete shelf cap along the full length of the elevation. The northeast and southwest corners of the structure, which contain egress stairs, present solid elements which demarcate them as features and also emphasize the openness of the adjacent tiers.

- **Building Façade.** Materials in general will be high quality, long lasting and weather resistant, including:
  - Structural Elements – Precast reinforced concrete
  - Exposed Spandrels – Colored and textured precast concrete
  - Window Framing – Clear anodized aluminum
  - Window Glass – Clear insulating units

- **Preserving Viewsheds**. MMC has considered the potential impact on public views from the Western Promenade towards the White Mountains. There is very little visual impact along the Western Promenade from the proposed garage. The roof of the proposed garage will be visible in the largely tree-screened view zone south of the White Mountain viewshed.

- **Priority Node.** The design focuses on supporting the pedestrian, mixed use environment of St. John Street. The landscape plan includes pedestrian access directly to paved walks connecting to pedestrian routes indicated in the IDP.

- **Pedestrian Safety.** MMC plans to enhance aesthetic value and implement crime prevention strategies along pedestrian routes from the garage to the main campus. The following strategies are outlined in the approved IDP:

    - Providing elements of visual interest along any blank walls facing public streets;
    - Ensuring that paths from transit stops, bike storage areas, and parking areas to main pedestrian entrances are well-lit, with clear sight lines;
    - Providing clear and properly-sized signs in safe locations to ensure safe wayfinding; and
    - Designing street-level elevations to minimize potential hideouts.

    The following considerations have been made for the proposed parking garage:

    - The south façade has trees located to mark the edge, with spacing allowing clear views between them offering nowhere to hide.
    - The west façade is inert material for egress, enclosed by a security fence, also offering nowhere to hide.
    - The north façade faces a surface parking area.
    - The east façade includes the lobby and plantings/lighting/pathways that are well lit with plantings specifically designed to allow high visibility.
    - The east façade zone between the Eagles building and parking garage is crushed stone and blocked from access from both sides with plantings.
    - The east façade between the lobby and northeast corner is well lit from the building with adjacent canopy trees that allow views beneath them. This zone is also enclosed by a security fence.
    - The pedestrian access from surface parking to St. John street includes a new stair with handrail, a resurfaced pedestrian path, a privacy fence at the property line between this zone and the neighbors at 212/214 St. John, and high branching deciduous trees with turfgrass beneath, allowing nowhere to hide.

- **Parking Structures.** The proposed parking garage screens views of cars from the public rights-of-way to the extent possible. The proposed garage is not located within 20 feet of the public right of way, so street activation intent does not apply. The plan for the proposed garage does remove a surface parking lot that was formerly within the view of the public right of way (Eagles Lot). Although the parking garage itself is not 20' within a public way, the proposed landscape plan activates the street with street trees along the St. John Street sidewalk and walkways directing parking garage users to pedestrian routes indicated in the IDP.

6.6 Signs (14-282 (f))

Signage for the parking garage will consist of a free-standing sign within the St. John Street entrance area. The plaza sign was coordinated with the overall landscaping design and context. Signage details and specs have been included as an attachment to Section 6. Any additional signage desired by MMC will be put forth in a future request.

6.7 Transportation (14-282 (g))

The MMC Transportation Demand Management (TDM) Plan is discussed in the approved IDP (IDP page 74). As outlined in the IDP, MMC has considered its transportation needs holistically, factoring into its future development alternative means of transportation (IDP page 25). 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 staff. According to the Transportation Plan in the IDP, the project area is 0.3 miles from the Bramhall Campus and MMC will encourage walking (IDP page 66).

A parking demand analysis was conducted as part of the Transportation Plan in the IDP to determine parking needs based on supply and demand, and trip reduction efforts outlined in the TDM Plan. The analysis revealed an existing staff parking shortage of 150 to 200 spaces, with the MMC parking system typically operating at or above capacity during weekday daytime hours (IDP page 65). Approximately 500 to 600 additional staff parking spaces are required to meet projected demand based on expected staff growth. The proposed project was identified as a solution to the shortage. MMC intends to deconstruct the existing 1,274-space staff garage and construct the proposed St. John Street replacement garage that will supply approximately 2,477 spaces for MMC.

Once the St John St garage is complete and the majority of MMC staff 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 staff. According to the IDP, consolidation of staff parking will improve staff satisfaction and minimize management challenges associated with eight satellite parking lots (IDP page 66).

Within the TDM, there are several parking and other strategies to manage the growth of staff parking demand. Those strategies are outlined in the TDM plan attached to **Section 10**.

6.8 Environment (14-282 (h))

The proposed development incorporates features that are designed to integrate with the surrounding context, including open space and pedestrian networks and infrastructure. See Landscaping approach description in Section 3.

6.9 Mitigation Measures (14-282 (i))

MMC will mitigate site plan impacts to off-premise infrastructure in a manner proportionate to those impacts. Mitigation measures proposed for project impacts include right of way improvements and improving pedestrian ways. Right of way improvement details, an off-site lighting improvement plan and an off-site sidewalk improvement plan has been included with the full design plan set in Section 3.

6.10 Neighborhood Integration and Neighborhood Engagement (14-282 (j))

In addition to the required neighborhood meeting as required by the Level III Site Plan process, MMC does the following in terms of neighborhood integration and neighborhood engagement:

- Monthly and as needed meetings with representatives of each of the neighborhood associations abutting the Bramhall Campus and Libbytown where MMC provides lunch;
- Targeted outreach to local businesses and residents;
- Open meetings where businesses and residents are invited to ask questions about the project and provide feedback;

- Provide mitigation measures (such as parking) to anyone directly impacted by temporary street parking closures or traffic detours;
- A webpage where all project information is available; and
- A project alert notification system where people can be updated via email or text of project updates.

6.11 Construction Management (14-282 (k))

A Construction Management Plan (CMP) that conforms to all IOZ requirements is provided in **Section 9** of this report. The CMP includes a construction schedule, and strategies for managing communication, noise, air quality, traffic, and parking impacts associated with the construction.

6.12 Other Requirements (14-282 (l))

- **Helipad**. This standard does not apply to the proposed project.
- **Snow Ban Parking**. In accordance with the IOZ Regulatory Framework, MMC will make parking available to neighbors within the parking garage for a set timeframe during designated snow ban parking events.
- **Healthy Communities**. This standard does not apply to the proposed project.

6.13 Attachments

- Signage Specifications

ZONING ANALYSIS Relevant Zone(s) Maine Medical Center IOZ

All Projects:

	Required	Proposed
Lot Size	IOZ Framework	5.27 acres
Area Per Dwelling Unit	N/A	N/A
Minimum Street Frontage	N/A	40 feet
Front Yard Minimum	0	0
Front Yard Maximum	N/A	0
Rear Yard	See Map	0
Yard Right	See Map	0 or 5 feet
Yard Left	See Map	0 or 5 feet
Side Street Setback	N/A	N/A
Step Back	N/A	N/A
Maximum Lot Coverage	N/A	N/A
Minimum Lot Coverage	N/A	N/A
Maximum Height	See Map	96.25 ft avg.
Open Space	N/A	N/A
Maximum Impervious Area	N/A	176,076 sf or 4.0
Pavement Setback	N/A	N/A
Floor Area Ratio	N/A	N/A
Off Street Parking Spaces	Est. in SP Review	2,452
Loading Bays	N/A	N/A
Other 1	N/A	N/A
Other 2	N/A	N/A
Other 3	N/A	N/A

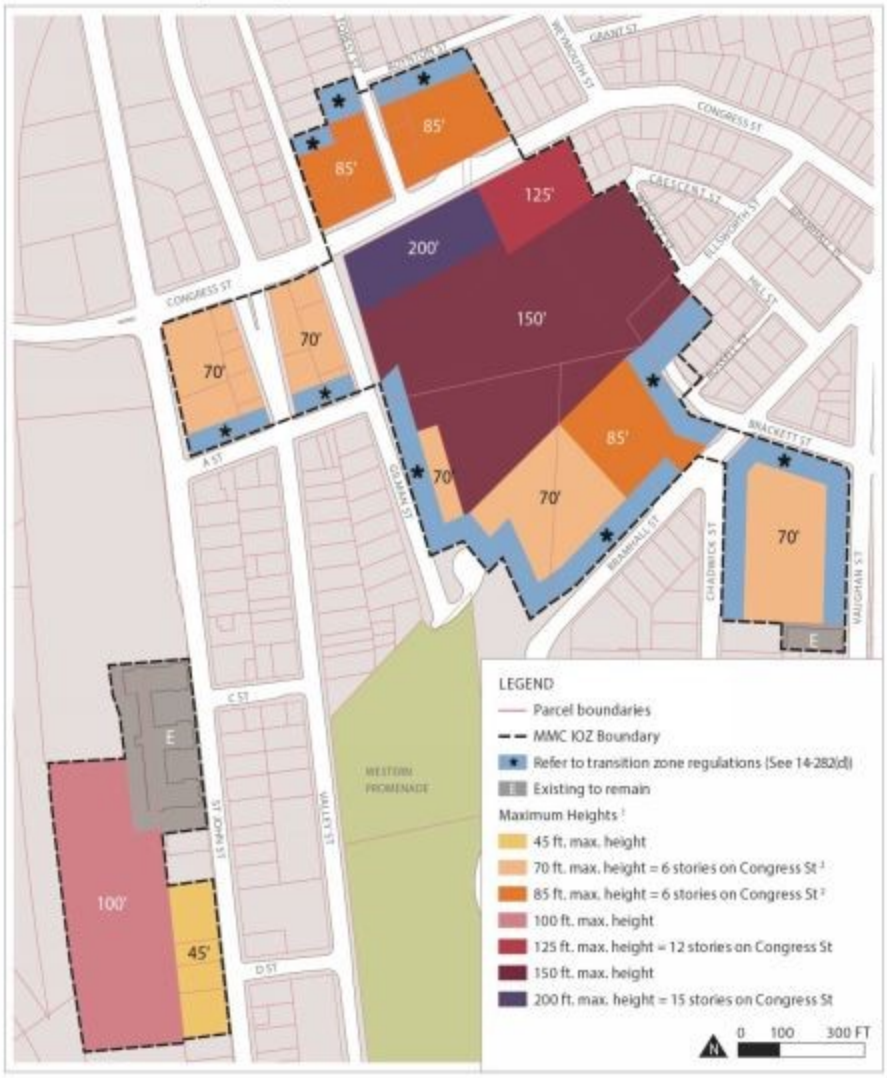
Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	N/A	N/A
Minimum Lot Area per Dwelling	N/A	N/A
Maximum # Units per Building	N/A	N/A
Maximum Building Length	N/A	N/A
Maximum Accessory Building Length	N/A	N/A
Minimum Setbacks	N/A	N/A
Minimum Building Separation	N/A	N/A
Minimum Open Space	N/A	N/A

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height			
Setback Reduction			
Recreation Space			
Maximum Accessory Building Length			
Minimum Setbacks			
Minimum Building Separation			
Minimum Open Space			
Explanatory Text 1 (optional):			
Explanatory Text 2 (optional):			
Explanatory Text 3 (optional):			

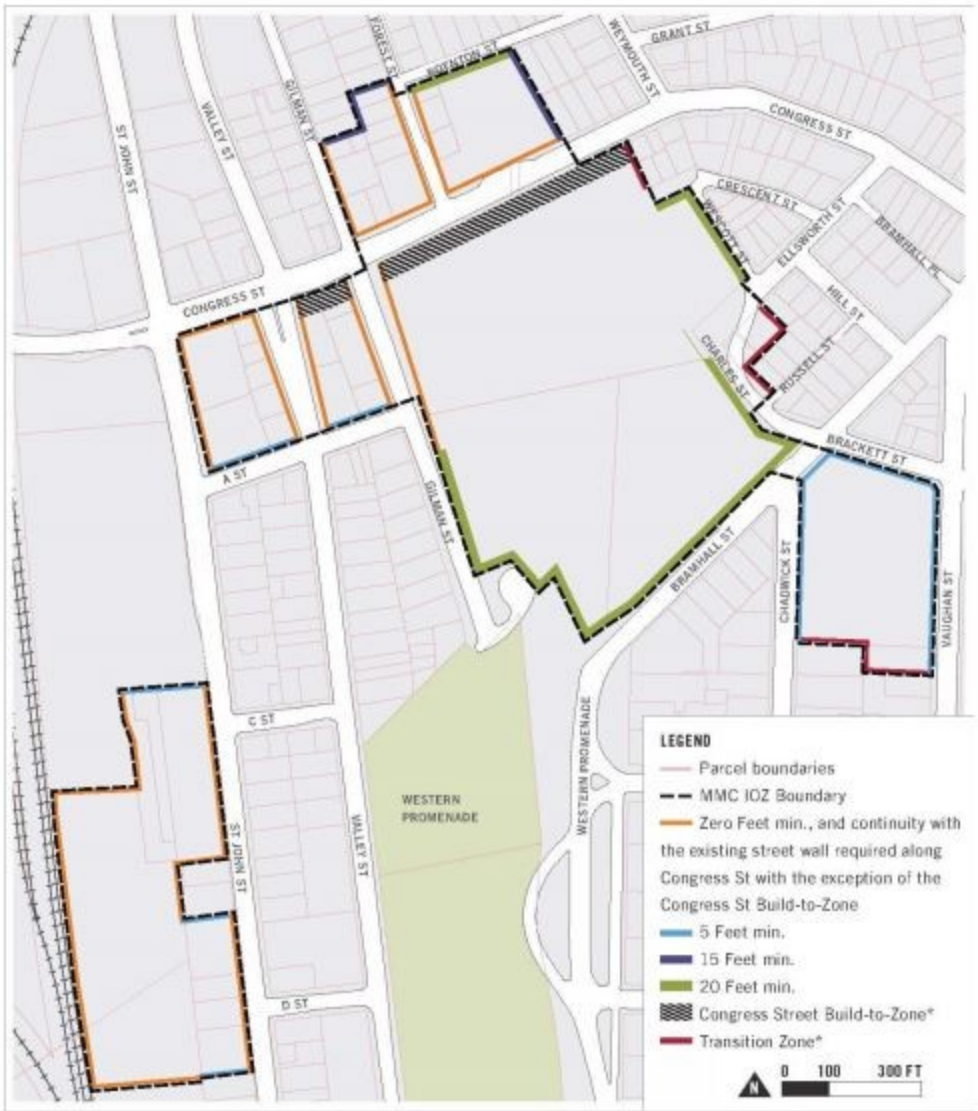
Maximum Building Heights



Notes: 1. Minimum building heights also apply. Refer to 14-282(d).

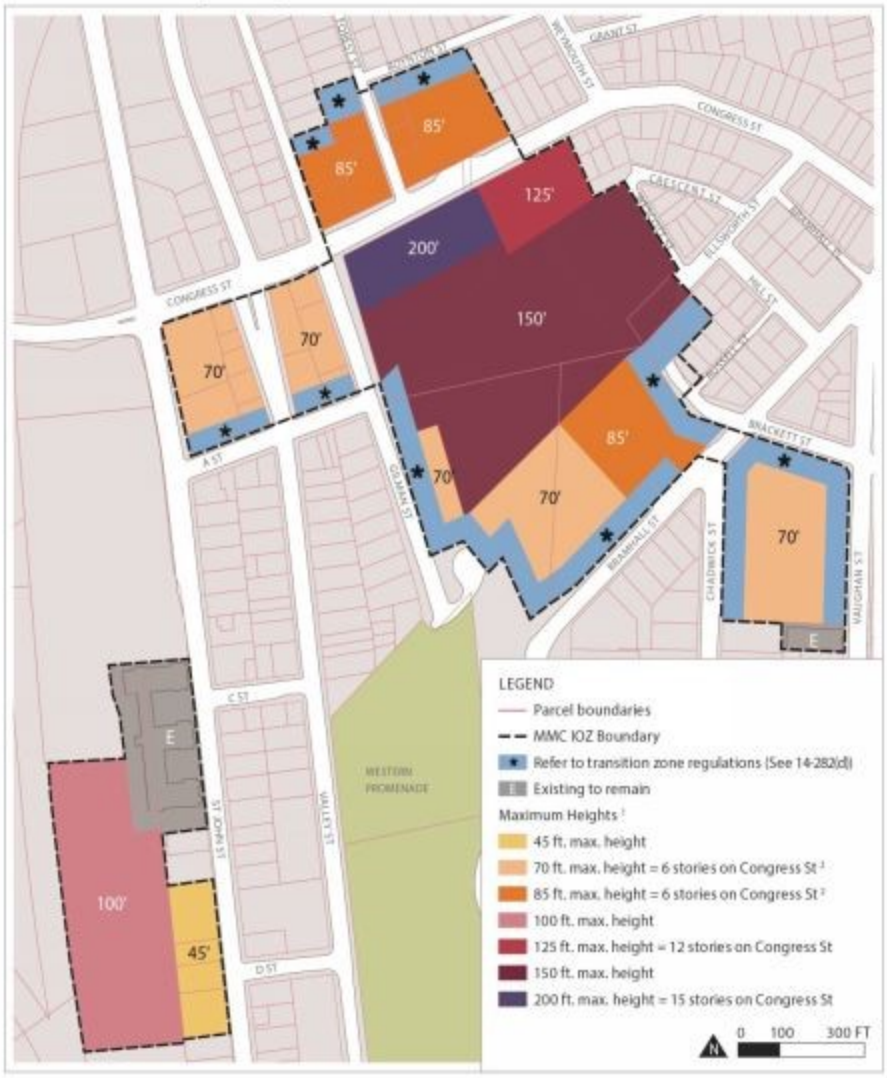
2. For buildings with residential use above the ground floor, the following height maximums apply: 70 ft. maximum height = 7 stories, and 85 ft. maximum height = 8 stories.

Minimum Setbacks



* **Note:** See Table 4.1 Dimensional Requirements.

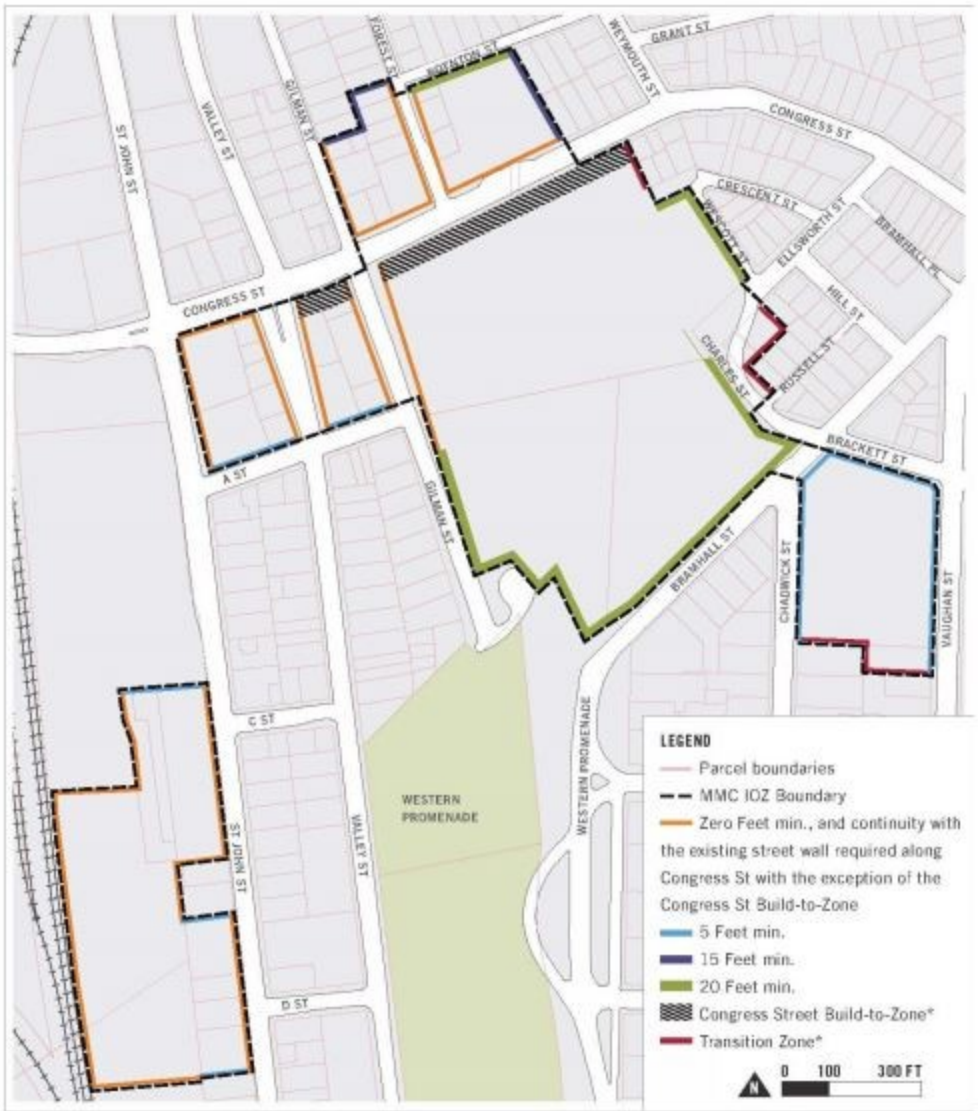
Maximum Building Heights



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.

Maine Medical Center
Bramhall Campus Environmental Graphics & Wayfinding Program

Preliminary Pricing Set
Schematic Design
6.22.18

Leverage

Project 1

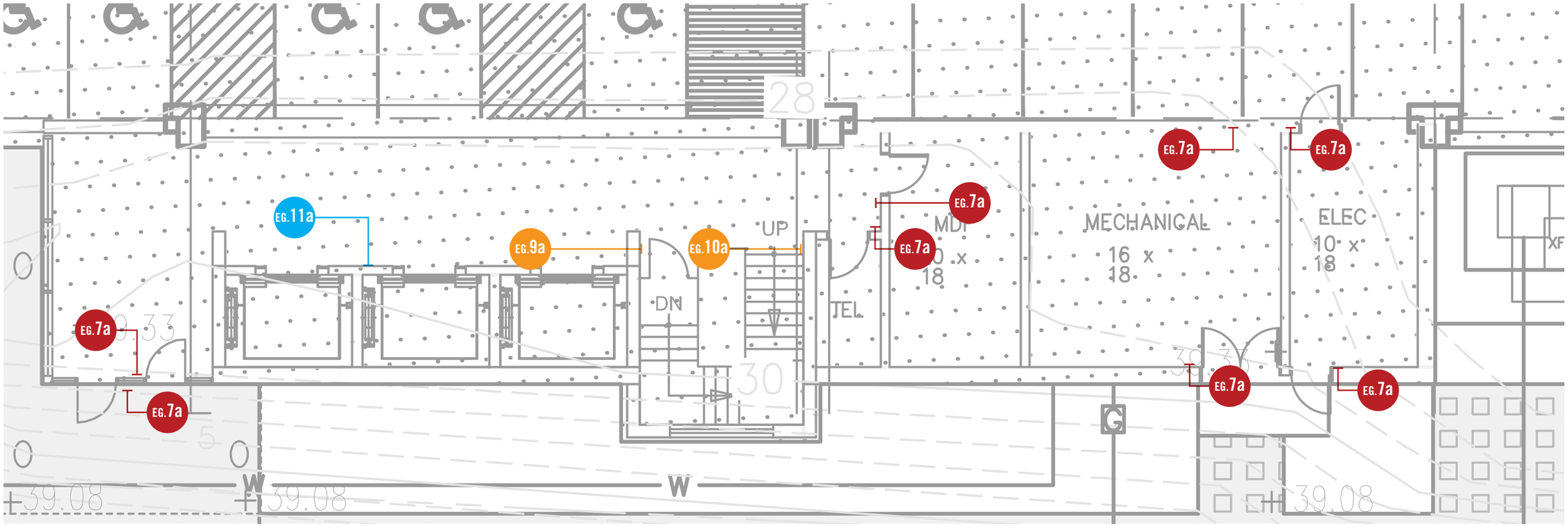
New Main Medical Center Parking Garage

Leverage/

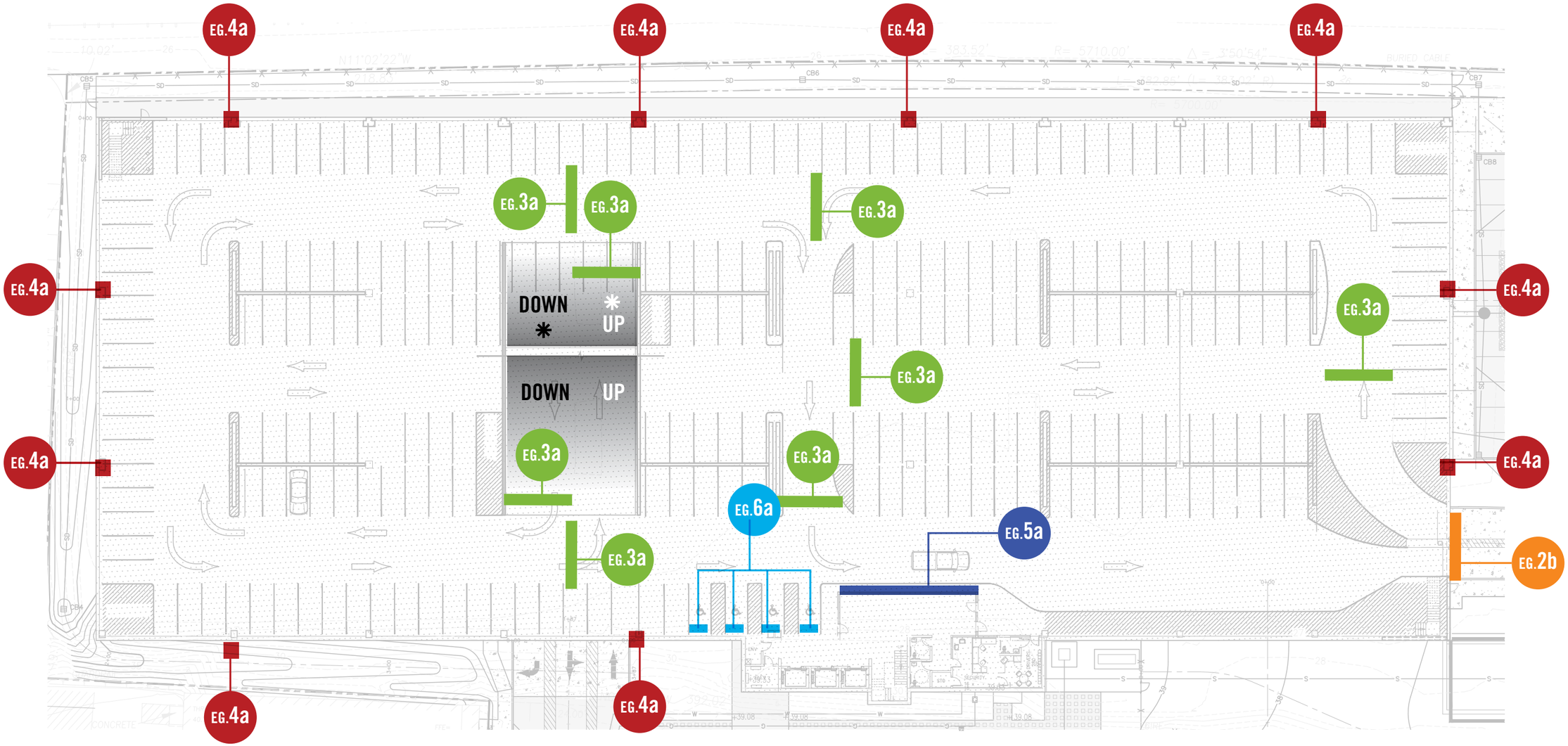
Preliminary Sign Location Plans

Preliminary Sign Location Plan (Level 1)

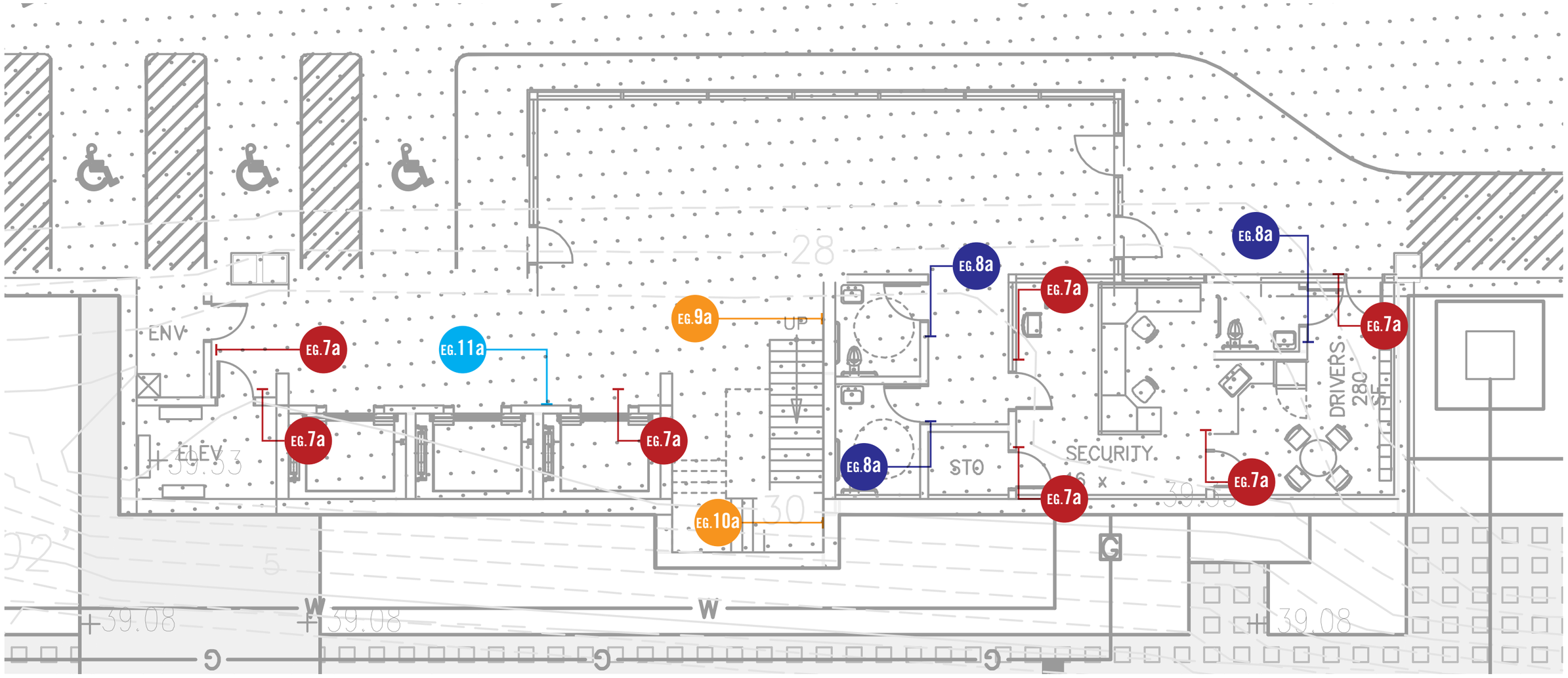
Preliminary Sign Location Plan (Level 1 Detail)



Preliminary Sign Location Plan (Levels 2-7)

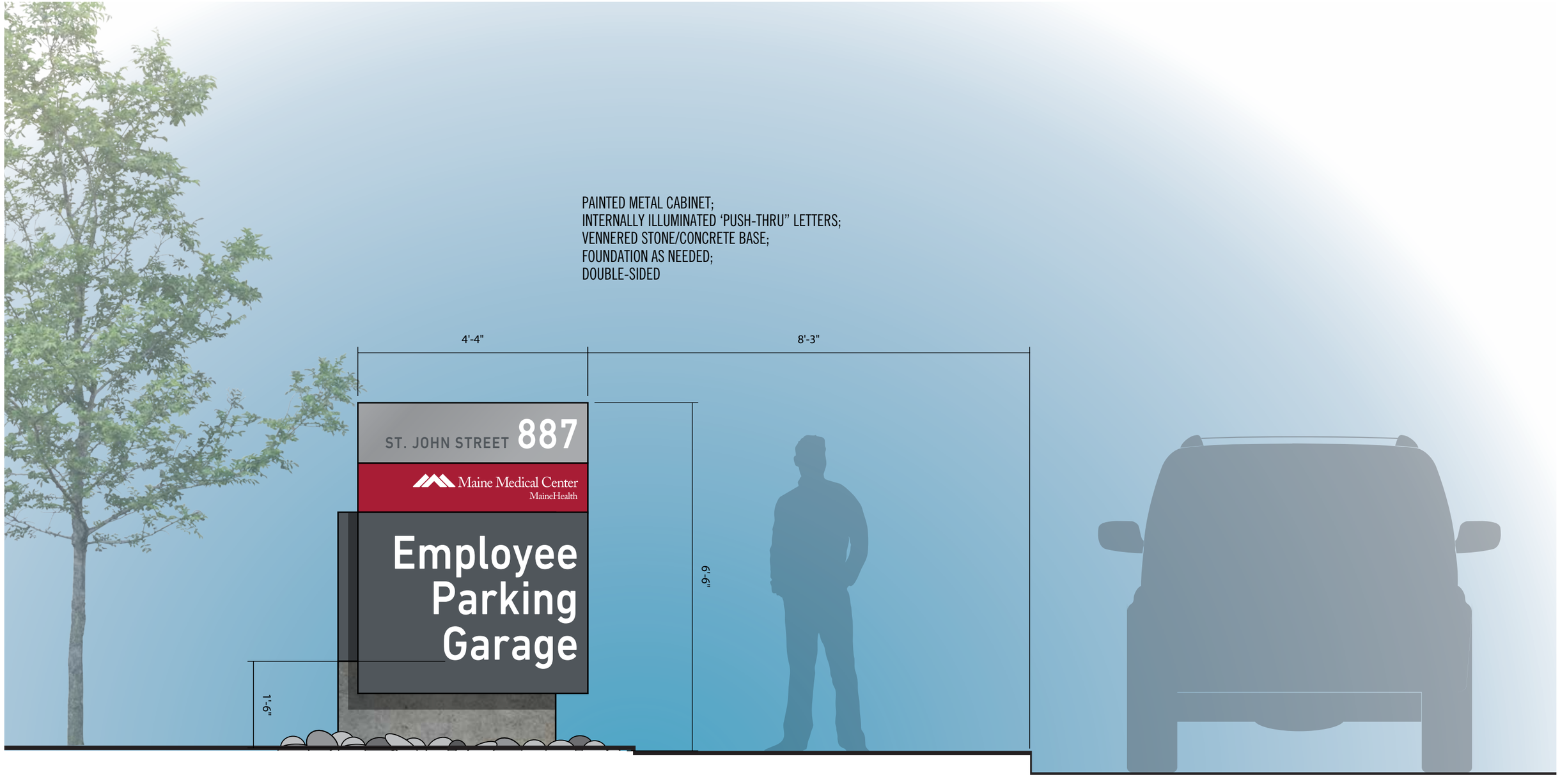


Preliminary Sign Location Plan (Levels 2-7 Detail)

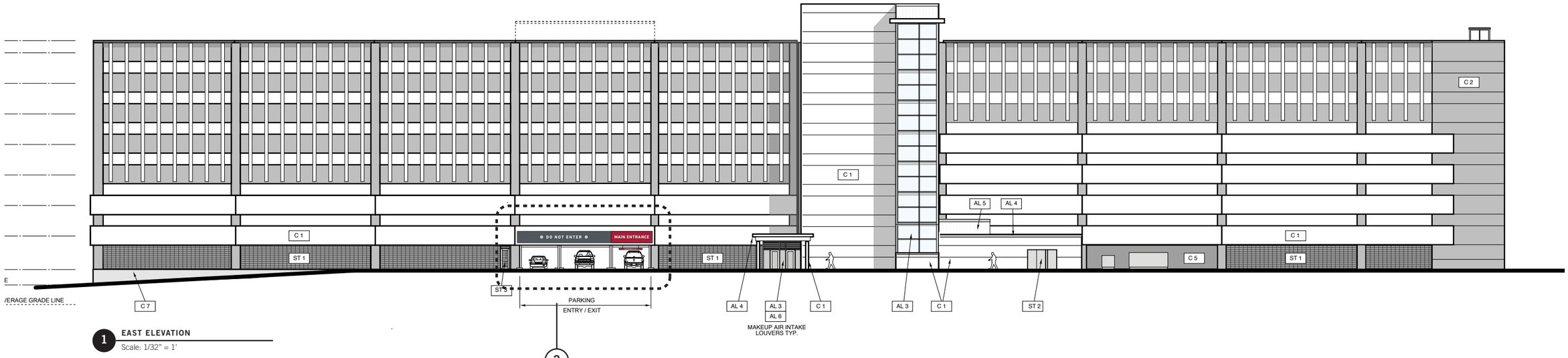


Sign Type Drawings

EG.1a Monument Sign



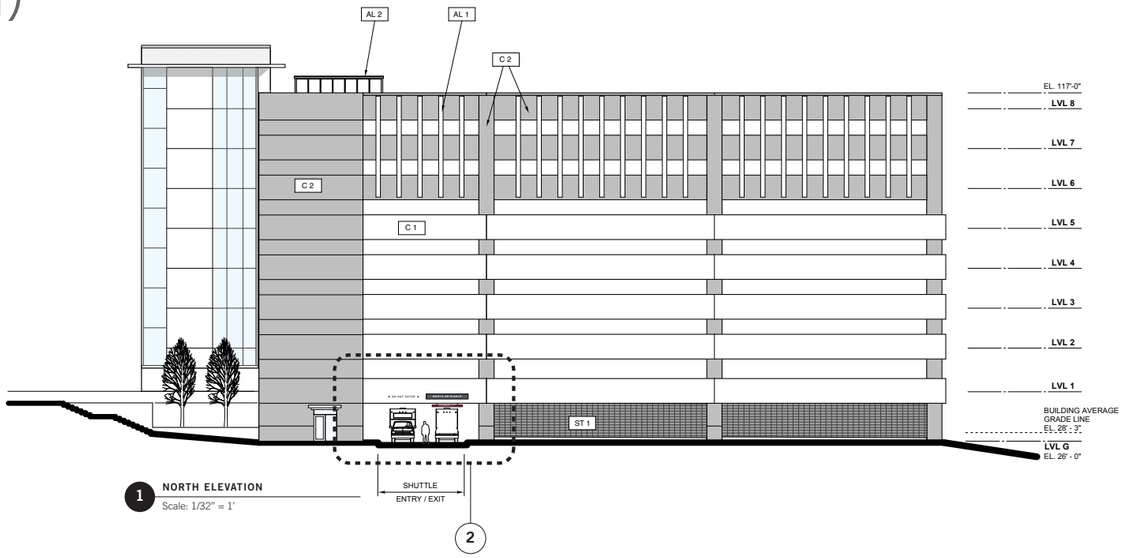
EG.2a Garage IDs (East Elevation)



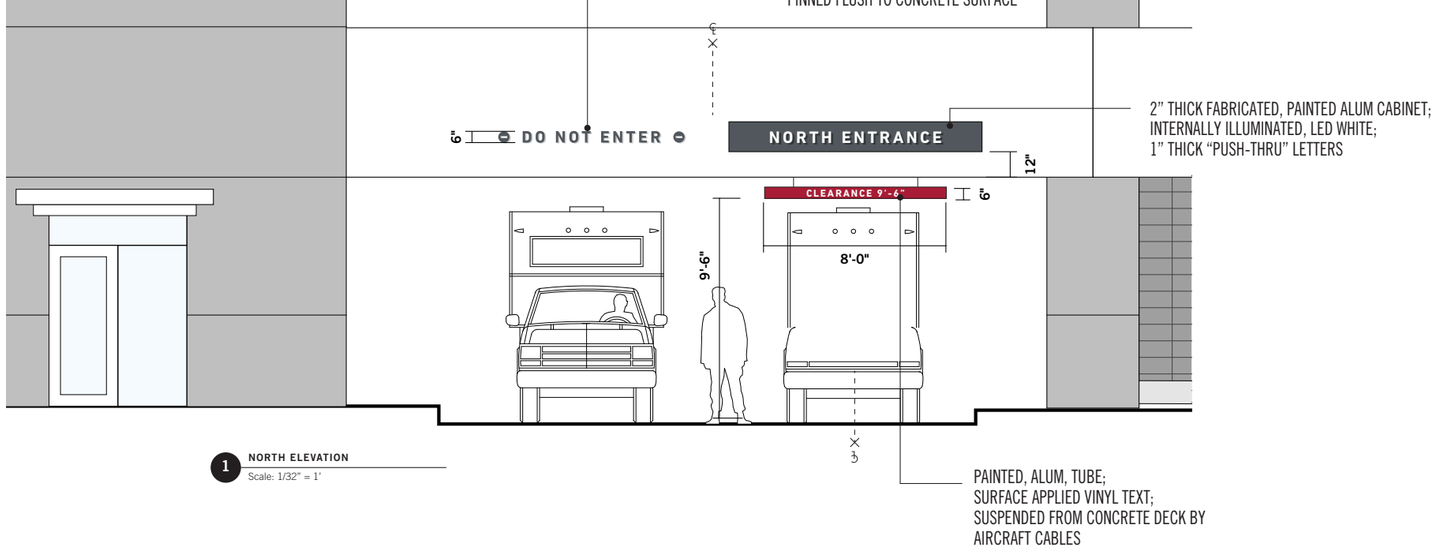
1 **EAST ELEVATION**
Scale: 1/32" = 1'

2 **SIGN TYPE F6: ENTRY SIGN**
Scale: 3/16" = 1'

EG.2b Garage IDs (North Elevation)

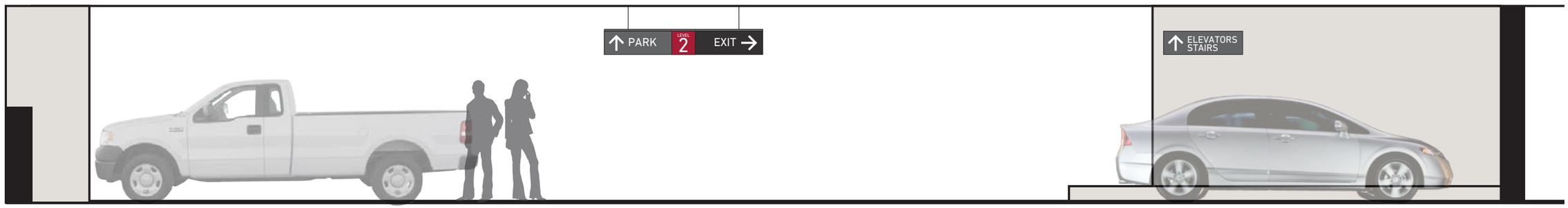


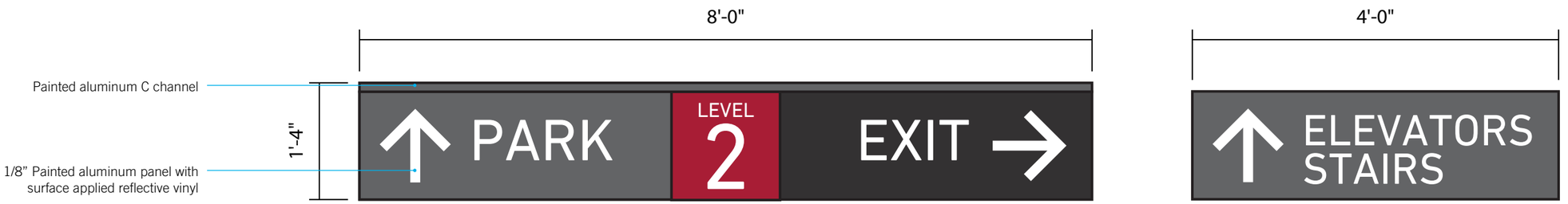
1 **NORTH ELEVATION**
Scale: 1/32" = 1'



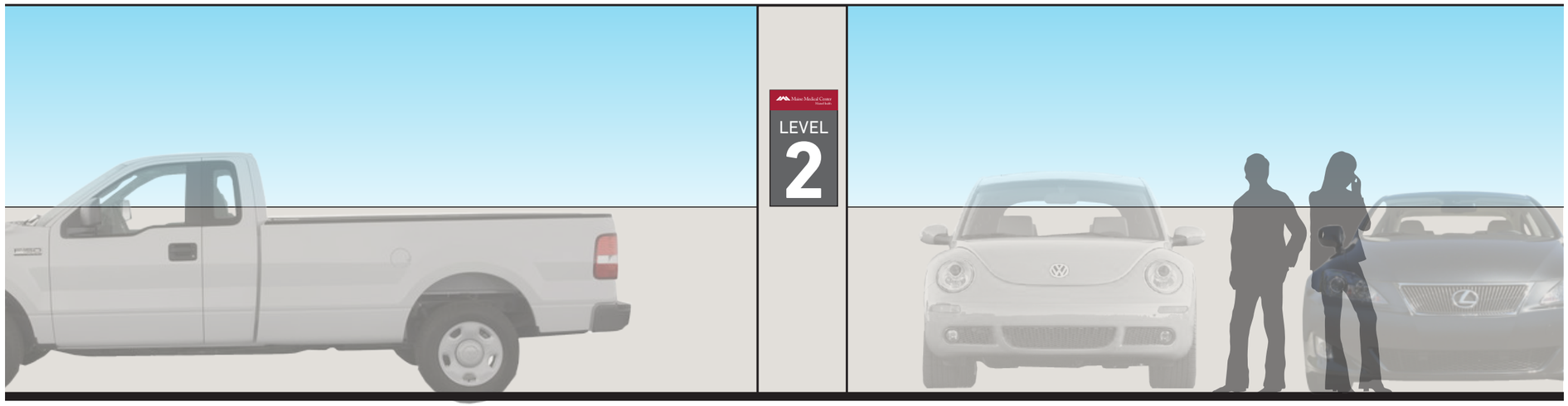
1 **NORTH ELEVATION**
Scale: 1/32" = 1'

EG.3a Garage IDs (North Elevation)





EG.4a Column ID

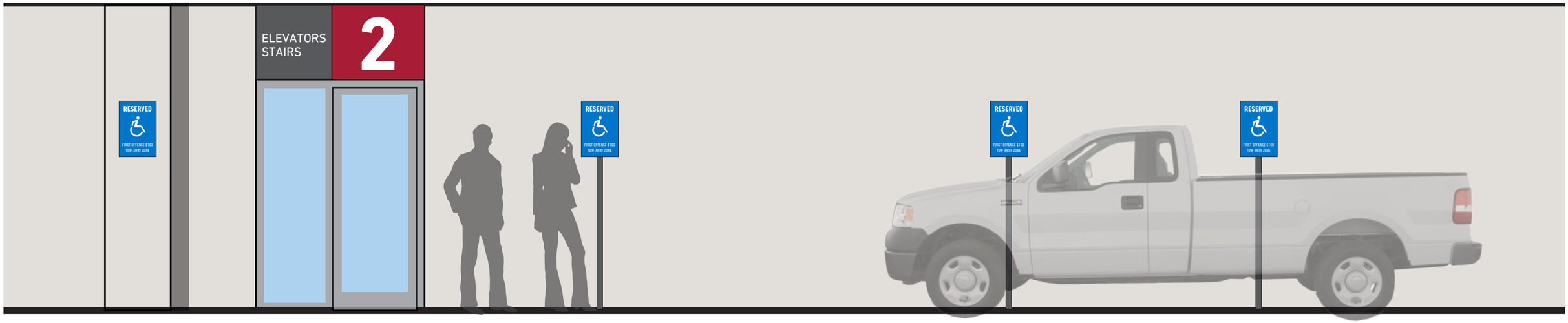


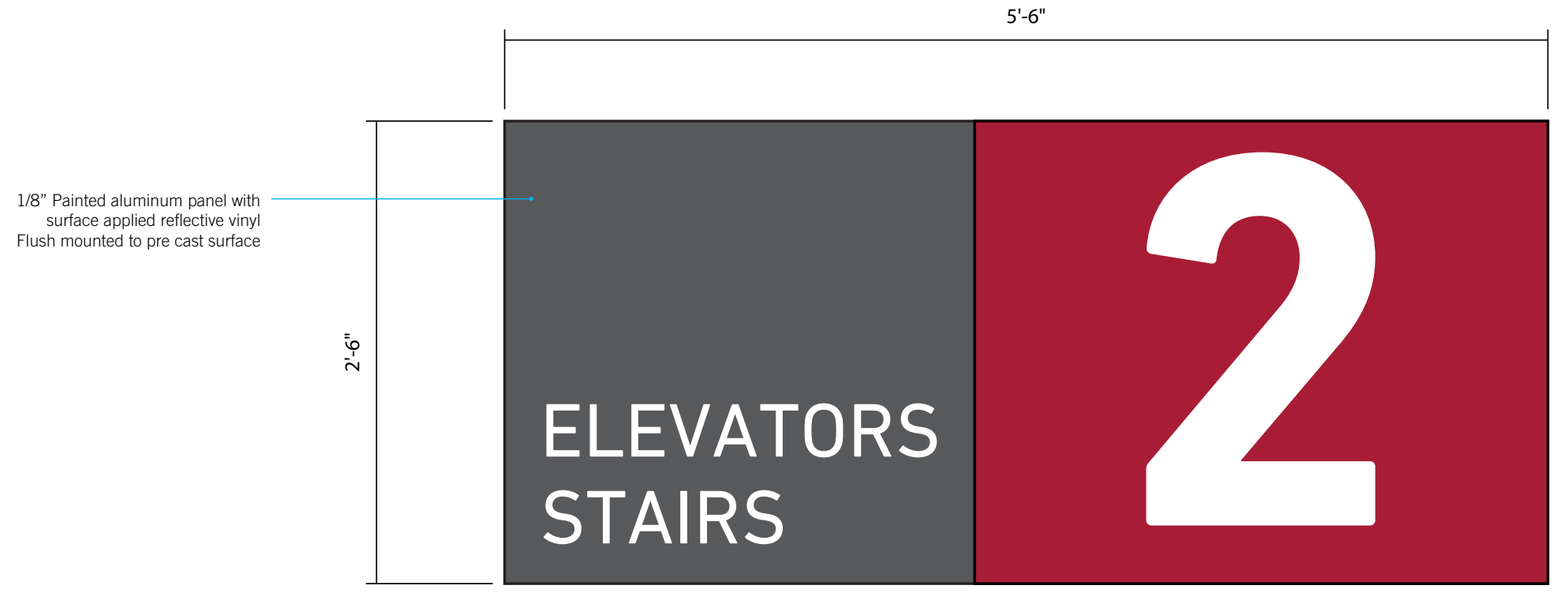
1'-8"

1/8" Painted aluminum panel with surface applied reflective vinyl Flush mounted to pre cast surface

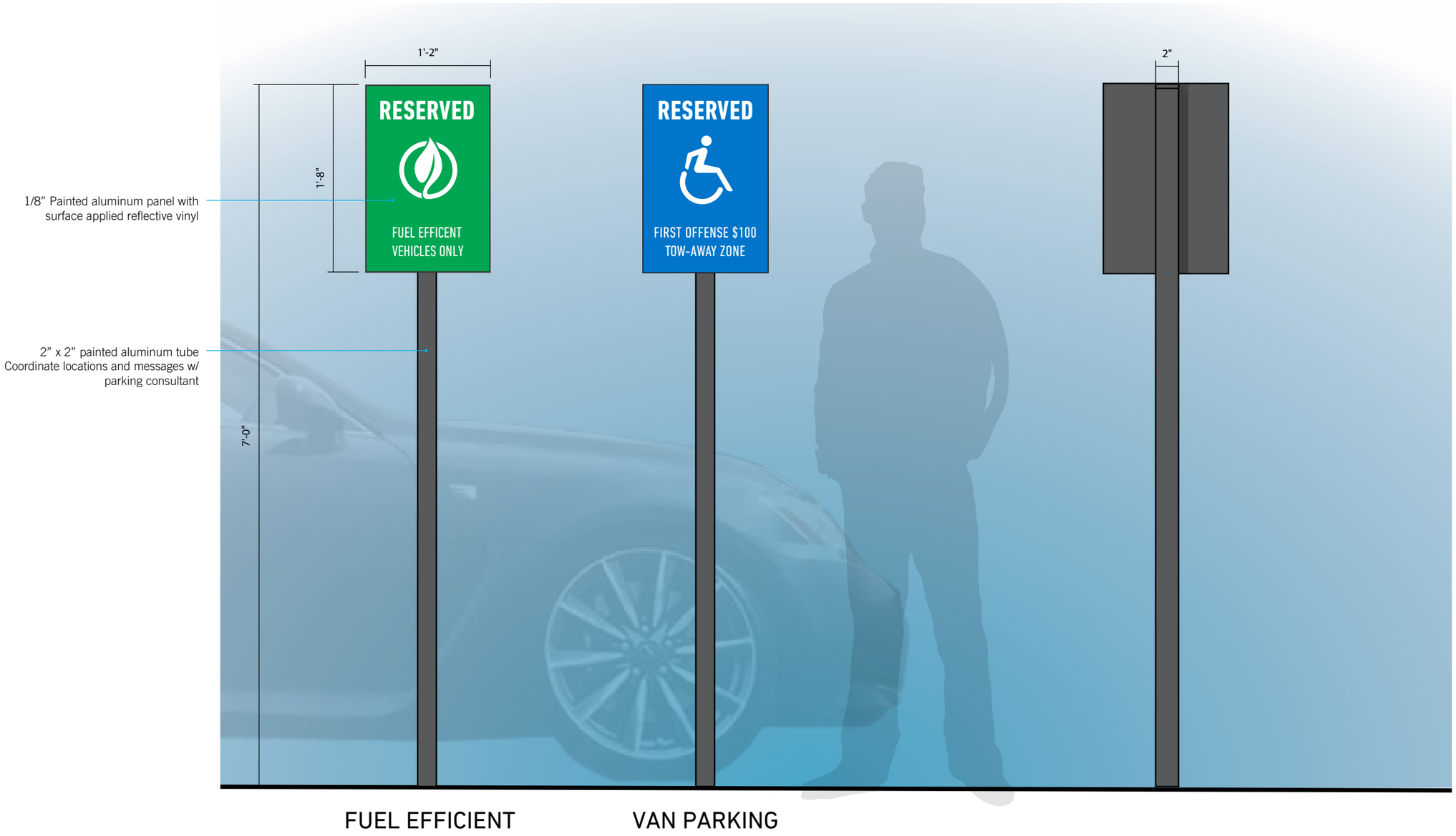
3'-0"

EG.5a Elevator Lobby IDs

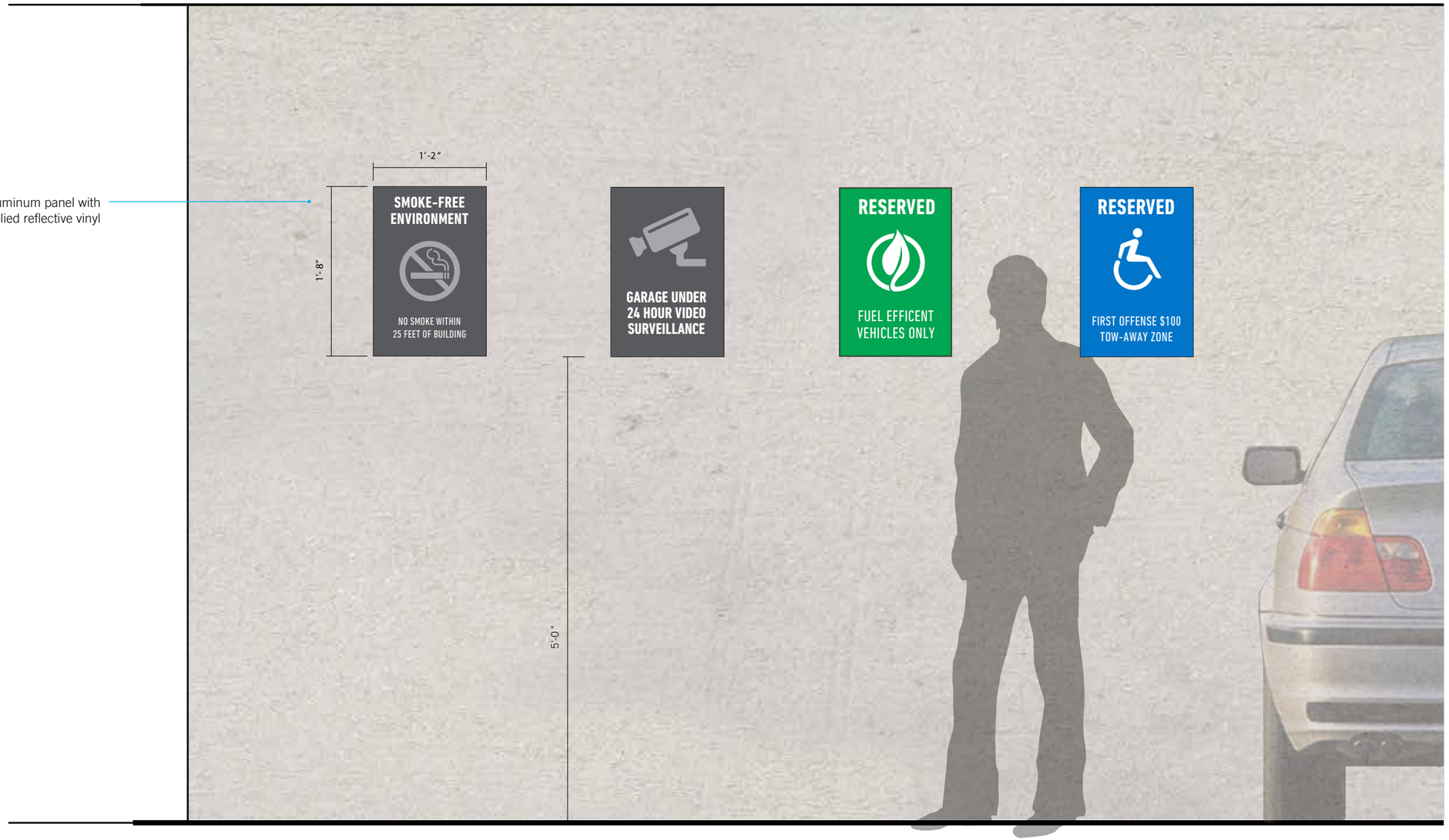




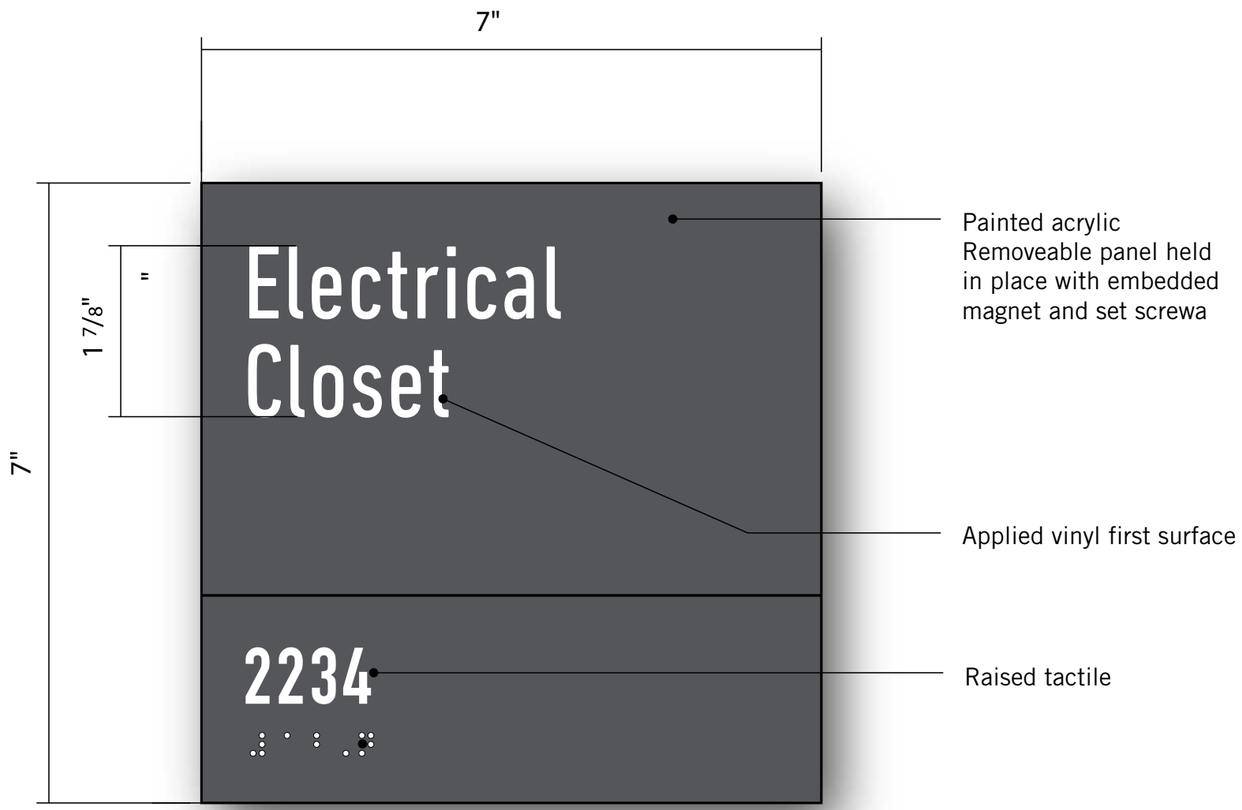
EG.6a DOT Posts

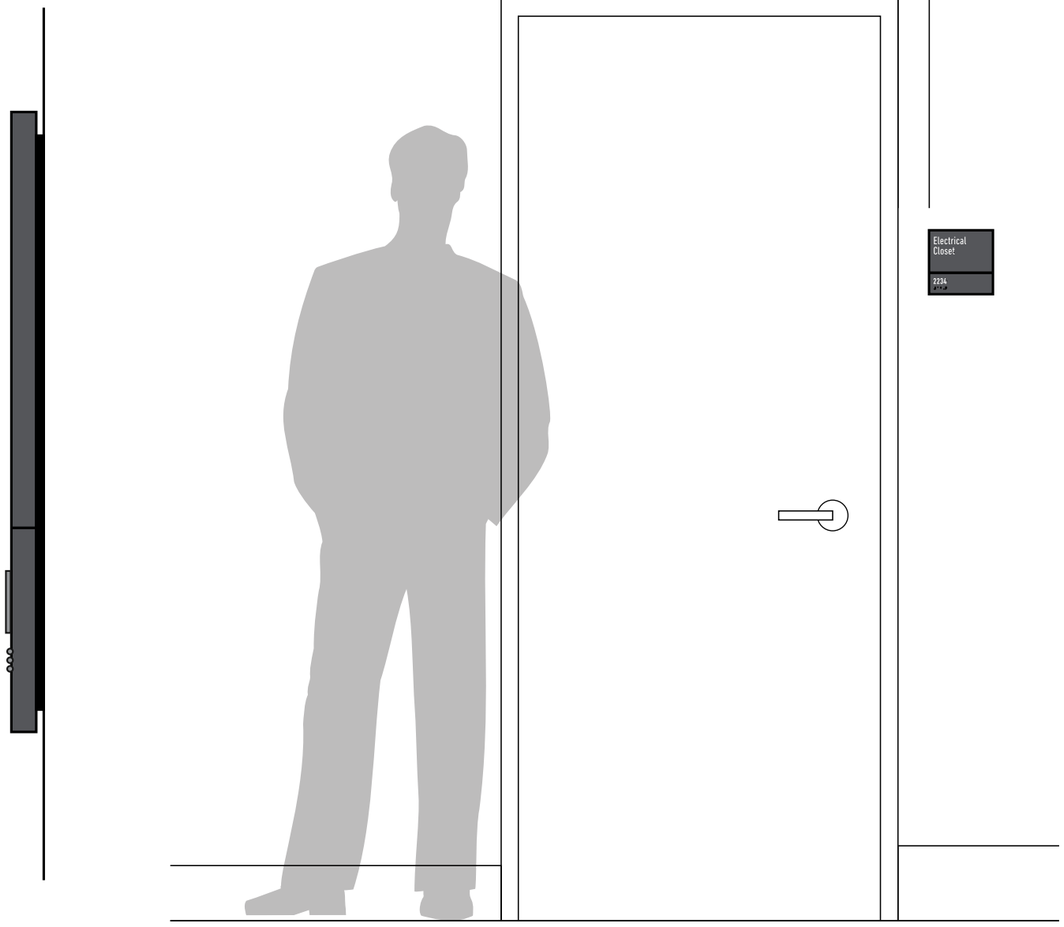


EG.6b DOT Plaques

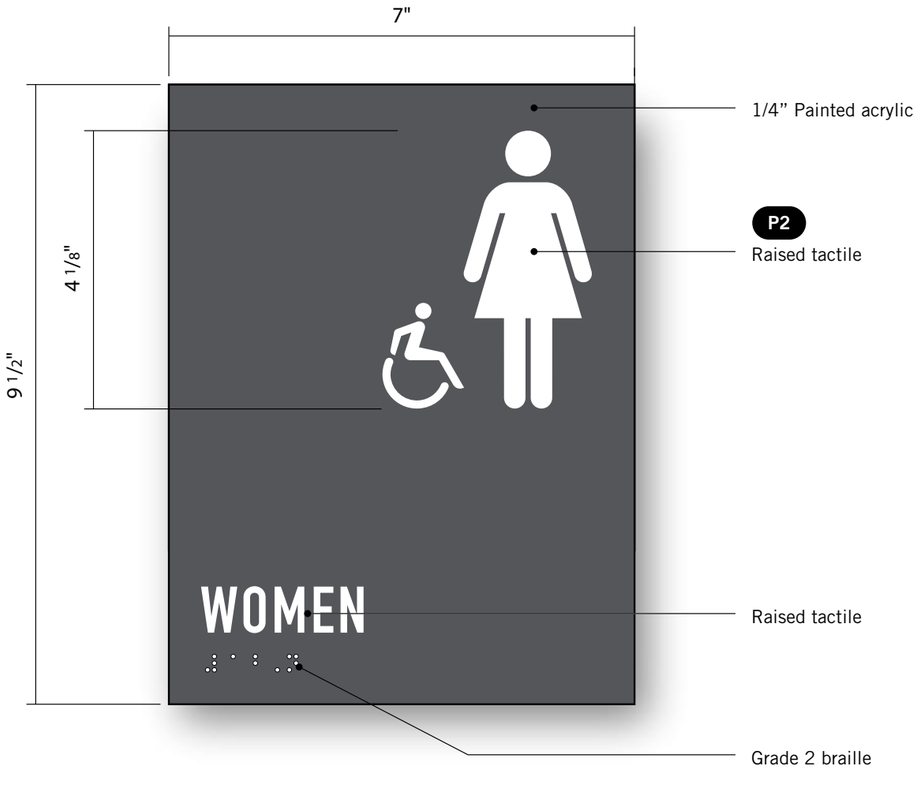


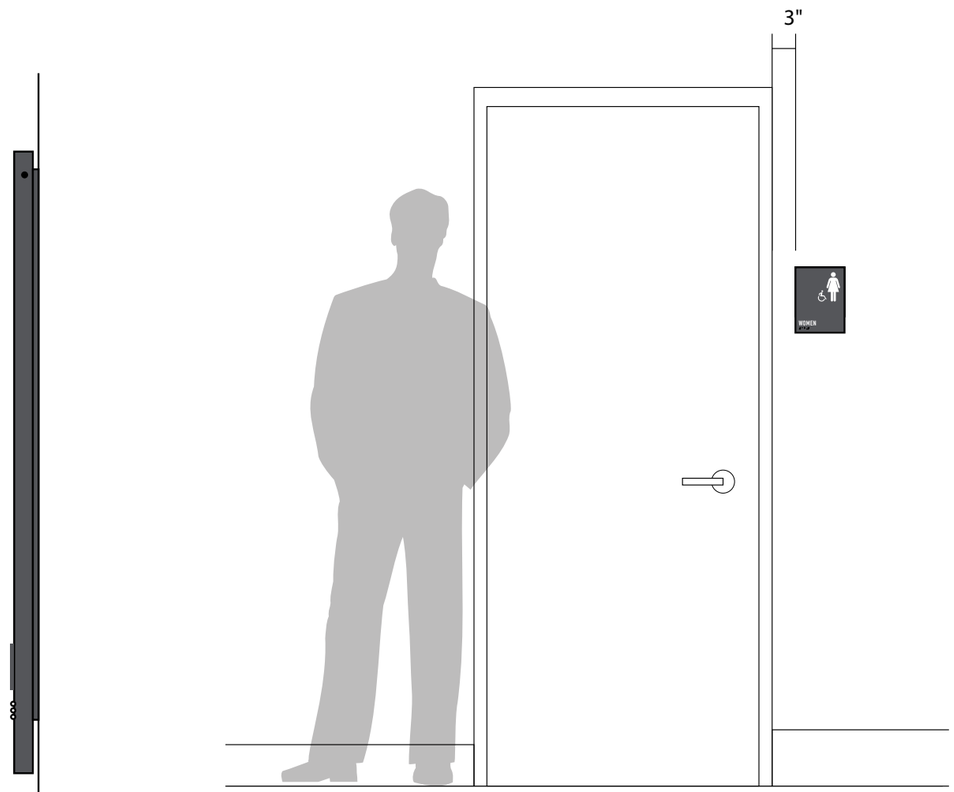
EG.7a Room IDs



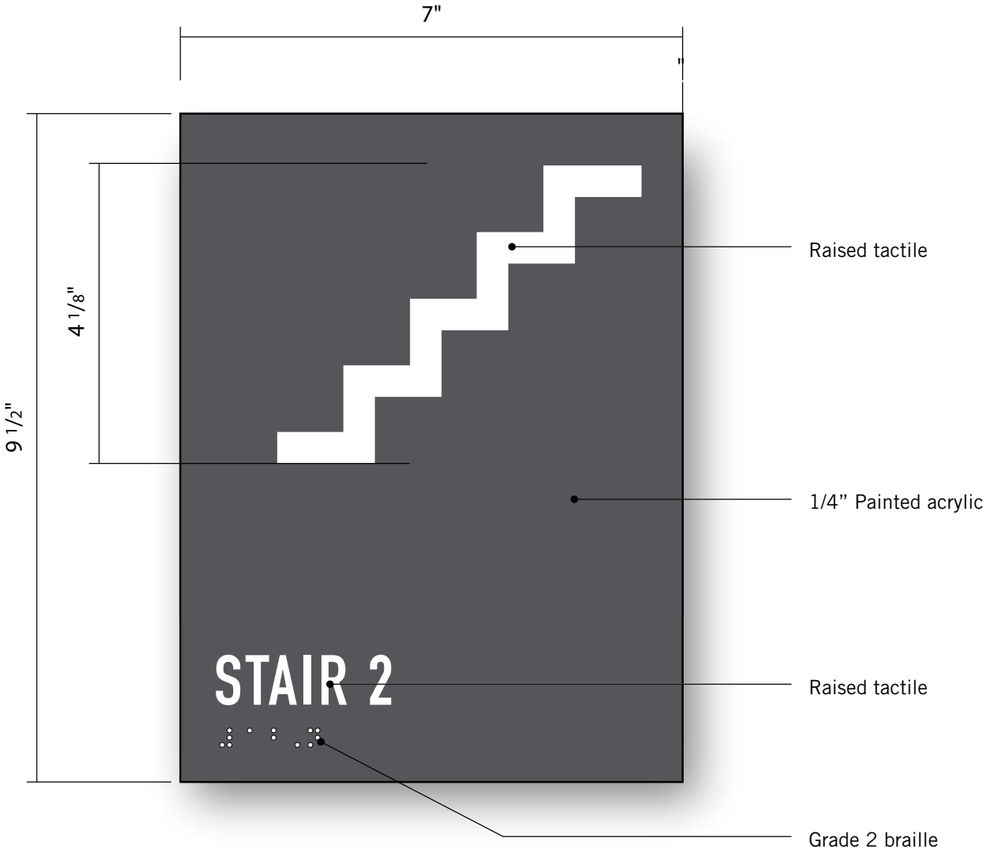


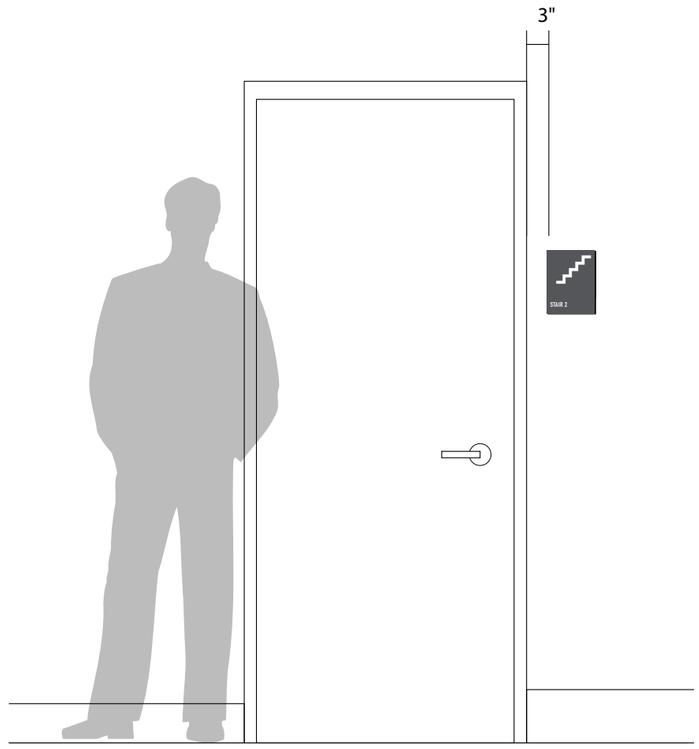
EG.8a Restroom IDs



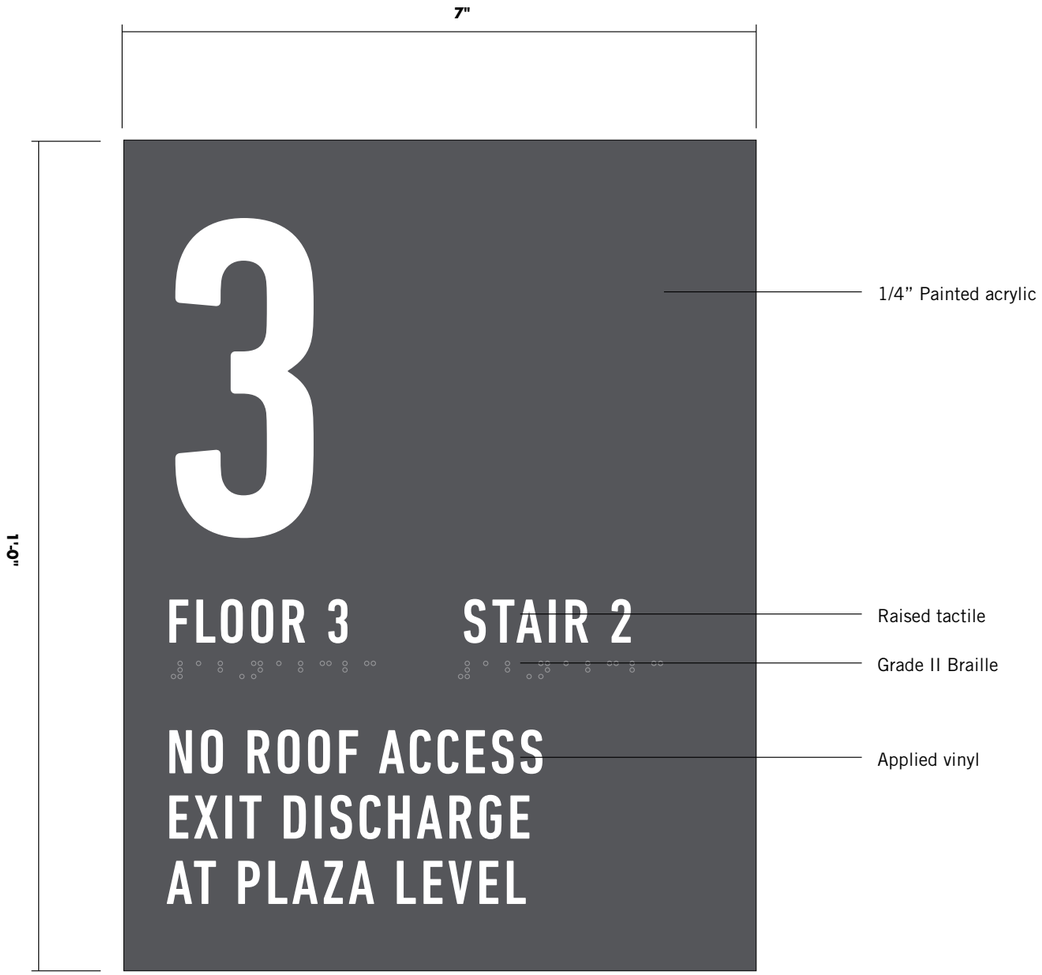


EG.9a Stairwell ID

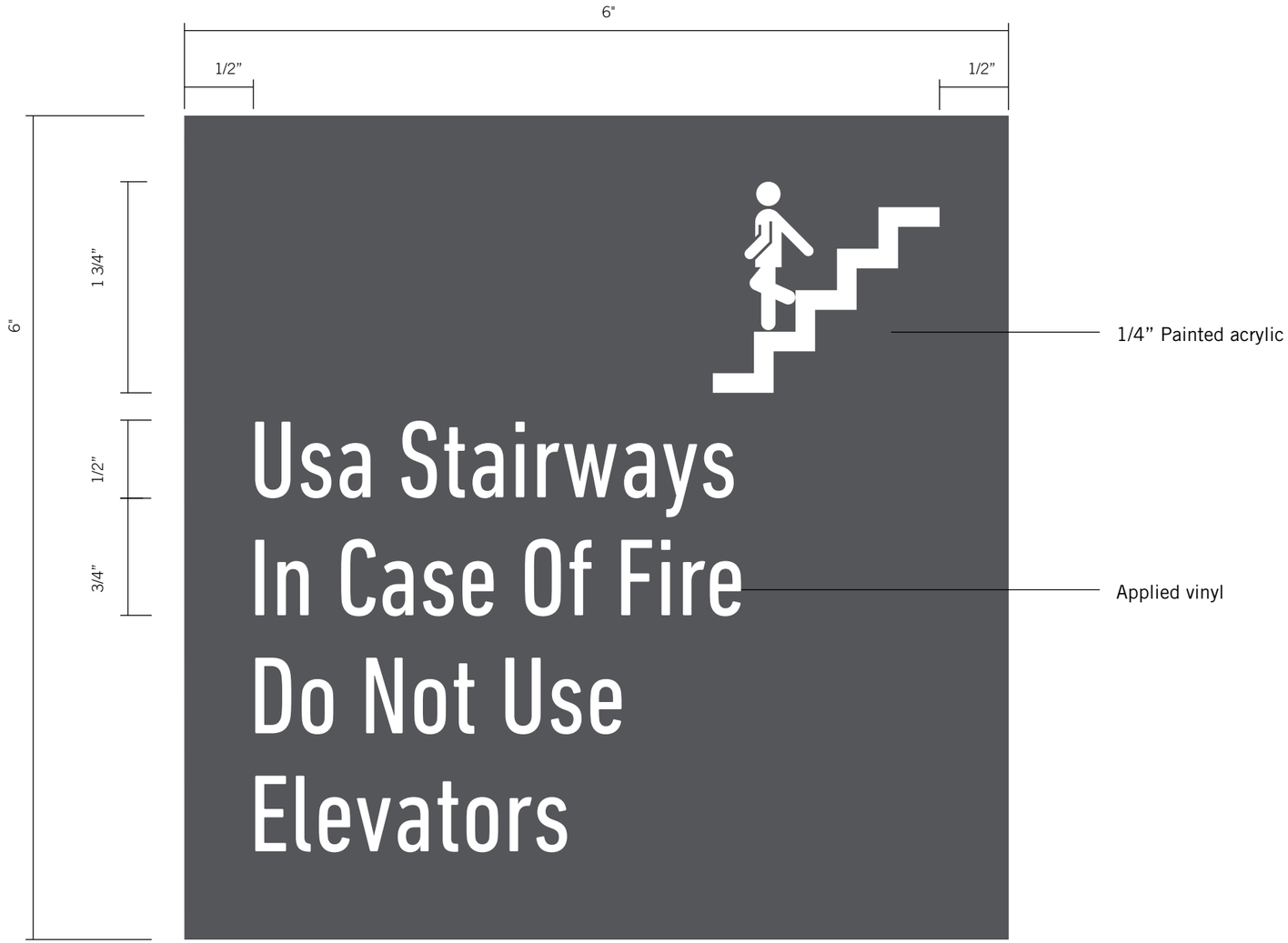




EG.10a Stair Egress



EG.11a Elevator Egress



7. EASEMENTS AND OTHER BURDENS

The Boundary Survey is included as an attachment to Section 19.

The following existing easements or other burdens have been identified:

- The survey shows the location of the existing access easement provided by the owner of the Union Station Plaza Property to Cowcatcher, LLC, the owner of the 221 St. John Street property. A small access easement also exists from Cowcatcher, LLC to Union Station Plaza. These two easements together provide for shared access for both properties to the existing parking lots. The existing access easements will be maintained to allow for continued shared access to the parking garage and parking lots.

- A twenty-foot drainage easement across Union Station Plaza was established between Union Station Limited Partnership and Maine Medical Center in May 2018. A copy of this easement is attached. Stormwater from the existing Cowcatcher, LLC parking lot currently discharges to a stormdrain system on the Union Station Plaza property. As noted later in this report, stormwater will continue to discharge to this location, and the stormdrain system has been inspected to ensure that it can adequately continue to handle stormwater flow, which will be reduced by the proposed stormwater management system.

- There was an existing easement from the Eagles lot (184 St. John Street) to 222 St. John Street for access. Under the proposed parking garage design, this easement would not be necessary since the Eagles lot has been purchased by Maine Medical Center.

7.1 Attachments

- Union Station Plaza Drainage Easement
- Union Station Plaza Access Easement

2

EASEMENT DEED

UNION STATION LIMITED PARTNERSHIP, a limited partnership organized under the laws of the State of Maine, whose mailing address is 12 Brook St., Wellesley, Massachusetts 02482 ("**Grantor**"), for consideration paid, grants to **COWCATCHER LLC**, a Maine limited liability company, whose mailing address is 100 Commercial Street, Portland, Maine 04101, its successors and assigns (collectively, the "**Grantee**"), forever, a non-exclusive easement for ingress and egress by foot, motor vehicle and equipment, and including the right to grade and pave the same and to locate, install, construct, maintain, repair and replace utility pipes, lines, wires, structures and appurtenances thereto, in, on, under and over the following described parcel of land more fully described below (the "**Easement Area**"). The easement shall be appurtenant to and run with and benefit Grantee's land described in that certain deed from Craig G. Coffin as successor to Daniel W. Hourihan, Trustee of the St. John Street Realty Trust under Declaration of Trust, dated December 17, 1985, which is dated September 10, 2008, and recorded in the Cumberland County Registry of Deeds ("**Registry of Deeds**") in Book 26330, Page 105 ("**Grantee's Property**"). The easement shall run with and burden the property described in a deed from Union Station Plaza Associates to Union Station Limited Partnership, dated June 26, 1992, and recorded in the Registry of Deeds in Book 10144, Page 23 ("**Grantor's Property**"). The Easement Area is more particularly bounded and described as follows:

A certain parcel of land situated on the westerly side of Saint John Street in the City of Portland, County of Cumberland, State of Maine bounded and described as follows:

Beginning at the northeasterly corner of land now or formerly of Cowcatcher, LLC,

Thence S 82° 18'40" W along land of said Cowcatcher 178.44 feet;

Thence S 07° 41' 20" E along land of said Cowcatcher 63.45 feet;

Thence S 22° 08' 20" E along land of said Cowcatcher 41.30 feet;

Thence S 07° 41' 20" E along land of said Cowcatcher 110.00 feet;

Thence S 82° 18' 40" W along land of said Cowcatcher 26.00 feet;

Thence N 07° 41' 20" W across land of Union Station Plaza, Inc. 238.44 feet;

Thence N 82° 18' 40" E across land of said Union Station Plaza, Inc. 15.69 feet;

Thence N 07° 41' 20" W across land of said Union Station Plaza, Inc. 7.00 feet;

Thence N 82° 18' 40" E across land of said Union Station Plaza, Inc. 125.43 feet;

Thence N 71° 37' 42" E across land of said Union Station Plaza, Inc. 53.95 feet to the westerly sideline of St. John Street;

Thence S 07° 41' 20" E along the westerly sideline of St. John Street 42.00 feet to the point of beginning, containing 11,057 +/- square feet.

Reference is made to a survey by Owen Haskell, Inc. Job #2008-100 P for further description of the above described easement.

[Balance of page intentionally left blank. Signature page follows.]

IN WITNESS WHEREOF, the undersigned has caused this instrument to be executed under seal by its duly authorized representative as of this 12th day of January 2009.

WITNESS

UNION STATION LIMITED PARTNERSHIP
By: Union Management Corp., a Maine corporation
Its General Partner

By: J. Robert Connor
J. Robert Connor
Its President

STATE OF MASSACHUSETTS
COUNTY OF NORFOLK. JAN 12, 2009

Then personally appeared before me the above-named J. Robert Connor in his capacity as President of Union Management Corp., General Partner of Union Station Limited Partnership, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Limited Partnership.

Notary Public/Attorney-at-Law
Print Name: Karen S. Somers
My commission expires:

SEAL

KAREN S. SOMERS
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
February 15, 2013

Received
Recorded Register of Deeds
Feb 04,2009 10:48:44A
Cumberland County
Pamela E. Lovley

1361744.2

EASEMENT DEED

UNION STATION LIMITED PARTNERSHIP, a limited partnership organized under the laws of the State of Maine, whose mailing address is 12 Brook St., Wellesley, Massachusetts 02482 **("Grantor"),** for consideration paid, grants to **MAINE MEDICAL CENTER,** a Maine nonprofit corporation, whose mailing address is 22 Bramhall Street, Portland, Maine 04102, its successors and assigns (collectively, the **"Grantee"),** forever, a non-exclusive easement, twenty (20) feet in width centered more or less on the existing underground storm drain line described below more fully, to reconstruct, operate, maintain, inspect and repair or replace a drainage system and related improvements ("**Facilities**"), together with the right of ingress and egress thereto, upon, under, and across the parcel of land (the **"Easement Area").** The Easement shall be appurtenant to and run with and benefit Grantee's land described in that certain deed from Craig G. Coffin as successor to Daniel W. Hourihan, Trustee of the St. John Street Realty Trust under Declaration of Trust, dated December 17, 1985, which is dated September 10, 2008, and recorded in the Cumberland County Registry of Deeds **("Registry of Deeds")** in Book 26330, Page 105 **("Grantee's Property").** The easement shall run with and burden the property described in a deed from Union Station Plaza Associates to Union Station Limited Partnership, dated June26, 1992, and recorded in the Registry of Deeds in Book 10144, Page 23 **("Grantor's Property").** The Easement Area is more particularly bounded and described as follows:

A certain underground storm drain line situated on the westerly side of St. John Street in the City of Portland, County of Cumberland, and State of Maine, further described as follows:

Commencing on the easterly line of a Portland Terminal Company railroad corridor at the common corner of land now or formerly of Cowcatcher, LLC (deed book 26330 page 105) and land now or formerly of Union Station Plaza Limited Partnership (deed book 6813 page 250);

Thence, N82°23'43"E along common line of said Cowcatcher, LLC and said Union Station Plaza Limited Partnership 88.33 feet, more or less, to an underground

storm drain line and the point of beginning;

Thence, from said point of beginning, the following courses and distances through land of the Grantor and along the centerline of said underground storm drain:

N09°01'09"W a distance of 37.88 feet;

N42°56'14"W a distance of 88.02 feet;

S85°42'45"W a distance of 35.72 feet to a point at land of said Portland Terminal Company, being N07°10'39"W a distance of 111.75 feet, more or less, from the point of commencement.

Grantee understands that **Grantor**, or its successors or assigns, may, from time to time in the future, require that the herein described Easement, or some part thereof, be relocated in order to accommodate the development or redevelopment of the **Grantor's Property** which is burdened by such Easement, or by some part thereof. **Grantee**, for itself and for its successors and assigns, agrees that it shall, if requested to do so by the **Grantor**, or by the **Grantor's** successors or assigns, permit the **Grantor**, or its successors or assigns, to relocate said Easement, or part thereof, provided (i) that the proposed relocation does not degrade the operational efficiencies of the **Facilities** to be relocated, or degrade the access to the **Facilities** by the **Grantee** for maintenance, repair, or reconstruction, and (ii) that the **Grantor** or its successors or assigns, pays the cost of said relocation (the costs of the relocation being the actual cost of relocation) and, (iii) that the **Grantor**, or its successors or assigns, grants unto the **Grantee** a replacement easement (which replacement easement shall be a perpetual and unencumbered easement in substantially the same form and content as this document) for the herein Easement, or part thereof, so relocated. At such time as the herein described Easement, or part thereof, is relocated pursuant hereto, **Grantee**, or its successors or assigns, shall vacate and release the herein described.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be executed under seal by its duly authorized representative as of this 9th day of May, 2018.

WITNESS

UNION STATION LIMITED PARTNERSHIP
By: Union Management Corp., a Maine corporation
Its General Partner

J. Robert Connor
Its President

STATE OF MASSACHUSETTS
COUNTY OF NORFOLK

May 9, 2018

Then personally appeared before me the above-named J. Robert Connor in his capacity as President of Union Management Corp., General Partner of Union Station Limited Partnership, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said Limited Partnership.

Courtney Stepien
Notary Public/ Attorney At Law

Print name: Courtney Stepien
My Commission Expires: 2/15/19

SEAL

COURTNEY STEPIEN
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
February 15, 2019

Received
Recorded Register of Deeds
May 16,2018 02:28:55P
Cumberland County
Nancy A. Lane

8. EVIDENCE OF FINANCIAL & TECHNICAL CAPACITY

8.1 Financial Capacity

Attached to this Section is a summary from MMC demonstrating that the organization has the financial capacity to support the proposed project.

8.2 Technical Capacity

Becker Structural Engineers is the lead designer for the proposed parking garage. Winton Scott Architects is the architect for the project and Woodard & Curran is the civil engineering firm completing the site design and permitting. Becker Structural Engineers, Woodard & Curran and Winton Scott Architects all have significant experience completing similar types of development projects in Maine, and specifically in Portland.

Resumes or additional company information for Woodard & Curran, other consultants referenced within this application, or key personnel involved in preparing this application can be provided upon request.

The design team includes the following professionals:

- Owners Project Manager – Colliers, Boston, MA
- Structural Engineer – Becker Structural Engineers, Portland, ME
- Civil Engineer & Permitting – Woodard & Curran, Portland, ME
- Architect – Winton Scott Architects, Portland, ME
- Landscape Architect – MBLA, Freeport, ME
- Construction Contractor – Consigli, Portland, ME
- Traffic Engineer – Gorrill Palmer, Portland, ME
- Traffic Engineer – VHB, Portland, ME
- Surveyor – Owen Haskell, Portland, ME
- Geotechnical Engineer – SW Cole, Portland, ME
- Mechanical/Plumbing – Ripcord, Portland, ME
- Electrical – Bartlett Design, Bath, ME

8.3 Attachments

- Financial Capacity Summary

MAINE MEDICAL CENTER LEVEL III SITE PLAN APPLICATION

Employee Parking Garage | 222 St. John Street, Portland, Maine

Section 8 | Evidence of Financial & Technical Capacity

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.

9. CONSTRUCTION MANAGEMENT PLAN

The MMC St. John Street parking garage project is anticipated to be approximately 15 months in duration, beginning in September 2018 and reaching substantial completion in December 2019. The following is the anticipated sequence of construction for major aspects of the development:

- Site mobilization and ground improvements
- Erection of precast garage (generally constructed south to north)
- Garage Interior Fit-Out
- Stair Tower Fit-Out
- Construction of St. Johns Street improvements (utility connections, sidewalks, traffic lights, paving and markings)
- Surface Parking Improvements (including stormwater management system)
- Testing & Punchlist

The CMP for the proposed development is in alignment with the template CMP provided in the approved IDP. Please refer to the attached CMP as prepared by Consigli. MMC recognizes that the CMP is an important aspect of the site plan, and desires to work with the City to provide the best plan for the project, surrounding neighborhood and City.

9.1 Attachments

- Construction Management Plan

June 22, 2018

CONSIGLI
Est. 1905

Maine Medical Center
MaineHealth

St. John Street Parking Garage
Construction Management Plan

Prepared For: Portland Department of Planning & Urban Development Department

Project Proponent: Colliers International

Construction Manager: Consigli Construction

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Construction Principles

The purpose of this Construction Management plan is to identify, mitigate and plan for all potential impacts throughout the duration of building the St. John Street Parking Garage. Maine Medical Center and Consigli Construction will strive for a seamless, incident free project by means of typical practices used to ensure that public safety and community are at the forefront of priorities.

Throughout this CM plan we will refer to specific examples of potential construction practices, traffic control scenarios, neighboring building considerations and public safety; as well as measures in which these items will be managed throughout the project to accommodate the community as much as possible. While we will take the necessary precautions to meet City and State requirements for traffic, noise, dust, vibration, etc., this project will be disruptive to adjacent properties compared to the current condition. Along with our subcontractor team members, it is imperative that we have complete participation from all parties affiliated with the project to maintain our strict safety requirements and ensure a quality building for Maine Medical Center.

Consigli Construction has been commissioned to construct a new 8 story, 2,450 space garage on the West side of St. John St. The garage is approximately 800,000 sf that will be primarily built out of precast concrete.

Consigli has extensively planned the project's schedule, site logistics and safety protocols that will be thoroughly covered in this report with graphics and narratives. This CM plan will continually be updated to meet the needs of the project, community and the city as the project progresses. We aim to deliver a safe and quality project to MMC, their employees and the City of Portland by means of communication, teamwork and stewardship.

Construction Administration and Communication

Consigli Construction will be the Construction Manager on site throughout the duration of the project. As such, there will be a dedicated team of individuals tasked with managing quality, schedule, site logistics and safety. These personnel will manage and enforce the proposed CMP with all associated subcontractors and material vendors.

Dave Thomas – Project Executive
207-650-8665, dthomas@consigli.com

Travis Kirby – Project Manager
207-272-6980, tkirby@consigli.com

Michael Swett – Assistant Project Manager
207-891-3708, mswett@consigli.com

Larry Chouinard – General Superintendent
207-650-5204, lchouinard@consigli.com

Site Communication

With the proximity to occupied buildings, community outreach and communication will be imperative throughout construction to keep the public informed of the expected turbulences caused by the project. Site signage will be prominently displayed to show pedestrian access around the site and any updates to the proposed CMP.

Quarterly reporting and updating of the CMP will be required to update the City and community of the following activities:

1) Construction schedule updates
2) Material deliveries, including notice of any oversized loads that may impact public traffic
3) Requests for upcoming off-hours work including weekends and holidays
4) Notice of any upcoming activities that may produce strong noise, vibration or dust that could adversely affect the neighboring communities.
5) Requests for any street openings or public sidewalk work to be completed as part of the construction contract

Construction Schedule

Project Work Hours

Construction work hours will be in accordance with section 17-18.

The project site is located within zoning group B2 – Business Community but is within 500 feet of buildings used for residential purposes. As such, work hours will be limited to Monday – Friday 7:00am – 6:00pm. Should work extend into Saturdays, the use of heavy equipment will be kept within the time constraints of 8:00am – 4:00pm.

Project Schedule/Logistics

The project is anticipated to begin in September 2018 will be partially turned over to MMC in December 2019. The work to complete will include completion of the garage fit-out from grid lines 9-12 along with landscaping items to be completed during the 2020 Spring planting season. Refer to the Overall Construction Sequence on page 10. Final occupancy of the building is expected the first quarter of 2020.

Regarding scheduled work to take place within public streets and sidewalks, this work will comply with Section 25-129 – Noise, dust and debris. The installation and connections to public utilities, traffic lane reconfigurations, and sidewalk construction will require work to be executed within St. John St. and D St. This work will be scheduled and planned with the City of Portland prior to the execution. All logistical concerns will be addressed with the City prior to starting the work. This work is tentatively scheduled to occur during the late summer of 2019. Temporary barricades, ramps and signage will be required during the installation to control pedestrian/vehicle movements around the work.

Material Deliveries

The construction of the parking garage will require coordination of material deliveries throughout the duration of the project. The following logistical plans show the planned lay-down areas, truck routes and safety protocols that will be in place prior to the start of construction. Refer to the Truck Routing Plan on page 11.

1. The primary entrance for sitework, concrete and precast deliveries will be through a paved right-of-way through the existing Eagles parking lot. Trucks will then exit the job site through the North gate accessing St. John St via the Union Plaza parking lot. A flagger will be employed to assist in navigating loads off St. John to the project site. Once the garage has been 50% erected, this right-of-way will become blocked and the primary entrance to the site will be redirected through Union Plaza and the North gate.
2. Four on street parking spaces will likely need to be closed to public use for the large trucks to gain access to the project site.

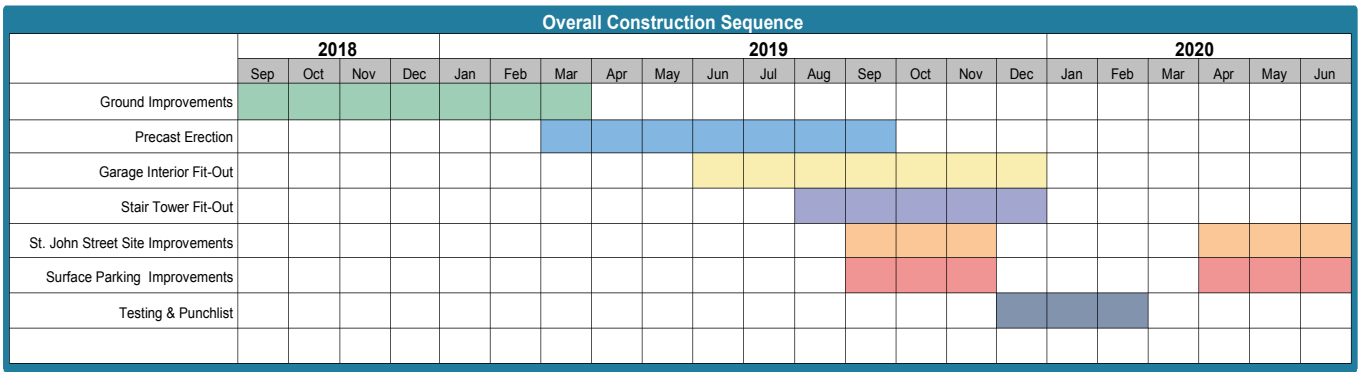
Material Storage and Laydown Area

The construction of the garage will require careful planning and management of the daily occurrences within the site limits. The logistical plan that is currently outlined is intended to keep all construction staging, laydown and temporary storage within the project limits and secured by temporary fencing. Specified areas will be granted to on site subcontractors for staging materials and managing their installation. With designated areas delegated to subcontractors the site will remain accessible by incoming trucks without causing a queuing affect outside of the fence. A secondary storage yard is anticipated near the project site. This area would be utilized to store precast material not able to be stored on site. The usage of this area will help to better control and manage the truck traffic to and from the site.

Contractor/Public Parking

At the peak of construction activity, it is anticipated that up to 100 people will be on site working various trades associated with the building. The current constraints of the project site do not allow for parking of subcontractors within the project limits. As such, contractor parking will be delegated to off site areas. Contractors will not be allowed to park on any residential street within the St. John neighborhood. Any violators will be fined or asked to leave the project depending on the frequency of the violations. Consigli is currently exploring options to acquire off site parking for the subcontractors that would not impact the neighboring community.

The Eagles parking needs will need to be addressed and managed throughout construction. During the construction process, MMC will find temporary accommodations for the members of the Eagles and tenants of 222 St John. The exact location of temporary parking has not been determined. MMC is committed to providing safe and proximate parking for these properties throughout the construction process.



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Fire Protection for Construction Activities

The 2013 Standard for Safeguarding Construction, Alteration and Demolition Operations will be enforced on this project by utilizing best management practices to mitigate the fire risks associated with the construction of the parking garage. Consigli and its subcontractors will execute the following measures to provide a safe and secure work place:

1) PFD Fire Command Center: This centralized location will hold all current project information and will act as the first responders meeting point to obtain the most up to date information of construction. The following documents will be found at this location:
    a. Hot Work Permits: To be filled out daily by any person performing work that will generate a spark or create a potential fire risk on the job site. The permits are to be completed and approved by Consigli prior to work starting.
    b. Updated Construction Schedule
    c. Updated Construction Logistics Plan
    d. Pre-Incident Fire Plan

2) On Site Fuel Storage: Different flammable liquids will be required throughout construction. A free standing, 30-minute fire-rated enclosure will be built to safely and securely store all flammable liquids and gases. Fueling trucks will be used as needed but under no circumstances be allowed to be parked or stored on site for any extended period.

3) Means of Egress: The parking garage will be permanently equipped with (3) 2-way stair assemblies for means of egress. During construction it is the intent to install the stair located in the Southwest corner first to provide emergency egress throughout construction. These stairs will be identified with temporary signage throughout construction indicating the floor level and exit path direction

4) Good Housekeeping: Consigli Construction will provide necessary dumpsters for the removal of debris from the site. All subcontractors are responsible for the daily clean-up of their work areas to ensure that no materials or tools are left out over night that could pose a hazard to the building. Daily safety walks by the Construction Superintendent will be utilized to ensure that all working floors are equipped with an inspected fire extinguisher and clear means of egress in the event of an emergency. Trash chutes and material hoists may be utilized to safely and efficiently remove all debris from the project.

5) On-site Security: The project site will be secured everyday by means of a temporary, post driven construction fence and scrim. Lockable gates will be located at (2) locations for site access.

6) Rapid Communication: Evacuation notification will be provided by means of 2-way radios/cellular devices as well as strategically positioned air horns. Upon evacuation of the building all project personnel will report to the muster point location where the Construction Manager and all subcontractor foremen will perform accountability checks. The General Contractor field staff will then be dispatched to all project entry points and the PFD Command Center. Upon arrival of the first responders to the PFD Command Center the General Contractor will provide an accountability and incident briefing.

Public Safety

The construction of the new MMC Parking Garage will be near pedestrian right of ways and will interact with public traffic throughout the duration of the project. Material deliveries, the use of cranes, lifts and other heavy machinery all have the potential to impact typical public activity. As a member of the Portland community, Consigli will strive to limit, mitigate and avoid these potential impacts as much as possible by means of controlling noise, on site dust, vibrations and traffic. By educating and informing the neighborhoods to the construction activities taking place we will aim to build to a project that produces the minimal of impacts to the St. John Street community.

Noise

Construction activities throughout the project will create noise that leaves the project site. It is the intent of the project team to limit the exposure to the noise by following section 17-18 of the City of Portland Code of Ordinances. This project site is located within 500 feet of buildings classified as residential. As such, the project hours will be limited the 7:00am – 6:00pm, Monday – Friday. Should any weekend or holiday work be required the use of heavy machinery will not commence before 8:00am. When this work is required, no less than 2-week advanced notice will be provided to MMC and the neighboring communities.

Work related to the pile foundation will likely be the loudest activity experienced during construction. Consigli has anticipated fast-tracking this work by utilizing (2) pile driving crews to reduce the duration of the sensory burden on the neighboring community. This work will take place from November 2018 – January 2019. Recently, many local projects have utilized the pile foundation to much success around Portland. The new WEX building on Commercial St. and the Hyatt in the Old Port both utilized piles in their foundation.

Dust Control/Air Quality

Maintaining an environmentally conscious project site will be a major priority for the project team to ensure safety not only for the neighboring communities but also for the construction workers on site day after day. All soils and debris will be kept within the project limits following the State of Maine Department of Environmental Protection erosion control Best Management Practices:

1) Erosion controlled construction entrances
2) Tarped dump trucks leaving the site with soil/debris
3) On-going sidewalk and street cleaning activities
4) The installation of temporary, compacted roads within the job site
5) Using wetting agents to control dust

6) Covering stock piles when material is to be piled for long periods of time
7) Smoking will not be allowed on the job site

Vibration Monitoring

Some of the construction practices required for this project will result in ground vibration waves that may transmit to nearby buildings. Prior to any potential vibration causing activities taking place a pre-construction survey will be conducted to review and document existing conditions. The survey will encompass all properties abutting the proposed project site to include the following addresses:

- 222 St. John St (Office Bldg.)
- 210 St. John St (Residence)
- 212 St. John St (Residence)
- 160 St John St (Sid Harvey's)
- 172 St. John St (Ferguson)
- 184 St. John St (Eagles Bldg.)

- Vibration monitoring will also be conducted adjacent the railroad immediately west of the project site limit.

Pavement removal, vibratory compaction and pile driving will be employed on this project and will be monitored by a third-party monitoring company. A pre-construction meeting will be planned with abutting property owners to discuss geological conditions, construction specifications and methods of installation that create vibration.

Traffic Control

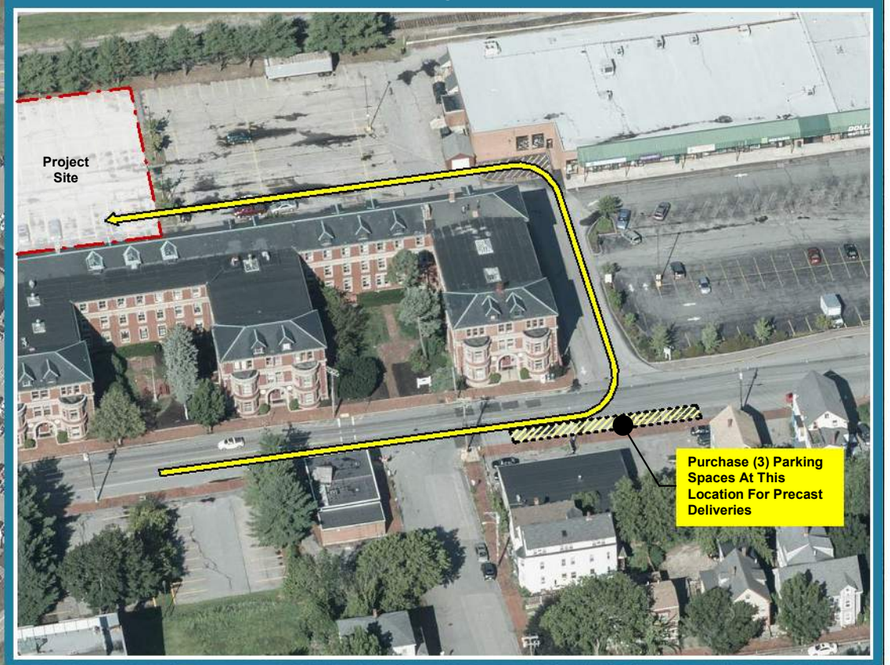
Throughout the construction process St. John St will experience increased traffic due to construction activities. Material deliveries, contractor access and public utility integration will be encountered and mitigated through coordinated logistics plans (starting on page 11), on site safety personnel, way-finding signage and well-organized traffic control devices. MMC & Consigli will strive to inform and direct the neighborhood to the activities taking place in public areas as they progress through completion. Beginning in July 2019, construction activities within St. John St will include public utility connections, traffic control installations and sidewalk improvements.

The main entrance point to the construction project will be through the East gate located within the existing Eagles parking lot. To navigate precast concrete deliveries to the project site a flagger will be stationed at St. John St. to usher the trucks into the right of way. Trucks and trailers will exit the project site through the North gate and re-enter traffic via the right of way through the Union Plaza parking lot. Due to the large turn radius of some of these trucks, it will be necessary to temporarily close parking spaces within the tenant lot as well as spaces located on St. John St. Please reference the trucking plan, on page 10, for more information.

Anticipated Construction Traffic Per Day

	2018				2019												2020					
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Earthwork/Ground Improvements	*(9)*	*(20)*	*(25)*	*(25)*	*(25)*	*(25)*				*(5)*	*(7)*	*(7)*	*(10)*							*(5)*	*(5)*	*(5)*
Structural Precast Erection							*(20)*	*(20)*	*(20)*	*(20)*	*(10)*	*(5)*										
Garage Fit-out													*(15)*	*(15)*	*(13)*	*(10)*	*(6)*					

Bird's Eye View



From I-295 Exit 4 Casco Bay Dr

Veterans Memorial Pathway

ALT 1

Ogdensburg St

Access To Project Site Via St. Johns' Street

St. John's Street

Project Site

Purchase (3) Parking Spaces At This Location For Precast Deliveries

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Maine Medical Center

St. John Street Garage
Truck Route

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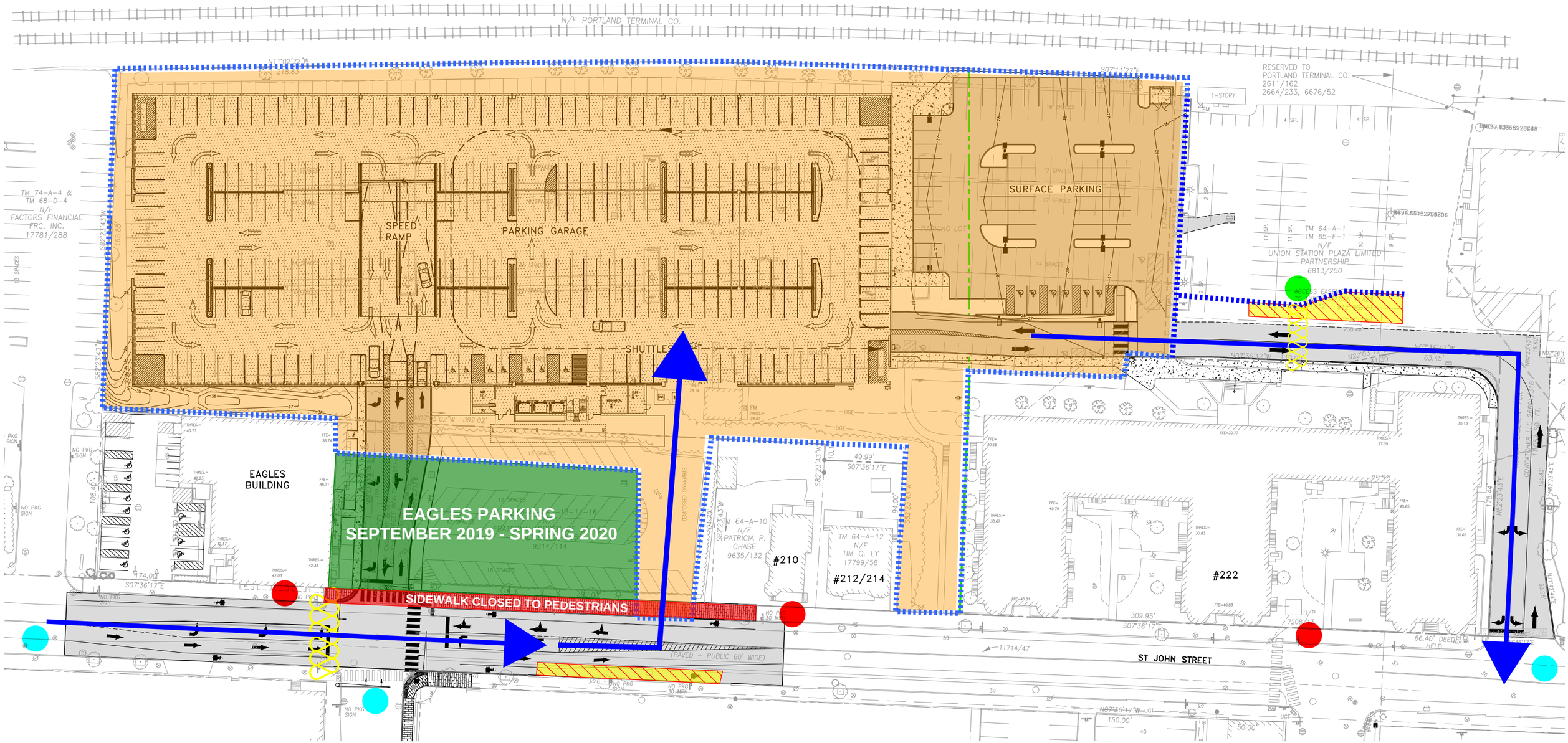
PHASE 1 LOGISTICS PLAN
SEPTEMBER 2018 - SUMMER 2019



TEMPORARY CROSSWALK

CROSSWALK SIGNAGE AND TRUCK CROSSING SENSOR

SIDEWALK CLOSURE SIGNAGE

CONSTRUCTION TRAFFIC AHEAD SIGNAGE

PARKING SPACES PROCURED FOR CONSTRUCTION

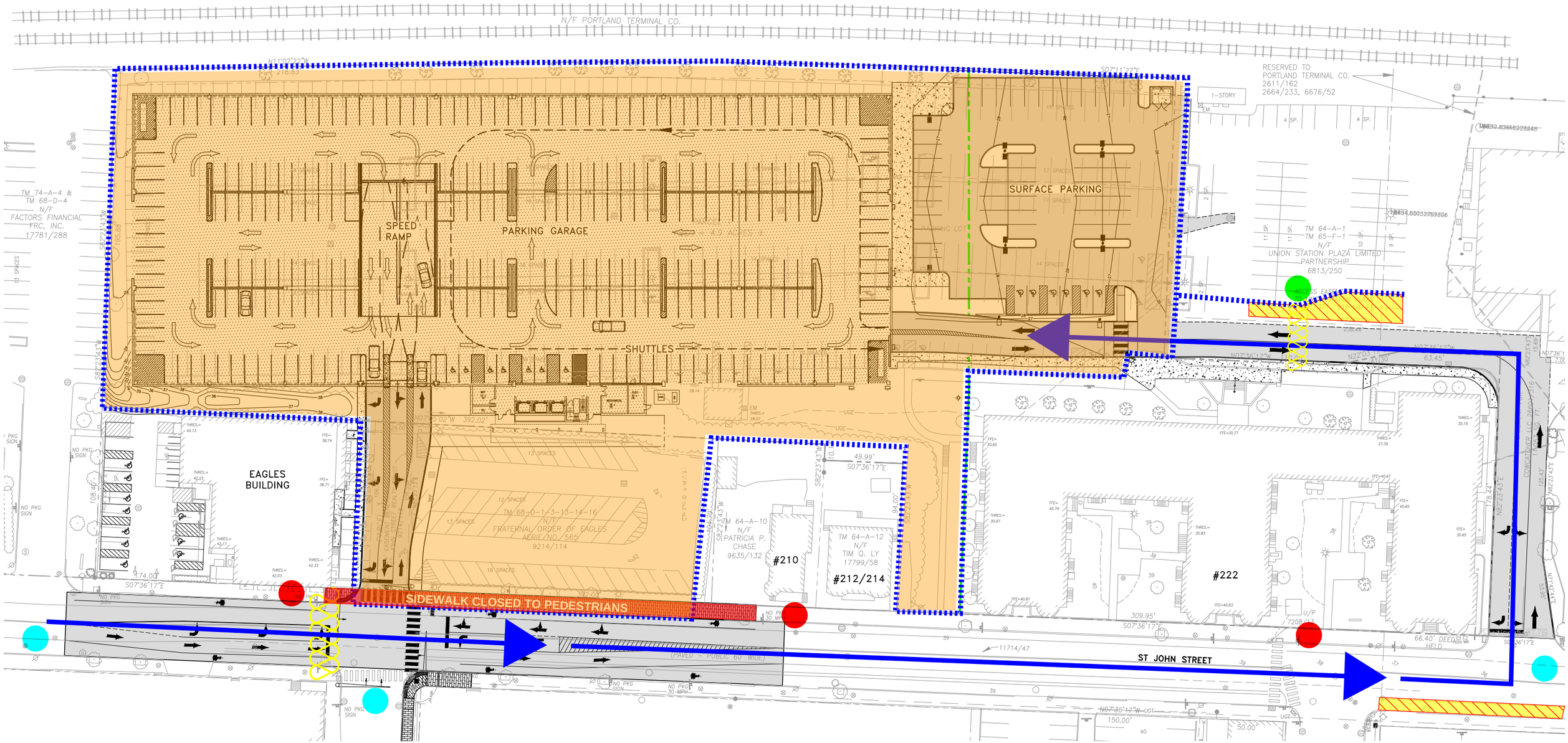
SIDEWALKS CLOSED DURING CONSTRUCTION

PROJECT SITE

CONSTRUCTION VEHICLE TRAFFIC

CONSIGLI

PHASE 2 LOGISTICS PLAN
SUMMER 2019 - DECEMBER 2019



TEMPORARY CROSSWALK

CROSSWALK SIGNAGE AND TRUCK CROSSING SENSOR

SIDEWALK CLOSURE SIGNAGE

CONSTRUCTION TRAFFIC AHEAD SIGNAGE

PARKING SPACES PROCURED FOR CONSTRUCTION

SIDEWALKS CLOSED DURING CONSTRUCTION

PROJECT SITE

CONSTRUCTION VEHICLE TRAFFIC

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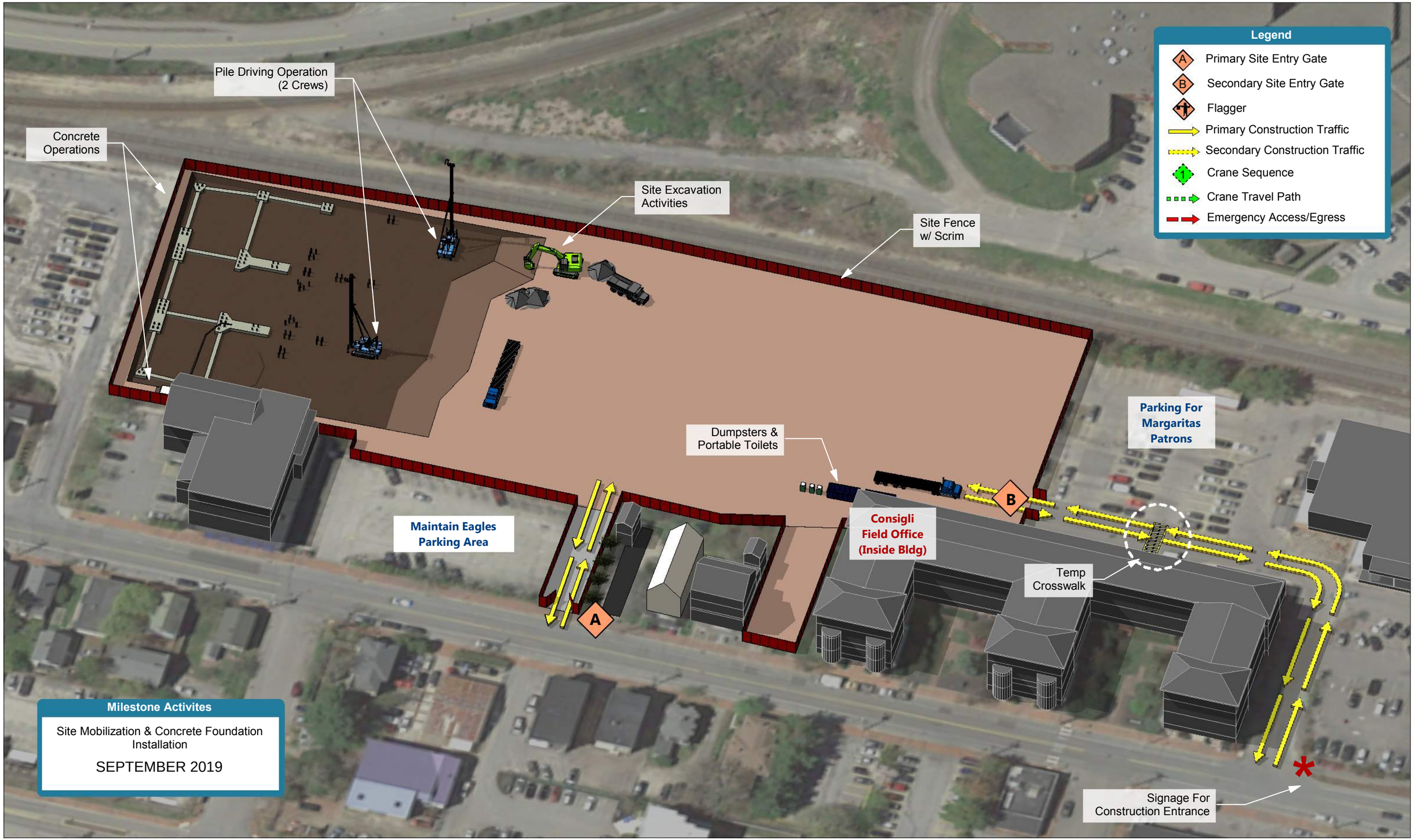

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Maine Medical Center

St. John Street Garage
Site Logistics Plan - Site Mobilization & Foundations

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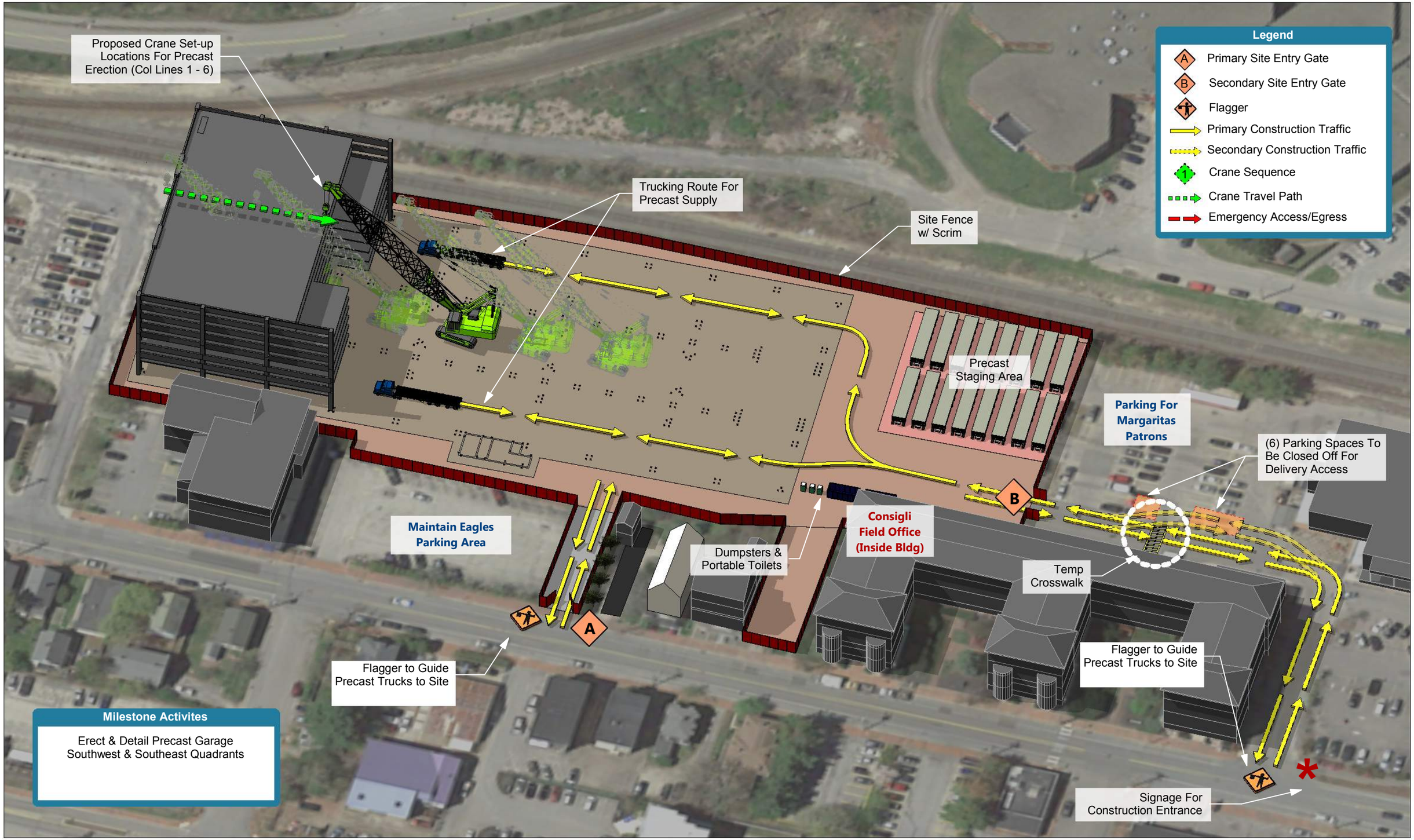

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Maine Medical Center

St. John Street Garage
Site Logistics Plan - Precast Erection (Column Lines 1-6)

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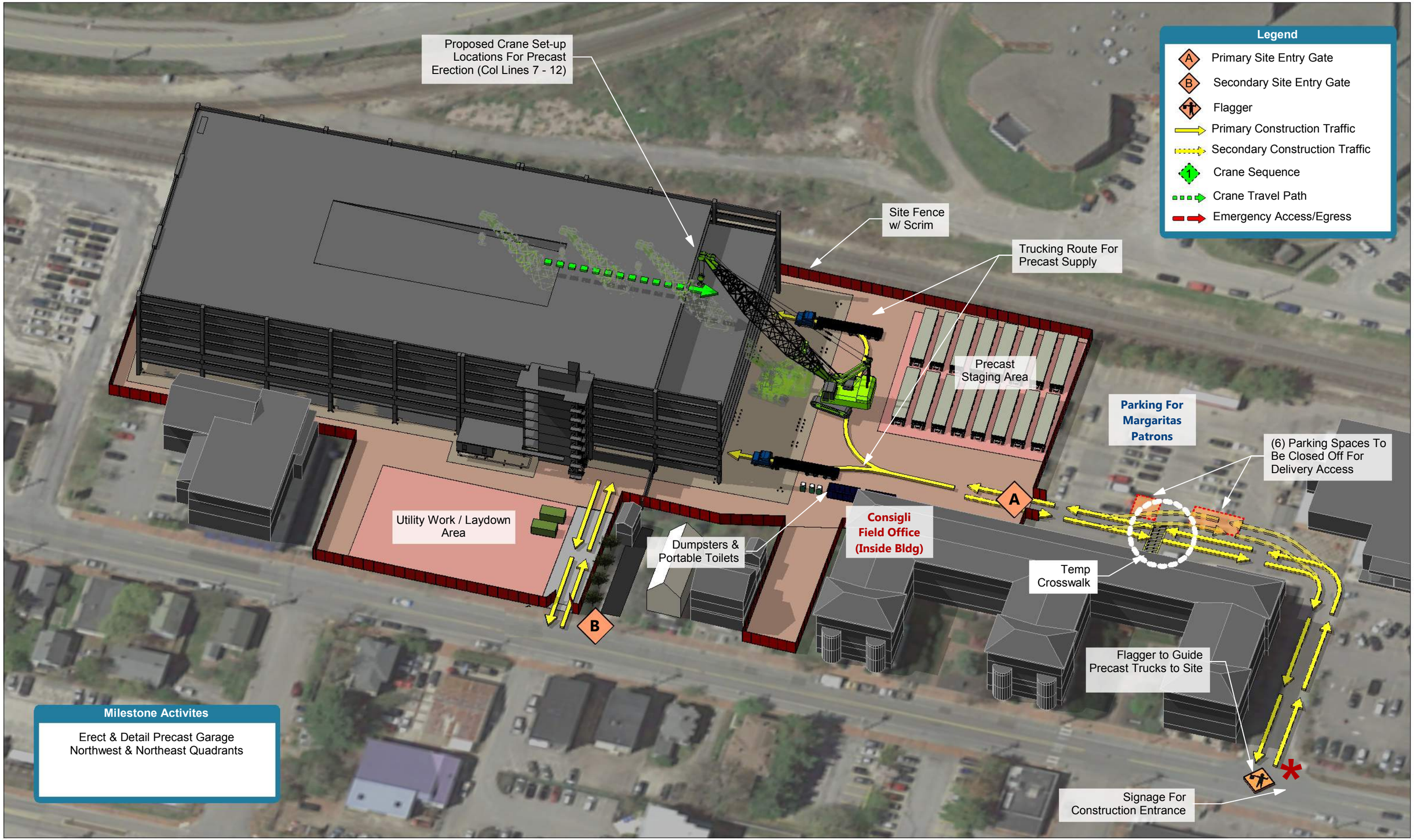

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Maine Medical Center

St. John Street Garage
Site Logistics Plan - Precast Erection (Column Lines 7-12)

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Maine Medical Center

St. John Street Garage
Site Logistics Plan - Architectural Facade & Core Finishes

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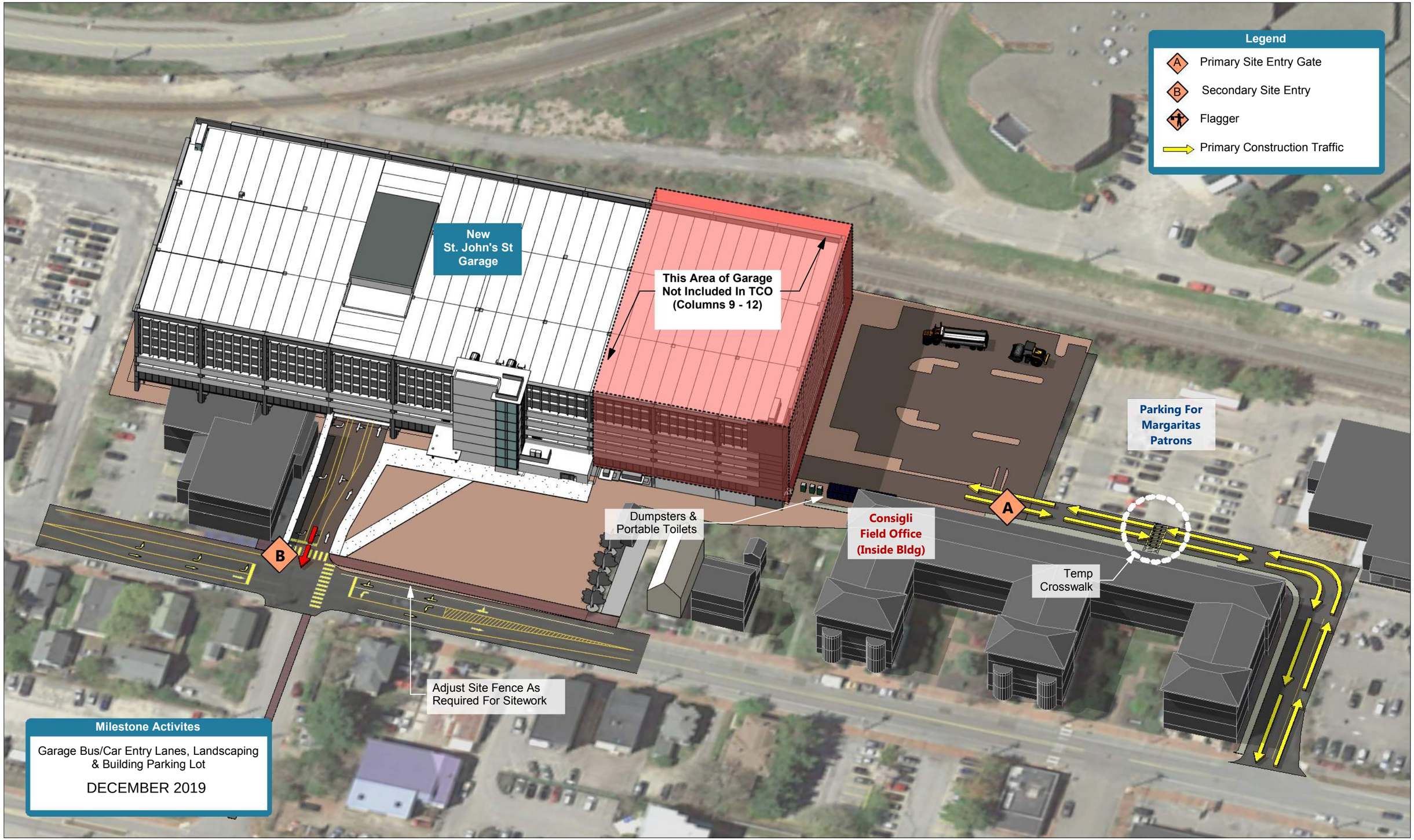

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Maine Medical Center

St. John Street Garage
Site Logistics Plan - Temporary Certificate of Occupancy

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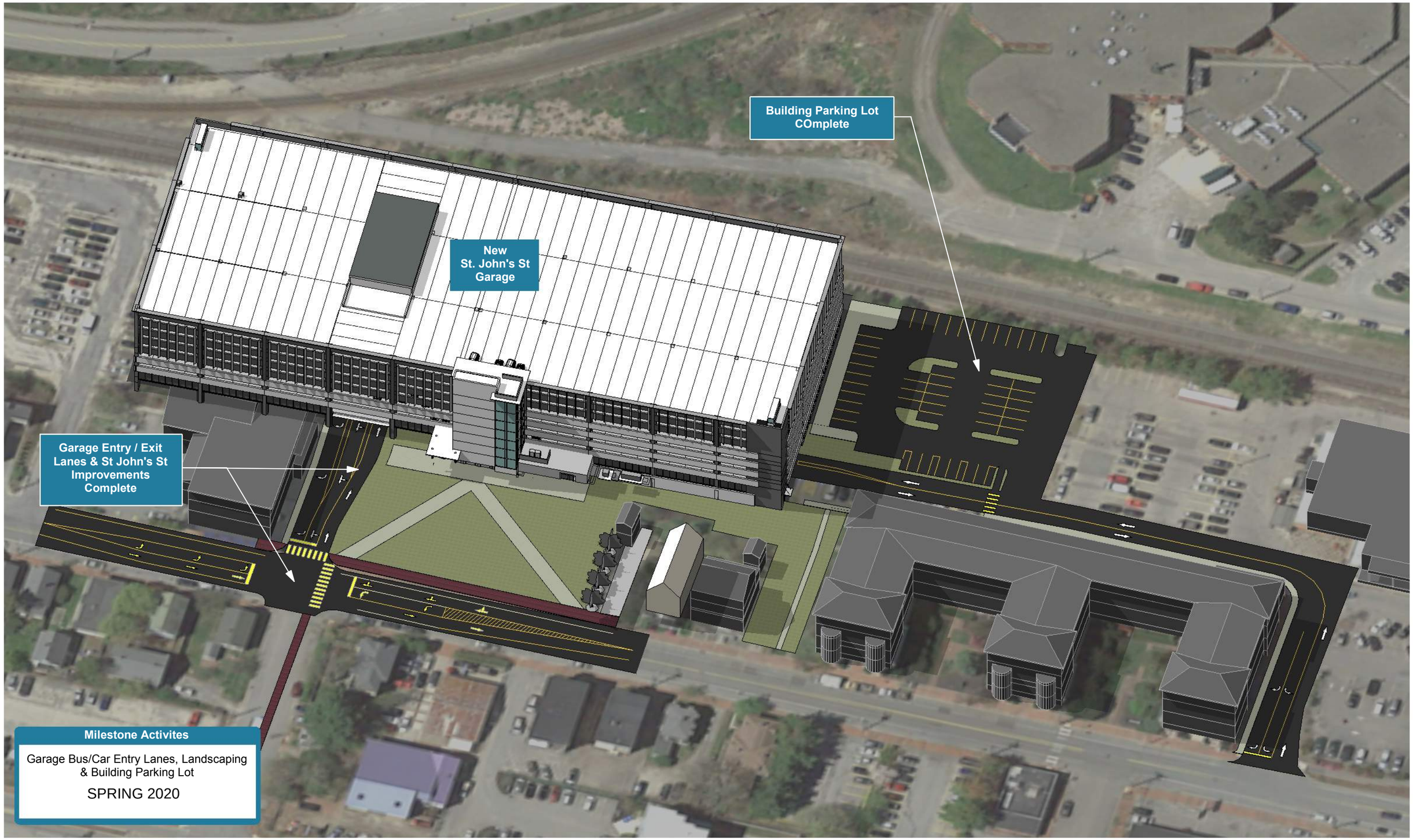

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Maine Medical Center

St. John Street Garage
Site Logistics Plan - Certificate of Occupancy

CONSIGLI Est. 1905

10. TRAFFIC AND PARKING ANALYSES

Gorrill Palmer prepared the attached Traffic and Parking Analysis and has forecasted trip generation for the proposed garage and evaluated the operation of the entrances and exits onto St. John Street.

The ground level of the parking garage and surface lot will accommodate parking needs associated with the businesses at 222 St. John Street after construction. MMC is arranging for other nearby accommodations during construction. Provision of snow ban parking in the garage will be further discussed between MMC and the City of Portland.

The MMC Transportation Demand Management (TDM) Plan is discussed in the approved IDP (IDP page 74). Within the TDM, there are several parking and other strategies to manage the growth of staff parking demand. The current TDM is attached to this Section.

MMC has developed proposed shuttle routes once the staff parking garage is complete. Figures showing the inbound and outbound shuttle routes are attached to this Section.

At the request of the City and based on traffic routing options, MMC analyzed a potential connection from the staff parking garage to the Fore River Parkway. A feasibility analysis was prepared and is attached to this Section.

10.1 Attachments

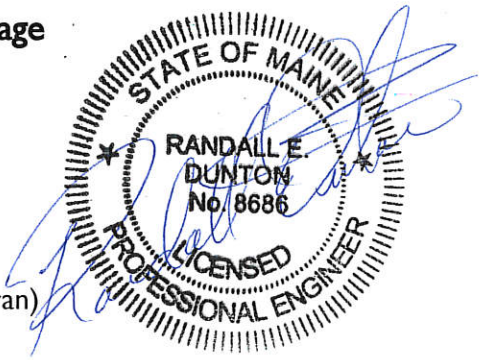
- Traffic Evaluation
- Transportation Demand Management Plan
- MMC Staff Parking Garage Shuttle Route Figures (Inbound & Outbound)
- Feasibility Analysis | Connecting the St. John Garage to Fore River Parkway

GORRILL PALMER

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

Traffic Evaluation
Maine Medical Center – St. John Street Garage
Portland, Maine

JN 2866.01



Date: June 19, 2018
Subject: Traffic Evaluation
St. John Street Garage – Portland, Maine
To: Alexander Green (MMC), Dave Senus (Woodard & Curran)
From: Randy Dunton / Emily Tynes, Gorrill Palmer

Introduction

Gorrill Palmer (GP) has prepared this traffic evaluation for the proposed 222 St. John Street garage to be located off St. John Street in Portland, Maine. This project is Phase 2 of 3 phases. The first phase of an East Tower overbuild and Visitor Garage overbuild are currently under construction. Phase 3 includes an expansion to the hospital to be located off Congress Street and will require a MaineDOT Traffic Movement Permit (administered by the City), as well as a more extensive and wide ranging traffic impact study that incorporate the findings of this evaluation. The garage is proposed to provide approximately 2,400 parking spaces, with an adjacent surface lot containing approximately 52 parking spaces. It should be noted that of the 2,452 spaces, 150 spaces will be allocated to tenants of 222 St. John Street, who operate during typical business hours (approximately 8:00 AM to 5:00 PM), and not on the offset shifts like the majority of Maine Medical Center employees. Also included in the garage on the first deck are 50 spaces reserved for the Eagles. GP has forecast trip generation for the proposed garage and evaluated the operation of the adjacent roadway network. The following is a summary of the methodology and results of the evaluation.

Trip Generation

The proposed garage and adjacent surface lot are anticipated to accommodate the following:

- Gilman Garage: 1,274 spaces
- Sportsman Lot: 60 spaces
- 222 St. John Street Lot: 283 spaces
- Gateway Garage: 100 spaces
- Classic Lot: 97 spaces
- 321 Brackett Street Lot: 9 spaces

- Reserved Eagles 50 spaces
- MMC Employee On-Street Parking: 200 spaces (estimated)

Total Parking Spaces = 2,073

The 200 on-street parking spaces are an approximate number of spaces intended to include vehicles that may currently park on neighborhood streets. The 50 parking spaces reserved for the Eagles are not expected to occur on a regular and frequent basis, or coincide with the peaks of MMC. However, to be conservative, for the purposes of completing this evaluation, they have been considered as MMC employee spaces with the same traffic patterns.

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

A parking demand analysis was conducted as part of the Transportation Plan in the IDP to determine parking needs based on supply and demand, and trip reduction efforts outlined in the TDM Plan. The analysis revealed an existing employee parking shortage of 150 to 200 spaces, with the MMC parking system typically operating at or above capacity during weekday daytime hours (IDP page 65). Approximately 500 to 600 additional employee parking spaces are required to meet projected demand based on expected staff growth. The proposed project was identified to address the shortage.

Existing Parking Area Traffic Volumes

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

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

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

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

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

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

Proposed Parking Garage Trip Generation

Since the employees that currently park in the Gilman garage will be shifted to the new garage, they will have to take a shuttle in the future rather than have direct access to the hospital as they do currently. Because of this shift, we would expect those employees to arrive approximately 15 minutes earlier than they typically would and that they would end up leaving the new garage approximately 15 minutes later. Therefore, the counted volumes for the Gilman Garage were adjusted by 15 minutes to estimate the traffic that would be experienced when the spaces are relocated to 222 St. John Street. The adjusted Gilman Garage volumes are shown on the attached "St. John Street Parking Garage Trip Generation" table.

The total trip generation for the proposed St. John Street garage is based on adding the existing or estimated trip generation of each 15 minute period for each parking location to identify the overall AM & PM peak hours. Then, a ratio of the proposed number of parking spaces (2,452) to the existing combined number of parking spaces to forecast the trip generation for the proposed garage.

Based on the combined volumes for the parking areas and the proportional increase in number of parking spaces, the AM peak hour of the proposed garage is estimated to occur from 6:00AM to 7:00AM with **1,097** trip ends, and the PM peak hour of the garage is estimated to occur 4:15PM to 5:15PM with **571** trip ends. A trip end is a trip into or out of the site, thus a round trip is equal to two trip ends. The AM peak hour of the garage is estimated to occur significantly outside of the adjacent street (St. John Street) peak hours for the AM condition which occurs from 7:30AM to 8:30AM and closer to the PM peak hour of the adjacent street which occurs from 4:00PM to 5:00PM. It should be noted that the Traffic Impact Study for Phase 3 will take a broader look at the overall adjacent roadway network peak hours versus the peak hours of the garage.

Trip Distribution and Assignment

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

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

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

The regional trip assignment has been based on the VHB travelshed completed for the IDP. For localized assignment, it is based on GP's review of the area as well as numerous discussions with the City of Portland staff and traffic consultant. The trip assignment is shown on the attached Figure 4.

Please note that the existing turning movement counts indicate that some traffic uses the existing Union Station access from Congress Street to the site. For the purposes of this assessment, to be conservative, it has been assumed that this cut-through will not be available and that traffic has been reassigned to the adjacent street. The attached Figure 6 shows the estimated MMC traffic using the Margarita's driveway, and Figure 7 shows the reassignment of the cut-through traffic (not including MMC traffic).

Shuttle Trip Generation / Assignment

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

access. These 104 trips have been added to the employee trips. To be conservative, it has been assumed that the shuttles will turn right into the Margarita's access and left out of the Margarita's access.

2022 Predevelopment Volumes

GP completed turning movement counts at the intersection of St. John Street with the Margarita's Driveway on May 17, 18, and 19, 2017 from 6:00AM to 8:00AM, 7:45AM to 9:00AM, 5:00PM to 8:00PM, and 3:00PM to 5:00PM. Those volumes were used as the base raw volumes for St. John Street and for Margaritas during the forecast garage peak hours of 6:00AM to 7:00AM and 4:15PM to 5:15PM.

Additional turning movement counts were completed by Accurate Counts at the following intersections from 6:00AM to 9:00AM and 2:00PM to 8:00 PM on the specified dates:

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

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

- St. John Street / D Street: May 30, 2018, 6:00AM – 9:00AM and 3:00PM – 6:00PM
- Congress Street / Valley Street: December 13, 2016, 7:00AM – 9:00AM and 3:00PM – 6:00PM

The results of all counts are shown on the attached Figure 2.

Seasonal Adjustment

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

- Valley Street / Commercial Street: 7.0%
- St. John Street / Valley Street: 8.1%
- D Street / St. John Street: 1.2%
- Margaritas / St. John Street: 2.3%
- Congress Street / St. John Street: 7.0%
- Valley Street / Congress Street: 12.8%

Annual Growth

In addition to the seasonal adjustment, the adjacent roadway volumes were also increased by an annual growth rate to forecast the traffic that may be experienced during the build out year of the project. An annual growth rate of 0.5% per year (approved by the City and consistent with other studies in the area) has been applied to the seasonally adjusted volumes to yield the 2022 Predevelopment traffic volumes shown on the attached Figure 3. It should be noted that the employee growth rate in the IDP is forecast to be approximately 0.63% per year, which is very similar to the growth rate approved by the City for overall on-street traffic and used on other studies in the area.

2022 Postdevelopment Volumes

The 2022 Predevelopment traffic volumes shown on Figure 3 were combined with the employee and shuttle trip assignments shown on Figures 4 and 5. Then, the traffic volumes on the Existing Employee Garage Trip Assignment on Figure 6, the Existing MMC 222 St. John Street Traffic on Figure 7, and the Existing Cut-Through Traffic on Figure 8 were subtracted from the combined trip assignment to yield the 2022 Postdevelopment traffic volumes shown on Figure 9.

Signal Warrant

A signal warrant was completed for the proposed garage access using the Manual on Uniform Traffic Control Devices (MUTCD) Signal Warrant 3, Peak Hour (attached). The warrant was completed using the 2022 Postdevelopment traffic volumes on Figure 9. Based on the warrant, a signal for the garage access opposite D Street is not warranted during the AM peak hour and is marginal during the PM peak hour. During the AM peak hour, the majority of the garage traffic is entering (98%), and very little (2%) is exiting, which does not meet the warrant. During the PM peak hour of the garage, if the traffic volumes on the adjacent street increase by approximately 150 vehicles, a signal would be warranted at the intersection. It should be noted that this evaluation assumes that the shuttles turn left out of the Margarita's access. If the shuttles are shifted to turn right out of the Margarita's access then turn left onto D Street, the traffic volumes on the adjacent street would need to increase by approximately 100 vehicles for a signal to be warranted at the garage access during the PM peak hour. Additionally, a signal would improve pedestrian connectivity in the vicinity of the garage and improve the safety of pedestrian crossings on St. John Street. It is our recommendation that a signal be installed at the garage access opposite D Street.

Capacity Analysis

Based on discussions with the City, the study area intersections for this evaluation include the following. Please note that Phase 3, the MMC Congress Street expansion, will require a Traffic

Movement Permit (TMP) and full traffic impact study which will include not only these intersections, but others as well.

- Valley / Congress (Signalized)
- Congress / St. John (Signalized)
- Margaritas / St. John (Unsignalized)
- D Street / Garage / St. John (Signalized)
- Valley / St. John (Signalized)
- Commercial / Valley (Signalized)

Capacity analysis was completed for the study area intersections using Synchro/SimTraffic computer analysis software. Levels of service are similar to the academic ranking system where an 'A' is good with little control delay and an 'F' represents poor traffic conditions. If the level of service falls below a 'D', an evaluation should be made to determine if mitigation is warranted. The following tables summarize the relationship between level of service and control delay per vehicle for unsignalized and signalized intersections.

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 capacity analysis was completed for the proposed St. John Street garage access as shown on the concept plan submitted with the overall application. This includes signalization of the St. John Street / garage access with associated restriping of St. John Street and restriping of the Margaritas exit for separate left and right lanes. This also assumes that the shuttles will turn left out of the Margaritas exit. The St. John Street southbound approach was reviewed for two separate

scenarios, one as shown on the site plan, and one that included a southbound right turn lane which is shown in the table in ( ). The results are based on the average of five SimTraffic runs. The following table summarizes the results of the capacity analysis. Detailed results are attached.

Level of Service Summary

Approach	Level of Service	
	2022 AM Garage Peak Hour	2022 PM Garage Peak Hour
Valley / Congress (S)		
Congress EB	A	A
Congress WB	C	B
Valley NB	B	C
Overall	**B**	**B**
Congress / St. John (S)		
Congress EB	C	C
Congress WB	C	C
St. John NB	B	C
St. John SB	C	C
Overall	**C**	**C**
Margaritas / St. John (U)		
Margaritas EB	F	C
St. John NB	C	A
St. John SB	A	A
D St / Garage / St. John (S)		
Garage EB / (with St. John SB Right)	C (B)	A (A)
D WB / (with St. John SB Right)	A (A)	A (A)
St. John NB / (with St. John SB Right)	B (A)	A (A)
St. John SB / (with St. John SB Right)	A (A)	B (B)
Overall / (with St. John SB Right)	**A (A)**	**A (A)**
Valley / St. John (S)		
St. John EB	A	B
St. John WB	B	C
Valley NB	A	B
Valley SB	A	B
Overall	**A**	**B**
Commercial / Valley (S)		
Fore River Pkwy EB	A	B
Commercial WB	B	C
Valley SB	A	B
Overall	**A**	**B**

(U) = Unsignalized, (S) = Signalized

As shown in the table, the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours of the garage. The garage access on St. John Street is forecast to operate at very good levels of service during the AM and PM peak hours of the garage. The Margarita's driveway on St. John Street is forecast to operate at a low level of service during the AM peak hour of the garage, due to the high volume of southbound traffic on St. John Street. It should be noted that if the shuttles turn right out of the Margarita's exit, the level of service is forecast to increase to a 'C' during the AM peak hour of the garage. Additional shuttle traffic is not forecast to significantly impact the St. John Street southbound approach at the garage access.

The construction of a right turn lane on St. John Street southbound at the proposed garage access opposite D Street is forecast to improve the level of service of the St. John Street northbound approach and the garage eastbound approach from a 'B' to an 'A' and a 'C' to a 'B', respectively, during the AM peak hour of the garage. The southbound right turn lane was included in initial intersection designs, but was removed per the request of the City of Portland to improve pedestrian accommodations.

Queue Analysis

For this evaluation, GP completed a queue analysis for key movements at the two accesses to the garage using the same Synchro/SimTraffic computer analysis software as that used to complete the capacity analysis. Queue analysis involves comparing the 95th percentile queue lengths, rounded up to the nearest five feet, to the available storage lengths. The results are based on the average of five SimTraffic runs. Please note that similar to the Capacity Analysis, the Queue Analysis evaluated two scenarios for the southbound St. John Street approach; with and without a right turn lane for traffic turning into the garage. The following table summarizes the results of the queue analysis for the key movements. Detailed results are attached.

Queue Analysis Summary

Approach	Available Storage Length (ft)	95th Percentile Queue Lengths (ft)	
		AM Garage Peak Hour	PM Garage Peak Hour
Garage Access / St. John St.			
Garage Exit EB LT	120 (to garage)	45	125
Garage Exit EB R	120 (to garage)	25	75
D St WB LR		35	45
St. John NB L	100	115	30
St. John NB TR		40	90
St. John SB L	75	60	45
St. John SB TR		225	180
St. John SB T		120	180
St. John SB R	150	150	75

Approach	Available Storage Length (ft)	95th Percentile Queue Lengths (ft)	
		AM Garage Peak Hour	PM Garage Peak Hour
Margaritas / St. John St.			
Exit EB L		110	115
Exit EB R	150	15	60
St. John NB LT		135	65
St. John SB TR		25	10

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
L=Left, T=Through, R=Right

As shown in the table, the proposed storage lengths are forecast to accommodate the anticipated 95th percentile queue lengths, with the exception of the St. John Street northbound left turn lane into the garage during the AM peak hour of the garage. The 95th percentile queue length is forecast to exceed the available storage length by approximately 15 feet, which is less than one vehicle, assuming a vehicle and the associated space between vehicles is 25 feet.

Additionally, if the shuttles turn right out of the Margarita's exit then left onto D Street, the queue lengths of the garage access are forecast to be improved. It is anticipated that the St. John Street southbound left turn lane would need to be increased from 75 feet to 100 feet to accommodate the additional shuttle traffic.

The addition of the St. John Street southbound right turn lane into the garage access opposite D Street is forecast to improve the queue lengths during the AM but is not forecast to significantly impact the queue lengths during the PM peak hour. The right turn lane was removed from the intersection per the request of the City to improve pedestrian accommodations.

Pedestrian Accommodations

Currently the nearest crosswalks across St. John Street are located at the intersection with C Street approximately 600 feet to the north and at the METRO station approximately 600 feet to the south. To better accommodate employees who wish to walk between the garage and work, or for pedestrians in the neighborhood, the proposed off-site mitigation along St. John Street includes a crosswalk across St. John Street on the northerly side of the garage access, as shown on the attached plan from Woodard & Curran. This crosswalk is proposed to include new ADA ramps and have pedestrian signal heads and push buttons so that they can cross with the traffic signal. In addition, MMC is reviewing available crosswalks & sidewalks, as well as street lighting between the garage and the hospital to ensure pedestrians have a designated route. See full site plan application for additional crosswalk & sidewalk locations as well as lighting upgrades.

Bicycle Accommodations

The City has recently restriped St. John Street along the site frontage to include a northbound and southbound bicycle lane. Consistent with the City's desire to provide a bicycle lane through this corridor, MMC is proposing to maintain a bicycle lane as well in each direction on St. John Street. See full Site Plan application submittal for a striping plan along the site frontage.

Conclusions

The following is a summary of the conclusions:

1. The proposed parking garage is the second phase of a three phase process. This evaluation will be incorporated into the larger more extensive traffic impact study to be submitted during phase three of the MMC expansion.

2. The proposed parking garage will accommodate six existing MMC parking areas as well as 200 on-street parking spaces (assumed) in the general neighborhood around the hospital and 50 parking spaces for the Eagles. This accounts for approximately 2,073 parking spaces. The proposed parking garage is planned to provide approximately 2,400 parking spaces in the garage and 52 parking spaces in a surface lot adjacent to the garage.

3. This project aligns with the parking demand information in the IDP.

4. The peak hours of the proposed St. John Street garage are forecast to be 6:00AM to 7:00AM and 4:15PM to 5:15PM. The peak hours of the garage are estimated to occur outside of the adjacent street (St. John Street) peak hours, which occur from 7:30AM to 8:30AM and 4:00PM to 5:00PM.

5. The employee trip generation for the proposed garage is forecast to be **1,097 AM** and **571 PM** peak hour trip ends, based on the parking demand of 2,452 spaces.

6. MMC is expected to expand their existing shuttle service to 13 shuttles during the peak hours, with a reduced level during non-peak hours. This would add approximately 104 (52 enter and 52 exit) trip ends to the Margaritas access. To be conservative, it has been assumed that the shuttles will turn right into the Margaritas access and left out of the Margaritas access.

7. Based on the MUTCD Signal Warrant 3, Peak Hour, a signal is marginal at the proposed garage access opposite D Street on St. John Street based on the 2022 Postdevelopment PM peak hour of the garage traffic volumes. If the adjacent street traffic increases by 150 vehicles during the PM peak hour of the garage, then a signal would be warranted at the

intersection. It should be noted that if the shuttles turn right out of Margaritas (instead of left) the adjacent street would need to increase by 100 vehicles to warrant a signal. A traffic signal would improve pedestrian connectivity and safety. A traffic signal at the garage access is recommended.

8. Based on the results of the capacity analysis, the study area intersections are forecast to operate at overall acceptable levels of service during both the AM and PM peak hours of the garage. The results indicate that addition of a southbound right turn lane on St. John Street at the garage access opposite D Street will slightly improve the operation of the northbound and eastbound approaches during the AM peak hour of the garage, but overall will not have a significant impact on the intersection. It should be noted that if the shuttles are directed to turn right out of the Margarita's access, the level of service of the Margarita's access is forecast to improve from an 'F' to a 'C'.

9. Based on the results of the queue analysis, the queues at the two accesses to the garage are forecast to be accommodated by the available storage lengths, with the exception of the St. John Street northbound left turn lane into the garage, which is forecast to exceed the storage length by less than one vehicle. The results indicate that addition of a southbound right turn lane on St. John Street at the garage access opposite D Street may improve the queue lengths of the southbound approach during the AM peak hour of the garage, but will not significantly impact the queue lengths during the PM peak hour of the garage. It should be noted that if the shuttles turn right out of the Margarita's access then left onto D Street, the queue lengths for the Margarita's access are forecast to improve. The St. John Street southbound left turn lane is anticipated to need to be increased from 75 feet to 100 feet to accommodate the additional shuttle traffic.

10. The proposed off-site mitigation includes signalization of the garage access onto St. John Street and striping the exit from Margaritas as separate left and right movements.

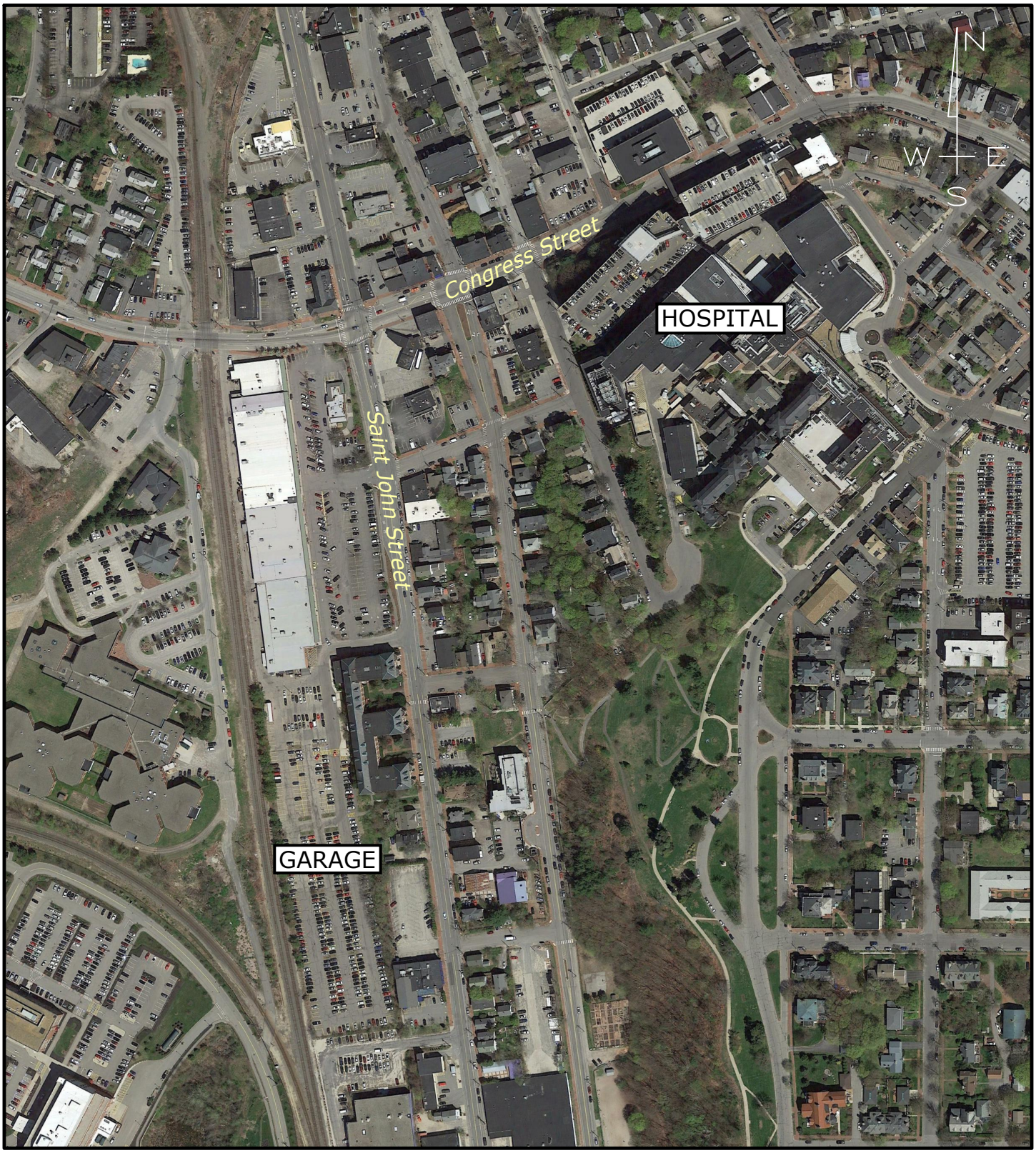
    A crosswalk across St. John Street is proposed on the northerly side of the St. John Street / D Street intersection. This will include ADA accommodations for the crossing as well pedestrian signal heads and push buttons.

    To accommodate bicyclists, the currently proposed off-site mitigation plan is maintaining a bicycle lane in both the northbound and southbound directions.

11. Based on this evaluation, it is our opinion that with the proposed mitigation identified herein, the proposed garage traffic can be accommodated on the adjacent roadway network.

Location Map

Figure No. 1



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Draft:		Date:	MAY 2017
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Raw Volumes

Figure No. 2

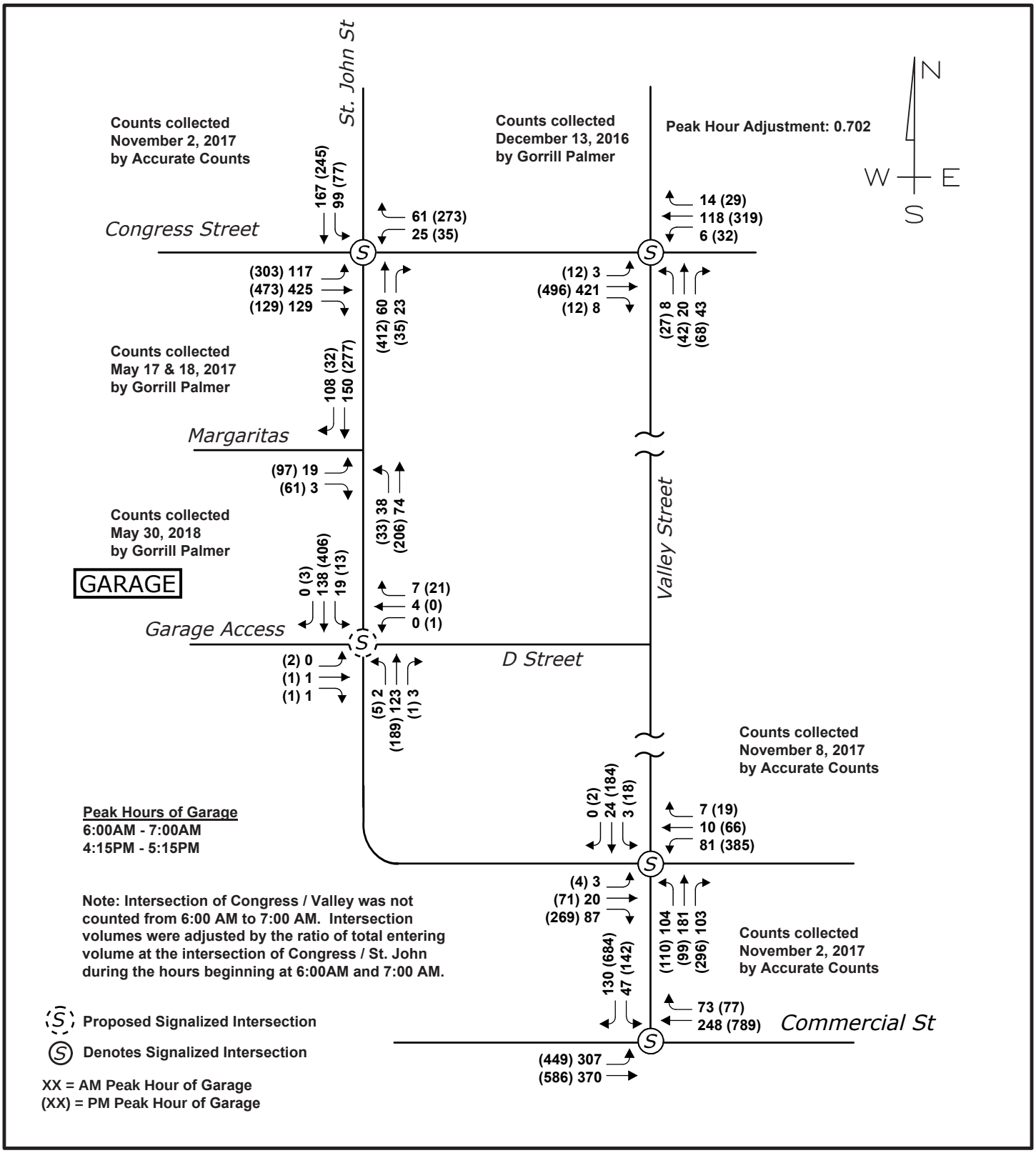

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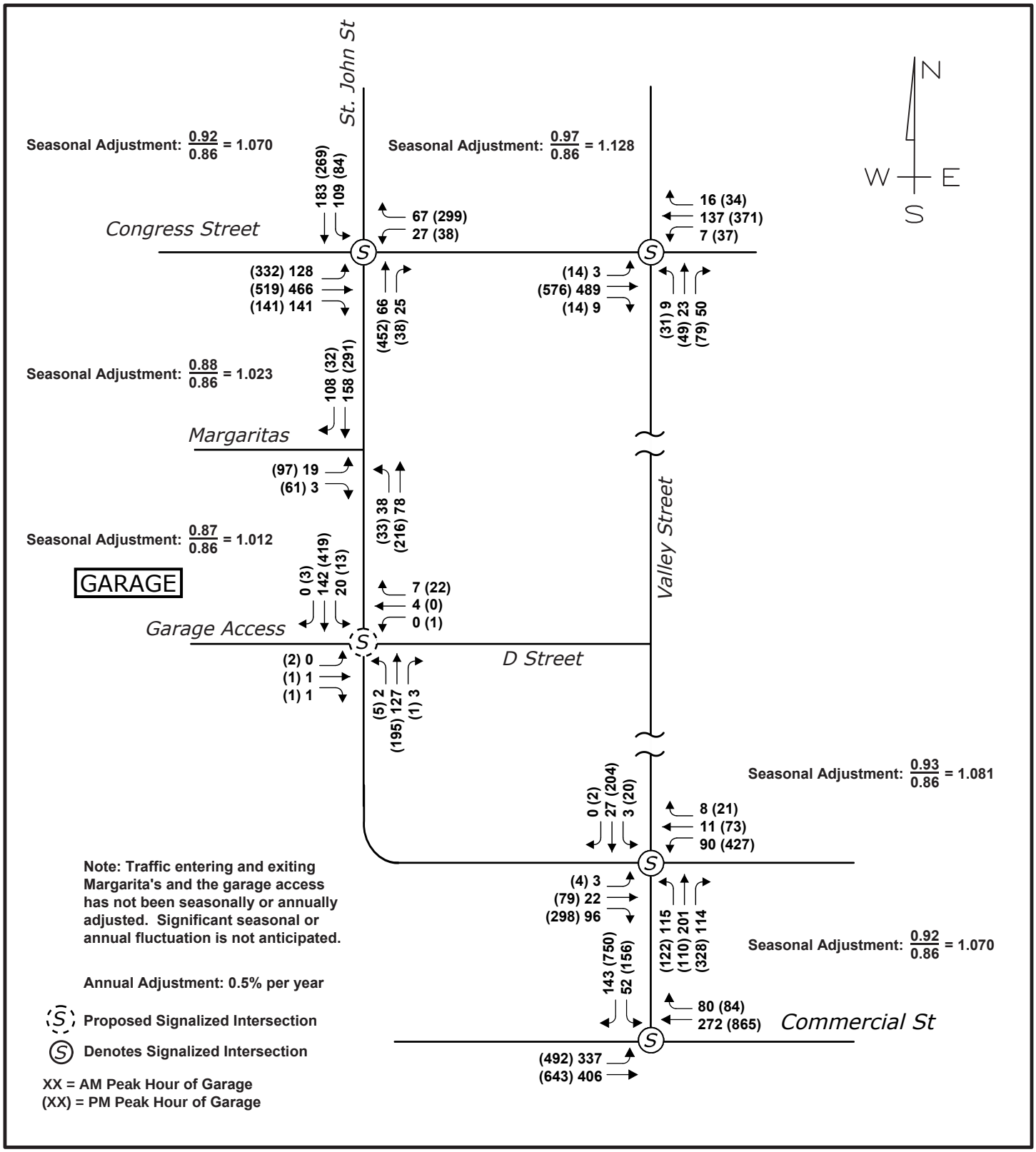
Figure No. 3



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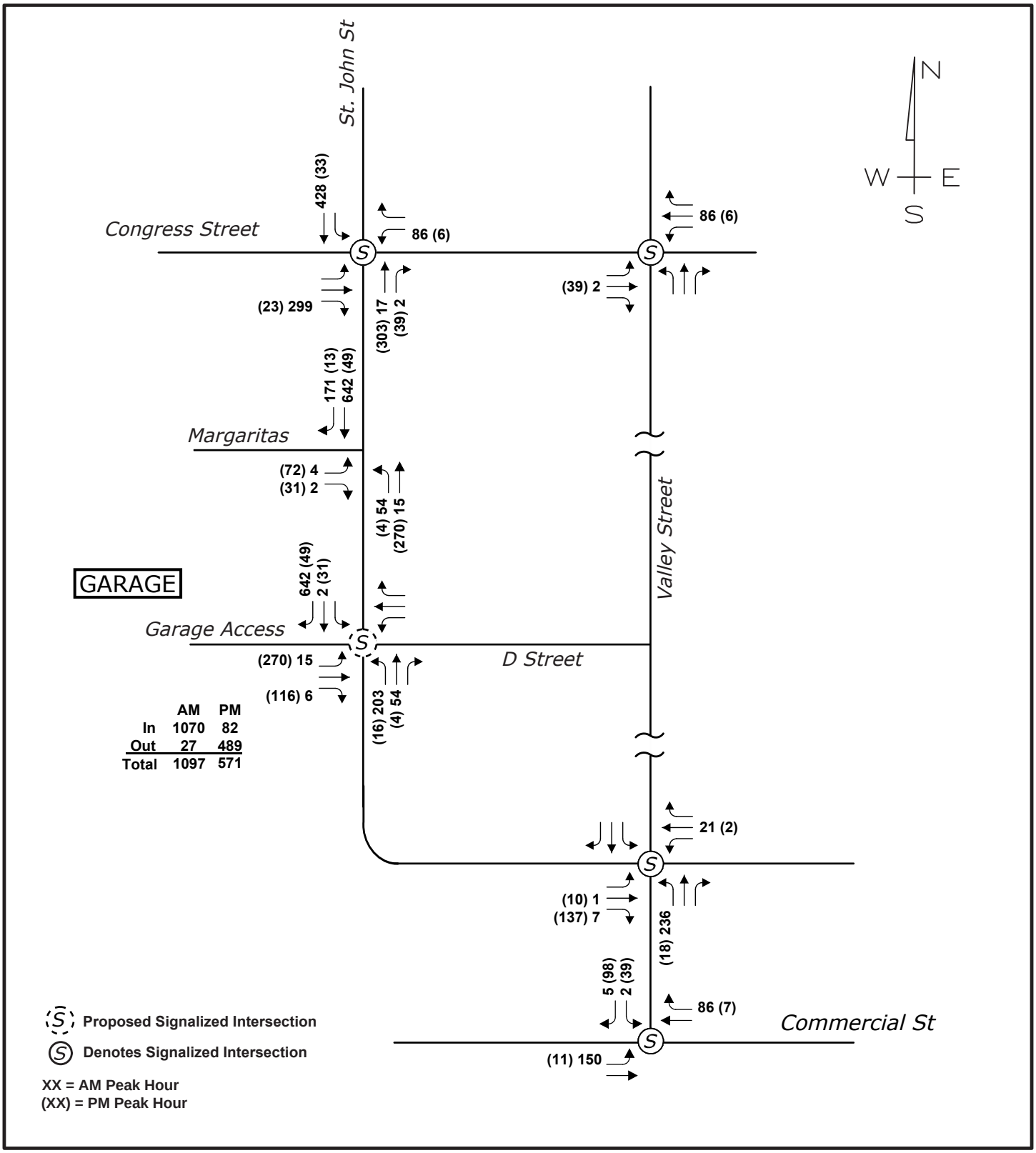
Trip Assignment

Figure No. 4



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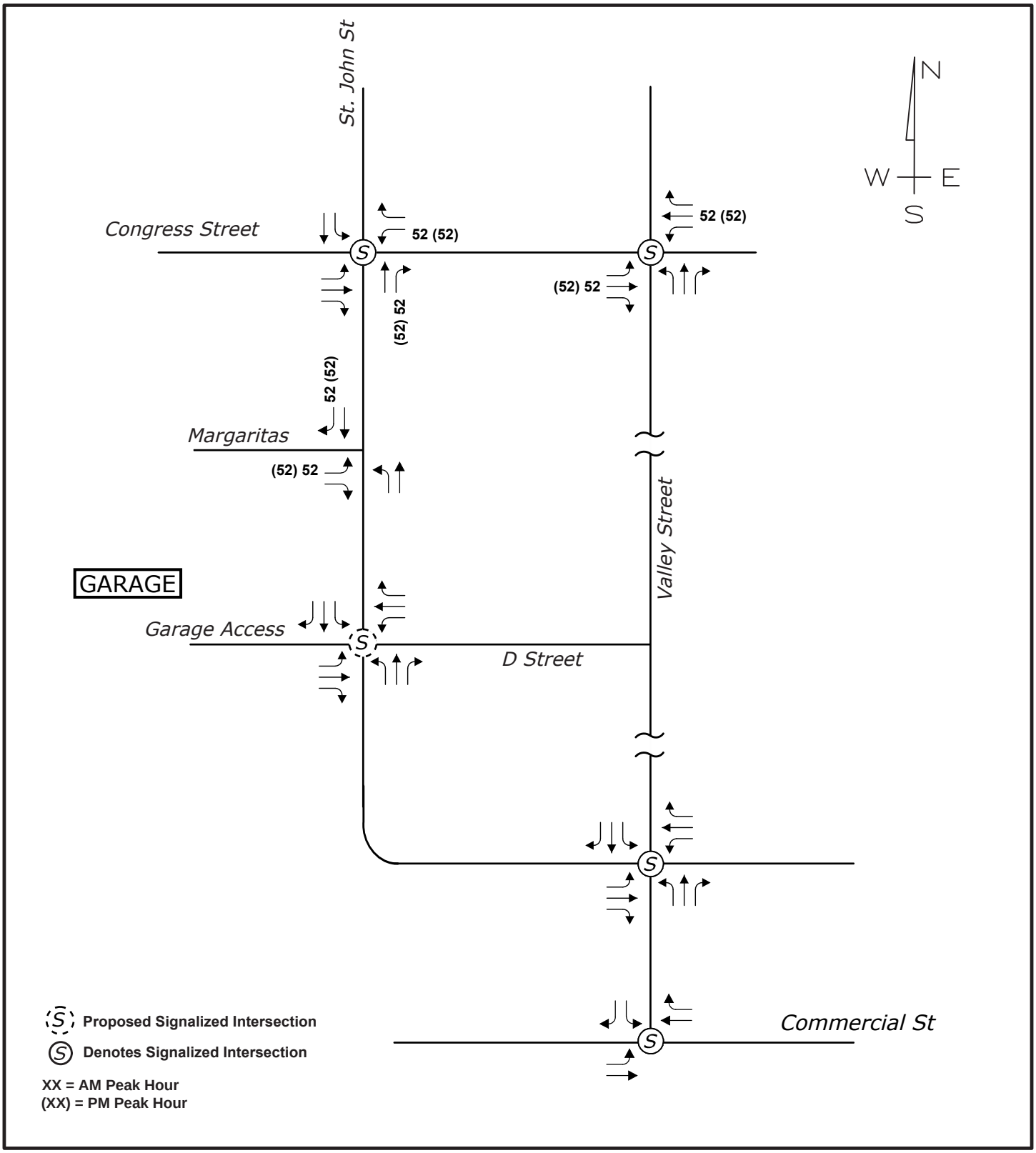
Shuttle Assignment

Figure No. 5



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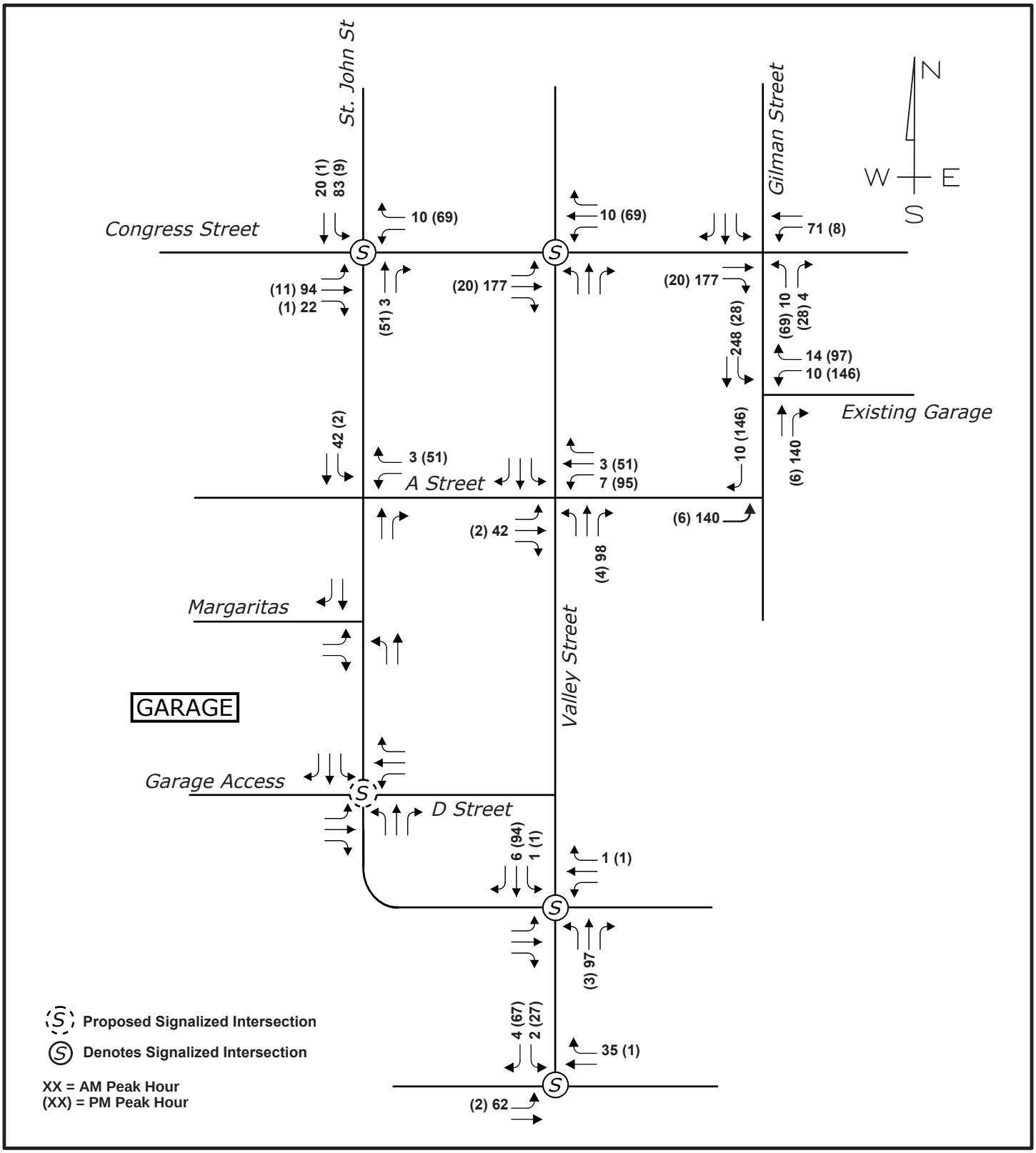
Existing Garage Employee Trip Assignment

Figure No. 6



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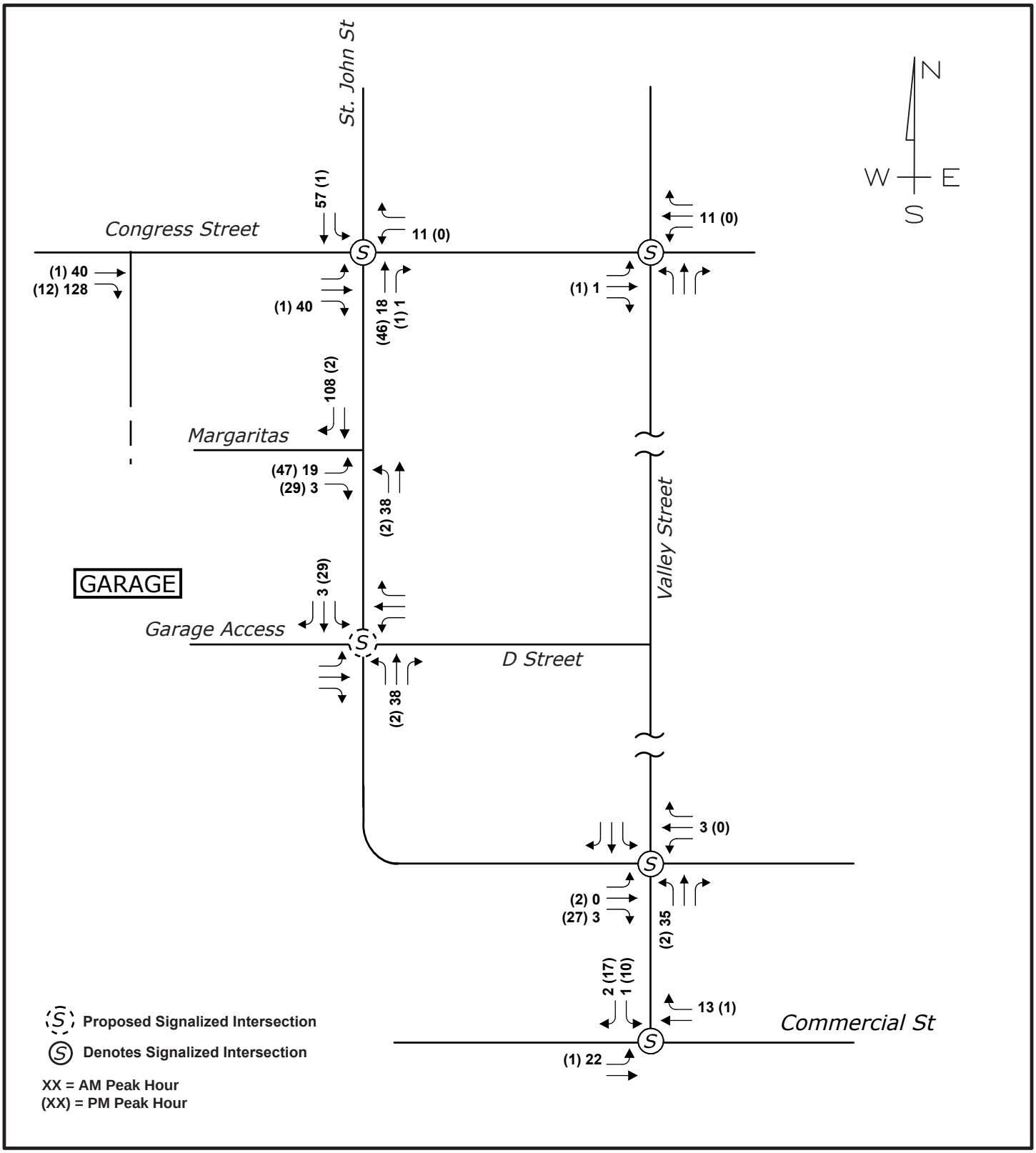
222 St. John Existing MMC Traffic

Figure No. 7



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222 St. John Existing Cut-Through (non-MMC) Figure No. 8

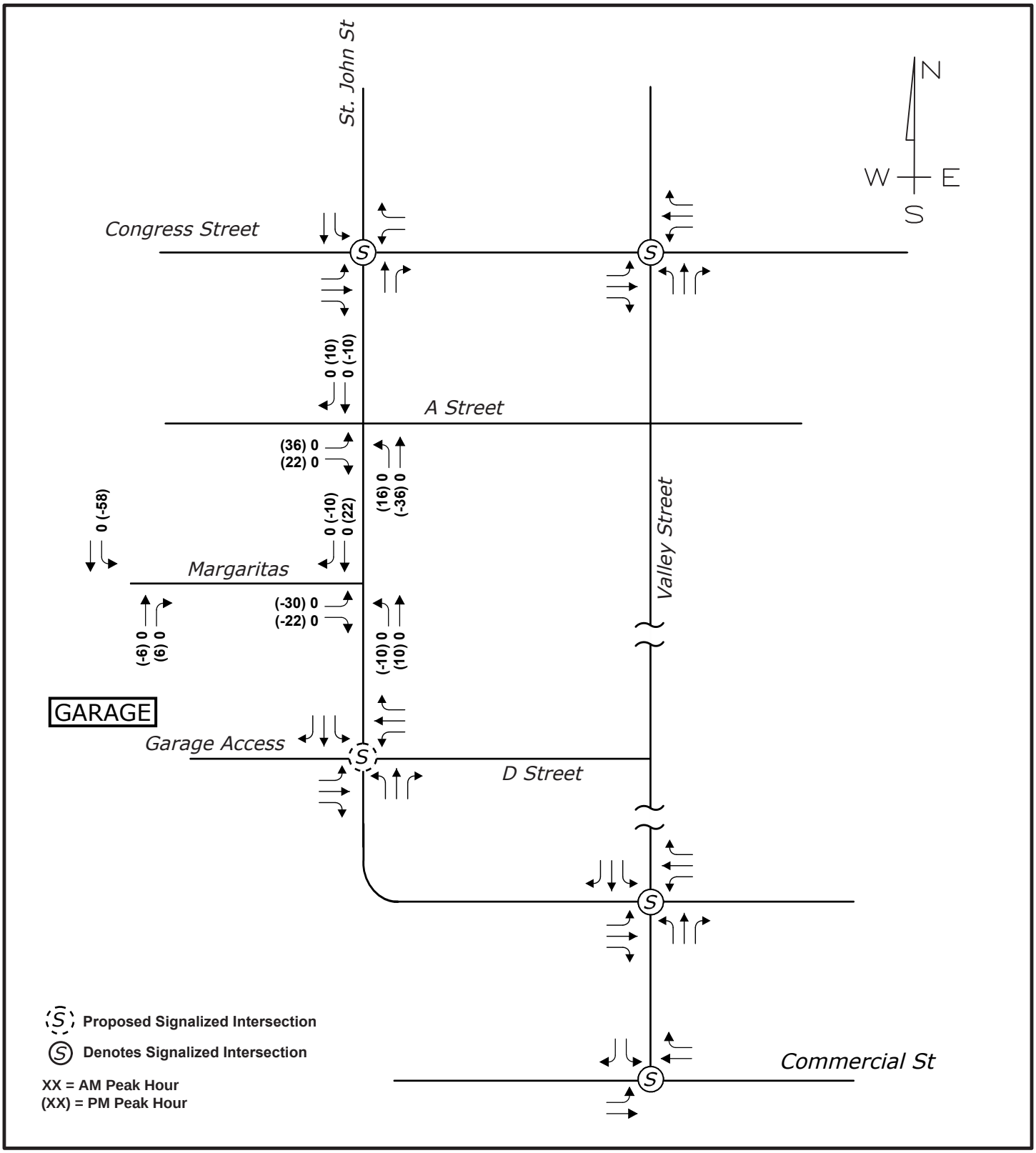

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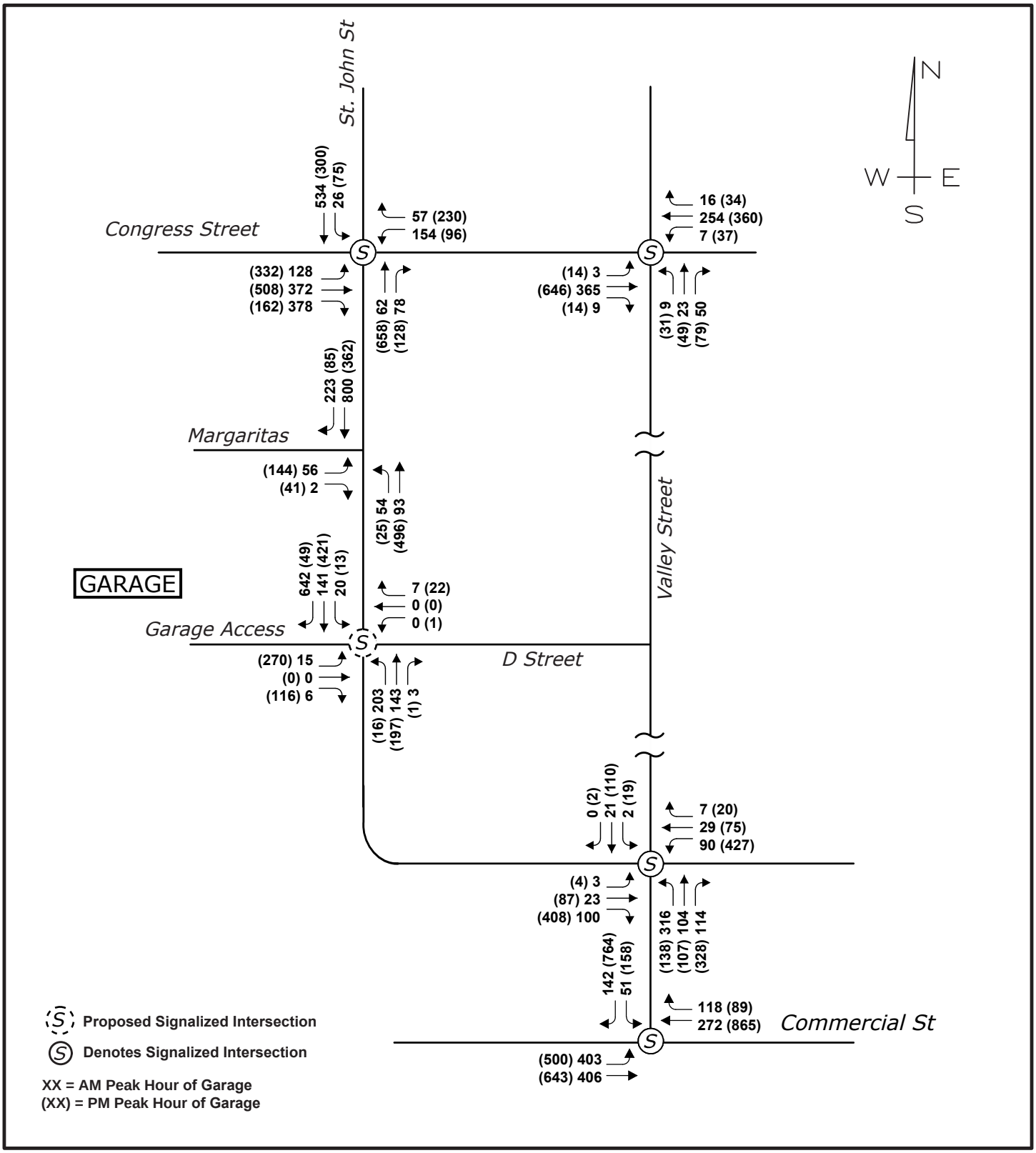
Figure No. 9



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St. John Street Parking Garage Trip Generation

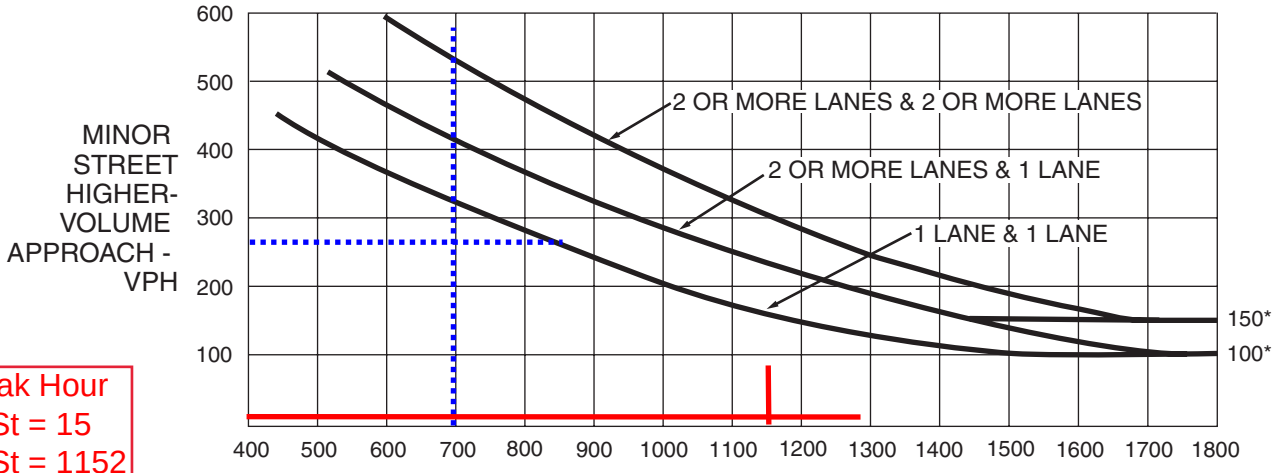
June 6, 2018
JN 2866.01

Parking Area	St. John St Lot		Sportsman Lot		Gateway Garage		Classic Lot		321 Brackett Lot		On-Street Spaces		Gilman Garage -Shifted		All Parking Areas			Existing Parking Hourly Volumes			Proposed Parking Hourly Volumes		
Count Date	1/18/2018		Estimated		Estimated		Estimated		Estimated		Estimated		11/2/2017					Total Spaces: 1923			Total Spaces: 2452		
Number of Spaces	283 Spaces		60 Spaces		100 Spaces		97 Spaces		9 Spaces		100 Spaces		1274 Spaces		1923 Spaces								
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Total	Hourly Vol.	%In	%Out	Hourly Vol.	Entering	Exiting
6:00 AM	23	0	5	0	8	0	8	0	1	0	8	0	89	1	142	1	143	**860**	98%	2%	**1097**	1070	27
6:15 AM	45	0	10	0	16	0	15	0	1	0	16	0	113	8	216	8	224	838	97%	3%	1069	1036	33
6:30 AM	85	1	18	0	30	0	29	0	3	0	30	0	118	6	313	7	320	791	95%	5%	1009	955	54
6:45 AM	51	1	11	0	18	0	17	0	2	0	18	0	51	4	168	5	173	637	83%	17%	812	673	139
7:00 AM	26	0	6	0	9	0	9	0	1	0	9	0	55	6	115	6	121	578	69%	31%	737	510	227
7:15 AM	41	0	9	0	14	0	14	0	1	0	14	0	60	24	153	24	177	551	59%	41%	703	412	291
7:30 AM	12	7	3	1	4	2	4	2	0	0	4	2	65	60	92	74	166	436	44%	56%	556	246	310
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	40	74	40	74	114						
8:00 AM	2	2	0	0	1	1	1	1	0	0	1	1	33	51	38	56	94						
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	23	39	23	39	62						
3:15 PM	1	8	0	2	0	3	0	3	0	0	0	3	12	38	13	57	70	357	12%	88%	455	56	399
3:30 PM	2	27	0	6	1	10	1	9	0	1	1	10	9	36	14	99	113	411	11%	89%	524	60	464
3:45 PM	1	15	0	3	0	5	0	5	0	0	0	5	6	60	7	93	100	399	13%	87%	509	64	445
4:00 PM	1	12	0	3	0	4	0	4	0	0	0	4	9	37	10	64	74	407	15%	85%	519	77	442
4:15 PM	3	22	1	5	1	8	1	8	0	1	1	8	9	56	16	108	124	**448**	14%	86%	**571**	82	489
4:30 PM	2	14	0	3	1	5	1	5	0	0	1	5	12	52	17	84	101	427	15%	85%	544	82	462
4:45 PM	6	9	1	2	2	3	2	3	0	0	2	3	4	71	17	91	108	410	17%	83%	523	88	435
5:00 PM	2	18	0	4	1	6	1	6	0	1	1	6	9	60	14	101	115	384	21%	79%	490	101	389
5:15 PM	3	12	1	3	1	4	1	4	0	0	1	4	9	60	16	87	103	351	33%	67%	448	147	301
5:30 PM	5	5	1	1	2	2	2	2	0	0	2	2	10	50	22	62	84	375	47%	53%	478	227	251
5:45 PM	2	5	0	1	1	2	1	2	0	0	1	2	22	43	27	55	82	381	54%	46%	486	264	222
6:00 PM	0	4	0	1	0	1	0	1	0	0	0	1	50	24	50	32	82	354	56%	44%	451	251	200
6:15 PM	1	1	0	0	0	0	0	0	0	0	0	0	78	47	79	48	127	308	50%	50%	393	197	197
6:30 PM	1	7	0	1	0	2	0	2	0	0	0	2	50	25	51	39	90						
6:45 PM	2	4	0	1	1	1	1	1	0	0	1	1	12	30	17	38	55						
7:00 PM	0	2	0	0	0	1	0	1	0	0	0	1	7	24	7	29	36						

Indicates peak hour volumes

Proposed Garage Access Signal Warrant
2022 Postdevelopment DHV

Figure 4C-3. Warrant 3, Peak Hour



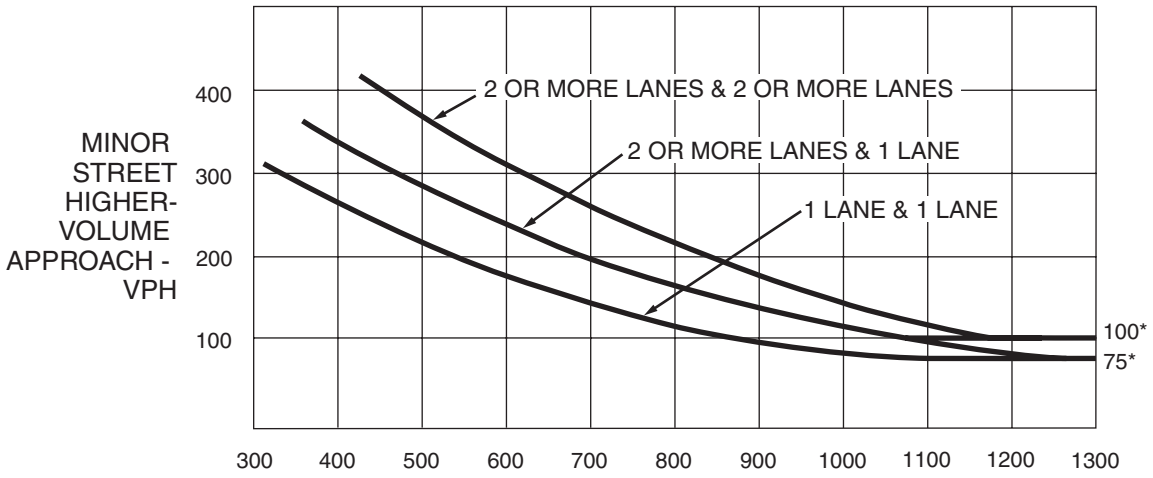
AM Peak Hour
Minor St = 15
Major St = 1152

PM Peak Hour
Minor St = 270
Major St = 697

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	3258	3246	3256	3237	3232	3246
Vehs Exited	3251	3243	3251	3218	3225	3238
Starting Vehs	85	98	72	76	67	77
Ending Vehs	92	101	77	95	74	84
Denied Entry Before	1	0	1	0	0	0
Denied Entry After	2	0	1	0	0	0
Travel Distance (mi)	1590	1598	1587	1563	1569	1581
Travel Time (hr)	86.8	93.3	89.1	85.5	87.3	88.4
Total Delay (hr)	26.0	32.2	28.5	25.9	27.4	28.0
Total Stops	3347	3578	3478	3291	3443	3428
Fuel Used (gal)	62.0	64.3	62.5	61.5	62.0	62.4

Interval #0 Information Seeding

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

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	3258	3246	3256	3237	3232	3246
Vehs Exited	3251	3243	3251	3218	3225	3238
Starting Vehs	85	98	72	76	67	77
Ending Vehs	92	101	77	95	74	84
Denied Entry Before	1	0	1	0	0	0
Denied Entry After	2	0	1	0	0	0
Travel Distance (mi)	1590	1598	1587	1563	1569	1581
Travel Time (hr)	86.8	93.3	89.1	85.5	87.3	88.4
Total Delay (hr)	26.0	32.2	28.5	25.9	27.4	28.0
Total Stops	3347	3578	3478	3291	3443	3428
Fuel Used (gal)	62.0	64.3	62.5	61.5	62.0	62.4

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.0
Total Del/Veh (s)	58.0	15.7	4.7	8.5
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	20.6	7.0	10.9	9.3	9.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.9	0.0	3.0	0.5
Total Del/Veh (s)	6.4	10.1	6.6	5.2	7.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.8	1.0	0.0	0.2	0.6
Total Del/Veh (s)	21.7	34.4	10.9	24.9	23.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	1.2	0.0	1.3
Total Del/Veh (s)	6.8	11.4	6.7	8.0
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

16: Congress Street & Valley Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	4.3	23.2	13.1	11.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	29.3
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	132	23	155	40
Average Queue (ft)	48	2	56	5
95th Queue (ft)	107	14	131	24
Link Distance (ft)	228		678	670
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150		
Storage Blk Time (%)	2			
Queuing Penalty (veh)	0			

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

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	53	31	35	121	81	99	280
Average Queue (ft)	14	5	9	67	6	14	122
95th Queue (ft)	43	23	32	113	38	56	225
Link Distance (ft)	470		195		1603		678
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		120		100		75	
Storage Blk Time (%)				2			11
Queuing Penalty (veh)				3			2

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	50	65	85	55	155	94	29	33
Average Queue (ft)	14	32	38	15	65	22	3	7
95th Queue (ft)	41	57	68	43	128	63	17	27
Link Distance (ft)	1603			536	264	264	594	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	136	338	302	104	209	51	78	51	348
Average Queue (ft)	58	166	136	89	94	14	22	20	197
95th Queue (ft)	117	276	242	118	217	39	54	49	312
Link Distance (ft)	1620	1620			188	670		1418	1418
Upstream Blk Time (%)					8				
Queuing Penalty (veh)					22				
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		1	0	33	0				
Queuing Penalty (veh)		2	0	19	0				

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	135	121	79	79	138	93	90	71	54	64
Average Queue (ft)	75	53	36	32	74	27	33	27	25	24
95th Queue (ft)	121	94	70	67	119	68	67	60	48	49
Link Distance (ft)			724	724	662	662		264	264	264
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 16: Congress Street & Valley

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	TR	L	TR	LT	R
Maximum Queue (ft)	19	159	26	243	69	58
Average Queue (ft)	1	54	3	105	22	24
95th Queue (ft)	7	124	17	207	56	52
Link Distance (ft)		188	839	839	494	494
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	50					
Storage Blk Time (%)		8				
Queuing Penalty (veh)		0				

Network Summary

Network wide Queuing Penalty: 49

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

Phase	2	4	5	6	8
Movement(s) Served	NBTL	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	45.0	5.0	6.5	34.0	5.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	60.8	5.3	6.1	25.3	5.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	48	83	31	9	83
Cycles @ Minimum (%)	0	17	13	0	17
Cycles Maxed Out (%)	24	17	40	38	17
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	19.0	8.0	18.0	19.0	31.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	11.7	6.7	7.1	11.7	9.5
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	18	62	57	18	33
Cycles @ Minimum (%)	4	0	9	4	6
Cycles Maxed Out (%)	14	10	0	14	0
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	EBL	SBT
Maximum Green (s)	12.5	15.5	3.7	25.5	5.5	22.5	4.5	26.0
Minimum Green (s)	8.0	8.0	3.0	8.0	5.0	8.0	1.0	5.0
Recall	None	C-Min	None	None	None	C-Min	None	None
Avg. Green (s)	10.1	25.3	8.5	26.4	5.8	28.6	0.0	31.2
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	NA	-0.01	NA
Cycles Skipped (%)	26	0	55	5	14	0	100	0
Cycles @ Minimum (%)	34	0	0	0	23	0	0	0
Cycles Maxed Out (%)	8	100	36	35	50	100	0	36
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

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

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	37.0	13.0	17.0	15.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	27.3	8.2	11.5	9.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	20	34	12	23
Cycles @ Minimum (%)	0	10	0	0
Cycles Maxed Out (%)	16	8	17	10
Cycles with Peds (%)	0	0	0	0

Controller Summary

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

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	3295	3227	3296	3238	3235	3258
Vehs Exited	3287	3227	3285	3237	3225	3254
Starting Vehs	86	96	71	86	67	76
Ending Vehs	94	96	82	87	77	84
Denied Entry Before	1	0	1	0	0	0
Denied Entry After	2	1	0	0	0	0
Travel Distance (mi)	1625	1606	1622	1604	1586	1609
Travel Time (hr)	89.3	94.9	88.7	88.4	87.4	89.7
Total Delay (hr)	27.0	33.4	26.7	27.1	26.9	28.2
Total Stops	3427	3546	3513	3388	3353	3447
Fuel Used (gal)	63.6	64.7	63.6	63.7	62.4	63.6

Interval #0 Information Seeding

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

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	3295	3227	3296	3238	3235	3258
Vehs Exited	3287	3227	3285	3237	3225	3254
Starting Vehs	86	96	71	86	67	76
Ending Vehs	94	96	82	87	77	84
Denied Entry Before	1	0	1	0	0	0
Denied Entry After	2	1	0	0	0	0
Travel Distance (mi)	1625	1606	1622	1604	1586	1609
Travel Time (hr)	89.3	94.9	88.7	88.4	87.4	89.7
Total Delay (hr)	27.0	33.4	26.7	27.1	26.9	28.2
Total Stops	3427	3546	3513	3388	3353	3447
Fuel Used (gal)	63.6	64.7	63.6	63.7	62.4	63.6

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.0	0.0
Total Del/Veh (s)	73.4	21.1	4.7	9.7
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	18.0	5.8	8.8	7.1	7.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	2.9	0.0	2.7	0.5
Total Del/Veh (s)	5.5	9.4	6.5	5.0	6.7
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.8	0.6	0.0	0.2	0.5
Total Del/Veh (s)	21.8	34.9	11.8	25.0	24.0
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.6	1.1	0.0	1.3
Total Del/Veh (s)	7.1	11.3	7.4	8.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

16: Congress Street & Valley Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.2	0.1	0.1
Total Del/Veh (s)	4.3	25.7	14.0	12.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	29.5
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	149	28	182	44
Average Queue (ft)	53	3	65	5
95th Queue (ft)	126	17	151	26
Link Distance (ft)	228		678	670
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		150		
Storage Blk Time (%)	3			
Queuing Penalty (veh)	0			

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

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	T	R
Maximum Queue (ft)	48	22	35	118	85	30	213	168
Average Queue (ft)	12	3	10	61	8	7	37	87
95th Queue (ft)	37	15	33	105	42	27	117	149
Link Distance (ft)	459		195		1603		678	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		120		100		75		150
Storage Blk Time (%)				1			0	1
Queuing Penalty (veh)				2			2	1

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	46	70	92	56	161	91	32	29
Average Queue (ft)	12	34	38	16	72	21	3	6
95th Queue (ft)	37	61	73	44	137	59	17	25
Link Distance (ft)	1603			536	264	264	594	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	179	338	310	104	210	46	76	97	356
Average Queue (ft)	60	165	132	89	97	13	24	21	199
95th Queue (ft)	124	276	241	119	222	36	57	64	323
Link Distance (ft)	1767	1767			188	670		1418	1418
Upstream Blk Time (%)					10				
Queuing Penalty (veh)					25				
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		1	0	33	0				
Queuing Penalty (veh)		3	0	19	0				

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	150	120	98	69	174	104	70	72	53	78
Average Queue (ft)	78	53	37	31	79	29	32	28	25	26
95th Queue (ft)	128	93	79	64	137	79	60	59	46	54
Link Distance (ft)			724	724	662	662		264	264	264
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 16: Congress Street & Valley

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	TR	L	TR	LT	R
Maximum Queue (ft)	24	167	26	267	72	66
Average Queue (ft)	1	52	3	117	22	23
95th Queue (ft)	12	129	17	237	56	55
Link Distance (ft)		188	839	839	494	494
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	50					
Storage Blk Time (%)		9				
Queuing Penalty (veh)		0				

Network Summary

Network wide Queuing Penalty: 54

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

Phase	2	4	5	6	8
Movement(s) Served	NBTL	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	45.0	5.0	6.5	34.0	5.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	39.8	5.2	6.2	19.3	5.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	38	84	43	10	84
Cycles @ Minimum (%)	0	16	13	2	16
Cycles Maxed Out (%)	19	16	33	18	16
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	19.0	8.0	18.0	19.0	31.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	11.5	6.8	7.2	11.5	9.6
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	17	64	57	17	35
Cycles @ Minimum (%)	4	0	9	4	5
Cycles Maxed Out (%)	11	10	0	11	0
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	EBL	SBT
Maximum Green (s)	12.5	15.5	3.7	25.5	5.5	22.5	4.5	26.0
Minimum Green (s)	8.0	8.0	3.0	8.0	5.0	8.0	1.0	5.0
Recall	None	C-Min	None	None	None	C-Min	None	None
Avg. Green (s)	10.0	24.9	9.4	27.0	5.8	28.9	0.0	31.4
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	NA	-0.01	NA
Cycles Skipped (%)	24	0	55	7	18	0	100	0
Cycles @ Minimum (%)	36	0	0	0	20	0	0	0
Cycles Maxed Out (%)	10	100	36	35	55	100	0	39
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

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

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	37.0	13.0	17.0	15.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	27.0	7.8	11.4	10.0
g/C Ratio	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	19	33	13	22
Cycles @ Minimum (%)	0	12	0	0
Cycles Maxed Out (%)	15	7	17	11
Cycles with Peds (%)	0	0	0	0

Controller Summary

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

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5487	5508	5577	5489	5534	5520
Vehs Exited	5460	5467	5548	5471	5496	5489
Starting Vehs	143	118	134	151	123	132
Ending Vehs	170	159	163	169	161	162
Denied Entry Before	2	4	2	0	1	0
Denied Entry After	4	5	1	2	1	2
Travel Distance (mi)	2802	2784	2836	2826	2811	2812
Travel Time (hr)	160.3	159.6	165.1	163.9	161.7	162.1
Total Delay (hr)	56.4	56.3	59.7	59.2	57.3	57.8
Total Stops	6743	6836	7014	6970	6851	6880
Fuel Used (gal)	109.9	110.4	111.8	110.9	110.8	110.8

Interval #0 Information Seeding

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

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5487	5508	5577	5489	5534	5520
Vehs Exited	5460	5467	5548	5471	5496	5489
Starting Vehs	143	118	134	151	123	132
Ending Vehs	170	159	163	169	161	162
Denied Entry Before	2	4	2	0	1	0
Denied Entry After	4	5	1	2	1	2
Travel Distance (mi)	2802	2784	2836	2826	2811	2812
Travel Time (hr)	160.3	159.6	165.1	163.9	161.7	162.1
Total Delay (hr)	56.4	56.3	59.7	59.2	57.3	57.8
Total Stops	6743	6836	7014	6970	6851	6880
Fuel Used (gal)	109.9	110.4	111.8	110.9	110.8	110.8

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.1	0.0	0.0	0.2
Total Del/Veh (s)	15.8	2.1	2.2	4.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.5	0.1	0.0	0.1	0.6
Total Del/Veh (s)	10.0	3.6	8.8	10.3	9.8
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	3.0	0.0	2.9	1.1
Total Del/Veh (s)	13.0	20.1	13.5	16.9	15.5
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	1	0	0	1

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.3	0.2	0.3
Total Del/Veh (s)	33.4	23.2	22.5	22.1	26.9
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.1	0.5	0.0	0.6
Total Del/Veh (s)	19.4	27.0	13.2	20.0
Denied Entry Before	0	0	0	0
Denied Entry After	1	0	0	1

16: Congress Street & Valley Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.3	0.2	0.1
Total Del/Veh (s)	7.4	18.3	24.7	13.1
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	35.9
Denied Entry Before	0
Denied Entry After	2

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	141	77	101	19
Average Queue (ft)	61	27	16	1
95th Queue (ft)	111	57	65	9
Link Distance (ft)	601		678	670
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		120		
Storage Blk Time (%)	1	0		
Queuing Penalty (veh)	0	0		

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

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	153	92	50	37	107	85	214
Average Queue (ft)	77	38	14	9	42	11	107
95th Queue (ft)	125	71	41	29	89	45	178
Link Distance (ft)	470		195		1603		678
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		150		100		75	
Storage Blk Time (%)	0				0		12
Queuing Penalty (veh)	0				0		2

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	217	135	291	129	129	220	72	81
Average Queue (ft)	61	96	164	26	58	103	24	35
95th Queue (ft)	149	142	254	86	108	191	60	69
Link Distance (ft)	1603			536	264	264	594	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)	0	4	0					
Queuing Penalty (veh)	0	4	0					

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	342	595	315	105	201	286	200	116	193
Average Queue (ft)	161	291	128	75	117	147	134	51	99
95th Queue (ft)	276	504	331	124	193	240	206	98	168
Link Distance (ft)	1783	1783			188	670		1418	1418
Upstream Blk Time (%)					1				
Queuing Penalty (veh)					5				
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		13	0	10	15	2	2		
Queuing Penalty (veh)		22	0	23	14	11	6		

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	300	342	200	180	369	331	65	154	146	167
Average Queue (ft)	98	184	69	63	227	182	27	70	91	97
95th Queue (ft)	238	310	160	142	323	277	56	122	135	149
Link Distance (ft)			1329	1329	662	662		264	264	264
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)	0	1	0							
Queuing Penalty (veh)	0	2	1							

Intersection: 16: Congress Street & Valley

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	TR	L	TR	LT	R
Maximum Queue (ft)	64	206	68	273	123	81
Average Queue (ft)	8	126	20	129	57	34
95th Queue (ft)	36	210	53	228	109	63
Link Distance (ft)		188	839	839	494	494
Upstream Blk Time (%)		1				
Queuing Penalty (veh)		6				
Storage Bay Dist (ft)	50					
Storage Blk Time (%)	0	21				
Queuing Penalty (veh)	0	3				

Network Summary

Network wide Queuing Penalty: 100

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

Phase	2	4	5	6	8
Movement(s) Served	NBTL	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	31.0	19.0	5.5	21.0	19.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	14.4	10.8	6.5	13.6	10.8
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	7	12	93	8	12
Cycles @ Minimum (%)	2	3	0	2	3
Cycles Maxed Out (%)	2	10	6	20	10
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	18.0	19.0	18.0	18.0	42.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	14.1	16.5	13.2	14.1	34.7
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	9	3	9	9	6
Cycles @ Minimum (%)	0	0	2	0	0
Cycles Maxed Out (%)	35	55	29	35	22
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	EBL	SBT
Maximum Green (s)	11.5	15.5	3.7	26.5	4.5	22.5	4.5	27.0
Minimum Green (s)	8.0	8.0	3.0	8.0	4.5	8.0	1.0	5.0
Recall	None	C-Min	None	None	None	C-Min	None	None
Avg. Green (s)	12.7	16.1	4.1	26.5	4.6	26.1	4.8	34.9
g/C Ratio	-0.01	NA	-0.01	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	2	0	16	0	20	0	93	0
Cycles @ Minimum (%)	4	2	0	0	80	0	0	0
Cycles Maxed Out (%)	78	100	80	66	80	100	7	66
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	44.0	16.0	18.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	43.3	15.3	17.2	21.1
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	71	79	75	92
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	5567	5589	5637	5499	5533	5568
Vehs Exited	5530	5554	5609	5471	5484	5529
Starting Vehs	132	139	140	149	115	134
Ending Vehs	169	174	168	177	164	170
Denied Entry Before	2	1	1	1	0	0
Denied Entry After	1	1	0	2	1	0
Travel Distance (mi)	2854	2850	2884	2806	2803	2840
Travel Time (hr)	179.1	162.4	168.7	163.6	160.0	166.8
Total Delay (hr)	73.0	56.3	61.5	59.7	56.0	61.3
Total Stops	7525	6739	7126	6949	6707	7008
Fuel Used (gal)	116.0	111.9	113.5	110.6	109.7	112.4

Interval #0 Information Seeding

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

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	5567	5589	5637	5499	5533	5568
Vehs Exited	5530	5554	5609	5471	5484	5529
Starting Vehs	132	139	140	149	115	134
Ending Vehs	169	174	168	177	164	170
Denied Entry Before	2	1	1	1	0	0
Denied Entry After	1	1	0	2	1	0
Travel Distance (mi)	2854	2850	2884	2806	2803	2840
Travel Time (hr)	179.1	162.4	168.7	163.6	160.0	166.8
Total Delay (hr)	73.0	56.3	61.5	59.7	56.0	61.3
Total Stops	7525	6739	7126	6949	6707	7008
Fuel Used (gal)	116.0	111.9	113.5	110.6	109.7	112.4

1: St. John Street & Margaritas Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	1.1	0.0	0.0	0.2
Total Del/Veh (s)	17.1	2.4	2.2	4.6
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	1.5	0.1	0.0	0.2	0.6
Total Del/Veh (s)	9.3	3.6	8.8	10.1	9.4
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

5: Valley & St. John Street Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	3.0	0.0	2.9	1.1
Total Del/Veh (s)	14.0	25.4	15.5	17.4	18.1
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

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

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.3	0.2	0.3
Total Del/Veh (s)	31.1	23.2	22.8	23.3	26.2
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0

13: Fore River Pkwy & Valley Performance by approach

Approach	EB	WB	SB	All
Denied Del/Veh (s)	1.1	0.5	0.0	0.6
Total Del/Veh (s)	27.0	25.7	12.9	22.3
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

16: Congress Street & Valley Performance by approach

Approach	EB	WB	NB	All
Denied Del/Veh (s)	0.0	0.3	0.1	0.1
Total Del/Veh (s)	7.5	18.5	24.6	13.2
Denied Entry Before	0	0	0	0
Denied Entry After	0	0	0	0

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	37.8
Denied Entry Before	0
Denied Entry After	0

Intersection: 1: St. John Street & Margaritas

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	158	83	122	11
Average Queue (ft)	64	25	19	0
95th Queue (ft)	118	58	84	6
Link Distance (ft)	601		678	670
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		120		
Storage Blk Time (%)	2	0		
Queuing Penalty (veh)	1	0		

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

Movement	EB	EB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	T	R
Maximum Queue (ft)	161	124	39	33	143	58	225	145
Average Queue (ft)	73	30	12	9	47	11	104	21
95th Queue (ft)	127	72	37	29	101	45	178	71
Link Distance (ft)	483		195		1604		678	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		150		100		75		150
Storage Blk Time (%)	0	0			1		11	0
Queuing Penalty (veh)	0	0			0		7	0

Intersection: 5: Valley & St. John Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	LT	TR
Maximum Queue (ft)	234	135	338	338	149	217	74	88
Average Queue (ft)	58	97	182	48	63	111	25	40
95th Queue (ft)	141	147	304	231	121	207	58	74
Link Distance (ft)	1604			536	264	264	594	
Upstream Blk Time (%)				0		0		
Queuing Penalty (veh)				0		0		
Storage Bay Dist (ft)		110	335					265
Storage Blk Time (%)	0	6	3					
Queuing Penalty (veh)	1	5	3					

Intersection: 7: St. John Street & Congress Street

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	R	T	TR	L	T
Maximum Queue (ft)	353	515	315	105	205	314	200	134	233
Average Queue (ft)	166	271	107	76	112	150	136	50	100
95th Queue (ft)	299	461	290	126	196	240	204	103	177
Link Distance (ft)	1767	1767			188	670		1418	1418
Upstream Blk Time (%)					2				
Queuing Penalty (veh)					7				
Storage Bay Dist (ft)			290	80			175		
Storage Blk Time (%)		9	0	12	14	2	1		
Queuing Penalty (veh)		15	0	27	13	11	4		

Intersection: 13: Fore River Pkwy & Valley

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	T	T	T	T	R	L	R	R
Maximum Queue (ft)	316	342	310	287	326	308	78	141	162	191
Average Queue (ft)	164	228	127	99	214	174	25	73	91	99
95th Queue (ft)	402	435	405	307	297	265	59	124	141	156
Link Distance (ft)			1329	1329	662	662		264	264	264
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	430	430					415			
Storage Blk Time (%)	1	6	0			0				
Queuing Penalty (veh)	3	18	2			0				

Intersection: 16: Congress Street & Valley

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	TR	L	TR	LT	R
Maximum Queue (ft)	44	206	83	299	150	71
Average Queue (ft)	6	122	22	132	59	34
95th Queue (ft)	26	218	59	242	113	57
Link Distance (ft)		188	839	839	494	494
Upstream Blk Time (%)		1				
Queuing Penalty (veh)		7				
Storage Bay Dist (ft)	50					
Storage Blk Time (%)		21				
Queuing Penalty (veh)		3				

Network Summary

Network wide Queuing Penalty: 129

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

Phase	2	4	5	6	8
Movement(s) Served	NBTL	EBTL	NBL	SBTL	WBTL
Maximum Green (s)	31.0	19.0	5.5	21.0	19.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	13.8	11.2	6.0	13.1	11.2
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	8	12	93	9	12
Cycles @ Minimum (%)	3	4	0	2	4
Cycles Maxed Out (%)	2	14	5	15	14
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 5: Valley & St. John Street

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBT
Maximum Green (s)	18.0	19.0	18.0	18.0	42.0
Minimum Green (s)	5.0	5.0	5.0	5.0	5.0
Recall	None	None	None	None	None
Avg. Green (s)	14.4	16.9	13.7	14.4	34.3
g/C Ratio	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	3	3	10	3	3
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	43	60	35	43	25
Cycles with Peds (%)	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 7: St. John Street & Congress Street

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	EBL	WBL	SBL	NBT	WBL	EBTL	EBL	SBT
Maximum Green (s)	11.5	15.5	3.7	26.5	4.5	22.5	4.5	27.0
Minimum Green (s)	8.0	8.0	3.0	8.0	4.5	8.0	1.0	5.0
Recall	None	C-Min	None	None	None	C-Min	None	None
Avg. Green (s)	12.4	16.3	4.0	26.4	4.6	25.8	5.4	34.9
g/C Ratio	-0.01	NA	-0.01	NA	-0.01	NA	-0.01	NA
Cycles Skipped (%)	2	0	14	0	18	0	93	0
Cycles @ Minimum (%)	4	0	0	0	82	0	0	0
Cycles Maxed Out (%)	76	100	84	70	80	100	7	70
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Fore River Pkwy & Valley

Phase	4	6	7	8
Movement(s) Served	EBT	SBL	EBL	WBT
Maximum Green (s)	44.0	16.0	18.0	21.0
Minimum Green (s)	5.0	5.0	5.0	5.0
Recall	None	None	None	None
Avg. Green (s)	43.0	15.4	17.3	21.0
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	73	83	81	92
Cycles with Peds (%)	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Maine Medical Center
MaineHealth
centered around you

Get on Board!

Maine Medical Center

Transportation Demand Management Program
Friday June 22nd, 2018

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Introduction

Purpose

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

Maine Medical Center

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

Incorporated in 1868, Maine Medical Center is the state's largest medical center, licensed for 637 beds and employing more than 8,000 people – with approximately 2,000 of those employees residing in the City of Portland. Maine Medical Center's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including the state's only medical school, through a partnership with Tufts University School of Medicine, and a world-class biomedical research center, the Maine Medical Center Research Institute.

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

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

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

MISSION, VISION AND VALUES

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

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

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

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

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

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

MMC Facility Planning

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

Every aspect of this project is designed around the needs of patients. The project will optimize current bed capacity at, Maine Medical Center, the state's largest hospital and calls for increasing the number of single rooms available to patients as well as replacing surgical and treatment areas with ones that adhere to 21st century standards. In addition, patient rooms will be universal meaning that each rooms can meet the needs of patients at any point during their stay whether they require critical care or acute care services. About $50 million of the total project cost will be invested in outpatient facilities through the hospital's multi-specialty medical group organization - Maine Medical Partners.

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

The project is organized into three separate site plan descriptions:

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

- Site Plan #3:
    - Removal of the current employee parking garage on Congress St.
    - Construction of a new hospital tower with 64 private universal rooms, 19 procedure rooms, and space for an additional 32 private universal rooms. This building will also include a new hospital entrance and drop-off area with direct connection to the visitor garage.

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

Commitment to TDM

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

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

Known as "Get on Board!," the program supports alternative commuting options such as carpool, 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.

Contributors to this Plan

MMC would like to thank the City of Portland, the West End, Western Promenade, Libbytown, St John Valley, and Parkside neighborhoods, and Vanasse Hangen Brustlin, Inc. (VHB) for contributing to this Transportation Demand Management Plan.

MMC engaged VHB to assist in the creation of this plan. VHB is a national consulting firm specializing in transportation engineering and a leader in the development and management of Transportation Demand Management plans.

Context

Land Use

CURRENT

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

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

FUTURE

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

Parking

CURRENT SUPPLY

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

TABLE 1 Existing Parking Spaces

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

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

CURRENT DEMAND

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

Patients, visitors, and staff at MMC often comment on the lack of adequate and predictable parking. MMC parking facilities do not have integrated technologies to accurately report parking utilization. Therefore, current demand was estimated using a combination of observed data and comparisons to facilities similar to MMC's Bramhall Campus.

Observations:

On behalf of MMC, VHB conducted on-site parking usage observations in January and March 2017. These months were ideal for parking observations because of the poor weather resulting in increased parking utilization. VHB collected parking count data during peak hours, which included late afternoon, evening, and overnight occupancy and turnover. Parking observations were completed during weekdays when MMC typically sees its biggest parking challenges – Tuesday – Friday. Historically, the highest patient volumes at MMC are on Thursdays and Fridays according to the MMC team responsible for managing parking. High patient volumes coincide with higher volumes of staff. The counts indicate that the parking system typically operates at or above capacity during weekday daytime hours. During the observations, it was difficult for VHB to differentiate staff from patients and visitors. Therefore, a total demand estimate is provided.

The observed data reveals that parking demand at the Bramhall campus among patients, visitors, physicians, and staff total roughly 3,122. MMC parking facilities have capacity of 2,877. The observed

parking demand is almost 110% of supply. The observed parking demand is 4.4% below the expected parking demand (3,264) for a suburban hospital of MMC's size, according to Institute of Transportation Engineers (ITE) parking demand projections. The difference equates to a shortage of 142 parking spaces.

In addition to VHB's observations, the MMC staff responsible for managing parking has estimated the employee parking deficit to be between 200 and 300 spaces.

Comparison to Peer Group:

VHB compared MMC's parking ratio per licensed bed to other hospitals in New England and nationally. MMC's 850 patient/visitor parking spaces equate to 1.33 parking spaces per bed which is low compared to peers. The midpoint patient and visitor parking space/licensed bed ratio among MMC peers is 1.87. It is important to note that based on a review of peer institutions, MMC would need to increase its patient/visitor allocation by 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 which is also low when compared to other peer institutions. The midpoint employee parking space/licensed bed ratio among MMC peers is 4.38. MMC has 637 licensed beds.

When compared to peers, MMC has a shortage of 341 patient and visitor parking spaces and 763 staff parking spaces.

$$\underline{MMC\ Licensed\ Beds\ (637) * Comparison\ Group\ Patient\ \&\ Visitor\ Parking\ Space\ per\ Bed\ (1.87)}$$
$$\underline{= Peer\ Equivalent\ Patient\ \&\ Visitor\ Parking\ Spaces\ (1{,}191)}$$
$$\underline{- MMC\ Patient\ \&\ Visitor\ Parking\ Space\ (850)}$$
$$\underline{= \boldsymbol{Patient\ \&\ Visitor\ Parking\ Space\ Deficit\ at\ MMC\ (341)}}$$

$$MMC\ Licensed\ Beds\ (637) * Peer\ Group\ Staff\ Parking\ Spaces\ per\ Bed\ (4.38)$$
$$= Peer\ Group\ Equivalent\ Staff\ Parking\ Spaces\ (2{,}790)$$
$$- MMC\ Staff\ Parking\ Spaces\ (2{,}027) = \boldsymbol{Staff\ Parking\ Space\ Deficit\ at\ MMC\ (763)}$$

Current Demand:

MMC used the observed and peer group data to determine the estimated parking demand.

Based on data available, the estimated MMC parking demand exceeds patient and visitor supply by approximately 25 parking spaces and exceeds employee parking supply by approximately 220 parking spaces. MMC's total parking deficit is estimated to be 800 parking spaces in 2017. Therefore, the estimated parking demand in 2017 is:

2017 Estimated Parking Demand
- 875 for patient and visitor parking ($875 = Current\ Patient\ Visitor\ Parking\ Supply + 25$) - 2,250 for employees ($2{,}250 = 2{,}247 + roundup = Current\ Employee\ Parking\ Supply + 220$) - 3,125 total estimated parking demand

The parking demand for MMC's Bramhall campus approximately 3,125 parking spaces.

MMC feels that the appropriate metric to measure parking utilization is parking demand per Bramhall campus employee. This metric is ideal because the number of employees will change over time. Other

metrics such as parking space per bed or parking space per square foot would not accurately account for all factors impacting parking demand on campus. This metric allows for changes in both factors – the number of employees and parking demand. In addition, this metric focuses on MMC employees who are the target population of this transportation demand management plan.

MMC's Bramhall campus has roughly 6,000 employees as of 2017. Therefore the current employee parking demand per Bramhall campus employee is 0.375.

$$\frac{Estimated\ Employee\ Parking\ Demand\ (2{,}250)}{MMC\ Bramhall\ Employees\ (6{,}000)} = Employee\ Parking\ per\ Bramhall\ Employee\ (0.375)$$

FUTURE

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

Data Collection

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

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.

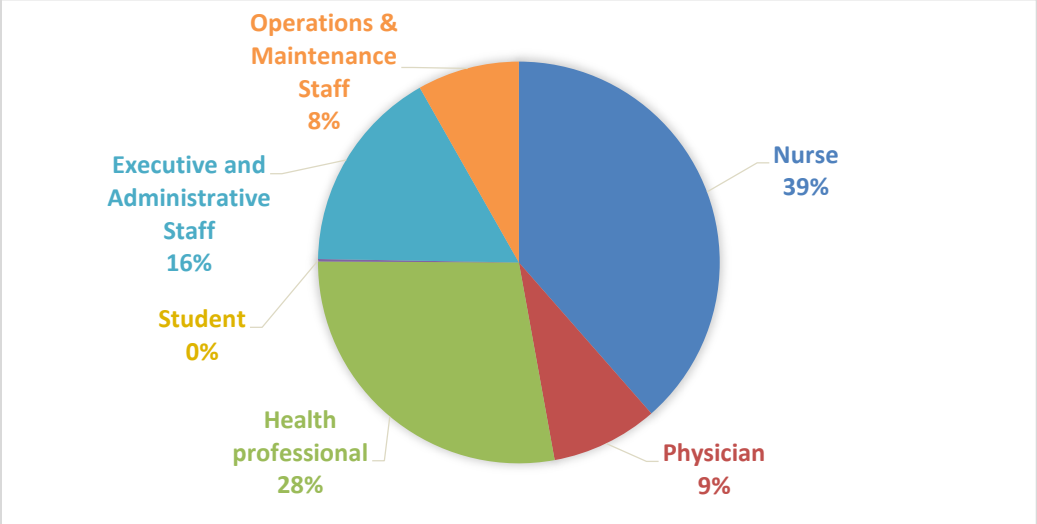
Current Travel Behavior

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.

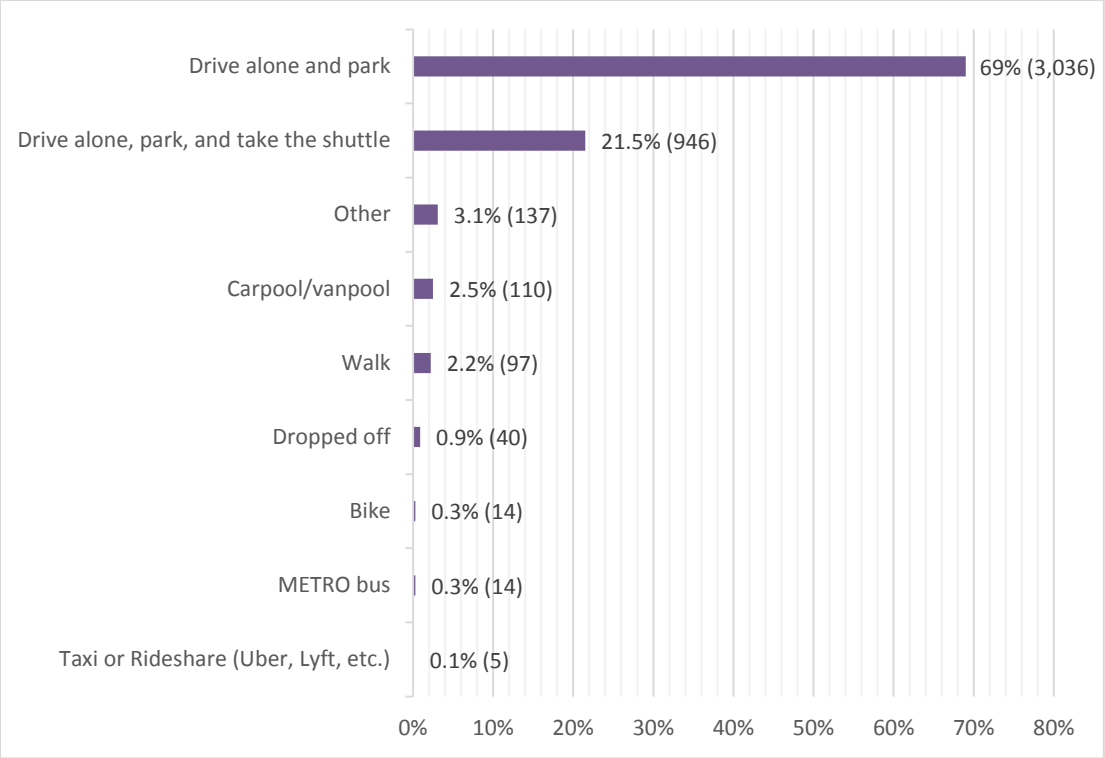
FIGURE 2 Survey Respondents by Hospital Affiliation



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 once every two years to track travel trends and to gauge the effectiveness of specific initiatives. The information collected will enable MMC to develop informed, data-based enhancements to Get on Board, providing a greater prospect for program success.

Geospatial Analysis

MMC analyzed the residence locations of its employees to understand employee commuting patterns. The analysis showed that approximately 27% of employees live within a 3-mile radius and approximately 73% of employees live beyond a three mile radius of MMC (See, Figures 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

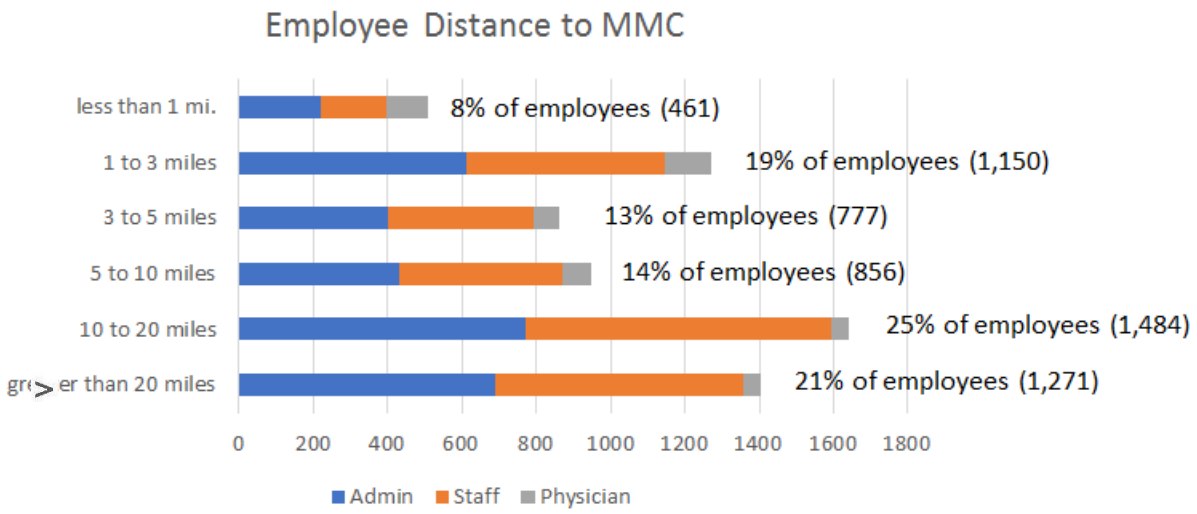
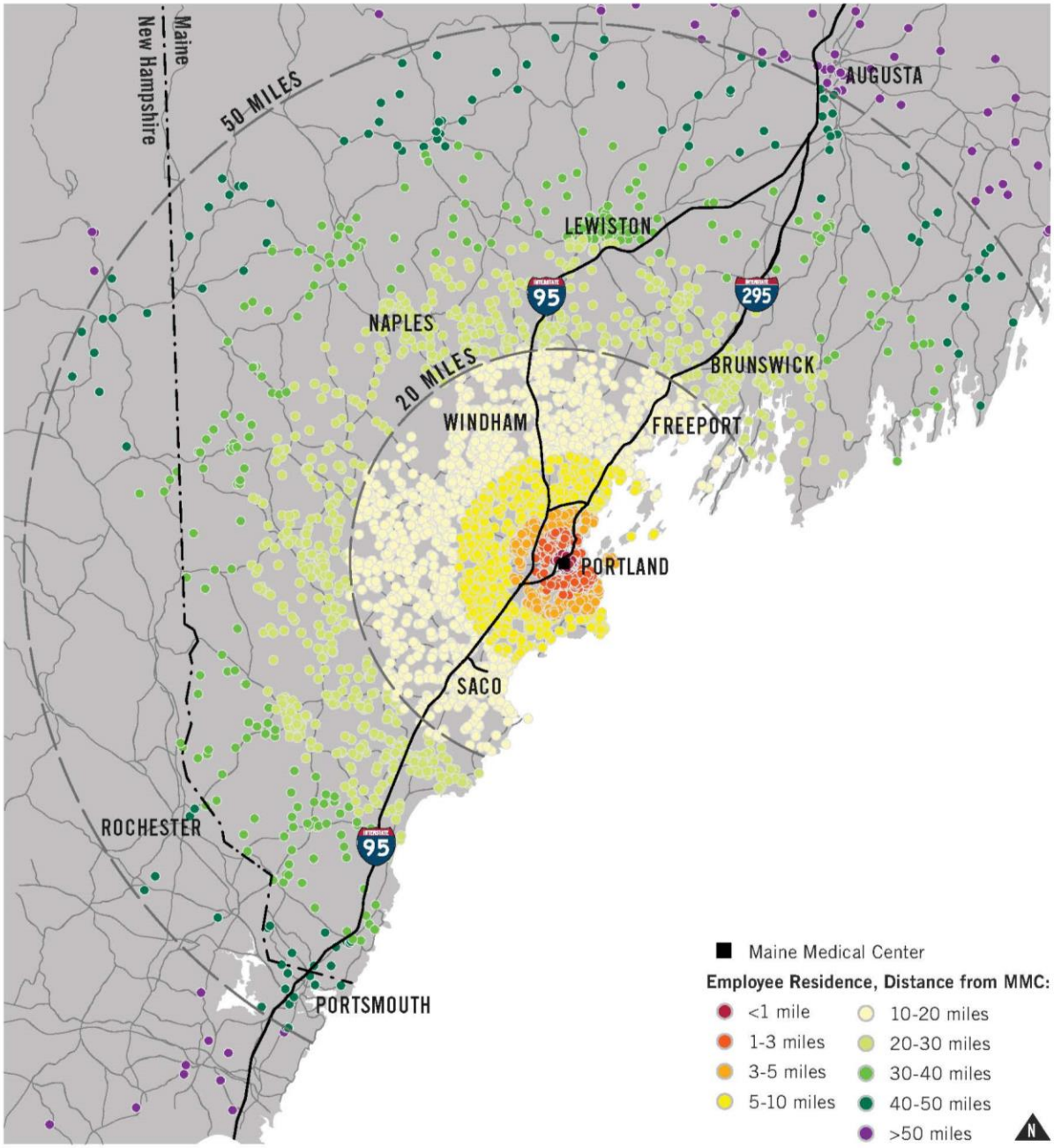


FIGURE 5 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



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). VHB's observations and peer group comparison will serve as the baseline for future reduction targets.

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

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

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

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

	2017 Baseline	Short-Term (0-2 years)	Mid-Term (2-5 years)	Long-Term (5+ years)
Targeted Reduction		2%	4%	5%
Employee Parking Demand Per Employee	0.375	0.367	0.360	0.356

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

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 - Portland Bikeway and Pedestrian Network (Source: City of Portland)

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	40%
S. Portland	$13.50	$8.00	40%
Zoom 10 Ride	$39.00	$29.60	25%
Zoom Monthly	$100.00	$84.50	15%
Zoom Quarterly	$260.00	$197.50	25%

The *Portland Peninsula Transit Study* [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

[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 .

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 every three months that certifies their use of alternative transportation during the week to commute to work. Upon receipt of a certification, MMC issues the employee a payment equal to the cost of parking at MMC's employee garage.

MMC 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. Therefore, the annual employee parking cost is $78.

$$\$3\ per\ paycheck\ \times 26\ pay\ periods\ =\ \$78$$

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

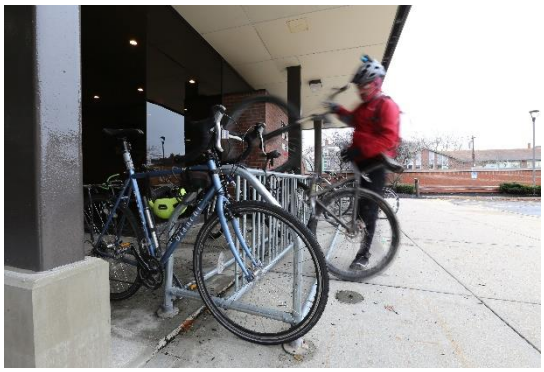
MMC will continue to offer bike storage, bike repair tools, and on-site shower and locker facilities to commuters who choose to bicycle to work.

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 Bike Share, a non-profit organization with a goal to establish a bike share system in the City of Portland, plans to launch a bike share pilot in 2018. MMC 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 holistic approach to travel management. The partnerships would enable the exchange of TDM-related information and experiences between institutions, and it would foster a community that is focused on promoting alternative transportation in the City of Portland. Such collaborations would afford the opportunity to think regionally and help guide both employer provided or sponsored benefits as well as critical external resources such as METRO transit, sidewalks, and bicycle infrastructure. Opportunities to improve existing transit infrastructure would be a focus of any regional connections partnership.

Supporting 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. Communication methods that are effective will be further refined while elements that are less effective will be reevaluated. Some examples of communication methods include:

- Introducing the program to new employees at orientation: MMC 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. These systems will provide quantifiable information to assist in determining future utilization of MMC's parking facilities.

MMC will utilize this parking usage data to assess its parking arrangement twice every year.

MMC has received feedback 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 intends to administer the survey once every two years 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.

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

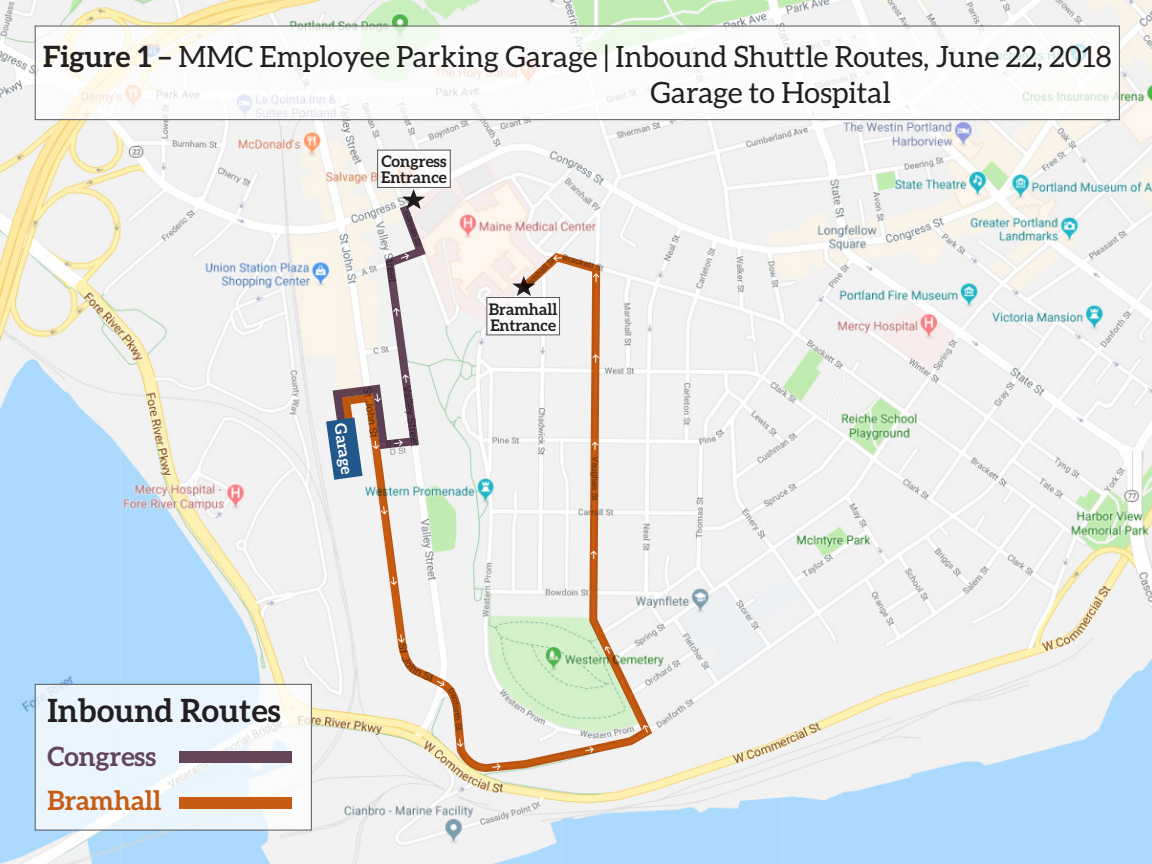


Figure 2 – MMC Employee Parking Garage | Outbound Shuttle Routes, June 22, 2018
Hospital to Garage

Maine Medical Center
MaineHealth

Feasibility Analysis

Connecting the St John Garage to Fore River Parkway

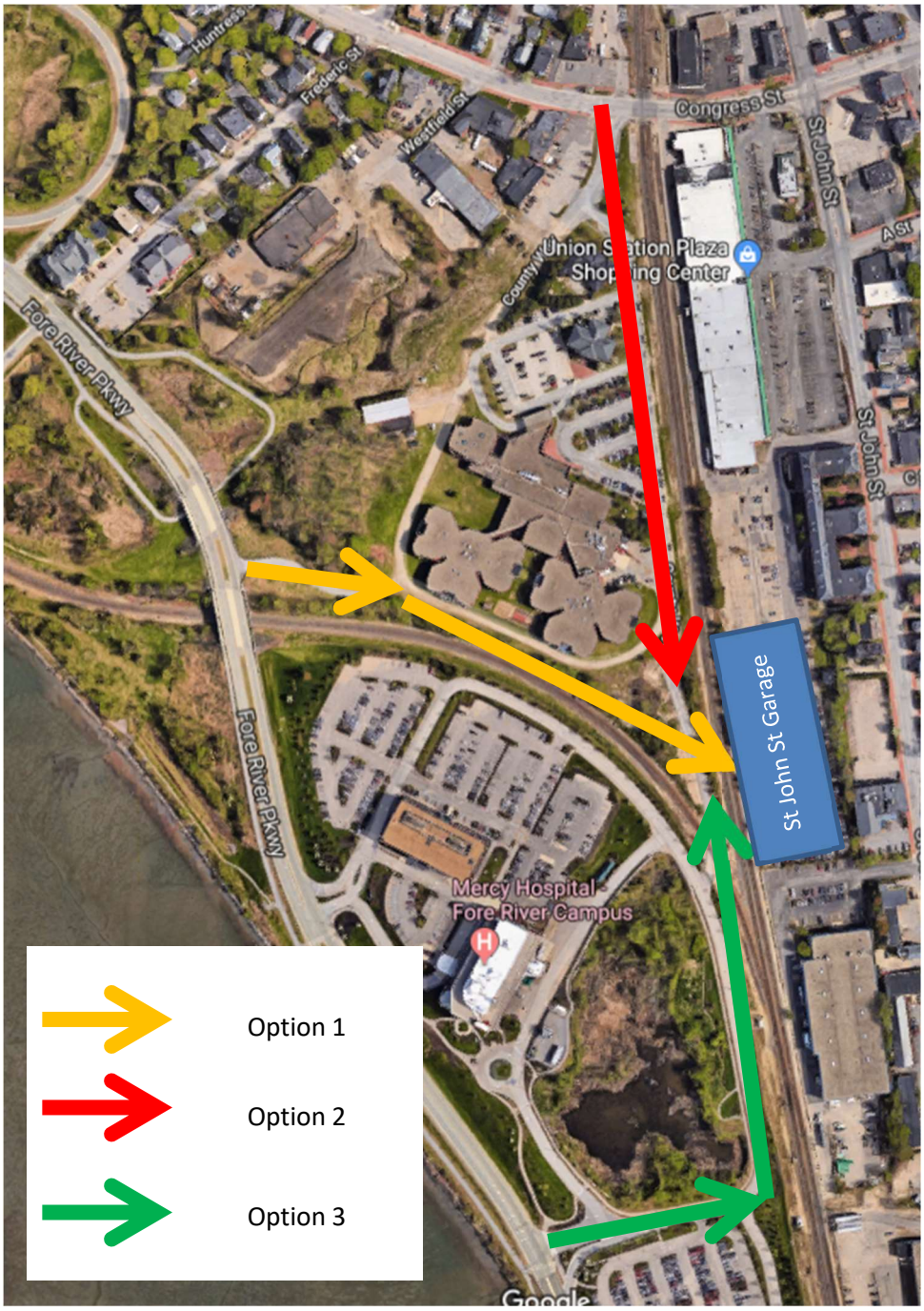
June 22, 2018

Executive Summary

Maine Medical Center is proposing to locate a 2,450 space parking garage on St John St near 222 St John St – the old railroad administration building. The primary access point to the proposed garage is on St John St near the intersection of St John St and D St. A secondary access point to the proposed garage is on St John St at the north end of the building located at 222 St John St.

The purpose of this document is to explore future access possibilities to the proposed St John garage from Fore River Parkway. This document analyzes the feasibility of such an access route and the pros and cons of access options identified by the City of Portland.

The options identified by the City of Portland are illustrated in the image below.



Source: Good Earth; City Of Portland

As described in detail below, none of the options are feasible within the anticipated construction schedule proposed by MMC in its Site Plan application. Of the options considered, option 3 is most worthy of additional consideration. This option uses an existing signalized intersection at Mercy Hospital and requires a ramp tall enough to safely clear three railways and a ramp long enough to provide a slope that is safe for regular vehicular traffic. This option would require significant time and cost to realize as well as easement agreements between private landowners and the railroad and wetland mitigation.

Objectives:

The objectives of a connection between the St John garage and the Fore River Pkwy include:

1. Utilize existing infrastructure, easements, and rights of way to the extent possible.
2. Decrease vehicular traffic on Congress St.
3. Increase utilization of Fore River Pkwy.

Assumptions:

Assumptions made in this analysis include:

1. A rail crossing is required.
2. Surface rail crossings are a safety concern and should be avoided.
3. Surface rail crossings temporarily interfere with non-rail traffic and should be avoided.
4. The slope of proposed ramps will be within industry standards for safe vehicular travel.
5. Any access option will meet applicable City of Portland technical standards.

Key Factors:

Key factors considered in this analysis include:

1. Existing and required easements.
2. Length of time required for all stakeholders to align around proposed design of access route. Stakeholders include rail operator, property owners and abutters, neighborhood associations, City of Portland and MMC.
3. Cost of ramps and infrastructure.
4. Minimum clearance over the rail is 23’-0” resulting in a bridge deck level of approximately 27’-0” above adjacent grade.

Option Summary

The following table summarizes the pros and cons of each access option. A significant cost and time to implement is assumed with each option. Costs would include the roadway and ramps associated with the rail crossing. Time for stakeholders to agree and approve a design is anticipated to be at least twenty months. Figures highlighting each option are attached to this summary.

	Pros	Cons
Option 1: Access behind the Jail	• Short bridge – two rail crossing • Increases Fore River Pkwy traffic • Decreases Congress St traffic • Potential for a through street using right of way adjacent to 222 St John.	• The narrowest point of the proposed roadway is between the jail facility and the rail right of way. There is inadequate space to allow for two lanes of traffic, property setbacks, utilities, drainage and pedestrian pathways. • Railroad bed is approximately 7' lower than existing grade alongside jail, access road would require long retaining wall system • Proximity to jail; disturbance to inmates. • Curb cut on Fore River Pkwy is between two bridges and cannot be widened. • The proposed location on Fore River Pkwy is currently unsignalized.
Option 2: County Way	• Short bridge – two rail crossing • Ogdensburg Street / County Way are existing public roads	• Does not decrease traffic on Congress St or increase traffic on Fore River Pkwy • County Way and Congress St is an unsignalized intersection. Signalizing this intersection is complicated due to the proximity to the rail crossing. • Individuals seeking entrance to I-295 would have a circuitous route given the one-way on Congress St. • There is potential for garage traffic to interfere with jail traffic. This concern is exacerbated in the case of an emergency at the jail.
Option 3: Mercy Circle Drive	• Stakeholder interest at this time. • Achieves stated objectives.	• May significantly impact Mercy's development capabilities and require filling a wetland area

Option 1: Access Behind the Jail

Constructing a bridge crossing that spans two-railroad tracks and a new roadway alongside and south of the jail provides access from the Fore River Parkway to the garage at a new intersection between two existing bridges on the parkway. While this option provides direct, fully segregated access for garage traffic between the parkway and the garage, there is insufficient room between the jail building and the spur track right-of-way (approximately 40' from building to right-of-way, estimated). The space is too narrow to accommodate a two-lane roadway, walkway, drainage, and infrastructure such as a retaining wall, while still providing a reasonable buffer from the jail building. Other complicating factors in this option include the limited room / limited sight lines at the proposed intersection location on Fore River Parkway, as this intersection would be located between two width-limited bridge structures. This option would require purchase of land or easements from various property owners and negotiating a railroad bridge crossing with the railway.

This option is not feasible due to the limited width of land between the railroad and the jail.

Option 2: County Way

Constructing a bridge crossing that spans two-railroad tracks and reconstructing two roadway sections alongside and east / north of the jail (Ogdensburg Street to County Way) provides access from Congress Street to the garage. This option relies on sharing municipal roadways that are currently fully dedicated to serving the needs of the Cumberland County jail; analysis would be needed on whether additional traffic has adverse impacts on the jail operations and emergency response vehicles. This option does not decrease traffic on Congress St or increase traffic on Fore River Pkwy. County Way and Congress St is an unsignalized intersection; signalizing this intersection is complicated due to the proximity of the intersection to the rail crossing. Individuals seeking entrance to I-295 would have a circuitous route given the one-way on Congress St. Traffic that leaves the garage over the railroad tracks would need to cross those same tracks at an existing at-grade crossing on Congress Street. This option would require negotiating a railroad bridge crossing from the railway and coordination with the County jail, including possible easements.

This option does not meet two of the objectives of decreasing vehicular traffic on Congress Street while increasing utilization of the Fore River Parkway and is therefore not considered to be a viable option for further consideration.

Option 3: Mercy Circle Drive

Constructing a long bridge across three-railroad tracks and the Mercy hospital roadway provides access from the Fore River Parkway to the garage by way of the existing Mercy Hospital roadway system. This option maximizes the use of existing, built infrastructure on the Mercy Hospital campus, including the existing signalized intersection on the Fore River Parkway. The ramp system that provides access between the Mercy Hospital roadway and the garage bridge would likely require filling of wetland areas and impacts to the previously developed Mercy Hospital Master Plan submitted to the City prior to the Fore River Campus construction. This option would require purchase of land or easements from various property owners, including Mercy Hospital, and negotiating a railroad bridge crossing with the railway.

Of the three options explored, this option is most feasible and meets the objectives of utilizing existing infrastructure, easements, and rights of way to the extent possible; decreasing vehicular traffic on Congress Street; and increasing utilization of the Fore River Parkway; however, this option has impacts to the Mercy Campus which require approvals outside of the control of MMC.

NOT FOR CONSTRUCTION

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

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REV	DESCRIPTION	DATE

DESIGNED BY:
DRAWN BY: BGM
CHECKED BY: DAS
ALTERNATE FIGURES.dwg

ACCESS BEHIND JAIL

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MM ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 2018
SCALE: 1" = 60'
SHEET: 1 OF 3

OPT. 1

24x36 SHEET
1:1

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DRAWN BY: SKM	ALTERNATE FIGURES.dwg	

COUNTY WAY

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MM ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUN E 2018
SCALE: 1" = 60'
SHEET: 2 OF 3

OPT. 2

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REV	DESCRIPTION	DATE
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MERCY CIRCLE DRIVE

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MM ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 2018
SCALE: 1" = 60'
SHEET: 3 OF 3

OPT. 3

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11. SIGNIFICANT NATURAL FEATURES

The existing Site is fully developed and there are no known areas of significant natural features, including unusual natural areas, rare or endangered botanical features, areas of significant wildlife habitats, or wetland areas associated with the site or surrounding property.

We have included the official species list for the site, as provided by the U.S. Fish & Wildlife Service. This list identifies the Northern Long-eared Bat as a threatened species, but no critical habitat is identified on the project site. The Northern Long-eared Bat is identified as threatened throughout the State of Maine. The project is located in an existing urban, developed area and no trees meeting the criteria for bat habitat are proposed to be impacted by the project.

Other publicly available data indicates that the project is not located in any significant plant or animal habitat, on any identified conservation land, or in wetlands. Figures documenting this are attached.

11.1 Attachments

- Official Species List
- Plant and Animal Habitat Map
- Conservation Land Map
- National Wetlands Inventory Map

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
Phone: (207) 469-7300 Fax: (207) 902-1588
http://www.fws.gov/mainefieldoffice/index.html

In Reply Refer To:
Consultation Code: 05E1ME00-2018-SLI-0307
Event Code: 05E1ME00-2018-E-00635
Project Name: Maine Med St John St Garage

January 26, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan: http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site: http://www.fws.gov/mainefieldoffice/Project%20review4.html

Additionally, wind energy projects should follow the wind energy guidelines: http://www.fws.gov/windenergy/ for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g.,

cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm and at: http://www.towerkill.com; and at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Maine Ecological Services Field Office
P. O. Box A
East Orland, ME 04431
(207) 469-7300

Project Summary

Consultation Code: 05E1ME00-2018-SLI-0307

Event Code: 05E1ME00-2018-E-00635

Project Name: Maine Med St John St Garage

Project Type: DEVELOPMENT

Project Description: Parking Structure

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.65010848741777N70.2795895413019W

Counties: Cumberland, ME

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Conserved Land and Undeveloped Habitat

Welcome Layers Legend

Conserved Lands

The State of Maine's conserved lands database includes lands in federal, state, and nonprofit ownership. Some privately owned conservation lands may not be represented. For the most accurate and current information about land ownership, consult with the local assessor and/or other local land management agencies. If public access potential to any of the properties displayed here is uncertain, landowners should be contacted first to determine if permission is necessary.

Ownership Types (transparent layers)

Federal: National parks, forests, and wildlife refuges.

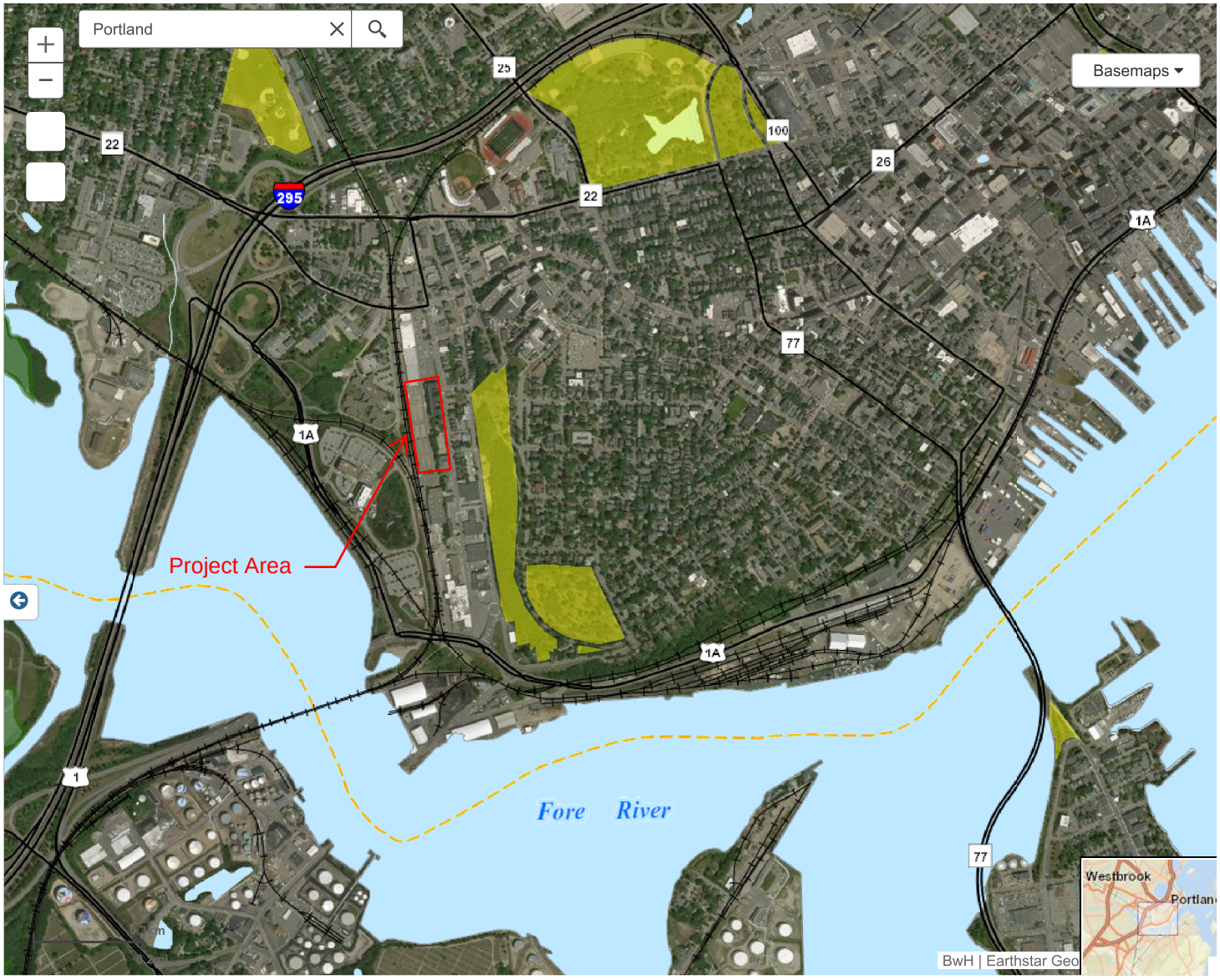
State: Wildlife Management Areas and other properties managed by the Department of Inland Fisheries and Wildlife, state parks, and parcels managed by the Bureau of Parks & Lands.

Municipal: Town parks, water district properties, community forests, etc.

Private Conservation: Properties owned and managed by private (usually nonprofit) organizations such as The Nature Conservancy, Maine Coast Heritage Trust; Trust for Public Land, and local land trusts.

Easement: Voluntary legal agreements that allow landowners to realize economic benefit by permanently restricting the amount and type of future development and other uses on all or part of their property as they continue to own and use it.

Focus Areas of Statewide Ecological Significance

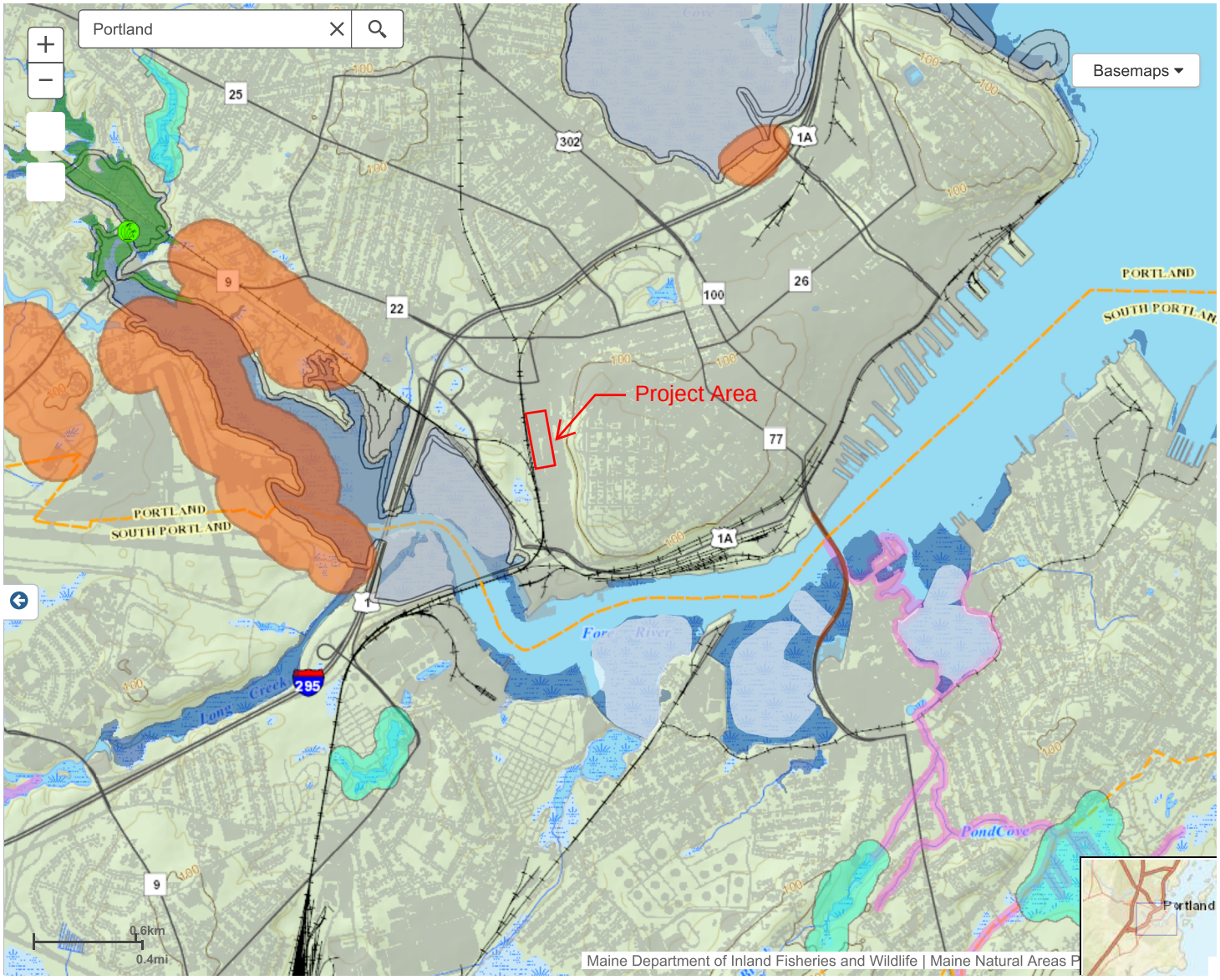


Plant and Animal Habitats

Welcome | Layers | Legend

Legend:

- State Listed Animal Habitats
- Deer Wintering Areas
- Inland Wading Bird and Waterfowl Habitat
- Tidal Wading Bird and Waterfowl Habitat
- Essential Plover and Tern Habitat
- Shorebird Habitat
- Seabird Nesting Islands
- Significant Vernal Pools
- Rare Plant Locations
- Natural Communities
- Shellfish Beds
- Endangered Fish Species
- Wild Brook Trout Habitat
- Atlantic Salmon Spawning Habitat
- Atlantic Salmon Rearing Habitat



U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands Map

January 29, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

12. STORMWATER MANAGEMENT PLAN & CALCULATIONS

The MMC staff parking garage project site consists of portions of the 222 St. John Street (Cowcatcher), 184 St. John Street (Eagles), and the Union Station Plaza property through an access easement. Within the stormwater design, these properties have been combined and evaluated as a single project site. Applicable regulations that govern stormwater management on this site include Section 5 of the City of Portland Technical Manual, Chapter 32 of the City of Portland Code of Ordinances, and the Maine Stormwater Best Management Practices (BMP) Manual. Under Section 5 of the City Technical Manual, the project is subject to the Redevelopment Standards and is required to adhere to the General Standards of the Maine Department of Environmental Protection Chapter 500 Stormwater Regulations.

The project will disturb greater than one acre of land; will result in a decrease of approximately 14,506 square feet (SF) of impervious area; and will result in the redevelopment of a non-roof impervious area greater than 5,000 SF. The project will therefore be required to meet the Basic Standards for erosion & sedimentation control, and the General Standards for treatment of redeveloped area. The project is not required to meet the Flooding Standard, as there is no new impervious surface proposed, however the project has been designed to minimize the impact of project flows on the surrounding stormdrain system. A small portion of the project area on the 184 St. John Street property will be connected to the existing separated stormdrain in St. John Street, east of the site. Drainage was not previously connected in this direction. The remainder of the post-development flows for the redeveloped site will be managed to reduce the flow to the existing downstream stormwater collection system west of the site. Adequate provisions have been made to collect, treat, and detain the required amount of stormwater runoff generated from the site. The following sections describe the design methodology and the proposed means of compliance with these standards.

12.1 Stormwater Modeling Methodology

Stormwater modeling was completed using the HydroCAD 10.0 Stormwater Modeling System by Applied Microcomputer Systems, which uses TR-20 runoff calculations methodology. The HydroCAD output for both the pre- and post-development models are attached to this section. The Chapter 500 Stormwater regulations define standard rainfall amounts for the 2-year, 10-year, and 25-year, 24-hour storm events; a Type III rainfall distribution was applied to the storm events.

Subcatchment drainage areas were delineated based on topographical information. HydroCAD provides a lookup table for curve number (CN), which is a measure of the retention and runoff properties of various surfaces based on the Hydrological Soil Group (HSG) and land cover type. The calculation of CN is based on TR-55 methodology. The HSG for the site was taken from the USDA Natural Resources Conservation Service Web Soil Survey, a copy of the survey map is attached; the Site consists of HSG Type A (representative of the most permeable soils) within the 184 St. John Street property and unclassifiable soils within the current 222 St. John Street Parking lot. The unclassifiable soils have been modeled as HSG Type D, the HSG representing the least permeable soil condition. The area of each land cover type was delineated using ground cover information from existing condition survey and GIS sources, and HydroCAD computed the final CN for each subcatchment based on the area-weighted average.

The Time of Concentration (Tc) is the time required for runoff to travel from the most hydrologically distant point of a watershed to the point of discharge. The Tc for each subcatchment drainage area was computed within HydroCAD using TR-55 methodology as the sum of the travel times for each consecutive flow segments along the longest hydraulic flow path. The longest hydraulic flow path was delineated utilizing contour data and partitioned into segments based on flow types, land cover, and slopes. The primary types of flow consist of sheet flow, shallow concentrated flow, and channel flow. A minimum Tc of six minutes was utilized for all subcatchments.

12.2 Pre- and Post-Development Site Conditions

For the purpose of this stormwater analysis, the model has been limited to the project area, which includes portions of the following properties:

- 222 St. John Street Property parking lot (Cowcatcher LLC);
- 184 St. John Street Property parking lot (Fraternal Order of Eagles); and
- A portion of the Union Station Plaza Parcel parking lot (Union Station Plaza Limited Partnership).

Areas proposed to be redeveloped as part of the design have been included within stormwater calculations described below. Two stormwater study points have been defined, an existing 30-inch stormdrain in St. John Street to the east of the site and an existing 18-inch stormdrain crossing the railroad tracks to the west of the site.

12.2.1 Pre-Development

Currently, stormwater runoff generated from the existing parking lot collects via catch basins into a closed storm drain system installed within the parking lots. The parking lot area is primarily flat and allows for additional relief along the western property line adjacent to the neighboring railroad tracks. The project area connects to a stormdrain system that continues through the main parking lot for 222 St. John Street and Union Station Plaza. These existing 18-inch diameter stormdrain pipes convey stormwater runoff from the site, to the west under the railroad tracks into the City of Portland's separated stormwater system that crosses Ogdensburg Street / County Way into the County Jail property.

Existing drainage patterns and site features are shown on the Pre-Development Drainage Plan provided in this section. For the purposes of our analysis, we have used the existing 18-inch stormdrain system as the pre-development study point. A closed circuit television (CCTV) inspection of a portion of the downstream stormdrain system was completed by the applicant, and the results of that inspection show that the existing 18-inch concrete pipe is in good condition.

12.2.2 Post-Development

The proposed redevelopment will consist of the construction of a new free-standing parking garage, entrance driveways, a surface parking lot, walkways, landscaping and associated stormwater management systems. Proposed work will primarily consist of the redevelopment of existing paved parking lot areas. Drainage from the project area will discharge to two locations. The majority of the redeveloped area will continue to discharge via direct pipe connection into the exiting 18-inch stormdrain that discharges to the west under the railroad tracks into the City's stormwater infrastructure. The redeveloped area along St. John Street, including an access driveway and associated landscaping, will be redirected to the existing stormwater drainage utilities within St. John Street. Proposed drainage patterns and features are shown on the Post-Development Stormwater figure provided in this section.

12.2.2.1 West Stormdrain

Stormwater runoff from the majority of the project site will be intercepted by a closed stormwater system that connects to a proprietary subsurface stormwater treatment system which will store and treat stormwater runoff generated from the following areas:

- Top deck of the parking garage and lobby structure roof, discharged to the system via internal garage plumbing;
- Crushed stone planting area which extends along the southern and western faces of the parking garage; and

- Northern surface parking lot, an adjacent grade level entrance driveway, and associated landscaping.

Details of the proposed treatment and storage are provided in the discussions of the General and Flooding Standards that follow in this report.

12.2.2.2 East Stormdrain

Stormwater runoff from the redeveloped area along St. John Street will be intercepted by a closed stormwater system that connects to a proprietary stormwater treatment system which will be installed within a new catch basin in the proposed entrance drive. The existing condition in this area is a parking lot that connects to the stormdrain to the west. This project proposes to instead direct stormwater from this area to the east into the existing 30-inch separated stormdrain in St. John Street. This is a small part of the overall project site, and the flow from this area will not be significant (see the Flooding Standard discussion below). Discussions with Brad Roland from the City of Portland Department of Public Works have indicated that the St. John Street stormdrain should have adequate capacity for the proposed connection.

12.3 Basic Standards (Soil Erosion and Sedimentation Control)

These standards address erosion and sedimentation control, inspection and maintenance, and good housekeeping practices. The application includes erosion and sediment control plans, details, and notes. These notes cover good housekeeping practices. The Erosion and Sedimentation Control Plan for the proposed project is provided below. Additional erosion and sedimentation controls are located within the construction management plan and detail the sequence of the management practice installation.

12.3.1 Erosion and Sedimentation Control Plan

The overall goal of the Soil Erosion and Sedimentation Plan is to restrict the potential for erosion and sedimentation at the site and down-gradient of the site. A variety of erosion control techniques will be implemented to achieve this goal. During construction, these include:

- Positive grades throughout the construction site to direct flow to sediment control barriers;
- Diversion barriers to keep upslope runoff from flowing through the construction site;
- Installation and maintenance of sedimentation barriers adjacent to downhill areas of the perimeter of the project site;
- Installation and maintenance of construction entrances at the travelled interface between stabilized and non-stabilized portions of the project site;
- Controls for fugitive dust, debris, and other materials;
- Permanent seeding or mulching applied as soon as areas are at final grades; and
- Inspection of all in-place measures after every significant rainfall until permanent measures are in place.

Structural measures for erosion and sedimentation control will be installed where shown on the Demolition Plan, which is included in the drawings attached to Section 3 of this Report; details for the proposed measures are also included in the drawings. Erosion and sedimentation control measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices" and will be installed prior to earth disturbing activities. Temporary measures will be removed after the areas are permanently stabilized.

Permanent erosion control measures will include surface ground cover, including vegetation, pavement, crushed stone, and rip rap. Areas of concentrated flow will be protected from erosion by establishing vegetation and riprap. All

measures will be maintained in effective operating condition. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures and will use the attached inspection report form or equivalent.

Due to the size of the site, the project will be required to conform with the Maine Construction General Permit. A Notice of Intent to Comply will be filed for the project prior to the start of construction, and will be provided to the City upon filing.

12.4 General Standard (Water Quality)

The City of Portland Technical Manual requires that all projects, not subject to the requirements of an existing Site Law or Stormwater Management Law Permit, that include redevelopment of non-roof impervious area greater than 5,000 square feet, and are subject to the City of Portland Review, provide stormwater quality treatment in accordance with the General Standard for no less than 50% of the redeveloped non-roof impervious area.

No new developed area will be created as part of this project, as the Site is already entirely developed. A majority of the site will be disturbed. The project will result in a net decrease of approximately 14,506 SF of impervious area. The project will result in approximately 146,887 square feet of redeveloped non-roof impervious area; it should be noted that the garage top deck is not considered "roof" under this analysis and is therefore counted toward the redeveloped area requiring treatment. The redevelopment standard requires 50% of this redevelopment area to be treated, requiring that a minimum 73,444 square feet of area be treated for this project.

A Jellyfish Filter with below-grade R-Tanks for water quality volume storage has been selected as the primary water quality treatment BMP for the Site. This system will provide treatment for the west stormdrain area (as described earlier under post-development site conditions). Alternative methods were considered, such as an underdrained subsurface sand filter, but were not selected due to elevation constraints associated with discharging to the existing stormdrain system located on the Union Station Plaza property. Above-grade storage systems, like underdrained soil filters and rain gardens, were also ruled out as there is limited available space on the Site.

Adequate provisions have been made to collect stormwater runoff from the project area via a series of catch basins and inlets, which drain to an underground R-Tank storage system designed to store the Water Quality Volume prior to treatment by the Jellyfish Filter. The proposed R-Tank System and Jellyfish Filter are proposed to be installed below-grade in the surface parking lot to the north of the parking garage and will collect, store and treat stormwater runoff generated from the post-development areas described above in Section 12.1.1.2.

The Jellyfish Filter is a proprietary system, which has been reviewed and approved for use by the MaineDEP; a copy of the approval letter is attached in this section. The proposed Jellyfish Filter has been sized to meet the MaineDEP approval standards to treat a minimum Water Quality Volume of 1-inch runoff from impervious areas and 0.4-inch runoff from pervious areas. Please see attached calculations demonstrating that the filter has been adequately sized to treat the required Water Quality Volume.

The Jellyfish Filter will be installed to provide treatment of greater than the minimum required area. The entire area of the site that is tributary to the proposed treatment system is approximately 157,512 square feet. Of this area, 125,012 square feet is redeveloped, non-roof impervious surface which exceeds the 73,444 square feet required for 50% treatment of the redeveloped impervious area.

A second treatment system is proposed for the east stormdrain area, which ties into St. John Street. This StormBasin catch basin filter will be installed within the redeveloped garage entrance along St. John Street. While the StormBasin filter is not an approved Maine DEP proprietary treatment option, the proposed stormdrain will aid in removal of pollutants generated within the highly trafficked entrance, providing treatment beyond the total amount required by the City's standards.

Table 12-1 outlines the areas as described, demonstrating conformance with the City of Portland Redevelopment Standards.

Table 12-1: Stormwater Treatment Area Breakdown

	Area (SF)	Area(AC)
Total Project Area:	229,656	5.27
Proposed Disturbed Area:	204,783	4.70
Total Impervious Surface Area:		
Existing:	190,582	4.38
Proposed:	176,076	4.01
Reduction:	(14,506)	0.33
Redeveloped Non-Roof Impervious Area:		
Total (includes top floor of garage):	146,887	3.37
Required Treatment Area (50%):	73,444	1.69
Provided Treatment Area:		
Jellyfish Filter & R-tanks		
Total Area Treated:	157,512	3.62
Total Redeveloped Non-Roof Impervious Area Treated:	**125,012**	**2.87**
Percentage of Redeveloped Non-Roof Impervious Area Treated:	**85%**	
StormBasin Catch Basin Filter		
Total Area Treated:	**10,000**	**0.75**
Total Redeveloped Non-Roof Impervious Area Treated:	**4,743**	**0.21**
Percentage of Redeveloped Non-Roof Impervious Area Treated:	**3.2%**	
Total Percentage of Redeveloped Non-Roof Impervious Area Treated by Both Systems:	**88.2%**	

12.5 Flooding Standard (Water Quantity)

In accordance with the City of Portland's Redevelopment Standards, the adherence to the Flooding Standard is not required for the site, as there is no new impervoius or new developed surface proposed. However, based upon good engineering practices, and current site constraints, the stormwater management system has been evaluated for the 24-hour, Type III storm event of the 2-,10-, and 25-year frequencies to ensure that peak flows from the Post-Development design of the site do not result in a negative impact on their tributary drainage systems.

The existing parking lot currently discharges to a stormdrain system that runs through the Union Station Plaza property and underneath the railroad tracks, connecting to an existing City-owned stormdrain system on Ogdensburg Street and County Way at the County Jail property located west of the project site. Examination of existing conditions on the site shows that the existing 18-inch stormdrain piping is not sized to adequately to handle current flows, and anecdotal

evidence notes that ponding does occur in the parking lot during larger storm events. CCTV inspection of the existing pipe has shown that the existing RCP pipe is in good condition.

The intent of our design is to manage stormwater such that the post-development peak flows are reduced to flow rates that can be accommodated within the existing 18-inch stormdrain pipe west of the site. This is accomplished by increasing the size of the R-tank storage system. An 18-inch pipe is able to convey 20.81 cfs of flow at 95% of its full capacity. Reviewing the peak flow calculations for this study point (see **Table 12-2**), the pipe capacity is exceeded in the existing condition during a 10-year storm event. The proposed stormwater system will provide adequate storage such that flow from the project site will be reduced to a rate that is below the 18-inch pipe's capacity during all evaluated storm events, including the 25-year storm event.

The small portion of the site that will connect to the St. John Street stormdrain to the east of the site will result in flow to the 30-inch separated stormdrain system, where stormwater does not currently exist. The City has indicated that this increase can be handled by the existing infrastructure.

Adequate provisions have been made to collect and discharge stormwater generated from the developed area of the Site. The HydroCAD reports for both Pre-and Post-Development Conditions are attached to this Section. The tables below provides a summary of the peak runoff rates for the 24-hour, 2-year, 10-year, and 25-year Type III storm events.

Table 12-2: Summary of Peak Runoff Rates to Study Point 1 – 18-inch Stormdrain

	PEAK RUNOFF RATE (CFS)		
	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM
Pre-Development (Existing) Site	11.20	21.56	27.70
Post-Development Site	2.38	11.73	18.80
Difference	**-8.82**	**-9.83**	**-8.90**

Table 12-3: Summary of Peak Runoff Rates to Study Point 2 – 30-inch St. John Street Stormdrain

	PEAK RUNOFF RATE (CFS)		
	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM
Pre-Development (Existing) Site	**No Connection**		
Post-Development Site	0.80	2.14	2.99
Difference	**+0.80**	**+2.14**	**+2.99**

Table 12-4: Summary of Peak Runoff Rates Overall Project Site

	PEAK RUNOFF RATE (CFS)		
	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM
Pre-Developed (Existing) Site	11.20	21.56	27.70
Post-Development	3.18	13.87	21.79
Difference	**-8.02**	**-7.69**	**-5.91**

As the Site's peak runoff rate has been reduced, the proposed development is not anticipated to result in adverse effects, including flooding and erosion to abutting and downstream properties. All on-site piping has been designed to accommodate the 25-year storm event without resulting in flooding onto adjacent properties.

12.6 Inspection and Maintenance of Stormwater Systems

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Chapter 500, Stormwater Management, Appendix B, Inspection and Maintenance and Stormwater Management, Maine Department of Environmental Protection Publication No. DEPLW0738. During construction, the contractor will be responsible for inspection and maintaining the Site. Upon completion, the property owner will be responsible for implementing the maintenance and inspection requirements for the stormwater management system associated with the new development. The responsible party will ensure that stormwater management facilities are properly maintained and inspected in accordance with the Stormwater Inspection and Maintenance Plan provided in this section.

12.7 Attachments

- Stormwater Erosion & Sedimentation Control Inspection Report Form
- USDA Natural Resources Conservation Service Web Soil Survey HSG Map
- Jellyfish Filter Sizing Calculations
- MaineDEP Jellyfish Filter approval letter
- Pre-Development Stormwater Figure
- Post-Development Stormwater Figure
- Pre-Development HydroCAD Report
- Post-Development HydroCAD Report
- Inspection and Maintenance Plan
- Jellyfish Filter Maintenance Guide
- BMP Maintenance Log
- StormBasin Maintenance Guide

STORMWATER EROSION & SEDIMENTATION CONTROL
INSPECTION REPORT FORM

Inspectors: Date: ___ / ___ / _____

_____ of _____ (Project Owner)
_____ of _____ (Contractor)
_____ of _____
_____ of _____

Storm Event? ☐ Yes ☐ No Rainfall Amount _____ Storm Duration _____ hours

Visual Observations of Activity and Site Conditions:
Disturbed Soil Areas:

Storage of Soils:

Sediment & Erosion Control Measures:

Construction Site Entrance:

Surface Stabilization:

Corrective Actions Taken

Attachments (if any):

Signature:

_____

Representing:

_____

Representing:

Custom Soil Resource Report
Map—Hydrologic Soil Group (Soils)

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 13, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (Soils)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cu	Cut and fill land		4.9	44.0%
HlB	Hinckley loamy sand, 3 to 8 percent slopes	A	6.2	56.0%
Totals for Area of Interest			**11.1**	**100.0%**

Rating Options—Hydrologic Soil Group (Soils)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

WOODARD &CURRAN
41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
TEL. (207) 774-2112
FAX (207) 774-6635

CLIENT MAINE MEDICAL CENTER
PROJECT 222 St. John Street Garage
DESIGNED BY CMS DATE 6-14-18
CHECKED BY _____ DATE _____
PROJECT NO. 0231168 SHEET NO. 1 OF 1

WATER Quality Volume for Jellyfish filter System

WQV = (1" • Impervious AREA) + (0.4" • Pervious AREA)

→ Impervious AREA = 128,334 SF
→ Pervious AREA = 31,783 SF

= ($1\frac{1}{12}$"/ft • 128,334 SF) + (0.4"/12"/ft • 31,783 SF)
10,964.50 CF 1,059.44 CF

= 11,754 CF

★ WQV PROVIDED = 11,832 CF > 11,754 CF

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

January 21, 2015

CONTECH Engineered Solutions LLC
71 US Route 1, Suite F
Scarborough, ME 04074
ATTN: Derek Berg

Dear Mr. Berg:

This letter is to inform you that the Department of Environmental Protection (Department) will review and approve, on a case-by-case basis, applicants' requests to use the Jellyfish Filter, manhole or vault housing, a cartridge deck supporting membrane filtration cartridges, as a low flow rate filter meeting the requirements of the General Standards (Section 4.B.) of the Stormwater Management Rules (Chapter 500) when sized, installed and maintained in accordance with the following provisions:

1. The Jellyfish Filter must be sized in accordance with the tested hydraulic loading rate, and is approved for a maximum rate of 80 gallons per minute (gpm) for each 54-inch long membrane filter cartridge (1.48 gpm per inch of cartridge length). The structure must include at least one draindown cartridge, which is approved for a hydraulic loading rate of 40 gpm per 54" cartridge (0.74 gpm per inch of cartridge length).
2. Upstream storage must be provided for the water quality/channel protection volume (WQv) consisting of the first 1.0 inch of runoff from impervious areas and 0.4 inch of runoff from lawns and landscaped areas. The WQv should be hydraulically isolated from any additional storage provided onsite by weirs or other means so that only the WQv is routed through the Jellyfish Filter. Additionally, the WQv must be detained for a minimum of 24 hours and a maximum of 48 hours (emptying time). Storage can typically be provided in an underground facility such as corrugated metal pipe, polypropylene chambers, concrete vaults or similar means.
3. All storage systems must include sufficient maintenance access for the removal of accumulated sediment and debris. It is desirable that a pretreatment structure be located upstream of the WQv storage to facilitate capture of coarse solids and trash.
4. The Jellyfish Filter must be delivered to the site and installed under the supervision of the manufacturer's representative.
5. The system must be inspected at least once every six months, and the filters maintained yearly per the manufacturer's guidelines to maintain the established efficiency for pollutant removal. A five-year binding inspection and maintenance contract must be provided prior to review and approval by the Department, and must be renewed before contract expiration.
6. The overall stormwater management design must meet all Department criteria and sizing specifications and shall be reviewed and approved by the Department prior to use.
7. Review and approval by the manufacturer for the proposed use and sizing of the Jellyfish Filter at each specific project is required to ensure conformance with the manufacturer's design specifications.

8. This approval is conditional to on-the-ground experience confirming that the Jellyfish Filter's pollutant removal efficiency and sizing are appropriate. The "permit shield" provision (Section 14) of the Chapter 500 rules will apply, and the Department will not require the replacement of the system if pollutant removals do not satisfy the General Standard Best Management Practices.

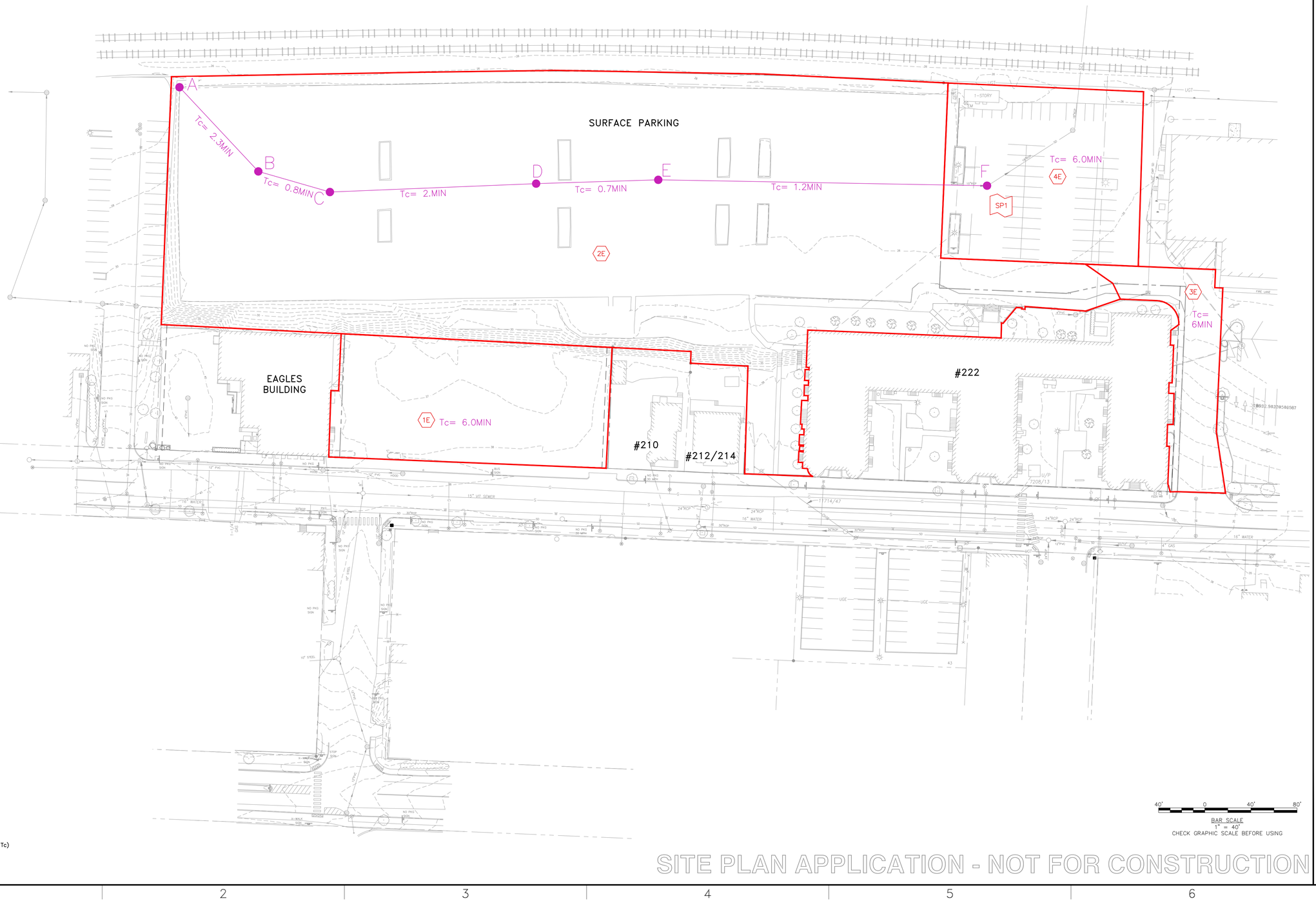
We look forward to working with you as these stormwater management structures are installed on new projects. And, we hope that this stormwater BMP will be included in our manual in the near future.

Questions concerning this decision should be directed to Marianne Hubert at (207) 215-6485 or Jeff Dennis at (207) 215-6376.

Sincerely,

Mark Bergeron, P.E.
Director, Division of Land Resource Regulation
Bureau of Land & Water Quality

C: Don Witherill, Maine DEP



STORMWATER LEGEND

- 1X — SUBCATCHMENT AREAS
- SP1 — STUDY POINT
- TIME OF CONCENTRATION (Tc) FLOW LINE
- LIMIT OF DRAINAGE AREA

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

SITE PLAN APPLICATION - NOT FOR CONSTRUCTION

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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REV	DESCRIPTION	DATE
DRAWN BY: BCM	DESIGNED BY: CMS	CHECKED BY: DAS

0231158 C100-101 SW.dwg

PRE DEVELOPMENT STORMWATER FIGURE

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1" = 40'
SHEET: 1 OF 2

PRE

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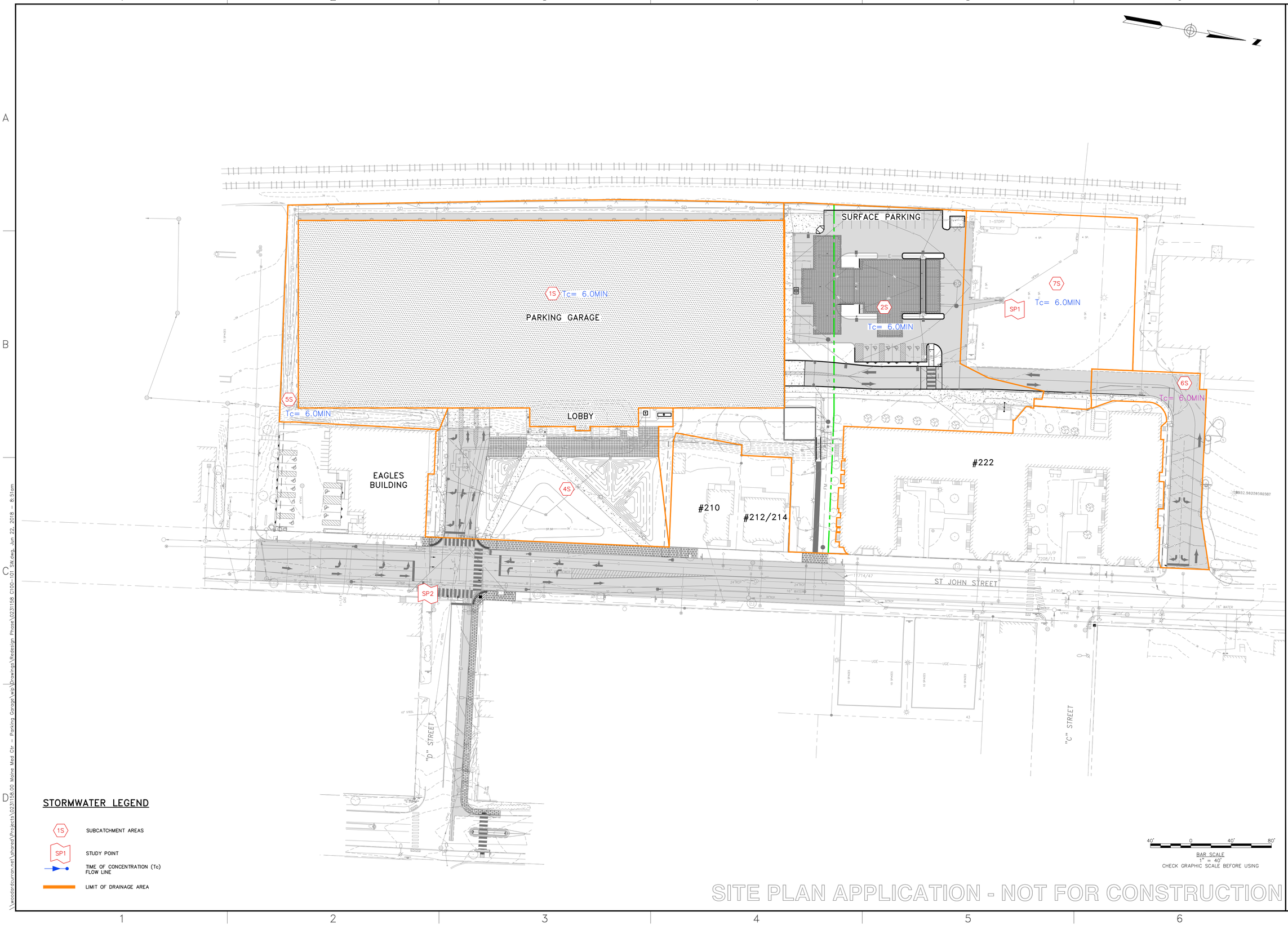
24x36 SHEET
1:1



STORMWATER LEGEND

- 1S — SUBCATCHMENT AREAS
- SP1 — STUDY POINT
- TIME OF CONCENTRATION (Tc) FLOW LINE
- LIMIT OF DRAINAGE AREA

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING
40' 0 40' 80'

SITE PLAN APPLICATION - NOT FOR CONSTRUCTION

41 Hutchins Drive
Portland, Maine 04102
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REV	DESCRIPTION	DATE
DESIGNED BY: CMS	CHECKED BY: DAS	
DRAWN BY: BCM	0231158 C100-101 SW.dwg	

POST DEVELOPMENT STORMWATER FIGURE

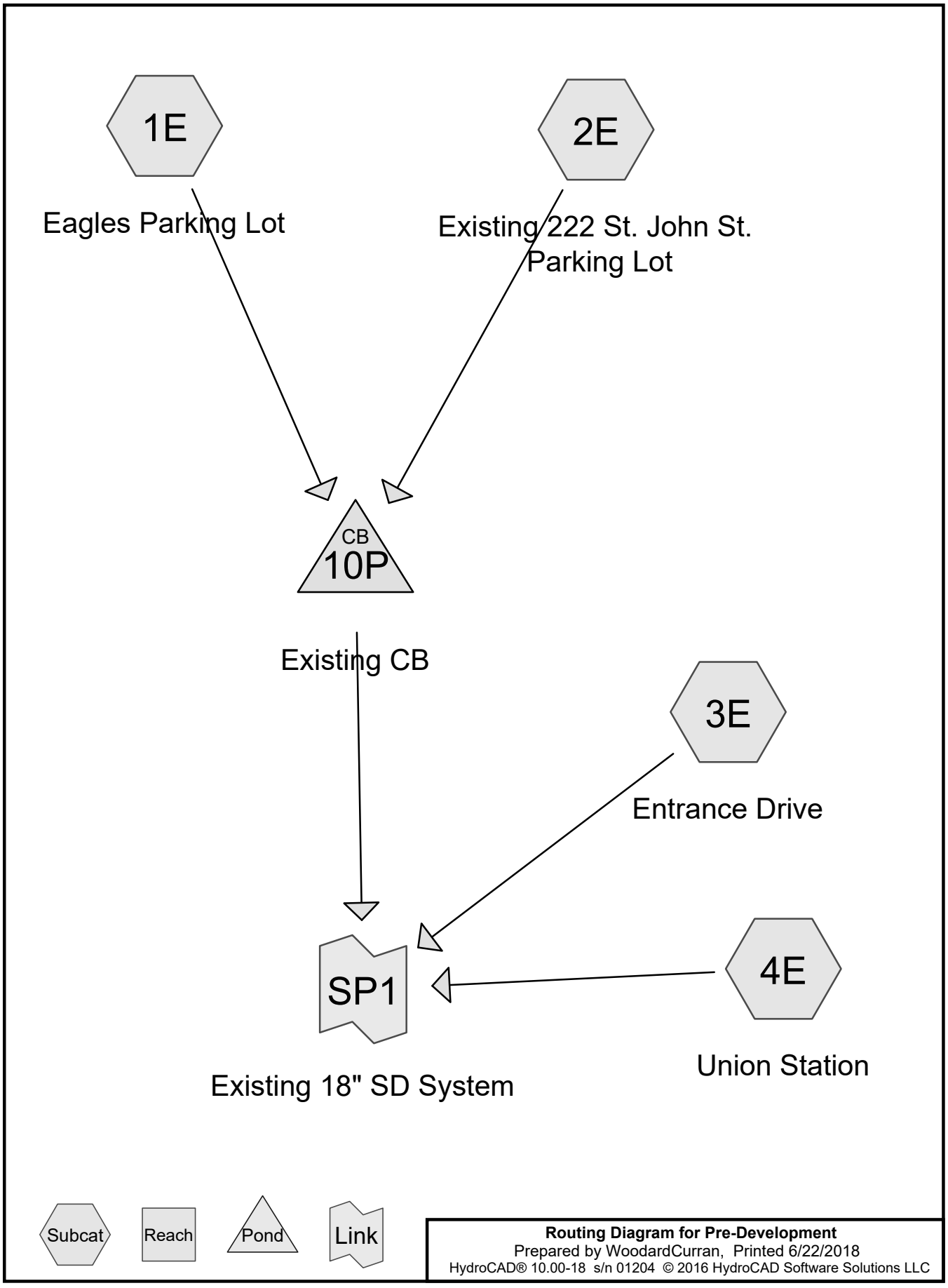
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1" = 40'
SHEET: 2 OF 2

POST

\\woodardcurran.net\shared\Projects\0231158.00 Maine Med Ctr - Parking Garage\wip\Drawings\Redesign Phase\0231158 C100-101 SW.dwg, Jun 22, 2018 - 8:51am



Routing Diagram for Pre-Development
Prepared by WoodardCurran, Printed 6/22/2018
HydroCAD® 10.00-18 s/n 01204 © 2016 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
35,714	98	(3E, 4E)
18,343	79	50-75% Grass cover, Fair, HSG C (2E)
3,718	70	Brush, Fair, HSG C (1E)
129,899	98	Paved parking, HSG B (2E)
20,184	76	Woods/grass comb., Fair, HSG C (2E)
21,798	98	parking lot (1E)
229,656	**94**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
129,899	HSG B	2E
42,245	HSG C	1E, 2E
0	HSG D	
57,512	Other	1E, 3E, 4E
229,656		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	0	35,714	35,714		
0	0	18,343	0	0	18,343	50-75% Grass cover, Fair	
0	0	3,718	0	0	3,718	Brush, Fair	
0	129,899	0	0	0	129,899	Paved parking	
0	0	20,184	0	0	20,184	Woods/grass comb., Fair	
0	0	0	0	21,798	21,798	parking lot	
0	**129,899**	**42,245**	**0**	**57,512**	**229,656**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2E	0.00	0.00	179.0	0.0009	0.012	12.0	0.0	0.0
2	2E	0.00	0.00	105.0	0.0029	0.012	12.0	0.0	0.0
3	2E	0.00	0.00	285.0	0.0047	0.012	15.0	0.0	0.0
4	10P	20.50	19.15	281.0	0.0048	0.011	18.0	0.0	0.0

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

Subcatchment1E: Eagles Parking Lot Runoff Area=25,516 sf 85.43% Impervious Runoff Depth>2.31"
Tc=6.0 min CN=94 Runoff=1.58 cfs 4,917 cf

Subcatchment2E: Existing 222 St. John Runoff Area=168,426 sf 77.13% Impervious Runoff Depth>2.22"
Flow Length=734' Tc=7.0 min CN=93 Runoff=9.85 cfs 31,138 cf

Subcatchment3E: Entrance Drive Runoff Area=9,847 sf 100.00% Impervious Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=0.66 cfs 2,201 cf

Subcatchment4E: Union Station Runoff Area=25,867 sf 100.00% Impervious Runoff Depth>2.68"
Tc=6.0 min CN=98 Runoff=1.74 cfs 5,781 cf

Pond 10P: Existing CB Peak Elev=24.27' Inflow=11.42 cfs 36,055 cf
18.0" Round Culvert n=0.011 L=281.0' S=0.0048 '/' Outflow=11.42 cfs 36,055 cf

Link SP1: Existing 18" SD System Inflow=13.81 cfs 44,037 cf
Primary=13.81 cfs 44,037 cf

Total Runoff Area = 229,656 sf Runoff Volume = 44,037 cf Average Runoff Depth = 2.30"
18.39% Pervious = 42,245 sf 81.61% Impervious = 187,411 sf

Summary for Subcatchment 1E: Eagles Parking Lot

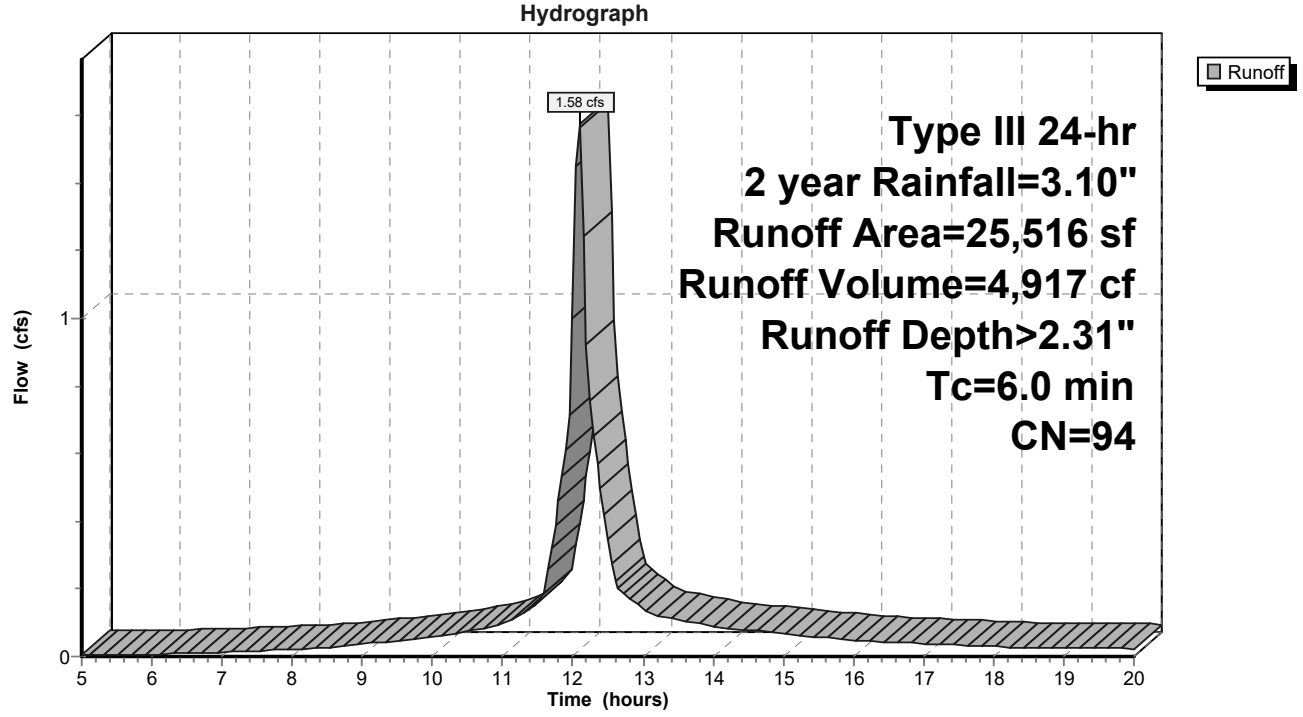
Runoff = 1.58 cfs @ 12.09 hrs, Volume= 4,917 cf, Depth> 2.31"

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 2 year Rainfall=3.10"

	Area (sf)	CN	Description
	3,718	70	Brush, Fair, HSG C
*	21,798	98	parking lot
	25,516	94	Weighted Average
	3,718		14.57% Pervious Area
	21,798		85.43% Impervious Area

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

Subcatchment 1E: Eagles Parking Lot



Summary for Subcatchment 2E: Existing 222 St. John St. Parking Lot

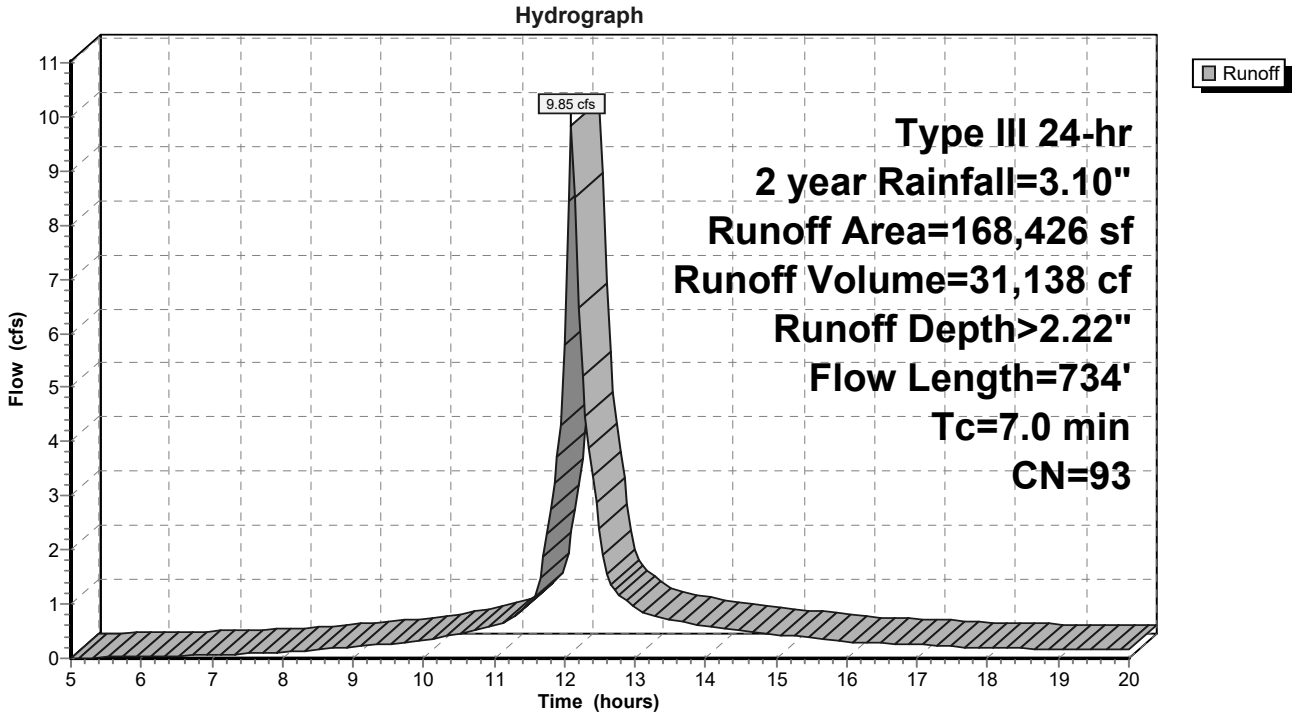
Runoff = 9.85 cfs @ 12.10 hrs, Volume= 31,138 cf, Depth> 2.22"

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 2 year Rainfall=3.10"

Area (sf)	CN	Description
129,899	98	Paved parking, HSG B
18,343	79	50-75% Grass cover, Fair, HSG C
20,184	76	Woods/grass comb., Fair, HSG C
168,426	93	Weighted Average
38,527		22.87% Pervious Area
129,899		77.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0044	0.74		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
0.8	65	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	179	0.0009	1.47	1.16	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	105	0.0029	2.65	2.08	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
1.2	285	0.0047	3.91	4.80	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Concrete pipe, finished
7.0	734	Total			

Subcatchment 2E: Existing 222 St. John St. Parking Lot



Summary for Subcatchment 3E: Entrance Drive

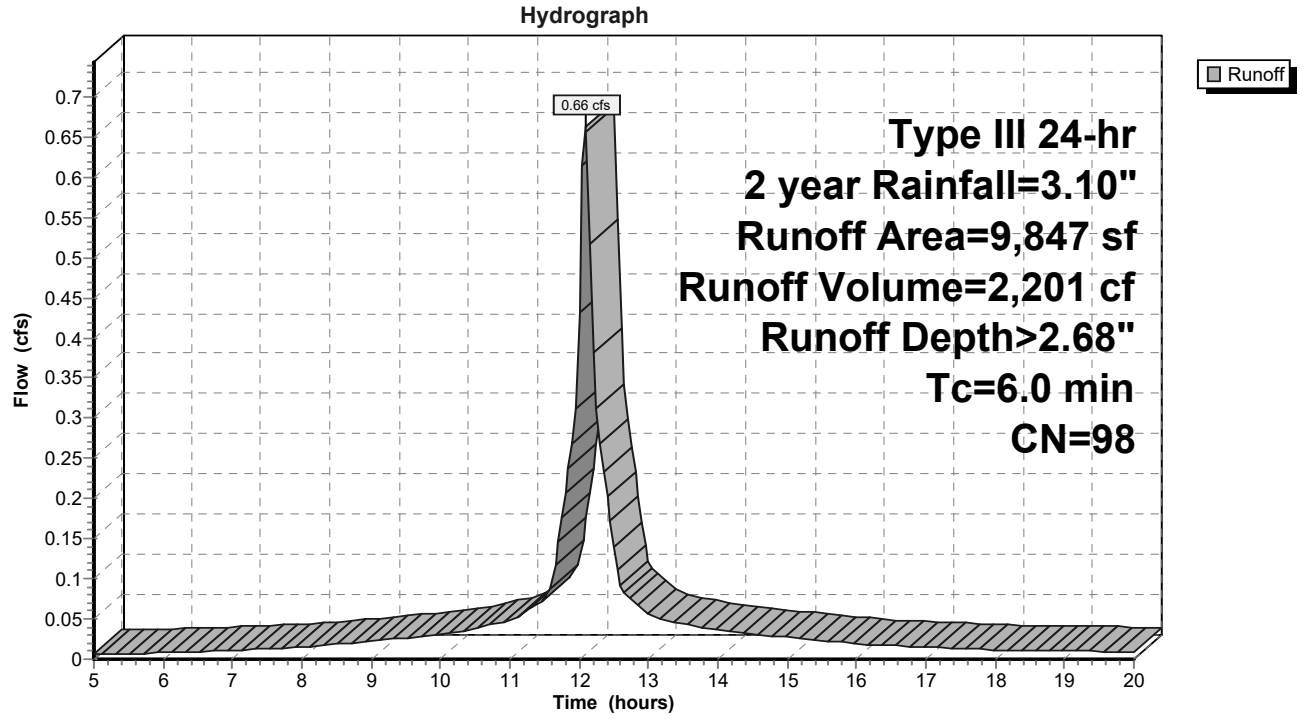
Runoff = 0.66 cfs @ 12.09 hrs, Volume= 2,201 cf, Depth> 2.68"

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 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	9,847	98	
	9,847		100.00% Impervious Area

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

Subcatchment 3E: Entrance Drive



Summary for Subcatchment 4E: Union Station

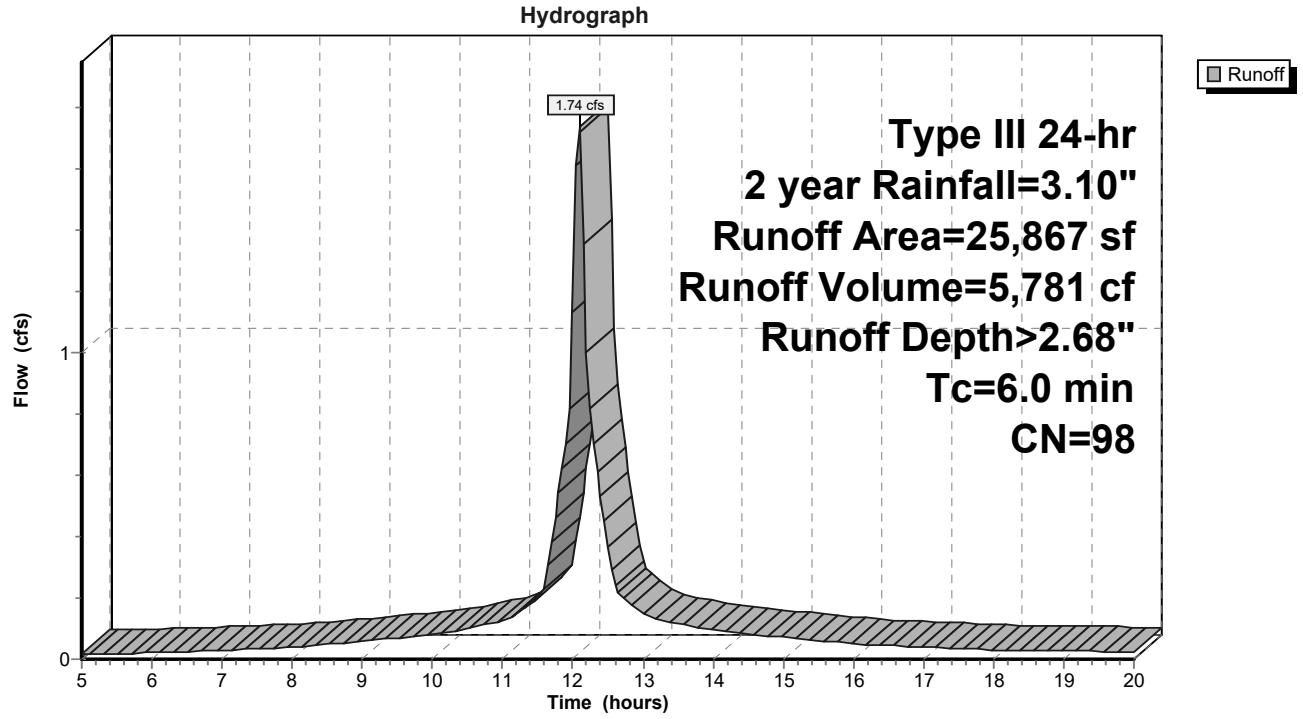
Runoff = 1.74 cfs @ 12.09 hrs, Volume= 5,781 cf, Depth> 2.68"

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 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	25,867	98	
	25,867		100.00% Impervious Area

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

Subcatchment 4E: Union Station



Summary for Pond 10P: Existing CB

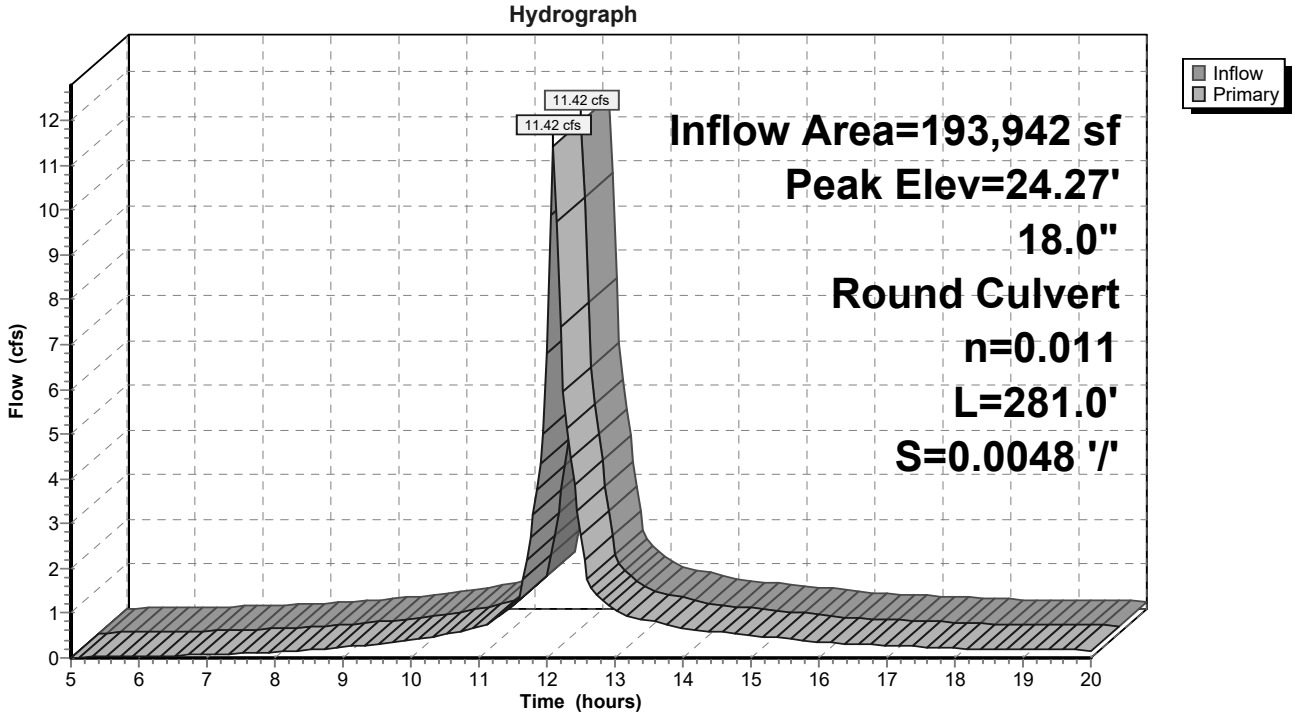
Inflow Area = 193,942 sf, 78.22% Impervious, Inflow Depth > 2.23" for 2 year event
Inflow = 11.42 cfs @ 12.10 hrs, Volume= 36,055 cf
Outflow = 11.42 cfs @ 12.10 hrs, Volume= 36,055 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.42 cfs @ 12.10 hrs, Volume= 36,055 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 24.27' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.50'	**18.0" Round Culvert** L= 281.0' Ke= 0.900 Inlet / Outlet Invert= 20.50' / 19.15' S= 0.0048 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=11.38 cfs @ 12.10 hrs HW=24.25' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 11.38 cfs @ 6.44 fps)

Pond 10P: Existing CB

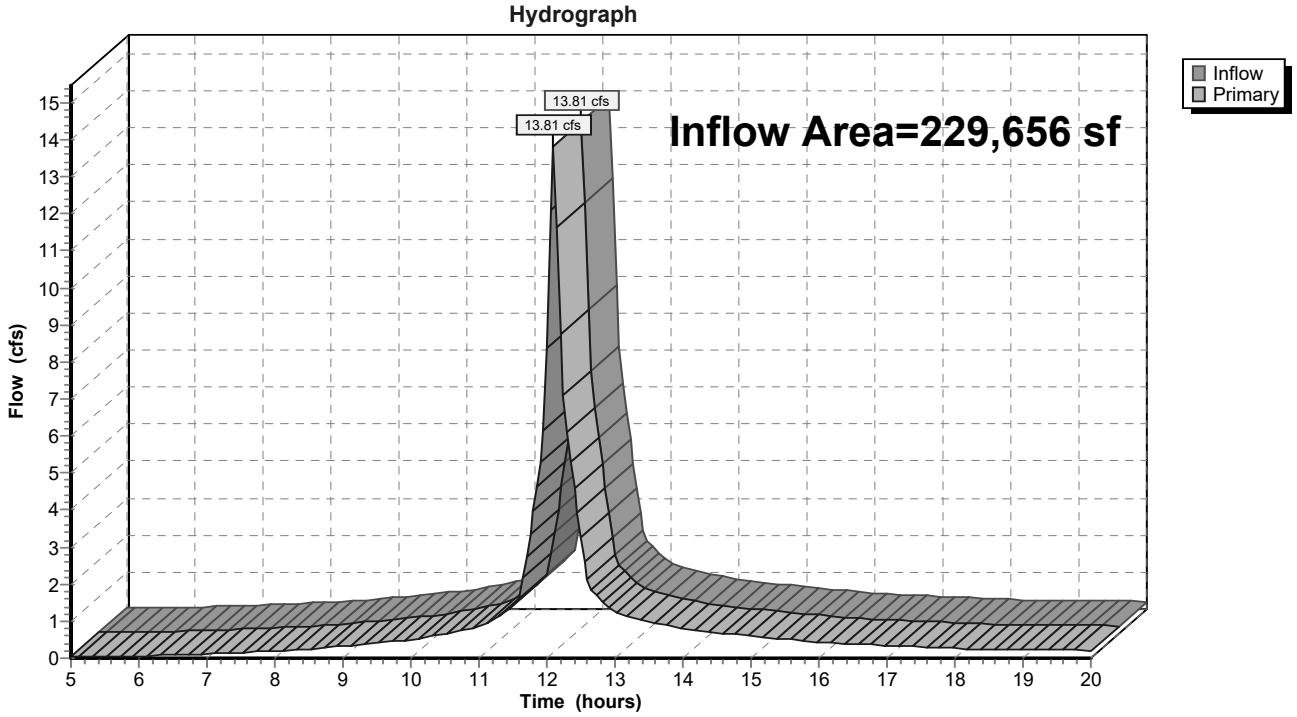


Summary for Link SP1: Existing 18" SD System

Inflow Area = 229,656 sf, 81.61% Impervious, Inflow Depth > 2.30" for 2 year event
Inflow = 13.81 cfs @ 12.10 hrs, Volume= 44,037 cf
Primary = 13.81 cfs @ 12.10 hrs, Volume= 44,037 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link SP1: Existing 18" SD System



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

Subcatchment1E: Eagles Parking Lot Runoff Area=25,516 sf 85.43% Impervious Runoff Depth>3.69"
Tc=6.0 min CN=94 Runoff=2.45 cfs 7,856 cf

Subcatchment2E: Existing 222 St. John Runoff Area=168,426 sf 77.13% Impervious Runoff Depth>3.60"
Flow Length=734' Tc=7.0 min CN=93 Runoff=15.54 cfs 50,460 cf

Subcatchment3E: Entrance Drive Runoff Area=9,847 sf 100.00% Impervious Runoff Depth>4.05"
Tc=6.0 min CN=98 Runoff=0.99 cfs 3,327 cf

Subcatchment4E: Union Station Runoff Area=25,867 sf 100.00% Impervious Runoff Depth>4.05"
Tc=6.0 min CN=98 Runoff=2.61 cfs 8,739 cf

Pond 10P: Existing CB Peak Elev=29.62' Inflow=17.98 cfs 58,316 cf
18.0" Round Culvert n=0.011 L=281.0' S=0.0048 '/' Outflow=17.98 cfs 58,316 cf

Link SP1: Existing 18" SD System Inflow=21.56 cfs 70,381 cf
Primary=21.56 cfs 70,381 cf

Total Runoff Area = 229,656 sf Runoff Volume = 70,381 cf Average Runoff Depth = 3.68"
18.39% Pervious = 42,245 sf 81.61% Impervious = 187,411 sf

Summary for Subcatchment 1E: Eagles Parking Lot

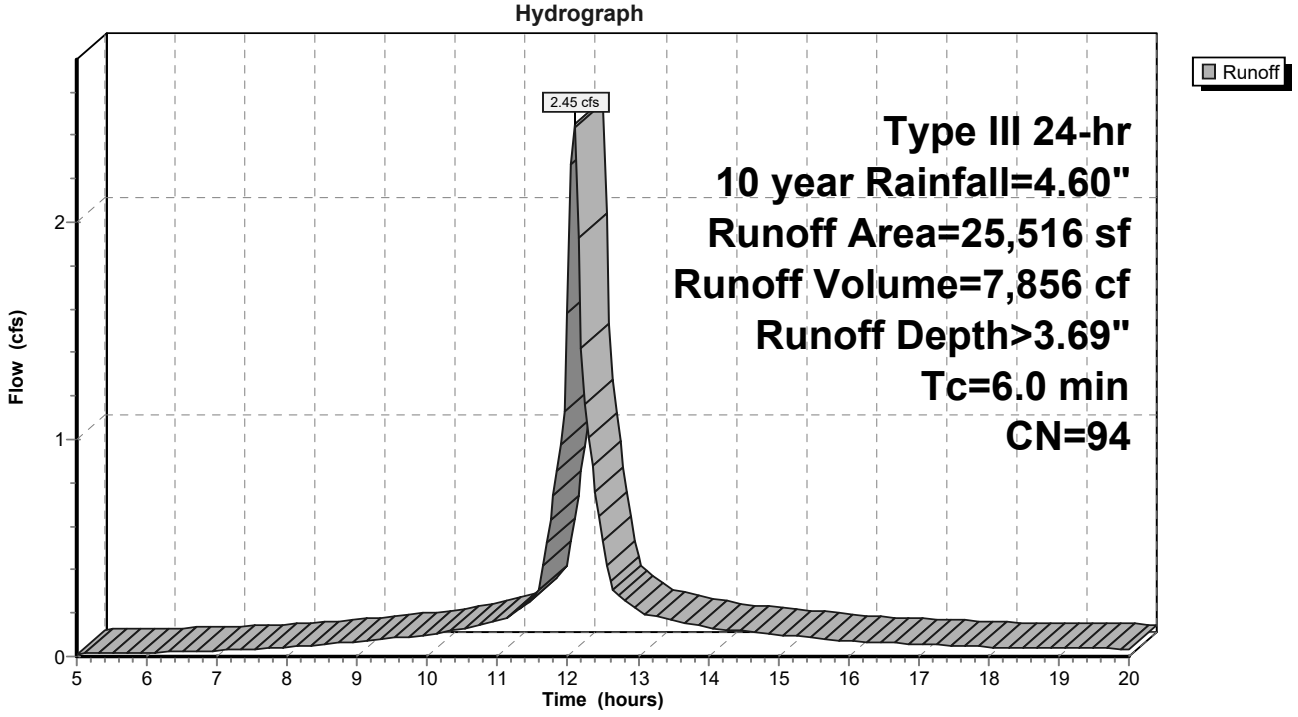
Runoff = 2.45 cfs @ 12.09 hrs, Volume= 7,856 cf, Depth> 3.69"

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 10 year Rainfall=4.60"

	Area (sf)	CN	Description
	3,718	70	Brush, Fair, HSG C
*	21,798	98	parking lot
	25,516	94	Weighted Average
	3,718		14.57% Pervious Area
	21,798		85.43% Impervious Area

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

Subcatchment 1E: Eagles Parking Lot



Summary for Subcatchment 2E: Existing 222 St. John St. Parking Lot

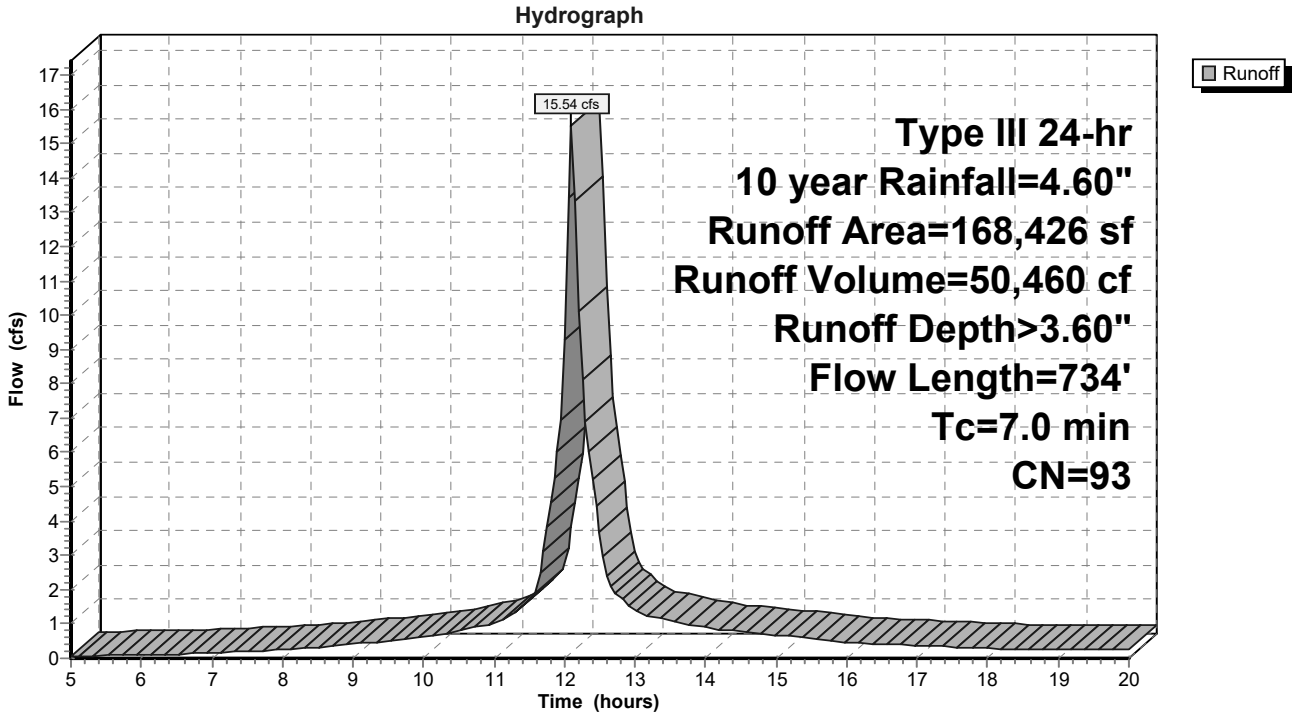
Runoff = 15.54 cfs @ 12.10 hrs, Volume= 50,460 cf, Depth> 3.60"

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 10 year Rainfall=4.60"

Area (sf)	CN	Description
129,899	98	Paved parking, HSG B
18,343	79	50-75% Grass cover, Fair, HSG C
20,184	76	Woods/grass comb., Fair, HSG C
168,426	93	Weighted Average
38,527		22.87% Pervious Area
129,899		77.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0044	0.74		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
0.8	65	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	179	0.0009	1.47	1.16	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	105	0.0029	2.65	2.08	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
1.2	285	0.0047	3.91	4.80	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Concrete pipe, finished
7.0	734	Total			

Subcatchment 2E: Existing 222 St. John St. Parking Lot



Summary for Subcatchment 3E: Entrance Drive

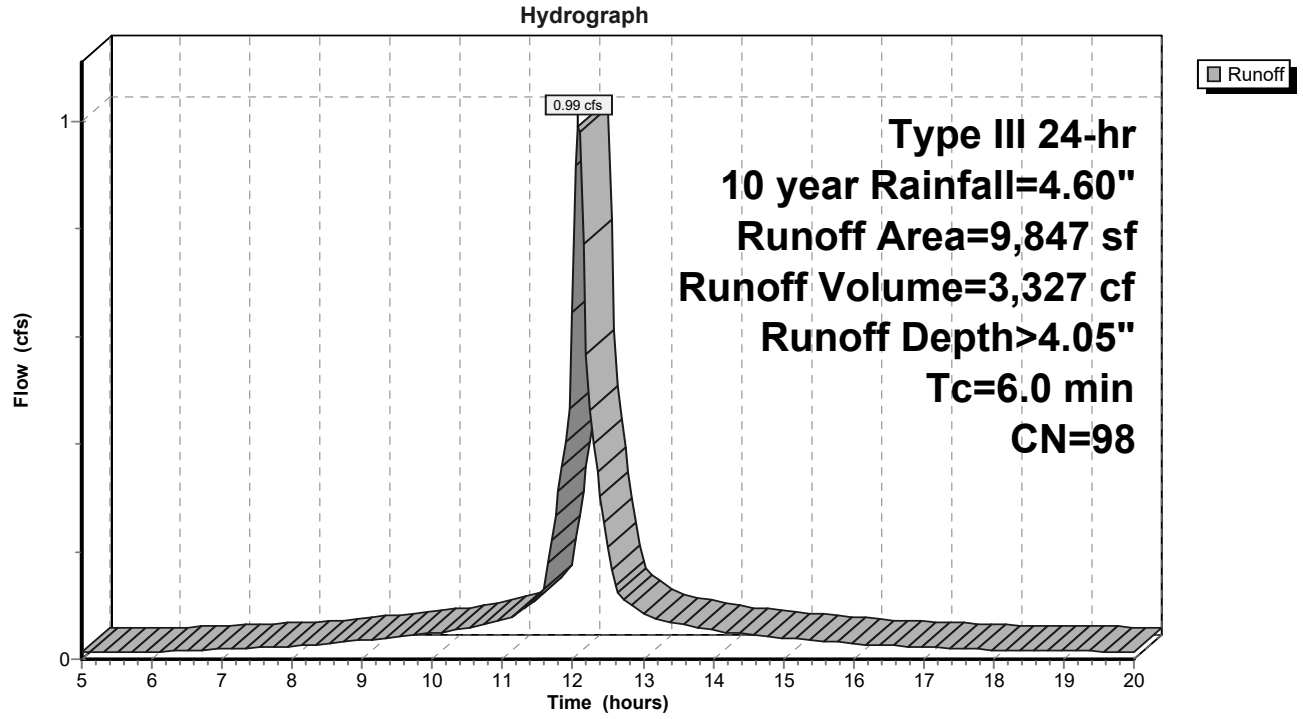
Runoff = 0.99 cfs @ 12.09 hrs, Volume= 3,327 cf, Depth> 4.05"

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 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	9,847	98	
	9,847		100.00% Impervious Area

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

Subcatchment 3E: Entrance Drive



Summary for Subcatchment 4E: Union Station

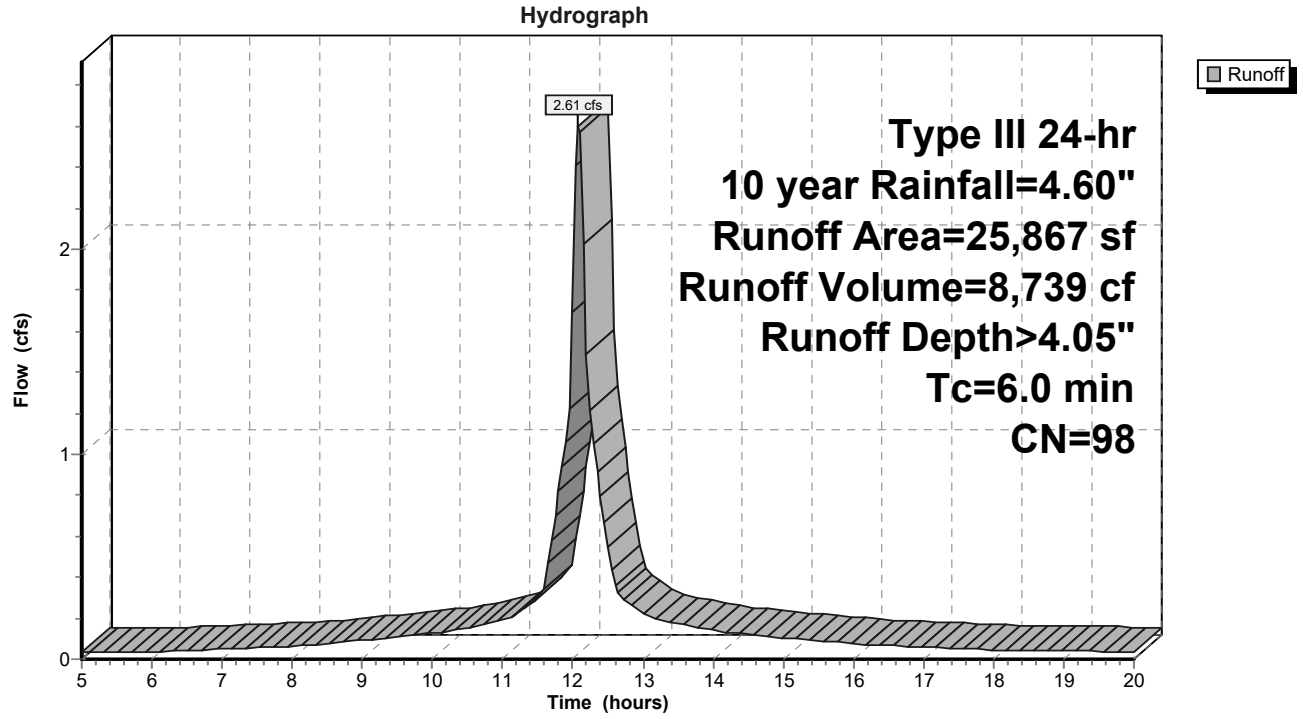
Runoff = 2.61 cfs @ 12.09 hrs, Volume= 8,739 cf, Depth> 4.05"

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 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	25,867	98	
	25,867		100.00% Impervious Area

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

Subcatchment 4E: Union Station



Summary for Pond 10P: Existing CB

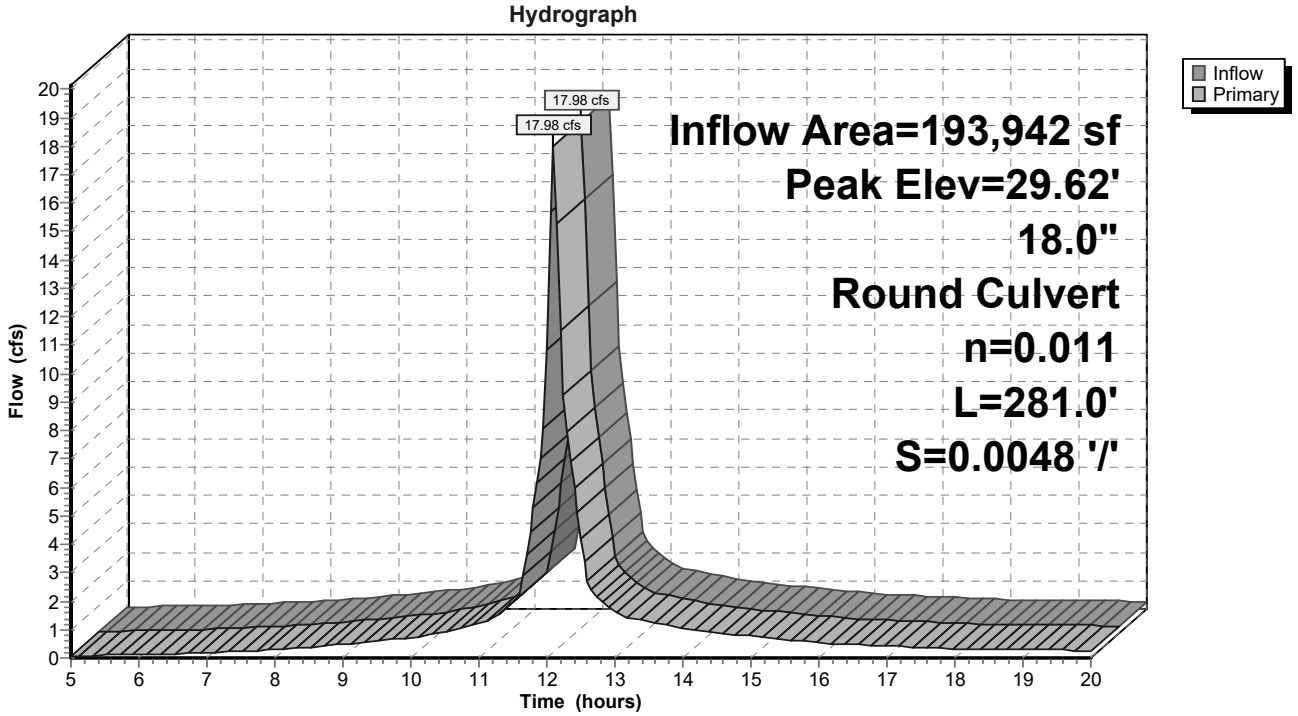
Inflow Area = 193,942 sf, 78.22% Impervious, Inflow Depth > 3.61" for 10 year event
Inflow = 17.98 cfs @ 12.10 hrs, Volume= 58,316 cf
Outflow = 17.98 cfs @ 12.10 hrs, Volume= 58,316 cf, Atten= 0%, Lag= 0.0 min
Primary = 17.98 cfs @ 12.10 hrs, Volume= 58,316 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 29.62' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.50'	**18.0" Round Culvert** L= 281.0' Ke= 0.900 Inlet / Outlet Invert= 20.50' / 19.15' S= 0.0048 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=17.89 cfs @ 12.10 hrs HW=29.53' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 17.89 cfs @ 10.12 fps)

Pond 10P: Existing CB

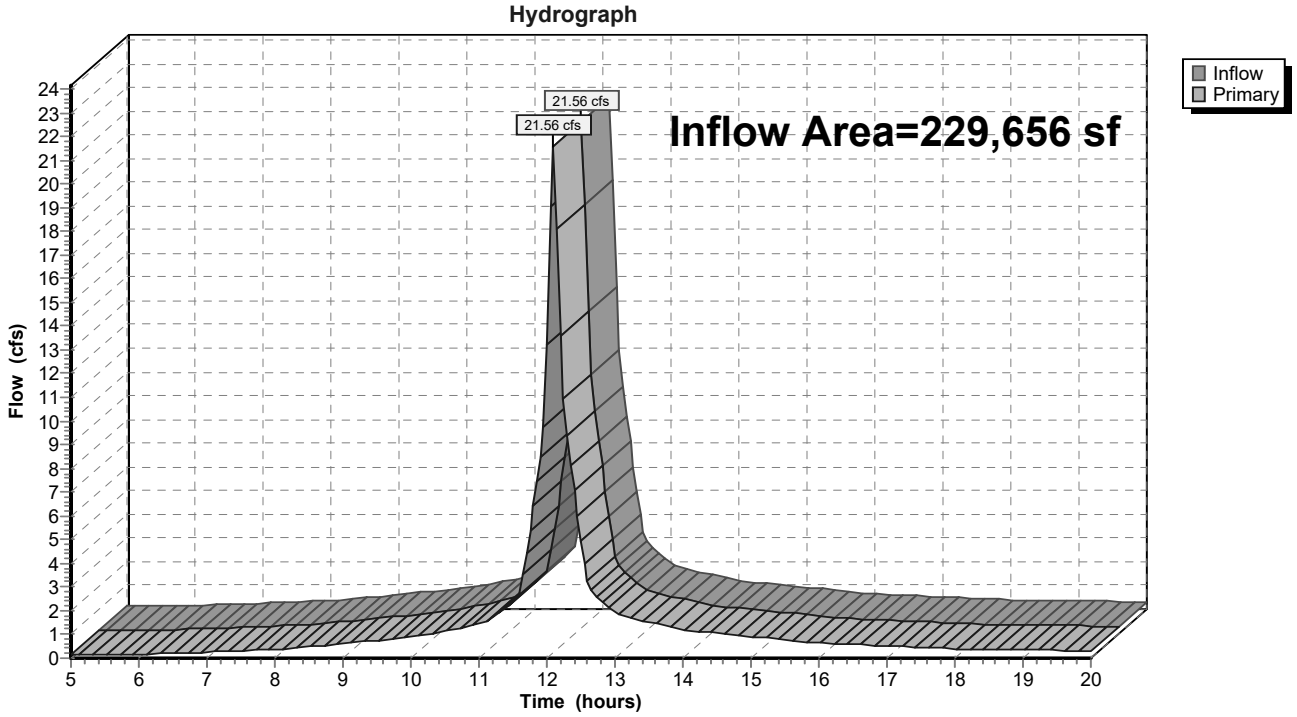


Summary for Link SP1: Existing 18" SD System

Inflow Area = 229,656 sf, 81.61% Impervious, Inflow Depth > 3.68" for 10 year event
Inflow = 21.56 cfs @ 12.10 hrs, Volume= 70,381 cf
Primary = 21.56 cfs @ 12.10 hrs, Volume= 70,381 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link SP1: Existing 18" SD System



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

Subcatchment1E: Eagles Parking Lot Runoff Area=25,516 sf 85.43% Impervious Runoff Depth>4.80"
Tc=6.0 min CN=94 Runoff=3.15 cfs 10,212 cf

Subcatchment2E: Existing 222 St. John Runoff Area=168,426 sf 77.13% Impervious Runoff Depth>4.70"
Flow Length=734' Tc=7.0 min CN=93 Runoff=20.05 cfs 66,005 cf

Subcatchment3E: Entrance Drive Runoff Area=9,847 sf 100.00% Impervious Runoff Depth>5.15"
Tc=6.0 min CN=98 Runoff=1.25 cfs 4,224 cf

Subcatchment4E: Union Station Runoff Area=25,867 sf 100.00% Impervious Runoff Depth>5.15"
Tc=6.0 min CN=98 Runoff=3.29 cfs 11,095 cf

Pond 10P: Existing CB Peak Elev=35.55' Inflow=23.18 cfs 76,217 cf
18.0" Round Culvert n=0.011 L=281.0' S=0.0048 '/' Outflow=23.18 cfs 76,217 cf

Link SP1: Existing 18" SD System Inflow=27.70 cfs 91,536 cf
Primary=27.70 cfs 91,536 cf

Total Runoff Area = 229,656 sf Runoff Volume = 91,536 cf Average Runoff Depth = 4.78"
18.39% Pervious = 42,245 sf 81.61% Impervious = 187,411 sf

Summary for Subcatchment 1E: Eagles Parking Lot

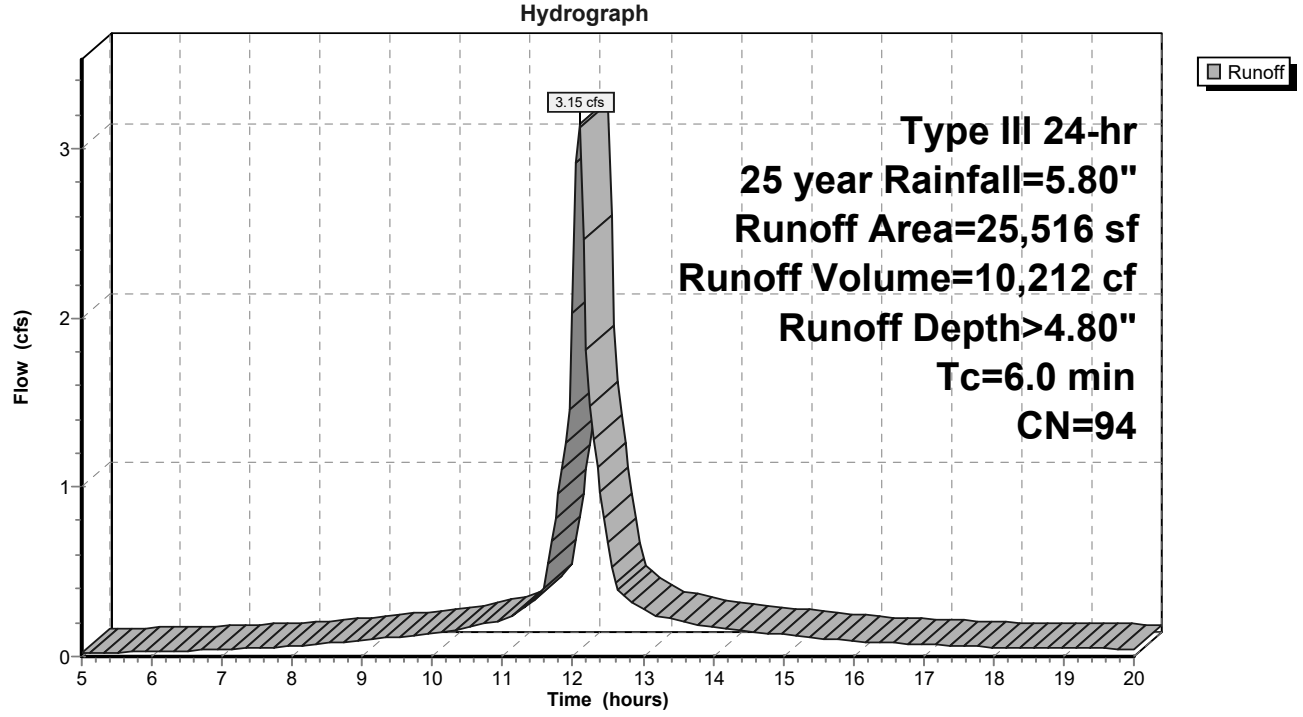
Runoff = 3.15 cfs @ 12.09 hrs, Volume= 10,212 cf, Depth> 4.80"

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 year Rainfall=5.80"

	Area (sf)	CN	Description
	3,718	70	Brush, Fair, HSG C
*	21,798	98	parking lot
	25,516	94	Weighted Average
	3,718		14.57% Pervious Area
	21,798		85.43% Impervious Area

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

Subcatchment 1E: Eagles Parking Lot



Summary for Subcatchment 2E: Existing 222 St. John St. Parking Lot

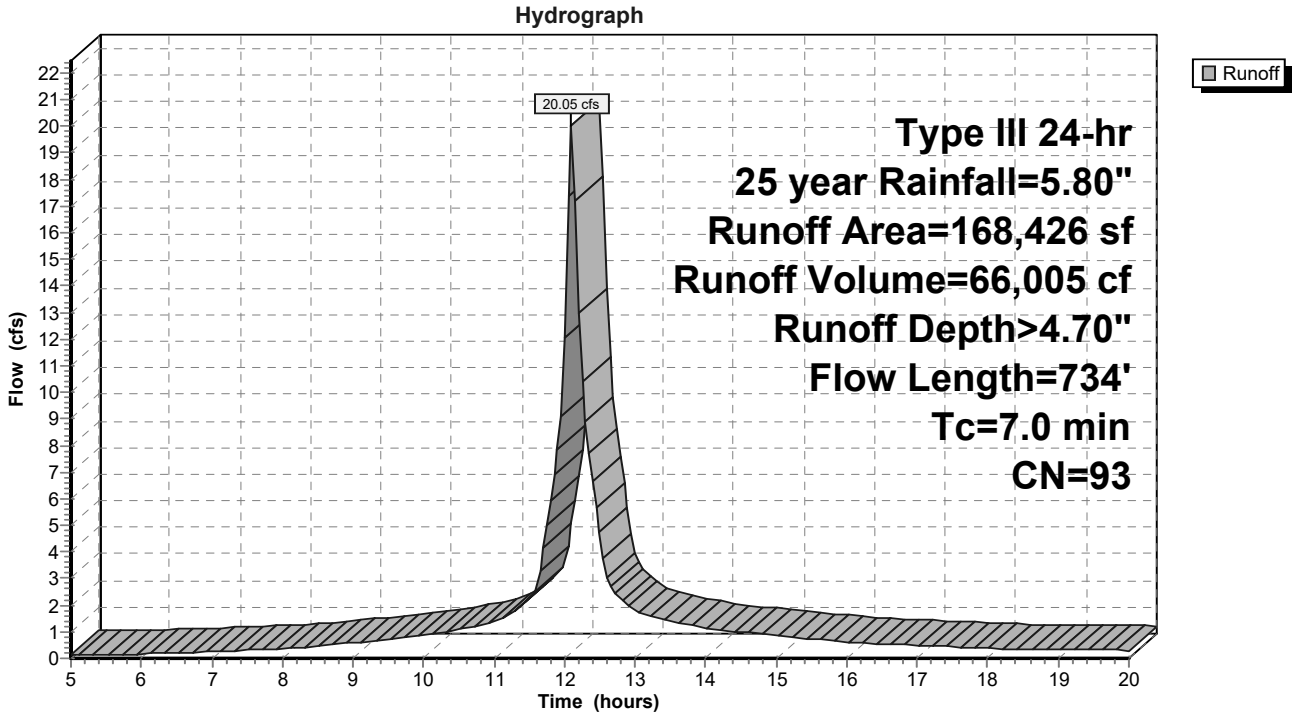
Runoff = 20.05 cfs @ 12.10 hrs, Volume= 66,005 cf, Depth> 4.70"

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 year Rainfall=5.80"

Area (sf)	CN	Description
129,899	98	Paved parking, HSG B
18,343	79	50-75% Grass cover, Fair, HSG C
20,184	76	Woods/grass comb., Fair, HSG C
168,426	93	Weighted Average
38,527		22.87% Pervious Area
129,899		77.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0044	0.74		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
0.8	65	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	179	0.0009	1.47	1.16	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
0.7	105	0.0029	2.65	2.08	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012 Concrete pipe, finished
1.2	285	0.0047	3.91	4.80	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012 Concrete pipe, finished
7.0	734	Total			

Subcatchment 2E: Existing 222 St. John St. Parking Lot



Summary for Subcatchment 3E: Entrance Drive

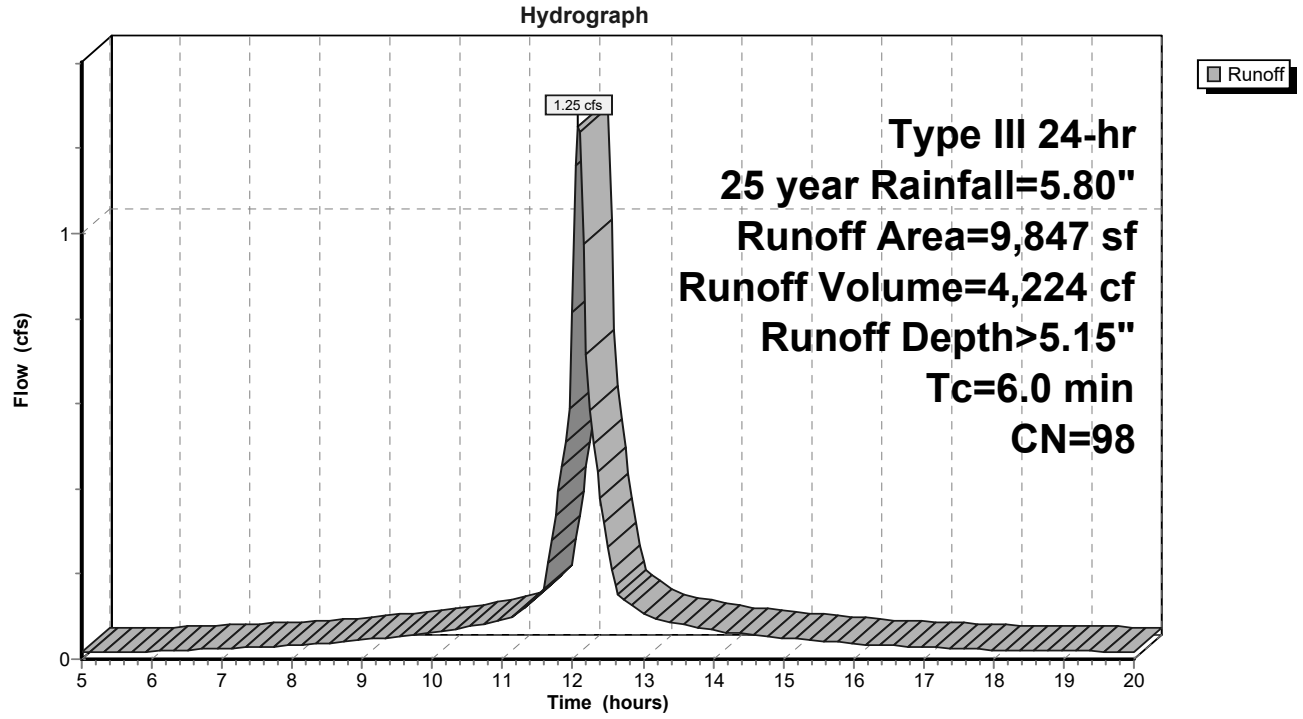
Runoff = 1.25 cfs @ 12.09 hrs, Volume= 4,224 cf, Depth> 5.15"

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 year Rainfall=5.80"

	Area (sf)	CN	Description
*	9,847	98	
	9,847		100.00% Impervious Area

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

Subcatchment 3E: Entrance Drive



Summary for Subcatchment 4E: Union Station

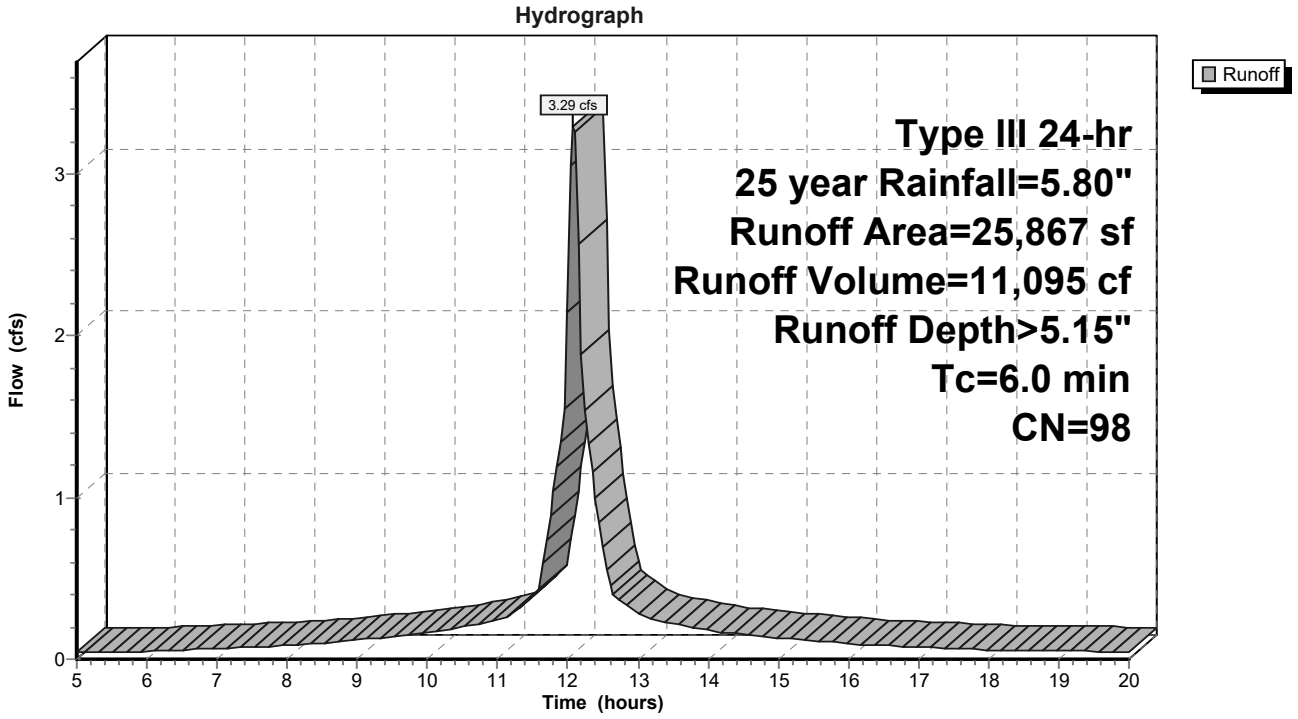
Runoff = 3.29 cfs @ 12.09 hrs, Volume= 11,095 cf, Depth> 5.15"

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 year Rainfall=5.80"

	Area (sf)	CN	Description
*	25,867	98	
	25,867		100.00% Impervious Area

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

Subcatchment 4E: Union Station



Summary for Pond 10P: Existing CB

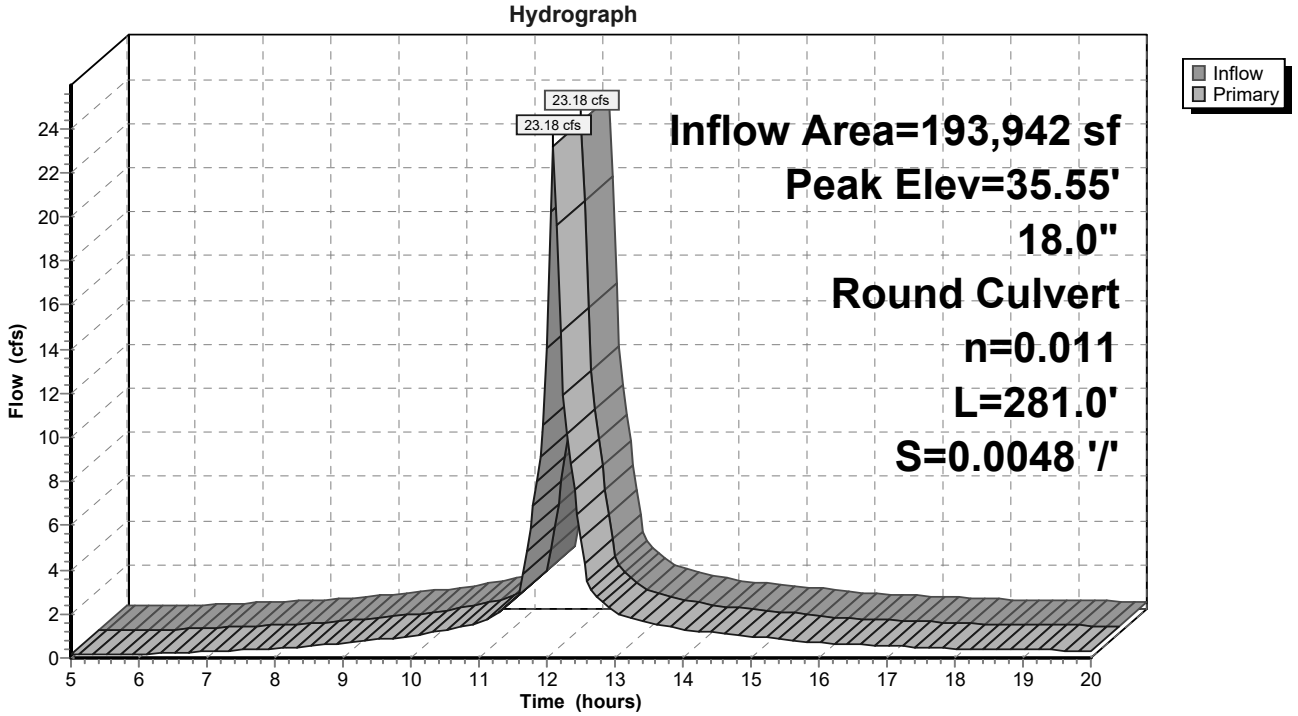
Inflow Area = 193,942 sf, 78.22% Impervious, Inflow Depth > 4.72" for 25 year event
Inflow = 23.18 cfs @ 12.10 hrs, Volume= 76,217 cf
Outflow = 23.18 cfs @ 12.10 hrs, Volume= 76,217 cf, Atten= 0%, Lag= 0.0 min
Primary = 23.18 cfs @ 12.10 hrs, Volume= 76,217 cf

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 35.55' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.50'	**18.0" Round Culvert** L= 281.0' Ke= 0.900 Inlet / Outlet Invert= 20.50' / 19.15' S= 0.0048 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 1.77 sf

Primary OutFlow Max=23.04 cfs @ 12.10 hrs HW=35.37' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 23.04 cfs @ 13.04 fps)

Pond 10P: Existing CB

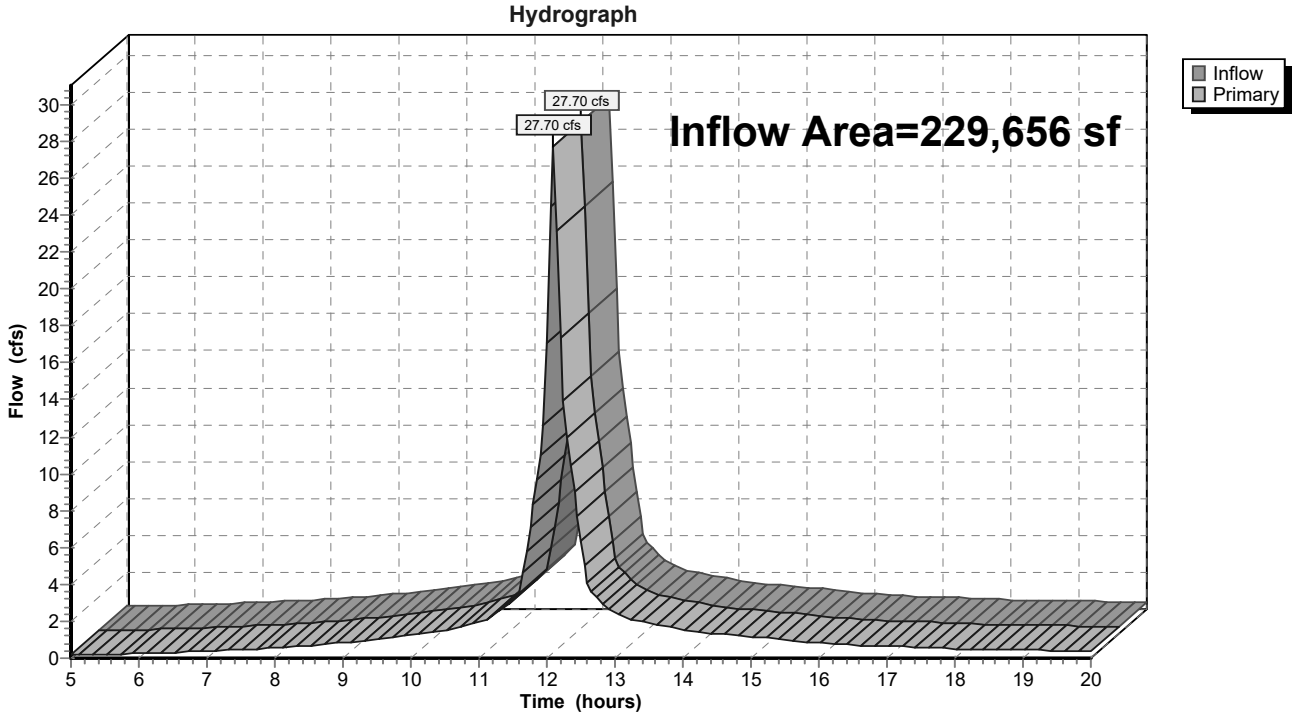


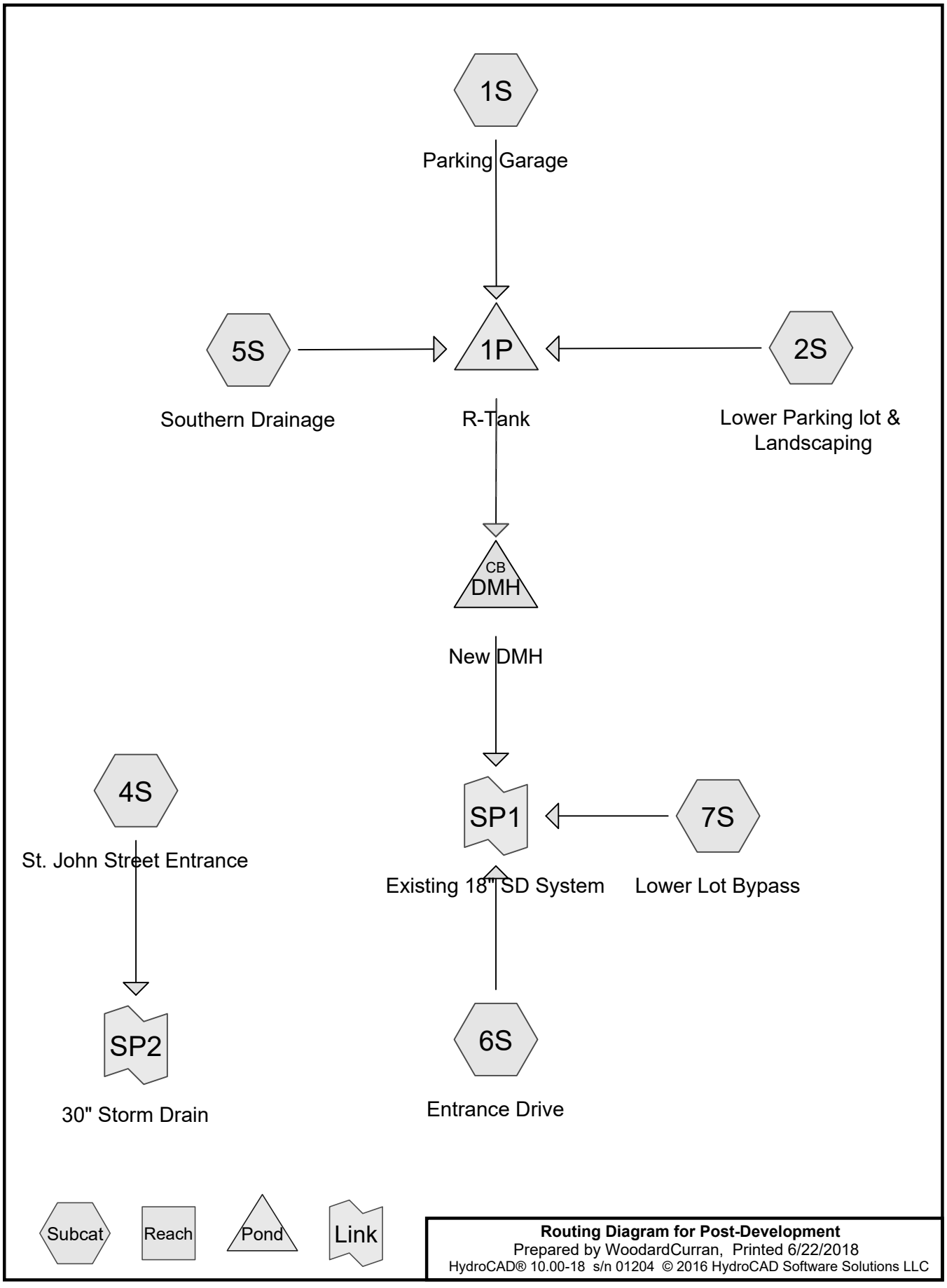
Summary for Link SP1: Existing 18" SD System

Inflow Area = 229,656 sf, 81.61% Impervious, Inflow Depth > 4.78" for 25 year event
Inflow = 27.70 cfs @ 12.10 hrs, Volume= 91,536 cf
Primary = 27.70 cfs @ 12.10 hrs, Volume= 91,536 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link SP1: Existing 18" SD System




1S
Parking Garage
5S
Southern Drainage
1P
R-Tank
2S
Lower Parking lot & Landscaping
CB
DMH
New DMH
4S
St. John Street Entrance
SP1
Existing 18" SD System
7S
Lower Lot Bypass
SP2
30" Storm Drain
6S
Entrance Drive
Subcat
Reach
Pond
Link
Routing Diagram for Post-Development
Prepared by WoodardCurran, Printed 6/22/2018
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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
513	84	50-75% Grass cover, Fair, HSG D (6S)
20,799	74	>75% Grass cover, Good, HSG C (4S)
20,397	80	>75% Grass cover, Good, HSG D (2S)
11,388	89	Crushed Stone (5S)
28,534	98	Entrance Drive & Walks (7S)
9,891	98	Entrance Road (6S)
483	79	Landscaped area (7S)
9,319	98	New entrane drive and walks (4S)
32,944	98	Paved Parking Lot (2S)
89,825	98	Paved parking, HSG B (1S)
2,186	98	Roofs, HSG B (1S)
3,377	98	Sidewalk (5S)
229,656	**94**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
92,011	HSG B	1S
20,799	HSG C	4S
20,910	HSG D	2S, 6S
95,936	Other	2S, 4S, 5S, 6S, 7S
229,656		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	0	513	0	513	50-75% Grass cover, Fair
0	0	20,799	20,397	0	41,196	>75% Grass cover, Good
0	0	0	0	11,388	11,388	Crushed Stone
0	0	0	0	28,534	28,534	Entrance Drive & Walks
0	0	0	0	9,891	9,891	Entrance Road
0	0	0	0	483	483	Landscaped area
0	0	0	0	9,319	9,319	New entrane drive and walks
0	0	0	0	32,944	32,944	Paved Parking Lot
0	89,825	0	0	0	89,825	Paved parking
0	2,186	0	0	0	2,186	Roofs
0	0	0	0	3,377	3,377	Sidewalk
0	**92,011**	**20,799**	**20,910**	**95,936**	**229,656**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1P	19.58	19.58	15.0	0.0000	0.012	15.0	0.0	0.0
2	1P	21.13	21.00	15.0	0.0087	0.012	15.0	0.0	0.0
3	DMH	19.25	19.15	40.0	0.0025	0.013	18.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Parking Garage Runoff Area=92,011 sf 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=6.35 cfs 21,990 cf

Subcatchment2S: Lower Parking lot & Runoff Area=53,341 sf 61.76% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=91 Runoff=3.06 cfs 9,622 cf

Subcatchment4S: St. John Street Entrance Runoff Area=30,118 sf 30.94% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=81 Runoff=1.12 cfs 3,491 cf

Subcatchment5S: Southern Drainage Runoff Area=14,765 sf 22.87% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=91 Runoff=0.85 cfs 2,663 cf

Subcatchment6S: Entrance Drive Runoff Area=10,404 sf 95.07% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=97 Runoff=0.73 cfs 2,391 cf

Subcatchment7S: Lower Lot Bypass Runoff Area=29,017 sf 98.34% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=2.00 cfs 6,935 cf

Pond 1P: R-Tank Peak Elev=21.86' Storage=17,421 cf Inflow=10.26 cfs 34,275 cf
Primary=0.03 cfs 4,370 cf Secondary=3.44 cfs 20,262 cf Outflow=3.47 cfs 24,632 cf

Pond DMH: New DMH Peak Elev=20.44' Inflow=3.47 cfs 24,632 cf
18.0" Round Culvert n=0.013 L=40.0' S=0.0025 '/' Outflow=3.47 cfs 24,632 cf

Link SP1: Existing 18" SD System Inflow=4.45 cfs 33,957 cf
Primary=4.45 cfs 33,957 cf

Link SP2: 30" Storm Drain Inflow=1.12 cfs 3,491 cf
Primary=1.12 cfs 3,491 cf

Total Runoff Area = 229,656 sf Runoff Volume = 47,091 cf Average Runoff Depth = 2.46"
23.33% Pervious = 53,580 sf 76.67% Impervious = 176,076 sf

Summary for Subcatchment 1S: Parking Garage

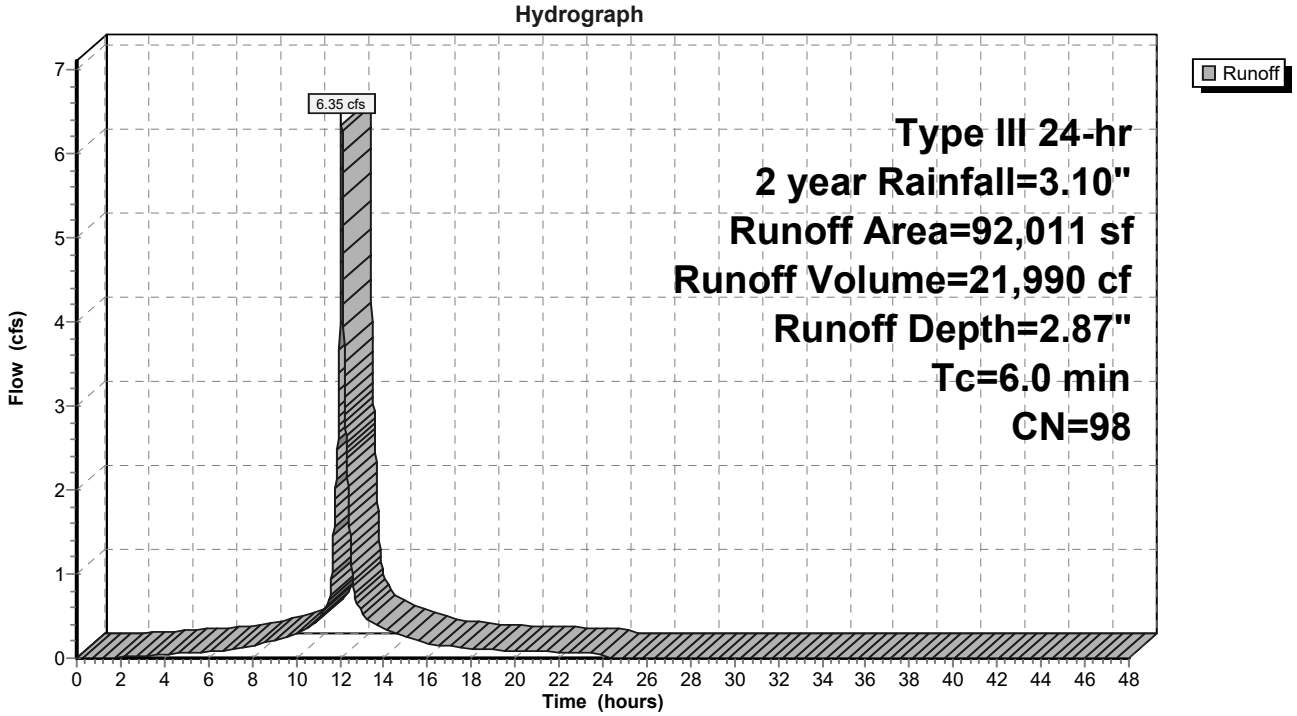
Runoff = 6.35 cfs @ 12.08 hrs, Volume= 21,990 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 year Rainfall=3.10"

Area (sf)	CN	Description
89,825	98	Paved parking, HSG B
2,186	98	Roofs, HSG B
92,011	98	Weighted Average
92,011		100.00% Impervious Area

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

Subcatchment 1S: Parking Garage



Summary for Subcatchment 2S: Lower Parking lot & Landscaping

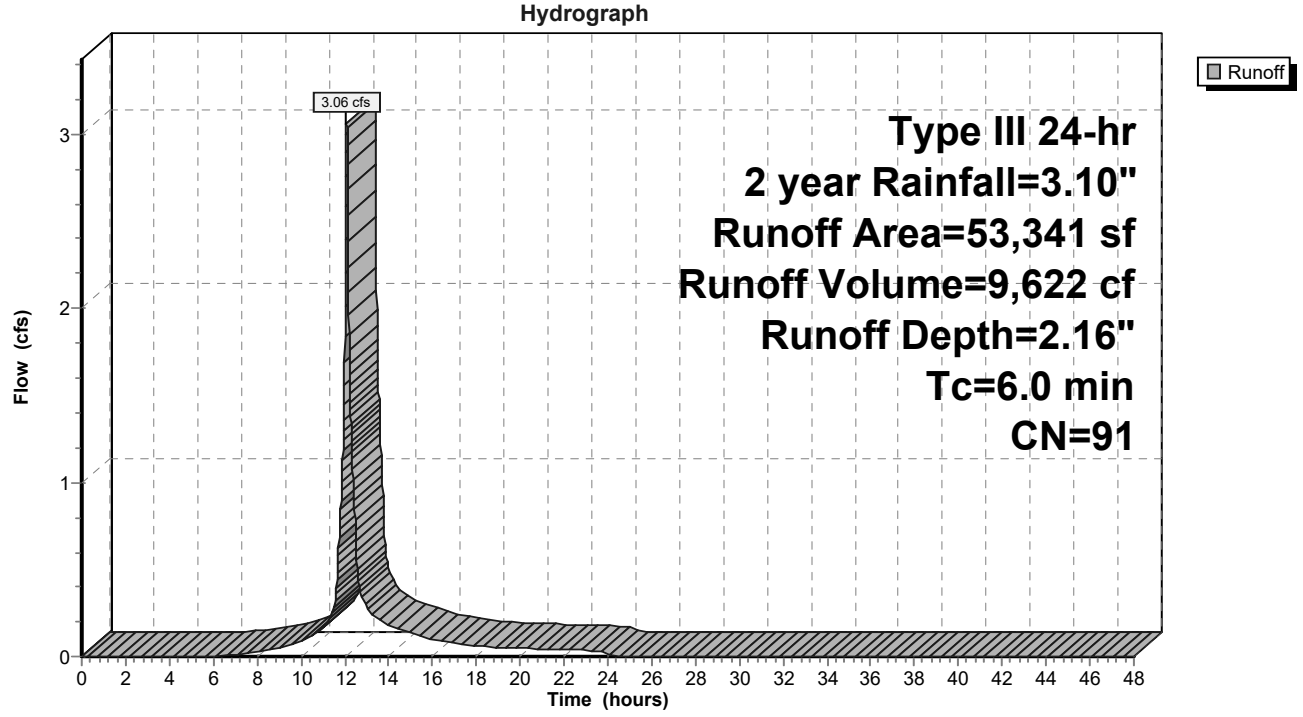
Runoff = 3.06 cfs @ 12.09 hrs, Volume= 9,622 cf, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	32,944	98	Paved Parking Lot
	20,397	80	>75% Grass cover, Good, HSG D
	53,341	91	Weighted Average
	20,397		38.24% Pervious Area
	32,944		61.76% Impervious Area

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

Subcatchment 2S: Lower Parking lot & Landscaping



Summary for Subcatchment 4S: St. John Street Entrance

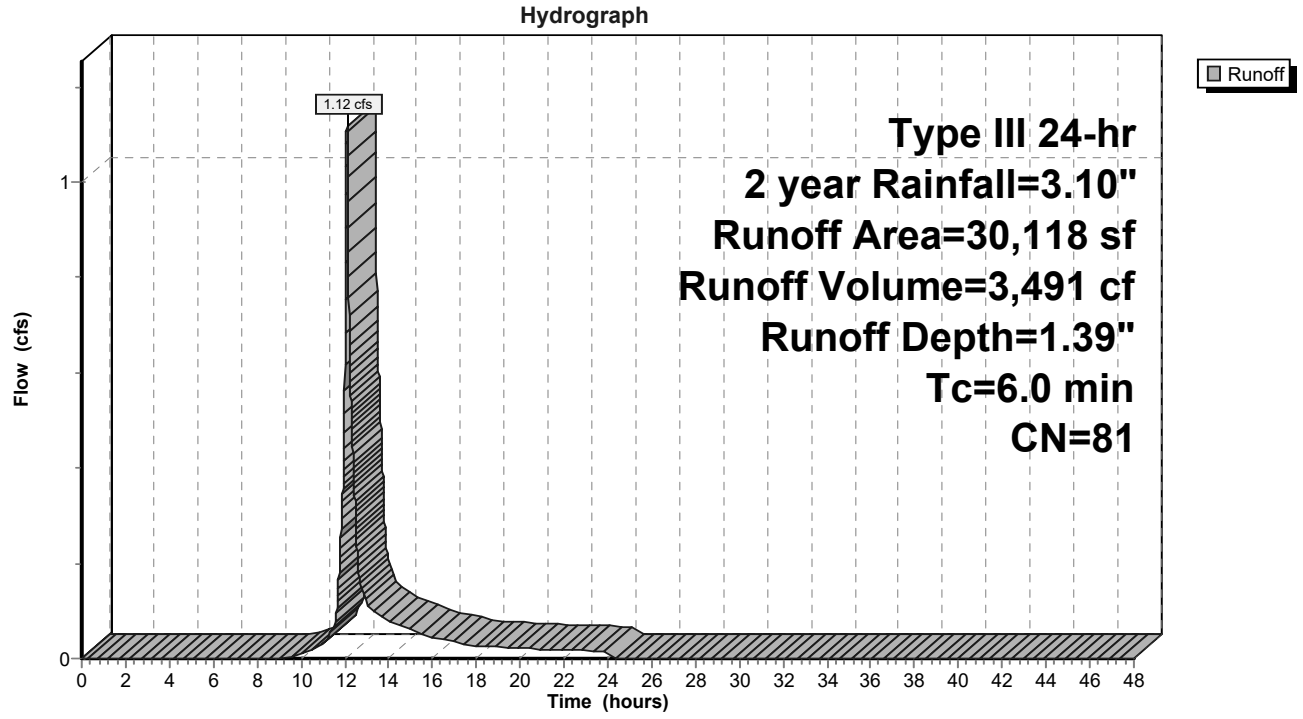
Runoff = 1.12 cfs @ 12.09 hrs, Volume= 3,491 cf, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	9,319	98	New entrane drive and walks
	20,799	74	>75% Grass cover, Good, HSG C
	30,118	81	Weighted Average
	20,799		69.06% Pervious Area
	9,319		30.94% Impervious Area

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

Subcatchment 4S: St. John Street Entrance



Summary for Subcatchment 5S: Southern Drainage

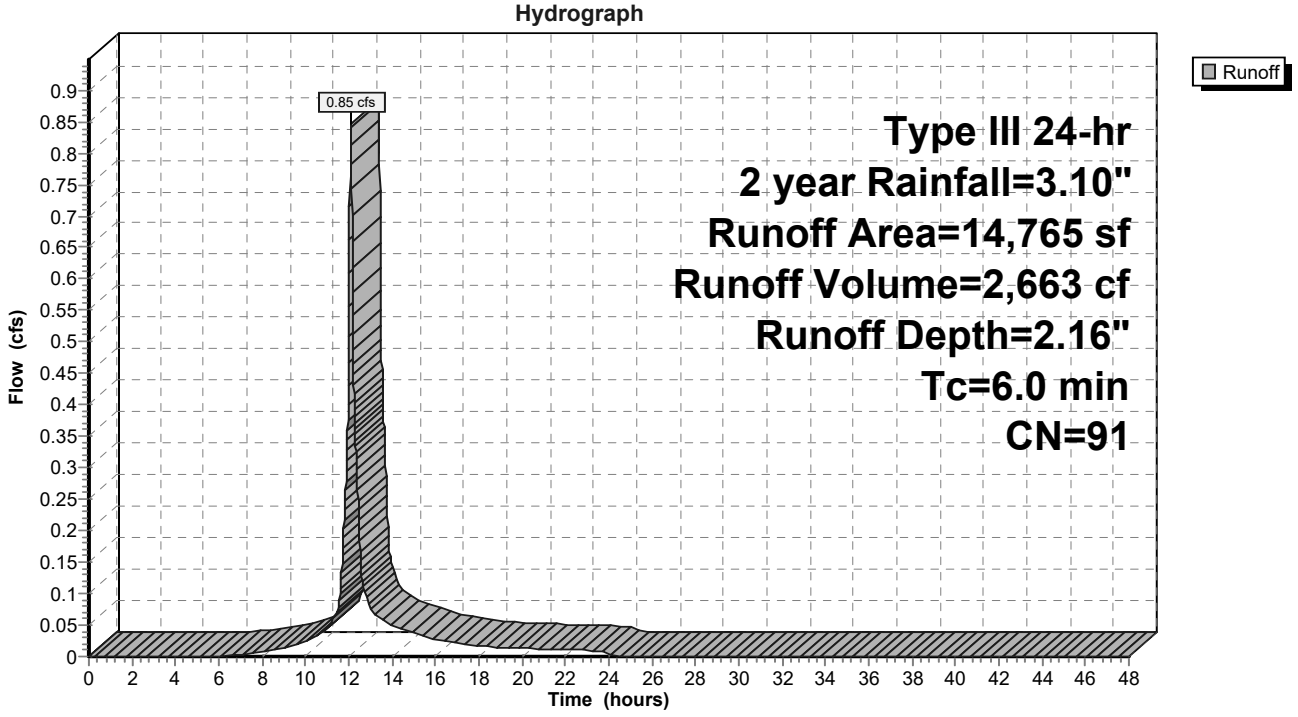
Runoff = 0.85 cfs @ 12.09 hrs, Volume= 2,663 cf, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	11,388	89	Crushed Stone
*	3,377	98	Sidewalk
	14,765	91	Weighted Average
	11,388		77.13% Pervious Area
	3,377		22.87% Impervious Area

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

Subcatchment 5S: Southern Drainage



Summary for Subcatchment 6S: Entrance Drive

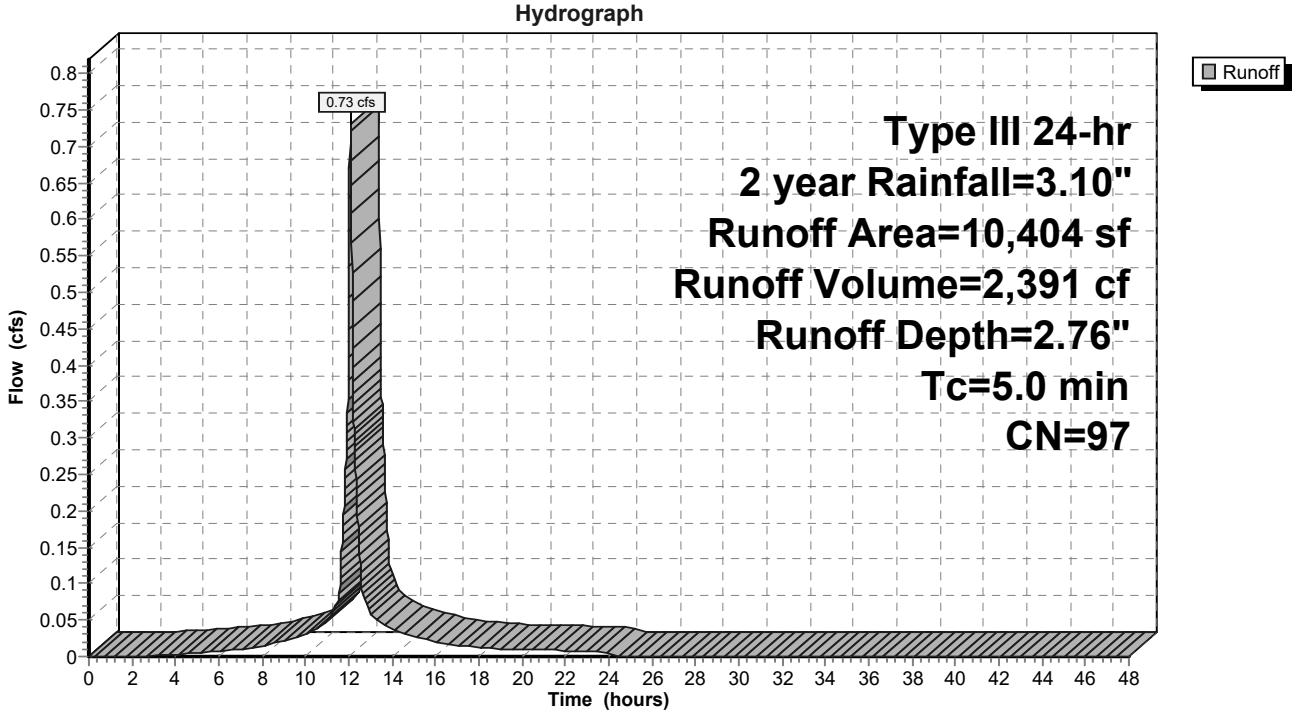
Runoff = 0.73 cfs @ 12.07 hrs, Volume= 2,391 cf, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	9,891	98	Entrance Road
	513	84	50-75% Grass cover, Fair, HSG D
	10,404	97	Weighted Average
	513		4.93% Pervious Area
	9,891		95.07% Impervious Area

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

Subcatchment 6S: Entrance Drive



Summary for Subcatchment 7S: Lower Lot Bypass

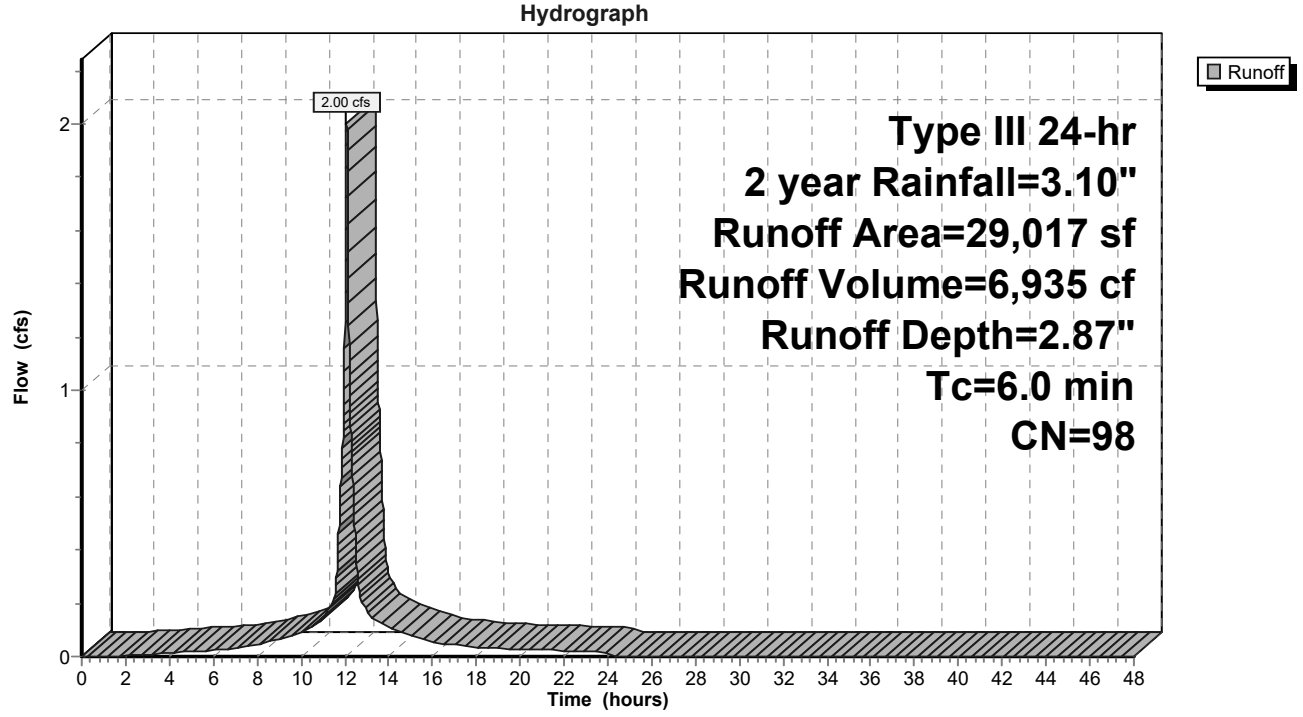
Runoff = 2.00 cfs @ 12.08 hrs, Volume= 6,935 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 year Rainfall=3.10"

	Area (sf)	CN	Description
*	28,534	98	Entrance Drive & Walks
*	483	79	Landscaped area
	29,017	98	Weighted Average
	483		1.66% Pervious Area
	28,534		98.34% Impervious Area

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

Subcatchment 7S: Lower Lot Bypass



Summary for Pond 1P: R-Tank

Inflow Area = 160,117 sf, 80.15% Impervious, Inflow Depth = 2.57" for 2 year event
Inflow = 10.26 cfs @ 12.08 hrs, Volume= 34,275 cf
Outflow = 3.47 cfs @ 12.36 hrs, Volume= 24,632 cf, Atten= 66%, Lag= 16.8 min
Primary = 0.03 cfs @ 15.85 hrs, Volume= 4,370 cf
Secondary = 3.44 cfs @ 12.36 hrs, Volume= 20,262 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 21.86' @ 12.36 hrs Surf.Area= 8,682 sf Storage= 17,421 cf

Plug-Flow detention time= 345.8 min calculated for 24,627 cf (72% of inflow)
Center-of-Mass det. time= 255.0 min (1,028.8 - 773.8)

Volume	Invert	Avail.Storage	Storage Description
#1	19.58'	4,733 cf	**Stone Envelope (Prismatic)** Listed below (Recalc) 33,165 cf Overall - 21,333 cf Embedded = 11,832 cf x 40.0% Voids
#2	19.58'	20,267 cf	**R-Tank Modules (Prismatic)** Listed below (Recalc) Inside #1 21,333 cf Overall x 95.0% Voids
		24,999 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.58	8,682	0	0
23.40	8,682	33,165	33,165

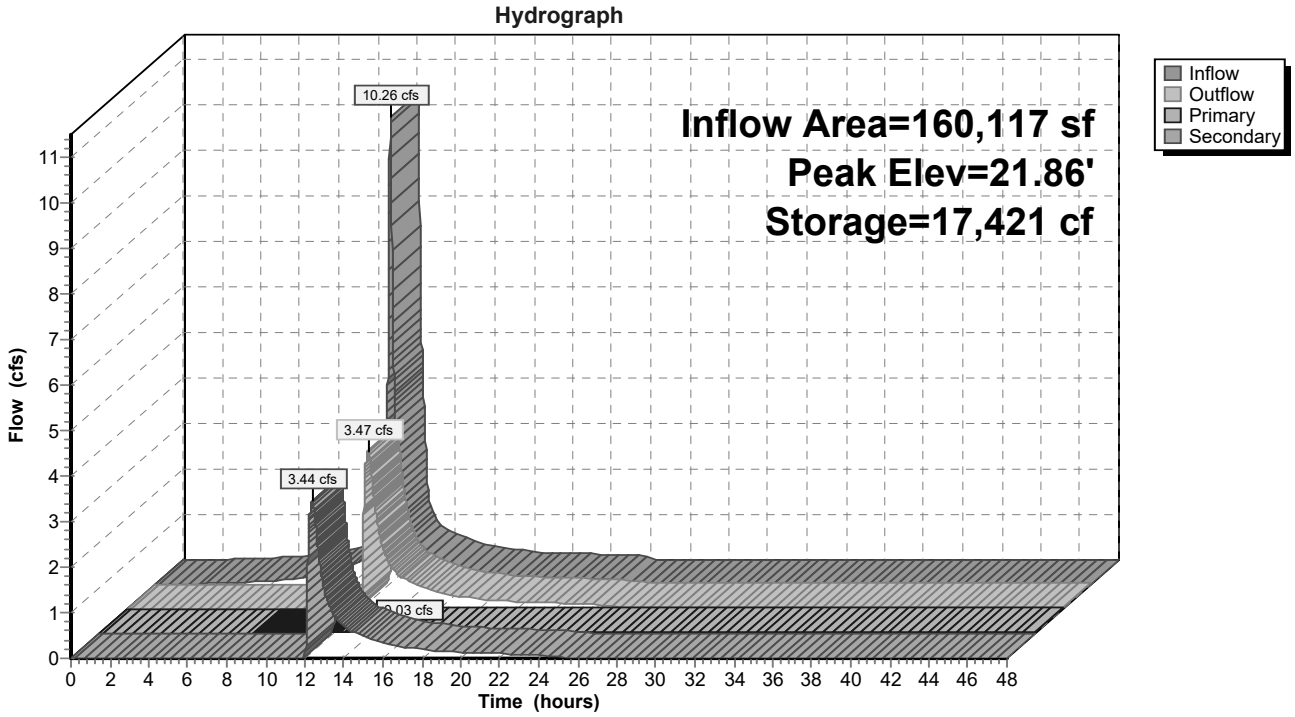
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.58	7,565	0	0
22.40	7,565	21,333	21,333

Device	Routing	Invert	Outlet Devices
#1	Primary	19.58'	**15.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 19.58' / 19.58' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	19.58'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	19.75'	**1.7" Vert. Orifice/Grate** C= 0.600
#4	Secondary	21.13'	**15.0" Round Culvert X 2.00** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 21.13' / 21.00' S= 0.0087 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.03 cfs @ 15.85 hrs HW=21.34' TW=19.62' (Dynamic Tailwater)
↑└**1=Culvert** (Passes 0.03 cfs of 5.25 cfs potential flow)
↑└**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 6.31 fps)
↑└**3=Orifice/Grate** (Passes 0.03 cfs of 0.09 cfs potential flow)

Secondary OutFlow Max=3.44 cfs @ 12.36 hrs HW=21.86' TW=20.44' (Dynamic Tailwater)
↑└**4=Culvert** (Barrel Controls 3.44 cfs @ 3.31 fps)

Pond 1P: R-Tank



Summary for Pond DMH: New DMH

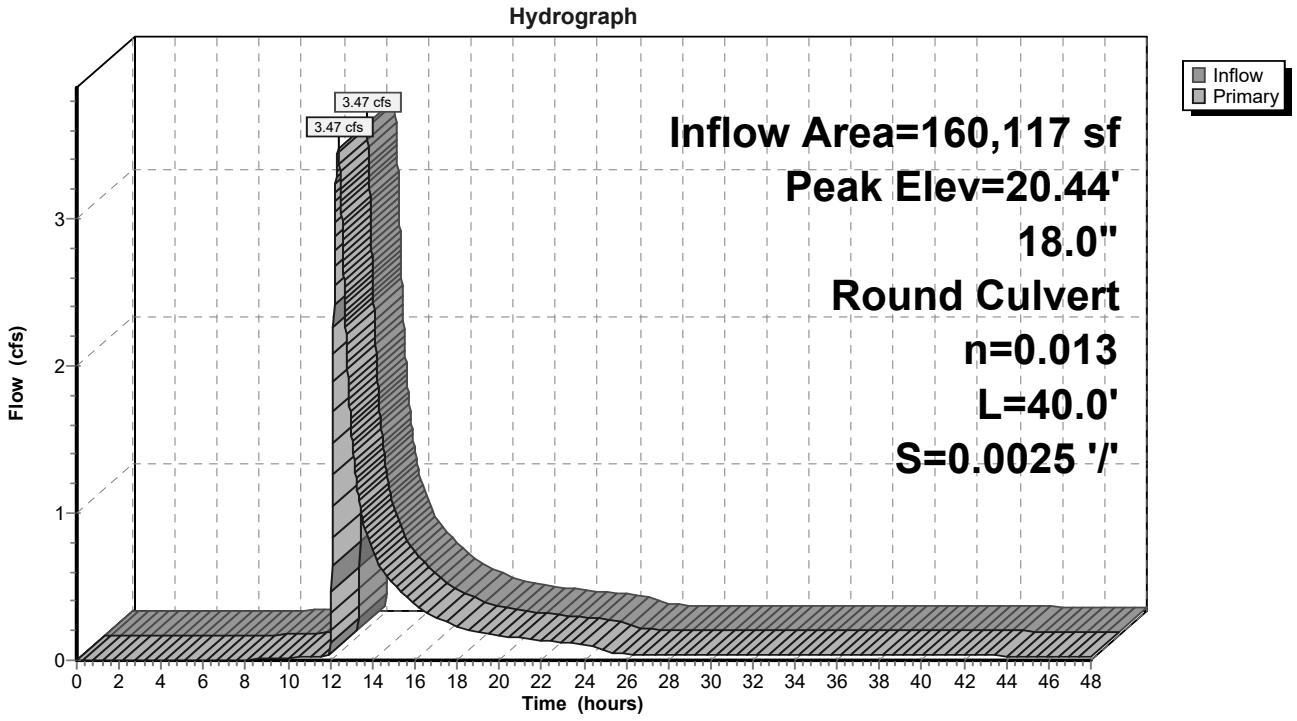
Inflow Area = 160,117 sf, 80.15% Impervious, Inflow Depth > 1.85" for 2 year event
Inflow = 3.47 cfs @ 12.36 hrs, Volume= 24,632 cf
Outflow = 3.47 cfs @ 12.36 hrs, Volume= 24,632 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.47 cfs @ 12.36 hrs, Volume= 24,632 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 20.44' @ 12.36 hrs
Flood Elev= 26.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.25'	**18.0" Round Culvert** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.25' / 19.15' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.47 cfs @ 12.36 hrs HW=20.44' TW=0.00' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.47 cfs @ 3.17 fps)

Pond DMH: New DMH

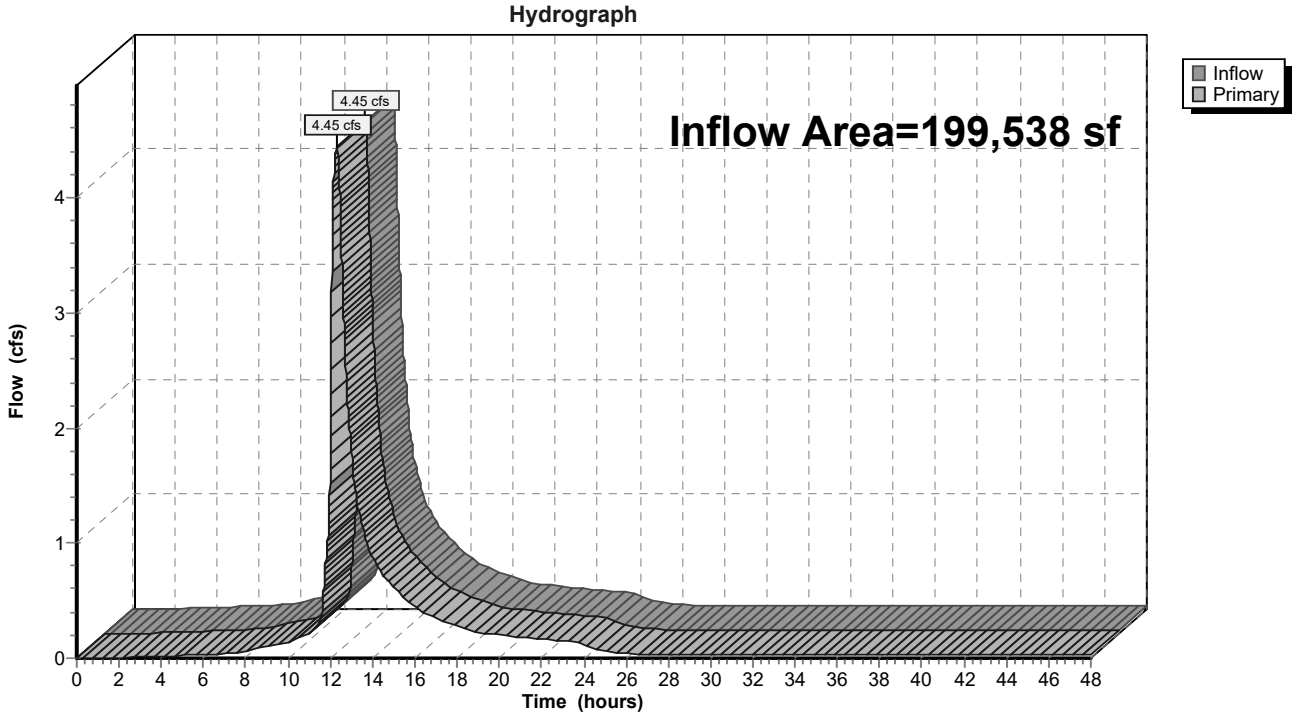


Summary for Link SP1: Existing 18" SD System

Inflow Area = 199,538 sf, 83.57% Impervious, Inflow Depth > 2.04" for 2 year event
Inflow = 4.45 cfs @ 12.30 hrs, Volume= 33,957 cf
Primary = 4.45 cfs @ 12.30 hrs, Volume= 33,957 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing 18" SD System

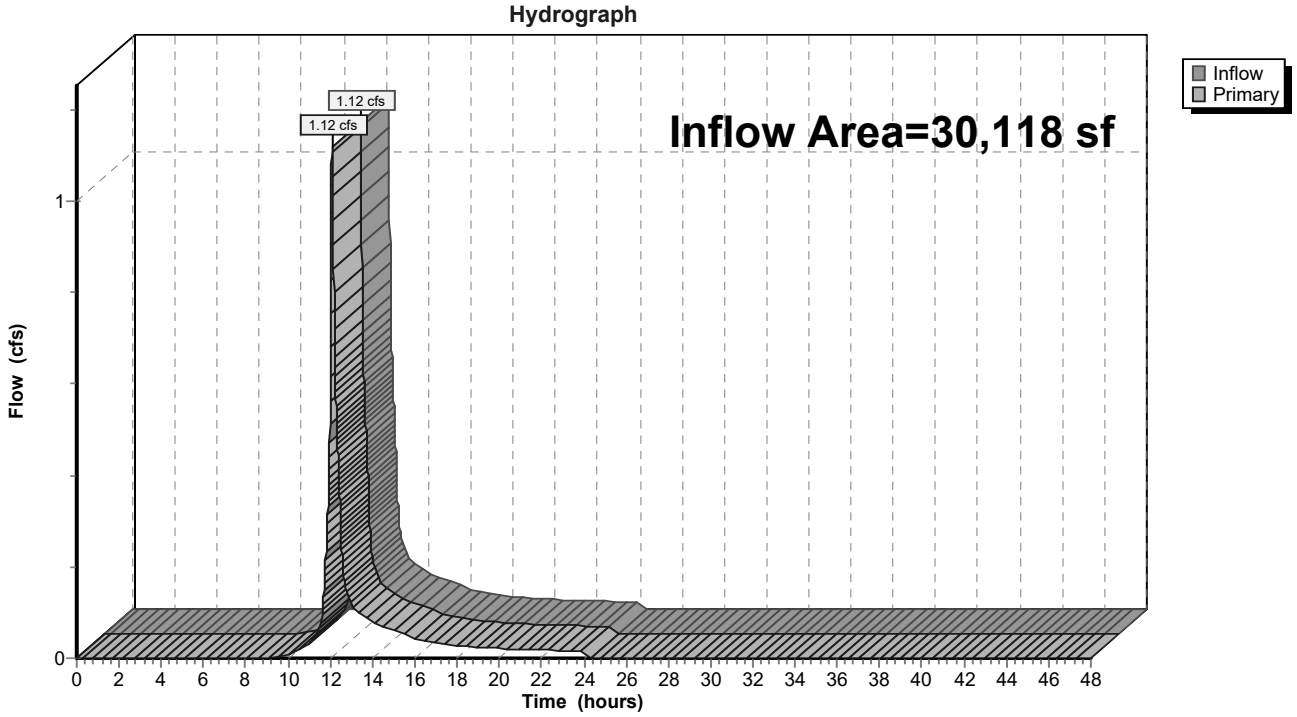


Summary for Link SP2: 30" Storm Drain

Inflow Area = 30,118 sf, 30.94% Impervious, Inflow Depth = 1.39" for 2 year event
Inflow = 1.12 cfs @ 12.09 hrs, Volume= 3,491 cf
Primary = 1.12 cfs @ 12.09 hrs, Volume= 3,491 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP2: 30" Storm Drain



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Parking Garage Runoff Area=92,011 sf 100.00% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=9.50 cfs 33,460 cf

Subcatchment2S: Lower Parking lot & Runoff Area=53,341 sf 61.76% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=91 Runoff=4.97 cfs 15,978 cf

Subcatchment4S: St. John Street Entrance Runoff Area=30,118 sf 30.94% Impervious Runoff Depth=2.63"
Tc=6.0 min CN=81 Runoff=2.14 cfs 6,613 cf

Subcatchment5S: Southern Drainage Runoff Area=14,765 sf 22.87% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=91 Runoff=1.38 cfs 4,423 cf

Subcatchment6S: Entrance Drive Runoff Area=10,404 sf 95.07% Impervious Runoff Depth=4.25"
Tc=5.0 min CN=97 Runoff=1.10 cfs 3,684 cf

Subcatchment7S: Lower Lot Bypass Runoff Area=29,017 sf 98.34% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=2.99 cfs 10,552 cf

Pond 1P: R-Tank Peak Elev=22.52' Storage=21,935 cf Inflow=15.84 cfs 53,861 cf
Primary=0.03 cfs 4,533 cf Secondary=9.20 cfs 39,639 cf Outflow=9.22 cfs 44,173 cf

Pond DMH: New DMH Peak Elev=21.89' Inflow=9.22 cfs 44,173 cf
18.0" Round Culvert n=0.013 L=40.0' S=0.0025 '/' Outflow=9.22 cfs 44,173 cf

Link SP1: Existing 18" SD System Inflow=11.73 cfs 58,409 cf
Primary=11.73 cfs 58,409 cf

Link SP2: 30" Storm Drain Inflow=2.14 cfs 6,613 cf
Primary=2.14 cfs 6,613 cf

Total Runoff Area = 229,656 sf Runoff Volume = 74,710 cf Average Runoff Depth = 3.90"
23.33% Pervious = 53,580 sf 76.67% Impervious = 176,076 sf

Summary for Subcatchment 1S: Parking Garage

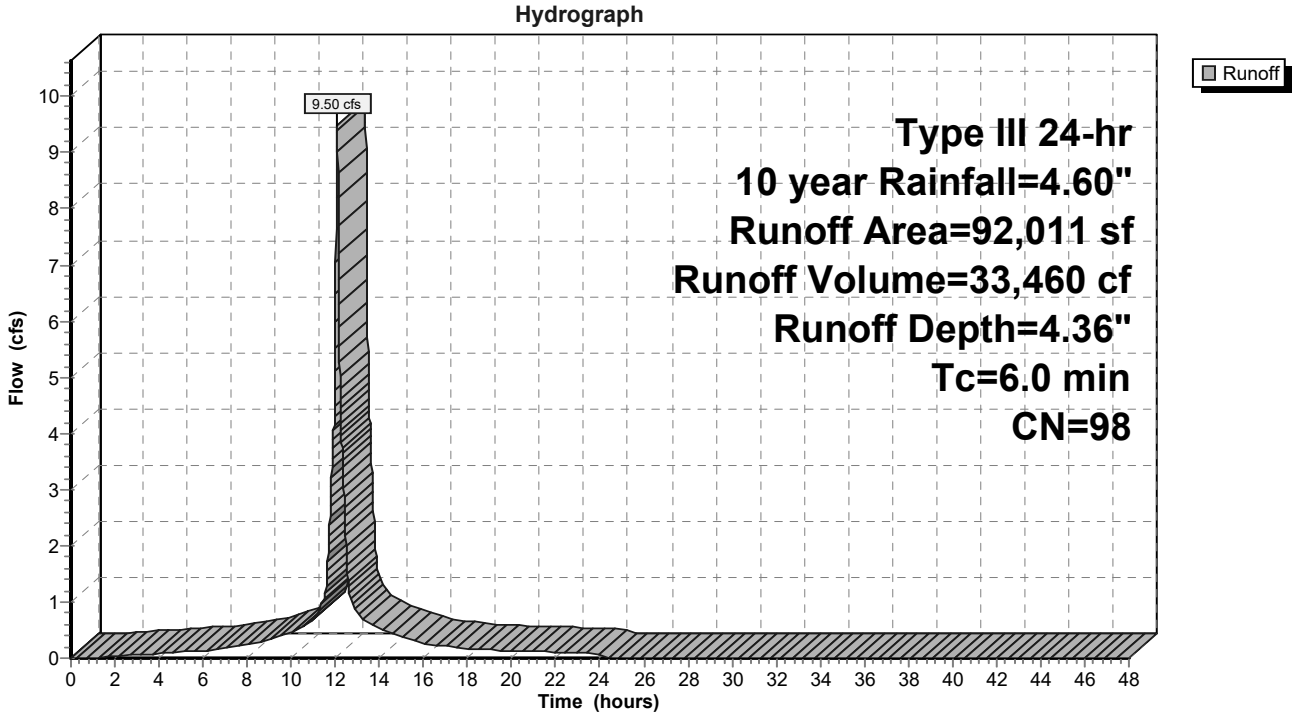
Runoff = 9.50 cfs @ 12.08 hrs, Volume= 33,460 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 year Rainfall=4.60"

Area (sf)	CN	Description
89,825	98	Paved parking, HSG B
2,186	98	Roofs, HSG B
92,011	98	Weighted Average
92,011		100.00% Impervious Area

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

Subcatchment 1S: Parking Garage



Summary for Subcatchment 2S: Lower Parking lot & Landscaping

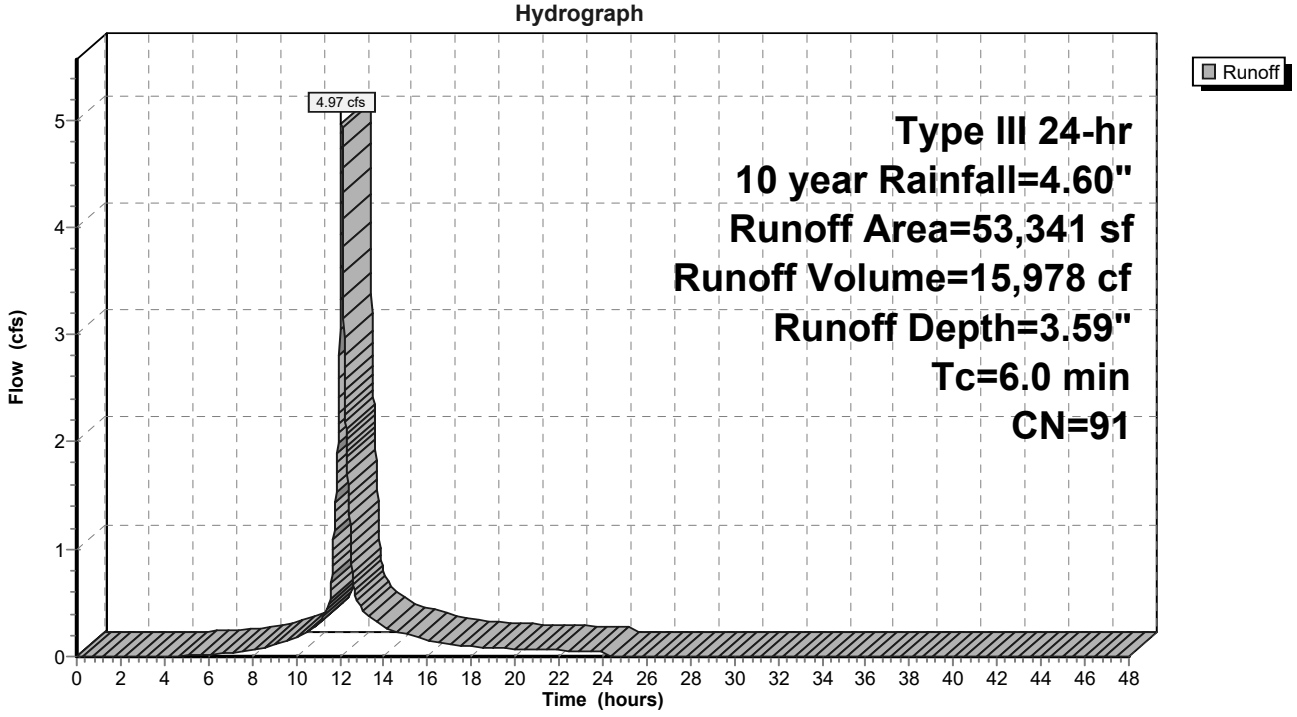
Runoff = 4.97 cfs @ 12.08 hrs, Volume= 15,978 cf, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	32,944	98	Paved Parking Lot
	20,397	80	>75% Grass cover, Good, HSG D
	53,341	91	Weighted Average
	20,397		38.24% Pervious Area
	32,944		61.76% Impervious Area

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

Subcatchment 2S: Lower Parking lot & Landscaping



Summary for Subcatchment 4S: St. John Street Entrance

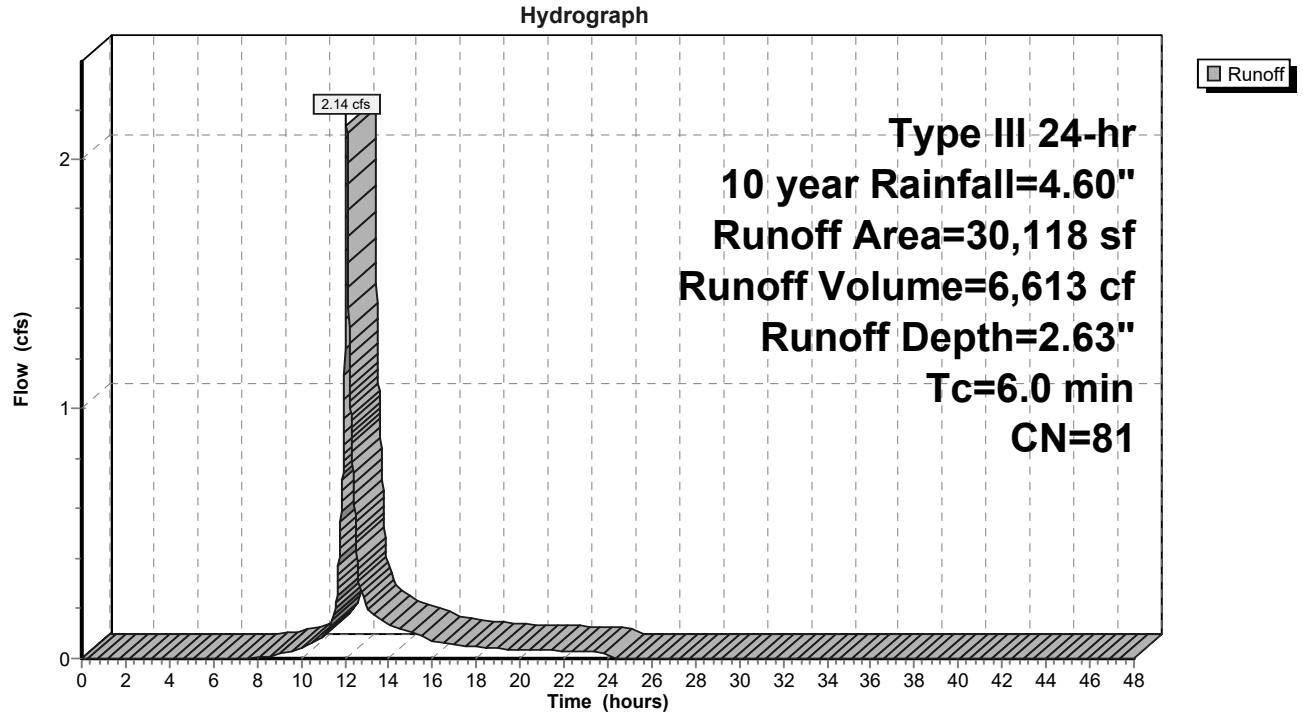
Runoff = 2.14 cfs @ 12.09 hrs, Volume= 6,613 cf, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	9,319	98	New entrane drive and walks
	20,799	74	>75% Grass cover, Good, HSG C
	30,118	81	Weighted Average
	20,799		69.06% Pervious Area
	9,319		30.94% Impervious Area

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

Subcatchment 4S: St. John Street Entrance



Summary for Subcatchment 5S: Southern Drainage

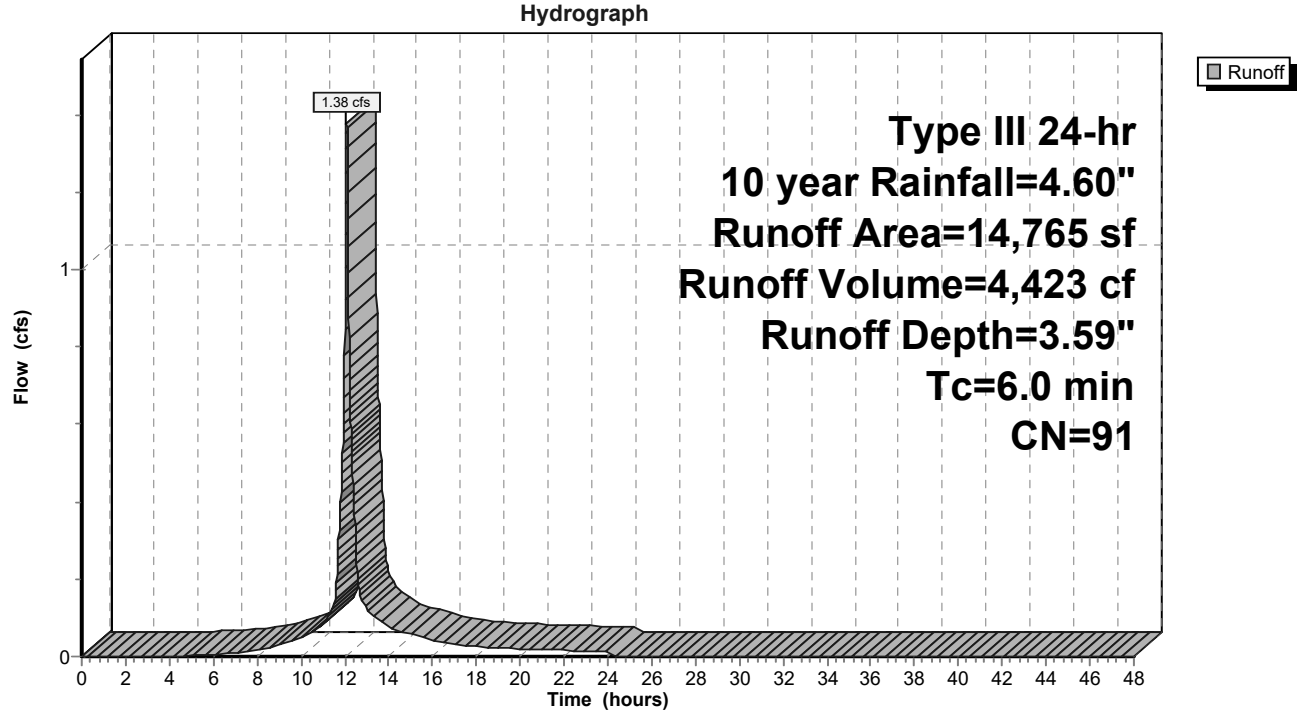
Runoff = 1.38 cfs @ 12.08 hrs, Volume= 4,423 cf, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	11,388	89	Crushed Stone
*	3,377	98	Sidewalk
	14,765	91	Weighted Average
	11,388		77.13% Pervious Area
	3,377		22.87% Impervious Area

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

Subcatchment 5S: Southern Drainage



Summary for Subcatchment 6S: Entrance Drive

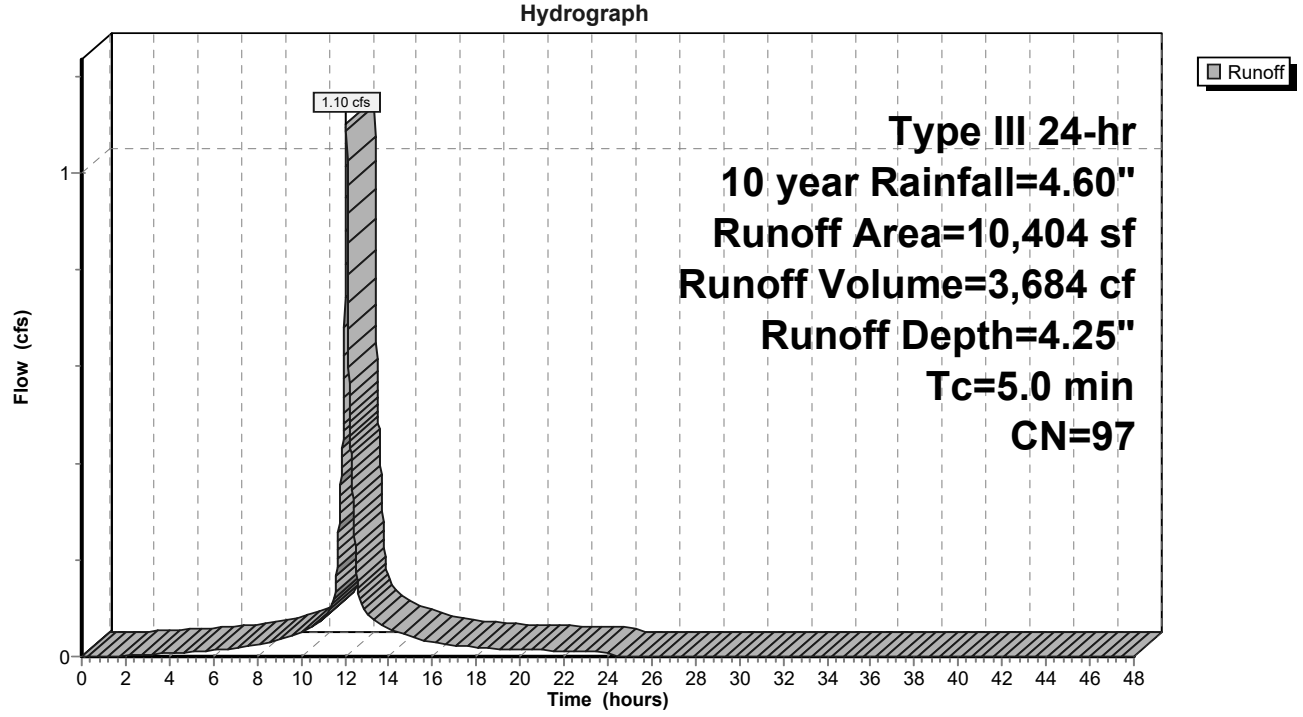
Runoff = 1.10 cfs @ 12.07 hrs, Volume= 3,684 cf, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	9,891	98	Entrance Road
	513	84	50-75% Grass cover, Fair, HSG D
	10,404	97	Weighted Average
	513		4.93% Pervious Area
	9,891		95.07% Impervious Area

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

Subcatchment 6S: Entrance Drive



Summary for Subcatchment 7S: Lower Lot Bypass

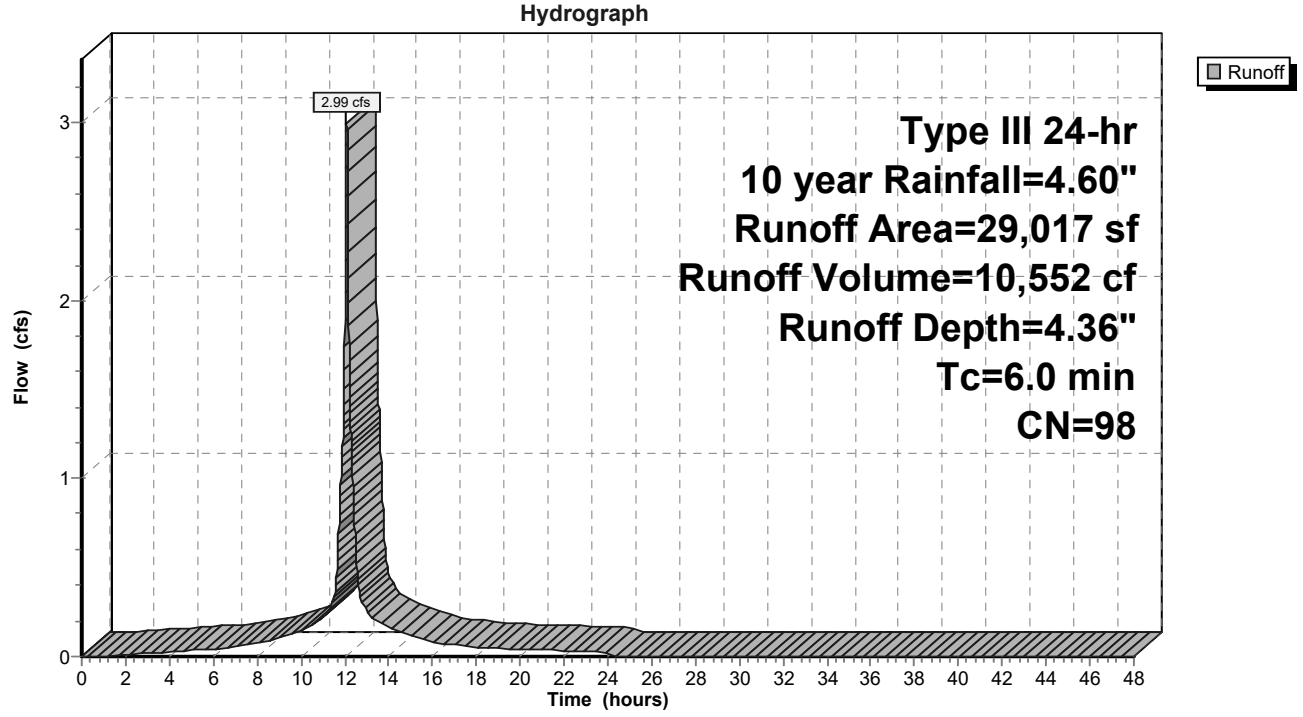
Runoff = 2.99 cfs @ 12.08 hrs, Volume= 10,552 cf, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 year Rainfall=4.60"

	Area (sf)	CN	Description
*	28,534	98	Entrance Drive & Walks
*	483	79	Landscaped area
	29,017	98	Weighted Average
	483		1.66% Pervious Area
	28,534		98.34% Impervious Area

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

Subcatchment 7S: Lower Lot Bypass



Summary for Pond 1P: R-Tank

Inflow Area = 160,117 sf, 80.15% Impervious, Inflow Depth = 4.04" for 10 year event
Inflow = 15.84 cfs @ 12.08 hrs, Volume= 53,861 cf
Outflow = 9.22 cfs @ 12.19 hrs, Volume= 44,173 cf, Atten= 42%, Lag= 6.5 min
Primary = 0.03 cfs @ 17.24 hrs, Volume= 4,533 cf
Secondary = 9.20 cfs @ 12.19 hrs, Volume= 39,639 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 22.52' @ 12.19 hrs Surf.Area= 8,682 sf Storage= 21,935 cf

Plug-Flow detention time= 242.2 min calculated for 44,173 cf (82% of inflow)
Center-of-Mass det. time= 170.1 min (934.8 - 764.7)

Volume	Invert	Avail.Storage	Storage Description
#1	19.58'	4,733 cf	**Stone Envelope (Prismatic)** Listed below (Recalc) 33,165 cf Overall - 21,333 cf Embedded = 11,832 cf x 40.0% Voids
#2	19.58'	20,267 cf	**R-Tank Modules (Prismatic)** Listed below (Recalc) Inside #1 21,333 cf Overall x 95.0% Voids
		24,999 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.58	8,682	0	0
23.40	8,682	33,165	33,165

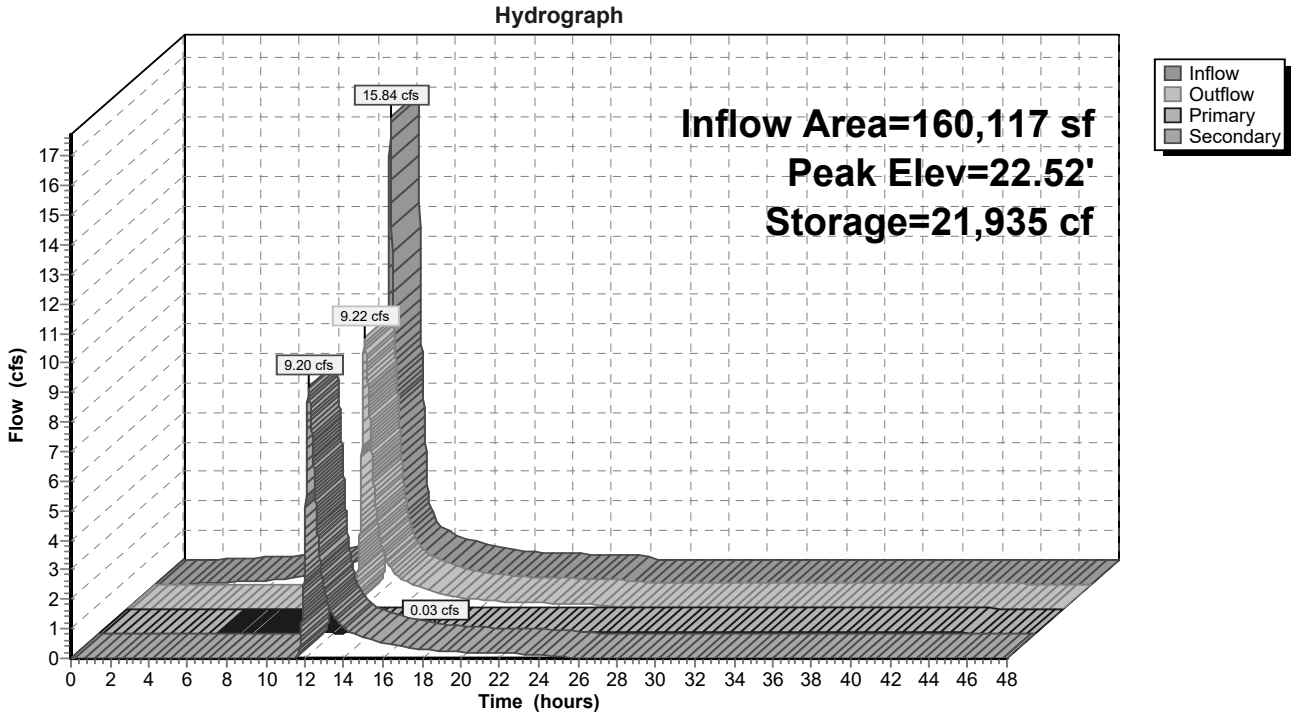
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.58	7,565	0	0
22.40	7,565	21,333	21,333

Device	Routing	Invert	Outlet Devices
#1	Primary	19.58'	**15.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 19.58' / 19.58' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	19.58'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	19.75'	**1.7" Vert. Orifice/Grate** C= 0.600
#4	Secondary	21.13'	**15.0" Round Culvert X 2.00** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 21.13' / 21.00' S= 0.0087 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.03 cfs @ 17.24 hrs HW=21.34' TW=19.62' (Dynamic Tailwater)
↑└**1=Culvert** (Passes 0.03 cfs of 5.25 cfs potential flow)
↑└**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 6.31 fps)
↑└**3=Orifice/Grate** (Passes 0.03 cfs of 0.09 cfs potential flow)

Secondary OutFlow Max=9.20 cfs @ 12.19 hrs HW=22.52' TW=21.88' (Dynamic Tailwater)
↑└**4=Culvert** (Barrel Controls 9.20 cfs @ 4.21 fps)

Pond 1P: R-Tank



Summary for Pond DMH: New DMH

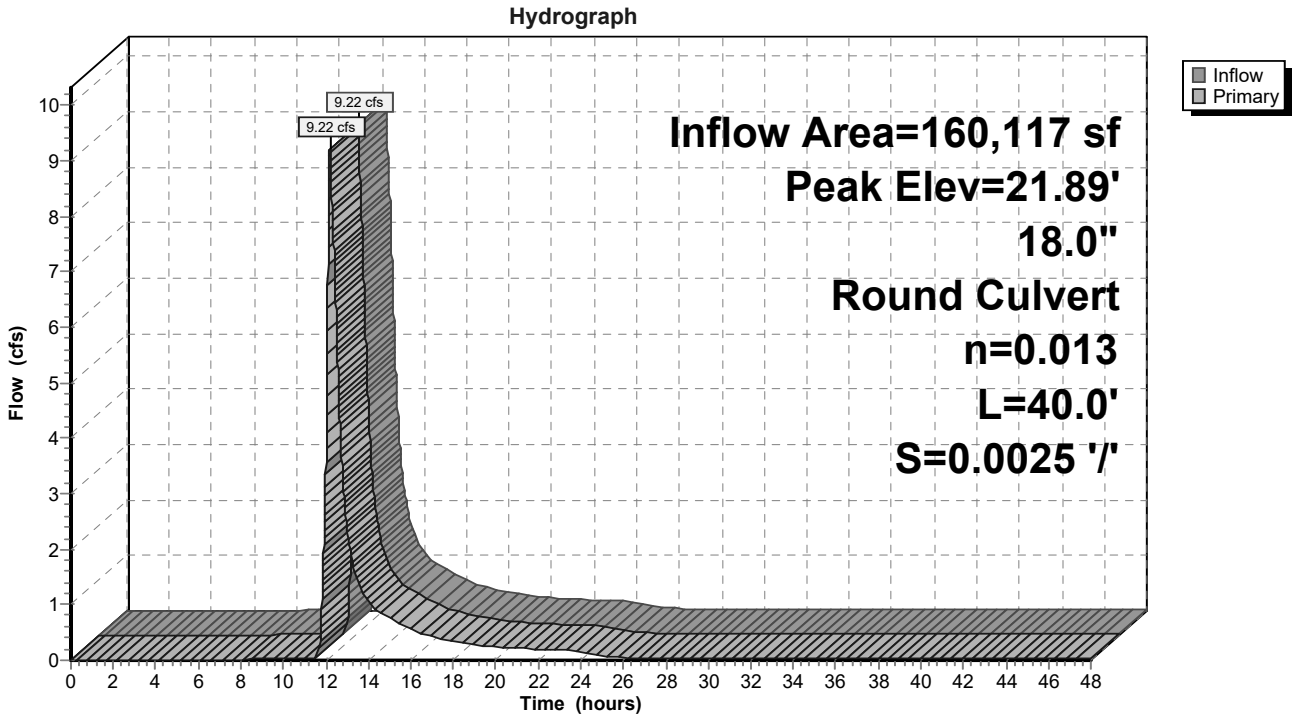
Inflow Area = 160,117 sf, 80.15% Impervious, Inflow Depth > 3.31" for 10 year event
Inflow = 9.22 cfs @ 12.19 hrs, Volume= 44,173 cf
Outflow = 9.22 cfs @ 12.19 hrs, Volume= 44,173 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.22 cfs @ 12.19 hrs, Volume= 44,173 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 21.89' @ 12.19 hrs
Flood Elev= 26.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.25'	**18.0" Round Culvert** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.25' / 19.15' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.22 cfs @ 12.19 hrs HW=21.88' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.22 cfs @ 5.22 fps)

Pond DMH: New DMH

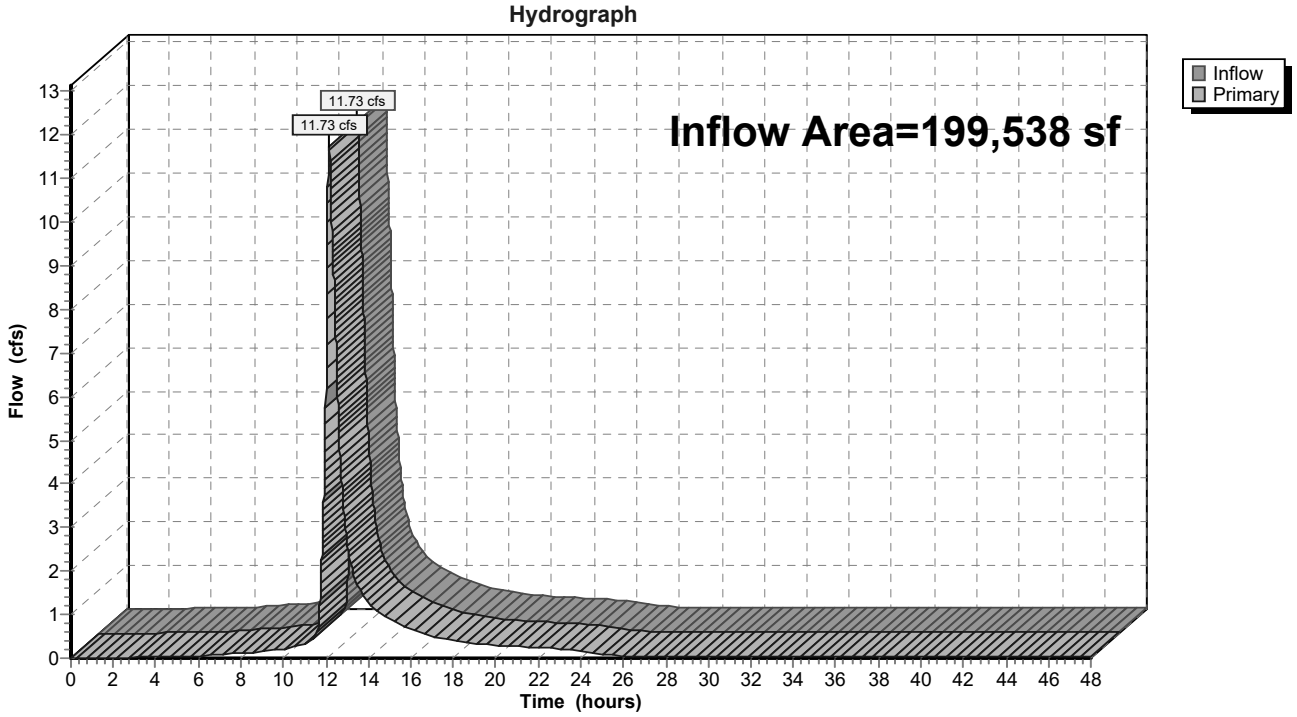


Summary for Link SP1: Existing 18" SD System

Inflow Area = 199,538 sf, 83.57% Impervious, Inflow Depth > 3.51" for 10 year event
Inflow = 11.73 cfs @ 12.16 hrs, Volume= 58,409 cf
Primary = 11.73 cfs @ 12.16 hrs, Volume= 58,409 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing 18" SD System

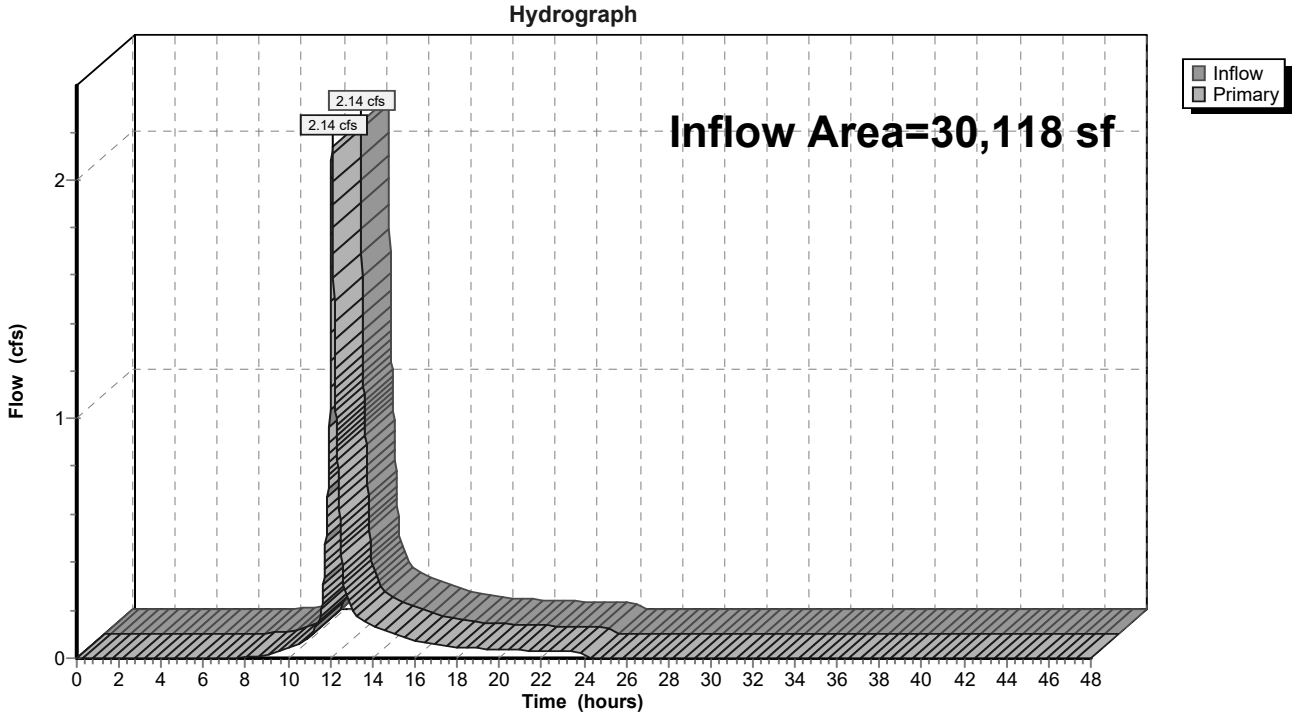


Summary for Link SP2: 30" Storm Drain

Inflow Area = 30,118 sf, 30.94% Impervious, Inflow Depth = 2.63" for 10 year event
Inflow = 2.14 cfs @ 12.09 hrs, Volume= 6,613 cf
Primary = 2.14 cfs @ 12.09 hrs, Volume= 6,613 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP2: 30" Storm Drain



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Parking Garage Runoff Area=92,011 sf 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=12.00 cfs 42,648 cf

Subcatchment2S: Lower Parking lot & Runoff Area=53,341 sf 61.76% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=91 Runoff=6.48 cfs 21,166 cf

Subcatchment4S: St. John Street Entrance Runoff Area=30,118 sf 30.94% Impervious Runoff Depth=3.70"
Tc=6.0 min CN=81 Runoff=2.99 cfs 9,291 cf

Subcatchment5S: Southern Drainage Runoff Area=14,765 sf 22.87% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=91 Runoff=1.79 cfs 5,859 cf

Subcatchment6S: Entrance Drive Runoff Area=10,404 sf 95.07% Impervious Runoff Depth=5.44"
Tc=5.0 min CN=97 Runoff=1.40 cfs 4,721 cf

Subcatchment7S: Lower Lot Bypass Runoff Area=29,017 sf 98.34% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=3.79 cfs 13,450 cf

Pond 1P: R-Tank Peak Elev=23.27' Storage=24,553 cf Inflow=20.28 cfs 69,672 cf
Primary=0.05 cfs 4,666 cf Secondary=14.55 cfs 55,737 cf Outflow=14.60 cfs 59,961 cf

Pond DMH: New DMH Peak Elev=24.73' Inflow=14.60 cfs 60,403 cf
18.0" Round Culvert n=0.013 L=40.0' S=0.0025 '/' Outflow=14.60 cfs 60,403 cf

Link SP1: Existing 18" SD System Inflow=18.80 cfs 78,573 cf
Primary=18.80 cfs 78,573 cf

Link SP2: 30" Storm Drain Inflow=2.99 cfs 9,291 cf
Primary=2.99 cfs 9,291 cf

Total Runoff Area = 229,656 sf Runoff Volume = 97,134 cf Average Runoff Depth = 5.08"
23.33% Pervious = 53,580 sf 76.67% Impervious = 176,076 sf

Summary for Subcatchment 1S: Parking Garage

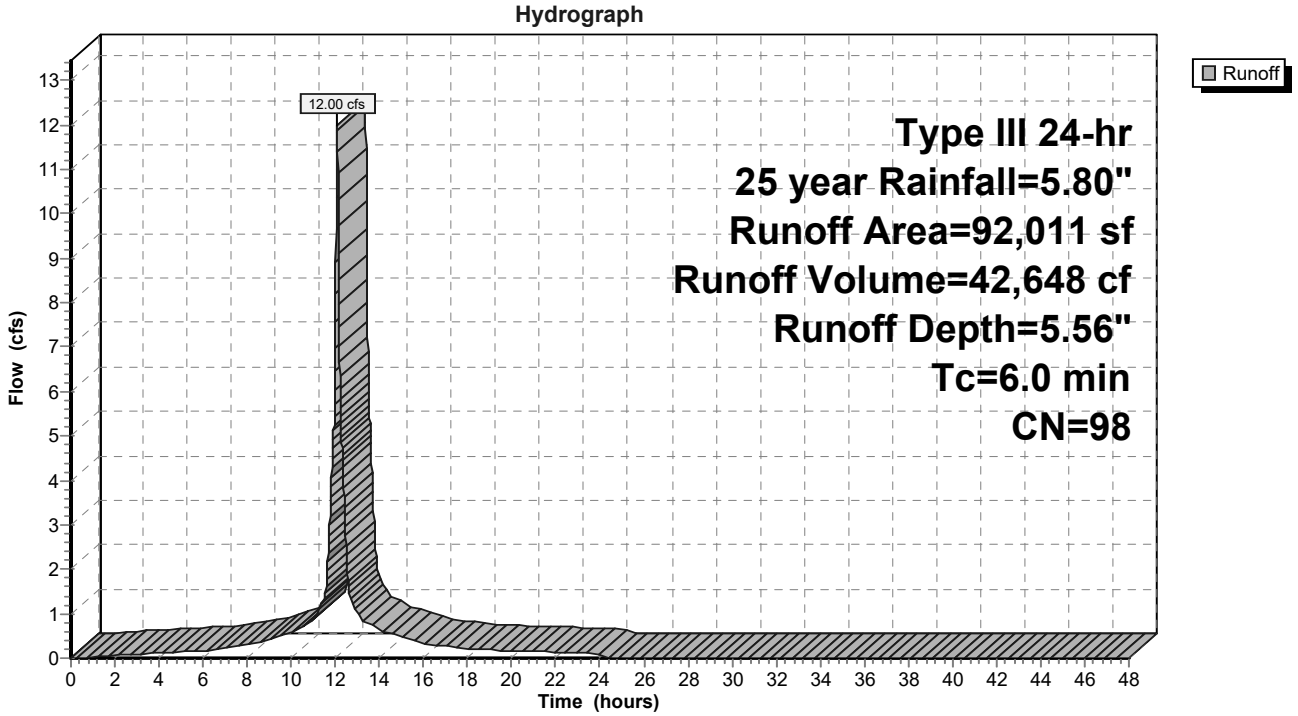
Runoff = 12.00 cfs @ 12.08 hrs, Volume= 42,648 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.80"

Area (sf)	CN	Description
89,825	98	Paved parking, HSG B
2,186	98	Roofs, HSG B
92,011	98	Weighted Average
92,011		100.00% Impervious Area

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

Subcatchment 1S: Parking Garage



Summary for Subcatchment 2S: Lower Parking lot & Landscaping

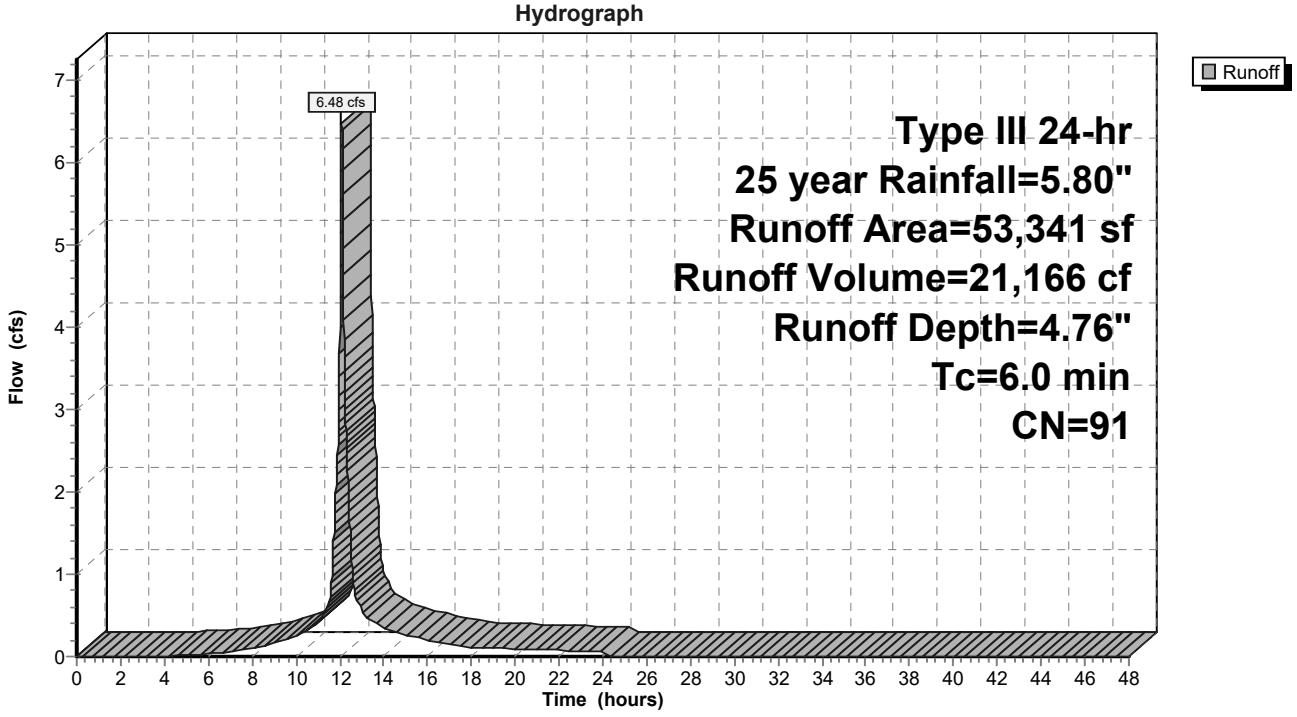
Runoff = 6.48 cfs @ 12.08 hrs, Volume= 21,166 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.80"

	Area (sf)	CN	Description
*	32,944	98	Paved Parking Lot
	20,397	80	>75% Grass cover, Good, HSG D
	53,341	91	Weighted Average
	20,397		38.24% Pervious Area
	32,944		61.76% Impervious Area

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

Subcatchment 2S: Lower Parking lot & Landscaping



Summary for Subcatchment 4S: St. John Street Entrance

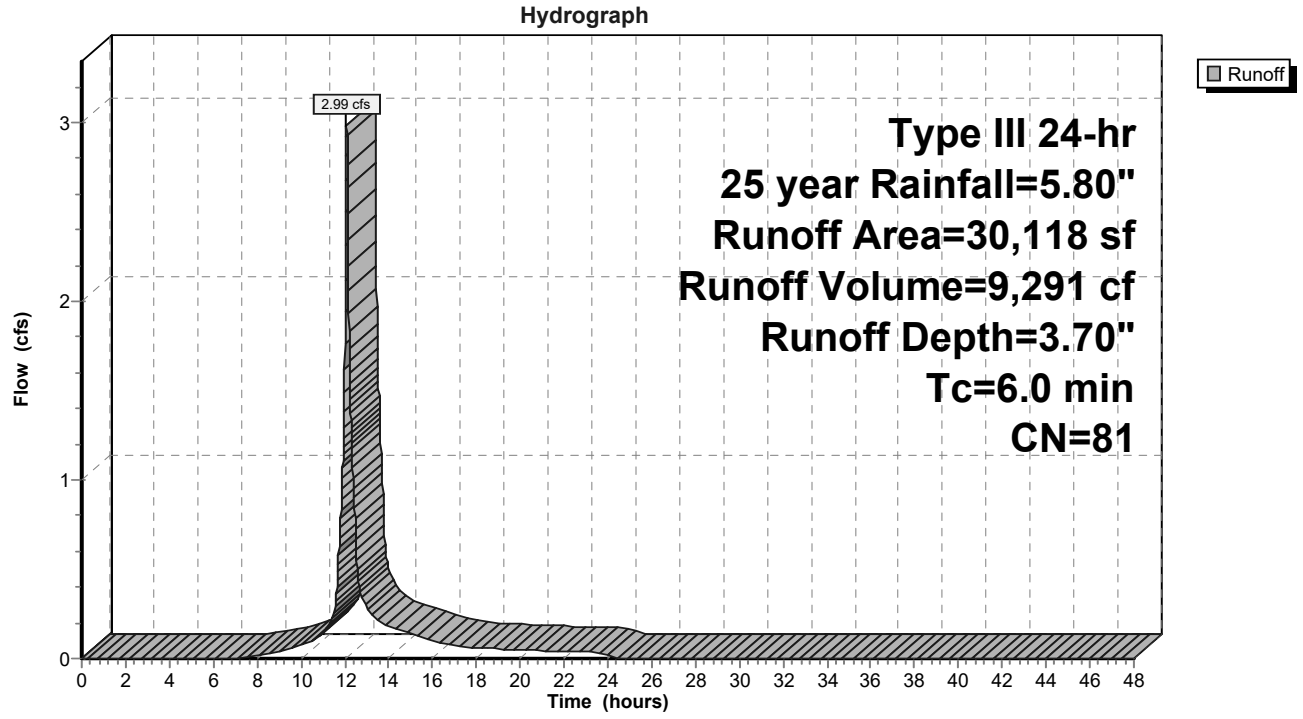
Runoff = 2.99 cfs @ 12.09 hrs, Volume= 9,291 cf, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.80"

	Area (sf)	CN	Description
*	9,319	98	New entrane drive and walks
	20,799	74	>75% Grass cover, Good, HSG C
	30,118	81	Weighted Average
	20,799		69.06% Pervious Area
	9,319		30.94% Impervious Area

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

Subcatchment 4S: St. John Street Entrance



Summary for Subcatchment 5S: Southern Drainage

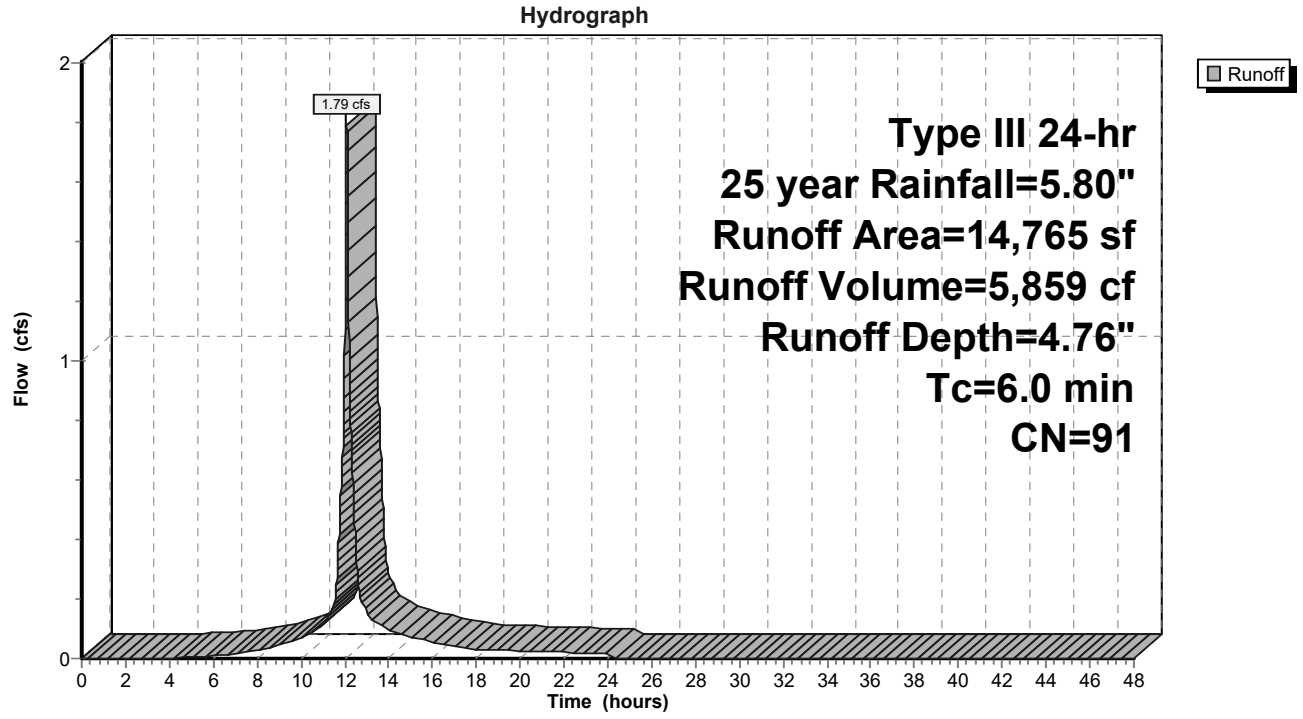
Runoff = 1.79 cfs @ 12.08 hrs, Volume= 5,859 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.80"

	Area (sf)	CN	Description
*	11,388	89	Crushed Stone
*	3,377	98	Sidewalk
	14,765	91	Weighted Average
	11,388		77.13% Pervious Area
	3,377		22.87% Impervious Area

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

Subcatchment 5S: Southern Drainage



Summary for Subcatchment 6S: Entrance Drive

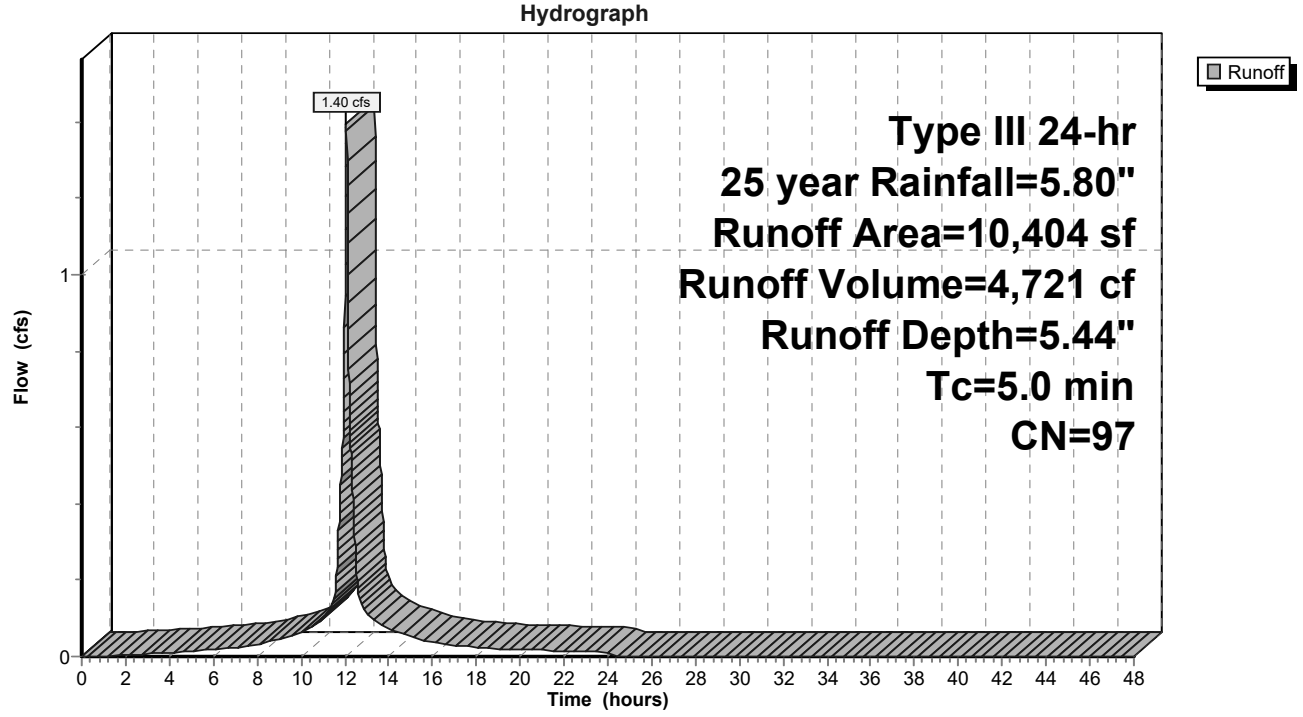
Runoff = 1.40 cfs @ 12.07 hrs, Volume= 4,721 cf, Depth= 5.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.80"

	Area (sf)	CN	Description
*	9,891	98	Entrance Road
	513	84	50-75% Grass cover, Fair, HSG D
	10,404	97	Weighted Average
	513		4.93% Pervious Area
	9,891		95.07% Impervious Area

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

Subcatchment 6S: Entrance Drive



Summary for Subcatchment 7S: Lower Lot Bypass

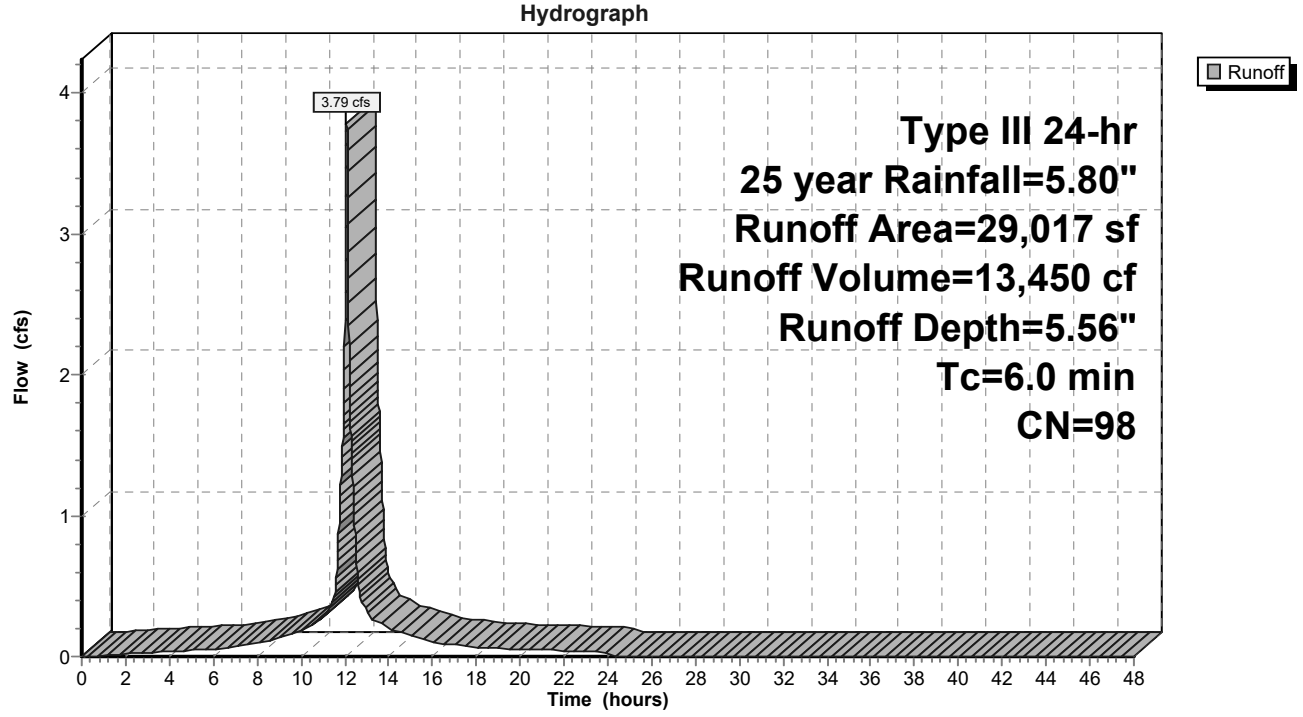
Runoff = 3.79 cfs @ 12.08 hrs, Volume= 13,450 cf, Depth= 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 year Rainfall=5.80"

	Area (sf)	CN	Description
*	28,534	98	Entrance Drive & Walks
*	483	79	Landscaped area
	29,017	98	Weighted Average
	483		1.66% Pervious Area
	28,534		98.34% Impervious Area

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

Subcatchment 7S: Lower Lot Bypass



Summary for Pond 1P: R-Tank

Inflow Area = 160,117 sf, 80.15% Impervious, Inflow Depth = 5.22" for 25 year event
Inflow = 20.28 cfs @ 12.08 hrs, Volume= 69,672 cf
Outflow = 14.60 cfs @ 12.16 hrs, Volume= 59,961 cf, Atten= 28%, Lag= 4.5 min
Primary = 0.05 cfs @ 12.16 hrs, Volume= 4,666 cf
Secondary = 14.55 cfs @ 12.16 hrs, Volume= 55,737 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 23.27' @ 12.16 hrs Surf.Area= 8,682 sf Storage= 24,553 cf

Plug-Flow detention time= 202.4 min calculated for 59,949 cf (86% of inflow)
Center-of-Mass det. time= 140.8 min (900.6 - 759.8)

Volume	Invert	Avail.Storage	Storage Description
#1	19.58'	4,733 cf	**Stone Envelope (Prismatic)** Listed below (Recalc) 33,165 cf Overall - 21,333 cf Embedded = 11,832 cf x 40.0% Voids
#2	19.58'	20,267 cf	**R-Tank Modules (Prismatic)** Listed below (Recalc) Inside #1 21,333 cf Overall x 95.0% Voids
		24,999 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.58	8,682	0	0
23.40	8,682	33,165	33,165

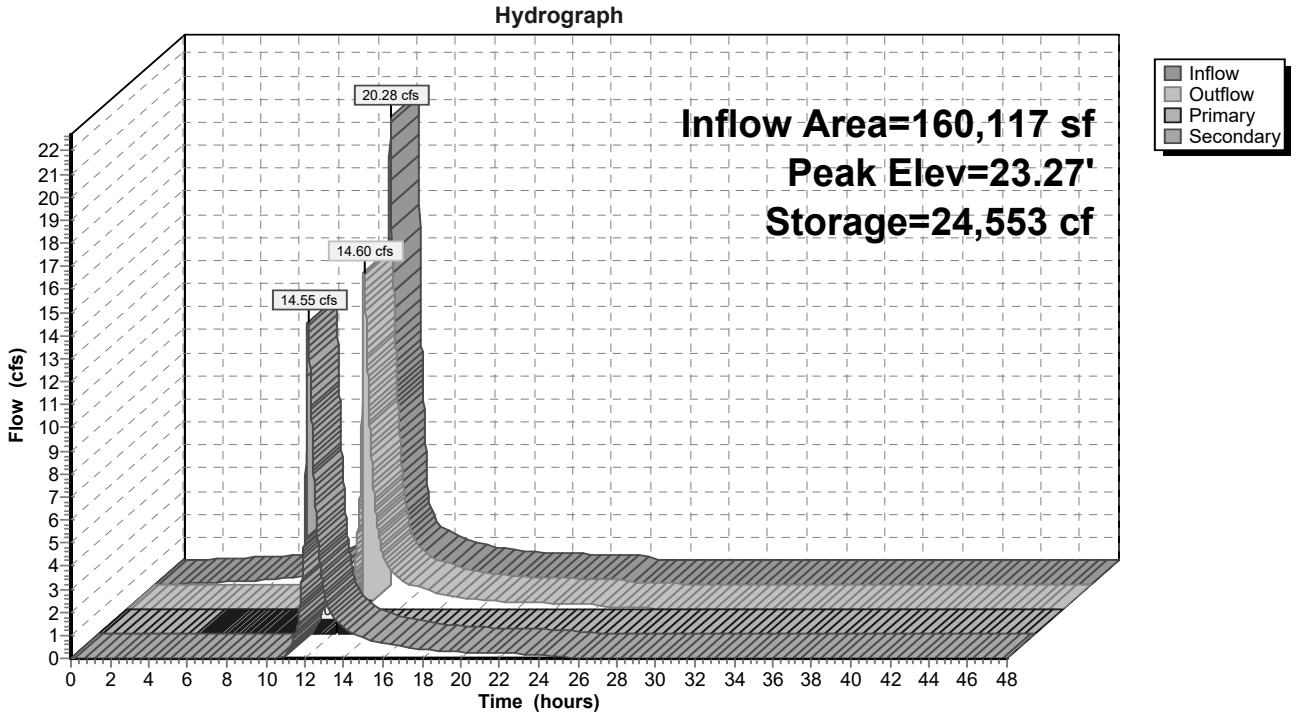
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.58	7,565	0	0
22.40	7,565	21,333	21,333

Device	Routing	Invert	Outlet Devices
#1	Primary	19.58'	**15.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 19.58' / 19.58' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	19.58'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	19.75'	**1.7" Vert. Orifice/Grate** C= 0.600
#4	Secondary	21.13'	**15.0" Round Culvert X 2.00** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 21.13' / 21.00' S= 0.0087 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 12.16 hrs HW=23.27' TW=24.72' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 12.16 hrs HW=23.27' TW=24.72' (Dynamic Tailwater)
└**4=Culvert** (Controls 0.00 cfs)

Pond 1P: R-Tank



Summary for Pond DMH: New DMH

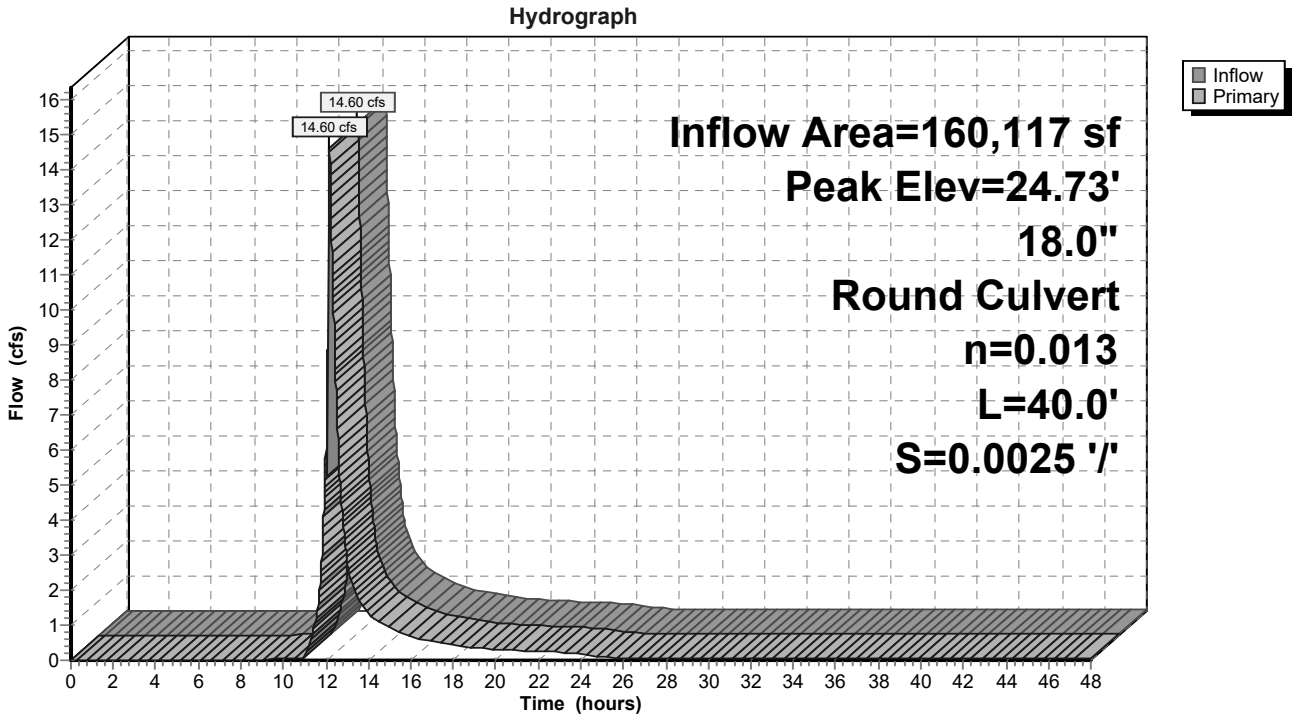
Inflow Area = 160,117 sf, 80.15% Impervious, Inflow Depth > 4.53" for 25 year event
Inflow = 14.60 cfs @ 12.16 hrs, Volume= 60,403 cf
Outflow = 14.60 cfs @ 12.16 hrs, Volume= 60,403 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.60 cfs @ 12.16 hrs, Volume= 60,403 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 24.73' @ 12.16 hrs
Flood Elev= 26.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.25'	**18.0" Round Culvert** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 19.25' / 19.15' S= 0.0025 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=14.60 cfs @ 12.16 hrs HW=24.72' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 14.60 cfs @ 8.26 fps)

Pond DMH: New DMH

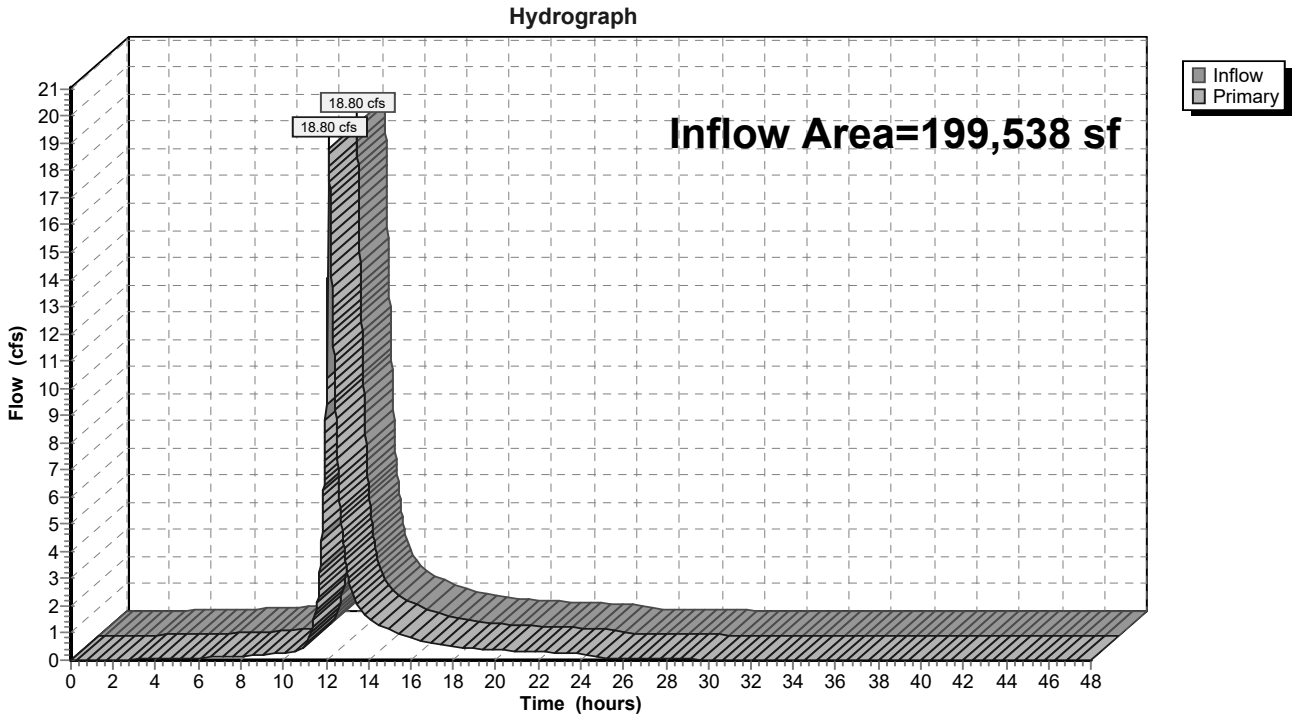


Summary for Link SP1: Existing 18" SD System

Inflow Area = 199,538 sf, 83.57% Impervious, Inflow Depth > 4.73" for 25 year event
Inflow = 18.80 cfs @ 12.12 hrs, Volume= 78,573 cf
Primary = 18.80 cfs @ 12.12 hrs, Volume= 78,573 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP1: Existing 18" SD System

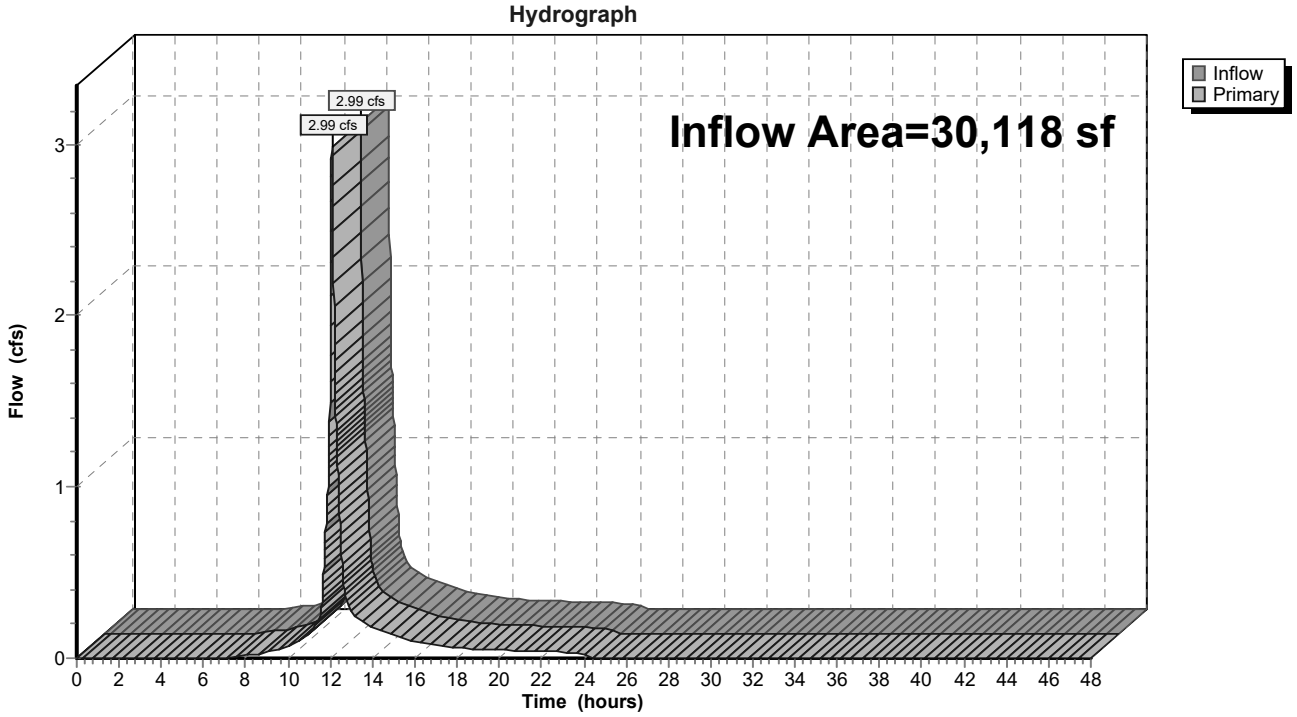


Summary for Link SP2: 30" Storm Drain

Inflow Area = 30,118 sf, 30.94% Impervious, Inflow Depth = 3.70" for 25 year event
Inflow = 2.99 cfs @ 12.09 hrs, Volume= 9,291 cf
Primary = 2.99 cfs @ 12.09 hrs, Volume= 9,291 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link SP2: 30" Storm Drain



STORMWATER INSPECTIONS & MAINTENANCE PLAN

Maine Medical Center St. John Street Employee Parking Garage

General inspection and maintenance during and after construction must take place in accordance with the requirements outlined in Appendix B of the Maine Department of Environmental Protection (MaineDEP) Chapter 500 Rules. Upon completion of the project, the Maine Medical Center will assume responsibility for overseeing the property, including the inspection and maintenance of the Site's stormwater drainage system and treatment measures outlined herein. A person with knowledge of stormwater management and erosion and sediment control, including the standards and conditions in the permit, shall conduct the inspections and perform maintenance of the facilities.

Inspection and maintenance activities will be performed per the attached checklist, schedule, and Jellyfish Filter guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached.

INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

In accordance with Ordinance Section 32-38, a qualified post-construction inspector will be hired with knowledge of stormwater management and erosion and sediment control, including the standards and conditions in the permit, to conduct the inspections and perform maintenance of the facilities. On or by June 30th of each year, a certification that the stormwater management system has been inspected, cleaned, and maintained shall be submitted to the Public Works Department in a form provided by that Department.

The inspection and maintenance criteria outlined in Chapter 500 Stormwater Regulations will be followed. Monitoring and maintenance is critical for the proper operation of the stormwater infrastructure. First year post-construction monitoring differs primarily by its increased frequency to assure proper system functioning. Post-construction routine monitoring is based on USEPA requirements for good housekeeping practices.

Post-Construction:

Trash, debris, and sediment shall be removed from storm drain pipes and catch basins as needed on a semi-annual basis. In addition to the inspection and maintenance of stormwater systems, parking and paved areas, such as the parking lot, will be inspected annually each spring. Visual inspections will enable parking areas to be kept clean and clear through periodic sweeping and winter plowing as required. The inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation and parking space delineation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will keep the parking areas clean and will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

R-Tank Subsurface Storage

The R-Tank system must be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter. This is done by removing the cap of the port and using a measuring device long enough to reach the bottom of the R-Tank system and stiff enough to push through lose sediments allowing a depth measurement. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed. A flushing event consists of pumping water into the maintenance port and/or adjacent structure, allowing turbulent flows through the R-Tank system to re-suspend the fine sediments. If multiple maintenance ports have been installed water should be pumped into each port to maximize flushing efficiency. Sediment-laden water can be filtered through a dirtbag or approved equivalent.

Stormbasin

The stormbasin shall be cleaned out a minimum of twice per year by removing debris, sand and silt, and filters maintained per manufacturer's guidelines, which are outlined in the attached guidance document.

Jellyfish Filter System

The Jellyfish Filter system must be inspected at least once every six months, and the filters maintained annually per the manufacturer's guidelines, which are outlined in the attached guidance document. Inspection frequency should be at least once every six months and after every major storm in the first year following construction.

- ❑ Perform sediment removal for depths reaching 12 inches or greater, or within 3 years.
- ❑ Removal all floatable trash and debris
- ❑ Filter cartridges shall be rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing.
- ❑ Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment or if damaged or missing. Tentacles should remain in service for no longer than 5 years.

Attachments

- Stormwater Inspection Checklist
- Stormwater Management Maintenance Task and Recommended Schedule
- BMP Maintenance Log
- Stormbasin Manufacturer's guidelines
- Jellyfish Filter Manufactures Guidelines

STORMWATER INSPECTION CHECKLIST

Inspection by: _____ Date: _____

Stormwater Management Feature	Condition						Comments
Vegetative cover on slopes	no bare spots, no evidence of rill erosion		some bare spots, some rill erosion		large bare areas, extensive erosion		
Drainage channels/ditches	no erosion, channels clear		some erosion and siltation		major erosion, channels clogged		
Stormbasin	no siltation		some siltation		heavily silted in		
Stormbasin	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Detention System	no siltation		some siltation		heavily silted in		
Subsurface Detention System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Detention System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Detention System	inlet/outlet clear		some debris		completely blocked		
Jellyfish Filter System*	Cartridges are in good condition		Cartridges in need of cleaning		Cartridges in need of replacement		
Jellyfish Filter System*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		

**See attached manufacturer's guidelines for Jellyfish Filter System maintenance and inspection.*

Recommended Actions: _____

_____

Actions Completed: _____ Date: _____

STORMWATER MANAGEMENT MAINTENANCE TASKS AND RECOMMENDED SCHEDULE

TASKS	DETENTION AND JELLYFISH FILTER SYSTEM	R-TANK	STORMBASIN	SCHEDULE
Inspect for sediment accumulation	X	X	X	Spring and Fall
Remove sediment accumulation	X	X	X	As needed
Clean debris	X	X	X	As needed
Inspect structural elements during wet weather and compare to as-built plans	X	X	X	Annually
Make adjustments or replacements as determined by wet weather observations	X	X	X	As needed
Keep records of all inspections and maintenance activities	X	X	X	Annually
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	As needed

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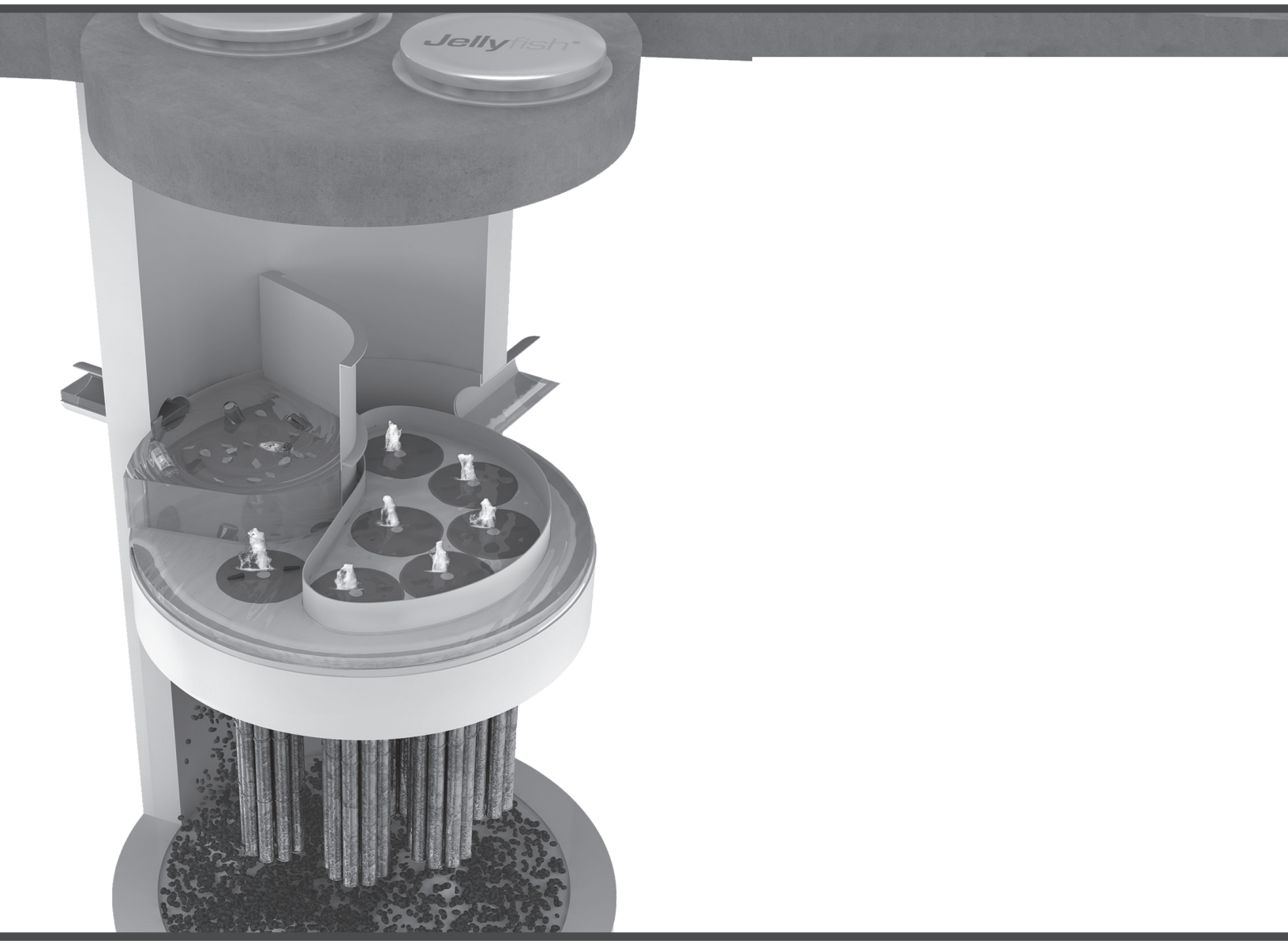
ENGINEERED SOLUTIONS

JellyFish® Filter Maintenance Guide



Jellyfish®

JELLYFISH® FILTER MANHOLE CONFIGURATIONS
INSPECTION & MAINTENANCE GUIDE

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1.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.

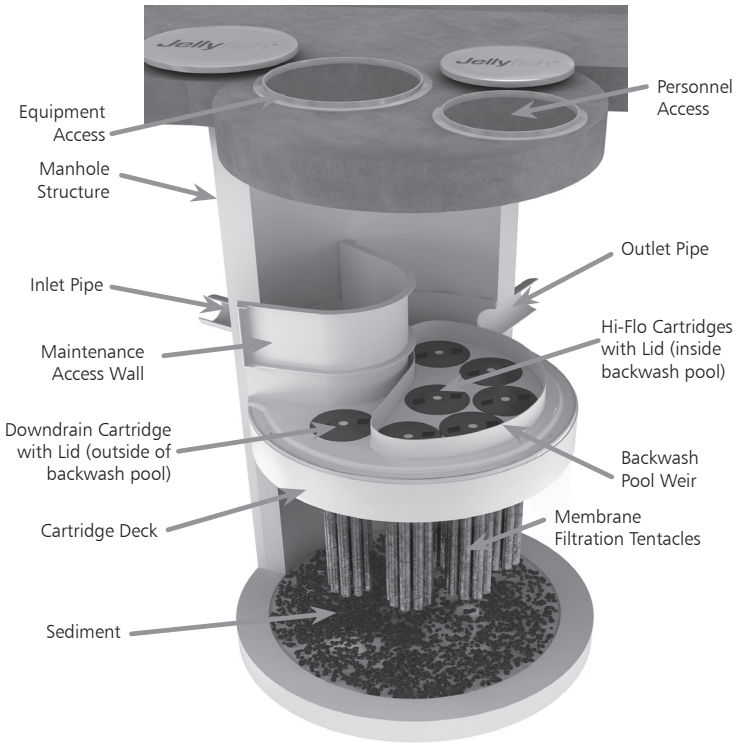
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.

Inspection activities are typically conducted from surface observations and include:

- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW)

Maintenance activities typically include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed



Note: Separator Skirt not shown

2.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; *or per the approved project stormwater quality documents (if applicable), whichever is more frequent*.

1. Post-construction inspection is required prior to putting the Jellyfish Filter into service. All construction debris or construction-related sediment within the device must be removed, and any damage to system components repaired, before installing the filter cartridges.
2. A minimum of two inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
3. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
4. Inspection is recommended after each major storm event.
5. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

3.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe through the MAW opening until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW, cartridge deck, and backwash pool weir, for cracks or broken components. If damaged, repair is required.

3.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates that the filter cartridges need to be rinsed.

Inspection Utilitzing Sediment Probe

- Standing water outside the backwash pool may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

3.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges are occluded with sediment and need to be rinsed

4.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

5.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures.
3. Caution: Dropping objects onto the cartridge deck may cause damage.
4. Perform Inspection Procedure prior to maintenance activity.
5. To access the cartridge deck for filter cartridge service, descend the ladder and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
6. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

5.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

5.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to damage or break the plastic threaded nut or connector.
2. Position tentacles in a container (or over the MAW), with the

Cartridge Removal & Lifting Device

threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.

3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane.

4. Collected rinse water is typically removed by vacuum hose.
5. Reattach tentacles to cartridge head plate. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

5.3 Cleaning Procedure

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening, being careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck. The separator skirt surrounds the filter cartridge zone, and could be torn if contacted by the wand. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening. Alternatively, floatable solids may be removed by a net or skimmer.

Tentacle Rinse Using Jellyfish Rinse Tool

3. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW.
5. Remove the sediment from the bottom of the unit through the MAW opening.

Vacuuming Sump Through MAW

6. For larger diameter Jellyfish Filter manholes (≥8-ft) and vaults without an MAW opening, complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.
7. After the unit is clean, re-fill the lower chamber with water if required by the local jurisdiction, and re-install filter cartridges.
8. Dispose of sediment, floatable trash and debris, oil, spent tentacles, and water according to local regulatory requirements.

5.4 Filter Cartridge Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.
3. Lower filter cartridge to the cartridge deck. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. Caution: Should a snag occur when lowering the cartridge into the receptacle, do not force the cartridge downward; damage may occur.
4. Replace the cartridge lid and check fit before completing rotation to a firm hand-tight attachment.

5.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

6.0 Related Maintenance Activities

Jellyfish units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

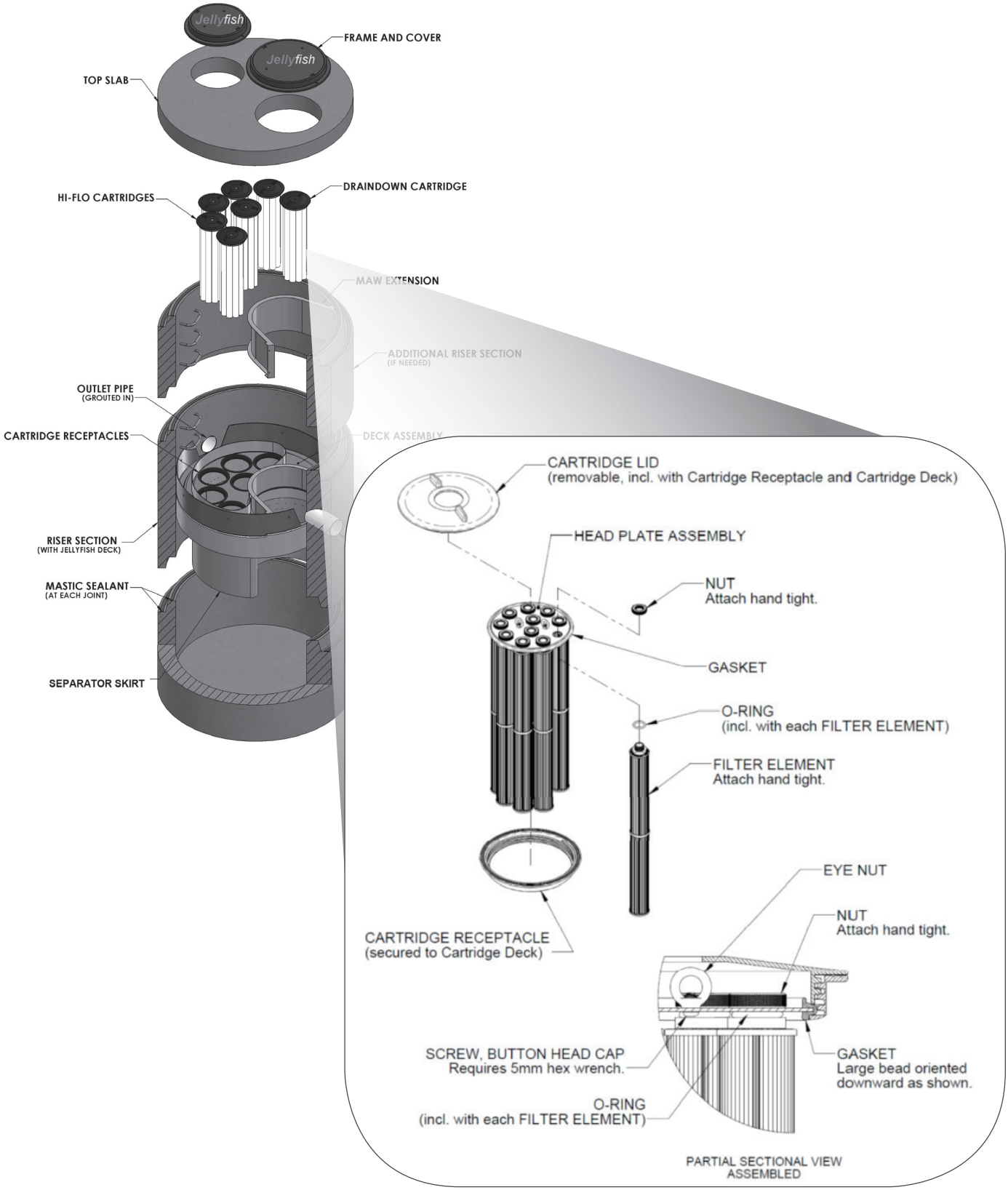
In order for maintenance of the Jellyfish filter to be successful, it is imperative that all other components be properly maintained. The maintenance and repair of upstream facilities should be carried out prior to Jellyfish maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

7.0 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge



Jellyfish Filter Inspection and Maintenance Log

Owner:				Jellyfish Model No:		
Location:				GPS Coordinates:		
Lande Use:	Commercial:		Industrial:		Service Station:	
	Roadway/Highway:		Airport:		Residential:	

Date/Time:						
Inspector:						
Maintenance Contractor:						
Visible Oil Present: (Y/N)						
Oil Quantity Removed:						
Floatable Debris Present: (Y/N)						
Floatable Debris Removed: (Y/N)						
Water Depth in Backwash Pool						
Draindown Cartridges externally rinsed and recommissioned: (Y/N)						
New tentacles put on Cartridges: (Y/N)						
Hi-Flo Cartridges externally rinsed and recommissioned: (Y/N)						
New tentacles put on Hi-Flo Cartridges: (Y/N)						
Sediment Depth Measured: (Y/N)						
Sediment Depth (inches or mm):						
Sediment Removed: (Y/N)						
Cartridge Lids intact: (Y/N)						
Observed Damage:						
Comments:						

Jellyfish®

CONTECH ENGINEERED SOLUTIONS

Support

- Drawings and specifications are available at ContechES.com/jellyfish.
- Site-specific design support is available from Contech Engineered Solutions.

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www.ContechES.com

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MMC Stormwater BMP Maintenance Log

BMP Structure	Inspector (Name)	Work Performed	Date Performed	Comments
Pavement Sweeping				
Catch Basins				
Jelly Fish System				
R-Tank Subsurface Storage				
Stormbasin				
Other				

Additional Comments:

StormBasin

Modular Stormwater Filtration System

Maintenance Guide

For
Nassau County Item 504A – Type “A”
Catch Basin Insert - Filter Type
Combination Inlet

Caution
Do not step, stand, sit or in anyway use the StormBasin device to support your weight during the maintenance procedure.

Caution
StormBasin units maybe installed into street level drain inlets. The StormBasin should be maintained by trained individuals who are familiar with all Traffic safety regulations.

StormBasin™

Maintenance Guide

Pre-installation Cleaning

The StormBasin like any other storm water remediation device requires maintenance to remain efficient as a storm water filter. Fabco Industries highly recommends inspecting the perspective catch basin storm sewer before installing a StormBasin unit and thoroughly cleaning it if necessary.

Cleaning Frequency

After installation the StormBasin requires periodic cleaning. There are no hard and fast rules in this regard. Small units and installation sites with higher than expected sediment loads or areas with significant trees and foliage require more maintenance. In general, Fabco Industries recommends cleaning out the unit(s) a minimum twice per year by removing the debris, sand and silt.

Cleaning out the StormBasin: Combination style drain inlets

Do not lift or remove the StormBasin from the grated inlet during cleaning. Be sure to follow proper road safety rules & regulations when working in the street. Begin by removing the grate from the inlet. CAUTION: Grates are extremely heavy. Some type of lifting mechanism is highly recommended. Place it carefully on the ground away from the work area.	
With the grate removed the StormBasin is available for cleaning. Do not step, stand, sit or in anyway use the StormBasin to support your weight. Be sure to follow all Safety and Traffic protocols. Remove the sediment and debris from the basin. This can be done manually or with a vacuum device. Be sure you are wearing gloves, safety glasses and that traffic safety procedures are observed.	
With the debris and sediment removed the filter cartridge(s) will be visible at the bottom of the unit. We suggest removing the cartridge(s) from the StormBasin and removing any loose debris, sediment, trash from the blue foam pre-filter. (See Removing the filter Cartridge). Cartridge replacement is recommended annually.	
With the StormBasin and cartridges cleaned and re-installed the maintenance process is complete. Re-install the drain grate to complete the job.	

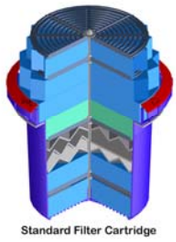
StormBasin™

Maintenance Guide

Selecting, Removing and Installing the StormBasin Cartridges

The Fabco filter cartridges used in the StormBasin product are designed primarily to capture: floating materials, sediments and suspended solids and emulsified products such as hydrocarbon compounds, dissolved heavy metals, nutrients (P&N) and pathogens (bacteria). Before ordering your cartridges make sure you select the correct type. Each cartridge type can be identified by a colored “Ring” located at the top of the cartridge.

Selecting the right cartridge(s)


Standard Filter Cartridge

Part Number	Effectiveness	Ring color code
9718-1	**Standard Cartridge** Good All-purpose cartridge for common surface runoff that may contain a little bit of everything.	Red
9718-2	**Pathogens Cartridge** 2x’s more pathogen treatment Vs. Std Cartridge. Use near sensitive water ways to keep beaches and shell fishing areas open.	Yellow
9718-3	**HV Hydrocarbon Cartridge** 25% more hydrocarbon filter media Vs Std cartridge. Excellent for vehicle or maintenance related applications.	Blue
9718-4	**HV Metals Cartridge** Uses unique FABLITE filter media for HV metals. Suggested for industrial usage where persistent HV metals have been identified in surface runoff	Grey
9718-5	**Standard short Cartridge** Reduced height version of std Cart.	Mint
9718-6	**Nutrients Cartridge** Uses proprietary FABPHOS media for nutrients. Highly effective on the critical dissolved Ortho-Phosphates. Helps reduce algae blooms keeping the water clean and healthy.	Green

StormBasin™

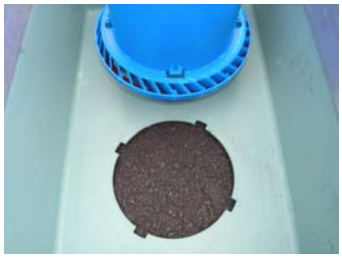
Maintenance Guide

Referring to the pollutant concentrations stated in the NYS stormwater design manual, the standard cartridge should be expected to last a minimum of 1 year. Fabco's special short cartridge should be replaced twice per year.

Removing the Filter Cartridge(s)

With all debris removed from the StormBasin the filter cartridge(s) will be exposed at the bottom. To remove the cartridge(s) reach down into the basin and firmly grasp the plastic outer rim of the cartridge body just below the foam. Twist the cartridge body Counter-Clock-wise about ¼ turn until it stops. Lift the cartridge straight up to remove.	

Installing new Filter Cartridge(s)

The StormBasin filter cartridge(s) install through a hole in the bottom of the collection basin. The hole has four (4) slots that accept 4 tabs molded into the underside of the cartridge body.	
Insert the StormBasin cartridge down through the hole in the base of the unit. The colored ring on the cartridge should be facing upwards. Push the cartridge all the way through the hole until it rests on the bottom. Slowly turn the cartridge in a Clock-wise direction until the Tabs align with the slots and the cartridge body drops about ¼' further down.	
Once the Tabs fall through the slots, continue turning firmly in a Clock-wise direction until the Tabs contact the STOPS. The Cartridge is now installed.	

13. CONSISTENCY WITH CITY COMPREHENSIVE PLAN

The project design is governed by the conditions set forth in the Institutional Development Plan (IDP) that was prepared by MMC and approved by City Council. The IDP, page 24, specifically articulates compliance with the City Comprehensive Plan. As mentioned in the IDP, 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). The existing MMC staff garage is nearing the end of its structural lifespan and is anticipated to be replaced with a new medical building for patient care on the main campus. The proposed parking garage will provide parking for all staff by replacing spaces in the old garage and consolidating parking from multiple surface lots around the main campus and City.

13.1 Economic Growth

According to the IDP, MMC desires to attract a high quality, highly educated workforce, and hopes that providing convenient parking for all staff members will help achieve this goal.

13.2 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 staff members. 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. A shuttle service will be available to all commuters who park in the proposed garage. Walking from the parking garage to the MMC campus will be encouraged.

13.3 Environment

MMC is environmentally conscious and engages in landscaping best practices to conserve water, reduce maintenance and limit fertilizer use. As mentioned in the approved IDP, MMC 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). MMC intends to continue these best practices by incorporating low maintenance, native plants into the landscaping plan for the proposed project.

14. UTILITY CAPACITY TO SERVE

The Site is proposed to be primarily serviced from utilities within the St. John Street corridor. Letters have been distributed to the local utilities requesting confirmation of capacity to serve the proposed development including water, sanitary sewer, natural gas, electricity, and telecommunications. Copies of these letters are attached to this Section. Responses will be forwarded to the City upon receipt.

We have met with Central Maine Power on February 20, 2018 to discuss the project specific requirements. In addition, the mechanical engineer on the project has been coordinating directly with Unitil on the project's natural gas needs and documentation will be forwarded upon completion of natural gas sizing.

14.1 Attachments

- Ability to Serve Requests to Utilities
- Portland Wastewater Capacity Application

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

June 22, 2018

ATTN: Jamie Cough
Jamie.Cough@cmpco.com
Central Maine Power
162 Canco Road
Portland, ME 04103

Re: Request for Ability to Serve – Maine Medical Center St. John Street Garage

Dear Mr. Cough:

This letter serves as a written request for the ability to serve for the Maine Medical Center Employee Garage project located at 222 St. John Street in Portland, Maine. Woodard & Curran is serving as an agent to the applicant, Maine Medical Center.

The proposed project includes the construction of a new free-standing parking garage structure to accommodate roughly 2,400 parking spaces. The garage is proposed at the location of the existing parking lot currently on the 222 St. John Street property, and it will provide employee parking for the nearby Maine Medical Center Campus. Included in the construction of the garage is a two-story lobby and security building which will house the garage's mechanical room and serve as the primary connection point for all utilities.

The proposed garage building has a footprint of approximately 92,375 square feet and is comprised of the following uses:

- Parking Garage: Approximately 89,925 square feet per floor (nine floors for a total of 808,425 square feet of floor area)
- Lobby and security building: Approximately 2,550 square feet per floor (two floors for a total of 5,100 square feet of floor area)

The intent of the project is to provide a service voltage of 120/208 volts, 3-phase with a transformer installed onsite and to connect to the electrical utility via a new drop pole installed along St. John Street, as shown on the attcahed utility plan.

Please let us know if any additional information is required to evaluate the service capacity for the site. We appreciate your assistance. If you have any questions or require any additional information, please do not hesitate to contact me at 207-558-4258 or csweet@woodardcurran.com.

Sincerely,

WOODARD & CURRAN

Craig Sweet, P.E.
Engineer

Enclosures – Utility Plan
PN: 231158.00

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

June 22, 2018

MEANS Group
Portland Water District
225 Douglass Street
Portland, ME 04104

Re: Request for Ability to Serve – Maine Medical Center St. John Street Garage

To Whom It May Concern:

This letter serves as a written request for the ability to serve for the Maine Medical Center Employee Garage project located at 222 St. John Street in Portland, Maine. Woodard & Curran is serving as an agent to the applicant, Maine Medical Center.

The proposed project includes the construction of a new free-standing parking garage structure to accommodate roughly 2,400 parking spaces. The garage is proposed at the location of the existing parking lot currently on the 222 St. John Street property, and it will provide employee parking for the nearby Maine Medical Center Campus. Included in the construction of the garage is a two-story lobby and security building which will house the garage's mechanical room and serve as the primary connection point for all utilities.

The proposed garage building has a footprint of approximately 92,375 square feet and is comprised of the following uses:

- Parking Garage: Approximately 89,925 square feet per floor (nine floors for a total of 808,425 square feet of floor area)
- Lobby and security building: Approximately 2,550 square feet per floor (two floors for a total of 5,100 square feet of floor area)

The proposed new services provided at the site include:

- 3" domestic water service to serve the lobby and security building
- One new hydrant located along the frontage of St. John Street as shown on the attached utility plan.

The intent of the project is to connect the proposed services descripbed above to the existing 16-inch cast iron watermain located within St. John Street as shown on the attached utility plan. Attached is a copy of the Portland Water District, which provides an estimated water usage for the project.

Please let us know if any additional information is required to evaluate the service capacity for the site. We appreciate your assistance. If you have any questions or require any additional information, please do not hesitate to contact me at 207-558-4258 or csweet@woodardcurran.com.

Sincerely,

WOODARD & CURRAN

Craig Sweet, P.E.
Engineer

Enclosures – Utility Plan
PN: 231158.00

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

June 22, 2018

Spectrum Cable
Attn: Mark Pelletier Mark.pelletier@charter.com
118 Johnson Road
Portland, ME 04102

Re: Request for Ability to Serve – Maine Medical Center St. John Street Garage

Dear Mr. Pelletier:

This letter serves as a written request for the ability to serve for the Maine Medical Center Employee Garage project located at 222 St. John Street in Portland, Maine. Woodard & Curran is serving as an agent to the applicant, Maine Medical Center.

The proposed project includes the construction of a new free-standing parking garage structure to accommodate roughly 2,400 parking spaces. The garage is proposed at the location of the existing parking lot currently on the 222 St. John Street property, and it will provide employee parking for the nearby Maine Medical Center Campus. Included in the construction of the garage is a two-story lobby and security building which will house the garage's mechanical room and serve as the primary connection point for all utilities.

The proposed garage building has a footprint of approximately 92,375 square feet and is comprised of the following uses:

- Parking Garage: Approximately 89,925 square feet per floor (nine floors for a total of 808,425 square feet of floor area)
- Lobby and security building: Approximately 2,550 square feet per floor (two floors for a total of 5,100 square feet of floor area)

The intent of the project is to connect to the communications utility via a new drop pole installed along St. John Street, as shown on the attached utility plan.

Please let us know if any additional information is required to evaluate the service capacity for the site. We appreciate your assistance. If you have any questions or require any additional information, please do not hesitate to contact me at 207-558-4258 or csweet@woodardcurran.com.

Sincerely,

WOODARD & CURRAN

Craig Sweet, P.E.
Engineer

Enclosures – Utility Plan
PN: 231158.00

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

June 22, 2018

ATTN; Bradley Roland, P.E.
Department of Public Works
55 Portland Street,
Portland, ME 04101

Re: Request for Ability to Serve – Maine Medical Center St. John Street Garage

Dear Mr. Roland:

This letter serves as a written request for the ability to serve for the Maine Medical Center Employee Garage project located at 222 St. John Street in Portland, Maine. Woodard & Curran is serving as an agent to the applicant, Maine Medical Center.

The proposed project includes the construction of a new free-standing parking garage structure to accommodate roughly 2,400 parking spaces. The garage is proposed at the location of the existing parking lot currently on the 222 St. John Street property, and it will provide employee parking for the nearby Maine Medical Center Campus. Included in the construction of the garage is a two-story lobby and security building which will house the garage's mechanical room and serve as the primary connection point for all utilities.

The proposed garage building has a footprint of approximately 92,375 square feet and is comprised of the following uses:

- Parking Garage: Approximately 89,925 square feet per floor (nine floors for a total of 808,425 square feet of floor area)
- Lobby and security building: Approximately 2,550 square feet per floor (two floors for a total of 5,100 square feet of floor area)

An oil water separator will be installed to collect runoff from all internal garage floors. Discharge from the oil water separator will be combined with sewer flows generated from the lobby and security building. Once combined the flows will be pumped to a manhole internal to the site which will drain via gravity in a new sewer lateral that will connect to the existing 24-inch sewer main in St. John Street. Please refer to the attached utility plan and wastewater application for additional information.

The oil water separator has been sized for an inflow of 35 GPM which is representative of the use of hose bibs to wash down parking decks. Parking decks will be washed down infrequently and the actual daily flow to the oil water separator is expected to be minimal.

Please let us know if any additional information is required to evaluate the service capacity for the site. If you have any questions or require any additional information, please do not hesitate to contact me at 207-558-4258 or csweet@woodardcurran.com.

Sincerely,
WOODARD & CURRAN

Craig Sweet, P.E.
Engineer

Enclosures – Utility Plan
Waste Water Application
PN: 231158.00

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: June 22, 2018

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

Site Address: 222 St. John Street

Chart Block Lot Number: Parcel 64-A-2-8-9-11
74-A-7 & 75-A-6

Proposed Use: Parking Garage & Lobby Structure
Previous Use: Parking Lot
Existing Sanitary Flows: N/A GPD
Existing Process Flows: N/A GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Connect to existing 24-inch sewer main located in St. John Street, shown on attached Utility Plan

Site Category

Commercial *(see part 4 below)*	
Industrial *(complete part 5 below)*	
Governmental	
Residential	
Other *(specify)*	X

Private Parking Lot for Institutional Use

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

2. Please, Submit Contact Information.

City Planner's Name: Nell Donaldson Phone: 207-874-8723
Owner/Developer Name: Maine Medical Center
Owner/Developer Address: 22 Bramhall Street Portland, Me 04102
Phone: Fax: E-mail:
Engineering Consultant Name: Woodard & Curran, Craig Sweet
Engineering Consultant Address: 41 Hutchins Drive, Portland Maine, 04102
Phone: 207-558-4258 Fax: E-mail: csweet@woodardcurran.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: 830 GPD + Oil Water Separator
Peaking Factor/ Peak Times: x6
Specify the source of design guidelines: *(i.e.*X *"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.

2 public toilets x 325 GPD/ toilet = 650 GPD
15 employees x 12 GPD/Seat= 180 GPD
Total= 830 GPD

Oil water separator has been sized for 35 GPM representing the use of hose bibs to wash down the parking decks, which will occur infrequently. The anticipated daily flow to the oil water separator will be minimal.

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

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

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

Peak Flow Based on Fixture Count

Adapted from 2009 Maine State Internal Plumbing Code

Customer	Maine Medical Center
Street Address	222 St. John Street
City	

Fixture		**Fixture Value 60 psi**		**No. of Fixtures**		**Fixture Value**
Bathtub		4	x	0	=	0
Bidet		1	x	0	=	0
Dental Unit		1	x	0	=	0
Drinking Fountain - Public		0.5	x	1	=	0.5
Kitchen Sink		1.5	x	1	=	1.5
Bathroom Sink		1	x	3	=	3
Showerhead (Shower Only)		2	x	0	=	0
Service Sink		3	x	1	=	3
Toilet	-Flushometer(high pressure)	5	x	3	=	15
	-Tank Type	2.5	x	0	=	0
Urinal	-Flushometer Valve	5	x	0	=	0
	-Tank Type	2	x	0	=	0
Wash Sink (Each Set of Faucets)		2	x	0	=	0
Dishwasher		1.5	x	0	=	0
Washing Machine		4	x	0	=	0
Hose (outdoor spigot)	<3/4 in.	2.5	x	36	=	90
Combined Fixture Value Total						113

Customer Peak Demand From Fig. 4-2 or 4-3	
Pressure Factor From Table 4-1	

Irrigation(Yes/No)?	Yes
If yes, gpm required by irrigation designer:	

Total Fixed Demand (Peak Flow) **0** **gpm**

Customer only needs to complete the cells highlighted in blue

15. SOLID WASTE

15.1 Commercial Solid Waste

All solid waste materials generated from the proposed building will be transported and disposed of in accordance with applicable laws and regulations. In addition to the solid waste collected within the building, exterior trash and recycling receptacles are proposed and will be maintained by the applicant. MMC will contract with a private hauler for all solid waste removal.

15.2 Construction & Land Clearing Debris

As with any construction project, the proposed construction will generate construction, and demolition debris. The existing site is primarily impervious surface, and land-clearing debris will be minimal. The contractor(s) for the construction work will be fully responsible for handling all waste generated by the project and for managing and disposing of it in accordance with Maine Solid Waste Management Regulations - 06-096 CMR 400-409. The contractor(s) will be bound by contract to dispose of all materials in full accordance with applicable Maine regulations and approval of the City of Portland. All efforts will be made during construction to minimize waste and to recycle. Construction debris will be transported to a waste management facility licensed to accept the waste materials.

15.3 Special & Hazardous Waste

The potential for contaminated soil on the site is being investigated and will be addressed as described below. The proposed development will not produce any other special or hazardous waste.

15.3.1 Soil Management

In 2008, a Phase 1 Environmental Site Assessment was completed by Credere Associates, LLC for 222 St. John Street. The assessment identified the possibility that environmental conditions had been impacted through the historical use of portions of the property as a rail yard. The nature of this past use as well as the industrialized character of the site and surrounding properties indicates the potential for historical releases of oil and/or hazardous materials at and in the vicinity of the site. Further, urban fill is prevalent throughout Portland's peninsula and it is therefore likely that shallow subsurface soil at the Site will be consistent with urban fill. "Urban Fill" means soil mixed with other materials that has been placed over an area for the purpose of modifying the elevation of the land surface to facilitate development. This type of material generally requires proper management and/or disposal when generated as excess during redevelopment work. However, no known or expected conditions where state or federal regulations would require active remediation are present at the site

Additional investigation, including soil and groundwater sampling, is being undertaken at the site. This data will be utilized to develop a soil management plan that will address both the reuse and disposal of any contaminated soils identified on the site. Disposal of any contaminated soils will be at appropriate licensed facilities, in accordance with all applicable regulations.

15.4 Findings

Adequate provisions for solid waste disposal have been made. General solid waste, construction, and demolition debris will be managed in full accordance with all applicable laws and will not cause a deleterious effect on the environment.

16. SUMMARY OF FIRE CODES

The items in the Portland Fire Department Site Review Checklist are addressed in the following sub-sections.

16.1 Contact Information

The contact information for the applicant and architect is provided below.

Applicant
Alexander Green
Maine Medical Center
22 Bramhall Street
Portland, ME 04102
(207) 662-3689

Architect
Winton Scott Architects
5 Milk Street
Portland, ME 04101
(207) 774-4811

16.2 Structure Information

- Proposed uses of any structures
    - The proposed structure is a ground level plus eight tiers free-standing parking garage that will accommodate 2,400 new parking spaces and 52 surface parking spaces to the north of the garage.
- Square footage of all structures (total and per story)
    - This information is provided on the attached plan set.
- Elevations of all structures
    - This information is provided on the attached plan set.
- Proposed fire protection of all structures
    - Standpipes that allow at-grade fire department connections to the water supply, with hoses connected to fight fires at each level are provided in the parking garage structure.
- Hydrant locations
    - This information is provided on the attached plan set.
- Water main size and location
    - This information is provided on the attached plan set.
- Fire Department ladder truck access to all structures (minimum 2 sides)
    - This information is provided on the attached plan set.
- A code summary shall be included referencing NFPA 1 and all fire department technical standards
    - This information is provided on the attached plan set.

MMC Staff Parking Garage - Code Review

Building Overview

Tiers:	8 tiers + grade level parking
Area Per Tier / Total Area:	Approximately 90,800 GSF / 817,200 GSF
Building Height	96' - 3"
Fire Protection	Not Sprinklered Dry-pipe standpipe system to be provided
IBC Use Group	S-2
Site Access	PFD ladder truck clearance on north and east sides

Applicable Codes and Standards

Maine Uniform Building and Energy Code (MUBEC)
International Building Code (IBC), 2015 Edition with ME Amendments
- Special Provisions : Section 406 Motor Vehicle Related Occupancies

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)
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
- Special Provisions for Parking Structures : Chapter 42.8

Americans with Disabilities Act (ADA), 2010 Standards for Accessible Design

Construction Type:	IBC: 1B (Non-Combustible 2 Hour Rated) / NFPA II(222)
Building Type:	Open Parking Garage (meets IBC 406.5 and NFPA 101 3.3.254.6)
High Rise Building Features:	Not required by NFPA nor IBC for open parking garages
Occupant Load	NFPA : None (42.8.1.7) / IBC : 450 per tier - 150 per stair

Fire Protection Features:

Exterior Wall Openings	All walls meet IBC min. distance of 10' for unlimited openings (Table 705 Note g.)	
Fire Resistance Ratings	Stairs	Not Required for Parking Garages
	Elevator Shafts	Two (2) hours
	Mechanical Room	One (1) hour
Fire Alarm System	To be provided per PFD requirements	
Means of Egress	Distances as shown on Code Plans meet NFPA and IBC	

SR #: 396365

0 100 200 400 600 800 Feet

1 inch = 100 feet

Pressure Zone: 267

PORTLAND WATER DISTRICT
225 Douglass Street
Portland, ME 04104
Asset Management and Planning Dept.

Legend

- Air Valve
- Blow Off
- By Pass
- Distribution
- Transmission
- Connection
- Attribute Change
- Reducer
- Hydrant
- Hydrant Control
- Combined Service
- Domestic Service
- Fire Service
- Private Hydrants
- Meter Pits
- Manhole
- CSO
- Gravity
- Force
- Contours

Hydrant Flow Testing Data

Address
Municipality

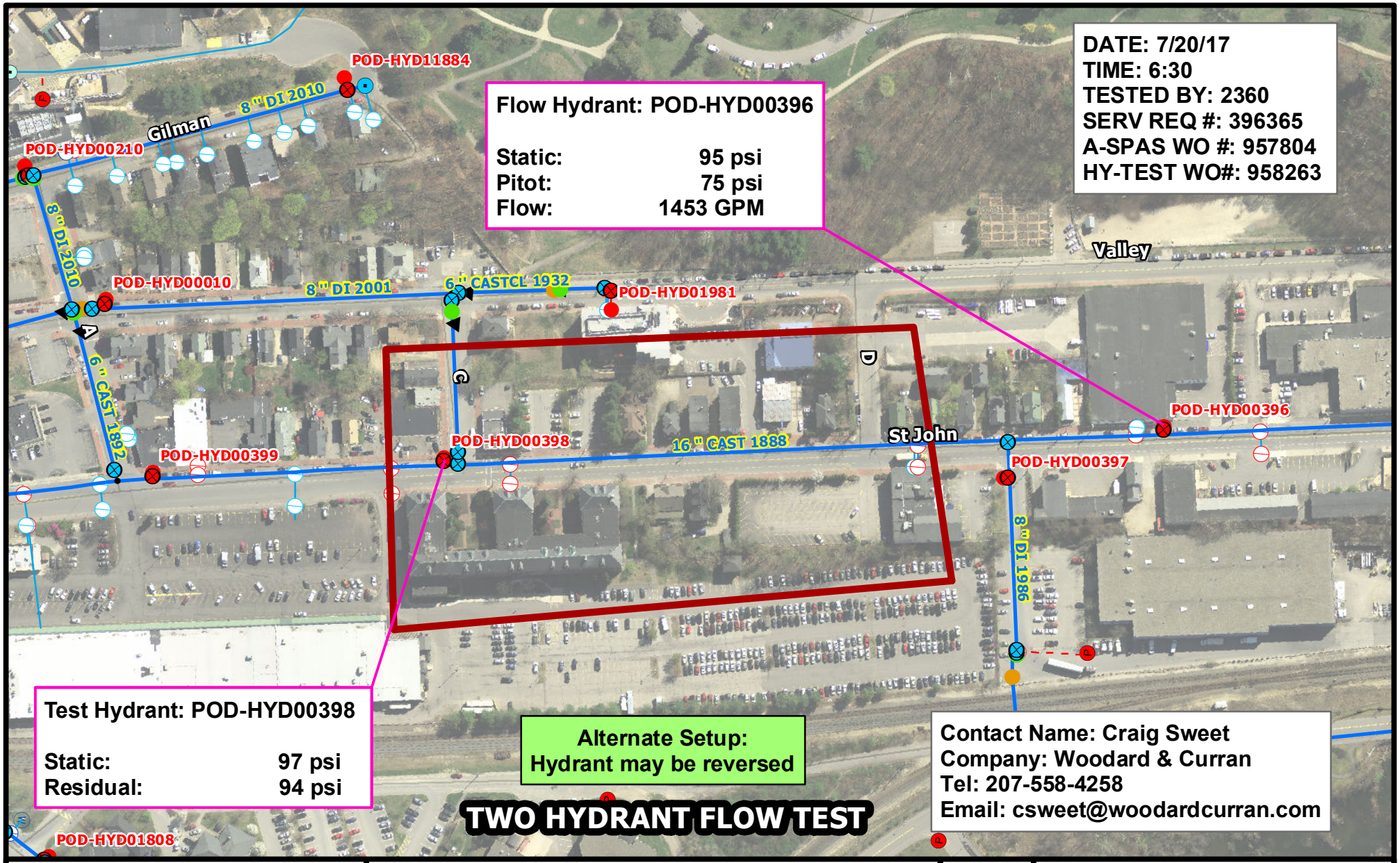
This map depicts flow testing and static pressure data for the selected hydrants from PWD's asset management system. If the data is out of date or insufficient for your needs, please contact the MEANS group to request a hydrant flow test and we will work with you to get more complete data.

Drawn By: RBB

Prepared For: Craig Sweet
Woodard and Curran

Scale: As Noted

Date: June 26, 2017



St. John Street
Portland

Scale 0 100 200 300 400 Feet — 1 inch = 200 feet

PORTLAND WATER DISTRICT
225 Douglass Street
PO Box 3553
Portland, ME 04104
Telephone: (207) 774-5961
Fax: (207) 761-8307

Legend

Air Valve	Connection	Combined Service	Manhole
Blow Off	Attribute Change	Domestic Service	CSO
By Pass	Reducer	Fire Service	Gravity
Distribution	Hydrant	Private Hydrants	Force
Transmission	Hydrant Control	Meter Pits	

N E S W

Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.

Drawn By: RBB
Prepared for: Craig Sweet
Woodard & Curran

Test Fee: $200.00
Date: July 27, 2017

17. CONSISTENCY WITH CITY OF PORTLAND LAND USE CODE

The proposed development meets the City's Site Plan Standards described in City of Portland Land Use Code (Chapter 14-526). The following section demonstrates compliance with City standards.

17.1 Transportation (14-526 (a))

- **Impact on Surrounding Street Systems.** Section 10 includes a detailed Traffic Impact Study.
- **Access and Circulation.** Internal circulation of traffic was designed to provide safe pedestrian and vehicular traffic within and around the parking garage. Points of access and egress are in locations that avoid conflicts with existing traffic flow.
- **Sidewalks.** Brick sidewalks will be replaced along the frontage of the Eagles lot and will be designed to City specifications. Concrete internal sidewalks are proposed from the parking structure to public sidewalks along the street to enhance pedestrian circulation from the main campus to the parking garage. In accordance with the IDP, the sidewalks will be well-lit for pedestrian safety.
- **Public Transit.** As described in the IDP, a private shuttle transit service will be provided from the proposed garage to the main campus. Some staff may use public transit depending on their schedule and destination point. The site was designed to provide safe circulation of shuttles, cars and pedestrians.
- **Parking.** The proposed staff parking garage meets MMC's parking demand and zoning requirements of the IOZ Regulatory Framework as described in Section 6 of this report. As discussed in the IDP, the proposed garage is intended to provide parking for staff, thus allowing expansion of the main campus into the area of the existing staff garage. The following table demonstrates compliance with City off-street parking standards for non-residential structures.

Table 17-1: Parking Space Summary

Category	Spaces Required	Spaces Provided
MMC Personal Vehicle (staff)*	-	2,342
Compact	-	20
Handicap Accessible	35	32 (not including van accessible)
Van Accessible		6
TOTAL for Garage		**2,400**
Shuttle**	-	13
Surface Parking Spaces Behind 222 St. John Street		52 (including 6 handicap accessible spaces, inclusive of 1 van Handicap Accessible)
Bicycle Parking/Storage		40

*2,400 parking spaces are provided in the parking garage and 52 spaces in the adjacent surface parking lot. The spaces in the garage will accommodate patrons of The Fraternal Order of Eagles (50 spaces). The Grade level of the garage and surface parking lot will accommodate businesses and patrons of 222 St. John Street.
**All shuttle parking spaces are provided on the ground level of the parking garage and are assumed to be shared spots. They do not factor into the total number of parking spaces.

Table 17-2: MMC Staff Parking Garage Parking Space Summary

Level	Standard	Compact	Car Accessible Spaces	Van Accessible	Shuttles	Level Total	Notes
Grade (in Garage)	242	2	3		13	247	Accommodates 13 shuttle spaces (off hours) within the garage and designated bike storage areas with capacity for 40 bicycles.
Level 1	251	4	1	6		262	Includes 2 IMT/Elec rooms. All van accessible spaces provided on Level 1, 100 designated carpool spaces & 6 charging stations.
Level 2	264	2	4			270	
Level 3	261	2	4			267	Includes 2 IMT/Electrical Rooms.
Level 4	264	2	4			270	
Level 5	261	2	4			267	Includes 2 IMT/Electrical Rooms.
Level 6	264	2	4			270	
Level 7	264	2	4			270	
Level 8	271	2	4			277	
Total Garage Spaces	**2,342**	**20**	**32**	**6**	**13**	**2,400**	**Approximately 0.8% of spaces are compact**

Below is a summary of how the proposed parking space summary in **Table 17-2** relates to the required number of accessible spaces.

- Total Accessible Spaces – 34 (20 plus 1 for each 100 over 1,000)
    - **38 spaces are provided**
- Van Accessible – 6 (1/6 of spaces required)
    - **6 van spaces are provided (included in total count of 38)**

The table above includes a summary of the parking garage space allocation. All van accessible spaces are provided on Level 1. Levels 1, 3 and 5 include IMT/Electric rooms. MMC will work with City to determine a snow ban parking arrangement on how this garage can help serve snow ban parking needs.

- **Snow Storage.** MMC contracts with an outside snow removal company. For snow management within the garage, snow melters will be located on the roof which will be open deck.

- **Transportation Demand Management (TDM).** The MMC TDM Plan "Get on Board!" is outlined in the approved IDP (IDP page 74). As discussed in **Section 6.7** of this report, MMC intends to continue encouraging staff to use alternative methods of transportation, included walking from the proposed parking garage to the main campus (approximately 0.3 miles).

- **Technical Manual Section 1.** A traffic study was developed for the proposed parking garage in accordance with Section 1 of the Technical Manual; the analysis is included in Section 10 of this report. No public streets are proposed as part of this project; however, a new signalized intersection is proposed at the corner of D Street and St. John Street. Pavement removed from St. John Street for construction of intersections and installation of utilities will be replaced in accordance with specifications provided in Section 1 of the Technical Manual.

  Public crosswalks, curbing and sidewalks meet City specifications as outlined and detailed in Section 1 of the Technical Manual. All sidewalks along St. John Street will be designed for accessibility and constructed out of brick in accordance with the City Sidewalk Materials Policy.

17.2 Environmental Quality (14-526 (b))

- **Preservation of Significant Natural Features.** As described in Section 11, the existing site is developed, and no significant natural features have been identified.

- **Landscaping.** See the detailed Landscaping approach in Section 3.4.3.

- **Parking Lot Landscaping.** The proposed surface parking lot complies with the parking lot landscaping standards. Trees are provided in landscaped islands in accordance with Section 15-526 (b) 2. b. (ii) and Technical Manual Section 4. See the detailed Landscaping approach in Section 3.4.3.

- **Street Trees.** See the detailed Landscaping approach in Section 3.4.3.

- **Stormwater.** As demonstrated in Section 12, the post-development peak flows for the overall project area do not exceed pre-development peak flows, and the proposed improvements are designed to minimize the rate of stormwater leaving the site. Most of the site's stormwater will continue to drain to the existing system to the west, with flows reduced by an onsite stormwater management system. A small portion of the site will now drain to the existing stormdrain in St. John Street, and the City has indicated that this change in flow will be acceptable. Section 12 of this report demonstrates compliance with Portland Stormwater Management Standards and MaineDEP Chapter 500 Basic, General and Flooding standards, in accordance with Technical Manual Section 5. The site is not located within the watershed of an Urban Impaired Stream; therefore, this standard does not apply to the proposed development.

- **Erosion Control.** Plans, notes, and details are provided to address erosion and sediment control requirements, inspection and maintenance requirements, and good housekeeping practices for the proposed development in accordance with Appendix A, B, & C of MaineDEP Chapter 500.

- **Sewer.** The proposed development includes office space with two single fixture bathrooms for the users/patrons off of the lobby area and one single fixture bathroom for staff in the break room at the lower level. The sanitary disposal of sewage complies to Section 2 of the Technical Manual.

17.3 Public Infrastructure and Community Safety Standards (14-526 (c))

- **Consistency with City Master Plans.** As demonstrated in Section 13, the proposed development is consistent with the IDP and the City Comprehensive Plan.

- **Public Safety and Fire Prevention.** The proposed development incorporates public safety principles for Crime Prevention through Environmental Design by limiting access to the garage to Maine Med staff, natural surveillance that promotes visibility, territorial reinforcement through sense of ownership and on site security.

The proposed development provides access for emergency vehicles. As demonstrated in Section 16, the proposed development complies with fire codes.

- **Availability and Adequate Capacity of Public Utilities.** As demonstrated in Section 14, public utilities have the capacity to serve the proposed development. Electrical service will be underground. The sanitary sewer and stormwater utilities are designed to City standards.

17.4 Site Design Standards (14-526 (d))

- **Massing, Ventilation and Wind Impact.** The proposed garage complies with the IOZ standards specified in the approved IDP, including maximum building height (100 feet), as demonstrated in Section 6. The bulk, location and height of the proposed structure is not anticipated to reduce ventilation to abutting structures, create unsafe wind conditions, or diminish the value or utility to neighboring structures. The ventilation mechanism will direct exhausted away from public spaces, as discussed in Section 18.

- **Shadows.** The proposed garage complies with the IOZ standards specified in the approved IDP, which includes a shadow analysis. The shadow analysis was conducted in accordance with Technical Manual Section 11.

- **Snow and Ice Loading.** MMC contracts with an outside snow removal company. For snow management within the garage, snow melters will be located on the roof which will be open deck.

- **View Corridors.** This standard does not apply to the proposed development, since it is not located within the area identified in the Downtown Vision View Corridor Protection Plan.

- **Historic Resources.** The proposed garage is located within 100 feet of the Maine Central Railroad General Office Building at 222 St. John Street, which is identified as a historic landmark. The parking garage was designed to minimize its impact to this building to the extent possible. Specifically, the scale and proportion of the principal elevations of the garage have been given a hierarchical treatment, avoiding the repetitive nature of the basic building type. Along St. John Street, the principal façade features a base zone of textured precast concrete spandrels with textured faces which impart detail and scale relating features. On the south side of this elevation, the bottom two tiers of spandrels relate to the low-rise buildings to the south. On the north side, a higher base of feature spandrels relate to a scale of city and institutional uses. The composition is deliberately varied, with an off-centered elevator core. The west side of the building, with no massing relief, is activated with a dramatic variation of the spandrel panels in an undulating pattern. The upper sides of both east and west feature light-catching perpendicular extruded aluminum fins, which create a softening of the mass of the structure. They also feature a horizontal precast concrete shelf cap along the full length of the elevation.

  The structure behind 210 St. John Street and on the 222 St. John Street property will be removed during the project. Research conducted on the structure behind 210 St. John Street provides the following information:

  - The structure is not shown on the 1916 Portland Terminal Plan which was obtained from DPW archives.
  - The structure is not shown on an aerial photo from October 1940 which was obtained from DPW archives.
  - The structure is not shown on the 1954 Sanborn Maps.
  - The structure is shown on an aerial photo from the 1950s (actual year is not clear).

- The structure is shown on a November 1969 aerial photo obtained from DPW archives and the lot has changed to surface parking.

The structure has a concrete foundation, brick exterior, metal stair pans and numerous concrete masonry units (CMUs). Although the structure has a roof and gutter style similar to the 222 St. John Street property, aspects of the building's construction are modern including:

- Precast concrete window sills instead of granite,
- Steel lintels instead of granite,
- Residential-scaled modern 1-over-1 windows instead of the monumental 2-over-2 double hung windows on the main building,
- A modern era reinforced concrete foundation, and
- A dramatic modern cantilevered concrete canopy over the back door.

The information above helps to clarify that the structure behind 210 St. John Street was not built with Union Station or 222 St. John Street and it was likely built sometime in the early 1950s, only being associated with the railroad for a short period of time (less than 20 years). Supporting documentation regarding this research has been attached to this Section.

- MMC attended an Advisory Review meeting with the Historic Preservation Board on April 18, 2018 to discuss the proposed staff parking garage.
- **Exterior Lighting.** This information is provided on the attached plan set. The lighting plan for the proposed project was designed to be consistent with current City standards.
- **Noise and Vibration.** The HVAC and mechanical equipment servicing the proposed development will be screened from public view and is not anticipated to generate noise that exceeds City standards. Section 18 of this report contains more detailed information on proposed mechanical equipment.
- **Signage and Wayfinding.** This information is provided on the attached plan set.

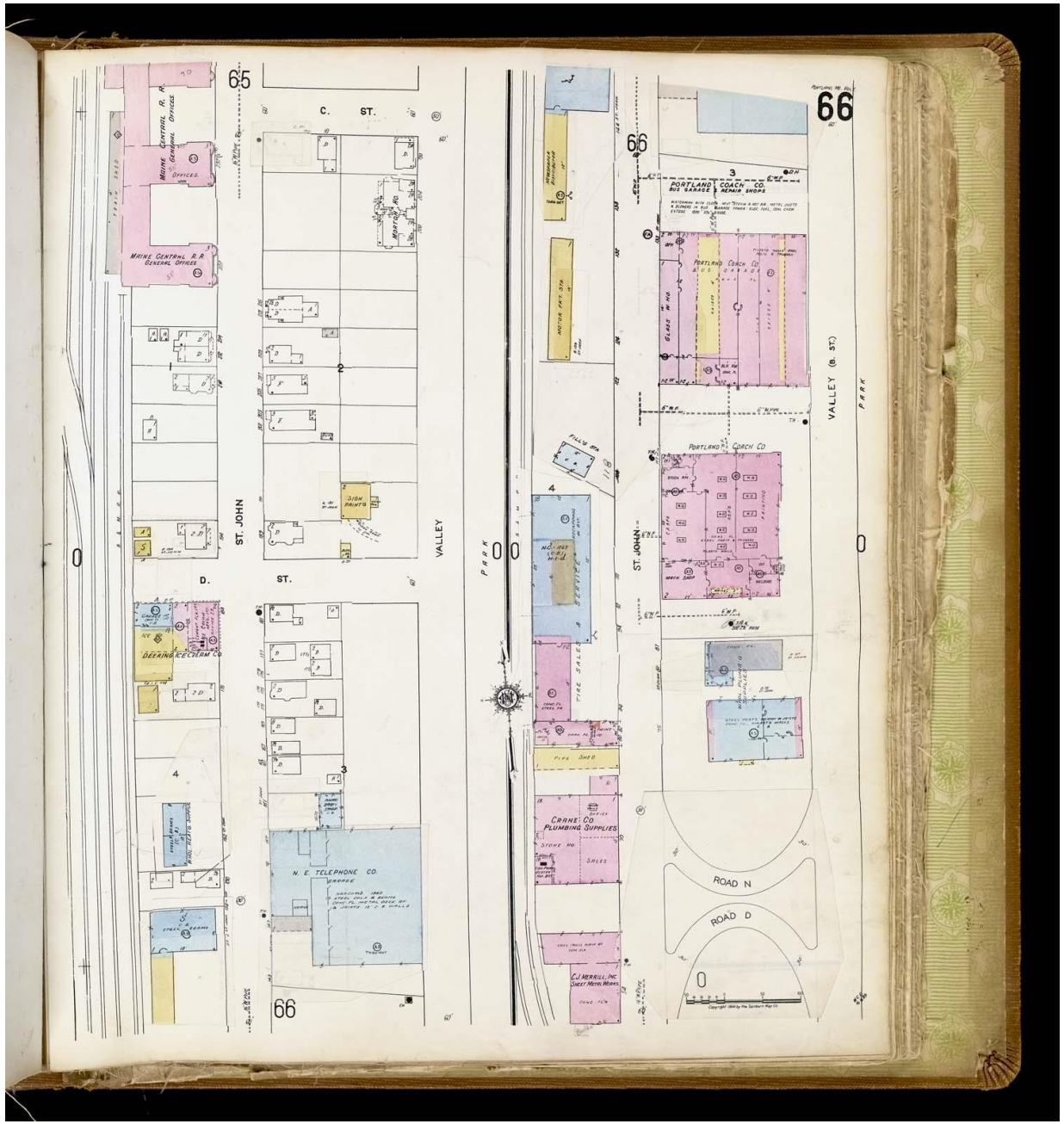
17.5 Attachments

- Structure Behind 210 St. John Street Documentation

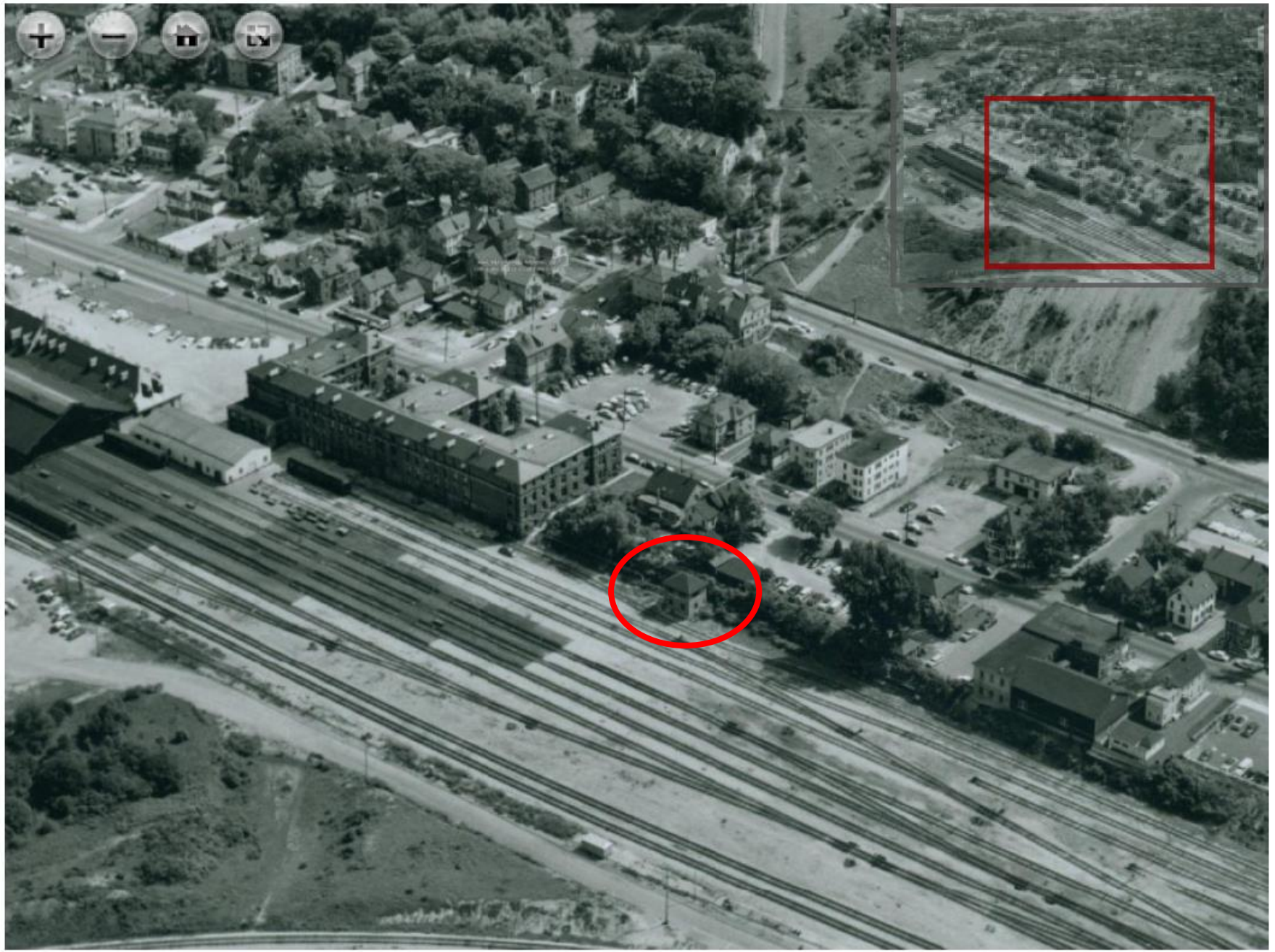
1916 Portland Terminal Plan

1940 Aerial Photo | Obtained from DPW Archives

1954 Sanborn Map | Obtained from Portland Public Library

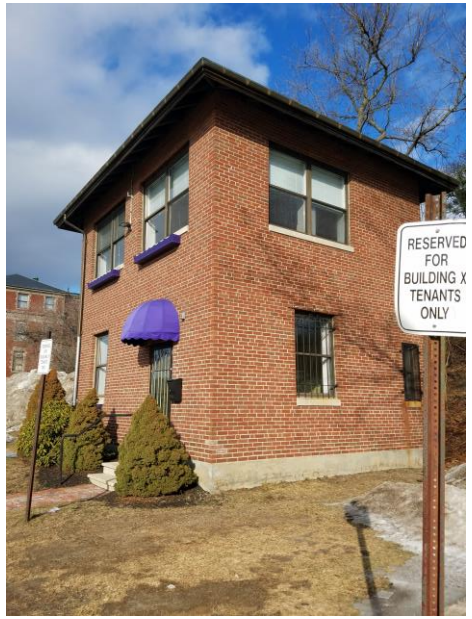


1950s Aerial Photo

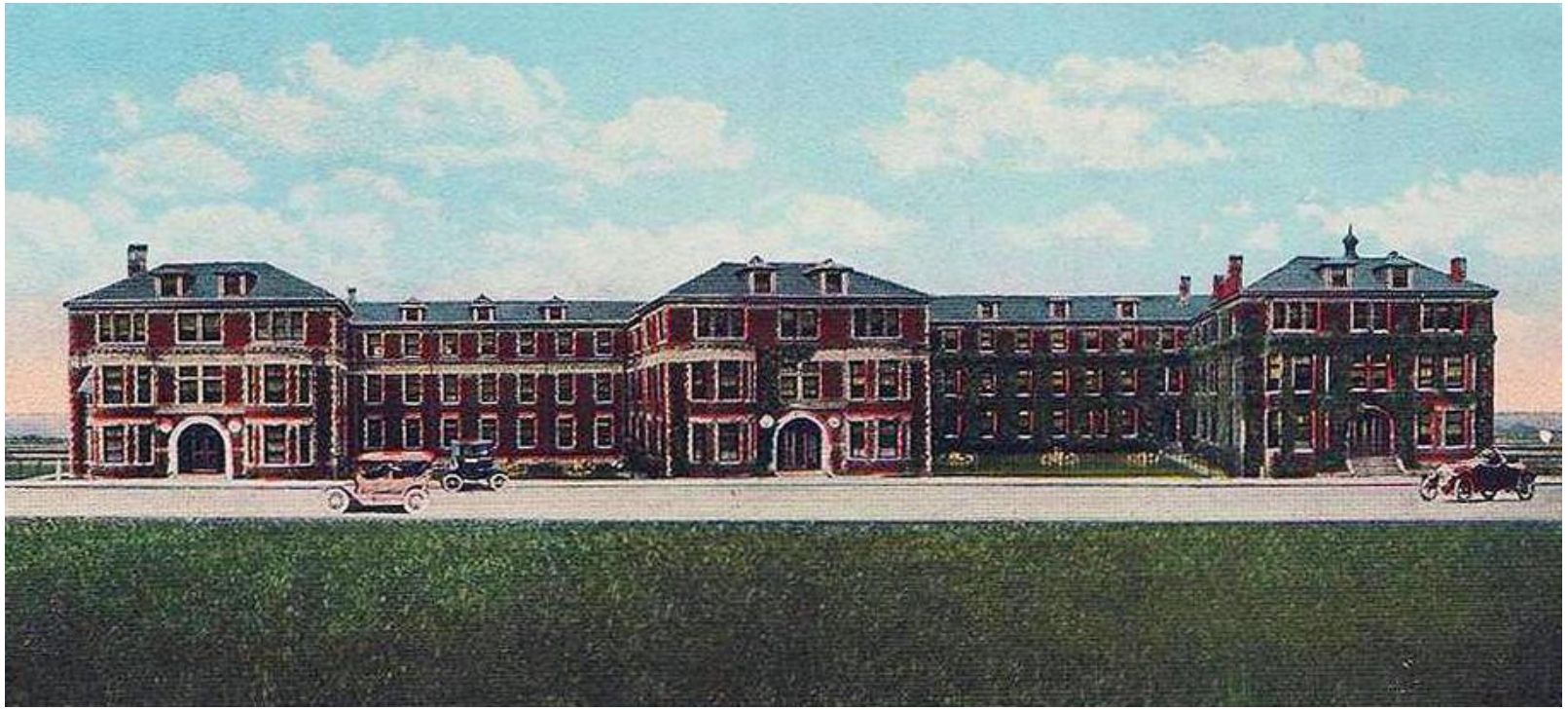


1969 Aerial Photo

February 2018 – Photos of Structure Behind 210 St. John Street



222 St. John Street



18. HVAC & MANUFACTURING EQUIPMENT VERIFICATION

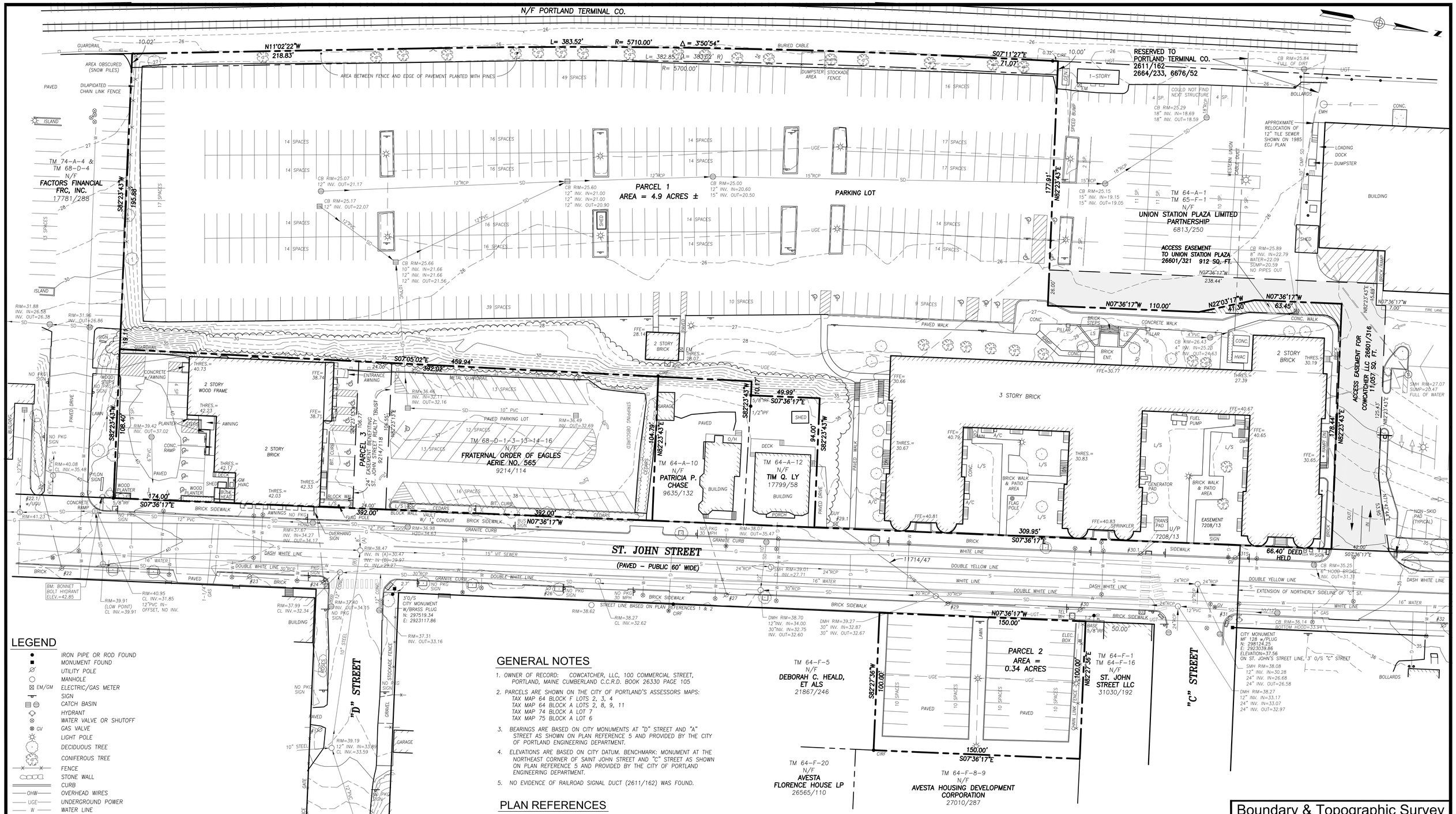
The HVAC equipment for the parking garage has not been selected yet. MMC requests a condition of approval stating that, prior to obtaining a building permit, the Applicant shall submit evidence that the equipment meets applicable state and federal emission requirements.

19. BOUNDARY SURVEY

A boundary survey of the Maine Medical Center parking garage at St. John Street was completed by Owen Haskell, Inc. in November 2016 and is attached to this Section. The boundary survey meets standards defined in Technical Manual Section 13.

19.1 Attachments

- Boundary Survey



LEGEND

- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- EM/GM ELECTRIC/GAS METER
- SIGN
- CATCH BASIN
- HYDRANT
- WATER VALVE OR SHUTOFF
- GV GAS VALVE
- LIGHT POLE
- DECIDUOUS TREE
- CONIFEROUS TREE
- FENCE
- STONE WALL
- CURB
- OHW OVERHEAD WIRES
- UGE UNDERGROUND POWER
- W WATER LINE
- G GAS LINE
- UGT TELEPHONE
- SD STORM DRAIN
- S SANITARY SEWER
- 25 1' CONTOUR
- FFE FINISHED FLOOR ELEVATION
- CONC. CONCRETE
- A/C AIR CONDITIONING UNIT
- L/S LANDSCAPED AREA
- IPF/IRF IRON PIPE OR ROD FOUND
- N/F NOW OR FORMERLY
- 000/000 DEED BOOK AND PAGE

SCALE : 1" = 30'

0' 15' 30' 60'

GENERAL NOTES

1. OWNER OF RECORD: COWCATCHER, LLC, 100 COMMERCIAL STREET, PORTLAND, MAINE CUMBERLAND C.C.R.D. BOOK 26330 PAGE 105
2. PARCELS ARE SHOWN ON THE CITY OF PORTLAND'S ASSESSORS MAPS:
   TAX MAP 64 BLOCK F LOTS 2, 3, 4
   TAX MAP 64 BLOCK A LOTS 2, 8, 9, 11
   TAX MAP 74 BLOCK A LOT 7
   TAX MAP 75 BLOCK A LOT 6
3. BEARINGS ARE BASED ON CITY MONUMENTS AT "D" STREET AND "A" STREET AS SHOWN ON PLAN REFERENCE 5 AND PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
4. ELEVATIONS ARE BASED ON CITY DATUM. BENCHMARK: MONUMENT AT THE NORTHEAST CORNER OF SAINT JOHN STREET AND "C" STREET AS SHOWN ON PLAN REFERENCE 5 AND PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
5. NO EVIDENCE OF RAILROAD SIGNAL DUCT (2611/162) WAS FOUND.

PLAN REFERENCES

1. "PLAN OF LAND ON ST. JOHN STREET FOR ST. JOHN STREET REALTY TRUST" DATED SEPTEMBER 10, 1985 AND REVISED THRU JAN. 15, 1990 BY OWEN HASKELL, INC.
2. "PLAN OF LAND ON ST. JOHN STREET, PORTLAND, MAINE MADE FOR ST. JOHN STREET REALTY TRUST" DATED SEPT. 10, 1985 REVISED THRU 11-03-00 BY OWEN HASKELL, INC.
3. CITY OF PORTLAND'S ASSESSOR'S MAPS.
4. "ALTA/ACSM LAND TITLE SURVEY, 217, 218-238, 221 AND 225 ST. JOHN STREET, PORTLAND, MAINE MADE FOR COWCATCHER LLC" DATED JUNE 27, 2008 REV. 3 11/18/08 BY OWEN HASKELL, INC.
5. "SAINT JOHN ST./VALLEY ST. STREETSCAPE IMPROVEMENTS EXISTING CONDITIONS PLAN" CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION DATED NOV. 2011
6. "BOUNDARY AND TOPOGRAPHIC SURVEY AT 217, 218-238, 221 AND 225 ST. JOHN STREET, PORTLAND, MAINE MADE FOR COWCATCHER, LLC" DATED NOV. 16, 2016 BY OWEN HASKELL, INC.

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

SAMUEL D. GLIDDEN, PLS NO. 2520

6-25-2018
DATE

STATE OF MAINE · SAMUEL D. GLIDDEN · 2520 · LICENSED PROFESSIONAL LAND SURVEYOR

Boundary & Topographic Survey

On

St. John Street, Portland, Maine

Made for

Woodard & Curran, Inc.

41 Hutchins Drive, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, UNIT 10, FALMOUTH, MAINE 04105

DRAWN BY: SDG / JLW	DATE: APRIL 2018	JOB NO. 2018-019P	
CHECKED BY: SDG	SCALE: 1" = 30'	DRWG. NO. 1	

20. SOILS

In accordance of Section 7 of the City's Technical Manual, Level III Site Plan applications are required to submit a soil survey. The site is located in a developed area of urban fill. In lieu of a soil survey, we are submitting a geotechnical report that has been prepared and stamped by a professional engineer.

Geotechnical data has been collected at the site and a Preliminary Geotechnical Report has been prepared by S.W. Cole Engineering, Inc. A copy of the July 2017 report is attached. Eight test borings were completed in February and March of 2017, and these borings were supplemented by data collected from borings completed in 1995 and 1989. Additional borings are planned for the site to provide supplemental information for the final foundation design.

The geotechnical investigation found that beneath the existing paved surface of the parking lot are layers of urban fill, glaciomarine soils including sand, silt, and clay, and glacial till, with bedrock at depths ranging from 34 to 62 feet. Due to the soil conditions encountered on the site, the garage will be founded on piles.

20.1 Attachments

- Preliminary Geotechnical Report, dated July 11, 2017, by S.W. Cole Engineering, Inc.

REPORT

17-0103 S

July 11, 2017

Explorations and Preliminary Geotechnical Engineering Services

Proposed Parking Structure
222 St. John Street
Portland, Maine

Prepared For:
Cowcatcher, LLC
c/o East Brown Cow Management, Inc.
Attention: Denine Leeman
100 Commercial Street, Suite 306
Portland, Maine 04101

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039
T: 207-657-2866

S.W.COLE ENGINEERING, INC.

- *Geotechnical Engineering*
- *Construction Materials Testing and Special Inspections*
- *GeoEnvironmental Services*
- *Test Boring Explorations*

www.swcole.com

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Appendix D Laboratory Test Results
Appendix E Geophysical Survey

17-0103 S

July 11, 2017

Cowcatcher, LLC
c/o East Brown Cow Management, Inc.
Attn: Denine Leeman
100 Commercial Street, Suite 306
Portland, Maine 04101

Subject: Explorations and Preliminary Geotechnical Engineering Services
Proposed Parking Structure
222 St. John Street
Portland, Maine

Dear Denine,

In accordance with our Proposal, dated February 8, 2017, we have performed subsurface explorations and a geophysical survey for the subject project. This report summarizes our findings and preliminary geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to provide a preliminary geotechnical assessment of feasible foundation types associated with the proposed construction. Our scope of services included a review of prior explorations, performing eight test boring explorations, soils laboratory testing, a geophysical survey, a geotechnical analysis of the subsurface findings and preparation of this report.

1.2 Site and Proposed Construction

The site is a rectangular parking lot at 222 St. John Street in Portland, Maine. Based on the information provided, we understand development plans call for construction of a new eight to ten-story parking structure. We understand the structure will be a pre-cast

reinforced concrete frame with pre-cast concrete decks and an on-grade, asphalt paved level at approximately elevation 25 to 26 feet (project datum). Based on information provided by Becker Structural Engineers (project structural engineer), we understand the structure will have maximum column loading of about 2,465 kips.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

S. W. Cole Engineering, Inc. (S.W.COLE) coordinated and logged a test boring exploration program at the site and reviewed prior site exploration data as follows:

2.1.1 Current Explorations

Eight test borings (B-201 through B-206, including B-203A and B-203B) were made at the site on February 27 through March 3, 2017 by S. W. Cole Explorations, LLC, a subsidiary of S. W. Cole Engineering, Inc. (S.W.COLE). The exploration locations were selected in conjunction with Becker Structural Engineers and established in the field by S.W.COLE using measurements from existing site features. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the test borings and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.1.2 Prior Explorations

We reviewed explorations made at the site for previously proposed developments, including:

- Seven test borings (B-1 through B-5, including B-2A and B-5A) made in 1989;
- Eight test borings (B-101 through B-108) made in 1995

The approximate locations of these test borings are shown on the "Exploration Location Plan" attached in Appendix B. Logs of these prior explorations are also attached in Appendix C.

2.2 Testing

The test borings were drilled using a combination of solid stem auger and cased wash-boring techniques. The soils were sampled at 2 to 5 foot intervals using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket penetrometer testing (PPT) was performed on split spoon samples of stiffer silty clay soils, where encountered. Shelby tube sampling and Vane Shear Testing (VST) was performed where softer silty clay soils were encountered. SPT blow counts, as well as PPT and VST results, are shown on the logs.

Soil samples obtained from the explorations were returned to our laboratory for further classification and testing. Atterberg Limits and moisture content test results are noted on the logs. The results of a one-dimensional laboratory consolidation test, performed as part of the prior 1990 study, are attached in Appendix D.

2.3 Geophysical Survey

Hager-Richter Geoscience, Inc. (Hager-Richter) of Salem, New Hampshire, working under subcontract to S.W.COLE, performed a geophysical survey at the site on June 3 and 4, 2017. The purpose of the survey was to assess shear wave velocities of soil and bedrock beneath the site for use in determining Seismic Soil Site Class per IBC, and to obtain additional depth to bedrock information. A geophysical survey report prepared by Hager-Richter is attached as Appendix E.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Surficial

The site is located at 222 St. John Street in Portland, Maine and currently consists of a large paved parking lot. Existing grade is relatively flat and level with existing ground surface varying from about elevation 26 to 27 feet. The site is located adjacent to an active railroad alignment and we understand portions of the site were historically used as a train yard. Existing site features are shown on the “Exploration Location Plan” attached in Appendix B.

3.2 Soil and Bedrock

Available soils mapping and the subsurface findings at the explorations indicate the site is located at the margin of Presumpscot Formation glaciomarine sands, silts, and clays and a marine fan deposit of primarily sand and gravel. Underlying a surficial layer of pavement, the borings generally encountered a thin layer of fill soils overlying the glaciomarine and marine fan deposits, overlying glacial till mantling bedrock at depth. The principal strata encountered are summarized below. Not all the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

Fill: Underlying surficial pavement, the borings encountered fill consisting of brown and black sand with varying portions of silt, gravel, and ash-like material. The fill extended to depths varying from approximately 1.5 to 5 feet below the ground surface.

Glaciomarine Soils: Underlying the fill or interbedded in the marine fan sand and gravel, borings B-202, B-204, and B-206, as well as several prior borings made in the northwestern portion of the site, encountered varying thickness of glaciomarine soils consisting of gray to gray-brown sand, silt, and silty clay with some shells. The glaciomarine soils at boring B-202 consisted of relatively soft, compressible gray silty clay at depth intervals of about 2 to 13.5 feet and 30 to 36 feet.

Marine Fan Sand and Gravel: Underlying the fill and underlying or interbedded amongst the glaciomarine soils, the borings encountered brown sand with varying portions of silt, gravel, cobbles and boulders.

Glacial Till: A relatively thin layer of glacial till, up to about 5 feet in thick, was encountered mantling the bedrock surface at the borings. The glacial till consisted of gray sand with varying portions of silt and gravel.

Bedrock: Bedrock was encountered at depths varying from approximately 34 to 62 feet at the borings, and generally appears to be trending deeper to the south. A thin surficial layer of weathered bedrock was penetrated by the drill tooling at some locations. A rock core retrieved at boring B-206 indicates the bedrock consist of gray Phyllite with an RQD of 44.

The Hager-Richter geophysical survey findings generally concur with the depth to bedrock trends encountered at the borings; discussion of depth to bedrock, as well as a bedrock elevation plan (Figure 5) are included in the Hager Richter report, attached as Appendix E.

3.3 Groundwater

Saturated soils or free water were encountered at the borings at depths varying from about 3 to 15 feet. Groundwater likely becomes perched on the relatively impervious silty clay encountered beneath a portion of the site. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

3.4 Frost and Seismic

The 100-year Air Freezing Index for the Portland, Maine area is about 1,410-Fahrenheit degree-days, which corresponds to a frost penetration depth on the order of 4.5 feet. Based on the Hager-Richter geophysical survey findings, we interpret the site soils to correspond to Seismic Soil Site Class D according to 2009/2015 IBC (shear wave velocity method).

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- The proposed parking structure will need to derive support from deep foundations, such as driven H-piles or drilled shafts. Alternatively, the proposed structure may be supported on spread footings bearing on ground improved with rigid inclusions.

- The dead load of the foundation system may be used for uplift resistance. Additionally, rock anchors installed through pipe piles or steel casing may be used to resist structural uplift loading. Battered piles and drilled shafts may be used to resist lateral loads. Lateral earth pressures acting on the sides of foundations may also be used to resist lateral loads.

- The asphalt paved on-grade garage level may be supported on properly prepared

soil subgrades using a conventional asphalt pavement section. If overhead clearance is tight on the ground level, we recommend installing insulation below the paved surface to mitigate potentially adverse frost heaving.

- The site was formerly used for rail operations and ash-like material was observed in the fills at some locations. We recommend the fill soils be characterized for environmental handling purposes prior to construction. As discussed, impacted soils may be able to be reused beneath the first floor ramp to avoid potentially costly export and off-site disposal.

- Imported materials, such as Crushed Stone, Structural Fill, and pavement gravels will be needed for construction.

4.2 Foundation and On-Grade Level Considerations

Given the magnitude of proposed structural loading and the subsurface findings, the parking structure will need to be supported on deep foundations, such as driven H-piles or drilled shafts. Alternatively, the structure may be supported on spread footings bearing on soils improved with rigid inclusions. Discussion of these foundation options follows:

4.2.1 Driven Piles

The proposed structure may be supported on steel H-piles fitted with cast driving tips, driven to end bearing on bedrock. Driven piles should ultimately be designed, sized and installed by a qualified design-build contractor. A driven pile submittal stamped by a Maine licensed professional engineer should be provided for review by the project team. We offer the following H-pile sizes and allowable axial compressive capacities for preliminary design consideration:

RECOMMENDED H-PILE CAPACITIES	
50 ksi Steel H-pile Section	Allowable Axial Compressive Capacity (kips)
HP 10 X 57	225
HP 12 X 84	345
HP 14 X 117	500
Notes: Piles driven to practical refusal on hard sound bedrock with cast driving tips and 0.0625-inch (1/16”) corrosion allowance.	

Pipe piles may be installed at discrete locations to allow for installation of drilled rock anchors for uplift resistance.

We recommend that pile caps for columns be supported by at least two piles if laterally tied together by grade beams or tie beams and three piles if laterally isolated. Grade beams supporting walls may be supported by a single line of alternating piles below the grade beam, as deemed necessary by the structural engineer.

Piles should be spaced a minimum center-to-center distance of at least 3 pile diameters, but no less than 30 inches. Pile caps and grade beams exposed to freezing temperatures should be covered with at least 4.5 feet of soil for frost protection.

Lateral Resistance: Battered piles may be driven to resist lateral loads. Alternatively, lateral resistance acting on the sides of grade beams and pile caps backfilled with compacted Structural Fill may provide some lateral resistance. Depending upon the amount of deflection, lateral earth resistance should consider a total unit weight of granular backfill (γt) of 125 pcf, an angle of internal friction of 30 degrees with an at-rest lateral earth pressure coefficient (Ko) of 0.5 and an ultimate passive lateral earth pressure coefficient (Kp) of 3.0. Additional resistance to lateral loads can be mobilized along the pile shafts, if needed. S.W.COLE can assist with lateral capacities, as deemed necessary by the structural engineer.

Pile Load Test: For piles with a capacity over 40 tons (80 kips), we recommend the contractor coordinate a test pile program including monitoring of several piles with a Pile Driving Analyzer (PDA) to determine pile and driving equipment compatibility as well as to define the “set” criteria and allowable pile capacity. The test pile program should include PDA monitoring of the test piles during re-strikes in order to assess pile capacity. The pile driving contractor should submit a WEAP analysis and information relative to pile driving equipment prior to beginning driving. S.W.COLE should be engaged to observe pile driving and pile load testing activities.

4.2.2 Drilled Shafts

The proposed parking structure may be supported on drilled shafts socketed into bedrock. Drilled shafts should be socketed at least 2 feet into competent bedrock. Deeper rock sockets may be required depending on the load requirements.

The base of the rock sockets should be leveled and cleaned of loose material and soil. We recommend deep foundations be drilled using steel casing within the overburden soils in order to maintain sidewall stability. Prior to installing reinforcing steel, S.W.COLE should observe the base of each drilled foundation. Temporary steel casings should be removed during concrete placement while maintaining a positive head of concrete above the casing bottom to maintain shaft sidewall stability.

Considering the subsurface conditions encountered, we anticipate drilled shaft axial capacity will be controlled by the concrete compressive strength. We recommend an allowable end-bearing pressure of 20 ksf utilizing a factor of safety of 2.0. For piers socketed deeper than two feet, additional axial compressive capacity can be mobilized from skin friction between the pier and rock socket. For a design concrete strength of 4,000 psi, a unit skin friction of 17 ksf is recommended for the portion of the pier socketed greater than two feet into bedrock. For a design concrete strength of 5,000 psi, a unit skin friction of 20 ksf is recommended for the portion of the pier socketed greater than two feet into bedrock.

Uplift resistance of drilled shafts can be developed from skin friction between the drilled shaft and soil and bedrock, as well as the dead weight of the drilled shaft. S.W.COLE can assist with uplift capacities as deemed necessary by the structural engineer.

4.2.3 Ground Improvement

The proposed structure may be supported on spread footing foundations bearing on soils improved by rigid inclusions. Rigid inclusions in granular soils consist of cast-in-place, grouted or cemented aggregate columns, typically installed by rammed or vibroflot methods. Rigid inclusions in clay soils consist of cast-in-place ready mix concrete installed by vibratory mandrel methods under positive pressure to create a concrete shaft. In both cases, load transfer platforms of compacted crushed gravel and geotextile are installed over the improved ground to support spread footings. The rigid inclusions stiffen the soils to reduce settlement and increase bearing capacity for spread footings. Rigid inclusions are designed and installed by a specialty geotechnical contractor. Based on preliminary

discussion with a regional contractor, we understand that net allowable soil bearing pressures of 8 to 10 ksf may be feasible. If the ground improvement option is selected, we recommend a design-phase test program be implemented prior to construction, consisting of full scale installation and modulus testing of several rigid inclusions across the varied subsurface conditions encountered in the test borings drilled at the site.

4.2.4 On-Grade Level

The paved on-grade level may be supported on properly prepared soil subgrades using a conventional asphalt pavement section. Existing pavement, utilities, structures, and foundations will need to be completely removed and replaced with compacted Granular Borrow below new paved areas. Existing fills will need to be proof-rolled and soft areas repaired prior to placing pavement gravels. Woven geotextile will be needed over clayey pavement subgrades in the northwest portion of the garage footprint.

If overhead clearance is less than 6 inches on the ground level, we recommend installing insulation below the paved surface to help mitigate potentially adverse frost heaving.

4.3 Excavation and Dewatering Considerations

Excavation work will generally encounter granular fills with ash-like material, silty clay, sand and gravel. Care must be exercised during construction to reduce strength loss of the native soils from disturbance. Earthwork and grading activities should ideally occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native clays. Final cuts to subgrade should be performed with a smooth-edged bucket to help reduce soil disturbance.

Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

The site was formerly used for rail operations and ash-like material was observed in the fills at several exploration locations. We recommend the fill soils be characterized for environmental handling purposes prior to construction. As discussed, impacted soils may

be able to be reused beneath the first floor ramp to avoid potentially costly export and off-site disposal.

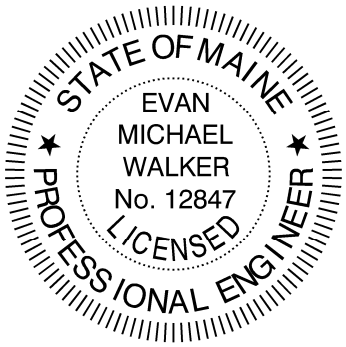
5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We recommend a design-phase geotechnical evaluation be undertaken once the site layout and structural layout has been further defined. We look forward to working with you as the project progresses.

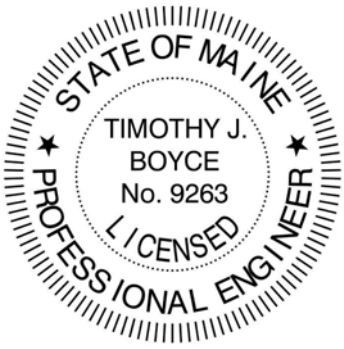
Sincerely,

S. W. Cole Engineering, Inc.

Evan M. Walker, P.E.
Geotechnical Engineer



Timothy J. Boyce, P.E.
Senior Geotechnical Engineer



EMW:tjb

Appendix A - Limitations

This report has been prepared for the exclusive use of Cowcatcher, LLC for specific application to the proposed Parking Structure at 222 St. John Street in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

FIGURES

N/F
PORTLAND TERMINAL CO.

FACTORS FINANCIAL FRC, INC.
17781/288

CHAIN LINK FENCE

AREA BETWEEN FENCE AND EDGE OF PAVEMENT PLANTED WITH PINES

L= 383.52' R= 5710.00' Δ = 3°50'54"
L= 382.85' (L= 383.02' R)
R= 5700.00'

N11°02'22"W 218.83'
S07°11'27"E 71.07'
10.02'
10.00'
0.33' CRF

DUMPSTER AREA
STOCKADE FENCE

B-201 B-101 B-3 B-2 B-2A B-103 B-102 B-202 B-5A B-5 B-205 B-4 B-1 B-206 B-104 B-203 B-203B B-203A B-105 B-204 B-108 B-107 B-106

49 SPACES
16 SPACES
14 SPACES
17 SPACES
39 SPACES
10 SPACES
9 SPACES

CB RIM=25.07
12" INV. OUT=21.17

CB RIM=25.17
12" INV. OUT=22.07

CB RIM=25.66
10" INV. IN=21.86
12" INV. IN=21.66
12" INV. OUT=21.56

CB RIM=25.60
12" INV. IN=21.00
12" INV. IN=21.00
12" INV. OUT=20.80

CB RIM=25.00
12" INV. IN=20.60
15" INV. OUT=20.50

CB RIM=25.15
15" INV. IN=19.15
15" INV. OUT=19.05

12"RCP 15"RCP 12"PVC 10"PVC SHED UGE

PARCEL 1
AREA = 4.9 ACRES ±

PARKING LOT

177.91' N82°23'43"E

TM 64-A-1
TM 65-F-1
N/F
UNION STATION PLAZA LIMITE PARTNERSHIP
6813/250

ACC TO 266

N07°36'17"W 238.44'
26.00'
N07°36'17"W 110.00'
N22°03'1

PAVED WALK
CONCRETE WALK
BRICK STEPS
PILLAR
RAIL
CONC.
LS
BRICK ENT.
4"PVC
CB RIM=25.43
4" INV. IN=25.23
6" INV. OUT=24.63
FFE=30.77

FFE= 28.14
2 STORY BRICK
PAVED
THRES.= 28.07
A/C

S82°23'43"W 195.94'
S82°23'43"W 108.29'
S82°23'43"W 459.84'
S07°05'02"E 24.00'
S07°36'17"E 49.99'
S82°23'43"W 101.17'
S82°23'43"W 94.00'
S07°36'17"E 309.95'

WOOD GUARD RAIL ALONG EDGE OF PAVEMENT

FFE= 30.66
3 STORY BRICK
THRES.= 30.67
FFE= 40.79
DRAIN
A/C
CONC
L/S
BRICK WALK & PATIO AREA
FLAG POLE
THRES.= 30.83
FUEL PUMP
GENERATOR PAD
TRANS PAD
U/P 7208/13
EASEMENT 7208/13
SIGN
FFE=40.81
FFE=40.83
SPRINKLER

BRICK

PARCEL 3
24' EASEMENT BRETTING TRUST
ST. JOHN STREET REALTY
9214/118
S82°23'13"W 106.77'
N82°23'13"E 106.55'

PAVED PARKING LOT

TM 68-D-1-3-13-14-16
N/F
FRATERNAL ORDER OF EAGLES
AERIE NO. 565
9214/114

GARAGE

TM 64-A-10
N/F
PATRICIA P. CHASE
9635/132

TM 64-A-12
N/F
TIM Q. LY
17799/58

WOOD FRAME
PAVED DRIVE
PAVED WALK
GUY
#29.1

" IRON FOUND
174.00' S07°36'17"E
24.00'
BIT. CURB
BRICK SIDEWALK
GRANITE CURB
WV
UP
HYD
#24
#20
#27
#29
#30
#31
#30.1
0.30'
3" OFFSET
CITY MONUMENT W/BRASS PLUG
N: 2975193.34
E: 2923117.86

15" VIT SEWER
4" GAS APPROXIMATE
16" WATER
SMH RIM=39.12 UNABLE TO OPEN
DMH RIM=38.70 UNABLE TO OPEN
DMH RIM=39.27
30" INV. IN=32.87
30" INV. OUT=32.67
11714/47 WHITE LINE
DOUBLE YELLOW LINE
WHITE LINE
30"RCP 24"RCP 12"RCP
TEL MH
BASE 5/8"RF
ELEC. BOX
50.00'
N07°36'17"W 150.00'
UGT

"D" STREET
"C" STREET
ST. JOHN STREET
(PAVED – PUBLIC 60' WIDE)

STREET LINE BASED ON PLAN REFERENCES 1 & 2

PARCEL 2
AREA = 0.34 ACRES

LAWN
CHAIN LINK FENCE
PAVED
10 SPACES
41
40
42
43
100.00'
S82°27'36"E 100.00'
N82°27'36"E 100.00'
S07°36'17"E 150.00'
CRF

TM 64-F-5
N/F
DEBORAH C. HEALD, ET ALS
21867/246

TM 64-F-1
TM 64-F-16
N/F
ST. JOHN STREET LLC
31030/192

LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=30' SCALE PLAN OF THE SITE ENTITLED "BOUNDARY SURVEY TOPOGRAPHIC SURVEY," PREPARED BY OWEN HASKELL, INC., DATED 11/16/2016.
5. THE BORINGS WERE LOCATED IN THE FIELD BY TAPED MEASUREMENTS FROM EXISTING SITE FEATURES.
6. BORINGS B-1 THROUGH B-5 WERE COMPLETED BY S. W. COLE ENGINEERING, INC. (SWCOLE) IN 1989.
7. BORINGS B-101 THROUGH B-108 WERE CMPLETED BY SWCOLE IN 1995.
8. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
9. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 30 60 Feet

S.W.COLE ENGINEERING, INC.

COWCATCHER, LLC

EXPLORATION LOCATION PLAN

PROPOSED PARKING STRUCTURE
222 ST. JOHN STREET
PORTLAND, MAINE

Job No.:	17-0103	Scale:	1" = 30'
Date :	03/15/2017	Sheet:	1

R:\2017\17-0103\CAD\Drawings\17-0103 ELP.dwg, 3/15/2017 2:24:35 PM, 1:1, CEM, S. W. Cole Engineering, Inc.

APPENDIX C

EXPLORATION LOGS AND KEY

BORING LOG

CLIENT:	Cowcatcher, LLC
PROJECT:	Proposed Parking Structure
LOCATION:	222 St. John Street, Portland, Maine

BORING NO.:	**B-201**
SHEET:	1 of 2
PROJECT NO.	17-0103
DATE START:	2/27/2017
DATE FINISH:	2/28/2017

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 26' +/- **TOTAL DEPTH (FT):** 64.0 **LOGGED BY:** Evan Walker

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Jeff Lee **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted CME 850 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Automatic / Automatic **HAMMER WEIGHT (lbs):** 140 / 140 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: **HAMMER DROP (inch):** 30 / 30

WATER LEVEL DEPTHS (ft): ▽ 10

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
25			1D		0.5-2.5	24/16	4-6-11-12			0.3 Asphalt Pavement; Brown and Black Silty Gravelly SAND with Probable Ash (Fill)		
			2D		2.5-4.5	24/16	12-12-11-10			2.5 Brown Sand and GRAVEL, trace Silt		
20	5		3D		5-7	24/10	5-6-7-9			Brown Gravelly SAND, Some Silt		
15	10		4D		10-12	24/10	6-7-9-10				▽	
10	15		5D		15-17	24/12	6-5-6-7					
5	20		6D		20-22	24/8	10-9-8-9					
0	25		7D		25-27	24/8	5-4-5-7					
-5	30		8D		30-32	24/10	8-8-8-9					
-10	35		9D		35-37	24/20	5-5-8-9			35.0 Gray-Brown to Gray Sandy SILT, Some Clay		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-201
SHEET: 2 of 2
PROJECT NO. 17-0103
DATE START: 2/27/2017
DATE FINISH: 2/28/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
-15			10D		40-42	24/22	3-3-4-15			40.0 Gray with Black Layering Clayey Silt and SAND with Frequent Sand Layers		Gravelly Layer 41.8' - 43'
	45		11D		45-47	24/20	2-5-10-8			45.0 Brown Clayey SILT		
-20										46.0 Light Brown Fine to Medium SAND, Trace Silt		
	50		12D		50-52	24/22	9-11-21-35			50.0 Brown with Orange Staining Fine SAND with Trace to Some Silt		
-25												
	55		13D		55-57	24/22	11-14-15-17					
-30												
	60		14D		60-62	24/20	10-12-14-36			60.0 Gray Silty SAND, Some Gravel (Glacial Till)		
-35										61.6 Weathered Bedrock		
										62.0 Bedrock - Advance by Roller Cone		
										64.0 Bottom of Exploration at 64.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-202
SHEET: 1 of 2
PROJECT NO. 17-0103
DATE START: 2/28/2017
DATE FINISH: 2/28/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 26' +/- | **TOTAL DEPTH (FT):** 47.0 | **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Jeff Lee | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted CME 850 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 30
WATER LEVEL DEPTHS (ft): ▽ 5
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
										0.3 4" Asphalt Pavement		
25			1D		0.5-2.5	24/16	6-7-5-3			Brown Gravelly SAND, Some Silt (Fill)		Soils Moist
			2D		2.5-4.5	24/20	3-4-3-4			2.2 Gray Clayey SILT, Some Sand, with Frequent Silty Sand Layers		Soils Wet
20	5		3D		5-7	24/20	WOH-WOH-WOH-WOH	q_p=0.5 ksf		5.0 Gray-Brown to Gray Silty CLAY with Occasional Sand Seams	▽	
15	10		1U		10-12	24/0						
			2U		12-14	24/14				13.5 Gray SAND, Trace Silt		
10	15		4D		15-17	24/6	4-4-5-6	w =27.5 %				
5	20		5D		20-22	24/16	1-1-1-1			20.0 Gray Silty SAND with Shells		
0	25		6D		25-27	24/14	4-6-7-7			25.0 Gray Medium to Coarse SAND, Trace Silt, Trace Fine Gravel		
-5	30		7D		30-32	24/14	1-2-2-2			30.0 Gray Silty CLAY		
-10	35		8D		35-37	24/16	2-2-12-9			36.0 Gray Silty Fine SAND with Frequent Clayey Seams		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-202
SHEET: 2 of 2
PROJECT NO. 17-0103
DATE START: 2/28/2017
DATE FINISH: 2/28/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
-15			9D	X	40-42	24/24	1-2-3-6			41.5 Gray Gravelly Silt and SAND (Glacial Till)		
	45									44.0 Bedrock - Advance by Roller Cone		
-20										47.0 Bottom of Exploration at 47.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-203
SHEET: 1 of 1
PROJECT NO. 17-0103
DATE START: 3/1/2017
DATE FINISH: 3/1/2017

Drilling Information

LOCATION: See Exploration Location Plan
ELEVATION (FT): 26' +/-
TOTAL DEPTH (FT): 9.5
LOGGED BY: Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC
DRILLER: Jeff Lee
DRILLING METHOD: Solid Stem Auger
RIG TYPE: Track Mounted Mobile B-53
AUGER ID/OD: N/A / 4 1/2 in
SAMPLER: Standard Split-Spoon
HAMMER TYPE: Safety
HAMMER WEIGHT (lbs): 140
CASING ID/OD: N/A /N/A
CORE BARREL:
HAMMER EFFICIENCY FACTOR:
HAMMER DROP (inch): 30
WATER LEVEL DEPTHS (ft): No Free Water Observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25			1D		0.5-2.5	24/18	6-7-9-12			0.2 Asphalt Pavement 1.5 Black Silty SAND, Some Gravel (Fill) Brown Gravelly SAND, Some Silt		
			2D		2.5-4.5	24/14	12-20-16-15					
	5											
20			3D		5-7	24/15	7-17-20-30			5.0 Brown Sand and GRAVEL, Some Silt, with Cobbles		
										9.5 Refusal at 9.5 feet Refusal on Probable Boulder		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

S.W.COLE ENGINEERING, INC.

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-203A
SHEET: 1 of 1
PROJECT NO. 17-0103
DATE START: 3/1/2017
DATE FINISH: 3/1/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 26' +/- | **TOTAL DEPTH (FT):** 8.1 | **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Jeff Lee | **DRILLING METHOD:** Solid Stem Auger
RIG TYPE: Track Mounted Mobile B-53 | **AUGER ID/OD:** N/A / 4 1/2 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Safety | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): No Free Water Observed
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25										See Boring B-203 For Approximate Soil Strata Auger to 8.1' - No Sampling		
	5											
20												
										8.1 Refusal at 8.1 feet Refusal on Probable Boulder		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-203B
SHEET: 1 of 2
PROJECT NO. 17-0103
DATE START: 3/1/2017
DATE FINISH: 3/1/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 26' +/- | **TOTAL DEPTH (FT):** 62.0 | **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Jeff Lee | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Mobile B-53 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Safety / Safety | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 15
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25										See Boring B-203 for Approximate Soil Strata Auger to 10' - No Sampling		
20	5											
15	10		1D		10-12	24/15	7-9-7-8			10.0 Brown Gravelly SAND, Trace to Some Silt		Soils Damp
10	15		2D		15-17	24/14	8-8-8-10				▽	
5	20		3D		20-22	24/10	13-9-13-13					
0	25		4D		25-27	24/12	10-12-13-15					
-5	30									30.0 Brown SAND, Trace Gravel, Trace Silt 31.0 Brown Fine to Medium SAND, Some Silt		
-10	35									34.5 Gray Silty CLAY with Frequent Sand Seams and Layers		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-203B
SHEET: 2 of 2
PROJECT NO. 17-0103
DATE START: 3/1/2017
DATE FINISH: 3/1/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
-15										40.0 Brown Fine SAND, Trace Silt, With Occasional Clayey Silt Seams and Layers		
	45											
-20												
	50											
-25												
	55									55.0 Brown Silty Fine SAND with Occasional Clayey Silty Seams		
-30										56.0 Gray Silty CLAY with Frequent Sand Seams		
										58.0 Increased Drill Resistance - Probable Glacial Till		
	60											
-35										60.5 Probable Bedrock - Advance By Roller Cone		
										62.0 Bottom of Exploration at 62.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

S.W.COLE ENGINEERING, INC.

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-204
SHEET: 1 of 1
PROJECT NO. 17-0103
DATE START: 2/27/2017
DATE FINISH: 2/27/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 27' +/- | **TOTAL DEPTH (FT):** 37.0 | **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Jeff Lee | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted CME 850 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic / Automatic | **HAMMER WEIGHT (lbs):** 140 / 140 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 30
WATER LEVEL DEPTHS (ft): ▽ 5
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_2O Depth	Remarks
										0.3 4" Asphalt Pavement		
25			1D		0.5-2.5	24/8	12-8-10-9			Black and Gray-Brown SAND, Some Gravel, Trace Silt (Fill)		
			2D		2.5-4.5	24/10	12-11-14-14			Gray to Gray-Brown Silty Gravelly SAND with Cobbles and Concrete (Fill)		Soils Moist
	5		3D		5-7	24/8	5-7-8-10			5.0 Brown Gravelly SAND, Some Silt	▽	
20												
	10		4D		10-12	24/14	5-5-4-2			10.0 Brown SAND, Some Gravel, Trace Silt, with Silty Seams		
15												
	15		5D		15-17	24/3	3-5-5-8			15.0 Brown Gravel and SAND, Some Silt		
10										18.0 Gray Silty CLAY with Frequent Sand Layers		Wash Turned Gray at 18'
	20		6D		20-22	24/22	WOH-WOH-3-4			21.0 Brown Silty Fine SAND with Frequent Silt and Clay Seams		
5												
	25		7D		25-27	24/18	5-5-3-4			25.0 Brown with Orange Staining Fine to Medium SAND, Trace Silt		
0												
	30		8D		30-32	24/12	4-5-11-9			29.0 Gray Silt and SAND, Some Gravel (Glacial Till)		Cobbles/Gravel at 29'
-5												
	35									34.0 Bedrock - Advance By Roller Cone		
-10										37.0 Bottom of Exploration at 37.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-204

BORING LOG

CLIENT:	Cowcatcher, LLC
PROJECT:	Proposed Parking Structure
LOCATION:	222 St. John Street, Portland, Maine

BORING NO.:	**B-205**
SHEET:	1 of 2
PROJECT NO.	17-0103
DATE START:	3/2/2017
DATE FINISH:	3/2/2017

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 25.5' +/- **TOTAL DEPTH (FT):** 58.0 **LOGGED BY:** Evan Walker

DRILLING CO.: S. W. Cole Explorations, LLC **DRILLER:** Jeff Lee **DRILLING METHOD:** Cased Boring

RIG TYPE: Track Mounted Mobile B-53 **AUGER ID/OD:** N/A / N/A **SAMPLER:** Standard Split-Spoon

HAMMER TYPE: Safety / Safety **HAMMER WEIGHT (lbs):** 140 / 300 **CASING ID/OD:** 4 in / 4 1/2 in **CORE BARREL:**

HAMMER EFFICIENCY FACTOR: **HAMMER DROP (inch):** 30 / 16

WATER LEVEL DEPTHS (ft): ▽ 10

GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level; ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling; D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear; Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot; WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector; S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25			1D		0.5-2.5	24/18	10-12-12-13			0.3 Asphalt Pavement; 1.0 Black Silty SAND, Some Gravel (Fill)		
			2D		2.5-4.5	24/18	9-10-9-10			Brown Gravelly SAND, Trace Silt (Fill); 2.5 Brown SAND, Some Gravel, Trace Silt		
20	5		3D		5-7	24/18	6-14-14-11			5.0 Brown Gravel and SAND, Trace Silt		Soils Damp
15	10		4D		10-12	24/10	4-9-7-8			Brown Gravelly SAND, Some Silt	▽	
10	15		5D		15-17	24/6	5-7-17-11					
5	20		6D		20-22	24/0	8-11-12-20					
0	25		7D		25-27	24/3	10-9-10-11			Brown Silty Gravelly SAND with Cobbles		
-5	30		8D		30-32	24/12	12-14-13-19					
-10	35		9D		35-36.8	22/2	14-33-42-50-4"/4"					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-205
SHEET: 2 of 2
PROJECT NO. 17-0103
DATE START: 3/2/2017
DATE FINISH: 3/2/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
-15			10D		40-42	24/20	9-8-7-10			40.0		
	45									Brown Silty Fine SAND with Silt Seams		
-20			11D		45-47	24/20	12-14-12-23			46.0 Gray Silty SAND with Frequent Silt Layers		
	50											
-25			12D		50-52	24/24	3-6-10-34			50.0 Gray Silty SAND, Some Gravel (Glacial Till)		
										53.9 Bedrock - Advance by Roller Cone		
-30	55											
										58.0 Bottom of Exploration at 58.0 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-206
SHEET: 1 of 2
PROJECT NO. 17-0103
DATE START: 3/3/2017
DATE FINISH: 3/3/2017

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 25.5' +/- | **TOTAL DEPTH (FT):** 45.9 | **LOGGED BY:** Evan Walker
DRILLING CO.: S. W. Cole Explorations, LLC | **DRILLER:** Jeff Lee | **DRILLING METHOD:** Cased Boring
RIG TYPE: Track Mounted Mobile B-53 | **AUGER ID/OD:** N/A / N/A | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Safety / Safety | **HAMMER WEIGHT (lbs):** 140 / 300 | **CASING ID/OD:** 4 in / 4 1/2 in | **CORE BARREL:**
HAMMER EFFICIENCY FACTOR: | **HAMMER DROP (inch):** 30 / 16
WATER LEVEL DEPTHS (ft): ▽ 3
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS: Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Undisturbed Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
25			1D		0.5-2.5	24/18	6-8-8-12			0.3 4" Asphalt Pavement Black Silty SAND, Some Gravel (Fill) 1.8 Brown SAND, Some Gravel, Trace Silt 2.5 (Probable Fill) Brown Medium to Coarse SAND, Trace Silt		
			2D		2.5-4.5	24/18	10-13-15-13				▽	
20	5		3D		5-7	24/22	6-6-7-9			6.0 Gray-Brown Silty SAND, Trace Gravel		
15	10		4D		10-12	24/14	3-8-7-8			10.5 Brown Medium to Coarse SAND, Trace Gravel, Trace Silt		
10	15		5D		15-17	24/6	4-9-9-12			15.0 Brown Gravelly SAND, Some Silt		
5	20		6D		20-22	24/10	5-5-4-7			20.0 Brown SAND, Some Silt, Trace Gravel		
0	25		7D		25-27	24/22	2-3-3-4			25.0 Gray Silty CLAY with Frequent Sand and Silt Seams		
-5	30		8D		30-32	24/15	3-4-19-34			30.0 Gray Medium to Coarse SAND, Trace Gravel, Trace Silt		
-10	35		9D		35-37	24/2	4-4-5-5			35.0 Gray Silty SAND, Some Gravel (Glacial Till)		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

(Continued Next Page)

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

BORING LOG

CLIENT: Cowcatcher, LLC
PROJECT: Proposed Parking Structure
LOCATION: 222 St. John Street, Portland, Maine

BORING NO.: B-206
SHEET: 2 of 2
PROJECT NO. 17-0103
DATE START: 3/3/2017
DATE FINISH: 3/3/2017

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
-15			10D		40-40.8	9/9	8-50-			40.8 Weathered Bedrock - Advance by Roller Cone		
			1R		40.9-45.9	60/60	3"/3" 44			40.9 Bedrock Gray PHYLLITE, medium hard, fine grained, closely spaced shallow to steep dipping fractures. Light oxidization.		
-20	45									45.9 Bottom of Exploration at 45.9 feet		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING / WELL 17-0103.GPJ SWCE TEMPLATE.GDT 5/4/17

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

KEY TO THE NOTES & SYMBOLS
Test Boring and Test Pit Explorations

All stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to ½" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

S.W.COLE
ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

Six Liberty Drive, Bangor, ME 04401 TEL (207) 848-5714 FAX (207) 848-2403
Gray Plaza, P.O. Box 378, Gray, ME 04039 TEL (207) 657-2866 FAX (207) 657-2810
161 Water St., P.O. Box 990, Caribou, ME 04736 TEL (207) 496-1511 FAX (207) 496-1501

BORING NO. B-101
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 25.5'±

PROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
LOCATION 222 ST. JOHN STREET PORTLAND, MAINE
DRILLING FIRM GREAT WORKS TEST BORING, INC. DRILLER DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING				
SAMPLER				

WATER LEVEL INFORMATION
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH & BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2"	ASPHALT
	1	24"	18"	2.5'	9	12	13	13	4.0'	LIGHT BROWN SILTY FINE TO MEDIUM SAND W/SOME GRAVEL (FILL) ~~ MEDIUM DENSE ~~
	2	24"	11"	6.5'	23	85	22	20		W= 2.4% BROWN GRAVELLY FINE TO COARSE SAND W/TRACE OF SILT ~~ DENSE TO MEDIUM DENSE ~~
	3	24"	8"	11.5'	7	9	10	13	11.5'	BOTTOM OF EXPLORATION AT 11.5'

SOIL CLASSIFIED BY :

DRILLER-VISUALLY	X
SOIL TECHNICIAN-VISUALLY	X
LABORATORY TESTS	X

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-101

S.W.COLE
ENGINEERING, INC.
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161 Water St., P.O. Box 920, Caribou, ME 04736 TEL (207) 496-1511 FAX (207) 496-1501

BORING NO. B-102
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 26.0'±

PROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
LOCATION 222 ST. JOHN STREET PORTLAND, MAINE
DRILLING FIRM GREAT WORKS TEST BORING, INC. **DRILLER** DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL	WATER LEVEL INFORMATION
CASING					NO FREE WATER OBSERVED
SAMPLER					

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1	24"	16"	2.5'	3	7	7	6		LIGHT BROWN MEDIUM TO COARSE SAND W/SOME GRAVEL AND TRACE OF SILT (FILL)
									4.0'	~~ MEDIUM DENSE ~~
	2	12"	0	5.5'	1	1				GRAY SILTY CLAY
	1S	30"	30"	8.0'	HYD		PUSH			qu= 1.35 ksf W= 30.4% qp= 0.5-1.0 ksf
	2x3	VANE		8.5'						Sv= 1.38/0.40 ksf Wl= 30.1
	2x3	VANE		9.0'						Sv= 1.58/0.40 ksf Wp= 16.1
										~~ MEDIUM ~~
	3	24"	24"	11.5'	WOH/15"		1/3"	2	12'	W= 28.2%
	2x3	VANE		12.0'						Sv= 7.52/1.98 ksf
	2x3	VANE		12.5'						Sv= 8.01/2.77 ksf
										GRAY SILTY CLAY WITH FINE SAND LAYERS
	4	24"	24"	16.5'	WOH/12"		2	2		W= 26.7% qp= 0.6 ksf
										~~ MEDIUM ~~
	5	24"	24"	21.5'	WOH/12"		WOH	WOH		W= 26.9% qp= 1.0 ksf
									24'.	
									29.5'	STIFFER SILTY CLAY OR MORE DENSE GRANULAR MATERIAL.

BOTTOM OF EXPLORATION AT 29.5'

ROD PROBE

DEPTH	BLOWS
21.5'-22.5'	2
22.5-23.5'	4
23.5'-24.5'	5
24.5'-25.5'	4
25.5'-26.5'	5
26.5'-27.5'	6
27.5'-28.5'	7
28.5'-29.5'	8

SOIL CLASSIFIED BY :

DRILLER-VISUALLY	X
SOIL TECHNICIAN-VISUALLY	X
LABORATORY TESTS	X

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-102

S.W.COLE
ENGINEERING, INC.
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161 Water St., P.O. Box 990, Caribou, ME 04736 TEL (207) 496-1511 FAX (207) 496-1501

BORING NO. B-103
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 26.0'±

ROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
ATION 222 ST. JOHN STREET PORTLAND, MAINE
RILLING FIRM GREAT WORKS TEST BORING, INC. DRILLER DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL	WATER LEVEL INFORMATION
ING					
AMPLER					4.4' OPEN HOLE

SING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									3.5'	ASPHALT
	1	24"	11"	2.5'	7	8	7	8	4.0'	LIGHT BROWN MEDIUM TO COARSE SAND W/SOME GRAVEL AND TRACE OF SILT ~~MEDIUM DENSE~~ (FILL)
	2	24"	0	6.5'	1/12"		1	2	8.0'	GRAY SILTY CLAY W/SOME FINE SAND ~~MEDIUM~~
	3	24"	13"	11.5'	1	5	7	9	11.5'	BROWN FINE TO MEDIUM SAND W/SOME GRAVEL ~~MEDIUM DENSE~~
										BOTTOM OF EXPLORATION AT 11.5'

SOIL CLASSIFIED BY :

DRILLER–VISUALLY	X
SOIL TECHNICIAN–VISUALLY	X
LABORATORY TESTS	

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-103

S.W.COLE
ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

Six Liberty Drive, Bangor, ME 04401 TEL (207) 848-5714 FAX (207) 848-2403
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BORING NO. B-104
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION

OJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
ATION 222 ST. JOHN STREET PORTLAND, MAINE
ILLING FIRM GREAT WORKS TEST BORING, INC. **DRILLER** DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL	WATER LEVEL INFORMATION
ING					
AMPLER					4.I' INSIDE AUGERS

SING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									5"	ASPHALT
									1.3'	BLACK GRAVELLY FINE TO MEDIUM SAND W/SOME SILT AND COAL ASH ~~ MEDIUM DENSE ~~ (FILL)
	1	24"	18"	2.5'	4	7	13	18		
										LIGHT BROWN GRAVELLY FINE TO COARSE SAND W/SOME SILT
									6.5'	~~ MEDIUM DENSE BECOMING DENSE ~~
	2	24"	16"	6.5'	24	30	33	33		BOTTOM OF EXPLORATION AT 6.5'

SOIL CLASSIFIED BY :

DRILLER-VISUALLY	X
SOIL TECHNICIAN-VISUALLY	X
LABORATORY TESTS	

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

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BORING NO. B-105
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 27.0'±

PROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
LOCATION 222 ST. JOHN STREET PORTLAND, MAINE
DRILLING FIRM GREAT WORKS TEST BORING, INC. **DRILLER** DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL	WATER LEVEL INFORMATION
CASING					
SAMPLER					4.0'

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
	1	24"	17"	2.0'	3	4	6	9	1.3'	BLACK GRAVELLY FINE TO MEDIUM SAND W/SOME SILT AND COAL ASH (FILL) ~~LOOSE~~
	2	24"	14"	6.5'	7	15	15	11		LIGHT BROWN GRAVELLY FINE TO COARSE SAND W/SOME SILT W=14.1% ~~ MEDIUM DENSE ~~
	3	24"	15"	11.5'	10	12	13	9	11.5'	BOTTOM OF EXPLORATION AT 11.5'

SOIL CLASSIFIED BY :

DRILLER–VISUALLY	X
SOIL TECHNICIAN–VISUALLY	X
LABORATORY TESTS	X

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

S.W.COLE
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161 Water St., P.O. Box 220, Caribou, ME 04736 TEL (207) 496-1511 FAX (207) 496-1501

BORING NO. B-106
PROJECT NO. 94-716 S
DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 38.0'±

PROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
LOCATION 222 ST. JOHN STREET PORTLAND, MAINE
DRILLING FIRM GREAT WORKS TEST BORING, INC. DRILLER DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
RIG				
SAMPLER				

WATER LEVEL INFORMATION
NO FREE WATER OBSERVED

BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									3"	ASPHALT
	1	24"	16"	2.5'	6	8	9	12	3.2'	LIGHT BROWN FINE TO COARSE SAND W/SOME GRAVEL AND TRACE OF SILT ~~ MEDIUM DENSE ~~ (FILL)
	2	24"	11"	4.5'	15	19	14	16	6.5'	TAN BROWN MEDIUM TO COARSE SAND W/SOME GRAVEL AND TRACE OF SILT ~~ DENSE TO MEDIUM DENSE ~~ (FILL)
	3	24"	0	6.5'	8	11	12	11		BOTTOM OF EXPLORATION AT 6.5'

SOIL CLASSIFIED BY :

DRILLER-VISUALLY	X
SOIL TECHNICIAN-VISUALLY	X
LABORATORY TESTS	

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-106

S.W.COLE
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161 Water St., P.O. Box 220, Caribou, ME 04736 TEL (207) 496-1511 FAX (207) 496-1501

BORING NO. B-107
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 36.0'±

PROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
LOCATION 222 ST. JOHN STREET PORTLAND, MAINE
DRILLING FIRM GREAT WORKS TEST BORING, INC. DRILLER DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
CASING				
SAMPLER				

WATER LEVEL INFORMATION
NO FREE WATER OBSERVED

CASING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2.5"	ASPHALT
	1	24"	16"	2.5'	9	13	13	14	2.8'	LIGHT BROWN GRAVELLY FINE TO MEDIUM SAND W/TRACE OF SILT AND COBBLES (FILL) ~~MEDIUM DENSE~~
	2	24"	18"	4.5'	5	5	6	9	4.0'	LIGHT BROWN GRAVELLY MEDIUM TO COARSE SAND W/TRACE OF SILT AND COBBLES (FILL) ~~MEDIUM DENSE~~
	3	24"	10"	6.5'	8	7	13	7		LIGHT BROWN MEDIUM TO COARSE SAND W/SOME GRAVEL AND SILT ~~ MEDIUM DENSE~~
	4	24"	8"	8.5'	8	12	14	13	8.5'	BOTTOM OF EXPLORATION AT 8.5'

SOIL CLASSIFIED BY :

DRILLER-VISUALLY	X
SOIL TECHNICIAN-VISUALLY	X
LABORATORY TESTS	

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-107

S.W.COLE
ENGINEERING, INC.
GEOTECHNICAL CONSULTANTS

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161 Water St., P.O. Box 990, Caribou, ME 04736 TEL (207) 496-1511 FAX (207) 496-1501

BORING NO. B-108
PROJECT NO. 94-716 S

DATE START 7/27/95
DATE FINISH 7/27/95
SURFACE ELEVATION 36.0'±

ROJECT/CLIENT : TRAIN STATION / CITY OF PORTLAND
ATION 222 ST. JOHN STREET PORTLAND, MAINE
ILLING FIRM GREAT WORKS TEST BORING, INC. DRILLER DAVE DIONNE

	TYPE	SIZE I.D.	HAMMER WT.	HAMMER FALL
ING				
AMPLER				

WATER LEVEL INFORMATION
NO FREE WATER OBSERVED

SING BLOWS PER FOOT	SAMPLE NO.	PEN.	REC.	DEPTH @ BOT	SAMPLER BLOWS PER 6" 0-6	6-12	12-18	18-24	DEPTH	STRATA & TEST DATA
									2.5'	ASPHALT
	1	18"	9"	2.0'	9	13	9			LIGHT BROWN GRAVELLY FINE TO COARSE SAND W/TRACE OF SILT AND COBBLES (FILL)
									4.0'	~~ MEDIUM DENSE ~~
	2	24"	14"	5.5'	15	19	14	16	5.5'	LIGHT GRAY CLAYEY SILT ~~ HARD ~~ qp= 9.0+ ksf
	3	24"	15"	7.5'	8	15	15	20	7.5'	BROWN CLAYEY SILT ~~ HARD ~~ qp= 9.0+ ksf
										BOTTOM OF EXPLORATION AT 7.5'

SOIL CLASSIFIED BY :

DRILLER-VISUALLY	X
SOIL TECHNICIAN-VISUALLY	X
LABORATORY TESTS	

REMARKS :

STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, AND THE TRANSITION MAY BE GRADUAL.

BORING NO. B-108

MAINE TEST BORINGS, INC. **BREWER, MAINE 04412**	CLIENT FIRST ATLANTIC	SHEET 1 OF 1 HOLE NO. B-1
DRILLER DARREL MCKEEN	PROJECT NAME MEDICAL BUILDING	LINE & STATION
T.B. JOB NUMBER 89-232	LOCATION PORTLAND, MAINE	OFFSET

GROUND WATER OBSERVATIONS

AT 0.00 FT. AFTER 0.00 HOURS

AT 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HS	SS	
SIZE I.D.	2 1/2"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

DATE START	DATE FINISH
12/28/89	12/28/89

SURFACE ELEVATION
NOT AVAILABLE

CASING BLOWS PER FOOT	SAMPLE NO.	O.D.	PEN.	REC.	DEPTH @ BOT	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
										0.3	PAVEMENT
										2.0	BLACK GRAVELY SAND W/SILT
	1D	2"	18"		3.5	16	10	16			~ MEDIUM DENSE ~
										4.0	BROWN GRAVELY SILTY SAND
	2D	2"	18"		6.5	20	25	30			~ DENSE ~ W=11.3 % BROWN GRAVELY SAND W/SOME SILT
										10.0	
	3D	2"	18"		11.5	15	20	25			~ DENSE ~ BROWN COARSE SAND TRACE OF GRAVEL
	4D	2"	18"		16.5	10	20	25			
										20.0	
	5D	2"	18"		21.5	9	9	11		21.5	BROWN SILTY SAND TRACE OF GRAVEL ~ MEDIUM DENSE ~ BOTTOM OF BORING @ 21.5' WATER @ 3.0' HOLE CAVED @ 4.0' RUNNING SAND IN AUGERS 10'- 20'

SAMPLES
S = SPLIT SPOON
U = 2" SHELBY TUBE
U = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
[XX] DRILLER-VISUALLY
[X] SOIL TECHNICIAN-VISUALLY
[X] LABORATORY TESTS

REMARKS:

MAINE TEST BORINGS, INC.
BREWER, MAINE 04412

CLIENT: FIRST ATLANTIC

SHEET 1 OF 1

HOLE NO. B-2

DRILLER: DARREL MCKEEN

PROJECT NAME: MEDICAL BUILDING

LINE & STATION:

M.T.B. JOB NUMBER: 89-232

LOCATION: PORTLAND, MAINE

OFFSET:

GROUND WATER OBSERVATIONS

AT 0.00 FT. AFTER 0.00 HOURS

AT 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HS	SS	
SIZE I.D.	2 1/2"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

DATE START: 12/29/89

DATE FINISH: 12/29/89

SURFACE ELEVATION: NOT AVAILABLE

CASING BLOWS PER FOOT	SAMPLE NO.	O.D.	PEN.	REC.	DEPTH @ BOT.	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
										0.3	PAVEMENT
	1D	2"	18"		3.5	30	30	16		5.5	~ DENSE ~ BROWN GRAVELY SAND
	2D	2"	18"		6.5	6	5	3		8.0	W=26.8% GRAY SILTY CLAY W/ BLACK STREAKS qp=0.5 ksf ~ SOFT TO MEDIUM ~
	3D	2"	18"		11.5	8	12	15			~ MEDIUM DENSE ~ W=14.5% BROWN COARSE SAND TRACE OF GRAVEL AND SILT
	4D	2"	18"		16.5	10	18	12			
	5D	2"	18"		21.5	10	11	12		21.5	BOTTOM OF BORING @ 21.5' WATER @ 4.2' HOLE CAVED @ 8.2'

SAMPLES
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
XX DRILLER-VISUALLY
X SOIL TECHNICIAN-VISUALLY
X LABORATORY TESTS

REMARKS:

HOLE NO. B-2

MAINE TEST BORINGS, INC. BREWER, MAINE 04412	CLIENT FIRST ATLANTIC	SHEET 1 OF 1 HOLE NO. B-2A
DRILLER DARREL MCKEEN	PROJECT NAME MEDICAL BUILDING	LINE & STATION
M.T.B. JOB NUMBER 89-232	LOCATION PORTLAND, MAINE	OFFSET

GROUND WATER OBSERVATIONS

AT 0.00 FT. AFTER 0.00 HOURS

AT 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HW	SS	
SIZE I.D.	4"	1 3/8"	
HAMMER WT.	300	140	
HAMMER FALL	16"	30"	

DATE START: 01/02/90 DATE FINISH: 01/02/90

SURFACE ELEVATION: NOT AVAILABLE

CASING BLOWS PER FOOT	SAMPLE NO.	SAMPLE O.D.	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH @ BOT.	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
AUGER										0.3	PAVEMENT
										2.0	BLACK GRAVELY SAND
9											BROWN GRAVELY SAND, TRACE OF COBBLES
10										5.5	
	1U	3	1/2"24"		7.5	WT OF 1 MAN		WT OF 2 MEN		7.8	GRAY SILTY CLAY W=39.6% W_L=37.1 W_P=21.5
											BOTTOM OF BORING @ 7.8' NO PENATRATION ON VANE

SAMPLES
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
XX DRILLER-VISUALLY
X SOIL TECHNICIAN-VISUALLY
X LABORATORY TESTS

REMARKS:

HOLE NO. B-2A

MAINE TEST BORINGS, INC. **BREWER, MAINE 04412**	CLIENT FIRST ATLANTIC	SHEET 1 OF 1 HOLE NO. B-3
DRILLER DARREL MCKEEN	PROJECT NAME MEDICAL BUILDING	LINE & STATION
T.B. JOB NUMBER 89-232	LOCATION PORTLAND, MAINE	OFFSET

GROUND WATER OBSERVATIONS

AT 0.00 FT. AFTER 0.00 HOURS

AT 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HS	SS	
SIZE I.D.	2 1/2"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

DATE START	DATE FINISH
12/28/89	12/28/89

SURFACE ELEVATION
NOT AVAILABLE

CASING BLOWS PER FOOT	SAMPLE NO.	O.D.	PEN.	REC.	DEPTH @ BOT.	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
										0.4	PAVEMENT
	1D	2"	6"		2.5	65					W = 5.7 % BROWN GRAVELY SAND TRACE OF COBBLES
										4.0	~ MEDIUM DENSE ~
	2D	2"	18"		6.5	10	19	17			W=3.5 %
	3D	2"	18"		11.5	4	8	18			W=5.9 %
	4D	2"	18"		16.5	3	3	3			~ LOOSE ~ BROWN COARSE SAND, TRACE OF GRAVEL
	5D	2"	18"		21.5	6	7	8			~ MEDIUM DENSE ~
	6D	2"	18"		26.5	4	5	9			~ LOOSE TO...
	7D	2"	18"		31.5	4	6	7		31.5	...MEDIUM DENSE ~

ROD PROBES

BLOWS	INTVL	BLOWS	INTVL	BLOWS	INTVL
32-33	7	38-39	51	44-45	28
33-34	15	39-40	45	45-46	36
34-35	16	40-41	52	46-47	64
35-36	17	41-42	38	47-48	80
36-37	24	42-43	32	48-49	97
37-38	40	43-44	26	49-50	112

SAMPLES
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
XX DRILLER-VISUALLY
X SOIL TECHNICIAN-VISUALLY
X LABORATORY TESTS

REMARKS:
BOTTOM OF BORING @ 50.0'
HOLE CAVED @ 12.5'

HOLE NO. B-3

MAINE TEST BORINGS, INC. BREWER, MAINE 04412	CLIENT FIRST ATLANTIC	SHEET 1 OF 1 HOLE NO. B-4
DRILLER DARREL MCKEEN	PROJECT NAME MEDICAL BUILDING	LINE & STATION
M.T.B. JOB NUMBER 89-232	LOCATION PORTLAND, MAINE	OFFSET

GROUND WATER OBSERVATIONS

AT 0.00 FT. AFTER 0.00 HOURS

AT 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HS	SS	
SIZE I.D.	2 1/2"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

DATE START	DATE FINISH
12/29/89	12/29/89

SURFACE ELEVATION
NOT AVAILABLE

CASING BLOWS PER FOOT	SAMPLE NO.	O.D.	PEN.	REC.	DEPTH @ BOT.	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
										0.4	PAVEMENT
	1D	2"	6"		2.5	100				2.0	BLACK GRAVELY SAND
											~ DENSE ~ W = 5.3 % BROWN GRAVELY SAND, TRACE OF COBBLES, TRACE OF SILT
	2D	2"	18"		6.5	22	28	33			
	0	2"	0"		10.0	50				11.0	
											~ MEDIUM DENSE ~ BROWN COARSE SAND, TRACE OF GRAVEL
	3D	2"	18"		16.5	10	15	13			
	4D	2"	18"		21.5	10	15	15		21.5	
											BOTTOM OF BORING @ 21.5' HOLE CAVED @ 10.0' WET

SAMPLES
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
XX DRILLER-VISUALLY
X SOIL TECHNICIAN-VISUALLY
X LABORATORY TESTS

REMARKS:

HOLE NO. B-4

MAINE TEST BORINGS, INC.
BREWER, MAINE 04412

CLIENT: FIRST ATLANTIC

SHEET 1 OF 1

HOLE NO. B-5

DRILLER: DARREL MCKEEN

PROJECT NAME: MEDICAL BUILDING

LINE & STATION:

M.T.B. JOB NUMBER: 89-232

LOCATION: PORTLAND, MAINE

OFFSET:

GROUND WATER OBSERVATIONS

AT 0.00 FT. AFTER 0.00 HOURS

AT 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HS	SS	
SIZE I.D.	2 1/2"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

DATE START: 12/28/89

DATE FINISH: 12/28/89

SURFACE ELEVATION: NOT AVAILABLE

CASING BLOWS PER FOOT	SAMPLE NO.	O.D.	PEN.	REC.	DEPTH @ BOT.	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
										0.5	PAVEMENT
										2.0	BLACK GRAVELY SAND
	1D	2"	18"		3.5	20	30	15			~ MEDIUM DENSE ~
										4.0	BROWN GRAVELY SAND

REFUSAL @ 4.0'

SAMPLES
D = SPLIT SPOON
C = 2" SHELBY TUBE
S = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
XX DRILLER-VISUALLY
X SOIL TECHNICIAN-VISUALLY
LABORATORY TESTS

REMARKS:

(7)

HOLE NO. B-5

IAINE TEST BORINGS, INC. BREWER, MAINE 04412	CLIENT FIRST ATLANTIC	SHEET 1 OF 1 HOLE NO. B-5A
RILLER DARREL MCKEEN	PROJECT NAME MEDICAL BUILDING	LINE & STATION
T.B. JOB NUMBER 89-232	LOCATION PORTLAND, MAINE	OFFSET

ROUND WATER OBSERVATIONS

T 0.00 FT. AFTER 0.00 HOURS

T 0.00 FT. AFTER 0.00 HOURS

	CASING	SAMPLER	CORE BARREL
TYPE	HS	SS	
SIZE I.D.	2 1/2"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

DATE START	DATE FINISH
12/29/89	12/29/89

SURFACE ELEVATION
NOT AVAILABLE

ASING LOWS PER OOT	SAMPLE NO.	O.D.	PEN.	REC.	DEPTH @ BOT.	BLOWS PER 6" ON SAMPLER 0-6	6-12	12-18	VANE READING	DEPTH	STRATUM DESCRIPTION
										0.5	PAVEMENT
										2.0	BLACK GRAVELY SAND
											~ MEDIUM DENSE TO DENSE ~ BROWN GRAVELY SAND TRACE OF COBBLES AND SILT W= 3.3 %
	1D	2"	18"		6.5	15	40	40		7.0	
	2D	2"	18"		11.5	11	21	32			~ MEDIUM DENSE ~
	3D	2"	18"		16.5	17	17	17			W=15.0% GRAVELLY BROWN COARSE SAND TRACE OF ~~GRAVEL~~ SILT
	4D	2"	18"		21.5	8	15	8			
	5D	2"	18"		26.5	9	10	14			
	6D	2"	18"		31.5	10	12	14		31.5	
											BOTTOM OF BORING @ 31.5'

SAMPLES
) = SPLIT SPOON
= 2" SHELBY TUBE
3 = 3" SHELBY TUBE

SOIL CLASSIFIED BY:
XX DRILLER-VISUALLY
X SOIL TECHNICIAN-VISUALLY
X LABORATORY TESTS

REMARKS:

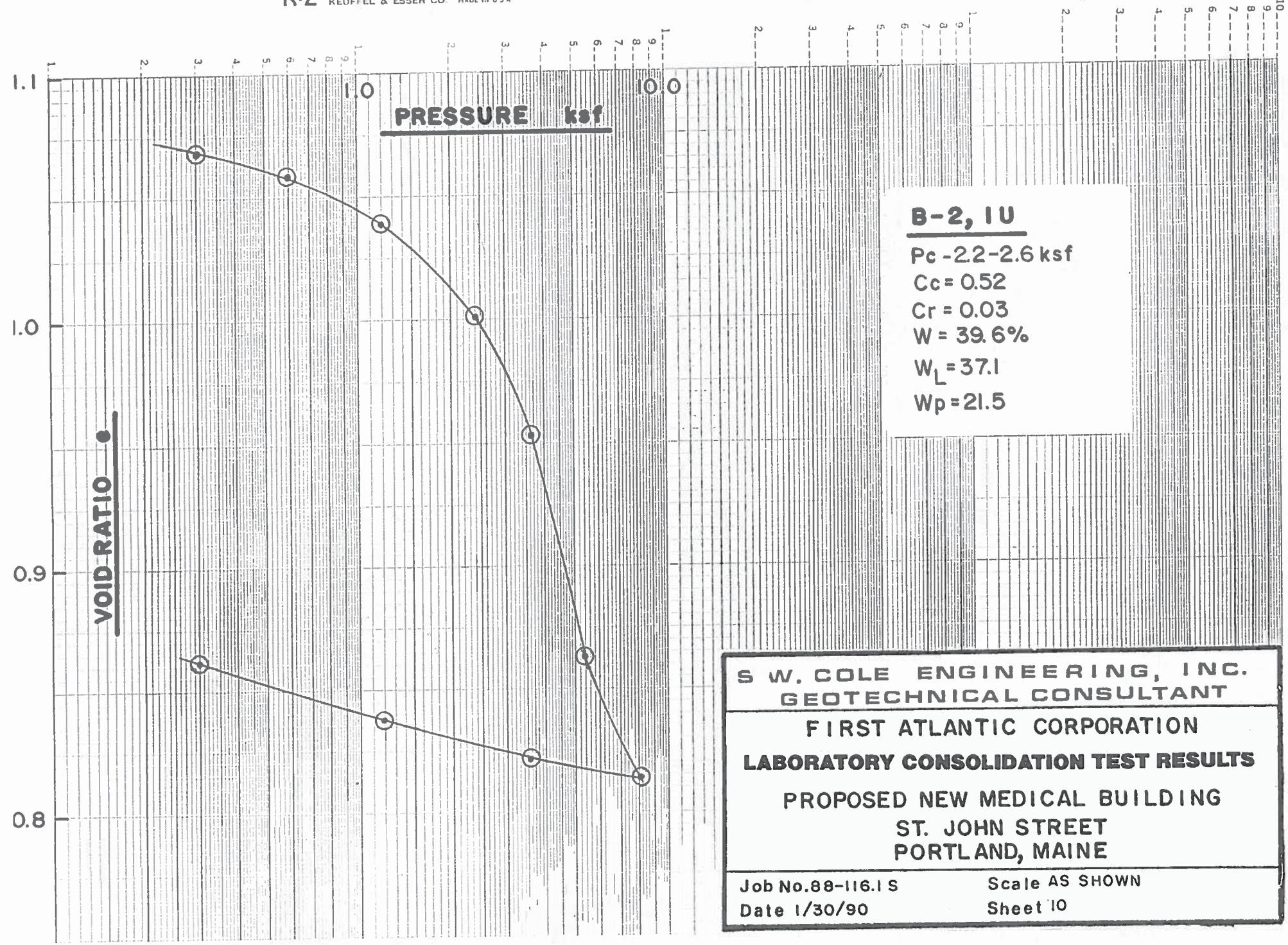
HOLE NO. B-5A

APPENDIX D

LABORATORY TEST RESULTS

K•E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6012



B-2, IU

Pc - 2.2-2.6 ksf
Cc = 0.52
Cr = 0.03
W = 39.6%
W_L = 37.1
Wp = 21.5

S W. COLE ENGINEERING, INC.
GEOTECHNICAL CONSULTANT

FIRST ATLANTIC CORPORATION

LABORATORY CONSOLIDATION TEST RESULTS

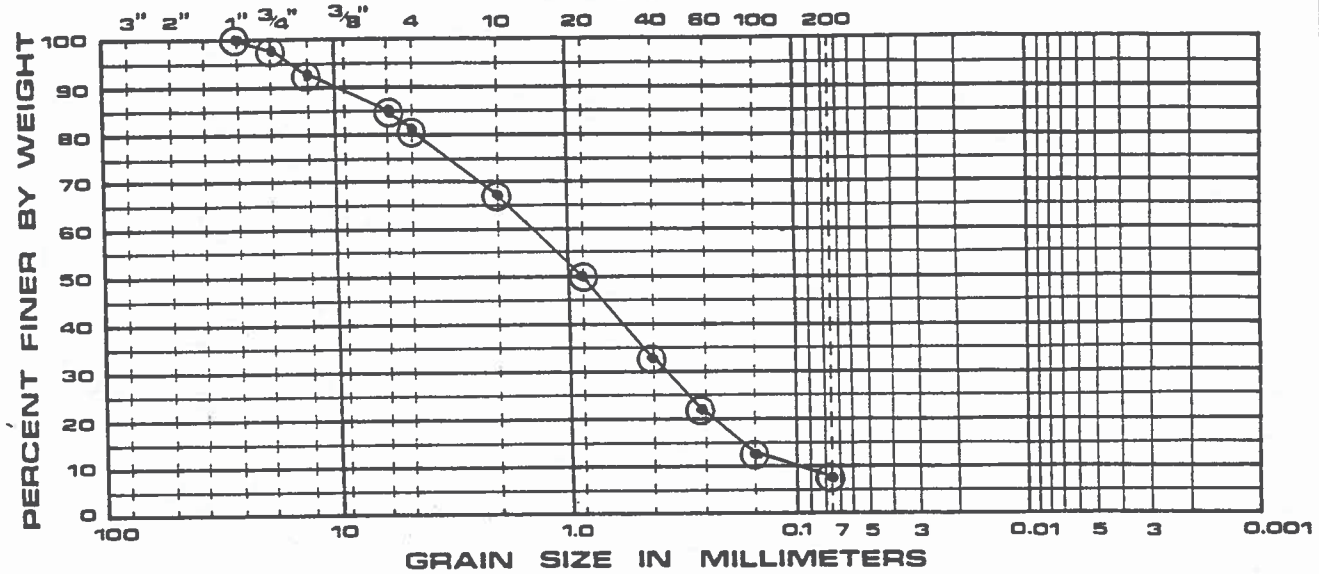
PROPOSED NEW MEDICAL BUILDING
ST. JOHN STREET
PORTLAND, MAINE

Job No. 88-116.1 S	Scale AS SHOWN
Date 1/30/90	Sheet 10

JOB NO: 88-116.1 S

GRAIN SIZE ANALYSIS

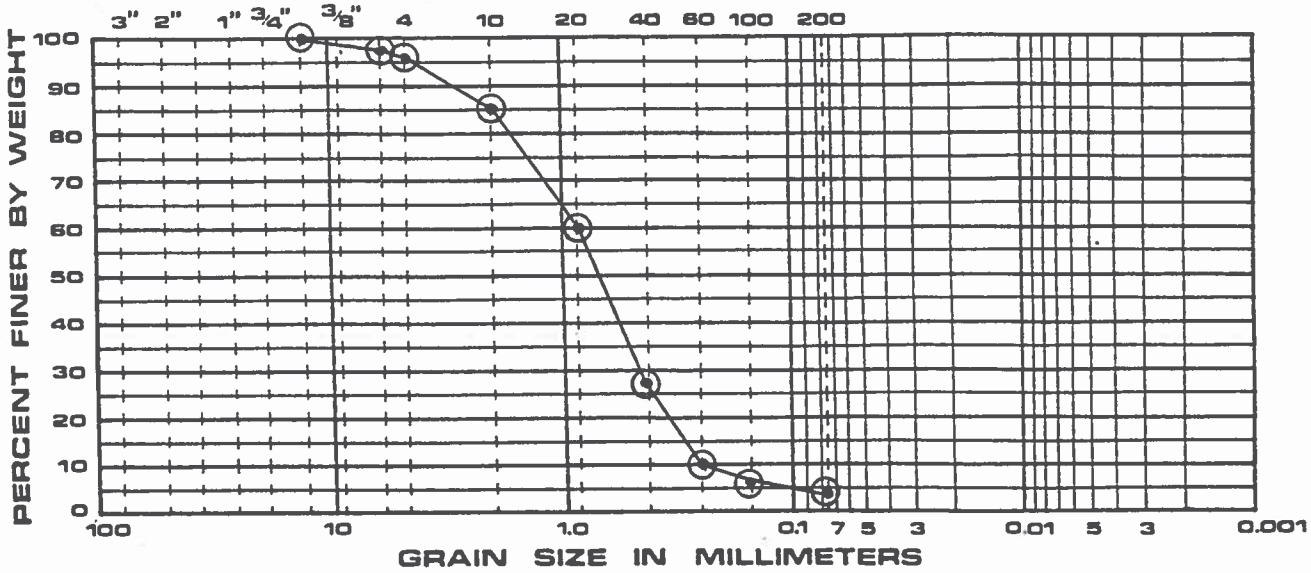
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
○	B-1	S-2	5'	Gravelly Sand w/some Silt		11.3 %

GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	

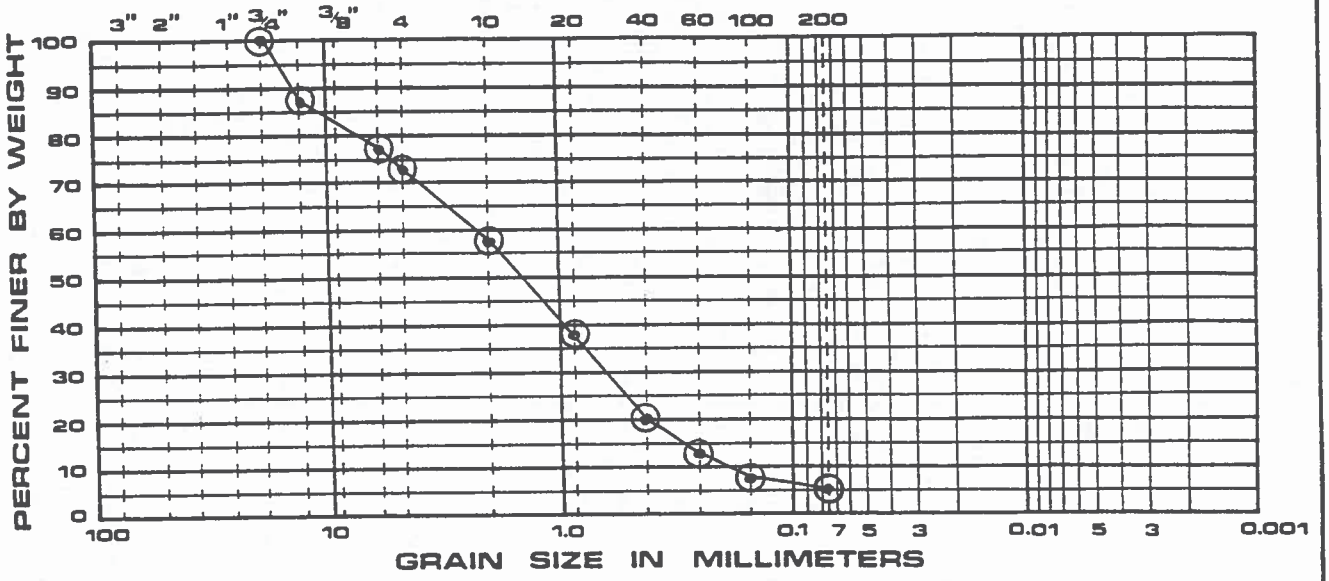


PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
○	B-2	S-3	10'	Sand w/trace Gravel and Silt		14.5%

JOB NO: 88-116.1 S

GRAIN SIZE ANALYSIS

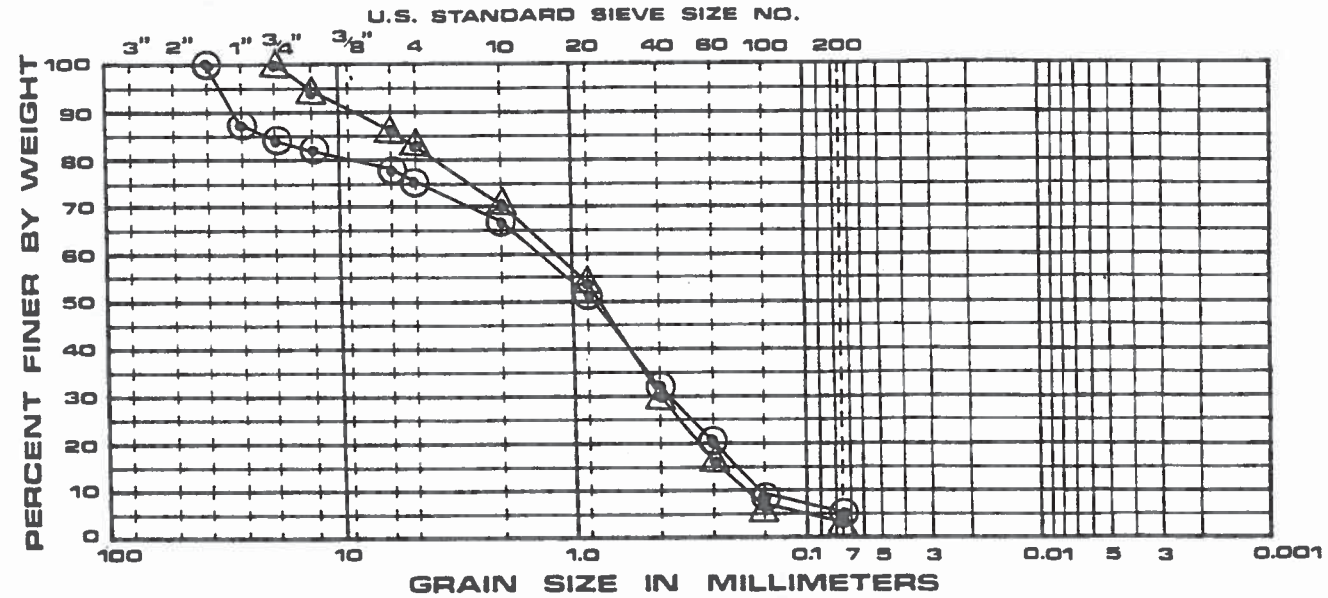
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
○	B-4	S-2	5'	Gravelly Sand w/trace of Silt		5.3 %

GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	

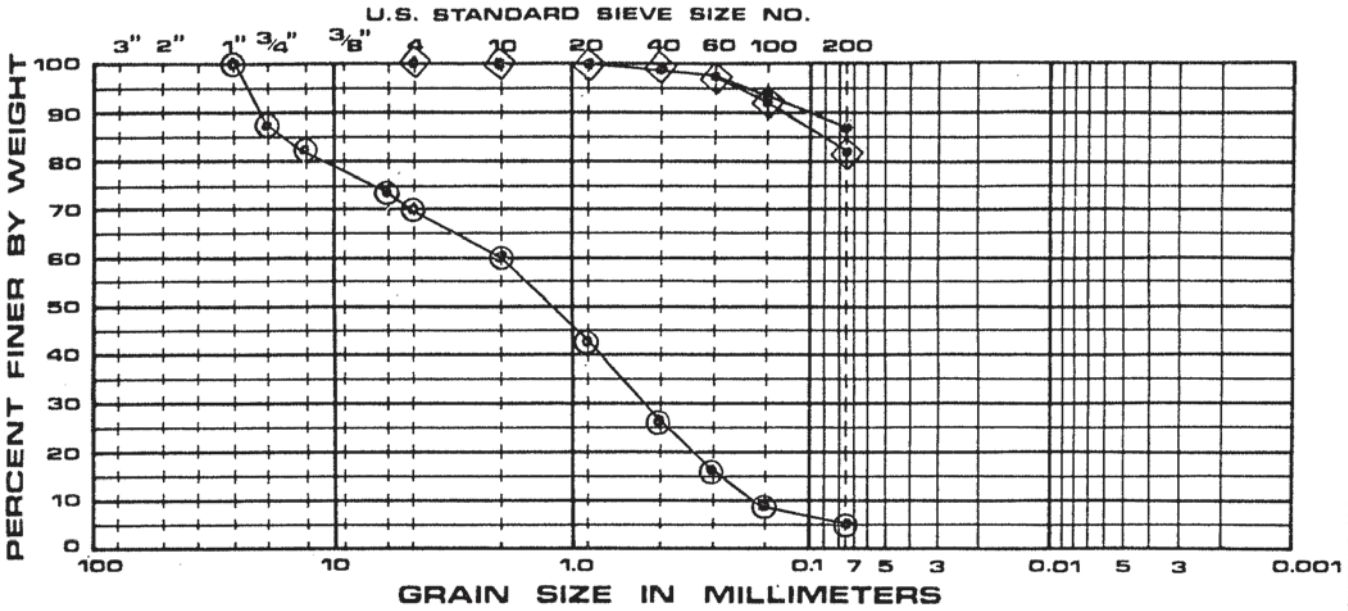


PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION		W
○	B-5A	S-1	5'	Gravelly Sand w/trace of Silt		3.3%
△	B-5A	S-2	10'	Gravelly Sand w/trace of Silt		15.3%

JOB NO. : 94-716 S

GRAIN SIZE ANALYSIS

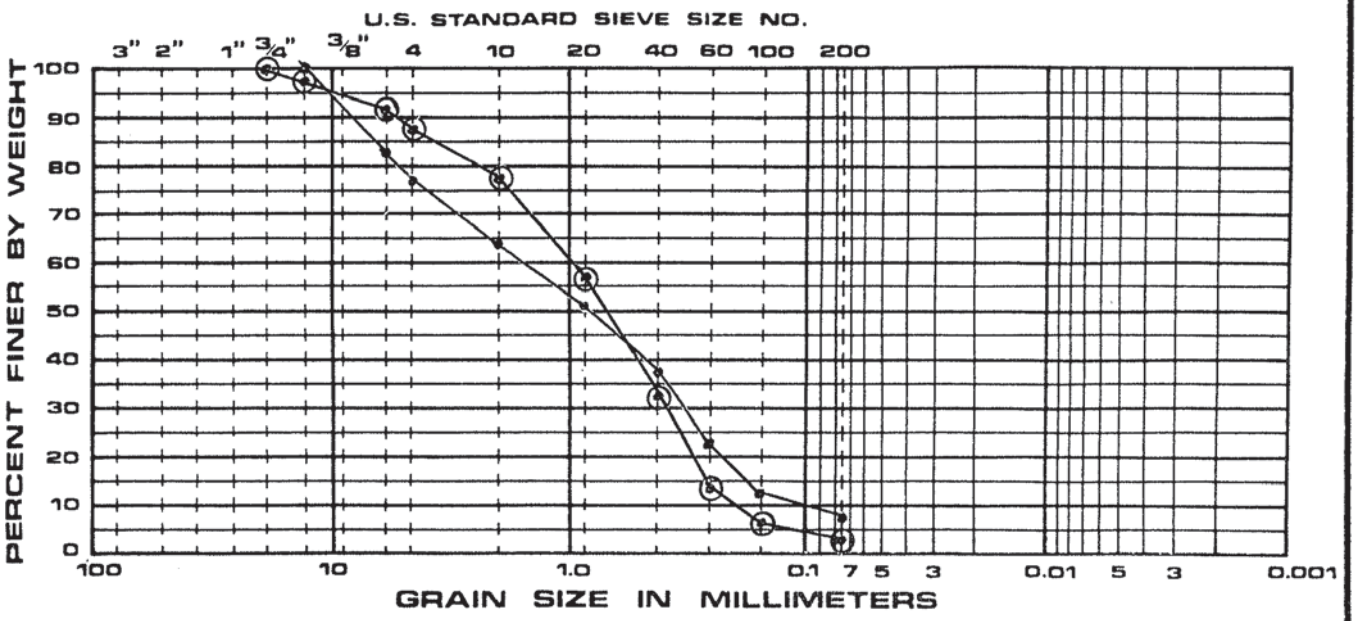
COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%
⊙	B-101	2	4.5'-6.5'	GRAVELLY FINE TO COARSE SAND W/TRACE OF SILT	2.4
•	B-102	3	9.5'-11.5'	GRAY SILTY CLAY W/SOME FINE SAND LAYERS	28.2
◈	B-102	4	14.5'-16.5	GRAY SILTY CLAY W/FINE SAND LAYERS	26.7

GRAIN SIZE ANALYSIS

COBBLE	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COA.	MEDIUM	FINE	



PLOT	SOURCE	SAMP.	DEPTH	CLASSIFICATION	W%
•	B-105	2	4.5'-6.5'	GRAVELLY FINE TO COARSE SAND W/SOME SILT	14.1
⊙	B-106	2	2.5'-4.5'	FINE TO COARSE SAND W/SOME GRAVEL AND TRACE	4.0
				OF SILT	

APPENDIX E

GEOPHYSICAL SURVEY

HAGER-RICHTER
GEOSCIENCE, INC.

GEOPHYSICAL SURVEY
PROPOSED PARKING STRUCTURE
222 ST. JOHN STREET
PORTLAND, MAINE

Prepared for:

S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039-9586

Prepared by:

Hager-Richter Geoscience, Inc.
8 Industrial Way - D10
Salem, New Hampshire 03079

File 17J53
June 2017

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HAGER-RICHTER
GEOSCIENCE,INC.

GEOPHYSICISTS FOR THE ENGINEERING COMMUNITY
8 INDUSTRIAL WAY - D10
SALEM, NEW HAMPSHIRE 03079-5820
TELEPHONE (603) 893-9944
FAX (603) 893-8313

June 27, 2017
File 17J53

Evan M. Walker, P.E.
Geotechnical Engineer
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, Maine 04039-9586

Phn: (207) 657-2866
Fax: (207) 657-2840
Email: ewalker@swcole.com

RE: Geophysical Survey
Proposed Parking Structure
222 St. John Street
Portland, Maine

Dear Mr. Walker:

In this letter, we report the results of a surface geophysical survey conducted by Hager-Richter Geoscience, Inc. (H-R) at the above referenced site in Portland, Maine in June, 2017. The survey was conducted to support a geotechnical investigation of the site by S.W. Cole Engineering, Inc. (SW Cole) for possible future development. The scope of the survey and the area of interest were specified by SW Cole.

INTRODUCTION

The Site is an active parking lot located on the west side of St. John Street in Portland, Maine. The general location of the Site is shown in Figure 1. The site is an existing parking lot measuring about 650 feet by 200 feet. According to information provided by S.W. Cole, the subsurface at the site consists of varying amounts of sand and silt over a thin layer of till and phyllite bedrock. The depth of bedrock varies from about 35 feet to about 65 feet across the site.

As part of a geotechnical investigation of the Site for possible future construction, S.W. Cole required a geophysical survey to provide information on site specific shear wave velocity information as a function of depth for the soil and rock to a depth of 100 feet, and the depth and configuration of the bedrock surface. The geophysical survey consisted of shear wave velocity testing and seismic refraction along five transects. The work was conducted over a weekend to minimize disruption to the parking lot and to minimize vehicular interference with the seismic testing.

OBJECTIVE

The objectives of the surface geophysical survey were to: 1) provide information on site specific shear wave velocity information as a function of depth for the soil and rock to a depth of 100 feet, and 2) determine the depth and configuration of the bedrock surface within the specified area of interest at the site.

THE SURVEY

Jeffrey Reid, P.G., and Bryan Carnahan of Hager-Richter conducted the seismic refraction survey on June 3-4, 2017. The fieldwork was coordinated with Evan M. Walker, P.E., of SW Cole who was present for the initiation of the field work. The locations of the seismic transects were selected in consultation with SW Cole. Data analysis and interpretation were completed at the Hager-Richter offices. Original data and field notes will be retained in the Hager-Richter files for a minimum of three years.

The geophysical survey consisted of passive shear wave velocity testing (pVs) and seismic refraction along five traverses totaling approximately 1,500 linear feet. The positions of the seismic transects were recorded using a Trimble Geo 7X CM GPS receiver outfitted with a Zephyr 2 external antenna. The locations of the transects are shown in Figure 2.

EQUIPMENT & PROCEDURES

pVs Survey. We used a 48-channel digital seismograph (Geometrics Geode) coupled to 48 low frequency (4.5 Hz) geophones to acquire the pVs data for the subject testing. pVs data were acquired along five transects. Lines 1 and 2 are composed of two segments or spreads and Lines 3-5 are composed of single spreads. The geophones are installed along a straight line and connected to a seismograph. A five-foot geophone spacing was used for Lines 1 and 2 and a four-foot spacing was sued for Lines 3-5.

Ambient noise is recorded for 30 seconds two or three times, and examined to be sure that noise of sufficiently low frequency is present. If the noise is sufficient, then 10 to 15 such records are acquired. If the noise spectra do not reach sufficiently low frequencies, then one walks or runs along the testing line during data acquisition to add low frequency noise to the ambient noise. The surface waves used in the pVs method, considered noise in seismic refraction and seismic reflection surveys, are enhanced during data acquisition and processing for the pVs method. The seismic data are analyzed using SeisOpt® ReMi™, a commercially licensed software package developed by Optim, Inc. located at the University of Nevada at Reno. Results are normally presented as 1-D plots or in tabular form showing shear wave velocity as a function

of depth for the center point of the seismic line. The pVs method yields a simple vertical shear wave velocity profile for the mid point of each testing line.

Determination of Average Shear Wave Velocity for Building Code Purposes. The pVs method determines (a) the shear wave velocity at the mid point along a survey line for several layers, averaged over the length of the survey line, and (b) the average shear wave velocity V_{avg} for site classification for seismic design in accordance with building codes. Similar calculations can be performed with the results of the shear wave velocity survey. The average value V_{avg} is determined using the equation 16-44 of the IBC as follows:

$$V_{avg} = \left(\sum_{i=1}^{N} d_i\right) / \sum_{i=1}^{N} d_i / V_i$$

where d_i is thickness of layer I
V_i is shear wave velocity of layer I
N denotes the total number of layers

The Seismic Site Class, *based solely on average shear wave velocity*, is defined by the IBC as follows:

Site Class	Soil Profile Name	Soil Shear Wave Velocity (ft/s)
A	Hard rock	$V_s > 5000$
B	Rock	$2500 < V_s \leq 5000$
C	Very dense soil and soft rock	$1200 < V_s \leq 2500$
D	Stiff soil profile	$600 \leq V_s \leq 1200$
E	Soft soil profile	$V_s < 600$

Although the IBC provides other methods to determine the Site Class, such as standard penetration resistance (blow counts) and soil undrained shear strength, this report provides shear wave velocity data only. There is no consideration of other factors that may affect a site class such as liquefaction. The final determination of seismic site class should be made by the project engineer.

Seismic Refraction. For the seismic refraction survey, we used a 48-channel seismograph (two 24-channel Geometrics Geodes) coupled to 48 geophones to acquire seismic refraction records. The seismograph was connected to, and controlled by, a notebook PC computer. The software provides for the acquisition, display, plotting, filtering, and storage of

seismic data. Seismic refraction data were acquired along five transects totaling approximately 1,500 linear feet. Geophone spacing was 5 feet for Lines 1 and 2 and was 4 feet for Lines 3-5. Line 1 and 2 consisted of two seismic spreads configured end to end and Lines 3-5 consisted of a single seismic spread. Seven shot points were used for most seismic spreads - three located internal to the spread, one at each end of the spread, and, where possible, two offset shots located in-line with but beyond the ends of the spread of geophones. This configuration allows for providing reversed profiles. The seismic source was a 12-pound sledgehammer striking a metal plate. The number of stacks per shot point was variable, and the quality of the stacked seismic signal for each shot point was verified in the field. The data were recorded digitally.

The seismic data were interpreted with the Generalized Reciprocal Method, commonly referred to as GRM. GRM allows the depth to bedrock to be determined for *each* geophone location (i.e., generally every 4 or 5 feet at this site), rather than only at the shot points as for most other methods, and it is less sensitive than are most other methods to the presence of dipping interfaces and hidden layers.

LIMITATIONS OF THE METHODS

pVs. As with all physical measurements, there is experimental error in the velocities that are determined using the passive shear wave velocity method. For the pVs method, the accuracy of V_{avg} is stated by Optim, Inc. to be 5-15%.

The depth of investigation is a function of the noise spectrum, and long wave lengths (low frequencies) are required to determine velocity at large depths. Noise levels can be improved by a person running along the seismic spread during data acquisition.

Seismic Refraction. As with all geophysical methods, the seismic refraction method is based on the assumption that the local geology is relatively uncomplicated. In particular, the seismic refraction method assumes that interfaces between geologic materials correlate with sharp increases in seismic velocity and that the interfaces between geologic units are relatively flat-lying. The method is not very sensitive to lateral variations within layers, and relatively subtle features such as fracture zones within bedrock generally cannot be detected unless there is a topographic expression of the feature and/or a significant drop in bedrock velocity. The accuracy of the method is degraded in areas with strong topographic relief and/or where the interfaces have apparent dips greater than about 20°. *In general, the accuracy of depths determined is stated to be about 10% or 2 feet, whichever is greater.*

Where two materials do not exhibit contrasting velocities, or where velocities gradually increase with depth, a clear refracted signal is not generated, and the seismic refraction method

cannot be used to distinguish the two materials. In some cases, the "geophysical contact" between materials with contrasting velocities does not correlate exactly with the "geologic contact." For example, where a highly weathered bedrock is overlain by a dense material such as till, the velocity range of the weathered bedrock might overlap or approach the velocity range of the till, and the two materials cannot be distinguished seismically. In such cases, the depth determined by seismic refraction is the depth of *competent* bedrock, which might be located at some depth below the geologic contact.

The depth relations of the water table and bedrock may constitute a significant problem for the seismic refraction technique. This problem is that of a "blind layer." A blind layer occurs where the thickness of the saturated overburden is less than about half the depth of bedrock. In such cases, the water-saturated material immediately above bedrock is "blind" in the sense that no refracted seismic energy from it will be received as a first arrival of seismic energy, and all methods used to reduce the seismic data to determine the depth of bedrock, the objective of this survey, use *only* first arrivals. Thus, the saturated layer will not be detected where it is close to bedrock, and most methods of seismic data reduction will indicate that bedrock is considerably shallower than it actually is. Although GRM, the method used by Hager-Richter to reduce the seismic refraction data, does not use first arrivals through the water saturated zone (because there is none to use) in such cases, GRM determines the depth of bedrock correctly by using the *average* velocity of the saturated and unsaturated zones.

A "hidden layer" occurs where a lower velocity material underlies a higher velocity material, a common situation in stratified sediments. An example is where sands are present under layers of clay or till. As in the case of a "blind layer," most methods of seismic refraction data reduction will indicate that bedrock is deeper than it actually is, if a hidden layer is present but not detected. Internal tests in the seismic refraction data reduction software that we use (IXRefraX by Interpex) indicate that such layers might be present, and an average velocity of the two layers is used to determine the depth of bedrock.

RESULTS

The geophysical survey consisted of passive shear wave velocity testing (pVs) and seismic refraction along five traverses totaling approximately 1,500 linear feet. The positions of the seismic transects were recorded using a Trimble Geo 7X CM GPS receiver outfitted with a Zephyr 2 external antenna.

Figure 2 is a site plan showing the locations of the seismic refraction transects and center points for the shear wave velocity profiles. Figures 3 and 4 show the seismic refraction results in profile form and Figure 5 is a color contour model of bedrock topography compiled from the

seismic refraction results and available boring information provided by SW Cole. Table 1 lists the results of the pVs survey and Table 2 lists the results of the seismic refraction survey.

pVs Survey. Based on boring logs provided by S.W. Cole, the subsurface at the site consists of varying amounts of sand and silt over a thin layer of till and phyllite bedrock. The depth of bedrock varies from about 35 feet to about 65 feet across the site. The locations of the borings are shown in Figure 2.

The quality for the pVs data at the subject site is judged to be very good. The results of the pVs testing are reported in Table 1. For modeling purposes, the subsurface stratigraphy was divided into four discrete units. The velocity units do not necessarily correlate with specific lithologic units identified in the boring log provided by S.W. Cole. The layer thicknesses that provide the best statistical fit to the dispersion curve are used for the seismic lines. No attempt was made to "force" a specific model to the boring data.

The shear wave velocities for the individual stratigraphic modeled units are provided in Table 1. The average values of the velocities of shear waves for the depth interval of 0-100 ft based on Equation 1 of the IBC , Vs_{100}, vary between 1,035 and 1,376 fps. The root mean square errors for the fit of the dispersion curves versus the measured data using the model velocities are also reported in Table 1 and vary between 1.8% and 3.8%.

Seismic Refraction Survey. The quality of the seismic refraction data ranges from very good to excellent. A measure of the accuracy of the data can be obtained by comparing the bedrock depths determined seismically with depths reported from nearby borings that encountered bedrock, or by comparing bedrock depths at the intersections of seismic refraction lines. Table 3 shows a comparison between bedrock elevations determined seismically and reported in nearby borings. For the present survey, six (6) borings that reported bedrock depths were located within 40 feet of a seismic line and were used for the comparison. An examination of Table 3 shows that the bedrock elevations determined for locations on seismic lines differ by an average of about 2 feet, or 5% from the bedrock elevations reported in boring logs. The standard deviation for the differences is about 1 foot or 2%.

Table 3 also shows a comparison of seismically determined bedrock elevations at six (6) seismic line intersections. Bedrock elevations determined at the seismic line intersections differ by an average of less than a foot, or 1% relative to bedrock depth. The standard deviation for the differences is about 1 foot or 1%. Based on the results of comparing seismically determined elevations at intersecting seismic lines and with nearby borings, and on the results from other similar seismic refraction surveys, we estimate the accuracy (standard deviation) of the *depths* of

competent bedrock determined by the seismic refraction survey to be about ± 10% of the depth of bedrock, or ± 2 feet), whichever is greater.

The results of the seismic refraction survey for the site are shown in profile form in Figures 3 and 4 and in tabular form in Table 2. Materials with three distinct velocity ranges were detected at the Site. The upper material exhibits a velocity range of 1,100 to 1,750 feet per second (fps) and is interpreted to consist of unsaturated soil. The middle material exhibits a velocity range of 4,800 to 5,200 fps and is interpreted to be saturated soil. The lower material exhibits a velocity range of 10,500 to 14,100 fps and is interpreted to be bedrock. Where the top of bedrock is highly fractured and/or deeply weathered, it might exhibit lower velocities that cannot be detected as a distinct layer on the basis of the seismic refraction data. Thus, the top of rock determined on the basis of seismic refraction data generally is the top of competent bedrock, which might be located somewhat below the geologic contact between the overburden and bedrock.

The depth of competent bedrock along Seismic Lines 1 through 5 varies between about 36 feet and 67 feet below ground surface, and the elevation of competent bedrock varies between approximately -40 feet and -10 feet, an *apparent* total relief of 30 feet. Figure 5 is a color contour plot of the bedrock elevation model generated from the seismic refraction survey and the boring data provided by SW Cole. The contours shown on Figure 5 represent interpolations based on the seismic data and available boring information relative to NAVD88. The contours shown represent non-unique models for bedrock elevation (i.e., different valid conceptual models can be developed to fit the data set), and the elevation of competent bedrock at any particular location may differ from that shown. Bedrock elevations based on additional data, such as additional borings or seismic data, may differ significantly from those shown on Figure 5.

Examination of the seismic profiles and the bedrock topographic model shows that bedrock is generally deeper at the south end of the site and shallower to the north. A small N-S bedrock trough is present near the center of the site.

CONCLUSIONS

Based upon the results of geophysical survey conducted by Hager-Richter Geoscience, Inc. at 222 St. John Street, Portland, Maine in June, 2017, we conclude:

- The average values of the velocities of shear waves along Lines 1-5 for the depth interval of 0-100 ft based on Equation 1 of the IBC , Vs_{100}, vary between 1,035 and 1,376 fps.

- The root mean square errors for the fit of the dispersion curves versus the measured data

vary between 1.8% and 3.8%.

- The depth of competent bedrock along Seismic Lines 1 through 5 varies between about 36 feet and 67 feet below ground surface, and the elevation of competent bedrock varies between approximately -40 feet and -10 feet, an *apparent* total relief of 30 feet.

- Materials with three distinct compressional wave velocity ranges were detected at the Site: an upper material exhibiting a velocity range of 1,100 to 1,700 fps and interpreted to consist of unsaturated sediments, a middle material exhibiting a velocity range of 4,800 to 5,200 fps and interpreted to consist of saturated sediments, and a lower material exhibiting a velocity range of 10,500 to 14,100 fps and interpreted to be bedrock.

- Bedrock is generally deeper at the south end of the site and shallower to the north.

- A small north-south bedrock trough is present near the center of the site.

LIMITATIONS

This report was prepared for the exclusive use of S. W. Cole Engineering, Inc. (Client). No other party shall be entitled to rely on this Report or any information, documents, records, data, interpretations, advice or opinions given to Client by Hager-Richter Geoscience, Inc. (H-R) in the performance of its work. The Report relates solely to the specific project for which H-R has been retained and shall not be used or relied upon by Client or any third party for any variation or extension of this project, any other project or any other purpose without the express written permission of H-R. Any unpermitted use by Client or any third party shall be at Client's or such third party's own risk and without any liability to H-R.

H-R has used reasonable care, skill, competence and judgment in the performance of' its services for this project consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by H-R should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

Except as expressly provided in this limitations section, H-R makes no other representation or warranty of any kind whatsoever, oral or written, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose, are hereby disclaimed.

If you have any questions or comments on this report, please contact us at your convenience. It has been a pleasure to work with you on this project. We look forward to working with you again in the future.

Sincerely yours,
HAGER-RICHTER GEOSCIENCE, INC.

Jeffrey Reid, P.G.
Vice President/Senior Geophysicist

Dorothy Richter, P.G.
President

Attachments: Tables 1-3
Figures 1-5

TABLE 1
pVs RESULTS

Geologic Unit *	Depth Interval (ft)	Vs** (ft/s)
pVs Test Line 1A @ 1+15		
Soft Loam and Sand	0 - 10	966
Sand	10 - 20	520
Silty Sand	20 - 64	939
Till or Bedrock?	64+	2,714
Vs_{100} (ft/s)	1,035	
RMS	3.8%	
pVs Test Line 1B @ 3+50		
Soft Loam and Sand	0 - 10	388
Silty Sand	10 - 20	495
Silty Sand - More Dense	20 - 45	956
Till or Bedrock?	45+	2,948
Vs_{100} (ft/s)	1,096	
RMS	2.9%	
pVs Test Line 2A @ 1+15		
Soft Loam and Sand	0 - 10	846
Sand	10 - 29	645
Silty Sand	29 - 63	1,403
Till or Bedrock?	63+	2,837
Vs_{100} (ft/s)	1,274	
RMS	3.5%	

The pVs method yields a simple vertical shear wave velocity profile for the mid point of each testing line. Although the IBC provides other methods to determine the Site Class, such as standard penetration resistance (blow counts) and soil undrained shear strength, this report provides shear wave velocity data only. There is no consideration of other factors that may affect a site class such as liquefaction. The final determination of seismic site class should be made by the project engineer.

pVs Test Line 2B @ 3+50		
Soft Loam and Sand	0 - 53	583
Silty Sand	5 - 14	494
Silty Sand - More Dense	14 - 34	783
Till or Bedrock?	34+	3,240
Vs_{100} (ft/s)	1,376	
RMS	2.5 %	
pVs Test Line 3 @ 0+96		
Soft Loam and Sand	0 - 7	853
Silty Sand	7 - 22	540
Silty Sand - More Dense	22 - 50	929
Till or Bedrock?	50+	1,967
Vs_{100} (ft/s)	1,092	
RMS	2.0%	
pVs Test Line 4 @ 0+96		
Soft Loam and Sand	0 - 7	1,333
Sand	7 - 22	540
Silty Sand - More Dense	22 - 57	1,034
Till/Bedrock?	57+	2,356
Vs_{100} (ft/s)	1,175	
RMS	1.8%	
pVs Test Line 5 @ 0+96		
Soft Loam and Sand	0 - 7	853
Sand	7 - 22	540
Silty Sand - More Dense	22 - 50	929
Till/Bedrock?	50+	1,967
Vs_{100} (ft/s)	1,092	
RMS	2.0%	

The pVs method yields a simple vertical shear wave velocity profile for the mid point of each testing line. Although the IBC provides other methods to determine the Site Class, such as standard penetration resistance (blow counts) and soil undrained shear strength, this report provides shear wave velocity data only. There is no consideration of other factors that may affect a site class such as liquefaction. The final determination of seismic site class should be made by the project engineer.

TABLE 2
SEISMIC REFRACTION RESULTS

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 1							
2922775.0	297267.0	0	14.1	63.5	27.0	12.9	-36.5
2922774.0	297271.9	5	14.1	63.1	27.0	12.9	-36.1
2922773.2	297276.8	10	14.1	62.5	27.0	12.9	-35.5
2922772.2	297281.8	15	14.1	61.8	27.0	12.9	-34.8
2922771.5	297286.7	20	14.1	62.2	27.0	12.9	-35.2
2922770.5	297291.6	25	14.1	62.0	27.0	12.9	-35.0
2922769.8	297296.5	30	14.1	63.8	27.0	12.9	-36.8
2922768.8	297301.4	35	14.1	64.6	27.0	12.9	-37.6
2922767.8	297306.4	40	14.1	64.0	27.0	12.9	-37.0
2922767.0	297311.3	45	14.1	63.8	27.0	12.9	-36.8
2922766.0	297316.2	50	14.1	62.7	27.0	12.9	-35.7
2922765.2	297321.1	55	14.1	62.5	27.0	12.9	-35.5
2922764.2	297326.0	60	14.1	61.0	27.0	12.9	-34.0
2922763.5	297331.0	65	14.1	60.4	27.0	12.9	-33.4
2922762.5	297335.9	70	14.1	61.8	27.0	12.9	-34.8
2922761.8	297340.8	75	14.1	64.0	27.0	12.9	-37.0
2922760.8	297345.7	80	14.1	63.3	27.0	12.9	-36.3
2922759.8	297350.6	85	14.1	66.1	27.0	12.9	-39.1
2922759.0	297355.6	90	14.1	66.4	27.0	12.9	-39.4
2922758.0	297360.5	95	14.0	66.0	27.0	13.0	-39.0
2922757.2	297365.4	100	14.0	66.2	27.0	13.0	-39.2
2922756.2	297370.3	105	14.0	66.8	27.0	13.0	-39.8
2922755.5	297375.2	110	14.0	63.8	27.0	13.0	-36.8

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 1 (cont.)							
2922754.5	297380.2	115	14.1	63.4	27.0	12.9	-36.4
2922753.5	297385.1	120	14.1	62.7	27.0	12.9	-35.7
2922752.8	297390.0	125	13.8	62.5	27.0	13.2	-35.5
2922751.8	297394.9	130	13.3	63.3	27.0	13.7	-36.3
2922751.0	297399.8	135	13.2	62.9	27.0	13.8	-35.9
2922750.0	297404.8	140	12.8	61.4	27.0	14.2	-34.4
2922749.2	297409.7	145	12.9	62.7	27.0	14.1	-35.7
2922748.2	297414.6	150	13.1	60.9	27.0	13.9	-33.9
2922747.5	297419.5	155	13.9	61.6	27.0	13.1	-34.6
2922746.5	297424.4	160	14.6	60.3	27.0	12.4	-33.3
2922745.5	297429.3	165	14.9	60.5	27.0	12.1	-33.5
2922744.8	297434.3	170	15.4	58.8	27.0	11.6	-31.8
2922743.8	297439.2	175	16.2	58.6	27.0	10.8	-31.6
2922743.0	297444.1	180	16.1	56.8	27.0	10.9	-29.8
2922742.0	297449.0	185	16.6	55.8	27.0	10.4	-28.8
2922741.2	297454.0	190	16.6	52.7	27.0	10.4	-25.7
2922740.2	297458.9	195	14.8	53.0	27.0	12.2	-26.0
2922739.2	297463.8	200	14.9	51.0	27.0	12.1	-24.0
2922738.5	297468.7	205	15.1	49.1	27.0	11.9	-22.1
2922737.5	297473.6	210	15.2	47.1	27.0	11.8	-20.1
2922736.8	297478.6	215	15.1	47.1	27.0	11.9	-20.1
2922735.8	297483.5	220	15.1	46.0	27.0	11.9	-19.0
2922735.0	297488.4	225	15.1	45.0	27.0	11.9	-18.0
2922734.0	297493.3	230	15.1	45.0	27.0	11.9	-18.0

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 1 (cont.)							
2922733.0	297498.2	235	15.1	45.2	27.0	11.9	-18.2
2922732.2	297503.2	240	15.0	46.5	27.0	12.0	-19.5
2922731.2	297508.1	245	15.0	44.5	27.0	12.0	-17.5
2922730.5	297513.0	250	14.9	44.3	27.0	12.1	-17.3
2922729.5	297517.9	255	14.9	46.5	27.0	12.1	-19.5
2922728.8	297522.8	260	14.8	45.4	27.0	12.2	-18.4
2922727.8	297527.8	265	14.7	44.7	27.0	12.3	-17.7
2922727.0	297532.7	270	14.7	44.5	27.0	12.3	-17.5
2922726.0	297537.6	275	14.6	43.5	27.0	12.4	-16.5
2922725.0	297542.5	280	14.5	43.9	27.0	12.5	-16.9
2922724.2	297547.4	285	14.5	45.4	27.0	12.5	-18.4
2922723.2	297552.3	290	14.4	44.5	27.0	12.6	-17.5
2922722.5	297557.3	295	14.4	45.0	27.0	12.6	-18.0
2922721.5	297562.2	300	14.3	44.5	27.0	12.7	-17.5
2922720.8	297567.1	305	14.3	43.5	27.0	12.7	-16.5
2922719.8	297572.0	310	14.2	44.5	27.0	12.8	-17.5
2922718.8	297577.0	315	14.1	43.5	27.0	12.9	-16.5
2922718.0	297581.9	320	14.1	44.3	27.0	12.9	-17.3
2922717.0	297586.8	325	14.0	44.1	27.0	13.0	-17.1
2922716.2	297591.7	330	14.0	45.2	27.0	13.0	-18.2
2922715.2	297596.6	335	13.7	43.5	27.0	13.3	-16.5
2922714.5	297601.6	340	13.7	42.0	27.0	13.3	-15.0
2922713.5	297606.5	345	13.6	42.4	27.0	13.4	-15.4
2922712.5	297611.4	350	13.6	44.5	27.0	13.4	-17.5

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 1 (cont.)							
2922711.8	297616.3	355	13.6	43.2	27.0	13.4	-16.2
2922710.8	297621.2	360	13.5	45.4	27.0	13.5	-18.4
2922710.0	297626.2	365	13.5	45.8	27.0	13.5	-18.8
2922709.0	297631.1	370	13.5	43.5	27.0	13.5	-16.5
2922708.2	297636.0	375	13.4	44.3	27.0	13.6	-17.3
2922707.2	297640.9	380	13.4	45.8	27.0	13.6	-18.8
2922706.5	297645.8	385	13.3	44.5	27.0	13.7	-17.5
2922705.5	297650.8	390	13.3	45.0	27.0	13.7	-18.0
2922704.5	297655.7	395	13.2	45.8	27.0	13.8	-18.8
2922703.8	297660.6	400	13.2	46.3	27.0	13.8	-19.3
2922702.8	297665.5	405	13.1	46.9	27.0	13.9	-19.9
2922702.0	297670.4	410	13.1	45.6	27.0	13.9	-18.6
2922701.0	297675.3	415	13.0	46.3	27.0	14.0	-19.3
2922700.2	297680.3	420	13.0	45.8	27.0	14.0	-18.8
2922699.2	297685.2	425	12.9	45.4	27.0	14.1	-18.4
2922698.2	297690.1	430	12.9	46.9	27.0	14.1	-19.9
2922697.5	297695.0	435	12.9	44.7	27.0	14.1	-17.7
2922696.5	297700.0	440	12.8	45.8	27.0	14.2	-18.8
2922695.8	297704.9	445	12.8	44.3	27.0	14.2	-17.3
2922694.8	297709.8	450	12.7	43.7	27.0	14.3	-16.7
2922694.0	297714.7	455	12.7	42.6	27.0	14.3	-15.6
2922693.0	297719.6	460	12.6	43.3	27.0	14.4	-16.3
2922692.2	297724.6	465	12.6	43.2	27.0	14.4	-16.2
2922691.2	297729.5	470	12.6	43.2	27.0	14.4	-16.2

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 2							
2922962.2	297327.2	0	13.5	64.2	27.0	13.5	-37.2
2922961.2	297332.1	5	13.4	62.5	27.0	13.6	-35.5
2922960.2	297337.0	10	13.3	62.9	27.0	13.7	-35.9
2922959.2	297341.9	15	13.1	63.3	27.0	13.9	-36.3
2922958.2	297346.8	20	13.0	63.8	27.0	14.0	-36.8
2922957.2	297351.7	25	12.9	61.6	26.9	14.0	-34.7
2922956.2	297356.6	30	12.8	60.4	26.9	14.1	-33.5
2922955.5	297361.5	35	12.6	60.6	26.9	14.3	-33.7
2922954.5	297366.4	40	12.5	59.7	26.9	14.4	-32.8
2922953.5	297371.3	45	12.4	59.6	26.9	14.5	-32.7
2922952.5	297376.2	50	12.3	61.2	26.9	14.6	-34.3
2922951.5	297381.1	55	12.1	60.6	26.9	14.8	-33.7
2922950.5	297386.0	60	12.0	59.5	26.9	14.9	-32.6
2922949.5	297390.9	65	11.9	60.0	26.9	15.0	-33.1
2922948.5	297395.8	70	11.8	61.4	26.9	15.1	-34.5
2922947.5	297400.7	75	11.7	61.5	26.8	15.1	-34.7
2922946.5	297405.6	80	11.5	61.5	26.8	15.3	-34.7
2922945.5	297410.5	85	11.4	61.8	26.8	15.4	-35.0
2922944.5	297415.4	90	11.3	62.6	26.8	15.5	-35.8
2922943.5	297420.3	95	11.2	61.1	26.8	15.6	-34.3
2922942.8	297425.2	100	11.2	61.5	26.8	15.6	-34.7
2922941.8	297430.2	105	11.1	61.7	26.8	15.7	-34.9
2922940.8	297435.1	110	11.0	61.4	26.8	15.8	-34.6
2922939.8	297439.9	115	10.9	62.9	26.8	15.9	-36.1

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 2 (cont.)							
2922938.8	297444.8	120	10.8	63.5	26.7	15.9	-36.8
2922937.8	297449.8	125	10.7	64.3	26.7	16.0	-37.6
2922936.8	297454.7	130	10.6	65.1	26.7	16.1	-38.4
2922935.8	297459.6	135	10.5	65.9	26.7	16.2	-39.2
2922934.8	297464.5	140	10.4	66.9	26.7	16.3	-40.2
2922933.8	297469.4	145	10.4	65.7	26.7	16.3	-39.0
2922932.8	297474.3	150	10.3	62.9	26.7	16.4	-36.2
2922931.8	297479.2	155	10.2	62.9	26.7	16.5	-36.2
2922930.8	297484.1	160	10.1	63.3	26.7	16.6	-36.6
2922930.0	297489.0	165	10.0	63.8	26.6	16.6	-37.2
2922929.0	297493.9	170	9.9	63.8	26.6	16.7	-37.2
2922928.0	297498.8	175	9.6	64.2	26.6	17.0	-37.6
2922927.0	297503.7	180	9.3	62.5	26.6	17.3	-35.9
2922926.0	297508.6	185	9.1	62.0	26.6	17.5	-35.4
2922925.0	297513.5	190	8.8	60.5	26.6	17.8	-33.9
2922924.0	297518.4	195	8.5	59.8	26.6	18.1	-33.2
2922923.0	297523.3	200	8.3	55.2	26.6	18.3	-28.6
2922922.0	297528.2	205	8.0	53.5	26.6	18.6	-26.9
2922921.0	297533.1	210	7.8	51.0	26.6	18.8	-24.4
2922920.0	297538.0	215	7.7	48.6	26.5	18.8	-22.1
2922919.0	297542.9	220	7.7	44.9	26.5	18.8	-18.4
2922918.0	297547.8	225	7.7	41.3	26.5	18.8	-14.8
2922917.2	297552.7	230	7.6	39.3	26.5	18.9	-12.8
2922916.2	297557.6	235	7.6	39.6	26.5	18.9	-13.1

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 2 (cont.)							
2922915.2	297562.5	240	7.6	39.7	26.5	18.9	-13.2
2922914.2	297567.4	245	7.5	40.6	26.5	19.0	-14.1
2922913.2	297572.3	250	7.5	42.3	26.5	19.0	-15.8
2922912.2	297577.2	255	7.5	42.6	26.5	19.0	-16.1
2922911.2	297582.1	260	7.4	42.8	26.4	19.0	-16.4
2922910.2	297587.0	265	7.4	43.2	26.4	19.0	-16.8
2922909.2	297591.9	270	7.4	41.7	26.4	19.0	-15.3
2922908.2	297596.8	275	7.3	42.2	26.4	19.1	-15.8
2922907.2	297601.8	280	7.3	41.2	26.4	19.1	-14.8
2922906.2	297606.7	285	7.3	42.0	26.4	19.1	-15.6
2922905.2	297611.6	290	7.2	42.5	26.4	19.2	-16.1
2922904.5	297616.5	295	7.2	42.6	26.4	19.2	-16.2
2922903.5	297621.3	300	7.2	43.1	26.4	19.2	-16.7
2922902.5	297626.2	305	7.1	42.5	26.4	19.3	-16.1
2922901.5	297631.2	310	7.1	40.0	26.3	19.2	-13.7
2922900.5	297636.1	315	7.1	39.8	26.3	19.2	-13.5
2922899.5	297641.0	320	7.0	38.9	26.3	19.3	-12.6
2922898.5	297645.9	325	7.0	37.2	26.3	19.3	-10.9
2922897.5	297650.8	330	7.0	37.8	26.3	19.3	-11.5
2922896.5	297655.7	335	6.9	38.9	26.3	19.4	-12.6
2922895.5	297660.6	340	6.9	38.8	26.3	19.4	-12.5
2922894.5	297665.5	345	6.9	38.3	26.3	19.4	-12.0
2922893.5	297670.4	350	6.8	36.7	26.3	19.5	-10.4
2922892.5	297675.3	355	7.0	35.9	26.2	19.2	-9.7

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 2 (cont.)							
2922891.8	297680.2	360	7.1	36.8	26.2	19.1	-10.6
2922890.8	297685.1	365	7.3	38.7	26.2	18.9	-12.5
2922889.8	297690.0	370	7.4	39.5	26.2	18.8	-13.3
2922888.8	297694.9	375	7.6	41.3	26.2	18.6	-15.1
2922887.8	297699.8	380	7.8	40.7	26.2	18.4	-14.5
2922886.8	297704.7	385	7.9	41.3	26.2	18.3	-15.1
2922885.8	297709.6	390	8.1	41.2	26.2	18.1	-15.0
2922884.8	297714.5	395	8.2	42.6	26.2	18.0	-16.4
2922883.8	297719.4	400	8.4	42.9	26.1	17.7	-16.8
2922882.8	297724.3	405	8.5	42.5	26.1	17.6	-16.4
2922881.8	297729.2	410	8.7	41.9	26.1	17.4	-15.8
2922880.8	297734.1	415	8.8	43.3	26.1	17.3	-17.2
2922879.8	297739.0	420	9.0	42.8	26.1	17.1	-16.7
2922879.0	297743.9	425	9.1	41.7	26.1	17.0	-15.6
2922878.0	297748.8	430	9.2	40.2	26.1	16.9	-14.1
2922877.0	297753.8	435	9.3	42.0	26.1	16.8	-15.9
2922876.0	297758.6	440	9.5	40.0	26.1	16.6	-13.9
2922875.0	297763.5	445	9.6	41.4	26.1	16.5	-15.3
2922874.0	297768.4	450	9.8	40.0	26.0	16.2	-14.0
2922873.0	297773.3	455	9.8	39.3	26.0	16.2	-13.3
2922872.0	297778.2	460	9.7	38.5	26.0	16.3	-12.5
2922871.0	297783.2	465	9.7	38.1	26.0	16.3	-12.1
2922870.0	297788.1	470	9.7	36.6	26.0	16.3	-10.6

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 3							
2922754.8	297380.2	0	14.8	64.2	27.0	12.2	-37.2
2922758.8	297381.1	4	14.7	64.6	27.0	12.3	-37.6
2922762.5	297382.0	8	15.0	63.8	27.0	12.0	-36.8
2922766.5	297382.9	12	14.3	62.0	27.0	12.7	-35.0
2922770.2	297383.8	16	14.4	62.7	27.0	12.6	-35.7
2922774.2	297384.8	20	13.6	61.5	27.0	13.4	-34.5
2922778.0	297385.7	24	13.4	60.3	27.0	13.6	-33.3
2922782.0	297386.6	28	13.4	59.3	27.0	13.6	-32.3
2922786.0	297387.5	32	13.8	57.8	27.0	13.2	-30.8
2922789.8	297388.4	36	13.7	58.4	27.0	13.3	-31.4
2922793.8	297389.3	40	13.7	58.1	27.0	13.3	-31.1
2922797.5	297390.2	44	14.2	56.6	27.0	12.8	-29.6
2922801.5	297391.2	48	13.9	57.6	26.9	13.0	-30.7
2922805.2	297392.1	52	13.4	58.6	26.9	13.5	-31.7
2922809.2	297393.0	56	13.2	58.4	26.9	13.7	-31.5
2922813.2	297393.9	60	13.5	56.7	26.9	13.4	-29.8
2922817.0	297394.8	64	13.3	56.8	26.9	13.6	-29.9
2922821.0	297395.7	68	13.4	55.8	26.9	13.5	-28.9
2922824.8	297396.7	72	13.0	56.9	26.9	13.9	-30.0
2922828.8	297397.6	76	13.1	56.6	26.9	13.8	-29.7
2922832.8	297398.5	80	13.0	56.9	26.9	13.9	-30.0
2922836.5	297399.4	84	12.9	56.9	26.9	14.0	-30.0
2922840.5	297400.3	88	12.9	56.6	26.9	14.0	-29.7
2922844.2	297401.2	92	12.9	56.3	26.9	14.0	-29.4

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 3 (cont.)							
2922848.2	297402.1	96	12.6	57.1	26.9	14.3	-30.2
2922852.0	297403.0	100	12.6	56.8	26.9	14.3	-29.9
2922856.0	297404.0	104	12.7	56.2	26.9	14.2	-29.3
2922860.0	297404.9	108	12.4	57.1	26.9	14.5	-30.2
2922863.8	297405.8	112	12.1	57.6	26.9	14.8	-30.7
2922867.8	297406.7	116	11.9	58.1	26.9	15.0	-31.2
2922871.5	297407.6	120	13.0	57.0	26.9	13.9	-30.1
2922875.5	297408.5	124	13.2	55.9	26.9	13.7	-29.0
2922879.2	297409.4	128	13.3	56.1	26.9	13.6	-29.2
2922883.2	297410.3	132	14.2	57.5	26.9	12.7	-30.6
2922887.2	297411.3	136	15.0	57.5	26.9	11.9	-30.6
2922891.0	297412.2	140	15.9	57.3	26.9	11.0	-30.4
2922895.0	297413.1	144	15.9	57.4	26.8	10.9	-30.6
2922898.8	297414.0	148	15.9	57.2	26.8	10.9	-30.4
2922902.8	297414.9	152	15.8	58.9	26.8	11.0	-32.1
2922906.5	297415.8	156	15.7	58.1	26.8	11.1	-31.3
2922910.5	297416.8	160	15.6	58.5	26.8	11.2	-31.7
2922914.5	297417.7	164	15.5	58.9	26.8	11.3	-32.1
2922918.2	297418.6	168	15.4	59.9	26.8	11.4	-33.1
2922922.2	297419.5	172	15.3	61.2	26.8	11.5	-34.4
2922926.0	297420.4	176	15.2	60.9	26.8	11.6	-34.1
2922930.0	297421.3	180	15.1	61.6	26.8	11.7	-34.8
2922934.0	297422.2	184	15.0	60.7	26.8	11.8	-33.9
2922937.8	297423.2	188	14.9	60.5	26.8	11.9	-33.7

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 4							
2922732.5	297498.1	0	8.7	45.1	27.0	18.3	-18.1
2922736.5	297499.0	4	8.7	44.4	27.0	18.3	-17.4
2922740.2	297499.8	8	8.7	45.7	27.0	18.3	-18.7
2922744.2	297500.7	12	8.7	44.7	26.9	18.2	-17.8
2922748.0	297501.5	16	8.7	46.0	26.9	18.2	-19.1
2922752.0	297502.4	20	8.7	47.5	26.9	18.2	-20.6
2922756.0	297503.3	24	8.7	46.7	26.9	18.2	-19.8
2922759.8	297504.1	28	8.7	45.7	26.9	18.2	-18.8
2922763.8	297505.0	32	8.7	45.3	26.8	18.1	-18.5
2922767.8	297505.8	36	8.7	46.4	26.8	18.1	-19.6
2922771.5	297506.7	40	8.8	46.8	26.8	18.0	-20.0
2922775.5	297507.6	44	8.8	48.8	26.8	18.0	-22.0
2922779.2	297508.4	48	8.8	49.1	26.7	17.9	-22.4
2922783.2	297509.3	52	8.8	47.8	26.7	17.9	-21.1
2922787.2	297510.2	56	8.8	48.0	26.7	17.9	-21.3
2922791.0	297511.0	60	8.8	48.1	26.7	17.9	-21.4
2922795.0	297511.9	64	8.8	47.5	26.7	17.9	-20.8
2922799.0	297512.8	68	8.9	48.0	26.6	17.7	-21.4
2922802.8	297513.6	72	8.9	47.3	26.6	17.7	-20.7
2922806.8	297514.5	76	8.9	50.7	26.6	17.7	24.1
2922810.5	297515.3	80	8.9	49.6	26.6	17.7	-23.0
2922814.5	297516.2	84	8.9	51.5	26.6	17.7	-24.9
2922818.5	297517.1	88	8.9	49.3	26.5	17.6	-22.8
2922822.2	297517.9	92	9.0	49.1	26.5	17.5	-22.6

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 4 (cont.)							
2922826.2	297518.8	96	9.0	51.2	26.5	17.5	-24.7
2922830.2	297519.7	100	9.0	51.7	26.5	17.5	-25.2
2922834.0	297520.5	104	9.0	50.7	26.4	17.4	-24.3
2922838.0	297521.4	108	9.0	50.4	26.4	17.4	-24.0
2922841.8	297522.2	112	9.0	49.3	26.4	17.4	-22.9
2922845.8	297523.1	116	9.0	49.9	26.4	17.4	-23.5
2922849.8	297524.0	120	9.1	50.4	26.4	17.3	-24.0
2922853.5	297524.8	124	9.1	49.4	26.3	17.2	-23.1
2922857.5	297525.7	128	9.1	49.1	26.3	17.2	-22.8
2922861.5	297526.5	132	9.1	48.5	26.3	17.2	-22.2
2922865.2	297527.4	136	9.1	50.1	26.3	17.2	-23.8
2922869.2	297528.3	140	9.1	48.8	26.3	17.2	-22.5
2922873.0	297529.1	144	9.1	50.6	26.2	17.1	-24.4
2922877.0	297530.0	148	9.2	51.7	26.2	17.0	-25.5
2922881.0	297530.8	152	9.2	48.3	26.2	17.0	-22.1
2922884.8	297531.7	156	9.2	49.3	26.2	17.0	-23.1
2922888.8	297532.6	160	9.2	49.6	26.1	16.9	-23.5
2922892.8	297533.4	164	9.2	48.6	26.1	16.9	-22.5
2922896.5	297534.3	168	9.2	48.1	26.1	16.9	-22.0
2922900.5	297535.2	172	9.2	47.7	26.1	16.9	-21.6
2922904.2	297536.0	176	9.2	48.5	26.1	16.9	-22.4
2922908.2	297536.9	180	9.2	47.3	26.0	16.8	-21.3
2922912.2	297537.8	184	9.2	47.2	26.0	16.8	-21.2
2922916.0	297538.6	188	9.2	44.6	26.0	16.8	-18.6

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to Maine West State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by S.W. Cole.

Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 5							
2922712.5	297611.4	0	7.7	44.1	27.0	19.3	-17.1
2922716.5	297612.2	4	7.7	45.5	27.0	19.3	-18.5
2922720.2	297613.0	8	7.7	45.5	27.0	19.3	-18.5
2922724.2	297613.8	12	7.7	45.4	26.9	19.2	-18.5
2922728.2	297614.6	16	7.8	45.5	26.9	19.1	-18.6
2922732.0	297615.3	20	7.8	43.8	26.9	19.1	-16.9
2922736.0	297616.1	24	8.3	45.4	26.9	18.6	-18.5
2922740.0	297616.9	28	8.8	45.2	26.9	18.1	-18.3
2922743.8	297617.7	32	8.0	46.0	26.8	18.8	-19.2
2922747.8	297618.5	36	8.3	46.4	26.8	18.5	-19.6
2922751.8	297619.3	40	8.5	47.2	26.8	18.3	-20.4
2922755.8	297620.1	44	8.0	47.9	26.8	18.8	-21.1
2922759.5	297620.8	48	7.8	48.6	26.7	18.9	-21.9
2922763.5	297621.7	52	8.7	49.5	26.7	18.0	-22.8
2922767.5	297622.4	56	8.7	48.6	26.7	18.0	-21.9
2922771.2	297623.2	60	8.7	49.0	26.7	18.0	-22.3
2922775.2	297624.0	64	9.1	48.1	26.7	17.6	-21.4
2922779.2	297624.8	68	9.3	50.3	26.6	17.3	-23.7
2922783.0	297625.6	72	9.4	50.4	26.6	17.2	-23.8
2922787.0	297626.4	76	8.9	51.3	26.6	17.7	-24.7
2922791.0	297627.2	80	8.2	51.5	26.6	18.4	-24.9
2922794.8	297627.9	84	8.3	48.6	26.6	18.3	-22.0
2922798.8	297628.7	88	8.4	47.6	26.5	18.1	-21.1
2922802.8	297629.5	92	8.5	44.9	26.5	18.0	-18.4

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Easting (ft)	Northing (ft)	Station (ft)	Layer 1 Depth (ft)	Bedrock Depth (ft)	Surface Elevation (ft)	Layer 1 Elevation (ft)	Bedrock Elevation (ft)
Seismic Line 5 (cont.)							
2922806.5	297630.3	96	8.7	42.6	26.5	17.8	-16.1
2922810.5	297631.1	100	8.8	42.6	26.5	17.7	-16.1
2922814.5	297631.9	104	9.0	42.6	26.4	17.4	-16.2
2922818.5	297632.7	108	9.1	42.1	26.4	17.3	-15.7
2922822.2	297633.5	112	9.3	41.7	26.4	17.1	-15.3
2922826.2	297634.2	116	9.5	41.8	26.4	16.9	-15.4
2922830.2	297635.0	120	9.6	40.2	26.4	16.8	-13.8
2922834.0	297635.8	124	9.8	40.9	26.3	16.5	-14.6
2922838.0	297636.6	128	10.0	37.8	26.3	16.3	-11.5
2922842.0	297637.4	132	10.2	36.9	26.3	16.1	-10.6
2922845.8	297638.2	136	10.3	36.2	26.3	16.0	-9.9
2922849.8	297639.0	140	10.5	36.1	26.3	15.8	-9.8
2922853.8	297639.8	144	10.2	37.0	26.2	16.0	-10.8
2922857.5	297640.5	148	10.1	37.5	26.2	16.1	-11.3
2922861.5	297641.3	152	10.1	37.8	26.2	16.1	-11.6
2922865.5	297642.1	156	9.4	39.4	26.2	16.8	-13.2
2922869.2	297642.9	160	9.4	39.9	26.1	16.7	-13.8
2922873.2	297643.7	164	9.6	39.7	26.1	16.5	-13.6
2922877.2	297644.5	168	9.9	39.3	26.1	16.2	-13.2
2922881.2	297645.3	172	10.2	39.0	26.1	15.9	-12.9
2922885.0	297646.1	176	10.0	39.4	26.1	16.1	-13.3
2922889.0	297646.8	180	10.3	39.1	26.0	15.7	-13.1
2922893.0	297647.6	184	10.3	39.2	26.0	15.7	-13.2
2922896.8	297648.4	188	10.3	39.4	26.0	15.7	-13.4

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Geophysical Survey
Proposed Parking Structure
222 St. John Street
Portland, Maine
File 17J53 Table 3 - Page 1

TABLE 3
COMPARISON OF BEDROCK ELEVATIONS

Comparison of Seismically Determined Bedrock Elevations with Bedrock Elevations Reported in Boring Logs							
Seismic Line and Location	/	Boring	Distance from Seismic Line to Boring	Bedrock Depth (feet)		Difference	
				Seismic Line	Boring	Feet	Percent
SL1 0+30	/	B-201	32' E	64	62	2	3
SL1 4+70	/	B-202	40' NE	43	44	1	2
SL2 0+12	/	B-203B	15' W	63	61	2	3
SL2 4+70	/	B-204	27' N	37	34	3	9
SL3 0+99	/	B-205	1' S	57	54	3	6
SL5 1+02	/	B-206	41' N	43	41	2	5
					Average	2	5
					Standard Deviation	1	2

Comparison of Seismically Determined Bedrock Elevations at Seismic Line Intersections								
Seismic Line A and Location	/	Seismic Line B and Location		Distance from Seismic Line A to Seismic Line B	Bedrock Depth (feet)		Difference	
					Seismic Line A	Seismic Line B	Feet	Percent
SL1 1+15	/	SL3	0+00	-	64	64	0	0
SL1 2+35	/	SL4	0+00	-	45	45	0	0
SL1 3+50	/	SL5	0+00	-	45	44	1	2
SL2 0+99	/	SL3	1+88	-	62	61	1	2
SL2 2+19	/	SL4	1+88	-	45	45	0	0
SL2 3+34	/	SL5	1+88	-	39	39	0	0
						Average	0	1
						Standard Deviation	1	1

Boring information provided by S.W. Cole. The absolute differences in feet reflect the absolute difference between bedrock depth determined for a location on a seismic line and bedrock depth reported for a nearby boring. The percentage differences were calculated by dividing the absolute differences in feet by the bedrock depth reported in the boring log.

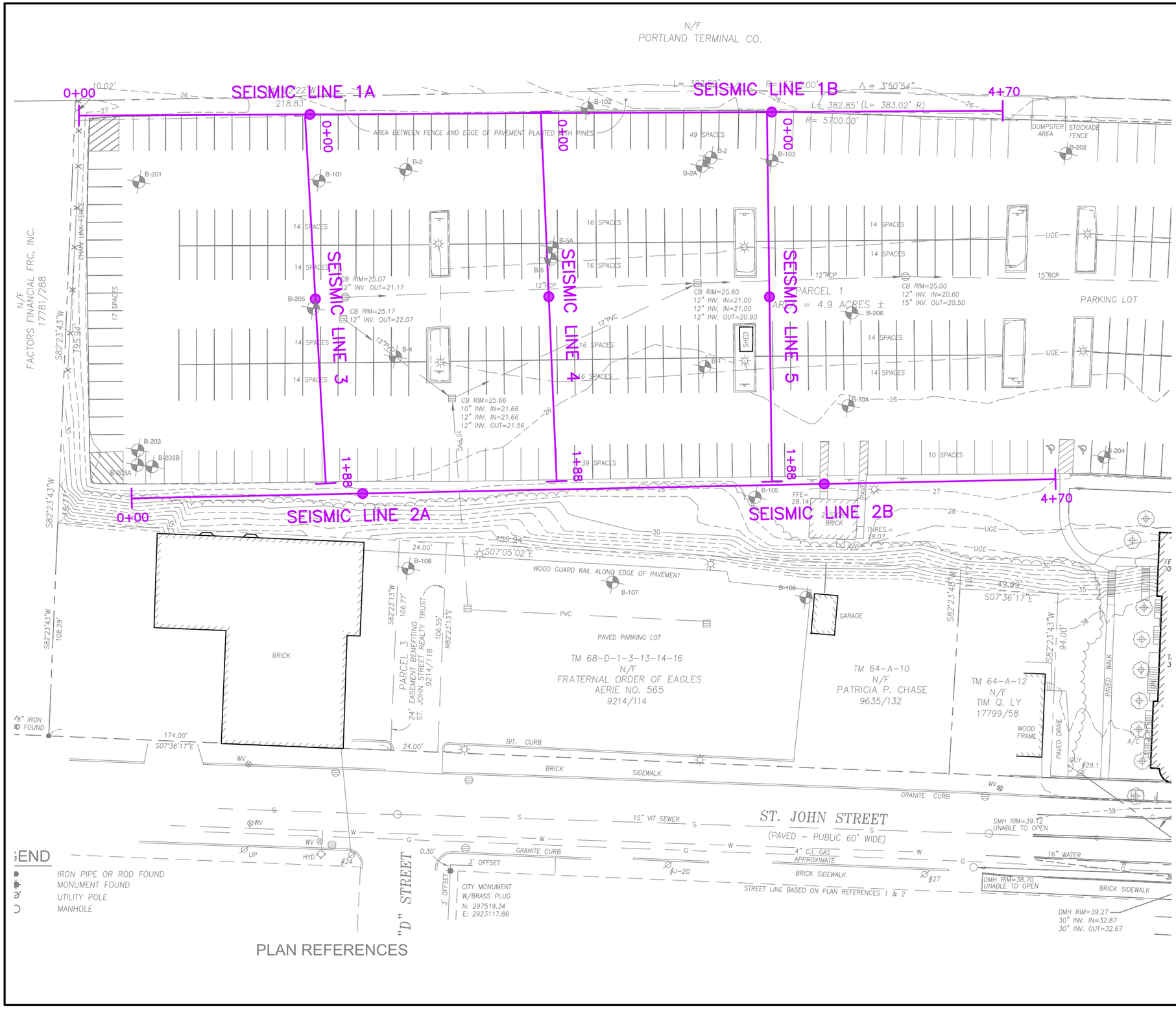
NOTE:

Modified from Google Earth Pro aerial photograph.

Figure 1
General Site Location
Proposed Parking Structure
Portland, Maine

File 17J53 | June, 2017

HAGER–RICHTER
Salem, NH | Fords, NJ



H-R

N

LEGEND

SEISMIC LINE WITH MIDPOINT

SCALE (feet)

0 50 100

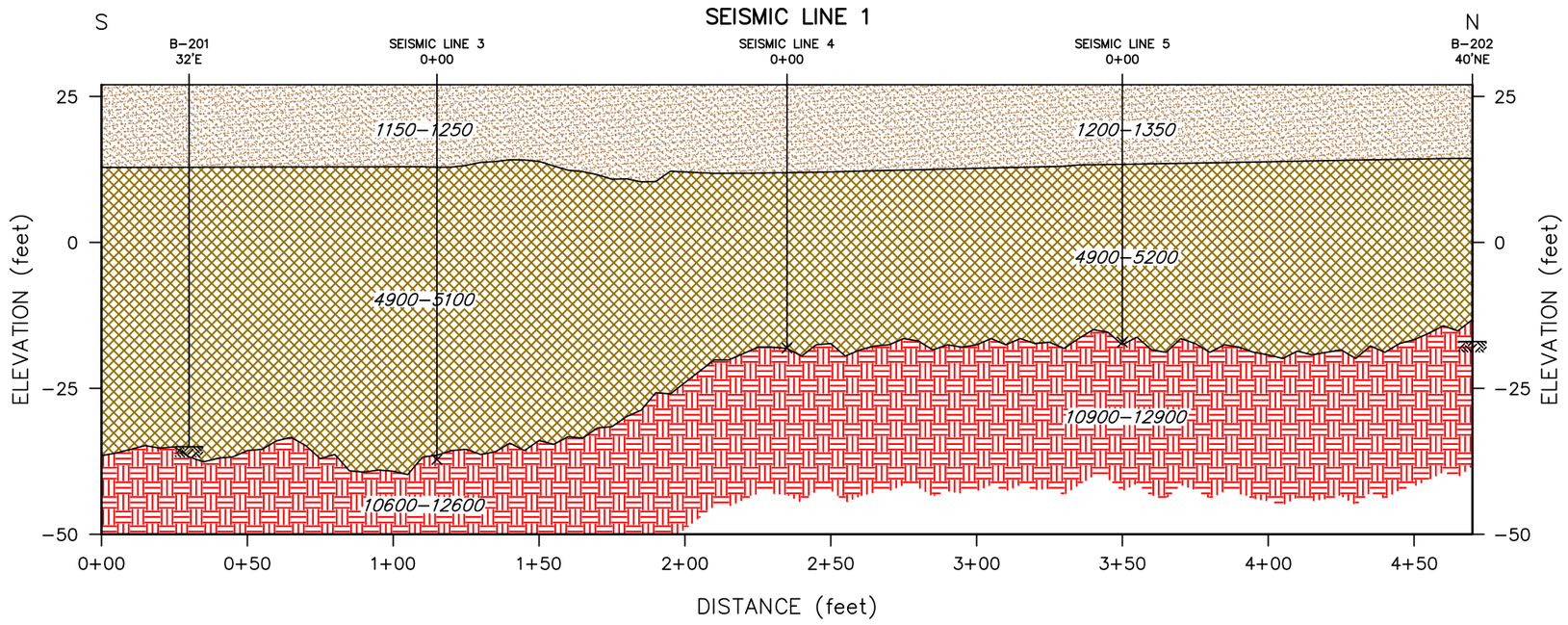
NOTE:

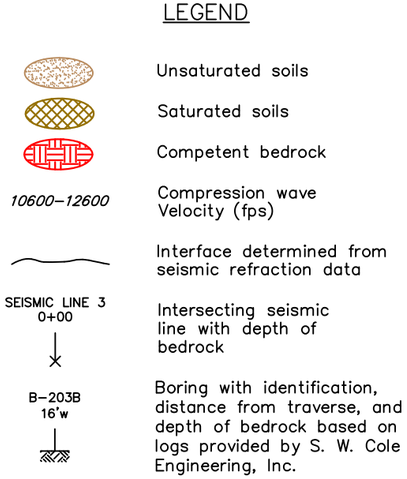
Modified from site plan provided by S.W. Cole Engineering, Inc., identified as 2016-343 USE THIS DWG.dwg.

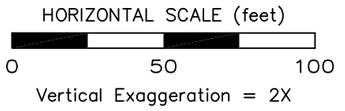
Figure 2
Site Plan
Proposed Parking Garage
Portland, Maine

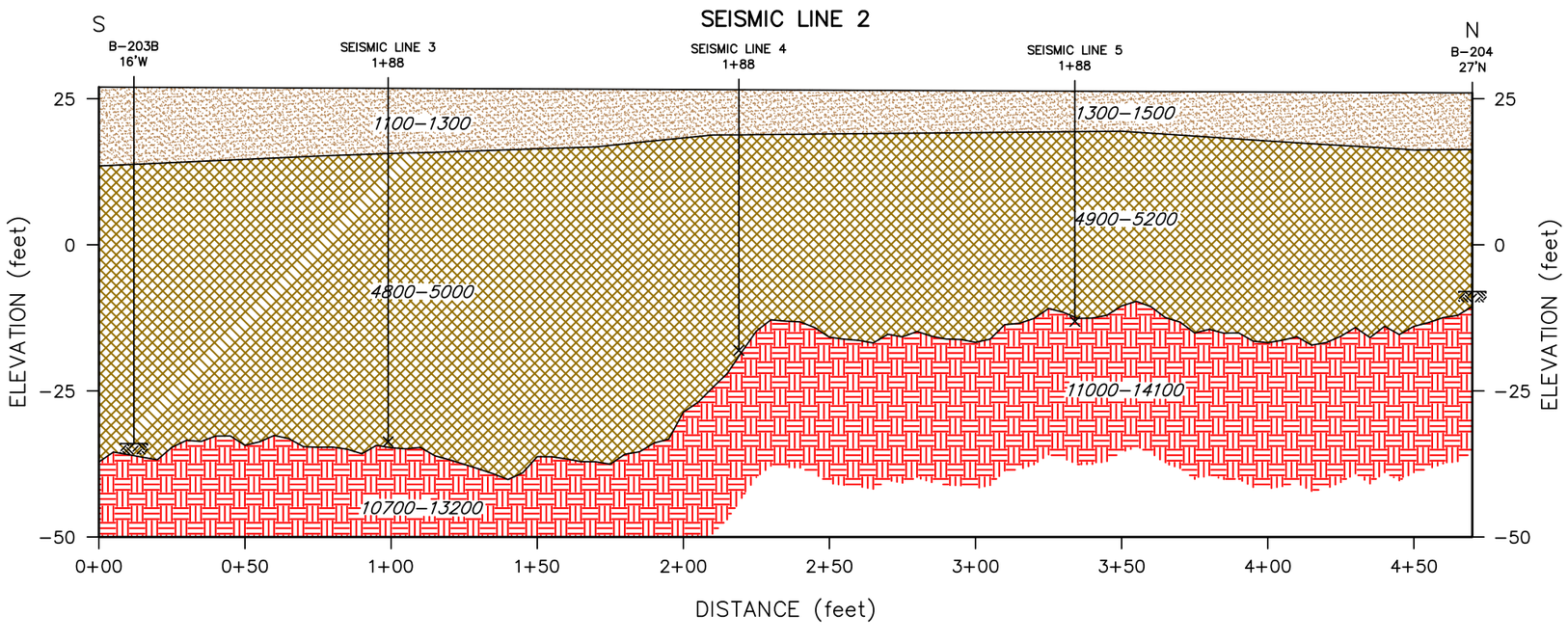
File 17J53 | June, 2017

HAGER-RICHTER
Salem, NH | Fords, NJ









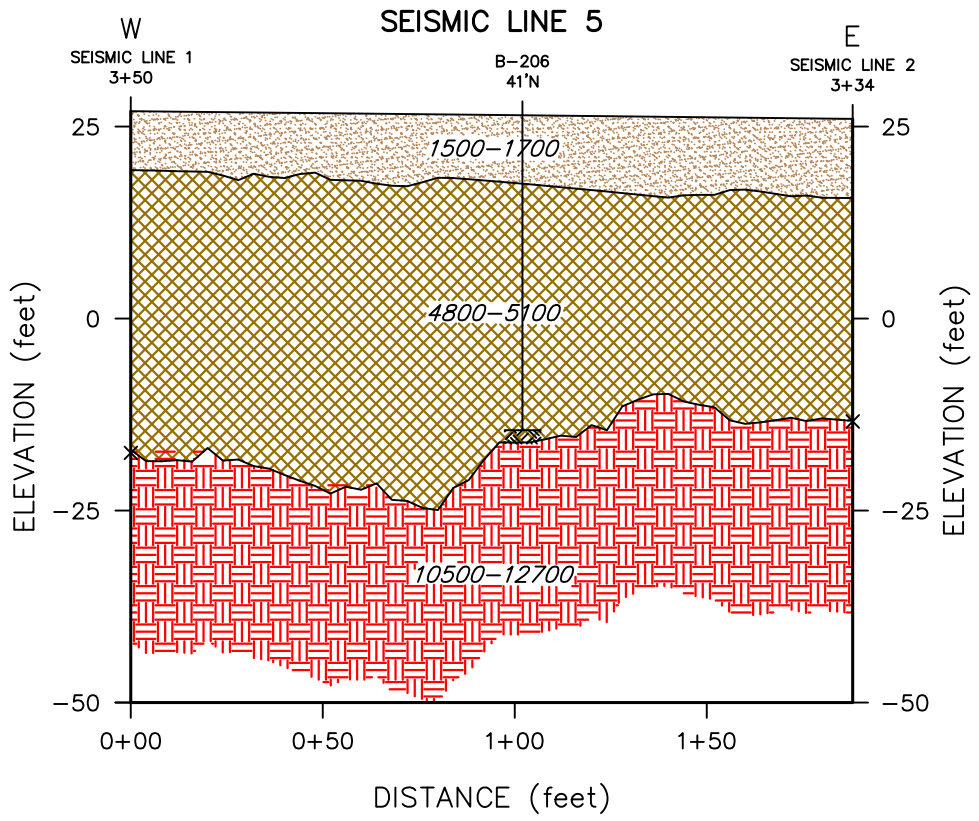
NOTES:

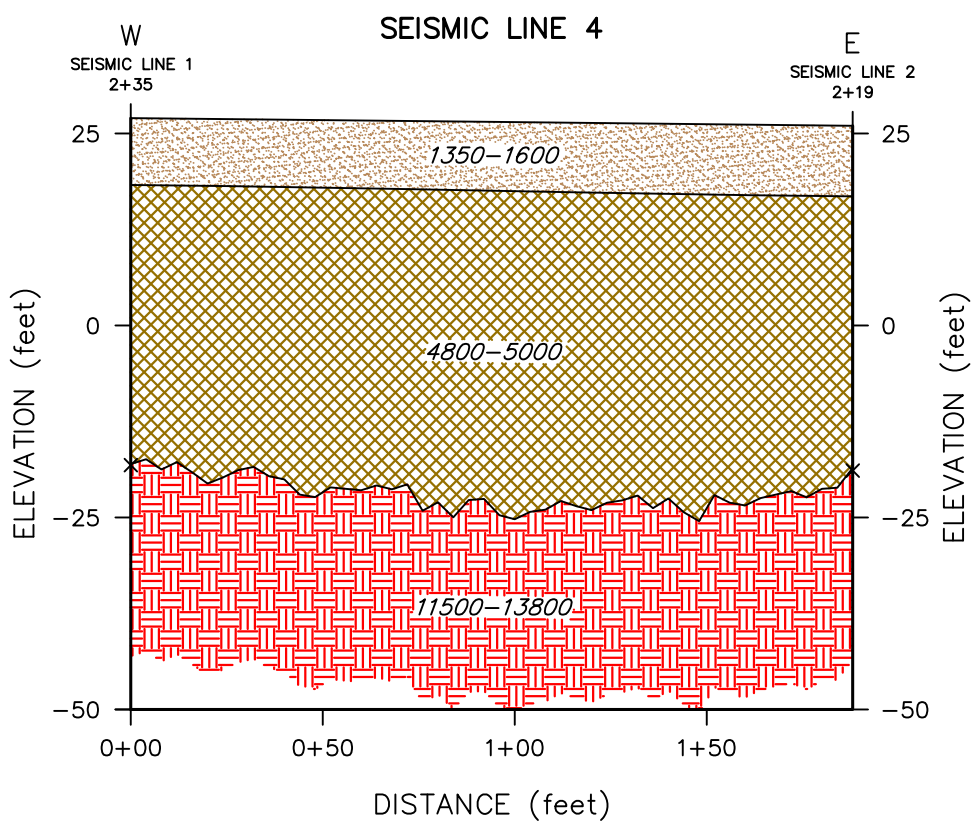
1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations determined from plans provided by S. W. Cole Engineering, Inc.
4. Data were analyzed using the Generalized Reciprocal Method.

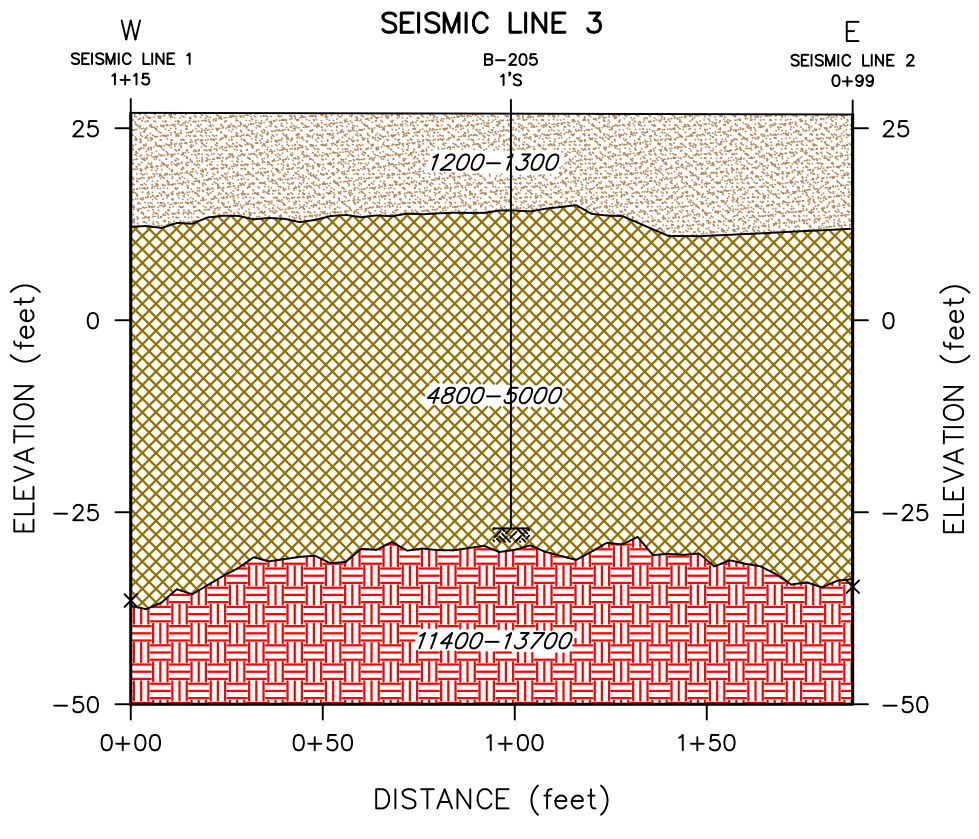
Figure 3
Seismic Lines 1 & 2
Proposed Parking Garage
Portland, Maine

File 17J53 | June, 2017

HAGER–RICHTER
Salem, NH | Fords, NJ







LEGEND

- Unsaturated soils
- Saturated soils
- Competent bedrock
- 10600–12600 — Compression wave Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 3 0+00 — Intersecting seismic line with depth of bedrock
- B–203B 16'w — Boring with identification, distance from traverse, and depth of bedrock based on logs provided by S. W. Cole Engineering, Inc.

HORIZONTAL SCALE (feet)

0 50 100

Vertical Exaggeration = 2X

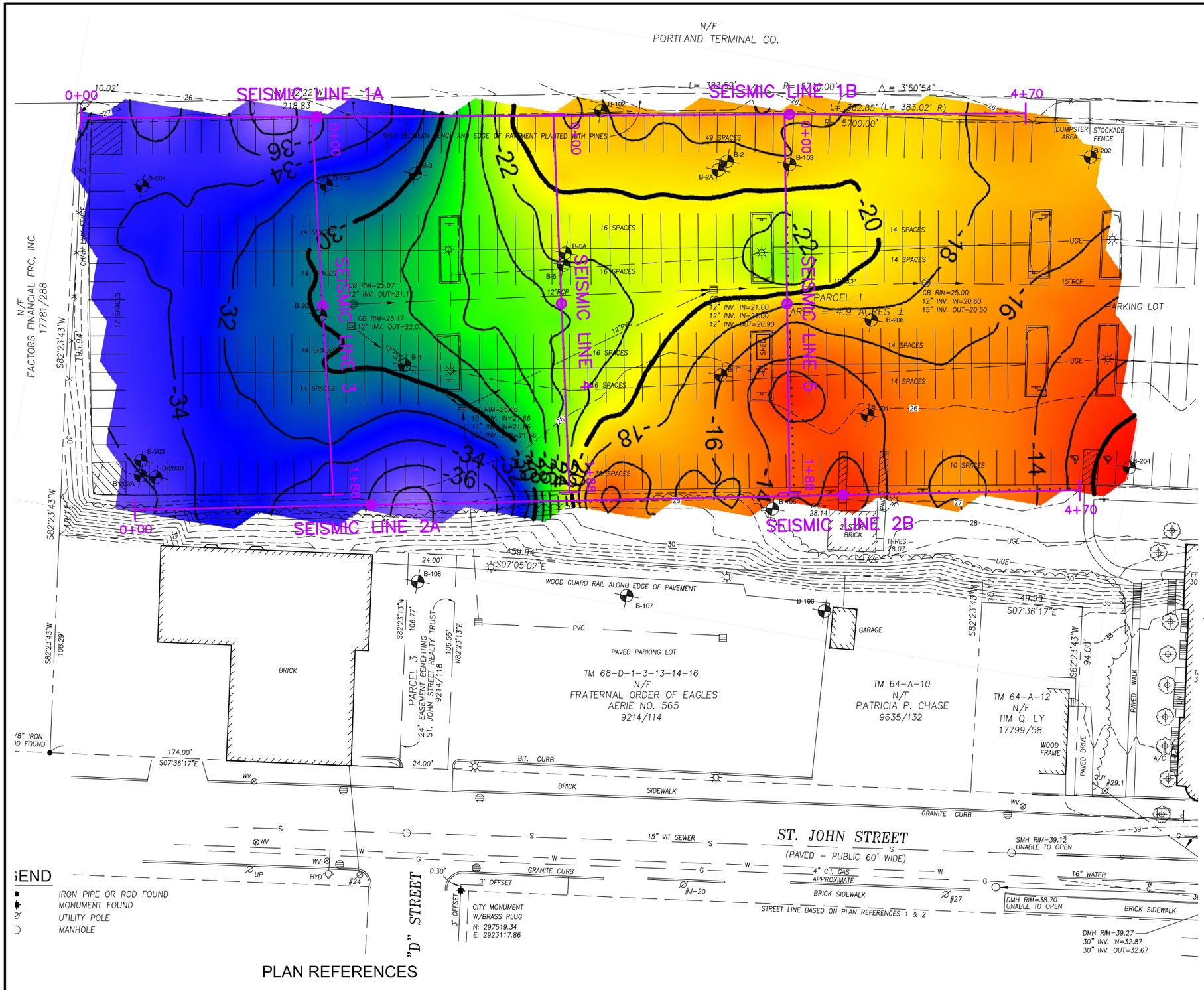
NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations determined from plans provided by S. W. Cole Engineering, Inc.
4. Data were analyzed using the Generalized Reciprocal Method.

Figure 4
Seismic Lines 3, 4, & 5
Proposed Parking Garage
Portland, Maine

File 17J53 | June, 2017

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Modified from site plan provided by S.W. Cole Engineering, Inc., identified as 2016-343 USE THIS DWG.dwg.
2. Contour Interval = 2 Foot.
3. The bedrock elevations shown on this plot are a non-unique model. The contours represent interpolations based on the available data, including seismic refraction data and boring information. The elevations of the bedrock surface at any particular location may differ from that shown. Bedrock elevations based on additional data may differ significantly.

Figure 5
Bedrock Elevation
Proposed Parking Garage
Portland, Maine

File 17J53 | June, 2017

HAGER-RICHTER
Salem, NH | Fords, NJ

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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

Via Electronic Mail

June 27, 2018

Department of Planning & Development
City of Portland
389 Congress Street
Portland, ME 04101

Re: MMC Staff Parking Garage | 222 St. John Street | Neighborhood Meeting Certification

To Whom It May Concern:

I, David Senus, PE of Woodard & Curran hereby certify that a neighborhood meeting was held on June 25, 2018 at Maine Medical Center's Dana Auditorium located at 66 Bramhall Street, Portland, Maine at 5:30pm regarding the Maine Medical Center Level III Site Plan Submittal for the Staff Parking Garage located at 222 St. John Street.

I also certify that on June 13, 2018, invitations were mailed to the following:

1. All addresses on the abutters list provided by the Planning Division which includes property owners within 500 feet of the proposed development.

2. Residents on the "interested parties" list.

Signed,

David Senus, PE
Woodard & Curran
Project Manager

06/27/2018
Date

Attached to this certification are:

1. Copy of the invitation sent
2. Sign-in sheet
3. Meeting Minutes
4. Copy of the Neighborhood Meeting Presentation

Maine Medical Center
MaineHealth

Maine Medical Center
22 Bramhall St.
Portland, ME 04102

Address line 1
Address line 2

Dear Property Owner,

This fall, Maine Medical Center (MMC) expects to begin the second phase of its $512 million expansion project, which involves construction of an employee parking garage behind 222 St. John St.

This new garage will accommodate our current and projected employee parking needs and allow the removal of our Gilman Street parking garage, which fronts Congress Street. Once we remove that older garage, MMC will expand into that space with a patient tower featuring modern single-bed patient rooms and procedure rooms centered on enabling modern cardiac care. This project will enhance our quality of care, improve our capacity, modernize our facilities and help us pursue our vision of working together to ensure our communities are the healthiest in America.

Given the proximity of your address to our planned St. John Street Garage, project construction may create direct or indirect impact on your property. It is important that you understand the nature of this project so we can work with you to minimize any inconveniences.

MMC will submit its site plan application to the city of Portland Planning Department on June 22. As part of our planning process, we have scheduled an all-neighborhood briefing.

Briefing details are below, no RSVP required:

> **Time and Date:** 5 p.m., Monday, June 25
> **Location:** Dana Health Education Center Auditorium, adjacent to MMC, entrance across from 7 Bramhall St.
> **Parking:** Street parking outside the Dana Center is available; MMC visitor parking (free) located a short walk away at Bramhall & Chadwick streets in the South Visitor Parking Lot

This information session will help you understand the scope of this phase and allow you to ask any questions you may have.

In the meantime, we urge you to visit www.MMC.org/Modernization for information and to sign up for email and/or text alerts when new project updates posted. If you have any questions, please contact us at MMCProjectContact@mmc.org.

Respectfully,

Jeffrey D. Sanders
Executive Vice President & Chief Operating Officer
Maine Medical Center

22 Bramhall Street • Portland, ME 04102 • Phone: (207) 662-0111
www.mmc.org

Neighborhood Meeting
June 25, 2017, 5:30PM – 6:30PM
Maine Medical Center
Dana Center Auditorium

Minutes

Attendees:

Alan Prosser	Dennis Morelli	Randy Dunton
Beth Prosser	Dominic Gagnon	Mark Wilcox
Tessa Metcalf	Dave Senus	Barry Sheff
Dan Chase	Gretchen Giumarro	Tuck O'Brien
Deborah Heald	Dave Thomas	Matt Wickenheiser
Tyler Brinkmann	Travis Kirby	Matt Tonello
Jeff Sanders	Todd Neal	
Walter Pochebit	Larry Bartlett	

I. Welcome

Jeff Sanders extended a welcome to the attendees and discussed the objectives and previewed the content of the presentation.

II. Project Background and Need & Review Process

- MMC struggles to meet the daily patient care need due to capacity limitations.
- Staff at MMC park in one of 8 different locations near MMC's Bramhall campus. This is a neighborhood and staff dissatisfier.
- Based on observations and reports from patients and staff, the current patient parking deficit is approximately 25 spaces; the staff parking deficit is approximately 220 spaces.
- City of Portland review of MMC's facility project is broken down into three site plan applications: 1. East Tower & Visitor garage (approved), 2. St John Garage (application submitted), 3. Congress Building (application pending).
- Attendees had questions about the placement of the proposed staff garage and whether the South Lot was considered.
- Attendees had questions about whether the proposed staff garage extends behind the historic building structure at 222 St. John Street; MMC team clarified that it does not and is separated by approximately 65'.

III. Transportation Demand Management & Traffic

- MMC's TDM program ("Get on Board!") has been in place since 2008. There are several enhanced and new programs being put into place now. These are outlined in the site plan application for the St John garage.
- The shuttle entrance to the garage will be on the ground floor and accessed via the driveway at Margarita's. The primary commuter entrance will be off of St John St near the existing Eagles building.

- MMC is proposing placement of a permanent traffic signal at the primary garage entrance and St John St.
    - Attendees asked MMC to consider a blinking yellow light during off-peak hours.
    - Attendees had concerns about the ability of tenants at 210 St John to back out of the driveway onto St John St safely.
    - Attendees shared concerns about the permanent loss of on-street parking in the area of the lane reconfiguration. MMC estimates that the number of on-street parking spaces that will be removed is between 10-13. MMC will follow up with City to understand protocol and property owners to discuss the loss of on-street parking further.

IV. <u>Right of Way Improvements</u>

- Potential walking paths from the proposed garage and the Bramhall campus were identified in MMC's Institutional Development Plan. MMC has evaluated the existing conditions of those pathways and identified areas in need of repair. MMC reviewed the repairs that are planned.
    - Attendees asked about the potential walking pathways and the unofficial pathway across the vacant lot adjacent to the Florence House. The unofficial pathways will likely remain until the owners of that property develops the site.
    - Attendees asked if there are any considerations of making "C" Street a 2-way road; Tuck O'Brien (City) noted that there are no current plans that he was aware of to change "C" Street.

V. <u>Landscape Architecture</u>

- An overview of the location and type of planting proposed was reviewed.
    - Attendees shared concerns about the invasive nature of the proposed plantings, specifically Honey Locust. MMC will review the plantings and avoid those which are not approved by the City of Portland.
    - Attendees asked about the proposed grade change behind 210 St. John Street; MMC team explained the grade change that will occur in this area along with improvements to drainage, addition of a privacy fence, and addition of plantings at the rear of these properties if amenable to property owner.

VI. <u>Construction</u>

- Proposed construction plans were shared and are as follows:
    - Work Hours – 7 a.m. – 6 p.m., Monday – Friday.
    - Rare weekend / Holiday work, with advance notice, start after 8 a.m.
    - Pile Driving will create noise, vibration – will fast-track by using 2 crews, October. 2018 - December. 2018 (est.)
    - Vibration monitoring to involve adjacent property surveys.
    - Dust Control – Tarped dump trucks; on-going sidewalk and street cleaning; use of wetting agents; covering stock piles.
    - No smoking allowed on site.
    - Contractor parking not allowed on adjacent public streets.

- The proposed construction traffic route utilizes the Veteran's bridge and St John St. The main site access will be through the north-end of the existing Eagles parking lot. Secondary site access will be through the Margarita's entrance. Flaggers will be in place to facilitate safe traffic flows during key times of construction.
    - Attendees asked about an alternative site access through the Ferguson property to the south of the construction site. MMC has approached the property owner who shared concerns about the impact on the traffic associated with the plumbing supply business there. MMC is unable to use this access point for construction traffic.
- Attendees were interested in the core samples taken during pre-construction. Representatives from Consigli construction explained that geotechnical borings have occurred on the site and bedrock is approximately 50' below grade.
- Attendees asked if the construction plan has been approved by the City; MMC clarified that the construction plan has just been submitted to the City and is now under review.

VII. Communications

- For more information and on-going updates, anyone can visit MMC's website to sign up for email and text alerts: www.mmc.org/modernization.

For construction related issues, there are contact numbers on the MMC Modernization website, as well as on the City's website. In addition, the project Manager, Tim Braun, can be reached for serious and immediate issues at 207-671-8919.

Link to project:
https://mainehealth.org/maine-medical-center/newsroom/modernization

Maine Medical Center
MaineHealth

MAINE MEDICAL CENTER NEIGHBORHOOD MEETING
222 ST. JOHN STREET | STAFF PARKING GARAGE
JUNE 25, 2018 | 5:30PM
SIGN-IN SHEET

	Name	Address	Email
1.	Alan Prosser	195 St John St. c7761816	
2.	Beth	Portland	
3.	TESSA METCALFE	190 VALLEY	TMETCALFE@AVESTAHOUSING.ORG
4.	Dan Chase	210 St. John St.	dpchase26@gmail.com
5.	Deborah Heald	213 St. John St.,	deborah.heald@gmail.com
6.	TYLER BRINKMANN	210 Valley st.	charliebrinkmann@yahoo
7.			
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18.			
19.			
20.			

Alan & Alan Prosser
7761816

Maine Medical Center
MaineHealth

Site Plan Two:
St John Garage
Neighborhood Meeting

June 25, 2018

BEST REGIONAL HOSPITALS U.S.News & World Report PORTLAND-SOUTH PORTLAND-BIDDEFORD RECOGNIZED IN 9 TYPES OF CARE 2017-18

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

THE JOINT COMMISSION NATIONAL QUALITY APPROVAL

Neighborhood Meeting Agenda

- **Meeting Objective**
  - Introduce neighbors to the project and Site Plan Review Process
  - Obtain feedback

- **Topics for Discussion**
  - Project Background and Need & Review Process
  - Transportation Demand Management & Traffic Discussion
  - Right of Way Improvements
  - Landscape Design
  - Construction Management & Schedule
  - Ongoing Communications
  - Questions

A Day at the Medical Center

Thursday, September 21st, 2017

Gassed Beds	
Total Beds:	637
Patient condition closures:	44
Construction closures:	4
Staffing closures:	13
Open beds:	576
Held for assigned admits:	7
Census at 0700:	553
Beds remaining:	16

Available Beds	
Medical/Surgical:	0
Cardiac:	4
Intermediate Care:	0
Intensive Care:	4
Psychiatric:	1
Childrens:	2
Obstetrics:	5
Beds remaining:	16

Patients Waiting for a Bed	
In the ED:	17
In the ED waiting for P6 (excludes outside psych placement):	0
In the PACU:	2
Transfer from other facilities:	4
Total:	**23**

Expected Admissions	
ED admits:	45 - 55
Procedural admits:	45 - 50
Cath Lab admits:	1 - 4
Outisde admits:	10 - 15
Total:	**101 - 124**

Jeff Sanders,
Executive Vice President and COO,
MMC

MMC Parking Supply

		Patient / Visitor	Employee	Total at Facility	Ownership
ON-CAMPUS	Employee Garage	0	1,274	1,274	Owned
850 patient / visitor 1,538 employee spaces	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	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 Patient/Visitor Parking Summary

- Existing Peak Parking Demand = 875 parkers
- Existing MMC Parking Supply = 850 spaces
- Current Patient/Visitor Shortfall = (-25) spaces

- Future Patient/Visitor Parking Demand = 175 spaces

- Total New Patient/Visitor Parking Spaces Needed to alleviate existing shortfall and to accommodate anticipated growth = **200-250 spaces**

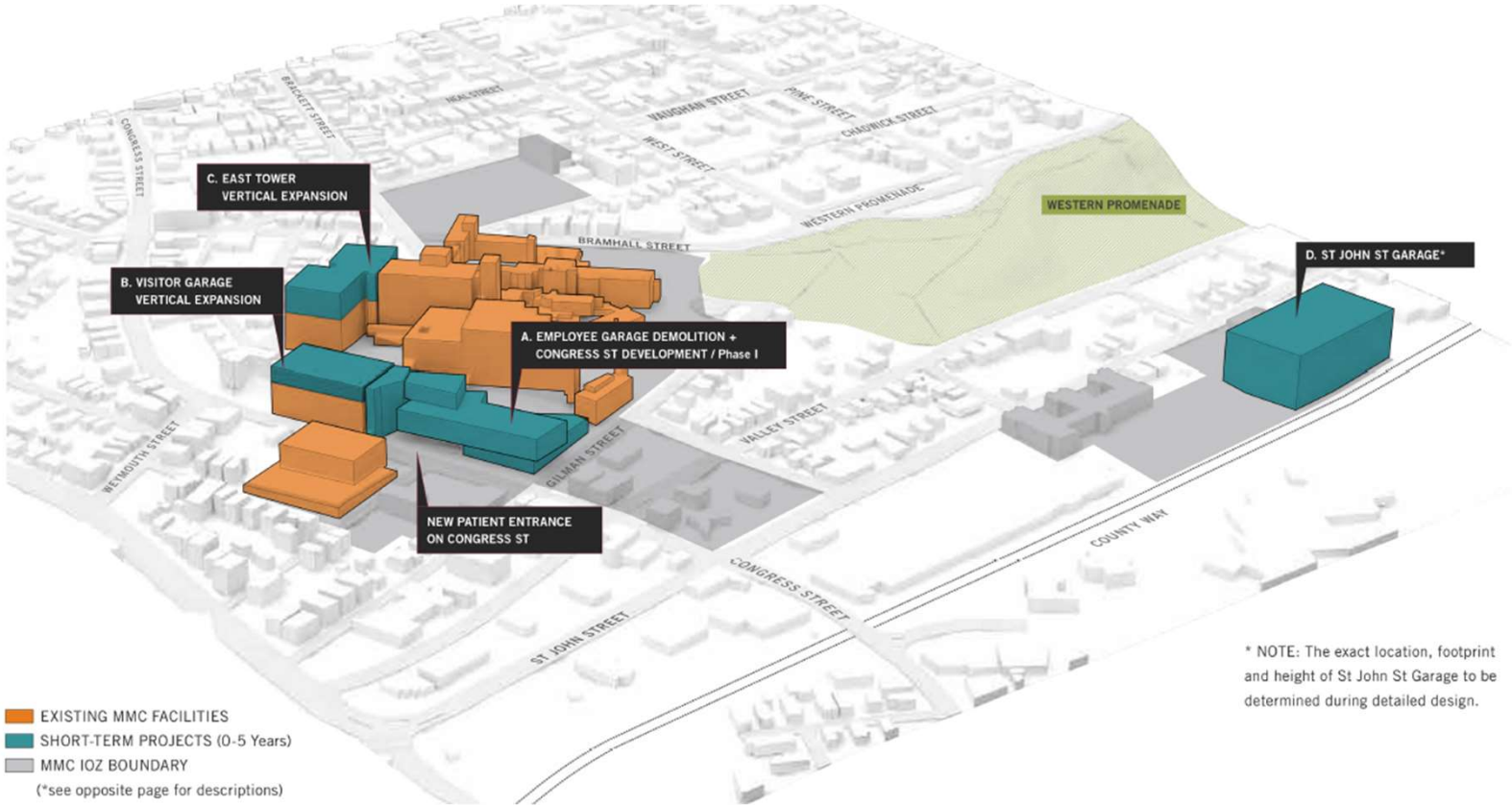
MMC Physician/Staff Parking Summary

- Existing Peak Parking Demand = 2,247 parkers
- Existing MMC Parking Supply = 2,027 spaces
- Current Physician/Staff Shortfall = (-220) spaces

- Future Physician/Staff Parking Demand = 270 spaces

- Total New Physician/Staff Parking Spaces Needed to alleviate existing shortfall and to accommodate anticipated growth = **500-600 spaces**

Master Facility Plan



Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Today

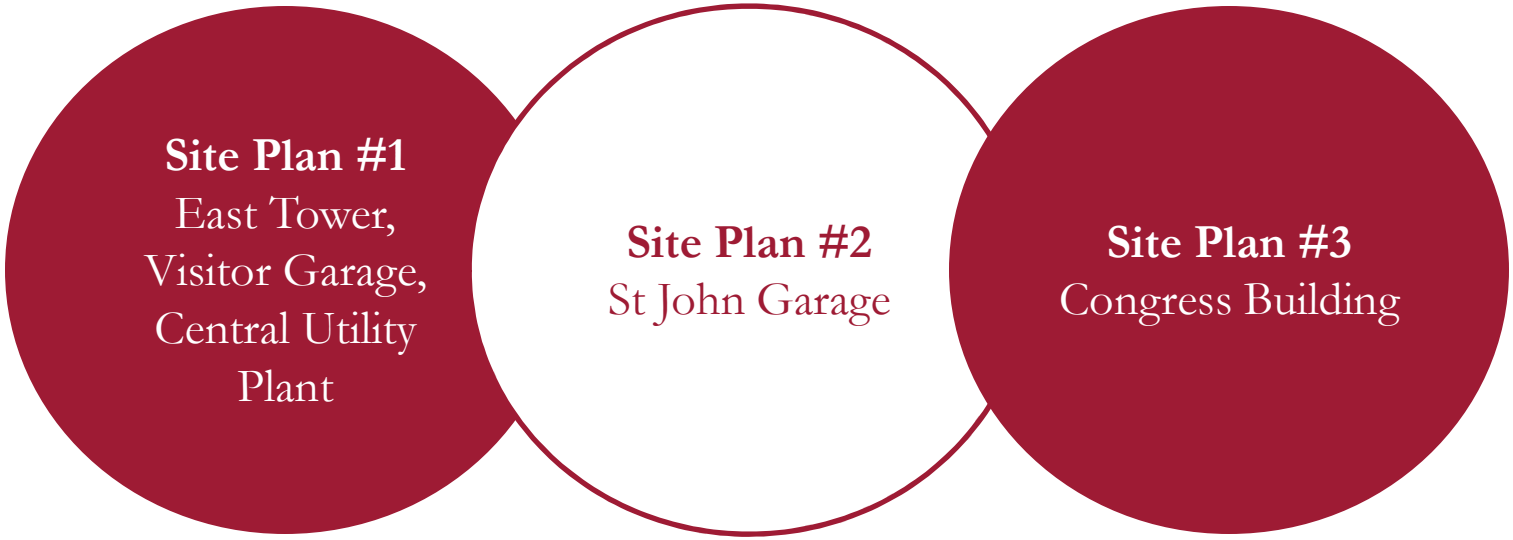
- Construction on Phase One has started and will continue through the fall of 2019.

East Tower

Patient & Visitor Garage

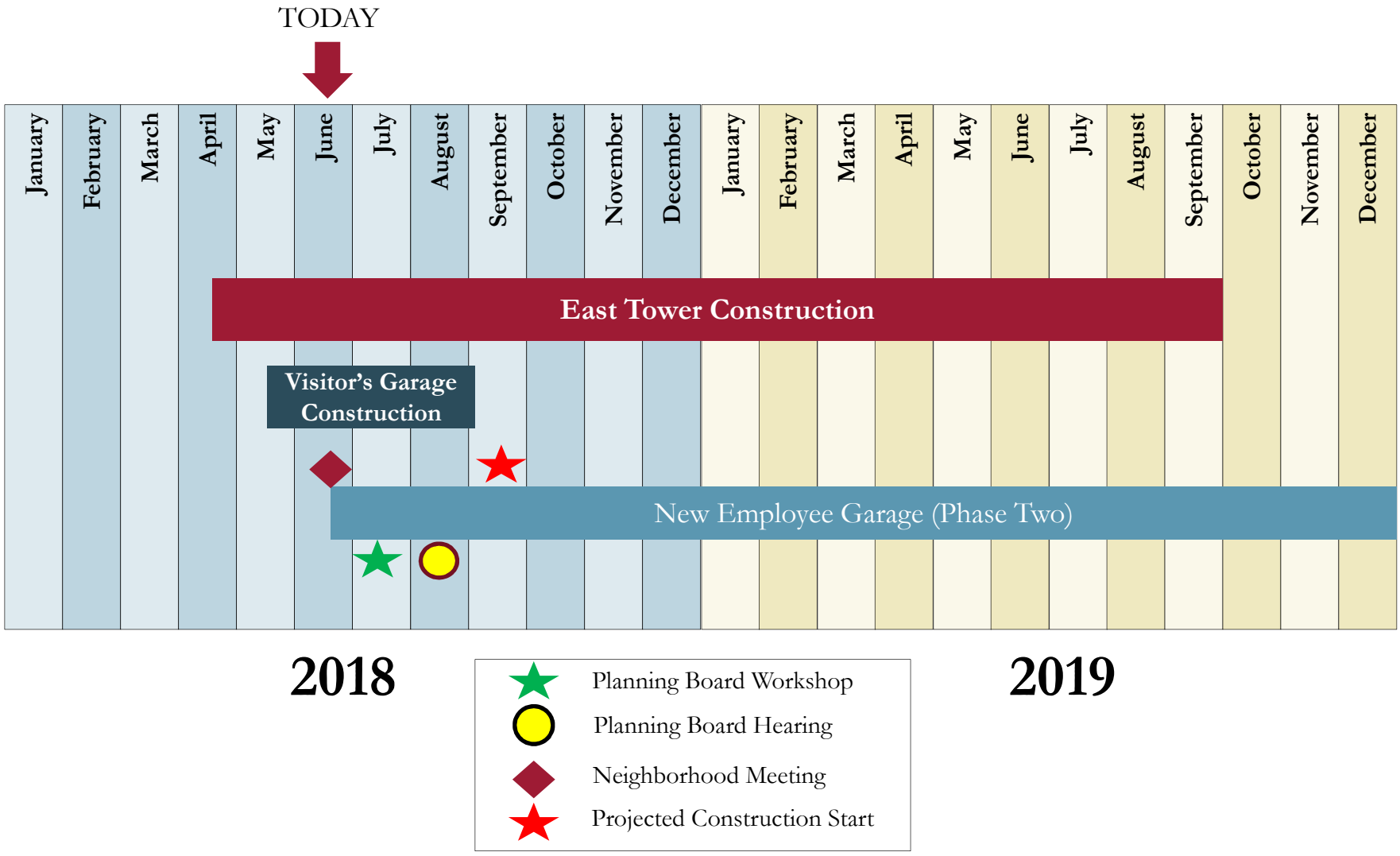
Act with kindness and compassion.
Be an active listener.
Be a role model.
Set high standards.
Take responsibility.
Embrace change.

MMC MFP Site Plan Review



- Three separate applications with overlapping schedules
- Intended to make the materials digestible and to provide more opportunities for feedback from the City and Neighbors

Schedule Overview



Staff Parking Garage

Staff Parking Garage

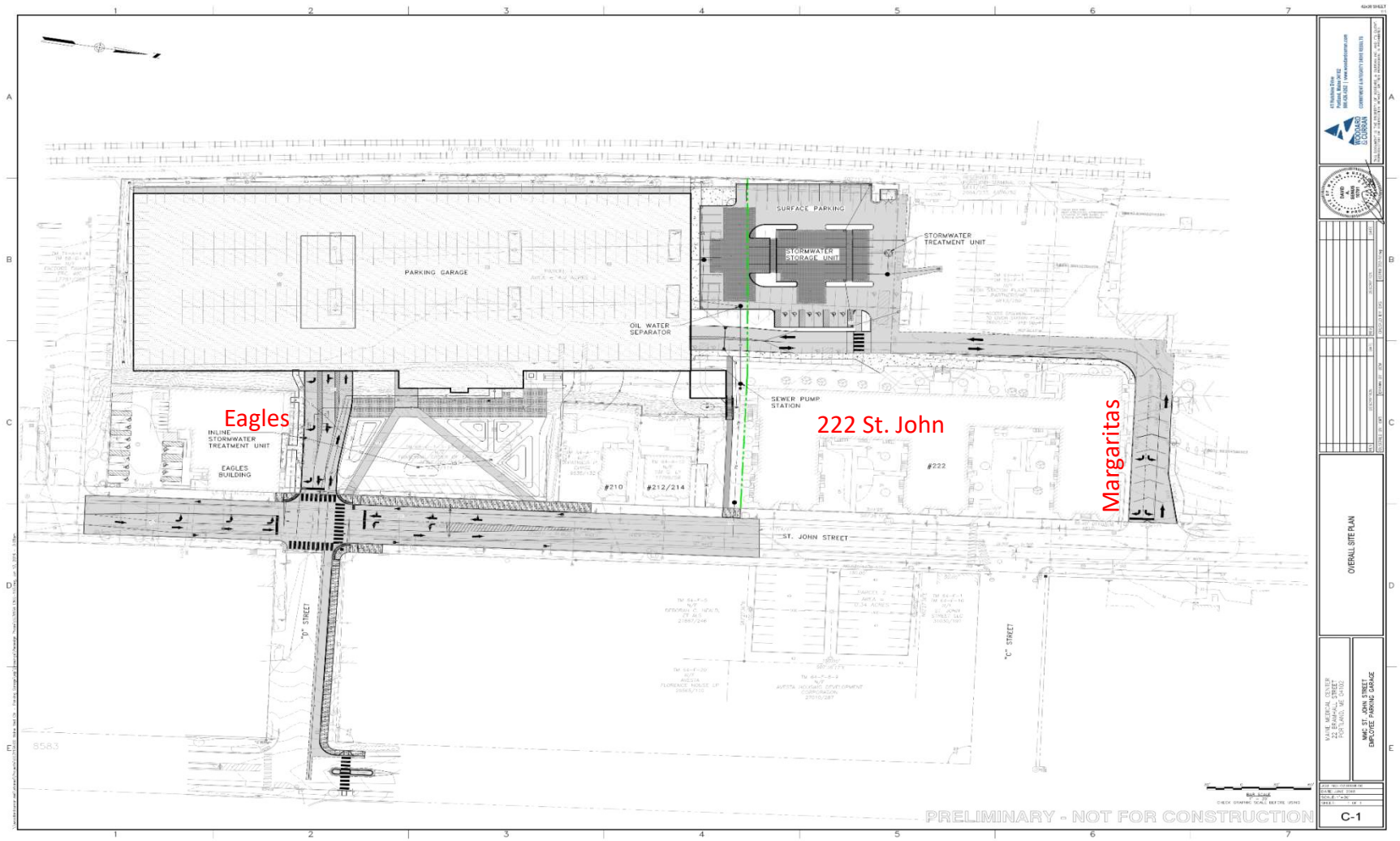
Transportation Demand Management & Traffic

Transportation Demand Management (TDM)

- MMC's "Get on Board!" was one of the first TDM programs in the State of Maine when it was launched in 2008.
- Data collection needs to be improved

Continuing (Enhanced) Program Efforts	New Program Efforts
• Metro pass discounts • Employee carpools • Supporting cycling • Employee shuttles • Pay to park	• TDM Coordinator • Increased education • Bi-annual transportation survey • Regional connections • Guaranteed ride home

Site Overview – Traffic Flow



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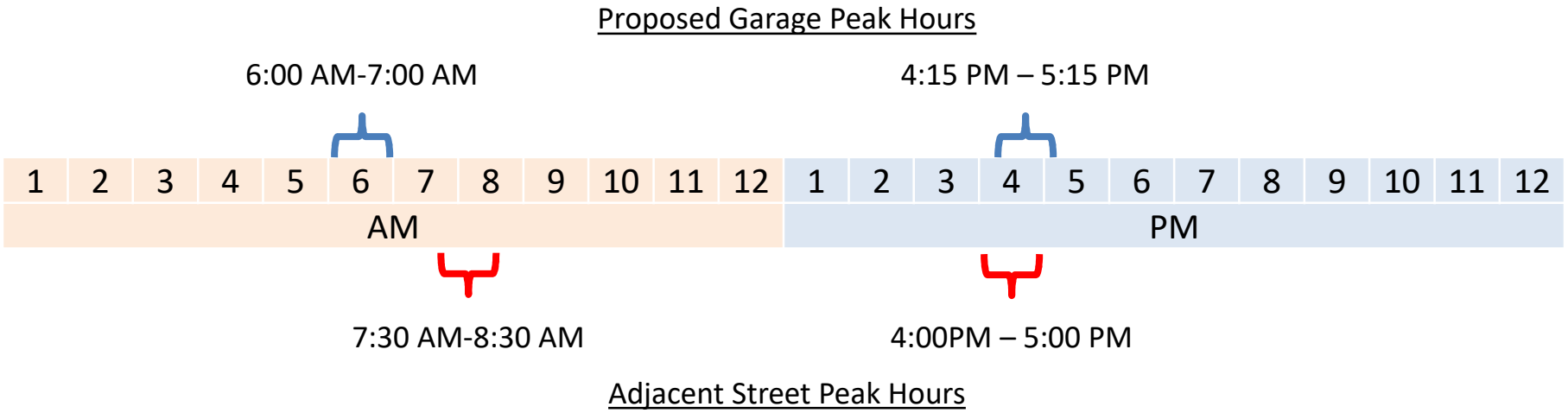
Al Green,
Director of Planning,
MMC

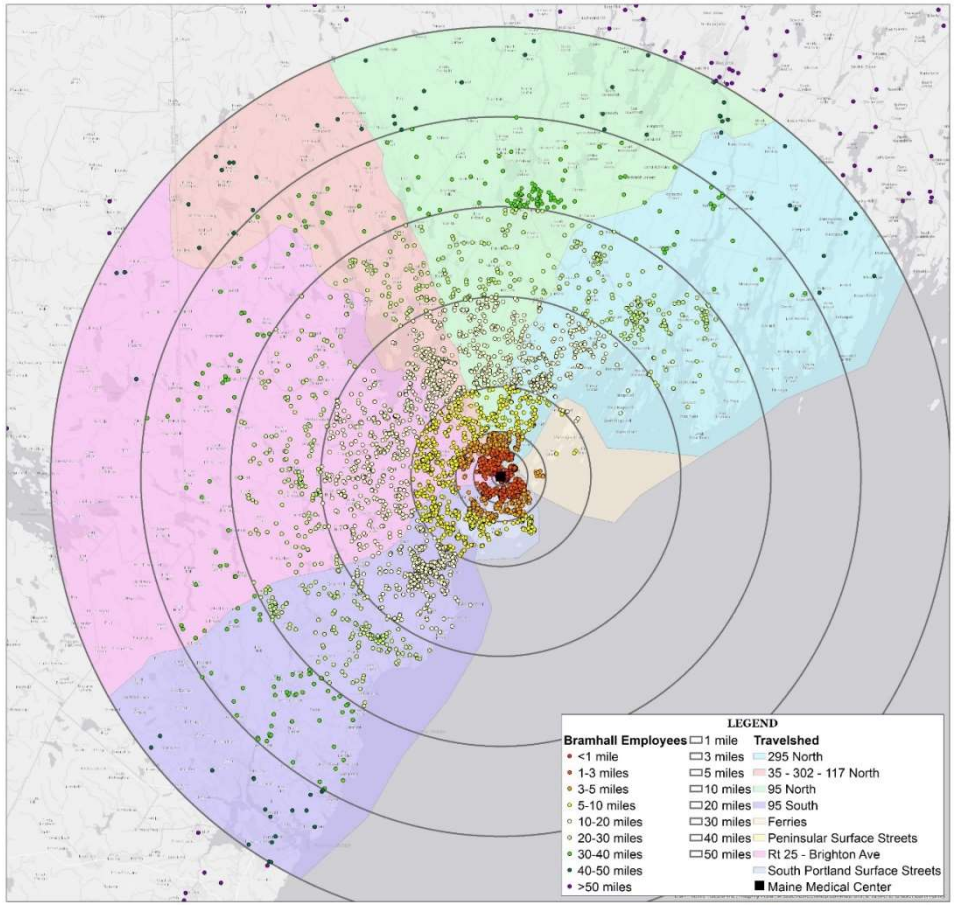
Maine Medical Center
MaineHealth

Traffic – Trip Generation (cont.)



- Trip Generation
  - AM Garage Peak Hour: 1,097 trip ends (1,070 in / 27 out)
  - PM Garage Peak Hour: 571 trip ends (82 in / 489 out)
  - AM Adjacent Street Peak Hour: 556 trip ends (246 in / 310 out)
  - PM Adjacent Street Peak Hour: 519 trip ends (77 in / 442 out)

Traffic – Trip Assignment



Bramhall Employee Address Locations and Travelsheds
Maine Medical Center

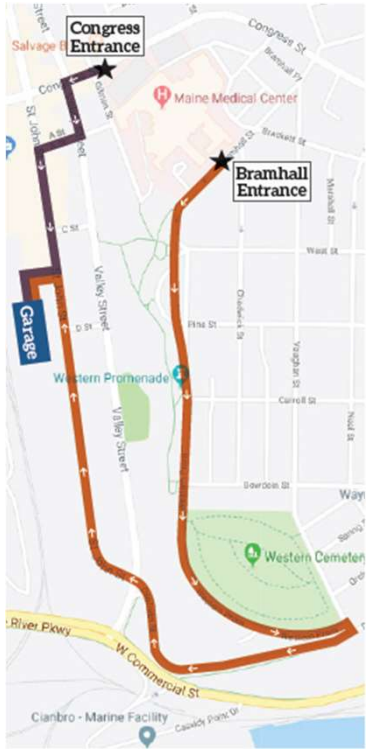
- MMC Employee Data
- Regional Transportation Patterns
- Actual Traffic Counts
- Conversations with City Staff about Potential Future Developments

Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Shuttles

Garage to Hospital

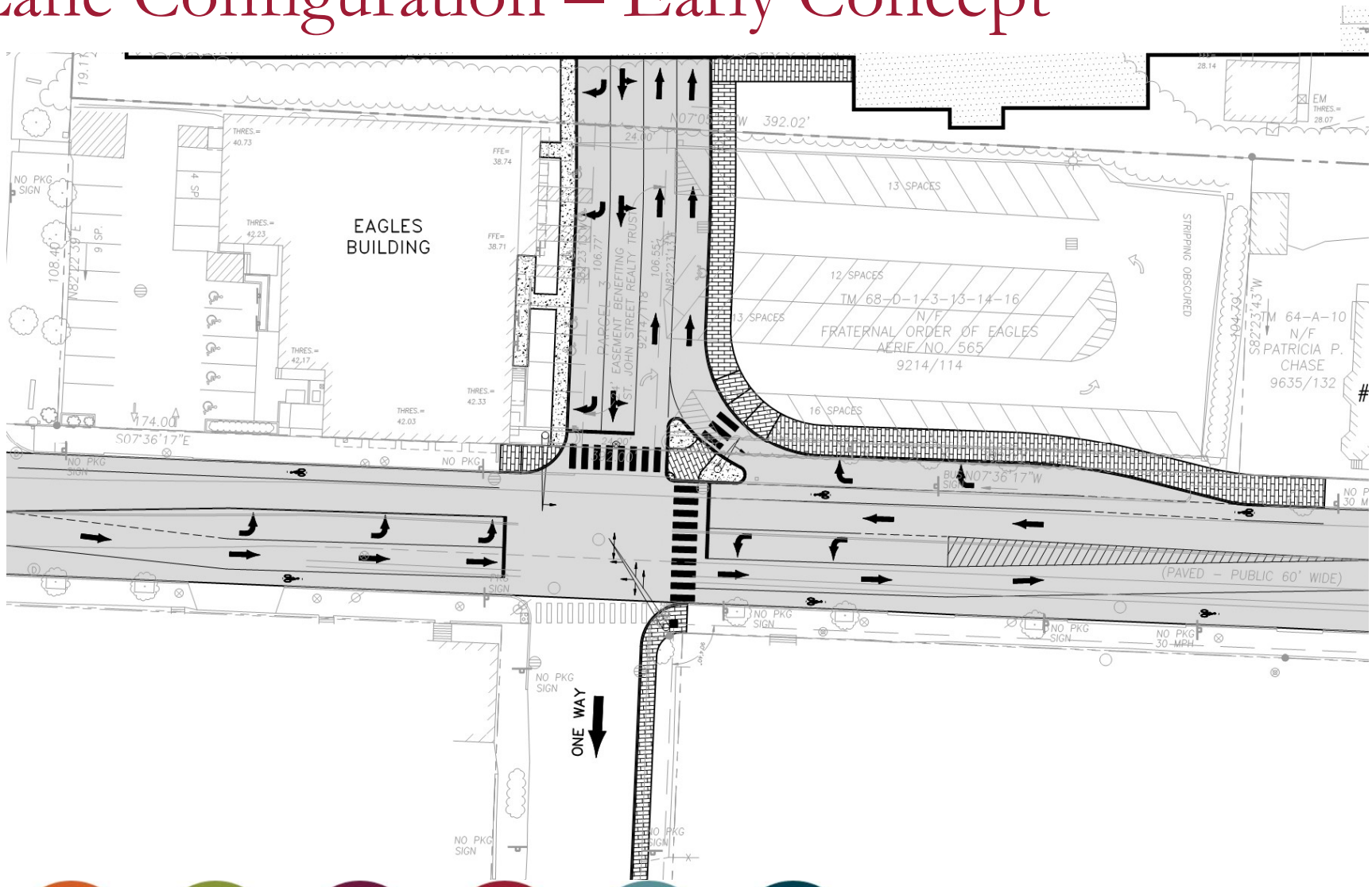
Hospital to Garage



- 13 Shuttles during peak hours
  - 6 to Bramhall Entrance
  - 7 to Congress Entrance
- 15 Minute trip time
- 52 in / 52 out (Total of 104 trip ends)
- Right into Margarita's access, Right out of Margarita's access

Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Lane Configuration – Early Concept



Act with kindness and compassion.

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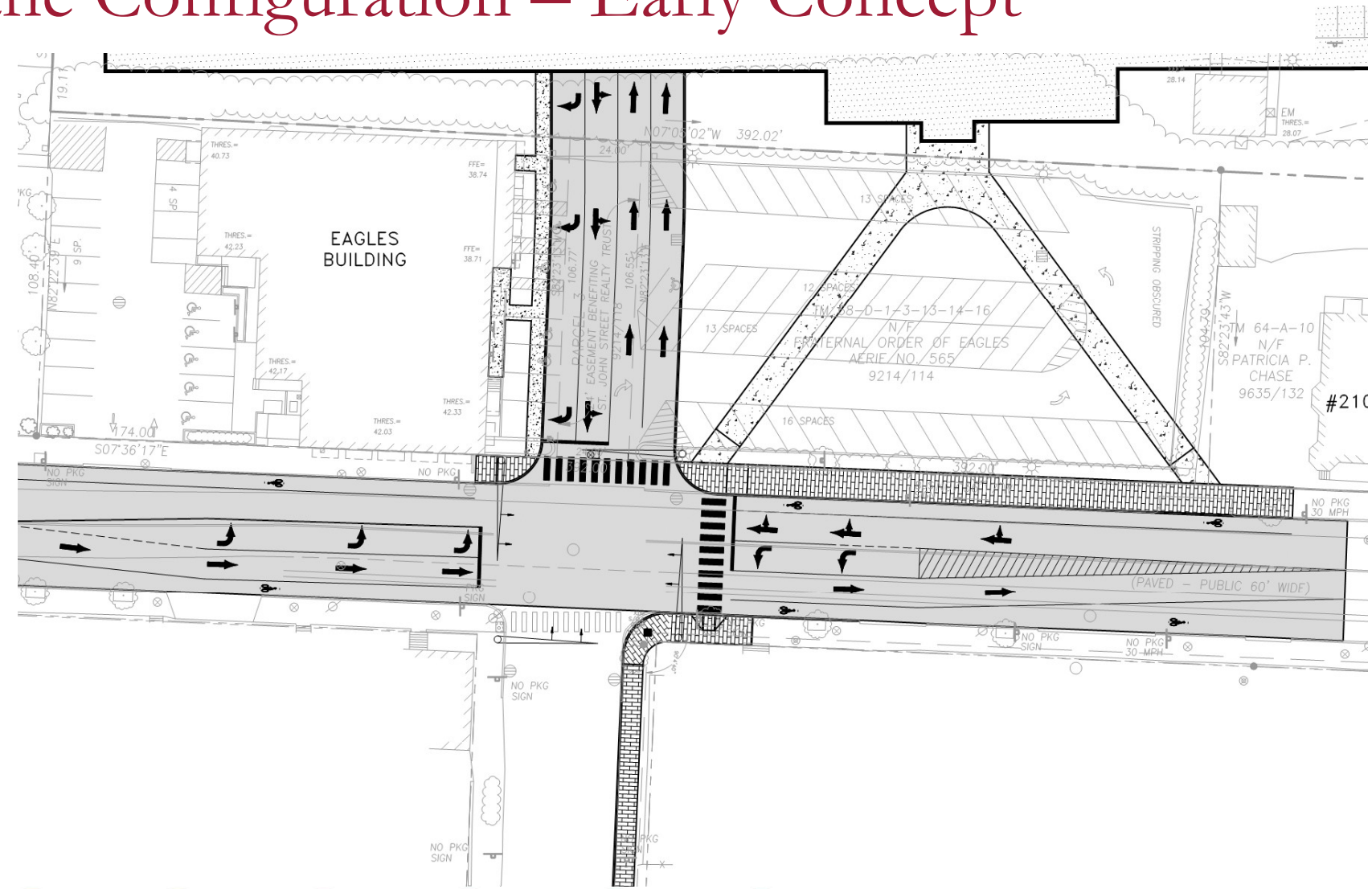
Embrace change.

Lane Configuration – Early Concept



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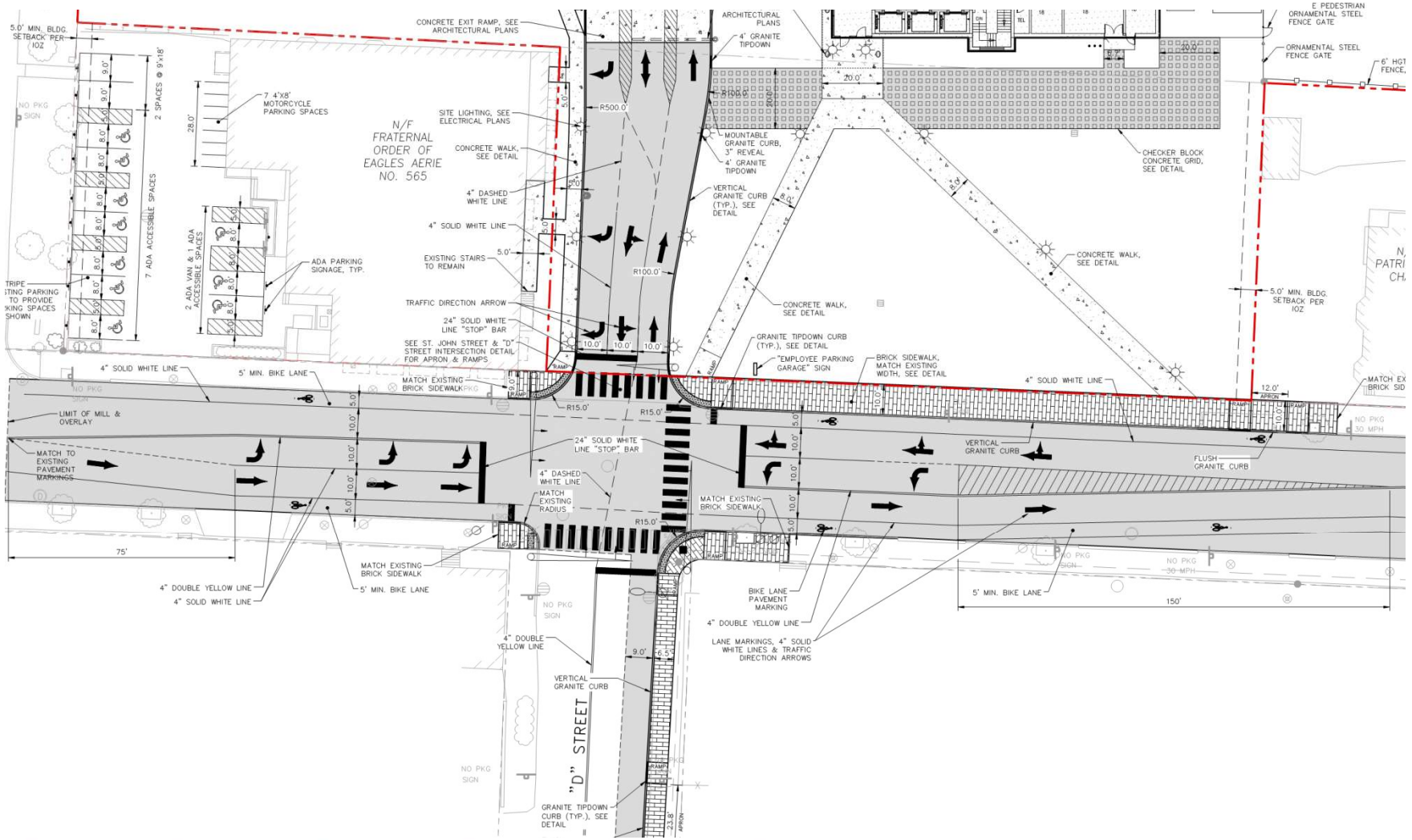
Al Green,
Director of Planning,
MMC

Maine Medical Center
MaineHealth

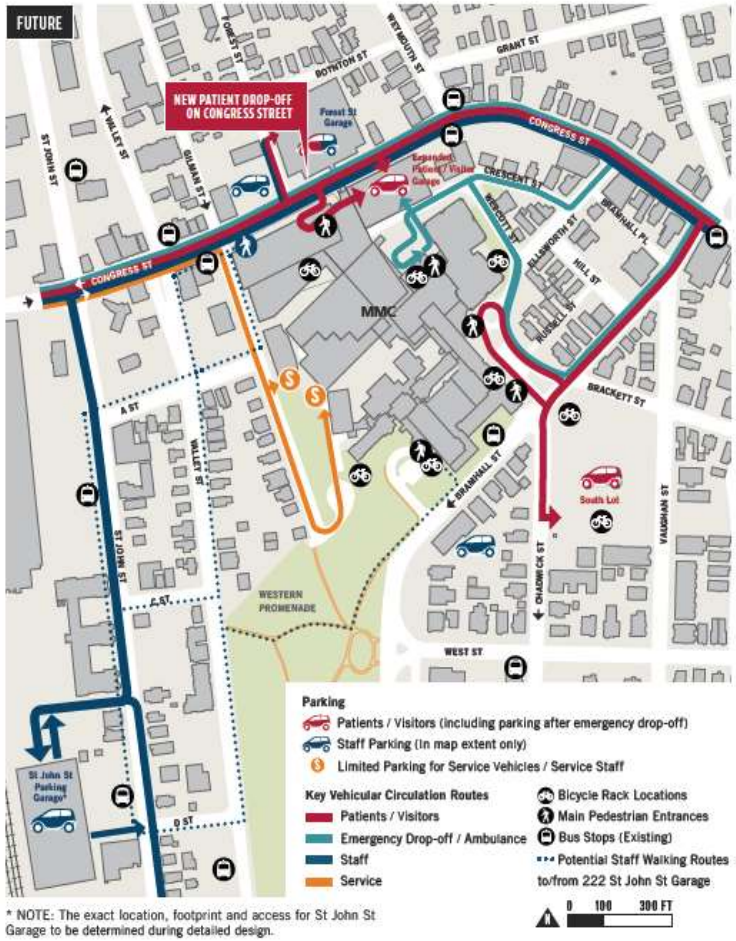
Lane Configuration – Proposed Concept



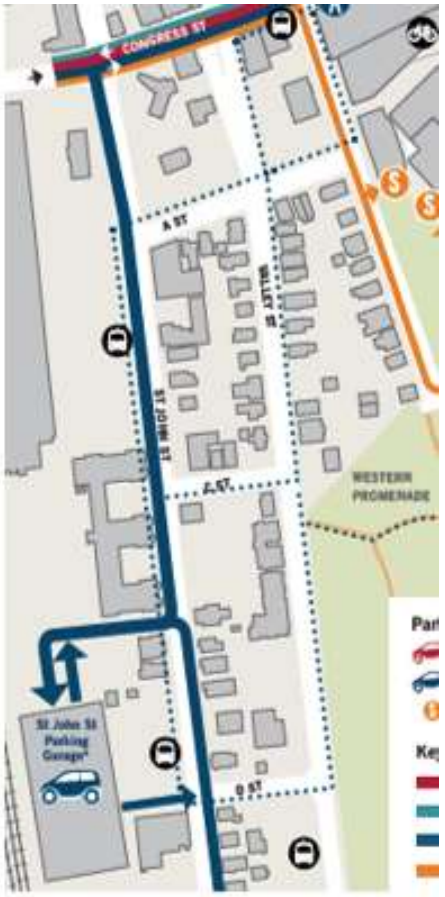
Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Right of Way Improvements

Pedestrian Travel Routes (as noted in IDP)



* NOTE: The exact location, footprint and access for St John St Garage to be determined during detailed design.

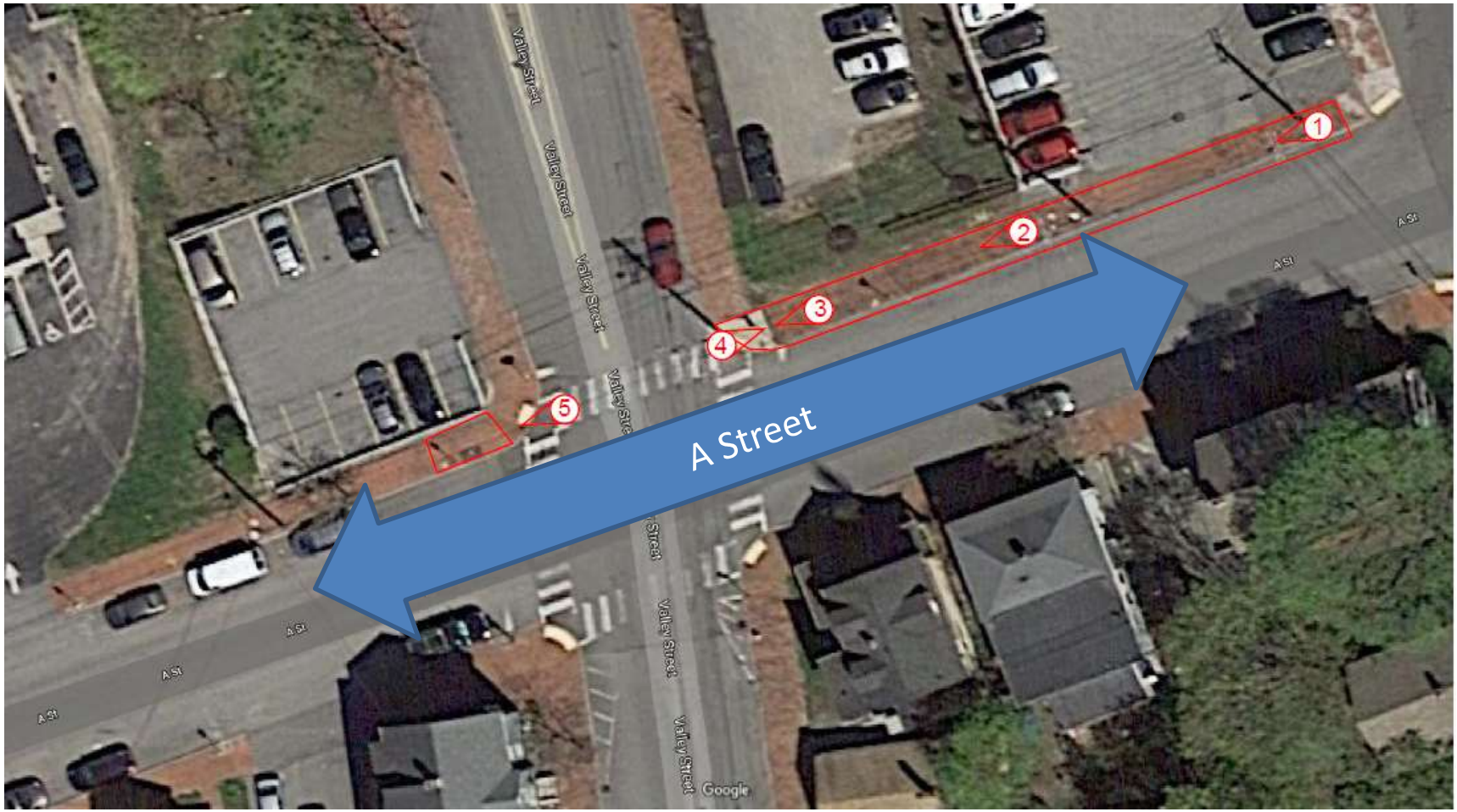


* NOTE: The exact location, footprint and access for S Garage to be determined during detailed design.

MAINE MEDICAL CENTER / Institutional Development Plan 59

Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Right of Way Improvements



Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

ROW Improvements

Photo 1 – Uneven settlement along sidewalk.

Photo 3 - Uneven settlement along sidewalk adjacent to ADA Ramp.

Photo 5 - Uneven settlement along sidewalk & unrepaired section from tree box removal.

Photo 2 - Uneven settlement along sidewalk.

Photo 4 - Uneven settlement along sidewalk.

Photo 6- Unrepaired sidewalk section from utility trenching.

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

ROW Improvements

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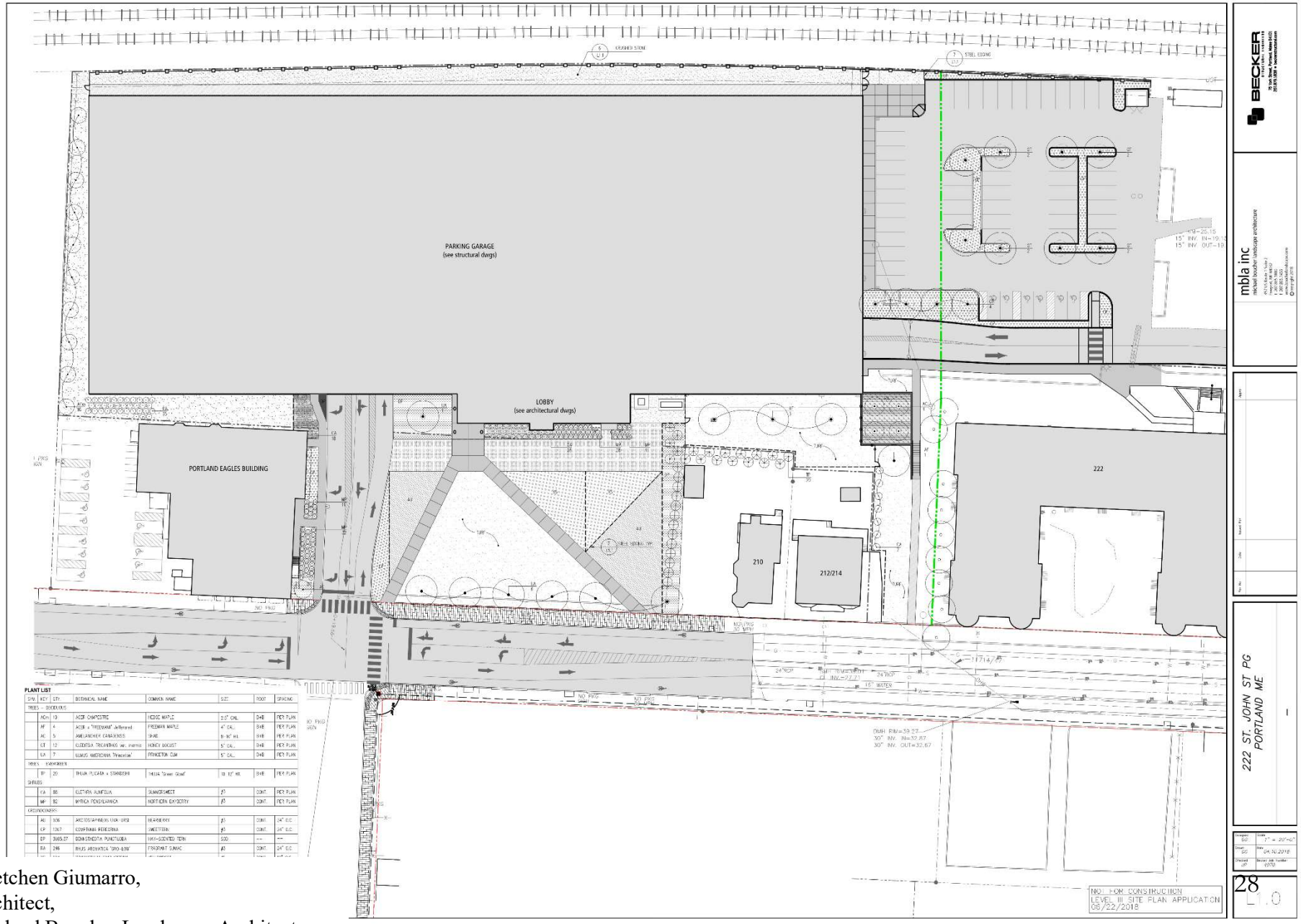
Dave Senus,
Project Manager,
Woodard & Curran

Maine Medical Center
MaineHealth

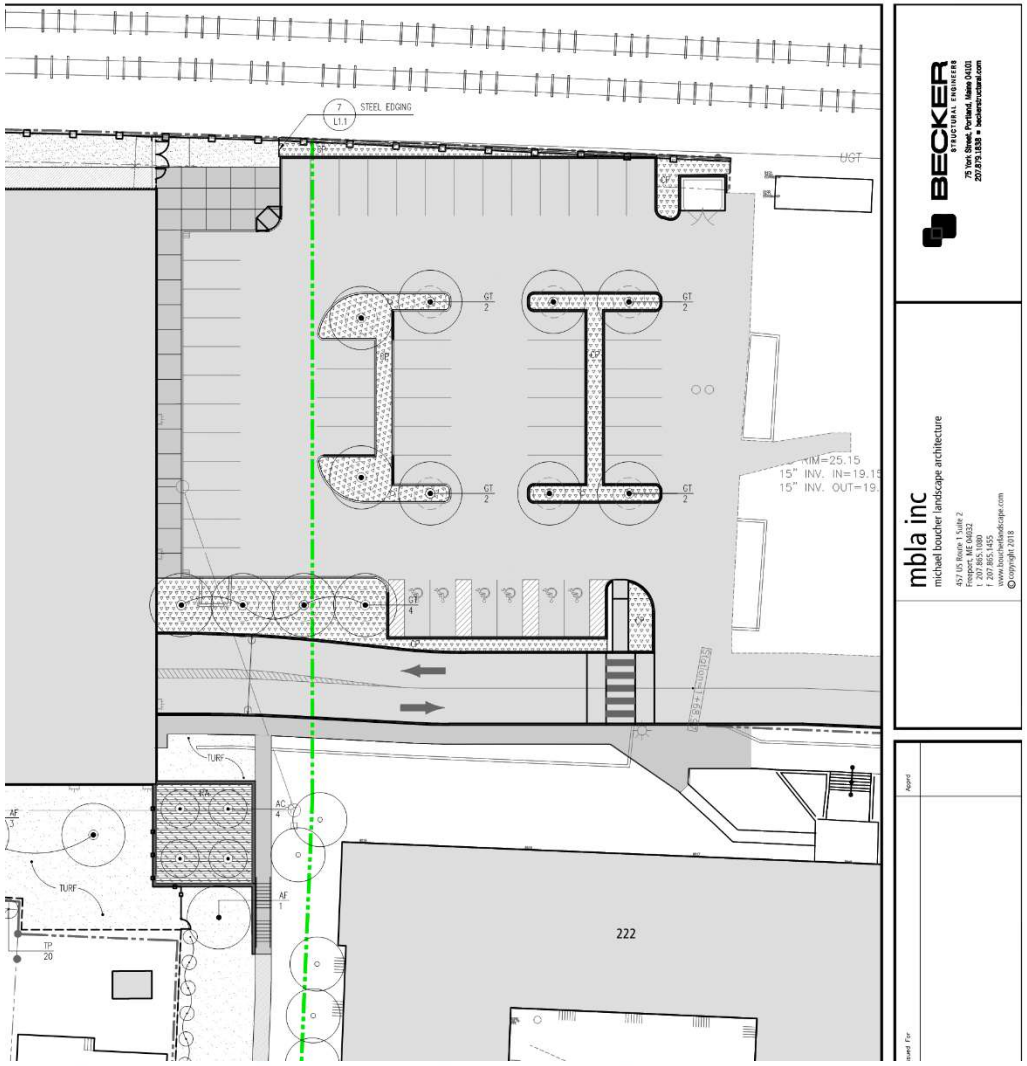
Landscape Architecture

Landscape Architecture



Gretchen Giumarro,
Architect,
Michael Boucher Landscape Architects

Landscape Architecture



Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

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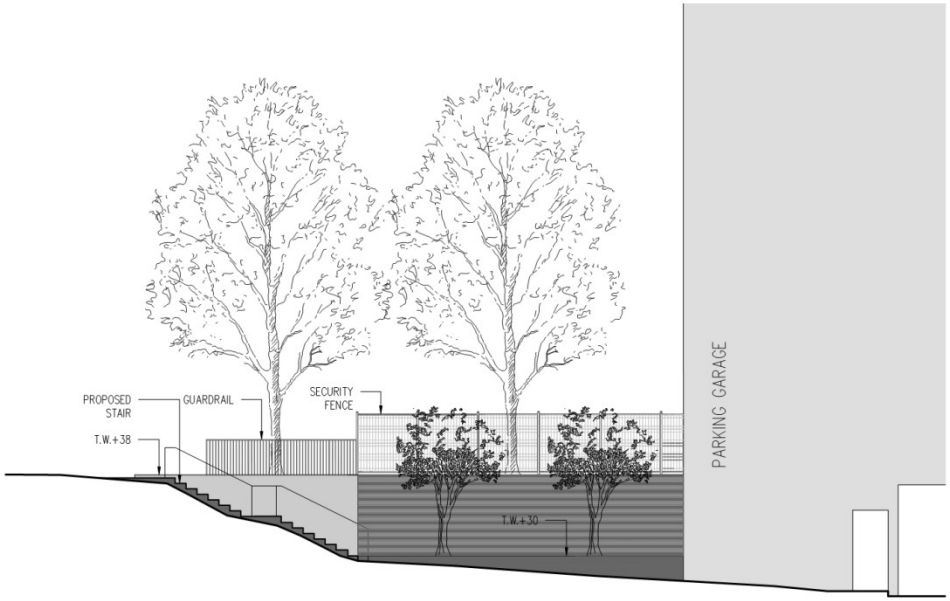
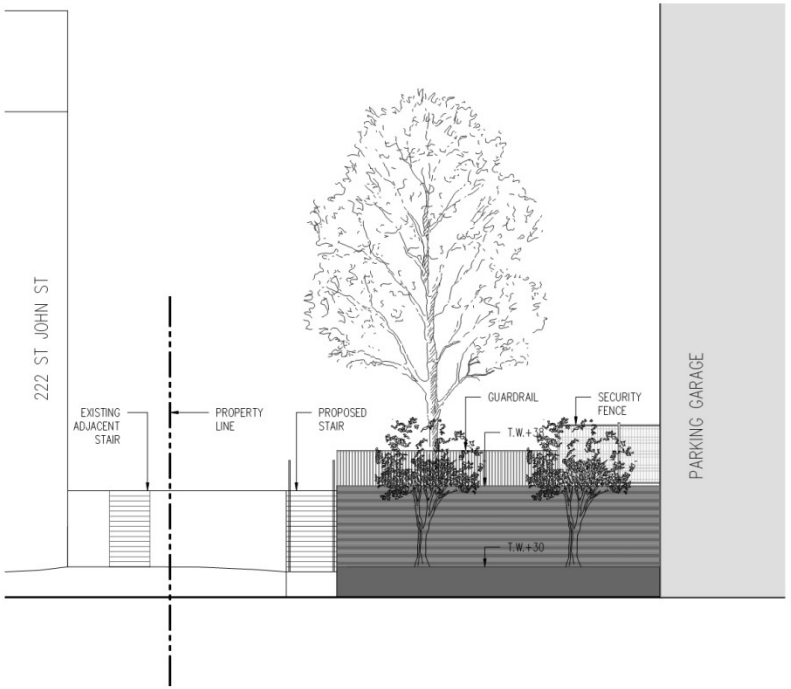
Landscape Architecture





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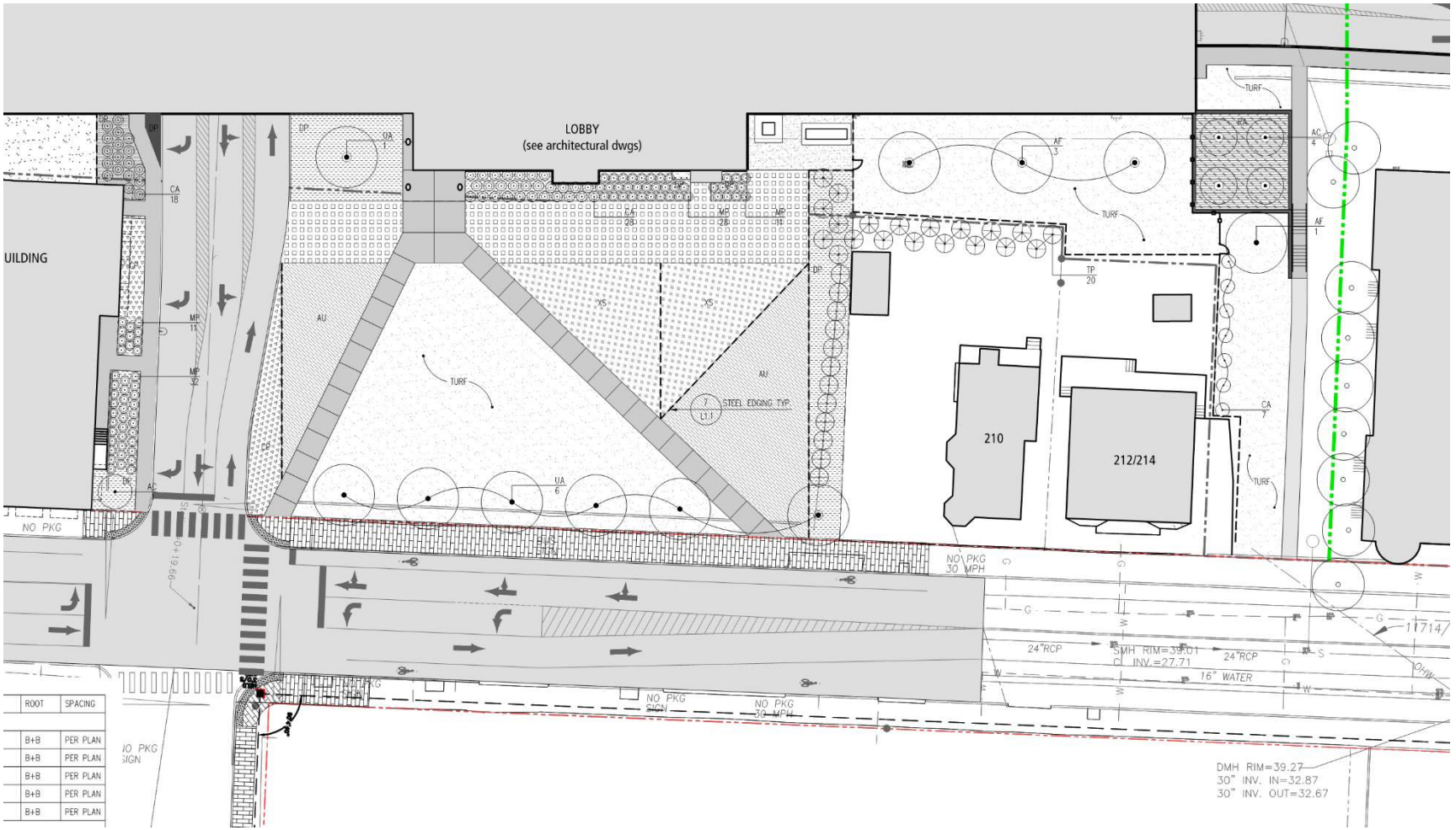
Architect,
Michael Boucher Landscape Architects

Maine Medical Center
MaineHealth

Landscape Architecture



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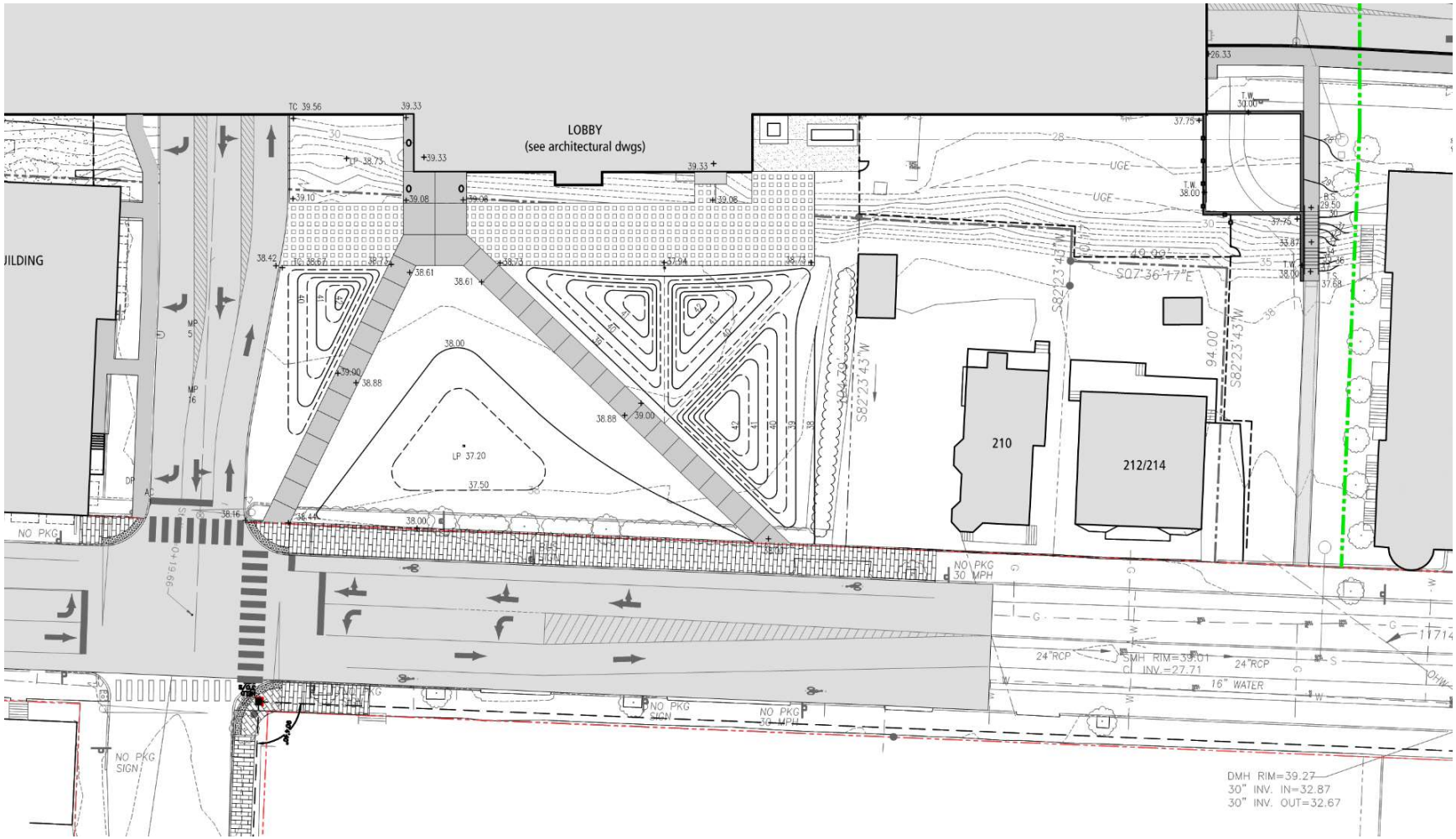
Landscape Architecture



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Landscape Architecture

View from St. John Street

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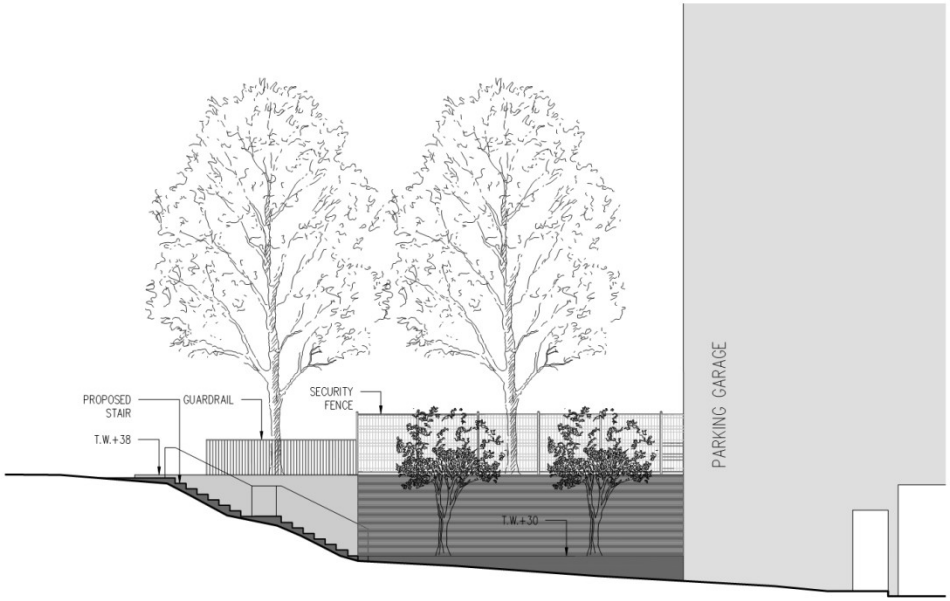

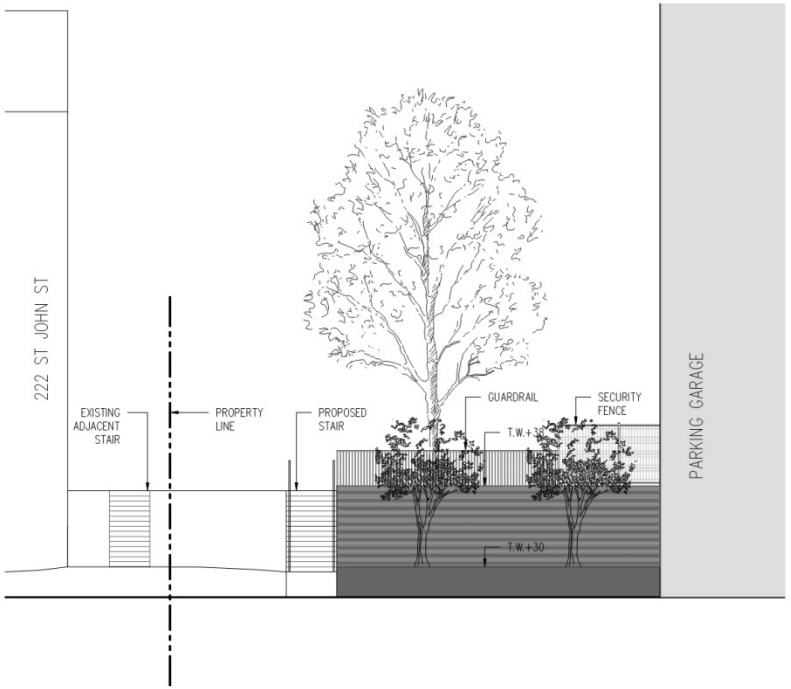

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Landscape Architecture

Welded Wire Security Fence

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Board and Cap Cedar Privacy Fence

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Checkerblock paving

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Construction

Construction Details

- Work Hours – 7 a.m. – 6 p.m., Monday – Friday.
- Rare weekend / Holiday work, with advance notice, start after 8 a.m.
- Pile Driving will create noise, vibration – will fast-track by using 2 crews, October. 2018 - December. 2018 (est.)
- Vibration monitoring to involve adjacent property surveys.
- Dust Control – Tarped dump trucks; on-going sidewalk and street cleaning; use of wetting agents; covering stock piles.
- No smoking allowed on site.
- Contractor parking not allowed on adjacent public streets.

Construction Traffic

- There will be two access points to the site
  - Main access point through the north end of the existing Eagles parking lot
  - Secondary access through the existing 222 St. John parking lot via the public right of way
- To navigate precast concrete vehicles to the site a flagger will be stationed at St. John Street as needed
- Due to the large turn radius of some vehicles at the secondary access route, it will be necessary to close parking spaces within the parking lot as well as spaces on St. John Street

Anticipated Construction Traffic Per Day

	2018				2019												2020					
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Earthwork/Ground Improvements	(9)	(20)	(25)	(25)	(25)	(25)				(5)	(7)	(7)	(10)							(5)	(5)	(5)
Structural Precast Erection							(20)	(20)	(20)	(20)	(10)	(5)										
Garage Fit-out													(15)	(15)	(13)	(10)	(6)					

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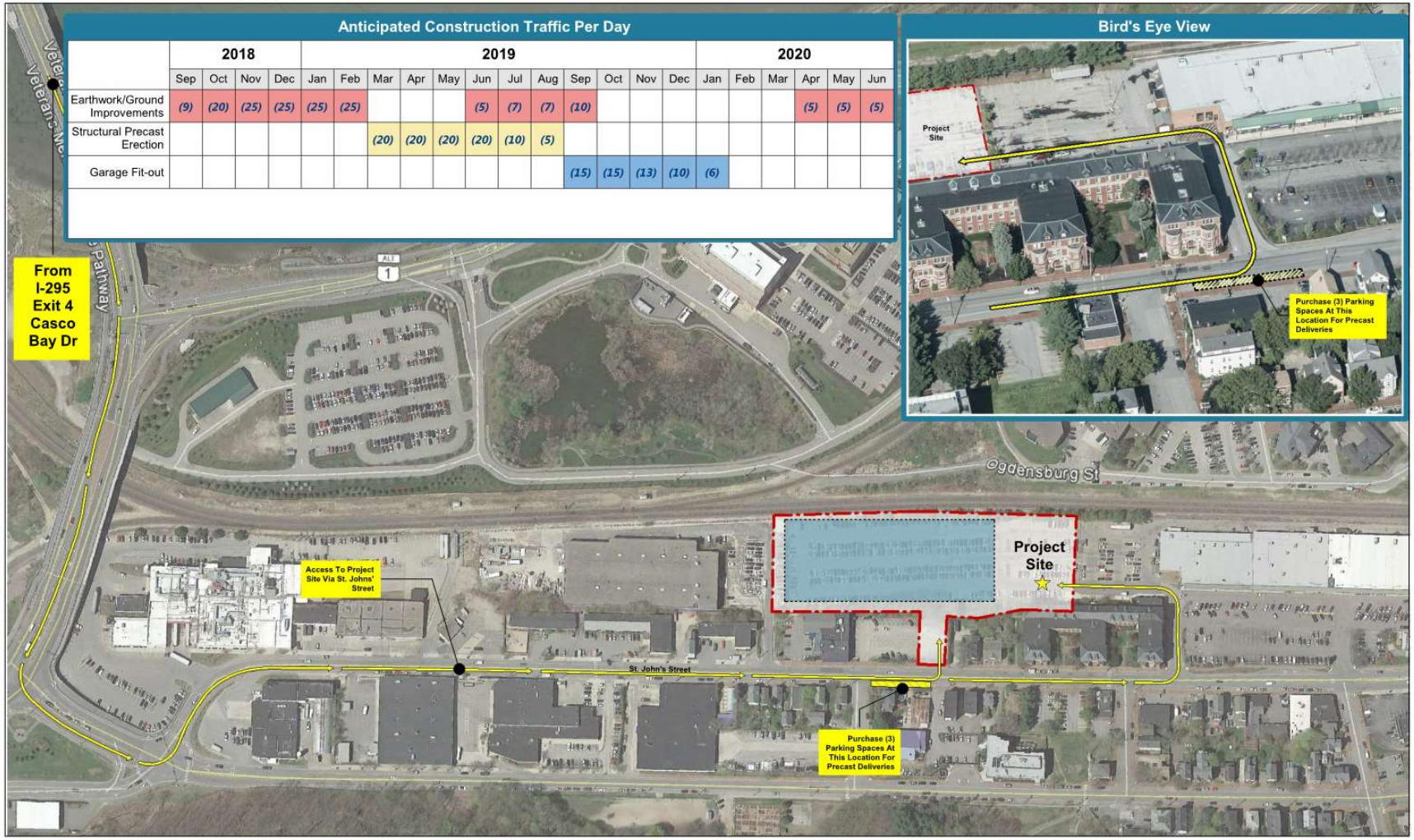
Truck Routes



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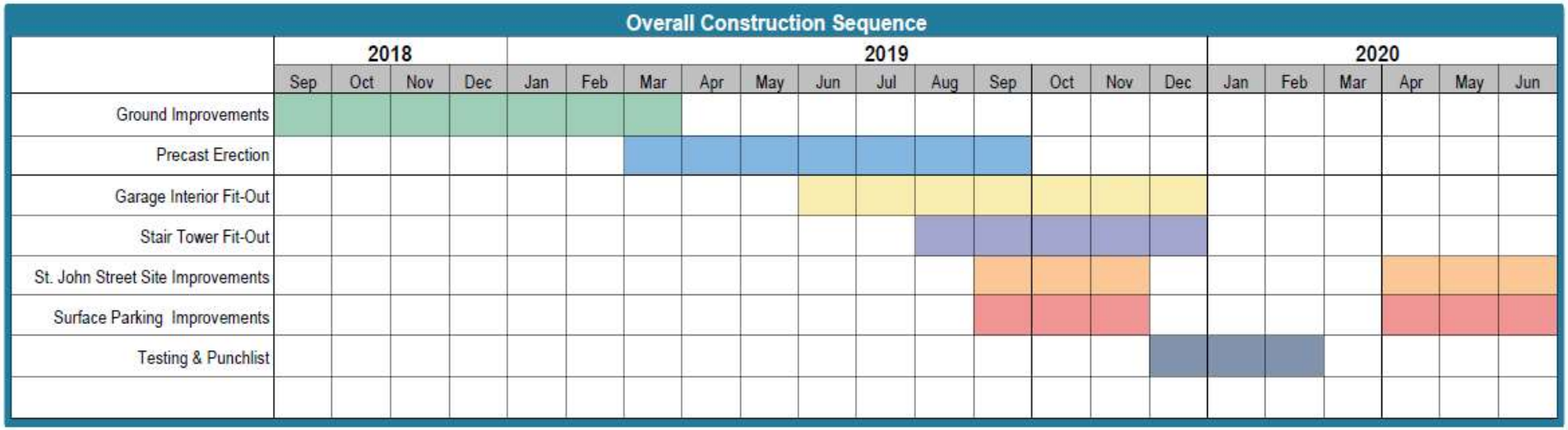
Construction Schedule



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Dave Thomas,
Project Executive,
Consigli

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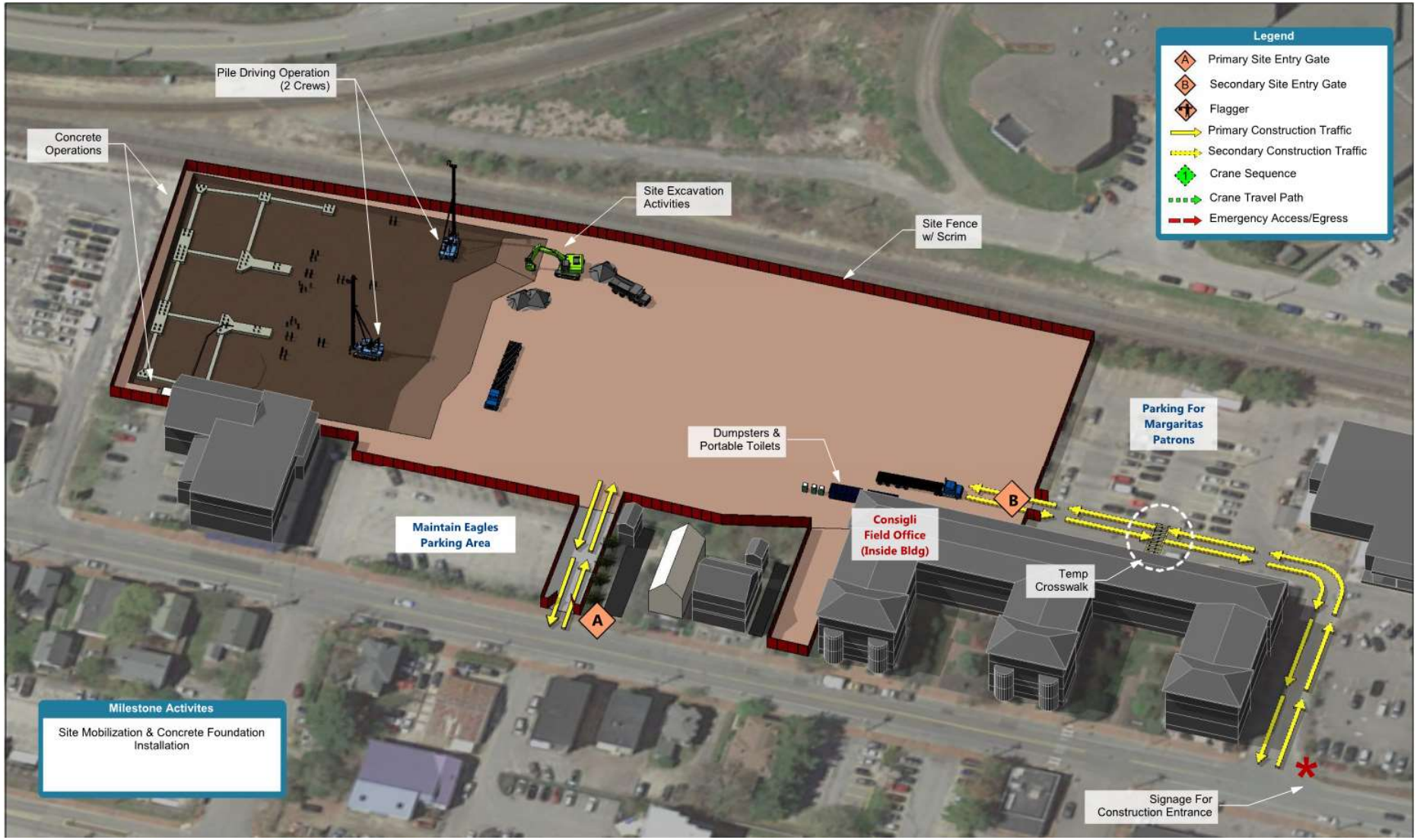
MaineHealth



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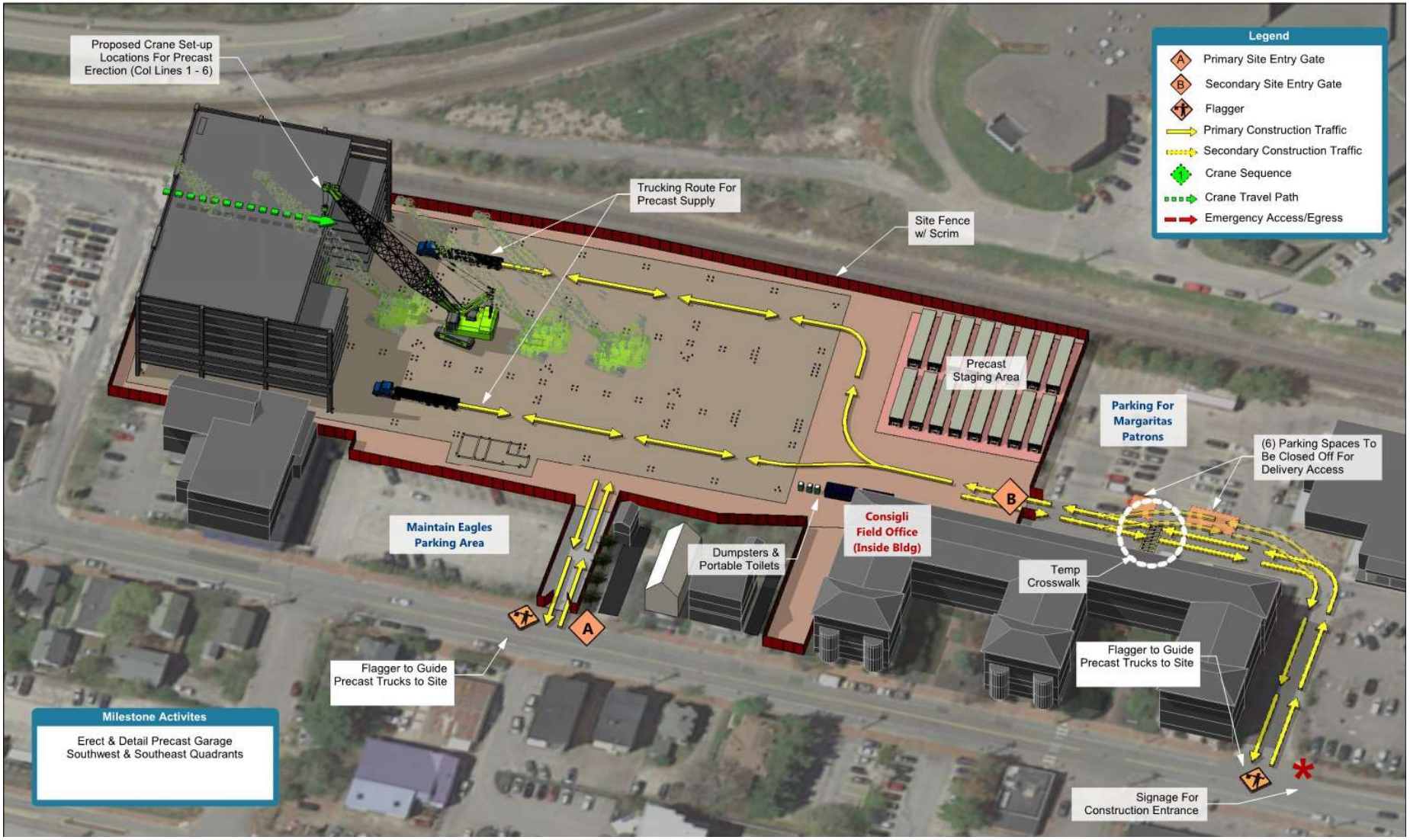

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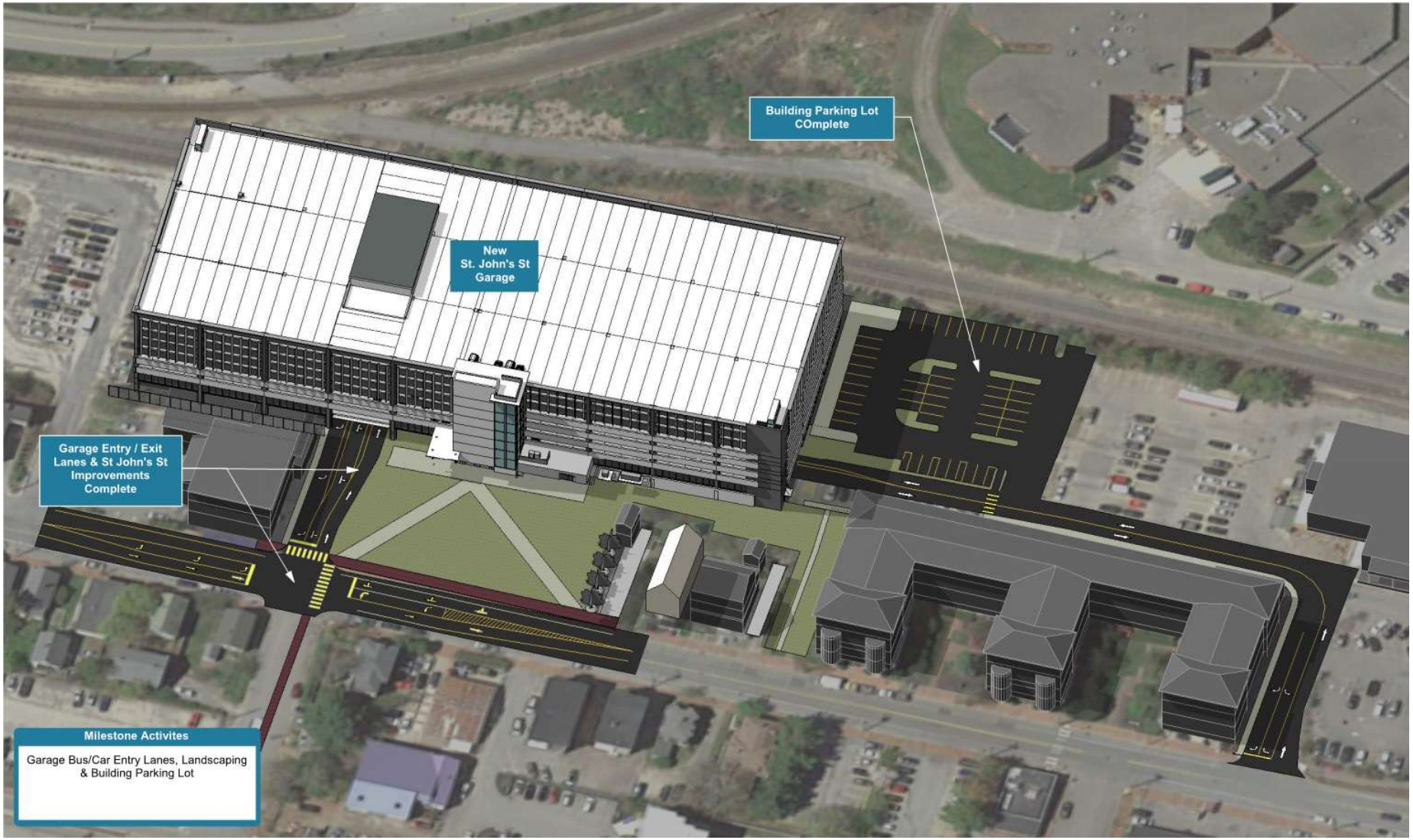

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Consigli

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Ongoing Communication

Communications

- For more information and on-going updates, anyone can visit MMC's website to sign up for email and text alerts: www.mmc.org/modernization

Newsroom

Media

Press Releases

MMC Campus Modernization Project

Project Updates

Neighborhood Meeting Minutes

Sign up for Project Alerts

Additional Information

MaineHealth › Maine Medical Center › Newsroom › *MMC Campus Modernization Project*

MMC Campus Replacement & Modernization Project

Maine Medical Center is excited to begin work on the largest modernization and replacement project in its history – a patient-focused initiative that will enable the state's largest hospital to meet the most urgent healthcare needs well into the future.

Altogether, the $512 million project will create 128 new private patient rooms, add 19 procedure rooms for surgeries and other complex treatments, provide an additional 225 spaces for patient and visitor parking, and consolidate MMC employee parking into one nearby garage that will meet current demand and future growth. The project will also open Maine Medical Center to Congress

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Matt Wickenheiser,
Sr Communications Manager,
MMC

Questions?

Maine Medical Center

PORTLAND CAMPUS

Environmental Graphics & Wayfinding

Exterior Sign System

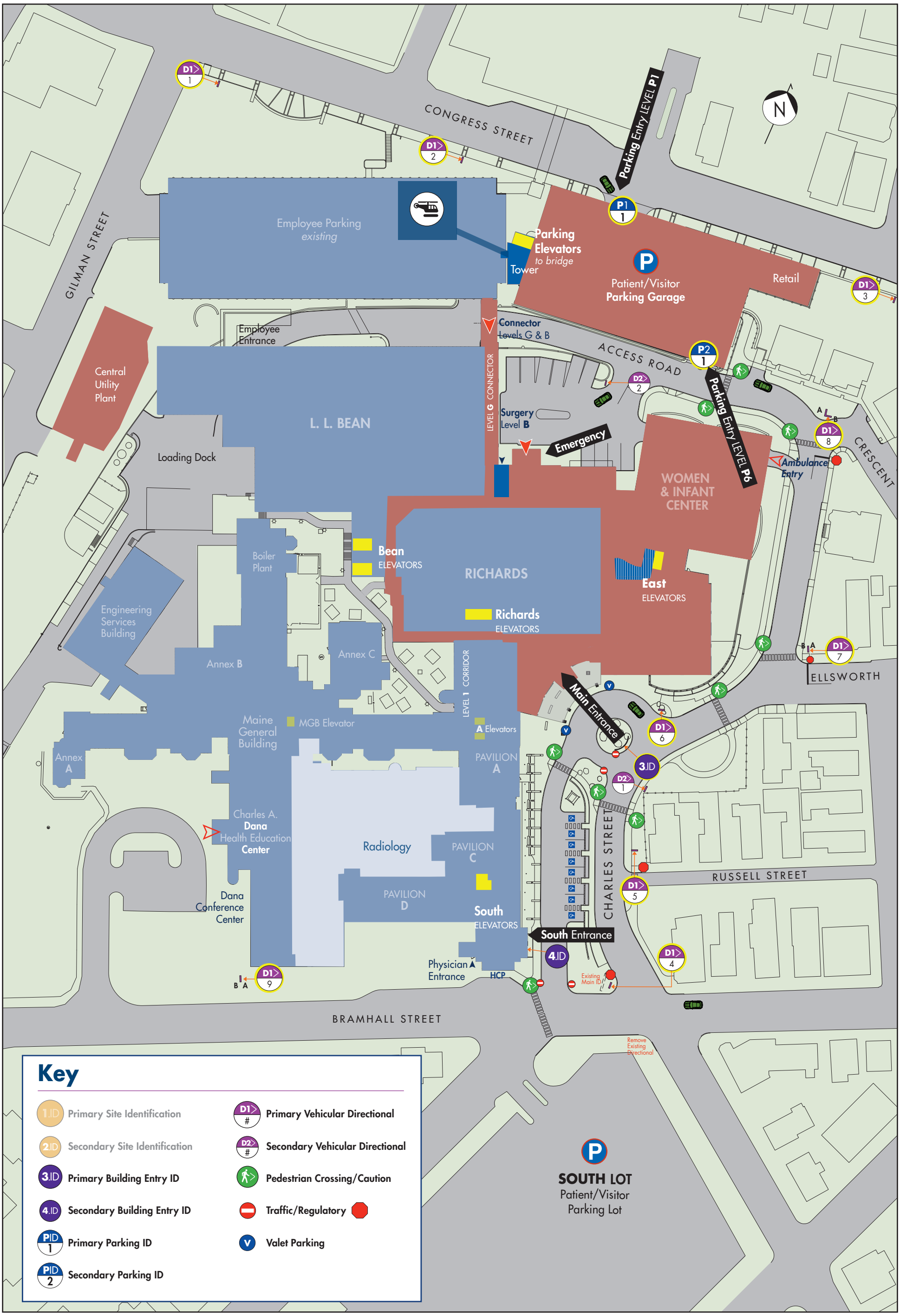
City of Portland Submittal

22 April 2008

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

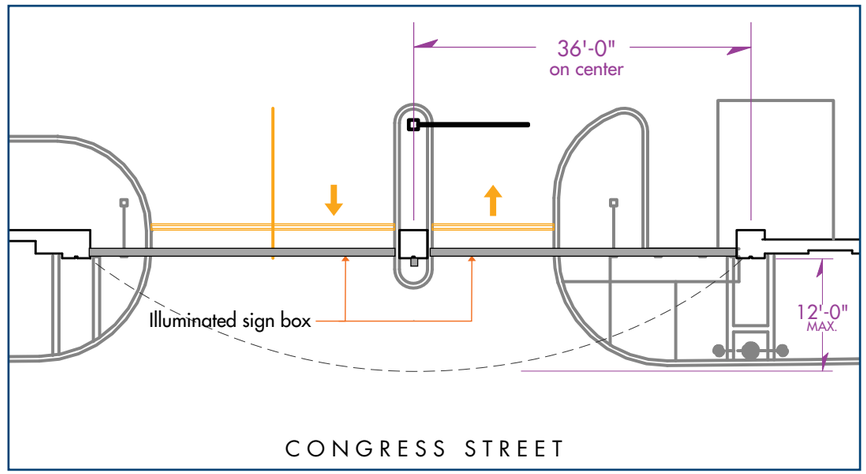


Maine Medical Center
PORTLAND CAMPUS
2008

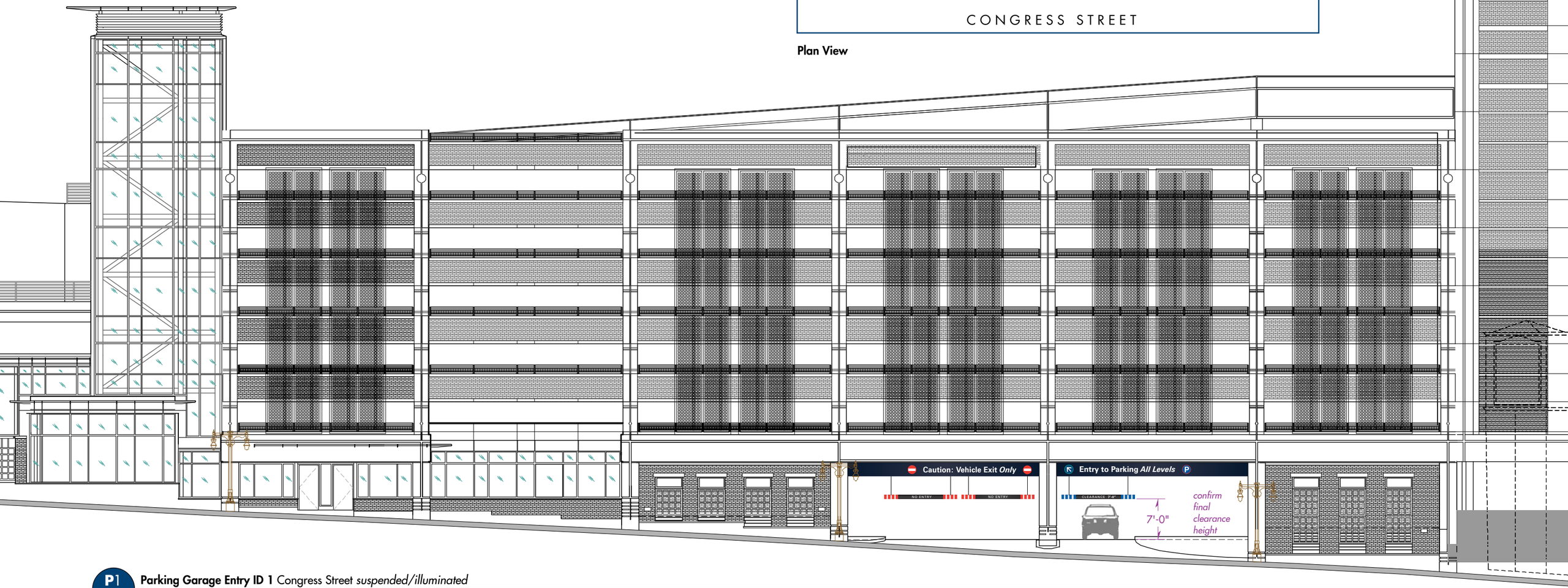
ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
603.427.1300

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"

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Portsmouth NH 03801
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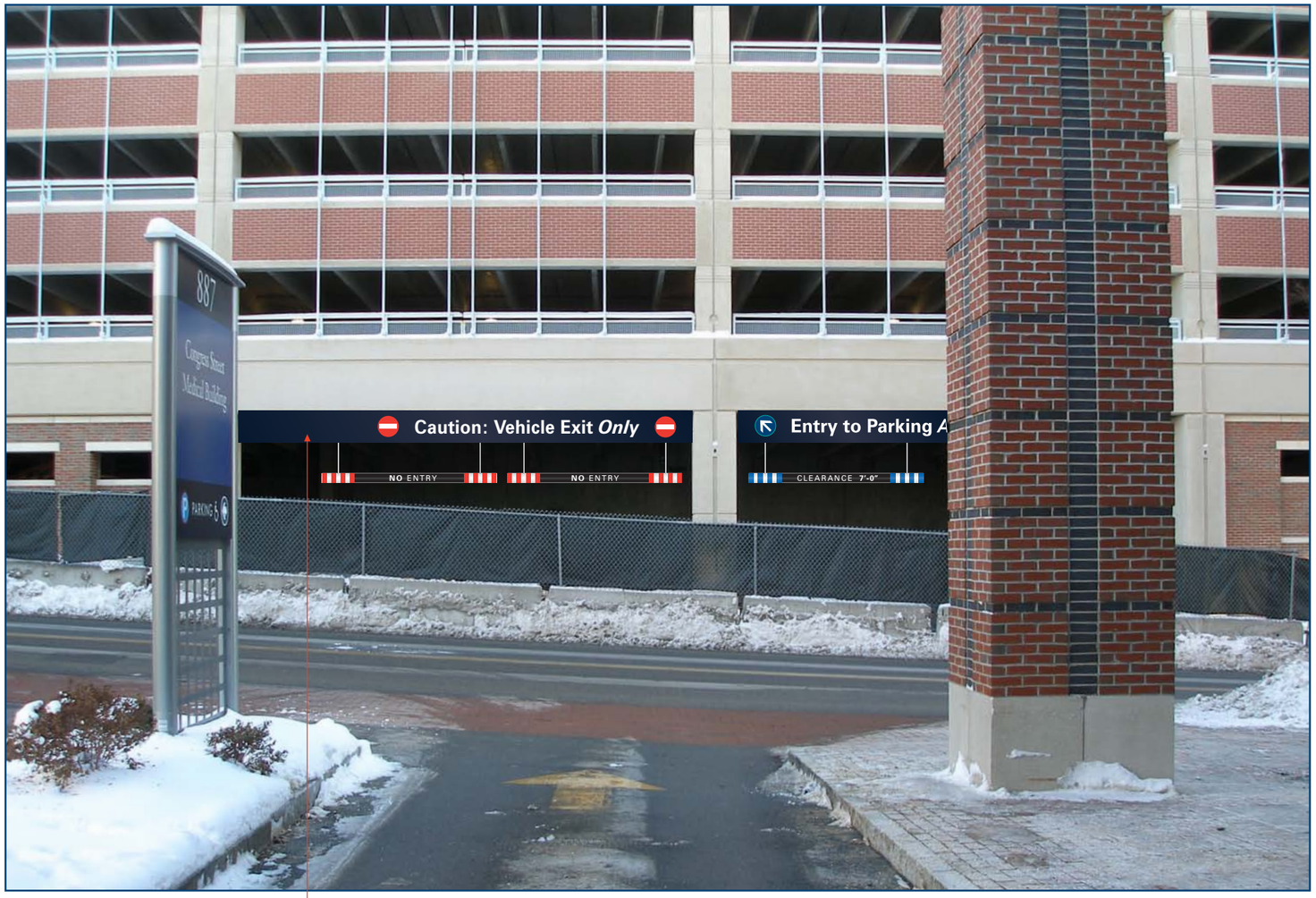
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign boxes/internally illuminated
Scale: as shown
22 April 2008

DRAWING N°
P1.1

1 **Parking Garage Entry ID** *view eastward up Congress Street*
Scale: relative to image



Sign Box *typical*
1/8" aluminum armature with internal structural supports; paint color: "Dark Blue Metallic" MPC# _____ to match exterior directional signs with 1/4" clear "push-thru" graphics in colors shown. Sign box internally illuminated by high-output fluorescents and suspension mounted flush to precast structure above. Clearance bars in colors shown fabricated from 8" dia. acrylic tubing *or equal* and suspended at final height TBD.

P1 B **Parking Garage Entry ID** *view across Congress Street*
Scale: relative to image

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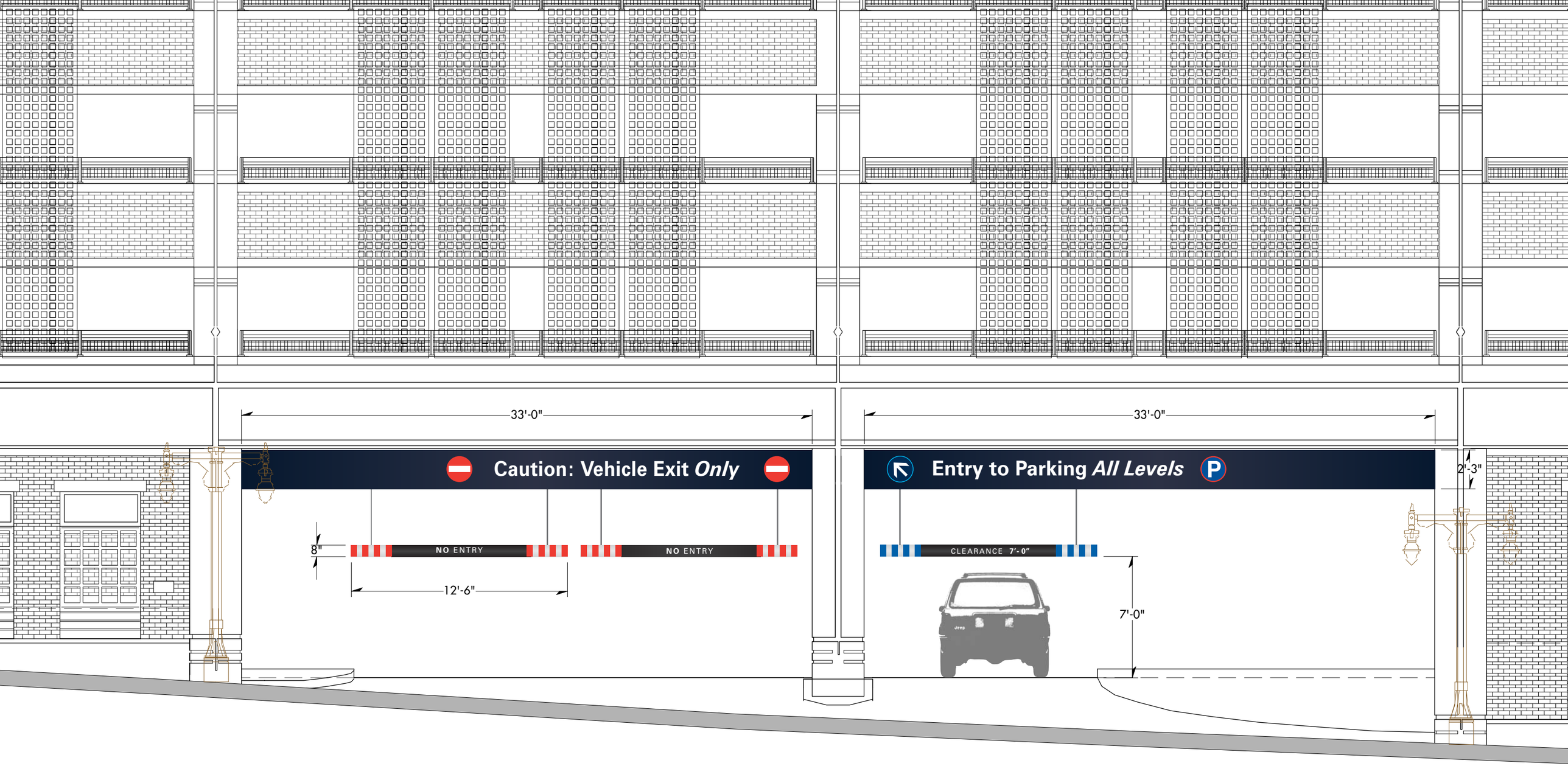
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign boxes/internally illuminated
Scale: as shown
22 April 2008

DRAWING N°
P1.2



P1 C **Parking Garage Entry ID 1** Congress Street *dimensions/detail*
Scale: 3/16" = 1'-0"

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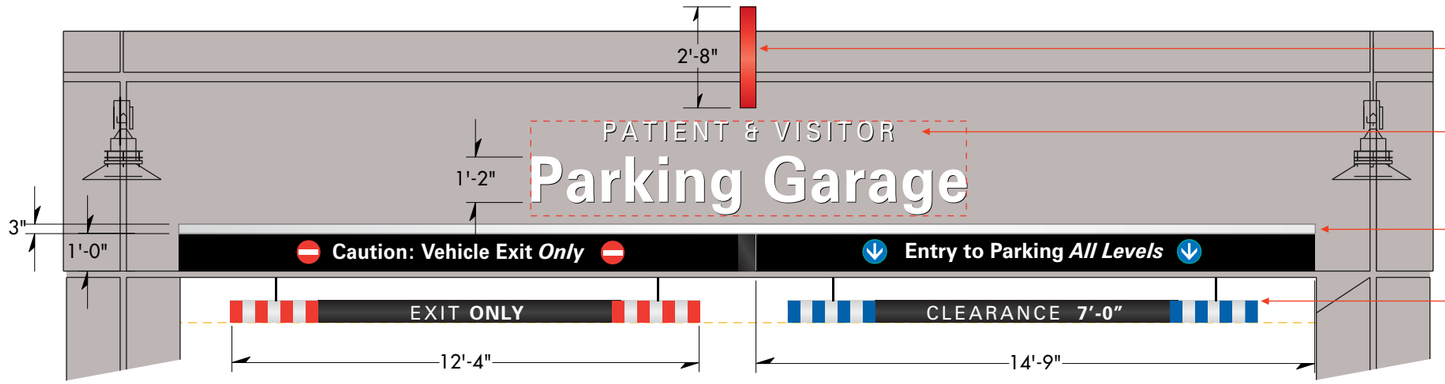
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Parking Garage Entry ID *Congress Street*
Sign box/clearance bar dimensions
Scale: as shown
22 April 2008

DRAWING N°
P1.3



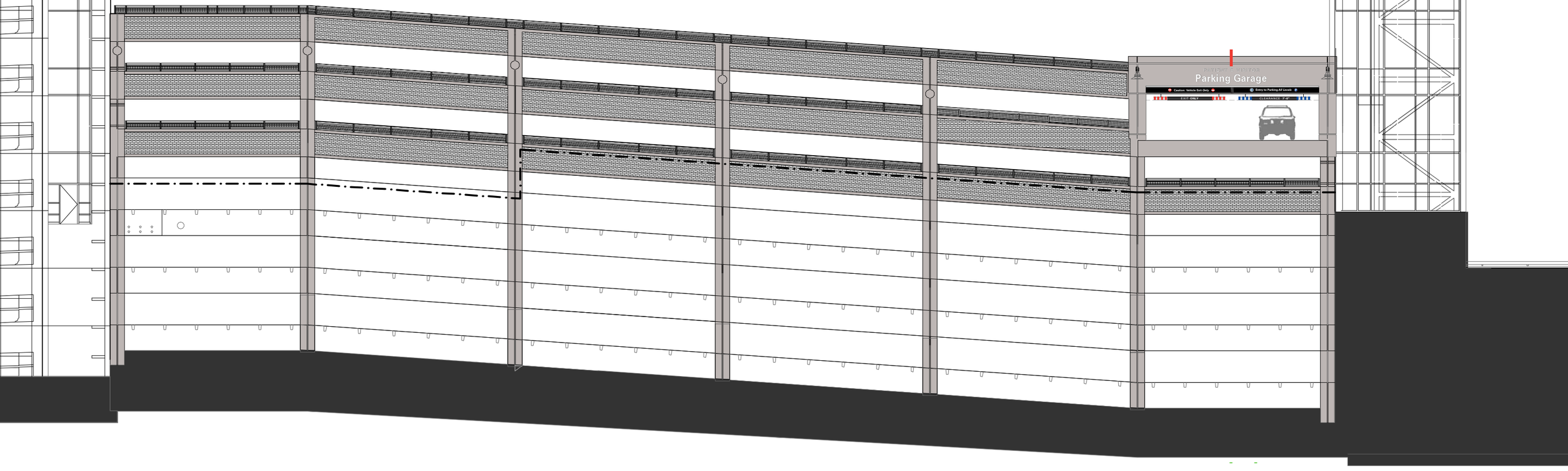
Design Layout *no MMC identity*
Scale: 1/4" = 1'- 0"

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"

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ARCHITECTURE
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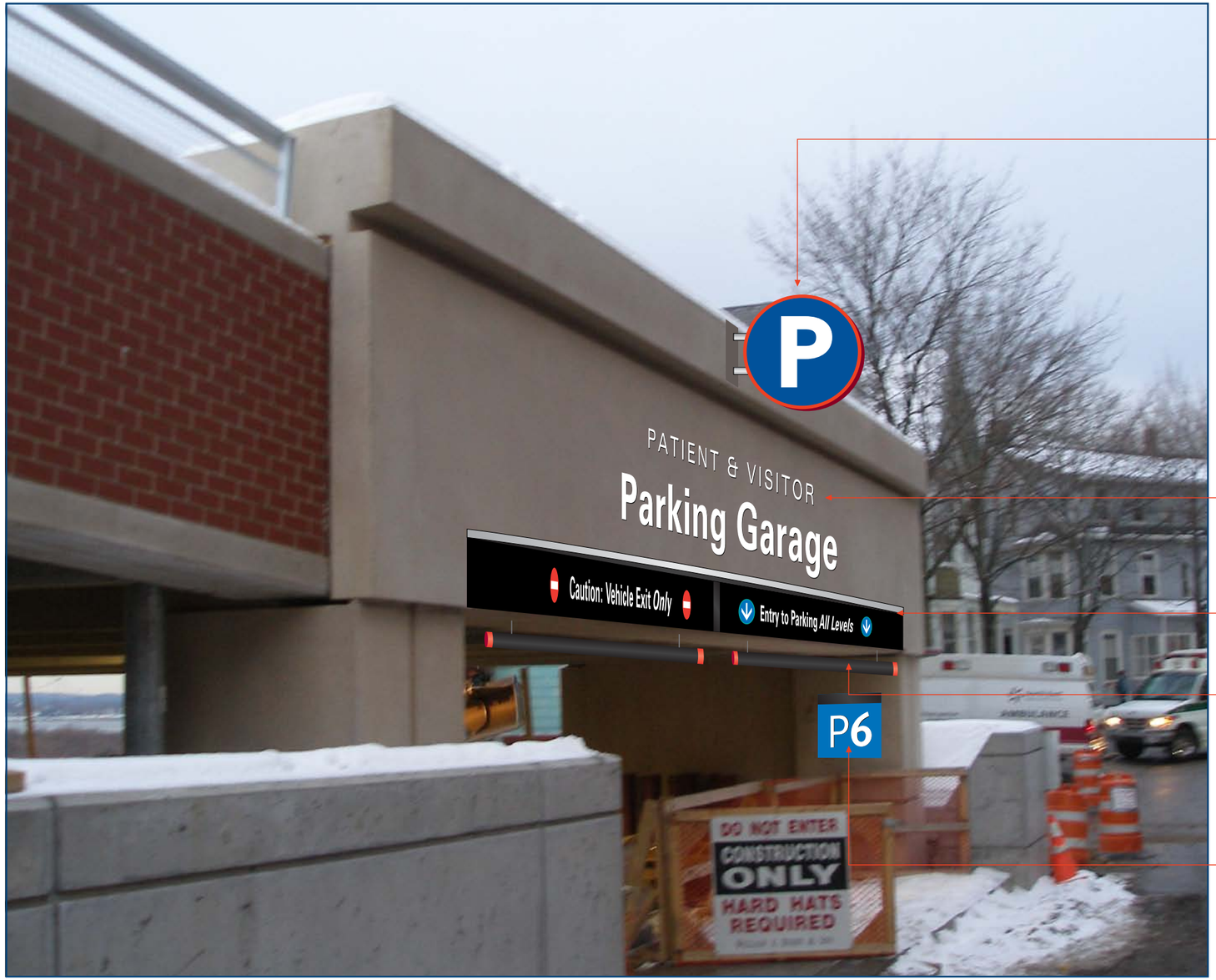
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

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

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Boston MA 02210
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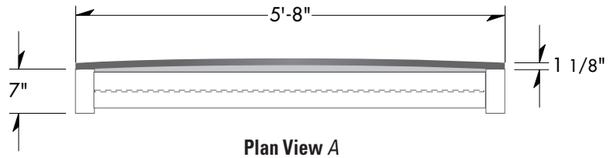
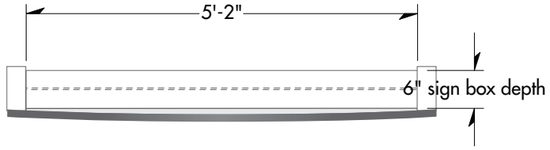
DRAWING TITLE
Secondary Parking Entry ID *at Level P6*
Sign graphics mounted to fascia
Scale: as shown
31 March 2008

DRAWING N°
P2.2

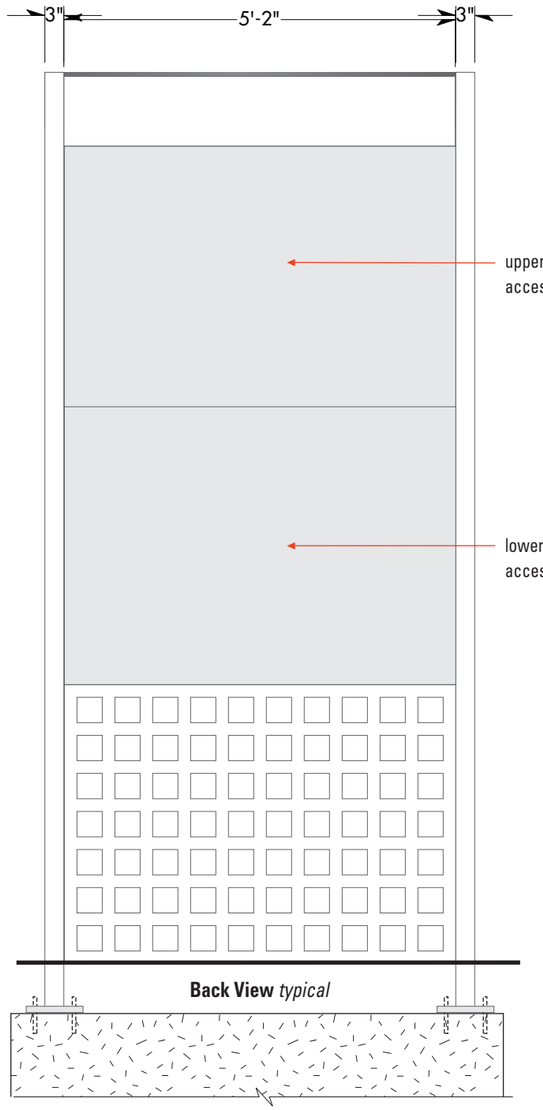


Plan View *A*

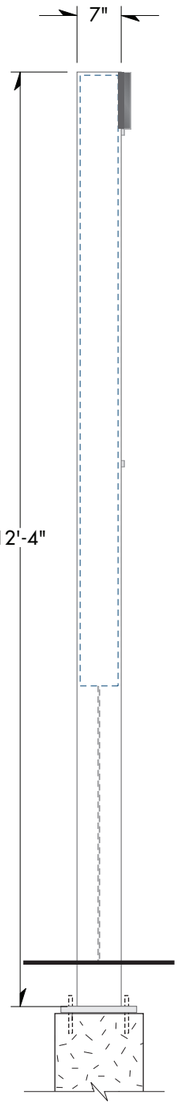


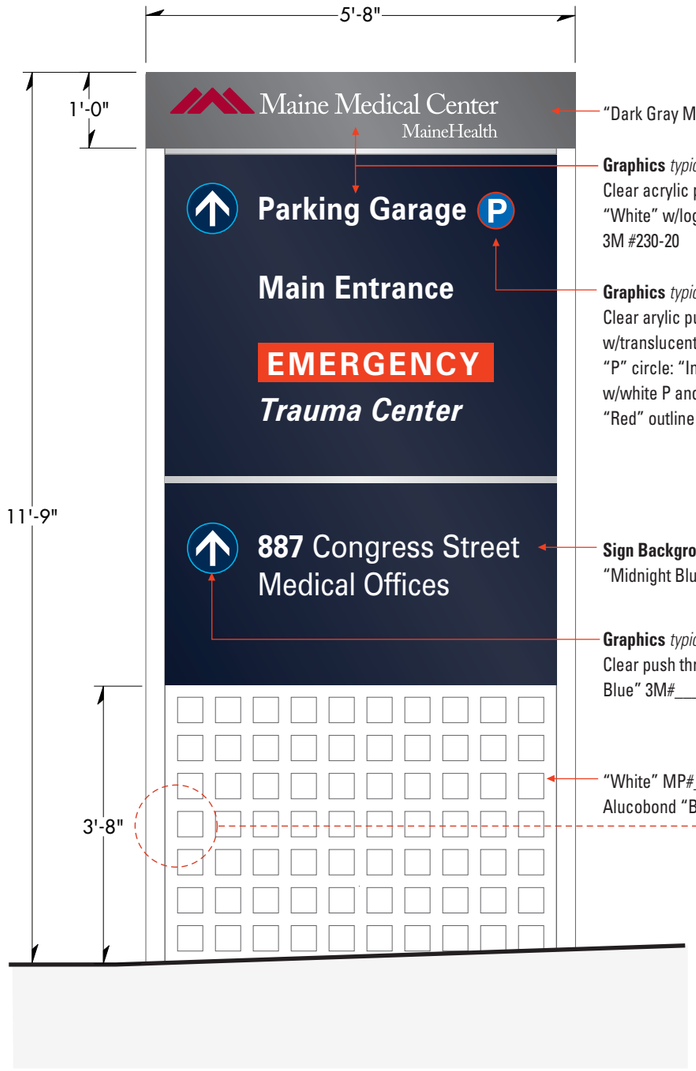
Plan View B

Side View

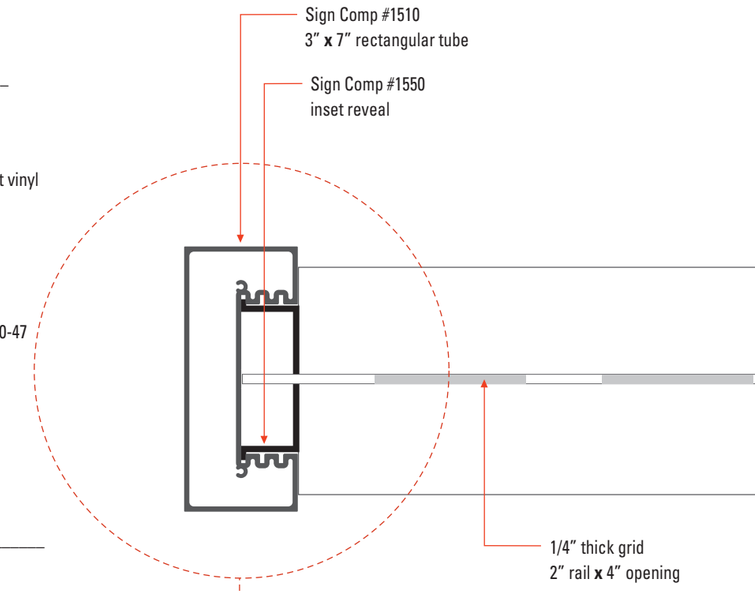


Back View *typical*





D1 / **1** **Primary Directional Sign 1**
Scale: 1/2" = 1'-0"



D1 / **B** **Sign Post/Grid** *Detail*
Scale: 3" = 1'- 0"

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22 Boston Wharf Road
Boston MA 02210
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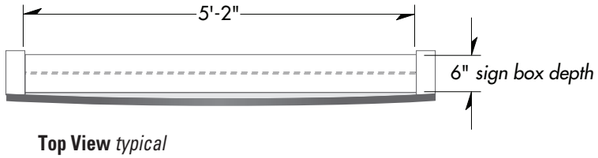
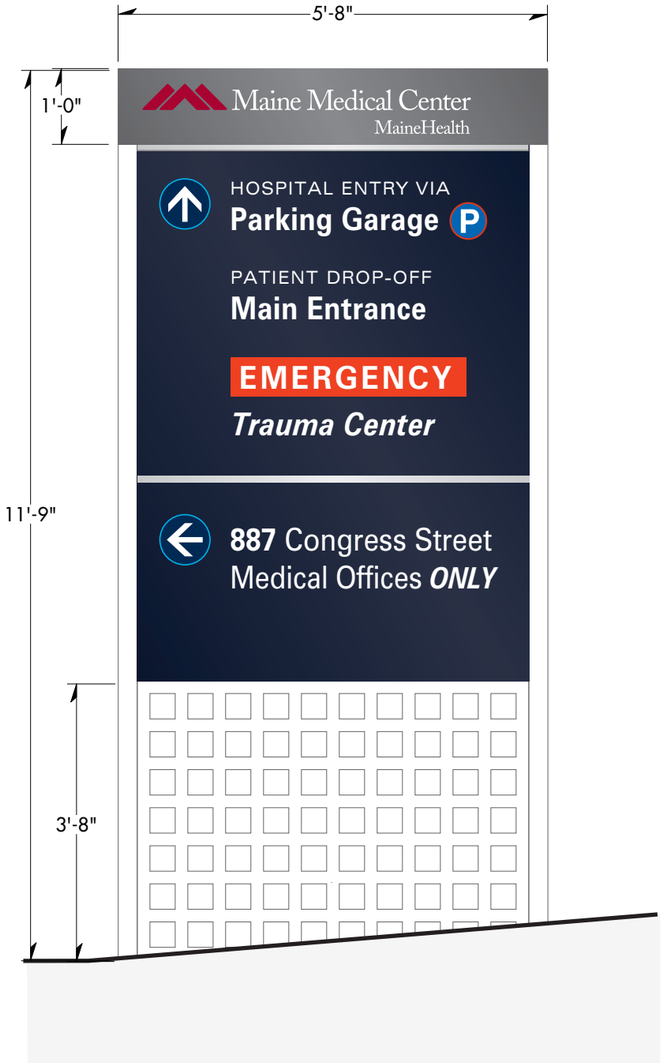
DRAWING TITLE
Primary Directional 1
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.1

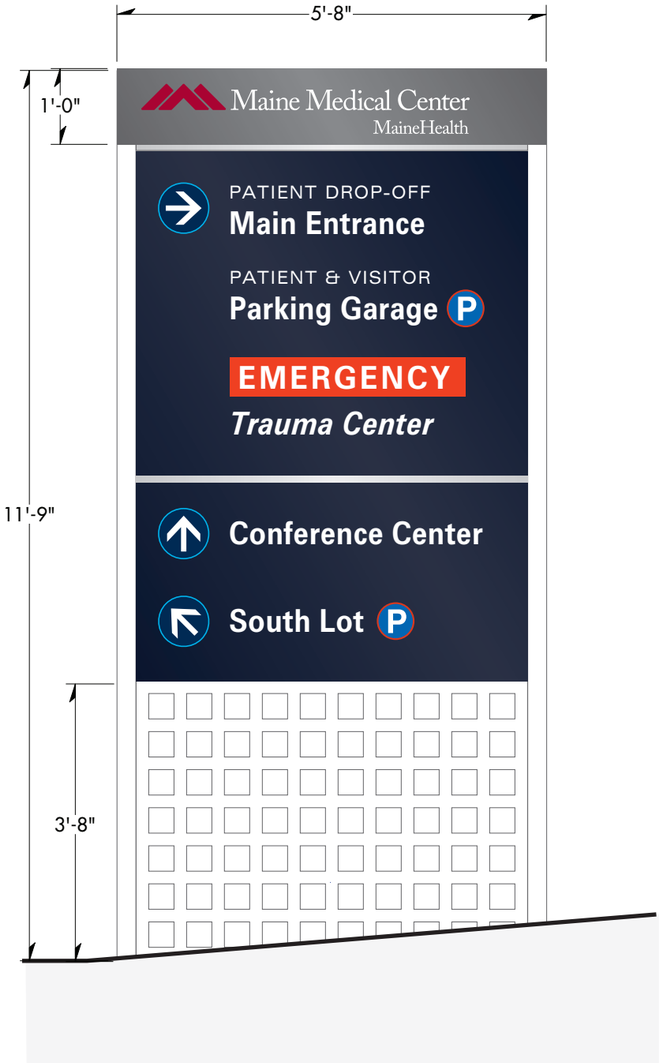


Top View *typical*



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"

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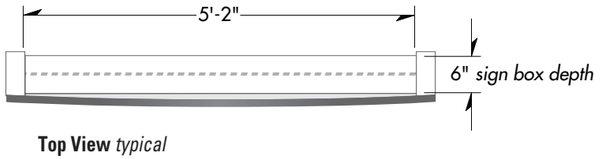
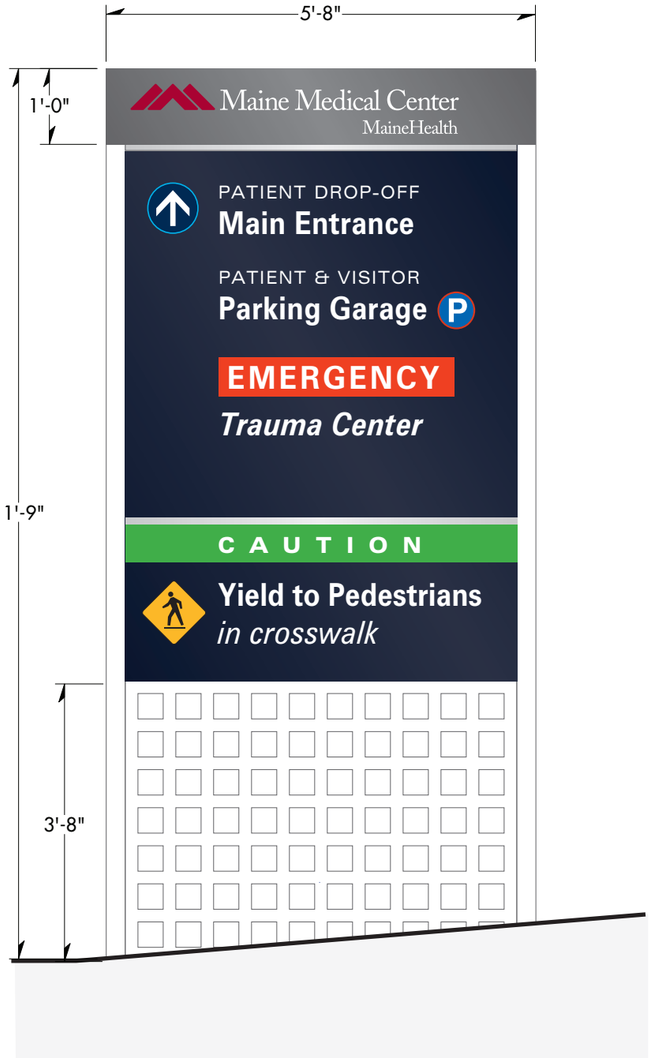
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

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*
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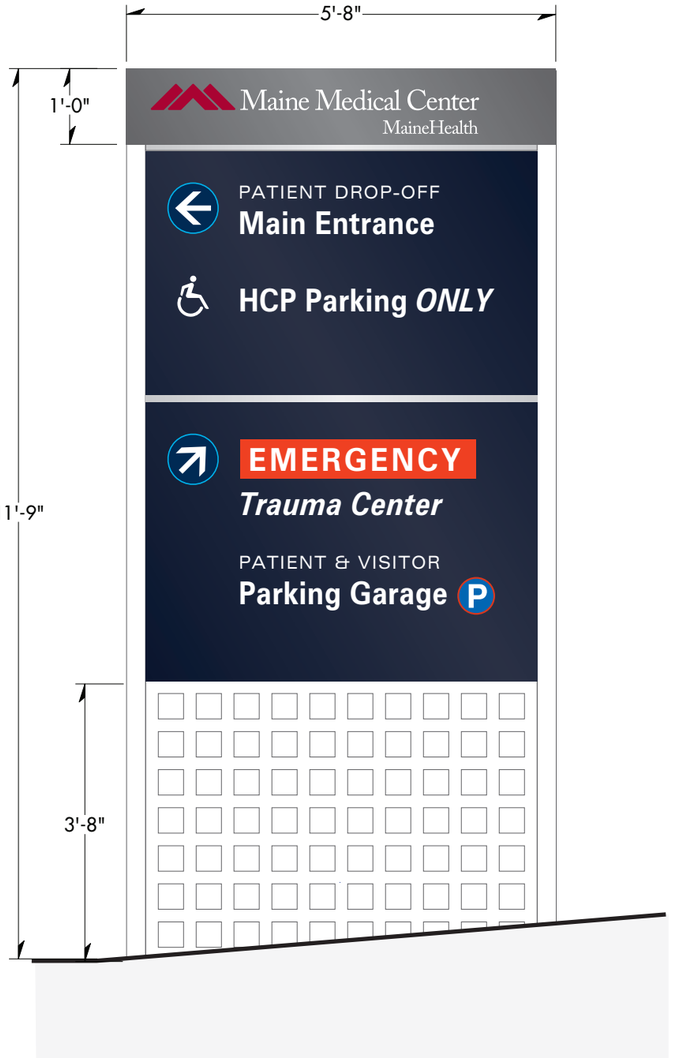


D1 6 **Primary Directional Sign** *D1-6*
Scale: 1/2" = 1'-0"

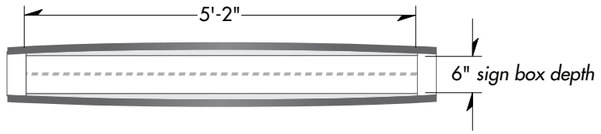
Maine Medical Center
PORTLAND CAMPUS

ENVIRONMENTAL GRAPHICS
Gamble Design LLC
154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

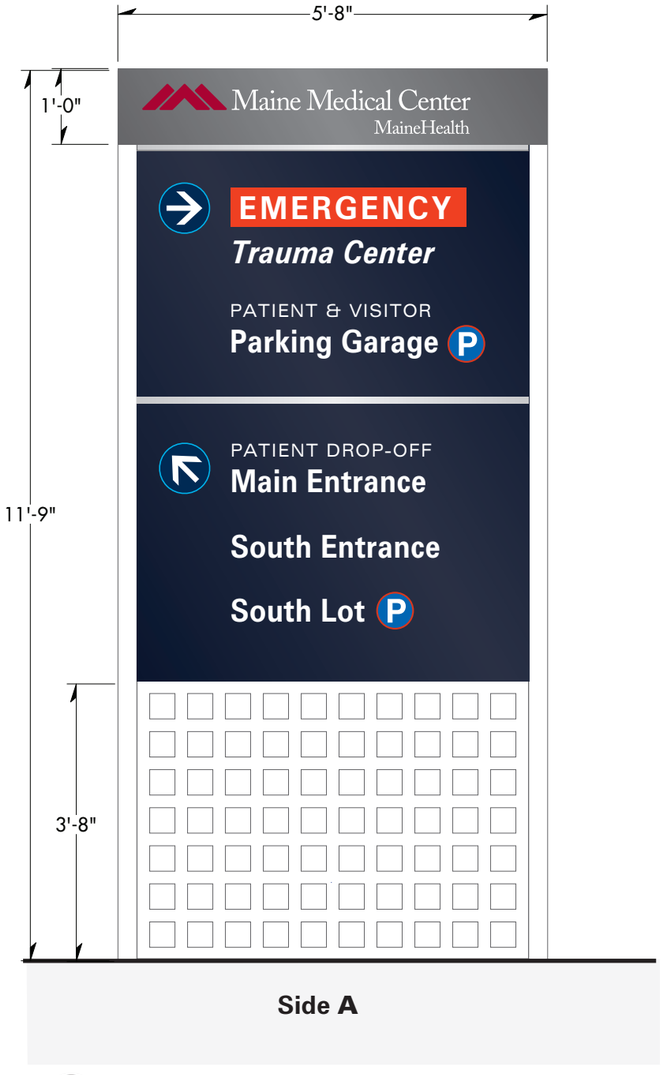
ARCHITECTURE
TRO|Jung Brannen
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign
Freestanding/illuminated
Scale: as shown
22 April 2008

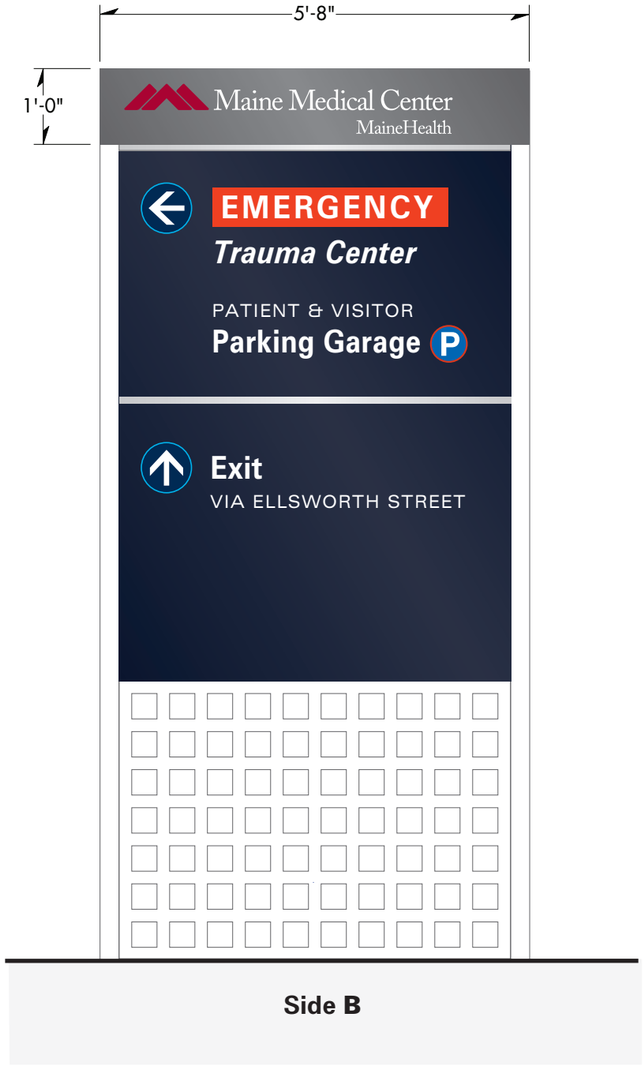
DRAWING N°
D1.5-6



Top View *D1.7 double-sided*



Side A



Side B

D1 7 **Primary Directional Sign** Double-sided *D1-7 side A*
Scale: 1/2" = 1'-0"

Primary Directional Sign Double-sided *D1-7 side B*
Scale: 1/2" = 1'-0"

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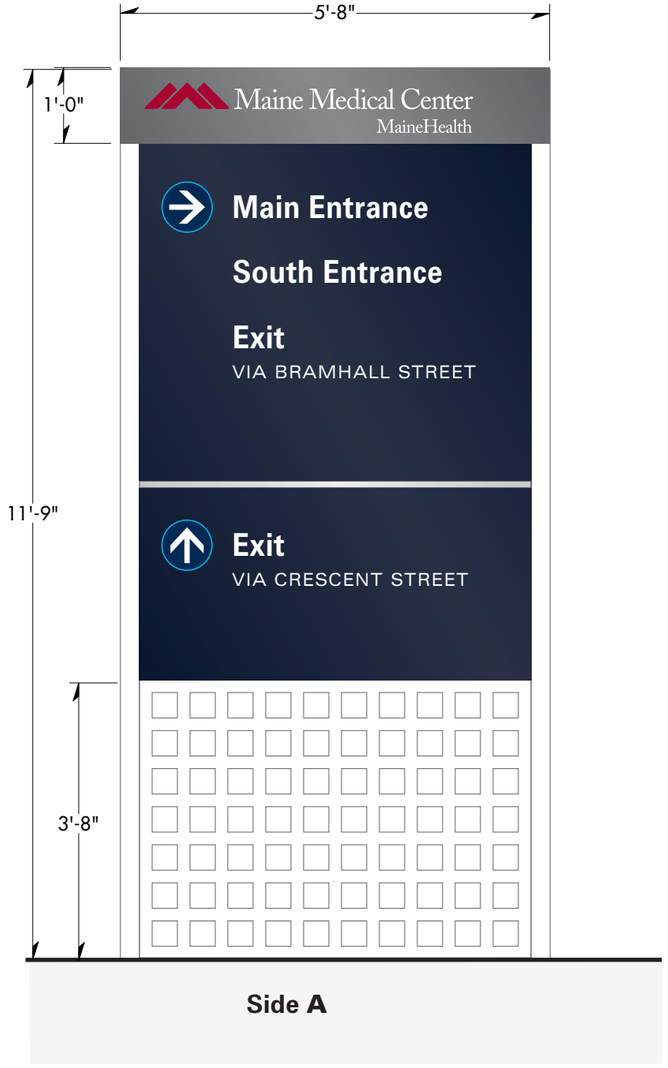
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign 7 *double-sided*
Freestanding/illuminated
Scale: as shown
22 April 2008

DRAWING N°
D1.7



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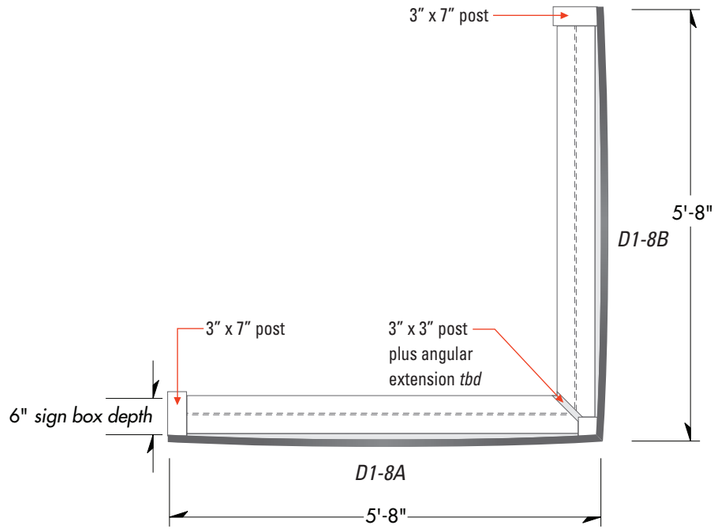
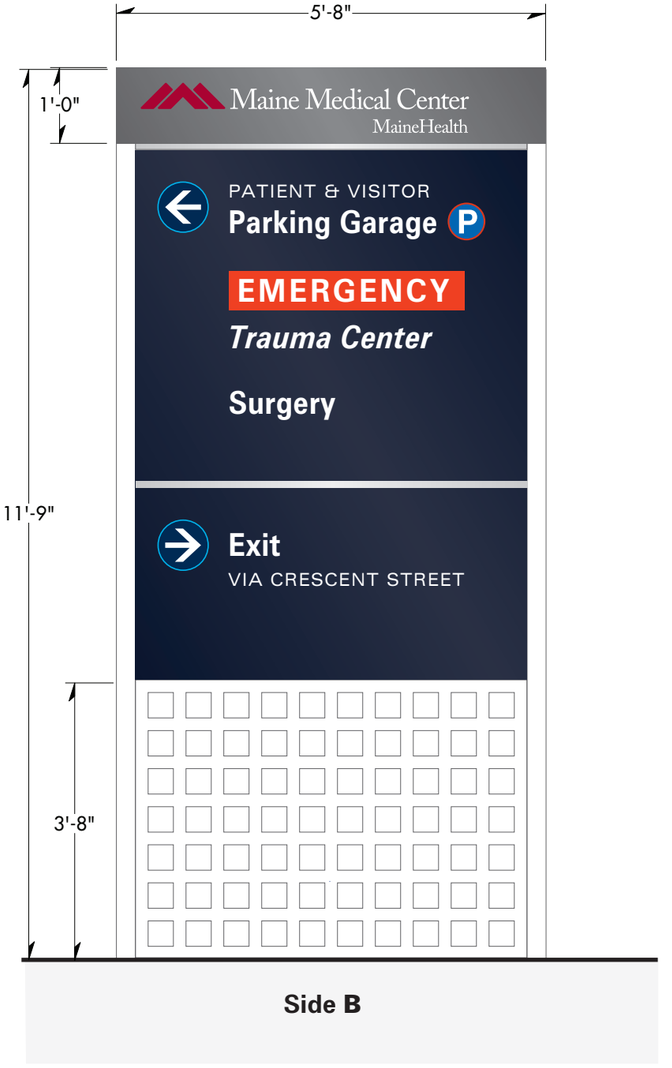


Top View *sign location #8*



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"

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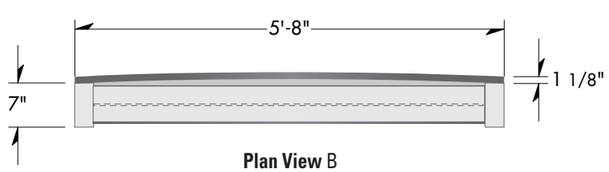
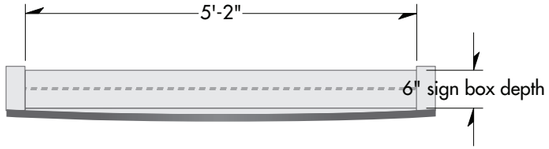
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign *"L" angle sign*
Freestanding/illuminated
Scale: as shown
22 April 2008

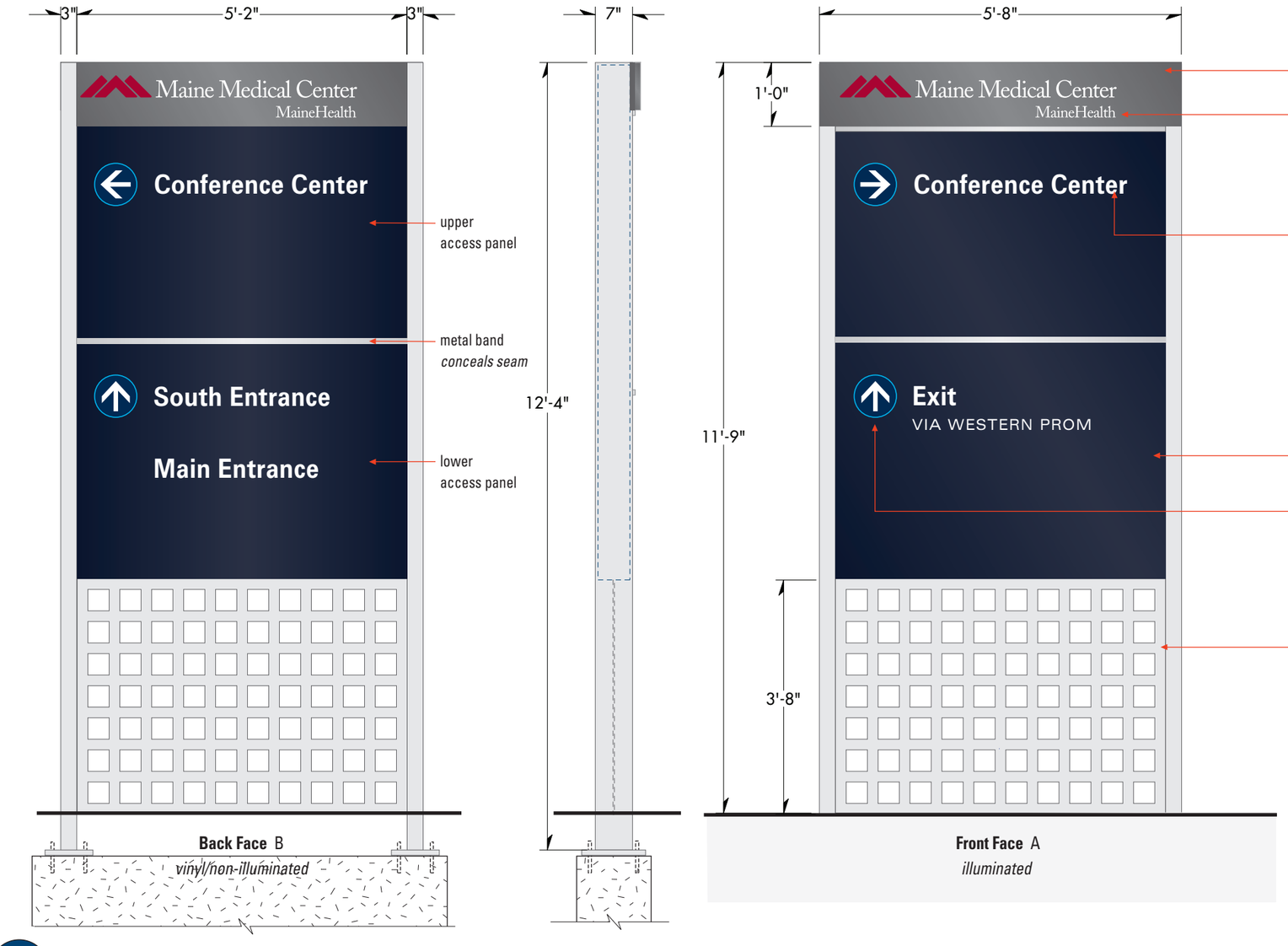
DRAWING N°
D1.8



Plan View B



Plan View A



Back Face B
vinyl/non-illuminated

Front Face A
illuminated

"Warm Gray Metallic" MP#_____

Graphics *typical*
Clear acrylic push through graphics w/ translucent vinyl on face "White" 3M#230-20

Circles *typical*
Clear arylic push through circle w/ vinyl graphics
Arrow circle: "Dark Blue Metallic (?) " 3M#tbd w/ white illuminated arrow
P circle: "Intense Blue" 3M#220-47 w/ white illuminated P and translucent "Red" outline 3M#230-33 for "Red" illumination

"Midnight Blue Metallic" MP#_____

Clear push through circle w/ "Bright Blue" 3M#_____ outline
NOTE: illumination color surrounding cirlce push through to be "Bright Blue" (not white)

"White" MP#_____ to match Duranar XL Silver Gray #UC50958

D1 / 9 **Primary Directional Sign** *Revised*
Scale: 1/2" = 1'-0"

Maine Medical Center
PORTLAND CAMPUS

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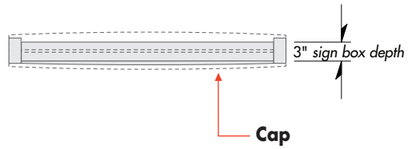
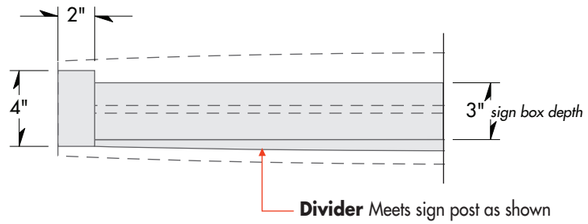
22 Boston Wharf Road
Boston MA 02210
✆ 617.502.3400

DRAWING TITLE
Primary Directional Sign 9
Freestanding/illuminated
Scale: as shown
22 April 2008

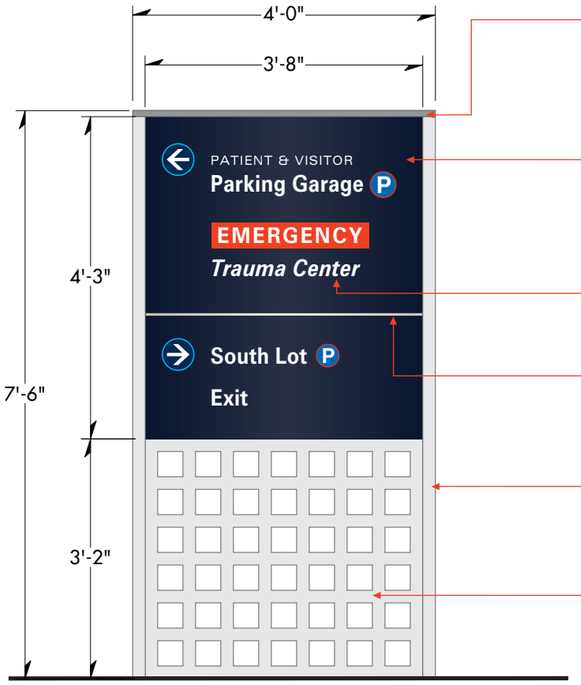
DRAWING N°
D1.9



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)*

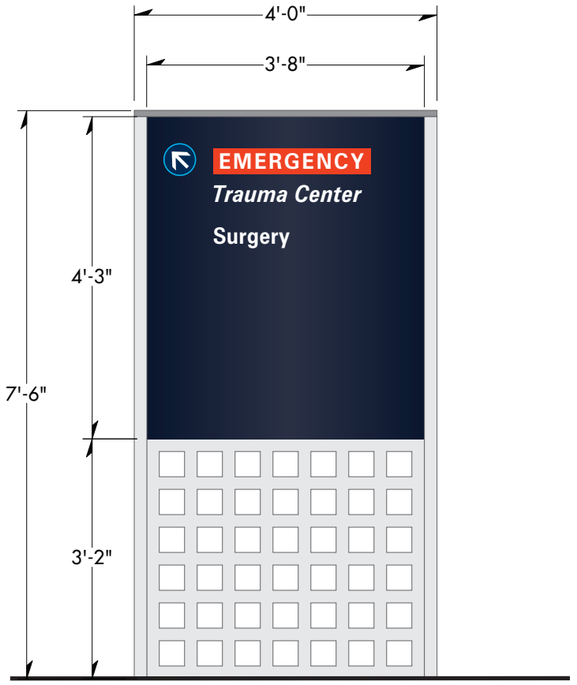
Graphics
Vinyl graphics in colors as shown

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

ENVIRONMENTAL GRAPHICS
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154 Maplewood Avenue
Portsmouth NH 03801
✆ 603.427.1300

ARCHITECTURE
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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

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

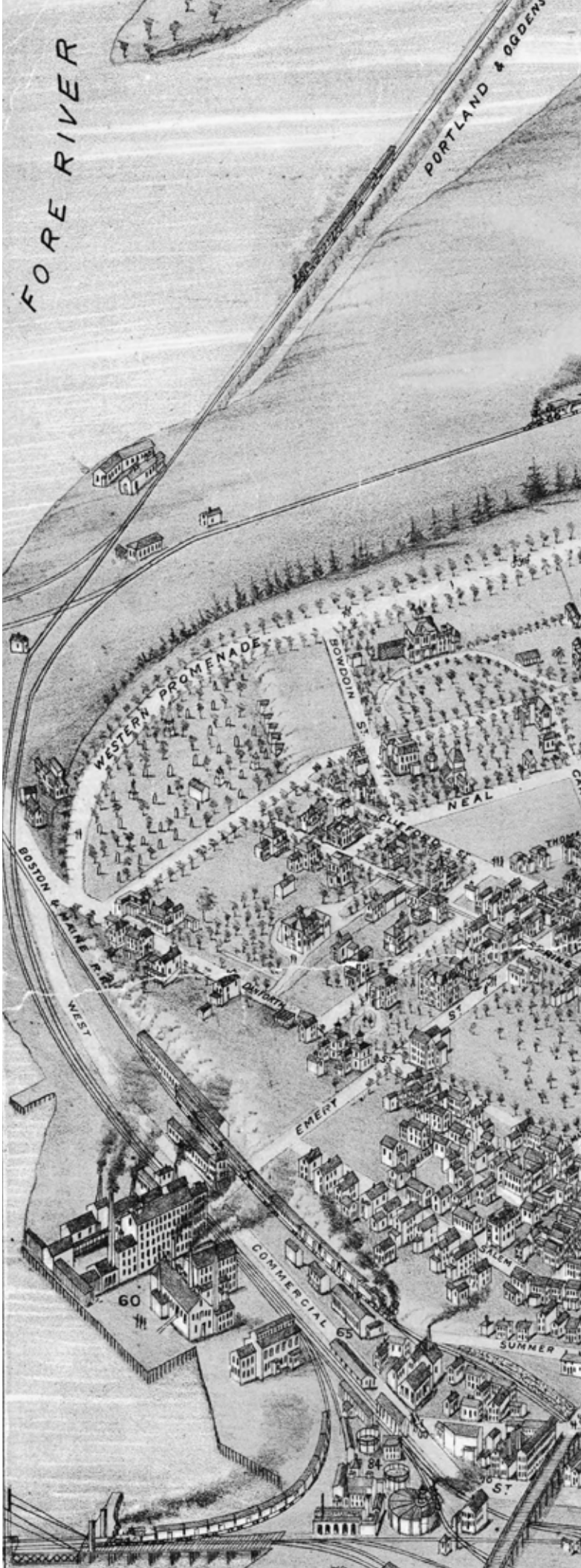


Fig.1.1 1876 Bird's eye view of Portland.

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.

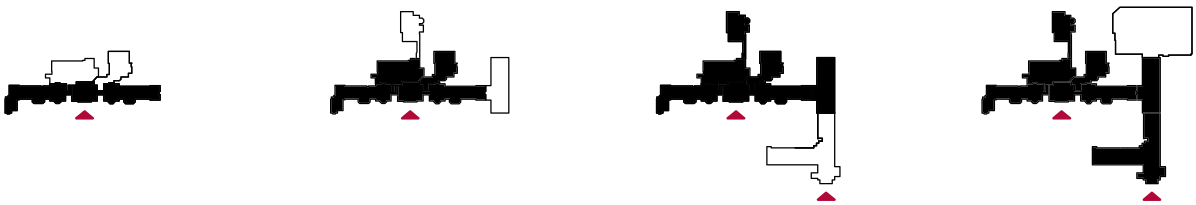
In 1951, Maine General Hospital, the Maine Eye and Ear Infirmary, and Children's Hospital merged to become MMC. Two new pavilions were added in 1956 to provide modern patient rooms. Suburban growth and the construction of interstate highways in the 1960s increased demand for parking at the Medical Center, 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



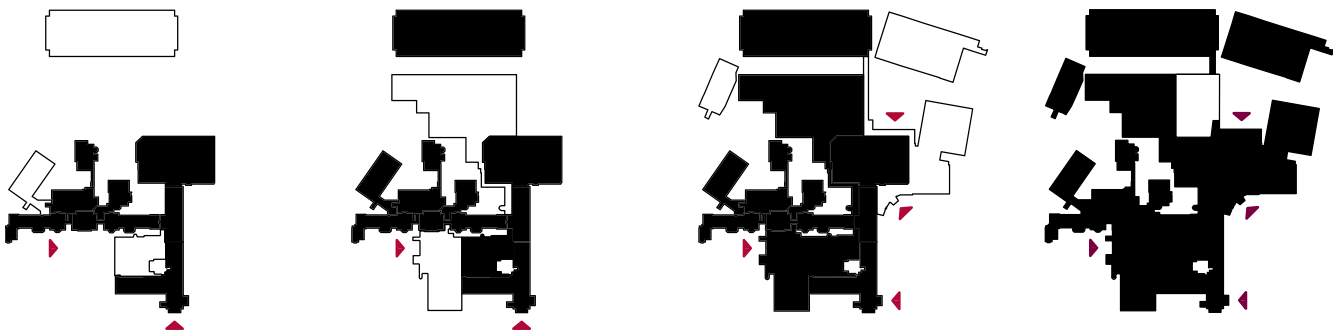
1890s 1920s 1950s 1960s

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).

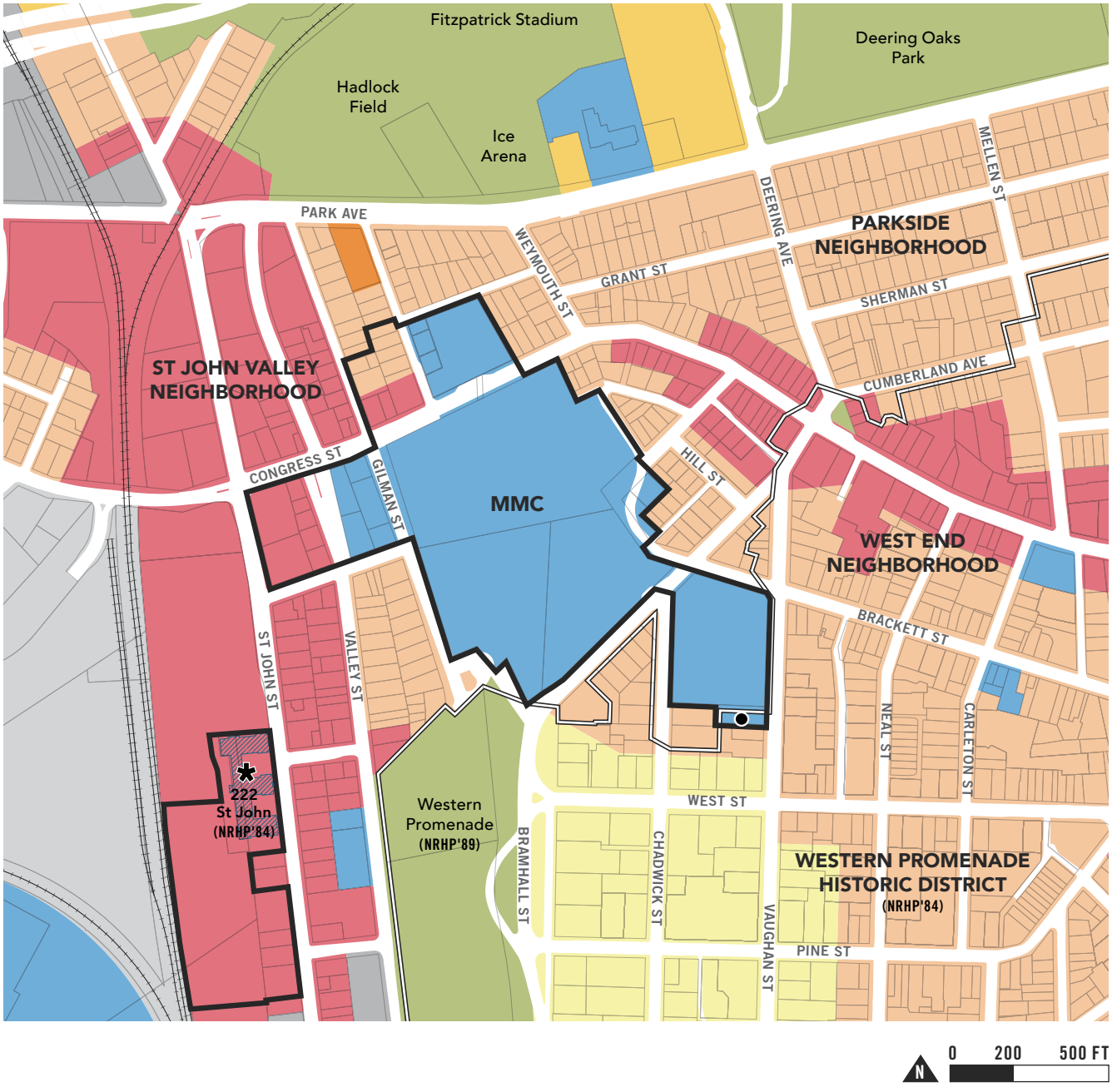
Any development within the IOZ boundary that is adjacent to or within 100 feet of any designated landmark, historic district, or historic landscape district will be subject to applicable requirements listed in Article 5 (Site Plan) of the City of Portland Land Use Ordinance.

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.

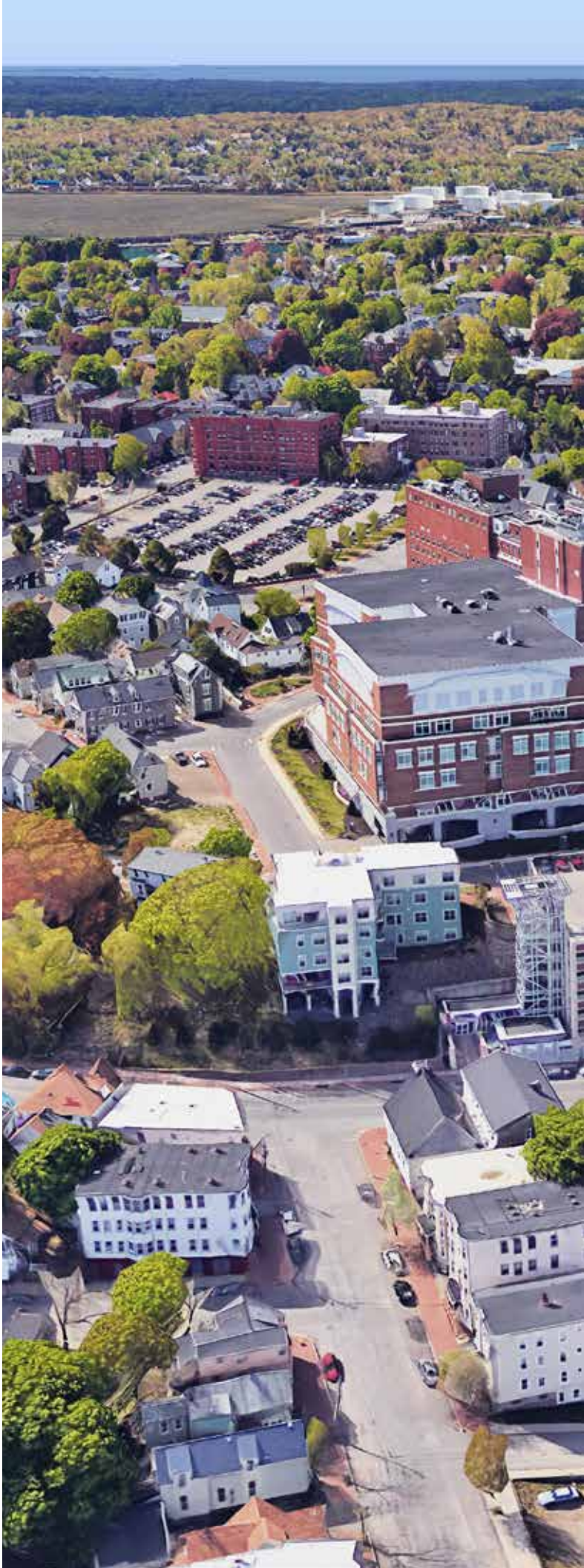


Fig.1.6 Bird's Eye View of the Campus in Context, Looking South

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

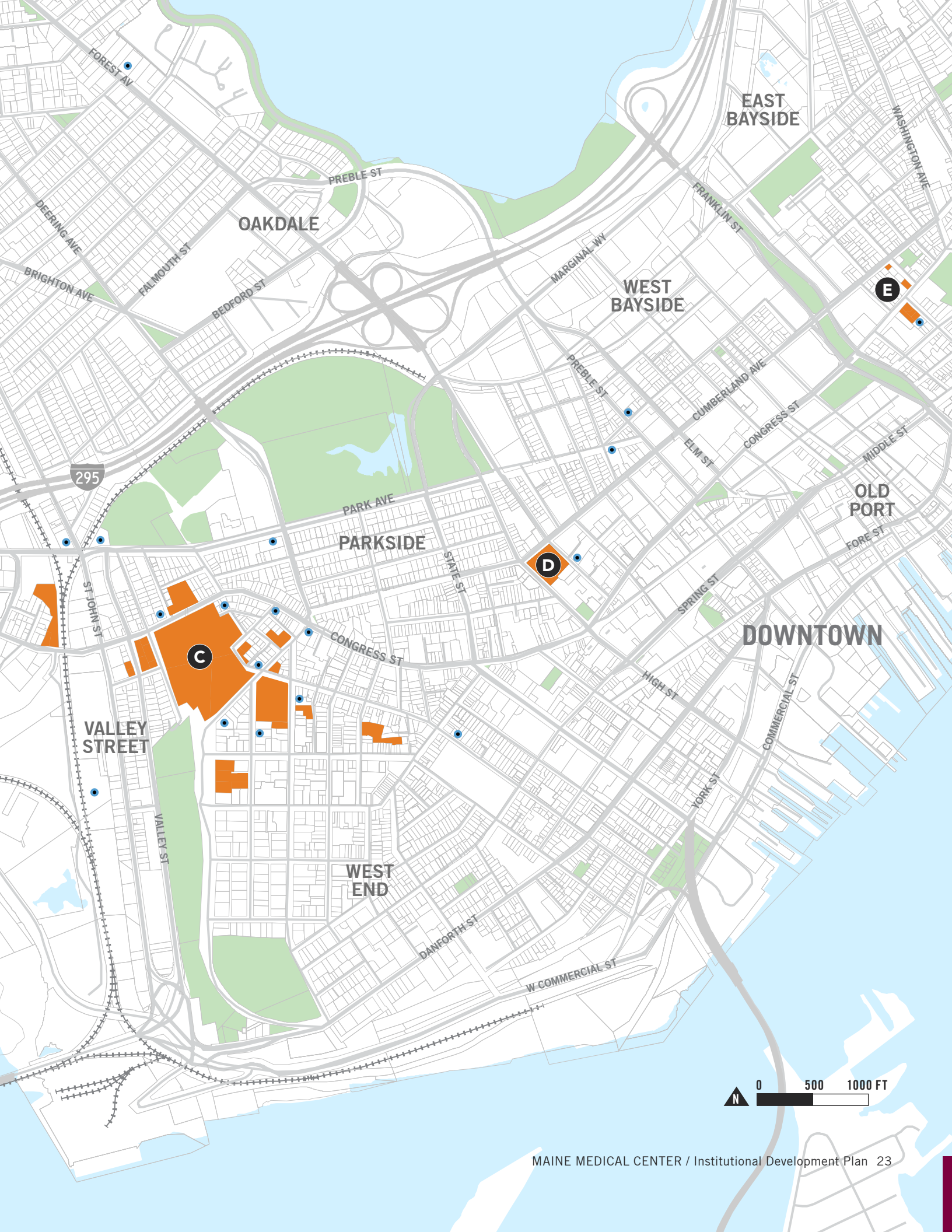
Parcel Address	*Current Use*
A MMC BRIGHTON CAMPUS	
335 Brighton Ave	MMC Brighton
367 Brighton Ave	Residential
27 Hollis Rd	Residential
136 Prospect St	Residential
142 Prospect St	Residential
170 Prospect St	Residential
B MMC BEHAVIORAL HEALTHCARE	
556 St John St	Medical Office
D GATEWAY GARAGE BUILDING	
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.

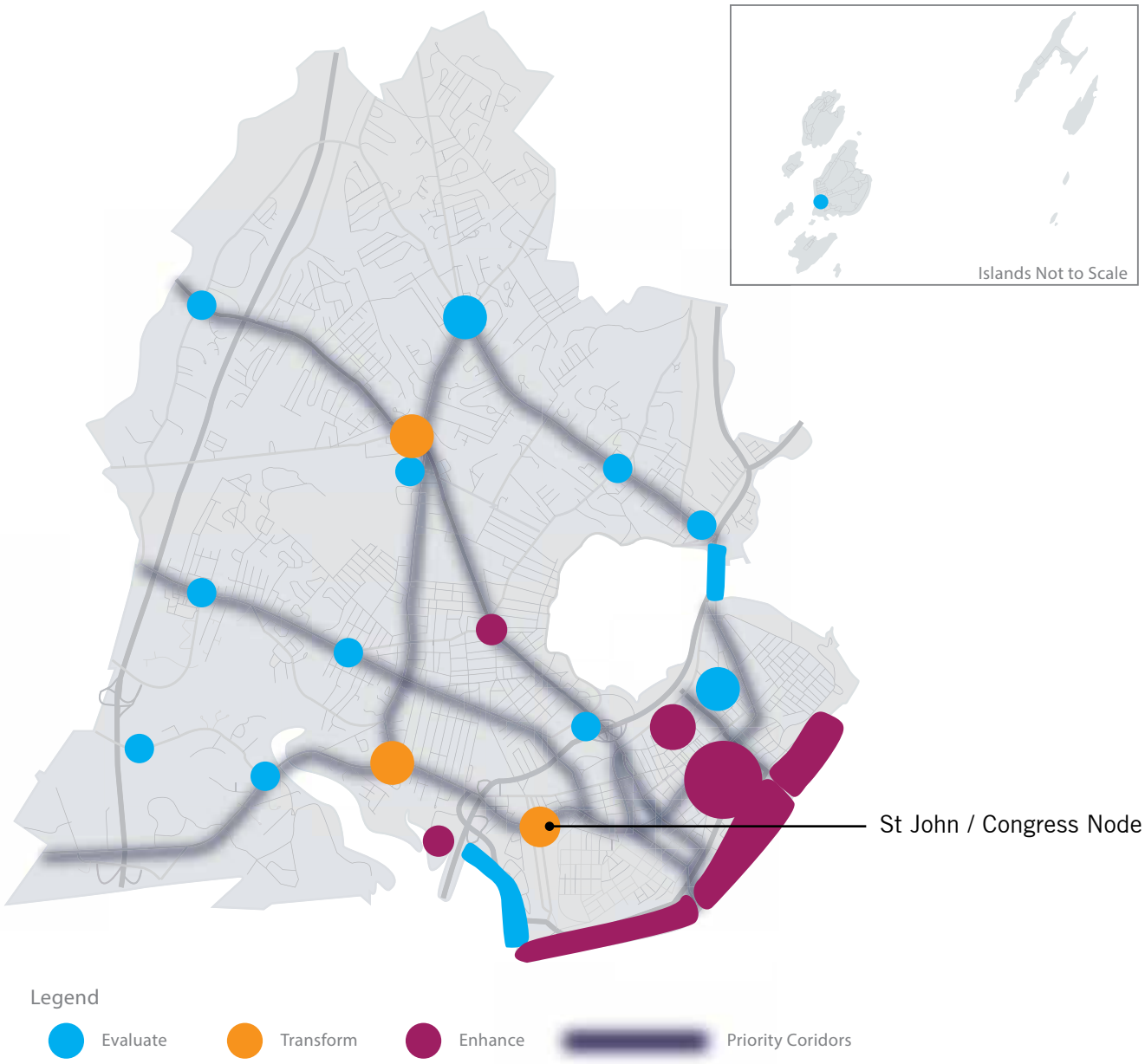
MMC's IOZ Regulatory Framework provides the mechanism for thoughtful, future development to transform the priority corridor identified by the City into an area of "additional mixed uses, higher density growth to take advantage of the transit benefits and services that well-designed, diverse corridors 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

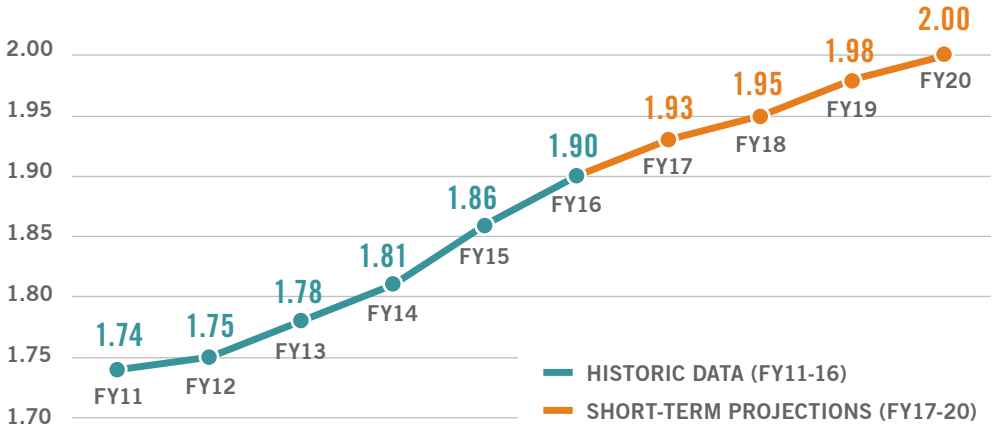


Fig.2.2 Existing Inventory of Private vs Semi-Private Beds

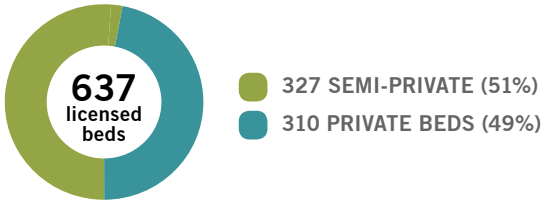
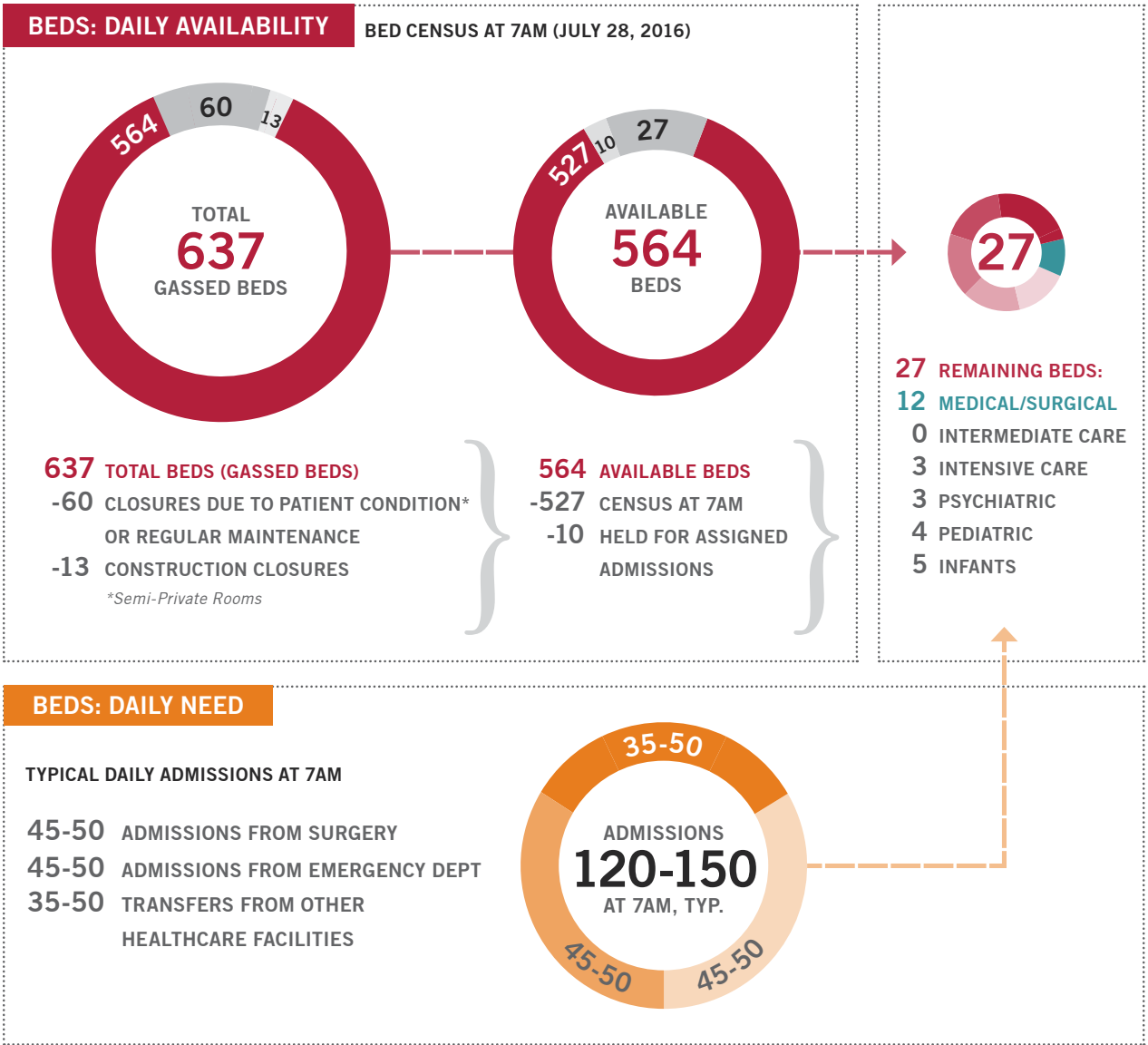


Fig.2.3 A Day in the Life of MMC: Bed Shortage



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

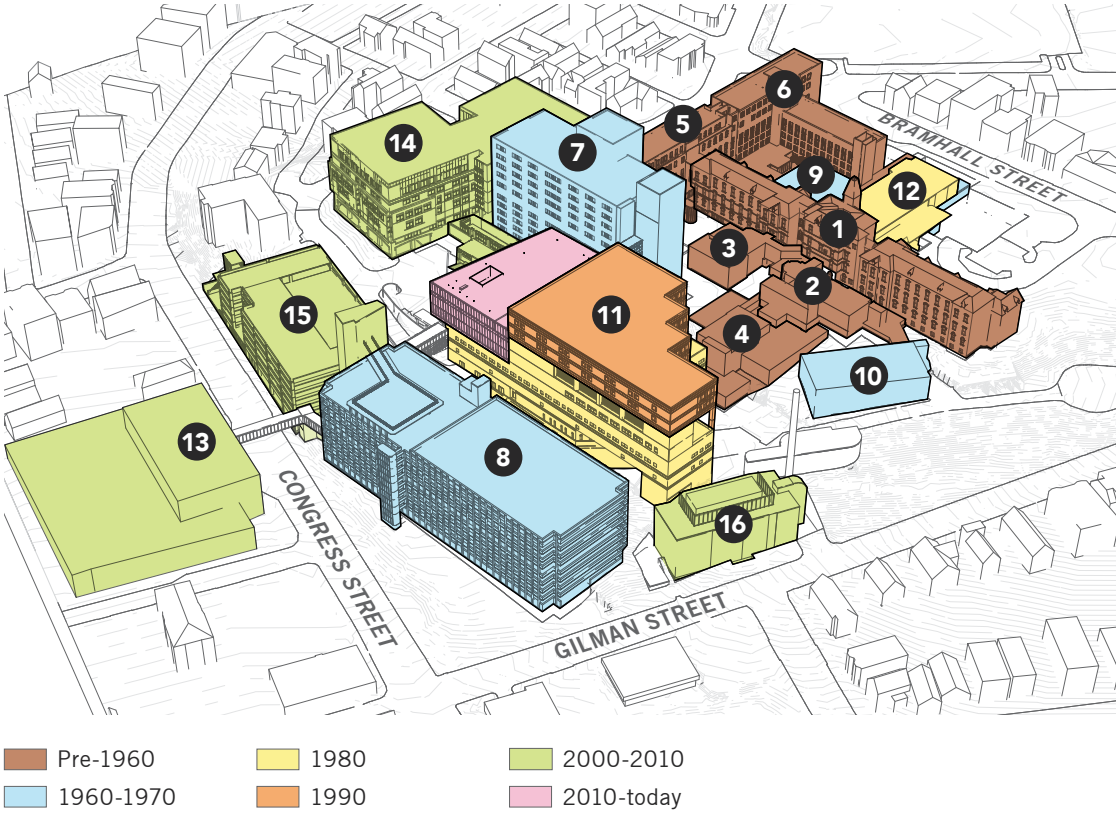


Table 2.2 Inventory of Existing Facilities

#	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.

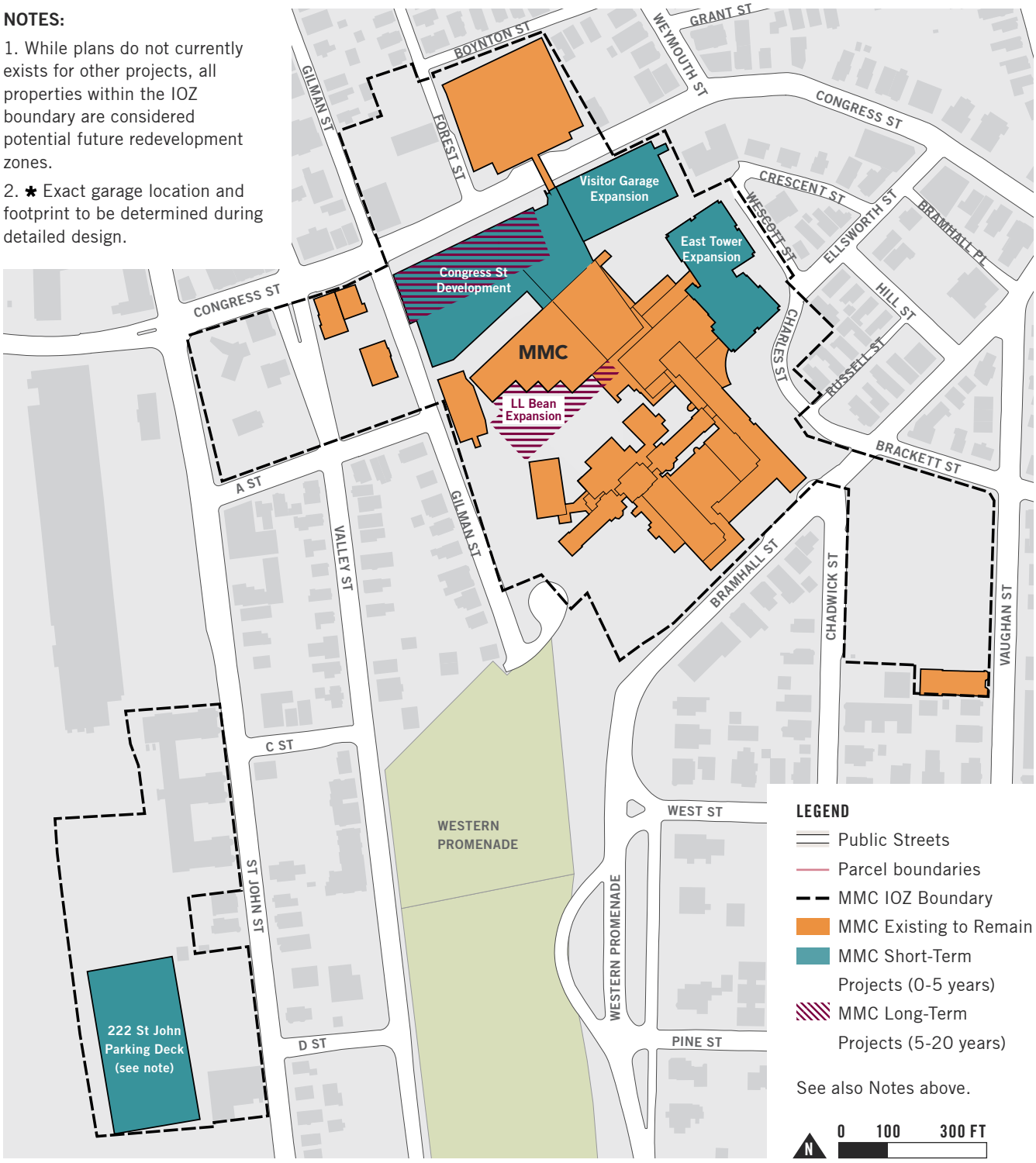
The short- and long-term project plans do not represent the only projects within this timeframe. Due to the various factors impacting healthcare planning and their short horizons, there may be other projects proposed within this timeframe.

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.

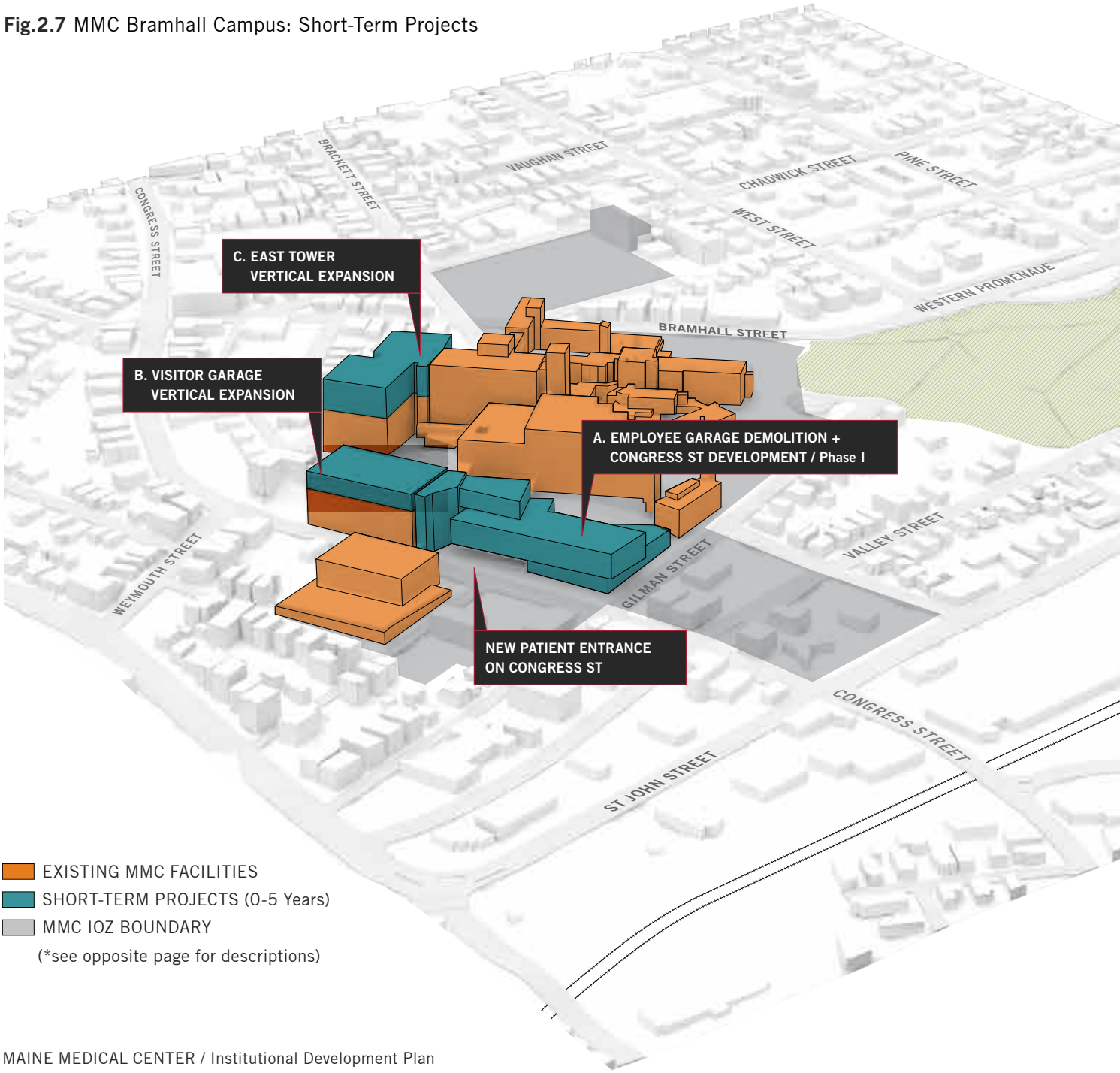
2. ✱ Exact garage location and footprint to be determined during detailed design.



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.

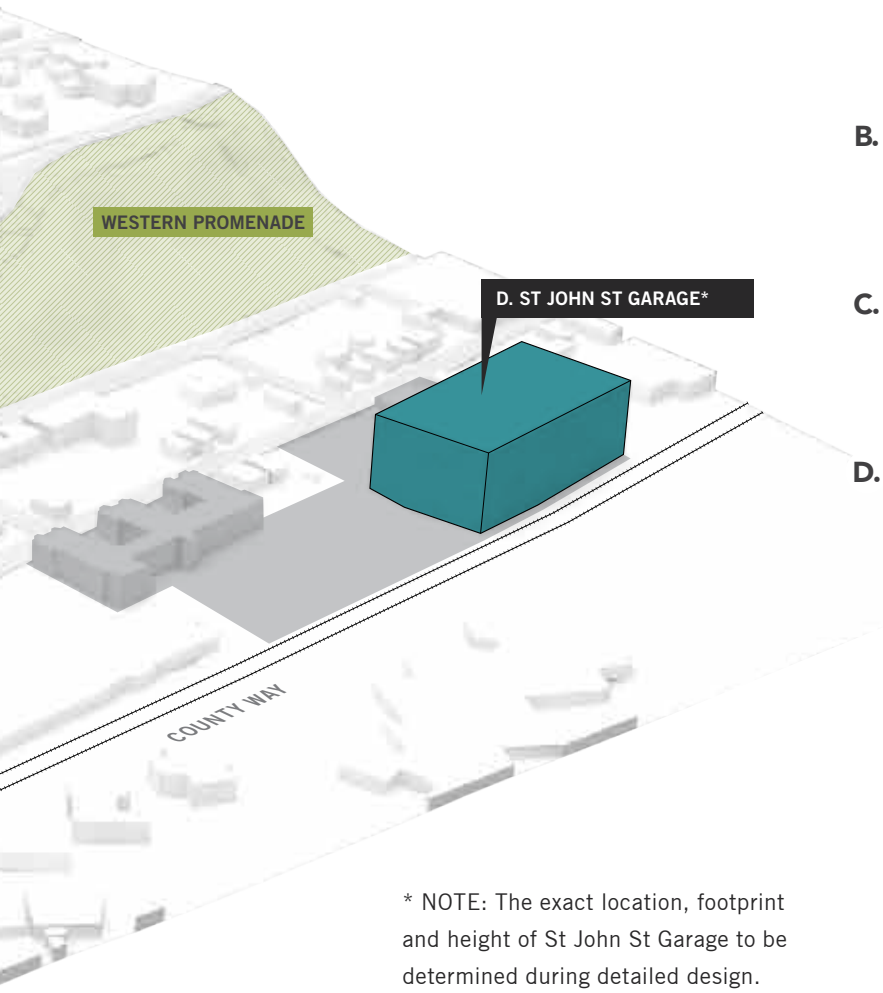
Fig.2.7 MMC Bramhall Campus: Short-Term Projects



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.

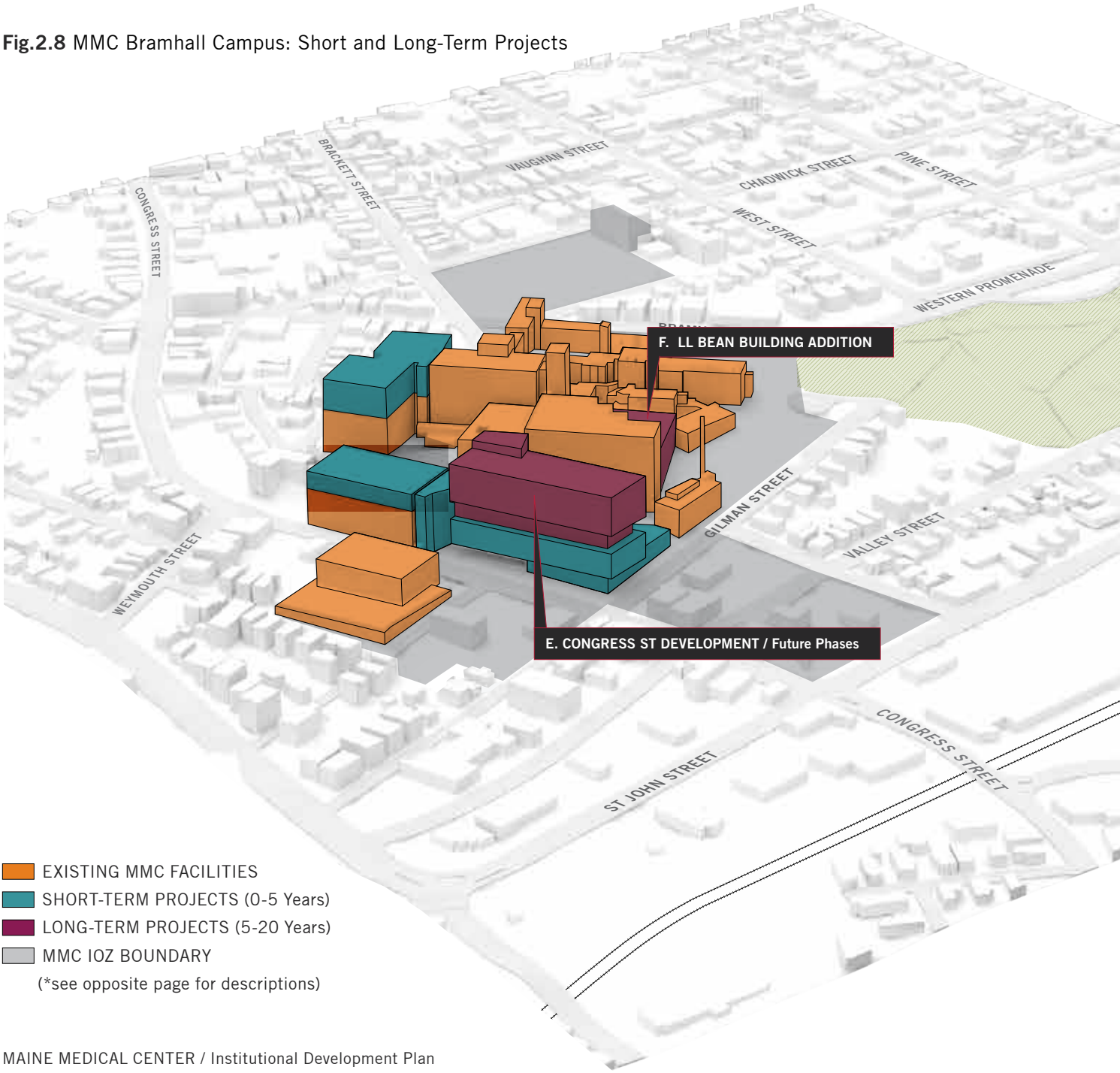
D. St John St Garage

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)

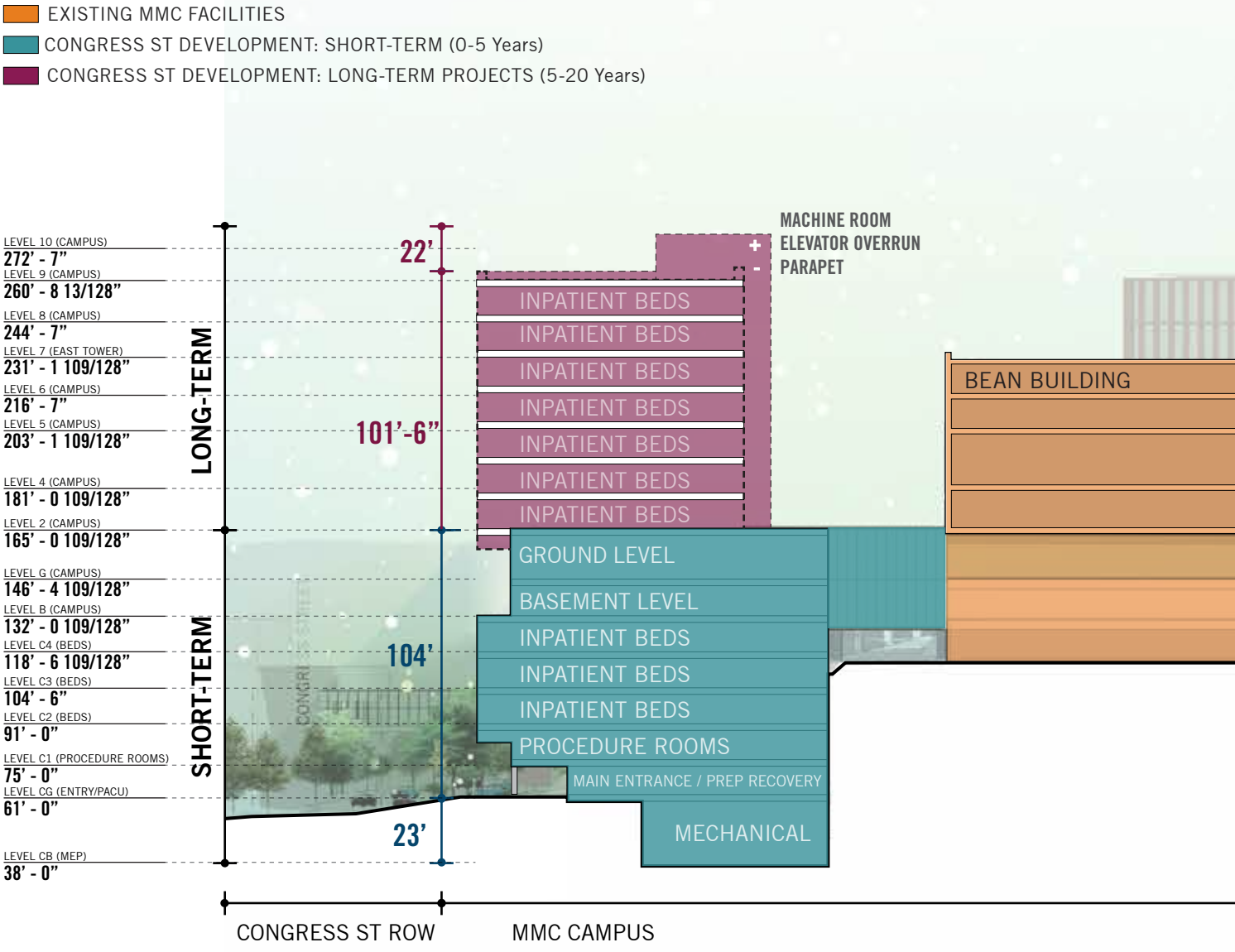
Future vertical expansion to include additional private inpatient beds.

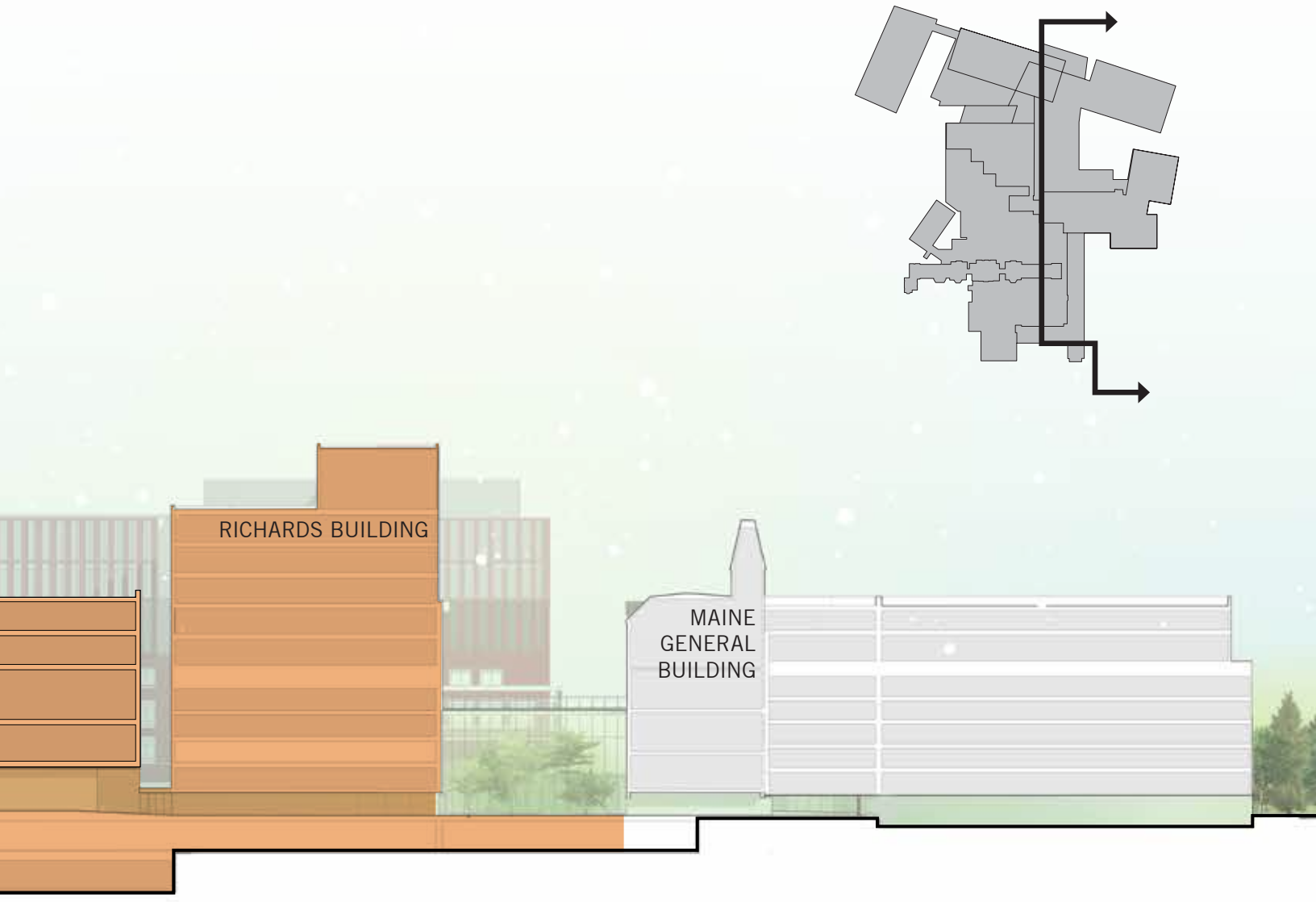
F. LL Bean Building Expansion (Approx. 120,000 GSF)

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

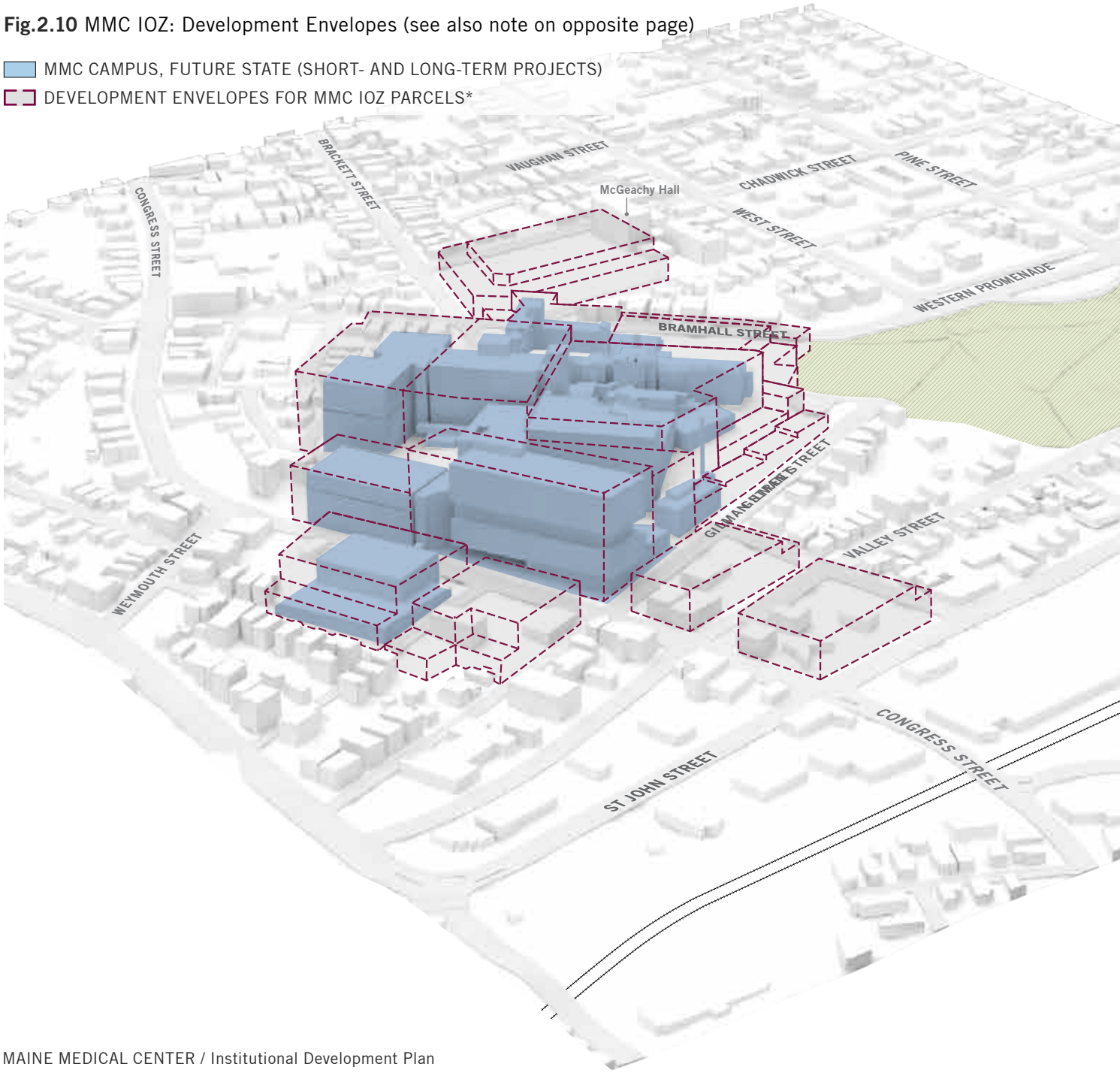



RICHARDS BUILDING
MAINE
GENERAL
BUILDING

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.

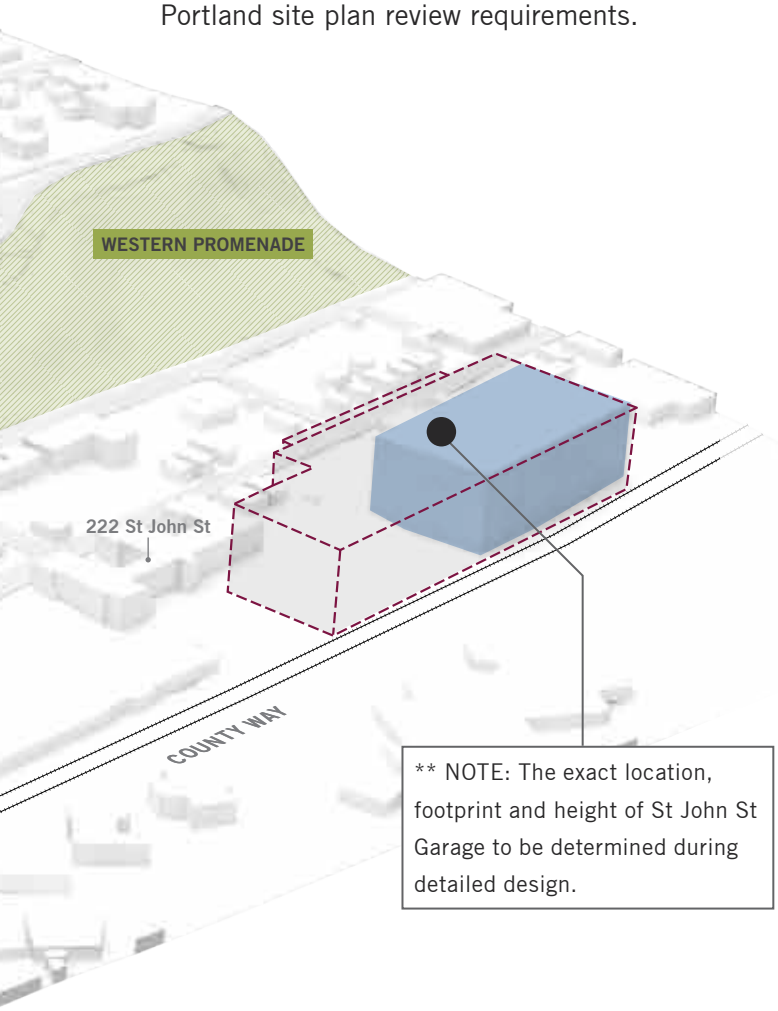


Table 2.5 MMC Potential Future Uses

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)

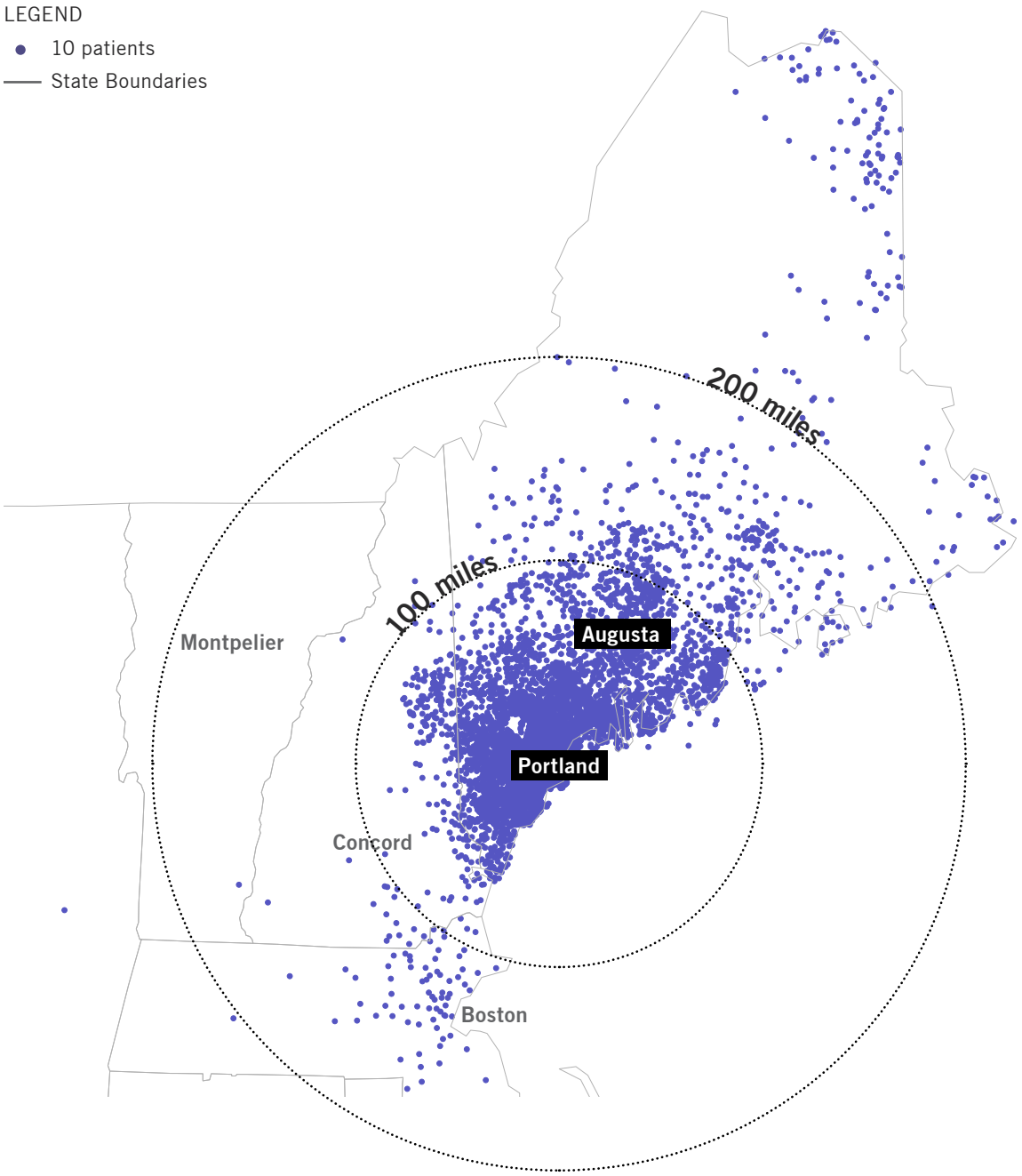


Fig.3.2 MMC Existing Circulation Routes and Access Points

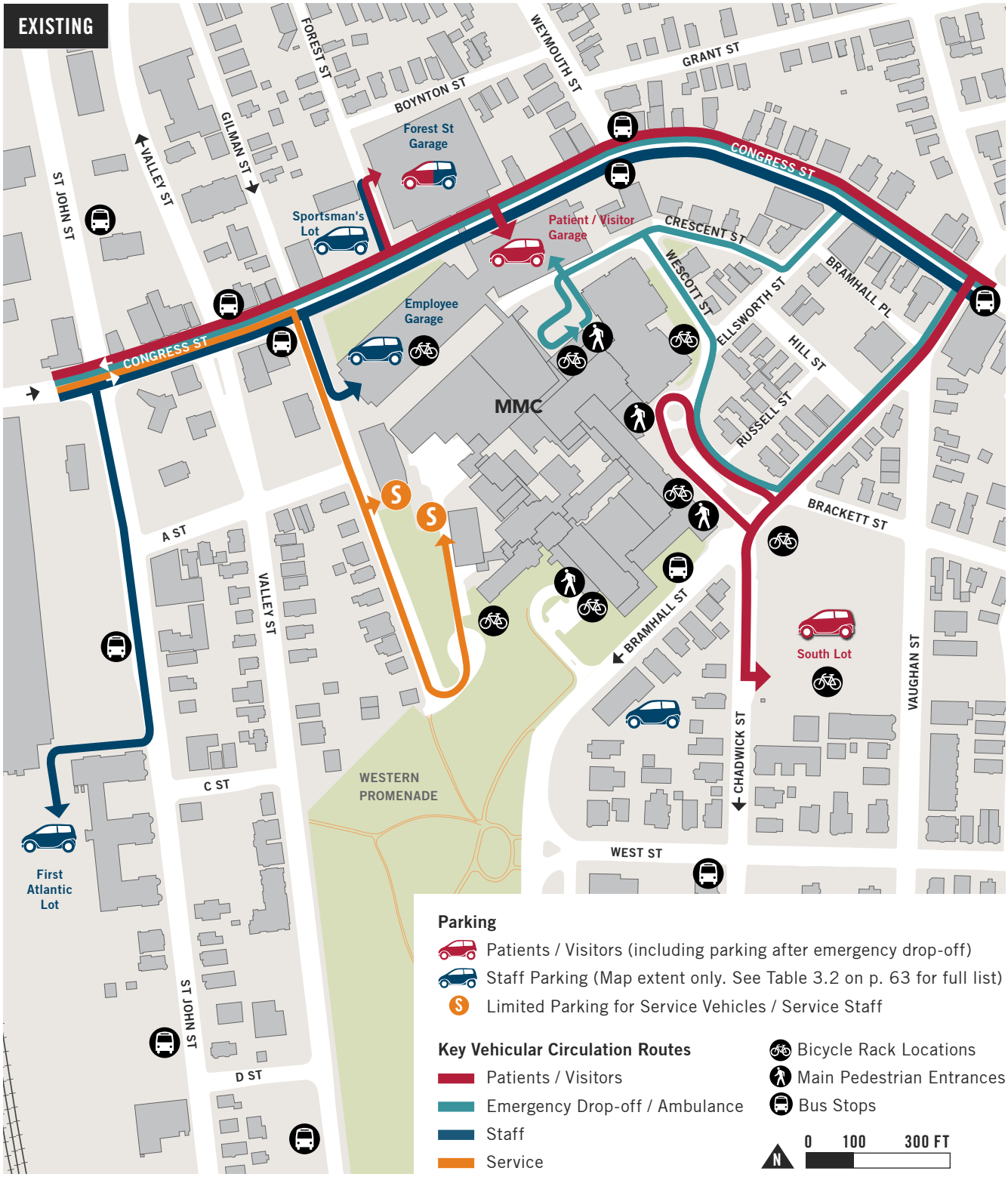
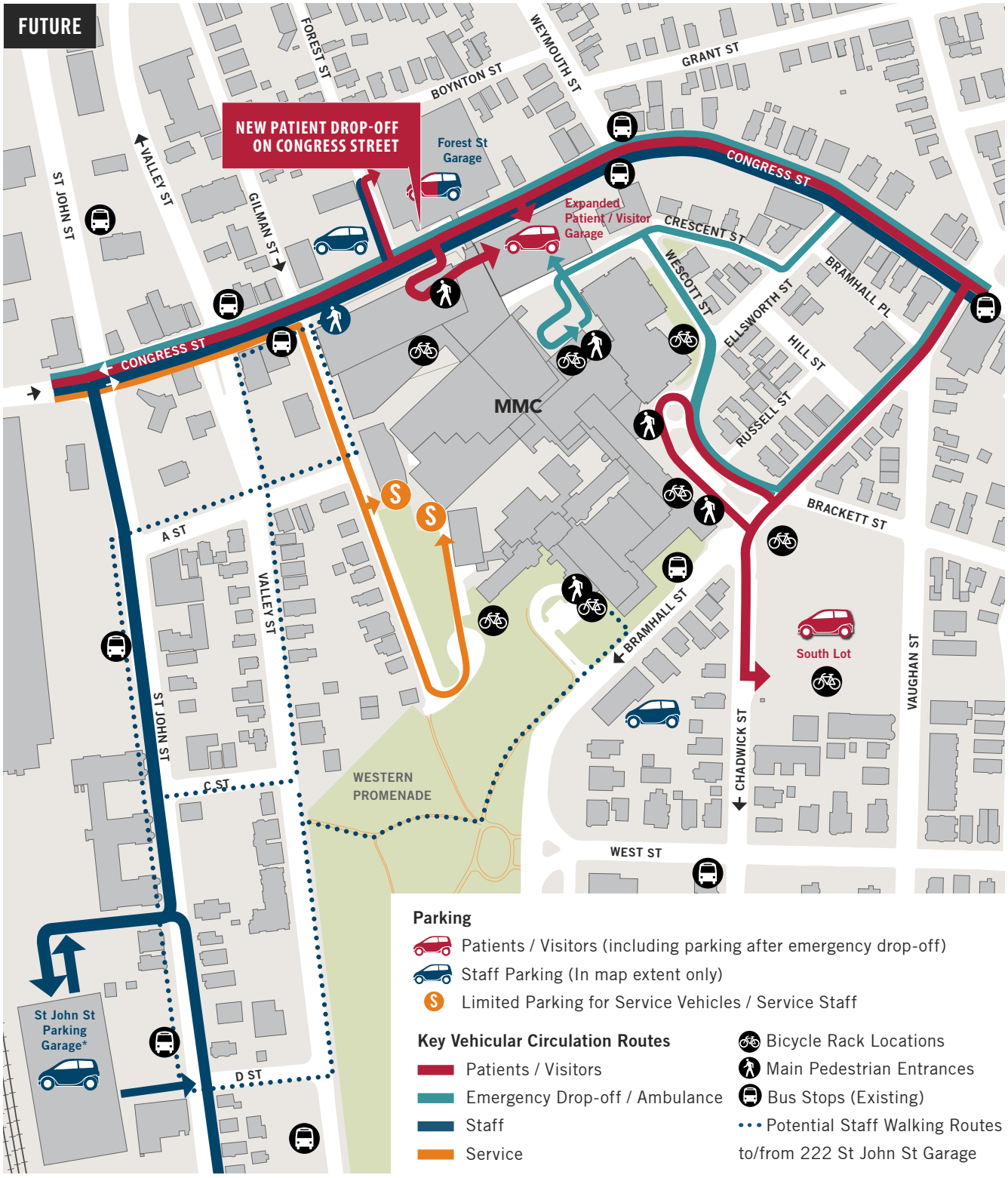


Fig.3.3 Transportation Plan (Future): Circulation Routes and Access Points



* 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)

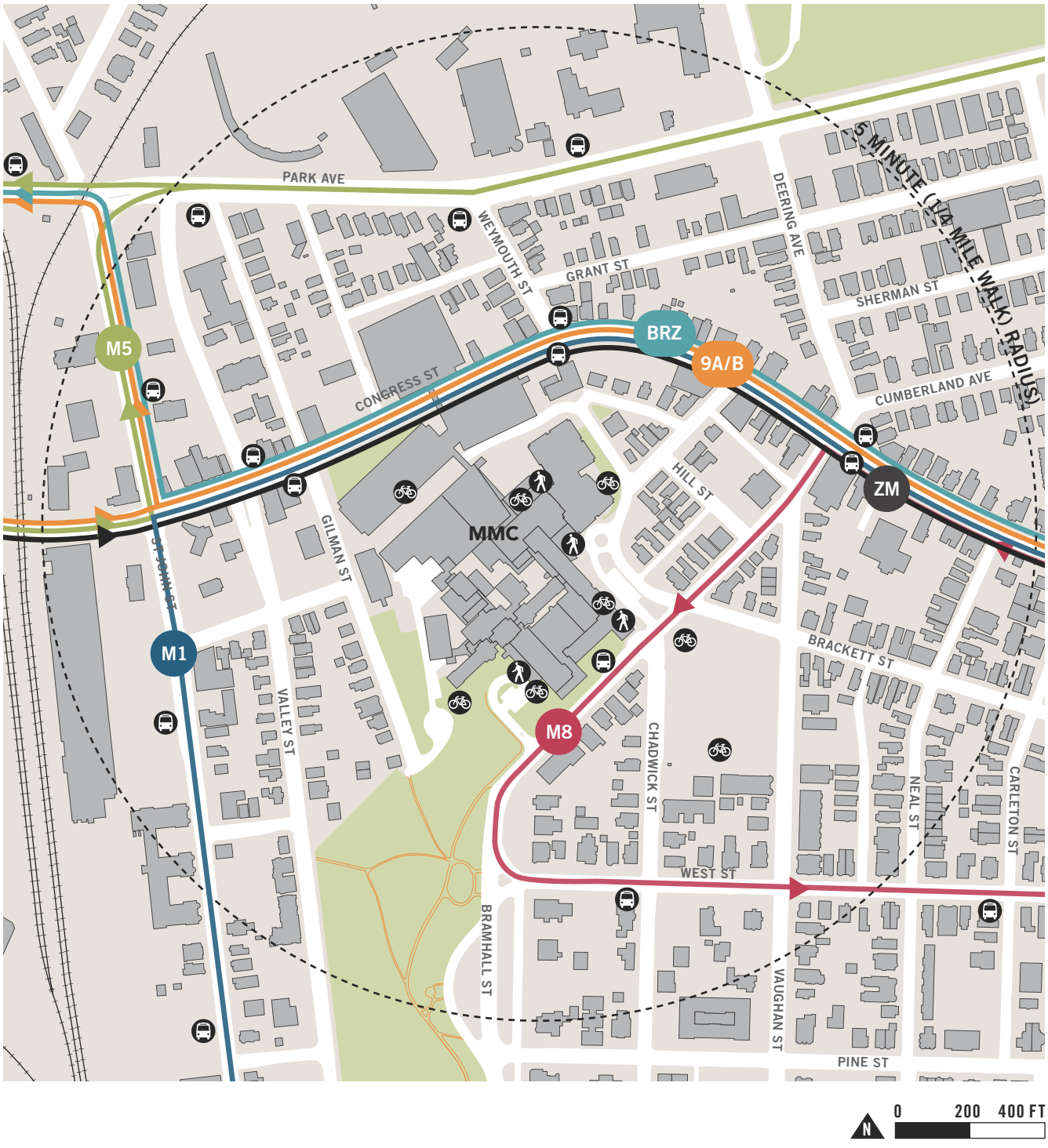


Table 3.3 Bus Routes Serving MMC Bramhall Campus

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)

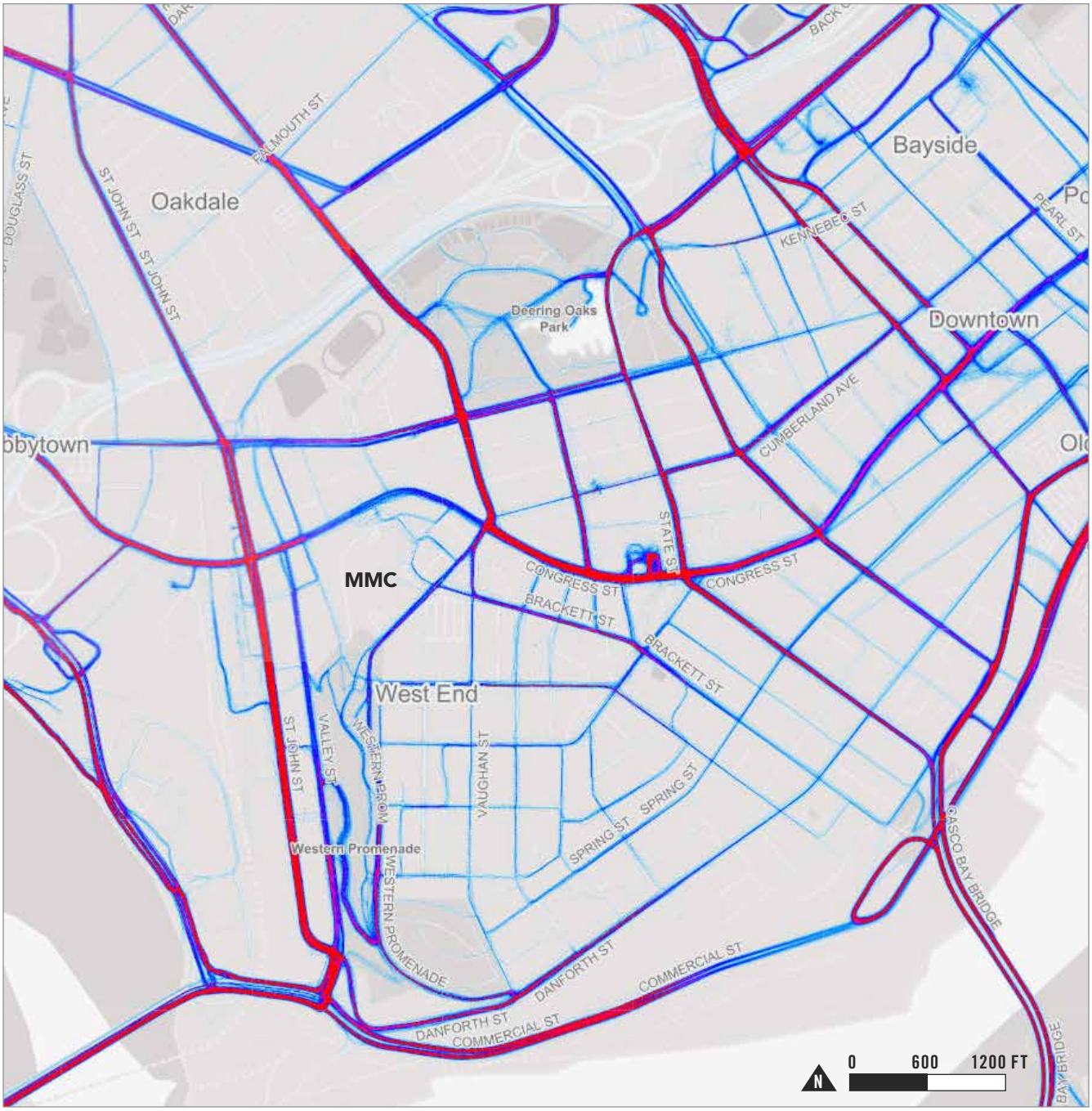


Fig.3.6 Portland Bikeway and Pedestrian Network *(Source: City of Portland, 2014)*

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)

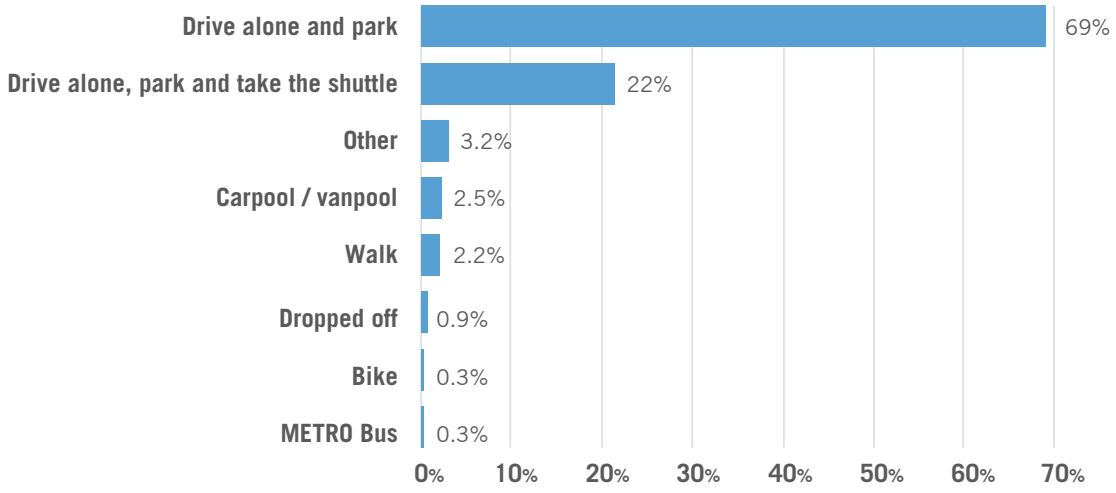


Fig.3.8 MMC Bramhall Campus Employees, Distance to Work by Type of Employee

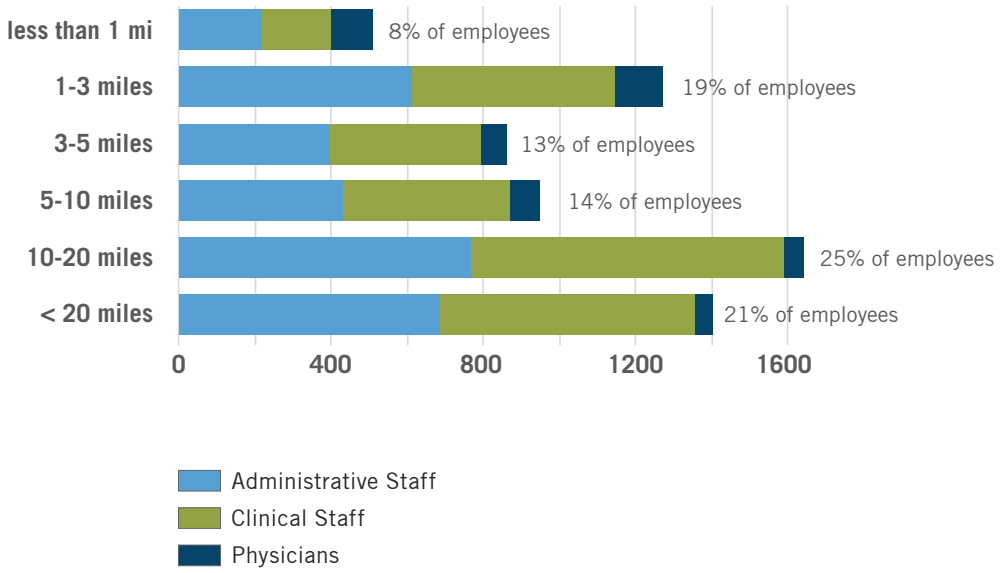
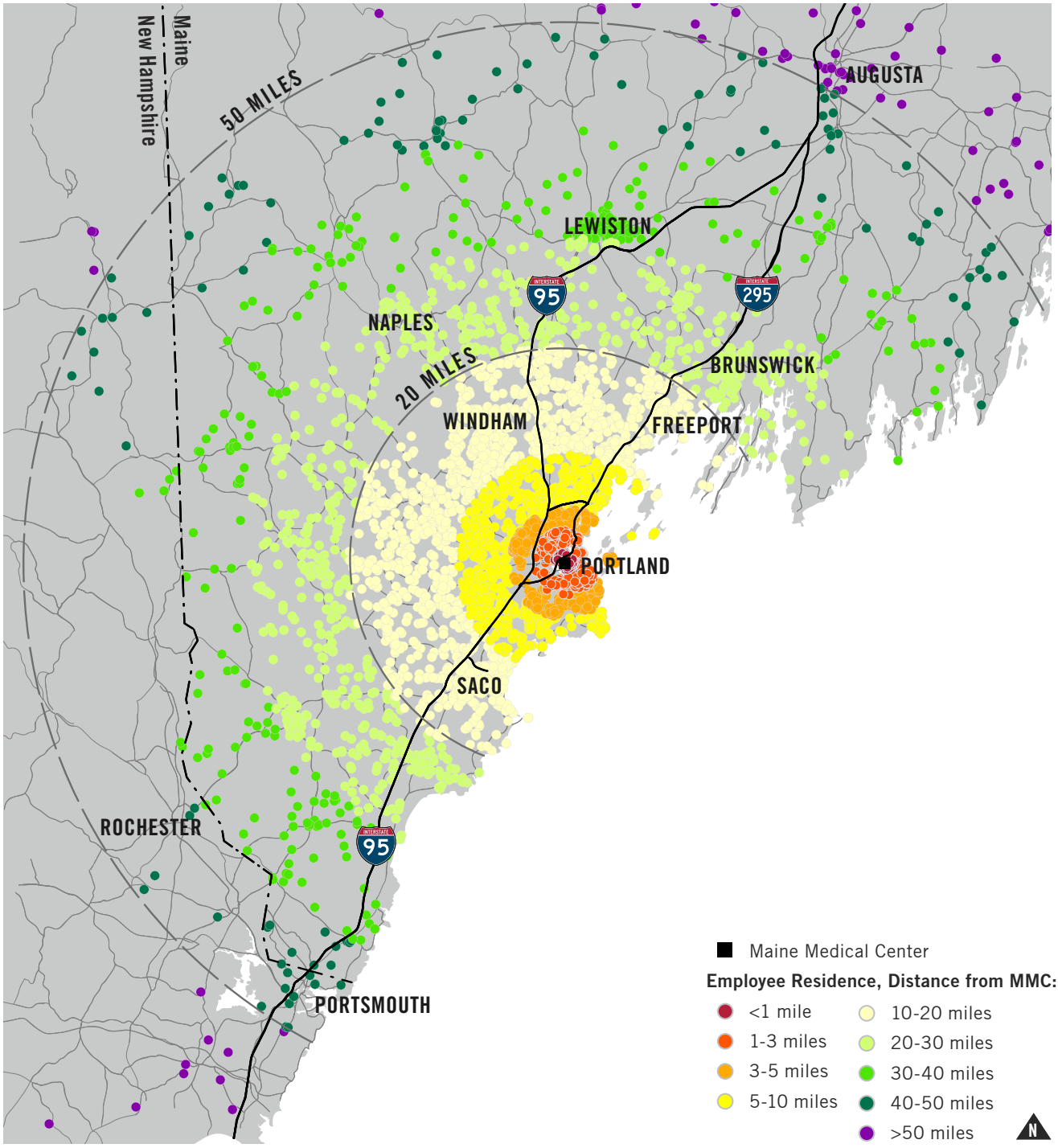


Fig.3.9 Map of MMC Bramhall Campus Employee Residences Illustrating Distance to Work and Travelsheds



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

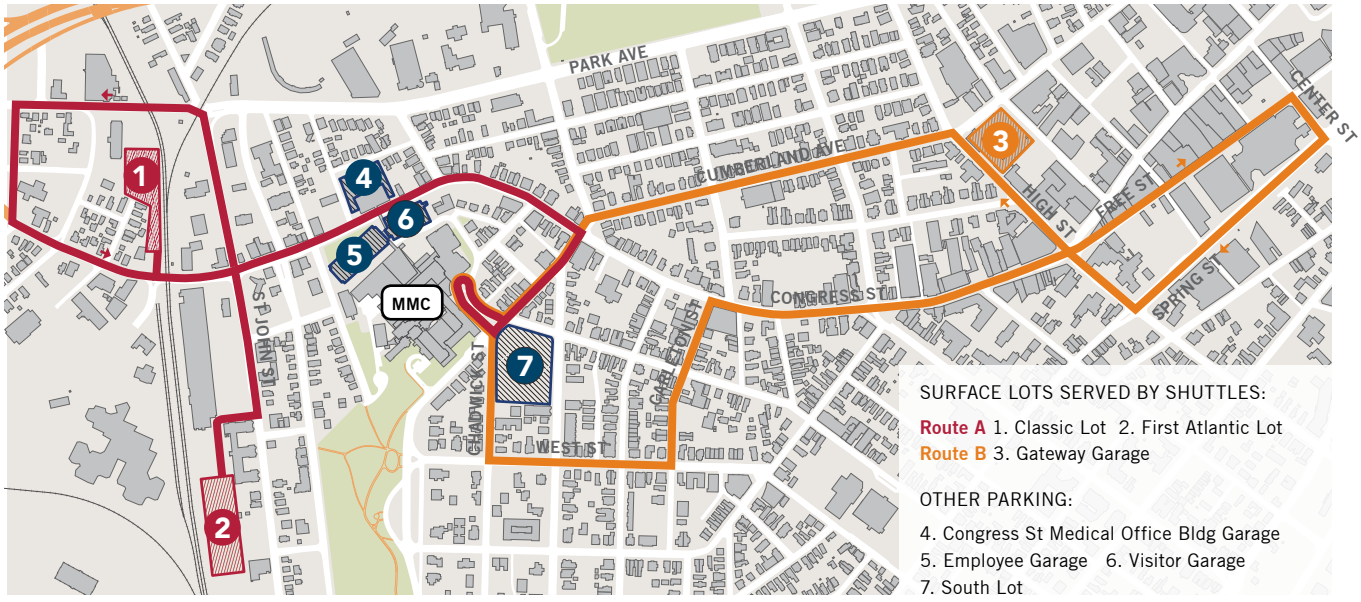
Working with UHaul and the City's Parking Department, MMC will continue to monitor the use of the UCar presently located in its Congress St parking garage. In the event an additional car is warranted, MMC will work with its partners in finding a suitable location on the main campus for the storage and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

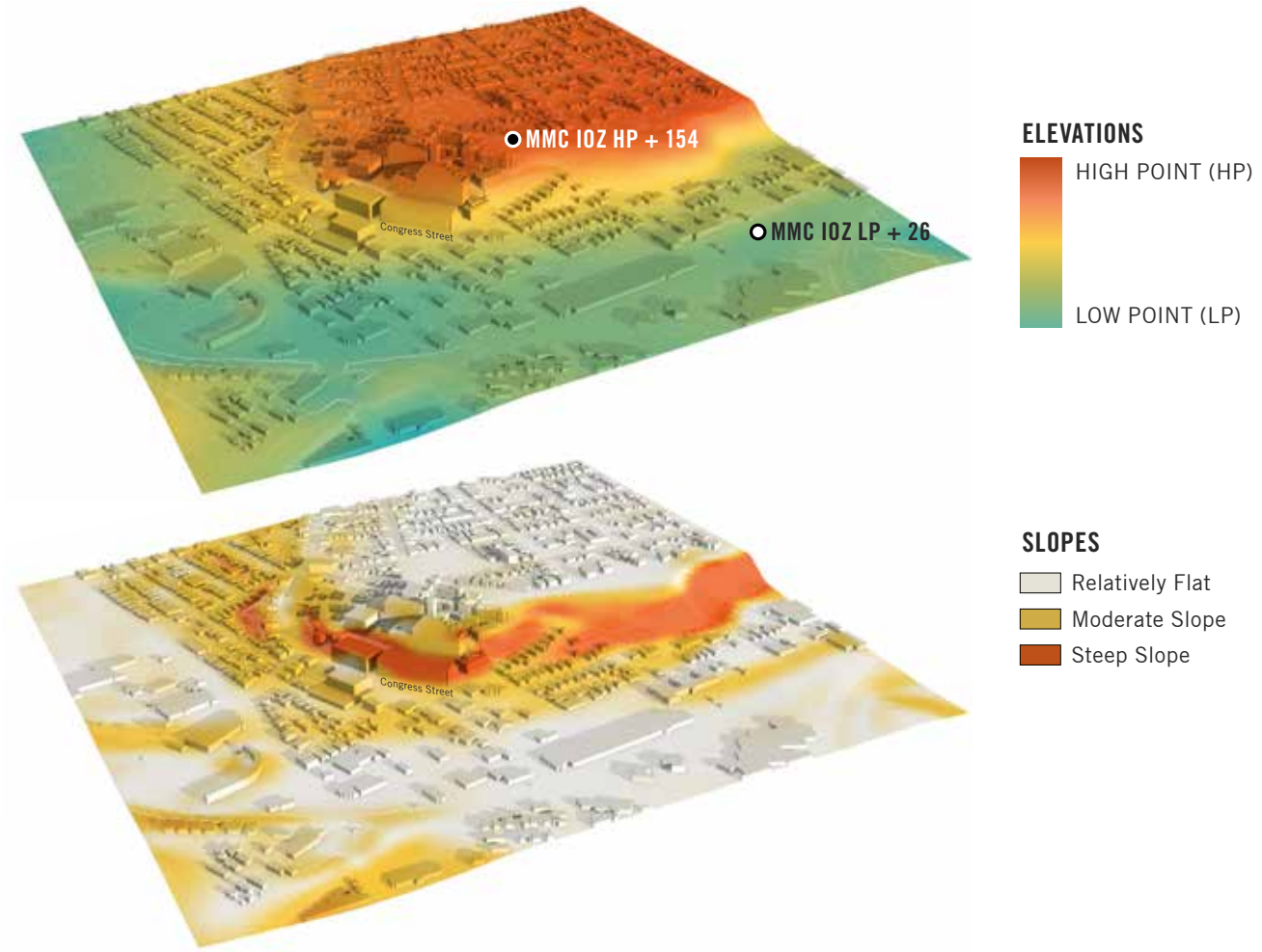
FEMA Floodplains

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

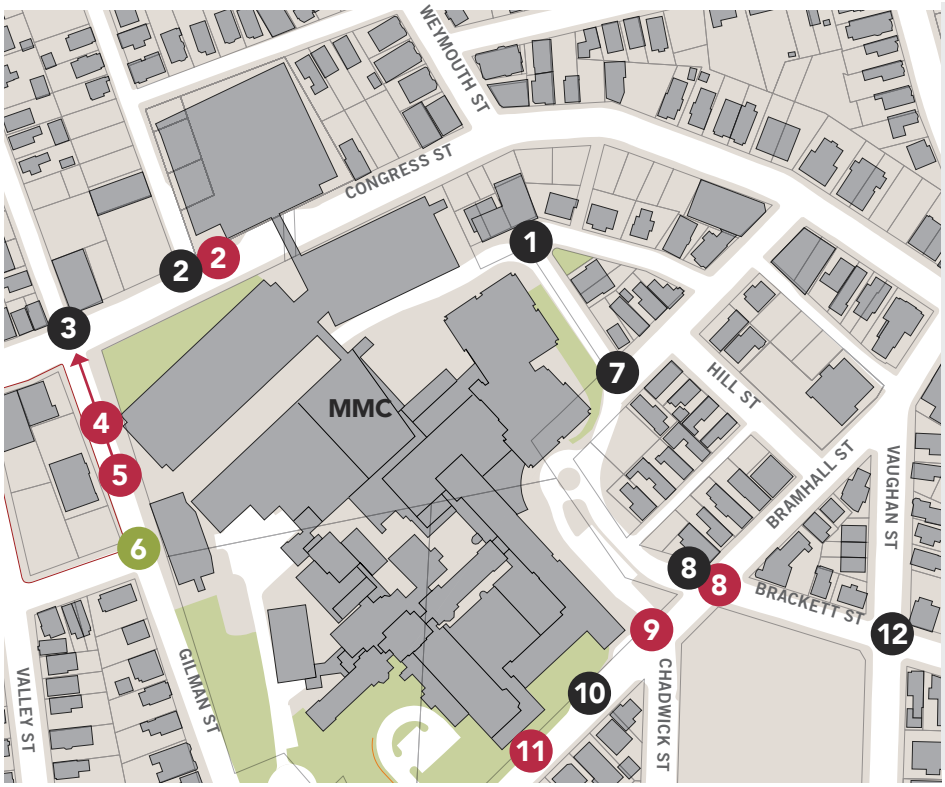
Any development or redevelopment of sites by MMC will be required to meet the City's stormwater management ordinance requirements and mitigate any increases in discharges to the extent practicable.

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.

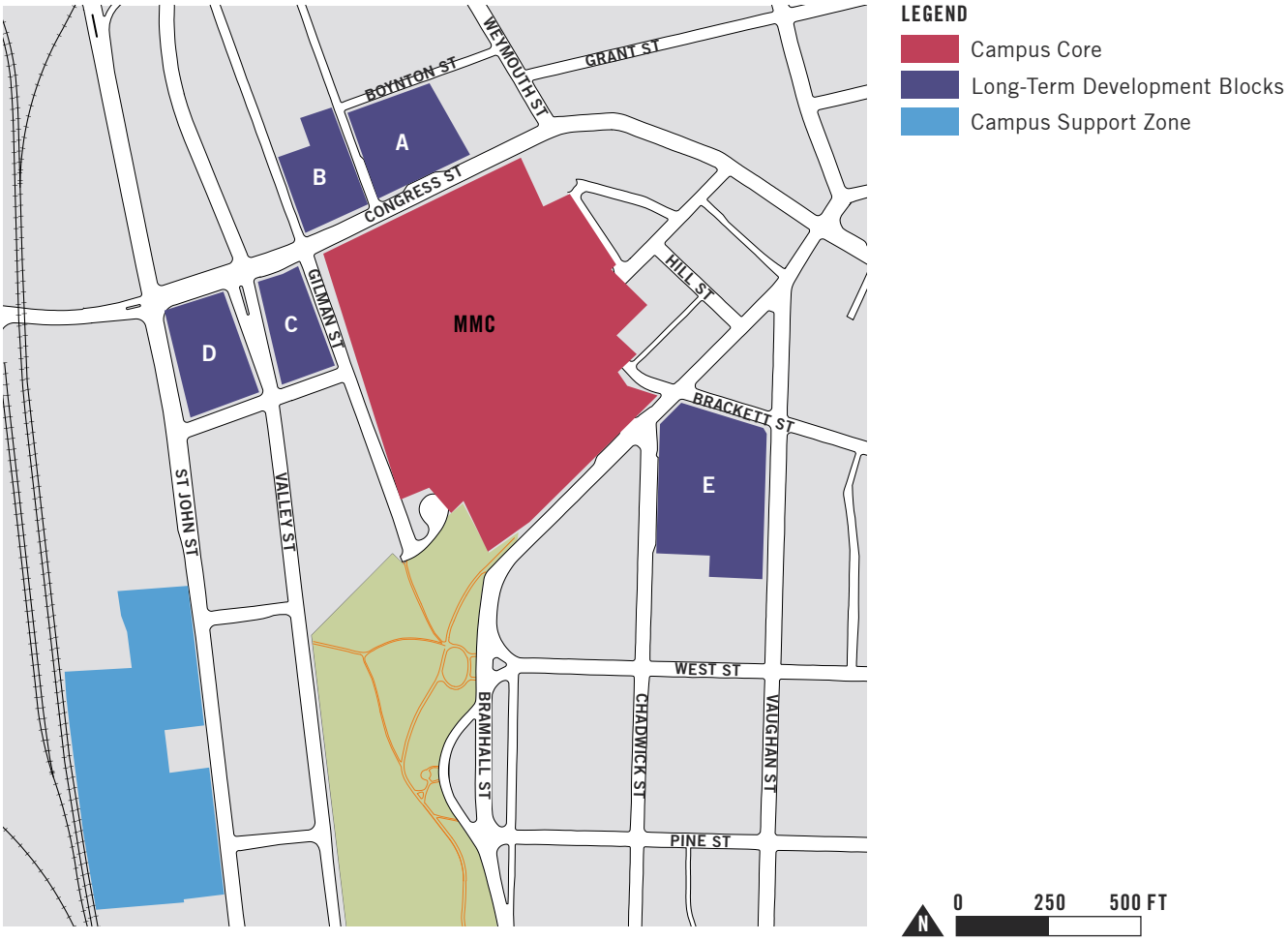
NEIGHBORHOOD INTEGRATION

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).

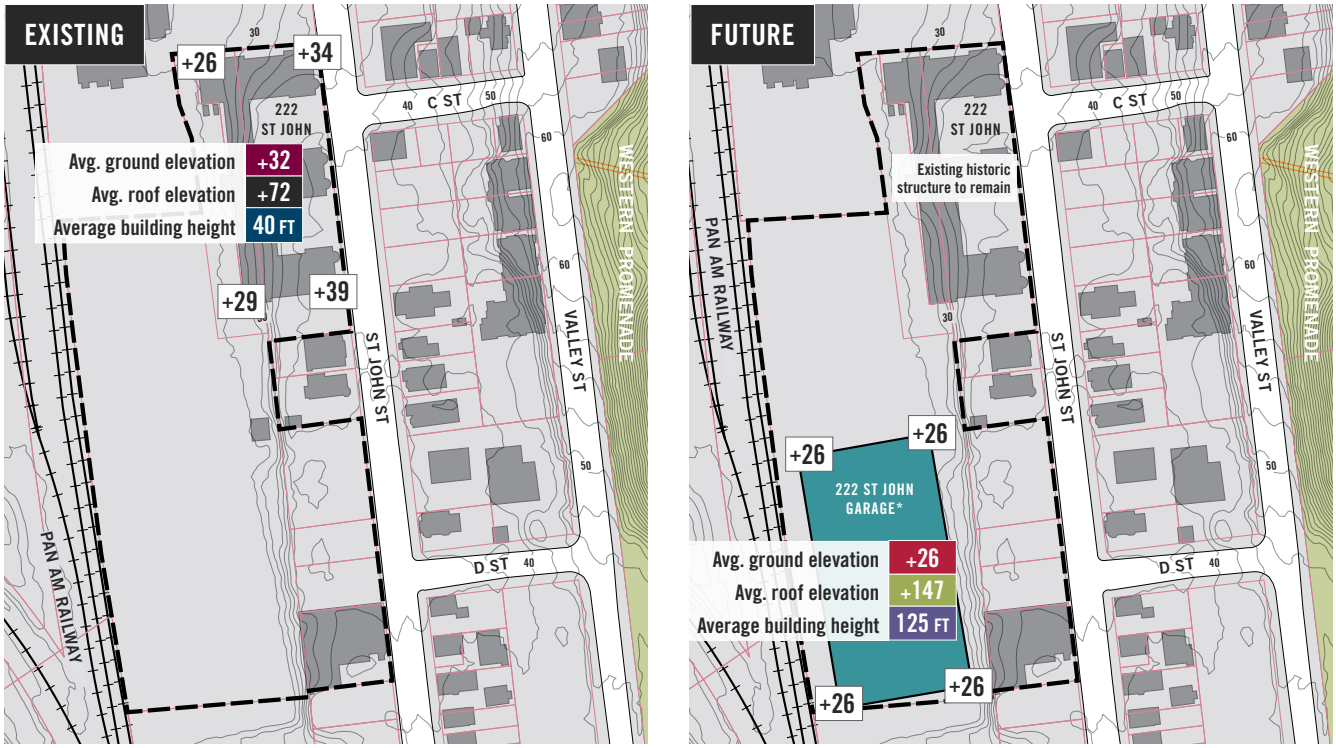
3. Slope Analysis. A 3D terrain model was used to optimize maximum heights based on the average grade of each building site and/or development zone within the IOZ.

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

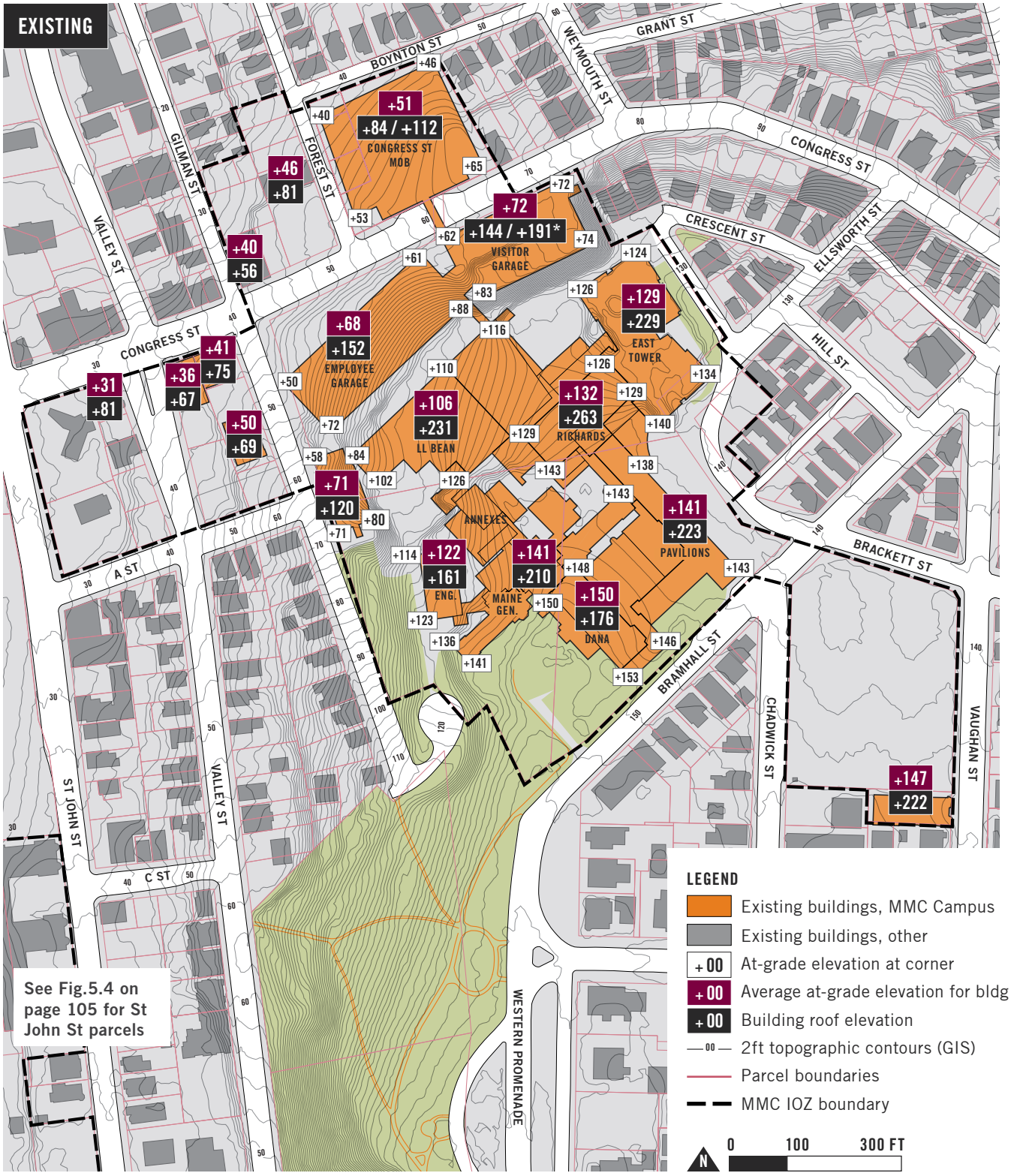


*** NOTE: The exact location, footprint and access to St John Garage to be determined during detailed design.**

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

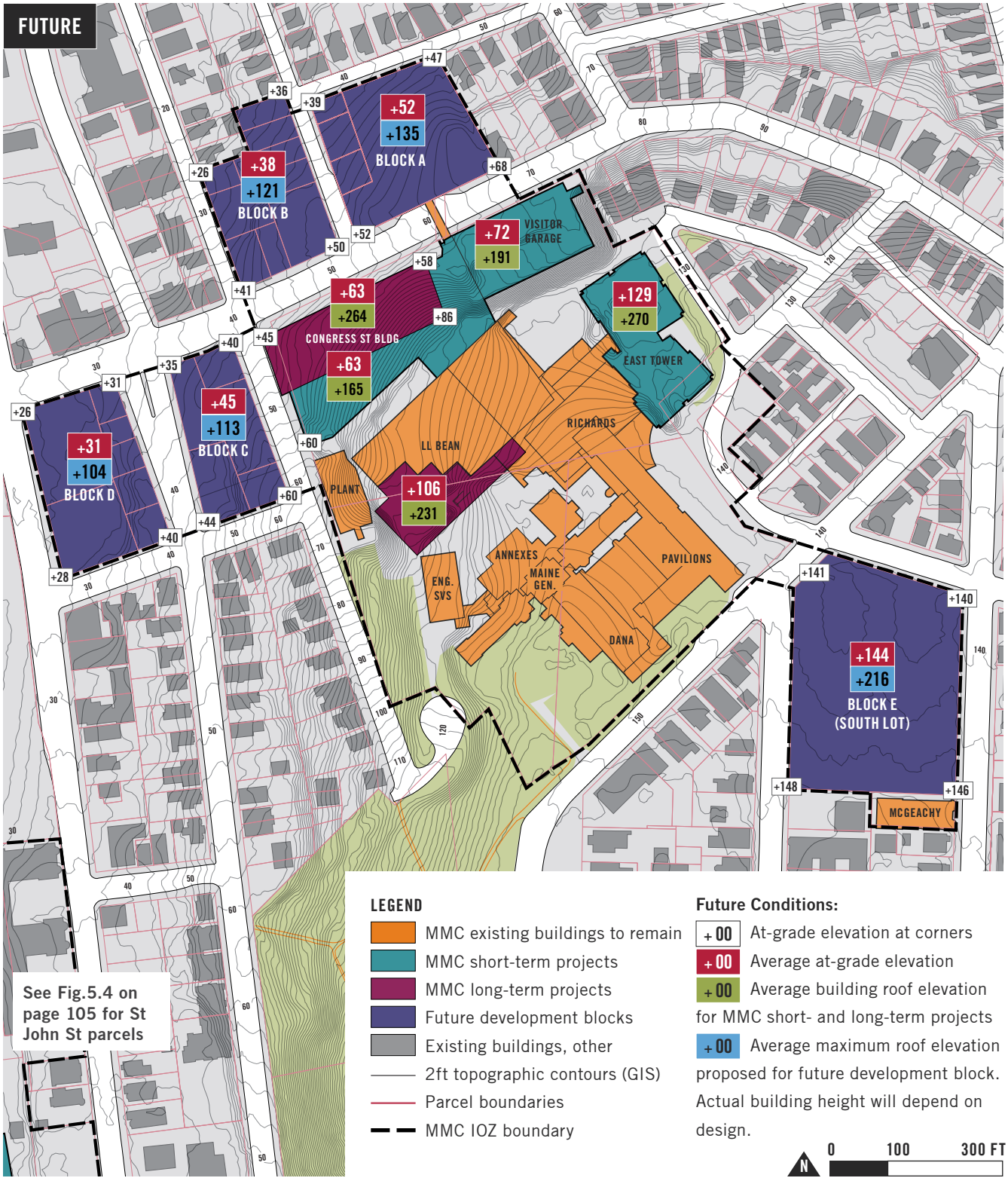
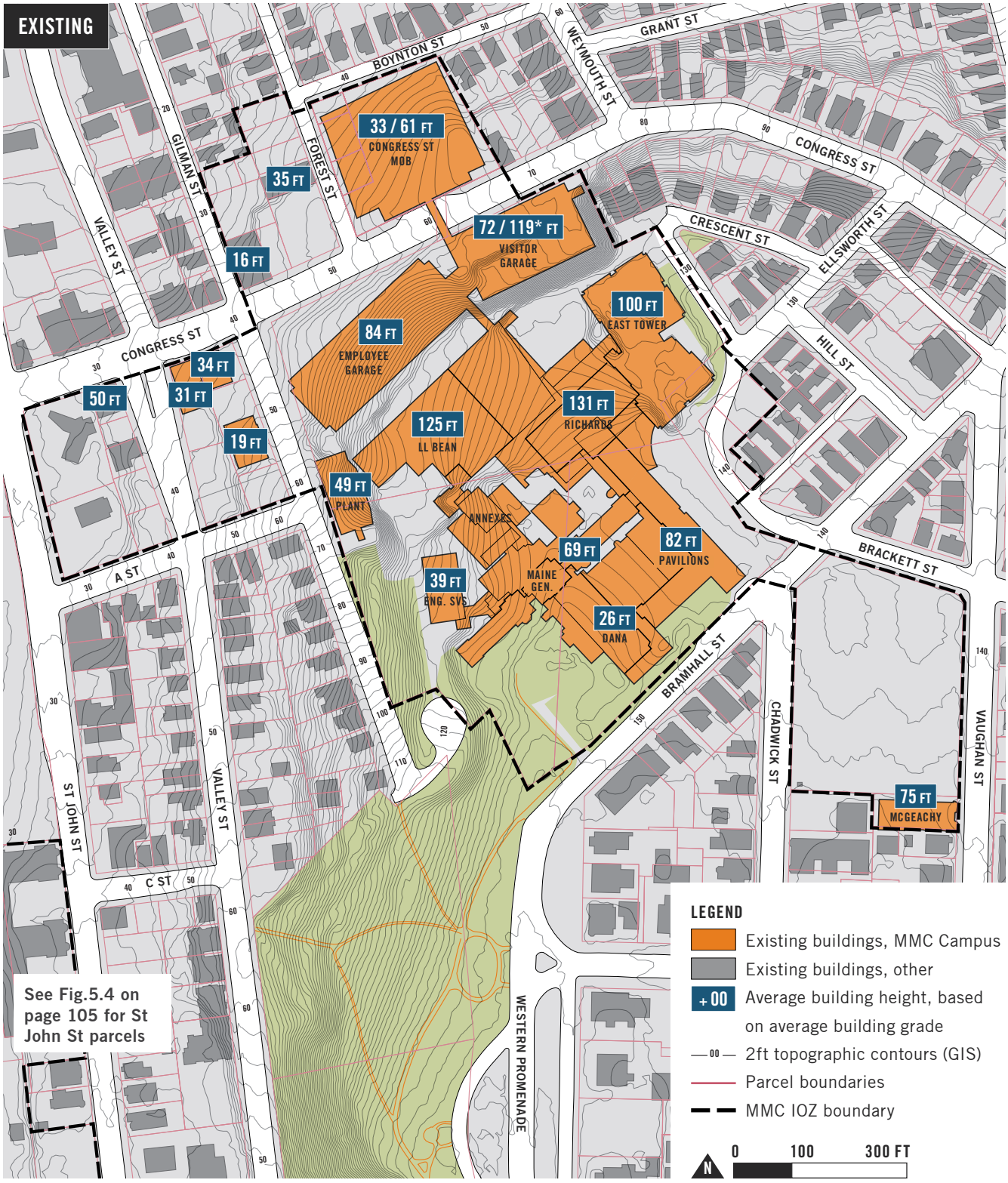
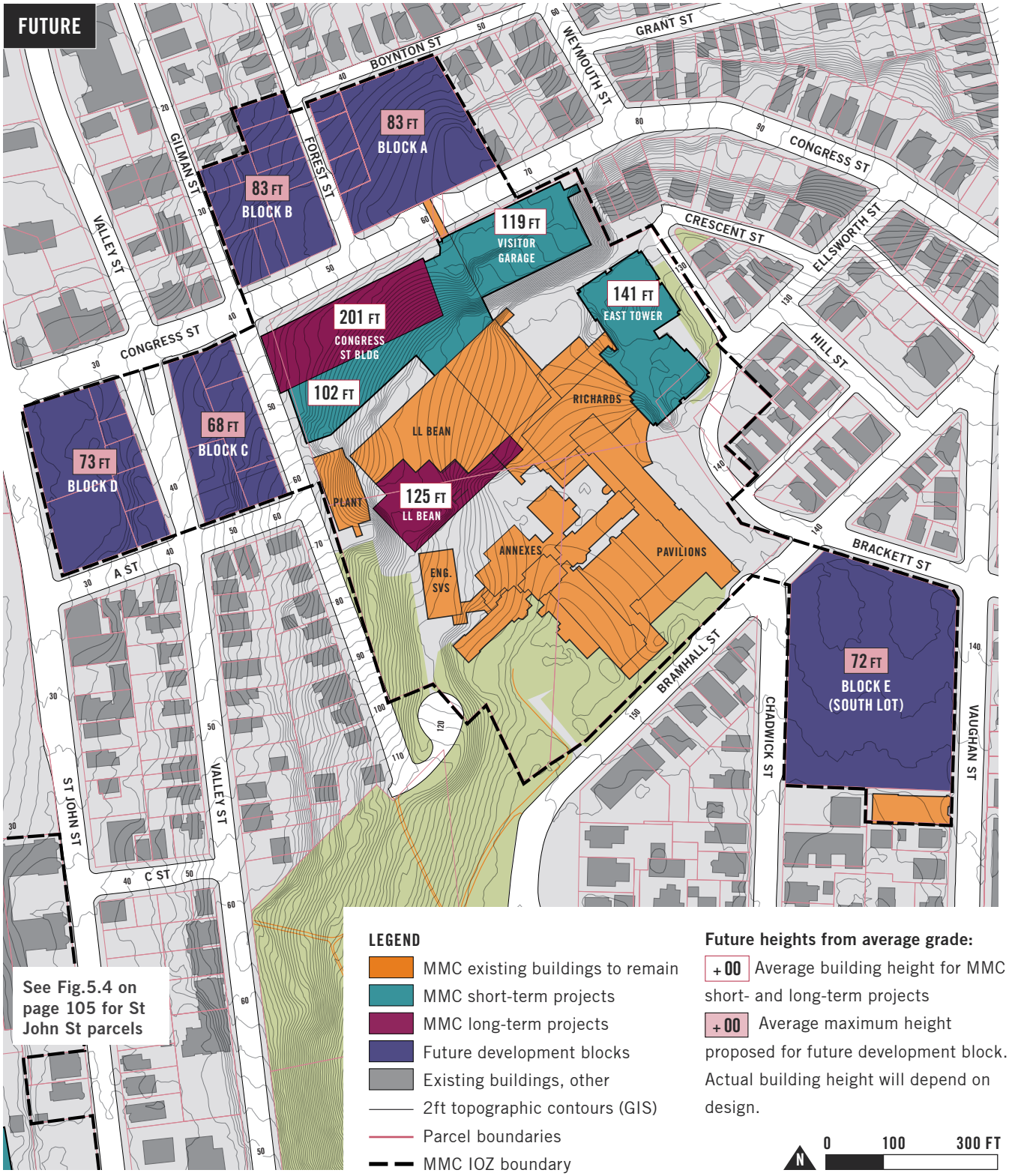


Fig.5.7 Existing Structures within IOZ: Average Building Heights at Average Grade



* 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

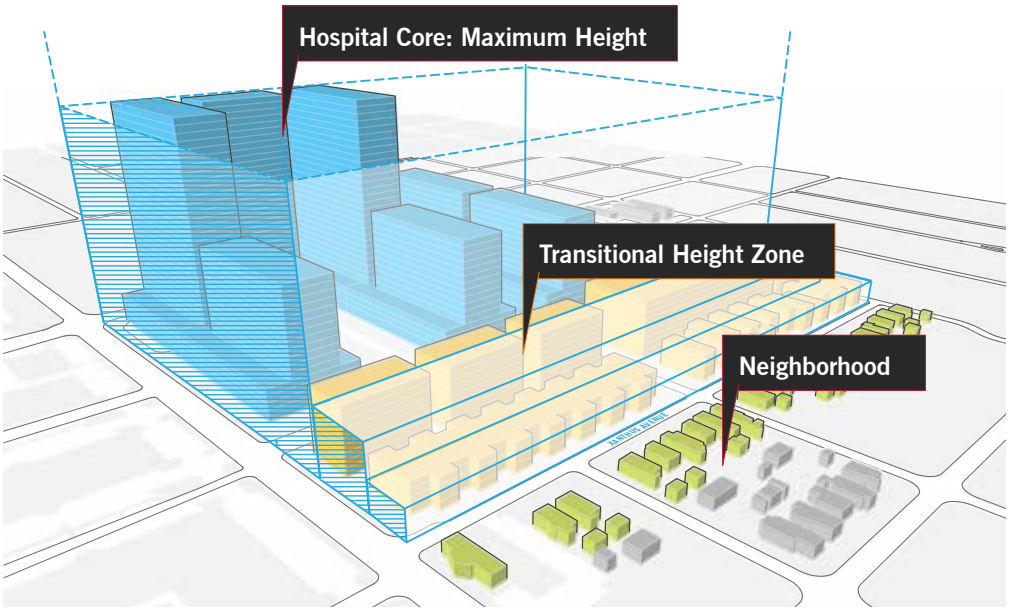


Fig.5.10 Map of proposed transitional zones within MMC IOZ

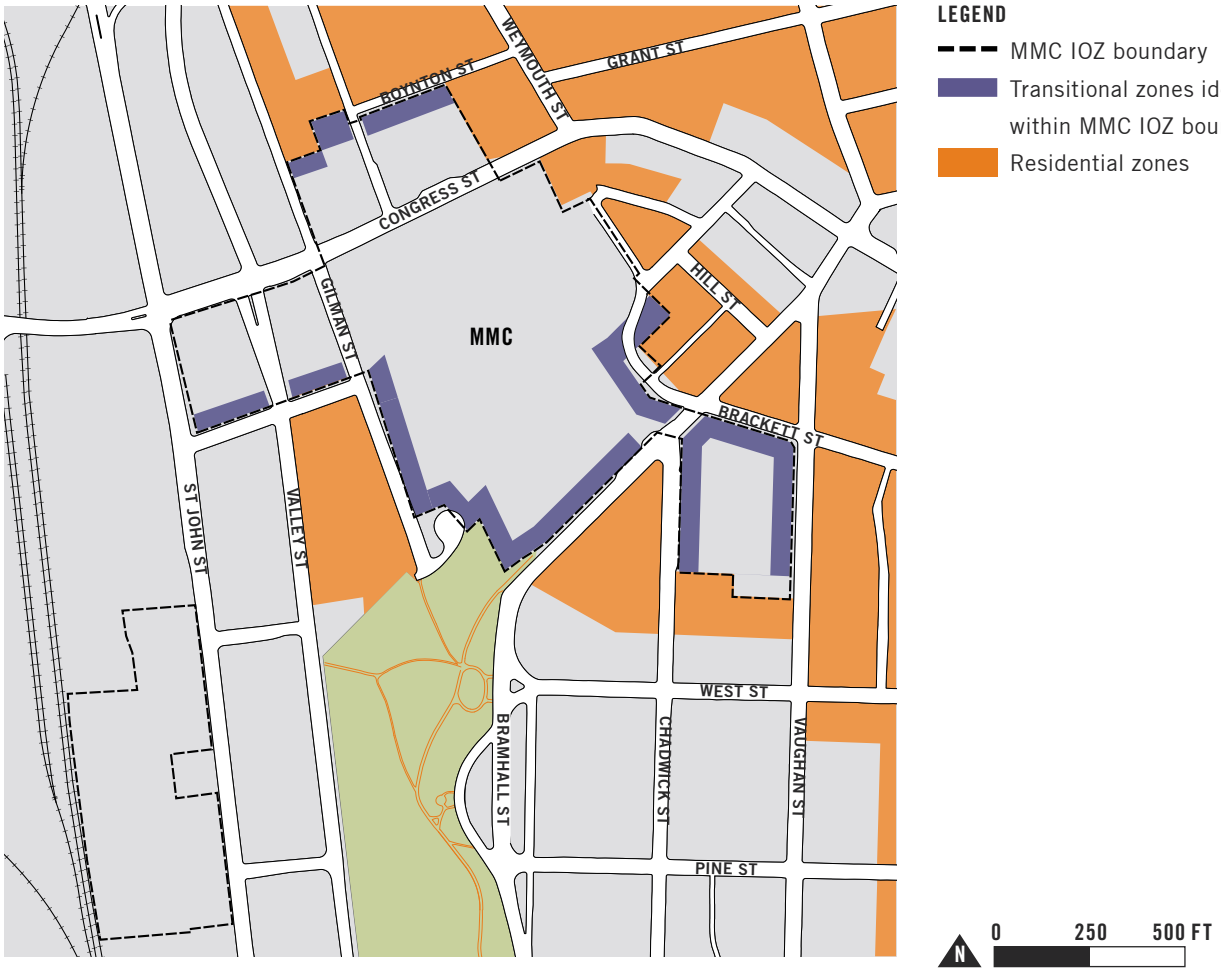
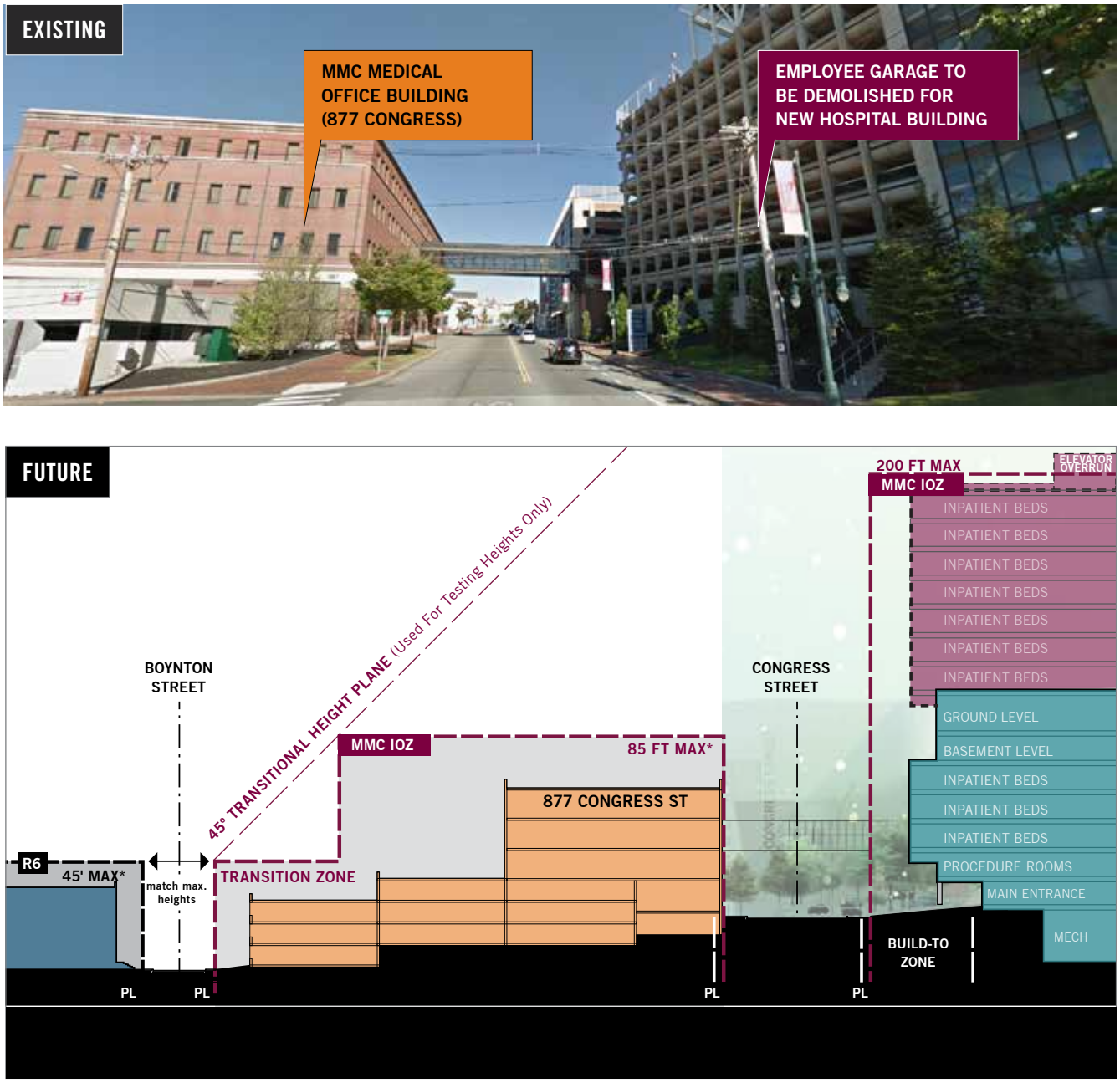
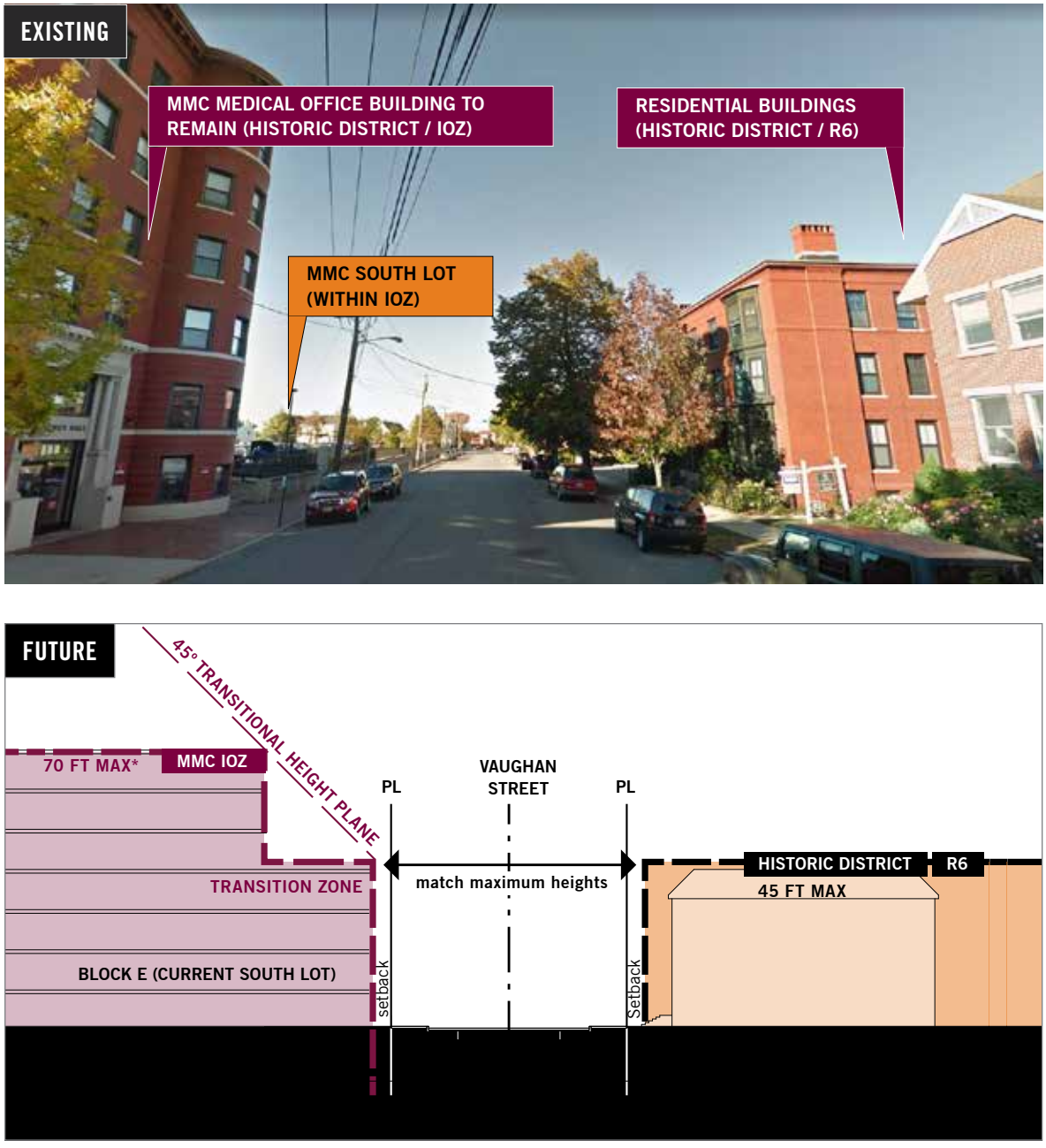


Fig.5.11 Cross-section illustrating height transition from MMC IOZ to Boynton St residential zone north of Congress St



* 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

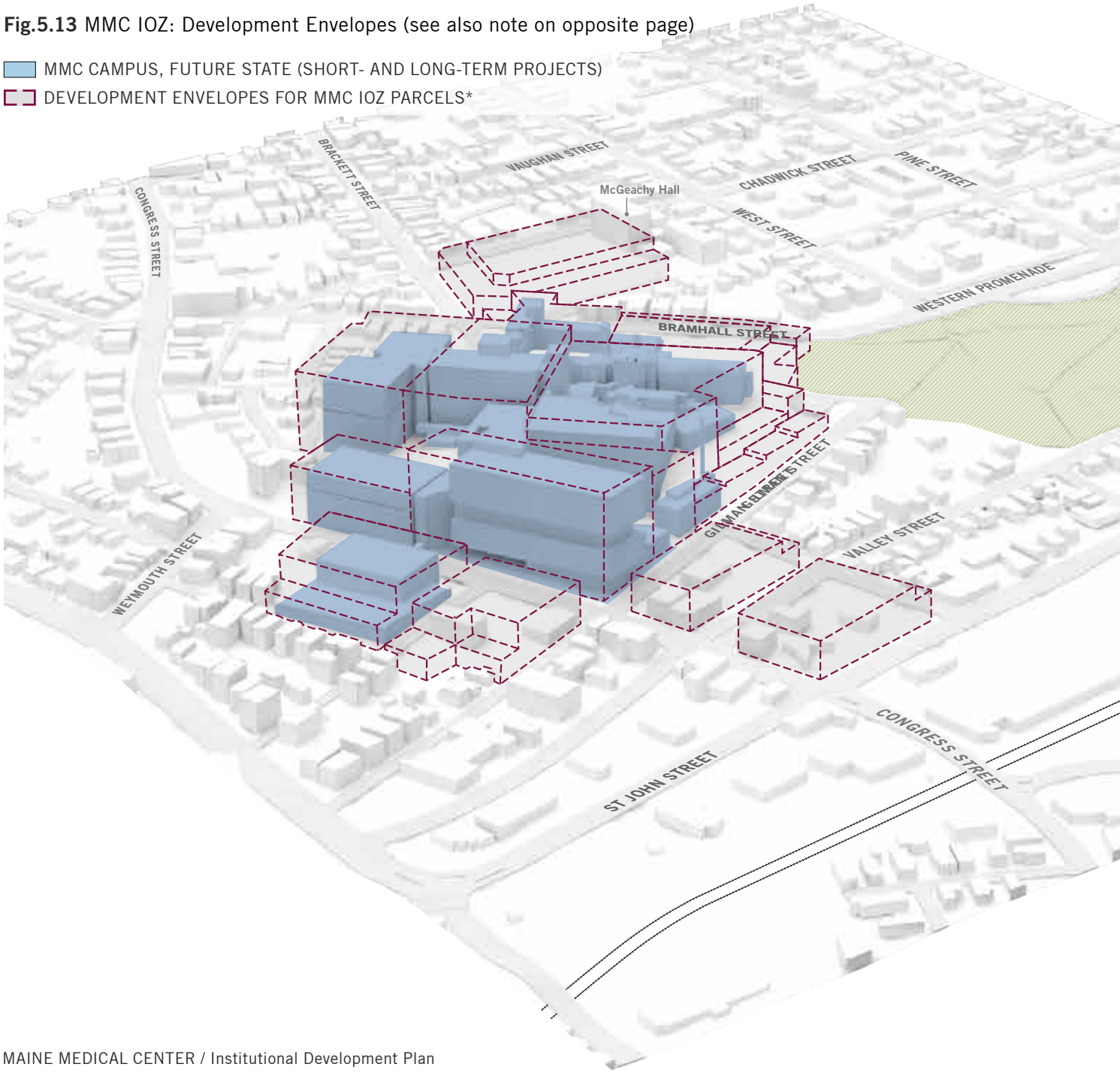


* Average maximum height needed to provide a 75-ft tall structure along Congress St given changes in topography across this site. See "Determining Maximum Heights" on page 104 for details on methodology.

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.

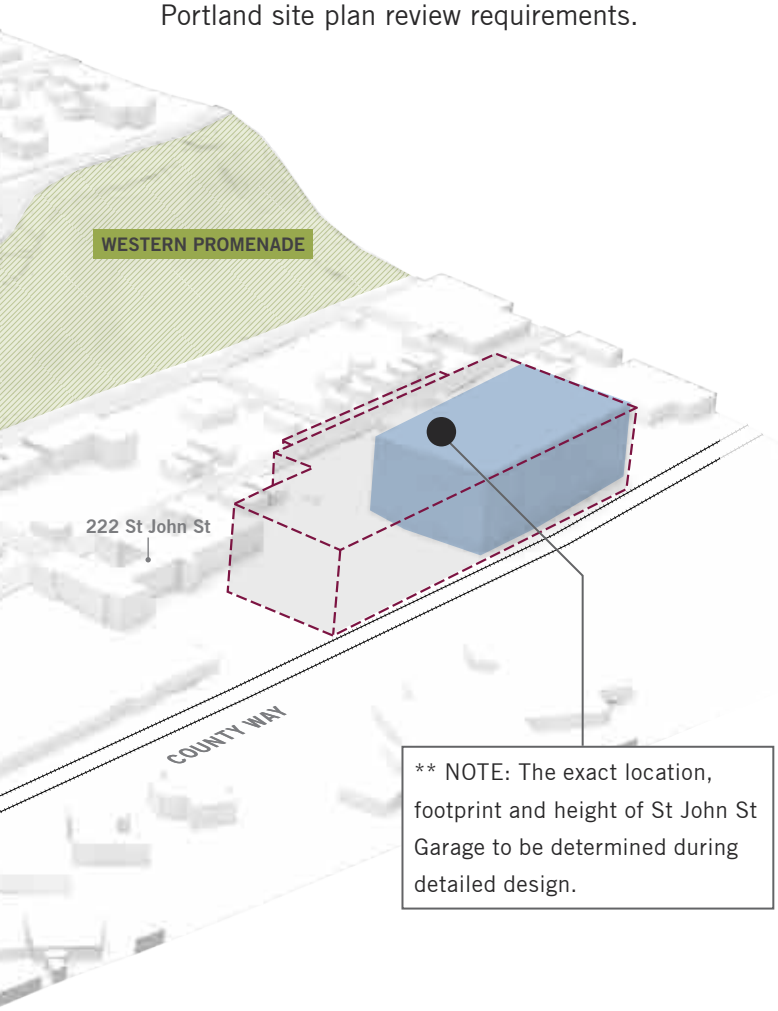


Table 5.1 MMC Potential Future Uses

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.

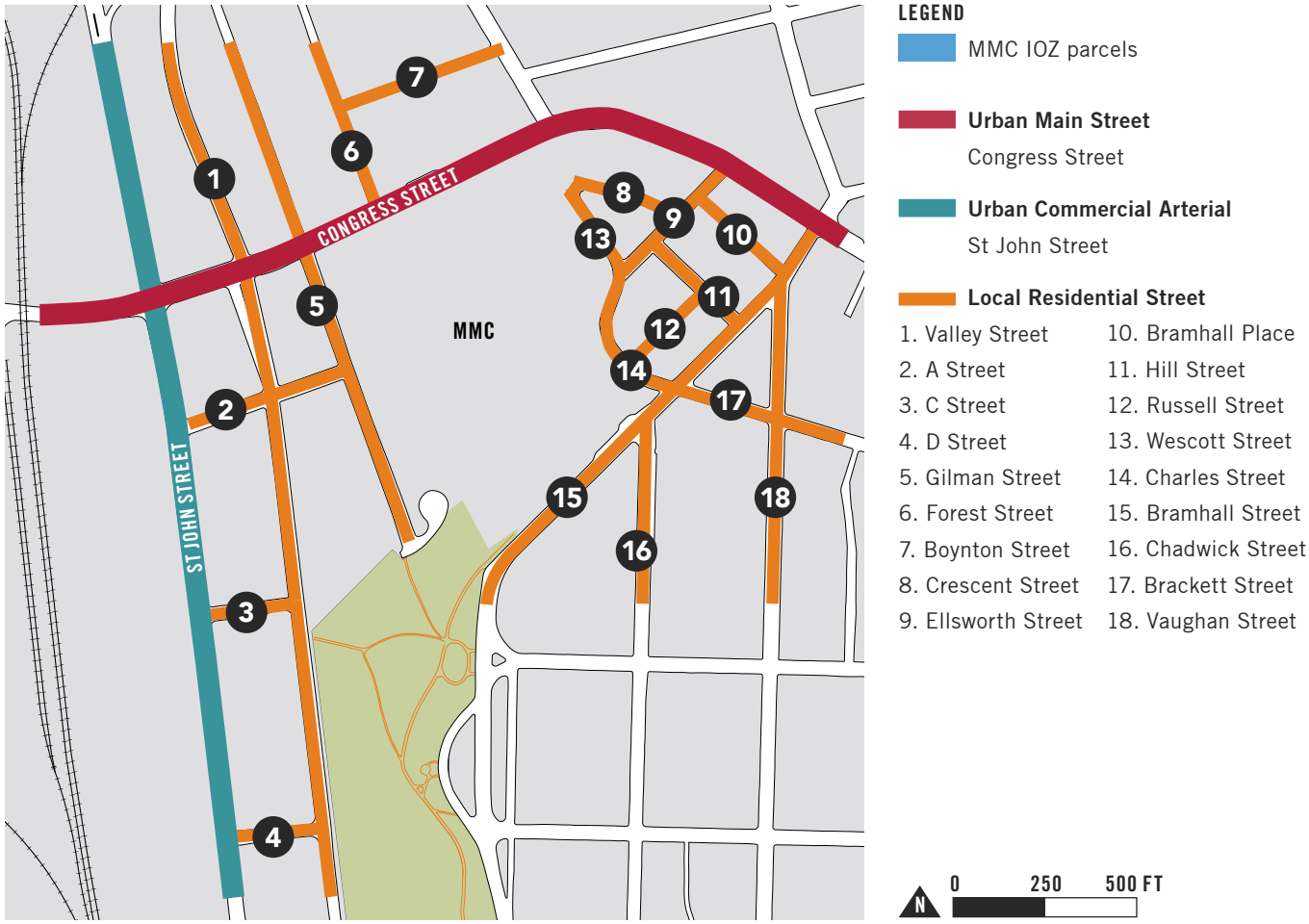
3. Building entrances will be oriented toward, located adjacent to, or accessible from, a sidewalk in a public right-of-way to create a pedestrian-oriented environment.

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

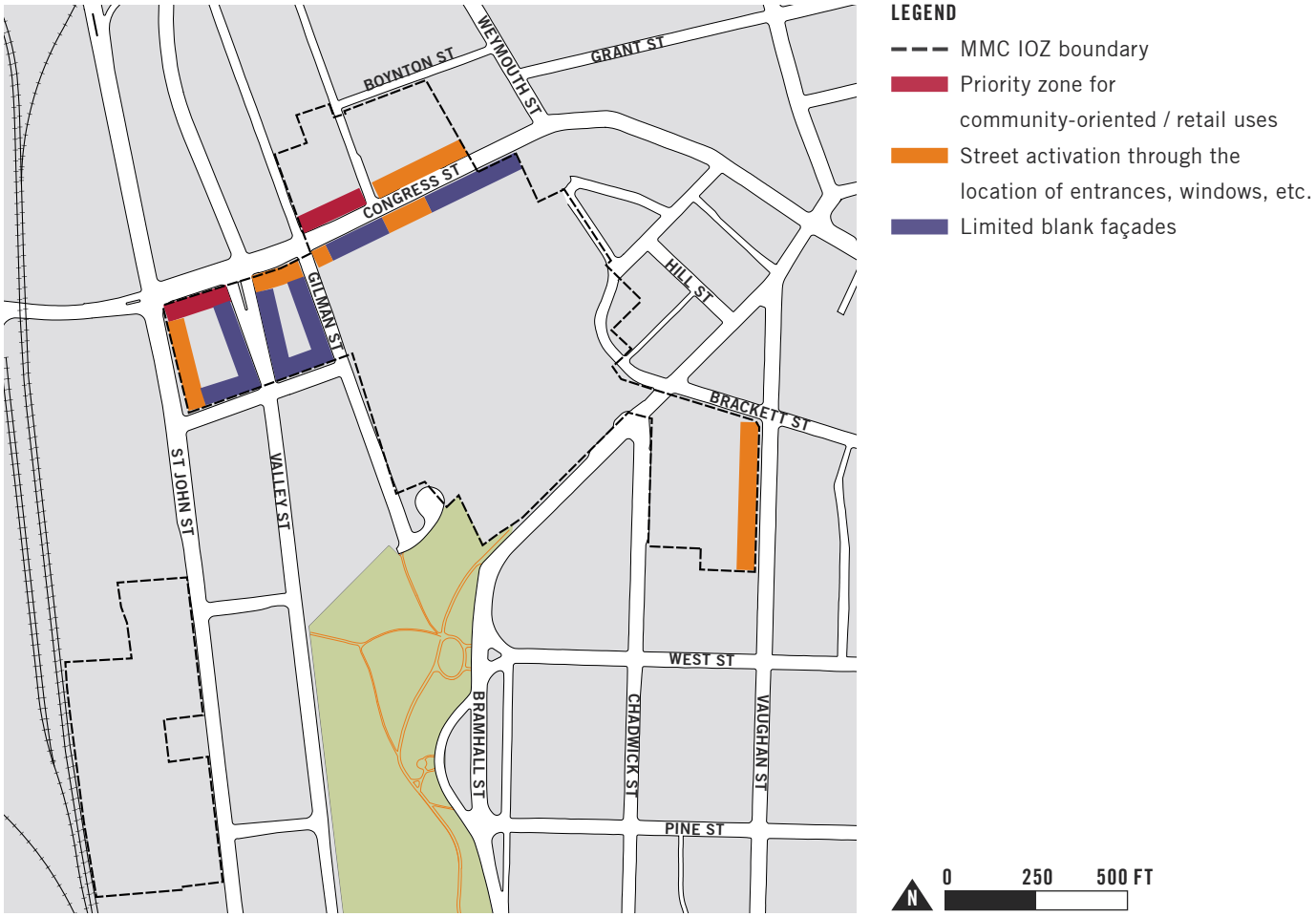


identified in the City's Comprehensive Plan. **Fig.5.15 on page 118** illustrates zones along Congress St deemed to be most suitable for community-oriented uses / retail.

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

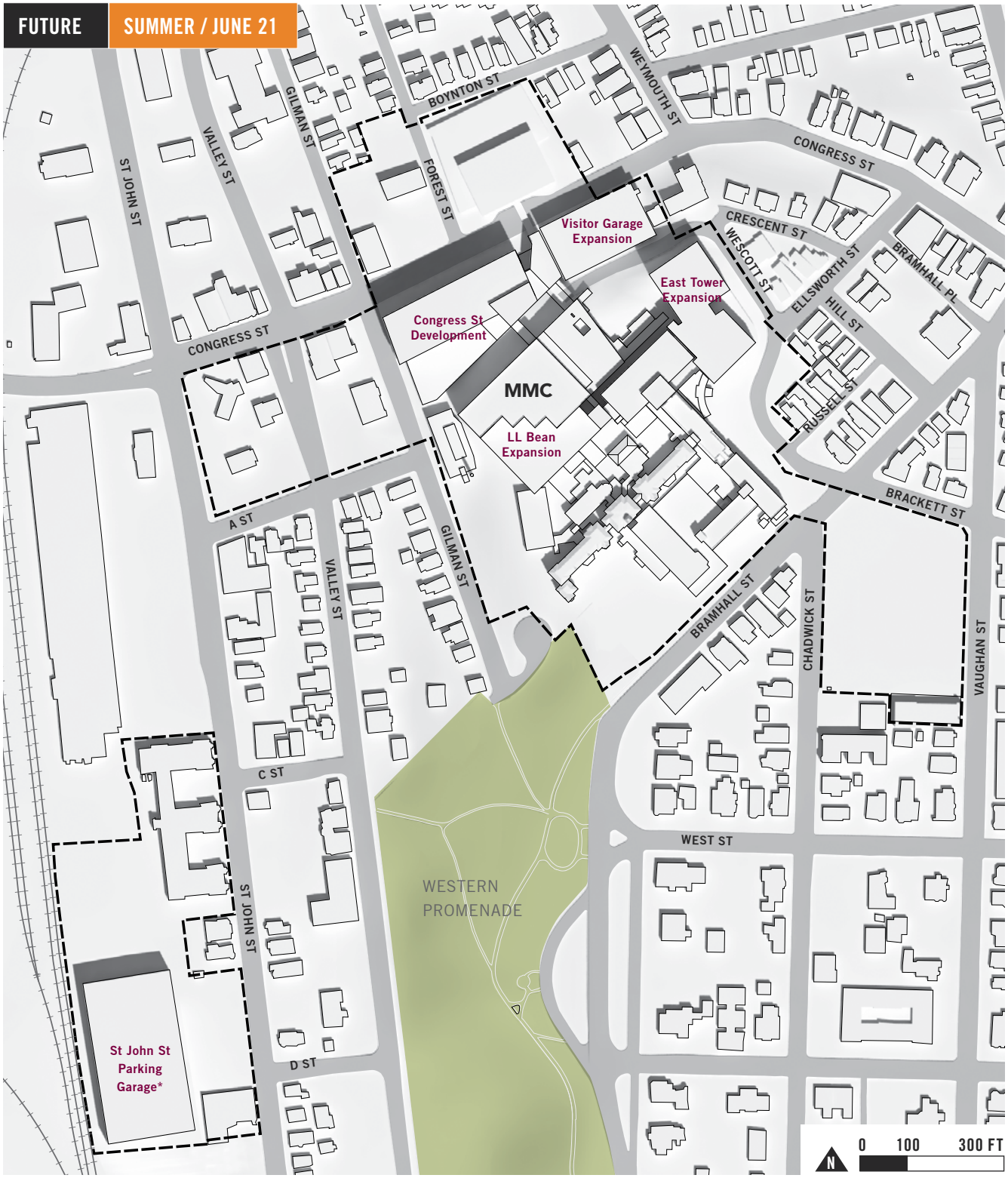
MMC understands the significance of historic and gateway viewsheds to the Portland community. The Maine General Hospital, a landmark civic building situated atop a hill, was designed to complement the sweeping views of the Fore River from the Western Promenade. Likewise, MMC will design new buildings 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

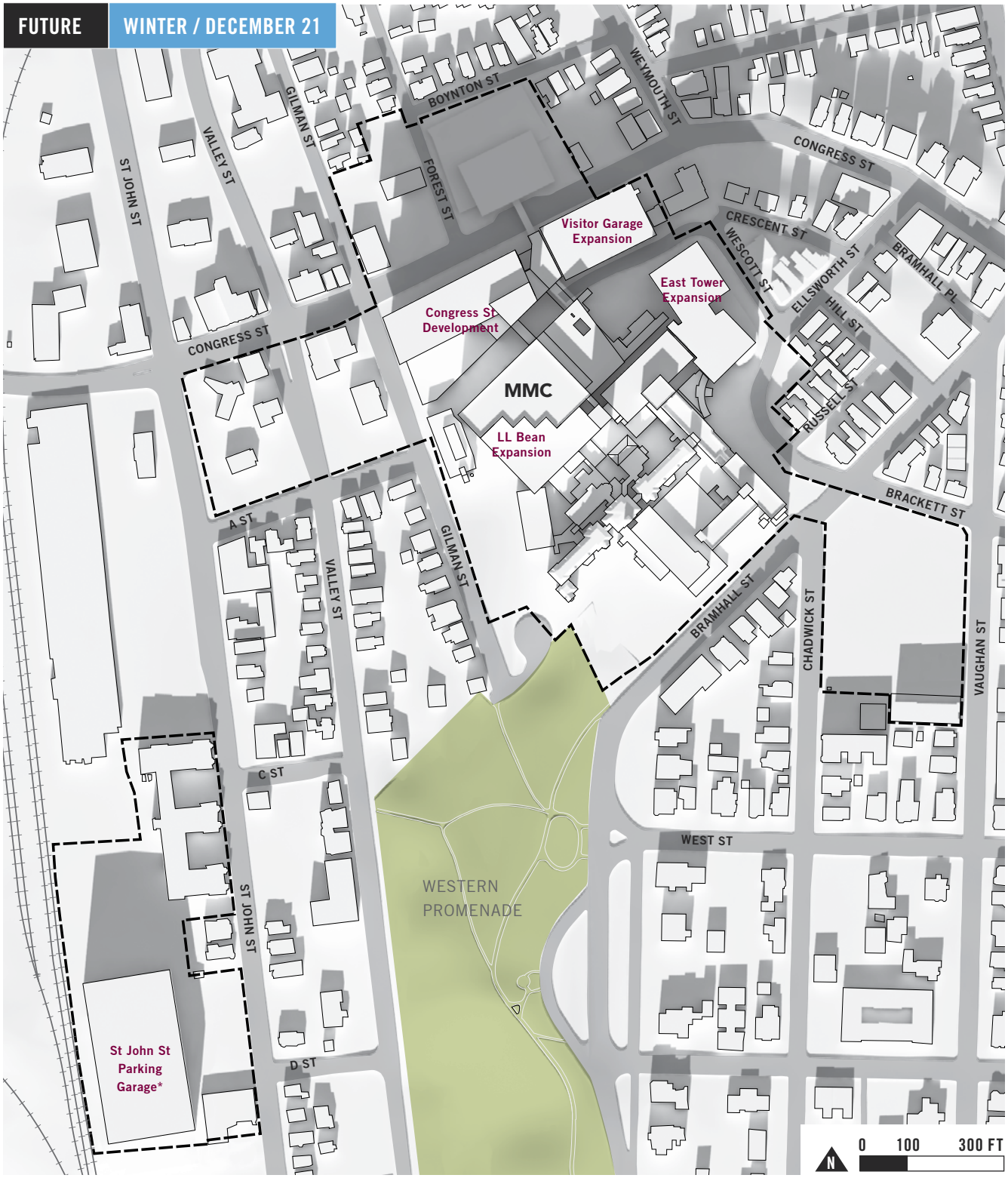
Fig.5.18 Computer-generated shadow study / Proposed long-term projects on June 21, noon



* 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

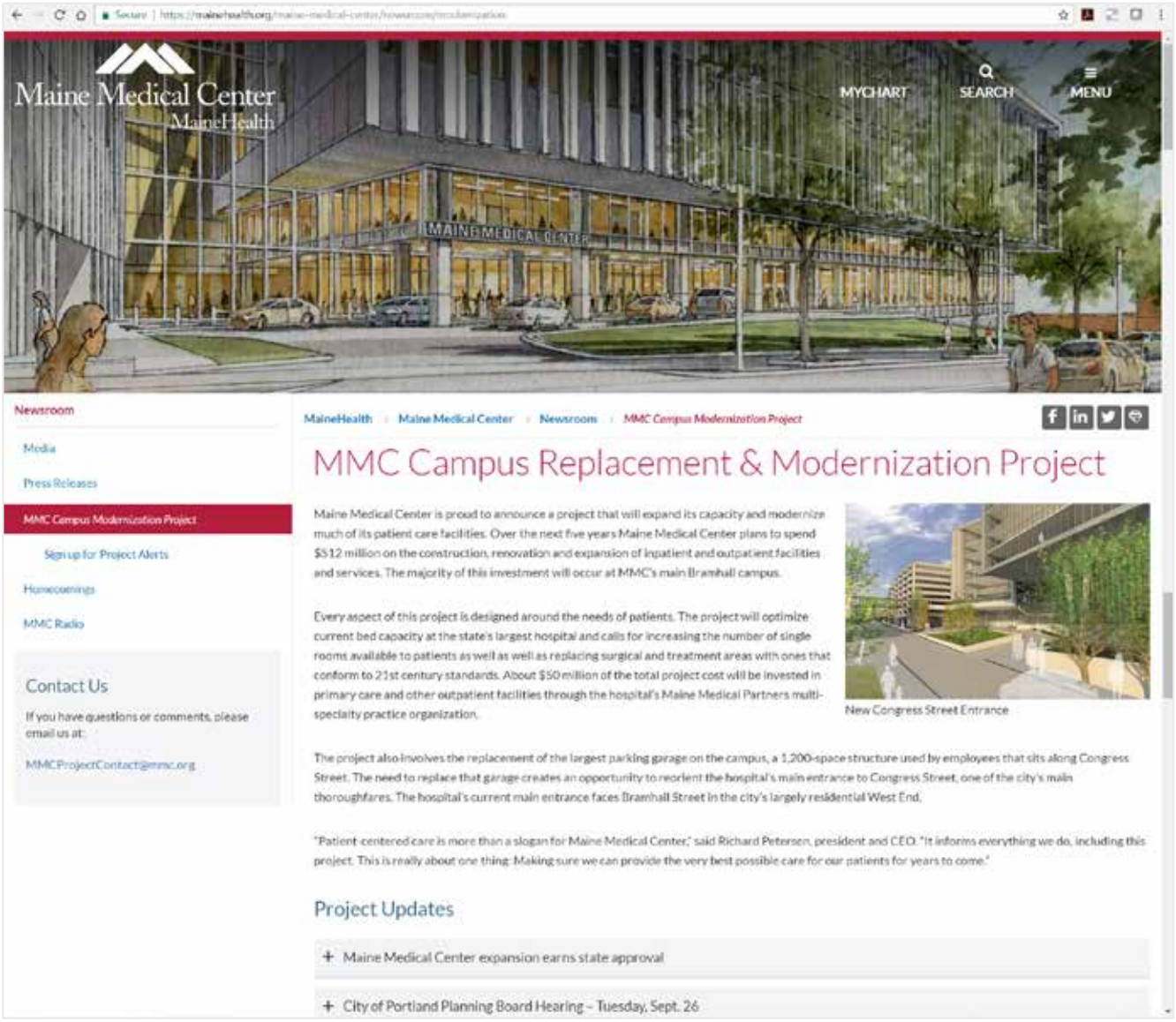
MMC will provide a method of communication between City of Portland, neighbors, and the construction team based on the anticipated impact of the construction project. For large construction projects, MMC will use its website, social media, and provide a dedicated email address to enable communication 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.

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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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PERKINS+WILL

Comment for March 27 MMC Expansion Meeting

Jenny MacKenzie <gabeat@msn.com> Mar 27, 2018 1:17 PM
Posted in group: **Planning Board**

To Planning Board Members,

I have concerns about the closing of Congress Street during Phase I expansion of MMC and have the following suggestions -

- Traffic be alerted by flashing signage on 295, in the vicinity of Exit 4 or 5 that an alternate route should be sought (suggest taking Exit 4 or Exit 6).
- Traffic coming off the Veteran's Bridge should be directed towards St. John Street or Fore River Parkway (concern about increased traffic on Valley). Another flashing sign would be helpful here.
- Traffic coming in-town via outer Congress and Exit 5 should be diverted to Park Street via St. John Street. I would like to see "Local Traffic Only" signs at the corner of Valley/Congress and Gilman/Congress to prevent excessive traffic from filtering down Forest and Boynton Streets.
- Increased monitoring of on-street parking violations during Sea Dogs games.
- Suspension of the weekly overnight parking restrictions in the surrounding streets (St. John, Valley, A, C, D, Gilman, Boynton, Weymouth, Forest, Park, etc.)

In addition, I would like an update from MMC on the plans for baseline inspections of the home owner's and business foundation walls in the surrounding neighborhoods. I am especially concerned about the construction of the employee garage on St. John, the new entrance on Congress and demolition of the old garage which could adversely impact properties.

Thank you.
Jenny MacKenzie
8 A Street

Portland Maine Yes. Google's good here.

Helen Donaldson <hcd@portlandmaine.gov>

Thank you! and follow up on the idea for the MMC garage

Emma Holder <pna@parksideneighborhood.org> Thu, Jun 7, 2018 at 10:57 AM
To: "Donaldson, Helen" <hcd@portlandmaine.gov>
Cc: Josef Kijewski <josef.kijewski@gmail.com>, hans breaux <hbreaux@me.com>, Tuck O'Brien <sgo@portlandmaine.gov>

Hi Nell,

Thanks for being part of the MMC meeting yesterday. It was heartening to have you there and to see some many folks around the table making this huge development move forward in an acceptable way.

I'd like to follow up on the idea I presented about the St. John st. X D Street "complete streets" striping near the proposed MMC garage. If the bike lane can be striped to merge with through-traffic at that intersection, it will get the bikes out of the right turn lane and avoid possible "right hook" injuries while allowing for smoother flow of motorists into the facility from St John st.

Would it be possible to ask the MMC-folk for another street-striping proposal with this in mind? As someone who rides 100% of the time, I can guarantee that cyclists would prefer not to be edged to the side of the road into the way of turning traffic.

AND - I am grateful that both sides of the street now contain bike lanes.

Please also consider a timed pedestrian walk light that gives pedestrians a 3-second head start before the traffic is allowed to move (as on St John X Park ave. under the trestle - it works really well.)

Thanks for all you and your team do for our fair city.

Cheers,

Emma

--
Parkside Prez
207 415 7204
http://parksideneighborhood.org

MMC's New Employee Parking Garage

Laura Noddin <laura.noddin@maine.edu> Jun 26, 2018 12:23 PM
Posted in group: **Planning and Urban Development**

To whom it may concern:

I'm writing in regard to the recent proposal to build MMC's new parking garage on St John Street. I have been a resident at 205 St John Street for the last two years (and hoping to stay for a third), and myself and my roommates rely on having on-street parking. My apartment building is 3 units, with 3 people per unit. Removing 13 parking spots from in front of our building would be incredibly inconvenient - as there are many other apartment buildings in this vicinity as well. Not to mention that these spots are nearly always filled -- if you drive around looking for a spot (say, during street cleaning) you will clearly see that the adjacent roads are filled with bumper to bumper parking as well.

I also believe that having on street parking available here is better for our local businesses. Take for example the Sea Dogs - many families opt for parking on this street to avoid the hassle of traffic. If we remove these street parking spots, we are essentially cutting off this part of Portland (and it's local businesses) to the public. From what I know about our city's values - I do not at all believe this is the right choice.

Thank you for taking the time to read this, and I hope you carefully consider the cons before making a decision.

Best,
Laura Noddin
205 St John Street, Apt #3

MMC proposal for parking garage 222 St. John Street

Beth Prosser <bprosser1@gmail.com> Jun 26, 2018 12:24 PM
Posted in group: **Planning and Urban Development**

Good Morning, please take this into consideration for the above-referenced proposal. Thanks very much!
Beth Prosser

Eliminating 13 parking spaces used by tenants, homeowners and businesses just isn't nice or neighborly. Unless I'm mistaken, it has not been reported in the newspaper that this new plan eliminates parking spaces and adds a street light at the D Street intersection with St. John Street.

I can appreciate Matt Wickenheiser's statement: "the goal is to consolidate parking into one spot, where employees can quickly and easily find a parking space, grab a shuttle and get to work." What about people who live and work directly across from this proposed private garage? What about landlords who have rentals and don't have off-street parking? Many of these people work late into the evening or early morning. Can they not easily find a parking space and go to work or home safely and easily?

I'm a landlord and own a business directly across the street. Employees park on St. John Street as do tenants and homeowners. Valley Street parking spots are usually always full and D Street is limited to 3 spaces on one side and 2-3 on the other side with limited one hour parking. With a proposed sidewalk and a street light at this intersection, parking may certainly become even more limited or possibly eliminated.

Jeff Sanders stated "This new plan meets the needs of our employees and addresses our neighbors' concerns." Taking away these parking spots do not mesh with this neighborhood as part of Portland's "institutional overlay zone." How will he meet MMC's neighbors' concerns by taking away much needed street parking?

It seems to me that for MMC's 2,450 spaced proposed parking garage, current street parking should not be eliminated. Will MMC give up 13 first floor spots in their garage in exchange for the ones they want to take away from the city residents in this neighborhood?

Concern with elimination of 13 on-street parking spaces with regards to the MMC Employee Parking Garage Project on St. John Street

DC Heald <deborah.heald@gmail.com> Jun 26, 2018 4:51 PM
Posted in group: **Planning and Urban Development**

Dear Planning Board Members,
Last night MMC held a neighborhood meeting at MMC's Dana Center to share the plans for the new Employee Parking Garage on St. John St.

This was the first time property owners adjacent to and near the D Street and St. John Street intersection learned of the addition of a traffic light there and the elimination of 13 on-street parking spaces (northbound side of St. John just before and after where D Street intersects with St. John).

When property owners asked about the 13 parking space eliminations, MMC, and others said they assessed/studied that area of the neighborhood and concluded that the elimination of the on-street parking would not have any negative impact.

As it turns out, this assumption by MMC and others, is incorrect. It does have a negative impact.

Property owners have asked MMC to revisit this concern and to work with them to find a way or ways to remediate the impact of this decrease in on-street parking in front of their properties.

Most sincerely,
Deborah Heald (resident/property owner)
213 St. John Street

Google Groups

Maine Med submits Phase 2 site plan for 2,450-space parking garage

Flexon, Dana <Dana.Flexon@consolidated.com> Jun 27, 2018 1:01 PM
Posted in group: **Planning Board**

Good afternoon

I am writing to you to express my concern over Maine Med's proposed plan for a new 2,450-space parking garage to be built on Saint John Street in Portland. I currently reside on Saint John Street with my husband and 18 month old. Street parking is currently extremely limited. With the construction of the new garage, there will be a loss of at least thirteen parking places. Does the city have plans to replace the parking spots with safe and convenient spaces for the residents? I totally understand the need for safe and convenient parking for Maine Med employees but as a resident, I also need safe and convenient parking. What are the plans?

Thanks

DANA FLEXON | Manager Access Management

D: 207-535-4169 | C: 603-657-8846

dana.flexon@consolidated.com

consolidated.com | NASDAQ: CNSL

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Google Groups

St John St Parking

Gregory Durgin <GWDurgin@mmc.org> Jun 28, 2018 4:48 AM
Posted in group: **Planning and Urban Development**

To whom it may concern,

I have recently learned that there are plans to eliminate 13 street parking spaces on St. John St as a part of the Maine Medical Center employee parking garage construction. Many of these spaces are currently used by myself and other residents of Portland as a part of daily life, and their loss would be a massive one. As I'm sure you are aware, parking within Portland particularly during the winter, is difficult enough with the scant spaces that exist and further removing parking is not going to help this issue for locals. Eliminating these parking spaces is also damaging to local business as it limits accessibility to those businesses. This is, for obvious reasons, undesirable.

I hope that if the parking garage proposal is approved, it can go forward without eliminating these crucial parking spaces. As residents of Portland, we also require parking and if no other alternative is afforded it will cause undue hardship and difficulty. Please take into consideration the needs of the residents and businesses of Portland that are not Maine Medical Center.

Regards,

Greg Durgin

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MAINE MEDICAL CENTER

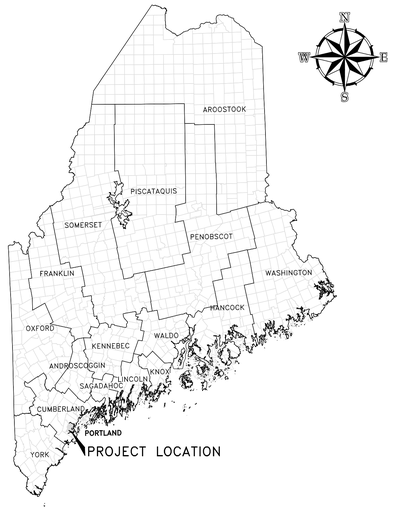
PORTLAND, ME 04102

ST. JOHN STREET EMPLOYEE PARKING GARAGE

W&C PROJECT NO. 0231158.00

JUNE 22, 2018

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

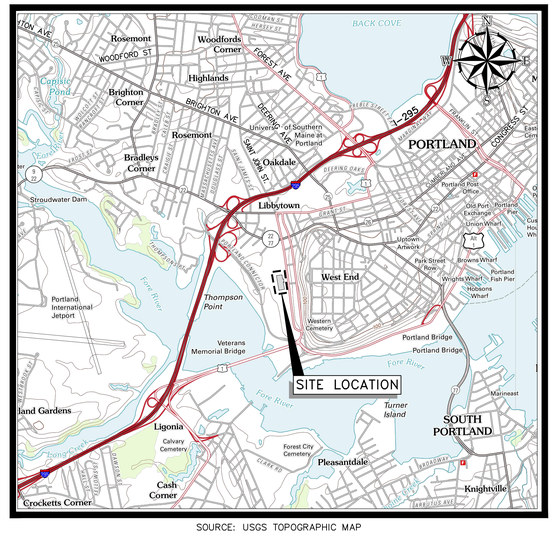
50 0 50 100
scale mile

DAVID A SENUS 10791
STATE OF MAINE
PROFESSIONAL ENGINEER
6/22/2018

WOODARD & CURRAN

41 Hutchins Drive | Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS



SOURCE: USGS TOPOGRAPHIC MAP

SITE LOCATION MAP

½ 0 ½ 1
scale mile

2000 0 2000 4000
scale feet

\\woodardcurran.net\shared\Projects\0231158.00 Maine Med Ctr - Parking Garage\Working\Drawings\Wdesign Phase\0231158 G000.dwg, Jun 22, 2018 - 7:54am

GENERAL NOTES:

1. EXISTING CONDITIONS, TOPOGRAPHIC INFORMATION, UTILITY LOCATIONS & PROPERTY LINE INFORMATION SHOWN HEREON HAVE BEEN PROVIDED FROM A FIELD SURVEY PREPARED BY OWEN HASKELL, INC., DATED NOV. 16, 2016 & UPDATED MARCH 26, 2018.
2. ELEVATIONS REFERENCED TO VERTICAL DATUM: NGVD29/ CITY DATUM.
3. ELEVATIONS REFERENCED TO HORIZONTAL DATUM: WEST, U.S. FOOT STATE PLANE NAD83.
4. 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.
5. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
6. PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE BY A LICENSED LAND SURVEYOR ACCEPTABLE TO THE CITY. PROPERTY MONUMENTS SHALL BE RESET IN ACCORDANCE WITH CITY OF PORTLAND STANDARDS.
7. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN WRITING BY CITY AND/OR LAND OWNER.
8. 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, AS SPECIFIED IN THE CITY OF PORTLAND TECHNICAL MANUAL.
9. IF CONTRACTOR PROPOSES TO TEMPORARILY STOCKPILE ANY SURPLUS SOIL AND ROCK IN THE CITY OF PORTLAND, THE CONTRACTOR SHALL OBTAIN APPROVAL FOR EACH STOCKPILE LOCATION FROM THE ENGINEER. IF CONTRACTOR PROPOSES TO PERMANENTLY STOCKPILE ANY SURPLUS SOIL AND ROCK ON PROPERTY IN THE CITY OF PORTLAND, THE CONTRACTOR MUST OBTAIN ANY SITE PLAN PERMITS REQUIRED FROM THE CITY PLANNING AUTHORITY OR ANY FILL PERMITS REQUIRED FROM MDEP OR U.S. ARMY CORPS OF ENGINEERS. BOTH TEMPORARY AND PERMANENT STOCKPILE LOCATIONS SHALL MEET THE APPLICABLE SETBACK REQUIREMENTS IN THE CITY LAND USE CODE AND SHALL RECEIVE PROPER STABILIZATION AND EROSION & SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH APPROVED SOIL EROSION & WATER POLLUTION CONTROL PLAN.
10. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING SHALL BE HELD AT THE PROJECT SITE WITH THE CONTRACTOR, ENGINEER, CITY OF PORTLAND DEVELOPMENT REVIEW COORDINATOR, CITY OF PORTLAND DEPARTMENT OF PUBLIC WORKS 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.
11. CONTRACTOR IS RESPONSIBLE FOR ALL SNOW REMOVAL AND WINTER MAINTENANCE OF ACCESS PATHS WITHIN THE LIMIT OF WORK.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE SITE DRAWINGS, INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM INFRASTRUCTURE, SIGNS, UTILITY POLES, FENCES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COSTS SHALL BE INCURRED BY THE CONTRACTOR.
13. LAND OUTSIDE THE PROPOSED LIMIT OF WORK SHALL NOT BE DISTURBED BY THE CONTRACTOR.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
15. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.
16. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKWAYS, STREETS, PAVEMENTS, CURBING, TREES, PLANTINGS, LAWN, FENCING TO REMAIN ON OR OFF THE PREMISES, AND SHALL REPAIR AND REPLACE AT HIS/HER OWN EXPENSE, AS DIRECTED BY THE ENGINEER, ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.
17. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
18. SAWCUTS IN EXISTING PAVEMENT SHALL BE SMOOTH AND STRAIGHT. EXISTING PAVEMENT SHALL BE SAWCUT AND BUTTED TO THE NEW PAVEMENT. NO FEATHERING OF PAVEMENT WILL BE PERMITTED.
19. WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE CITY OF PORTLAND AND STATE REQUIREMENTS.
20. IF IMPORTED FILL MATERIAL IS REQUIRED, IT SHALL BE CERTIFIED IN WRITING BY LICENSED GEOLOGIST OR ENGINEER AS NON-CONTAMINATED, CLEAN FILL SUITABLE FOR THE INTENDED USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTING OF ENVIRONMENTAL PARAMETERS AS OUTLINED IN THE PROJECT SPECIFICATIONS.
21. RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH (GRAVEL, PAVEMENT, RIPRAP, GRASS, ETC.) UNLESS OTHERWISE NOTED ON PLANS. RESTORATION OF ALL AREAS DAMAGED BY CONTRACTOR SHALL BE INCIDENTAL TO THE PROJECT.
22. ALL CURB DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND SPECIFICATIONS. COST IS INCIDENTAL TO CONTRACT.
23. ALL MATERIAL SHALL BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.
24. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION.
25. ALL FULL DEPTH PAVEMENT REPLACEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS.
26. ALL WORK WITHIN THE RIGHT OF WAY OF CITY STREETS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSED TRAFFIC CONTROL PLANS TO THE TRAFFIC ENGINEER AT LEAST 7 DAYS BEFORE BEGINNING CONSTRUCTION IN ANY STREET. THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER, WHO MAY ATTACH SPECIAL CONDITIONS TO, OR REQUIRE MODIFICATIONS OF, THE TRAFFIC CONTROL PLAN. WORK SHALL NOT BEGIN UNTIL THE PLAN IS APPROVED BY THE TRAFFIC ENGINEER.
27. RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, BARRIERS, FENCES, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. NO TRENCH SHALL BE LEFT OPEN DURING NON-WORKING HOURS. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR, DURING BOTH WORKING AND NON-WORKING HOURS.
28. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
29. THE CONTRACTOR SHALL OBTAIN A CITY STREET OPENING PERMIT BEFORE BEGINNING CONSTRUCTION. THE CONTRACTOR WILL ALSO BE REQUIRED TO HAVE A CURRENT EXCAVATOR'S LICENSE IN THE CITY.
30. ALL WORK IN THE PUBLIC R.O.W. SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLES VI, VII, AND IX OF CHAPTER 25-STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES OF THE CITY OF PORTLAND CODE OF ORDINANCES.
31. ALL SEWER CONSTRUCTION IN THE PUBLIC WAY SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLE II OF CHAPTER 24-SEWERS OF THE CITY OF PORTLAND CODE OF ORDINANCES.
32. CONTACT CITY OF PORTLAND ARBORIST AND ENGINEER PRIOR TO CUTTING ROOTS, TRIMMING BRANCHES, OR DISTURBING TREES WITHIN THE R.O.W. THAT NOT HAVE BEEN NOTED FOR REMOVAL ON THE PLANS.
33. ST. JOHN STREET IS A MORATORIUM STREET. EXCAVATION WITHIN STREET WILL NOT BE ALLOWED UNTIL 6-2-2022, EXCEPT IN ACCORDANCE WITH THE CITY OF PORTLAND FIVE-YEAR MORATORIUM STREET RESTORATION REQUIREMENTS AS OUTLINED WITHIN THE RULES AND REGULATIONS FOR EXCAVATION ACTIVITY WITHIN THE PUBLIC RIGHT-OF-WAY. THE PERMANENT PAVEMENT RESTORATION LENGTH SHALL BE 20' IN BOTH DIRECTIONS FROM FURTHEST EDGES OF EXCAVATION AND THE PERMANENT PAVEMENT RESTORATION WIDTH SHALL BE THE ENTIRE WIDTH OF THE PAVEMENT STREET. THE PERMANENT PAVEMENT RESTORATION DEPTH SHALL BE 2" (ARTERIAL STREET). PREPARATION FOR PERMANENT RESTORATION SHALL BE ACCOMPLISHED BY MACHINE GRINDING THE EXISTING PAVEMENT TO MEET THE DEPTH REQUIREMENT VERTICAL SURFACES OF MACHINE GROUND PAVEMENT SHALL BE PERPENDICULAR TO THE PAVEMENT SURFACE.
34. CONTRACTOR SHALL PROVIDE AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THESE PLANS AND THE LATEST EDITION OF THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S BEST MANAGEMENT PRACTICES MANUAL. KEEP ALL STREETS FREE OF DUST, MUD, AND DEBRIS. STREETS AND WALKWAYS SHALL BE SWEPT REGULARLY, AND TEMPORARY CONSTRUCTION ENTRANCES SHALL BE UTILIZED DURING CONSTRUCTION.
35. CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN ACCORDANCE WITH REQUIREMENTS OUTLINED WITHIN THE MAINE CONSTRUCTION GENERAL PERMIT. CONTRACTOR SHALL FILE A NOTICE OF TERMINATION WITH PHOTOGRAPHS AND REQUIRED ATTACHMENTS TO THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION UPON COMPLETION OF THE PROJECT. A DRAFT OF THE NOTICE WILL BE PROVIDED TO THE OWNER AND THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO SUBMISSION. A COPY OF THE NOTICE CAN BE OBTAINED AT WWW.MAINE.GOV/DEP/LAND/STORMWATER/CONSTRUCTION.HTML.
36. CONTRACTOR SHALL MAINTAIN EROSION CONTROL AND STORMWATER POLLUTION PREVENTION SYSTEMS IN COMPLIANCE WITH THE REQUIREMENTS OF THE MAINE CONSTRUCTION GENERAL PERMIT (MCGP). CONTRACTOR SHALL CONDUCT AND MAINTAIN RECORDS OF EROSION CONTROL INSPECTIONS PER THE NOTICE OF INTENT TO COMPLY WITH THE MAINE CONSTRUCTION GENERAL PERMIT. CONTRACTOR SHALL PREPARE AND SUBMIT A NOTICE OF TERMINATION TO THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, UPON COMPLETION OF THE CONSTRUCTION PROJECT. SUBMIT A COPY OF THE INSPECTION RECORDS AND THE NOTICE OF TERMINATION TO THE OWNER AND ARCHITECT. PROVIDE CRANE PADS PER DIRECTION OF CONSIGLI.

DEMOLITION NOTES:

1. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE CITY OF PORTLAND, AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
2. THE WORD 'DEMOLISH" SHALL IMPLY THE FULL REMOVAL AND PROPER DISPOSAL OF THE ITEM AND ANY APPURTENANT ITEMS, AS NOTED, OR AS DIRECTED BY THE OWNER OR THEIR REPRESENTATIVE. THE OWNER RETAINS THE RIGHT TO KEEP ANY ITEM NOTED FOR REMOVAL OR DEMOLITION AT THE REQUEST OF THE OWNER OR THEIR REPRESENTATIVE.
3. CONSTRUCTION/DEMOLITION DEBRIS NOT APPROVED FOR REUSE ON-SITE, SHALL BE REMOVED AND DISPOSED OFF SITE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION. WASTE MANIFEST FORMS DOCUMENTING PROPER OFF-SITE DISPOSAL SHALL BE PROVIDED TO THE SITE/CIVIL ENGINEER AND THE CITY OF PORTLAND.
4. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE DEMOLISHED OR TO REMAIN PROTECTED DURING CONSTRUCTION. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF THE CONFLICT.
5. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES TO REMAIN. ANY TEMPORARY SHUT DOWNS REQUIRED TO FACILITATE THE PROPOSED CONSTRUCTION, WHICH MAY AFFECT USES ON ADJACENT PROPERTIES SHALL BE COORDINATED BY THE CONTRACTOR, THE CITY OF PORTLAND AND APPLICABLE UTILITY.
6. CONTRACTOR SHALL REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL PROCEED WITH CAUTION WITHIN THE PROPOSED WORK AREA TO PREVENT ANY INTERRUPTION TO EXISTING UTILITY SERVICE.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) PLAN IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.
8. CONTRACTOR SHALL COVER CONSTRUCTION DUMPSTERS AND ROLL-OFF CONTAINERS, AND STORE ALL CONSTRUCTION CHEMICALS INSIDE THE CONSTRUCTION TRAILER OR UNDER A COVERED AREA DURING PERIODS WHEN CONSTRUCTION CEASES.

LAYOUT AND MATERIALS NOTES:

1. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

GRADING AND DRAINAGE NOTES:

1. CASTINGS FOR EXISTING STRUCTURES TO REMAIN AND PROPOSED STRUCTURES SHALL BE SET TO THE PROPOSED ELEVATIONS SHOWN ON THE DRAWINGS.
2. UNSUITABLE FILL AND BACKFILL MATERIALS ARE MATERIALS CONTAINING EXCESSIVE AMOUNT OF WATER, PLASTIC, CLAY, VEGETATION, ORGANIC MATTER, DEBRIS, PAVEMENT, STONES OR BOULDERS OVER 12 INCHES IN GREATEST DIMENSION, FROZEN MATERIAL, AND MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, WILL NOT PROVIDE A SUITABLE FOUNDATION OR SUBGRADE.
3. SUITABLE SOIL SHALL BE PLACED IN LAYERS TO THE REQUIRED ELEVATIONS AS SHOWN ON THE DRAWINGS. FILL, BACKFILL AND COMPACT TO PRODUCE MINIMUM SUBSEQUENT SETTLEMENT OF THE MATERIAL AND PROVIDE ADEQUATE SUPPORT FOR THE SURFACE TREATMENT OR STRUCTURE TO BE PLACED ON THE MATERIAL. PLACE MATERIAL IN APPROXIMATELY HORIZONTAL LAYERS OF BEGINNING AT LOWEST AREA TO BE FILLED. DO NOT IMPAIR DRAINAGE. DO NOT USE ON-SITE TOPSOIL AS FILL MATERIAL.
4. FOR GROUND SURFACE PREPARATION, CONTRACTOR SHALL REMOVE VEGETATION, DEBRIS, UNSUITABLE SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACEMENT OF FILL. REMOVE MATERIAL TO THE FULL EXTENT OF ROOT PENETRATION. PROOF-ROLL EXISTING GROUND SURFACE PRIOR TO PLACEMENT OF FILL TO PROVIDE A DENSE, STABLE BASE FOR THE FIRST LIFTS OF THE STRUCTURAL FILL.

UTILITIES NOTES:

1. ALL PROPOSED UTILITIES (WATER, ELECTRIC, SANITARY, STORM SEWER, ETC.) AND THEIR CONNECTIONS, DISCONNECTION AND RELOCATION OF EXISTING UTILITIES SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION. ANY COORDINATION WITH THE MUNICIPALITY AND/OR UTILITY COMPANY, PERMITS OR APPROVALS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. CONDUIT FOR ELECTRIC LINES SHALL BE WATER-TIGHT IN ADDITION TO CONFORMING TO UTILITY COMPANY REQUIREMENTS.
3. REFER TO ELECTRICAL DRAWINGS PREPARED BY BARTLETT DESIGN FOR ELECTRICAL WIRING DIAGRAMS, SCHEDULES, CONDUIT MATERIAL, POWER CONNECTIONS AND ENERGIZATION AND ALL OTHER APPURTENANCES RELATED TO ELECTRICAL WORK FOR THIS PROJECT.
4. ALL PROPOSED ELECTRICAL AND LIGHTING WORK SHOWN ON THESE CIVIL DRAWINGS SHALL BE COORDINATED WITH THE ELECTRICAL PLANS AND SPECIFICATIONS PREPARED BY COMPANY. IN THE EVENT THERE IS A DISCREPANCY BETWEEN THE CIVIL AND ELECTRICAL DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IN WRITING.CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
5. COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
6. COORDINATE DISRUPTION OF PRIVATE UTILITY SERVICES WITH LANDOWNERS AT LEAST TWO DAYS (48 HOURS) PRIOR TO DISRUPTION. ALL UTILITY COORDINATION IS RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY CONNECTION, RETIREMENT, AND COORDINATION FEES.
7. CONTRACTOR SHALL ARRANGE AND PREPARE FOR ALL NECESSARY TEMPORARY UTILITIES AS REQUIRED TO COMPLETE WORK, INCLUDING ANY NECESSARY SUB-METERING OR TEMPORARY CONNECTIONS.
8. ALL WATER LINE (MAINS, SERVICES, HYDRANTS, ETC.) CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT TECHNICAL SPECIFICATIONS, LATEST EDITION. PORTLAND WATER DISTRICT TECHNICAL SPECIFICATIONS SHALL GOVERN IN THE CASE OF ANY AND ALL CONFLICTS IN THE PROJECT CONSTRUCTION DOCUMENTS AT NO ADDITIONAL COST TO OWNER.
9. ALL GAS LINE (MAINS, SERVICES, GATE VALVES, METERS, ETC.) CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH UNITIL'S TECHNICAL SPECIFICATIONS, LATEST EDITION. UNITIL'S TECHNICAL SPECIFICATIONS SHALL GOVERN IN THE CASE OF ANY AND ALL CONFLICTS IN THE PROJECT CONSTRUCTION DOCUMENTS AT NO ADDITIONAL COST TO OWNER.
10. EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM A FIELD SURVEY PREPARED BY OWEN HASKELL, INC. THESE PLANS DO NOT NECESSARILY DEPICT THE EXACT LOCATIONS OF ALL UTILITIES, WHICH MAY EXIST AT THIS TIME WITHIN THE SURVEY LIMITS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY UTILITY CONNECTIONS OR CROSSINGS OF PROPOSED OR EXISTING UTILITIES. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IN WRITING. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THESE LINES. NO SEPARATE OR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND ACTUAL FIELD CONDITIONS ENCOUNTERED. THE CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE EXISTING UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE AND TO FACILITATE THE PROPOSED CONNECTION(S).
11. WHEREVER POSSIBLE, PROVIDE 10 FOOT HORIZONTAL SEPARATION BETWEEN WATER AND SEWER LINES. WHEN THIS HORIZONTAL SEPARATION IS NOT POSSIBLE, INSTALL SEWER LINE AT LEAST 18 INCHES BETWEEN BOTTOM OF WATER LINE AND TOP OF SEWER.
12. FOR SEWER LINE CROSSING WATER LINE TRENCHES, PROVIDE AT LEAST 18 INCHES BETWEEN BOTTOM OF WATER LINE AND TOP OF SEWER.
13. INSULATE ALL SEWER, FORCEMAINS AND WATER MAINS WHICH HAVE LESS THAN 4 FEET OF COVER OR WHERE DIRECTED BY THE ENGINEER. RIGID INSULATION REQUIRED: 2" THICK, BY 4' WIDE, UNLESS OTHERWISE NOTED. COSTS ASSOCIATED WITH INSULATION ARE INCIDENTAL TO CONTRACT.
14. INSTALL THRUST BLOCKS AT ALL BENDS IN FORCEMAIN AND WATER MAIN. SEE CIVIL DETAIL ON SHEET C-202.
15. PROVIDE END CAPS ON ALL UNDERDRAIN PIPING EXCEPT WHERE DAYLIGHTED, UNLESS OTHERWISE NOTED.
16. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL DIG TEST PITS TO VERIFY THE LOCATION OF POTENTIAL EXISTING UNDERGROUND UTILITY CONFLICTS. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AT PROPOSED UTILITY CROSSINGS, AND ADVISE THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
17. ALL PROPOSED UTILITIES AND THEIR CONNECTIONS, DISCONNECTION AND RELOCATION OF EXISTING UTILITIES SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION. ANY COORDINATION WITH THE MUNICIPALITY AND/OR UTILITY COMPANY, PERMITS OR APPROVALS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
18. UNLESS OTHERWISE SPECIFIED, PIPE FOR STORM DRAINS SHALL BE MATERIAL OR APPROVED EQUAL, WITH WATER TIGHT JOINTS. PIPE JOINTS, FITTINGS AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH SECTION X.

ABBREVIATIONS

&	AND	N.I.C.	NOT IN CONTRACT
A.G.	ABOVE GROUND	NO.	NUMBER
		NR	NO REFUSAL
BC	BOTTOM OF CURB	N.T.S.	NOT TO SCALE
BIT	BITUMINOUS		
BW	BOTTOM OF WALL	OE	OVERHEAD ELECTRIC
B/W	BETWEEN	OH	OVERHEAD
CB	CATCH BASIN	±	PLUS OR MINUS
CI	CAST IRON	LLS	LICENSED LAND SURVEYOR
CMP	CENTRAL MAINE POWER	PROP.	PROPOSED
CMP	CORRUGATED METAL PIPE	PT.	POINT
CONC	CONCRETE	PVC	POLYVINYL CHLORIDE
DI	DUCTILE IRON	R.O.W.	RIGHT-OF-WAY
DIA.	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DMH	DRAIN MANHOLE	REINF.	REINFORCED
DTL.	DETAIL	REQ'D	REQUIRED
E	UNDERGROUND ELECTRICAL	S	SLOPE (FT./FT.)
EL.	ELEVATION	S	SEWER
E.O.P.	EDGE OF PAVEMENT	SD	STORM DRAIN
EXIST.	EXISTING	SMH	SEWER MANHOLE
		SCH	SCHEDULE
FF	FINISH FLOOR	STA.	STATION
FM	FORCEMAIN		
FT	FOOT/FEET	TS	TOP OF STAIRS
		TW	TOP OF WALL
G	GAS MAIN	TYP.	TYPICAL
GS	GAS SERVICE		
GALV.	GALVANIZED	UP	UTILITY POLE
GRAN.	GRANITE		
		VC	VITRIFIED CLAY
HDPE	HIGH DENSITY POLYETHYLENE	VIT.	VITRIFIED CLAY
HYD	HYDRANT		
		W	WEST
INV.	INVERT	W	WATER
		W/	WITH
LF	LINEAR FEET	W	WATERMAIN
		WS	WATER SERVICE
MAX.	MAXIMUM	WV	WATER VALVE
MDOT	MAINE DEPARTMENT OF TRANSPORTATION		
MIN.	MINIMUM		
MON	MONUMENT		

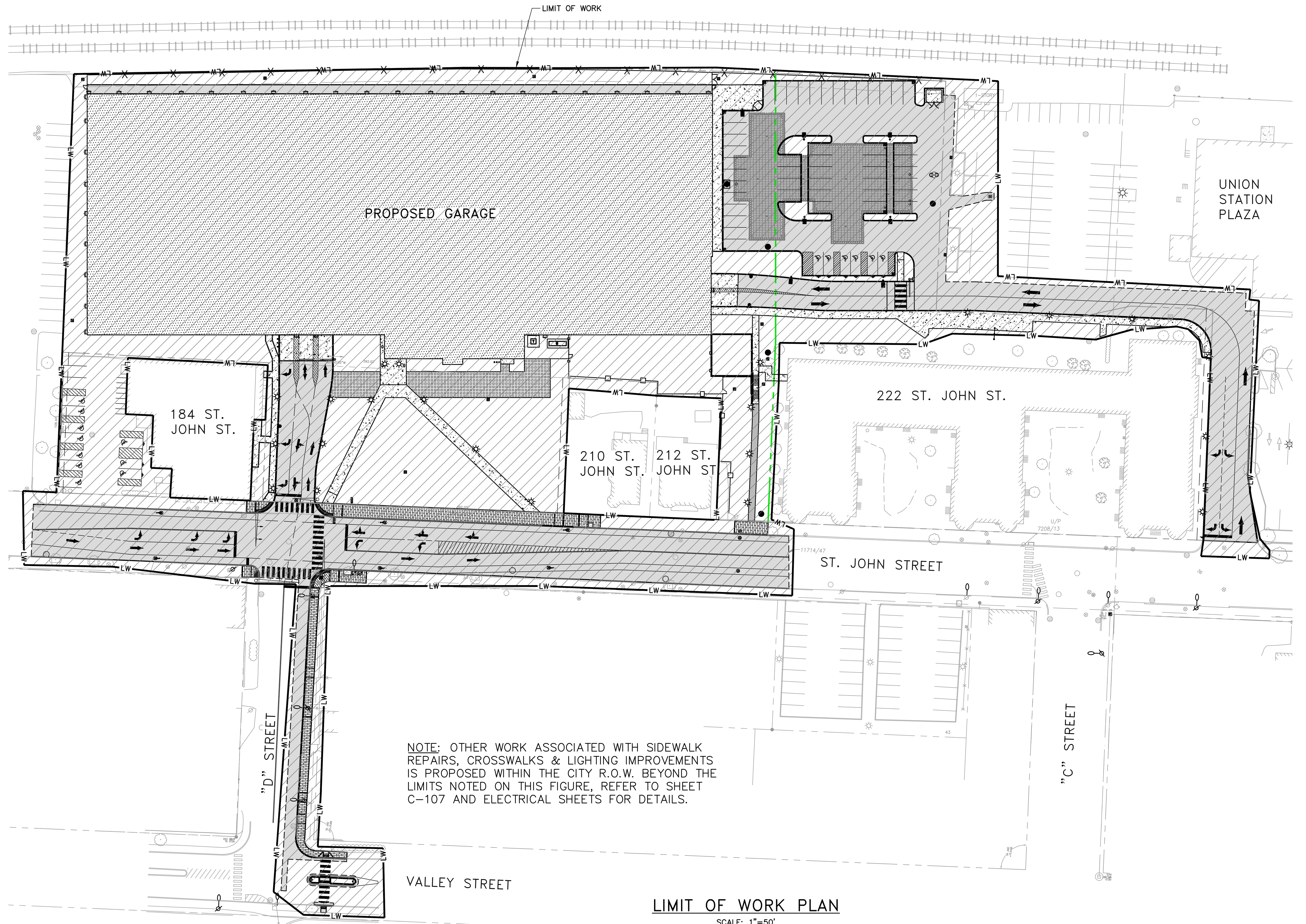
DRAWING INDEX		
Sheet Number	Sheet Title	Sheet Description
CIVIL		
--	G-000	COVER
1	G-001	GENERAL NOTES, LEGEND, SHEET INDEX & ABBREVIATIONS
2	B&TS-1	BOUNDARY & TOPOGRAPHIC SURVEY
3	C-001	EXISTING CONDITIONS & DEMOLITION PLAN
4	C-100	SITE LAYOUT & MATERIALS PLAN - 1
5	C-101	SITE LAYOUT & MATERIALS PLAN - 2
6	C-102	GRADING & DRAINAGE PLAN - 1
7	C-103	GRADING & DRAINAGE PLAN - 2
8	C-104	UTILITY PLAN - 1
9	C-105	UTILITY PLAN - 2
10	C-106	FIRE TRUCK MOVEMENT PLAN
11	C-107	SIDEWALK IMPROVEMENT PLAN
12	C-200	CIVIL DETAILS - 1
13	C-201	CIVIL DETAILS - 2
14	C-202	CIVIL DETAILS - 3
15	C-203	CIVIL DETAILS - 4
16	C-204	CIVIL DETAILS - 5
17	C-205	CIVIL DETAILS - 6
LANDSCAPING		
18	L1.0	LANDSCAPE SITE PLAN
19	L2.0	LANDSCAPE DETAILS
ARCHITECTURAL		
20	G101	GROUND LEVEL CODE INFORMATION PLAN
21	G102	LEVEL 1 CODE INFORMATION PLAN
22	G103	LEVEL 2 CODE INFORMATION PLAN
23	A101	BUILDING ELEVATIONS
24	A102	BUILDING ELEVATIONS
STRUCTURAL		
25	PS1	GRADE LEVEL PARKING LAYOUT
26	PS2	LEVEL 1 PARKING LAYOUT
27	PS3	LEVELS 2,4 & 6 PARKING LAYOUT
28	PS4	LEVEL 3 & 5 PARKING LAYOUT
29	PS5	LEVEL 7 PARKING LAYOUT
30	PS6	LEVEL 8 PARKING LAYOUT
ELECTRICAL		
31	E0.1	SITE LIGHTING CALCULATION PLAN - 1
32	E0.2	SITE LIGHTING CALCULATION PLAN - 2
33	E0.3	SITE LIGHTING CALCULATION PLAN - 3
34	E0.4	SITE LIGHTING CALCULATION PLAN - 4
35	E0.5	ROOF DECK LIGHTING CALCULATION PLAN
36	E1.1	ELECTRICAL SITE PLAN - 1
37	E1.2	ELECTRICAL SITE PLAN - 2
38	E1.3	ELECTRICAL SITE PLAN - 3
39	E1.4	ROOF DECK ELECTRICAL PLAN

LEGEND

EXISTING		PROPOSED
	CONTOUR (1' OR 2' INTERVAL)	
	CONTOUR (INDEX)	
S	SANITARY SEWER	S
FM	FORCEMAIN	FM
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
W	WATER LINE	W
E	UNDERGROUND ELECTRIC	E
T	UNDERGROUND TELEPHONE	T
CTV	UNDERGROUND TELEVISION	CTV
G	GAS LINE	G
OE	OVERHEAD ELECTRIC	OE
AS	ABANDONED SEWER	
AW	ABANDONED WATER LINE	
	PROPERTY LINE	PL
	RIGHT OF WAY	R/W
	EASEMENT	
	EDGE OF VEGETATION	
	FENCE	
	CENTERLINE	
	RETAINING WALL	
	STONEWALL	
	CURB	
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL	
	GUARDRAIL	
	RAILROAD TRACKS	
	DRAINAGE DITCH / SWALE	
	SILT FENCE	
	LIMIT OF WORK	LW
	BITUMINOUS PAVEMENT	
	CONCRETE WALKWAY	

LEGEND

EXISTING		PROPOSED
	SANITARY SEWER MANHOLE	
CO	CLEAN OUT	CO
	DRAINAGE MANHOLE	
	FIELD INLET CATCH BASIN	
	CURB INLET CATCH BASIN	
	TELEPHONE MANHOLE	
TELE BOX	TELEPHONE STAND BOX	
	GAS METER BOX	
	GAS VENT	
	GATE GATE	
	TRANSFORMER	
	UTILITY POLE	
	UTILITY POLE WITH GUY	
	LIGHTPOST	
	WATER GATE	
	CURB STOP	
	REDUCER	
	COUPLING	
WSO	WATER SHUT OFF VALVE	WSO
	HYDRANT	
	WATER METER BOX	
	GATE VALVE BOX	
	GATE VALVE	
	PROPERTY MONUMENT	
MB	MAIL BOX	
	STREET AND MISCELLANEOUS SIGNS	
FP	FLAGPOLE	
XXX.XX	SPOT ELEVATION	XXX.XX
	DECIDUOUS TREE/SHRUB	
	CONIFEROUS TREE/SHRUB	
TP-#	TEST PIT	TP-#



NOTE: OTHER WORK ASSOCIATED WITH SIDEWALK REPAIRS, CROSSWALKS & LIGHTING IMPROVEMENTS IS PROPOSED WITHIN THE CITY R.O.W. BEYOND THE LIMITS NOTED ON THIS FIGURE, REFER TO SHEET C-107 AND ELECTRICAL SHEETS FOR DETAILS.

LIMIT OF WORK PLAN
SCALE: 1"=50'

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

DAVID A. SENUS 10791

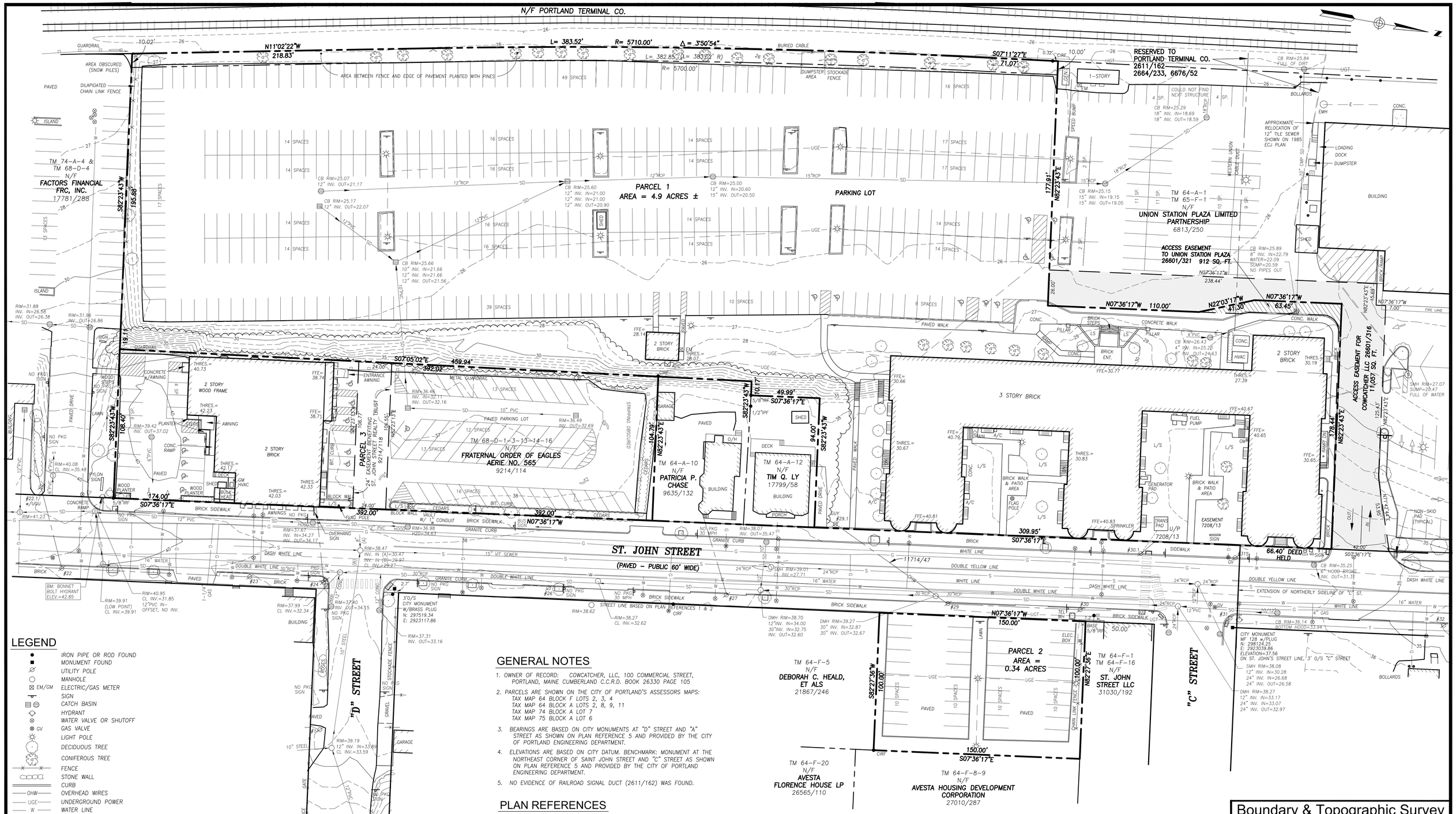
GENERAL NOTES, LEGEND, SHEET INDEX & ABBREVIATIONS

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET EMPLOYEE PARKING GARAGE

JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: N.T.S.
SHEET: 1 OF 17

G-001



LEGEND

- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- EM/GM ELECTRIC/GAS METER
- SIGN
- CATCH BASIN
- HYDRANT
- WATER VALVE OR SHUTOFF
- GV GAS VALVE
- LIGHT POLE
- DECIDUOUS TREE
- CONIFEROUS TREE
- FENCE
- STONE WALL
- CURB
- OHW OVERHEAD WIRES
- UGE UNDERGROUND POWER
- W WATER LINE
- G GAS LINE
- UGT TELEPHONE
- SD STORM DRAIN
- S SANITARY SEWER
- 25 1' CONTOUR
- FFE FINISHED FLOOR ELEVATION
- CONC. CONCRETE
- A/C AIR CONDITIONING UNIT
- L/S LANDSCAPED AREA
- IPF/IRF IRON PIPE OR ROD FOUND
- N/F NOW OR FORMERLY
- 000/000 DEED BOOK AND PAGE

SCALE : 1" = 30'

0' 15' 30' 60'

GENERAL NOTES

1. OWNER OF RECORD: COWCATCHER, LLC, 100 COMMERCIAL STREET, PORTLAND, MAINE CUMBERLAND C.C.R.D. BOOK 26330 PAGE 105
2. PARCELS ARE SHOWN ON THE CITY OF PORTLAND'S ASSESSORS MAPS:
   TAX MAP 64 BLOCK F LOTS 2, 3, 4
   TAX MAP 64 BLOCK A LOTS 2, 8, 9, 11
   TAX MAP 74 BLOCK A LOT 7
   TAX MAP 75 BLOCK A LOT 6
3. BEARINGS ARE BASED ON CITY MONUMENTS AT "D" STREET AND "A" STREET AS SHOWN ON PLAN REFERENCE 5 AND PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
4. ELEVATIONS ARE BASED ON CITY DATUM. BENCHMARK: MONUMENT AT THE NORTHEAST CORNER OF SAINT JOHN STREET AND "C" STREET AS SHOWN ON PLAN REFERENCE 5 AND PROVIDED BY THE CITY OF PORTLAND ENGINEERING DEPARTMENT.
5. NO EVIDENCE OF RAILROAD SIGNAL DUCT (2611/162) WAS FOUND.

PLAN REFERENCES

1. "PLAN OF LAND ON ST. JOHN STREET FOR ST. JOHN STREET REALTY TRUST" DATED SEPTEMBER 10, 1985 AND REVISED THRU JAN. 15, 1990 BY OWEN HASKELL, INC.
2. "PLAN OF LAND ON ST. JOHN STREET, PORTLAND, MAINE MADE FOR ST. JOHN STREET REALTY TRUST" DATED SEPT. 10, 1985 REVISED THRU 11-03-00 BY OWEN HASKELL, INC.
3. CITY OF PORTLAND'S ASSESSOR'S MAPS.
4. "ALTA/ACSM LAND TITLE SURVEY, 217, 218-238, 221 AND 225 ST. JOHN STREET, PORTLAND, MAINE MADE FOR COWCATCHER LLC" DATED JUNE 27, 2008 REV. 3 11/18/08 BY OWEN HASKELL, INC.
5. "SAINT JOHN ST./VALLEY ST. STREETSCAPE IMPROVEMENTS EXISTING CONDITIONS PLAN" CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION DATED NOV. 2011
6. "BOUNDARY AND TOPOGRAPHIC SURVEY AT 217, 218-238, 221 AND 225 ST. JOHN STREET, PORTLAND, MAINE MADE FOR COWCATCHER, LLC" DATED NOV. 16, 2016 BY OWEN HASKELL, INC.

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

CERTIFICATE

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

SAMUEL D. GLIDDEN, PLS NO. 2520

6-25-2018
DATE

STATE OF MAINE · SAMUEL D. GLIDDEN · 2520 · LICENSED PROFESSIONAL LAND SURVEYOR

Boundary & Topographic Survey

On

St. John Street, Portland, Maine

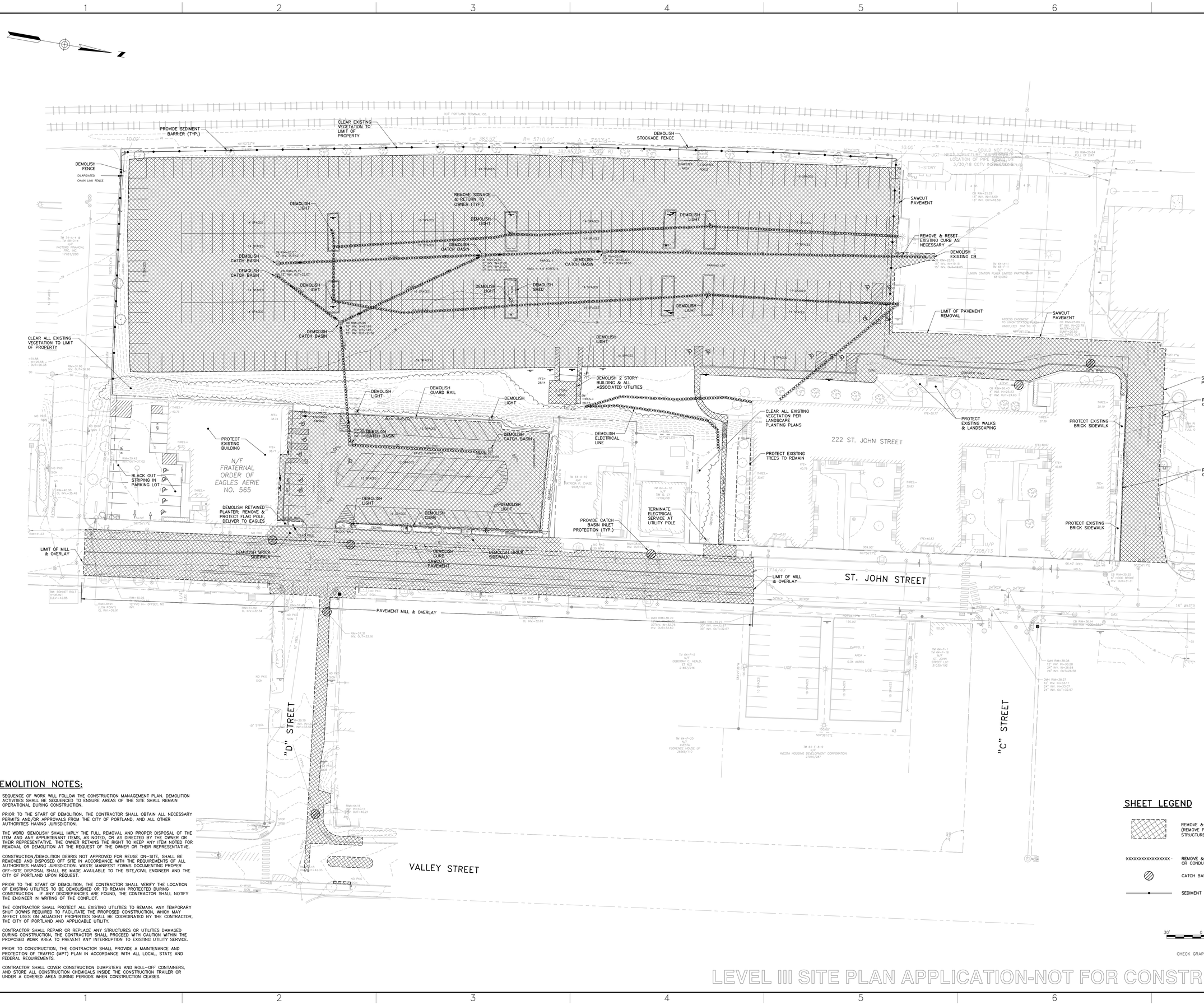
Made for

Woodard & Curran, Inc.

41 Hutchins Drive, Portland, Maine

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, UNIT 10, FALMOUTH, MAINE 04105

DRAWN BY: SDG / JLW	DATE: APRIL 2018	JOB NO. 2018-019P	
CHECKED BY: SDG	SCALE: 1" = 30'	DRWG. NO. 1	



DEMOLITION NOTES:

1. SEQUENCE OF WORK WILL FOLLOW THE CONSTRUCTION MANAGEMENT PLAN. DEMOLITION ACTIVITIES SHALL BE SEQUENCED TO ENSURE AREAS OF THE SITE SHALL REMAIN OPERATIONAL DURING CONSTRUCTION.
2. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE CITY OF PORTLAND, AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
3. THE WORD DEMOLISH' SHALL IMPLY THE FULL REMOVAL AND PROPER DISPOSAL OF THE ITEM AND ANY APPURTENANT ITEMS, AS NOTED, OR AS DIRECTED BY THE OWNER OR THEIR REPRESENTATIVE. THE OWNER RETAINS THE RIGHT TO KEEP ANY ITEM NOTED FOR REMOVAL OR DEMOLITION AT THE REQUEST OF THE OWNER OR THEIR REPRESENTATIVE.
4. CONSTRUCTION/DEMOLITION DEBRIS NOT APPROVED FOR REUSE ON-SITE, SHALL BE REMOVED AND DISPOSED OFF SITE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION. WASTE MANIFEST FORMS DOCUMENTING PROPER OFF-SITE DISPOSAL SHALL BE MADE AVAILABLE TO THE SITE/CIVIL ENGINEER AND THE CITY OF PORTLAND UPON REQUEST.
5. PRIOR TO THE START OF DEMOLITION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE DEMOLISHED OR TO REMAIN PROTECTED DURING CONSTRUCTION. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF THE CONFLICT.
6. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES TO REMAIN. ANY TEMPORARY SHUT DOWNS REQUIRED TO FACILITATE THE PROPOSED CONSTRUCTION, WHICH MAY AFFECT USES ON ADJACENT PROPERTIES SHALL BE COORDINATED BY THE CONTRACTOR, THE CITY OF PORTLAND AND APPLICABLE UTILITY.
7. CONTRACTOR SHALL REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROCEED WITH CAUTION WITHIN THE PROPOSED WORK AREA TO PREVENT ANY INTERRUPTION TO EXISTING UTILITY SERVICE.
8. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) PLAN IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.
9. CONTRACTOR SHALL COVER CONSTRUCTION DUMPSTERS AND ROLL-OFF CONTAINERS, AND STORE ALL CONSTRUCTION CHEMICALS INSIDE THE CONSTRUCTION TRAILER OR UNDER A COVERED AREA DURING PERIODS WHEN CONSTRUCTION CEASES.

SHEET LEGEND

- REMOVE & DISPOSE OF PAVEMENT (REMOVE PAVEMENT, CURB AND/OR STRUCTURE WITHIN ZONE)
- XXXXXXXXXXXXXXXXX · REMOVE & DISPOSE OF PIPE OR CONDUIT
- CATCH BASIN INLET PROTECTION
- SEDIMENT BARRIER

30' 0 30' 60'
BAR SCALE
1" = 30'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

WOODARD & CURRAN
41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

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DAVID A. SENUS 10791 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE 6/22/2018

REV	DESCRIPTION	DATE

CHECKED BY: DAS
DRAWN BY: BEM
DESIGNED BY: CMS

EXISTING CONDITIONS & DEMOLITION PLAN

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=30'
SHEET: 3 OF 17

C-001

\\woodardcurran.net\shares\Projects\02311558.00 Maine Med Ctr - Parking Garage\cad\Drawings\Redesign Phase\02311558 C001.dwg, Jun 22, 2018 - 8:01am

42x30 SHEET
1:1

N/F
PORTLAND TERMINAL CO.

4' WIDE PEDESTRIAN CHAINLINK GATE, SEE DETAIL

BITUMINOUS WALK, SEE DETAIL

6' HGT. CHAINLINK FENCE, SEE DETAIL

8' WIDE EQUIPMENT ACCESS CHAINLINK GATE, SEE DETAIL

4' WIDE PEDESTRIAN CHAINLINK GATE, SEE DETAIL

7.0'

20.2'

8.1'

SURFACE PARKING

N/F
FACTORS
FINANCIAL
FRC, INC.
17781/288

PARKING GARAGE
SEE ARCHITECTURAL PLANS

LEVEL 1 DECK

LEVEL 1 DECK

HEADACHE BAR, SEE ARCHITECTURAL PLANS

PAD MOUNTED TRANSFORMER & GENERATOR, SEE ELECTRICAL PLANS

LOT DIVISION

ORNAMENTAL STEEL FENCE GATE

RETAINING WALL TO BE DETAILED ON STRUCTURAL PLANS

4' WIDE PEDESTRIAN ORNAMENTAL STEEL FENCE GATE

ORNAMENTAL STEEL FENCE GATE

6' HGT. PRIVACY FENCE, SEE DETAIL

4' WIDE PEDESTRIAN ORNAMENTAL STEEL FENCE GATE

FALL PROTEC
TO BE DETAIL
STRUCTURAL I

TRANSITION CURB

BOLLARD (TYP.)

CONCRETE EXIT RAMP, SEE ARCHITECTURAL PLANS

CANOPY SUPPORT, SEE ARCHITECTURAL PLANS

4' GRANITE TIPDOWN

5.0' MIN. BLDG. SETBACK PER I02

NO PKG SIGN

2 SPACES @ 9'x18'

7 ADA ACCESSIBLE SPACES

7 4'X8' MOTORCYCLE PARKING SPACES

28.0'

SITE LIGHTING, SEE ELECTRICAL PLANS

N/F
FRATERNAL
ORDER OF
EAGLES AERIE
NO. 565

CONCRETE WALK, SEE DETAIL

MOUNTABLE GRANITE CURB, 3" REVEAL

4" GRANITE TIPDOWN

CHECKER BLOCK CONCRETE GRID, SEE DETAIL

4" DASHED WHITE LINE

4" SOLID WHITE LINE

VERTICAL GRANITE CURB (TYP.), SEE DETAIL

EXISTING STAIRS TO REMAIN

2 ADA VAN & 1 ADA ACCESSIBLE SPACES

ADA PARKING SIGNAGE, TYP.

RESTRIPE EXISTING PARKING LOT TO PROVIDE PARKING SPACES AS SHOWN

TRAFFIC DIRECTION ARROW

24" SOLID WHITE LINE "STOP" BAR

SEE ST. JOHN STREET & "D" STREET INTERSECTION DETAIL FOR APRON & RAMPS

CONCRETE WALK, SEE DETAIL

CONCRETE WALK, SEE DETAIL

5.0' MIN. BLDG. SETBACK PER I02

N/F
PATRICIA P.
CHASE

N/F
TIM Q. LY

4' HGT. PRIVACY FENCE TO BACK OF EXISTING DRIVEWAY & 6' HGT BEYOND, SEE DETAIL

GRANITE TIPDOWN CURB (TYP.), SEE DETAIL

"EMPLOYEE PARKING GARAGE" SIGN

BRICK SIDEWALK, MATCH EXISTING WIDTH, SEE DETAIL

4" SOLID WHITE LINE

MATCH EXISTING BRICK SIDEWALK

MATCH EXISTING BRICK SIDEWALK

4" SOLID WHITE LINE

5' MIN. BIKE LANE

LIMIT OF MILL & OVERLAY

MATCH TO EXISTING PAVEMENT MARKINGS

24" SOLID WHITE LINE "STOP" BAR

4" DASHED WHITE LINE

MATCH EXISTING RADIUS

VERTICAL GRANITE CURB

FLUSH GRANITE CURB

ST. JOHN STREET

MATCH TO EXISTING PAVEMENT MARKINGS

LIMIT OF MILL OVERLAY

75'

4" DOUBLE YELLOW LINE

4" SOLID WHITE LINE

MATCH EXISTING BRICK SIDEWALK

5' MIN. BIKE LANE

MATCH EXISTING BRICK SIDEWALK

BIKE LANE PAVEMENT MARKING

4" DOUBLE YELLOW LINE

LANE MARKINGS, 4" SOLID WHITE LINES & TRAFFIC DIRECTION ARROWS

5' MIN. BIKE LANE

150'

2" MILL & OVERLAY; PROVIDE MORATORIUM PAVEMENT REPAIR OF ST. JOHN STREET IN ACCORDANCE WITH CITY OF PORTLAND STREET OPENING STANDARDS

4" DOUBLE YELLOW LINE

VERTICAL GRANITE CURB

"D" STREET

GRANITE TIPDOWN CURB (TYP.), SEE DETAIL

FLUSH GRANITE CURB

10 SPACES

MATCHLINE – SEE THIS SHEET

MATCHLINE – SEE THIS SHEET

"D" STREET

GRANITE TIPDOWN CURB (TYP.), SEE DETAIL

FLUSH GRANITE CURB

SAWCUT EXISTING PAVEMENT

DETECTABLE WARNING STRIP

MATCH EXISTING BRICK SIDEWALK

GRANITE TIPDOWN CURB (TYP.), SEE DETAIL

4" SOLID WHITE LINE

KEEP RIGHT SYMBOL SIGN MUTCD X-R4-7

KEEP RIGHT SYMBOL SIGN MUTCD X-R4-7

GRANITE CURB ISLAND

BITUMINOUS WALK

DETECTABLE WARNING STRIP

AREA OF DETAIL

SITE KEY PLAN
SCALE: 1"=200'

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

41 Hutchins Drive
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DAVID A. SENUS 10791 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE 10/22/2018

REV	DESCRIPTION	DATE
	03/08 CDS-10 mg	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DESIGNED BY: CMS	
	DRAWN BY: BCM	

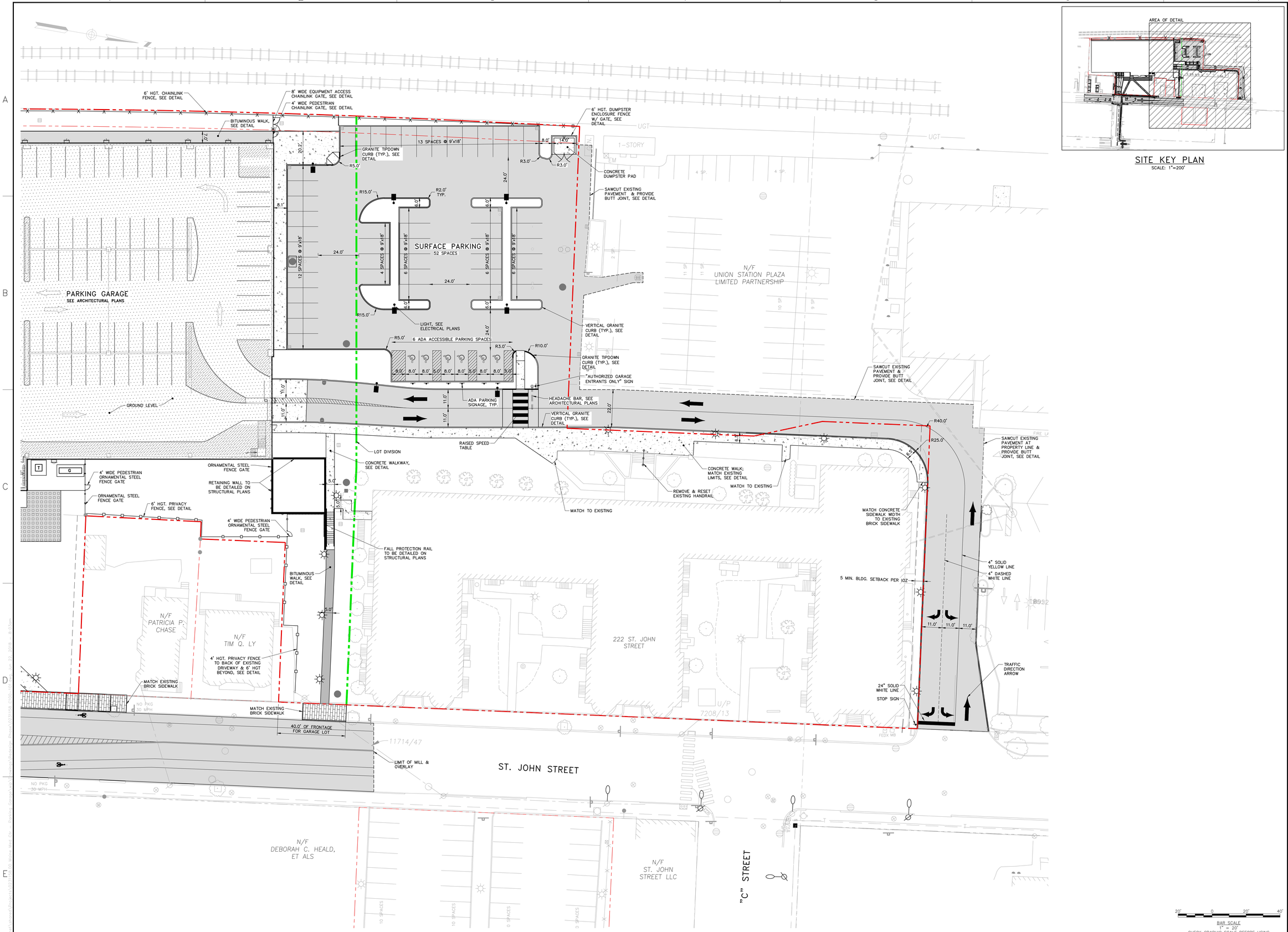
SITE LAYOUT & MATERIALS PLAN - 1

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=20'
SHEET: 4 OF 17

C-100



SITE KEY PLAN

SCALE: 1"=200'

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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DAVID A. SENUS 11791 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE 10/22/2018

REV	DESCRIPTION	DATE
	03/08 CDS-10 mm	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DESIGNED BY: CAS	
	DRAWN BY: BEM	

SITE LAYOUT & MATERIALS PLAN - 2

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=20'
SHEET: 5 OF 17

C-101

PORTLAND TERMINAL CO.

N/F FACTORS FINANCIAL FRC, INC. 17781/288

PARKING GARAGE
SEE ARCHITECTURAL PLANS

LOBBY
SEE ARCHITECTURAL PLANS

SURFACE PARKING

N/F FRATERNAL ORDER OF EAGLES AERIE NO. 565

N/F PATRICIA P. CHASE

N/F TIM Q. LY

ST. JOHN STREET

"D" STREET

PIPE 1 12" SD 101' 0.0051
PIPE 2 10" SD 99' 0.0028
PIPE 3 10" SD 81' 0.0028
PIPE 4 15" SD 182' 0.0015
PIPE 5 15" SD 137' 0.0015
PIPE 6 18" SD 138' 0.0017
PIPE 7 18" SD 22' 0.0015
PIPE 8 15" SD 45' 0.0022
PIPE 9 15" SD 25' 0.0022
PIPE 10 15" SD 19' 0.0022
PIPE 11 10" SD 13' 0.0028
PIPE 12 10" SD 42' 0.0393
PIPE 13 10" SD 19' 0.0032
PIPE 18 18" SD 51' 0.0015
PIPE 19 10" SD 32' 0.0025
PIPE 20 12" SD 11' 0.0028
PIPE 21 18" SD 5' 0.0000
PIPE 27 18" SD 5' 0.0000
PIPE 28 12" SD 10' 0.0028
PIPE 29 12" SD 11' 0.0028
PIPE 30 12" SD 12' 0.0028
PIPE 31 18" SD 204' 0.0012

MATCHLINE – SEE THIS SHEET

MATCHLINE – SEE THIS SHEET

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

AREA OF DETAIL

SITE KEY PLAN

SCALE: 1"=200'

STRUCTURE TABLE					
NAME	DIA.	RIM	SUMP DEPTH	INV IN/SIZE/FROM	INV OUT/SIZE/TO
CB1	4'	37.22	2'	33.42/10"SD/CB2	33.22/12"SD/EXIST. DMH
CB2	4'	37.20	2'	33.81/10"SD/CB3	33.71/10"SD/CB1
CB3	4'	38.80	2'		34.05/10"SD/CB2
CB4	4'	27.90	2'	23.00/12"SD/GAR.	22.99/15"SD/CB5
CB5	4'	26.90	2'	22.71/15"SD/CB4	22.61/15"SD/CB23
CB6	4'	26.00	2'	22.05/18"SD/CB23 22.05/12"SD/GAR.	21.95/18"SD/CB7
CB7	4'	24.08	2'	21.71/18"SD/CB6 21.80/10"SD/CB22 21.71/12"SD/GAR.	21.61/18"SD/CB8
CB8	4'	25.47	2'	21.57/18"SD/CB7	21.47/18"SD/DMH1
CB9	4'	25.39	2'	21.27/15"SD/CB10	21.17/15"SD/DMH1
CB10	4'	25.47	2'	21.43/15"SD/CB11	21.33/15"SD/CB9
CB11	4'	25.48	2'	21.58/10"SD/CB12	21.48/15"SD/CB10
CB12	4'	27.06	2'	23.00/10"SD/CB13	21.63/10"SD/CB11
CB13	4'	32.00	2'	24.93/10"SD/CB14	24.83/10"SD/CB12
CB14	4'	26.69	2'		25.00/10"SD/CB13
CB22	4'	25.49	2'		21.89/10"SD/CB7
CB23	4'	24.66	2'	22.40/15"SD/CB5 22.40/12"SD/GAR.	22.30/18"SD/CB6
DMH1	4'x6'	25.16	2'	21.05/15"SD/CB9 21.39/18"SD/CB8	20.65/18"SD/RTANK 1 20.65/18"SD/RTANK 1

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WOODARD & CURRAN

DAVID SENUS 10791 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER 6/22/2018

REV	DESCRIPTION	DATE
1	031018 CDD-103.dwg	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DESIGNED BY: CMS	
	DRAWN BY: BCM	

GRADING & DRAINAGE PLAN - 1

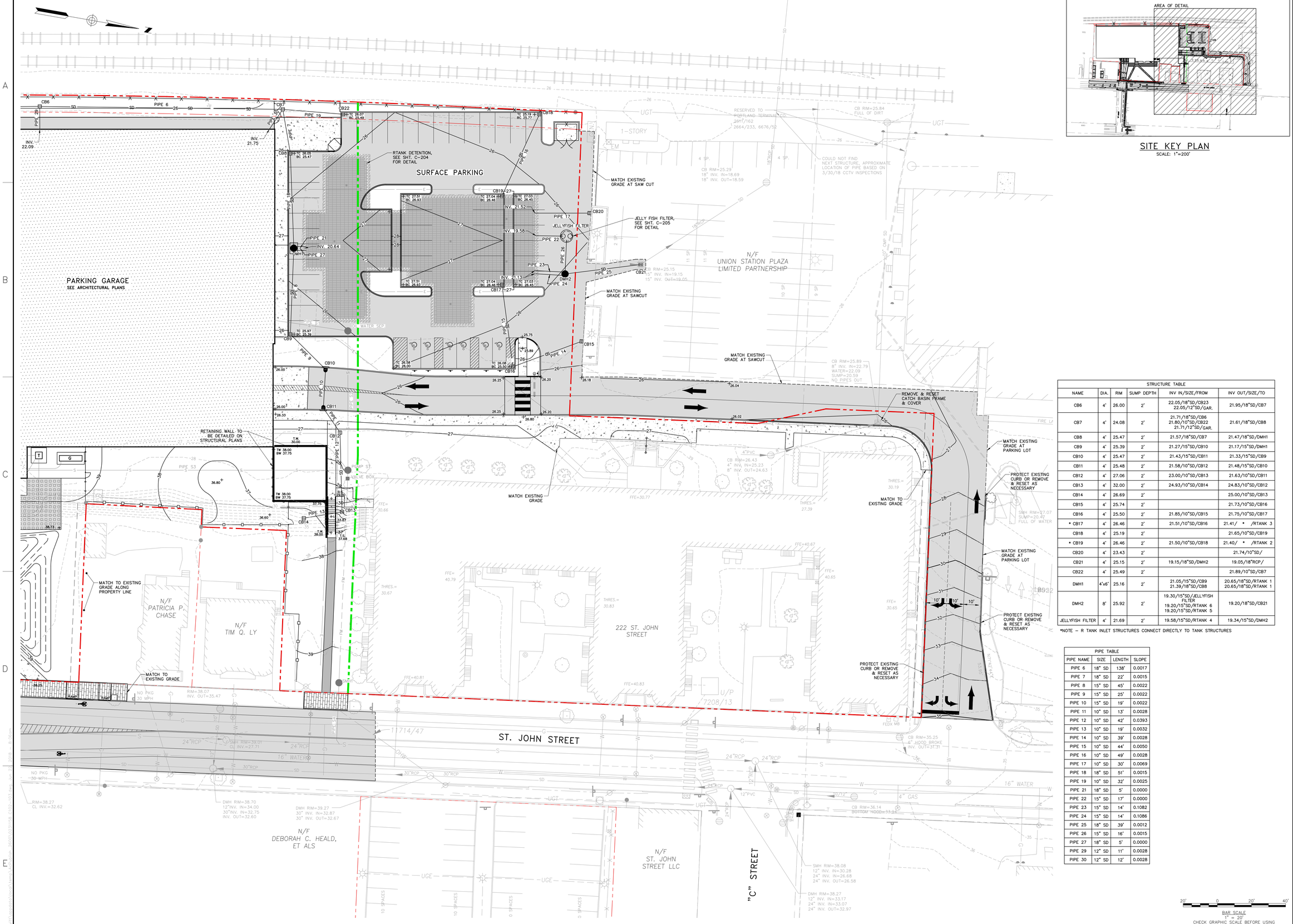
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=20'
SHEET: 6 OF 17

C-102



SITE KEY PLAN

SCALE: 1"=200'

STRUCTURE TABLE					
NAME	DIA.	RIM	SUMP DEPTH	INV IN/SIZE/FROM	INV OUT/SIZE/TO
CB6	4'	26.00	2'	22.05/18"SD/CB23 22.05/12"SD/GAR.	21.95/18"SD/CB7
CB7	4'	24.08	2'	21.71/18"SD/CB6 21.80/10"SD/CB22 21.71/12"SD/GAR.	21.61/18"SD/CB8
CB8	4'	25.47	2'	21.57/18"SD/CB7	21.47/18"SD/DMH1
CB9	4'	25.39	2'	21.27/15"SD/CB10	21.17/15"SD/DMH1
CB10	4'	25.47	2'	21.43/15"SD/CB11	21.33/15"SD/CB9
CB11	4'	25.48	2'	21.58/10"SD/CB12	21.48/15"SD/CB10
CB12	4'	27.06	2'	23.00/10"SD/CB13	21.63/10"SD/CB11
CB13	4'	32.00	2'	24.93/10"SD/CB14	24.83/10"SD/CB12
CB14	4'	26.69	2'		25.00/10"SD/CB13
CB15	4'	25.74	2'		21.73/10"SD/CB16
CB16	4'	25.50	2'	21.85/10"SD/CB15	21.75/10"SD/CB17
* CB17	4'	26.46	2'	21.51/10"SD/CB16	21.41/ * /RTANK 3
CB18	4'	25.19	2'		21.65/10"SD/CB19
* CB19	4'	26.46	2'	21.50/10"SD/CB18	21.40/ * /RTANK 2
CB20	4'	23.43	2'		21.74/10"SD/
CB21	4'	25.15	2'	19.15/18"SD/DMH2	19.05/18"RCP/
CB22	4'	25.49	2'		21.89/10"SD/CB7
DMH1	4'x6'	25.16	2'	21.05/15"SD/CB9 21.39/18"SD/CB8	20.65/18"SD/RTANK 1 20.65/18"SD/RTANK 1
DMH2	8'	25.92	2'	19.30/15"SD/JELLYFISH FILTER 19.20/15"SD/RTANK 6 19.20/15"SD/RTANK 5	19.20/18"SD/CB21
JELLYFISH FILTER	4'	21.69	2'	19.58/15"SD/RTANK 4	19.34/15"SD/DMH2

*NOTE – R TANK INLET STRUCTURES CONNECT DIRECTLY TO TANK STRUCTURES

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
PIPE 6	18" SD	138'	0.0017
PIPE 7	18" SD	22'	0.0015
PIPE 8	15" SD	45'	0.0022
PIPE 9	15" SD	25'	0.0022
PIPE 10	15" SD	19'	0.0022
PIPE 11	10" SD	13'	0.0028
PIPE 12	10" SD	42'	0.0393
PIPE 13	10" SD	19'	0.0032
PIPE 14	10" SD	39'	0.0028
PIPE 15	10" SD	44'	0.0050
PIPE 16	10" SD	49'	0.0028
PIPE 17	10" SD	30'	0.0069
PIPE 18	18" SD	51'	0.0015
PIPE 19	10" SD	32'	0.0025
PIPE 21	18" SD	5'	0.0000
PIPE 22	15" SD	17'	0.0000
PIPE 23	15" SD	14'	0.1082
PIPE 24	15" SD	14'	0.1086
PIPE 25	18" SD	39'	0.0012
PIPE 26	15" SD	16'	0.0015
PIPE 27	18" SD	5'	0.0000
PIPE 29	12" SD	11'	0.0028
PIPE 30	12" SD	12'	0.0028

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

WOODARD & CURRAN
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DAVID SENUS 10791 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE 10/29/2018

REV	DESCRIPTION	DATE
	03/08 CDD-103.dwg	
CHECKED BY: DAS		

REV	DESCRIPTION	DATE
DESIGNED BY: CAS	DRAWN BY: BCM	

GRADING & DRAINAGE PLAN - 2

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=20'
SHEET: 7 OF 17

C-103

PORTLAND TERMINAL CO.

N/F FACTORS FINANCIAL FRC, INC. 17781/288

PARKING GARAGE
SEE ARCHITECTURAL PLANS

SURFACE PARKING

LOBBY
SEE ARCHITECTURAL PLANS

N/F FRATERNAL ORDER OF EAGLES AERIE NO. 565

N/F PATRICIA P. CHASE

N/F TIM Q. LY

ST. JOHN STREET

"D" STREET

PAD MOUNTED TRANSFORMER & GENERATOR, SEE ELECTRICAL PLANS

INV. 19.00

GAS METER

NEW LIGHTING (TYP.), SEE ELECTRICAL DRAWINGS

SEE ELECTRICAL DRAWINGS

3" D.I. WATER – DOMESTIC SERVICE

2" WELDED STEEL GAS SERVICE

3" GATE VALVE

NEW UTILITY POLE (TYP.), SEE ELECTRICAL DRAWINGS

3" SERVICE SADDLE

NEW TELCOM UTILITY POLE, SEE ELECTRICAL DRAWINGS

NEW GAS SERVICE FROM VALLEY STREET TO BE INSTALLED BY UNTIL, TRENCHING BY SITE CONTRACTOR

SEWER CROSSINGS TO BE DETAILED ON STRUCTURAL PLANS

SLOPE FM BACK TO PUMP STATION (NO SAGS IN LINES)

2" SEWER FORCE MAIN

HYDRANT, SEE DETAIL

6" D.I. WATER

WATER GATE VALVE

6"X16" TAPPING SLEEVE

WYE CONNECTION TO EXISTING SEWER MAIN, CONTRACTOR TO FIELD VERIFY DEPTH

OIL WATER SEP.

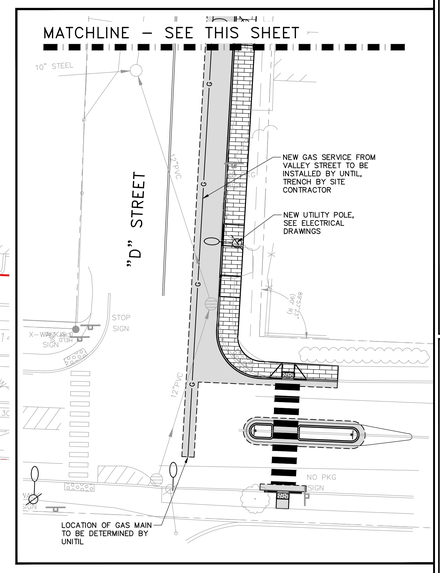
PUMP ST.

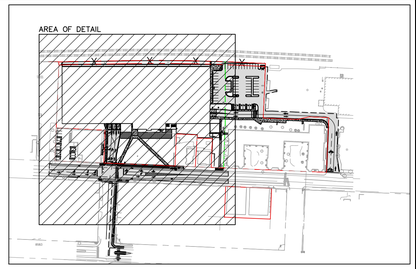
VALVE BOX

SMH1

MATCHLINE – SEE THIS SHEET

MATCHLINE – SEE THIS SHEET





SITE KEY PLAN
SCALE: 1"=200'

STRUCTURE TABLE					
NAME	DIA.	RIM	SUMP DEPTH	INV IN/SIZE/FROM	INV OUT/SIZE/TO
OIL WATER SEP.	4'	25.99	0'	18.50/6"S/GAR.	18.40/6"S/PUMP ST.
PUMP ST.	4'	28.20	0'	17.99/6"S/OIL WATER SEP. 17.90/6"S/GAR.	25.00/2"FM/VALVE BOX
SMH1	4'	38.99	0'	35.00/2"FM/VALVE BOX	34.90/6"S/MAIN
VALVE BOX	2'X2'	27.03	0'	25.00/2"FM/PUMP ST.	25.00/2"FM/SMH1

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
FM1	2" FM	2'	N/A*
FM2	2" FM	117'	N/A*
PIPE S1	6" S	42'	0.0050
PIPE S2	6" S	78'	0.0050
PIPE S4	6" S	32'	0.1157

*SLOPE BACK TO PUMP STATION

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

41 Hutchins Drive
Portland, Maine 04102
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DAVID SENUS 10791 PROFESSIONAL ENGINEER STATE OF MAINE
10/22/2018

REV	DESCRIPTION	DATE
	031018 CDM-105.dwg	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DESIGNED BY: CMS	
	DRAWN BY: BCM	

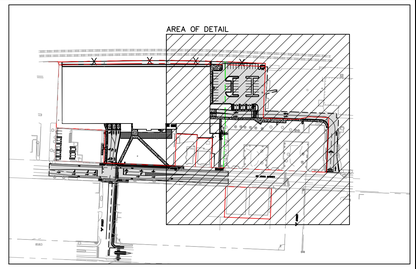
UTILITY PLAN - 1

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=20'
SHEET: 8 OF 17

C-104



SITE KEY PLAN
SCALE: 1"=200'

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NAME	DIA.	RIM	SUMP DEPTH	INV IN/SIZE/FROM	INV OUT/SIZE/TO
OIL WATER SEP.	4'	25.99	0'	18.50/6"S/GAR.	18.40/6"S/PUMP ST.
PUMP ST.	4'	28.20	0'	17.99/6"S/OIL WATER SEP. 17.90/6"S/GAR.	25.00/2"FM/VALVE BOX
SMH1	4'	38.99	0'	35.00/2"FM/VALVE BOX	34.90/6"S/MAIN
VALVE BOX	2'X2'	27.03	0'	25.00/2"FM/PUMP ST.	25.00/2"FM/SMH1

PIPE TABLE			
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FM1	2" FM	2'	N/A*
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PIPE S4	6" S	32'	0.1157

*SLOPE BACK TO PUMP STATION

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DAVID A. SENUS 10791 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE
10/22/2018

REV	DESCRIPTION	DATE
	031018 CDM-105.dwg	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DRAWN BY: BEM	
	DESIGNED BY: CMS	

UTILITY PLAN - 2

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=20'
SHEET: 9 OF 17

C-105

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

42x30 SHEET
1:1

PARKING GARAGE

STAND PIPE LOCATION (TYP.)

LOBBY

SURFACE PARKING

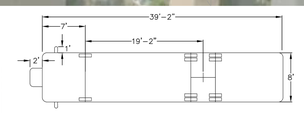
NEW HYDRANT LOCATION

ST JOHN STREET

"D" STREET

"C" STREET

EXISTING HYDRANT LOCATION



MIN CENTERLINE RADIUS=35'
BLOCK NAME – "LADDER"
LADDER 6

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING
40' 0 40' 80'

BAR SCALE
1" = 30'
CHECK GRAPHIC SCALE BEFORE USING
30' 0 30' 60'

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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DAVID SENUS 10791 STATE OF MAINE REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
6/22/2018

REV	DESCRIPTION	DATE

CHECKED BY: DAS

REV	DESCRIPTION	DATE

DESIGNED BY: CMS DRAWN BY: BDM

FIRE TRUCK MOVEMENT PLAN

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: 1" = 30'
SHEET: 10 OF 17

C-106

\\woodardcurran.net\shares\Projects\0231158.00 Maine Med Ctr – Parking Garage\wip\Drawings\Redesign Phase\0231158_C106.dwg, Jun 22, 2018 – 8:12pm

*NOTE: DETAILED SITE DESIGN OF OFF-SITE IMPROVEMENTS WILL BE FINALIZED UPON COMPLETION OF GROUND SURVEY.

50' 0 50' 100'
BAR SCALE
1" = 50'
CHECK GRAPHIC SCALE BEFORE USING

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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DAVID SENUS 10981 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE
6/22/2018

REV	DESCRIPTION	DATE
	031018 C107.dwg	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DRAWN BY: BEM	
	DESIGNED BY: DAS	

SIDEWALK IMPROVEMENT PLAN

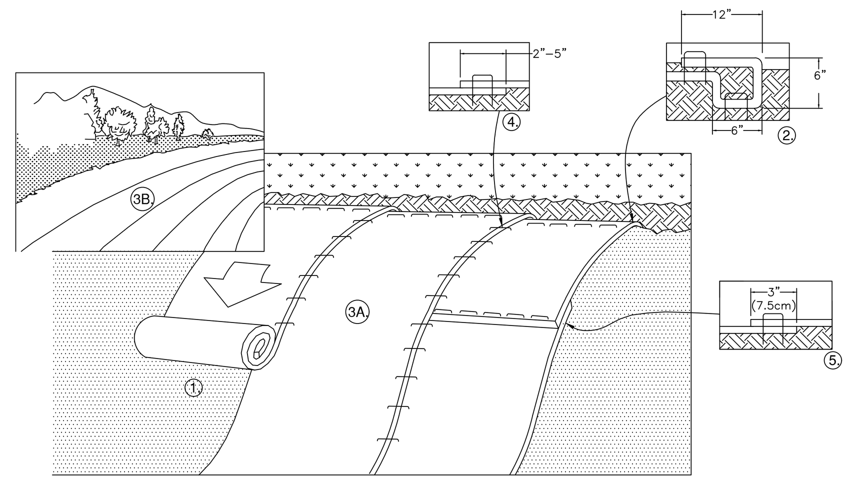
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: 1"=50'
SHEET: 11 OF 17

C-107

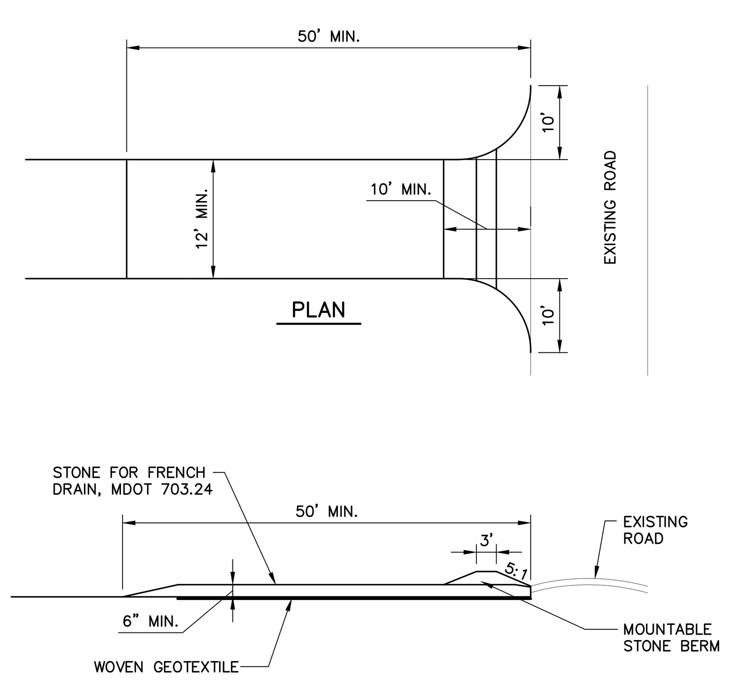
\\woodardcurran.net\shares\Projects\0231158.00 Maine Med Ctr - Parking Garage\Wip\Drawings\Redesign Phase\0231158 C107.dwg, Jun 22, 2018 - 8:13am



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED AS WELL AS REMOVING ANY PROTRUDING ROCKS, STUMPS OR ROOTS. DURING THE GROWING SEASON (APRIL 15–SEPTEMBER 15) USE RECP'S ON THE BASE OF GRASSED WATERWAYS, SOIL SLOPES HAVING A GRADE GREATER THAT 15%, OR ANYWHERE WHERE HAY MULCH HAS PROVEN TO BE INEFFECTIVE AT CONTROLLING SHEET EROSION. RECP'S ARE A MANUFACTURED COMBINATION OF MULCH AND NETTING DESIGNED TO PREVENT EROSION AND RETAIN SOIL MOISTURE. FOR OVER WINTER PROTECTION, APPLY RECP'S ON THE BASE AND SIDE SLOPES OF GRASSED WATERWAYS AND ON SLOPES STEEPER THAN AN 8% GRADE.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP's WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.
6. UNTIL GRASS IS ABUNDANT, INSPECT PERIODICALLY AND AFTER EACH RAINSTORM TO CHECK FOR EROSION. IMMEDIATELY REPAIR AND ADD MORE MULCH UNTIL GRASSES ARE FIRMLY ESTABLISHED. DO NOT MOW THE FIRST YEAR.

ROLLED EROSION CONTROL MATTING

N.T.S.



NOTES:

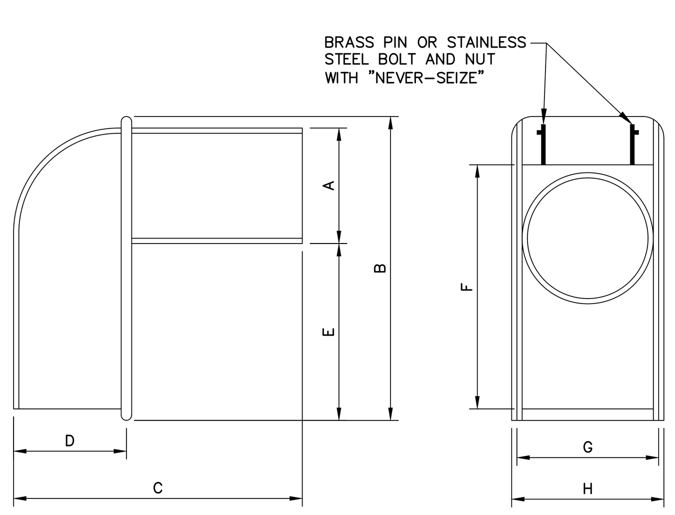
- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
- WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.

MAINTENANCE: INSPECT FOR EFFECTIVE REMOVAL OF SOIL FROM VEHICLES PRIOR TO LEAVING THE SITE. SWEEP ANY SOIL FROM ADJACENT ROADWAYS.

REMOVAL: AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL ALL AREAS OF THE SITE ARE STABILIZED.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.



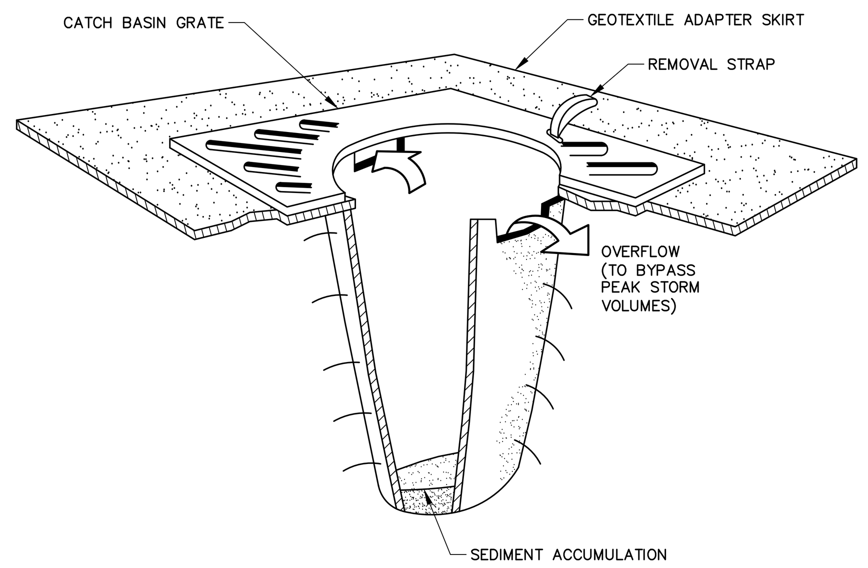
SIZE	A	B	C	D	E	F	G	H
10"	9 1/2"	16"	16 1/4"	6"	4 1/2"	14 1/8"	11 1/2"	12 3/8"
15"	14 1/2"	22 1/2"	23"	10 1/4"	5 3/4"	21"	14 1/2"	15 3/4"

NOTE:

1. CASCO TRAP SHALL BE CAST IRON CASCO TRAP BY ETHERIDGE FOUNDRY OR APPROVED EQUAL.
2. BOLT AND NUT REQUIRED WHERE HOOD WILL NOT OPEN COMPLETELY.
3. CASCO TRAP SHALL BE INSTALLED ON ALL CATCH BASIN OUTLET PIPES, INCIDENTAL TO COST OF CATCH BASIN

CASCO TRAP DETAIL

N.T.S.



NOTES:

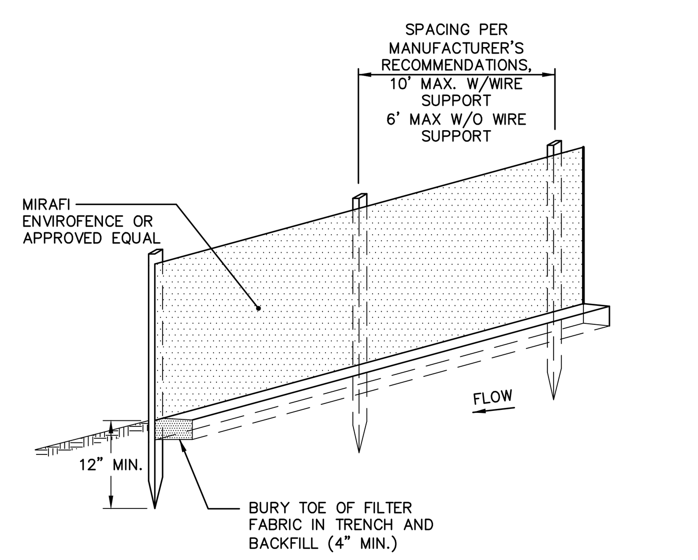
CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).

INSERT TO BE EMPTIED IN AN APPROVED MANNER WHEN IT IS 1/2 FULL OF SEDIMENT.

INSPECT INSERT AFTER ALL RAINFALL EVENTS, REPAIR AND MAINTAIN AS REQUIRED.

TEMPORARY INLET PROTECTION

N.T.S.



NOTES:

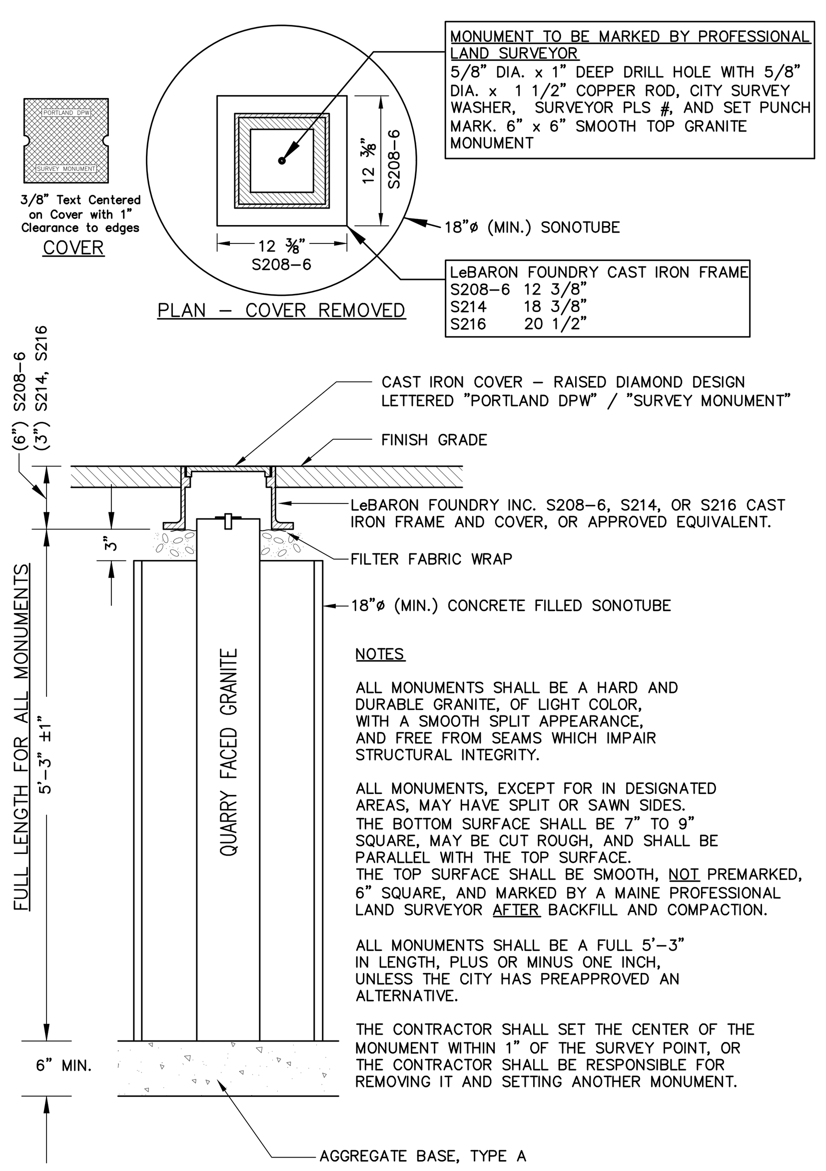
- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

MAINTENANCE: INSPECT FOR TEARS IN THE FABRIC OR DAMAGE TO SUPPORTS. REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF SIX–INCHES OR LESS.

REMOVAL: WHEN UPSLOPE AREAS ARE STABILIZED, THE STRUCTURE AND ANY ACCUMULATED SEDIMENT WILL BE REMOVED.

SEDIMENT BARRIER – SILTATION FENCE DETAIL

N.T.S.



NOTES

ALL MONUMENTS SHALL BE A HARD AND DURABLE GRANITE, OF LIGHT COLOR, WITH A SMOOTH SPLIT APPEARANCE, AND FREE FROM SEAMS WHICH IMPAIR STRUCTURAL INTEGRITY.

ALL MONUMENTS, EXCEPT FOR IN DESIGNATED AREAS, MAY HAVE SPLIT OR SAWN SIDES. THE BOTTOM SURFACE SHALL BE 7" TO 9" SQUARE, MAY BE CUT ROUGH, AND SHALL BE PARALLEL WITH THE TOP SURFACE. THE TOP SURFACE SHALL BE SMOOTH, NOT PREMARKED, 6" SQUARE, AND MARKED BY A MAINE PROFESSIONAL LAND SURVEYOR AFTER BACKFILL AND COMPACTION.

ALL MONUMENTS SHALL BE A FULL 5'–3" IN LENGTH, PLUS OR MINUS ONE INCH, UNLESS THE CITY HAS PREAPPROVED AN ALTERNATIVE.

THE CONTRACTOR SHALL SET THE CENTER OF THE MONUMENT WITHIN 1" OF THE SURVEY POINT, OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING IT AND SETTING ANOTHER MONUMENT.

GRANITE STREET MONUMENT

N.T.S.

NOTE: AGGREGATE TYPES PER MDOT SECTION 304.02

EROSION AND SEDIMENT CONTROL NOTES

Temporary Erosion Control

Contractor shall prepare and submit a soil erosion and water pollution control plan to engineer in accordance with section 656.

Measure	Dates For Use	Timing, Activity, and Location
Sedimentation Barrier	ALL	Before soil disturbance, install downhill of areas to be disturbed and around material stockpiles.
Up–slope Diversion	ALL	Before soil disturbance, install uphill of areas to be disturbed and material stockpiles.
Catch Basin Protection	ALL	Before soil or pavement disturbance, install ACF Environmental, Inc. High Flow Siltsack, Siltsaver Inlet Filter. or equal, installed per manufacturer's requirements.
Dust Control	ALL	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 1	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days. If grass growth provides less than 95% soil coverage by Nov. 1, apply mulch and anchor with erosion control blanket.
Mulch	April 15 to Sept. 15	On all areas of exposed soil prior to rain events or every __ days, apply 100–150 lbs (2.5 bales) per 1,000 sq ft. by mechanical blower.
Winter Mulch	Sept. 16 to Oct. 31	On all areas of exposed soil prior to precipitation or every __ days, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. by mechanical blower. Erosion control blanket may be used as a substitute for winter mulch.
	Nov. 1 to April 14	On all areas of exposed soil, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. and anchor with netting at the end of each working day. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and maintain and repair as necessary.

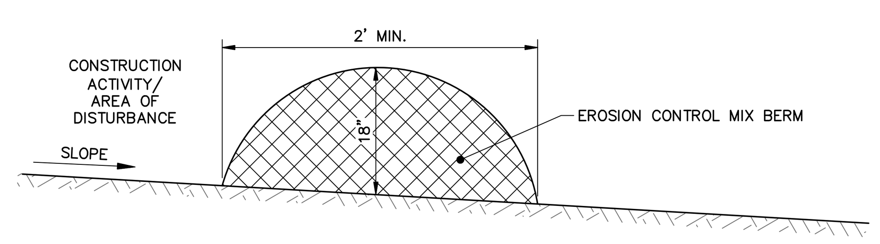
Permanent Erosion Control:

Measure	Dates For Use	Timing, Activity, and Location
Pavement – Base Course – Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation, prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil. Apply seed at double the specified rate on bare soil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	ALL	Install with final landscaping.

Inspections:

Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

Inspected Item	Look For
Mulched Surfaces	Thin mulch or inadequate application. Wind movement.
Seeded Surfaces	Poor seed germination. Loss of mulch. Development of rivulets.
Sediment Barrier	Sediment build–up to one half the height of the barrier. Undermining of the barrier. Supporting stakes loose, toppled, or unmarked. Breaks in barrier.
Perimeter Diversion	Discharge is to stabilized area. Erosion or breaks in barrier. Supporting stakes loose, toppled or unmarked.
Catch Basin Protection	Sediment build–up and structure blockages. Slow flow/Ponding water. Breaks in fabric or voids in barrier.
Dewatering Filter	Breaks in fabric or supporting structure. Slow flow, indicating high sediment build–up.
Construction Entrance	Sedimentation of roadways. Off–site dust complaints.



NOTES:

1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
2. EROSION CONTROL MIX SHALL CONTAIN A WELL–GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
   - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100%, DRY WEIGHT BASIS.
   - PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85%, PASSING A 0.75" SCREEN.
   - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
   - LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
   - SOLUBLE SALTS CONTENT SHALL BE < 4.0 MMHOS/CM.
   - THE PH SHOULD FALL BETWEEN 5.0 AND 8.0.

EROSION CONTROL MIX BERM

N.T.S.

EROSION AND SEDIMENTATION CONTROL NOTES

TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, HYDRAULIC MULCH, HAY AND STRAW MULCH, EROSION CONTROL BLANKET, TURF REINFORCED MATTING, RIPRAP AND TEMPORARY SEEDING. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE THE USE OF SILT FENCE, EROSION CONTROL MIX BERMS, PLUNGE POOLS, CHECK DAMS, SEDIMENT TRAPS, CATCHBASIN SEDIMENT COLLECTION BAGS AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE THE USE OF RIPRAP AT EXPOSED STORMDRAIN AND CULVERT INLETS AND OUTLETS, ARMORED SWALES AND SLOPES AND PERMANENT VEGETATION.

GENERAL

A. THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT, IF APPLICABLE. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK PUBLISHED BY THE MAINE DEP UNLESS OTHERWISE NOTED IN THESE PLANS. HTTP://WWW.MAINE.GOV/DEP/LAND/EROSION/ESCBMPS/

B. ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.

C. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.

D. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.

E. CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN–ON TO DISTURBED AREAS.

F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:

i. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS THAT 90% OF THE DISTURBED AREA IS COVERED WITH REASONABLY THICK UNIFORM STAND OF PERMANENT GRASS SPECIES, FREE FROM SIZABLE THIN OR BARE SPOTS.
ii. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THAT COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE OFF.
iii. FOR MULCHED AREAS, PERMANENT STABILIZATION MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL.
iv. FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL–GRADED GRAVEL OR APPROVED GEOTEXTILE. STONE MUST BE SIZED APPROPRIATELY AND IN ACCORDANCE WITH SECTION E–6 OF THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL.
v. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.
vi. FOR OPEN CHANNELS, LEVEL SPREADERS, ENGINEERED BUFFERS OR OTHER DESIGNED STORMWATER CONVEYANCE STRUCTURE, PERMANENT STABILIZATION MEANS THE CHANNELIZED AREA(S) IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH APPROVED RIPRAP, OR WITH OTHER NON–EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE SHALL BE NO EVIDENCE OF SLUMPING, UNDERCUTTING OR DOWNCUTTING OF THE DESIGNED CHANNEL.

H. IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, AND WILL NOT BE BUILT ON, THEN IMMEDIATELY PROVIDE PERMANENT STABILIZATION USING VEGETATION THROUGH PLANTING, SEEDING, SOD OR THROUGH THE USE OF PERMANENT MULCH OR RIPRAP. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED, OVERLY–COMPACTED SUBSOIL WITH TOPSOIL OR COMPOST AND LIGHTLY TILL 2–3" OF SOIL AMENDMENTS INTO THE TOP 8" OF SOIL.

I. PERMANENT SEEDING: SEED MIXES AND APPLICATION ARE SPECIFIED ON THE LANDSCAPING PLANS.

J. PROTECT ALL SEEDED AREAS WITH MULCH OR EROSION CONTROL BLANKET IN AREAS OF SHEET OR CONCENTRATED FLOWS. MULCH ALL AREAS SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. SCHEDULE SEEDING OR SODDING TO AVOID FAILURE DUE TO SUMMER DROUGHT AND FALL FROST. NEWLY SEEDED AREAS SHOULD BE PROTECTED FROM VEHICLE TRAFFIC, PEDESTRIAN TRAFFIC AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE OR SURFACE EROSION IS EVIDENT.

K. DITCH LININGS AND RIPRAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF THE CULVERT.

L. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1, IN THE BASE OF DITCHES AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (WETLANDS AND WATER RESOURCES). EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL. EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

M. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURE UPON STABILIZATION OF PROJECT AREA & COST SHALL BE INCIDENTAL TO CONTRACT.

WINTER CONDITIONS

A. WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 1. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15 THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS.

GOOD HOUSEKEEPING AND POLLUTION PREVENTION

A. SPILL PREVENTION CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER RUNOFF AND APPROPRIATE SPILL PREVENTION, CONTAINMENT AND RESPONSE PLANNING AND IMPLEMENTATION.

B. DURING CONSTRUCTION, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUND OR SURFACE WATERS MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO INFILTRATION AREAS. AN "INFILTRATION AREA" IS ANY ARE OF THE SITE THAT BY DESIGN, OR AS A RESULTS OF SOIL AND TOPOGRAPHY, ACCUMULATES RUNOFF THAT INFILTRATES IN THE SOIL. DIKES, BERMS, SUMPS AND OTHER FORMS OF TEMPORARY SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

C. LOCATE ALL MATERIAL STOCKPILES WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.

D. TAKE ALL REASONABLE MEASURES TO MINIMIZE DUST RESULTING FROM THE PROJECT. OIL MAY NOT BE USED FOR DUST CONTROL.

E. LOCATE ALL LITTER, CONSTRUCTION DEBRIS AND CONSTRUCTION CHEMICALS WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.

F. TRENCH OR FOUNDATION DE–WATERING MUST BE SPREAD THROUGH SUFFICIENT NATURAL BUFFERS THAT HAVE CAPACITY TO INFILTRATE THE PUMPED WATER OR SHOULD BE PUMPED TO DESIGNED CONSTRUCTION DEWATERING DEVICES AS DESCRIBED IN THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK.

G. SEDIMENTS AND SOIL MATERIALS SHOULD BE SWEPT FROM PAVED SURFACES AT THE END OF EACH WORKDAY OR PRIOR TO RAIN EVENTS, WHENEVER POSSIBLE.

INSPECTION AND MAINTENANCE

A. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT, THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK OR ANY MUNICIPAL REQUIREMENTS MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF ADDITIONAL BMPS OR MODIFICATIONS TO BMPS ARE NECESSARY, THE MODIFICATIONS MUST BE IMPLEMENTED WITH 7 CALENDAR DAYS OR PRIOR TO ANY PRECIPITATION EVENT. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

B. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT BY THE CONTRACTOR, SUMMARIZING THE SCOPE OF THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO THE OPERATION OF EROSION AND SEDIMENT CONTROL BMPS, MATERIAL STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE CONSTRUCTION AREA. THE INSPECTION LOG SHOULD BE DELIVERED TO THE PROPERTY OWNER OR RESPONSIBLE CONTRACTING ENTITY UPON COMPLETION OF THE PROJECT.

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COMMITMENT & INTEGRITY DRIVE RESULTS

STATE OF MAINE
DAVID SENUS
10791
PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION

DESIGNED BY: CMS | DRAWN BY: BCM | CHECKED BY: DAS

CIVIL DETAILS - 1

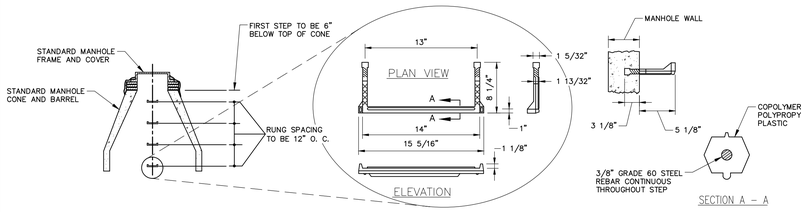
MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET EMPLOYEE PARKING GARAGE

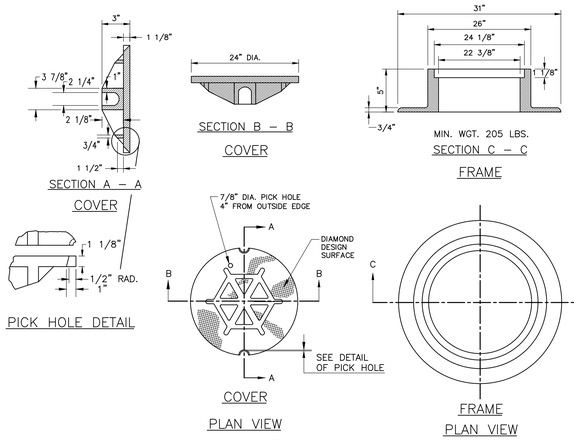
JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: AS NOTED
SHEET: 12 OF 17

C-200

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION



PLASTIC MANHOLE STEPS
N.T.S.

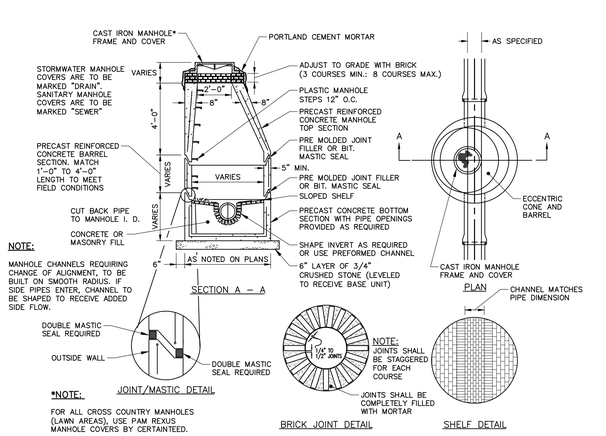


NOTE:
FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

TYPE "A" CAST IRON MANHOLE COVER AND FRAME
N.T.S.

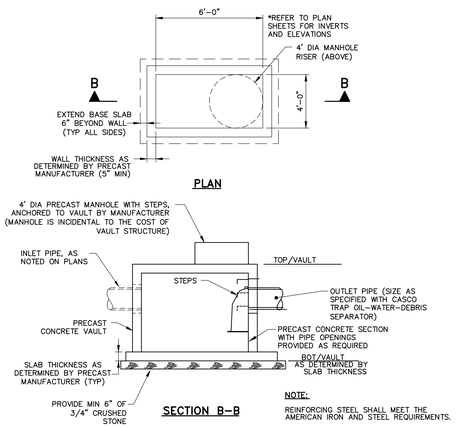
GENERAL NOTES FOR MANHOLES AND CATCH BASINS

1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C–478.
3. ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR SURFACE. IF CONSTRUCTED OF BRICK MASONRY, SURFACE SHALL BE PLASTERED WITH A SMOOTH MORTAR FINISH 3/8" THICK. AFTER THE MORTAR HAS SET, THE SURFACE SHALL BE WATERPROOFED AS REQUIRED BY SUPPLEMENTAL SPECIFICATIONS SECTION 604.
4. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48–CLASS 35. ALL PARTS OF CASTINGS, EXCEPT FINISHED SURFACE, SHALL RECEIVE A COAT OF COAL TAR PITCH VARNISH OR ASPHALTUM PAINT WHICH SHALL BE SMOOTH AND TOUGH BUT NOT BRITTLE.
5. MANHOLES MAY BE CONSTRUCTED OF MASONRY, PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
6. CONTRACTOR SHALL SUBMIT ANTIFLOATATION CALCULATIONS FOR ALL MANHOLE AND CATCH BASIN STRUCTURES.
7. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION, OFFSET, AND STRUCTURE ID PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
8. STORM AND SEWER MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED PICK HOLE.
9. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
10. WHEN THE FLOW CHANGES DIRECTION IN A MANHOLE, THE CHANNEL ALIGNMENT SHALL FOLLOW A SMOOTH RADIUS. CHANNELS SHALL BE FORMED TO ACCEPT ALL INLET PIPES.
11. ON STORM AND SEWER MANHOLES, THE SHELF AND CHANNEL SHALL BE FORMED BY BRICK SET IN CEMENT MORTAR OR BY FACTORY PRE–CAST CONCRETE. SUCH PRE–CAST CONCRETE SHALL BE EPOXY COATED AND THE SHELF SHALL HAVE A PERMANENT NON–SKID SURFACE.

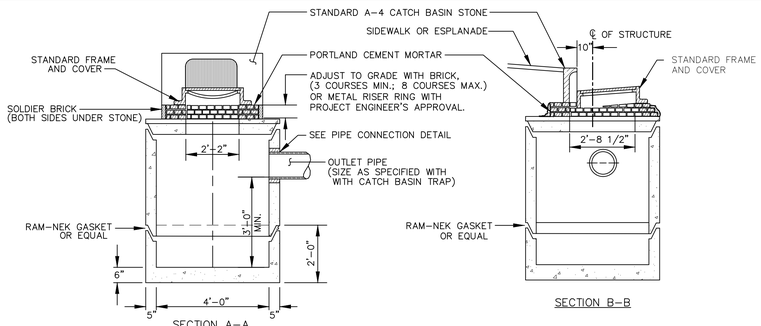


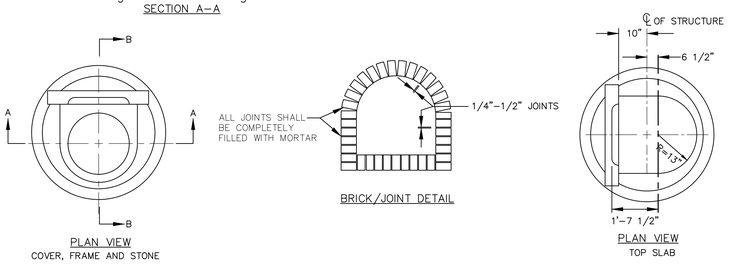
PRECAST CONCRETE MANHOLE
N.T.S.

PRECAST CONCRETE CATCH BASIN
N.T.S.

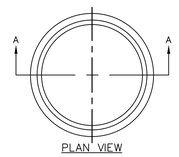


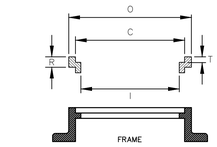
PRECAST CONCRETE VAULT
N.T.S.





PRECAST CONCRETE CATCH BASIN – TYPE "D"
N.T.S.



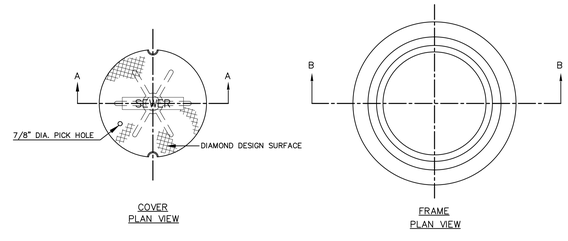


SIZE	C	R	T	O	I	Wt.
R241 1/2	24	1 1/2	1 1/8	26 1/4	22 1/2	60
R242	24	2	1 1/8	26 1/4	22 1/2	80
R242 1/2	24	2 1/2	1 1/8	26 1/4	22	100
R243	24	3	1 1/8	26 1/4	22	120

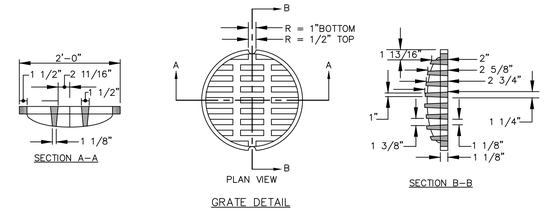
MANHOLE RISER RING
N.T.S.

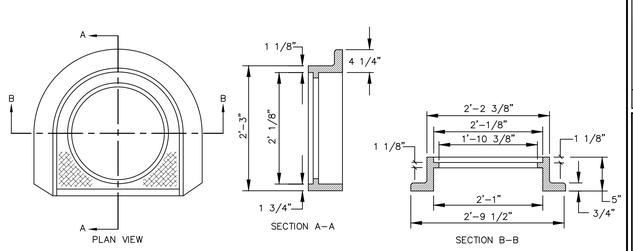
NOTE:
ALL MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE, LOCATED 8" FROM THE CENTER OF THE COVER.

ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.



CAST IRON MANHOLE COVER AND FRAME
N.T.S.





CATCH BASIN FRAME & GRATE
N.T.S.

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DAVID SENUS 10781 REGISTERED PROFESSIONAL ENGINEER 9/22/2018

REV	DESCRIPTION	DATE
	031018 CSW.dwg	
	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DESIGNED BY: CMS	
	DRAWN BY: BEM	

CIVIL DETAILS - 2

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: AS NOTED
SHEET: 13 OF 17

C-201

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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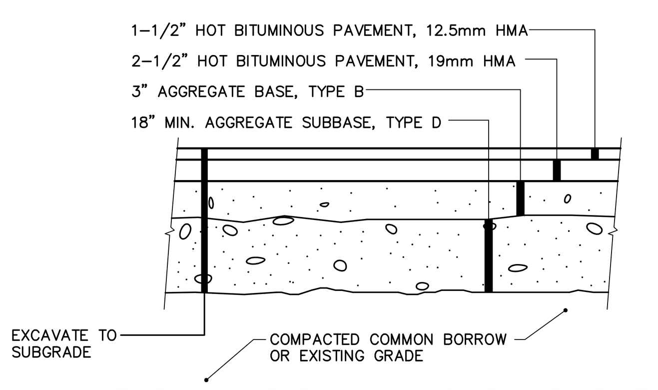
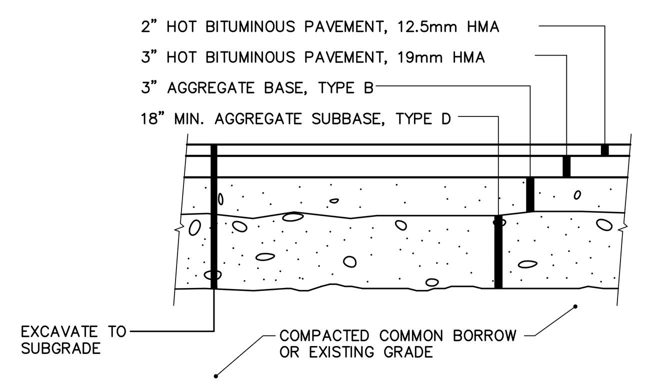
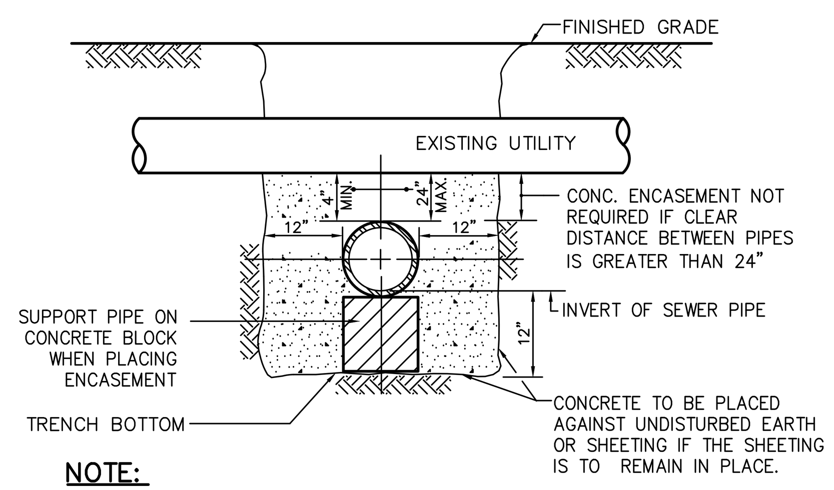


TYPICAL BITUMINOUS PAVEMENT SECTION – PARKING
N.T.S.

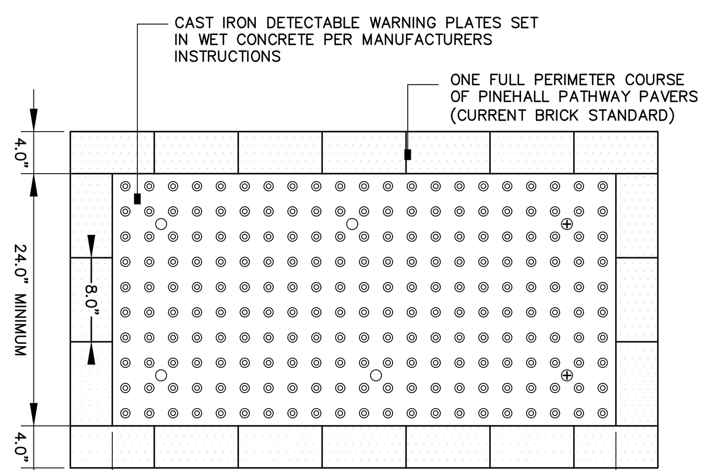


TYPICAL BITUMINOUS PAVEMENT SECTION – CITY RIGHT-OF-WAY
N.T.S.

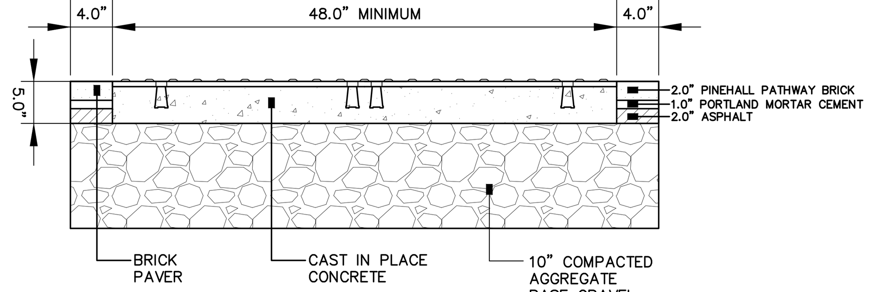


NOTE:
PIPE MUST BE BRACED VERTICALLY & HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONC.

UTILITY CROSSING LESS THAN 24" CLEARANCE
N.T.S.



PLAN VIEW

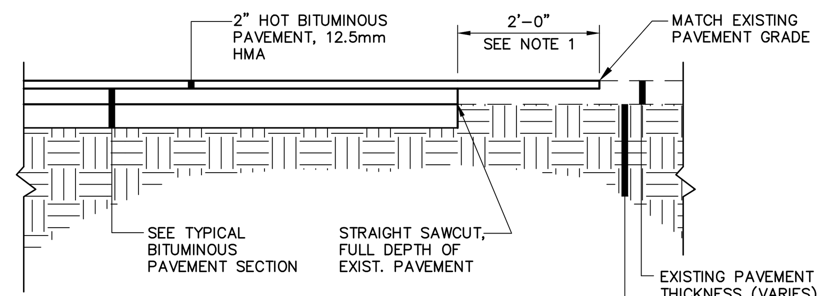


SECTION VIEW

SIDEWALK RAMP DETECTABLE WARNING
N.T.S.

NOTES:

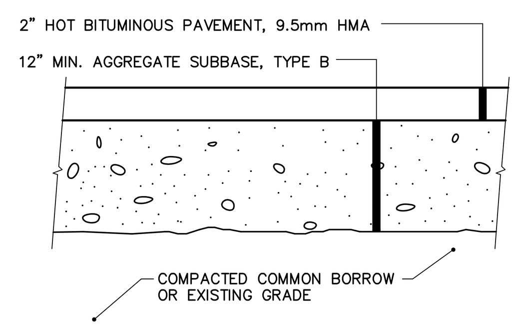
1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MAINE D.O.T. CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. NO OTHER DETECTABLE WARNING DESIGN OR CONFIGURATION IS ALLOWED.
4. FOR ALL DETECTABLE WARNING PANELS, WITHIN OR ABUTTING HISTORIC DISTRICTS AND HISTORIC LANDSCAPES, "DARK GRAY" COLORED (#36118) PANELS SHALL BE USED. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
5. THE DETECTABLE WARNING PANEL SHALL HAVE ONE FULL COURSE OF PINEHALL PATHWAY PAVERS (THE CURRENT BRICK STANDARD) AROUND THE FULL PERIMETER OF THE PANEL. THIS PERIMETER COURSE SHALL BE SET USING PORTLAND MORTAR CEMENT TO CREATE A FLUSH SURFACE BETWEEN THE BRICK AND THE PANEL.
6. SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
7. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



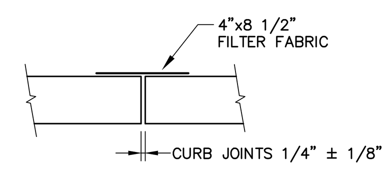
NOTES:

1. GRIND EXISTING PAVEMENT, TO 1-1/2" DEPTH.
2. PROVIDE BITUMINOUS TACK COAT ON VERTICAL AND HORIZONTAL SURFACES PRIOR TO PAVING.
3. DETAIL APPLICABLE TO PAVEMENT BUTT JOINTS AT ROADWAY WORK LIMITS. REFER TO PIPE INSTALLATION DTL. OR PAVED ROAD SECTION DTLS. FOR TRENCH REPAIR REQUIREMENTS.

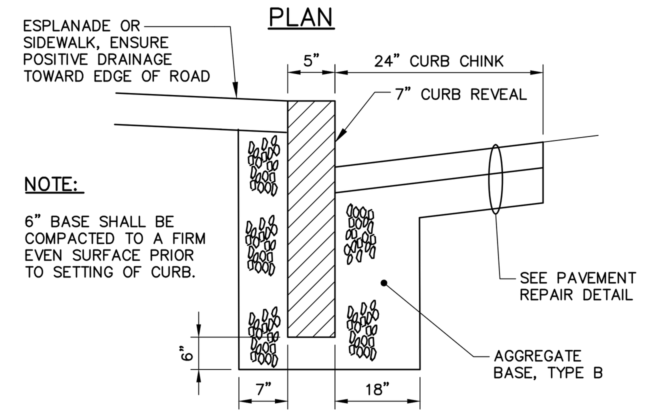
PAVEMENT BUTT JOINT DETAIL
N.T.S.



TYPICAL BITUMINOUS PAVEMENT SECTION – SIDEWALKS
N.T.S.



PLAN

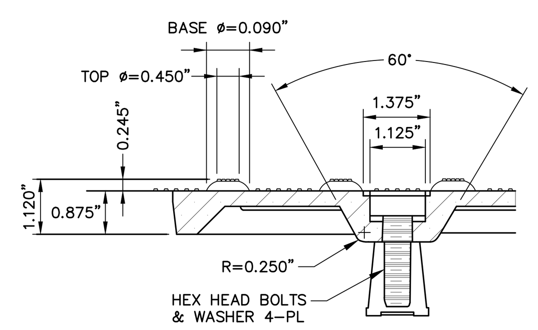


SECTION

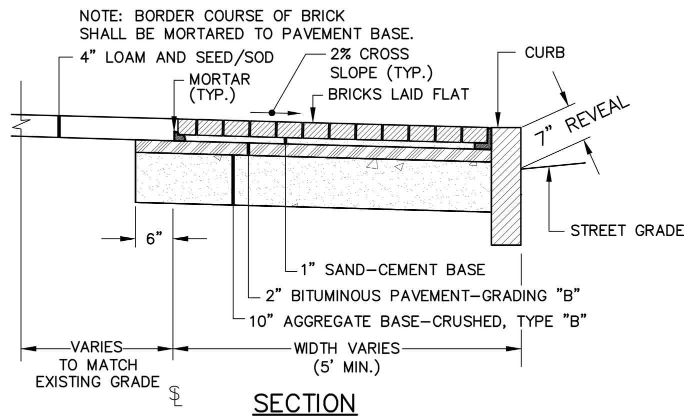
CURB TYPE 1 ON CURVES			
TYPE	RADIUS OF CURVE	LENGTH	STONE IS CUT OR CAST
1	0' TO 60' INCL.	4' MIN.	ARC TO FIT CURVE
	OVER 60' TO 160'	4' TO 6'	STRAIGHT PIECES

TYPICAL NEW AND RESET CURB INSTALLATION
N.T.S.

NOTE: AGGREGATE TYPES PER MDOT SECTION 304.02

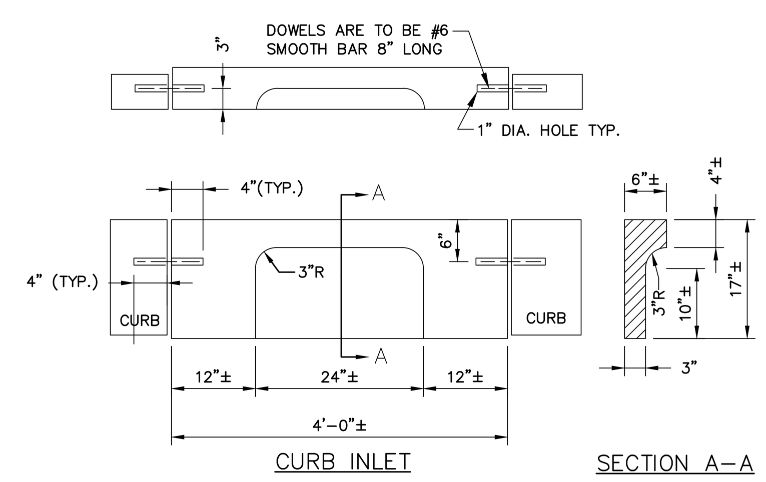


BOLT DETAIL



SECTION

BRICK SIDEWALK DETAIL
N.T.S.

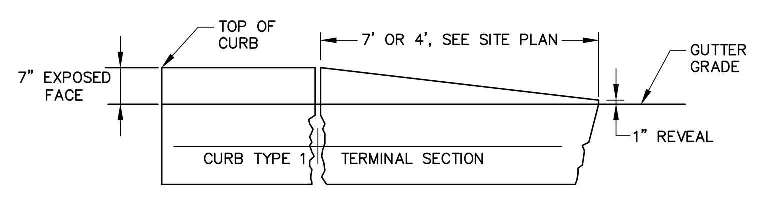


CURB INLET

SECTION A–A

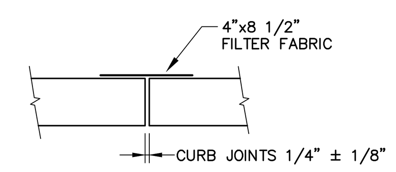
*FOR "D" FRAME & COVER INLETS

TYPE 1 GRANITE CURB INLET
N.T.S.

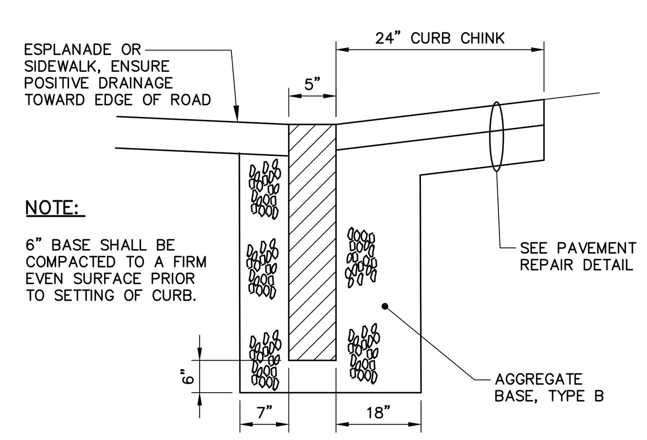


TERMINAL SECTION TYPE "1"

TERMINAL CURB SECTION
N.T.S.



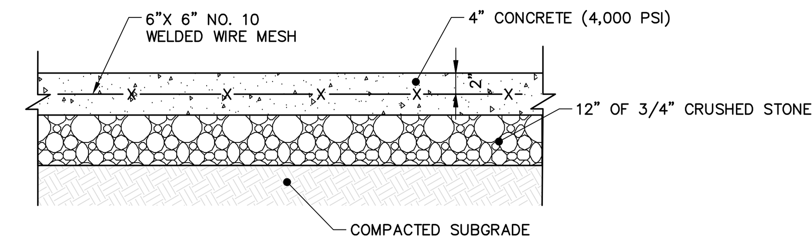
PLAN



SECTION

TYPICAL FLUSH CURB INSTALLATION
N.T.S.

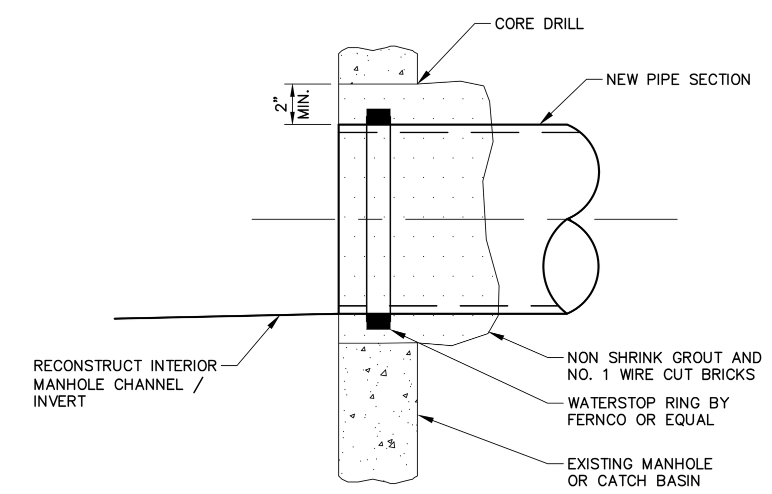
NOTE: AGGREGATE TYPES PER MDOT SECTION 304.02



NOTES:

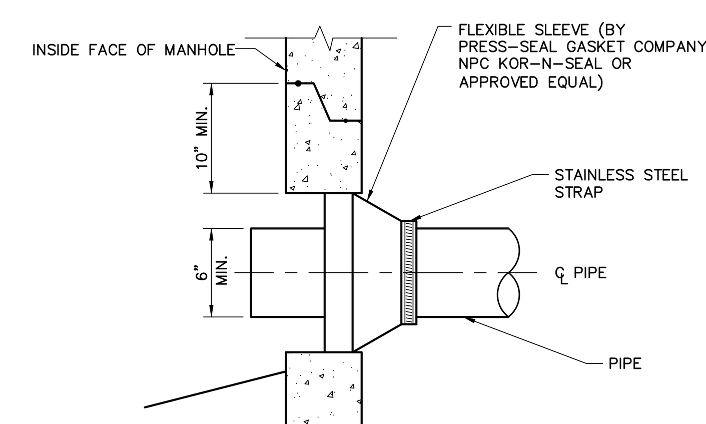
1. PROVIDE 1/2" PREMOLDED BITUMINOUS EXPANSION JOINTS AT 20 FT. INTERVALS.
2. PROVIDE CONTROL JOINTS AT 5 FT. INTERVALS OR AS SHOWN ON LANDSCAPE PLANS.
3. PROVIDE LIGHT BROOM FINISH AFTER TOOLING OF EDGES/ JOINTS. NO TOOLING PATTERNS ON FINISH SLAB

CAST-IN-PLACE CONCRETE SIDEWALK
N.T.S.

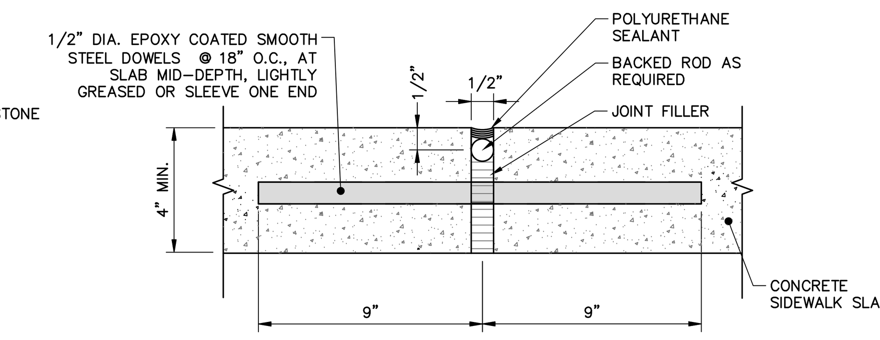


NEW PIPE TO EXISTING STRUCTURE
N.T.S.

NOTE: EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION



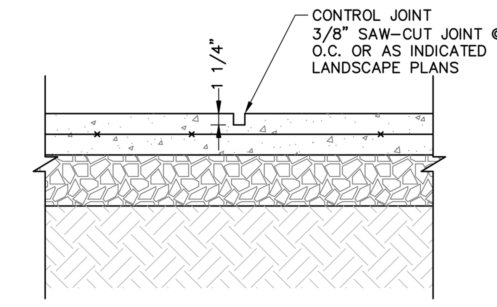
NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL
N.T.S.



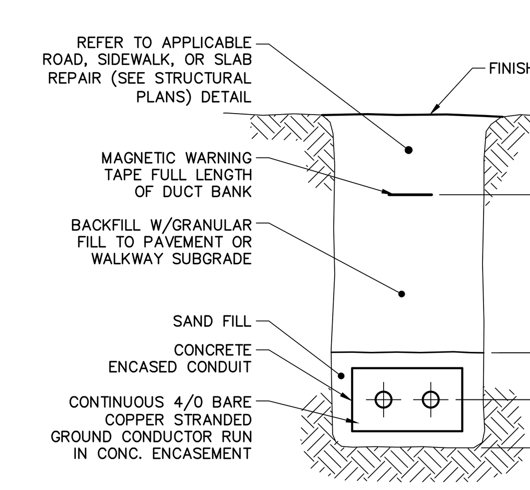
NOTES:

1. EXPANSION JOINTS SHALL BE 60' O.C.
2. DISCONTINUE REINFORCING AT EACH SIDE OF JOINT.
3. DOWELS SHALL BE CUT STRAIGHT AND DEBURRED.

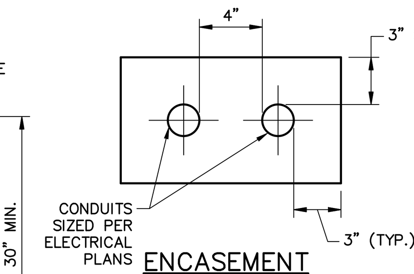
CONCRETE SIDEWALK EXPANSION JOINT
N.T.S.



SIDEWALK CONTROL JOINT
N.T.S.



TRENCH

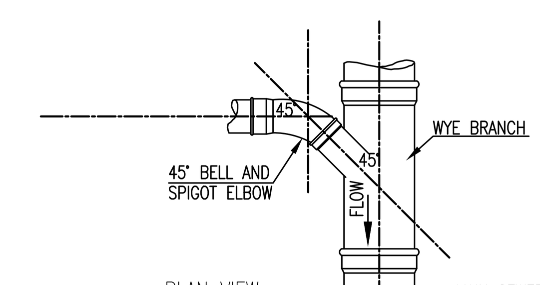


ENCASEMENT

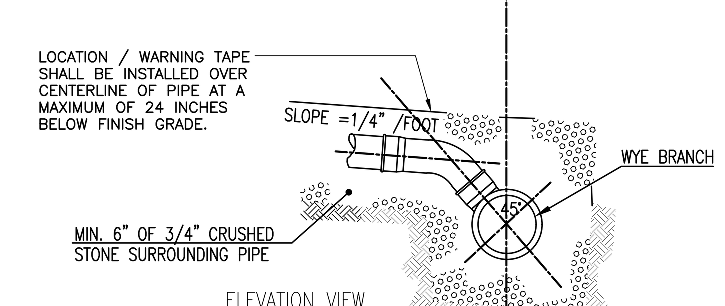
NOTES:

1. ALL CONDUITS, INCLUDING RISER CONDUITS, NEED TO BE SLOPED TO DRAIN INTO MANHOLES OR TRANSFORMER FOUNDATIONS, 3" PER 100'.
2. INSTALL A PULLING LINE WITHIN EACH CONDUIT.
3. CONDUIT SHALL BE SCHEDULE 40 PVC, CONDUIT SWEEPS SHALL BE MIN. 48" RADIUS RIGID GALV. STEEL.

BURIED ELECTRICAL CONDUIT DETAIL
N.T.S.

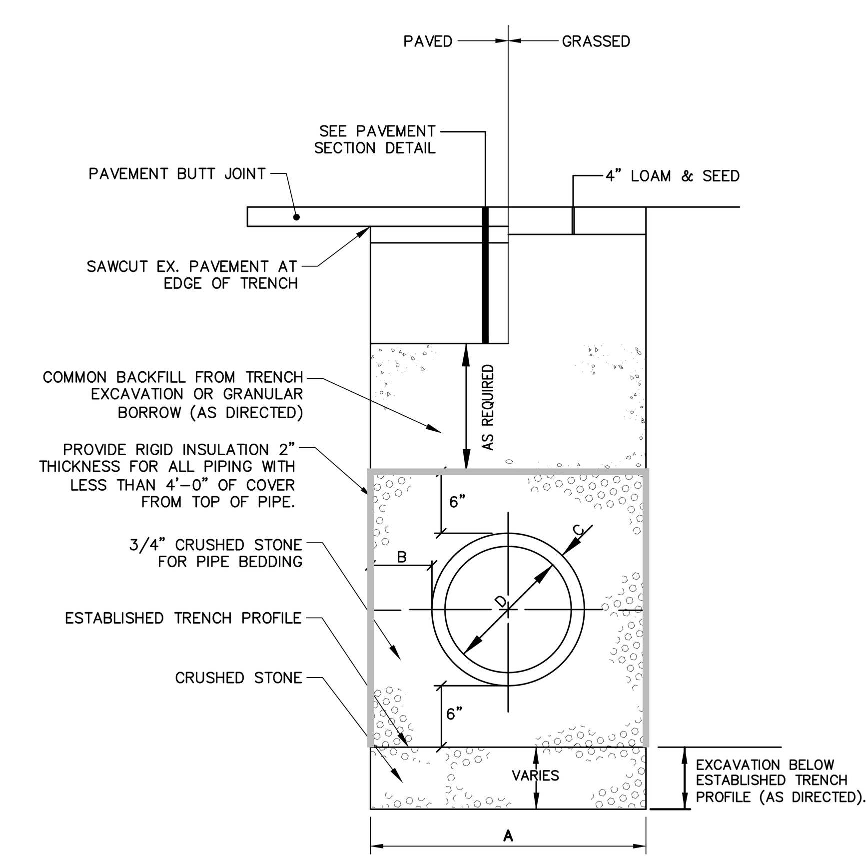


PLAN VIEW



ELEVATION VIEW

TYPICAL SEWER LATERAL WYE CONNECTION DETAILS
N.T.S.



PIPE INSTALLATION DETAIL
N.T.S.

PIPE INSTALLATION DETAIL – NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE.
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 "B" SHALL BE AT LEAST 9".
4. DIMENSION "A" SHALL BE BASED ON PIPE DIAMETER, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, "D" (INCHES)	MAX. TRENCH WIDTH, "A" (FEET)
6	4.0
8	4.0
10	4.0
12	4.0
15	4.0
18	5.0
21	5.0
24	5.5
27	6.0
30	6.0
36	7.0
42	8.0
48	8.0

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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STATE OF MAINE – DAVID A. SENUS – 10791 – PROFESSIONAL ENGINEER – 6/22/2018

REV	DATE	DESCRIPTION
		0231158 (C20X.dwg)

DESIGNED BY: CMS | DRAWN BY: BCM | CHECKED BY: DAS

CIVIL DETAILS - 3

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: AS NOTED
SHEET: 14 OF 17

C-202

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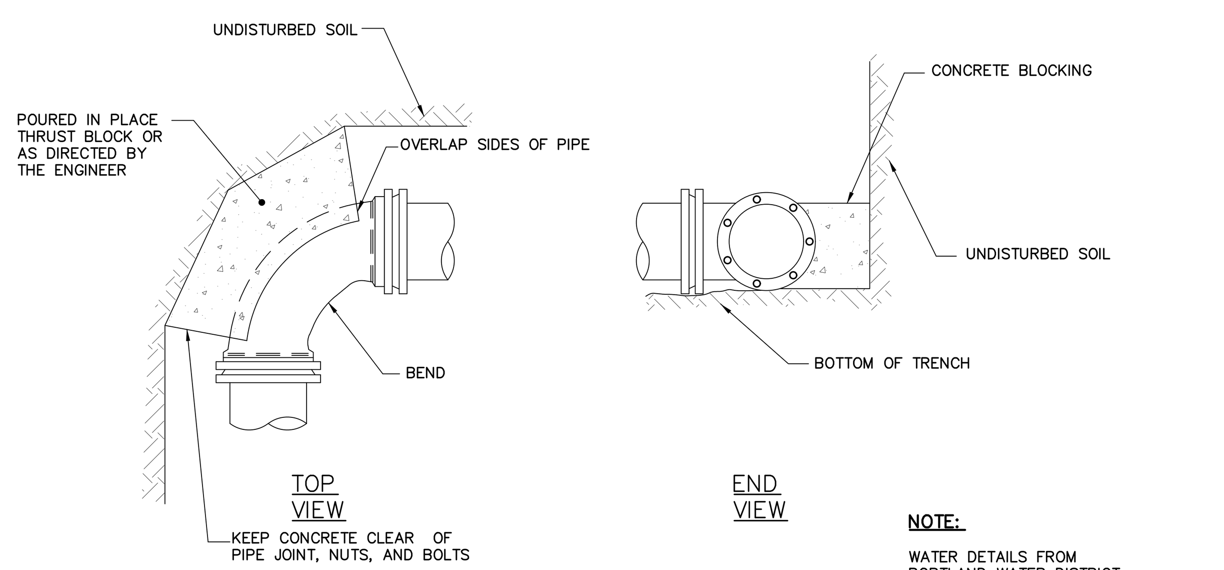
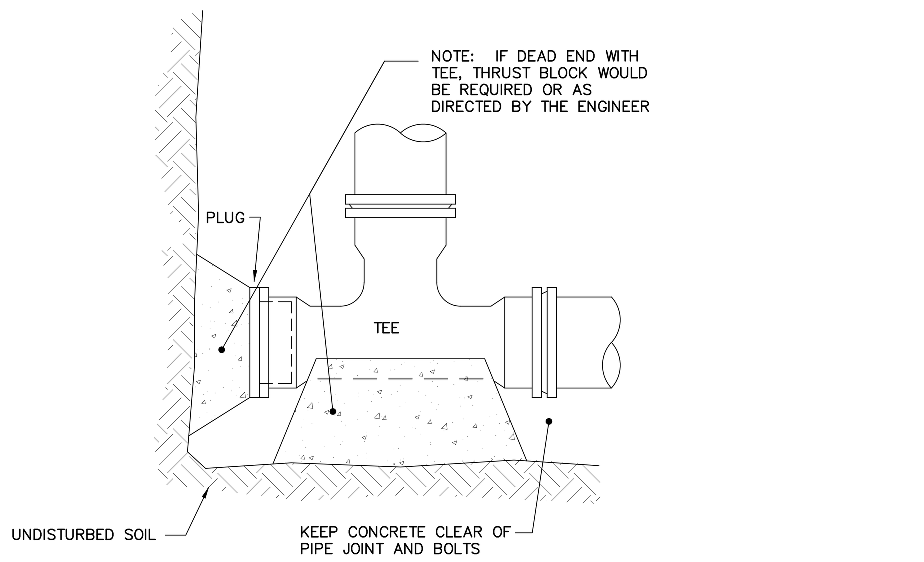
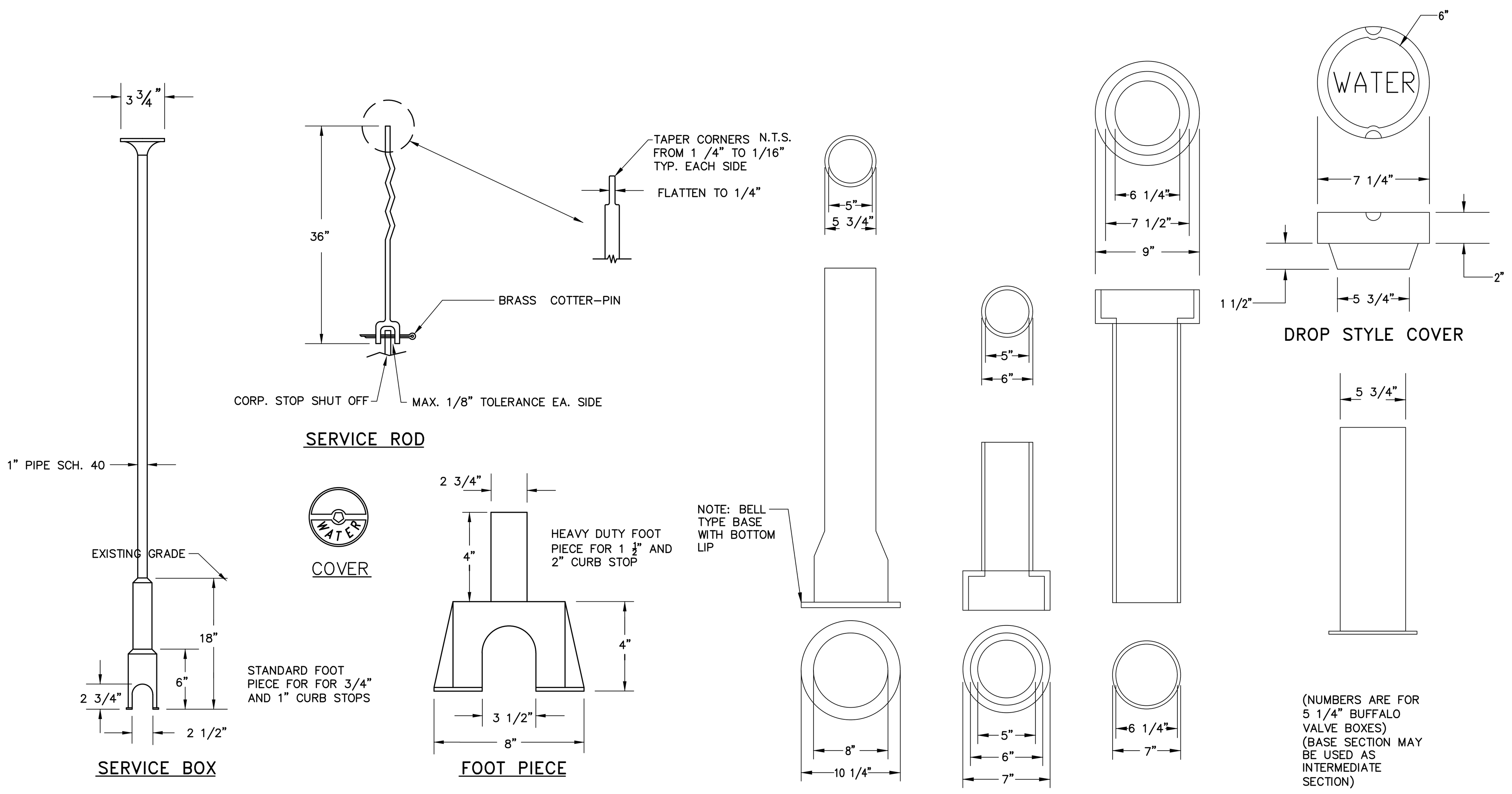


STANDARD BEND BLOCKING
N.T.S.

NOTE:
WATER DETAILS FROM PORTLAND WATER DISTRICT ASSET MANAGEMENT & PLANNING DEPT. "STANDARD WATER DETAILS WATER MAIN REPLACEMENTS PORTLAND – SOUTH PORTLAND"



STANDARD TEE BLOCKING
N.T.S.

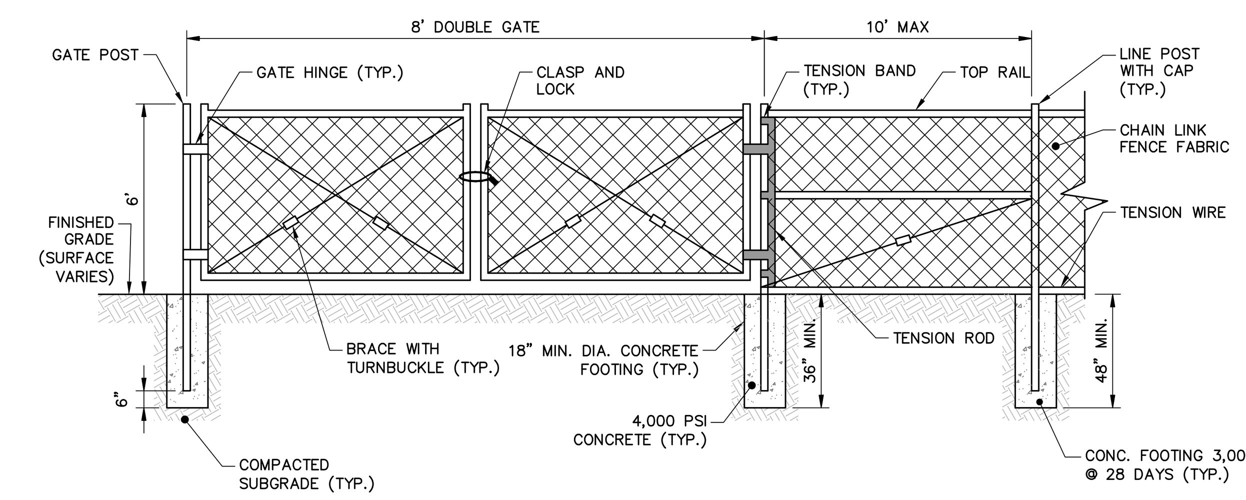


NOTE : ANY EXTENSION OF SERVICE BOX REQUIRES:

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.)

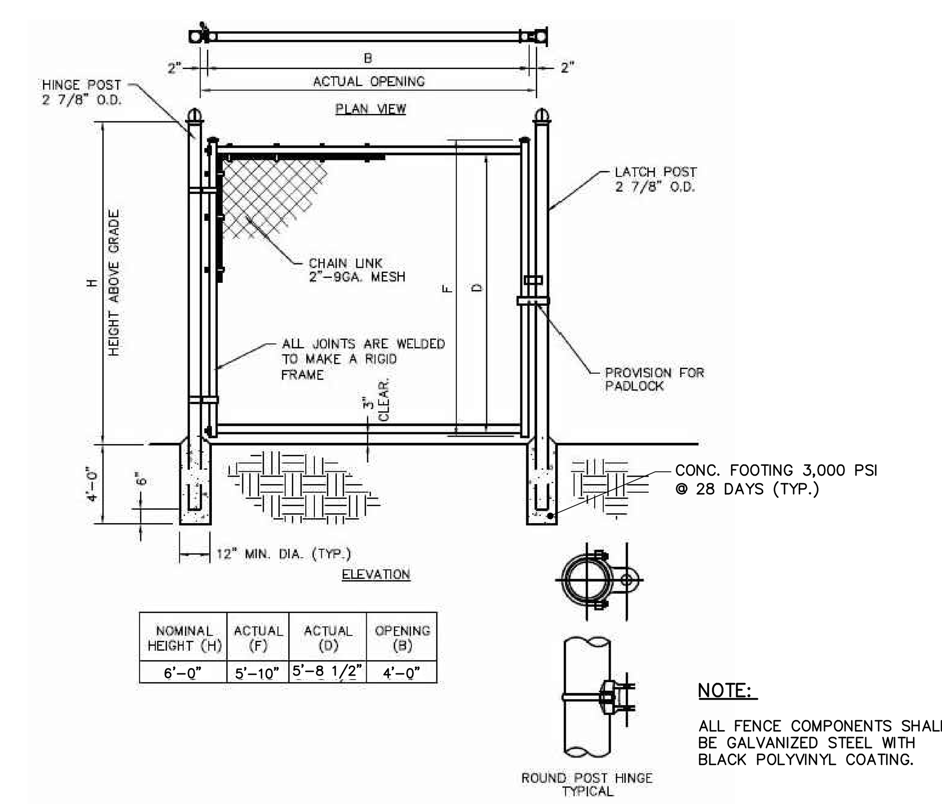
VALVE BOX & COVER
N.T.S.



NOTES:
1. ALL FENCING AND HARDWARE TO BE LIST MATERIAL.
2. INSTALL ALL FENCING AND HARDWARE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

NOTE:
ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH BLACK POLYVINYL COATING.

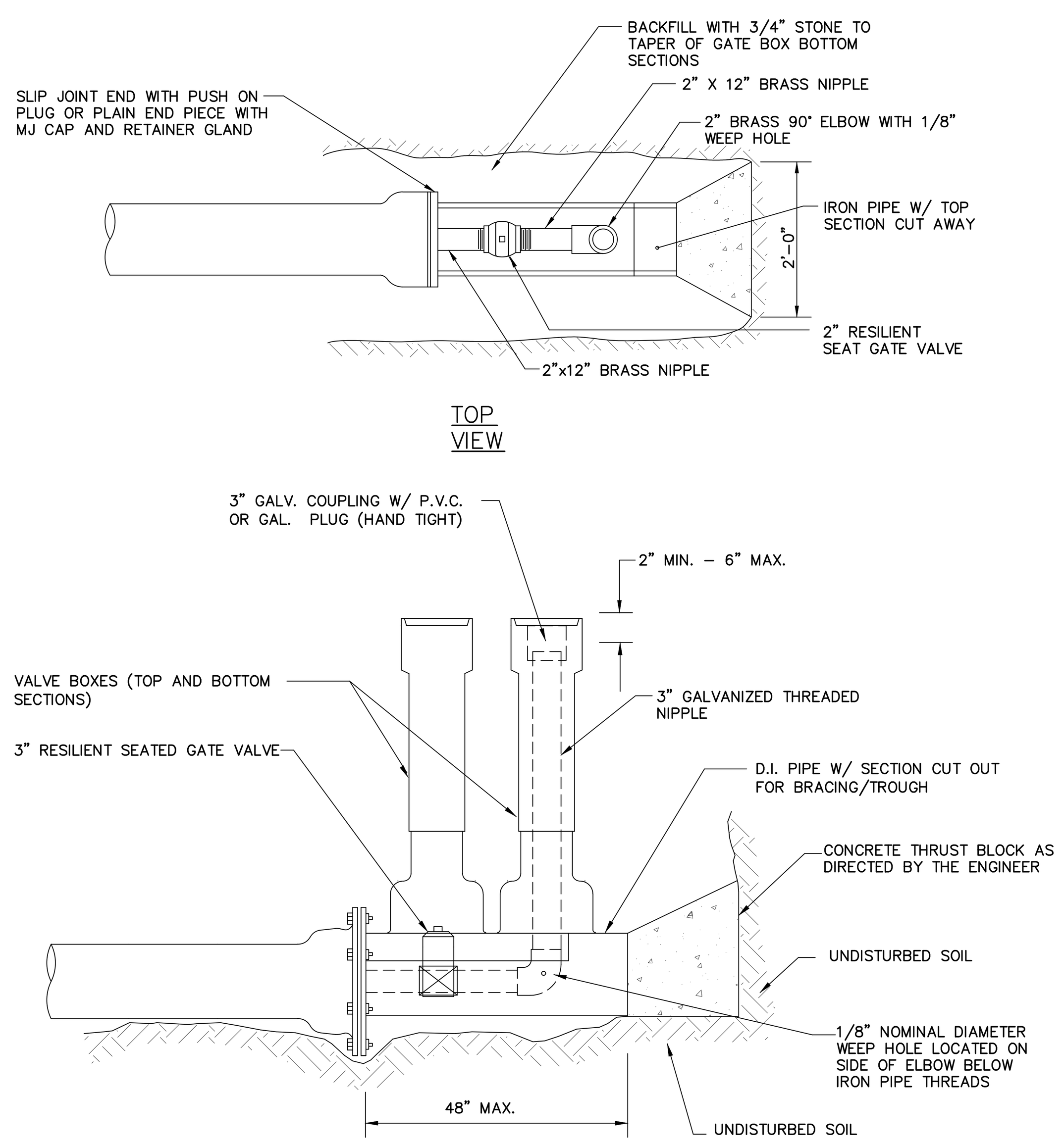
6' HGT. CHAIN LINK FENCE AND GATE
N.T.S.



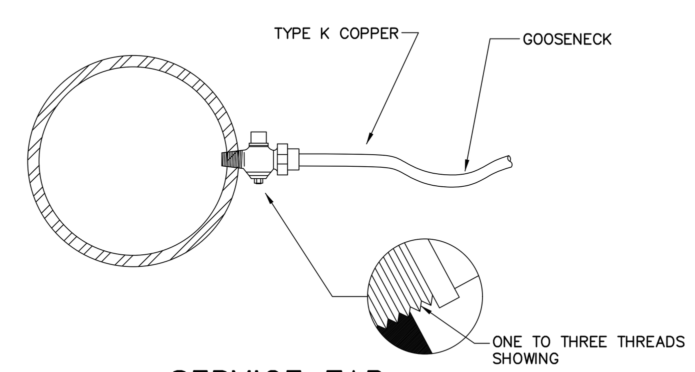
NOMINAL HEIGHT (H)	ACTUAL (F)	ACTUAL (D)	OPENING (B)
6'-0"	5'-10"	5'-8 1/2"	4'-0"

NOTE:
ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH BLACK POLYVINYL COATING.

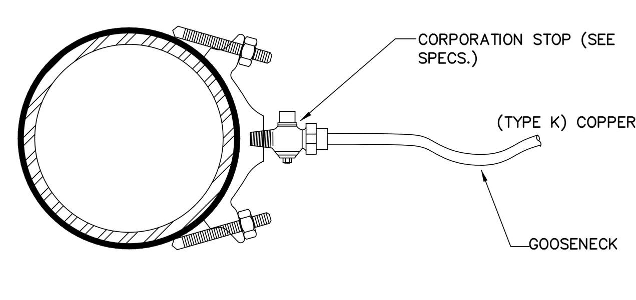
CHAIN LINK PERSONNEL GATE
N.T.S.



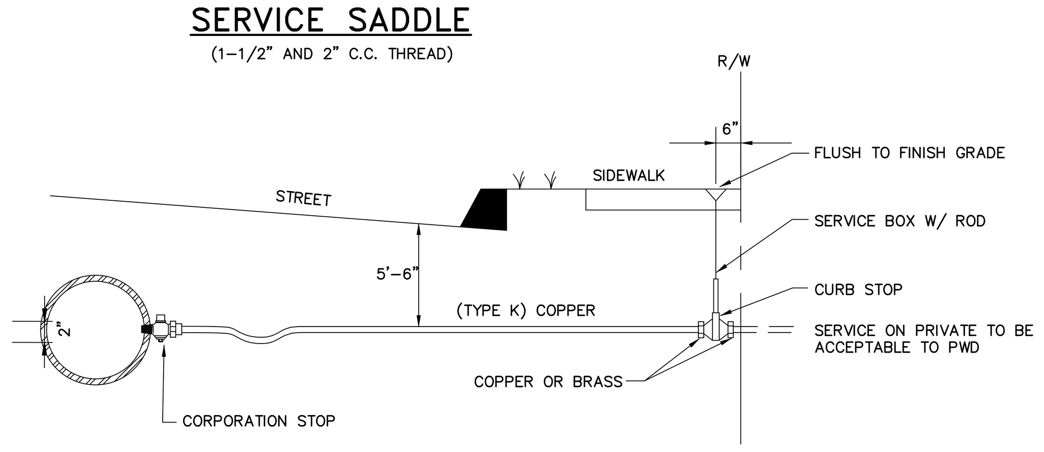
STANDARD 3" BLOW OFF
N.T.S.



SERVICE TAP
(3/4" AND 1" C.C. THREAD)

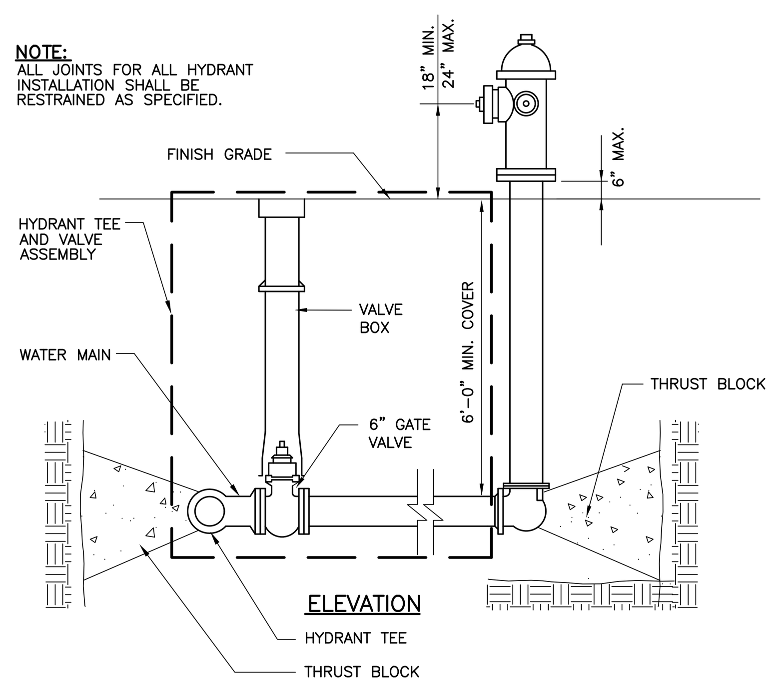


SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)

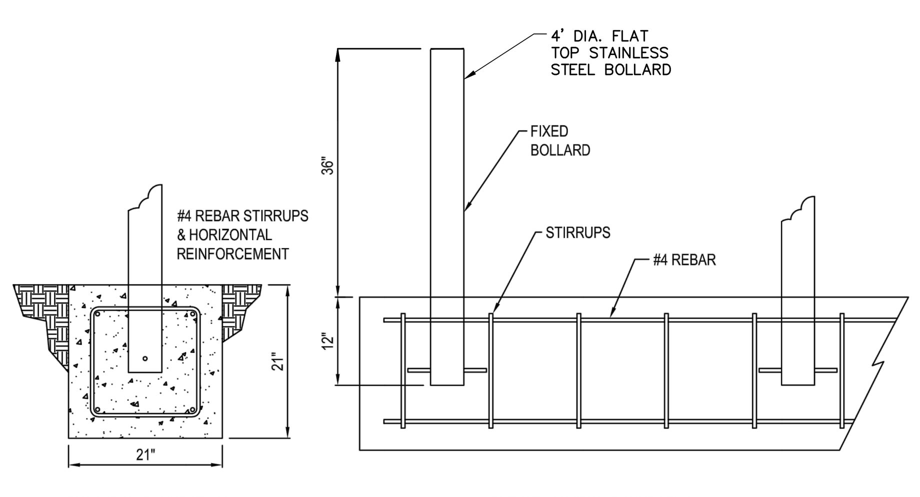


TYPICAL SERVICE CONNECTION
N.T.S.

NOTE:
ALL JOINTS FOR ALL HYDRANT INSTALLATION SHALL BE RESTRAINED AS SPECIFIED.

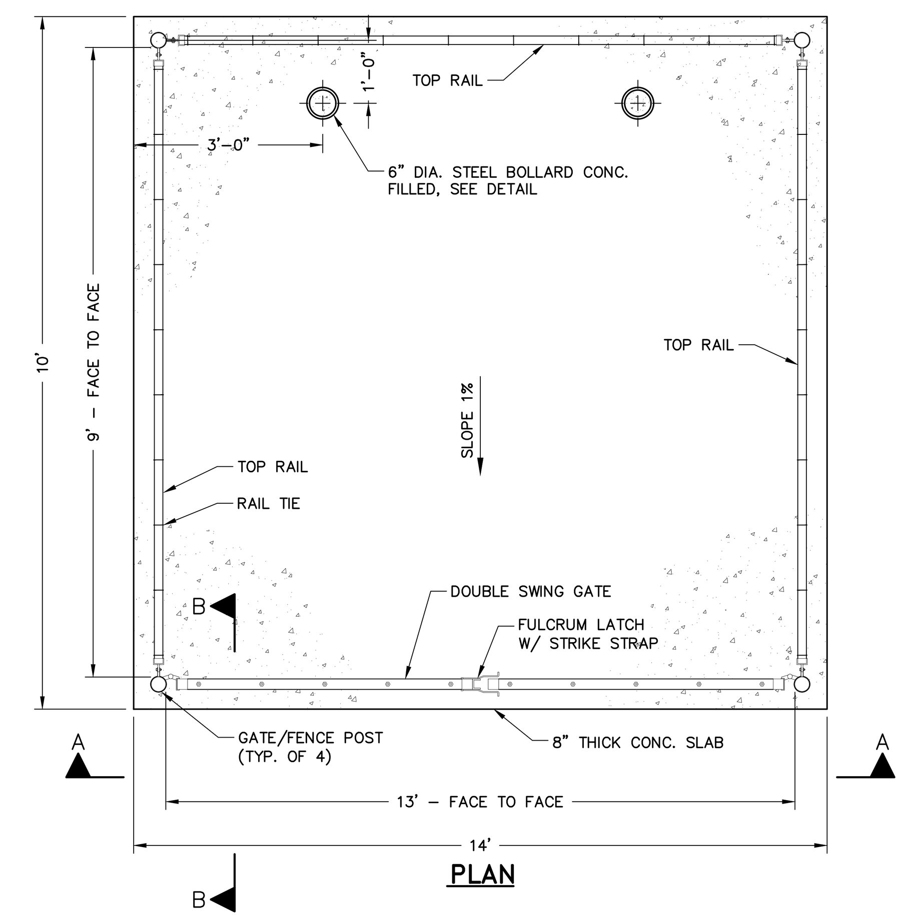


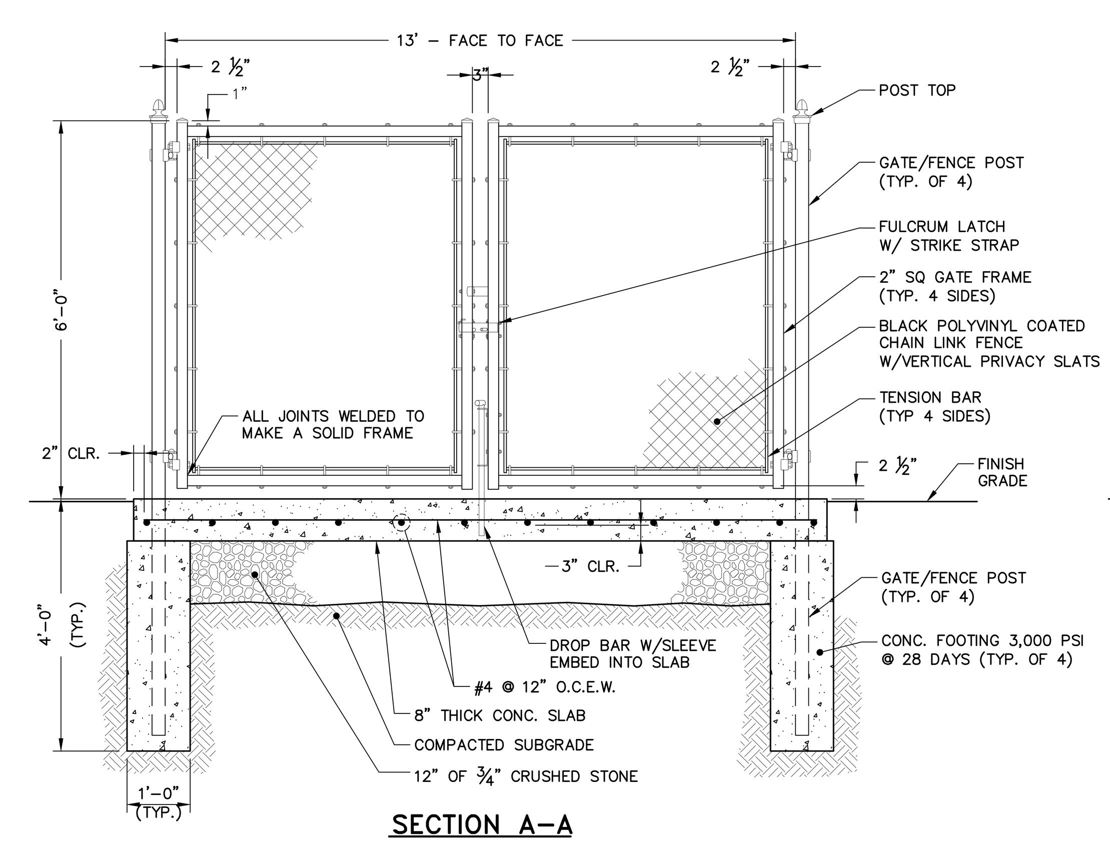
TYPICAL HYDRANT ASSEMBLY DETAIL
N.T.S.

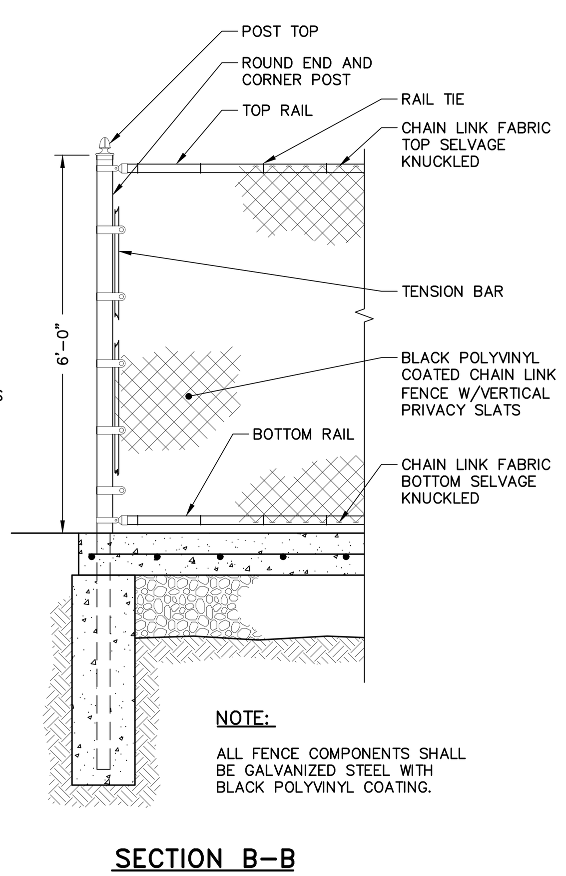


NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ALL DIMENSIONS ARE CONSIDERED TRUE AND REFLECT MANUFACTURER'S SPECIFICATIONS.
3. DO NOT SCALE DRAWING.
4. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 2905-015.

BOLLARD DETAIL
N.T.S.







NOTE:
ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH BLACK POLYVINYL COATING.

DUMPSTER ENCLOSURE & PAD DETAIL
SCALE: N.T.S.

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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STATE OF MAINE – DAVID SENUS – 10791 – PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION
		0231158 C20X.dwg

DESIGNED BY: CMS | CHECKED BY: DAS | DRAWN BY: BCM

CIVIL DETAILS - 4

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: AS NOTED
SHEET: 15 OF 17

C-203

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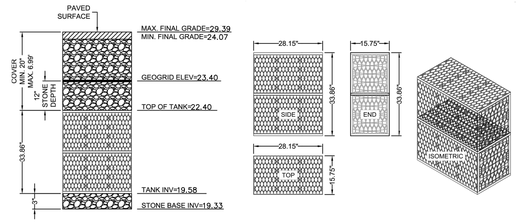


DOUBLE R-TANKHD-ELEVATION

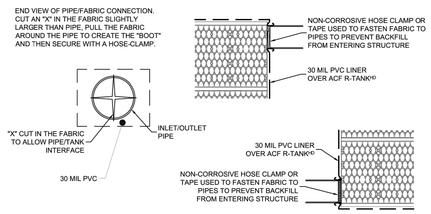
N.T.S.

MODULE DATA

GEOMETRY:	**LOAD RATING:**
LENGTH = 28.15 IN. (715 MM)	33.4 PSI, (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS20, (WITH ACF COVER SYSTEM)
HEIGHT = 33.86 IN. (860 MM)	**MATERIAL:**
TANK VOLUME = 8.69 CF	100% RECYCLED POLYPROPYLENE
STORAGE VOLUME = 8.25 CF	**SMALL PLATES PER**
VOID INTERNAL VOLUME: 95%	**SEGMENT/TOTAL:**
VOID SURFACE AREA: 90%	5/10

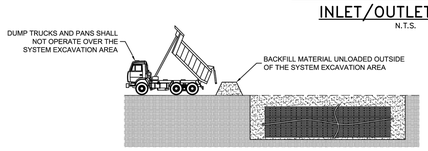
DOUBLE R-TANKHD-MODULE DETAIL

N.T.S.



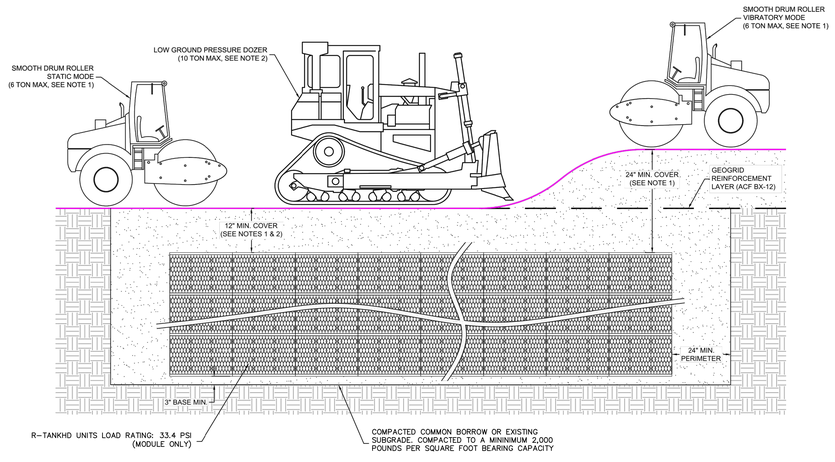
DOUBLE R-TANKHD TYPICAL INLET/OUTLET DETAIL

N.T.S.



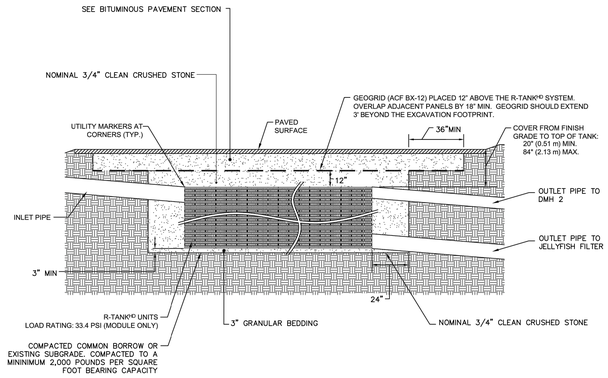
DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF 3/4-1.5" CLEAN CRUSHED, ANGULAR STONE SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLERS MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24 INCH OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED
2. ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVE EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT.
3. ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT)



DOUBLE R-CONSTRUCTION EQUIPMENT COVER DETAIL

N.T.S.

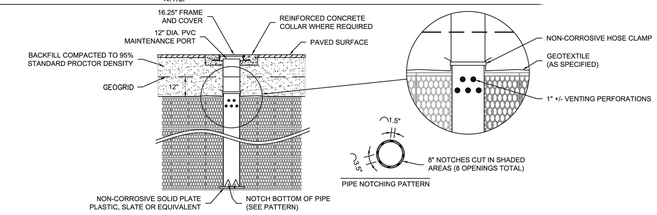


R-TANKHD & H-20 LOAD SECTION VIEW

N.T.S.

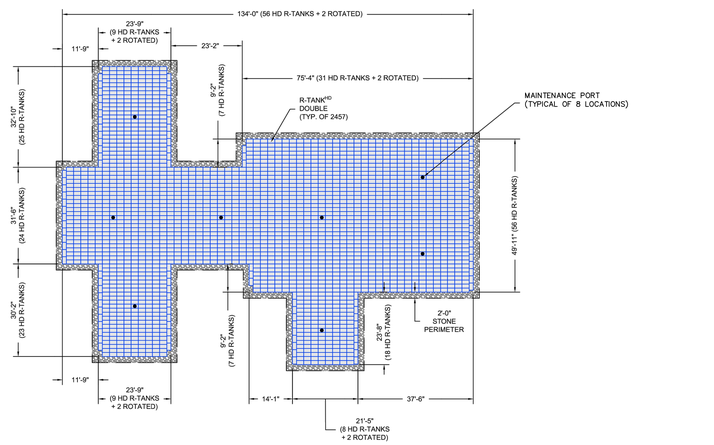
R-TANKHD & H-20 LOADS - SEC

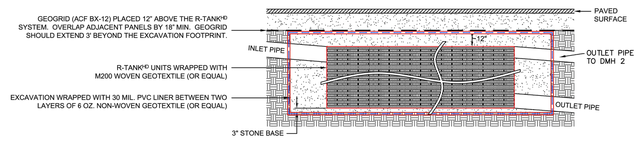
NOTES
1. THIS PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.



R-TANKHD TYPICAL MAINTENANCE PORT

N.T.S.





R-TANKHD TANK WRAP & EXCAVATION ENVELOPE DETAL

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DAVID SENUS 10124 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE 06/22/2018

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	CHECKED BY: DAS	

REV	DESCRIPTION	DATE
	DESIGNED BY: CNS	
	DRAWN BY: BCM	

CIVIL DETAILS - 5

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.:0231158.00
DATE: JUNE 22, 2018
SCALE: AS NOTED
SHEET: 16 OF 17

C-204

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

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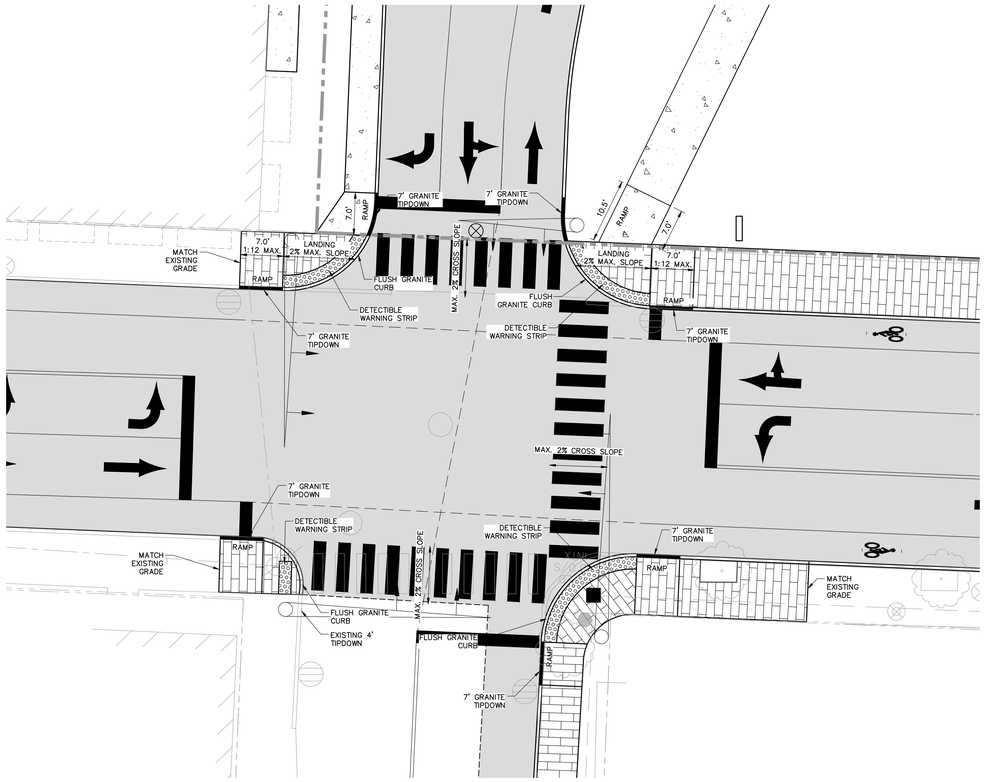
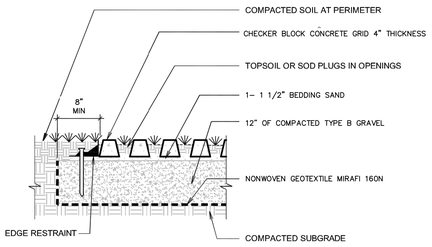


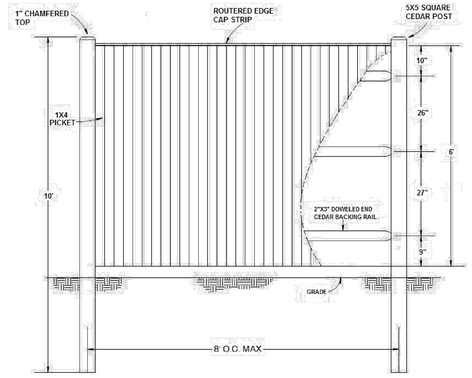
ST. JOHN STREET & "D" STREET INTERSECTION

SCALE: 1"=10'



CHECKER BLOCK CONCRETE GRID DETAIL

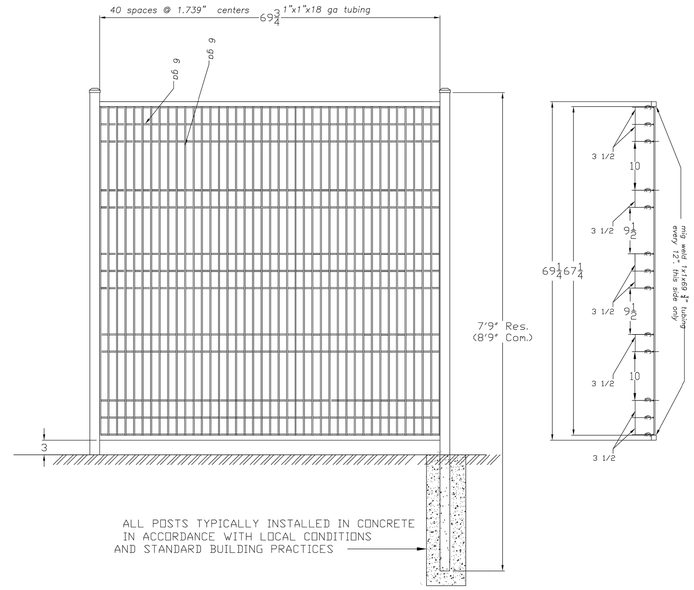
N.T.S.



GENERAL NOTES:
1. ALL MATERIALS ARE PREMIUM, #1 GRADE CEDAR
2. ALL POSTS ARE "DIRECT BURIAL" SET AT AN APPROXIMATE DEPTH OF 4'– CONCRETE IS NOTE RECOMMENDED FOR BACKFILL

6–FOOT SOLID BOARD W/THINK CAP STRIP– CEDAR PRIVACY FENCE

N.T.S.



ORNAMENTAL STEEL FENCE DETAIL

N.T.S.

NOTES:

1. WEIGHT (EMPTY): 50 LB MAX. NO CARTRIDGES

⚠ MATERIAL:
A) ADJUSTABLE FLANGE AND DEFLECTOR: ALUMINUM ALLOY 6063-T6
B) BASIN (PLASTIC): POLYPROPYLENE POLYETHYLENE COPOLYMER
C) CORNER FILL: ALUMINUM ALLOY: 5052-H32
D) SUPPORT HARDWARE: CRES 300 SERIES

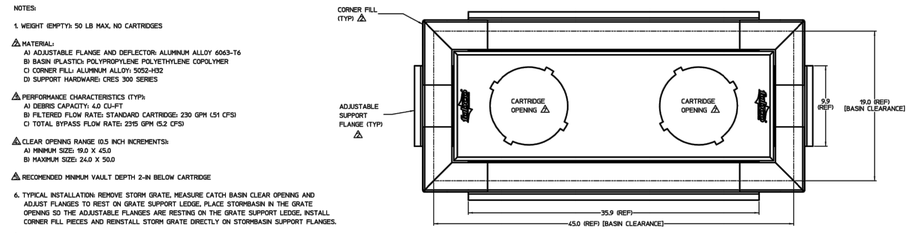
⚠ PERFORMANCE CHARACTERISTICS (TYP):
A) DEBRIS CAPACITY: 4.0 CU-FT
B) FILTERED FLOW RATE: STANDARD CARTRIDGE: 230 GPM (.51 CFS)
C) TOTAL BYPASS FLOW RATE: 2315 GPM (5.2 CFS)

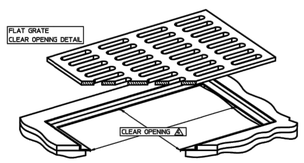
⚠ CLEAR OPENING RANGE (0.5 INCH INCREMENTS):
A) MINIMUM SIZE: 19.0 X 45.0
B) MAXIMUM SIZE: 24.0 X 50.0

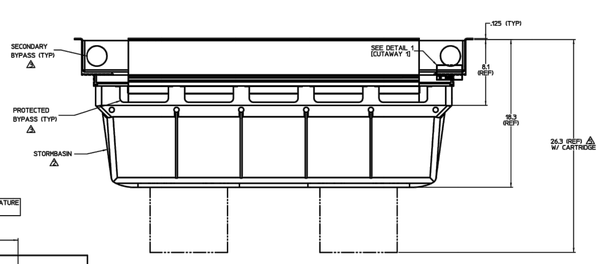
⚠ RECOMENDED MINIMUM VAULT DEPTH 2-IN BELOW CARTRIDGE

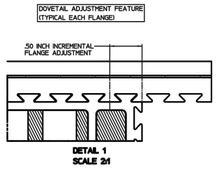
6. TYPICAL INSTALLATION: REMOVE STORM GRATE, MEASURE CATCH BASIN CLEAR OPENING AND ADJUST FLANGES TO REST ON GRATE SUPPORT LEDGE, PLACE STORMBASIN IN THE GRATE OPENING SO THE ADJUSTABLE FLANGES ARE RESTING ON THE GRATE SUPPORT LEDGE. INSTALL CORNER FILL PIECES AND REINSTALL STORM GRATE DIRECTLY ON STORMBASIN SUPPORT FLANGES.

⚠ USE WITH FABCO REPLACEABLE MEDIA CARTRIDGES ONLY.



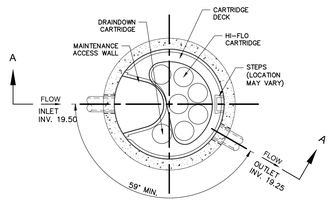


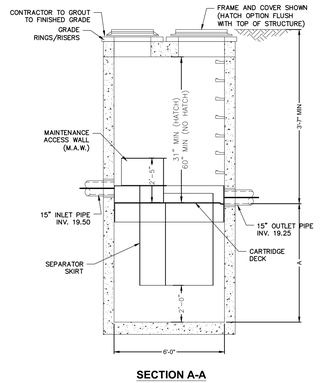




FABCO STORMBASIN, TYPE C FLANGE

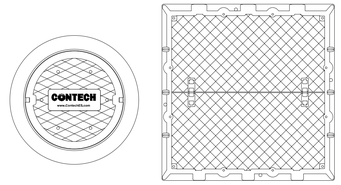
N.T.S.





CONTECH JELLYFISH FILTER DETAIL

N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

HATCH
(48" x 48" CAST INTO SLAB)
N.T.S.

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS–20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' – 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C–478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB–BASE, BACKFILL DEPTH, AND/OR ANTI–FLOTATION PROVISIONS ARE SITE–SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON–SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION–RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740–3318.

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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DAVID A. SENUS 10791 REGISTERED PROFESSIONAL ENGINEER STATE OF MAINE
10/22/2018

REV	DESCRIPTION	DATE

DESIGNED BY: CMS | DRAWN BY: BEM | CHECKED BY: DAS | 07/18 .CDV dwg

REV	DESCRIPTION	DATE

CIVIL DETAILS - 6

MAINE MEDICAL CENTER
22 BRAMHALL STREET
PORTLAND, ME 04102

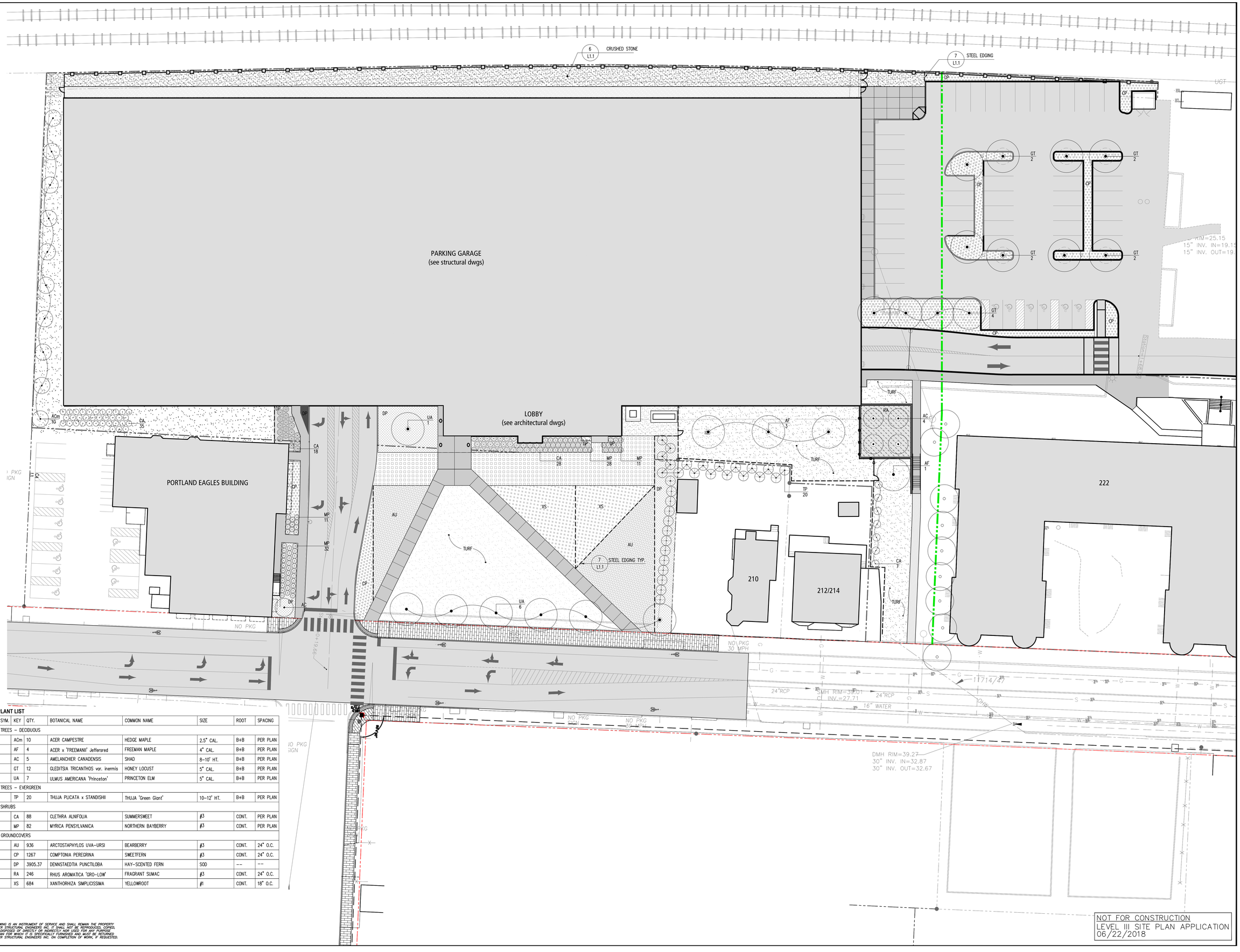
MMC ST. JOHN STREET
EMPLOYEE PARKING GARAGE

JOB NO.: 0231158.00
DATE: JUNE 22, 2018
SCALE: AS NOTED
SHEET: 17 OF 17

C-205

LEVEL III SITE PLAN APPLICATION-NOT FOR CONSTRUCTION

C:\Users\bmcdevitt\appdata\local\temp\AcPublish_2600\0231158 C205V dwg, Jun 22, 2018 - 8:14am



PLANT LIST

SYM.	KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING
TREES – DECIDUOUS							
	ACm	10	ACER CAMPESTRE	HEDGE MAPLE	2.5" CAL.	B+B	PER PLAN
	AF	4	ACER x 'FREEMANII' Jeffersred	FREEMAN MAPLE	4" CAL.	B+B	PER PLAN
	AC	5	AMELANCHIER CANADENSIS	SHAD	8–10' HT.	B+B	PER PLAN
	GT	12	GLEDITSIA TRICANTHOS var. inermis	HONEY LOCUST	5" CAL.	B+B	PER PLAN
	UA	7	ULMUS AMERICANA 'Princeton'	PRINCETON ELM	5" CAL.	B+B	PER PLAN
TREES – EVERGREEN							
	TP	20	THUJA PLICATA x STANDISHII	THUJA 'Green Giant'	10–12' HT.	B+B	PER PLAN
SHRUBS							
	CA	88	CLETHRA ALNIFOLIA	SUMMERSWEET	#3	CONT.	PER PLAN
	MP	82	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	#3	CONT.	PER PLAN
GROUNDCOVERS							
	AU	936	ARCTOSTAPHYLOS UVA–URSI	BEARBERRY	#3	CONT.	24" O.C.
	CP	1267	COMPTONIA PEREGRINA	SWEETFERN	#3	CONT.	24" O.C.
	DP	3905.37	DENNSTAEDTIA PUNCTILOBA	HAY–SCENTED FERN	SOD	--	--
	RA	246	RHUS AROMATICA 'GRO–LOW'	FRAGRANT SUMAC	#3	CONT.	24" O.C.
	XS	684	XANTHORHIZA SIMPLICISSIMA	YELLOWROOT	#1	CONT.	18" O.C.

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NOT FOR CONSTRUCTION
LEVEL III SITE PLAN APPLICATION
06/22/2018

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STRUCTURAL ENGINEERS
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mbla inc
michael boucher landscape architecture
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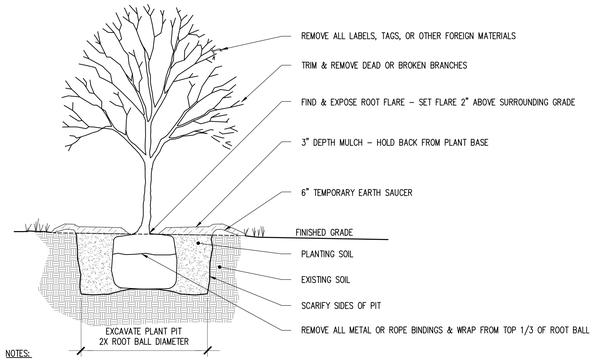
Issued For
Date
Rev No

222 ST. JOHN ST PG
PORTLAND ME

Designed	Scale
GG	1" = 20'-0"
Drawn	Date
GG	04.10.2018
Checked	Becker Job Number
JP	4070

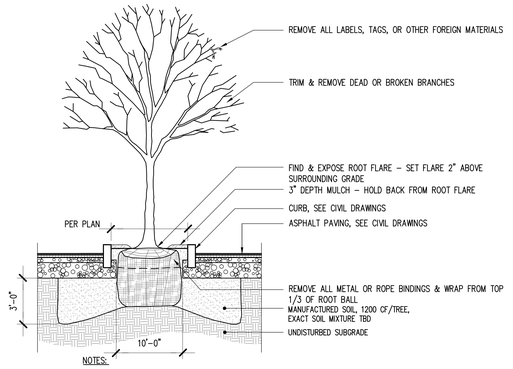
L1.0



NOTES:

1. TREE TO BE SET PLUMB.
2. SECURE TREE AS MAY BE REQUIRED ACCORDING TO TREE SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

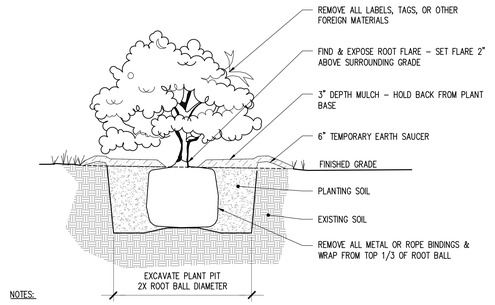
1 TREE PLANTING DETAIL
1/4"=1'-0"



NOTES:

1. TREE PITS TO INCLUDE ROOT IRRIGATION AND AERATION SYSTEM, TBD.
2. TREE TO BE SET PLUMB.
3. SECURE TREE AS MAY BE REQUIRED ACCORDING TO TREE SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
4. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

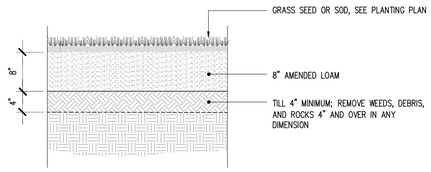
2 TREE PLANTING IN ASPHALT DETAIL
1/4"=1'-0"



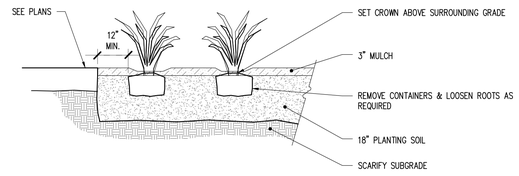
NOTES:

1. SHRUB TO BE SET PLUMB.
2. SECURE SHRUB AS MAY BE REQUIRED ACCORDING TO SIZE, LOCATION, & WIND/WEATHER CONDITIONS.
3. IF USING ROOTBALL STABILIZATION, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

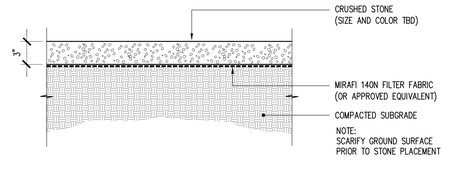
3 SHRUB PLANTING DETAIL
1/2"=1'-0"



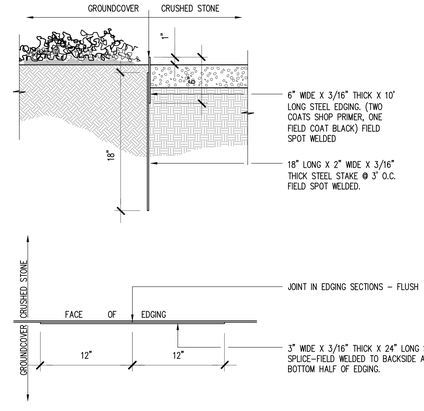
4 TURF PLANTING DETAIL
1"=1'-0"



5 GROUNDCOVER PLANTING DETAIL
1/2"=1'-0"

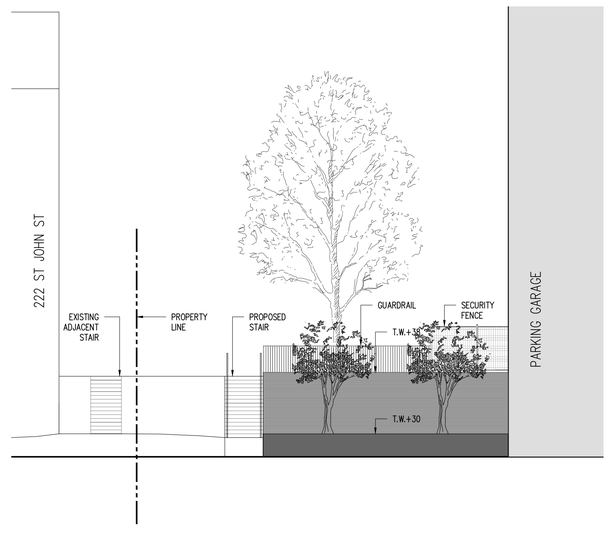


6 CRUSHED STONE PAVING DETAIL
1-1/2"=1'-0"



7 STEEL EDGE DETAIL
1-1/2"=1'-0"

8 E/W SECTION AT STAIR
1/8" = 1'-0"



9 N/S SECTION AT STAIR
1/8" = 1'-0"

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NOT FOR CONSTRUCTION
LEVEL III SITE PLAN APPLICATION
06/22/2018

BECKER STRUCTURAL ENGINEERS
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michael boucher landscape architecture
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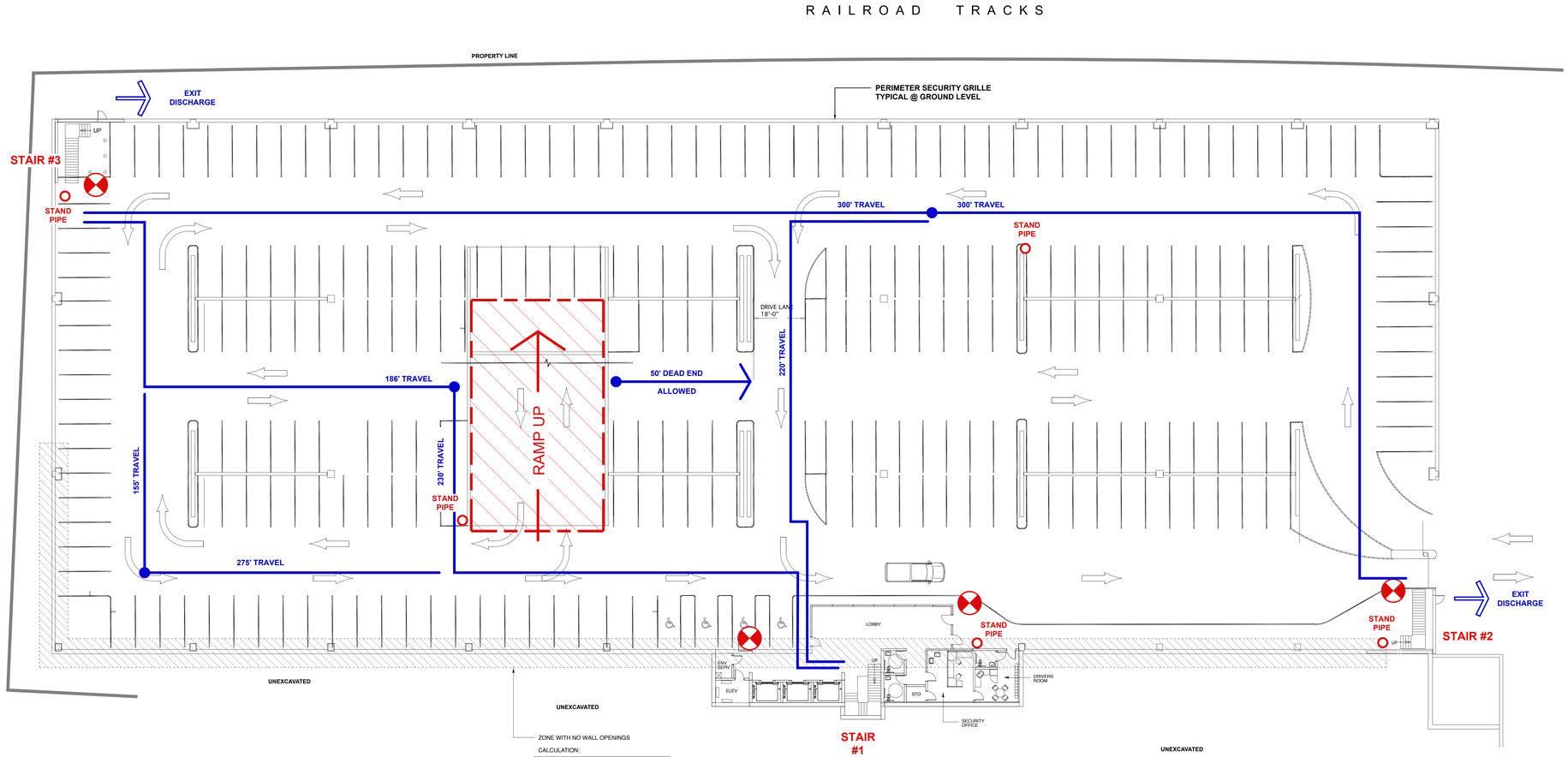
Rev. No	Date	Issued For
		Appvd

222 ST. JOHN ST PG
PORTLAND, ME

LEVEL III SITE PLAN SUBMITTAL

Designed GG	Scale 1" = 20'-0"
Drawn GG	Date 04.10.2018
Checked JP	Becker Job. Number 4070

L2.0



BUILDING CODE SUMMARY

St. John Street Parking Garage
Building Address: Portland, ME

APPLICABLE CODES (Per MUBEC: Maine Uniform Building and Energy Code)

Building	IBC 2015 (International Building Code)
	IEBC 2009 (International Existing Building Code)
Electrical	National Electrical Code 2009
Fire Protection	NFPA Life Safety Code 2009 and NFPA 1 Uniform Fire Code 2003
Mechanical	International Mechanical Code 2009 (ASHRAE 62.1 2007 and 90.1 2007)
Plumbing	Maine State Internal Plumbing Code (UPC 2000)
Energy	IECC 2009 (International Energy Conservation Code)
Accessibility	ADA 2010 (Americans With Disabilities Act)

PROJECT DESCRIPTION:

New Construction - Open Parking Garage	Meets IBC 406.5 and NFPA 101: 3.3.254.6
Proposed Construction Type :	Type I B / NFPA II (222)
Gross Area Per Tier:	90,800 +/-
Height :	8 Tiers / 96'-3" (Top of Speed Ramp Roof Double Tees)
Use Group IBC :	Open Parking Garage Section 406
Use Group NFPA :	Open Parking Garage Chapter 42.8
High Rise Requirements	Exemptions for Parking Garages
	IBC 403.1
	NFPA 101 42.8.4
Automatic Suppression System	No
Dry Standpipe System	Yes

BUILDING CODE REQUIREMENTS (IBC 2015)

Height and Area Summary (Table 406.5.4)

Allowable Height :	12 Tiers
Allowable Area	Unlimited

REQUIRED FIRE RESISTANCE RATINGS

ELEMENT (IBC Table 601/NFPA 101 Table A8.2.1.2)	RATING (In Hours)
Primary Structural Frame	**2**
Bearing Walls:	
Exterior	**2**
Interior	**2**
Non-Bearing Walls & Partitions	
Exterior	**0**
Interior	**0**
Floor Construction & Secondary Members	**2**
Roof Construction & Secondary Members	**2**

SPECIFIC ROOM RATINGS	RATING (In Hours)
Stairs and Floor Openings	**0**
Parking Open Ramps	**0**
Offices + Break Room	**0**
Electrical	**0**
Mechanical Room	**1**
Elevator Shaftway	**2**

EXTERIOR WALL PROTECTION

Wall Fire Resistance Rating (Table 602)	**0** (No rating for 10' or greater per Note c.)
Openings Rating (Table 705.8)	**0** (No rating for 10' or greater per Note g.)

OCCUPANCY LOADS

NFPA Per Chapter 42.8.1.7 :	None
IBC Per Table 1004.1.2 :	1 Per 200 GSF / 454 Per Tier
Egress Width Required : Stairs @ 0.3" Per Person	137"
Egress Width Provided :	144" / (3) 48" Wide Stairs / 152 Persons Each
Stair Exit Door Width Required:	30.4"
Stair Exit Door Width Provided:	32" Clear Door @ Each Stair

OPENNESS CALCULATIONS:

GROUND FLOOR SUMMARY IBC

IBC 2015 SECTION 406.5

GROUND FLOOR WALL AREA:	13,536 SF
GROUND FLOOR NET OPEN AREA:	5,010 SF
OPENNESS RATIO [20% REQD]	37%

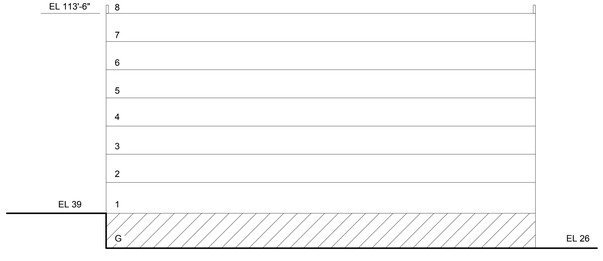
OPENINGS DISTRIBUTED AROUND 56% OF THE PERIMETER [40% REQD]

GROUND FLOOR SUMMARY NFPA

NFPA 101 3.3.254.6

GROUND FLOOR PERIMETER:	1,332 LF
GROUND FLOOR NET OPEN AREA:	5,010 SF
OPEN AREA PER LF [1.4 SF REQD]	3.7 SF/LF

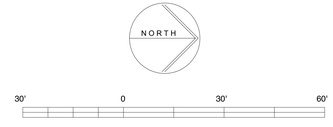
OPENINGS DISTRIBUTED AROUND 56% OF THE PERIMETER [40% REQD]



PARKING GARAGE SECTION DIAGRAM

GROUND FLOOR CODE INFORMATION PLAN

1" = 20' - 0"



BAR SCALE
1" = 16'
CHECK GRAPHIC SCALE BEFORE USING

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NOT FOR CONSTRUCTION
LEVEL III SITE PLAN APPLICATION
6 / 22 / 18

BECKER STRUCTURAL ENGINEERS LLC
75 York Street, Portland, Maine 04101
207.221.5326 • www.beckerstructural.com

WSA
Winton Scott Architects
5 Milk Street
Portland, Maine 04101
207 774 4811
www.wintonscott.com

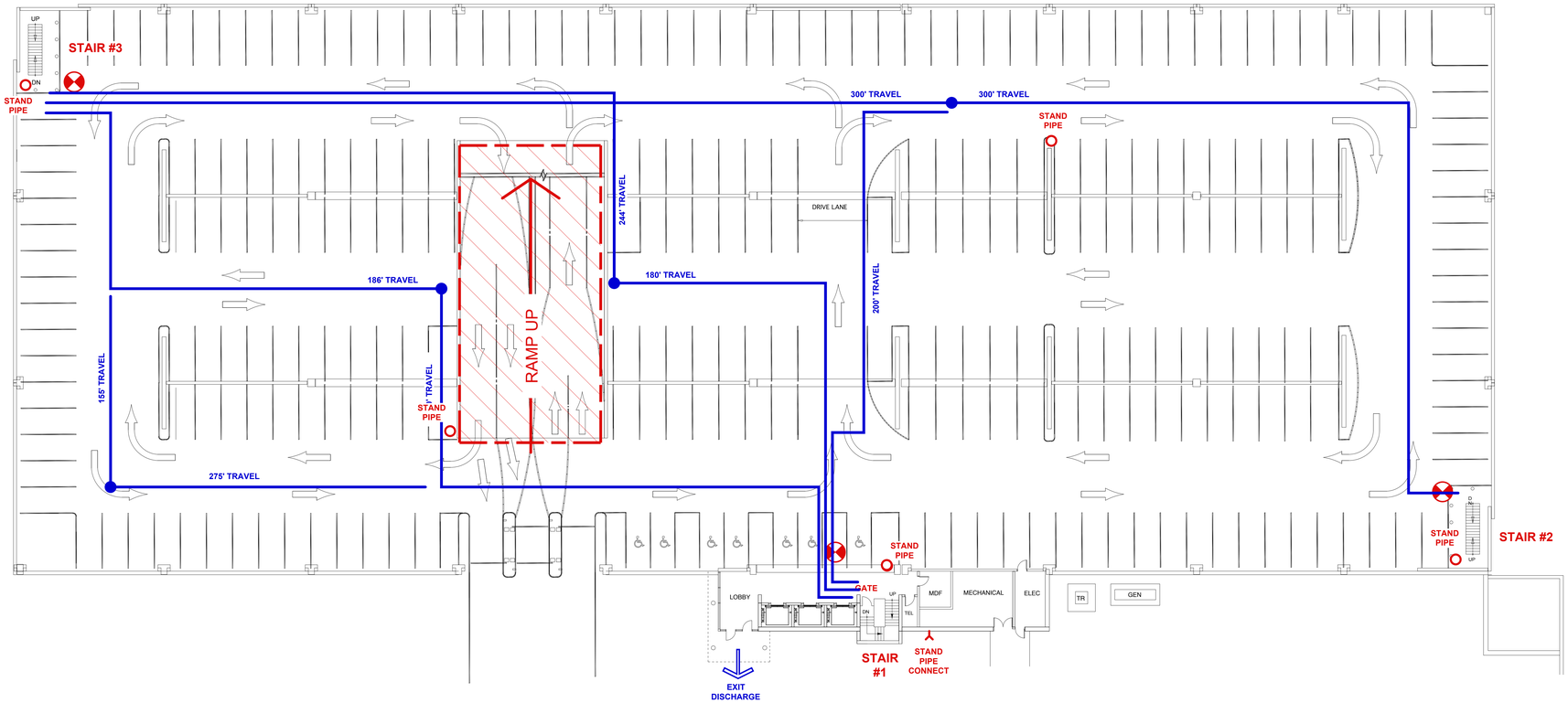
Rev No	Date	Issued For
		Apprd

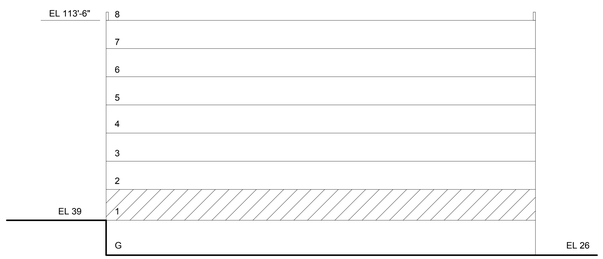
MMC ST. JOHN ST PG
PORTLAND, ME

CODE INFORMATION PLANS

Designed: MMW	Scale: AS NOTED
Drawn: MMW	Date: 6/22/18
Checked: MMW	Becker Job Number: 4070.1

G 101





PARKING GARAGE SECTION DIAGRAM

FIRST FLOOR CODE INFORMATION PLAN

1" = 20' - 0"

BAR SCALE
1" = 16'
CHECK GRAPHIC SCALE BEFORE USING

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APPLICABLE CODES (Per MUBEC: Maine Uniform Building and Energy Code)

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	NFPA 101 42.8.4
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Dry Standpipe System	Yes

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Interior	**2**
Non-Bearing Walls & Partitions	
Exterior	**0**
Interior	**0**
Floor Construction & Secondary Members	**2**
Roof Construction & Secondary Members	**2**
SPECIFIC ROOM RATINGS	RATING (In Hours)
Stairs and Floor Openings	**0**
Parking Open Ramps	**0**
Offices + Break Room	**0**
Electrical	**0**
Mechanical Room	**1**
Elevator Shaftway	**2**

EXTERIOR WALL PROTECTION

Wall Fire Resistance Rating (Table 602)	**0** (No rating for 10' or greater per Note c.)
Openings Rating (Table 705.8)	**0** (No rating for 10' or greater per Note g.)

OCCUPANCY LOADS

NFPA Per Chapter 42.8.1.7 :	None
IBC Per Table 1004.1.2 :	1 Per 200 GSF / 454 Per Tier
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Egress Width Provided :	144" / (3) 48" Wide Stairs / 152 Persons Each
Stair Exit Door Width Required:	30.4"
Stair Exit Door Width Provided:	32" Clear Door @ Each Stair

OPENNESS CALCULATIONS:

FIRST FLOOR SUMMARY IBC

IBC 2015 SECTION 406.5

GROUND FLOOR WALL AREA:	13,536 SF
GROUND FLOOR NET OPEN AREA:	7,014 SF
OPENNESS RATIO [20% REQD]	51%

OPENINGS DISTRIBUTED AROUND 92% OF THE PERIMETER [40% REQD]

FIRST FLOOR SUMMARY NFPA

NFPA 101 3.3.254.6

GROUND FLOOR PERIMETER:	1,332 LF
GROUND FLOOR NET OPEN AREA:	7,014 SF
OPEN AREA PER LF [1.4 SF REQD]	5.2 SF/LF

OPENINGS DISTRIBUTED AROUND 92% OF THE PERIMETER [40% REQD]

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6 / 22 / 18

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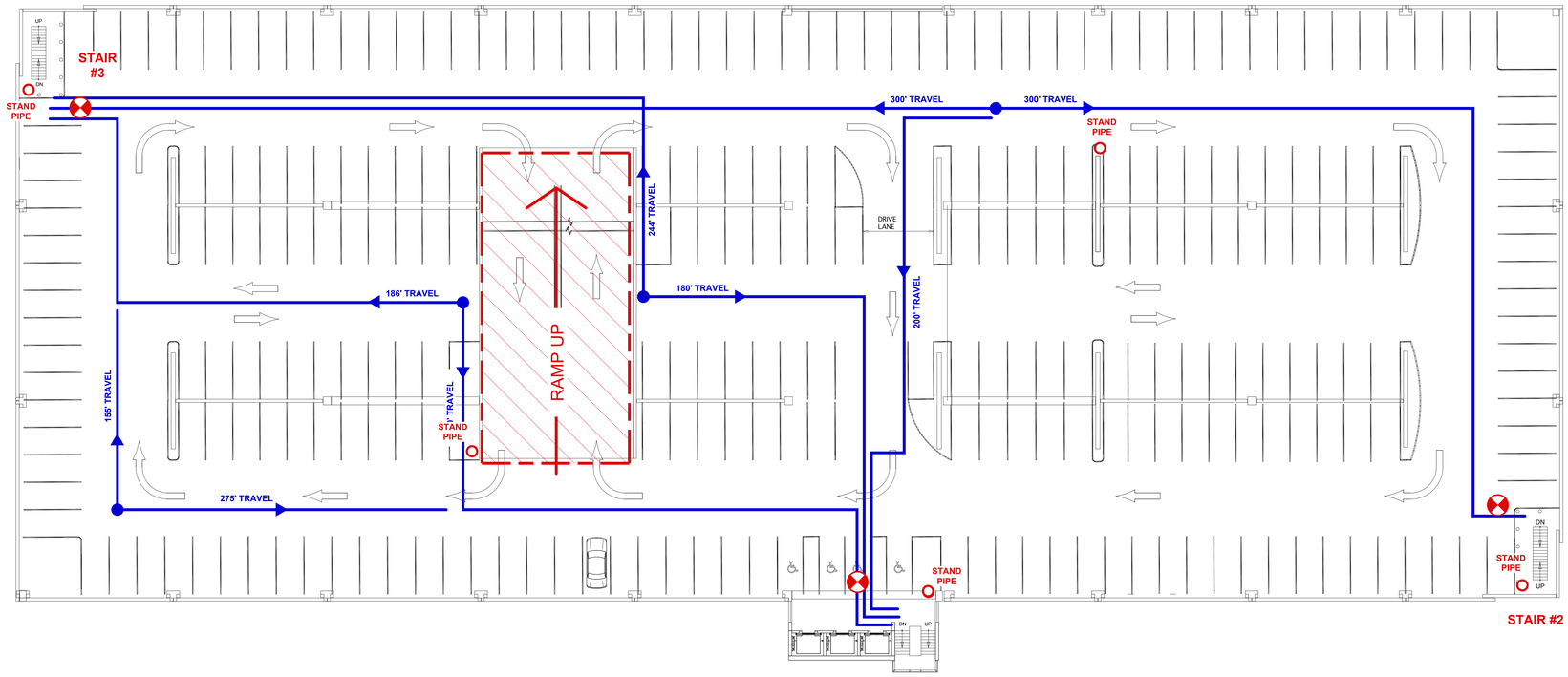
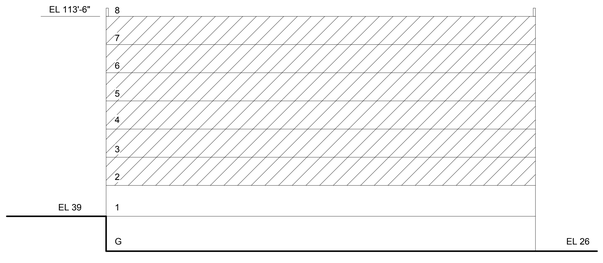
MMC ST. JOHN ST PG
PORTLAND, ME

CODE INFORMATION PLANS

Designed	Scale
MMW	AS NOTED
Drawn	Date
MMW	6/22/18
Checked	Becker Job Number
MMW	4070.1

G 102





PARKING GARAGE SECTION DIAGRAM

SECOND FLOOR CODE INFORMATION PLAN

1" = 20' - 0" LEVELS 3 - 8 SIMILAR

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BUILDING CODE SUMMARY

St. John Street Parking Garage
Building Address: Portland, ME

APPLICABLE CODES (Per MUBEC: Maine Uniform Building and Energy Code)

Building	IBC 2015 (International Building Code)
	IEBC 2009 (International Existing Building Code)
Electrical	National Electrical Code 2009
Fire Protection	NFPA Life Safety Code 2009 and NFPA 1 Uniform Fire Code 2003
Mechanical	International Mechanical Code 2009 (ASHRAE 62.1 2007 and 90.1 2007)
Plumbing	Maine State Internal Plumbing Code (UPC 2000)
Energy	IECC 2009 (International Energy Conservation Code)
Accessibility	ADA 2010 (Americans With Disabilities Act)

PROJECT DESCRIPTION:

New Construction - Open Parking Garage	Meets IBC 406.5 and NFPA 101: 3.3.254.6
Proposed Construction Type :	Type I B / NFPA II (222)
Gross Area Per Tier:	90,800 +/-
Height :	8 Tiers / 96'-3" (Top of Speed Ramp Roof Double Tees)
Use Group IBC :	Open Parking Garage Section 406
Use Group NFPA :	Open Parking Garage Chapter 42.8
High Rise Requirements	Exemptions for Parking Garages IBC 403.1 NFPA 101 42.8.4
Automatic Suppression System	No
Dry Standpipe System	Yes

BUILDING CODE REQUIREMENTS (IBC 2015)

Height and Area Summary (Table 406.5.4)

Allowable Height :	12 Tiers
Allowable Area	Unlimited

REQUIRED FIRE RESISTANCE RATINGS

ELEMENT (IBC Table 601/NFPA 101 Table A8.2.1.2)	RATING (In Hours)
Primary Structural Frame	**2**
Bearing Walls:	
Exterior	**2**
Interior	**2**
Non-Bearing Walls & Partitions	
Exterior	**0**
Interior	**0**
Floor Construction & Secondary Members	**2**
Roof Construction & Secondary Members	**2**

SPECIFIC ROOM RATINGS	RATING (In Hours)
Stairs and Floor Openings	**0**
Parking Open Ramps	**0**
Offices + Break Room	**0**
Electrical	**0**
Mechanical Room	**1**
Elevator Shaftway	**2**

EXTERIOR WALL PROTECTION

Wall Fire Resistance Rating (Table 602)	**0** (No rating for 10' or greater per Note c.)
Openings Rating (Table 705.8)	**0** (No rating for 10' or greater per Note g.)

OCCUPANCY LOADS

NFPA Per Chapter 42.8.1.7 :	None
IBC Per Table 1004.1.2 :	1 Per 200 GSF / 454 Per Tier
Egress Width Required : Stairs @ 0.3" Per Person	137"
Egress Width Provided :	144" / (3) 48" Wide Stairs / 152 Persons Each
Stair Exit Door Width Required:	30.4"
Stair Exit Door Width Provided:	32" Clear Door @ Each Stair

OPENNESS CALCULATIONS:

SECOND FLOOR SUMMARY IBC

IBC 2015 SECTION 406.5

SECOND FLOOR WALL AREA:	12,538 SF
SECOND FLOOR NET OPEN AREA:	6,582 SF
OPENNESS RATIO [20% REQD]	52%

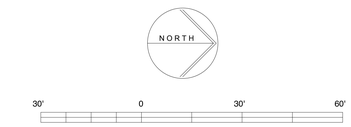
OPENINGS DISTRIBUTED AROUND 96% OF THE PERIMETER [40% REQD]

SECOND FLOOR SUMMARY NFPA

NFPA 101 3.3.254.6

SECOND FLOOR PERIMETER:	1,332 LF
SECOND FLOOR NET OPEN AREA:	6,582 SF
OPEN AREA PER LF [1.4 SF REQD]	4.9 SF/LF

OPENINGS DISTRIBUTED AROUND 96% OF THE PERIMETER [40% REQD]



BAR SCALE
1" = 16'
CHECK GRAPHIC SCALE BEFORE USING

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CODE INFORMATION PLANS

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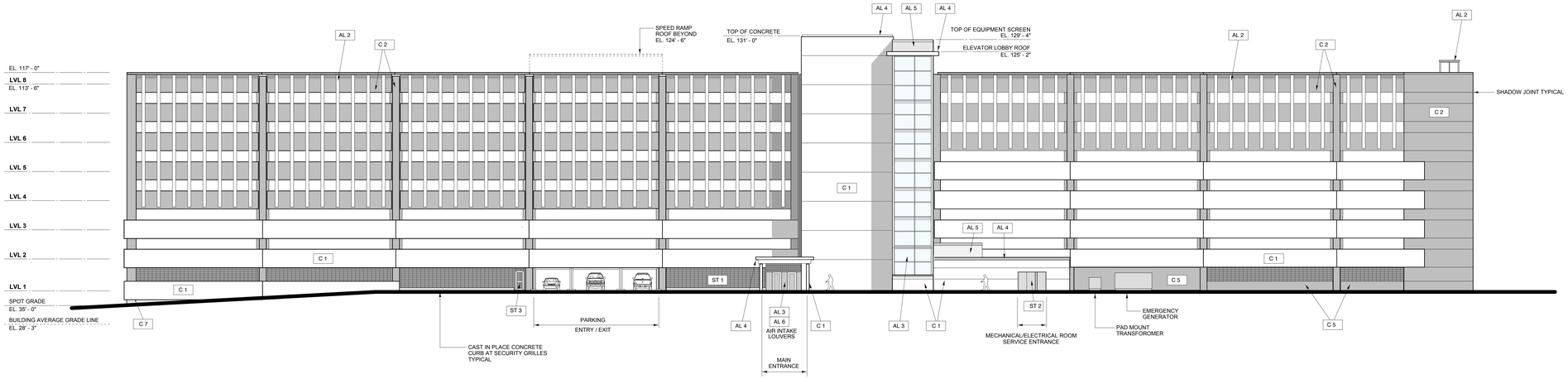
Checked	MMW	Becker Job Number	4070.1

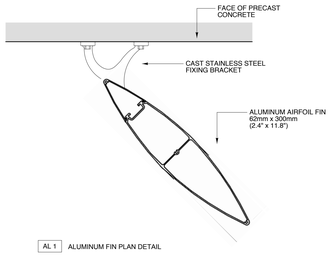
G 103



EAST ELEVATION

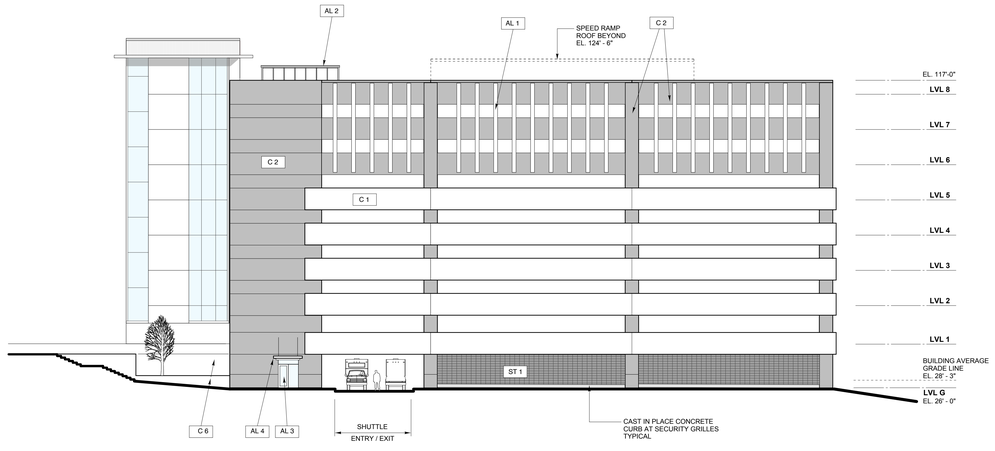
1/16" = 1' - 0"

0' 4' 8' 16' 32'



AL 1 ALUMINUM FIN PLAN DETAIL

ST 1 SECURITY GRILLE DETAIL



NORTH ELEVATION

1/16" = 1' - 0"

0' 4' 8' 16' 32'

EXTERIOR MATERIALS LEGEND

AL 1	ALUMINUM LIGHT-CONTROL FIN ASSEMBLY
AL 2	ALUMINUM STOREFRONT FRAMED STAIR PENTHOUSE ENCLOSURE
AL 3	CURTAINWALL : CLEAR GLASS / CLEAR ANODIZED ALUMINUM FRAMING
AL 4	ALUMINUM ROOF EDGE TRIM
AL 5	ALUMINUM SIDING EQUIPMENT SCREEN
AL 6	ALUMINUM LOUVER
C 1	PRECAST CONCRETE : WHITE WITH LIGHT SANDBLAST
C 2	PRECAST CONCRETE : CHARCOAL GRAY WITH LIGHT SANDBLAST
C 3	PRECAST CONCRETE PROJECTING CORNICE
C 4	PRECAST CONCRETE COLUMNS : WHITE WITH LIGHT SANDBLAST
C 5	PRECAST CONCRETE SMOOTH WALL PANEL
C 6	CAST IN PLACE CONCRETE FOUNDATION / RETAINING WALL
ST 1	SECURITY ENCLOSURE GRILLE : PREFINISHED STEEL BAR GRATING
ST 2	PAINTED FLUSH HOLLOW METAL DOORS
ST 3	PAINTED WELDED TUBE STEEL STILE AND RAIL DOOR AND FRAME

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BUILDING ELEVATIONS

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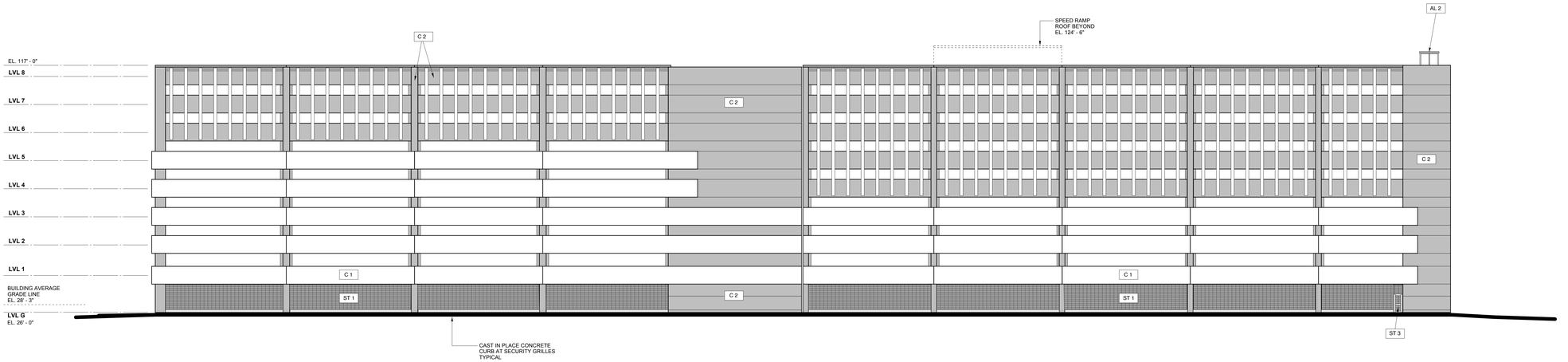
Checked MMW	Becker Job Number 4070.1

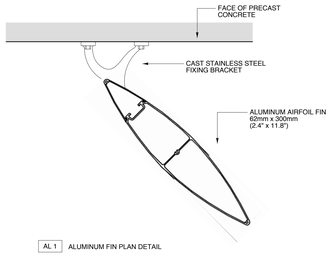
A 101



WEST ELEVATION

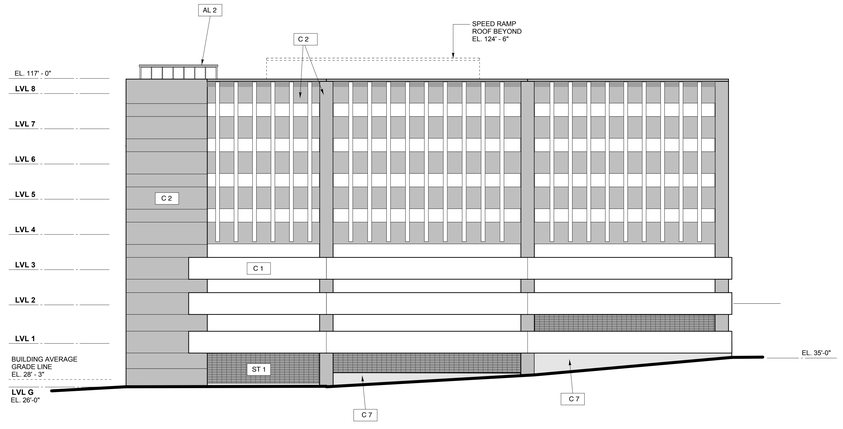
1/16" = 1' - 0"

0' 4' 8' 16' 32'



AL 1 ALUMINUM FIN PLAN DETAIL

ST 1 SECURITY GRILLE DETAIL



SOUTH ELEVATION

1/16" = 1' - 0"

0' 4' 8' 16' 32'

EXTERIOR MATERIALS LEGEND

AL 1	ALUMINUM LIGHT-CONTROL FIN ASSEMBLY
AL 2	ALUMINUM STOREFRONT FRAMED STAIR PENTHOUSE ENCLOSURE
AL 3	CURTAINWALL : CLEAR GLASS / CLEAR ANODIZED ALUMINUM FRAMING
AL 4	ALUMINUM ROOF EDGE TRIM
AL 5	ALUMINUM SIDING EQUIPMENT SCREEN
AL 6	ALUMINUM LOUVER
C 1	PRECAST CONCRETE : WHITE WITH LIGHT SANDBLAST
C 2	PRECAST CONCRETE : CHARCOAL GRAY WITH LIGHT SANDBLAST
C 3	PRECAST CONCRETE PROJECTING CORNICE
C 4	PRECAST CONCRETE COLUMNS : WHITE WITH LIGHT SANDBLAST
C 5	PRECAST CONCRETE SMOOTH WALL PANEL
C 6	CAST IN PLACE CONCRETE FOUNDATION / RETAINING WALL
ST 1	SECURITY ENCLOSURE GRILLE : PREFINISHED STEEL BAR GRATING
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ST 3	PAINTED WELDED TUBE STEEL STILE AND RAIL DOOR AND FRAME

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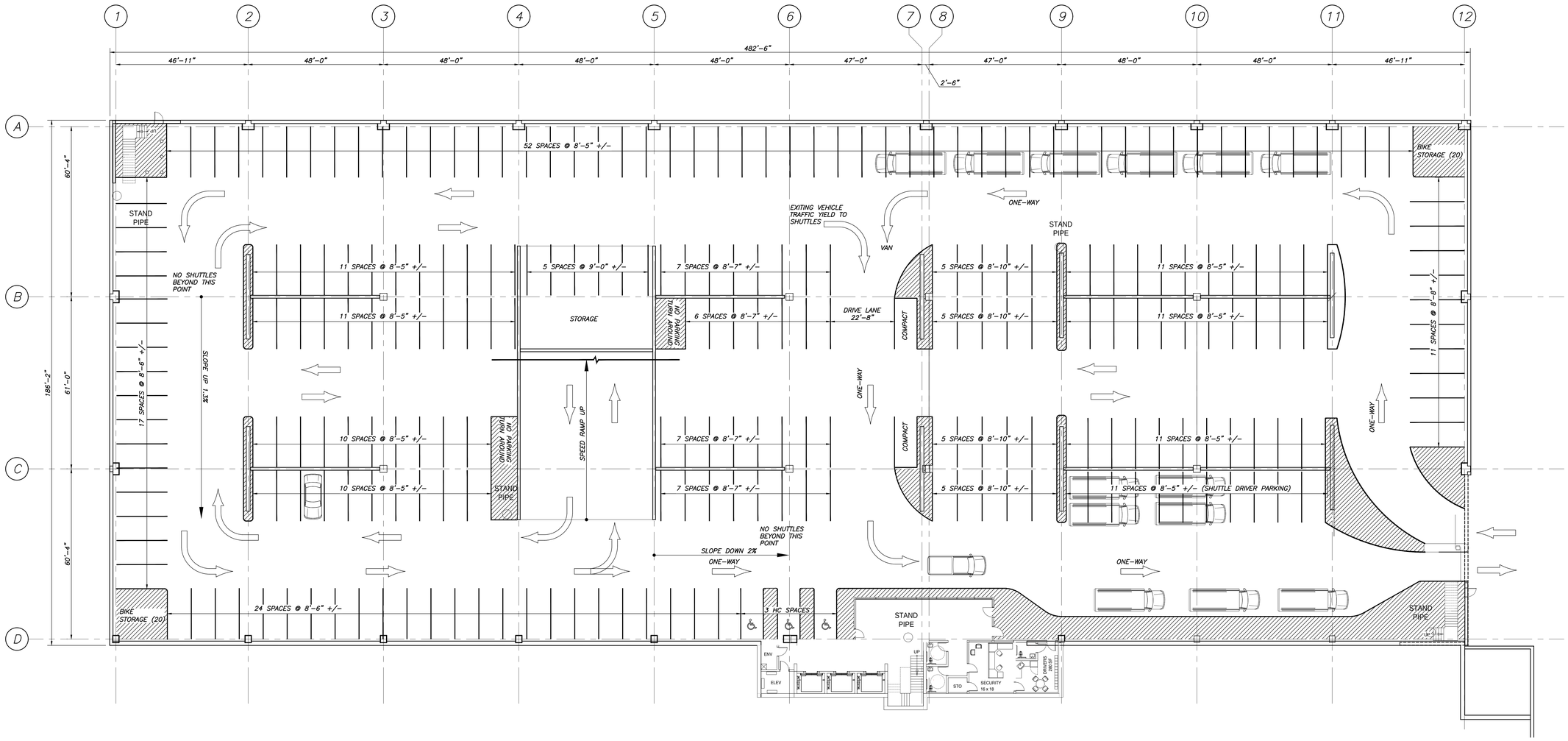
BUILDING ELEVATIONS

Designed MMW	Scale AS NOTED
Drawn MMW	Date 4/10/18
Checked MMW	Becker Job Number 4070.1

A 102



GRADE LEVEL

1/16"=1'-0"

SIZE	QTY
HC	3
COMPACT	2
REGULAR	242
TOTAL	247

NOTE:
PARKING COUNTS ARE PRELIMINARY

GARAGE PARKING COUNT

SIZE	QTY
HC	32
HC VAN	6
COMPACT	20
REGULAR	2342
TOTAL	2400

NOTE:
PARKING COUNTS ARE PRELIMINARY

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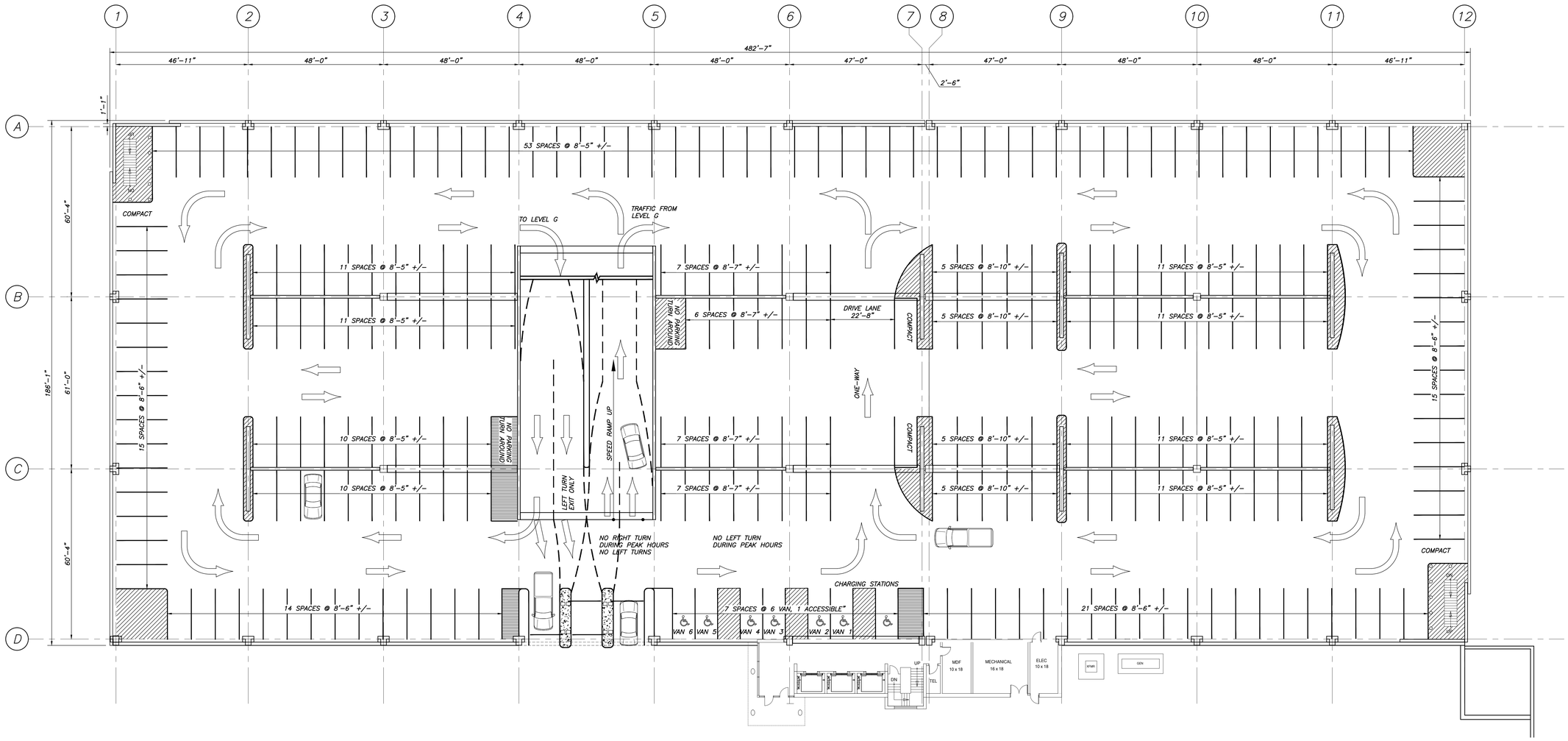
GRADE LEVEL PARKING LAYOUT

Designed: TMN	Scale: AS NOTED
Drawn: CHF	Date: 2/23/18
Checked: TMN	Becker Job Number: 4070

PS1



LEVEL 1
1/16"=1'-0"

SIZE	QTY
HC	7
COMPACT	4
REGULAR	251
TOTAL	262

NOTE:
PARKING COUNTS ARE PRELIMINARY

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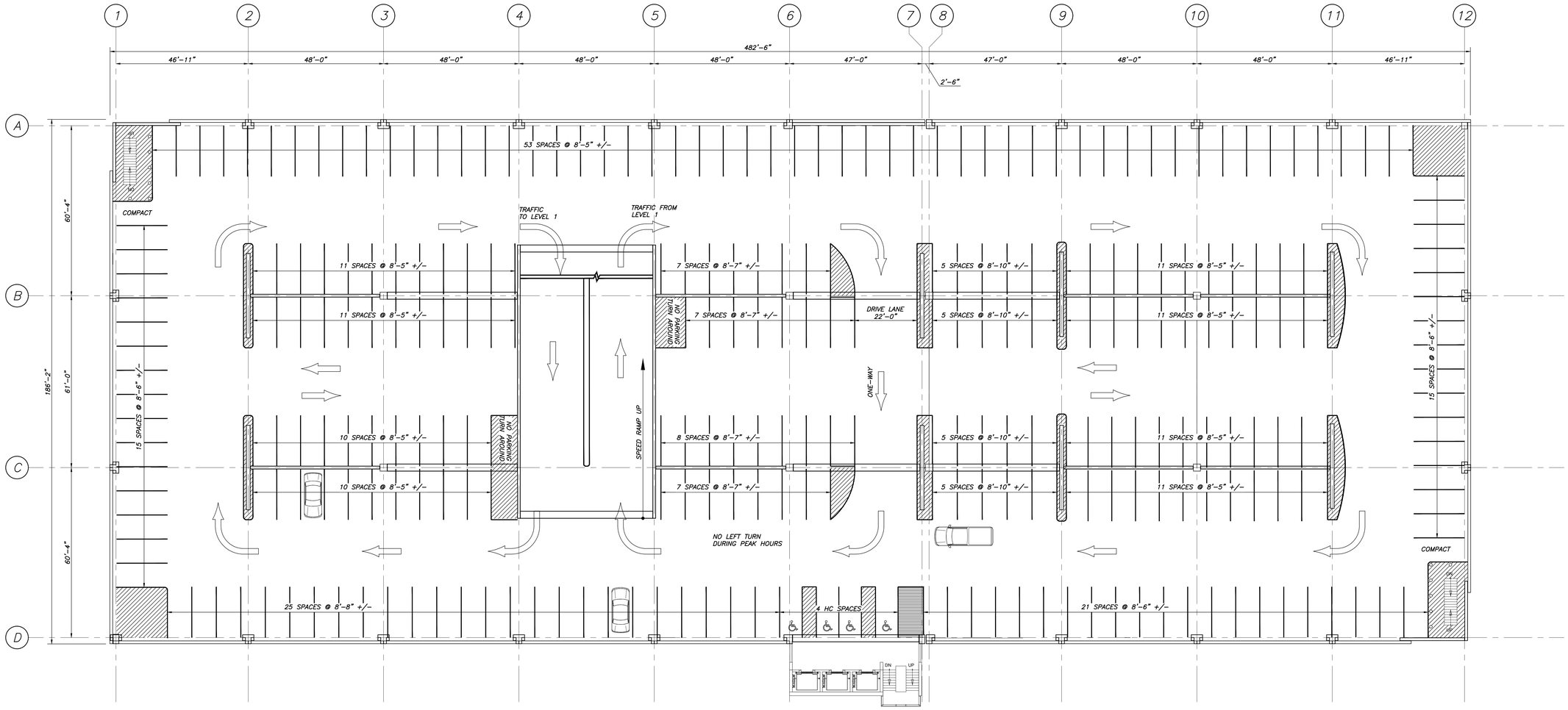
LEVEL 1 PARKING LAYOUT

Designed	Scale
TMN	AS NOTED
Drawn	Date
CHF	2/23/18
Checked	Becker Job Number
TMN	4070

PS2



LEVELS 2,4&6

1/16"=1'-0"

SIZE	QTY
HC	4
COMPACT	2
REGULAR	264
TOTAL	270

NOTE:
PARKING COUNTS
ARE PRELIMINARY

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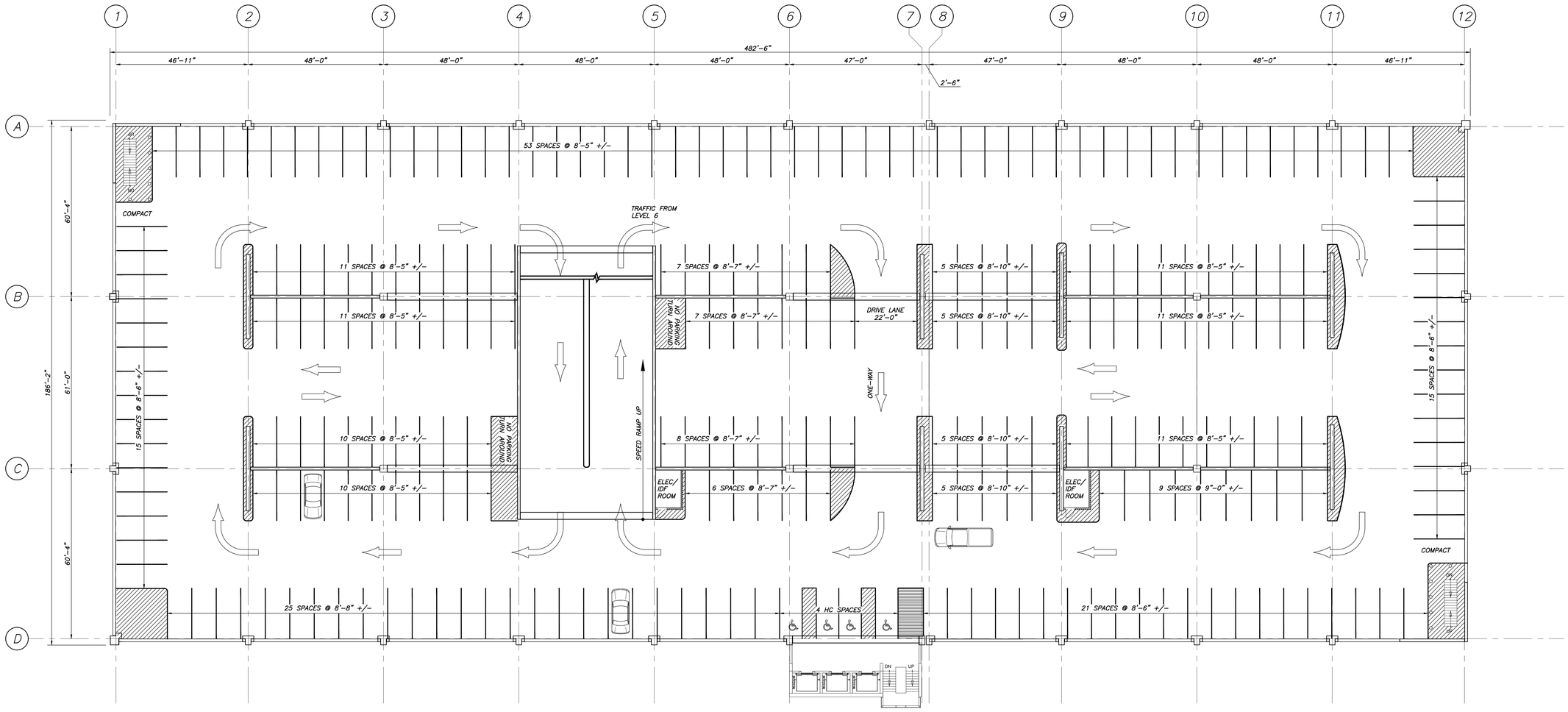
LEVELS 2,4&6 PARKING LAYOUT

Designed	Scale
TMN	AS NOTED
Drawn	Date
CHF	2/23/18
Checked	Becker Job Number
TMN	4070

PS3



LEVELS 3,5

1/16"=1'-0"

SIZE	QTY
HC	4
COMPACT	2
REGULAR	261
TOTAL	267

NOTE:
PARKING COUNTS ARE PRELIMINARY

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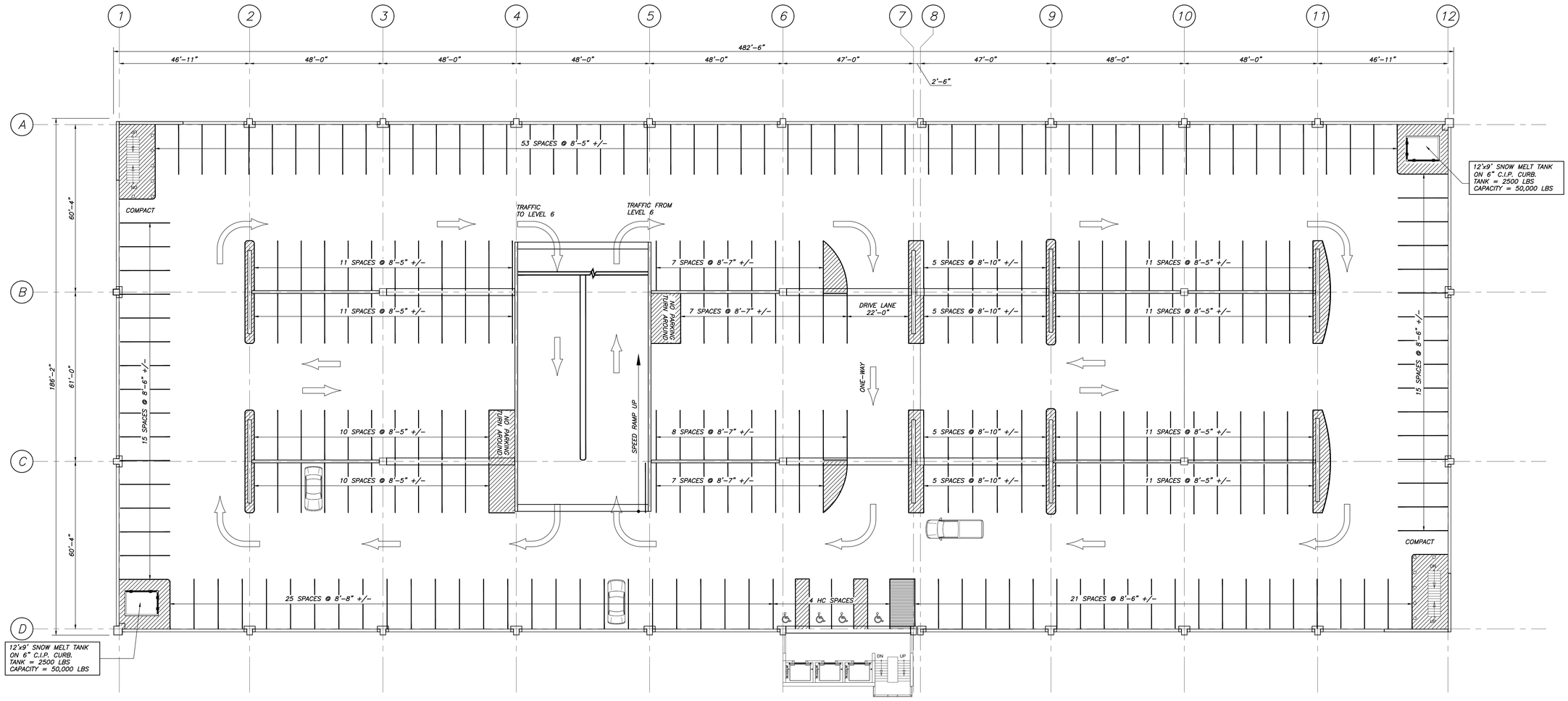
LEVELS 3&5 PARKING LAYOUT

Designed	Scale
TMN	AS NOTED
Drawn	Date
CHF	2/23/18
Checked	Becker Job Number
TMN	4070

PS4



LEVEL 7
1/16"=1'-0"

SIZE	QTY
HC	4
COMPACT	2
REGULAR	264
TOTAL	270

NOTE:
PARKING COUNTS
ARE PRELIMINARY

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LEVEL 7 PARKING LAYOUT

Designed	Scale
TMN	AS NOTED
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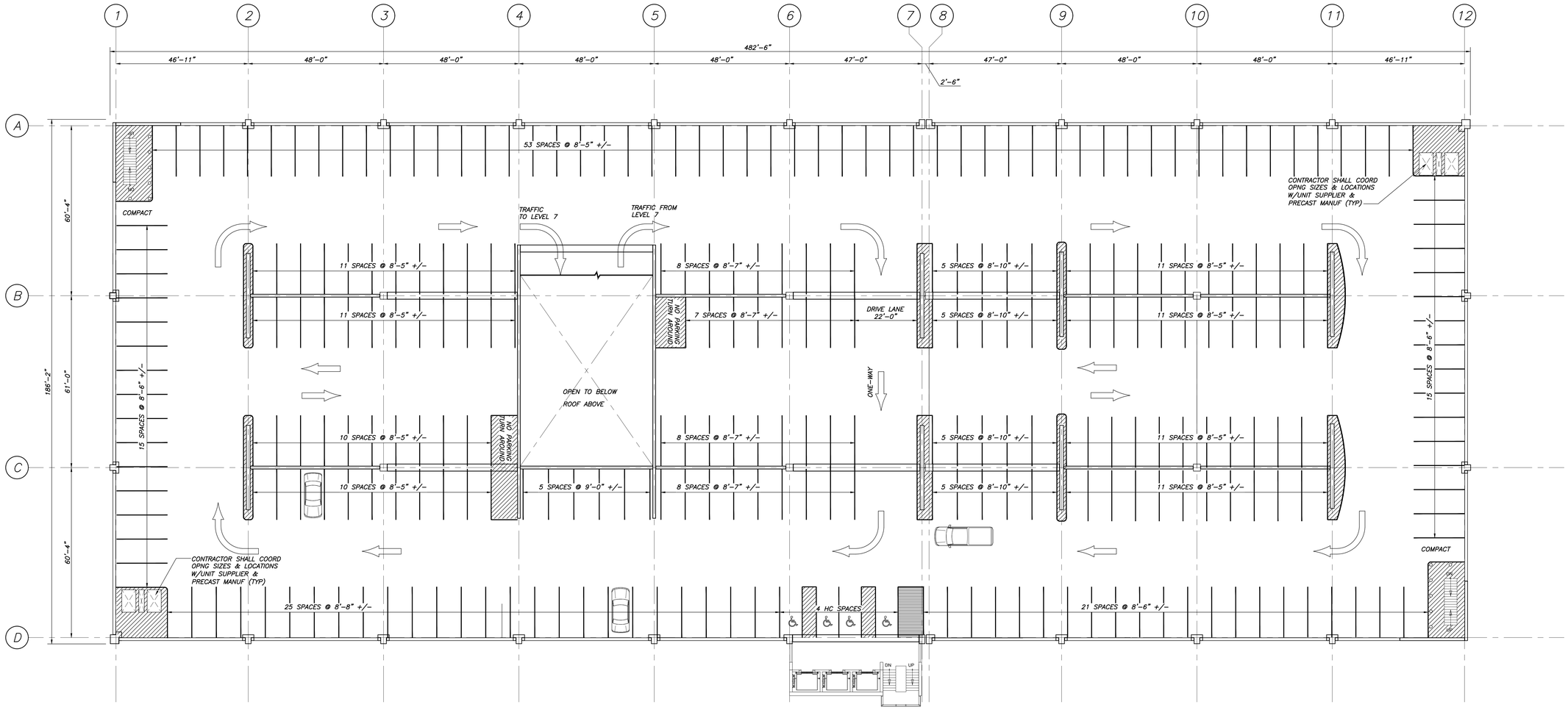
TMN	4070

PS5



ROOF LEVEL

1/16"=1'-0"

SIZE	QTY
HC	4
COMPACT	2
REGULAR	271
TOTAL	277

NOTE:
PARKING COUNTS ARE PRELIMINARY

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LEVEL 8 PARKING LAYOUT

Designed	Scale
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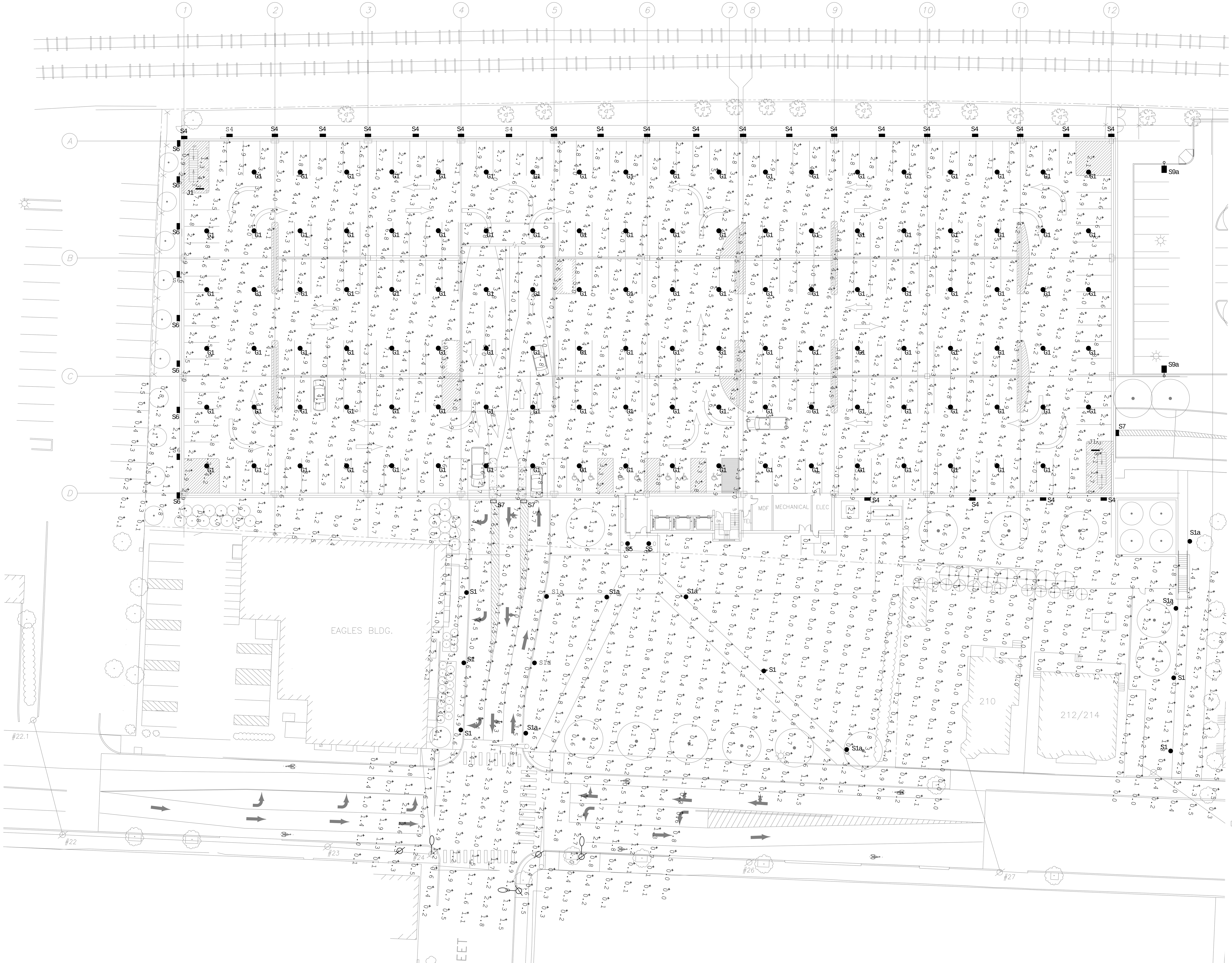
Drawn	Date
CHF	2/23/18
Checked	Becker Job Number
TMN	4070

PS6



1 LEVEL 1 LIGHTING CALCULATION PLAN

FEET
20 0 20 40
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6/22/18

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Bartlett Design
LIGHTING & ELECTRICAL ENGINEERING
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TEL (207) 443-5447

STATE OF MAINE
LAWRENCE E. BARTLETT
No. 7928
LICENSED PROFESSIONAL ENGINEER
6/19/18

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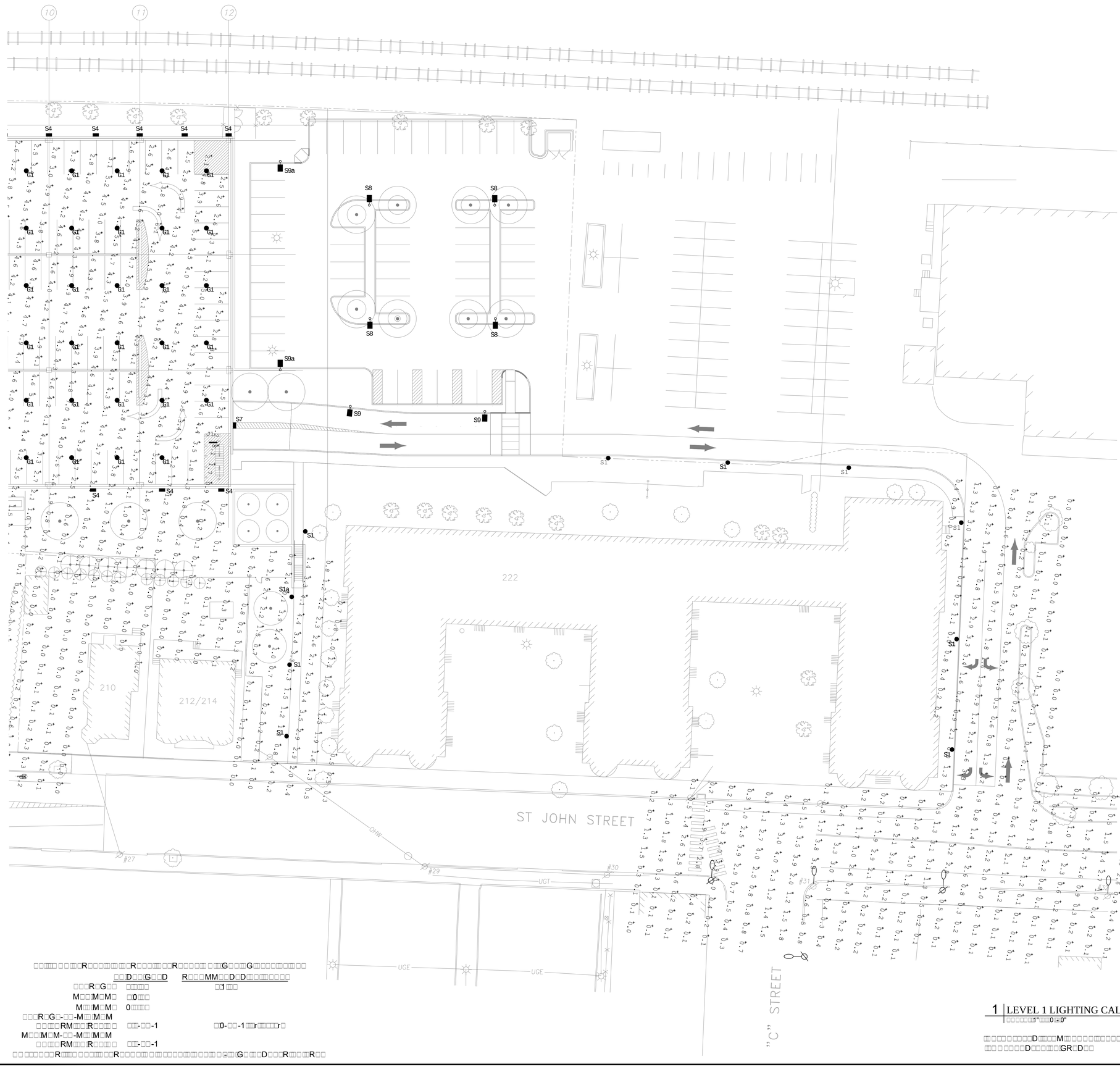
PORTLAND, ME

SITE LTG. CALCULATION PLAN - 1

Designed	Scale
LEB	1"=20'-0"
Drawn	**Date**
LEB	06/22/18
Checked	**Becker Job Number**
LEB	4070

E0.1



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1 LEVEL 1 LIGHTING CALCULATION PLAN
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LEVEL III SITE PLAN APPLICATION
6/22/18

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No. 7928
PROFESSIONAL ENGINEER
6/19/18

Rev No	Date	Issued For

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Drawn LEB | Date 06/22/18
Checked LEB | Becker Job Number 4070

222 ST. JOHN ST PG
PORTLAND, ME

SITE LTG. CALCULATION PLAN - 2

E0.2

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8/16/18

Rev No	Date	Issued For

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PORTLAND, ME

SITE LTG. CALCULATION PLAN – 3

Designed	Scale
LEB	1"=20'-0"
Drawn	Date
LEB	06/22/18
Checked	Becker Job Number
LEB	4070

E0.3

ST JOHN STREET

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212/214

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1 GRADE LEVEL LIGHTING CALCULATION PLAN

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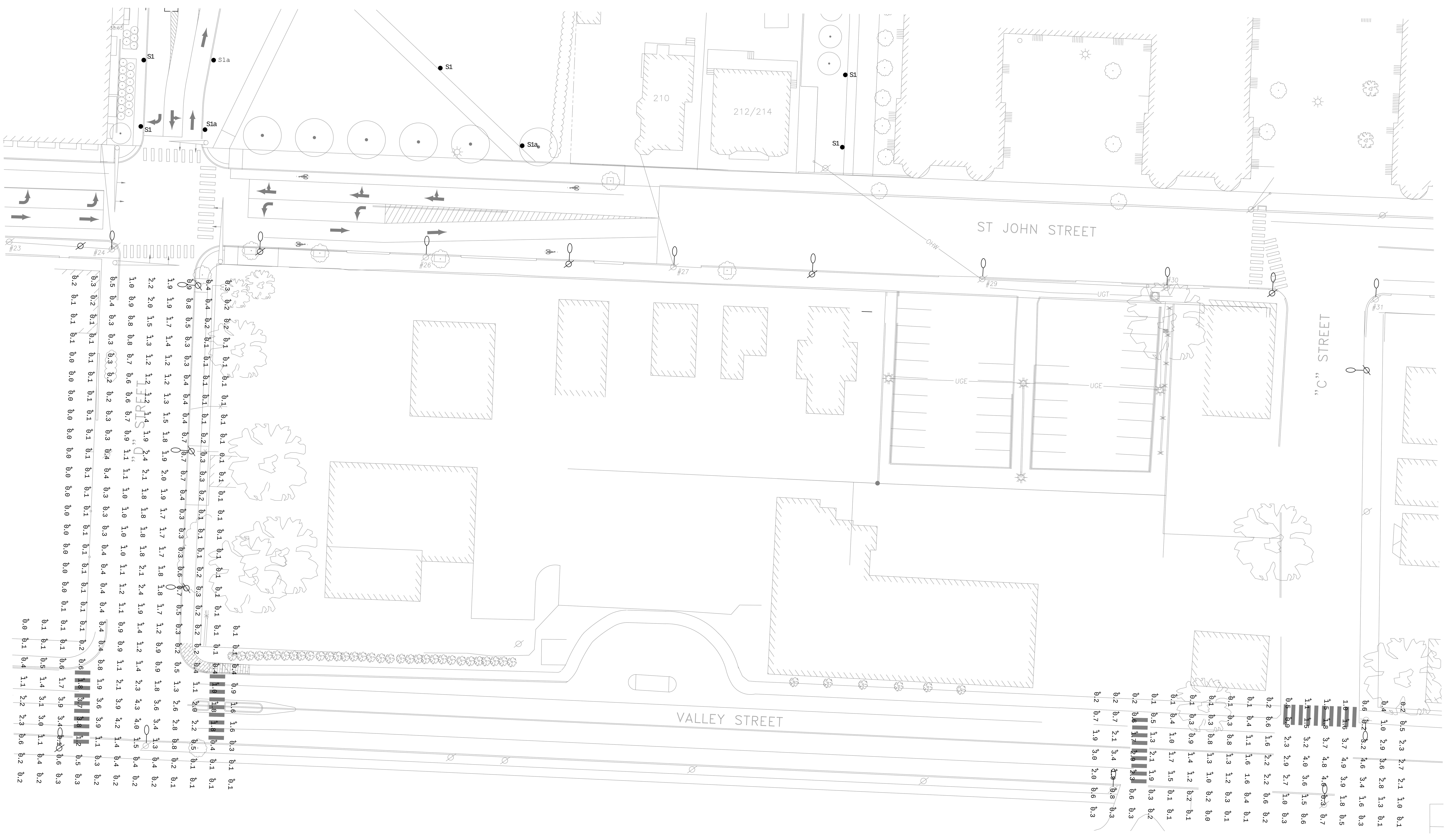
6/22/18



1 "D" STREET & "C" STREET LIGHTING CALCULATION PLAN

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06/22/18

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222 ST. JOHN ST PG
PORTLAND, ME

SITE LIGHTING CALCULATION PLAN - 4

Designed	LEB	Scale	1"=20'-0"
Drawn	LEB	Date	6/22/18
Checked	LEB	Becker Job Number	4070

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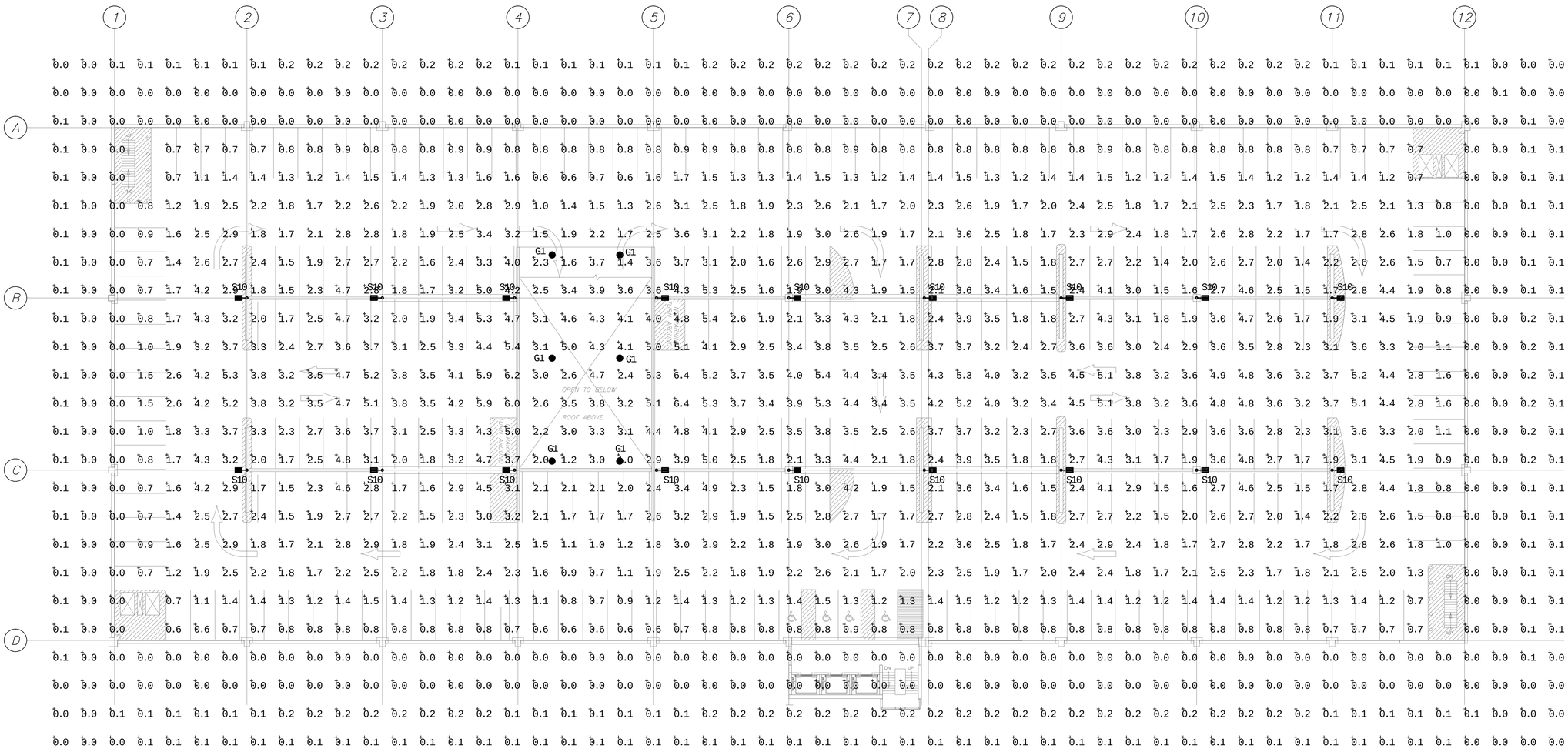

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1 ROOF DECK LIGHTING CALCULATION PLAN

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6/22/18

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STATE OF MAINE LAWRENCE E. BARTLETT No. 7928 REGISTERED PROFESSIONAL ENGINEER
Lawrence E. Bartlett 6/19/18

Rev No	Date	Issued For

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222 ST. JOHN ST PG
PORTLAND, ME

ROOF DECK LIGHTING CALCULATION PLAN

Designed LEB	Scale 1"=16'-0"
Drawn LEB	Date 06/22/18
Checked LEB	Becker Job Number 4070

E0.5

GARAGE LEVEL 1 SHOWN

EXISTING UNDERGROUND WIRING TO REMAIN

STANDBY GENERATOR

CMP METER

MANHOLE STRUCTURE

MMC FIBER OPTIC CABLE MANHOLE

ELEC. SERVICE PAD MOUNTED TRANSFORMER

TYPICAL FOR ALL SITE LTG. POLES

(NOTE 3)

CAP CONDUITS BELOW GRADE

ARRANGE WITH CMP TO PROVIDE A NEW 66-WATT LED STREET LIGHT

ARRANGE WITH CMP TO PROVIDE A NEW 66-WATT LED STREET LIGHT

ARRANGE WITH CMP TO PROVIDE A NEW 44-WATT LED STREET LIGHT

ARRANGE WITH CMP TO REMOVE EXISTING UTILITY POLE

ARRANGE WITH CMP TO REMOVE EXISTING OVERHEAD ELEC. SECONDARY

NEW CMP RISER POLE

NEW CMP RISER POLE

NEW CMP UTILITY POLE

"D" STREET

ST JOHN STREET

222

210

212/214

UNDERGROUND CONDUIT SCHEDULE

- * (A) (2) 5" PVC CDTS (CMP PRMARY)
- (B) (6) 4" PVC CDTS (GENERATOR SERVICE)
  (2) 1" PVC CDTS (GENERATOR CONTROLS)
- (C) (6) 4" PVC CDTS (SECONDARY SERVICE)
- * (D) (1) 4" PVC CDT (TELEPHONE)
  (1) 4" PVC CDT (CABLE TV)
  (4) 4" PVC CDTS (MAINE MED FO CABLE)
- (E) (1) 1-1/4" PVC CDT (CMP METER)
- (F) (1) 1-1/4" PVC CDT (SITE LIGHTING)
- * (G) (1) 4" PVC CDT (TELEPHONE)
- * (H) (1) 4" PVC CDT (CABLE TV)
- * (I) (4) 4" PVC CDTS (MAINE MED FO CABLE)
- (J) (2) 5" PVC CDTS (CMP PRMARY)
- (K) (1) 4" PVC CDT (TELEPHONE)
- (L) (2) 4" PVC CDTS (MAINE MED FO CABLE)
- (M) (1) 1" PVC CDT (SIGN LIGHT)
- (N) (2) 4" PVC CDTS (MAINE MED FO CABLE)

* CONCRETE ENCASE CONDUITS

1 ELECTRICAL AND LIGHTING SITE PLAN

1" = 0'-0"

NOTES:

1. COORDINATE ALL ELECTRICAL UNDERGROUND UTILITY CONDUITS AND MANHOLES WITH OTHER UNDERGROUND UTILITIES AS SHOWN ON CIVIL UTILITY SITE PLANS.
2. WHERE CONDUITS ENTER BUILDING, SLOPE CONDUITS AWAY FROM BUILDING EXTERIOR WALL.
3. WHERE INDICATED, DROP UNDERGROUND MMC FIBER OPTIC CABLE CONDUITS AND CAP FOR FUTURE USE BY OTHERS.
4. WHERE INDICATED, BURY CONDUITS 12 INCHES BELOW THE PAVEMENT WITH A 2 INCH THICK CONCRETE COVER.

N

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Rev. No	Date	Issued For
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MMC ST. JOHN ST PG
PORTLAND, ME

ELECTRICAL SITE PLAN – 1

Designed	Scale
LEB	AS NOTED
Drawn	Date
LEB	6/22/18
Checked	Becker Job Number
LEB	4070

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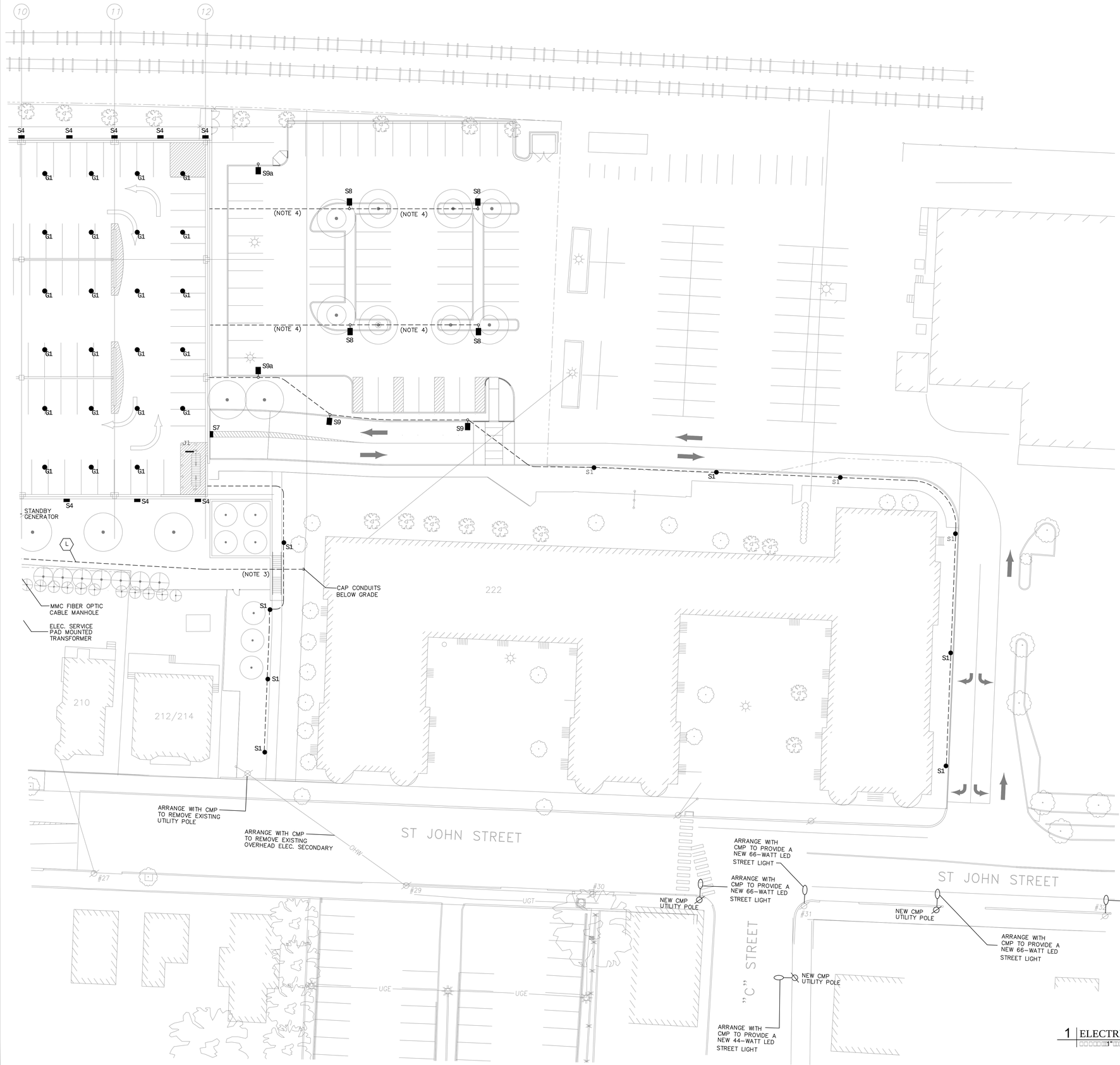

1 ELECTRICAL AND LIGHTING SITE PLAN

1"=20'-0"

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06/22/18

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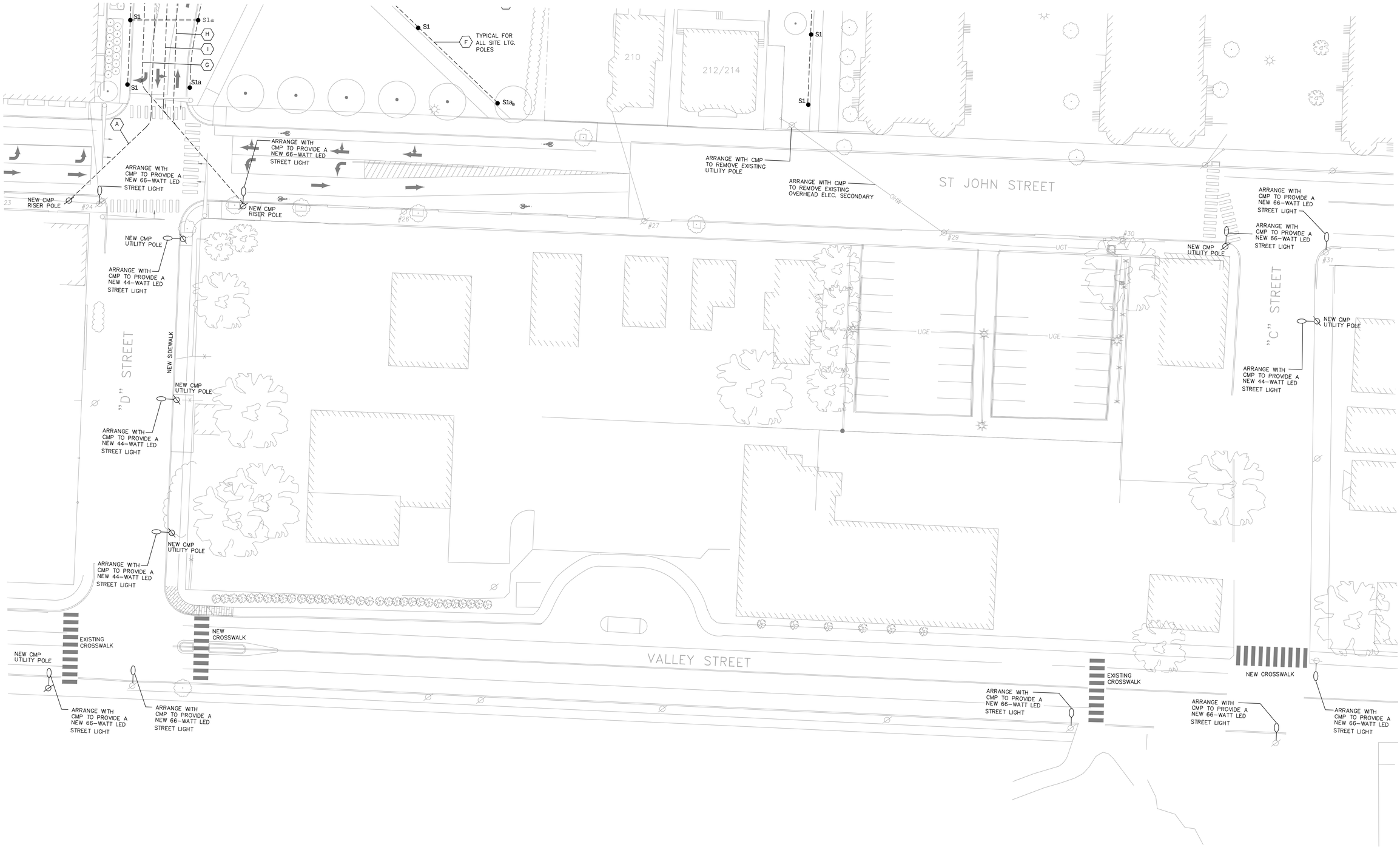
Date	
Rev. No	

222 ST. JOHN ST PG
PORTLAND, ME

ELECTRICAL SITE PLAN - 2

Designed LEB	Scale 1"=20'-0"
Drawn LEB	Date 6/22/18
Checked LEB	Becker Job Number 4070

E1.2



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1 ELECTRICAL AND LIGHTING SITE PLAN

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222 ST. JOHN ST PG
PORTLAND, ME

ELECTRICAL SITE PLAN - 3

Designed	Scale
LEB	1"=20'-0"
Drawn	Date
LEB	6/22/18
Checked	Becker Job Number
LEB	4070

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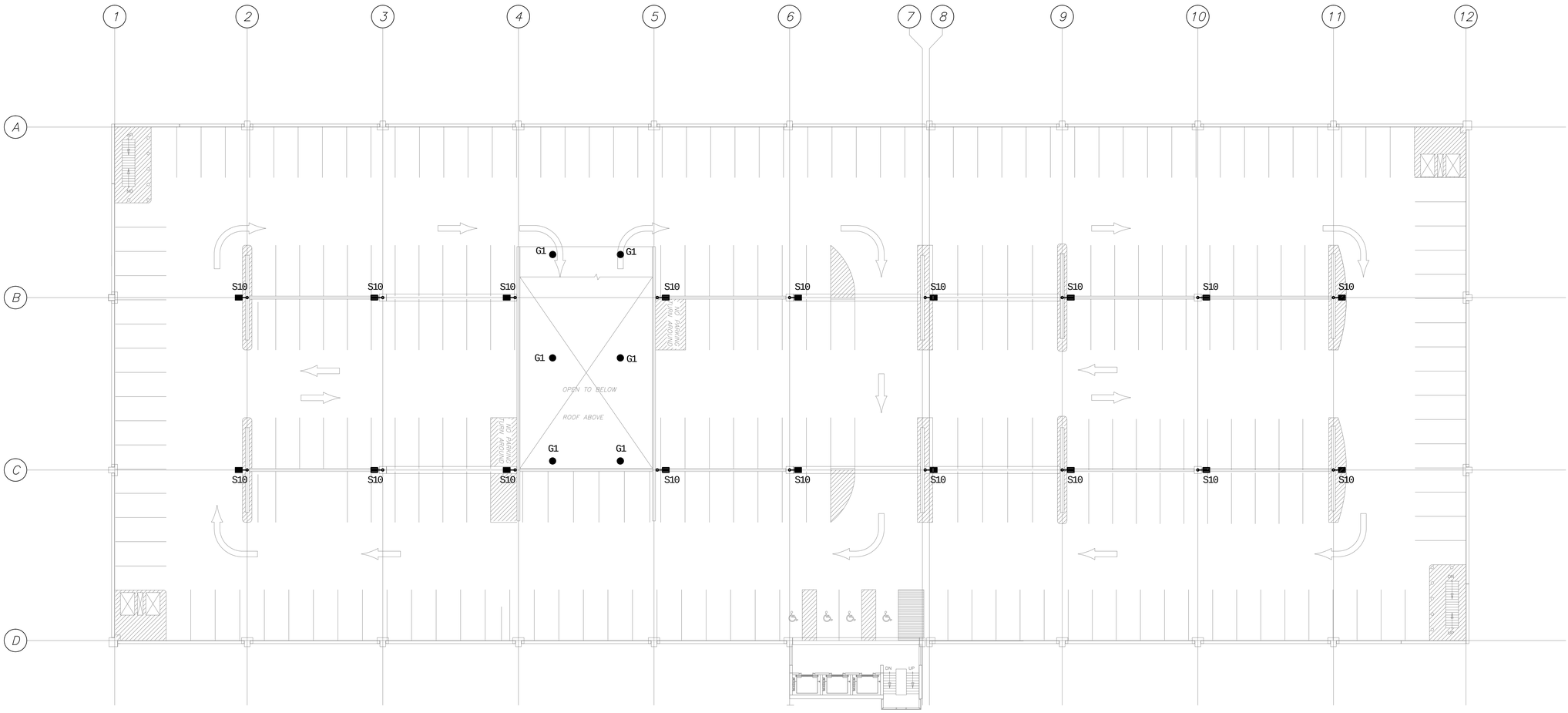

1 ROOF DECK ELECTRICAL PLAN
1/8" = 1'-0"

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222 ST. JOHN ST PG
PORTLAND, ME

ROOF DECK ELECTRICAL PLAN

Designed LEB	Scale 1"=16'-0"
Drawn LEB	Date 06/22/18
Checked LEB	Becker Job Number 4070

E1.4

Maine Medical Center
MaineHealth

Site Plan Two:
St John Garage
Planning Board Workshop

July 10, 2018

BEST REGIONAL HOSPITALS U.S.News 2017-18

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

A Day at the Medical Center

Thursday, September 21st, 2017

Gassed Beds		
Total Beds:		637
	Patient condition closures:	44
	Construction closures:	4
	Staffing closures:	13
Open beds:		576
	Held for assigned admits:	7
	Census at 0700:	553
Beds remaining:		16

Available Beds	
Medical/Surgical:	0
Cardiac:	4
Intermediate Care:	0
Intensive Care:	4
Psychiatric:	1
Childrens:	2
Obstetrics:	5
Beds remaining:	16

Patients Waiting for a Bed	
In the ED:	17
In the ED waiting for P6 (excludes outside psych placement):	0
In the PACU:	2
Transfer from other facilities:	4
Total:	**23**

Expected Admissions	
ED admits:	45 - 55
Procedural admits:	45 - 50
Cath Lab admits:	1 - 4
Outisde admits:	10 - 15
Total:	**101 - 124**

Jeff Sanders,
Executive Vice President and COO,
MMC

Maine Medical Center
MaineHealth

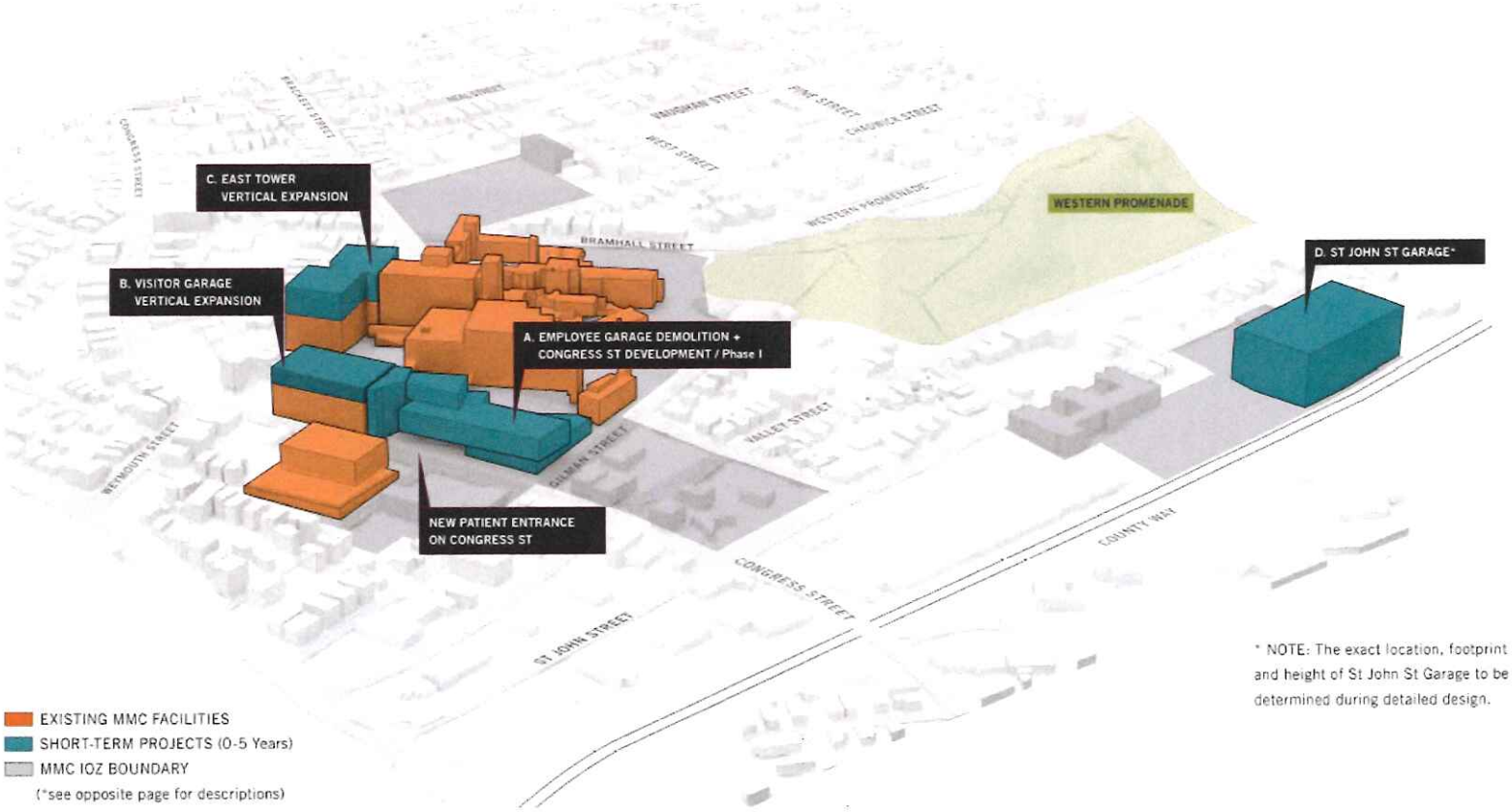
MMC Patient/Visitor Parking Summary

- Existing Peak Parking Demand = 875 parkers
- Existing MMC Parking Supply = 850 spaces
- Current Patient/Visitor Shortfall = (-25) spaces

- Future Patient/Visitor Parking Demand = 175 spaces

- Total New Patient/Visitor Parking Spaces Needed to alleviate existing shortfall and to accommodate anticipated growth = **200-250 spaces**

Master Facility Plan

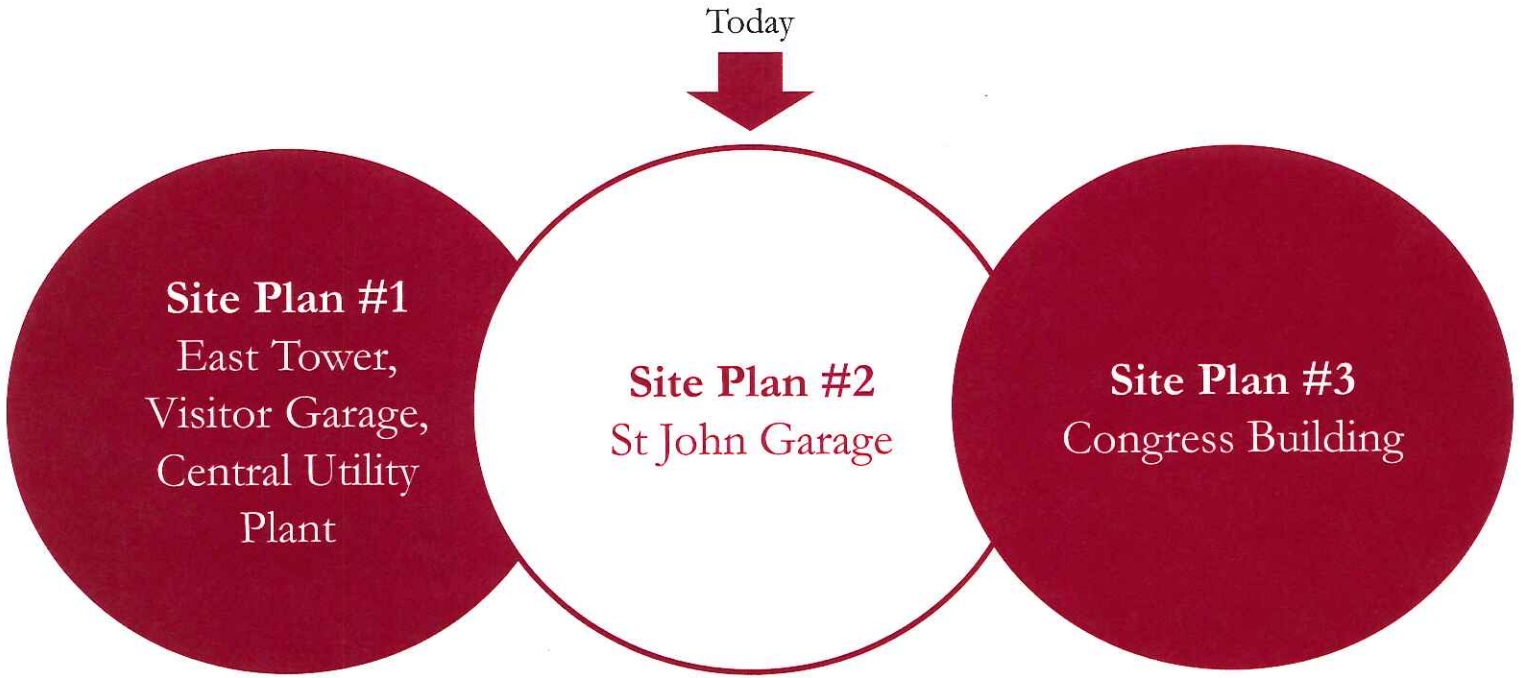


Act with kindness and compassion. | Be an active listener. | Be a role model. | Set high standards. | Take responsibility. | Embrace change.

Jeff Sanders,
Executive Vice President and COO,
MMC

Maine Medical Center
MaineHealth

MMC MFP Site Plan Review



- Three separate applications with overlapping schedules
- Intended to make the materials digestible and to provide more opportunities for feedback from the City and Neighbors

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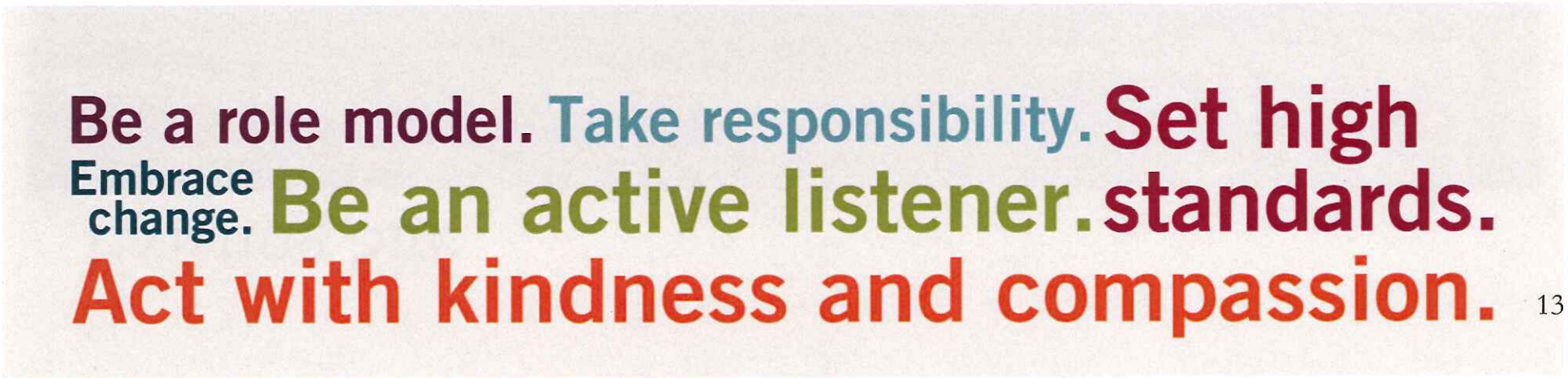
Staff Parking Garage

Site Overview
and Zoning Review



Proposed Garage

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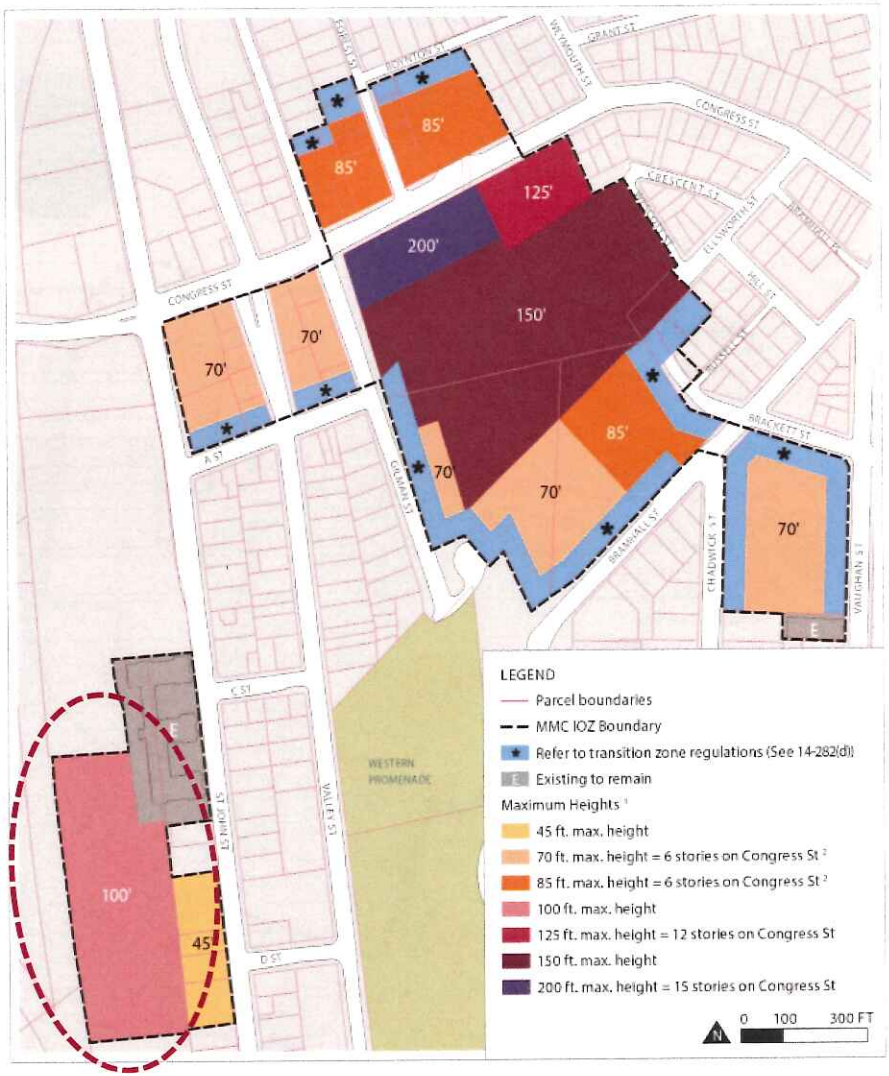
Dave Senus,
Project Manager,
Woodard & Curran

Maine Medical Center
MaineHealth

Zoning Compliance
I.O.Z. Regulatory Framework

	Requirement	Proposed
Building Height	100’	96.25’

Maximum Building Heights



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Project Manager,
Woodard & Curran

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MaineHealth

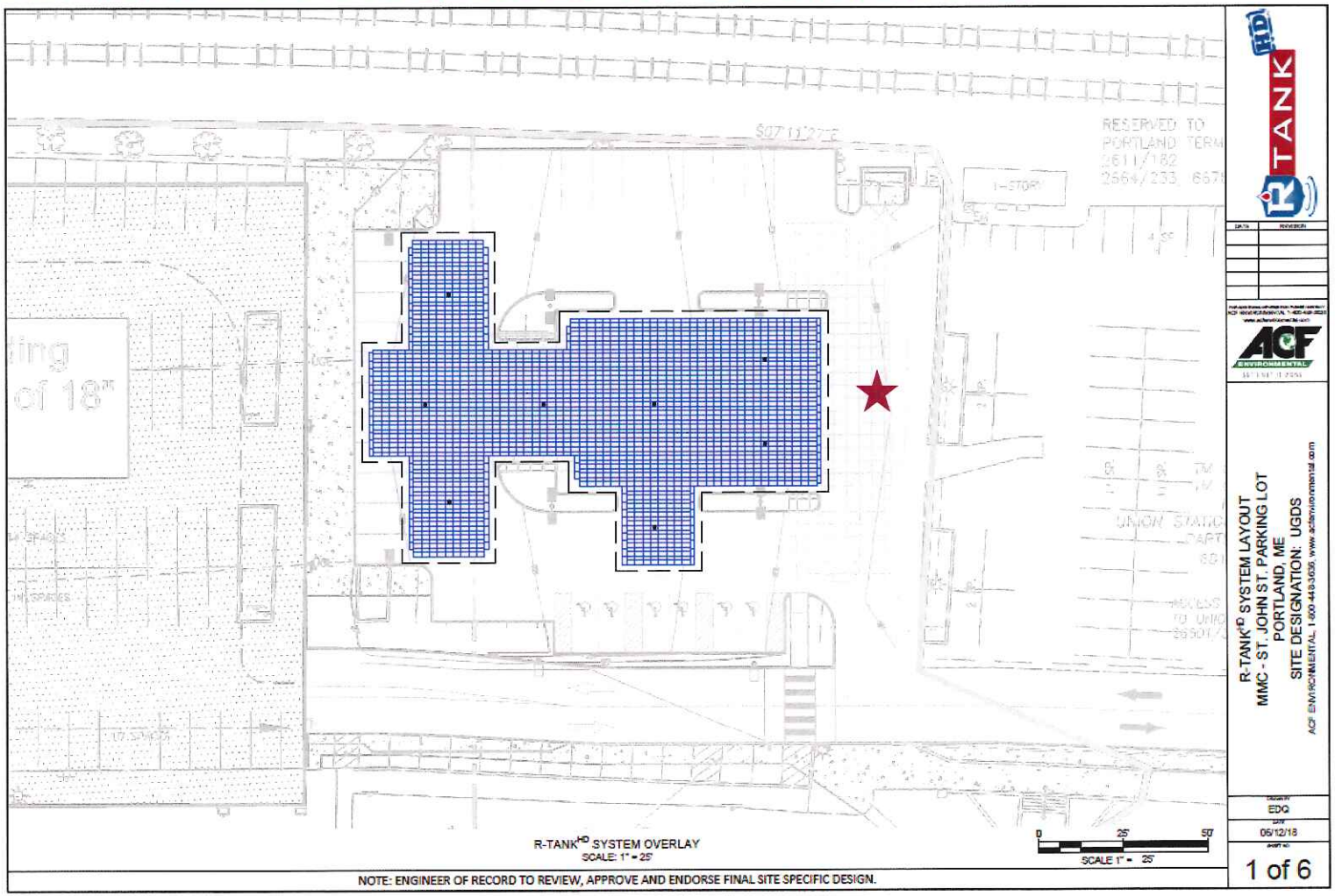
Zoning Compliance
I.O.Z. Regulatory Framework

	Requirement	Proposed
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.	482'

Stormwater Plan

- **Stormwater**
  - Treat top deck of garage and surface parking area
    - » Stormwater will be stored in subsurface storage tanks and discharged to a filter
    - » Filter discharges into 18" existing drainage associated with Union Station Plaza (easement established between owners)
  - Treat St. John Street entrance through a catch basin filter located in garage entrance driveway, connect to existing storm drain in St. John Street (30" RCP)

Stormwater Detention & Treatment



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Project Manager,
Woodard & Curran

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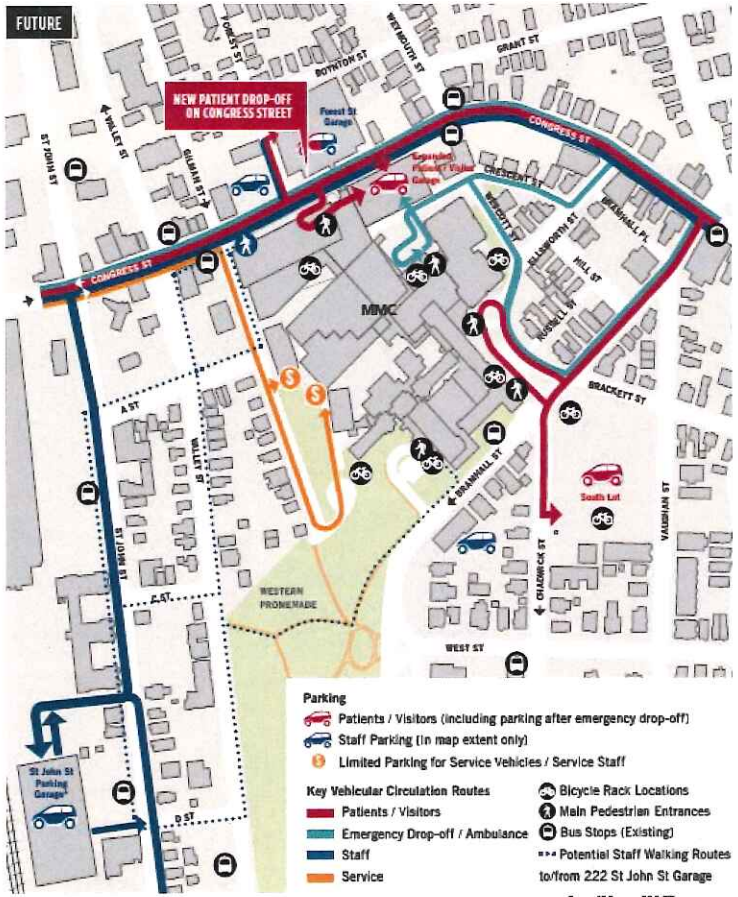
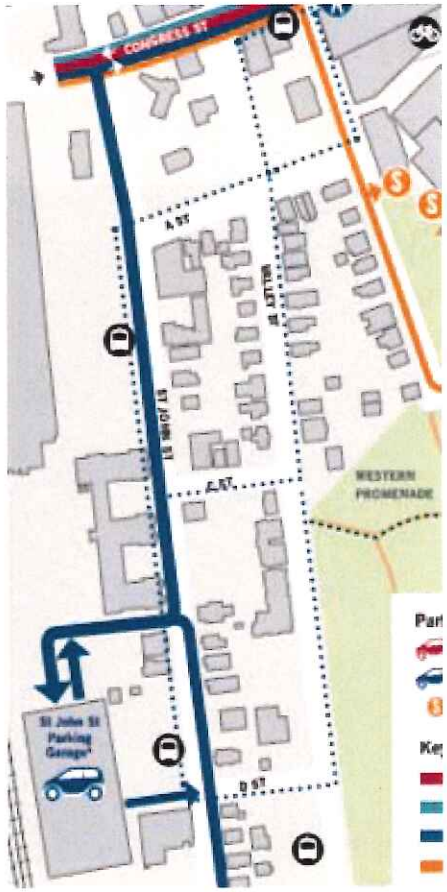
Stormwater Treatment Area Summary

	Area (SF)	Area(AC)
Total Project Area:	229,656	5.27
Proposed Disturbed Area:	204,783	4.70
Total Impervious Surface Area:		
Existing:	190,077	4.36
Proposed:	176,076	4.01
Reduction:	14,001	0.32
Redeveloped Non-Roof Impervious Area:		
Total (includes top floor of garage):	146,887	3.37
Required Treatment Area (50%):	73,444	1.69
Provided Treatment Area (R-Tank & Jellyfish Filter):		
Total Area Treated	157,512	3.62
Total Redeveloped Non-Roof Impervious Area Treated:	125,012	2.87
Percentage of Redeveloped Non-Roof Impervious Area Treated:	85%	
Additional Provided Treatment Area (Catch Basin Filter):		
Total Area Treated	32,723	0.75
Total Redeveloped Non-Roof Impervious Area Treated:	9,319	0.21
Percentage of Redeveloped Non-Roof Impervious Area Treated:	6%	

Pedestrian Travel Routes (as noted in IDP)



* NOTE: The exact location, footprint and access for St John St Garage to be determined during detailed design.



* NOTE: The exact location, footprint and access for S Garage to be determined during detailed design.

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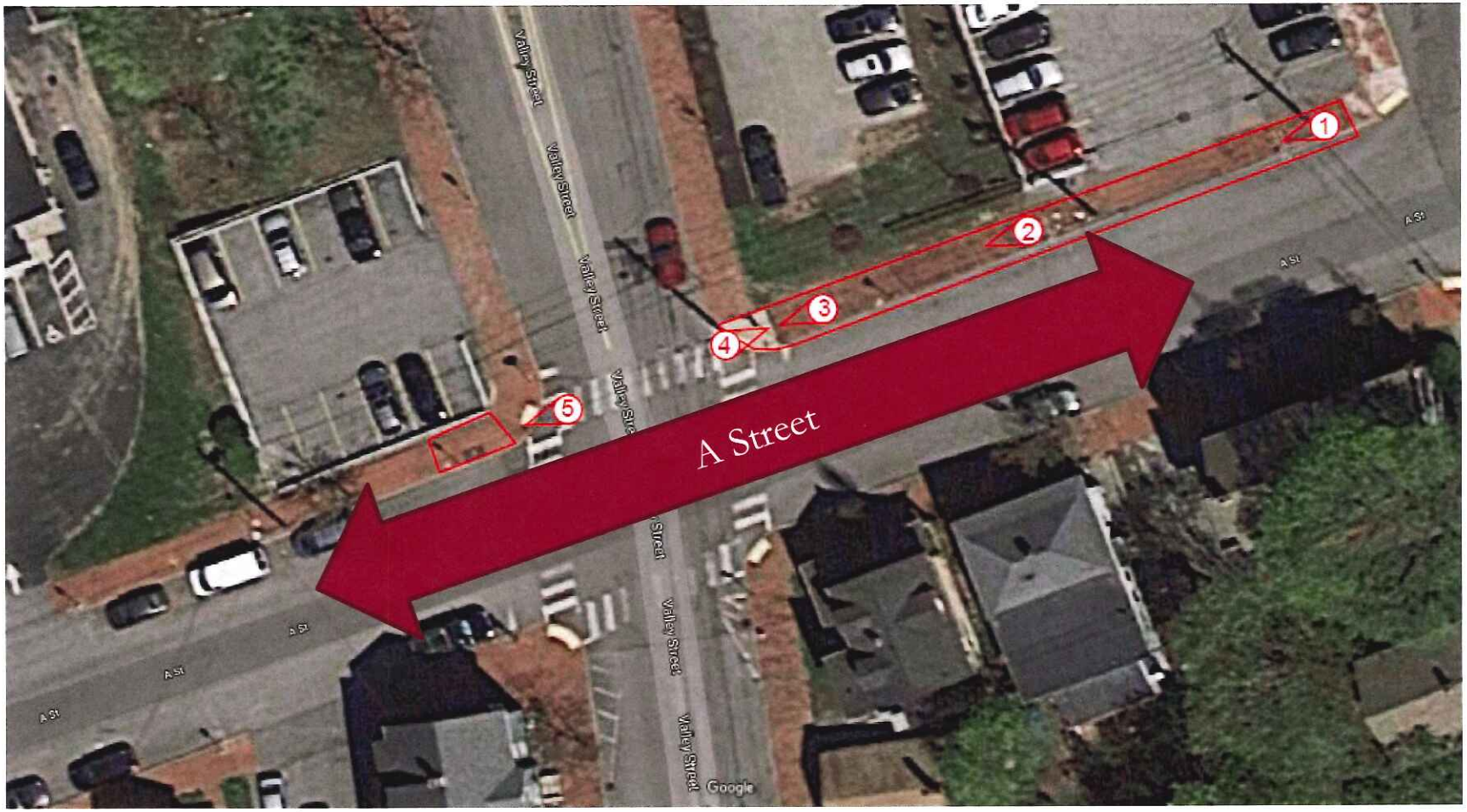
Right of Way Improvements



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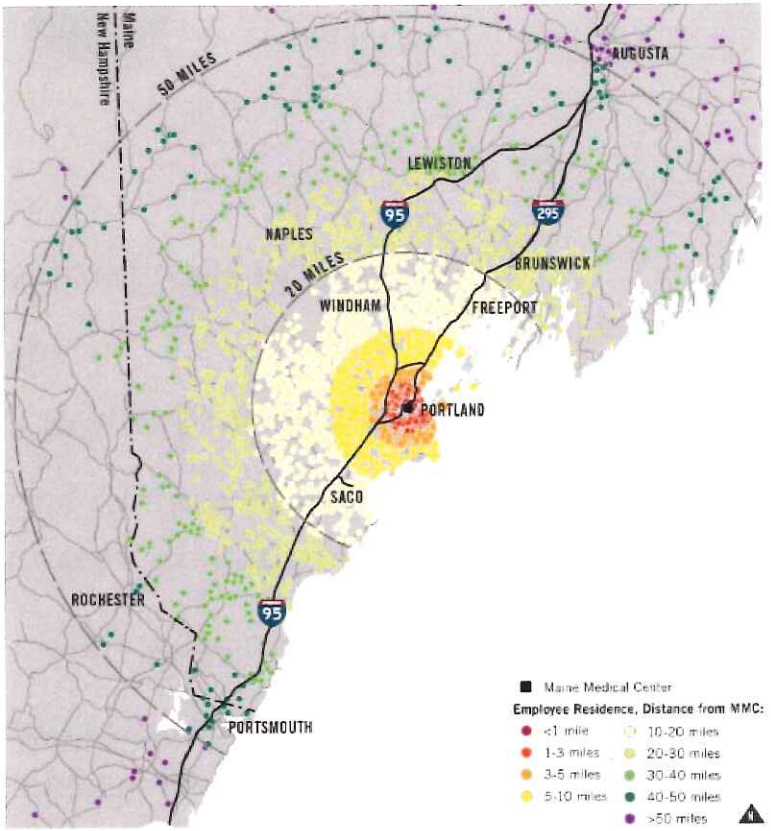
Transportation Demand Management

Improving Data Collection

- Gate readers similar to EZPass to secure the garage
- Sensors in the proposed garage to monitor utilization
- Employee surveys every other year



Bramhall Campus Staff Home Locations and Distances to Work (MMC TDM Plan)

Act with kindness and compassion. Be an active listener. Be a role model. Set high standards. Take responsibility. Embrace change.

Al Green,
Director of Planning,
MMC

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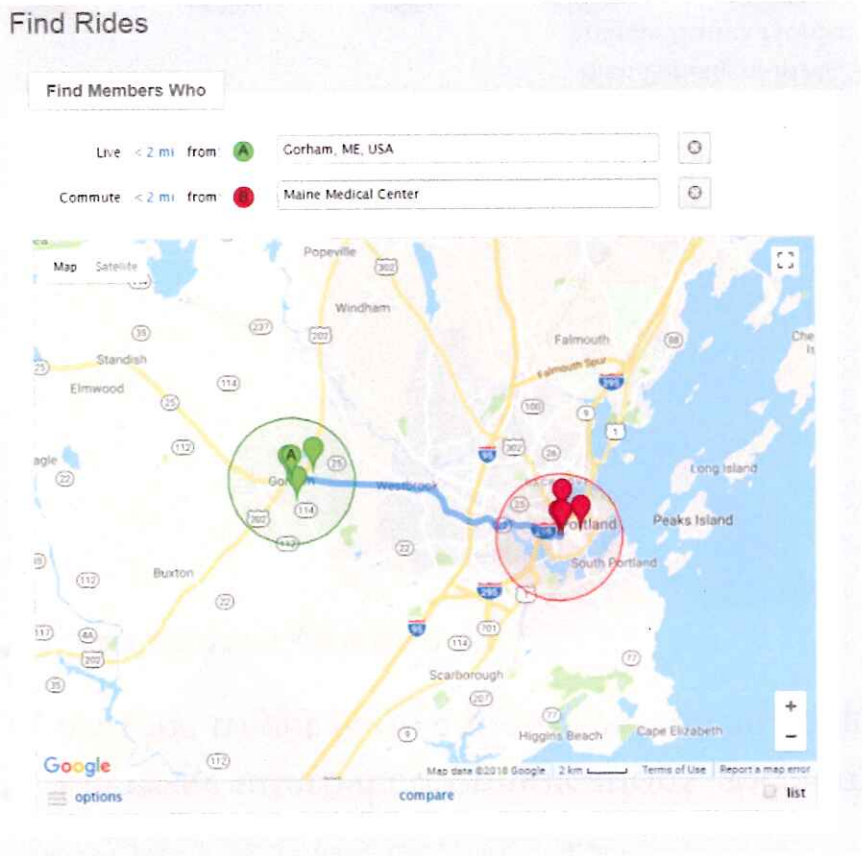
Carpool, Vanpool, and Car Share



- Carpooling / Vanpooling is MMC's #1 TDM program by volume of participants according to survey (est. 150 participants)
- UCar located on site
- Participants are eligible for parking cost reimbursement
- 100 parking spaces reserved on level 1 of the St John garage for carpoolers
- Continue to promote the GOMAINE carpool match program
- Participate in "WAY 2 GO Maine 2018"

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Looking to the Future

- 6 Vehicle charging stations in the St John Garage (room for 20 more in the future)
  - 4 in the expanded Visitor Garage
- Bike share
- Involved in regional conversation
  - City of Portland
  - PACTS (GPCOG)
  - METRO
  - Portland Trails
  - Bicycle Coalition of Maine
  - Other employers

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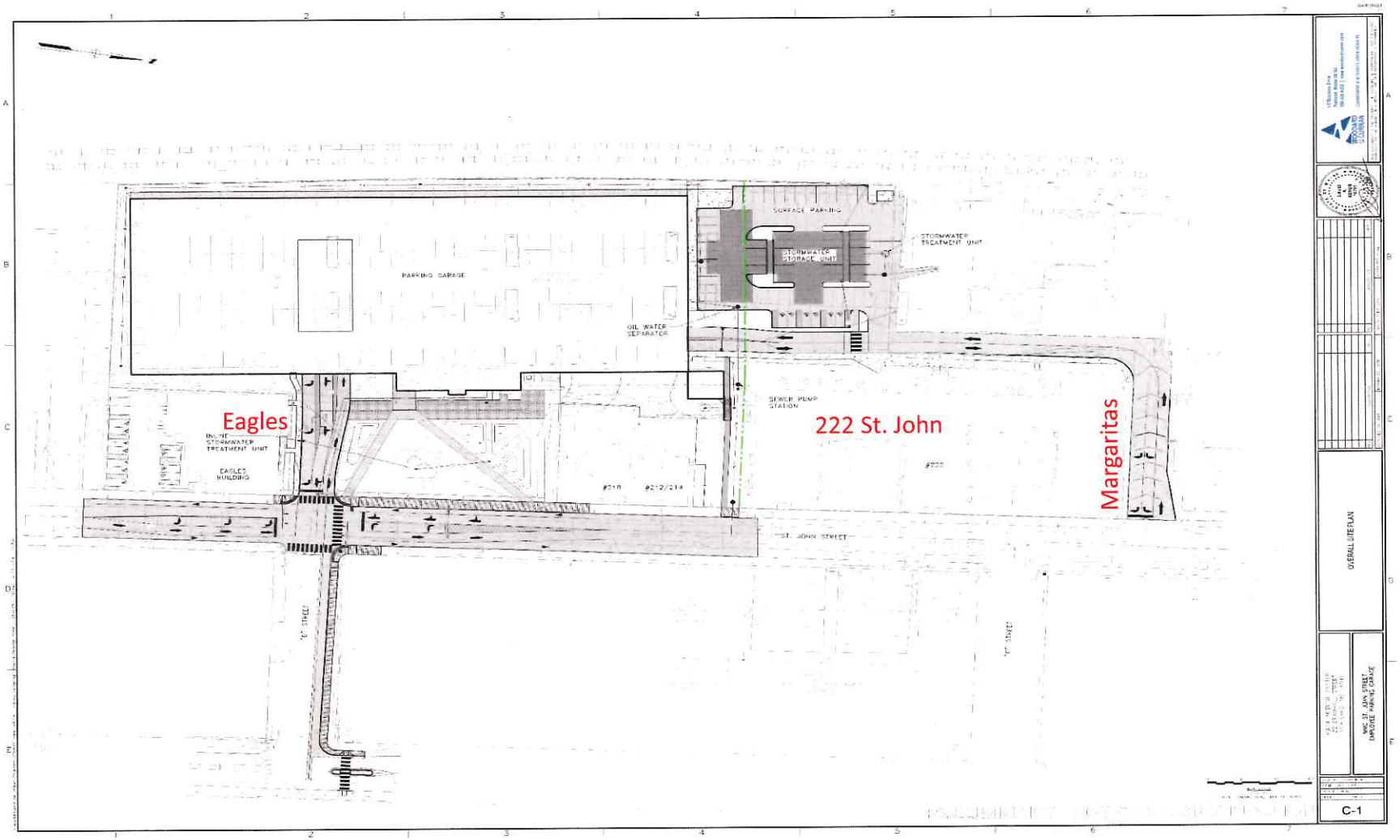
Site Overview – Traffic Flow



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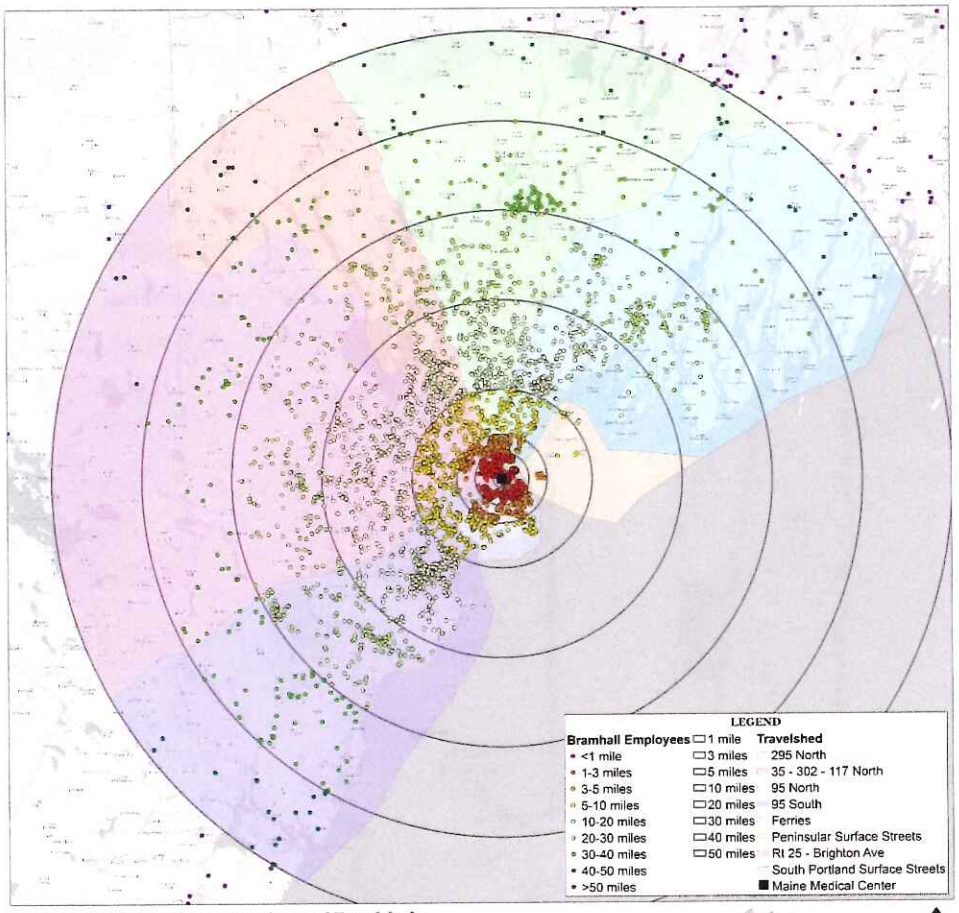
Traffic – Trip Assignment



Bramhall Employee Address Locations and Travelsheds
Maine Medical Center

- MMC Employee Data
- Regional Transportation Patterns
- Actual Traffic Counts
- Conversations with City Staff about Potential Future Developments

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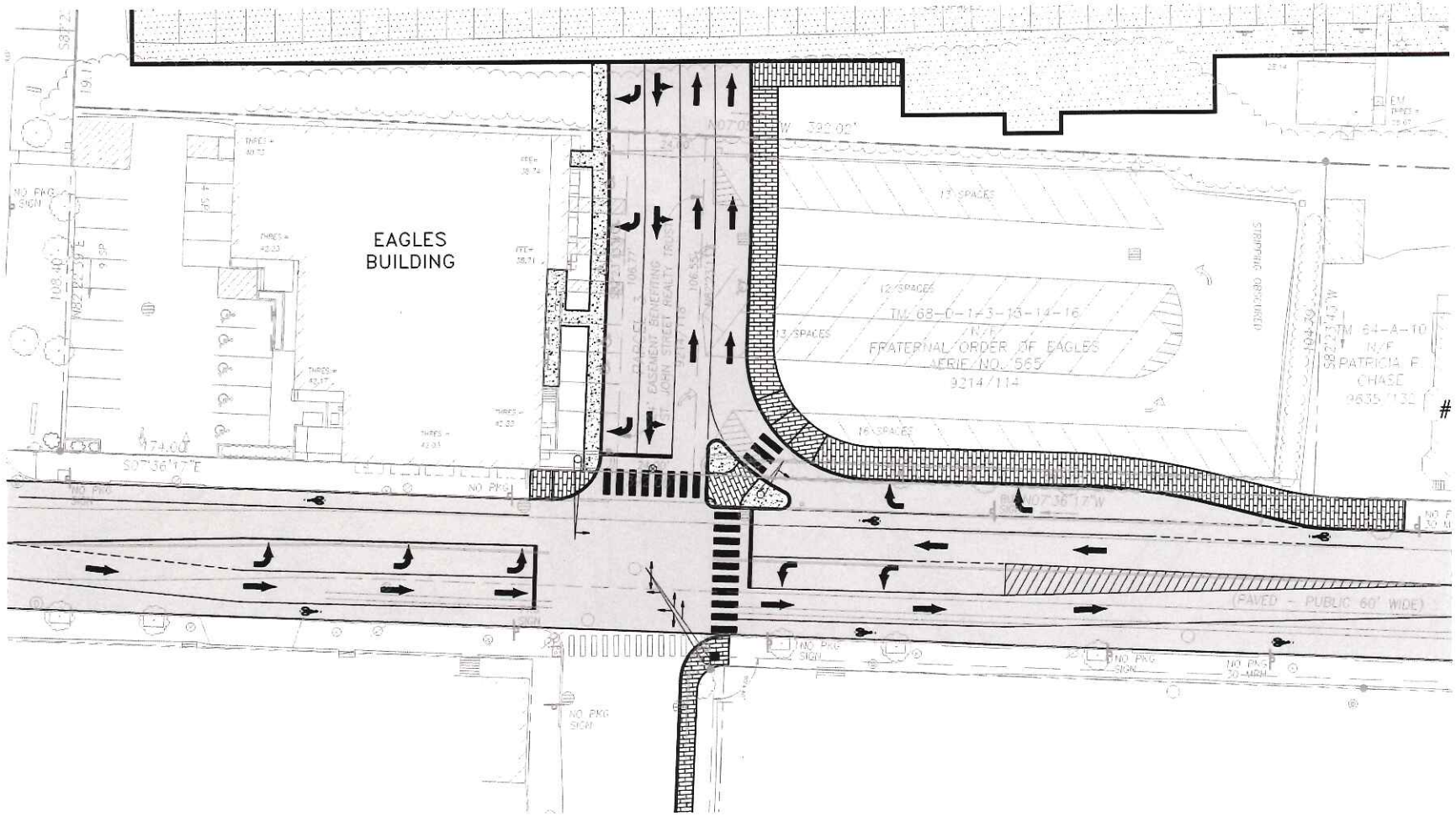
Lane Configuration – Early Concept



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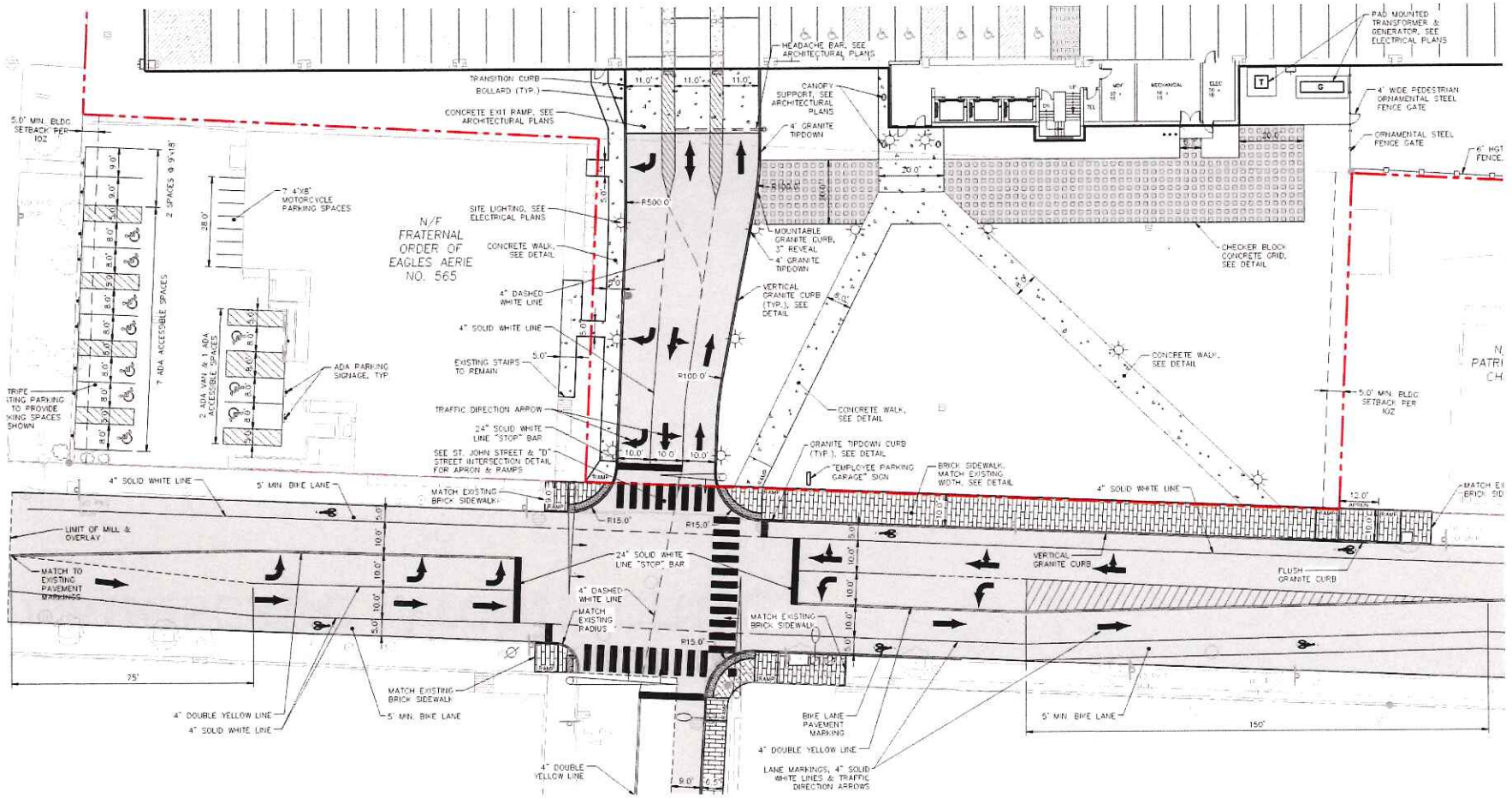
Lane Configuration – Proposed Concept



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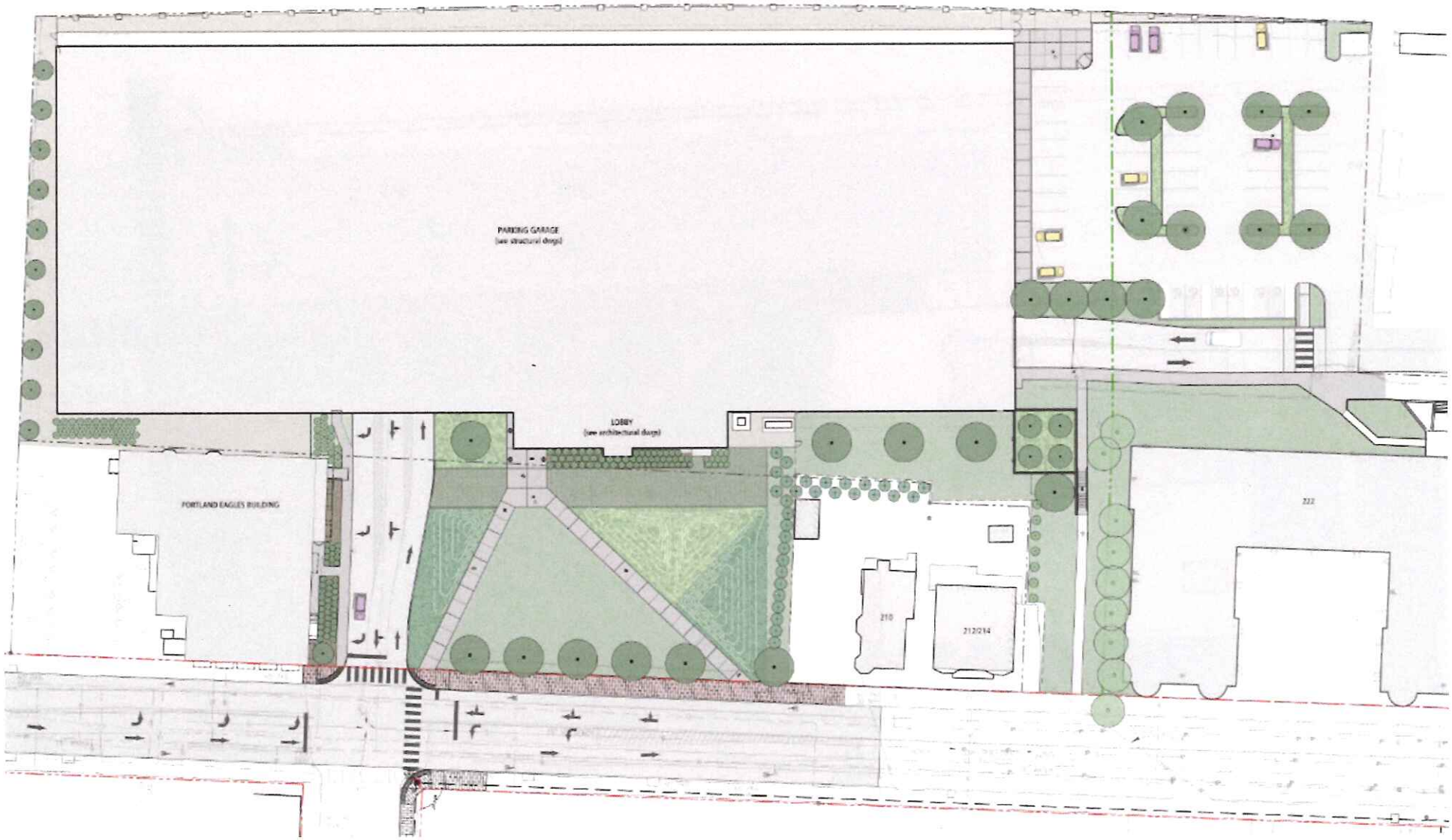
Landscape Architecture



Gretchen Giumarro,
Landscape Architect,
Michael Boucher Landscape Architecture

Landscape Architecture

View from St. John Street

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Embrace change.

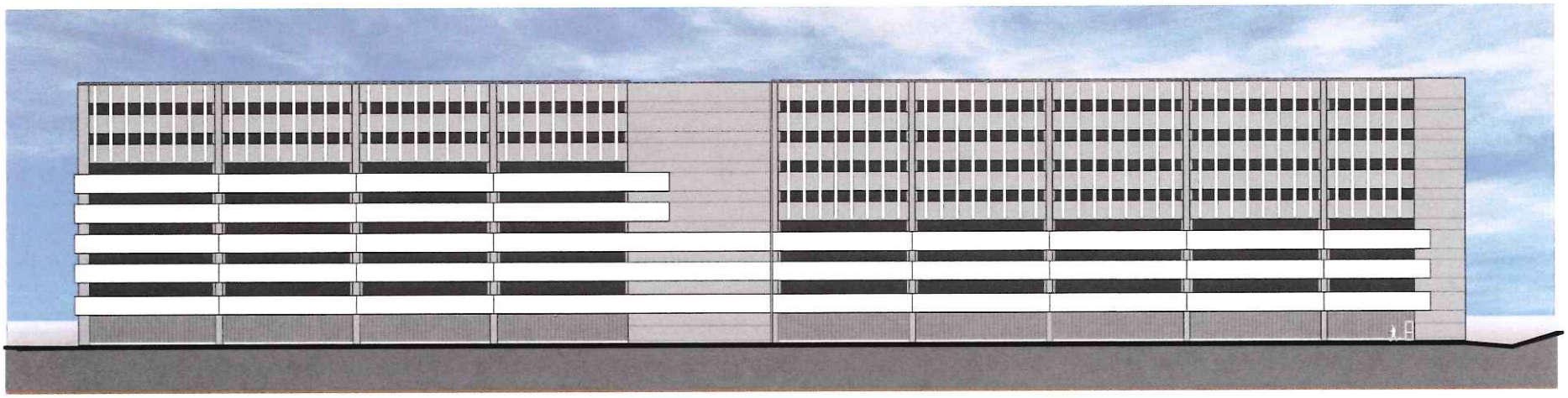
Gretchen Giumarro,
Landscape Architect,
Michael Boucher Landscape Architecture

Maine Medical Center
MaineHealth

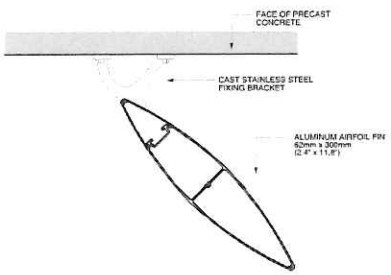
Design Review To Date

- Presentation to Historic Preservation
  - Be recessive and provide a background to 222 St John St – Railroad Building
  - Be consistent on all elevations
  - Stair tower provides a feature to break up the mass
  - Design should express function as a garage
- Meetings with City Staff
  - Importance of selected corners
  - Importance of view from Veteran's Bridge @ Fore River Parkway

Building Architecture

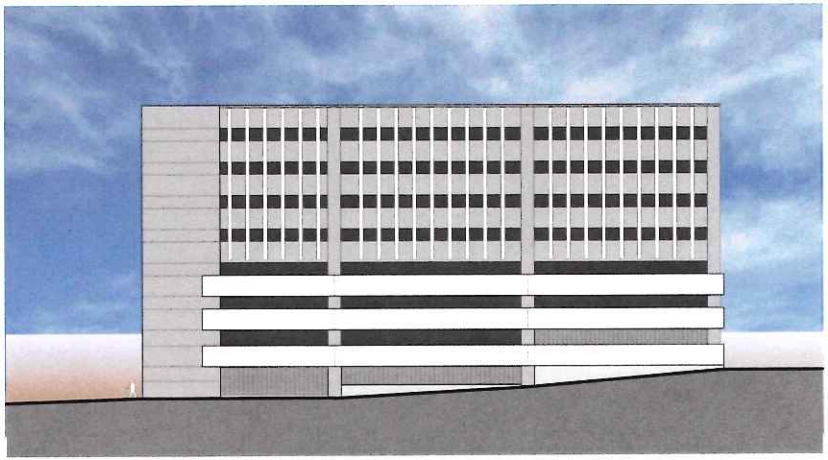


West Elevation



Aluminum Fin Plan Detail

Ground Floor Security Grilles



South Elevation

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Mark Wilcox,
Architect,
Winton Scott Architects

View from St. John Street

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

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North View

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

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Set high standards.

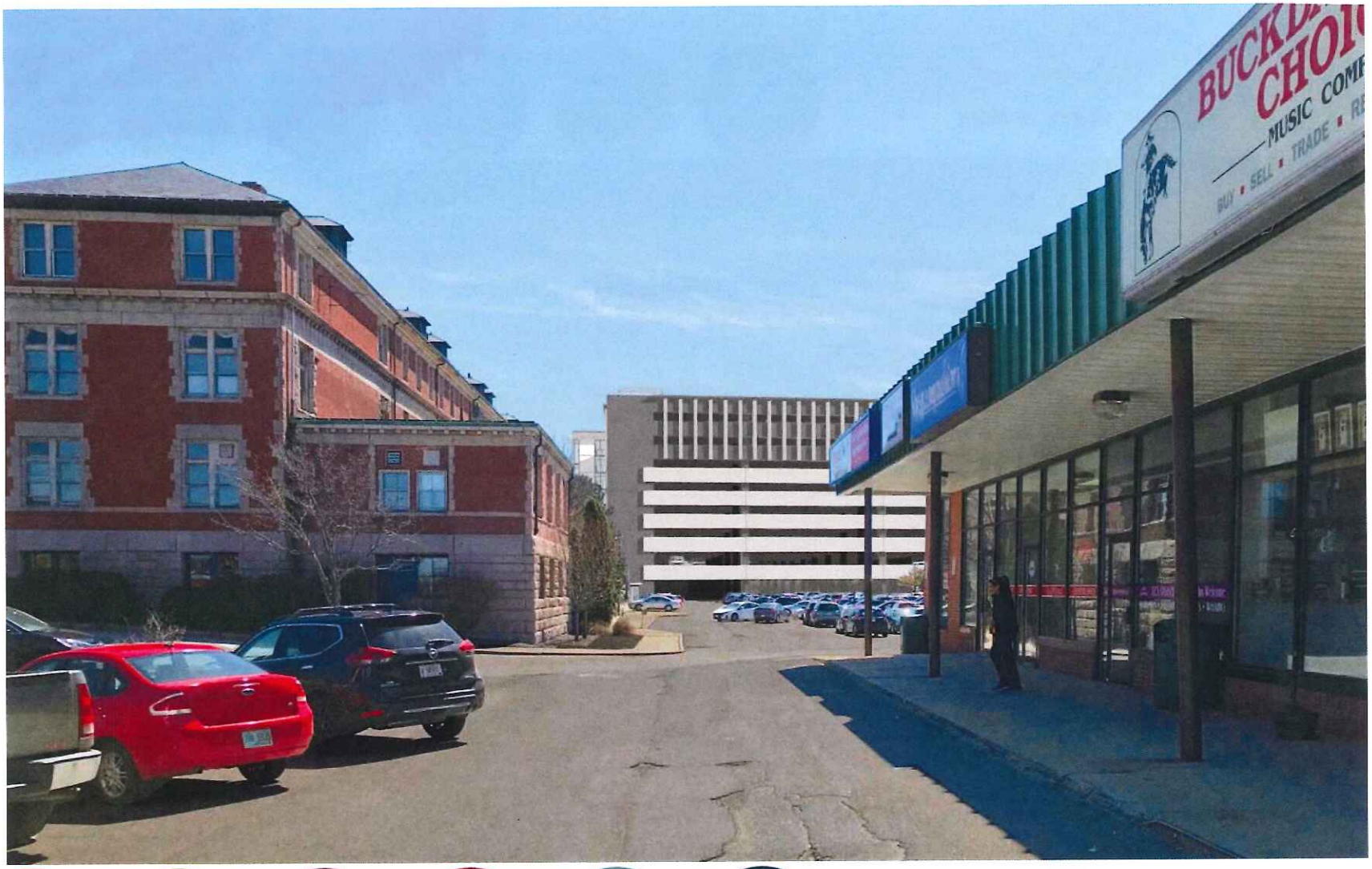
Take responsibility.

Embrace change.

A Street View

After

Mark Wilcox,
Architect,
Winton Scott Architects



Act with kindness and compassion.

Be an active listener.

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Set high standards.

Take responsibility.

Embrace change.

Shopping Center View

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

View At 222 St. John

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

View From South

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

Western Prom View

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

View From Edge of Promenade

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

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Set high standards.

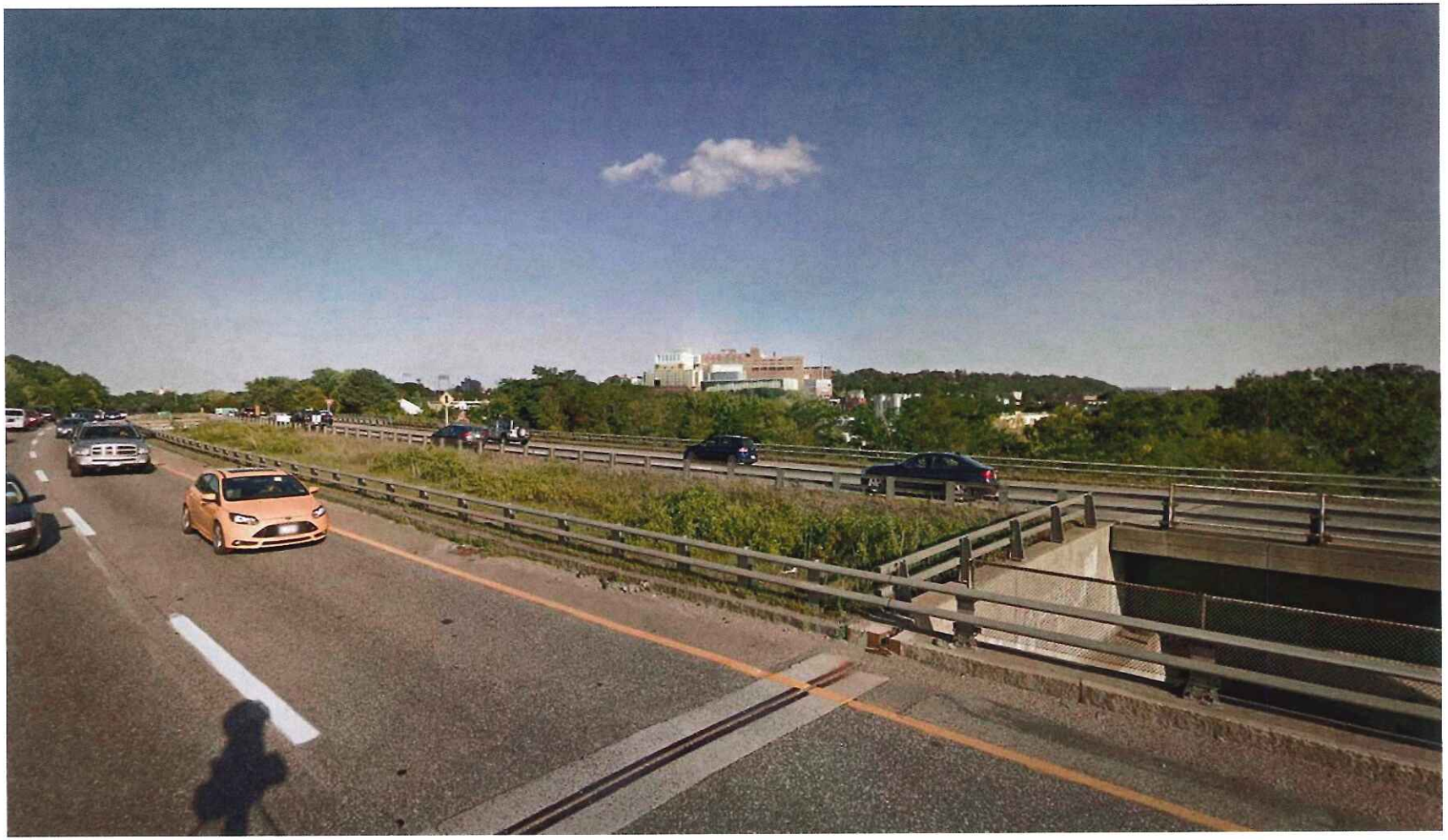
Take responsibility.

Embrace change.

View From TB Reed Circle

After

Mark Wilcox,
Architect,
Winton Scott Architects



Act with kindness and compassion.

Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

Route 295 View

After

Mark Wilcox,
Architect,
Winton Scott Architects

Act with kindness and compassion.

Be an active listener.

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Set high standards.

Take responsibility.

Embrace change.

Veterans Bridge View

After

Mark Wilcox,
Architect,
Winton Scott Architects

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Be an active listener.

Be a role model.

Set high standards.

Take responsibility.

Embrace change.

Veterans Bridge Close View

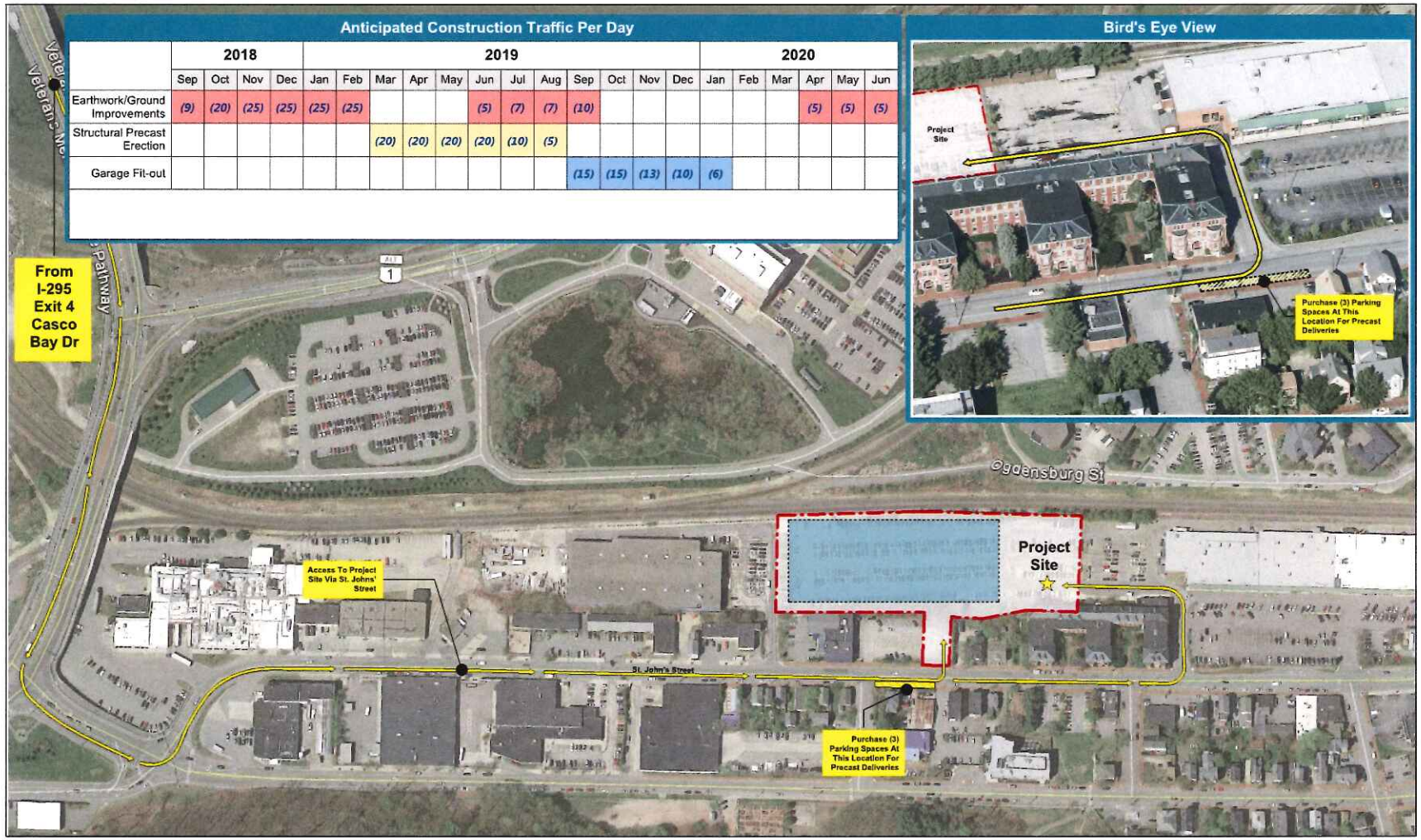
After

Mark Wilcox,
Architect,
Winton Scott Architects

Construction Details

- Work Hours – 7 a.m. – 6 p.m., Monday – Friday.
- Rare weekend / Holiday work, with advance notice, start after 8 a.m.
- Pile Driving will create noise, vibration – will fast-track by using 2 crews, October. 2018 - December. 2018 (est.)
- Vibration monitoring to involve adjacent property surveys.
- Dust Control – Tarped dump trucks; on-going sidewalk and street cleaning; use of wetting agents; covering stock piles.
- No smoking allowed on site.
- Contractor parking not allowed on adjacent public streets.

Truck Routes



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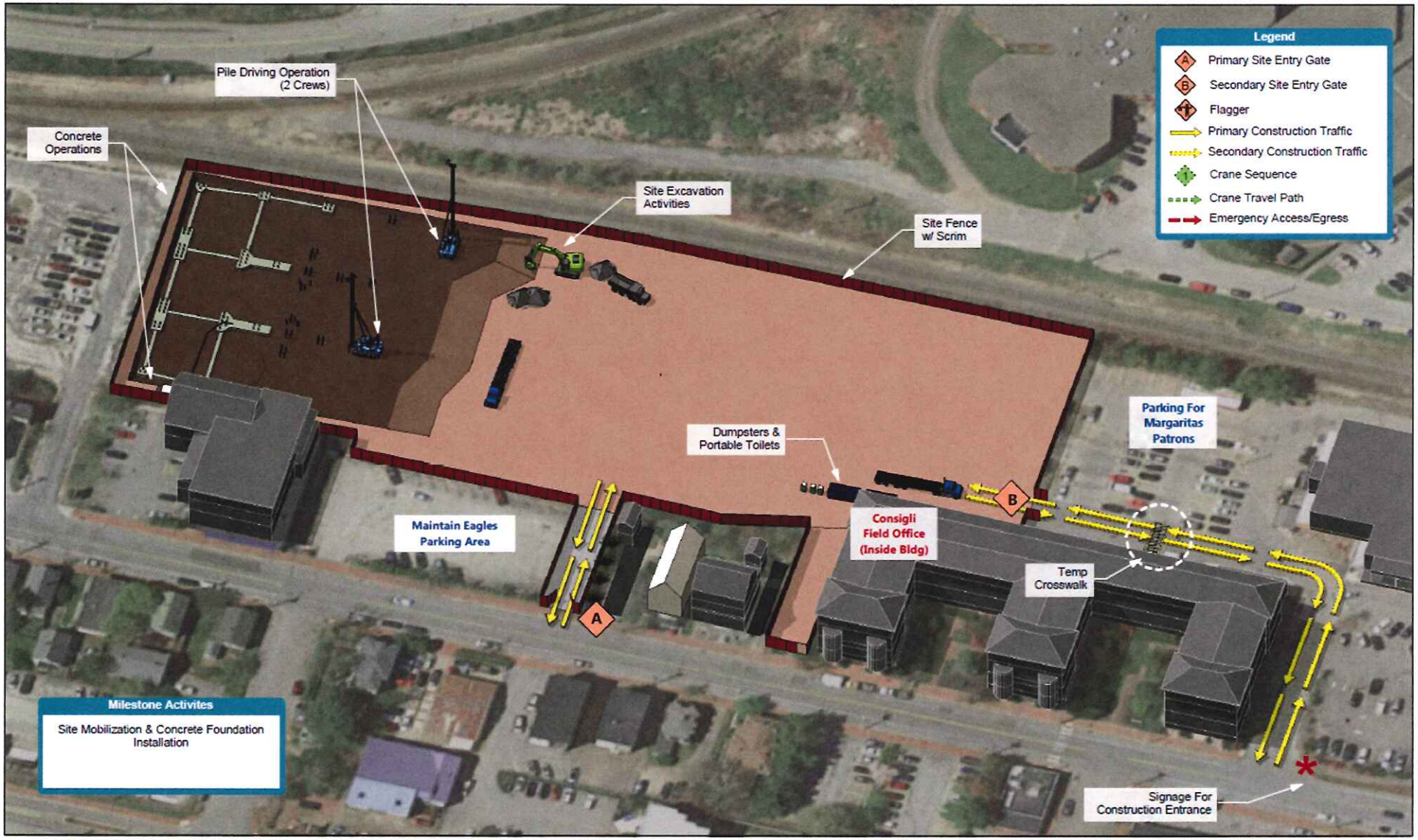
Maine Medical Center
MaineHealth



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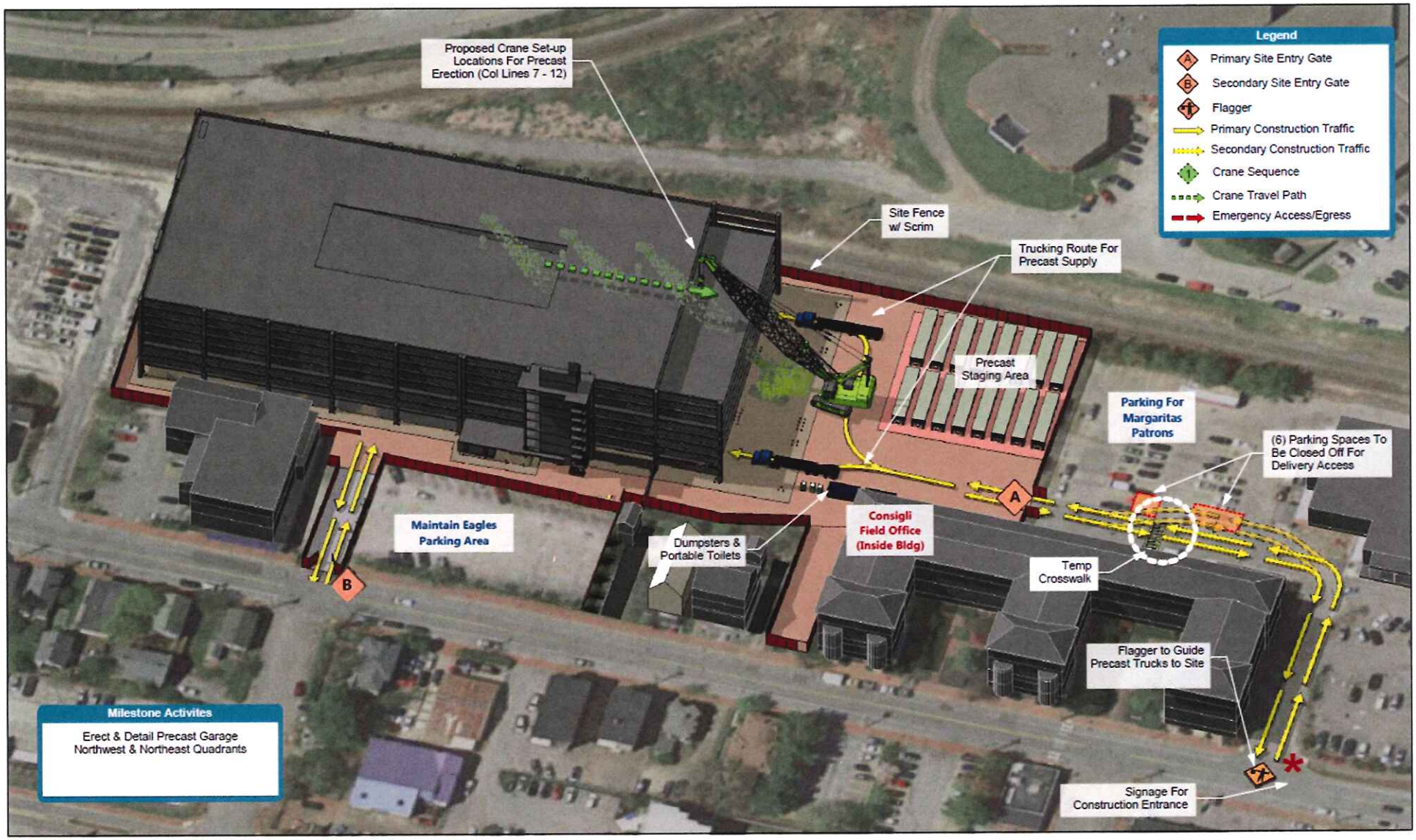
Dave Thomas,
Project Executive,
Consigli

Maine Medical Center
MaineHealth



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Dave Thomas,
Project Executive,
Consigli

Neighborhood Engagement and Communications

Communications

- For more information and on-going updates, anyone can visit MMC's website to sign up for email and text alerts: www.mmc.org/modernization

Newsroom

Media

Press Releases

MMC Campus Modernization Project

Project Updates

Neighborhood Meeting Minutes

Sign up for Project Alerts

Additional Information

MaineHealth › Maine Medical Center › Newsroom › *MMC Campus Modernization Project*

MMC Campus Replacement & Modernization Project

Maine Medical Center is excited to begin work on the largest modernization and replacement project in its history – a patient-focused initiative that will enable the state's largest hospital to meet the most urgent healthcare needs well into the future.

Altogether, the $512 million project will create 128 new private patient rooms, add 19 procedure rooms for surgeries and other complex treatments, provide an additional 225 spaces for patient and visitor parking, and consolidate MMC employee parking into one nearby garage that will meet current demand and future growth. The project will also open Maine Medical Center to Congress

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Jeff Sanders,
Executive Vice President and COO,
MMC

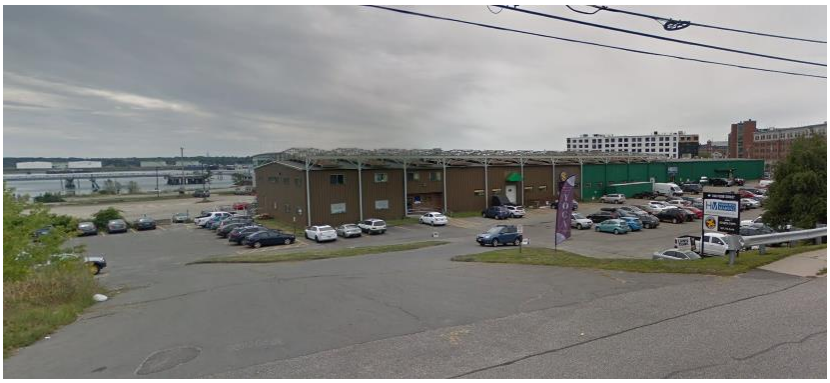
Maine Medical Center
MaineHealth

Memorandum
Planning and Urban Development Department
Planning Division

To:	Chair Dundon and Members of the Portland Planning Board
From:	Christine Grimando, Senior Planner
Date:	July 6, 2017
Project #:	ZN-000114-2018
CBLs:	019 A010001
Re:	Application for a map amendment at 100 Fore Street
Meeting Date:	July 10, 2018

I. INTRODUCTION

100 Fore Street LLC has submitted an application for an amendment of the *B6 Building Height Overlay & Building Overlays Map* (Height Overlay) where it applies to 100 Fore Street. The property, in the Eastern Waterfront, fronts exclusively on Fore Street and is abutted by an extensive mix of uses, including residential, office, hotels, a brewery, and retail uses. The parcel is in the B-6 zone and abuts the IS-FBC and R-6 zones. The applicant is requesting to amend the Height Overlay for the 100 Fore Street parcel, which currently allows a maximum of 45ft, except that maximum height is 35 feet within 100 feet horizontal distance from Fore Street, as measured from floodplain. The application requests heights of 45 and 55 feet, with an area limited to 35 feet within 40 feet horizontal distance of Fore Street, measured from average grade, which is the standard method for measuring height throughout the City (with the exception of island, which measure height from finished grade).



Figures 1 & 2. Top Image, 100 Fore Street from Fore looking east. Bottom image, 100 Fore St. from Fore looking south.

The height amendment is requested in order to support a mixed-use site containing structured parking wrapped by office and retail uses. If the amendment to the height overlay is approved, the subsequent application would be reviewed as a Level III site plan.

The application materials include a narrative of how these changes help fulfill multiple City policy goals that the current height maximums do not allow for, as well as accompanying visuals, including an existing conditions plan and conceptual site plan layout.

Applicant: 100 Fore Street LLC, represented by Jonathan Cohen
Property Owner: 100 Fore Street LLC
Consultants: Archetype Architects (Bill Hopkins, Katherine Detmer)
Public Notice: Public notice of the workshop appeared in the Portland Press Herald on July 2 and July 3 2018, was posted on the web site and was sent by mail or e-mail to 170 property owners and interested citizens.

II. PROPOSED MAP AMENDMENT

Current Zoning:	B-6 (Eastern Waterfront Mixed Zone)
Proposed Zoning:	B-6 (Eastern Waterfront Mixed Zone), with changes to the B6 Height Overlay from 45 feet to a combination of 45' and 55', a change in the distance from Fore Street heights cannot exceed 35', and a change to the height measurement method.
Current Uses:	Surface parking, single-story warehouse building occupied by a mix of uses, including marine supply, copy shop and other office and service uses.
Proposed Uses:	Parking garage with approximately 600 spaces, retail, and office space.
Parcel Area:	129,000 SF (approximate)
Area to be Rezoned:	Changes to the Height Overlay sought for portion of parcel on the Building Envelope east of Mountfort Street

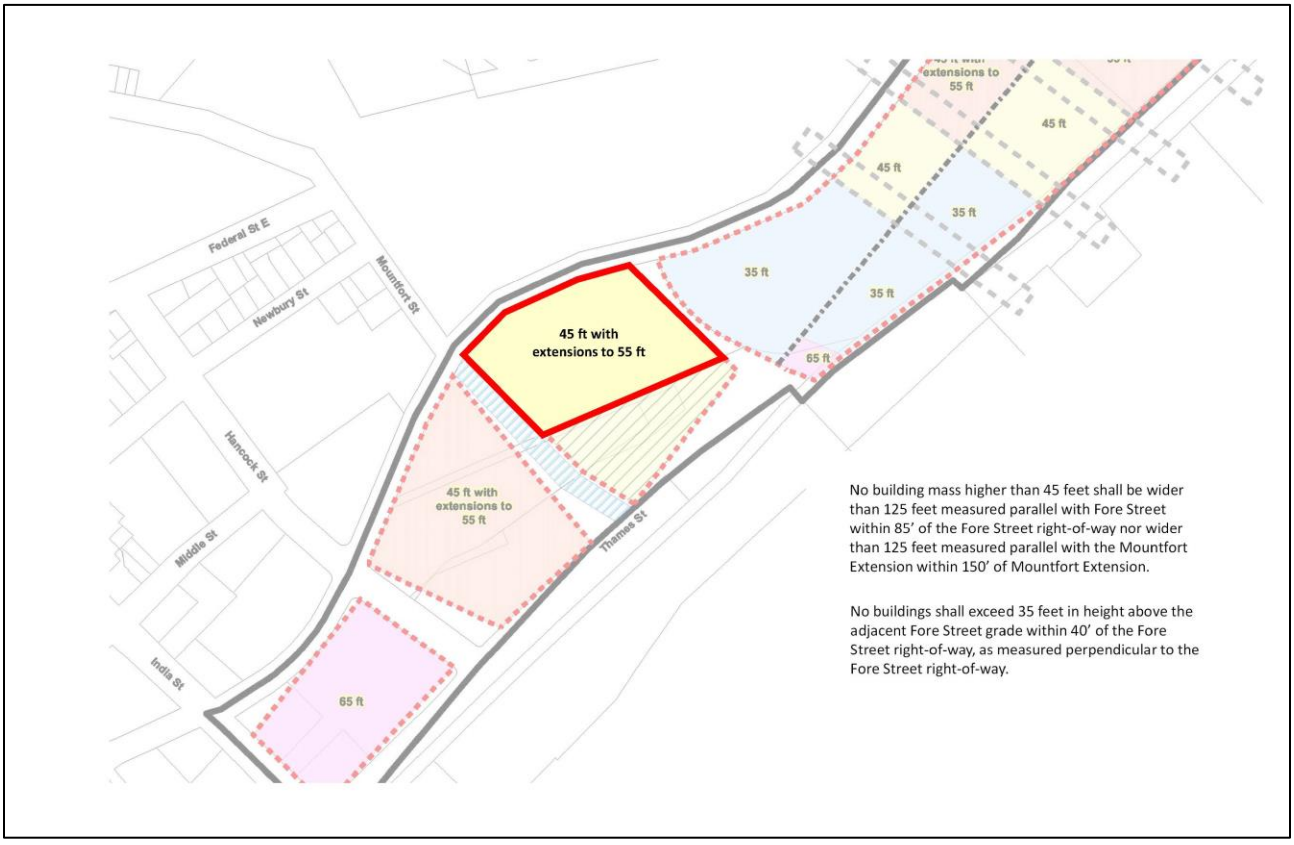


Figure 3, Requested changes to the B-6 Height Overlay for 100 Fore Street.

III. CONTEXT

Current Uses

Currently the parcel is occupied by surface parking and a single-story warehouse building occupied by a mix of uses, including Hamilton Marine, Xpress Copy, and other office and service uses.

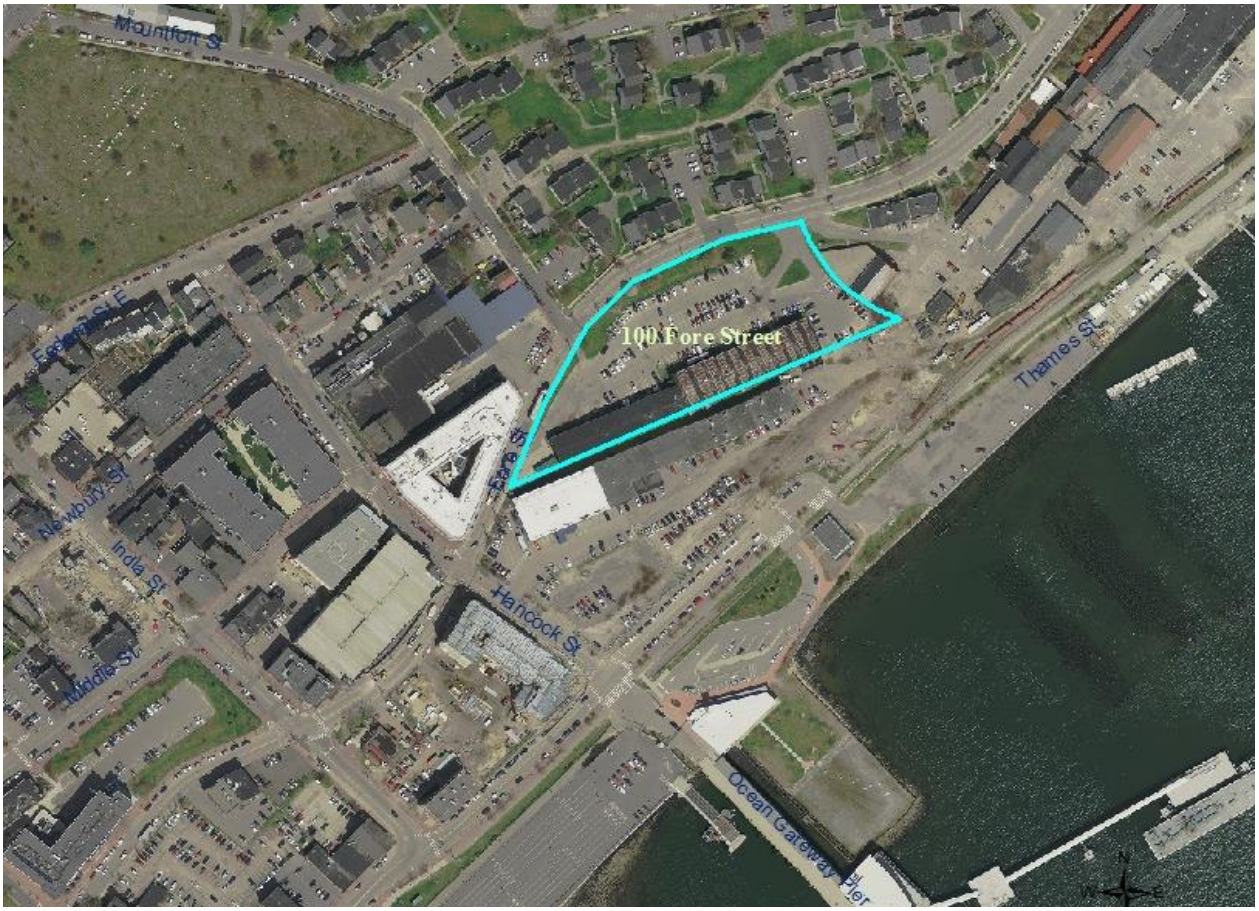


Figure 4. Aerial view, 100 Fore Street and surroundings

Surrounding Uses

The property fronts Fore Street and sits perpendicular to Mountfort Street, bounded to the east by the Portland Company site, to the north by the residences of Munjoy South, and portions of the Shipyard Brewery and the Marriot Residence Inn properties, to the south offices and surface parking followed by the Eastern Promenade Trail and Ocean Gateway, and to the west the varied uses - office, hotel, retail, and residential - of the India Street neighborhood.

Zoning Context

The parcel is in the B-6 zone. Part of the Eastern Waterfront, the area is comprised of two zoning districts, the EWPZ and the B-6. The EWPZ is intended to foster marine passenger services and supporting infrastructure, such as piers and circulation areas and supporting services; recreational boating such as marinas; and a host of marine commercial uses such as storage, seafood processing, and ship repair. The B-6, encompassing 100 Fore Street, occupies the upland, mixed-use portion of the Eastern Waterfront, and has no marine-dedicated requirements, though it allows for supportive services, such as fuel storage and marine supply stores. The Eastern Waterfront includes the Ocean Gateway Marine Passenger Terminal; 58 Fore Street/Portland Company site, recently approved for a master development plan and the site of a new historic district; a marina; and a sail school. The area is the locus of significant planning initiatives, public investment, and private development.

Examples of public initiatives to support the Eastern Waterfront and surrounding area include: a road and utility extension of Thames Street, new public open space and waterfront access in the location of the Amethyst Lot, and a study to improve transportation and circulation for the Commercial Street corridor. 100 Fore Street is also abutted by the R-6 and IS-FBC zones and is separated by one B-6 parcel from the Eastern Waterfront Port Zone (EWPZ). Several of the abutting properties are also in the Shoreland Zone and within Flood zones, though 100 Fore Street is not in either of these overlay zones.

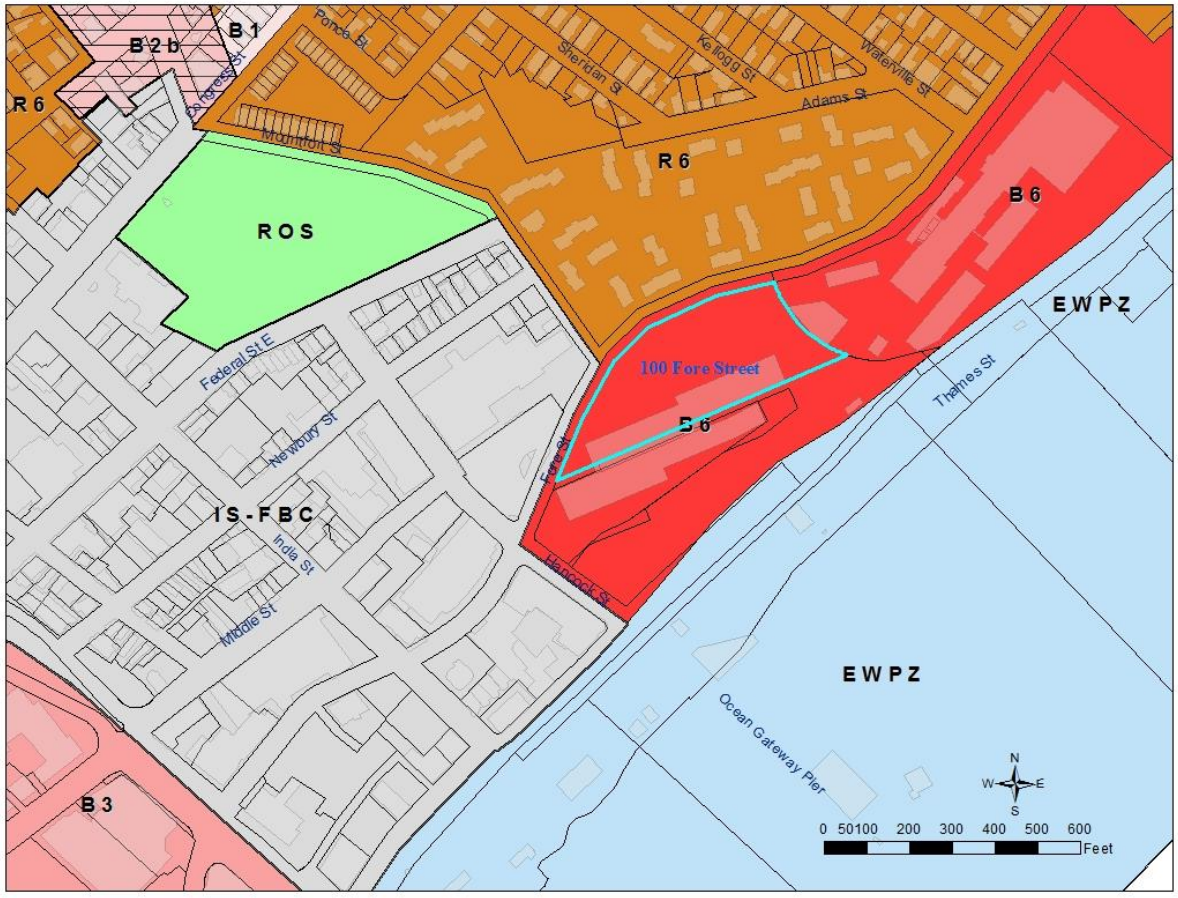


Figure 5, Zoning Context

All of the B-6 zone is subject to the Height Overlay (Figure 6, Attachment 1).

IV. ZONING ANALYSIS

Purpose Statement

The B-6 was created to be a mixed-use upland zone that abuts and is compatible with a waterfront zone, though unlike the three primary waterfront zones (EWPZ, WCZ, WPDZ) is not required or expected to support marine-dependent or marine-related uses. The purpose of the B-6 Eastern Waterfront Mixed Zone (sec. 14-268) is to: *establish a zoning district for the upland portion of the eastern waterfront area. The B-6 zone encourages this district to acquire a distinctly urban from through development that emphasizes a quality pedestrian experience, promotes public transit, and demonstrates exemplary urban design. The zone promotes a range of uses to achieve twenty-four urban vitality and shared use of parking infrastructure as recommended in the eastern waterfront master plan for redevelopment.* The purpose further states that the regulatory framework of the zone promotes a mixed-use development pattern envisioned for urban land on Portland's peninsula and that specific development criteria, including building height overlays and design standards, may be established for this district to supplement the provisions of this section.

B-6 Use Table

Reflecting its location as a zone that spans waterfront zones to one side and residential and mixed-use zones on the other, the B-6 zone allows a truly diverse range of uses such as galleries, brew pubs, hotels, biotechnology, multi-family residential buildings, fuel storage and carpentry shops. Parking as a principal use is permitted as a conditional use only, with conditions directed at not having the urban form of this area visually dominated by either surface parking or single use parking structures. New surface parking is permitted so long as it is accompanied by time constraints, and won't prohibit future construction, and new structured parking is permitted so long as it includes retail or other uses along street frontages. The following table contains a summary of permitted and conditional uses for the B-6 zone (see Sec. 14- 269 & 14-270 for full text):

B-6 Permitted and Conditional Uses		
Permitted Uses	Commercial	Professional, business and general offices
		Restaurants and other eating and drinking establishments (restrictions on hours and location east of Waterville Street)
		Hotels and inns limited to no more than 150 rooms
		Craft and specialty shops, including the on-premises production of handcrafted goods
		Retail and retail service establishments, excluding those with gas pumps
		Theatres
		Banking services, excluding vehicular drive-up services
		Cabinet and carpentry shops
		Personal services
		Business services
		Offices of business trades people
		Miscellaneous repair services
		Telecommunication and broadcast and receiving facilities (height limits for roof-mounted)
		Brew pubs and microbreweries without associated bottling facilities; and brewpubs and microbreweries with associated bottling facilities up to 5,000 bottles per year
		Electronic data storage
		Marine products wholesaling and retailing
		Harbor and marine supplies and services, chandlery and ship supply
		Bakeries, coffee roasters, and commercial kitchens with building footprints limited to fifteen thousand (15,000) square feet of contiguous building space.
		Underground marine fuel storage provided that fuel storage structures shall be used solely for the purpose of fueling vessels
		Printing establishments
	Residential	Attached dwellings including row houses, two-family and multifamily dwellings
		Handicapped family units
		Combined living/working spaces, including but not limited to artist residences with studio space
		Mixed use residential and commercial structures
	Public	Utility substations, including sewage collection and pumping stations, water pumping stations, transformer stations, telephone electronic equipment enclosures and other similar structures
		Landscaped pedestrian parks, plazas and other similar outdoor pedestrian spaces
		Pedestrian and multi-use trails
	Other	Studios for artists, photographers and craftspeople including but not limited to, painters, sculptors, dancers, graphic artists and musicians
		Accessory uses customarily incidental and subordinate to the location, function and operation of permitted uses*
		Health clubs, martial arts and mediation facilities
		Intermodal transportation facilities
		Nursery schools, kindergartens, and daycare facilities or home babysitting services
		Wind energy systems, as defined and allowed in Article X, Alternative Energy
		Private Clubs or non-profit social and recreational facilities
		Educational Facilities
		Temporary events (with size and frequency limits)
		Museums and art galleries
		Wind energy systems
Conditional Uses	Commercial	Meeting and exhibition facilities up to 20,000 sf of interior floor area
		Wholesaling up to 15,000 sf, associated with a retail establishment
		Drive-up Banking, subject to conditions
		Research and development and related production facilities, including but not limited to biotechnology, with conditions.
	Parking	Surface parking, provided it includes lease limits and provisions to not inhibit future building, including structured parking
		Structured parking, provided it incorporates first floor retail or other mixed use along all street frontages.
	Energy	Temporary Wind Anonometer Towers

The zone also includes a short list of specified prohibited uses (14-271), including ground-mounted telecommunication towers; waste, scrap, and/or byproduct storage and processing; auto service stations; drive-up facilities, except as permitted as a conditional use.

B-6 Dimensional Standards

The B-6 dimensional standards direct new development toward continuous strong building lines along street frontages, including maximum setbacks. Many of these standards are superseded by the Height Overlay. Below is a summary table of the dimensional requirements for the B-6 zone (see Sec. 14- 272 for full text):

B-6 Dimensional Requirements	
Min. Lot Size	None
Min. Street Frontage	None
Min. Front Yard Setback	None, except
Min. Rear Yard Setback	None
Min. Side Yard Setback	None
Max Setback from Street Line (not applicable to the easternmost envelope (not applicable to 58 Fore Street/Portland Co.)	10 feet, except: setback may be increased for lots fronting on more than one street if: the increase occurs at the intersection of two streets; the increased setback area is the primnary pedestrian entrance to the building; 75% of the building wall facing the streets is setback a maximum of 10 ft, cumulative for all building wall segments; for new construction abutting three or more streets, the max. setback applies to the two most major streets; buildings in have no max. setback.
View Corridors & Street Walls within the B-6 Height Overlay (not applicable to 58 Fore Street/Portland Co.)	New Structures to build to key building evelopes, except: parking structures and public transportation facilities have no max. setback.
Min. Length of Building Wall Along Frontage (not applicable to 58 Fore Street/Portland Co.)	70% of street frontage or 25% of building permiter, except that for buildings fronting two or more streets, min. building wall may be decreased so long as it is proportionately increased on other frontage for not less than 25 feet of building wall.
Max. Lot Coverage	100%
Max Building Height	65 ft or as indicated in the B-6 Height Overlay
Min. Building Height (not applicable to 58 Fore Street/Portland Co.)	3 floors of habitable space above average adjacent grade within 25 ft of a public street for new construction, except for: kiosks and ticketing booths; parking attendant booths; parking garages; public transportation facilities; additions on buildings in existence as of 2004, up to 25% of total footprint; buildings or additions <2,000 sf; buildings on lots or available building sites <2,000 sf; utility substations; additions on historic structures.

B-6 Height Overlay

The Height Overlay emerged from recommendations of the Eastern Waterfront Height Study. Originally adopted in 2004 to include land in the B-6 zone east of India Street to the western edge of the Portland Company site, it was extended to include the Portland Company in 2015. The Height Overlay regulates heights in multiple ways: it includes Building Envelopes with base heights and height extensions that range from 35-65 feet; since 2015 an additional measure has been in place limiting buildings to 35 feet within the first 100 horizontal feet of Fore Street from Mountfort Street eastward; within identified view corridors the height may not exceed the grade of Fore Street; there are several areas within the height overlay, outside of the Building Envelopes, where no building is permitted; and, on one of the Building Envelopes height must be measured from flood plain rather than from the standard measurement method of measuring height from average grade. In addition to including these various height regulations, the Building Envelopes have associated setback and building placement language in the Land Use Code.

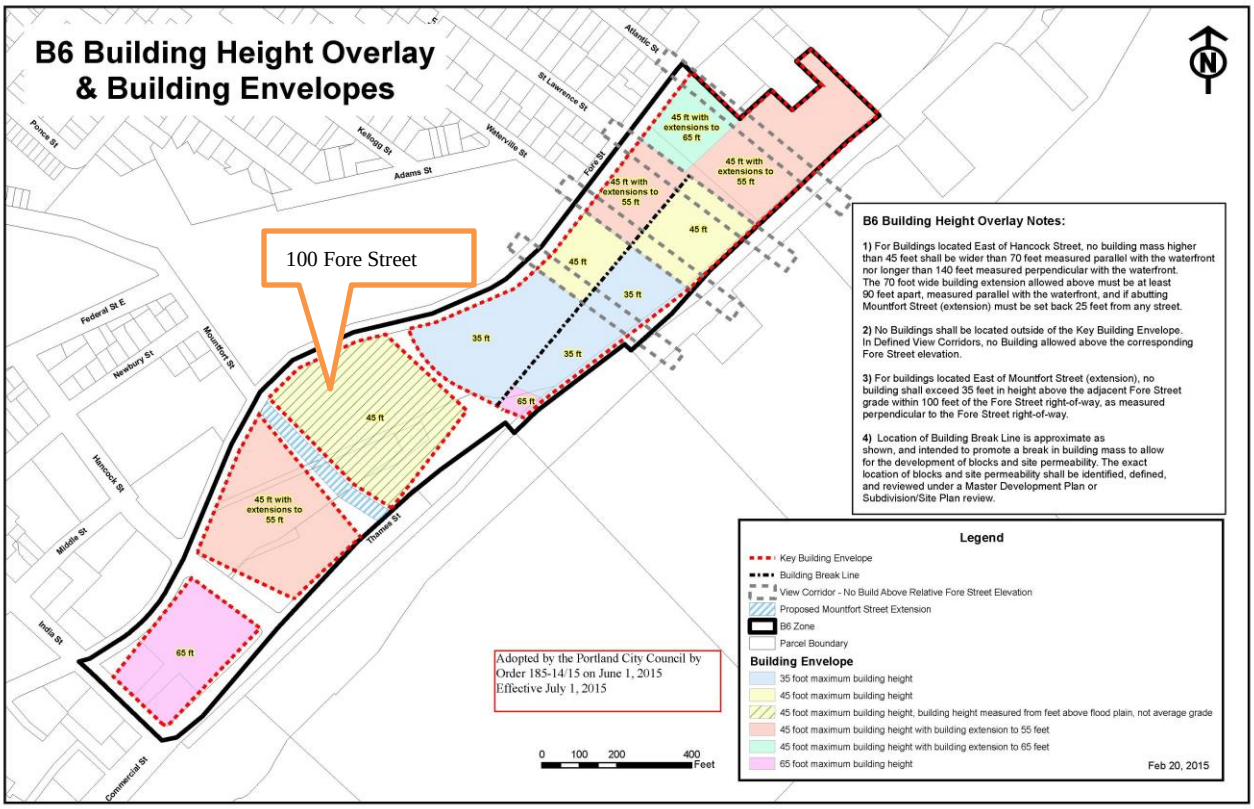


Figure 6, Current B-6 Height Overlay, with 100 Fore Street

V. POLICY ANALYSIS

The applicant has provided a detailed analysis (Attachment B) of the impact of the current Height Overlay on prospective build-out of the site. This document addresses the application's request in light of City policies, including the Comprehensive Plan and documents related specifically to the Eastern Waterfront. The applicant maintains that the development potential under current zoning in regard to allowed heights at 100 Fore Street does not promote a built form or mix of uses consistent with City policy for the Eastern Waterfront. The analysis includes cross sections of potential heights and masses on the site in relation to the surrounding streetscape, development patterns and grade changes, including illustrations of the site in relation to the residences at Munjoy South and more recent developments such as the new Wex building. The application addresses consistency with City policies through analysis of the Height Study for this area and of additional goals for the Eastern Waterfront, such as those for mixed use development, economic development, and parking that is not surface parking or single use structures.

Figure 7, Eastern, Central, Western Waterfronts

Policy background and elements of

both Eastern Waterfront Masterplan documents and the Comprehensive Plan with relevance to this application follows.

The B-6 zone, though not a zone that directly abuts the waterfront, emerged out of the planning process for Portland's Eastern Waterfront. Thirty years of planning and policy have reinforced distinct policy directions for several subdistricts of the waterfront based on historic patterns, environmental conditions (such as water depths) and existing infrastructure. A 1992 *Waterfront Alliance Report* initially identified four areas which were later simplified into three subdistricts – the Eastern, Central, and Western Waterfronts - and which now have respective zoning districts and policy directions. Each of these areas has been revisited over the years to craft policy that helps them meet their intended purposes, and each may need to be revisited in the future to respond to changing conditions, but the overall intentions for them has not changed. Likewise, the overall use hierarchy of marine-dependent, marine-related, and marine-compatible uses in the City's waterfront zones remains in the requirements of each of the waterfront zones. *Portland's Plan 2030* also supports continuing to approach these three recognized waterfront areas through this policy framework in its Waterfront Goals (p. 34, *Recognize and reinforce the respective roles of the Eastern, Central, and Western Waterfronts*), and in Future Land Use (p. 86), where it identifies this area as one of multiple priority areas, categorized as *Enhance*, so that the area can continue to build on past planning initiatives.

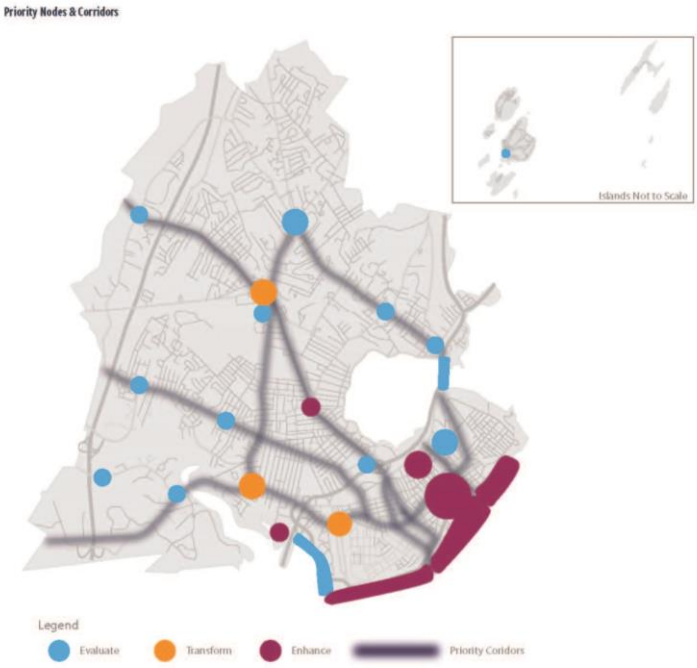


Figure 8, Future Land Use

In the early 2000s a multi-year planning process resulted in *A Masterplan for Redevelopment of the Eastern Waterfront* (Eastern Waterfront Masterplan) comprised of three parts: the original masterplan document establishing goals and recommendations for the areas, *Design Guidelines for the Eastern Waterfront*, and the *Eastern Waterfront Building Height Study* (the full text of these combined documents is on the City's website here: http://www.portlandmaine.gov/DocumentCenter/View/3391/Eastern-Waterfront--Master-Plan). The Eastern Waterfront Masterplan is a central policy document for new development in this area. The study anticipates and encourages new development in the Eastern Waterfront, and emphasizes the importance of site permeability, quality design, traffic management, the retention of view corridors and sensitivity to surrounding neighborhoods as new and re-development unfolds. To date, many of the recommendations of the Eastern Waterfront Masterplan have been implemented in some form. A sample of significant initiatives in the vicinity of 100 Fore Street since adoption of the plan:

- Adoption of zoning, including the creation of the B-6
- Adoption of a B-6 Height Overlay map (2004), patterned on recommendations from the height study portion of the Eastern Waterfront Masterplan
- In 2015 58 Fore Street was rezoned to a combination of the EWPZ and the B-6, including an expansion of the B-6 Height Overlay

- Portions of the study area blended with the India Street neighborhood, eventually being included in the IS-FBC zone
- Hancock Street extended
- Thames Street and associated utilities to be extended to the Portland Company site
- The construction of Ocean Gateway Marine Passenger Terminal
- The Amethyst Lot, a waterfront parking lot between the Portland Company site and Ocean Gateway, is slated to be redesigned into a public open space
- Significant new developments in the immediate vicinity including the new Wex site, the AC Hotel, and anticipated new development at 58 Fore Street

100 Fore Street falls into what the Eastern Waterfront Masterplan identifies as the Central Redevelopment Area (pg. 6) and identifies the following development considerations (pg. 7):

- *Currently home to poorly organized public and private surface parking lots.*
- *New streets to be extended from existing street grid.*
- *Provides significant opportunity for large-scale development of both City controlled and private properties.*
- *Promote consolidation of surface parking into shared parking structures.*
- *Integrate new streets serving the marine passenger terminal with redevelopment of lands north of an extended Commercial Street.*

It also identifies a series of principles for redevelopment of the Eastern Waterfront (pgs. 15, 18), under the headings of Character and Impact of Development, Mixed Use, Maritime Resources, and Economically Responsible Development. Several of the statements associated with these principles have direct implications for this application and subsequent development of the property:

- *Development within the eastern waterfront will be compatible with the surrounding areas, neighborhoods, natural environment and maritime uses* (Character and Impact of Development).
- *Development within the eastern waterfront will create a vital and active mixed use urban area that generates life and use every day of the year and all hours of the day* (Mixed Use).
- *Development in the eastern waterfront will provide a significant benefit to the City and regional economy*. (Economically Responsible Development. Broad in scope, this principle includes priorities such as water-related tourism, positive economic return, multi-modal transportation opportunities).

The Design Guidelines section of the Eastern Waterfront Masterplan focuses on building design for new proposals, but also public spaces, view corridors, building orientation, height, and parking. It calls for buildings to be placed at the sidewalk edge with primary entrances to the street, and for building heights to be compatible with surrounding development and neighborhoods. It states that *above-grade parking structures should include usable retail, commercial, and /or residential uses along street frontages to create a high quality urban environment* (pg. 6) and that the *areas devoted to surface parking and vehicle queuing should be minimized as much as possible and visual impact of such areas should be mitigated through buffering and landscaping. Land devote to surface parking lots should be reduced over time through redevelopment and construction of structured parking facilities* (pg. 12).

The creation of Design Guidelines was followed by a Height Study which recommended heights of 3-6 stories in this area (and some inclusion of 7 stories outside of the current B-6 zone), and avoidance of monolithic building heights and designs. It concluded that heights could not be divorced from the alignment of roads and open spaces in the Eastern Waterfront, and included recommendations for each of these things. A graphic of height recommendations, Illustration 33, included the India Street neighborhood, the Portland Company site and several other parcels, including 100 Fore Street. Illustration 33 informed many of the elements in the

current Height Overlay, though implementation has required variations from the study through neighborhood concerns, property owner needs, and public deliberation. Some current of differences between the Height Study vision and initial implementation of zoning include:

- The inclusion of flood plain measurement for one of the key building envelopes
- Reduction of heights on the 100 Street Building Envelope from 4 and 5 stories to 45 ft
- Reductions to 35 ft for new construction within 100 ft. of Fore Street
- Reduction of heights on the Building Envelope occupied by Wex from 4 and 6 storeis ft to 45/55 ft
- No inclusion of the India Street neighborhood (with the exception of the western-most Building Envelope, now superseded by the IS-FBC).
- Changing of the no-build corridor running west to east through the Portland Co. site to a building break line, exact locations to be determined in the course of Planning Board review.
- Conversion of building stories to feet

Each of these variations from Illustration 33 resulted in zoning consistent with the overarching conclusions of the Height Study, including preservation of view corridors, promoting street extensions, and varying heights throughout the study area.

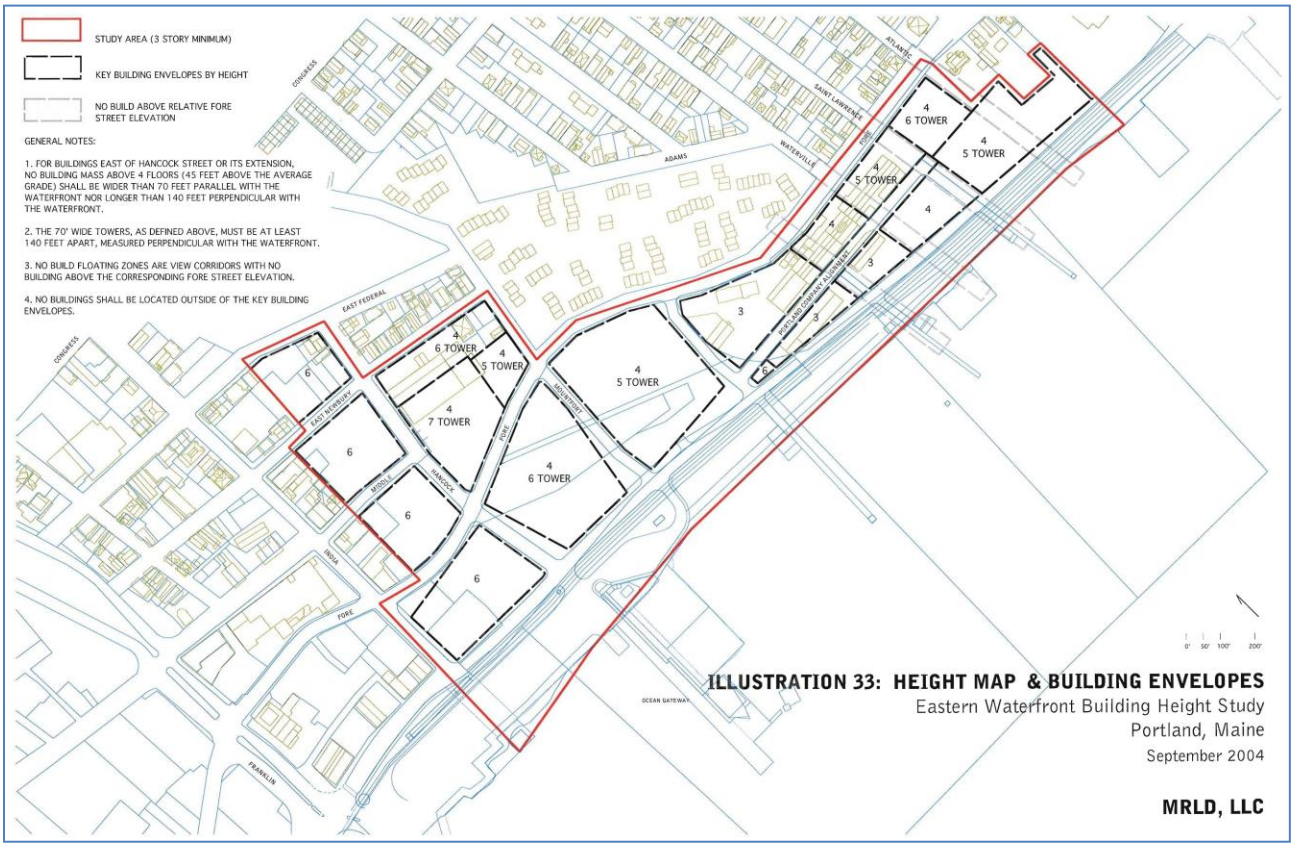


Figure 9, Illustration 33, Eastern Waterfront Height Study

The Eastern Waterfront Masterplan, including the original masterplan, the design guidelines, and the height study, is a wide-ranging document. For the purposes of this application for a change to allowable heights, it's pertinent elements have to do with the priorities of the height study as well as the additional recommendations of the Eastern Waterfront Masterplan such as fostering mixed-uses, multistory redevelopment, elimination of surface parking, provision of parking within a mixed-use structure, and maintaining view corridors and the potential for future street extensions.

VI. PUBLIC COMMENT

Five items have been submitted to date. These expressed concern with the presence of high rise buildings in Portland, the need for green space, traffic congestion, poor architectural design, noise, pollution, and the sustainability implications of providing more parking, rather than encouraging more sustainable modes of travel.

VII. DISCUSSION

Full map edits

The applicant's modified map showing the portion of the Building Envelope for which the height increase is proposed isolates half the envelope area and includes two new notes for the Height Overlay in addition to the four existing plan notes (Figure 3, Attachment D). If this height change request is approved as proposed, it necessitates changes to other plan notes for consistency. Below are the proposed changes integrated into the B-6 Height Overlay (included as Attachment 2):

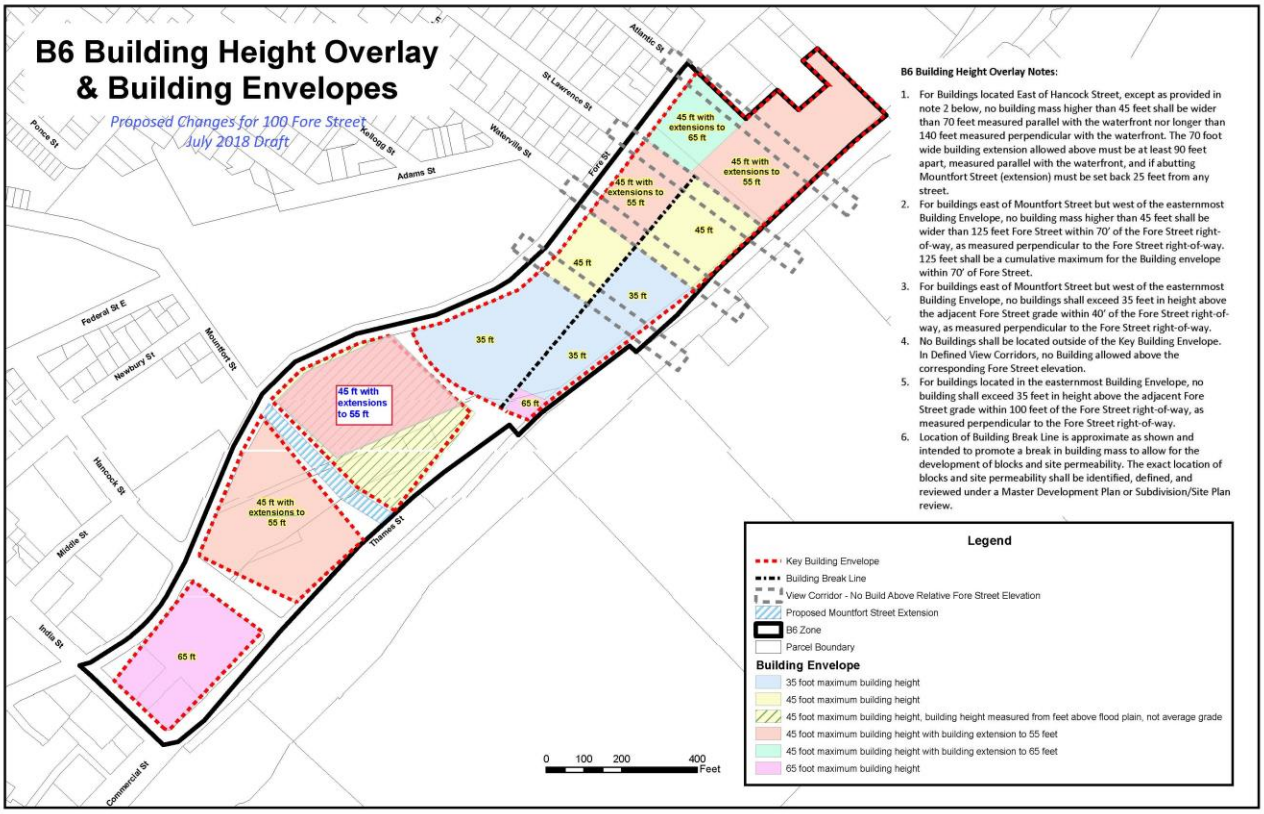


Figure 10, 100 Fore Street Map amendment, full changes to plan notes.

Below are the changes to the Height Overlay notes in Figure 10 (applicant's language is underlined, staff changes include new text in blue and struck-through text):

1) *For Buildings located East of Hancock Street, except as provided in note 2 below, no building mass higher than 45 feet shall be wider than 70 feet measured parallel with the waterfront nor longer than 140 feet measured perpendicular with the waterfront. The 70 foot wide building extension allowed above must be at least 90 feet apart, measured parallel with the waterfront, and if abutting Mountfort Street (extension) must be set back 25 feet from any street.*
2) *For buildings east of Mountfort Street but west of the easternmost Building Envelope, no building mass higher than 45 feet shall be wider than 125 feet ~~measured parallel with~~ Fore Street within 70' of the Fore*

Street right-of-way, as measured perpendicular to the Fore Street right-of-way. 125 feet shall be a cumulative maximum for the Building envelope within 70' of Fore Street.

3) *For buildings east of Mountfort Street but west of the easternmost Building Envelope, no buildings shall exceed 35 feet in height above the adjacent Fore Street grade within 40' of the Fore Street right-of-way, as measured perpendicular to the Fore Street right-of-way.*

~~2)~~ *4) No Buildings shall be located outside of the Key Building Envelope. In Defined View Corridors, no Building allowed above the corresponding Fore Street elevation.*

~~3)~~ *5) For buildings located in the easternmost Building Envelope ~~East of Mountfort Street (extension)~~, no building shall exceed 35 feet in height above the adjacent Fore Street grade within 100 feet of the Fore Street right-of-way, as measured perpendicular to the Fore Street right-of-way.*

~~4)~~ *6) Location of Building Break Line is approximate as shown~~,~~ and intended to promote a break in building mass to allow for the development of blocks and site permeability. The exact location of blocks and site permeability shall be identified, defined, and reviewed under a Master Development Plan or Subdivision/Site Plan review.*

Mountfort Street Extension

The no-build area on included in the area of Mountfort Street shows a retaining wall and plantings to support the conceptual site plan. Though no new buildings are proposed here, and there would be fewer obstructions in this corridor than under existing conditions, any future site plan for this application will need to include insure that no new development precludes a future street extension.

Connector Road

The conceptual site plan included with his application shows a cul-de-sac off Fore Street in the vicinity of one of the current site entrances. This cul-de-sac should be eliminated and the entrance extended to integrate with the design for the Thames Street extension in any future submission, as well as address the interface of this parcel with circulation for the Portland Company site.

Other Height Overlay Considerations

Though this application may be considered soley for the changes being requested for 100 Fore Street, the application provides an opportunity to address aspects of the Height Overlay that could be improved. The Height Overlay was originally patterned on visuals that were helpful in the context of the Eastern Waterfront Height Study but that are unwieldly to administer in the form of a zoning map. Many of the boundary lines in the map –view corridors, no-build zones, Building Envelopes, and breaks between height blocks - do not follow parcel or ROW lines and are therefore difficult to interpret. The creation of the IS-FBC means that the westernmost building envelope has now been superseded, but still exists in both the IS-FBC and the Height Overlay and should be removed from the latter. Changes that have occurred since the Height Study, such as the alignment of the Thames Street Extension and the future connection between Thames and Fore Street, have implications for the Building Envelopes and the white no-build areas - the final design of both the connection between Fore Street and the Thames Street Extension, as well as any future design of Mountfort Street Extension, will be determined by engineering requirements, access requirements and the challenges of the Eastern Waterfront's grade changes as well as the policy direction established by the Height Study. Lastly, the application for 100 Fore Street splits an existing Building Envelope, the remainder of which is City-owned land. Below is an altered Height Overlay, for workshop discussion, showing some potential amendments. A rough draft to inform discussion, any cartographic changes can be made more visually attractive before being finalized. In addition to the proposed 100 Fore Street amendment, changes include:

- Removal of the westernmost building envelope (now in IS-FBC).

- No-build areas replaced with view protection splays and street extension areas, final layout to be determined in the course of Site Plan or Master Development Plan Review. Street extension areas are preserved.
- Removal of a 65 ft. Building Envelope, since it is anticipated that the extension of Thames Street will cross through much of this area.
- Change to the remainder of the parcel with the floodplain measurement requirement to 45ft maximum from average grade.
- New notes 7, 8, and 9, including notes on measurements and interpretation:

7) *There shall be no new buildings in the areas of the Mountfort Street Extension and the Fore Street Connector Road, which shall be reserved for protection of public views and future extension of streets built to City street design standards. Precise layout and design shall be identified, defined, and reviewed under a Master Development Plan or Site Plan Review.*

8) *View Protection Splays. These areas shall be prioritized for view protection, site circulation, and active public space.*

9) *Interpretation of Boundaries. View Corridor limits shall be drawn from an extension of the corresponding streets where these streets meet Fore Street, or in the case of Kellogg Street where it meets Adams Street. Building Envelope boundaries shall take their boundaries from the nearest view corridor and/or street extension boundaries where applicable; when a Building Envelope does not align with a view corridor or street extension, the boundary shall be the parcel boundary.*

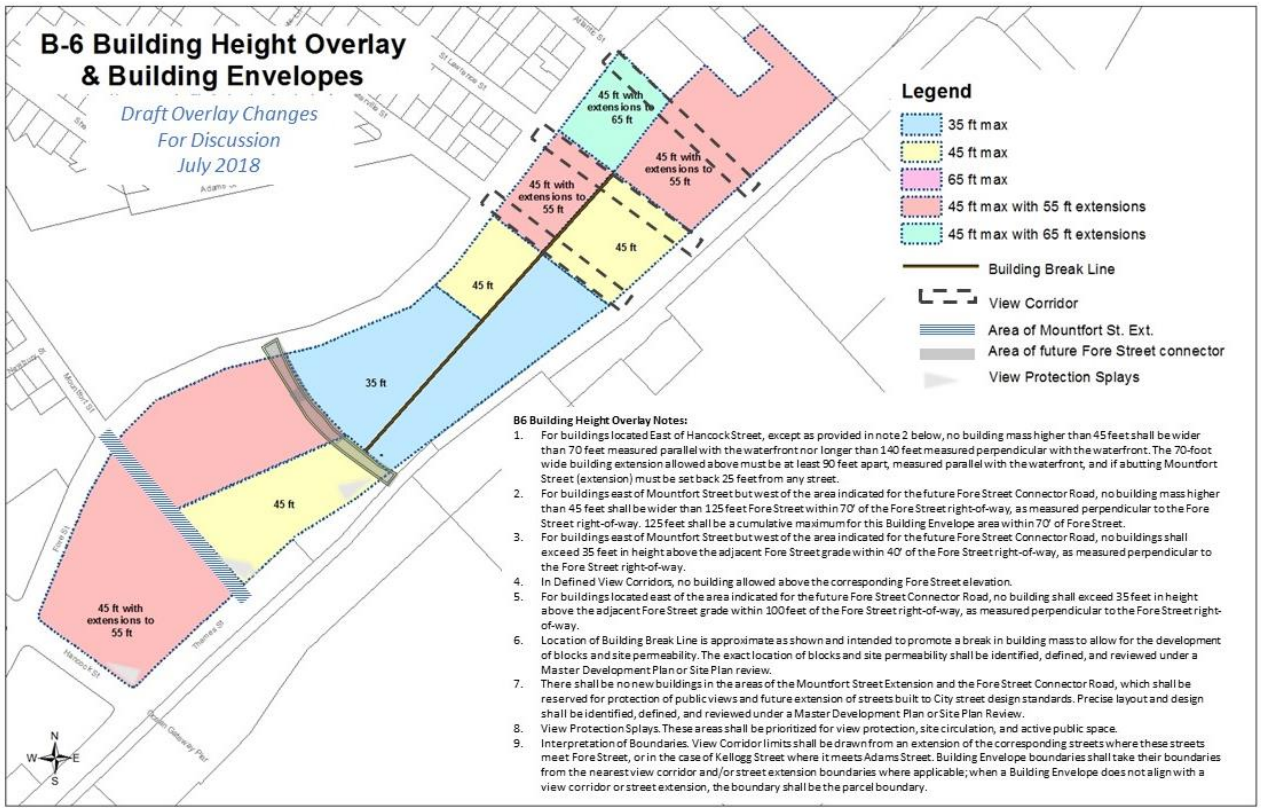


Figure 11, B-6 Height Overlay with draft changes for discussion

VIII. NEXT STEPS

- Provide guidance on the Height Overlay amendment request
- Schedule a public hearing

IX. ATTACHMENTS

1. Adopted B-6 Building Height Overlay
2. B-6 Building Height Overlay w/ 100 Fore Street Proposed Changes
3. B-6 Building Height Overlay w/additional changes

Applicant's Submittal

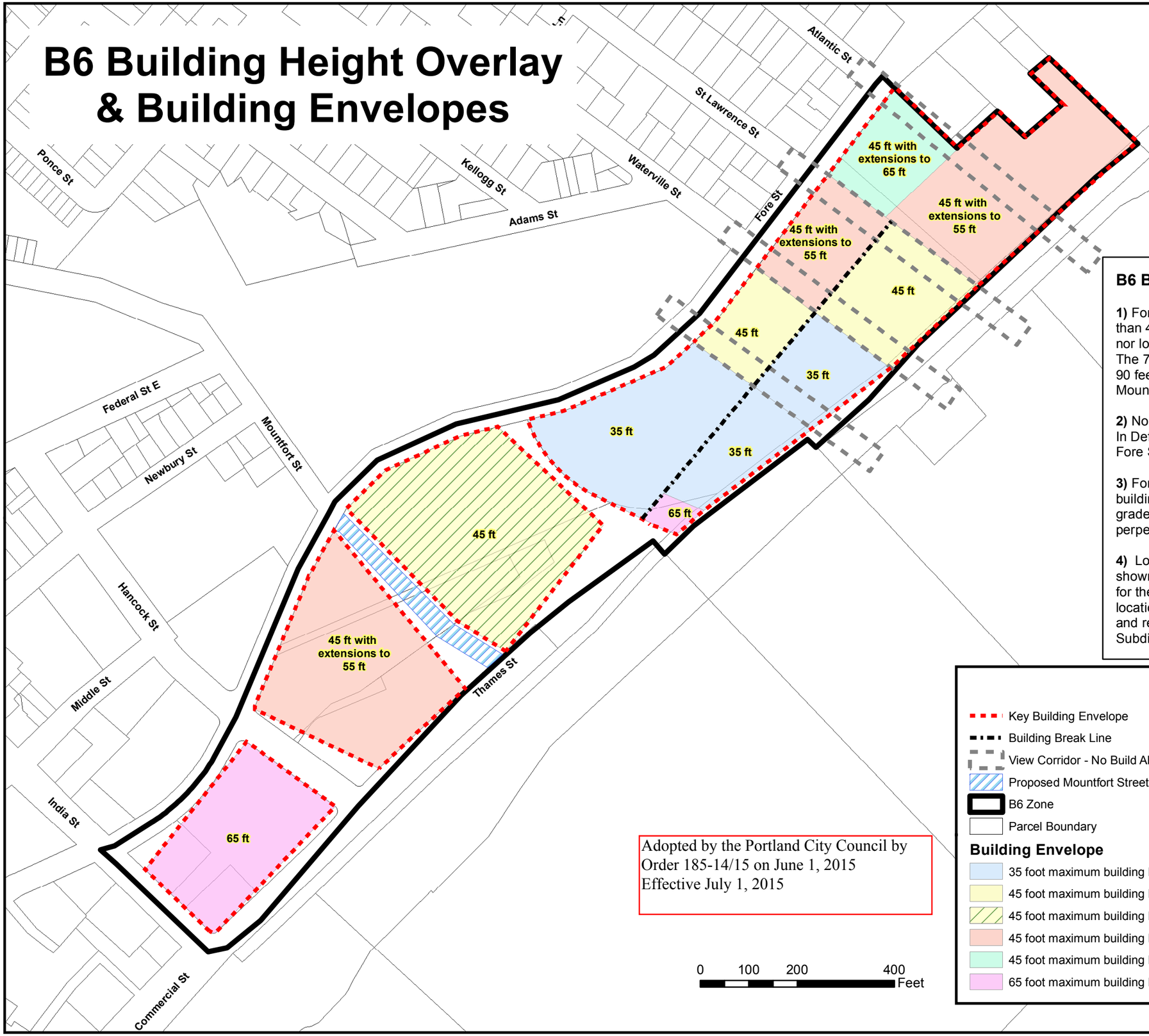
A. Zoning Request Summary
B. 100 Fore Street Policy Narrative
C. Quitclaim Deed
D. Proposed B-6 Height Overlay Amendments

Plan 1. Existing Conditions Plan
Plan 2. 100 Fore Street Concept Plan
Plan 3 Contextual Massing

Public Comment

PC1. Murray 6-25-2018
PC2. Wolf 7-3-2018
PC3. Snyder 7-6-2018
PC4. Medina 7-6-2018
PC5. Day Petit 7-6-2018

B6 Building Height Overlay & Building Envelopes



B6 Building Height Overlay Notes:

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2) No Buildings shall be located outside of the Key Building Envelope. In Defined View Corridors, no Building allowed above the corresponding Fore Street elevation.

3) For buildings located East of Mountfort Street (extension), no building shall exceed 35 feet in height above the adjacent Fore Street grade within 100 feet of the Fore Street right-of-way, as measured perpendicular to the Fore Street right-of-way.

4) Location of Building Break Line is approximate as shown, and intended to promote a break in building mass to allow for the development of blocks and site permeability. The exact location of blocks and site permeability shall be identified, defined, and reviewed under a Master Development Plan or Subdivision/Site Plan review.

Adopted by the Portland City Council by Order 185-14/15 on June 1, 2015
Effective July 1, 2015

0 100 200 400 Feet

Legend

- Key Building Envelope
- Building Break Line
- View Corridor - No Build Above Relative Fore Street Elevation
- Proposed Mountfort Street Extension
- B6 Zone
- Parcel Boundary

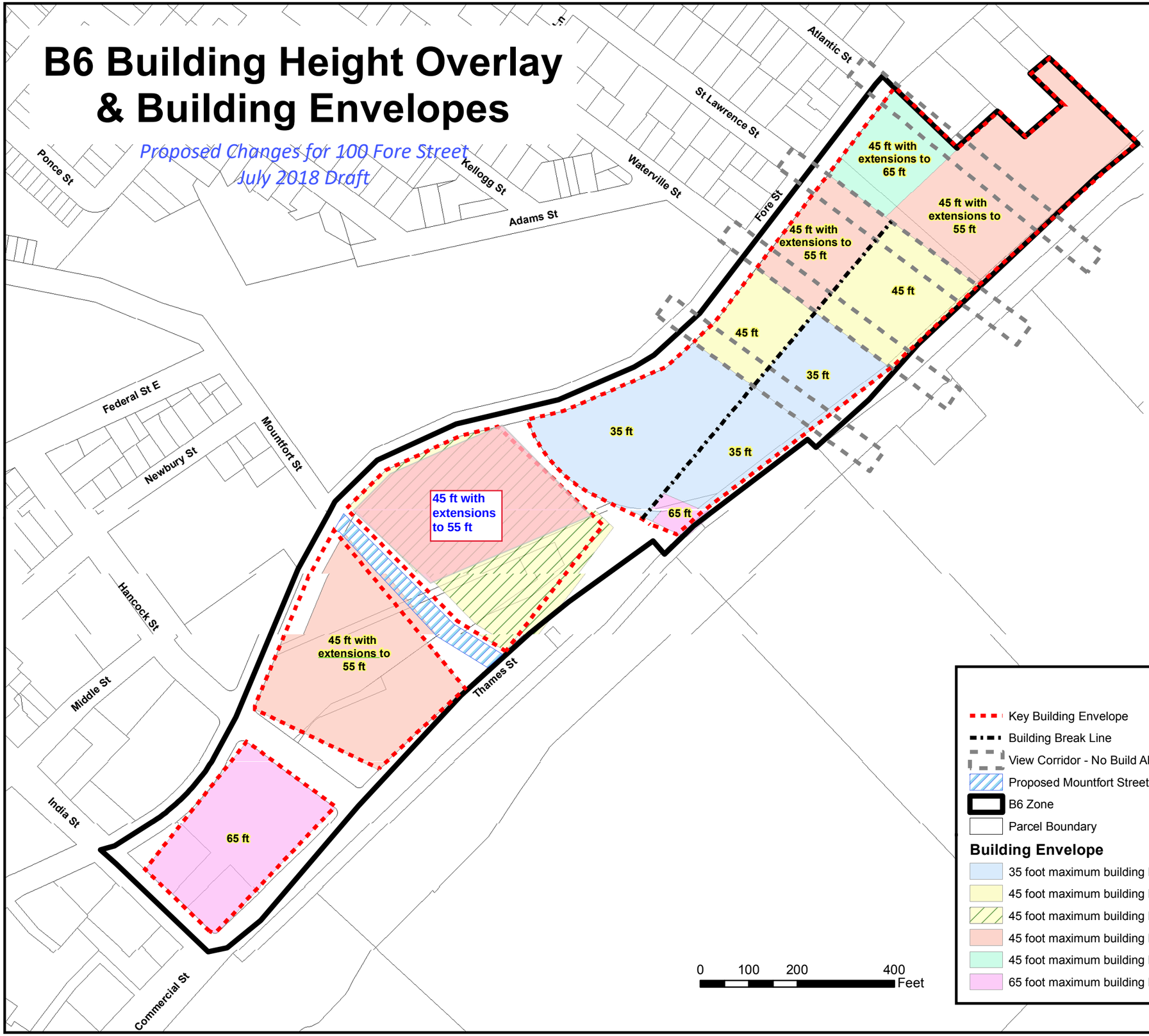
Building Envelope

- 35 foot maximum building height
- 45 foot maximum building height
- 45 foot maximum building height, building height measured from feet above flood plain, not average grade
- 45 foot maximum building height with building extension to 55 feet
- 45 foot maximum building height with building extension to 65 feet
- 65 foot maximum building height

Feb 20, 2015

B6 Building Height Overlay & Building Envelopes

Proposed Changes for 100 Fore Street
July 2018 Draft



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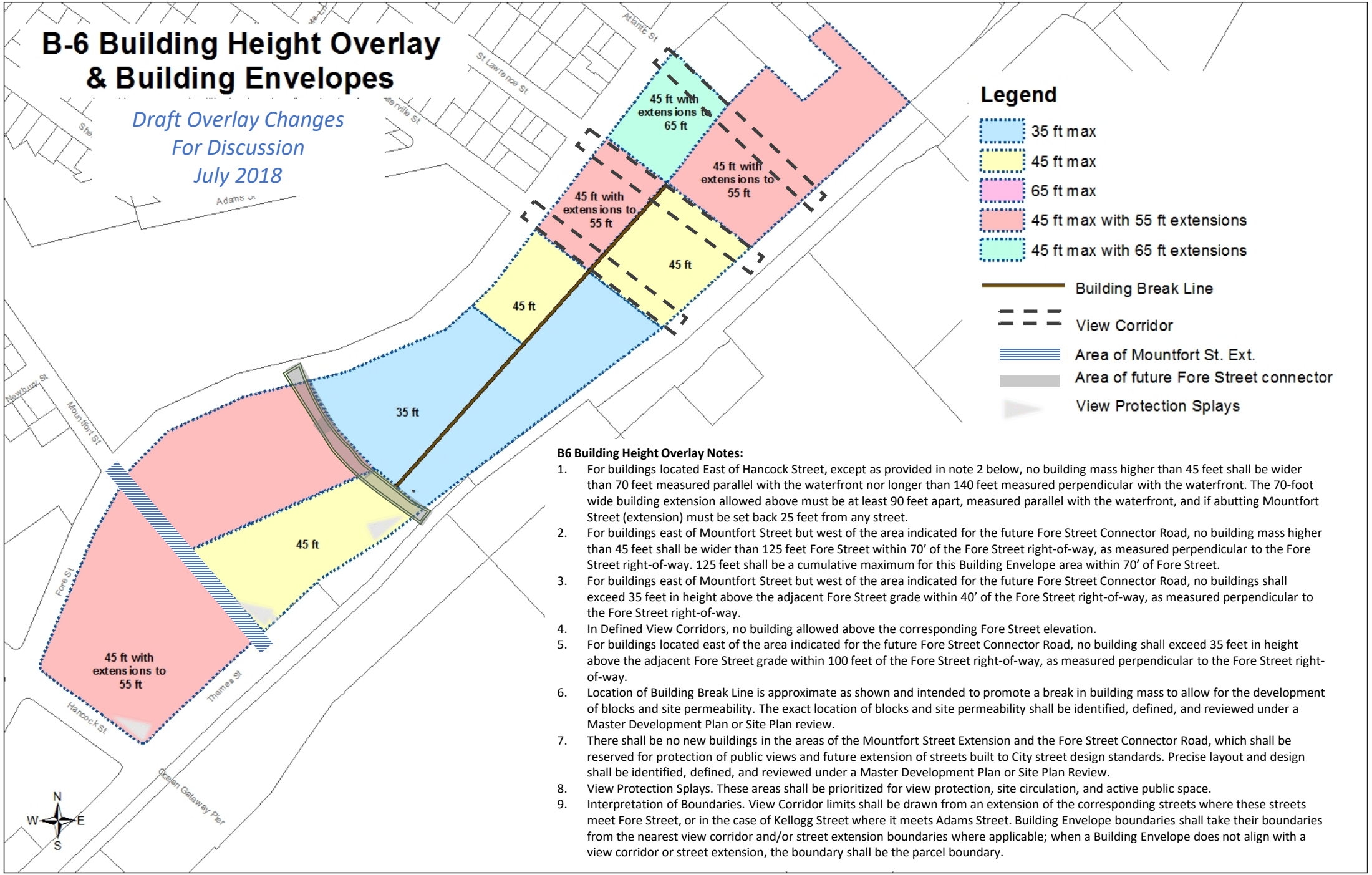
- 65 foot maximum building height

B-6 Building Height Overlay & Building Envelopes

Draft Overlay Changes
For Discussion
July 2018



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100 Fore St, 86 Newbury St,

Debby Murray <debbym@gwi.net> Jun 25, 2018 5:12 PM
Posted in group: **Planning and Urban Development**

I am lumping these two issues I'd like to protest together because they make me want to scream. WHERE ARE WE PUTTING ALL THE CARS? What's the traffic plan? HELP! No one lives or works in these glass monstrosities down by the Wex etc project and the driving is already horrendous. WHAT HAPPENS WHEN THEY ALL LEAVE FOR WORK?

And height. Think about places you love to visit or live, like Brooklyn or Charleston....the sky is not cluttered with high rise buildings. It's like a game of dominoes right now- one developer blocks residents- a new developer blocks that one and soon the richest developer wins. His buyers get the view AND NO ONE ELSE DOES.

These are Two huge things to consider when you vote on these projects. Cars, parking, pollution, noise, safety all come under one umbrella - beauty, accessibility, and sensitivity come under the other.

Debby Murray

Debby Murray🐝
104 North St.
Portland. ME 04101

86 Newbury and 100 Fore Street

Maggy W <mswnola@gmail.com> Jul 3, 2018 4:03 PM
Posted in group: **Planning Board**

TO members of the Planning Board:

I was recently so pre-occupied with the zoning on Munjoy Hill that I failed to keep abreast of the 100 Fore Street and 86 Newbury Street proposed site plan applications. I understand that both of these projects are requesting zoning variances to allow increased height. Also I have read that 100 Fore Street seeks to use the average grade of Fore Street to calculate the height even though there is a sharp slope and no buildable square footage on Fore Street.

Please do not allow any variance to the current zoning for either site. We need to rely on zoning laws being enforced and we do NOT want a high wall shutting all of the India Street and East End residents off from the Old Port and the waterfront, especially if that high wall is to be used for parking spaces. The streets servicing these areas cannot handle the number of cars planned for these developments - the traffic is already congested and with 600-900 more cars per day on Franklin, India, Mountfort, Fore St, Commercial Street and the Eastern Prom, we are looking at a major problem, and this number does not even include the projected parking spaces inlcuded in the site plan for 58 Fore Street, for which I still have not seen the "pending" traffic study which was not available at the time the master site plan was approved. This huge increase in car traffic will further erode the quality of life to the East of Franklin Street.

As a citizen who is deeply concerned about climate change, I am asking the city to implement policies and infrastructure which encourage public transportation. We need to implement more satellite parking and work with WEX and other employers who wanted to bring more employees downtown to create a state of the art shuttle system from satellite locations. We should be keeping cars and their pollution away from the waterfront, not building walls of parking garages.

Furthermore, the Newbury Street site currently includes a beautiful historic brick building on Mountfort Street and another multi-family house on Newbury which should be preserved if Portland is to retain any residences of character in the India Street neighborhood. The poor Abyssinian Meeting House will be facing a huge modern structure which will further undermine its context.

Thank you for considering my point of view.

Maggy Wolf
28 Saint Lawrence

100 Fore St Planning Board Workshop - 7/10/2018

Karen Snyder <karsny@yahoo.com> Jul 6, 2018 8:39 AM
Posted in group: **Planning Board**

Portland Planning Board: Friday, 7/6/2018
Sean Dundon, Chairperson
Brandon Mazer, Vice Chairperson
David Eaton
David Silk
Austin Smith
Maggie Stanley
Lisa Whited

Re: 100 Fore St

Dear Chairperson Dundon and Portland Planning Board Members,

I am requesting that the Planning Board to NOT give 100 Fore Street a zoning height waiver change just to support more parking spaces.

I am very concerned about the 100 Fore St. at the base of Munjoy Hill. As you are well aware, we all ready have parking issues of downtown Portland workers, tourists, city employees parking on Munjoy Hill and it will only get worse. Also, there is great traffic congestion during rush hours on Franklin Arterial and Washington Avenue which will only get worse as well.

It was also reported in the Portland Press Herald that I-295 traffic is bad now. How can it not only exacerbate the current traffic and parking issues?
https://www.pressherald.com/2018/06/26/state-study-calls-for-traffic-flow-and-safety-improvements-along-congested-i-295/

Just simply adding 600 parking spaces to this site is a very short sited and “car-centric” mind set. This will create further traffic congestion and pollution on Franklin Arterial and Washington Avenue during the rush hours which are all ready cause for avoidance for Munjoy Hill residence, India St residence, and the fisherman on the working waterfront on Commercial street. Please note the commuter park and ride parking lot at I-295 and Marginal Way is currently under-utilized.

If Portland government and developers are chanting Portland as wanting to be a "world" class city, just creating a massive amount of more parking spaces to create even more gridlock and pollution in the city is NOT a world class solution for this day and age. Mass transit should be pursued to push as much parking and traffic congestion off the peninsula rather than the City encouraging it.

Potential Solutions to Portland's Parking and Traffic Congestion Issues:

Short-Term Solutions:
1) Use satellite parking to shuttle in the top employers employees in town from the satellite parking lots.
2) Set staggered hours for the largest employers for employees to ease traffic congestion on I-295.

Long-Term Solutions:
1) **Obtain funding to build up on the commuter park and ride right off of I-295 on Marginal Way**. This parking lot is extremely under-utilized.
- Have city investigate getting funding to build this by either Federal grants, DOT, Dept of Energy, developers, etc.
- Make it 4 to 5 stories to move the parking off to the highway (800-1,000 parking spaces).
- Have City enforce that companies > 50 employees start using this park and ridge garage off of I-295 that work in town.

- Why can't WEX help fund this? Their employees will have the biggest impact on the city of over 600 employees.

2) **Obtain funding to create a solar/electric street cars/tram/light rail going from this garage, up Franklin Arterial with a turn about at Middle street.**
-Have city investigate getting funding to build this by either Federal grants, DOT, Dept of Energy.

3) I am sure there are great other ideas out there....

I urge the Planning Board to find more progressive and environmental sustainable solutions for the Portland residents and fishermen affected by this development rather than thinking that creating more parking spaces will solve current traffic/parking problems because it won't. It will only further exasperate the traffic congestion/parking problems besides increased pollution that we currently have in Portland.

Regards,

Karen Snyder

Munjoy Hill Resident and Property owner

Portland Maine | Yes. Google's good here.

Christine Grimando <cdg@portlandmaine.gov>

100 Fore Street - Hamilton Marina/Xpress Copy Building NO zoning height change please

Anna Medina <fruity.gemini@gmail.com> Fri, Jul 6, 2018 at 11:39 AM
To: planningboard@portlandmaine.gov, jlevine@portlandmaine.gov, planning@portlandmaine.gov, cdg@portlandmaine.gov, bsr@portlandmaine.gov, jpj@portlandmaine.gov

Good afternoon,

I write with a plea concerning 100 Fore St - Hamilton Marina/Xpress Copy building. I would like to encourage you to **not** give a zoning height change. Please help remove congestion off of the peninsula. Consider mass transit capability to remove the traffic congestion.

This development will add additional traffic, pollution, and more potential parking issues going up Munjoy Hill. Please help preserve this precious place in our great city.

Thank you for your time.

Anna Medina

Portland Maine | Yes. Google's good here.

Christine Grimando <cdg@portlandmaine.gov>

App 6-19-18 ZN-000114-2018

Pamela Day <pday2304@gmail.com> Fri, Jul 6, 2018 at 11:42 AM
To: planningboard@portlandmaine.gov, Jeff Levine <jlevine@portlandmaine.gov>, planning@portlandmaine.gov, cdg@portlandmaine.gov, Belinda Ray <bsr@portlandmaine.gov>, jpj@portlandmaine.gov

Planning Board Members:

We oppose this proposed development because it further degrades the waterfront near our home on Waterville Street. The India Street corridor has already become a dark, faceless area that is increasingly congested and unfriendly to pedestrians and others who seek to enjoy east end access to the water.

We find it ironic that the city would even contemplate locating a 600 car garage in such a potentially lovely space. Developers should be challenged to create a building with green space that complements the pedestrian friendly Old Port waterfront, Eastern Prom and Ft. Williams Park areas.

Please do NOT grant this project a zoning height change or approval to add the 600 car parking structure.

Respectfully,

Pamela Day & Michael Petit

Pamela Day
207-461-1461

5-22-2018

100 Fore Street

Application for zoning map and text amendment

Project Summary

After thorough analysis of the Eastern Waterfront Master Plan, we have come to the conclusion the B6 Building Height Overlay & Building Envelopes does not match the intent of the plan as related to our site located at 100 Fore Street to the east of Mountfort Extension. The overlay does not appropriately account for existing site conditions so the desired relationship to Fore Street and the surrounding neighborhoods differs from the intentions set up both in section and plan by the master plan.

The current zoning allows for 45' from flood plain on the area we are looking to have re-zoned. This is the only parcel on the B6 overlay that measures from flood plain and when flood plain is examined at this location, it is actually below existing grade. Our proposal asks for the height measurement to be taken from average grade, just as all of the other sites on the B6 height overlay are. When the sections along Fore Street are studied in the EWMP, a relationship between Fore Street and it's existing buildings across the street from our parcel are set up that require a sensitivity in height and show massing approximately 3 stories high along the street. Because of the grade change that occurs at our site, the existing zoning would only allow us to be about 1.5 stories at Fore Street whereas our proposal will allow for 2.5 with the top level setback from the road.

We are proposing revised zoning on the B6 map for our site that we believe allows development to respond better to the major principles of the EWMP including character and impact of development, mixed-use and economically responsible development. A revised map with text amendments is included with this submission and it shows that we are asking for the site to be 45' from average grade with extensions to 55' based on the development's relationship to Fore Street. There is also a height restriction put in place as to how high the building can be within 40' of the Fore Street right-of-way. This edits the existing zoning which has a setback to 100' from Fore Street.

100 Fore Street Zoning Map and Text Amendment Narrative

The parcel located at 100 Fore Street is a piece of the urban landscape that has the opportunity to provide Portland with multiple uses encouraged by Portland's Comprehensive Plan and the Eastern Waterfront Master Plan. The proposed development has the potential to help relieve the need for parking through a design that would stack and conceal the parking rather than adding to the unwelcome standard surface level parking in the area. It would also add mixed-uses that would be activated throughout the year. Following an analysis of zoning and the existing conditions of the site and surrounding properties, we discovered that a modification to the existing height overlay map is necessary for all aspects of the proposed development to succeed. The requested map amendment would provide consistency in the overlay map by bringing this parcel in line with all other parcels in terms of height measurement and would allow a development that is more compatible with the surrounding uses, all while keeping with the goals of the Eastern Waterfront Master Plan and the Comprehensive Plan.

Zoning and Master Planning Pertaining to the Site

The Goals of the B-6 Zone

-Eastern Waterfront mixed zone
-Distinctly urban form
    -Quality pedestrian experience
    -Promotion of public transit
    -Exemplary urban design
    -Multiple uses to achieve activity throughout the day and week
    -Shared parking infrastructure

The Key Principles of the Eastern Waterfront Master Plan

-**Character and impact of development**
-**Mixed-Use**
-Maritime Resources
-**Economically Responsible Development**

(The three highlighted principles relate directly to the site)

Major Related Goals of Portland's Comprehensive Plan

-Growth for Portland's economy
    -Buy local
    -Strengthen neighborhoods
-Improve upon and expand street system
    -Connectivity for people, cars and bikes
    -Through both public and private investment
    -Expand access to the waterfront

-Include well-lit crosswalks, sidewalk and bike lanes
-Improve sidewalks and streetscapes
-Reduce Impervious surfaces
-Plan and zone for parking needs
-Create inviting environment for current and future employers both large and small
-attract and create a workforce with the skills needed in today's economy
-in response to low household income, low population growth, rising housing costs
-Support job creation and business growth through public initiatives and private partnerships
-Modify ordinances to do so
-Density by design
-If well designed, density can add to the quality of life
-Density can be environmentally friendly
-It promotes transit use
-provides customers for local businesses – during non-tourist season as well

Existing Site Uses

The structures currently on site are single story warehouse buildings that are being used for mixed-use purposes including office space, retail and other services. Despite the uses, the building siting is not pedestrian friendly nor does it provide the density that would make the site truly beneficial to the developing eastern waterfront. The site also has a surface parking lot and a moderate grade change of approximately fourteen feet from Fore Street to the buildings

The Problem

As shown on the B6 Building Height Overlay map, the block between a future extension of Mountfort Street and a future Connector Road is labeled as allowing maximum heights of 45 feet measured from flood plain. The block contains the 100 Fore Street parcel and the city-owned dirt

parking lot parcel. This is the only block on which heights are measured from flood plain; all other parcels in the B6 are measured from average grade. The 100 Fore Street parcel extends across the future Mountfort Street extension onto the block to the west that does not contain the flood plan restriction. There is no current rationale for measuring building height from flood plain on this parcel, particularly in light of the development that has occurred in the area since the initial adoption of the overlay in 2004. .

When the Portland Company property was added to the Building Height Overlay in 2015, there was a lot of discussion and research as to the origin of the flood plain measurement. It is important to note that the flood plain measurement for that block was adopted as part of the zoning and not adopted into the Eastern Waterfront Master Plan. The attached Illustration 33 is from the Eastern Waterfront Master Plan and does not mention the measurement from flood plain. Thus, amending the overlay to allow measurement from average grade for all property in the B6 is consistent with the Eastern Waterfront Master Plan.

The following limitations on building height currently apply to 100 Fore Street:

- 45 foot maximum building height measured from feet above flood plain, not average grade
- For buildings located east of Mountfort Street (extension), no building shall exceed 35 feet in height above the adjacent Fore Street grade within 100 feet of the Fore Street right-of-way, as measured perpendicular to the Fore Street right-of-way.
- For buildings located east of Hancock Street, no building mass higher than 45 feet shall be wider than 70 feet measured parallel with the waterfront nor longer than 140 feet measured perpendicular with the waterfront. The 70 foot wide building extension allowed above must be at least 90 feet apart, measured parallel with the waterfront, and if abutting Mountfort Street (extension) must be set back 25 feet from any street.

When all of the above restrictions from the overlay map are used to layout massing on our site with the existing topography, it limits the massing to that which is smaller in scale in relation to Fore Street and the neighboring development. Using a flood plain measurement results in a building that is four stories total and only two stories above Fore Street. If the height were to be amended to match the neighboring parcel and allow buildings of 45’ in height measured from average grade, with 55’ extensions, we could have a building that is 5 stories total and is 30’ above Fore Street for a depth of 40’ from Fore Street, where the 5th story will begin and rise to a total of 42’ above the grade of Fore Street. Allowing the 5th story and the few extra feet above Fore Street will allow for three levels of parking and two levels of office space. It will also allow for the parking garage to be wrapped in retail. Measurement from flood plain would require elimination of one level of parking or office space and could result in office, rather than retail on

the ground level perimeter. Amending the height overlay would create consistency in height measurement for the entire zone and would result in a more desirable development pattern, as the parcel relates to the surrounding development. It will further allow for more parking in an area in great need of off street parking.

How Does the Project Respond to the Principles of the Eastern Waterfront Master Plan

How the Proposed Development is Economically Responsible

-The intention is to balance the need for good architectural planning with financial viability

-The architecture should present a mixed-use project, particularly when dealing with a garage – we are aiming for a 600+/- car garage

-This fulfills our obligations to other projects around us, taking care of new uses and providing a substantial increase in public parking

-Our experience in commercial development tells us that the preferred target for office size is about 70,000 SF satisfying the need of larger uses as well as generating enough revenue to help the garage's viability

-The balance will produce a project that helps alleviate parking problems in the neighborhood, produces much needed tax revenue and jobs and blends in to the city at the pedestrian scale

How the Development is Compatible with its Surroundings in Character and Impact of Development

The Evolution of the Eastern Waterfront Master Plan as Related to our Site

-Looking back to the early plans proposed for the EWMP in 2002, you will see that the area in question was originally designated to be from 3-5 stories with the taller structure wrapping around structured parking that is topped with a plaza

-At a neighborhood meeting, the height of buildings proposed for the initial Master Plan were discussed and there was concern with how the new development approached Fore Street and it was recommended that they not be higher than those across the street

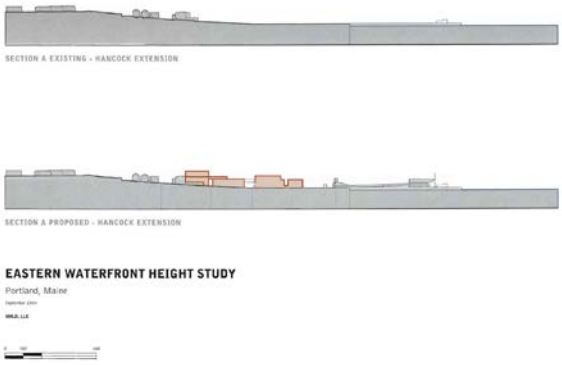
-A new height and building envelope map was released in 2004 that called out for 4 stories with towers to 5 on our lot

-There were specific width restrictions put in place on the tower elements and the restrictions were set up in relation to Hancock Street and the waterfront

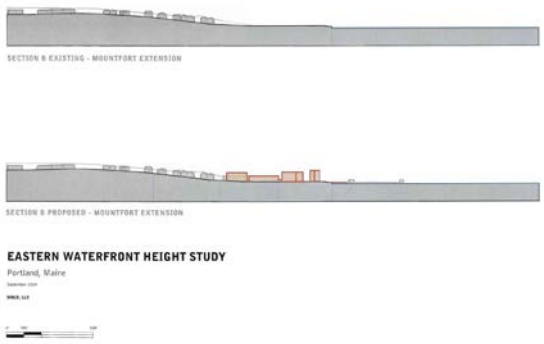
-Because of our specific location, it is more important to address how it relates to Fore Street than to Hancock and the waterfront.

-There was sectional analysis included in the Master Plan analysis that gives better guidance on massing goals for our site and surrounding sites in terms of their relationship to Fore Street

-Hancock Street section – The buildings look to be 3-5 stories at Fore Street



-Mountfort Street section – The buildings look to be at least 3 stories at Fore Street, and are taller than the existing buildings across the street



- As noted above, when the B6 Height overlay map was adopted in 2004, it allowed for 45’ building height as measured from flood plain on the 100 Fore Street parcel – it is the only block on the map that is measured from flood plain

-In 2015 the map was amended to add a 100’ setback from Fore Street for any structure that is more than 35’ above the Fore Street grade

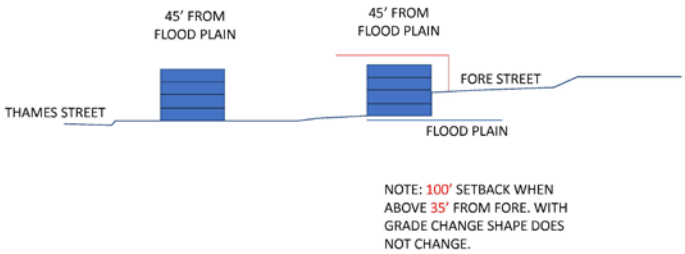
How Does our Site Actually Relate to Fore Street?

-There is a steep grade change at the Fore Street border of our site – a steeply banked slope ranging from 12'-15' in height from the Mountfort Extension to the corner of what would be the extension road.

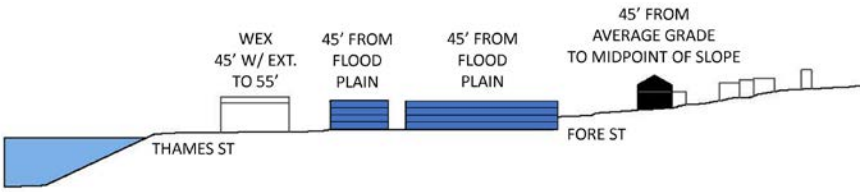
-The grade on the other side of Fore Street immediately goes up with a retaining wall and continues up the East End from there.

-The flood plain actually sits several feet below our existing grade, dropping our height in relation to Fore Street even more.

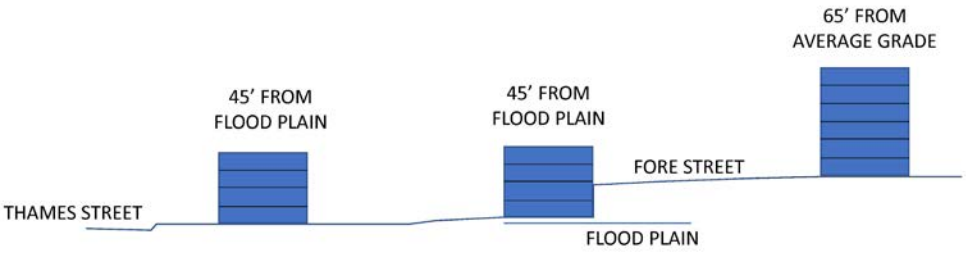
What Does this Mean for the Structure Based on the Zoning that is Currently Allowed?



-With the allowable zoning our building would site almost 2 stories below grade at Fore Street allowing for only 2 stories at the street level.
-The building allowed across the street by zoning can potentially be 20' higher.



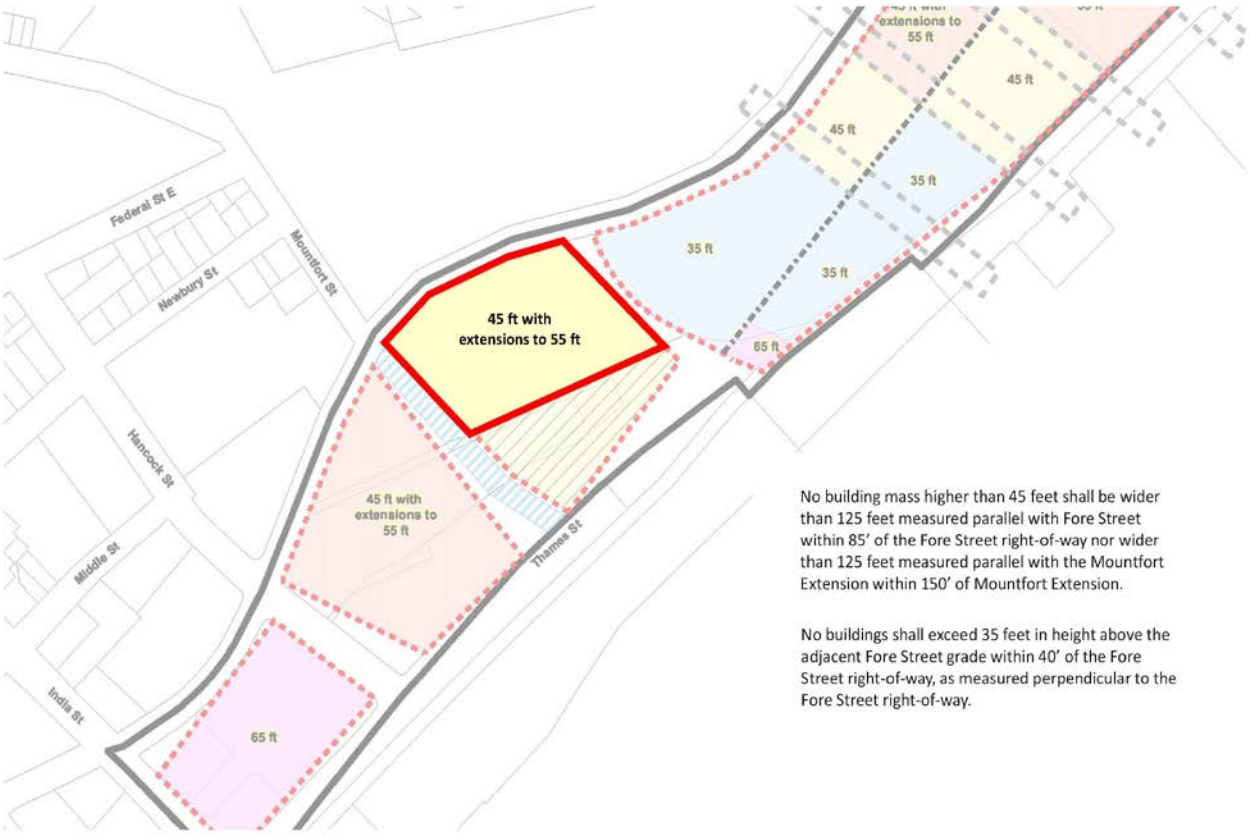
-The zoning for property located diagonally across Fore, on the other side of Mountfort, allows building heights 45' higher than what is allowed on our site.



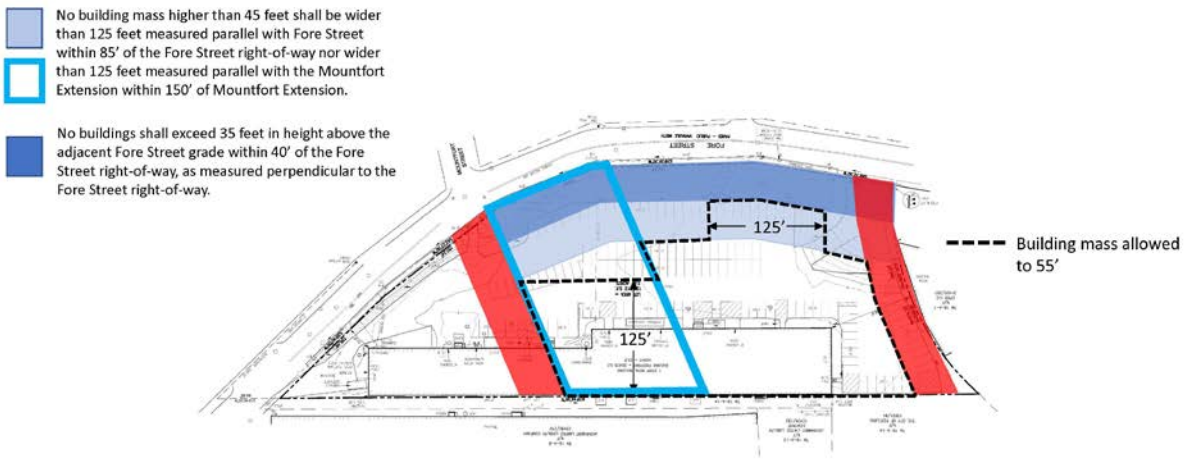
What are the Zoning Text and Map Amendments we are asking for?

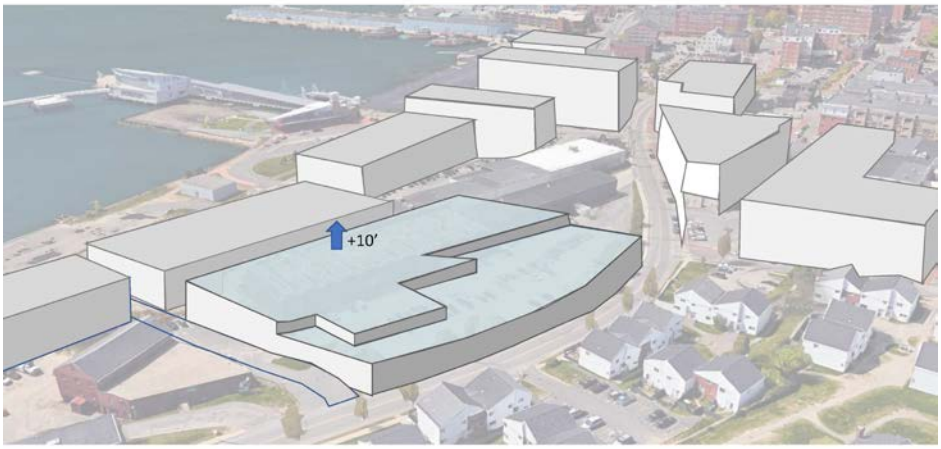
-The proposed amendments to the height overlay map are as follows:

- 45' with extensions to 55' from average grade as measured from average grade.
- No building mass higher than 45 feet shall be wider than 125 feet measured parallel with Fore Street within 85' of the Fore Street right-of-way
- No building mass higher than 45 feet shall be wider than 125 feet measured parallel with Mountfort Extension within 150' of the Mountfort Extension right-of-way.
- No buildings shall exceed 35 feet in height above the adjacent Fore Street grade within 40' of the Fore Street right-of-way, as measured perpendicular to the Fore Street right-of-way.



-What these changes would do to the allowable massing is the following:

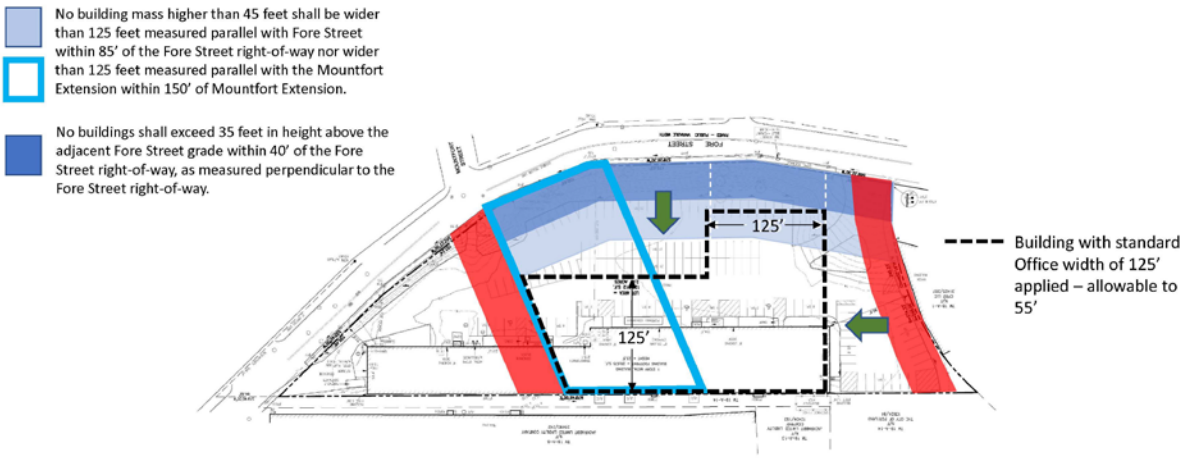


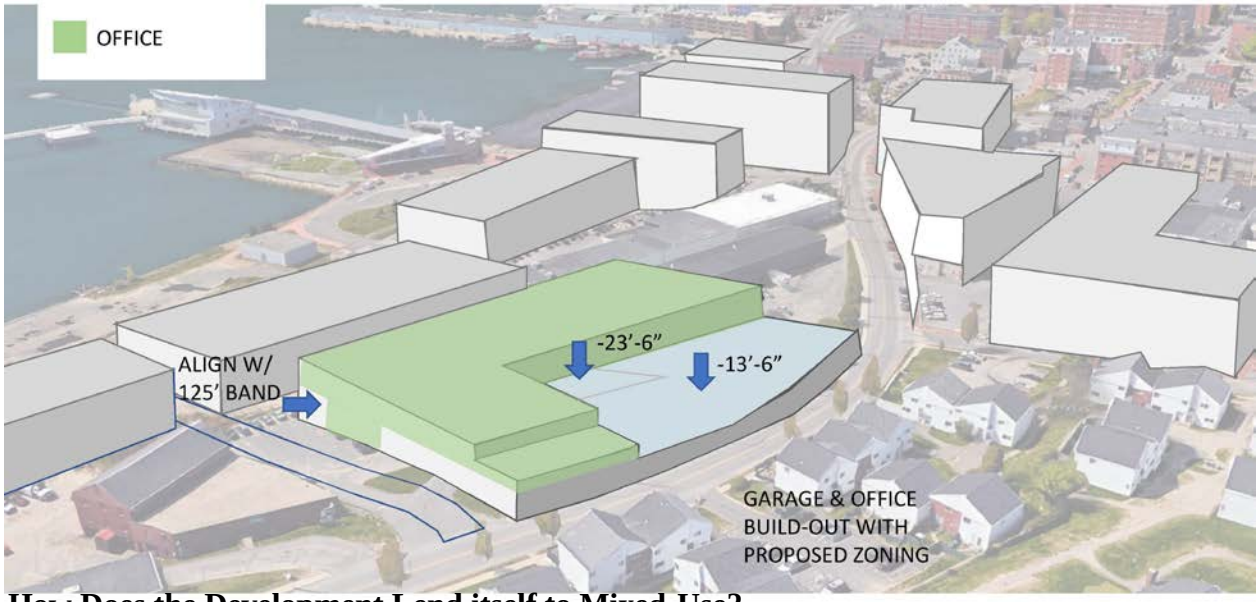


PROPOSED ZONING

-At Fore Street, the building would approach the street as slightly above two stories.
-Once 40' back from Fore Street, an additional story could be added to the overall massing in comparison to what is currently allowed making the building slightly higher than 3 stories above Fore Street with the 3rd story stepped back from the street.
-when the proposed height is analyzed in section in relation to development up the hill, it is in keeping with sight lines allowed by the surrounding zoning?

What happens when office levels are applied to the two upper stories of this massing? Standard office space would be maximum 125' wide creating a building shape such as is shown in this diagram.

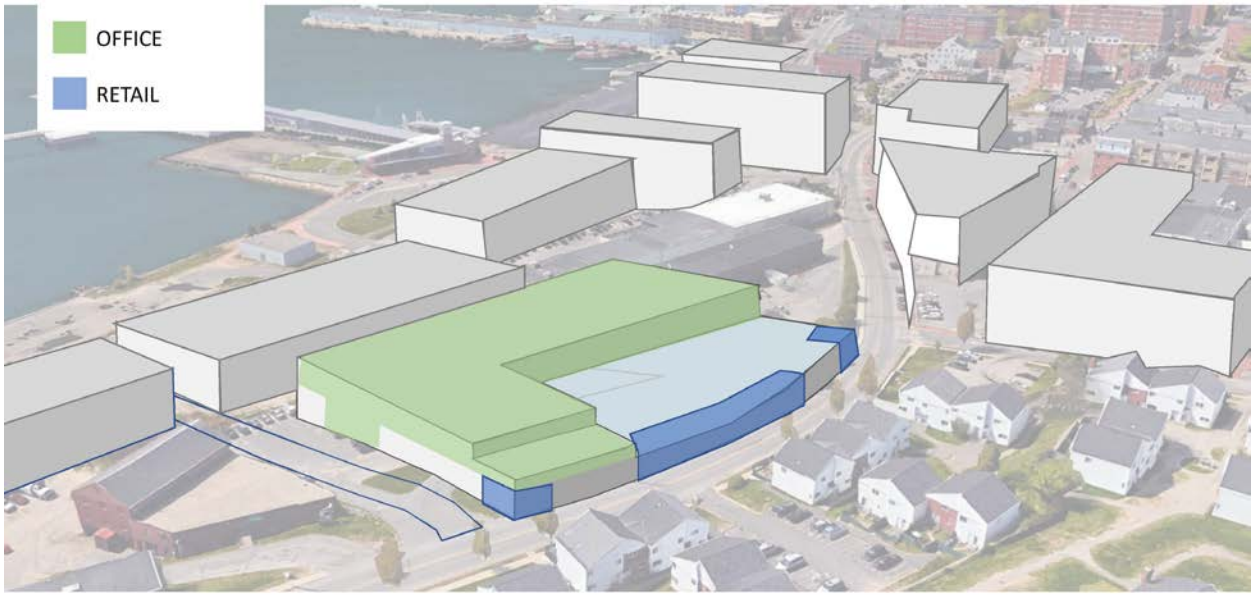




How Does the Development Lend itself to Mixed-Use?

What the Master Plan is looking for with mixed-use development?

-The development should encourage life and use throughout the day and year
-Development should work to eliminate surface level parking while addressing short and long-term parking needs in the city
-It should include a mix of compatible uses
-It should encourage a walkable city with an enjoyable pedestrian environment
-Blank walls should be avoided and there should be frequent street level entries



How does the amendment to the height overlay map allow us to better meet these goals?

-Rather than having 4 stories – 2 parking and 2 office as is possible with the current zoning, there can now be an additional level of parking.
  -This minimizes the need for surface level parking in the area.
  -This allows the level that meets Fore Street to be one of the parking levels which means we can wrap the garage level in retail opportunities (an office use will want to use as much of the perimeter of its levels as possible for its own users).
    -This increases public use of the project.
    -This masks the parking with a more interesting/interactive use.
    -It increases the opportunity for entrances on Fore Street.

How Does the Project Meet the Goals of Portland's Comprehensive Plan

How the Proposed Development is Economically Responsible?

-Please refer to economic section in response to EWMP.
-Within Comp Plan
  -Snapshot: Waterfront – Invest in Infrastructure p 35
  -Public Private Partnerships – Approach Funding Strategically p 58

How Does the Project Alleviate Issues with Impervious Surfaces and the need for Parking in the Area?

- Within Comp Plan
  -Policy Guide: Environment p. 20
  -Policy Guide: Transportation, Manage Parking Strategically p. 75
-We are hoping to have 3 levels of parking beneath 2 levels of office. This would provide 600+/- parking spaces with a building footprint of approximately 66,500 SF.
-By stacking parking, and being able to have three levels, we address both the need to decrease impervious surface and the need for more parking in the area as that gives us enough to feed both our building and additional needs in the area.
-The Comprehensive Plan suggests that the city zones for the ability to create the necessary parking.

How Does the Project Invite Current and Future Employers, Attract a New Workforce and Create New Jobs?

-Within Comp Plan
  -Policy Guide: Economy - A Vibrant City p. 39 & 40

-Policy Guide: Economy – Support Local Business Retention & Recruitment p. 44

-Target Areas for Job Growth, Modify Ordinances to do so p. 44

-We are proposing two levels of office space coming out to almost 80,000 SF that would provide many jobs.

-The site is in a very opportunistic location to attract businesses.

-It is located in close proximity to a residential neighborhood and to the Old Port.

-Wex has already set a precedent for offices moving to this area of the waterfront.

-The location provides water views and views into the Old Port for the office space.

-The site is easily accessible by foot and bike paths that extend to many residential areas and it is near bus stops.

-The project would provide parking for the offices which is a current issue for companies trying to move downtown.

How Does the Project Successfully Create Density by Design?

-Within Comp Plan

-Density by Design p. 49

-This sight aims to use height, while appropriately scaled to its surroundings, to add a mixed-use concept that benefits users in multiple ways.

-It provides much needed parking with a smaller footprint.

-It creates office space for many new jobs.

-It creates retail opportunities that create jobs, opportunities for local businesses and enhance the pedestrian opportunity and interaction with the public.

-The parking can be utilized by both the tenants, nearby businesses and the public

-Stacking development is more environmentally friendly.

By analyzing the intent of the Eastern Waterfront Master Plan and its height analysis and design guidelines and Portland's Comprehensive Plan, not only are the proposed amendments consistent with the Comprehensive Plan, but the proposed development can best meet the goals laid out by the city if the current overlay map is amended. Because of the existing site conditions and because of the limits of height being measured from flood plain, which is particular to only this site, the development would not currently be able to approach Fore Street in a way that allows for the desired uses and appropriately scaled massing in relation to its surroundings. The amended zoning would allow for a building that would meet the needs of the city and remain contextually appropriate for the newly developing waterfront growing northeast of the old port.

Recorded in the Cumberland County
Registry of Deeds on 1/6/17 in Book 33748, Page 1

SHORT FORM QUITCLAIM DEED WITH COVENANT

HOPE 1, LLC, a Maine limited liability company with a place of business in Portland, Maine ("Grantor") FOR CONSIDERATION PAID, grants to **100 FORE STREET, LLC**, a Maine limited liability company with a mailing address of P.O. Box 910, Westbrook, Maine 04098-0910 ("Grantee") with QUITCLAIM COVENANT, certain real property, with any improvements thereon and all rights and easements appurtenant thereto, located at or near 100 Fore Street, Portland, Cumberland County, Maine, and more particularly described on **Exhibit A** attached hereto and made a part hereof.

The conveyance herein is made subject to all easements, covenants, restrictions and agreements of record, to the extent in effect and applicable, to leases and licenses disclosed to Grantee, and to real estate taxes not yet due and payable.

Being the same premises conveyed to the Grantor by Quitclaim Deed with Covenant from Avidity Partners, LLC, Trustee of the FOL Liquidation Trust, dated January 19, 2005, and recorded in the Cumberland County Registry of Deeds in Book 22261, Page 50.

IN WITNESS WHEREOF, Grantor has caused this instrument to be executed and delivered by its duly-authorized Chief Operating Officer below this 6th day of January, 2017.

WITNESS:

Tom S. Hanson

Hope 1, LLC

By: _____
George Cacoulidis
Duly authorized Chief Operating Officer

State of Maine
County of Cumberland

January 6, 2017

PERSONALLY APPEARED before me the above-named George Cacoulidis, Chief Operating Officer of Hope 1, LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said limited liability company.

Before me,

TS Hanson

Name: Tom S. Hanson
~~Notary Public~~/Attorney at Law
Commission Expires N/A

EXHIBIT A

A certain lot or parcel of land with the buildings thereon situated on the Southerly side of Fore Street in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

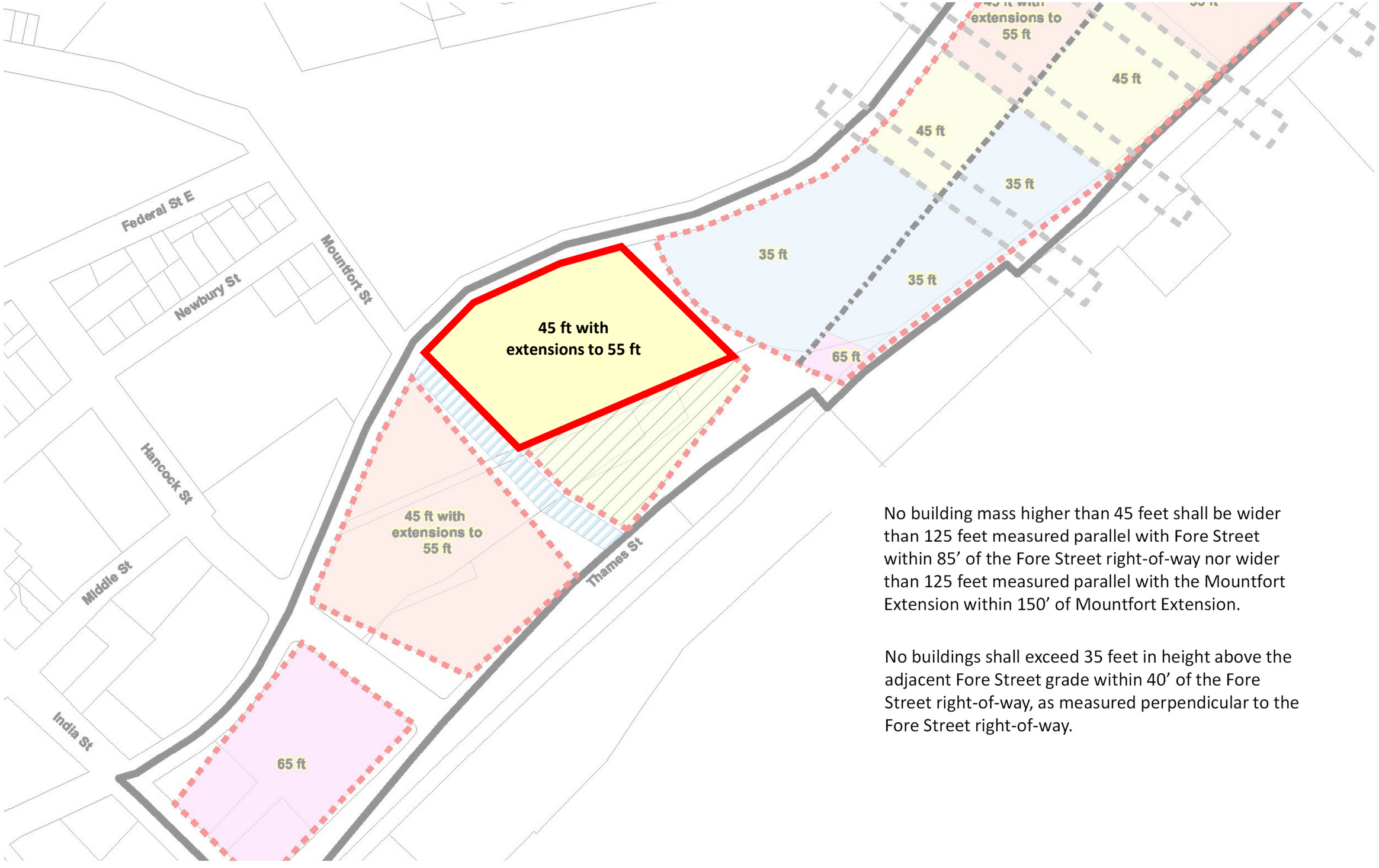
> Beginning on the Southerly side line of Fore Street at the Northwest corner of the premises conveyed to Frank J. Gaziano et al. by Canadian National Railway Company by deed dated November 1, 1973 and recorded in the Cumberland County Registry of Deeds in Book 3502, Page 247;

Thence N 79°-46' E along said premises conveyed to Frank J. Gaziano, et al. and along land now or formerly of Canadian National Railway 742.42 feet to an iron pipe on the Westerly boundary of land now or formerly of The Portland Company;

Thence Northwesterly along land of The Portland Company, on a curve to the right whose radius is 274.33 feet, 248.66 feet to an iron pipe on the Southerly side line of Fore Street, said iron pipe being distant 240.23 feet to a bearing of N 32°-18' W from the iron pipe at the terminus of the last described line;

Thence by the following courses and distances along the Southerly side line of Fore Street;

S 89°-32'-30" W	143.31 feet to an iron pipe;
S 78°-29'-30" W	172.03 feet to an iron pipe;
S 58°-36'-30" W	109.63 feet to an iron pipe;
S 42°-27' W	157.24 feet to an iron pipe;
S 35°-40' W	155.46 feet to the point of beginning.

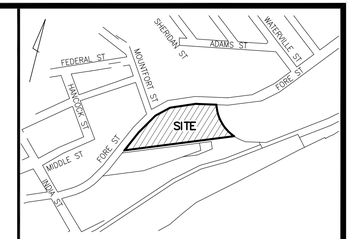


No building mass higher than 45 feet shall be wider than 125 feet measured parallel with Fore Street within 85’ of the Fore Street right-of-way nor wider than 125 feet measured parallel with the Mountfort Extension within 150’ of Mountfort Extension.

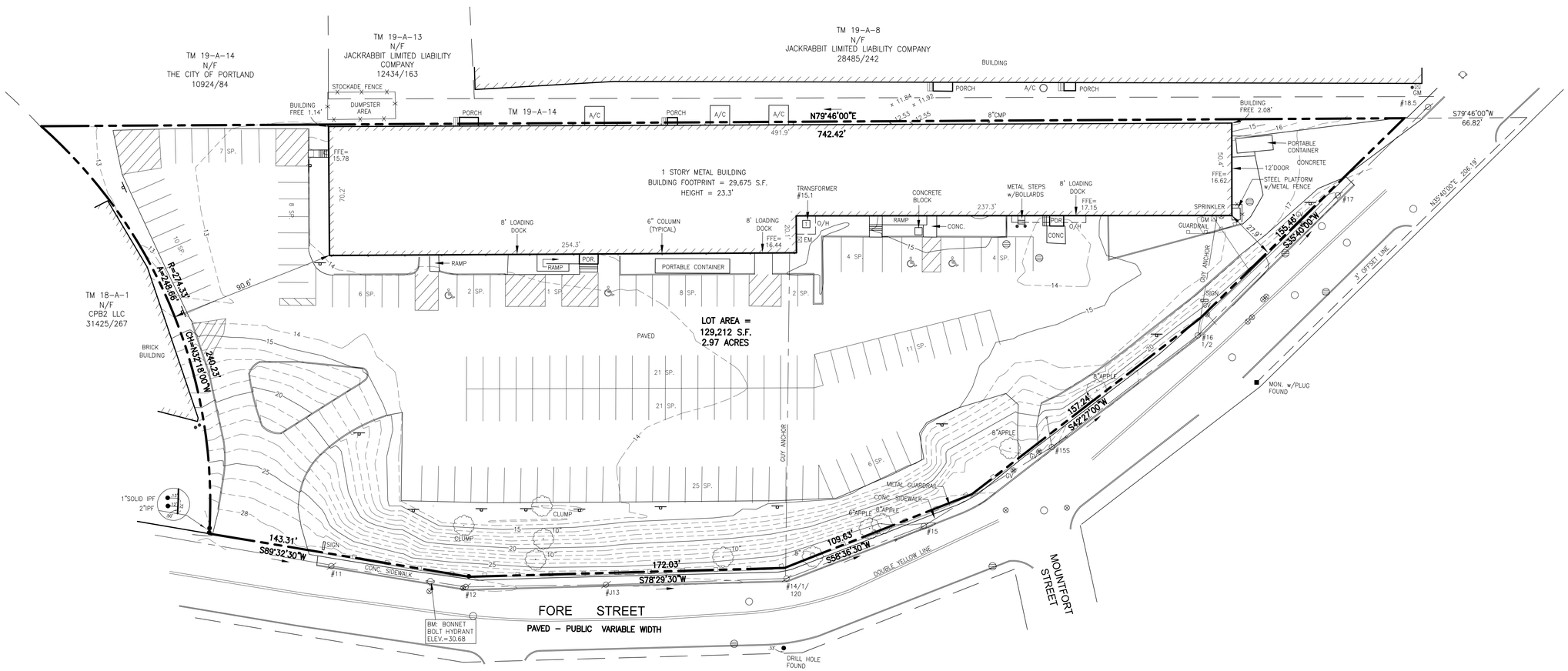
No buildings shall exceed 35 feet in height above the adjacent Fore Street grade within 40’ of the Fore Street right-of-way, as measured perpendicular to the Fore Street right-of-way.

Legend

- MONUMENT FOUND
- IRON PIPE OR ROD FOUND
- GV GAS VALVE
- WATER VALVE
- HYDRANT
- UTILITY POLE
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- SIGN
- ELECTRIC OR GAS METER
- BOLLARD
- CURB
- GUARDRAIL
- OHW OVERHEAD WIRES
- FENCE
- N/F NOW OR FORMERLY
- 000/000 DEED BOOK/PAGE
- CONC. CONCRETE
- O/H OVERHANG
- A/C AIR CONDITIONING UNIT
- POR. PORCH
- DECIDUOUS TREE



Location Map N.T.S.



SCALE : 1" = 30'

0' 15' 30' 60'

Utility Note:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION.

Plan References:

1. "ALTA/ACSM LAND TITLE SURVEY, 58 FORE STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR CPB2 LLC" MAY 22, 2013 BY OWEN HASKELL, INC.

2. "PLAN OF LAND IN PORTLAND, MAINE FOR CROSBY GROUP" AUGUST 6, 1976 BY OWEN HASKELL, INC.

3. "ALTA/ACSM LAND TITLE SURVEY, 100 FORE STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR NAI THE DUNHAM GROUP" SEPTEMBER 2, 2015 BY OWEN HASKELL, INC.

4. "ALTA/NSPS LAND TITLE SURVEY, 100 FORE STREET, PORTLAND, CUMBERLAND COUNTY, MAINE MADE FOR JONATHAN COHEN" OCTOBER 20, 2016 BY OWEN HASKELL, INC.

Notes:

1. OWNER OF RECORD: 100 FORE STREET LLC, P.O. BOX 910, WESTBROOK, MAINE, CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 33748, PAGE 1.

2. PROPERTY IS SHOWN AS LOT 10 BLOCK A ON CITY OF PORTLAND'S ASSESSORS MAP 19.

3. BEARINGS ARE BASED ON LOCUS DEED 22261/50 AND PLAN REFERENCE #2, MAGNETIC 1955.

4. UTILITY SHOWN ARE OBSERVED EVIDENCE ONLY.

5. THERE ARE 136 REGULAR PARKING SPACES AND 4 HANDICAP SPACES.

6. BEARINGS LABELED ARE BASED ON LOCUS DEED, COORDINATES BASED ON CITY POINTS 3000 N:301536.12 E:2931222.72 & 3023 N:301390.32 E:2931443.86 OCEAN GATEWAY PROJECT. BENCHMARK: 3'O/S MONUMENT CORNER OF HANCOCK STREET AND THAMES STREET ELEVATION 13.98' CITY DATUM.

Topographic Survey

100 Fore Street

100 Fore Street, Portland, Maine

made for

Jonathan Cohen

P.O. Box 910, 865 Spring Street

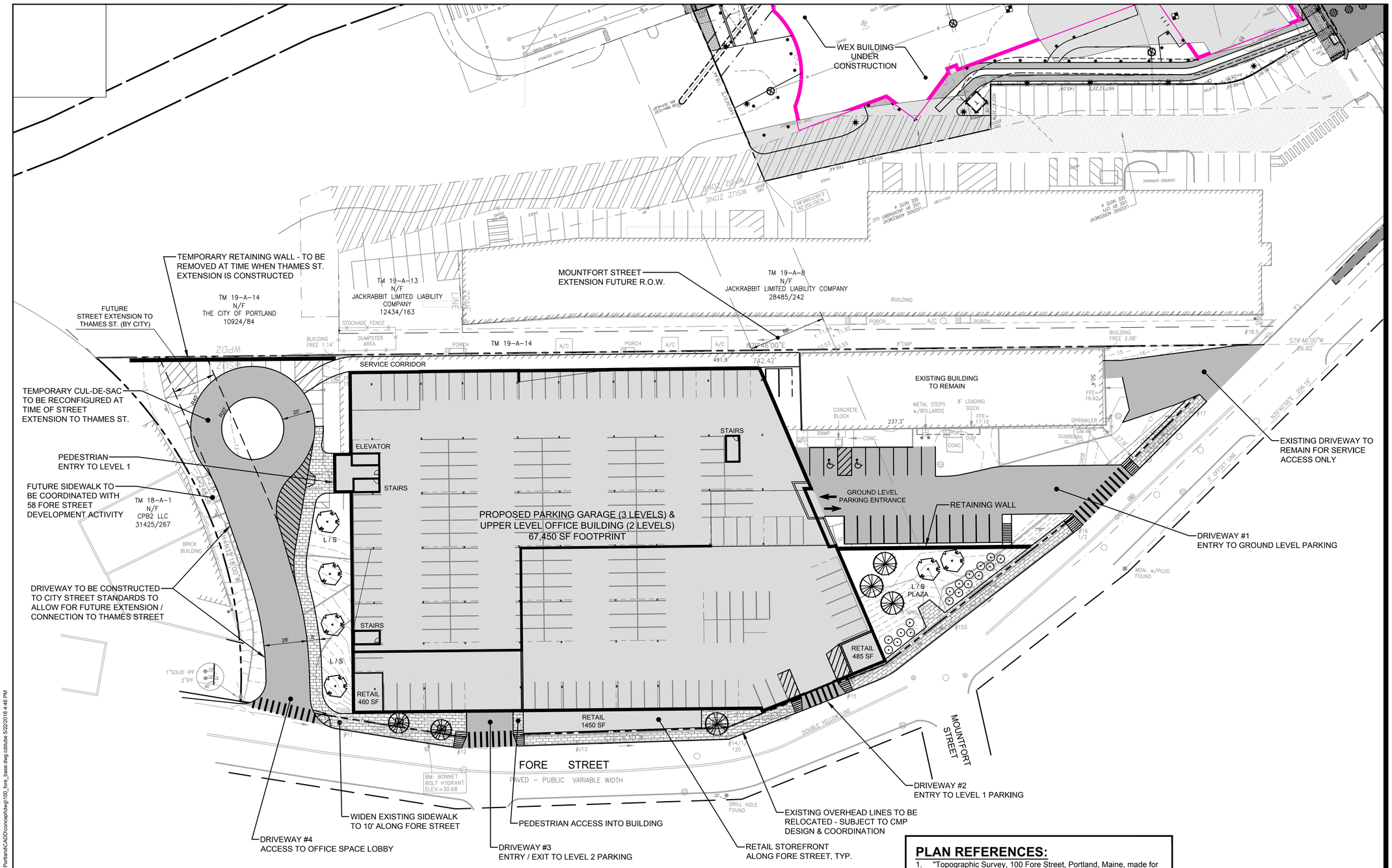
Westbrook, Maine 04092

OWEN HASKELL, INC.

PROFESSIONAL LAND SURVEYORS

390 U.S. ROUTE ONE, UNIT 10, FALMOUTH, MAINE 04105

DRAWN BY:	RS / JLW	DATE:	DEC. 4, 2017	JOB NO.	2016-325 P
CHECKED BY:	EBC / RRL	SCALE:	1" = 30'	DRWG. NO.	1



DIMENSIONAL REQUIREMENTS FOR THE B-6 EASTERN WATERFRONT BUSINESS ZONE		
ITEM DESCRIPTION	LAND USE ORDINANCE REQUIREMENT	PROPOSED
MIN. LOT SIZE	NONE	2.97 ACRES
MIN. FRONTAGE	NONE	737.67 FEET
MIN. FRONT SETBACK	NONE (BUILD TO KEY BLDG. ENVELOPES SHOWN ON B6 BLDG. HEIGHT OVERLAY & BLDG. ENVELOPES MAP)	6 INCHES ±
MIN. SIDE SETBACK	NONE	71 FEET
MIN. REAR SETBACK	NONE	10.67 FEET
MAX. BUILDING SETBACK FROM STREET LINE	10 FEET (BUILD TO KEY BLDG. ENVELOPES SHOWN ON B6 BLDG. HEIGHT OVERLAY & BLDG. ENVELOPES MAP)	6 INCHES ±
MIN. LENGTH OF BLDG. WALL REQUIRED TO BE LOCATED ALONG STREET FRONTAGE OF LOT	70% OF LOT STREET FRONTAGE OR 25% OF BUILDING PERIMETER	30% OF BUILDING PERIMETER
MAX. LOT COVERAGE	100%	80% ±
MAX. BLDG. HEIGHT	45 FEET	
MIN. BLDG. HEIGHT	3 FLOORS OF HABITABLE SPACE ABOVE THE AVERAGE ADJACENT GRADE WITHIN 25' OF ANY PUBLIC STREET	

PLAN REFERENCES:

1. "Topographic Survey, 100 Fore Street, Portland, Maine, made for Jonathan Cohen, P.O. Box 910, 865 Spring Street, Westbrook, Maine 04092", by Owen Haskell, Inc., Date: Dec. 4, 2017.
2. Conceptual building plans by Archetype, P.A., Dated December 4, Sheets A0.00 through A1.04.
3. "Site Development Plans for a commercial office building on Thames Street Property (One Hancock Street), Portland, Maine, November 2017, Construction Set", (Wex project), prepared by Stantec.

LEVELS - APPROXIMATE GRADES:

PARKING GARAGE
GROUND - 13.0'
LEVEL 1 - 22.5'
LEVEL 2 - 32.0'
OFFICE SPACE
LEVELS 3-4 - T.B.D.

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

PRELIMINARY - NOT FOR CONSTRUCTION

V:\1953\resource\fet\Admin Resources\PROPOSALS\Stantec Proposals\100 Fore Street Portland\CADD\concept\dwg\100_fore_base.dwg cddulbe 5/22/2018 4:46 PM

Stantec
482 Payne Road Scarborough Court
Scarborough, Maine 04074-8929
Tel. 207.883.3355
www.stantec.com

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Consultants

Notes

OWNER OF RECORD:

100 FORE STREET LLC
P.O. BOX 910
WESTBROOK, ME 04098
CCRD BOOK 33748, PAGE 001

No.	Revision	By	Appd.	YY.MM.DD
1	SUBMITTED CONCEPT PLAN	CDD	SRB	2018.05.22

File Name: 100_fore_base	DWN.	CHK'D.	DSGN.	DATE
	CDD	SRB	SRB	18.05.22

Permit-Seal

Client/Project
ARCHETYPE ARCHITECTS
48 UNION WHARF, PORTLAND, ME

100 FORE STREET

PORTLAND, MAINE

Title
CONCEPT PLAN - IN SUPPORT OF ZONING APPLICATION

Project No. -
Scale 1" = 30'

Sheet
C-1

100 FORE STREET

100 Fore St/ Wex building

Kristin Lawson <klaws18@gmail.com> Jul 9, 2018 10:40 PM
Posted in group: **Planning and Urban Development**

To Whom It May Concern:
I am a Munjoy Hill resident and home owner. I am taking the time to write and sincerely voice my concerns about the proposed plans for 100 Fore St.-Hamilton Marina/Xpress Copy Building. The roads and layout of Portland given that it is a peninsula and there are very limited ways on and off the peninsula is reason alone to seriously think about before allowing another 600 cars commuting to and from that area on Fore St. every day. I am a working professional who witnesses first hand how congested the Franklin St. area is everyday during work commuting hours. It would be a disaster and commercial street is even more congested than Franklin St. that time of day. Mass transit options should be utilized instead of adding to congestion and traffic downtown. Additional cars also add to unnecessary air pollution and green house gases since most of those cars will be sitting in traffic.

I am also strongly against allowing a zoning height waiver on this project.

Sincerely,

Kristin M. Lawson

100 Fore St, 86 Newberry Street, Hancock - WEX

Patricia Ryan <pryan2@maine.rr.com> Jul 9, 2018 4:05 PM

Posted in group: **Planning and Urban Development**

These development projects present serious issues for Munjoy Hill's viability as a unique neighborhood and historic district. Because of traffic congestion, pollution, greater parking issues on the Hill, and the slimmer and slimmer chances of affordable housing on the Hill, I am requesting that you do not grant the zoning height waivers to 100 Fore Street and 86 Newberry St., and that WEX provide a shuttle service for it employees, thereby lessening congestion on Franklin Arterial by elimination of 600cars commuting on Franklin Arterial. Please help preserve Munjoy Hill's unique historic significance.

Patricia Ryan LCSW
60 Montreal St.
Portland, Me 04101
207-749-8385

100 Fore Street 86 Newbury WEX

Stephen Gaal <steve@gaal.com> Jul 10, 2018 9:47 AM
Posted in group: **Planning and Urban Development**

Dear Planning Board members, City Council members and staff,

The requested zoning changes to waive or revise height limits and add nearly 1,000 parking spaces in the India Street area defy description. Why do we have zoning rules that protect us all and make it possible to live in close proximity and in relative harmony when they can be easily circumvented? These property owners knew what the rules were when they purchased and planned their developments. Hold them accountable to the rules. Please, DO NOT grant the waivers.

The idea of adding 950 parking spaces is astonishing. Just 3-4 years ago, when the planning board was considering the contract zone for the new 400 seat theater at the St. Lawrence, neighbors objected saying the additional 200 cars per performance would be an issue without additional parking and the project was approved anyway saying the city's strategy is to NOT make parking more available and to encourage public transportation. What is good for the goose is good for the gander. Please do not approve these waivers. Let them take public transportation. Perhaps they can "subsidize" the Metro like the St. Lawrence promised to do.

Respectfully,

Stephen Gaal
Portland ME
steve@gaal.com
(603) 651-9183 mobile

The Russian dissident and chess grandmaster Garry Kasparov drew upon long familiarity with that process when he tweeted: "The point of modern propaganda isn't only to misinform or push an agenda. It is to exhaust your critical thinking, to annihilate truth."

100 Fore Street - Hamilton Marina/Xpress Copy Building

R Cousins <rcousins@hotmail.com> Jul 10, 2018 11:49 AM
Posted in group: **Planning and Urban Development**

My vote is that the Zoning height waiver be NOT given.

We have zoning rules and regulations for reasons. One is to maintain some sort of cohesiveness to the surrounding area. Also to maintain similar height and mass restrictions.

I think it's time to reassess the need or desire to clog some of our most desirable land areas with parking garages. I would suggest this parking garage and future parking garages be located nearer to the 'gateways' to our city and then public transportation used to move about the city. This could do a lot to alleviate congestion in the city overall and in this case the immediate neighborhood and Munjoy Hill. When BIW was operating there were certain times of day when getting through nearby intersections, Congress-Mountford in particular, was next to impossible. Many vehicles ignored the lights and continued through the intersections as a train might. When the rush was over then back to normal. I fear that if we continue to add to the number of vehicles rushing through our neighborhood it will only get worse. It really is time to give the 'locals' safety concerns a priority over providing 'dead zones' when there could be more suitable alternatives if you applied some logical thought processes about what kind of city we really want. Haven't we done many studies about transportation viabilities in Portland. Why do we spend money on these studies if we don't learn anything or enact some of the recommendations?

Sincerely,
Rae Cousins
Munjoy Hill resident

Google Groups

100 Fore Street - Hamilton Marina/Xpress Copy Building

Mark Holden <mark.k.holden@gmail.com> Jul 10, 2018 8:33 AM
Posted in group: **Planning Board**

Dear Members of the Planning Board and staff of the Portland Government:

Please do not permit a variance in the ordinance to allow a 600 unit garage next to the Wex development.

Emphasis should be placed on limiting traffic congestion and getting the new companies to development more thoughtful plans for helping their employees and visitors to arrive via commuter vans, and other forms of mass transit.

This will the end provide a less polluted, less congested Portland waterfront and city in general with less air pollution and stress.

There is a lot going on and a lot of pressure on all of you to give in to the interests of these large developments. But sensible decisions now will make for a better city for everyone in future years.

Yes of course there should be provisions for parking but it doesn't have to be over the top. It is OK for you to set some limits and let the developing company figure out options for reducing congestion and pollution.

Please also consider limiting the height of these developments for the sake of everyone's viewspace inlcuding you very proximal neighbor's on the edge of Munjoy Hill.

Sincerely

Mark Holden
37 Saint Lawrence Street
Portland Maine 04101
207-522-0944

Google Groups

July 10, 2018 Workshop - 100 Fore Street

Sandra Guay <slg@woodedlaw.com> Jul 10, 2018 2:12 PM
Posted in group: **Planning Board**

Dear Planning Board Members:

Please review and circulate to all Planning Board Members the attached letter concerning the zoning amendment proposal for 100 Fore Street.

Thank you for your assistance and for your attention to this very important issue.

Sandra Guay

SANDRA L. GUAY, ESQUIRE

Partner

WOODMAN EDMANDS DANYLIK

AUSTIN SMITH & JACQUES, P.A.

234 MAIN ST., P. O. BOX 468

BIDDEFORD, ME 04005

T: (207) 284-4581 F: (207)284-2078

slg@woodedlaw.com

www.woodedlaw.com

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WOODMAN EDMANDS DANYLIK AUSTIN SMITH & JACQUES, P.A.

ATTORNEYS-AT-LAW

ROBERT B. WOODMAN
PETER L. EDMANDS
THOMAS DANYLIK
RALPH W. AUSTIN
JAMES B. SMITH
KEITH R. JACQUES
MICHAEL J. O'TOOLE
HARRY B. CENTER II
SANDRA L. GUAY

234 MAIN STREET
P.O. BOX 468
BIDDEFORD, ME 04005-0468
TELEPHONE: 207-284-4581
FAX: 207-284-2078
E-MAIL: SLG@woodedlaw.com
www.woodedlaw.com

July 10, 2018

Via Email

Portland Planning Board
Sean Dundan, Chair
City of Portland
Planning Division
389 Congress Street
Portland, ME 04101

Re: 100 Fore Street LLC
Zoning Map Amendment

Dear Mr. Dundan and Planning Board Members:

This law firm represents a large group of Portland fishermen and merchants who call themselves the Portland Working Water Front Group ("PWWG"). This letter addresses the apparent purpose of the zoning amendment proposed by 100 Fore Street LLC, to enable 100 Fore Street LLC to increase occupancy and parking at the 100 Fore Street location. The PWWG opposes this zoning amendment request for several reasons.

First and foremost, there should be no consideration of any zoning amendments in the Commercial Street area without the applicant first submitting a peer reviewed traffic study addressing the additional impact on Commercial Street from the increased development made possible by the amendment. As the City's recent *West Commercial Street Multi-Model Corridor Study* (the "Study") and other recent studies report, the present traffic on Commercial Street is already having a significant and negative impact on the fishermen, fisheries and marine related businesses that are dependent on the Commercial Street docks and wharves. While parking garages, condominiums, hotels and retail outlets can locate anywhere on the peninsula, "[t]he fisheries and other marine

businesses that dominate the waterside of Commercial Street have no alternative locations within which to operate." *Study* at 6.

As an example of the existing and ongoing issues caused by the ever increasing traffic on Commercial Street, just this past month, fishermen and others on a wharf were trapped *for over an hour* while a semitrailer truck unloaded produce to a restaurant causing significant public safety issues, in addition to blocking access to the wharf. Trucks loaded with fresh fish, lobster and bait are consistently held up for prolonged periods of time in traffic while attempting to access 295. The *Study* predicts that the already proposed Commercial Street area development/redevelopment "would be expected to generate 3,300 weekday PM peak hour trips" within the next 10 years. *See* Memo from Christine Grimando to Portland Planning Board (July 6, 2018).

As adopted in Portland's recent Comprehensive Plan, the State goal is to "protect the State's marine industry, ports and harbors from incompatible development." The City's goal is to "celebrate, promote, and protect Portland's lobster and fishing industry as a foundation of the region's economy and a feature of civic pride." The City of Portland is blessed with the country's oldest fishing community. Today, these fishermen and lobstermen bring in a catch worth over $750 million annually to contribute to the local economy. In addition to the fishermen and lobstermen, the many businesses that support this fishery must be located on the wharves and piers along Commercial Street – they cannot relocate to any other location and still function in their industry service capacities. The City cannot have it both ways – unrestricted continued development, which daily increases inaccessibility to the wharves, and deteriorating transportation facilities and access for the fishing community, will destroy the fishing industry in Portland unless the City takes action to slow (rather than allow for zoning amendments to increase) development.

In addition to the above traffic and access related concerns, the PWWG views the continued and piecemeal zoning amendment and relaxation requests for development in the Commercial Street area as a slippery slope that can only result in creating an ever-increasing logjam of congestion on Commercial Street, and decreased accessibility to the wharves. Bending to a developer's vision of how to maximize his or her property in this fashion is the antithesis of good planning and the PWWG respectfully asks this Board to put the brakes on and as provided for in the Comprehensive Plan, to consider further study of the effects and impact of traffic on the marine industry from the plethora of proposed, nonstop Commercial Street development.

Commercial Street has reached a tipping point. It simply cannot accommodate continued increased traffic – and provide safe and reliable access to support the marine industry. The Planning Board, as the guardians of public safety, health and welfare, must begin to more closely scrutinize development in the Commercial Street area, and especially on development proposals that seek relaxation or amendment of the present zoning requirements.

Thank you for your consideration of these very important issues.

Very Truly Yours,

SANDRA L. GUAY

SLG/lb

Copy to:
Members of the Portland Working Water Front Group

Fwd: 100 Fore Street - Hamilton Marina/Xpress Copy Building

Melissa Sweet <melissa@melissasweet.net> Jul 10, 2018 4:40 PM
Posted in group: **Planning Board**

Dear Committees and Staff:

This is another voice asking you NOT to allow a variance for height and parking. I have yet to see a plan for the number of cars Portland is inviting with the hotels and development.
WEX should do what they do in CA: get a van pool pick up going.

If you say yes to them, where does it stop? They do not need this.
Let these developers figure out a creative solution given the parameters everyone else has to follow!

Melissa Sweet
Saint Lawrence St
Portland

Begin forwarded message:

From: Mark Holden <mark.k.holden@gmail.com>
Subject: 100 Fore Street - Hamilton Marina/Xpress Copy Building
Date: July 10, 2018 at 8:33:20 AM EDT
To: planningboard@portlandmaine.gov, jlevine@portlandmaine.gov, cdg@portlandmaine.gov, bsr@portlandmaine.gov, jpj@portlandmaine.gov

Dear Members of the Planning Board and staff of the Portland Government:

Please do not permit a variance in the ordinance to allow a 600 unit garage next to the Wex development.

Emphasis should be placed on limiting traffic congestion and getting the new companies to development more thoughtful plans for helping their employees and visitors to arrive via commuter vans, and other forms of mass transit.

This will the end provide a less polluted, less congested Portland waterfront and city in general with less air pollution and stress.

There is a lot going on and a lot of pressure on all of you to give in to the interests of these large developments. But sensible decisions now will make for a better city for everyone in future years.

Yes of course there should be provisions for parking but it doesn't have to be over the top. It is OK for you to set some limits and let the developing company figure out options for reducing congestion and pollution.

Please also consider limiting the height of these developments for the sake of everyone's viewspace inlcuding you very proximal neighbor's on the edge of Munjoy Hill.

Sincerely

Mark Holden
37 Saint Lawrence Street
Portland Maine 04101
207-522-0944

PLANNING BOARD REPORT
PORTLAND, MAINE

Warehouse, Light Industrial Uses
128 Cassidy Point Drive
Administrative Authorization and Conditional Use Applications
99-2018
Tod Dana, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: July 10, 2018	Prepared by: Matthew Grooms, Planner Date: July 6, 2018

I. INTRODUCTION

Tod Dana has submitted an administration authorization and conditional use application for his property at 128 Cassidy Point Drive for conversion of an existing building that was previously occupied by Advantage Gas Works to a retail warehouse for Asia West and light-industrial space for between three and four tenants. This property is located within the Waterfront Port Development Zone (WPDZ) and is subject to the zone specific and general conditional use standards. Zone specific standards are intended to ensure adequate waterfront access to water-dependent and marine-related users while the general standards facilitate site compatibility between conditional uses and uses permitted by right. Conditional use applications, when submitted in conjunction with a site plan or administrative authorization, are required to go before the Planning Board for review and approval.

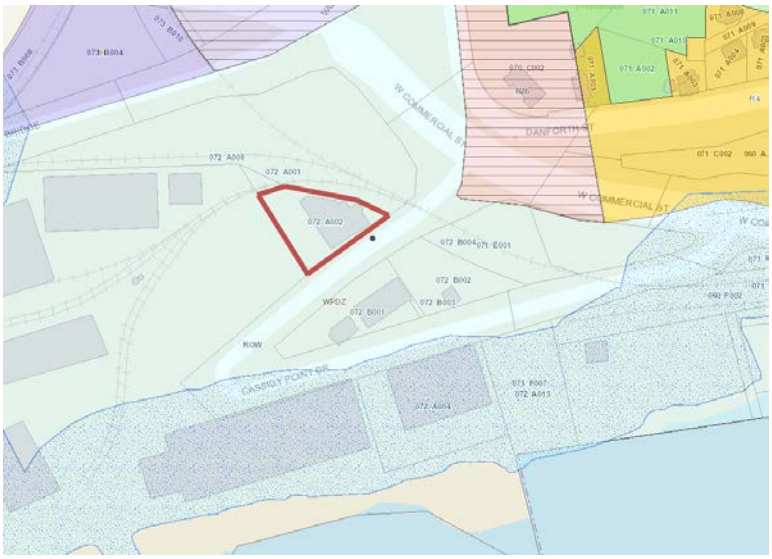

Figure 1: Project location with zoning context

A total of thirty-eight (38) notices were sent to property owners within 500 feet of the site and interested party list. A legal ad ran on July 2nd and 3rd, 2018 of the Portland Press Herald. As of the writing of this report, no public comments have been received by the Planning Office.

Applicant Name	Tod Dana, Kennebec Street Properties

II. PROJECT DATA

Existing Zoning	Waterfront Port Development Zone (WPDZ)
Existing Use	Previously occupied by Advantage Gas Works and Matheson Gas
Proposed Use	Warehouse/Light Industrial

Parcel Size	23,282 SF
Building Size	13,880 SF
Number of Units to be Demolished	None
Building Footprint	7,329 SF
Estimated Cost of Project	$340,000

III. PROPOSED PROJECT DESCRIPTION

The proposal before the Board features no exterior site modifications and reuse of an existing two-story, 13,880 square foot wooden building located at 128 Cassidy Point Drive, currently owned by PWS Holdings, the former owner of Advantage Gas. This site does not feature waterfront access and is adjacent to Sprague Marine Terminal and MaineDOT railroad right-of-way. According to the applicant, retail warehousing for Asia West would occupy the entire ground floor and approximately 30% of the second floor. The remainder of the second floor would be occupied by an accessory office (for use by Asia West) and between three and four light-industrial spaces, measuring approximately 1,000 square feet in area. As identified in the application, potential tenants include: screen-printing studio, painting studio and graphic design studio. The building itself is well-suited to this multiple use scenario with a separate dedicated entrance for the second floor and two-fire rated stairwells leading directly to the outside.

Figure 2: View of the property at present. Note, limited exterior modifications are proposed

According to the narrative provided with this application, the proposed traffic impact and parking requirements for this proposal would be substantially less than those of the previous tenant and should therefore be more than adequately served by the 20 existing off-street parking spaces. It is anticipated that 10 full-time employees will work at this site, with commute and operations totaling approximately 48 weekday trips. No retail sales are proposed at this location. In contrast, Advantage Gas Works had between 20 and 24 employees as well as a customer showroom, with an estimated 100-150 daily patrons. Total weekday vehicle trips were estimated at 334.

IV. DEVELOPMENT REVIEW

The proposed uses, which include warehousing and low impact industrial uses are identified as conditional uses under Section 14-319. Permitted Uses under the WPDZ zoning regulations. As a result, this development proposal is subject to the zone specific conditional use standards, Section 14-320, and the general standards for conditional uses, Section 14-474. The applicant's responses to these standards are included as Attachments A and B respectively. A separate administrative authorization application was filed for review of the site plan, which is not subject to Planning Board review.

A. ZONE SPECIFIC CONDITIONAL USE STANDARDS – SEC. 14-320(a)

The project site is located in the Waterfront Port Development Zone (WPDZ) and does not feature direct water access. Uses identified as conditional uses within this zone are subject to five additional standards that are intended to ensure water access to water-dependent and marine-related users. Those standards are as follows:

In addition to the provisions of section 14-474 (c)(2) such uses will:

1. Not impede or preclude existing or potential water-dependent development on other lots;
    a. Applicant Response: My proposed use in no way interferes with the current and future water-dependent uses of the neighboring lots. My proposed uses of warehousing and light manufacturing are completely internal uses that will have no effect on the abutters. I have no intention of expanding the existing footprint and my low impact uses will not result in a material change to vehicular traffic. 128 Cassidy Point Drive is a white elephant in this zone, as it does not have waterfront access and is bordered by the railroad on two sides, Sprague Energy on one side (huge pile of coal), and Cassidy Point Drive on one side. Future water-dependent development on other lots in the future will in no way be affected by my internal uses.

    b. Staff Comment: The staff concurs, given that the proposed use is housed entirely within an existing building and site with no direct water access and does not preclude this site or other nearby sites from future redevelopment.

2. Allow for adequate access to the water;
    a. Applicant Response: 128 Cassidy Point Drive has no water access and my proposed uses are internal and will in no way interfere with access to the water

    b. Staff Comment: See previous staff comment.

3. Be compatible with water dependent and marine uses;
    a. Applicant Response: My proposed use of warehousing for Asia West is completely compatible with Eimskip Marine Facility, as this is one of the shipping ports I receive sea shipments from. Almost all of my freight arrives via shipping containers.

    b. Staff Comment: The staff finds the proposed uses to be compatible as the primary user relies upon ship-borne freight and other uses are accessory and in no way impede water-dependent or marine-related operations found elsewhere within the WPDZ.

4. Operationally support one or more water dependent use(s), or be located in a building or structure that is physically adaptable or relocatable to make way for future development of water-dependent uses; and
    a. Applicant Response: As mentioned above, my use as a receiving and warehousing facility for ocean freight arriving in Portland is supportive of a water-dependent use.

    b. Staff Comment: See previous staff comment.

5. Meet any additional performance and dimensional standards (Note: Where no staff comment is provided, it indicates compliance with this standard based upon the information provided).
    a. Applicant Response:

i. Outdoor Storage: My uses will not result in the outdoor storage of commodities and other materials.

ii. Noise: My use of the property will be internal only and operate during normal business hours. We will be in total compliance with noise regulations.

iii. Vibration: My uses will not result in any vibrations that would be felt outside of the building.

iv. Environmental Regulations: Our uses will be in compliance with all state and federal regulations.

v. Discharge into Harbor areas: 128 Cassidy Point Drive does not have waterfront access and our uses do not involve discharges of any sort.

vi. Storage of vehicles: No unregistered vehicles will be stored on the premises.

vii. Landfill of docking & berthing areas: N/A

viii. Off-street parking: 128 Cassidy Point Drive has a private, 20 car, paved parking lot abutting the building which will more than accommodate the first-floor warehouse staff and second-floor light manufacturing users.

- Staff Comment (Tom Errico, Traffic Engineer with T.Y. Lin): I have reviewed the projects (referring to 121 Cassidy Point Drive in addition to 128 Cassidy Point Drive) as it relates to the Conditional Use Standards and Conditions. Specifically, "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." As it relates to this specific standard, I find that the projects comply and will not substantially increase traffic and parking conditions.

ix. Off-street loading: The building has an off-street loading dock.

x. Flood plain regulations: N/A

xi. Lighting: All current and future lighting will be shielded so as not to interfere with vessel navigation.

- Staff Comment: At this point in time, a lighting plan has not been provided. As part of the administrative authorization review, the staff will request additional information on site lighting and will require that any future lights be compliant with Section 10 of the City's Technical Manual.

xii. Signage: Any signage will be in compliance with Division 22 of this article.

xiii. Storage of pollutants: No pollutants will be stored on premises

xiv. Compatibility with marine uses: Circulation, parking, dumpsters, exterior storage, and loading facilities will in no way interfere with existing or future marine or non-marine uses, as our vehicular traffic will be light, and all storage, loading, and parking facilities are off-street.

- Staff Comment: The applicant has indicated that all operations will be internal to the building and that there shall be no exterior storage of materials or waste receptacles. Confirmation of this will also be required for the administrative authorization.

xv. Design and visual character: We have no plans to change the existing building's height or footprint. Our only plans are to replace windows.

The staff finds the proposal to be compliant with all applicable zone specific conditional use standards.

B. GENERAL CONDITIONAL USE STANDARDS – SEC. 14-474

All conditional uses are subject to the general conditional use standards as listed under Section 14-474, which are intended to ensure compatibility and integration of a conditional use with other surrounding uses permitted by right. This is achieved through three separate standards related to traffic/parking impacts, unsanitary or harmful conditions and site design. The specific standards are as follows:

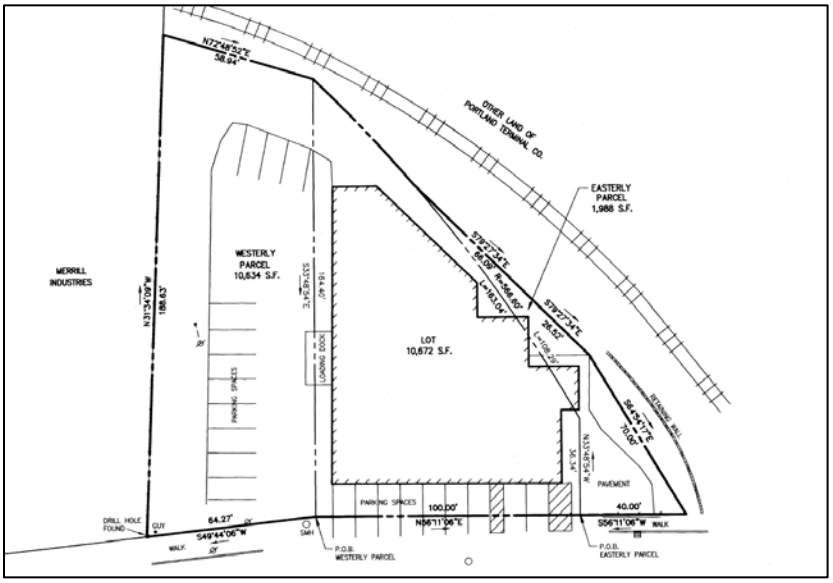

Figure 3: Site plan showing existing conditions. Given limited traffic volumes and that this is an existing condition, staff are not requiring that parking along the building's front façade be relocated within the property line.

1. 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;

   a. Applicant Response: The proposed changes of use will have an insignificant impact on the traffic in this area. Cassidy Point Drive is a major intermodal transportation center with direct access to Route 1 and I-295. As the primary use of the building will be storage and light industrial uses, the vehicular traffic will be minimal and the 20+ existing parking spaces on-site are more than adequate to accommodate the proposed uses. The hours of operation will be typical working hours (9am-5pm) and will not interfere with the existing marine and trucking uses.

b. Staff Comment (Tom Errico, Traffic Engineer with T.Y. Lin): I have reviewed the projects (referring to 121 Cassidy Point Drive in addition to 128 Cassidy Point Drive) as it relates to the Conditional Use Standards and Conditions. Specifically, "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." As it relates to this specific standard, I find that the projects comply and will not substantially increase traffic and parking conditions.

2. 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

    a. Applicant Response: All of the proposed uses are internal to the buildings. There are no proposed changes to the site that would create noise, glare, dust, odors and lighting. All trash will be disposed of onsite using dumpsters. The only external improvement planned is to replace old windows/siding, repair the roof, and possibly paint the building.

    b. Staff Comment: The staff agrees that the proposed uses will not have an adverse impact as it relates to noise, glare, dust, sewage disposal, emissions to the air, odor, lighting or litter.

3. 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.

    a. Applicant Response: As the operations of proposed uses are all internal, these uses will not impact surrounding uses. There are only modest aesthetic changes proposed for the existing site, none of which will have an impact on the surrounding properties. The location of the loading dock will allow containers to sit comfortably on the property and not interfere with surrounding uses.

    b. Staff Comment: As this proposal involves reuse of an existing site with very limited exterior modifications, the staff finds the proposal to be compatible with surrounding uses and performance standards of the WPDZ.

The staff finds the proposal to be generally compliant with the city's general standards for conditional uses.

V. STAFF RECOMMENDATIONS

The Planning Division recommends approval of the conditional use application with the recommended condition 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 99-2018 relevant to the conditional use standards; and the testimony presented at the planning board hearing, the Planning Board finds that the plan **[is** or **is not]** in conformance with the conditional use standards of the land use code.

VII. ATTACHMENTS

STAFF REVIEW

1. T.Y. Lin Review Comment

APPLICANT'S SUBMITTAL

A. Cover Letter
B. Project Description
C. Application
D. Conditional Use Checklist
E. Proposed Uses
F. General Conditional Use Standards Narrative
G. WPDZ Conditional Use Standards Narrative
H. Purchase and Sale Agreement
I. Traffic Memo

PLANS

Plan 1 Site Plan

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

121 and 128 Cassidy Point Road - Conditional Use Traffic Review

Tom Errico <thomas.errico@tylin.com> Tue, Jul 3, 2018 at 9:03 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

Hi Matt – I have reviewed the projects as it relates to the Conditional Use Standards and Conditions. Specifically, *"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."* As it relates to this specific standard, I find that the projects comply and will not substantially increase traffic and parking conditions.

If you have any questions, please contact me.

Best Regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
T·Y LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
+1.207.781.4753 fax
thomas.errico@tylin.com
Visit us online at www.tylin.com
Twitter | Facebook | LinkedIn | Google+

"One Vision, One Company"

Kennebec Street Properties, LLC

P.O. Box 169 * Portland, Maine 04112
Phone: 207-671-5566 * Fax: 207-775-0022
asiawest@aol.com

Tuck O'Brien
City Planning Director
Portland Planning & Urban Development Dept.
389 Congress Street
Portland, Maine 04101

RE: WPDZ Conditional Use Appeal

May 4, 2018

Dear Tuck,

Next month, I will be purchasing the property at 128 Cassidy Point Drive (currently owned by PWS Holdings, the former owner of Advantage Gas). The attached application is for Conditional Use approval.

My proposal is to use the first floor of the building as a warehouse facility for Asia West (my import company), as the building is strategic located close to our retail location, port facilities, and the highway. I would further propose to use the 2nd floor of the building for some low impact industrial uses, as well as an accessory use (my personal office).

There is currently a shortage of small industrial and light manufacturing spaces for lease in the City, and my hope would be to meet the needs of 3 or 4 users on the 2nd floor of the building. The current configuration of the building is ideally set up for this dual use, with a separate entrance for the 2nd floor, and two fire-rated stairwells leading directly to the outside.

This property is unique in the WPDZ Zone, as it does not have direct waterfront access. As a result, the property has no value to a water-dependent user. As my proposed uses of the building are all internal, and will result in very little vehicular traffic, they will have no adverse impact on the existing water-dependent uses in this zone.

The existing property is a two-story, 13,880 square foot wooden building on .5345 acres. The property has a loading dock and a small paved parking lot adjacent to it, which can support approximately 20 vehicles. The property is bordered by railroad tracks on two sides, Sprague Energy on one side, and Cassidy Point Drive on one side.

The current user of the building is a Matheson Gas, who leases the building from PWS Holdings-Cassidy, LLC, and uses the building exactly as Advantage Gas used it before them (warehouse, showroom, and office facility).

Asia West, the primary user of the property, is an importer & merchant of home and garden accessories. Asia West opened on Commercial Street 25 years ago and currently engages in both wholesale and retail trade. They receive almost all of their inventory by sea container (Approximately 10-15 forty-foot containers annually). 128 Cassidy Point Drive is perfectly situated in close proximity to the Asia West retail location at 219 Commercial Street, the Eimskip Port Facility, and the highway.

Thank you for your consideration.

Sincerely,

Tod Dana
671-5566

Addendum to Conditional Use Letter Dated May 4, 2018

At the request of Barbara Barhydt, the following is a more detailed explanation of how my proposed uses of 128 Cassidy Point Drive will operate at the site:

Asia West will be occupy approximately 70% of the building (the entire 1rst floor and about 30% of the 2nd floor). Asia West has approximately 7 or 8 employees at any given time, but only 3 of them will be working at Cassidy Point. These employees (myself included) will receive and unload sea containers at the loading dock, which is contained within the parking area adjacent to the building. We currently receive about 1 container per month. The container is delivered by a freight company and picked up later the same day. After unloading, goods are either stored on premises, delivered to our retail location at 219 Commercial Street, or delivered to our customers. All of these deliveries are done with our 14' box truck. Between the periodic container arrival and the regular deliveries, I would estimate that our use of the building will result in 4-5 truck trips (coming and going) each day. This is less vehicular traffic than is generated by the current user, and certainly not enough traffic to have a material effect on Cassidy Point, given the 2 points of access.

The proposed 3-4 light industrial users of the 2nd floor will each be in spaces that are approximately 1000 square feet and will be staffed by one or two individuals, who will visit the site regularly to work normal business hours. Examples of light industrial uses I would pursue are: screen-printing studio, painting studio, and graphic design studio. The vehicular traffic generated by these additional users will also be light (5-10 vehicular trips per day).

The adjacent on-premise parking lot has room for almost 20 vehicles, which will more than accommodate the proposed uses.

In summary, I don't believe the proposed uses will result in any change in the circulation onsite, parking onsite, or the traffic generated.

Sincerely,

Tod Dana

Conditional Use for Planning Board Review
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 Conditional Use where the Planning Board is listed as the reviewing authority rather than the Zoning Board of Appeals. 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.

A. Conditional Use: Standards and Criteria – Section 14-474 and Zone Related Criteria

Conditional uses are listed in the Zoning Ordinance for each zone and these proposed uses must address the criteria contained in Section 14-474 in the written application. In addition to the criteria in Section 14-474, each application must address any applicable conditional use standards contained in the applicable zone and the proposed specific use. The Zoning Ordinance specifies when the Planning Board is designated as the reviewing authority rather than the Zoning Board of Appeals. This application is for Planning Board reviews only.

Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines 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.

B. Site Plan Application: <u>Please submit the Conditional Use Application in addition to the applicable Site Plan Application.</u>

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

Land Use Code: http://me-portland.civicplus.com/DocumentCenter/Home/View/1080
Design Manual: http://me-portland.civicplus.com/DocumentCenter/View/2355
Technical Manual: http://me-portland.civicplus.com/DocumentCenter/View/2356

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8719
planning@portlandmaine.gov

Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

PROJECT NAME:

ASIA WEST WAREHOOSE

PROPOSED DEVELOPMENT ADDRESS:

128 CASSIDY POINT ROAD

CHART/BLOCK/LOT (s): 72-A-002 **Applicable Zone:** WPDZ

CONTACT INFORMATION:

Applicant – must be owner, Lessee or Buyer Name: TOD DANA Business Name, if applicable: KENNEBEC ST PROP., LLC Address: PO BOX 169 City/State : PORTLAND Zip Code: 04112	**Applicant Contact Information** Work # 207.775.0066 Home# — Cell # 671.5566 Fax# e-mail: ASIAWEST@GMAIL.COM
Owner – (if different from Applicant) Name: PWS HOLDINGS-CASSIDY, LLC Address: 201 US RT. 1, PMB 307 City/State : SCARBOROUGH Zip Code: 04074	**Owner Contact Information** Work # Home# Cell # Fax# e-mail:
Billing Information Name: KENNEBEC ST. PROPERTIES Address: PO BOX 169 City/State : PORTLAND Zip Code: 04112	**Billing Information** Work # Cell # Fax# e-mail:

Designated person/person(s) for uploading to e-Plan:

Name: TOD DANA
e-mail: ASIAWEST@GMAIL.COM

Name:
e-mail:

Name:
e-mail:

RIGHT, TITLE OR INTEREST:

CONTRACT TO PURCHASE PROPERTY

(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.)

VICINITY MAP: (Please attach a map showing the subject parcel and abutting parcels, labeled as to ownership and/or current use.)

EXISTING USE: Describe the existing use of the subject property.

WAREHOUSE / SHOWROOM / OFFICE FOR MATHESON GAS

PROPOSED USE: Describe the proposed use of the subject property

WAREHOUSE + LIGHT MANUFACTURING

TYPE OF CONDITIONAL USE PROPOSED (Refer To Specific Provisions Of Land Use Code Authorizing The Proposed Conditional Use).

WAREHOUSING

LOW IMPACT INDUSTRIAL USES (PRINTING + LIGHT MANUFACTURING)

SITE PLAN: Submit a separate site plan application for the proposal that provides a site plan for the property, showing existing and proposed improvements, which meets the submission requirements of the applicable level of site plan review.

CONDITIONAL USE STANDARDS AND CONDITIONS – 14-474

Address the following criteria in your written application and any applicable conditional use standards contained in the zoning code for the specific use. Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines 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.

CONDITIONAL USE AUTHORIZED BY: SECTION 14- 319

Address any specific conditional use standards for the specific use contained in the zoning code in the written submission.

APPLICATION FEES:

✓ Conditional Use Review ($100.00) (Please submit a separate application for the applicable site plan review. Fees and charges are listed within the application)	The City invoices separately for the following: • Notices ($.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
		1	Completed Application Form
		1	Cover letter stating the nature of the project.
		1	Evidence of right, title and interest.
		1	Written Submittals that address the conditional use standards of Sec. 14-474.
		1	Written submittals that address any applicable standards of review contained in the zoning code for the specific use.
		1	A stamped standard boundary survey prepared by a registered land surveyor at a scale not less than one inch to 50 feet and containing the information required for the applicable level of site plan review.
		1	An accompanying site plan application, as applicable.

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 Conditional Use. 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:
[signature]	APRIL 30, 2018

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

Planning & Urban Development Department

CONDITIONAL USE APPLICATION FOR PLANNING BOARD REVIEW

Submit each Tab as one PDF file and bookmark the items as noted below
Please confirm by electronically checking the boxes to the left

Conditional uses are listed in the Zoning Ordinance for each zone and these proposed uses must address the criteria contained in Section 14-474 in the written application. In addition to the criteria in Section 14-474, each application must address any applicable conditional use standards contained in the applicable zone for the proposed use.

CONDITIONAL USE AND SUPPLEMENTAL DOCUMENTATION, AS APPLICABLE

TAB 1 – GENERAL APPLICATION DOCUMENTS

Checklist	Items to be Provided
Yes NA Plan [X]	PROJECT DESCRIPTION • Cover Letter with detailed project description
Yes NA Plan [X]	COMPLETED CHECKLIST - CONDITIONAL USE
Yes NA Plan [X]	RIGHT, TITLE AND INTEREST • Deeds, leases, or purchase and sales agreements

Tab 2 – CONDITIONAL USE STANDARDS AND CRITERIA

Checklist	Items to be Provided
Yes NA Plan [X]	TRAFFIC • Address volume and type of vehicle traffic to be generated, hours of operation, expanse of pavement, and number of parking spaces required are not substantially greater than would normally occur at surrounding uses or other allowable uses in the zone
Yes NA Plan [X]	ENVIRONMENTAL IMPACTS • Address use will not create unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.
Yes NA Plan [X]	DESIGN AND OPERATION • Address the design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generations, 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.
Yes NA Plan [X]	ZONE SPECIFIC CRITERIA • Cite and address zone specific conditional use standards for the proposed use.

Asia West Warehouse, 128 Cassidy Point Drive, Portland, Maine

Section. 14-319 Permitted uses

Under Section 14-319, we are requesting the follow permitted conditional uses:

Industrial:

- Warehousing
- Low Impact Industrial Uses
- Light Manufacturing
- Manufacture of products
- Storage of materials incidental to proposed uses
- Art and craft production
- Print making

Other

- Accessory uses customarily incidental and subordinate to the location, function and operation of permitted uses.

Asia West Warehouse, 128 Cassidy Point Drive, Portland, Maine

CONDITIONAL USE STANDARDS AND CONDITIONS – 14-474

Address the following criteria in your written application and any applicable conditional use standards contained in the zoning code for the specific use. Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines 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;

The proposed changes of use will have an insignificant impact on the traffic in this area. Cassidy Point Drive is a major intermodal transportation center with direct access to Route 1 and I-295. As the primary use of the building will be storage and light industrial uses, the vehicular traffic will be minimal and the 20+ existing parking spaces onsite are more than adequate to accommodate the proposed uses. The hours of operation will be typical working hours (9am-5pm) and will not interfere with the existing marine and trucking uses.

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

All of the proposed uses are internal to the buildings. There are no proposed changes to the site that would create noise, glare, dust, odors and lighting. All trash will be disposed of onsite using dumpsters. The only external improvement planned is to replace old windows/siding, repair the roof, and possibly paint the building.

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.

As the operations of proposed uses are all internal, these uses will not impact surrounding uses. There are only modest aesthetic changes

proposed for the existing site, none of which will have an impact on the surrounding properties. The location of the loading dock will allow containers to sit comfortably on the property and not interfere with surrounding uses.

Kennebec Street Properties, LLC

P.O. Box 169 * Portland, Maine 04112
Phone: 207-671-5566 * Fax: 207-775-0022
asiawest@aol.com

Tuck O'Brien
City Planning Director
Portland Planning & Urban Development Dept.
389 Congress Street
Portland, Maine 04101

RE: Conditional Use Standards 14-320

June 5, 2018

Dear Tuck,

As part of my Conditional Use appeal to use 128 Cassidy Point Drive as a warehouse facility for my import company (Asia West), as well as some light manuacturing, I respond below to the conditional use standards specific to the WPD zone:

> (a) Conditional uses shall be permitted in the Waterfront Port Development Zone, provided that, notwithstanding section 14-471(c), section 14-474(a), or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority.
>
> In addition to the provisions of section 14-474(c)(2) such uses will:

·Not impede or preclude existing or potential water-dependent development on other lots;

My proposed use in no way interferes with the current and future water-dependent uses of the neighboring lots. My proposed uses of warehousing and light manufacturing are completely internal uses that will have no effect on the abutters. I have no intention of expanding the exisiting footprint and my low impact uses will not result in a material change to vehicular traffic. 128 Cassidy Point Drive a is white elephant in this zone, as it does not have waterfront access and is bordered by the railroad on two sides, Sprague Energy on one side (huge pile of coal), and Cassidy Point Drive on one side. Future water-dependent development on other lots in the future will in no way be effected by my internal uses.

·Allow for adequate access to the water;

128 Cassidy Point Drive has no water access and my proposed uses are internal and will in now way interfere with access to the water.

·Be compatible with water dependent and marine uses;

My proposed use of warehousing for Asia West is completely compatible with Eimskip marine facility, as this is one of the shipping ports I receive sea shipments from. Almost all of my freight arrives via shipping containers.

·Operationally support one or more water dependent use(s), or be located in a building or structure that is physically adaptable or relocatable to make way for future development of water-dependent uses; and

As mentioned above, my use as a receiving and warehousing facility for ocean freight arriving in Portland is supportive of a water dependent use.

·Meet any additional performance and dimensional standards set forth below.

128 Cassidy Point Drive is in compliance with dimensional standards listed for Conditional Uses in this zone.

As far as performance standards are concerned, I will address each standard individually:

a) Outdoor storage: My uses will not result in the outdoor storage of commodities and other materials.
b) Noice: My use of the property will be internal only and operate during normal business hours. We will be in total compliance with noise regulations.
c) Vibration: My uses will not result in any vibrations that would be felt outside of the building.
d) Environmental regulations: Our uses will be in comliance with all state and federals regulations.
e) Discharge into harbor areas: 128 Cassidy Point Drive does not have waterfront access and our uses do not involve discharges of any sort.
f) Storage of vehicles: No unregistered vehicles will be stored on the premises.
g) Landfill of docking & berthing areas: N/A
h) Off-street parking: 128 Cassidy Point has a private, 20 car, paved parking lot abutting the building which will more than accommodate the 1rst floor warehouse staff and 2nd floor light manufacturing users.
i) Off-street loading: The building has an off-street loading dock.
j) Flood Plain Regulations: N/A
k) Lighting: All current and future lighting will be shielded so as not to interfere with vessel navigation.
l) Signage: Any signage will be in compliance with division 22 of this article.
m) Storage of pollutants: No pollutants will be stored on premises.

n) Compatibility with marine uses: Circulation, parking, dumpsters, exterior storage, and loading facilities will in no way interfere with existing or future marine or non-marine uses, as our vehicular traffic will be light, and all storage, loading, and parking facilities are off-street.
o) Design & visual character: We have no plans to change the existing building's height or footprint. Our only plans are to replace windows.

Please let me know if I can provide more clarification on any of these points.

Sincerely,

Tod Dana
671-5566

CONTRACT FOR THE SALE OF COMMERCIAL REAL ESTATE

RECEIVED from Asia West, a Maine corporation or its assigns/nominees (hereinafter called "Purchaser"), this 10th day of November, 2017, the sum of Ten Thousand Dollars ($10,000) as earnest money deposit toward purchase and sale of certain real estate owned by PWS Holdings-Cassidy, LLC, a Maine limited liability company (hereinafter called the "Seller") and located at 128 Cassidy Point Road in the City of Portland, County of Cumberland and State of Maine, and described as follows:

A 13,880 +/- SF commercial building along with .5345 +/- acres of land and being more fully described at said County Registry of Deeds in Book 25722, Page 254 and Book 25722, Page 252, and upon the terms and conditions indicated below.

1. PERSONAL PROPERTY: The following items of personal property are included in this sale (if applicable): None

2. PURCHASE PRICE: The total Purchase Price [redacted], with payment made as follows:

   Earnest money to be delivered as of the date hereof: [redacted]
   Earnest money to be delivered upon completion of satisfactory due diligence under Section 10 [redacted]
   Balance due at closing, in immediately-available funds: [redacted]

3. EARNEST MONEY/ACCEPTANCE: NAI The Dunham Group ("Escrow Agent") shall hold the earnest money in a non-interest bearing account and act as escrow agent until closing. This offer shall be valid until Friday, November 17,2017 at 5 pm. In the event of Seller's non-acceptance of this offer, the earnest money shall be returned promptly to Purchaser.

4. TITLE: Within 60 days of the Effective Date (the "Title Review Period"), Purchaser shall notify Seller in writing (the "Title Objection Notice") of any matters affecting title to the property that are objectionable to Purchaser in Purchaser's sole discretion ("Title Defects"). Purchaser shall be deemed to have waived the right to object to any matter affecting title as of the Effective Date, except for any mortgage, tax lien, mechanics' lien, judgment lien, or other liens encumbering the property (for which no objection is required), if Purchaser fails to specifically identify such matters in the Title Objection Notice (each matter not objected to being a "Permitted Encumbrance"). Within seven (7) days of Seller's receipt of the Title Objection Notice, Seller shall notify Purchaser in writing whether or not Seller elects to cure any of the matters identified in the Title Objection Notice. If Seller elects to cure certain Title Defects, Seller shall use good faith efforts to cure such Title Defects and shall have a period of not more than thirty (30) days after notice of Seller's election within which to cure any such Title Defects (the "Title Cure Period"), and the Closing Date shall be extended until five (5) days after the expiration of the Title Cure Period. Seller agrees that, after the Effective Date, it shall not permit or suffer encumbrance of the property with any liens, easements, leases or other encumbrances without Purchaser's prior written consent. On or before the Closing Date, Seller shall remove, at its sole cost, any such matters affecting the title to the property suffered or created by or consented to by Seller after the Effective Date that are not approved in writing by Purchaser. If Seller elects not to cure any Title Defects or if Title Defects which Seller elects to cure are not cured within the Title Cure Period, then Purchaser shall elect, by written notice to Seller on or before the Closing Date, as the same may be extended, either (i) to accept title to the property subject to such uncured Title Defects without reduction of the purchase price and without any liability on the part of Seller therefor, in which case such Title Defects shall be Permitted Encumbrances, or (ii) to terminate this Contract, whereupon the earnest money immediately shall be returned to Purchaser and neither party shall have any further obligations under this Contract.

5. DEED: In return for payment in full of the purchase price, Seller shall convey the property to Purchaser on June 29, 2018 ("Closing Date"), by Maine Statutory Short-Form Quit Claim Deed with Covenant (the "Deed"), and the parties agree to execute and deliver on the Closing Date title insurance affidavits, evidences of authority and such other documents that are customary and/or reasonably necessary to complete the conveyance. It is a condition to Purchaser's obligations hereunder that title to the property shall be free and clear of all liens and encumbrances except for the following matters and otherwise in compliance with the requirements of this Contract: (i) zoning restrictions and land use laws and regulations and permits and approvals issued pursuant thereto; and (ii) current taxes and assessments attributable to periods from and after the Closing, which Purchaser shall be liable to pay; (iii) any Permitted Encumbrance.

6. [Reserved]

7. POSSESSION/OCCUPANCY: Possession/occupancy of property shall be given to Purchaser on July 1, 2018 at 12:00 am, unless otherwise agreed by both parties in writing.

8. RISK OF LOSS: Until transfer of title, the risk of loss or damage to the property by fire or otherwise is assumed by Seller unless otherwise agreed in writing. The property shall at closing be in substantially the same condition as of the Effective Date, excepting reasonable use and wear. If the property is materially damaged or destroyed prior to closing, Purchaser may either terminate this

 Buyer's Initials T·D Seller's Initials DMZ

Contract and be refunded the earnest money deposit, or close this transaction and accept the property in its as-is condition together with an assignment of the Seller's right to any insurance proceeds relating thereto.

9. PRORATIONS: The following items shall be prorated as of the Closing Date:

   a. Real Estate Taxes based on the municipality's tax year. Seller is responsible for any unpaid taxes for prior years.
   b. Fuel
   c. Metered utilities, such as water and sewer, shall be paid by the Seller through the date of closing;
   d. Purchaser and Seller shall each pay one-half of the transfer tax as required by the laws of the State of Maine.
   e. Rents, estimated monthly common area maintenance charges, estimated monthly property tax payments, and all other additional revenue received by Seller pursuant to leases of the property.

10. DUE DILIGENCE: Purchaser is advised to seek information from professionals regarding any specific issue of concern. Purchaser acknowledges receipt of property disclosure form attached hereto. Neither Seller nor the Real Estate Licensees identified below make any representations or warranties regarding the condition, permitted use or value of Seller's real or personal property. Purchaser's obligation to close under this Contract is conditioned upon Purchaser's satisfaction with its investigations of the property, which may without limitation include survey, environmental assessment, engineering studies, wetlands or soils studies, zoning compliance or feasibility, and code compliance, all within ninety (90) days of the Effective Date.

    To facilitate Purchaser's inspections and evaluation of the Property, Seller agrees to deliver to Purchaser as soon as possible, but in any event within seven (7) days from the Effective Date, copies of all surveys, plans, inspections, studies, environmental reports, title reports/policies, governmental notices or other correspondence pertaining to the Property within Seller's possession or control.

    All investigations will be done by professionals chosen and paid for by Purchaser. If the result of any investigation is unsatisfactory to Purchaser in its sole discretion, Purchaser may declare this Contract null and void by notifying Seller in writing within the specified number of days set forth above, and said earnest money shall be promptly returned to Purchaser. If Purchaser does not notify Seller that Purchaser's investigations are unsatisfactory within the time period set forth above, this contingency is waived by Purchaser, and Purchaser shall promptly deliver an additional Fifteen Thousand Dollars ($15,000.00) as an additional escrow money deposit. In the absence of any investigations(s) mentioned above, Purchaser is relying completely upon Purchaser's own opinion as to the condition of the property. Purchaser agrees to restore any disturbance to the property caused by Purchaser's investigations, and Purchaser agrees to indemnify and hold Seller harmless for any claims, damages, losses or costs, including without limitation reasonable attorneys' fees, incurred or suffered by Seller as a result of Purchaser's investigations of the property, which indemnification obligation shall survive termination or closing under this Contract.

11. ZONE CHANGE: This Contract is subject to Purchaser, within one hundred fifty (150) days of the Effective Date, obtaining from any federal, state, or local governmental authority any non-appealable zoning change(s) and/or permits and/or approvals whatsoever that Purchaser, in its sole discretion, deems advisable for Purchaser's intended development of the Property ("Governmental Approvals"). If Purchaser is unable to so obtain the Governmental Approval, Purchaser may declare this Contract null and void by notifying Seller in writing within said 150 day period, and said earnest money of $25,000.00 shall be promptly returned to Purchaser. Seller hereby agrees to fully support and cooperate with Purchaser's efforts to obtain the Governmental Approvals, and agrees to promptly execute any document reasonably requested by Purchaser in connection with any such efforts by Purchaser, all at no cost or charge to Purchaser.

12. FINANCING: Notwithstanding anything to the contrary contained in this Contract, Purchaser's obligation to close hereunder is conditioned upon Purchaser's obtaining within sixty (60) days from the Effective Date of this Contract (the "Commitment Date") a written commitment (the "Commitment") from a lender for a mortgage on terms reasonably acceptable to Purchaser. In the event the Purchaser is unable to obtain the Commitment and Purchaser notifies Seller thereof by the Commitment Date, then Escrow Agent shall immediately return the earnest money to Purchaser, this Contract shall terminate, and neither party shall be under any further obligation under this Contract. It shall be a further condition of Purchaser's obligation to close hereunder that the Commitment shall not lapse, be terminated and/or withdrawn prior to the Closing Date for any reason whatsoever, including but not limited to the property failing to appraise at or above the Purchase Price, or any such other level acceptable to Purchaser and Purchaser's lender sufficient to support the Commitment. In the event the Commitment shall lapse, be terminated and/or withdrawn by Purchaser's lender for any reason (other than at the request of Purchaser) at any time prior to the Closing Date, Purchaser shall notify Seller of such notice of lapse, termination and/or withdrawal, and upon such notification Purchaser may, at Purchaser's option, elect to terminate this Contract and thereafter the earnest money immediately shall be returned to Purchaser and neither party shall have any further obligation under this Contract. This contingency benefits Purchaser only, and only Purchaser may waive it by providing written notice to Seller specifically waiving this condition and contingency or any part thereof.

13. AGENCY DISCLOSURE: NAI The Dunham Group is the only brokerage involved in this transaction. All commissions are the responsibility of the Seller and will be paid at closing or transfer of title.

Buyer's Initials T-D Seller's Initials

14. DEFAULT: If the sale of the property as contemplated hereunder is not consummated solely by reason of Purchaser's default hereunder, provided that Seller is then ready, willing and able to consummate the sale of the property as contemplated by this Contract and provided further that all conditions to Purchaser's obligation to consummate such purchase have been satisfied or waived by Purchaser, Seller shall be entitled to either (i) pursue any and all legal and/or equitable remedies or (ii) terminate this Contract and receive the earnest money as full and complete liquidated damages for the breach of this Contract, it being agreed between the parties that the actual damages to Seller in the event of such breach are difficult to ascertain and/or prove and the earnest money is a reasonable estimate and forecast of such actual damages. The parties acknowledge that the payment of the earnest money is not intended as a forfeiture or penalty, but is intended to constitute liquidated damages to Seller. In the event of an undisputed default by either party, the Escrow Agent may deliver the earnest money to the party entitled to it under this Contract, with written notice to both parties pursuant to Maine Real Estate Commission regulations. If a dispute arises between Purchaser and Seller as of the existence of a default hereunder and said dispute is not resolved by the parties within thirty (30) days, the Escrow Agent may elect to file an action in interpleader and deposit the earnest money in the court to resolve said dispute, or otherwise disburse the earnest money pursuant to Maine Real Estate Commission regulations. Purchaser and Seller, jointly and severally, shall indemnify Escrow Agent for all costs, losses, expenses, and damages, including reasonable attorneys' fees, incurred by the Escrow Agent in connection with said action and/or in connection with any dispute relating to this Contract and/or the earnest money.

15. MEDIATION: Any dispute or claim arising out of or relating to this Contract or the property addressed in this Contract shall be submitted to mediation in accordance with the Maine Residential Real Estate Mediation Rules of the Maine Association of Dispute Resolution Professionals or its successor organization. This clause shall survive the closing of this transaction.

16. PRIOR STATEMENTS: This Contract sets forth the entire agreement between the parties, and there are no other representations, agreements or understandings with respect to the subject matter of this Contract. This Contract shall be construed according to the laws of the State of Maine.

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

18. COUNTERPARTS: This Contract may be signed on any number of identical counterparts, including telefax copies and electronically transmitted copies with the same binding effect as if all of the signatures were on one instrument.

19. EFFECTIVE DATE: This Contract is a binding contract when signed by both Seller and Purchaser and when that fact has been communicated to all parties or to their agents. Time is of the essence of this Contract. Seller or Licensees are given permission by the parties to complete the Effective Date blank below with the date of the last signature of the parties, and that date shall be the Effective Date for all purposes under this Contract, and if that blank is not completed, then the Effective Date shall be the date of the last signature of the parties. Except as expressly set forth to the contrary in this Contract, the use of the term "days" in this Contract, including all addenda made a part hereof, shall mean calendar days. Deadlines in this Contract, including all addenda, expressed as "within x days" or the like shall be counted from the Effective Date, unless another starting date is expressly set forth, beginning with the first day after the Effective Date, or such other established starting date, and ending at 5:00 pm, Eastern Time, on the last day counted.

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

21. A copy of this Contract is to be received by all parties and, by signature, receipt of a copy is hereby acknowledged. If not fully understood, consult an attorney.

22. Seller acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2 1/2 % of the consideration unless Seller furnishes to Purchaser a certificate by the Seller stating, under penalty of perjury, that Seller is a resident of the State of Maine or the transfer is otherwise exempt from withholding.

23. ADDENDA: This Contract has addenda containing additional terms and conditions. Yes ____ No X .

24. OTHER PROVISIONS:

The existing Tenant at the Property, Matheson Gas, agreed to forfeit all rights to the property and shall vacate the premises on or before ~~the Closing Date~~. JULY 1, 1918 UNLESS AGREED TO BY ALL PARTIES. T.D.

Buyer's Initials T.D Seller's Initials DRM

Purchaser agrees to take title to the property subject to the reservations, conditions, covenants and agreements set forth in the two deeds referenced in the preamble of this contract and agrees to assume the indemnification obligations set forth in the deeds. All such items shall be construed as Permitted Encumbrances.

The parties agree that none of the above are collateral agreements. It is the intent of the parties that except as expressly set forth in this Contract, all covenants, representations, statements and obligations of both parties herein shall not survive closing.

Asia West or its assigns/nominees

ASIA WEST, INC.
Legal Name of Purchaser

By: _____
Signature

THOMAS DANA / PRESIDENT
Name/Title, there unto duly authorized

Seller accepts and agrees to the terms and conditions set forth in this Contract and agrees to pay the Licensees the commission for services according to the terms of the listing agreement or if there is no listing agreement.
In the event the earnest money is forfeited by Purchaser, it shall be evenly distributed between (1) Licensees and (2) Seller; provided, however, that the Licensees' portion shall not exceed the full amount of the commission specified.

Signed this 27 day of November, 2017.

PWS Holdings – Cassidy, LLC

PWS HOLDINGS - CASSIDY, LLC
Legal Name of Seller

By: _____
Signature

DAVID P. MACDONALD - PRESIDENT
Name/Title, thereunto duly authorized

NAI The Dunham Group

Legal Name of Escrow Agent

Name/Title, thereunto duly authorized

By: _____
Signature

EFFECTIVE DATE OF THIS CONTRACT: NOV. 27, **2017.**

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Buyer's Initials T.D. Seller's Initials DPM

DEXTROUS
CREATIVE

June 28, 2018

Matt Grooms
Planning Department
City of Portland
389 Congress Street
Portland, ME 04101

RE: 128 CASSIDY POINT DRIVE

Dear Mr. Grooms,

My client Kennebec Street Properties, LLC, recently purchased 128 Cassidy Point Drive and is seeking a change of use which will reduce traffic to the area. Cassidy Point Drive is a major intermodal transportation center with direct access to Route 1 and I-295.

The proposed uses will have a reduced impact over the current use, the Advantage Gas. The number of trips generated by the new uses will reduce the number of trips from over 330 per day down to 48 per day. The hours of operation, pavement and number of parking spaces will not interfere with the neighboring marine and trucking uses.

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;

ADVANTAGE GAS AVERAGE DAILY CUSTOMER TRIPS (DATA PROVIDED BY PREVIOUS TENANT)
Employees working onsite (20-24): 22 x 2 = 44
Company-owned delivery vehicles (2): 2 x 12 = 24
Supplier deliveries (6-10): 8 x 2 = 16
Walk-in customers: (100-150): 125 x 2 = 250
Total vehicular trips daily (M-F): 334

PROPOSED AVERAGE DAILY TRIPS
Asia West & 3 or 4 light Industrial user vehicular trips per day:
Total employees working onsite (10): 10 x 2 = 20
AW company-owned delivery vehicles (1): 1 x 12 = 12
AW Supplier deliveries (2): 2 x 2 = 4
AW customers: (2): 2 x 2 = 4
4 Industrial user's supplier deliveries: (4): 4 x 2 = 8
Total vehicular trips daily (M-F): 48

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

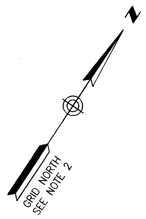
All of the proposed uses are internal to the buildings. There are no proposed changes to the site that would create noise, glare, dust, odors and lighting. All trash will be disposed on using dumpsters.

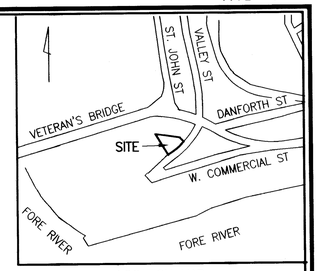
The design and operation of the proposed use, including but not limited to landscaping, screening, signs, loading, deliveries, trash or waste generation, arrangement of structures, and materials storage will not have a substantially greater effect/impact on surrounding properties than those associated with surrounding uses or other allowable uses in the zone.

There are no external changes proposed to the existing site and the site will have no impact on the surrounding properties.

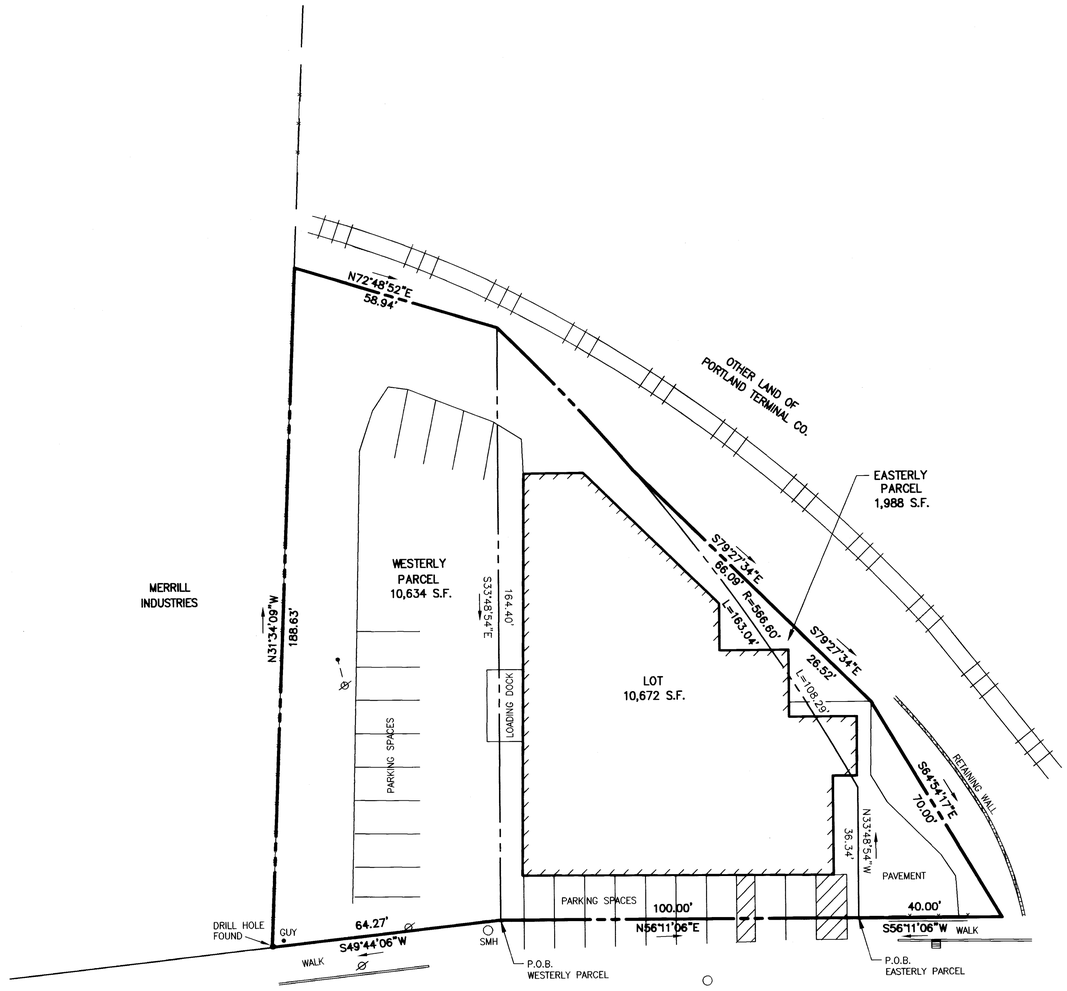
Sincerely,

Tracie J. Reed, Maine Licensed Architect, NCARB
Dextrous Creative, LLC





LOCATION MAP
N.T.S.



DANFORTH STREET
PAVED – PUBLIC 66' WIDE

State of Maine, Cumberland SS.
Registry of Deeds
Received DECEMBER 8, 20 04
at 2 h. 11 m. P M and recorded in
Plan Book 204 Page 882
Attest: John B. O'Brien Register

LEGEND:

- UTILITY POLE
- MANHOLE
- CATCH BASIN
- FENCE
- CURB

GRAPHIC SCALE
0 10' 20' 40' 80'

PLAN REFERENCES:

1. LAND OF PORTLAND TERMINAL COMPANY ON THE NORTH SIDE OF DANFORTH STREET NEAR VAUGHNS BRIDGE PORTLAND MAINE DATED SEPTEMBER 23, 1926 RECORDED IN PLAN BOOK 17 PAGE 29.
2. LAND TITLE SURVEY ON DANFORTH AND WEST COMMERCIAL STREETS PORTLAND, MAINE MADE FOR RECORD OWNER: MERRILL INDUSTRIES, INC. DATED JAN. 27, 2003 REVISED THROUGH 10-26-04 BY OWEN HASKELL, INC.
3. STANDARD BOUNDARY SURVEY FOR PROPOSED ELECTRICAL SUBSTATION WEST COMMERCIAL STREET PORTLAND MAINE MADE FOR CENTRAL MAINE POWER COMPANY DATED JAN. 2004 BY TITCOMB ASSOCIATES.

NOTES:

1. OWNER OF RECORD: DAVID R. MAC DONALD ET ALS. BOOK 7890 PAGE 25
2. BEARINGS ARE GRID BASED ON MARKERS FOUND AS SHOWN ON PLAN REFERENCE 3.

CERTIFICATION:

OWEN HASKELL, INC. HEREBY CERTIFIES THAT THIS PLAN IS BASED ON, AND THE RESULT OF, AN ON THE GROUND FIELD SURVEY AND THAT TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, IT CONFORMS TO THE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS CURRENT STANDARDS OF PRACTICE.

11-29-04
DATE

WILLIAM C. SHIPPEN, PLS #2118

STATE OF MAINE
WILLIAM C. SHIPPEN
No. 2118
PROFESSIONAL LAND SURVEYOR

LAND IN PORTLAND, MAINE
OWNER OF RECORD:
PORTLAND TERMINAL COMPANY
TO
DAVID R. MACDONALD
JOAN F. MULLER
BARBARA J. SAABYE
SCALE: 1"=20' DATE: OCT. 27, 2004

OWEN HASKELL, INC.
16 CASCO ST., PORTLAND, ME 04101 (207)774-0424
PROFESSIONAL LAND SURVEYORS

Drwn By	WCS	Date	Job No.
Trace By	RWC	OCT. 27, 2004	2004-239P
Check By	WCS	Scale	Drwg. No.
Book No.	FILE	1" = 20'	1

PLANNING BOARD REPORT
PORTLAND, MAINE

WPDZ Conditional Use
121 Cassidy Point Drive
Administrative Authorization and Conditional Use Applications
84-2018
Cyrus Hagge, Applicant

Submitted to: Portland Planning Board: Public Hearing Date: July 10, 2018	Prepared by: Matthew Grooms, Planner Date: July 6, 2018

I. INTRODUCTION

Cyrus Hagge has submitted an administrative authorization and conditional use application for his property at 121 Cassidy Point Drive for conversion of the former CoachWorks facility for use by small-scale light industrial operations geared towards craft persons, marine businesses and small trades. The planned re-use of this property is in two phases. The first phase involves reuse of the existing site and buildings. The second phase, anticipated to begin in Spring of 2019, involves demolition of the existing wooden structure on-site and replacement with a new metal building.

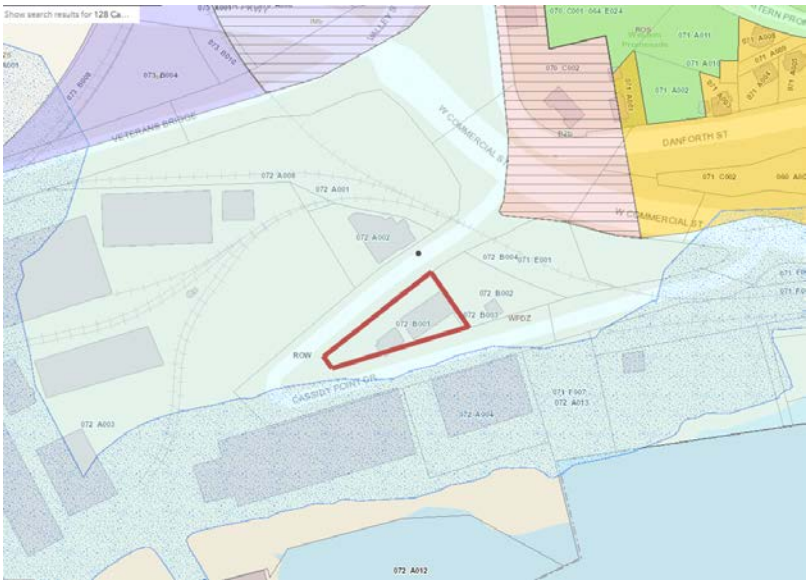


Figure 1: Proposed development site with zoning context

This property is located within the Waterfront Port Development Zone (WPDZ) and is subject to the zone specific and general conditional use standards due to the proposed uses which are identified as conditional uses within the WPDZ. Zone specific standards are intended to ensure adequate waterfront access to water-dependent and marine-related users while the general standards facilitate site compatibility between conditional uses and uses permitted by right. Conditional use applications, when submitted in conjunction with a site plan or administrative authorization, are required to go before the Planning Board for review and approval.

A total of thirty-eight (38) notices were sent to property owners within 500 feet of the site and interested party list. A legal ad ran on July 2nd and 3rd, 2018 of the Portland Press Herald. As of the writing of this report, no public comments have been received by the Planning Office.

Applicant Name	Cyrus Hagge, Project Management, INC

II. PROJECT DATA

Existing Zoning	Waterfront Port Development Zone (WPDZ)
Existing Use	Previously occupied by Advantage Gas Works and Matheson Gas
Proposed Use	Warehouse/Light Industrial
Parcel Size	.575 Acres
Building Size	6,903 SF
Number of Units to be Demolished	None
Building Footprint	5,237 SF (1924), 1,666 SF (1910)

III. PROPOSED PROJECT DESCRIPTION

The former CoachWorks site consists of two separate structures, including a 5,237 square foot metal building constructed in 1924 that features 6 large overhead doors along and a smaller 1,666 square foot two-story wooden structure constructed in 1910. The current use of the property is auto and truck repair with an office on the upper level of the wood frame structure. Other current uses of this property include boat repair, boat storage, auto parts, auto body repair shop, storage of fishing equipment and multi-use storage. The majority of this lot is paved.

Figure 2: Site at present with wood frame building at right and metal building at left

Under this proposal, the applicant is seeking to reuse the site in its existing condition for a limited period of time, with future redevelopment of a portion of the site anticipated for early next year. According to the applicant, the goal of this project is to provide small 1,000 to 2,500 square foot spaces for users engaged in small trade, craft and marine businesses. The primary tenant will be SailMaine, who is seeking to relocate to this site, and they are requesting conditional use approval for marine repair services, yacht brokerage, boat storage and the storage and repair of fishing equipment. Other potential users encompass welding and metal working/fabrication, carpentry/cabinet shops and craft production and print making.

Traffic impacts and parking needs are anticipated to be significantly less than those of the previous tenant, CoachWorks. The estimated number of weekday trips will decline from more than 250 down to approximately 60, and the parking analysis shows a similar decline, with 20 spaces needed as opposed to 30 previously. The site at present features sufficient space to accommodate this need.

IV. DEVELOPMENT REVIEW

The proposed uses, which include warehousing and low impact industrial uses are identified as conditional uses under Section 14-319. Permitted Uses under the WPDZ zoning regulations. As a result, this development proposal is subject to the zone specific conditional use standards, Section 14-320, and the general standards for conditional uses, Section 14-474. The applicant's responses to these standards are included as Attachments A and B respectively. A separate administrative authorization application was filed for review of the site plan, which is not subject to Planning Board review.

A. ZONE SPECIFIC CONDITIONAL USE STANDARDS – SEC. 14-320(a)

The project site is located in the Waterfront Port Development Zone (WPDZ) and does not feature direct water access. As identified within the application, conditional use approval is being sought for the following uses:

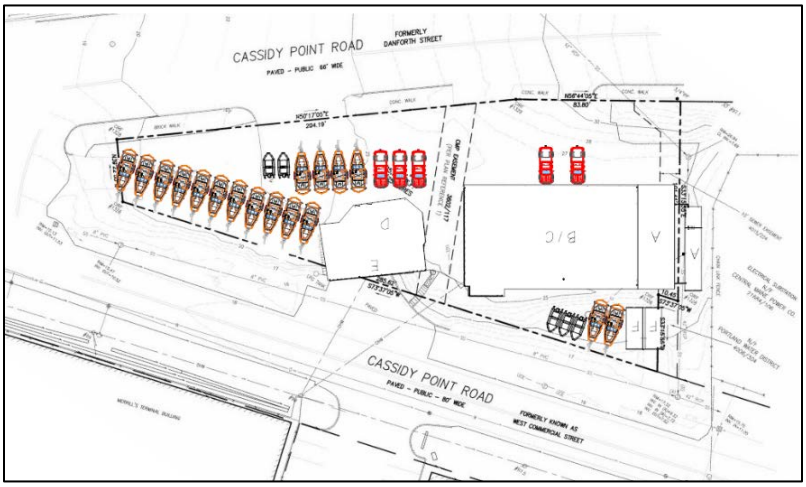


Figure 3: Proposed site plan showing areas for boat storage

Marine:

- Marine repair and machine shops
- Marine retail and wholesale sales
- Boat storage facilities
- Fabrication, storage and repair of fishing equipment.

Industrial:

- Low impact industrial uses
- Light manufacturing
- Manufacture of products
- Welding and metal fabrication
- Storage of materials incidental to proposed uses
- Carpentry, woodworking and cabinet shops
- Art and craft production
- Print Making

Uses identified as conditional uses within this zone are subject to five additional standards that are intended to ensure water access to water-dependent and marine-related users. Those standards are as follows:

In addition to the provisions of section 14-474 (c)(2) such uses will:

1. Not impede or preclude existing or potential water-dependent development on other lots;
    a. Applicant Response: 121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

    b. Staff Comment: The development site, 121 Cassidy Point Drive is unique in the context of the WPDZ as it has no direct water access and existing rights-of-way provide ample access for other users. All non-marine uses being proposed are to be housed entirely within the existing structures and will in no way impede water-dependent development on other lots. Marine-related activities associated with SailMaine will occur outside of the two structures.

2. Allow for adequate access to the water;
    a. Applicant Response: 121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

b. Staff Comment: See previous staff comment.

3. Be compatible with water dependent and marine uses;
    a. Applicant Response: 121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

    b. Staff Comment: The primary tenant for this facility is a marine-related enterprise that will benefit from its location within the WPDZ. Other uses being proposed do not preclude marine-related and water-dependent development and are uses typical of an industrial port zone.

4. Operationally support one or more water dependent use(s), or be located in a building or structure that is physically adaptable or relocatable to make way for future development of water-dependent uses; and
    a. Applicant Response: 121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

    b. Staff Comment: As stated in the previous staff comment, SailMaine is a marine-related use that will benefit from its location and benefit other marine-related and water-dependent users. Proposed activities include marine repair, yacht brokerage, boat storage and the storage and repair of fishing equipment.

5. Meet any additional performance and dimensional standards

    a. Outdoor Storage: All storage of materials shall be indoors or in sealed storage containers with no offsite runoff

        - Staff Comment: Applicant's proposal features exterior storage of boats and marine equipment, identified within certain locations on-site. Storage of this equipment is not to occur higher than 45 feet above grade. Non-marine activities will be housed entirely within existing structures.

    b. Noise: All onsite conditional uses shall be indoor and will not exceed the maximum 55 decibel level

    c. Vibration: All on site vibration shall be imperceptible without instruments at lot boundaries.

    d. Environmental Regulations: The proposed changes of use will comply with all federal and state environmental statutes and regulations.

    e. Discharge into Harbor areas: The proposed changes of use will not discharge into the harbor water areas.

    f. Storage of vehicles: No unregistered vehicles will be stored on the premises for more than 60 days.

    g. Landfill of docking & berthing areas: N/A

h. Off-street parking: All off street parking shall meet the standards of Division 20 (off-street parking).

- Staff Comment (Tom Errico, Traffic Engineer with T.Y. Lin): I have reviewed the projects (referring to 121 Cassidy Point Drive in addition to 128 Cassidy Point Drive) as it relates to the Conditional Use Standards and Conditions. Specifically, "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." As it relates to this specific standard, I find that the projects comply and will not substantially increase traffic and parking conditions.

i. Off-street loading: All off-street loading shall meet the standards of Division 21.

j. Flood plain regulations: This property does not have waterfront access and is not located in the flood plain.

k. Lighting: All lighting shall be shielded to prevent direct light sources from interfering with vessels transiting the harbor. These sources will not have an adverse impact on adjacent residential zones.

- Staff Comment: At this point in time, a lighting plan has not been provided. As part of the administrative authorization review, the staff will request additional information on site lighting and will require that any future lights be compliant with Section 10 of the City's Technical Manual.

l. Signage: Any signage will be in compliance with Division 22 of this article.

m. Storage of pollutants: There will not be storage of pollutants or oily wastes on site.

n. Compatibility with marine uses: The proposed conditional uses are compatible with nearby marine uses.

- Staff Comment: The applicant has indicated that all non-marine operations will be internal to the building and that there shall be no exterior storage of materials related to those uses.

o. Design and visual character: Outside of a new entrance door, no new structures or exterior changes are proposed as part of this application.

- Staff Comment: The staff notes that Phase II of this development will involve demolition of the existing wood frame structure and construction of a new metal building. At that time, the design and visual character standard shall apply.

The staff finds the proposal to be compliant with all applicable zone specific conditional use standards.

B. GENERAL CONDITIONAL USE STANDARDS – SEC. 14-474

All conditional uses are subject to the general conditional use standards as listed under Section 14-474, which are intended to ensure compatibility and integration of a conditional use with other surrounding uses permitted by right. This is achieved through three separate standards related to traffic/parking impacts, unsanitary or harmful conditions and site design. The specific standards are as follows:

1. 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;

    a. Applicant Response: The proposed changes of use willreduce the amount of traffic in this area. Cassidy Point Drive is a major intermodal transportation center with direct access to Route 1 and I-295. The proposed uses will have a reduced impact over the current use, the Coachworks auto and truck repair business. The number of trips generated by the new uses, will reduce the number of trips from over 250 per day down to 60 per day. The hours of operation, pavement and number of parking spaces will not interfere with the neighboring marine and trucking uses.

    b. Staff Comment (Tom Errico, Traffic Engineer with T.Y. Lin): I have reviewed the projects (referring to 121 Cassidy Point Drive in addition to 128 Cassidy Point Drive) as it relates to the Conditional Use Standards and Conditions. Specifically, "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." As it relates to this specific standard, I find that the projects comply and will not substantially increase traffic and parking conditions.

2. 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

    a. Applicant Response: All of the proposed uses are internal to the buildings, except for the outdoor storage of boats. There are no proposed changes to the site that would create noise, glare, dust, odors or lighting. All trash will be disposed of using dumpsters. The only external improvement is to bring in a new sewer line from lower Cassidy Point Drive to the large building.

    b. Staff Comment: The staff agrees that the proposed uses will not have an adverse impact as it relates to noise, glare, dust, sewage disposal, emissions to the air, odor, lighting or litter. As a condition of approval, the staff is suggesting that additional information be provided regarding site lighting and the location of exterior waste receptacles.

3. 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.

a. Applicant Response: There are no changes proposed to the existing site and the site will have no impact on surrounding properties.

b. Staff Comment: As this proposal involves reuse of an existing site with very limited exterior modifications, the staff finds the proposal to be compatible with surrounding uses and performance standards of the WPDZ.

The staff finds the proposal to be generally compliant with the city's general standards for conditional uses and is suggesting one condition of approval related to site lighting and siting of exterior waste storage.

V. STAFF RECOMMENDATIONS

The Planning Division recommends approval of the conditional use application with the recommended condition 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 84-2018 relevant to the conditional use standards; and the testimony presented at the planning board hearing, the Planning Board finds that the plan **[is** or **is not]** in conformance with the conditional use standards of the land use code, subject to the following conditions of approval that must be met prior to the issuance of a certificate of occupancy:

1. The applicant shall provide updated information regarding future site lighting, specifically the location of lighting and relevant lighting details demonstrating compliance with Section 10 of the Technical Manual.

2. The applicant shall provide an updated site plan showing the location of the proposed dumpster along with details for its enclosure, demonstrating compliance with the site plan ordinance

VII. ATTACHMENTS

STAFF REVIEW

1. T.Y. Lin Review Comment

APPLICANT'S SUBMITTAL

A. Cover Letter
B. Project Description
C. Application
D. Conditional Use Checklist
E. Proposed Uses
F. General Conditional Use Standards Narrative
G. WPDZ Conditional Use Standards Narrative
H. Purchase and Sale Agreement
I. Traffic Memo

PLANS

Plan 1 Site Plan

Portland Maine Yes. Google's good here.

Matthew Grooms <mgrooms@portlandmaine.gov>

121 and 128 Cassidy Point Road - Conditional Use Traffic Review

Tom Errico <thomas.errico@tylin.com> Tue, Jul 3, 2018 at 9:03 AM
To: Matthew Grooms <mgrooms@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Barbara Barhydt <bab@portlandmaine.gov>

Hi Matt – I have reviewed the projects as it relates to the Conditional Use Standards and Conditions. Specifically, *"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."* As it relates to this specific standard, I find that the projects comply and will not substantially increase traffic and parking conditions.

If you have any questions, please contact me.

Best Regards,

Thomas A. Errico, PE
Senior Associate
Traffic Engineering Director
T·Y LIN INTERNATIONAL
12 Northbrook Drive
Falmouth, ME 04105
+1.207.781.4721 main
+1.207.347.4354 direct
+1.207.400.0719 mobile
+1.207.781.4753 fax
thomas.errico@tylin.com
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"One Vision, One Company"

CYRUS Y. HAGGE
225 Commercial Street, Suite 502
Portland, Maine 04101-4613
207-274-1547
chagge@mac.com

April 26, 2018

Tuck O'Brien
City Planning Director
Planning & Urban Development Department
City of Portland, Maine
389 Congress Street
Portland, ME 04101

RE: WPDZ Conditional Use Review

Dear Tuck:

I am purchasing the former CoachWorks facility at 121 Cassidy Point Drive in the Waterfront Port Development Zone. This property is unique to the zone in that it does not have direct deepwater access due to being surrounded by Cassidy Point Drive on three sides. Because the location of the lot, it will not have an adverse impact on marine uses and the non-water-dependent uses and will not interfere with any of the existing water-dependent uses in the zone.

The existing property is .5847 acres with two structures and a large paved area. There is a 5,105 square foot curved top metal building with 6 large overhead loading doors which was built in 1924 and is in excellent condition. The second building is a two story wood frame structure that was constructed in 1910 and is in fair condition. The majority of the lot is paved. The current use of the property is auto and truck repair with an office on the upper level of the wood frame structure and there is a welding and metal fabrication business in the lower level. The other current uses of the property include, boat repair, boat storage, auto parts, auto body repair shop, storage of fishing equipment and general multi-use storage.

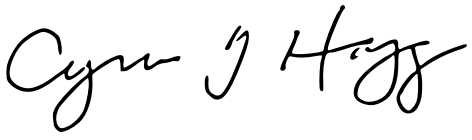
There is a shortage of small industrial and light manufacturing space in Portland. The goal of this project is to bring on line a variety of small 1,000 to 2,500 square foot spaces with overhead doors that will meet the needs of the small trade and craft persons and marine businesses. The planned re-use of this property is in two phases. The first phase is to reuse the existing site and buildings and request approval for a number of conditional uses. The second phase will include the to remove the wood house and replace it with a new 5,000 to 8,000 sq/ft metal building starting in the spring of 2019.

Phase 1 will need to address the conditional uses that are necessary to allow for a variety of new activities on the site. SailMaine will be moving to the site and is requesting conditional use approval for marine repair services, yacht brokerage, boat storage and the storage and repair of fishing equipment. The other uses are targeted at the tenant who is engaged in low impact industrial or light manufacturing. This would

encompass welding and metal working/fabrication, carpentry/cabinet shops, art and craft production and print making. Finally, we are requesting the accessory uses customarily incidental and subordinate to the location, function and operation of the permitted uses.

The scope of Phase 1 is to only change to new permitted conditional uses. There are no exterior changes to the site proposed, except of the installation of a new sewer line to the larger building. All uses proposed are internal to the two structures with the exception of the Marine uses and outdoor boat storage.

Sincerely yours,



Cyrus Y Hagge

534 DANFORTH PROJECT, 121 CASSIDY POINT DRIVE, PORTLAND MAINE

Section. 14-319 Permitted uses

Under Section 14-319 we are requesting the follow permitted conditional uses:

Marine:

- Marine repair services and Machine shops
- Marine Retail and Wholesale sales including yacht brokerage
- Boat Storage Facilities
- Fabrication, storage and repair of Fishing equipment.

Industrial:

- Low Impact Industrial Uses
- Light Manufacturing
- Manufacture of products
- Welding and metal fabrication
- Storage of materials incidental to proposed uses
- Carpentry, woodworking and cabinet shops
- Art and craft production
- Print making

Other

- Accessory uses customarily incidental and subordinate to the location, function and operation of permitted uses.

121 CASSIDY POINT DRIVE, 534 DANFORTH LLC APPLICANT

Sec. 14-474 (c) 2. Conditional uses standards

Address the following criteria in your written application and any applicable conditional use standards contained in the zoning code for the specific use. Upon showing that a proposed use is a conditional use under this article, a conditional use permit shall be granted unless the Board determines 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;

The proposed changes of use will reduce the amount of traffic in this area. Cassidy Point Drive is a major intermodal transportation center with direct access to Route 1 and I-295. The proposed uses will have a reduced impact over the current use, the Coachworks auto and truck repair business. The number of trips generated by the new uses, will reduce the number of trips from over 250 per day down to 60 per day. The hours of operation, pavement and number of parking spaces will not interfere with the neighboring marine and trucking uses.

COACHWORKS ESTIMATED AVERAGE DAILY CUSTOMER TRIPS

25-30 customer repairs per day	100 - 120. Trips per day
Parts and supply delivery 10 to 16 per day	20 – 32 Trips per day
Vender delivery 5 – 10 per day	10 – 20 Trips per day
Repair and Body Shop estimates	4-6 Trips per day
7 to 9 employees two trips per day	18-36 Trips
Test drives 10 per day	20 trips per day
Misc. visitors 10-15 per day	20 -30 trips per day
Auto sales	4-6 trips per day
8 to 10 cars parked daily	
1 - 3 trucks parked daily	

PROPOSED AVERAGE DAILY TRIPS

Employees. 4 to 6	16 - 24 Trips per day
Deliveries 4 to 8 per day	8-16 Trips per day
Visitors 6 to 10 per day	12-20 Trips per day

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

All of the proposed uses are internal to the buildings, except for the outdoor storage of boats. There are no proposed changes to the site that would create noise, glare, dust, odors and lighting. All trash will be disposed on using dumpsters. The only external improvement is to bring in a new sewer line from lower Cassidy Point Drive to the large building.

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.

There are no external changes proposed to the existing site and the site will have no impact on the surrounding properties.

121 CASSIDY POINT DRIVE, 534 DANFORTH LLC, APPLICANT

Sec. 14-320. Conditional use standards.

(a) Conditional uses shall be permitted in the Waterfront Port Development Zone, provided that, notwithstanding section 14-471(c), section 14-474(a), or any other provision of this Code, the Planning Board shall be substituted for the Board of Appeals as the reviewing authority.

In addition to the provisions of section 14-474(c)(2) such uses will:

- not impede or preclude existing or potential water-dependent development on other lots;

  The proposed conditional uses will not impede or preclude existing or potential water dependent development.

  121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

- allow for adequate access to the water;

  The proposed conditional uses will allow for adequate access to the water.

  121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

- be compatible with water dependent and marine uses;

  The proposed conditional uses are compatible with water dependent and marine.

  121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

operationally support one or more water dependent use(s), or be located in a building or structure that is physically adaptable or relocatable to make way for future development of water-dependent uses; and

121 Cassidy Point Drive is not a waterfront lot and separated from the nearest water front lot by Cassidy Point Drive.

- meet any additional performance and dimensional standards set forth below.

Sec. 14-320.1 Prohibited uses.

The proposed conditional uses are not on the prohibited uses list.

Sec. 14-320.2 Dimensional requirements.

The existing buildings were in existence prior to the implementation of the WPDZ and are grandfathered and still meet the dimensional requirements of the zone.

Sec. 14-320.3 Performance Standards

(a) Outdoor storage of materials:

All storage of materials shall be indoors or in sealed storage containers with no offsite runoff.

(b) Noise:

All onsite conditional uses shall be indoor and will not exceed the maximum 55 decibel level.

(c) Vibration:

All on site vibration will shall be imperceptible without instruments at lot boundaries.

(d) Federal and state environmental regulations:

The proposed changes of use will comply with all federal and state environmental statutes and regulations

(e) Discharges into harbor areas:

The proposed changes of use will not discharge into the harbor water areas.

(f) Storage of vehicles:

The proposed changes of use will have the storage of any unregistered automotive vehicles on the premises for more than sixty days.

(g) Landfill of docking and berthing areas:

121 Cassidy Point does not have waterfront access and this section does not apply to this project.

(h) Off-street parking:

All off street parking shall meet the standard of Division 20 (off-street parking)

(i) Off-street loading:

All off street loading shall meet the standards of Division 21.

(j) Shoreland and flood plain management regulations:

This property does not have waterfront access and is not located in the flood plain.

(k) Lighting:

All lighting shall be shielded to prevent direct light sources shall not unreasonably interfere with vessels transiting the harbor nor have an unreasonable adverse impact on adjacent residential zones.

(l) Signs:

Signs shall be permitted as set forth in division 22 of this article.

(m) Storage of pollutants and oily wastes:

There will be not be storage of pollutants or oily wastes on the site.

(n) Compatibility of non-marine uses with marine uses:

The proposed conditional uses are compatible with nearby marine uses.

(o) Design and Visual Character shall:

Outside of a new entrance man door, no new structures or exterior changes are proposed as part of this application.

CONTRACT FOR PURCHASE AND SALE OF REAL ESTATE

THIS CONTRACT FOR PURCHASE AND SALE OF REAL ESTATE (the "Contract") is made and entered into by and between **P & D REAL CORP.**, a Maine corporation with an address of 121 Cassidy Point Road, Portland, Maine 04102 (the "Seller") and **CYRUS Y. HAGGE**, or his assigns or nominee, whose address is 225 Commercial Street, Suite 502, Portland, Maine 04101 ("Buyer") (Seller and Buyer may be referred to herein singularly as a "Party" or collectively as the "Parties"), effective as of the Effective Date (as defined below).

ARTICLE I
DEFINED TERMS

1.1 This Contract uses the following terms as defined below:

a. "Closing" means the consummation of the purchase of the Property by Buyer from Seller in accordance with the terms and provisions of this Contract.

b. "Closing Date" means the day of the Closing as defined in Section 9.1.

c. "Earnest Money" means the portion of the Purchase Price deposited by the Buyer in escrow with the Escrow Agent, as hereinafter defined, at the time and in the amounts specified in Section 3.3 hereof.

d. "Effective Date" means the date the last Party has fully executed copy of this Contract.

e. "Escrow Agent" means Pearce & Dow LLC, Tow Monument Square Suite 901 PO Box 108, Portland, ME 04112

f. "Hazardous Materials" means any flammable explosives, radioactive materials, hazardous material, hazardous waste, hazardous or toxic substances or related materials as defined in the Comprehensive Environmental Response, Compensation and Liability Act of1980, as amended (42 U.S.C. § 9.601 et. seq.), the Hazardous Materials Transportation Act, as· amended (49 U.S.C. § 18.01 et. seq.), the Resource Conservation and Recovery Act, as amended (42 U.S.C. § 69.0 1 et. seq.) and in the regulations adopted in publications promulgated pursuant thereto, and all asbestos (friable or non-friable), petroleum derivatives, polychlorinated biphenyls, flammable substances and materials defined as hazardous materials under any federal, state or local laws, ordinances, codes, rules, orders, regulations or policies governing the use, storage, treatment, transportation, manufacture, refinement, handling, production or disposal

thereof.

g. "Inspection Period" means the period commencing with the Effective Date and ending sixty (60) days therefrom as further described in Section 7.1(d).

h. "Permitted Encumbrances" means those exceptions or conditions as are approved or deemed to be approved by Buyer under Section 4.1.

i. "Property" means all of Seller's right, title and interest in a certain tract of land, with buildings and improvements thereon, located at **121 Cassidy Point Road, Portland, Maine**, identified by the City of Portland Tax Assessor as Tax Map 72-B-1, and more particularly described in a Warranty Deed from James O. Cobb to Seller dated January 27, 2000 and recorded in the Cumberland County Registry of Deeds in Book 15299, Page 96, together with all and singular the rights and appurtenances pertaining to such real estate, including any right, title and interest of Seller in and to the adjacent streets, alleys, rights-of-way, strips or gores of land, improvements, fixtures, and/or personal property situated thereon and attached thereto, including all water, wastewater, storm water, drainage or other similar utility capacity rights allocable to the Property.

j. "Purchase Price" means the total consideration to be paid by Buyer to Seller for the purchase of the Property under Section 3.1.

k. "Title Commitment" means the Commitment for Title Insurance issued by the Title Company covering the Property Section 4.1.

l. "Title Company" means the title insurance company selected by the Buyer to issue the Title Commitment and the Title Policy.

m. "Title Policy" means the Owner's Policy of Title Insurance issued by the Title Company under Section 4.1.

ARTICLE II
AGREEMENT OF PURCHASE AND SALE

2.1 The Property. Upon the terms and conditions of this Contract and in consideration of the respective covenants, warranties and representations contained herein, Seller agrees to sell and convey to Buyer the Property and all appurtenances relating thereto, and Buyer hereby agrees to buy and take the Property and the appurtenances from Seller.

ARTICLE III PURCHASE PRICE

3.1 The Purchase Price. The total amount to be paid by Buyer to Seller for the Property and all appurtenances thereto shall be [redacted]00/100 Dollars

($900,000.00) and shall be referred to as the "Purchase Price."

3.2 Payment of Purchase Price. The Purchase Price shall be payable to Seller on the Closing Date in cash, bank cashier's check or certified check, or by wire transfer of funds.

3.3 Earnest Money. Within five (5) days after the Execution Date, Buyer will deposit the sum of Ten Thousand Dollars ($10,000.00) with Escrow Agent as Earnest Money to be held by the Escrow Agent in escrow for the Property. Buyer and Seller agree to hold Escrow Agent harmless from damages, losses or expenses arising out of this Contract. Buyer discloses and Seller acknowledges that Buyer is represented in this transaction by Jensen Baird Gardner & Henry. In the event of Seller's non-acceptance, this earnest money shall be promptly returned to Buyer. If the purchase and sale hereunder is consummated in accordance with the terms and provisions of this Contract, the entire Earnest Money shall be applied by the Escrow Agent as partial payment of the Purchase Price due at the Closing. In all other events, the Earnest Money shall be disposed of by the Escrow Agent as provided herein.

ARTICLE IV TITLE AND SURVEY

4.1 Title Commitment. Buyer, at Buyer's cost, shall have the right to obtain the following: (i) an ALTA 2006 Owner's Title Insurance Commitment Form covering the Property issued by a reputable title insurance company pursuant to which the title company agrees to issue to Buyer, at Closing, an owner's policy of title insurance in the amount of the purchase price, consistent with the Commitment; and (ii) a current commercial mortgage loan inspection plan, boundary or ALTA/ACSM Land Title survey of the Property, showing all improvements, easements and matters referenced on the Title Insurance Commitment, certified to Buyer, its counsel, and the Title Company (the "Survey"). If Buyer shall have any objection(s) with respect to the status of title to the Property as reflected in the Commitment and/or the Survey which render title unmarketable or which would interfere with Buyer's intended use of the Property, Buyer may notify Seller of such objections on or before the expiration of the Inspection Period (as hereinbefore defined) (the "Buyer's Title Objection Notice"). Any matters shown in the Commitment and Survey to which Buyer does not timely object, except as otherwise provided herein, shall be deemed "Permitted Encumbrances". In the event the Commitment or the Survey reflects any defect or title condition to which Buyer timely objects, then Seller shall be required to use its commercially reasonable efforts to cause all such defects and title conditions to be cured no later than the date which is sixty (60) days following receipt of Buyer's Title Objection Notice ("Seller's Title Cure Period"), it being understood that Seller shall not be obligated to institute litigation in connection with same. Notwithstanding anything to the contrary contained in this Contract, Buyer need not object to and Seller shall, on or before the Closing Date, remove or satisfy (1) judgments against Seller, and (2) other monetary liens (including any mortgages, deeds of trust, mechanic's, materialmen's or vendor's liens with respect to the Property and any real estate tax liens (including improvement district and special taxing district liens) other than liens for ad valorem taxes and assessments not yet due and payable (collectively, "Monetary Liens"), none of which shall be deemed Permitted Encumbrances. Provided, however, that Buyer has no right to object to any matter which is set

forth or incorporated in the following, all of which shall be deemed to be a Permitted Encumbrance.

(i) the Warranty Deed from James O. Cobb to Seller dated January 27, 2000 and recorded in the Cumberland County Registry of Deeds in Book 15299, Page 96 ("Source Deed");

(ii) The letter agreement between Cianbro Corporation and Seller dated March 23, 2004 which is recorded in said registry of deeds in Book 21153, Page 115.

4.2 Seller's Failure to Perfect Title or Make Property Conform. In the event that Seller, exercising commercially reasonable efforts, does not eliminate all such defects and title conditions as of the expiration of Seller's Title Cure Period, Buyer shall have the option of either: (i) accepting the title "as is", without reduction in the Purchase Price and without claim against Seller therefor, or (ii) terminating this Contract by delivery of written notice thereof to Seller no later than ten (10) days following the expiration of Seller's Title Cure Period, in which event the Escrow Agent shall return the Earnest Money to Buyer, whereupon both parties shall be released from all further obligations under this Contract, unless otherwise specifically set forth herein.

4.3 Buyer's Election to Accept Title. If, during the pendency of this Contract, the Property or any portion thereof shall be taken by any right of eminent domain, or if, during the pendency of this Contract, the Property shall suffer a casualty which has a material adverse effect on the Buyer's intended use of the Property, then, in either such event, Buyer may terminate this Contract upon 10 days' prior written notice to Seller, and Escrow Agent shall promptly return the Earnest Money to Buyer. If this Contract shall be so terminated, then the parties shall have no further recourse against one another. The Buyer shall also have the election at Closing to accept such title as the Seller can deliver to the said Property in their then condition and to pay therefore the Purchase Price without deduction, in which case the Seller shall convey such title, except that in the event of such conveyance in accord with the provisions of this clause, if the said Property shall have been damaged by casualty insured against, then the Seller shall, unless the Seller has previously restored the Property to their former condition, either:

a. pay over or assign to the Buyer, on delivery of the deed, all amounts recovered or recoverable on account of such insurance, less any amounts reasonably expended by the Seller for any partial restoration, or

b. if a holder of a mortgage on said Property shall not permit the insurance proceeds or a part thereof to be used to restore the said Property to their former condition or to be so paid over or assigned, give to the Buyer a credit against the Purchase Price, on delivery of the deed, equal to said amounts so recovered or recoverable and retained by the holder of the said mortgage less any amounts reasonably expended by the Seller for any partial restoration.

Upon conveyance of the Property to Buyer, Seller shall also pay over or assign to Buyer any award or claim arising out of any eminent domain taking.

ARTICLE V
REPRESENTATIONS AND WARRANTIES OF SELLER

5.1 To the best of Seller's knowledge, Seller represents, warrants, covenants and agrees with Buyer that as of the Effective Date and as of the Closing Date:

a. Seller is corporation duly organized and validly existing under the laws of the State of Maine, and shall have the full right, power and authority to convey the Property to Buyer as provided in this Contract and to carry out its obligations hereunder, and that all required action by the Seller to enter into this Contract and to carry out its obligations hereunder has been, or upon Closing will have been, taken.

b. Seller has received no notice and has no current actual knowledge of condemnation or contemplated condemnation proceedings affecting the Property or any part thereof by any other entity with eminent domain authority.

c. There is no litigation or threatened litigation affecting Seller or the Property that would in any way constitute a lien, claim or obligation of any kind against the Property. Seller will have at the time of Closing good and indefeasible title in fee simple to the Property, free and clear of all encroachments, liens, encumbrances, covenants, conditions, restrictions, rights-of-way, easements and other matters affecting title, except for the Permitted Encumbrances and such liens and security interests that will be released at or before Closing.

d. Seller has no current actual knowledge of any environmental, civil (including actions by private parties), criminal, administrative, or other proceedings pending against the Property of any judgments or orders entered against Seller or the Property or any property in the immediate vicinity of the Property relating to the use, generation, manufacture, storage or disposal of any Hazardous Material on, in or under the Property. Seller has no current actual knowledge of any failure to comply with any applicable local, state and federal environmental laws, regulations, ordinances and administrative and judicial orders relating to the generation, recycling, reuse, sale, storage, handling, transport and disposal of any Hazardous Material located on the Property.

ARTICLE VI
EXPRESS COVENANTS OF SELLER

6.1 Between the date hereof and the Closing, Seller expressly covenants and agrees that

a. Within five (5) days following the Effective Date, Seller shall deliver to Buyer copies in Seller's possession, if any, of all engineering, environmental or wetlands studies or reports relating to the Property, all site plans or other surveys of the Property, all leases and income and expense information on the Property, and any other agreements, warranties or guaranties relating to the Property, all of which are provided by Seller without warranty or representation as to accuracy or completeness. Buyer shall agree to keep said information confidential, and shall not disclose any of Seller's confidential information to third parties, other than Buyer's attorneys, accountants and consultants as necessary to advise Buyer regarding this transaction, all of whom shall be informed of the need to keep said information confidential. In the event that this Contract is terminated, Buyer shall promptly return all confidential information to Seller, and confirm that any electronic copies of the same have been destroyed. Buyer's confidentiality obligations hereunder shall survive the termination of this Agreement.

b. Seller shall not commit waste of the Property.

c. Seller shall give to Buyer immediate written notice of the institution of or receipt of notice of any litigation or threatened litigation affecting the Property which would in any way constitute or have the effect of presently or in the future creating a lien, claim or obligation of any kind against the Property.

d. Seller shall give Buyer immediate notice upon the occurrence of any event, or receipt of any notice, which might give rise to a breach by Seller of any of its representations or warranties set forth in Article 5 above.

e. Seller shall not impose, nor permit to be imposed upon the Property, any new or additional encumbrances to title and shall discharge, or cause to be discharged, any claims of lien or liens imposed upon the Property on or prior to Closing.

f. From the Effective Date until Closing, Seller shall: (i) maintain the Property in the same manner as Seller has heretofore done and (ii) not, without the prior written consent of Buyer, enter into any agreement or instrument or take any action that would encumber the Property after Closing, that would bind Buyer or the Property after Closing, or that would be outside the normal scope of maintaining the Property and (iii) promptly furnish Buyer with a copy of all notices of violation of laws or municipal ordinances, regulations, orders or requirements of any state, city or municipal departments or other governmental authorities having jurisdiction over the Property.

ARTICLE VII
CONDITIONS PRECEDENT TO BUYER'S PERFORMANCE

7.1 Buyer shall not be obligated to perform under this Contract unless:

a. Closing Documents. Seller shall have provided to Buyer at Closing, each of the documents required pursuant to Section 9.2(a) hereof, in form and content mutually satisfactory to Buyer and Seller.

b. Seller's Warranties, Representations and Covenants. Each of Seller's warranties and representations set forth in Article V hereof are true and correct as of the Effective Date, and remain true as of the Closing Date. Furthermore, as of Closing, Seller shall have performed all its covenants as set forth in Article VI hereof.

c. No Condemnation. On the Closing Date, no portion of the Property shall have been condemned or sold under threat of condemnation, or is subject to any proceedings for condemnation by any other entity with eminent domain authority.

d. Buyer's Investigation. Within the Inspection Period Buyer, in its sole discretion, has determined that the Property is suitable for the Buyer's intended use and that any leases in existence affecting the Property are acceptable. From and after the Effective Date and until the Closing, Buyer and its agents, servants, employees and representatives shall have the right, from time to time, at Buyer's sole expense and risk and in such manner as Buyer may reasonably determine, after consultation with Seller, to enter upon the Property to make or cause to be made engineering studies, surveys, test borings, and such other inspections, investigations, tests, analyses, and studies of the Property as Buyer, in its sole discretion, may reasonably deem necessary or desirable. If any environmental assessment obtained by the Buyer with respect to the Property reveals any present or past generation, storage, handling, transportation and/or disposal of any Hazardous Materials on the Property, or recommends further or additional testing or inspection of the Property, the Inspection Period shall, without limiting Buyer's termination right provided in this Section 7.1(d), automatically be extended for an additional thirty (30) days. The provisions of this Section 7.1(d) may only be waived, wholly or in part, by the Buyer, in a specific written waiver executed and delivered by the Buyer to Seller. If, prior to 5:00 p.m. on the day of the expiration of the Inspection Period, Buyer determines in its sole and absolute discretion, that the Property is unacceptable to Buyer for any reason or no reason, including, without limitation, unsatisfactory soil conditions, environmental conditions, parking conditions, zoning conditions, or engineering or other mechanical and structural conditions, Buyer shall have the unconditional right to give notice to Seller electing to terminate the Contract, and, in that event, this Contract shall terminate and Buyer shall restore the Property at Buyer's sole expense to substantially its condition before testing if test results are unsatisfactory to Buyer or if Buyer otherwise decides not to close under this Contract. Upon restoration of the Property to its pre-testing Condition, Seller shall authorize the Escrow Agent to deliver the Earnest Money to Buyer, and neither party shall have any further rights or obligations each to the other under this Contract except for those that expressly survive. Seller shall not be entitled to and is hereby estopped from objecting to the determination of the Buyer with respect to its

evaluation as set forth in this Section 7.1(d). Seller acknowledges that Buyer's investigation of the Premises is solely for Buyer's benefit and shall not limit or reduce the representations and warranties made by Seller hereunder.

Buyer shall indemnify, defendant, and hold Seller harmless from any lien, claim or liability that any of Buyer's contractors, engineers, or consultants or their employees or agents assert against the Property or Seller, which obligation shall survive the Closing or termination of this Contract.

Buyer, at Buyer's sole option, may elect to waive, in whole or in part, any of the conditions to Buyer's obligations set forth in this Article VII by delivery of written notice to Seller of its election to so waive any such conditions on or before Closing. If the conditions set forth in this Article VII have not been satisfied or waived, in whole or in part, on or prior to Closing or if, at any time, Buyer, in its sole and absolute discretion shall have determined that any of the conditions set forth in this Article VII will not be satisfied, or will be satisfied but on terms unacceptable to Buyer, Buyer shall have the right (i) to terminate the Contract by giving written notice thereof to Seller, whereupon the Escrow Agent shall deliver the Earnest Money to the Buyer, and thereafter the parties shall be released of all further obligations each to the other under the Contract, except as herein provided, or (ii) proceed to Closing, whereby the condition(s) not otherwise satisfied shall be deemed waived; provided, however, in the event the failure of any of the foregoing conditions is a result of a default of Seller, including, without limitation, a breach by Seller of any of the covenants, representations and warranties of Seller hereunder, then Buyer shall have the additional remedies provided in Article X(b) of this Contract.

ARTICLE VIII
CONDITIONS PRECEDENT TO SELLER'S PERFORMANCE

8.1 Purchase Price. Seller shall not be obligated to perform under this Contract unless Buyer shall have paid the total purchase price and delivered the other items listed in Section 9.2 (b).

ARTICLE IX
CLOSING

9.1 Date and Place of Closing. The Closing hereunder shall take place in the offices of the Escrow Agent on June 1, 2018, or at such other place and at such other time as Seller and Buyer may mutually agree.

9.2 Items to be Delivered at the Closing.

a. Seller. At the Closing, Seller shall deliver to Buyer or its assignees, at Seller's cost and expense, the following items:

i. a Warranty Deed in accordance with the Short Form Deeds Act, 33 M.R.S.A. §§ 761 *et seq.*, duly executed and acknowledged by Seller, conveying good and indefeasible fee simple title to the Property to Buyer, subject only to the Permitted Exceptions.

ii. Assignment of any leases on the Property, in a form reasonably acceptable to Buyer and Seller.

iii. an affidavit executed by Seller satisfactory to evidence that Buyer will not be required to withhold any tax and that no withholding liability exists as of the Closing under Section 1445 of the Internal Revenue Code (and the implementing regulations) or under 36 M.R.S.A. § 5250-A.

iv. a written notice, pursuant to 38 M.R.S.A. § 563(6), which notice shall certify to the best of Seller's knowledge that either (i) that there is no underground oil storage facility located on the Property, or (ii) if there is such a facility on the Property, that the facility exists and shall disclose its registration number or numbers, the exact location of the facility, whether or not it has been abandoned in place, and that the facility is subject to regulation by the Board of Environmental Protection.

v. all additional documents and instruments the Title Company may require in order to issue the Title Policy or which Buyer's counsel and Seller or Seller's counsel may mutually reasonably determine are necessary to the proper consummation of this transaction.

b. Buyer. At the Closing, Buyer shall deliver to the Seller each of the following items:

i. the total Purchase Price; and

ii. all additional documents and instruments the Title Company may require in order to issue the Title Policy or which Buyer's counsel and Seller or Seller's counsel may mutually reasonably determine are necessary to the proper consummation of this transaction.

9.3 Adjustments at Closing. All normal and customarily proratable items, including real estate taxes, water, sewer, utilities, rents, and fuel, shall be prorated as of the Closing Date, Seller being charged and credited for all of same up to such date and Buyer being charged and credited for all of same on and after such date. If the actual amounts to be prorated are not known as of the Closing Date, the prorations shall be made on the basis of the best evidence then

available, and thereafter, when actual figures are received, a cash settlement will be made between Seller and Buyer. The provisions of this Section 9.3 shall survive the Closing.

9.4 Possession and Closing. Possession of the Property shall be delivered to Buyer by Seller at the Closing, free and clear of any and all personal property, business equipment (but not including any fixtures), tools, and stored items, but subject to the occupancy of any then existing tenants in possession. The Property shall additionally be in broom-clean condition.

9.5 Costs of Closing. Seller agrees to pay:

a. One-half (½) of the Maine real estate transfer tax in accordance with 36 M.R.S.A. § 4641-A;

b. Seller's attorneys' fees; and

c. all charges incurred by Seller for the procurement, preparation and recording of any releases, waivers, or other instruments required to clear Seller's title to the Property in accordance with the provisions hereof.

Buyer agrees to pay:

a. The cost of any tests or inspections performed on the Property;

b. The cost of any Survey on the Property if elected under Section 4.1;

c. the premium for issuance of the Title Policy required under Section 4.1;

d. Fee for recording the deed;

e. One-half (½) of the Maine real estate transfer tax in accordance with 36 M.R.S.A. § 4641-A; and

f. Buyer's attorneys' fees;

All other costs, fees, penalties and other expenses incurred at the Closing shall be paid by Seller and/or Buyer as is customarily done in connection with a closing of the type of transaction contemplated by this Contract.

ARTICLE X
DEFAULTS AND REMEDIES

10.1 Seller's Defaults; Buyer's Remedies.

a. Seller's Defaults. Seller shall be deemed to be in default hereunder if Seller shall fail to meet, comply with or perform any material covenant, agreement or obligation on its part required under this Contract or any warranty or representation shall become untrue when made or deemed to be made.

b. Buyer's Remedies. In the event Seller shall be deemed to be in default hereunder, Buyer, at Buyer's option and as its sole and exclusive remedies: (i) shall be entitled to terminate this Contract whereupon Buyer shall be entitled to an immediate refund of the Earnest Money, and the parties hereto shall have no further obligations to one another hereunder, or (ii) may pursue all available remedies at law or in equity, including the remedy of specific performance of this Contract. No failure on the part of Buyer to exercise, and no delay in exercising, any right under this section shall not operate as a waiver thereof; nor shall any single or partial exercise of any such right preclude any other or further exercise thereof or the exercise of any other right.

10.2 Buyer's Defaults; Seller's Remedies.

a. Buyer's Default. Buyer shall be deemed to be in default hereunder if Buyer shall fail to meet, comply with or perform any material covenant, agreement or obligation on its part required under this Contract.

b. Seller's Remedy. In the event Buyer shall be deemed to be in default hereunder, Seller shall, as its sole and exclusive remedy, be entitled to terminate this Contract and request that the Escrow Agent deliver the Earnest Money to Seller (on receipt of written notice from Seller that Buyer has defaulted). Such notice to the Escrow Agent need not be accompanied by any other document or consent of any other party, it being agreed between Buyer and Seller that the Earnest Money shall be liquidated damages for a default of Buyer hereunder because of the difficulty, inconvenience, and uncertainty of ascertaining actual damages for such default. It is further agreed that the liquidated damages provided for herein represent a reasonable forecast of Seller's full and complete damages, considering all the circumstances existing as of the date of this Contract.

ARTICLE XI
MISCELLANEOUS

11.1 Captions. The captions, headings and arrangements used in this Contract are for convenience only and do not in any way affect, limit, amplify or modify the terms and provisions hereof.

11.2 Number and Gender of Words. Whenever herein the singular number is used, the same shall include the plural where appropriate and words of any gender shall include each other gender where appropriate.

11.3 Notices. Any notice required or permitted to be given under this Contract shall

be in writing and either shall be mailed by certified mail, postage prepaid, return receipt requested, or sent by overnight air courier service, or personally delivered to a representative of the receiving party, or sent by telecopy or electronic mail. Buyer's and Seller's respective addresses for purposes of this Contract, and to which all notices required hereunder shall be sent, are as follows:

(a) If to Seller:

P & D Real Corp.
Attention: _____
121 Cassidy Point Road
Portland, Maine 04102
E-Mail:_____
Phone:_____

With a copy to:

Aaron P. Burns, Esq.
Pearce & Dow, LLC
Two Monument Sq. Ste 901
P.O. Box 108
Portland, ME 04112
aburns@pearcedow.com
(207) 822-9900

(b) If to Buyer:

Cyrus Hagge
225 Commercial Street, Suite 502
Portland, Maine 04101
E-Mail: chagge@mac.com
Phone: (207) 274-1547

With a copy to:

Nicholas J. Morrill, Esq.
Jensen Baird Gardner & Henry
P.O. Box 4510
Portland, Maine 04101
E-Mail: nmorrill@jbgh.com
Phone: (207) 775-7271

Any notice so addressed and sent by United States mail or overnight courier shall be deemed to be given on the earliest of (1) when actually delivered, (2) on the first business day after deposit

with an overnight air courier service, or (3) on the third business day after deposit in the United States mail, postage prepaid, in each case to the foregoing address of the intended addressee. Any notice so delivered in person shall be deemed to be given when receipted for by, or actually received by Seller or Buyer, as the case may be. If given by telecopy, a notice shall be deemed given and received when the telecopy is transmitted to the party's telecopy number if specified above and confirmation of complete receipt is received by the transmitting party between the hours of 8:00 a.m. and 6:00 p.m. Eastern Time on a business day or on the next business day if not confirmed during such business hours. If given by electronic mail, a notice shall be deemed given and received when the electronic mail is transmitted to the recipient's electronic mail address specified above. Either party may designate a change of address by written notice to the other by giving at least ten (10) days prior written notice of such change of address. Copies of notices are for informational purposes only, and a failure to give or receive copies of any notice shall not be deemed a failure to give notice. Notices given or received by counsel to the Buyer shall be deemed given or received by Buyer and notices given or received by counsel to the Seller shall be deemed given by or received by Seller.

11.4 Governing Law and Venue. This Contract is being executed and delivered and is intended to be performed in the State of Maine, and the laws of such State shall govern the validity, construction, enforcement and interpretation of this Contract, unless otherwise specified herein. Venue for any legal proceeding relating to this Contract shall be Maine Superior Court, Cumberland County.

11.5 Entirety and Amendments. This Contract embodies the entire agreement between the parties and supersedes all prior agreements and understandings, if any, relating to the Property and may be amended or supplemented only by an instrument in writing executed by the party against whom enforcement is sought.

11.6 Invalid Provisions. If any provision of this Contract is held to be illegal, invalid, or unenforceable under present or future laws, such provisions shall be fully severable the same as if such invalid or unenforceable provisions had never comprised a part of the Contract; and the remaining provisions of the Contract shall remain in full force and effect and shall not be affected by the illegal, invalid or unenforceable provision or by its severance from this Contract. Furthermore, in lieu of such illegal, invalid or unenforceable provision, there shall be automatically as a part of this Contract, a provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible and be legal, valid and enforceable. Notwithstanding anything to the contrary contained herein, if any condition precedent to Buyer's or Seller's obligations hereunder is held to be illegal, invalid or unenforceable under present or future laws, then Buyer or Seller may terminate this Contract by written notice delivered to the other party and, thereafter, the parties hereto shall have no further obligations or liabilities hereunder, one to the other.

11.7 Multiple Counterparts. This Contract may be executed in a number of identical counterparts. If so executed, each of such counterparts is to be deemed an original for all purposes and all such counterparts shall, collectively, constitute one agreement, but, in making

proof of this Contract, it shall not be necessary to produce or account for more than one such counterpart.

11.8 Parties Bound. This Contract shall be binding upon and inure to the benefit of Seller and Buyer and their respective heirs, personal representatives, successors and assigns.

11.9 Risk of Loss. Risk of loss or damage to the Property or any part thereof by fire or any other casualty from the Execution Date up to the time of delivering the Warranty Deed transferring title to the Property to Buyer will be on Seller and thereafter will be on Buyer.

11.10 Further Acts. In addition to the acts and deeds recited herein and contemplated to be performed, executed and/or delivered by Seller to Buyer, Seller and Buyer agree to perform, execute and/or deliver or cause to be performed, executed and/or delivered at the Closing or after the Closing any and all such further acts, deeds and assurances as may be necessary to consummate the transactions contemplated hereby.

11.11 Time of the Essence. It is expressly agreed by the parties hereto that time is of the essence with respect to this Contract. If the final day of any period of any date of performance under this Contract falls on a Saturday, Sunday or legal holiday, then the final day of said period or the date of performance shall be extended to the next business day thereafter.

11.12 Real Estate Brokerage. The Parties each represent and warrant to the other that there are no real estate brokers, salesmen or finders involved in this transaction. Any commission claimed by any broker on account of the sale contemplated herein shall be the sole responsibility of the party who dealt with such real estate broker, or whose actions gave rise to such claim. This provision shall survive the closing and the delivery of the deed.

11.13 Survival. All covenants and agreements contained herein and intended to be performed subsequent to any Closing hereunder shall survive the execution and delivery of the deed and other closing documents required hereby and shall specifically not be deemed to be merged into or waived by any instrument of Closing, but shall expressly survive and be binding upon Seller and Buyer. Any liability of Seller for misrepresentation or breach of warranty contained herein shall survive the execution and delivery of the deed and other closing documents required hereby, shall specifically not be deemed to be merged into or waived by any instrument of Closing, and such liability shall expressly survive and be binding upon Seller.

IN WITNESS WHEREOF, the undersigned have executed this Contract as of the day and year first above set forth.

SELLER:
P & D REAL CORP.

Witness

By: _____
Print Name: PETER SPEED/ES

Its: Pres. PSD Realcorp.
Date: 2-3-18

BUYER:

Witness

Cyrus Y. Hagge
Date: 2-3-18

The Undersigned Escrow Agent acknowledges receipt of an original execute copy of this Contract either together with or subsequent to Buyer's Earnest Money in the amount of Ten Thousand Dollars ($10,000.00) on the ___ day of _____, 2018. Escrow Agent certifies that the Effective Date of this is as set forth below:

Effective Date: _____, 2018.

ESCROW AGENT:
Pierce & Dow LLC

_____
Witness

By:_____
Aaron P. Burns Esq.

WARRANTY DEED

P & D Real Corp., a Maine corporation with a mailing address of c/o Peter E. Speeches, 34 Whistler Landing, Scarborough, Maine 04074 ("Grantor"), grants to **534 Danforth LLC**, a Maine limited liability company with a mailing address of 225 Commercial Street, Ste 502, Portland, Maine 04101 ("Grantee"), with WARRANTY COVENANTS the land in Portland, Cumberland County, Maine described in Exhibit A attached hereto.

Witness my hand and seal this 30th day of May 2018

P&D Real Corp.

By: _____
Peter E. Speeches, Its President

STATE OF MAINE
CUMBERLAND ss. Dated: May 30, 2018

Then personally appeared the above-named Peter E. Speeches, President of P&D Real Corp., a Maine corporation, and acknowledged the foregoing instrument be his free act and deed in said capacity and the free act and deed of said corporation.

Before me,

_____ #8885
Notary Public/Attorney at law

EXHIBIT A
121 Cassidy Point Road, Portland, Maine

Those certain lots or parcels of land situated between the southerly side of Cassidy Point Road, formerly a portion of Danforth Street, and the northerly side of West Commercial Street in the City of Portland, County of Cumberland and State of Maine, being bounded and described as follows:

A certain lot or parcel of land with the buildings thereon, situated at the junction of Danforth and West Commercial Street, in the City of Portland and being the same premises conveyed to Wilfred E. Ricker by James A. Romito by Warranty Deed dated March 23, 1923, and recorded in the Registry for Cumberland County, Book 1131, Page 87, and containing approximately 22,377 square feet, and which said parcel is further described in said deed as:

> A certain lot or parcel of land in said Portland, situated on the southerly side of Danforth Street near Vaughn's Bridge and bounded and described as follows, to wit; Beginning at a point on a fence at the northwest corner of land now or formerly belonging to Timothy Ronan; thence westerly by said Danforth Street; about 60.3 feet to an angle in the line of said Danforth Street; thence angling to the south from the westerly direction of Danforth Street about 6° 27' for a distance of 204.19 feet along a street line determined in a deed of land purchased for street purposes by the Boston & Maine Railroad Company of the J. B. Brown Estate Dec. 26th, 1899; thence southerly at right angles to said line and by land contributed for street purposes in said referred to deed thirty feet to the line of West Commercial Street; thence easterly by said West Commercial Street about two hundred seventy two feet to the line of said above mentioned Timothy Ronan lot as indicated by a fence along its westerly boundary; thence northerly by said line and fence and land of said Ronan about 133.7 feet to the point of beginning.

Excepting, however, from the above described parcel, so much thereof as was conveyed by said Wilfred E. Ricker to the State of Maine by deed dated April 26, 1938 and recorded in said Registry of Deeds in Book 1548, Page 90.

Also a certain other lot or parcel of land adjoining the above-described parcel on its northeasterly side and being the second parcel described in a Warranty Deed from Peter J. Hollywood to Wilfred E. Ricker dated February 28, 1931, and recorded in said Registry of Deeds in Book 1368, Page 230, and containing approximately 2,295 square feet, and which said parcel is further described in said deed as:

> A certain lot or parcel of land with the buildings thereon situated in said Portland, on the northwesterly side of Commercial Street near its junction with Danforth Street at the northerly end of Vaughan's Bridge, and bounded and described as follows, to wit: Commencing at the easterly corner of a lot of land which Timothy Roland purchased of Eliza A. Mason as it now is since the laying out of Commercial Street; thence running westerly by land formerly of John B. Brown, forty-five (45) feet to a stake; thence forty-five-(45) feet parallel with Commercial Street to land formerly of John B. Brown; thence by said land formerly of said Brown forty-five (45) feet to Commercial Street; thence northerly by said Commercial Street forty-five (45) feet to the bound begun at.

Being the same premises conveyed to James O. Cobb by deed from George R. McAllister and Leo B. Groder dated August 27, 1973 and recorded in said Registry of Deeds in Book 3450, Page 52.

Excepting, however, from the above described premises so much thereof as was conveyed by James O. Cobb to Cianbro Corporation by deed dated July 1, 1974, and recorded in said Registry of Deeds in Book 3567, Page 293. Also excepting so much thereof as was conveyed by James O. Cobb to the Portland Water District by deed dated April 29, 1977, and recorded in said Registry of Deeds in Book 4006, Page 304.

The above described premises are subject to an easement given by James O. Cobb to Central Maine Power Company, dated September 23, 1974, and recorded in said Registry of Deeds in Book 3602, Page 117.

Also another certain lot or parcel of land together with the buildings thereon, if any, situated in Portland in said County and State bounded and described as follows:

Beginning on the southerly side of Danforth Street in said Portland at a stake marking the most northeasterly corner of a lot conveyed by George R. McAllister to said James O. Cobb August 27, 1973, recorded in the Cumberland County Registry of Deeds in Book 3450, Page 52; thence in an easterly direction along said Danforth Street a distance of 23.5 feet to another stake; thence in a general southeasterly direction along a course parallel to the most easterly boundary of said lot conveyed by said McAllister et al a distance of 102 feet, more or less, to a stake; thence in a westerly direction in a line parallel to West Commercial street 24.55 feet, more or less to said land conveyed by McAllister et al; thence in a northwesterly direction along said line of land conveyed by McAllister et al to said Cobb to the point of beginning.

The herein conveyance is subject to the following:

A sewer easement held by the Portland Water District as described in a Notice of Condemnation dated May 13, 1977 and recorded at said Registry of Deeds in Book 4015, Page 224.

An easement to Central Maine Power Company dated September 23, 1974, and recorded at said Registry of Deeds in Book 3602, Page 117.

A Department of Environmental Protection Commissioner's Certification of Completion of Response Actions under a Partial Voluntary Response Action Plan dated March 1, 1995 and recorded at said Registry of Deeds in Book 11839, Page 110.

An Indenture Agreement entered into between Portland Water District and James O. Cobb dated February 4, 1999 recorded at Book 14540, Page 279.

Letter agreement between Cianbro Corporation and Grantor dated March 23, 2004 recorded at Book 21153, Page 115.

Easement Deed from Preventative Maintenance Company to Central Maine Power Company dated May 8, 1984 recorded in Book 6528, Page 115.

Apparent encroachment of a portion of the existing building into the area of West Commercial Street, as depicted on an unrecorded Standard Boundary Survey on West Commercial & Danforth Streets, Portland, Maine made for Coachworks, Inc., prepared by Wayne T. Wood & CO., Job No. 97008, dated April 1997.

DEXTROUS
CREATIVE

June 28, 2018

Matt Grooms
Planning Department
City of Portland
389 Congress Street
Portland, ME 04101

RE: 121 CASSIDY POINT DRIVE, 534 DANFORTH LLC APPLICANT

Dear Mr. Grooms,

My client 534 Danforth LLC, recently purchased 121 Cassidy Point Drive and is seeking a change of use which will reduce traffic to the area. Cassidy Point Drive is a major intermodal transportation center with direct access to Route 1 and I-295.

The proposed uses will have a reduced impact over the current use, the Coachworks auto and truck repair business. The number of trips generated by the new uses will reduce the number of trips from over 250 per day down to 60 per day. The hours of operation, pavement and number of parking spaces will not interfere with the neighboring marine and trucking uses.

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;

<u>COACHWORKS ESTIMATED AVERAGE DAILY CUSTOMER TRIPS (DATA PROVIDED BY PREVIOUS TENANT)</u>

Customer repairs, 20 – 30 per day	100 - 120 Trips per day
Parts and supply delivery 10 to 16 per day	20 – 32 Trips per day
Vender delivery 5 – 10 per day	10 – 20 Trips per day
Repair and Body Shop estimates, 4 – 6 per day	8 – 16 Trips per day
7 to 9 Employees per day	28 – 36 Trips per day
Test drives 10 per day	20 Trips per day
Misc. visitors 10-15 per day	20 - 30 Trips per day
Auto sales 4-6 per day	8 - 12 Trips per day
Total Trips per Day	**214 to 386 Trips per day**

8 - 10 cars parked daily
1 - 3 trucks parked daily
Total parking 30 spaces

PROPOSED AVERAGE DAILY TRIPS

Units A – E, 10 - 12 Employees per day	40 - 48 Trips per day
Units A – E, 10 – 20 Deliveries per day	20 - 40 Trips per day
Units A – E, 10 – 20 Visitors per day	20 - 40 Trips per day
Total Trips per Day	80 – 128 Trips per day

12, J-22 sail boats
8 - 10 cars parked daily
2 – 5 trucks parked daily
Total parking 20 spaces

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

All of the proposed uses are internal to the buildings, except for the outdoor storage of boats. There are no proposed changes to the site that would create noise, glare, dust, odors and lighting. All trash will be disposed on using dumpsters. The only external improvement is to bring in a new sewer line from lower Cassidy Point Drive to the large building.

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.

There are no external changes proposed to the existing site and the site will have no impact on the surrounding properties.

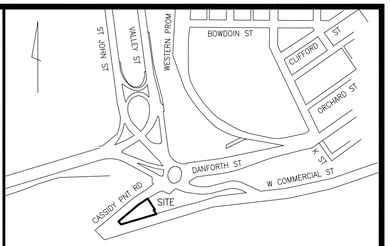
Sincerely,

Tracie J Reed

Tracie J. Reed, Maine Licensed Architect, NCARB
Dextrous Creative, LLC

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.



LOCATION MAP N.T.S.

LEGEND

IRON PIPE OR ROD FOUND	FENCE
UTILITY POLE	STONEWALL
MANHOLE	CURB
SIGN	OHW OVERHEAD WIRES
CATCH BASIN	UGE UNDERGROUND POWER
HYDRANT	W WATER LINE
WATER VALVE OR SHUTOFF	G GAS LINE
LIGHT POLE	SS SANITARY SEWER
GAS VALVE	20 1' CONTOUR
	IPF/IRF IRON PIPE OR ROD FD
	N/F NOW OR FORMERLY
	000/000 DEED BOOK / PAGE
	CONC. CONCRETE

PLAN REFERENCES

1. "STANDARD BOUNDARY SURVEY ON WEST COMMERCIAL & DANFORTH STREETS, PORTLAND, MAINE FOR COACHWORKS, INC.," BY WAYNE T. WOOD & CO., DATED APRIL 1997.

2. "STANDARD BOUNDARY SURVEY FOR PROPOSED ELECTRICAL SUBSTATION, WEST COMMERCIAL STREET, PORTLAND, MAINE, MADE FOR CENTRAL MAINE POWER, CMP# 956-3-1," BY TITCOMB ASSOCIATES, DATED JAN 2004 AND REVISED THROUGH 8/17/2004. RECORDED IN PLAN BOOK 204 PAGE 571.

GENERAL NOTES

1. OWNER OF RECORD: P & D REAL CORP
TAX MAP 72 BLOCK B LOT 1
C.C.R.D. BOOK 34772 PAGE 91

2. BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83.

3. ELEVATIONS ARE BASED ON CITY DATUM (NGVD 1929) BASED UPON MAINE DEPARTMENT OF TRANSPORTATION DISK L 5 (NGS) RESET 1997 FOUND SET IN CONCRETE BRIDGE ABUTMENT THAT SUPPORTS THE BEACH STREET ON RAMP WHERE IT CONNECTS TO THE CASCO BAY BRIDGE.

4. PROPERTY LINES AND DIMENSIONS ARE TAKEN FROM PLAN REFERENCE 1.

SCALE : 1" = 20'
0' 10' 20' 40'

TOPOGRAPHIC SURVEY
AT
#121 CASSIDY POINT ROAD
PORTLAND, MAINE
MADE FOR
CYRUS HAGGE
225 COMMERCIAL STREET, PORTLAND, MAINE

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, UNIT 10, FALMOUTH, MAINE 04105

DRAWN BY: TMK	DATE: MAY 17, 2018	JOB NO. 2018-070P
CHECKED BY: SDG	SCALE: 1" = 20'	DRWG. NO. 1

121 Cassidy Point Drive

Portland

PORTLAND WATER DISTRICT
225 Douglass Street
Portland, ME 04104

Scale 0 25 50 100 150 200 Feet — 1 inch = 100 feet

Legend

- Air Valve
- Blow Off
- By Pass
- Distribution
- Transmission
- Connection
- Attribute Change
- Hydrant Control
- Reducer
- Hydrant
- Meter Pits
- Combined Service
- Domestic Service
- Fire Service
- Shallow Water Main
- Deep Water Main
- Proposed Water Main
- Private Hydrants
- Gravity
- Force
- Manhole
- CSO

N W E S

Disclaimer: This map is suitable for preliminary study and analysis and is based on PWD record information. PWD is not liable for any damages whatsoever resulting from inaccurate data or from errors made in the location and marking of its infrastructure.

Drawn By: HAS	Infrastructure Map
Scale: As Noted	Date: December 12, 2017

121 Cassidy Point Site Plan Comments:

Building and Site Use: The Conditional Uses proposal is to change the automotive repair uses with low impact industrial uses and the outdoor storage of automobiles and trucks to Marine repair services and boat storage.

Units A: Marine (Approx. 1,450 SF)
-Marine Repair Services and Boat Storage.

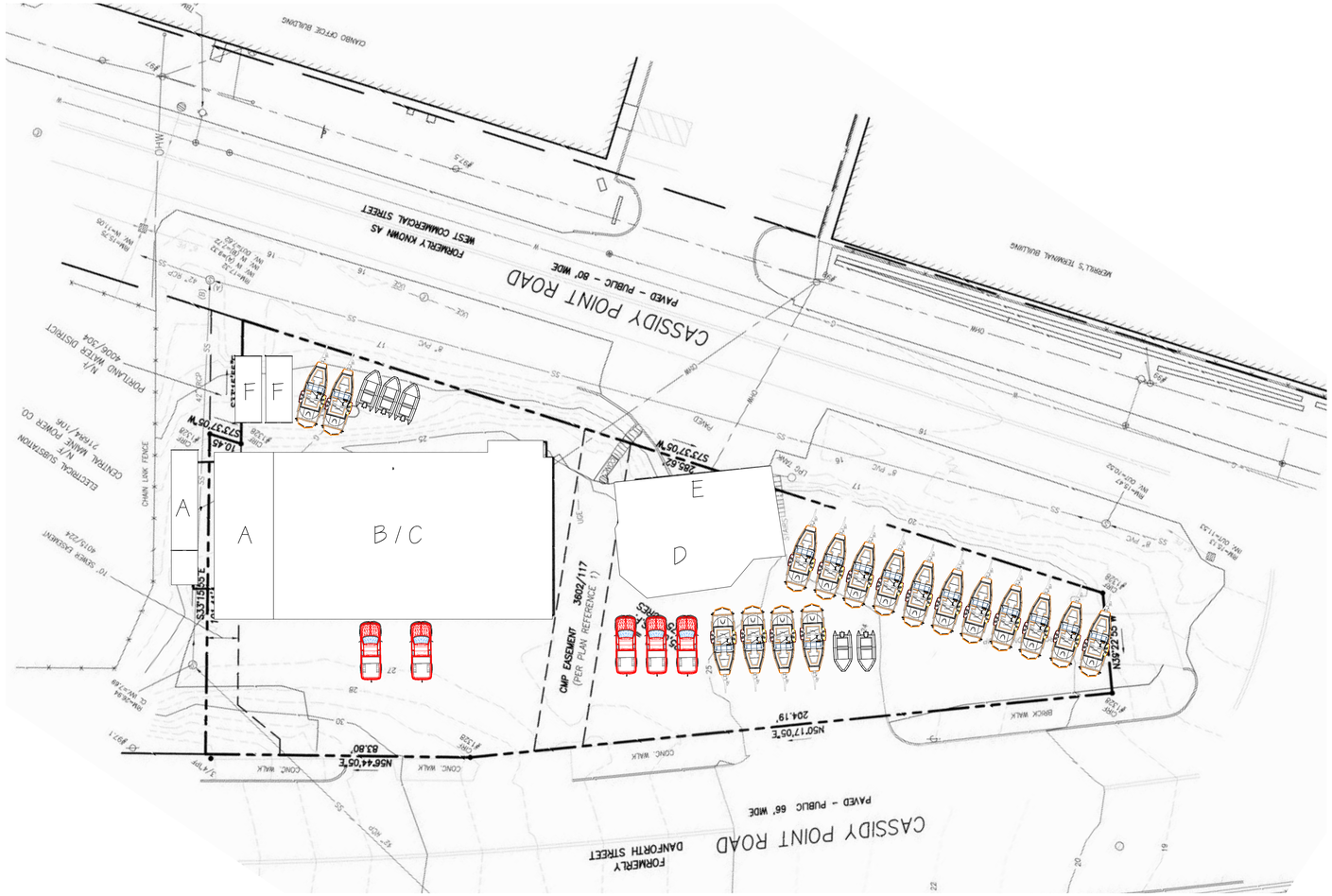
Units B, C: Industrial (Approx. 4,100 SF)
-Low Impact Industrial Uses.
-Light Manufacturing of products, welding and metal fabrication.
-Carpentry, wood working, cabinet making.
-Art and craft production
-Print making.
-Accessory uses.

Unit D: Marine (Approx. 1,500 SF)
-Marine Retail and Yacht Brokerage.

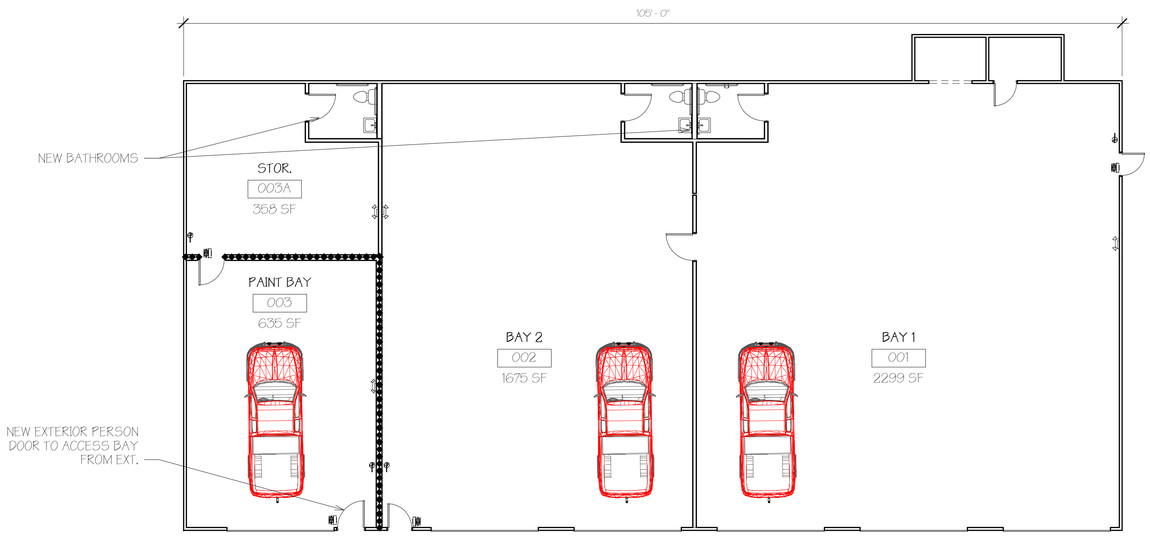
Unit E: (Approx. 1,200 SF)
-Low Impact Industrial Uses
-Welding and metal fabrication.

Units F: Marine
-Boat Storage Facilities
-Fabrication, storage and repair of fishing equipment

General Site: Marine
-Marine repair services and boat storage



1 SITE PLAN
1" = 20'-0"



2 FLOOR PLAN FOR CHANGE OF USE
1/8" = 1'-0"

A NEW EXTERIOR PERSON DOOR TO ACCESS THE PAINT BAY AND ADA-ACCESSIBLE BATHROOMS ARE BEING ADDED TO THE BUILDING. THESE CHANGES ARE CURRENTLY UNDER REVIEW UNDER PERMIT BLDC2018-00141

LICENSED ARCHITECT
TRACIE J. REED
No. 4139
STATE OF MAINE

121 Cassidy Point Drive

OWNER / CONTRACTOR
534 DANFORTH STREET LLC
225 Commercial Street, Suite 502
Portland, ME 04101
(207) 775-7442
chagge@mac.com

DEXTROUS CREATIVE
PORTLAND, ME 04102
TRACIE REED, ARCHITECT
NCARB, AIA, LEED AP BD+C
traciereed@dextrouscreative.com
2074030404459 (cell)

PROJECT TEAM

No.	Description	Date

SITE & FLOOR PLAN

Project number 18-18_Cassidy Point
Date 06.11.18
Drawn by TJR
Checked by TJR

C-1.1

Scale As indicated

6/6/2018 3:28:19 PM

Portland, Maine Yes. Life's good here.

Jeff Levine, AICP
Director, Planning & Urban Development Department

Memorandum

To: Chair Dundon and Members of the Planning Board

From: Jeff Levine, Director, Planning and Urban Development Department

Date: July 10, 2018

Re: Hotel Linkage –Nexus Study and Draft Ordinance

At the direction of the City Council's Housing Committee, staff from the Planning and Urban Development Department researched the possibility of a linkage fee for hotel developments to fund the Housing Trust. Such a linkage fee would be assessed on newly developed hotels at the time of completion based on the fact that hotels employ a large number of low income workers, many of whom need to live near their place of employment due to their hours of work or other factors. The linkage fee would be a one-time assessment to the hotel based on the number of rooms or square feet that would be paid into the Housing Trust to help provide that housing.

The Planning Department commissioned a study completed by the Greater Portland Council of Governments (GPCOG) that analyzes the need for affordable housing that is produced by a new hotel. That study is an important part of developing a commercial linkage ordinance and allows us to establish what amount the fee might be. Staff drafted a proposed ordinance based on that study. The Nexus Study and draft ordinance are attached.

At their June 27th meeting, the Housing Committee voted 3-0 to forward the proposed Hotel Linkage Fee Ordinance for review by the Planning Board.

To: Jeff Levine, Planning & Urban Development Director
From: Stephanie Carver, GPCOG Planning Director
Date: 6/15/18
RE: Proposed Methodology for Hotel Linkage fees

Introduction

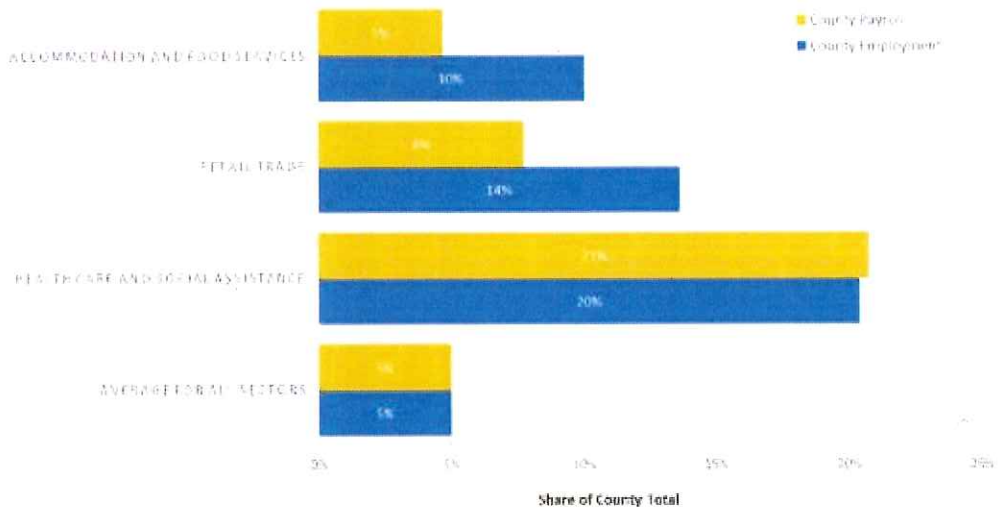
The City of Portland's Department of Planning & Urban Development is examining the feasibility of a proposal for assessing hotel linkage fees. The purpose of this memo is to provide information to the City regarding the use of linkage fees for this purpose and outline a potential methodology for the calculation of a fee.

Background

Linkage fees are fees that cities may choose to implement to help mitigate the effects of new commercial development on the demand and availability of affordable housing. Prior to implementing a fee policy, communities often conduct a study to identify the connection, or "nexus" between new commercial development and the need for additional affordable housing. It is assumed that new commercial development contributes additional workers to a city's workforce and adds new worker households. In many industries, a percentage of these households do not make enough to live and work in the same city. Looking outside the city to find affordable housing often results in longer commute times and higher transportation costs. If implemented, a linkage fee is typically charged to a developer as a condition of approval and it is assessed based on total square footage or number of units in the development.

The City's Comprehensive Plan identifies the increasing demand for affordable housing as an emerging issue and sets a goal of pursuing "policies to enable people who work in Portland to have the option to live in Portland." To be considered affordable, housing should consume no more than 30% of a household's income including rent, mortgage, utilities and other household related costs. Of the 1,130 housing units that were permitted and/or built in Portland between 2010 to 2014, including apartments, condominiums and single-family homes, just 29% were offered at a rent or sales price affordable to a household earning the median income[i].

CUMBERLAND COUNTY EMPLOYMENT 2016



The Maine office of Tourism estimates over 36 million tourists visited Portland in 2017. Hotel development is steadily increasing, with 1,811,050 square feet of hotel development representing 2,647 units currently in operation throughout the City[ii]. According to the US Census, the accommodation and food service sector is the third largest share of employment in Cumberland County, representing 10% of the County's workforce but only 5% of the County's payroll. In fact, the median employee in this sector earns $312 a week or $16,227 per year, nearly half of the median wage in Cumberland County of $696 per week or $36,187 per year[iii]. A worker employed at the County median wage earns 85% of the household income needed to afford the median rent in Portland, while the average accommodation and food service worker earns a median wage that is 37% of the household income needed to afford the median rent in Portland.[iv] This affordability gap may force accommodation workers employed in Portland to seek housing outside of Portland.

COMPARISON OF MEDIAN WEEKLY WAGE BY INDUSTRY 2016

	Portland	Cumberland County	Maine
Accommodation and Food Service	**$353**	**$312**	**$290**
Retail Trade	$418	$466	$410
Health Care and Social Assistance	$685	$699	$611
Total - All Industries	$616	$696	$611

Source: US Census American Community Survey 2016 5-year sample

According to the Maine State Housing Authority the average rent (including utilities) for a two-bedroom apartment in Portland is $1,053 per month and the household income needed to afford the average rent in Portland is $42,111 per year. However, this is the average rent paid by existing renters in Portland and new households moving to Portland will pay the current market rate, which is generally higher than the average rent. As of June 15, 2018, there are roughly 60 two-bedroom apartments listed for rent in Portland on Zillow, with monthly rents ranging between $1,300-$3,500. One third of those apartments are listed with rents between $1,500 and $2,000, and another third of those apartments are listed for more than $2,000 per month. Therefore, a new household moving to Portland will expect to pay between 120%-330% of the average rent to live in the City.

Methodology

Methodologies used to calculate linkage fees vary, but in most cases the analysis begins with an estimation of the number of new employees associated with a typical development, in this case a hotel. In this methodology, a formula is used to calculate the affordability gap between what workers can afford to pay for housing and the average cost of market rate housing.

In Portland's case, a link is established between the creation of new jobs in the hotel sector and the increased demand for affordable housing through the following steps:

- **New Jobs.** Industry data was used to estimate the number of direct jobs that will be created by the new hotel with 180 units. According to the Urban Land Institute the typical hotel employs between 0.5-0.8 employees per hotel room. Using an average value of 0.65 employees per hotel room it is estimated that a hotel with 180 rooms will employ 117 people. The current ratio of jobs per household was used to estimate how many households will be created by this new employment.

- **Households.** Currently there are 37,737 employed civilians aged 16 and over living in the 30,211 total households in Portland. This means that on average there are 1.2 jobs per every household in Portland. Based on this ratio it was estimated that the 117 additional jobs created by a new hotel will create 94 new households in Portland. However, it is assumed employment in these households will be split up between different occupations, such as management, sales, service, and maintenance. Depending on the occupation the wages for each occupation may be higher or lower than the median wage for the hotel industry. Therefore, industry occupation employment and wage data examined from the ACS was used to estimate how many new households will be low income.

EMPLOYED POPULATION PER HOUSEHOLD 2016

	Portland	Cumberland County	Maine
Employed Civilian Population 16+	37,737	155,014	652,638
Total Households	30,211	117,871	551,109
Jobs/Household	1.2	1.3	1.2

Source: American Community Survey 2016 5-year estimate

- **Jobs by Occupation.** Based on industry and occupation employment data from the ACS 64% of jobs in the hotel industry are service occupations, 19% of hotel jobs are management occupations, 13% of hotel jobs are sales and office occupations, and the remainder are maintenance and transportation occupations. The total number of jobs and households that will be created in each occupation was calculated by multiplying the share of hotel employment by occupation by the total number of new hotel jobs created.

NEW JOBS AND HOUSEHOLDS BY OCCUPATION CREATED BY NEW HOTEL EMPLOYMENT

	Share of Hotel Employment	Number of New Jobs	Number of New Households
Service	64%	74	60
Sales and Office	13%	15	12
Transportation	4%	4	3
Maintenance	1%	1	1
Management	19%	22	18
Total - All Occupations	100%	117	94

Source: American Community Survey 2016 5-year estimate; GPCOG Analysis

- **Household Income.** To calculate the household income for each household in each occupation category the median wage by occupation data for Cumberland County from the ACS was used. This calculation assumes 1 person in each new household works full time in the hotel industry and any additional workers in the household earn the area median income.

NEW HOUSEHOLDS AND HOUSEHOLD INCOME BY OCCUPATION

	Number of New Households	Median Wage for Hotel Income Earner	Median Wage for Second Income Earner	Total Household Income
Service	60	$18,109	$9,015	$27,124
Sales and Office	12	$30,444	$9,015	$39,459
Transportation	3	$31,695	$9,015	$40,710
Maintenance	1	$33,421	$9,015	$42,436
Management	18	$52,910	$9,015	$61,925

Source: GPCOG Analysis and American Community Survey 2016 5-year estimates

- **Affordability Gap.** These estimates for household income by occupation were compared to affordability data from the Maine State Housing Authority to show the difference between what the new households created by hotel employment earn and the minimum income needed to afford a two-bedroom apartment in Portland. These results show that households with Service or Sales and Office occupations have a household income that is lower than the minimum income needed to afford rental housing in Portland. This household affordability gap is largest ($14,987) for households with Service occupations, which also represent nearly 2/3 of households created by the new hotel employment.

AFFORDABILITY GAP

	Number of New Households	Total Household Income	Income Needed to Afford Rent in Portland	Household Affordability Gap	Total Affordability Gap
Service	60	$27,124	$42,111	$14,987	$892,820
Sales and Office	12	$39,459	$42,111	$2,652	$32,048
Transportation	3	$40,710	$42,111	$1,401	$4,856
Maintenance	1	$42,436	$42,111	NA	$0
Management	18	$61,925	$42,111	NA	$0
Total					$929,724

Rental Affordability Source: Maine State Housing Authority, 2017

- **Aggregate Affordability Gap.** Next, the household affordability gap for each occupation was multiplied by the number of households with employment in each occupation to arrive at a total affordability gap of $929,724 per year. This number represents the difference between these households' ability to pay for their housing and the market cost of their housing based on the median monthly rent. In reality these households will face much higher rental housing costs since the current shortage of rental housing in Portland means that rents for new units are significantly higher than the median rent.

- **Final Calculation.** When we divide the affordability gap of $929,724 by the number of new hotel rooms, we get an average affordability gap per room of $5,165, or $7.70 per square foot. Therefore, a fee of just under $8 per square foot would cover a minimum justified

housing affordability gap for the 94 new households created by a new 180 unit hotel employment for one year.

This example estimate represents the full cost of the affordability gap for employment in one hotel for one year based on available data. Multiple industries could potentially affect the demand for affordable housing and the city may determine a higher or lower percentage of this fee based on these variables. Furthermore, this fee could be re-evaluated periodically as circumstances such as inflation, rents, and rental housing supply change.

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[i] Portland 2030 Housing Demand, GPCOG 2015
[ii] Data from City of Portland, Department of Planning & Urban Development.
[iii] 2016 median wage data from the US Census American Community Survey (ACS)
[iv] (Source: US Census County Business Patterns, 2016).

Sec.14-484. Purpose.

It is in the public interest to promote an adequate supply of affordable housing for the city's residents. The purpose of this division therefore is to offer incentives to developers to include units of affordable housing within development projects or based on demonstrated need caused by creation of new lower-income jobs, thereby mitigating the impact of market rate housing construction on the limited supply of available land for suitable housing, and helping to meet the housing needs of all economic groups within the city. The city believes that this division will assist in meeting the city's comprehensive goals for affordable housing, in the prevention of overcrowding and deterioration of the limited supply of affordable housing, and by doing so promote the health, safety and welfare of its citizens.

Sec. 14-485. Definitions.

...

Hotel Project is any hotel, inn or motel, as defined in this ordinance, consisting of 10 or more rooms for rent. Any such development that expands by 10 or more rooms within any 5 year period will also be considered a Hotel Project.

14-489 ~~Hotel~~ Housing Linkage ~~Fee~~for Hotel Projects

(a) **Purpose:** This section is based on City analysis, most specifically documented in the Greater Portland Council of Government study "Proposed Methodology for Hotel Linkage Fees" dated 6/15/18, that finds that new hospitality developments create a need for new affordable housing. This need is the result of the fact that these uses create a number of jobs that do not pay sufficiently to afford housing provided in the market.

(b) **Applicability:** This section applies to all Hotel Projects as defined in 14-485 that are not complete as of the effective date of this section.

(c) **Housing Linkage:** All Hotel Projects shall provide one unit of Low Income Housing for Rent in the City of Portland for every 20 rooms in the Hotel Project. This amount shall be rounded up to the nearest increment of 20 rooms.

(d) **Fee in Lieu Alternative:** As an alternative to providing units as per (c) above, a Hotel Project may pay a linkage fee as shown in the table below, which would address one

year's impact from development of that hotel room on the housing market. This amount shall be paid into the City's Housing Trust and used for the purposes set forth in the ordinance and regulations applicable to that trust:

Hotel Projects with Building Permits but without Certificates of Occupancy as of the Applicable Date of this Ordinance	$2,500 per room
Hotel Projects without Building Permits as of the Applicable Date of this Ordinance	$5,000 per room

(e) **Annual Adjustments:** The amounts in (d) above shall be adjusted annually in the same way as the fee under Division 29 for Housing Replacement.

(f) **Regulations:** The Planning Board may promulgate implementing regulations based on this ordinance.

Sec. 14-~~489~~490. Housing trust fund.

Fwd: hotel linkage project

jdealaman <jdealaman@portlandmaine.gov> Jul 10, 2018 2:58 PM
Posted in group: **Planning Board**

Forwarding as a public comment to the Planning Board group.

---------- Forwarded message ----------
From: **Mark Robinson** <markrobinson@maine.rr.com>
Date: Tue, Jul 10, 2018 at 2:43 PM
Subject: hotel linkage project
To: jlevine@portlandmaine.gov
Cc: jdealaman@portlandmaine.gov, dmk@portlandmaine.gov

Good afternoon, Mr. Levine.

I am a communications consultant to several commercial real estate developers who have built successful projects in Portland, and I am aware that the Proposed Hotel Linkage Project will be discussed in a workshop at the end of tonight's meeting.

There has been sort of a scramble in the last few days as these companies have reached a consensus that they would like a little more time to pull together some alternative ideas to present to the Planning Board, perhaps in a subsequent workshop. (I believe the Portland Press Herald first publicized the $5,000 per-room fee last Monday, July 2 — I think it's fair to say the news caught many off guard, although I know the Housing Committee has been studying the matter.)

Could you please alert the Planning Board tonight to your receipt of this email? I realize that I am light on details about which companies I am representing, and I don't have a specific ask for how much time exactly they are asking for, but I do assure you that this is a serious effort to present possible alternative. The challenge here is that this effort is in its infancy, launched a few days ago, just before the Fourth, by the Press Herald's article. I was alerted to this only this morning. If you could enter my note into the record, I'd be much obliged. If you would like to discuss over the phone, I can be reached at 207-332-3798.

Incidentally, one of the developers sent me a link this morning to a pertinent article. I think it's an interesting read:

http://www.latimes.com/opinion/op-ed/la-oe-manville-monkonnen-linkage-fee-20170719-story.html

Thank you very much for your time and consideration.

— Mark Robinson

www.MainePR.com
207-332-3798
MarkRobinson@maine.rr.com

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James Dealaman, Administrative Officer
Planning and Urban Development Department
City Hall, 389 Congress Street, 4th Floor
Portland, Maine 04101
(207) 874-8721 (T)
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planning@portlandmaine.gov
www.portlandmaine.gov
Office Hours are Monday - Friday 8:00 a.m. - 4:00 p.m.

7/10/18

City of Portland

389 Congress Street

Portland, ME 04101

Members of the City Council,

As a resident of Portland for a number of years, I fail to see how this linkage fee will be conducive to the overall growth of the city. I have a myriad of other concerns that the city could address, to solve the problem at hand. Instead of pointing specifically at hotel developers to fix the lack of affordable housing, we should look at other problems within the city itself.

One of the most attractive parts about living in downtown Portland, is that you can walk to most places very easily. However for the rest of the city, the public transportation to get you there is inadequate. There are not enough buses running or designed routes to make public transit efficient or viable. This has created a catalyst for the current traffic congestions we are experiencing in the city. The demand for affordable housing downtown, would not be as great if people living on the outskirts of the city could easily commute in.

Linkage fees in a broad application can be effective, in this case though, targeting a small group of taxpayers and investors simply because of the potential profitability of their investment, does not seem like a solution to our affordable housing problem. On the contrary a broader tax incentive program to build affordable housing, would have a far greater long term impact on the city. Also Portland would become one the first cities nationally where the linkage fee is targeted at such a specific sector. I don't think this is the precedent we want to set for the city's future development.

I do think that the city council is in the right place in trying to address the affordable housing problem that Portland currently has. I believe this is one of the biggest challenges facing our city in the coming future. I just struggle to find the correlation between hotel developments and the lack of affordable housing. I believe there is a multitude of issues contributing to the overall problem. Therefore the solution will not come from any one thing but a much more comprehensive plan to address this growing issue.

Sincerely,

Brent Maurice