PLANNING BOARD

Tuesday, June 11, 2024 at 4:30 PM
Hybrid Meeting, Room 209, 2nd Floor,
City Hall

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

The Planning Board invites the public to attend the meeting **in person or Zoom** pursuant to the Remote Meeting Policy adopted by the Planning Board. Prior to the meeting, please check the Agenda Center https://www.portlandmaine.gov/602/Agendas-Minutes to view memos and reports which will be posted by the end of the day on the Friday before the Planning Board meeting. To submit written public comment on an agenda item, email planningboard@portlandmaine.gov. Submissions must be received by 12:00 pm **the day before** the Planning Board meeting to guarantee their inclusion in the agenda packet. All submissions must include the commenter's name and legal address. To help ensure your comment is submitted for the correct item, please include the name of the agenda item (see below).

REMOTE PARTICIPATION
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AGENDA:

WORKSHOP - 4:30 PM

i. Major Site Plan; 235 Park Ave; Portland Sea Dogs, Applicant. The Planning Board will hold a hybrid workshop to consider a proposal to construct a new 2-story, 23,600 square foot pre-fabricated building which will serve as the Sea Dogs Clubhouse. The clubhouse will include lockers, restrooms, showers, lounge space, and baseball workout areas. The subject property totals 22.7 acres, and is zoned ROS Recreation Open Space. A project and plan summary are available for viewing on the city's CSS Portal (https://css.portlandmaine.gov/) by referencing Plan Number PL-002896-2024.

PUBLIC HEARING - 5:30 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON MAY 28, 2024 AND JUNE , 2024

May 28, 2024
Workshop
42 Atlantic Street: Barker, Chann, Mazer, Murphy, Silk, Smith and Stanley present.

Public Hearing
186 Woodford Street: Barker, Chann, Mazer, Murphy, Smith and Stanley present. Silk recused.
638/654 Riverside Street: Barker, Chann, Mazer, Murphy, Smith and Stanley present. Silk absent.
246 Eastern Promenade: Barker, Chann, Mazer, Murphy, Smith and Stanley present. Silk absent.

June 5, 2024
Workshop
Recode: Barker, Chann, Mazer, Silk, Smith and Stanley present. Murphy absent.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON MAY 28, 2024

i. Major Site Plan; 9 Boyd Street; Portland Housing Development Corporation and COMB Block, LP, Co-Applicants. Smith motioned, and Murphy seconded a motion to table the public hearing to July 9, 2024. Vote 5-0. Silk absent, Barker recused.

ii. Major Site Plan Amendment; 186 Woodford Street; Community Housing of Maine (CHOM), Applicant. Barker motioned, and Murphy seconded a motion to approve the major site plan amendment. Vote 6-0. Silk recused. Barker motioned, and Stanley seconded a motion to adopt the draft approval letter as the Board's decision on the major site plan amendment application, and authorize the Board Chair to sign the letter as drafted. Vote 6-0. Silk recused.

iii. Major Site Plan and Conditional Use Amendment; 638/654 Riverside Street; City of Portland, Applicant. Barker motioned, and Stanley seconded a motion to approve the expansion of the emergency shelter conditional use at the subject property. Vote 4-2. Chann and Murphy opposed, and Silk absent. Barker motioned, and Stanley seconded a motion to approve the major site plan amendment. Vote 4-2. Chann and Murphy opposed, and Silk absent. Barker

motioned, and Stanley seconded a motion to adopt the draft approval letter as the Board's decision on the major site plan and conditional use amendment application, and authorize the Board Chair to sign the letter as drafted. Vote 6-0. Silk recused.

iv. Major Site Plan and Conditional Use; 246 Eastern Promenade; ECK Realty, LLC, Applicant. Barker motioned, and Stanley seconded a motion to waive Technical Manual Sec. 1.10.3, to reduce the required minimum two-way driveway aisle width from 24 feet to 18 feet. Vote 6-0, Silk absent. Barker motioned, and Stanley seconded a motion to waive Technical Manual Sec. 1.5.1.B to reduce the required minimum two-way driveway width from between 20 and 24 feet to 18 feet. Vote 6-0, Silk absent. Barker motioned, and Stanley seconded a motion to approve the conditional use application for inclusionary zoning. Vote 6-0. Silk absent. Barker motioned, and Stanley seconded a motion to approve the major site plan application. Vote 6-0. Silk absent.

5. NEW BUSINESS

i. Major Site Plan and Conditional Use Amendment; 54 York Street; 54 York Street, LLC, Applicant. The Planning Board will hold a hybrid public hearing to consider a proposed amendment to application PL-001838-2021, to convert the project from a 14-unit residential project to a 14-room hotel. This amendment does not propose any changes to any other application materials or drawings. The project site totals 9,715 square feet, and is zoned B-5b Urban Commercial. A project and plan summary are available for viewing on the city's CSS Portal (https://css.portlandmaine.gov/) by referencing Plan Number PL-002954-2024.

ii. Conditional Use; 501 Forest Avenue; DC 509 Forest, LLC, Applicant. The Planning Board will hold a hybrid public hearing to consider a conditional use application intended to facilitate the conversion of 3,985 square feet of existing space within the building at 501 Forest Avenue to warehouse storage, associated with Bow Street Beverage, located at 495 Forest Avenue. Warehouse storage totaling less than 10,000 square feet of floor area is identified as a conditional use in the B-2b Community Business zone, and is subject to Planning Board review. A project and plan summary are available for viewing on the city's CSS Portal (https://css.portlandmaine.gov/) by referencing Plan Number CU-002955-2024.

iii. Major Site Plan and Site Location of Development; 1 Bean Pot Circle; Northeastern University, Applicant. The Planning Board will hold a hybrid public hearing to consider a proposal to construct a 238,000 square foot Learning, Research & Collaboration Building, renovation of the 58,000 square foot Bean Building to create a business incubator space, construction of a 234,550 square foot parking garage, and development of a 7,500 square foot childcare facility. Other improvements include replacement of the existing pier on the property, and the development of new public open spaces and pathways. The subject property totals approximately 24 acres, including submerged lands, and is zoned B-5 Urban Commercial and also located within the Roux Institute Institutional Overlay Zone. A project and plan summary are available for viewing on the city's CSS Portal (https://css.portlandmaine.gov/) by referencing Plan Number PL-002724-2023.

Planning Board Memorandum
Planning & Urban Development Department

To: Chair Mazer and Members of the Portland Planning Board
From: Ameriz Gamez, Planner
Date: June 6, 2024
Subject: 235 Park Avenue
Project ID: PL-002896-2024
Meeting Date: June 11, 2024

I. INTRODUCTION

At the workshop on June 11th, the Planning Board will review a Major Site Plan application submitted by VHB , on behalf of the Portland Sea Dogs, which proposes the construction of a 23,600 square foot. pre-engineered, two-story clubhouse located at 235 Park Avenue, adjacent to Hadlock Field. This clubhouse will consist of lounge spaces, showers, workout area, and locker rooms. It will primarily be used by the players, umpires, and ground staff, and will not be open to the public. The clubhouse is being constructed in order to bring the Hadlock Facility into compliance with rules established by Major League Baseball (MLB) for Minor League Teams, so that the Sea Dogs will continue to be able to utilize Hadlock Field as their home field.

The Planning and Urban Development Department mailed 113 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the June 1, 2024 and the June 4, 2024 editions of the Portland Press Herald.

Applicant: Portland Sea Dogs
Applicant Representative:David Senus and Jason Howe, VHB

II. REQUIRED REVIEWS

Review	Applicable Standards
Major Site Plan Review	Section 14.6

III. PROJECT DATA

Existing Zoning	Recreational Open Space (R-OS)
Property Size	913,168 sq. ft. (20.96 ac.)

	Parcel ID: **049 A001001**
Existing Use	Hadlock Baseball Field
Proposed Use	Installation of Clubhouse located on Hadlock Field

	Existing	Proposed	Net Change
Impervious Surface Area	75 %	75%	0%
Parking Spaces	58	46	12
Bicycle Parking Spaces	39	39	0

IV. EXISTING CONDITIONS AND SURROUNDING AREA

The project site where the installation is to take place is a portion of a larger parcel that is a total of 20 acres of recreation open space. This location is accompanied by surrounding recreational uses such as Deering Oaks Park, Fitzpatrick Stadium, and the Ice Area, along with adjacent residential uses.



Figure 1: Figure 1: View property highlighted, from City of Portland Maine Parcel Viewer

V. PROPOSED DEVELOPMENT

The proposed project consists of 23,600 Sq. Ft. two-story pre-engineered metal building to be installed at Hadlock field. Major League Baseball is requiring the Portland Sea Dogs add a new clubhouse in order to provide facilities for both teams. This new clubhouse will provide lockers, showers, lounge space, and workout areas for the use of the players, umpires, and grounds crew; this will not be open for public access. The metal building will have a height of 40Ft therefore not exceeding the max height of 45 Ft.and will provide an elevator for ADA access to the second level. The Sea Dogs have contracted with the City of Portland to be the primary tenant at Hadlock Field, therefore, installing the required clubhouse will allow for the continued use of the stadium as the team's home field. The applicant is predicting a completion date of March 2025.

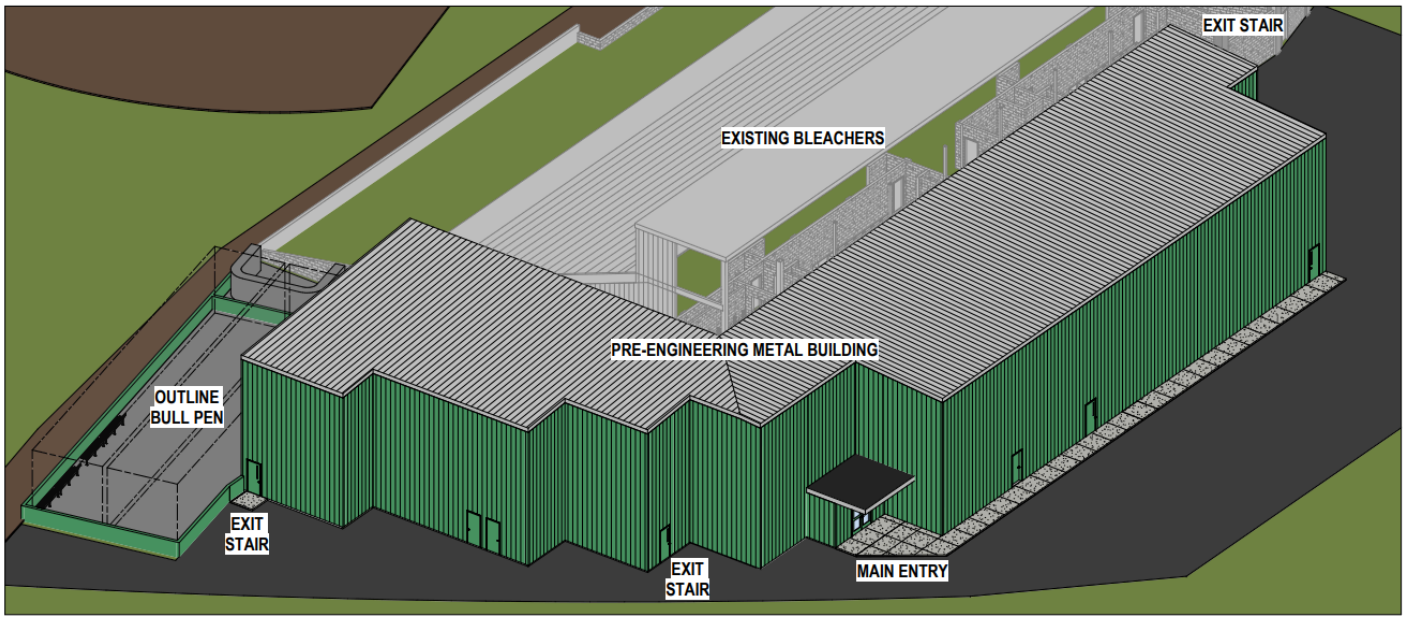


Figure 2: Snip from Exterior Isometric, Sheet A2.0a, from applicant submittal.

VI. RIGHT, TITLE, AND INTEREST

This is a City owned property and documentation has been provided by the applicant demonstrating the City's ownership of the property, which was recorded at the Cumberland County Registry of Deeds (Book 01694/158 Page 56) on December 13, 2023.

VII. FINANCIAL AND TECHNICAL CAPACITY

The applicant has submitted a letter from HSBC Bank USA, National Association, dated April 10th 2024, that demonstrates that all accounts have been maintained and operated in a satisfactory manner. The Sea Dogs have hired VHB, a multidisciplinary Engineering, Planning, and Design firm with a proven track record in project delivery, to prepare the application materials, and see the application through the permitting process.

VIII. ZONING ANALYSIS DIMENSIONAL AND USE REQUIREMENTS

A zoning review has been conducted on this application and this project is required to meet the standards of the R-OS Recreational Open Space zone, see below.

	Required	Proposed
Front Setback (Min.)	25Ft.	169.6 Ft.
Rear Setback (Min.)	25Ft.	11Ft.
Side Setback (Min.)	12Ft.	61Ft.

Structure Height (Max.)	45Ft.	40Ft.
Impervious Surface Ratio (Max.)	75%	<75%
Off-Street Parking	0	0

IX. SITE PLAN STANDARDS

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's Site Plan Ordinance, Section 14.6. Staff comments are below.

1. Transportation Standards (Section 14.6.1)

A. Impact on Surrounding Street Systems

The proposed installation will not result in impacts to off-premises infrastructure, nor will the development increase the number of staff members or players at the site therefore not creating any additional traffic. The physical impacts of the project are not set to extend beyond the property boundaries and the additional construction at the Park Avenue entrance will take place during off-season, which should minimize potential impacts to traffic along Park Avenue. The development will result in the removal of 12 existing parking spaces, however there will still be a total of 46 spaces, including handicap, that are to remain available for visitors to utilize.

B. Access and Circulation

Hadlock Field is accessed via an existing curb cut and driveway off Park Avenue, which allows for two-way vehicular traffic in and out of the site, with one-way circulation through the off-street parking area. The property features a brick sidewalk along its frontage, with a dedicated pedestrian zone for visitors to access the field. The property is served by the METRO Route 5 Bus, with westbound stop between Hadlock Field and the Portland Expo, and eastbound stop at the intersection of Park Avenue and Gilman Street, immediately across the street from Hadlock Field. The City is planning to create a multi-use pathway along the former Union Branch Rail Corridor which runs along the back of the property between Hadlock Field and I-295, this proposed development will not interfere with the City's plan to construct this trail.

Staff Comments:

Access to the park is to remain off of Park Avenue, the current driveway approach is not in full compliance with ADA City Standards and there will need to be reconstruction of the City driveway apron, it has been requested by staff that this be addressed and brought to compliance prior to approval. Staff has also requested clarification in regards to the relocation of the stairs that are shown and noted on floor plans.

C. Public Transit Access

Due to the nearest bus shelter being less than ¼ miles away from the site, this

standard does not apply.There is an active bus stop off of Congress Street and Valley Street that is approximately 0.3 miles from the project site.

D. Parking
This installation is taking place on a portion of the parking lot which is resulting in the removal of a total of 12 parking spaces. The impacts to the parking lot are minimal, however, staff will request clarification from the applicant on who utilizes the spaces currently and how they anticipate people to arrive at the facility.

E. Transportation Demand Management (TDM)
A Transportation Demand Management Plan is not required for this site; therefore this section is not applicable.

2. Environmental Quality Standards (Section 14.6.2)

A. Preservation of Significant Natural Features
There are no significant natural features as defined in Sec. 14.6.2.A.1 on the subject property and therefore this standard does not apply.

B. Landscape Preservation
This site does have existing trees that are to be removed for the installment of the clubhouse. The applicant confirms that all existing trees within the limit of demolition shall be removed and properly disposed of off site.

Staff is requesting that the applicant provide the size, species, and total number of trees that are onsite and which are proposed to be removed for the installation.

C. Site Landscaping and Buffers
The applicant did not submit a Landscaping Plan that specifies new planting to take place after the construction of the clubhouse. Therefore, staff is requesting that the applicant submit a plan to confirm the location of any new planting that is to take place.

D. Water Quality, Stormwater Management, and Erosion Controls
The project is required to comply with the Maine DEP Chapter 500 and the City's Technical Manual Section five standards for stormwater management. This project has included erosion and sedimentation control measures per the basic standards. It is also proposing to construct 4,800 Sq. Ft. of permeable payment that is to provide treatment for itself. While most of the project area is rooftop or can be considered maintenance, adequate treatment area is provided to meet the General and Redevelopment Standards.

It has been requested by the City's Stormwater Engineer that the applicant clarify a number of comments pertaining to stormwater management and Erosion Control. Staff is requesting further details on areas that will also encompass the storm drain main line, numerous connections from the building drainage, as well as the proposed water

services. Additionally, the details provided for the catch basins and associated frames and grates are the typical details from the City of Portland Technical Manual, however they are generally for use in the ROW when structures are installed along a curb line. We are requesting that details be provided for the types of structures to be utilized on the site, and the structure names also indicate that some will be different types of structures and details should be provided for these as well. Lastly, the plans show a retaining wall detail that indicates an underdrain behind the wall. We are requesting additional clarification as to whether this will be utilized and where it will connect or discharge.

3. Public Infrastructure and Community Safety Standards (Section 14.6.3)

A. Consistency with City Master Plans
The installation of the clubhouse allows for the Sea Dogs organization to comply with league rules. The Sea Dogs are contracted to be the primary tenant at Hadlock Stadium, therefore, the project is consistent with the Athletic Facilities Task Force Report (2011) and ultimately the City's Master Plan of continuing to have this athletic organization occupy the stadium.

B. Public Safety and Fire Prevention
The alley that is formed by the clubhouse addition will provide maintenance and emergency service access to the rear of the stadium and to left field. The project includes a rear vehicle alley to allow for emergency vehicle access to the north side of the building. The south and west sides of the new clubhouse are open to and accessible from an existing parking lot.
Staff is currently waiting on the review of the Fire Department to confirm that the public safety and fire prevention standards are met for this site.

C. Public Utilities
The Applicant is required to provide a wastewater capacity authorization requested to the Department of Public Works in order to account for the facility expansion.. Staff is requesting that the applicant provide confirmation from utility provider that they have adequate capacity to service the project. This will also include acceptance of design for the proposed utility connections

4. Site Design Standards (Section 14.6.4)

A. Massing, Ventilation, and Wind Impact
The location of the new pre-engineered clubhouse will replace the existing detention bleacher and concession building. The new building will not exceed the current height of the stadium and will be adjacent to the existing stadium's third baseline concourse. The proposed clubhouse property line is next to a railroad line and wooded area, and therefore the location of the building is not anticipated to result in a reduction in ventilation to abutting structures, or unsafe wind conditions for users of the site or future adjacent public spaces.

B. Shadow
The proposed clubhouse is comparable to the existing stadium and is designed to accommodate public views and sightlines for the stadium's intended purpose. It is important to note that although there is currently no path, there is a plan to construct a new multi-use pathway in the future that is to be publicly accessible. This pathway will be immediately adjacent to the project site. Per Section 11 of the Technical Manuel a Shade Study will not be required due to the height of the proposed building being less than 45 Ft.

C. Snow and Ice Loading
The roof of the clubhouse is a single slope shed roof, with the slope pitching away from any public spaces. There are to be restraints included along the roof and above the egress points. Any snow that is to fall will be stored in a designated area as shown on the site plan.

D. View Corridors
This project site is not located within an established view corridor. Not applicable.

E. Historic Resources

No historic resources are known to exist, in the event that they are identified during the construction process, the applicant will be required to comply with the documentation and preservation criterion of this standard.

F. Exterior Lighting

The site related lighting consists of building mounted full cut off area lighting located at 16 feet above finished grade (W5) and (W6); wall mounted full cut off egress lighting mounted over the entry doors (W4); and downlights under the canopy of the walkway (R2). Staff has requested that the applicant provide a lighting plan to confirm that no lights are emitted above the horizontal plane or spilled into adjacent properties.

G. Noise and Vibration
The heating, ventilation, and air conditioning system are high-efficient units and are to be located on the proposed building, in order to minimize noise and vibration impacts.

H. Signage and Wayfinding
There is no new on-site signage proposed for this project.

I. Zoning-related Design Standards

The project is within the Recreational Open Space (R-OS) zoning, therefore the proposed project is not subject to a design review based on the use and the location of the building.

X. NEIGHBORHOOD MEETING AND PUBLIC COMMENT

The Applicant is set to hold a neighborhood meeting on June 12, 2024 as part of this project. The neighborhood meeting minutes and sign-in sheet will be included as part of the Planning Board's packet for any subsequent meeting.

As of the writing of this memorandum, the City has not received any public comments on this application.

XI. NEXT STEPS

Planning Staff is seeking feedback from the Planning Board on:

- Any concern that may be in correlation with the proposed installation.
- Applicant is to provide the requested information in the following:
    - Stormwater management approach
    - Lighting Plan
    - Preservation and Landscaping Plan
    - Utility confirmation

XII. ATTACHMENTS

Staff Attachments

1. Project Review Comments, First Submission, 5/31/2024

Applicant Documents

1. Cover Letter
2. Checklist
3. Evidence of Right, Title, and Interest
4.
5. Zoning Assessment Table
6. Site Plan Standards Assessment
7. Summary of Existing Easement or Covenants
8. Financial Capability
9. Technical Capability
10. Sea Dogs Neighborhood Meeting Invitation
11. Stormwater Memo
12. Construction Management Plan

Plans

A.1.1a First Floor Plan
A1.1b Level 1 and Level 2 Floor Plan - Area A
A1.2a Second Floor Plan

A1.2b Level 1 and Level 2 Floor Plan - Area B
A2.0a Exterior Isometric
A2.0b Perspectives and Isometric
A2.1 Exterior Elevations
A2.2 Exterior Elevations
C0.00 Cover
C1.00 Legend and General Notes
C2.00 Site Preparation Plan
C3.00 Layout and Materials Plan
C4.00 Grading and Drainage Plan
C5.00 Utility Plan
C6.00 Erosion Control Plan
C7.01 Site Details Plan 1
C7.02 Site Details Plan 2
Sv-1 Boundary Retracement Survey
Sv-2 Existing Conditions

Dear Applicant,

We have completed our review of your application (PL-002896-2024) proposing to install a 23,600 Sq. Ft. two-story pre-engineered metal building that will be the new clubhouse for the Sea Dogs baseball team at Hadlock Field. This clubhouse will consist of lounge spaces, showers, workout area, and locker rooms. There will be no public access to this building. This installment is taking place in the R-OS Recreational Open Space zone and triggers the major site plan review and is subject to the following regulations:

- Site Plan – Article 14.6

An overview of the City's review can be viewed in the attached project review worksheets and peer review comments.

Next Steps

Please review all feedback and reach out to the project review manager if you have any questions or would like to discuss this feedback in more detail. In order to proceed, the applicant shall prepare a written response to all feedback, and shall update plans, documents and other materials as necessary to address the above listed comments. The applicant shall notify the project review manager when a resubmission is uploaded to ProjectDox. Once received, the project review manager will notify the applicant of their scheduled review timeline for this resubmission.

Based upon the City's findings related to your application, the City will advance this application for a workshop with the Planning Board on **Tuesday, 06/11/2024.** Please let me know at your earliest convenience if there are any conflicts with the proposed date.

Sincerely,

Ameriz Gamez

Site Plan Review Standards (Sec. 14.6)

Transportation Standards (Sec. 14.6.1)

Standard	*Discussion*	*Finding*
Impact on Surrounding Street Systems	**Overview:** Any construction that is to occur during the installment of the pre-engineered clubhouse shall comply with Chapter 25 Article VII of the City Code. Additional construction at the Park Avenue entrance is set to take place during off-season eliminating potential impacts to traffic. **Updates Requested** ● Submit a Construction Management Schedule.	Not Met
Access and Circulation	**Overview:** Access to the park will remain off of Park Avenue, the current driveway approach is not compliant with ADA City Standards and will be required to be addressed prior to approval. **Updates Requested** ● The driveway approach needs to be ADA accessible in order to meet our requirements. ● The driveway will need to be reconstructed and include a City driveway apron detail. ● Note that the wider brick area may need to be removed, please review the City's brick sidewalk detail. (See attachment from DPW Transportation)	Not Met
Public Transit Access	**Overview:** **Updates Requested** ● List action items for an applicant to respond to	Not Met
Parking	**Overview:** Impacts to the parking lot are minimal and are compatible with future plans around the establishment. Staff has reviewed the parking layout and have no concern. **Updates Requested:** ● None.	Met
Transportation Demand Management	**Overview:** A Transportation Demand Management Plan is not required for this project. **Updates Requested** ● None.	Met

Environmental Quality Standards (Sec. 14.6.2)

Standard	*Discussion*	*Finding*
Preservation of Significant Natural Features	**Overview:** This Project does not contain any significant natural features. **Updates Requested** ● None.	Met
Landscape Preservation	**Overview:** There are existing trees in the exact location of where the installation is to take place. The Preparation Notes confirm that all existing trees within the limit of demolition shall be removed and disposed of off site. **Updates Requested** ● Provide size and species of all trees that are to be removed.	Not Met

Site Landscaping and Buffers	**Overview:** A landscape plan was not submitted with this application. **Updates Requested** ● Confirm the trees that are to be removed from this site and if new planting is to take place.	Not Met
Water Quality, Stormwater Management and Erosion Control	**Overview:** This project is required to comply with the Maine DEP Chapter 500 and City of Portland Technical Manual Section 5 standard for the stormwater management.This project has included erosion and sedimentation control measures per the basic standards. It is also proposing to construct 4,800SqFt of permeable payment that is to provide treatment for itself. The permeable pavement also generally represents the area that is considered non-roof redevelopment, while most of the project area is rooftop or can be considered maintenance. Adequate treatment area is provided to meet the General and Redevelopment Standards. Updates Requested ● The following comments on the proposed porous pavement system. ○ The Applicant should review the proposed outlet control structure design. A 1.5” orifice is proposed, however, based on the dimensions provided, only 1.26” of concrete will be provided between the top of that orifice and the top of the weir. This seems very close, and might not be a stable structural design, and may also be difficult to construct. The HydroCAD model also shows that there is no flow through the orifice and that at all modeled storm events, all flow is over the weir. The system design should be confirmed. The orifice should also be specifically identified as a specific maintenance item in the post-construction maintenance plan. ○ The HydroCAD model includes two model points for the Porous Pavement, one specifically for the pavement modeled as a pond, and a second for the outlet control structure as a pond. Both of these ponds include the same storage volume representing the porous pavement, which appears to double count for storage. Please clarify the model. ○ The detail for porous pavement shows a single 4” perforated pipe within the crushed stone later. The plan view does not show the location of these underdrain pipes, so it is unclear where they will be located and how they will connect to any structures within the porous pavement area. This area will also encompass the stormdrain main line, numerous connections from the building drainage, as well as the proposed water services. The layout of the porous pavement piping should be clarified. ○ The porous pavement details indicate that impermeable liner will be provided on the sides of the section. Please clarify what will be provided along the base of the section – at a minimum a separation filter fabric should be provided, but also confirm that separation requirements from groundwater will not require an impermeable layer. ● The plans note that the water line will be concrete encased. A detail should be provided. ● The retaining wall detail indicates an underdrain behind the wall. Please clarify if this will be utilized and where it will connect or discharge.	Not Met

	• The rim and invert information provided indicates that the stormdrain pipe at DBC 100 will have less than 2' of cover and the stormdrain pipe at AD 110 will have 2' of cover. It is recommended that insulation be utilized for these locations if additional cover depth cannot be provided. • The rim for DMH 108 is shown incorrectly per the site grades. • The details provided for the catch basins and associated frames and grates are the typical details from the City of Portland Technical Manual, however they are generally for use in the ROW when structures are installed along a curb line. Details should be provided for the types of structures to be utilized on the site. The structure names also indicate that some will be different types of structures (i.e. DCB and AD) and details should be provided for these as well.	

Public Infrastructure and Community Safety Standards (Sec. 14.6.3)

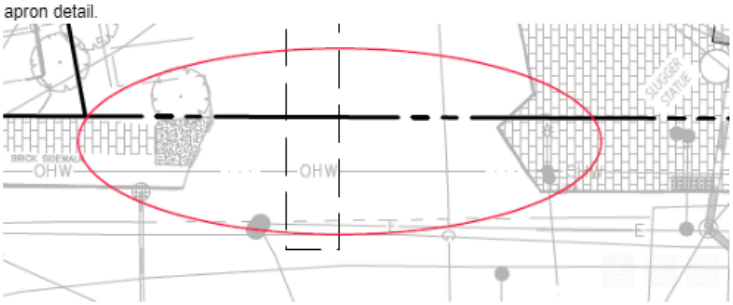
Standard	***Discussion***	***Finding***
Consistency with City Master Plans	**Overview:** The installation of the clubhouse allows for the Sea Dogs organization to comply with league rules. The Sea Dogs are contracted to be the primary tenant at Hadlock Stadium, therefore, the project is consistent with the City's Master Plan of continuing to have this athletic organization occupy the stadium. **Updates Requested** • None.	None
Public Safety and Fire Prevention	**Overview:** The alley that is formed by the clubhouse addition will provide maintenance and emergency service access to the rear of the stadium and to left field. The project includes a rear vehicle alley to allow for emergency vehicle access to the north side of the building. The south and west sides of the new clubhouse are open to and accessible from an existing parking lot. **Updates Requested** • None.	Met
Public Utilities	**Overview:** The applicant provided a utility plan that was reviewed by staff with the following request. **Updates Requested** • Provide a wastewater capacity authorization request to DPW in order to account for the facility expansion. • Provide confirmation and evidence that there is no impact to existing wastewater flows. • Confirmation of utility ability to serve will be required for the proposed new building. This will also include acceptance of design for the proposed utility connections.	Not Met

Site Design Standards (Sec. 14.6.4)

Standard	***Discussion***	***Finding***
Massing, Ventilation and Wind Impact	**Overview:** The location of the new pre-engineered clubhouse will replace the existing detached bleacher and concession building. The new building will not exceed the current height of the stadium and will be adjacent to the existing stadium's third baseline concourse. The clubhouse property line is next to a railroad line and wooded area, the location of the development will not create any wind or ventilation impacts. **Updates Requested**	Met

	• None	
Shadow	**Overview:** The overall height is comparable to the existing stadium and designed to accommodate public views and sightlines for the stadium's intended purpose. Therefore, the clubhouse will not cast any shadow on public space. **Updates Requested** • None	Met
Snow and Ice Loading	**Overview:** The design of the clubhouse is set to meet all City codes, the roof of the clubhouse is a single slope shed that is away from any public spaces. There are to be restraints included along the roof and above the egress points. Any snow that is to fall will be stored in a designated area at the property line. **Updates Requested** • None.	Met
View Corridors	**Overview:** This project does not obstruct the public view of any corridors. **Updates Requested** • None.	Met
Historic Resources	**Overview:** The subject property is not located within a historic district, therefore Section 14.6.4 E does not apply. **Updates Requested** • None.	Met
Exterior Lighting	**Overview:** The site related lighting consists of building mounted full cut off area lighting located at 16 feet AFG (W5) and (W6), wall mounted full cut off egress lighting mounted over the entry doors (W4), downlights under the canopy of the walkway (R2). See attachment for additional information. **Updates Requested** • Provide an exterior lighting plan to show that no lights are emitted about the horizontal plane or spilled onto any adjacent properties.	Not Met
Noise and Vibration	**Overview:** The heating, ventilation, and air conditioning system are high-efficient units and are to be located on the project in order to minimize any noise levels to surrounding establishments. **Updates Requested** • None	Met
Signage and Wayfinding	**Overview:** New on-site signage is not proposed for this site. **Updates Requested** • None.	Met
Design Standards	**Overview:** The project is within the R-OS zoning, the pre-engineered clubhouse meets all the zoning and dimensional standards set forth in the City's Land Use Code. **Updates Requested** • Please confirm, it appears that the exterior stair has either been removed or relocated inside the building. The note is still listed on A2.2 in elevations. The drawing of the stairway to the second floor has been removed, but not the note.	Not Met

DPW Transportation

- Current driveway approach is non-compliant to current ADA accessibility requirements. Driveway must be reconstructed to become conforming. Include City driveway apron detail.
- 

- Wider brick removal area may need to be removed than is currently shown. Use the City's brick sidewalk detail.
- 

April 19, 2024

Ref: 55748.00

Mr. Kevin Kraft
Planning & Urban Development Director
City of Portland
389 Congress Street
Portland, Maine 04101

Re: Major Site Plan Review
Site Plan Review Application
Portland Sea Dogs Clubhouse Addition
Map 52 Block C Lot 1

Dear Mr. Kraft

On behalf of our client, Portland Sea Dogs, VHB has prepared the following application package for a Major Site Plan Review related to the proposed clubhouse addition to be located on Map 52 Lot 1 located at 275 Park Avenue.

The application package includes the following items:

- Cover letter (this document)
- Completed Checklist
- Evidence of Right
- Zoning Assessment Table
- Site Plan Standards Assessment
- Summary of Existing Easements
- Site Plan Standards Assessment
- Financial Capablility
- Technical Capability
- Project Planset
- Stormwater Memorandum
- Supplemental Architectural documents

CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST
Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes in the left-hand column.

**** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE AND WAIVER TABLE SEPARATELY AS NOTED BELOW ****

At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.

GENERAL APPLICATION DOCUMENTS	
☒ Yes ☐ NA	**Project Description** ● Cover letter with detailed project description
☒ Yes ☐ NA	**Completed Checklist** (this document)
☒ Yes ☐ NA	**Evidence of Right, Title, and Interest** ● Deeds, leases, or purchase and sales agreements
☐ Yes ☒ NA	**Evidence of State or Federal Approvals** ● Permits or letters of non-jurisdiction, if applicable
☒ Yes ☐ NA	**Zoning Assessment** (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
☒ Yes ☐ NA	**Site Plan Standards Assessment** (see Section 14.6 of the land use code) • Summary of project compliance with site plan standards of the land use code
☒ Yes ☐ NA	**Summary of Existing and/or Proposed Easements or Covenants, applicable.** ● Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
☐ Yes ☒ NA	**Waiver Requests** (see Waiver Table) ● Written request for waiver describing request and compliance with applicable waiver standards
☒ Yes ☐ NA	**Financial Capability** ● Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
☒ Yes ☐ NA	**Technical Capability** ● Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR SITE PLAN
STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.
Please submit each document as a separate PDF file.

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

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

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

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

MAJOR SITE PLAN
DRAWINGS CHECKLIST

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

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

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

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

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

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

Existing Conditions Plan with the following:

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

Proposed Site Plan with the following:

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

- Location of fire hydrants
- Location of solid waste management receptacles
- Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable
- Location of proposed easements and rights-of-way, including dimensions
- Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed

UTILITY PLAN including:

- Proposed electrical infrastructure
- Location, sizing and directional flows of all proposed sewer and stormwater infrastructure
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

GRADING AND DRAINAGE PLAN including:

- Proposed grades
- Proposed stormwater management measures meeting Technical Manual (Section 5) standards
- Any proposed alteration of a watercourse or wetlands
- Any groundwater protection measures
- Proposed buffers and preservation measures for wetlands or significant natural features

LANDSCAPE PLAN including:

- Existing vegetation to be preserved and preservation measures
- Proposed landscaping, screening, and street trees, including caliper widths for trees
- Planting schedule, including street trees

ARCHITECTURAL PLANS AND RENDERINGS including:

- Exterior building elevations, color renderings, illustrations of all sides
- Axonometric and street-level views for structures greater than three stories in height
- Provide context drawings, if applicable (Design Manual, page 1)
- Floor plans

CONSTRUCTION MANAGEMENT PLAN including:

- Specifics on traffic control, sidewalk sheds, and pedestrian rerouting
- Include a drawing and written narrative

OTHER

- Details and cross-sections, as necessary

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:44 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
6025	DEED	01998/402	05/12/1950

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
MAINE INSTITUTION FOR THE BLIND	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Maine Inst'n. For The Blind to Portland City Of War.

KNOW ALL MEN BY THESE PRESENTS, That THE MAINE INSTITUTION FOR THE BLIND, a corporation organized and existing under the laws of the State of Maine, located in Portland in the County of Cumberland and State of Maine, in consideration of the sum of One Dollar ($1.00) and other good and valuable considerations, the entire consideration being under One hundred Dollars ($100.00), paid by CITY OF PORTLAND, a body politic and corporate located in said County of Cumberland and State of Maine, the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said CITY OF PORTLAND, its successors and assigns forever, a certain lot or parcel of land located in Portland in said County of Cumberland and State of Maine and described as follows:

Beginning at an iron stake in the westerly side line of land owned by The Maine Institution for the Blind, said iron stake and point being distant two hundred seventy-six and seventy-four hundredths (276.74) feet northwesterly, measured along said side line, from an iron stake situated in the northerly side line of Park Avenue and marking the southerly corner of The Maine Institution for the Blind land and land of the City of Portland; thence in a northerly direction sixty-two (62) feet, more or less, along said westerly side line of The Maine Institution for the Blind land and land of the City of Portland to an iron stake marking the corner of The Maine Institution for the Blind land; thence in an easterly direction along the division line of The Maine Institution for the Blind land and land of the City of Portland one hundred fifty (150) feet to a point marked by an iron stake; thence in a westerly direction one hundred sixty-three (163) feet, more or less, to the iron stake at the point of beginning.

Hereby conveying to said City of Portland a triangular piece of land containing approximately four thousand six hundred fifty (4,650) square feet, more or less,from the rear of the lot of land owned by The Maine Institution for the Blind situated on Park Avenue.

TO HAVE AND TO HOLD the aforegranted and bargained premises with all of the privileges and appurtenances thereof, to the said CITY OF PORTLAND, its successors and assigns, to its and their use and behoof forever.

AND The Maine Institution for the Blind does covenant with the said Grantee, its successors and assigns, that it is lawfully seized in fee of the premises, that they are free of all incumbrances; that it has good right to sell and convey the same to the Grantee to hold as aforesaid; and that it and its successors shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, The Maine Institution for the Blind has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Henry R. Gillis, its Treasurer thereunto duly authorized, this 28th day of October, 1947.

Signed, Sealed and Delivered in Presence of

THE MAINE INSTITUTION FOR THE BLIND

CORPORATE SEAL

Nathaniel M. Haskell

By Henry R. Gillis Treasurer

COUNTY OF CUMBERLAND

STATE OF MAINE

Portland, Maine, October 28, 1947.

There personally appeared the above-named Henry R. Gillis, as aforesaid and acknowledged the foregoing instrument to be his free act and deed in said capacity and the free act and deed of The Maine Institution for the Blind.

Before me, Nathaniel M. Haskell

Notary Public Notarial Seal

I hereby certify, that as Clerk of THE MAINE INSTITUTION FOR THE BLIND I am the Secretary of the Board of Directors, and that a meeting of the Board of Directors, held on the 28th day of October, 1947, at which time a quorum was present and acting throughout, that the following motion was made, seconded and

" VOTED: That the corporation transfer to the City of Portland, a certain lot or parcel of land consisting of 4,650 square feet, more or less, as per deed drawn and submitted; and that the Treasurer of the corporation, Mr. Henry R. Gillis, be and hereby is authorized to sign said deed in behalf of the corporation and that the Clerk of the Corporation be and is hereby authorized to affix the seal of the corporation thereto. "

A true record:

Attest:

Nathaniel M. Haskell Clerk

CORPORATE SEAL OF THE MAINE INSTITUTION FOR THE BLIND

= Received May 12, 1950, at 1h 40m P. M., and recorded according to the original

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Gryskewicz & to Portland Pipe Line Corp. Easement

KNOW ALL MEN BY THESE PRESENTS, THAT We, Gadmin Gryskewicz and Nellie Gryskewicz of Portland, Maine, hereinafter called Grantor(s), for and in consideration of One Dollar and other valuable considerations, the receipt of which is hereby acknowledged, do hereby give, grant, bargain, sell and convey unto PORTLAND PIPE LINE CORPORATION, a Maine corporation having an office at 335 Forest Avenue, Portland, Maine, hereinafter called Grantee, its successors and assigns, a right of way over, under and through a certain lot or parcel of land in South Portland in the County of Cumberland and State of Maine, bounded and described as follows:

Lot No. 77 as shown on Plan of Lots at Main Street Terrace recorded in Cumberland County Registry of Deeds, in Plan Book 14, Page 45,

for the purposes of constructing at a location to be designated by Grantee herein, and maintaining and operating a line of pipe with such valves and fittings as may be necessary or convenient, for the transportation of oil, petroleum, gas and petroleum products and altering, enlarging, replacing, repairing and removing the same, with free ingress and egress for all of the above purposes.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:05 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
4769	DEED	01712/354	05/17/1943

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
USA	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

U.S.I.R.
$0.55
5-14-43
McD
Land Co.

TO HAVE AND TO HOLD the aforesaid granted premises, with all the privileges and appurtenances thereto belonging, unto and to the use of said Grantee, and his heirs and assigns forever.

AND the George E. McDonald Land Company does hereby, for itself and for its successors and assigns, covenant with the said Grantee, and his heirs and assigns that the said granted premises are free from all incumbrances made by it, and that it will, and shall warrant and defend the same to the said Grantee, and his heirs and assigns forever against all incumbrances made as aforesaid.

IN WITNESS WHEREOF, the said George E. McDonald Land Company has caused this instrument to be sealed with its corporate seal, and signed in its corporate name by George E. McDonald, its President, thereunto duly authorized, this 11th day of May, in the year of our Lord one thousand nine hundred and forty-three.

Signed and Sealed in the presence of

Clinton T. Goudy

GEORGE E. McDONALD LAND COMPANY.

CORPORATE SEAL

By: George E. McDonald

Its President

State of Maine

County of Cumberland

In Portland, on the eleventh day of May A. D. 1943. Personally appeared the above named George E. McDonald President of said George E. McDonald Land Company, and acknowledged the foregoing instrument by him executed to be his free act and deed in his said capacity, and the free act and deed of said George E. McDonald Land Company. Before me, Clinton T. Goudy Justice of the Peace

Received May 17, 1943, at 9h 30m A. M., and recorded according to the original

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U. S. of America to Portland City of Deed

QUITCLAIM DEED

WHEREAS, the City of Portland, Maine, conveyed the property hereinafter described to the United States of America by deed dated December 16, 1942, of record in the Registry of Deeds, Cumberland County, Maine, in Deed Book 1704, Page 17; and

WHEREAS, the said land was acquired by the United States under the provisions of Section 202 of Title II of the Act of October 14, 1940, as amended; and

WHEREAS, the said land has been found to be unsuitable for the war public works project for which it was acquired; and

WHEREAS, the said City of Portland, Maine, has conveyed another parcel of land to the United States of America which is suitable for the purpose, and has asked that the United States of America convey the property hereinafter described back to the City of Portland; and

WHEREAS, the Administrator of the Federal Works Agency deems that the said property should be conveyed back to the City of Portland, and that this conveyance is made in the public interest.

NOW THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

That the United States of America in the consideration of the foregoing prem-

ises and $1.00, the receipt of which is hereby acknowledged, does hereby remise, release, and forever quitclaim unto the City of Portland, a body politic and corporate in the County of Cumberland, State of Maine, and its assigns forever, all that tract or parcel of land situated in Cumberland County, Maine, described as follows:

Beginning at a point in the westerly side line of Deering Avenue, said point being distant 334.21 feet northerly along said westerly side line of Deering Avenue from its intersection with the northerly side line of Park Avenue; thence northerly along said westerly side line of Deering Avenue on a course of North 1° 40' East, a distance of 15.39 feet to a point; thence northerly and northwesterly along said westerly side line of Deering Avenue on a curve to the left tangent to the last above described course and having a radius of 517.97 feet, a distance of 254.78 feet, measured on the arc, to a point - the long chord of the curve last above described bearing North 12° 25½' West and having a length of 252.22 feet; thence westerly on a course of South 80° 26' West, a distance of 238.38 feet, more or less, to a point in the extension northerly of the easterly side line of land now owned by the Maine Institution for the Blind; thence southerly on a course of South 1° 40' West along the said extension of and the easterly side line, itself, of land now owned by the Maine Institution for the Blind, a distance of 272.21 feet to a point, said point being distant 270.60 feet northerly along said easterly side line of land now owned by the Maine Institution for the Blind from its intersection with the northerly side line of Park Avenue; thence easterly on a course of North 80° 26' East, a distance of 300.99 feet, more or less, to the point of beginning in the westerly side line of Deering Avenue.

The bearings describing the courses in the above description are magnetic and are computed from an observed bearing from angles turned with a transit, and are of the date of May 1942.

IN WITNESS WHEREOF, the United States of America has caused these presents to be executed in its name by the Administrator of the Federal Works Agency and the seal of the Federal Works Agency to be hereunto affixed this 4th day of May,1943.

Witnesses:

Ida B. Sills

Maude E. Lyles

UNITED STATES OF AMERICA

By Philip B.Fleming

Administrator

Federal Works Agency

FEDERAL WORKS AGENCY UNITED STATES OF AMERICA SEAL

UNITED STATES OF AMERICA)
DISTRICT OF COLUMBIA) SS.

On this 4th day of May, 1943, personally appeared before me Ida B. Sills, a Notary Public in andfor the District of Columbia, the above named Major General Philip B. Fleming, Administrator, Federal Works Agency, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the said United States of America.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year aforesaid.

Ida B. Sills Notary Public, District of Columbia

My Commission expires November 30, 1947 Notarial Seal

Received May 17, 1943, at 9h 50m A. M., and recorded according to the original

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Phair to Payant & War.

KNOW ALL MEN BY THESE PRESENTS, That I, Ellen L. Phair, of Scarborough, in the County of Cumberland and State of Maine, formerly Ellen L. Fogg, of said Scarborough, in consideration of one dollar and other valuable consideration paid by Alfred V. Payant and Carrie T. Payant, husband and wife, both of Cape Elizabeth, in said County and State, the receipt whereof I do hereby acknowledge, do hereby give,grant, bargain, sell and convey unto the said Alfred V. Payant and Carrie T. Payant, as joint tenants and not as tenants in common, and their heirs and assigns, and the survivor of them and the heirs and assigns of the survivor of them, forever,

(1) A certain lot or parcel of land with the buildings thereon, situated in said Scarborough, and bounded and described as follows:

Beginning on the westerly line of the Prouts Neck Road, also known as Black Point Road, at the southeasterly corner of land formerly of Abraham Plummer and now known as the Grange Hall Lot; thence running southerly by said line of said road thirty-nine (39) rods, more or less, to a point and the second parcel of land described in deed from George W. Libby to John A. Libby and Simon Libby, dated October 8, 1858, and recorded in Cumberland County Registry of Deeds, Book 290, Page 129; thence running westerly by said land conveyed as aforesaid to John A. Libby and Simon Libby twelve (12) rods to a point; thence running southerly by said land conveyed as aforesaid to John A. Libby and Simon Libby twenty (20) rods to a point; thence running westerly by said land conveyed as aforesaid to John A. Libby and Simon Libby ninety-four (94) rods, more or less, to Nonesuch River; thence running westerly by said river eleven (11) rods and fifteen (15) links, more or less, to marsh formerly of Sumner J. Libby; thence running northwesterly by said Marsh formerly of Sumner J. Libby and marsh formerly of Larrabee, twenty-seven (27) rods, more or less, to said river; thence running northwesterly by said river forty-nine (49) rods, more or less, to marsh formerly of Dominicas Libby; thence running northerly by said last named marsh eight (8) rods, more or less, to said river; thence running easterly by said river thirty-nine (39) rods, more or less, to Roundabout Creek; thence running southeasterly by said Roundabout Creek and by the westerly line of the second lot described in this deed, twenty-one (21) rods, more or less, to a point; thence running southerly by said westerly line of said second lot described in this deed, three (3) rods and five (5) links, more or less, to a point and to Negro Head Road, so called; thence running easterly by the southerly line of said second lot described in this deed and by said Negro Head Road, thirty-two (32) rods, more or less, to a point; thence running northerly by the line of said second lot described in this deed eighteen (18) rods, more or less, to a point; thence running westerly by the line of said

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:07 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
12055	DEED	01694/158	09/29/1942

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
MAINE INSTITUTION FOR THE BLIND	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

IN WITNESS WHEREOF, We, the said Geneva P. Haskell, Lois E. Stewart, and Leah E. Pike, in our said capacity, have hereunto set our hands and seals this fourth day of September in the year of our Lord one thousand nine hundred and forty-two.

Signed, Sealed and Delivered in Presence of

Fred W. Small
Witness to all three

Geneva P. Haskell Seal
Lois E. Stewart Seal
Leah E. Pike Seal
Administratrices of the Estate
of George C. Pike

State of Maine. Cumberland,ss. September 4, 1942.

Personally appeared the above named Geneva P. Haskell, Lois E. Stewart, and Leah E. Pike, and acknowledged the foregoing instrument to be their free act and deed in their capacity of Administratrices of the Estate of George C. Pike.

Before me, Fred W. Small Justice of the Peace

Received September 29, 1942, at 11h 16m A. M., and recorded according to the original =

Maine Inst'n. for the Blind to Port. City of War.

KNOW ALL MEN BY THESE PRESENTS, That The Maine Institution for the Blind, a corporation organized and existing under the laws of the State of Maine and located at Portland in the County of Cumberland and State of Maine, in consideration of one dollar ($1.00) and other valuable considerations,paid by the City of Portland, Maine, a body corporate and politic in the County of Cumberland and State of Maine, the receipt whereof it does hereby acknowledge, does hereby give, grant, bargain, sell and convey, unto the said City of Portland, its successors and assigns forever, a certain lot or parcel of land with the buildings thereon, situated at the intersection of the Westerly side of Deering Avenue (formerly called Grove Street) with the Northerly side of Park Avenue, formerly Portland Street in said Portland and bounded and described as follows: Beginning at the intersection of the said Westerly side of Deering Avenue with the said Northerly side of Park Avenue; thence running North 1° 24' West by Deering Avenue three hundred feet to land of Mary E. Libby, sold to Caroline P. Dow by deed dated August 16, 1879, and recorded in Cumberland County Registry of Deeds in Book 457, Page 305; thence Westerly at right angles to Deering Avenue and by said Dow land one hundred feet; thence Northerly parallel with Deering Avenue and by said Dow land and by land of Portland Savings Bank sold to Caroline P. Dow October 15, 1888, by deed recorded in said Registry in Book 554, Page 140, eighty feet; thence Easterly on a course at right angles to Deering Avenue and by said Dow land one hundred feet to Deering Avenue; thence Northerly by Deering Avenue one hundred sixty feet to land Portland Savings Bank soldto George D. Clark November 15, 1878, by deed recorded in said Registry in Book 450, Page 333; thence Westerly at right angles to Deering Avenue and by said Clark land one hundred feet; thence Northerly parallel with Deering Avenue forty feet; thence Easterly at right angles to Deering Avenue one hundred feet; thence North 1° 24' West by Deering Avenue fifty eight and eight tenths feet to an angle in Deering Avenue; thence at right

angles to said last course of Deering Avenue and along the line of land of the said City of Portland two hundred ninety feet, more or less, to the stake and other land of the said City of Portland; thence about South 1° 24' East by land of said City of Portland about two hundred eighty feet to a fence at land Jonathan Morgan sold to Isaac Waldron by deed dated July 25, 1835,and recorded in said Registry in Book 142, Page 432; thence Easterly by said fence one hundred and fourteen hundredths feet; thence South 1° 24' East parallel to and one hundred feet Easterly of said City of Portland land three hundred fifty-one and two tenths feet to Park Avenue; thence North 89° 29' East by Park Avenue one hundred ninety-five and twenty-six hundredths feet to point of beginning; excepting, however, the privilege of a right of way about ten feet wide granted in said deed of Jonathan Morgan to Isaac Waldron; and excepting whatever rights may exist for a certain agreement granted by Israel Hunt to Nathaniel Stevens; said lot contains including said passageway above mentioned 151,600 square feet of land. Excepting from the foregoing a strip of land taken by the said City of Portland in widening said Park Avenue in 1896 and also the strip of land taken by the said City of Portland in the widening of Deering Avenue. The measurements and bounds herein given are based upon the street lines of Park Avenue(formerly Portland Street) and Deering Avenue as they existed prior to 1896.

The above described premises were conveyed to said Grantor by Albert S. Rines by warranty deed dated December 13, 1920 and recorded in Cumberland County Registry of Deeds in Book 1067, Page 206.

The above described premises are conveyed subject to a lease to Mexican Petroleum Corporation recorded in said Registry in Book 1421, Page 189, modifications of which are recorded in said Registry in Book 1468, Page 203 and Book 1606, Page 312.

TO HAVE AND TO HOLD the aforegranted and bargained premises, with all the privileges and appurtenances thereof to the said CITY OF PORTLAND, its successors and assigns, to its and their use and behoof forever.

U.S.I.R.
$60.50
T.M.I.B.
9/29/42

AND the said Grantor Corporation does hereby covenant with the said Grantee, its successors and assigns, that it is lawfully seized in fee of the premises; that they are free of all incumbrances; that it has good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors,shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said The Maine Institution for the Blind has caused this instrument to be sealed with its corporate seal and signed in its corporate name by Convers E. Leach, its President and Harry G. Eastman, its Treasurer, thereunto duly authorized, this 28th day of September in the year one thousand nine hundred and forty-two.

Signed, Sealed and Delivered in Presence of

THE MAINE INSTITUTION FOR THE BLIND
CORPORATE SEAL

Harry L. Cram
to both

By Convers E. Leach
President

By Harry G. Eastman
Treasurer

State of Maine. County of Cumberland, ss. September 28, 1942.

Then personally appeared the above named Convers E. Leach, President and Harry G. Eastman, Treasurer of said Grantor Corporation as aforesaid, and each acknowledged the foregoing instrument to be his free act and deed in his said capacity, and the free act and deed of said corporation.

Before me, Harry L. Cram Justice of the Peace

Received September 29, 1942, at 12h 25m P.M., and recorded according to the original

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Rangeley Trust Co. to Matthews Rel.

PARTIAL DISCHARGE

KNOW ALL MEN BY THESE PRESENTS, That the Rangeley Trust Company, Rangeley, Maine, owner of a certain mortgage given by Mary B. Matthews to said Rangeley Trust Company datedJanuary 11, 1938, and recorded in Cumberland County Registry of Deeds, Book 1542, Page 37, does hereby acknowledge that in consideration of One Dollar and other valuable considerations, it does hereby release from said mortgage a certain piece or parcel of land bounded and described as follows:- Situated in Falmouth, in the County of Cumberland and State of Maine, being numbered two hundred and fifty-four (254) on plan of FALMOUTH BY THE SEA made by Percy H. Richardson C. E. dated June 1923 and recorded in Cumberland County Registry of Deeds, Book 15, Page 37, also another parcel of land on plan of Falmouth by the Sea which is bounded and described as follows, viz: Beginning at a point in the Northeasterly line of Crosby Road, now called Hammond Road, as shown on said plan, which point is the Southwesterly corner of lot No. 253 on said plan, thence running Easterly (erroneously designated as Westerly in a certain deed given by Otis H. Perry, Trustee, to Mary B. Matthews dated April 29, 1924 and recorded in Cumberland County Registry of Deeds in Book 1165, Page 348) along the Northeasterly line of Hammond Road, thirty (30) feet to a stake; thence turning and running Northeasterly fifty (50) feet distant from and parallel to the Easterly line of Lot No. 253 one hundred ten (110)feet,more or less, to the Northeasterly line of said lot No. 253, thence turning and running Northwesterly along the Northeasterly line of said lot No. 253 fifteen (15) feet to a stake, at the Northeast corner of lot No. 254, thence turning and running Southwesterly along the easterly line of Lot No. 254 one hundred ten (110) feet to Hammond Road and the point and place of beginning. Containing two thousand four hundred seventy-five (2,475) feet of land, more or less. Being a portion of lot No. 253 as shown on plan of Falmouth by the Sea.

This Partial Discharge is to release from the above mentioned Mortgage only such Real Estate as is located in Falmouth, Cumberland County, Maine, and does not effect any other property covered by said mortgage.

IN WITNESS WHEREOF, the said Rangeley Trust Company by its President, duly authorized, has hereunto set its hand and seal this fifteenth day of September, A.D.1942.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:09 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
11688	DEED	01693/174	09/28/1942

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
WALDRON LILLIAN M	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

174

Know all Men by these Presents, That

I, Lillian M. Waldron, of Portland in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations, paid by City of Portland, a body politic and corporate in the County of Cumberland and State of Maine,

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said City of Portland, its successors and assigns forever, the following described property:

A certain lot or parcel of land situated in said Portland, and bounded and described as follows: Beginning at a point on the easterly side line of a lot of land conveyed by the City of Portland to the Maine Institute for the Blind by deed dated April 4,1908 and recorded in the Cumberland County Registry of Deeds, Book 821, Page 196, said easterly side line being the division line between land now of the Maine Institute for the Blind and land of the Grantor, and said point of beginning being distant one hundred thirty-one (131) feet northerly along said division line from its intersection with the northerly side line of Park Avenue; thence northerly along said division line between land of the Maine Institute for the Blind and land of the Grantor, a distance of one hundred ninety-three and seventy-hundredths (193.70) feet to a point; thence easterly and making an included angle of 87° 01½' through the southeast and along a line formerly occupied by a fence, a distance of one hundred and twelve hundredths (100.12) feet to a point; thence southerly and making an included angle of 92° 58½' through the southwest and on a line parallel with the first mentioned course, a distance of one hundred ninety and twenty hundredths (190.20) feet to a point, said last mentioned point being distant one hundred thirty-one (131) feet northerly from the northerly side line of Park Avenue, measured along a prolongation in a straight line of the last above described course;thence westerly and making an included angle of 89° 02' through the northwest and on a line parallel with the northerly side line of Park Avenue, a distance of one hundred (100) feet, more or less, to the point of beginning. Containing nineteen thousand one hundred ninety-three (19,193) square feet, more or less.

Being a portion of the premises devised under the Last Will and Testament of Isaac Waldron, an abstract of which is recorded in Cumberland County Registry of Deeds, Book 783, Page 386. Linda C. Waldron, life tenant named therein, is now deceased, and I. Louville Waldron, named therein as one of the remaindermen, died intestate, unmarried and without issue, leaving the Grantor herein as his sole heir-at-law.

Also all right, title and interest in and to so much only of a right-of-way leading northerly from the northerly side of Park Avenue as lies adjacent to the easterly side line of the lot above described.

U.S.I.R. $2.75 L.M.W. 9/28/42

To Have and to Hold the aforegranted and bargained premises, with all ~~the~~ privileges and appurtenances thereof, to the said City of Portland, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Lillian M. Waldron, unmarried,

have hereunto set my hand and seal this twenty-eighth day of September, in the year of our Lord one thousand nine hundred and forty-two.

Signed, Sealed and Delivered in presence of

Carroll S. Chaplin — Lillian M. Waldron — Seal

State of Maine, CUMBERLAND, SS. September 28, 1942. Personally appeared the above named Lillian M. Waldron, and acknowledged the above instrument to be her free act and deed.

Before me, Carroll S. Chaplin, Justice of the Peace

Received September 28 19 42, at 3 o'clock45 m. P.M., and recorded according to the original.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:08 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
6215	DEED	01677/247	06/02/1942

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
CORNISH GERTRUDE B	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

247

Know all Men by these Presents, That

I, Gertrude B. Cornish of Portland in the County of Cumberland and State of Maine,

in consideration of one dollar and other valuable considerations, paid by City of Portland, a body corporate and politic, in the County of Cumberland and State of Maine, the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said City of Portland, its successors and assigns forever, a certain lot or parcel of land, with the buildings thereon, situated on the westerly side of Deering Avenue in said Portland, bounded and described as follows: Beginning at a point on said westerly side of Deering Avenue, formerly Grove Street, three hundred (300) feet feet from its intersection with the northerly side of Park Avenue, formerly Portland Street; thence northerly by said Deering Avenue eighty (80) feet, and from these two points extending westerly at right angles with said Deering Avenue and parallel with said Park Avenue, one hundred (100) feet, keeping the width of eighty (80) feet. Said measurements from Park Avenue are as of the width of Portland Street prior to the widening of said street in 1896. My title to said premises was obtained by tax deeds from the City of Portland, and by quit-claim of even date herewith from Augustus E. Dow, to be recorded herewith.

U.S.I.R.
$4.40
G.B.C.
6/2/42

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do hereby covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I, the said Gertrude B. Cornish, being unmarried have hereunto set my hand and seal this second day of June in the year of our Lord one thousand nine hundred and forty-two.

Signed, Sealed and Delivered in presence of

Walter F. Murrell — Gertrude B. Cornish Seal

State of Maine, CUMBERLAND, SS. June 2, 1942 Personally appeared the above named Gertrude B. Cornish and acknowledged the above instrument to be her free act and deed.

Before me, Walter F. Murrell, Notary Public Notarial Seal

Received June 2 19 42, at 4 o'clock41 m. P. M., and recorded according to the original.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:46 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
1028	DEED	01361/465	01/08/1931

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
CLARK ALBERT P	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Know all Men by these Presents, That

I, Albert P. Clark of Portland in the County of Cumberland, State of Maine, being a widower,

~~in consideration of~~ - for valuable consideration,
City of Portland, a municipal corporation in the County of Cumberland and State of Maine, paid by
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

City of Portland, a municipal corporation, its successors and assigns forever, a certain lot or parcel of land with the buildings thereon, situated on the westerly side of Deering Avenue, formerly Grove Street, in the City of Portland in the State of Maine, and more specifically described as follows, viz: Commencing on said westerly side of Deering Avenue at a point five hundred and forty (540) feet northerly on said westerly side of Deering Avenue from the intersection of the northerly side of Park Avenue, formerly Portland Street, as it existed on November 15, 1878, and before said Park Avenue was widened on the northerly side, and said westerly side of Deering Avenue; thence running westerly at right angles to said Deering Avenue one hundred (100) feet to a stake; thence running Northerly parallel to said Deering Avenue forty (40) feet to a stake; thence running easterly at right angles to said Deering Avenue one hundred (100) feet to said Deering Avenue; thence running southerly by said Deering Avenue (40) feet to the point of beginning.

Being the same premises conveyed to me by Joseph A. Greer of Medford, in the Commonwealth of Massachusetts, by warranty deed for eight ninths (8/9) in common and undivided interest, dated January 6, 1928, and recorded in Cumberland County Registry of Deeds Book 1283, Page 208, and by Warranty Deed for one ninth (1/9) in common and undivided interest conveyed to me by Lucy Doris Clark of Portland, State of Maine, dated June 8, 1929, and recorded in the Cumberland County Registry of Deeds, Book 1321, Page 429. The eight ninths (8/9) in common and undivided interest being the same premises conveyed to Joseph A. Greer by Warranty Deed dated January 6, 1928 from Albert P. Clark, Paul M. Clark, Bertha Clark Corbett, Edith M. Clark, Genevieve M. Clark, Stella Clark Harrigan, as they are the heirs-at-law and next to kin of Mary Ellen Clark, late of said Portland, State of Maine. The one ninth (1/9) in common and undivided interest being the interest inherited by the said Lucy Doris Clark from her mother, Mary Ellen Clark, late of said Portland, State of Maine. All of which is the same premises conveyed to the said Mary Ellen Clark by Warranty deed from Edith Clark Stacy, dated May 26, 1916, and recorded in the Cumberland County Registry of Deeds, Book 969, Page 390. Being the same premises conveyed to George D. Clark by the Portland Savings Bank by Quit-Claim deed dated November 15, 1878, and recorded in the Cumberland County Registry of Deeds, Book 450, Page 333, and also being the same premises described in a warranty deed from Mary A. Clark and Elliot F. Clark to George D. Clark, dated January 2, 1879, and recorded in said Cumberland County Registry of Deeds, Book 456, Page 100.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland, a municipal corporation, its successors heirs and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors heirs and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Albert P. Clark, being a widower, has

his hand and seal this third day of January in the year of our Lord one thousand nine hundred and thirty-one. ~~have~~ hereunto set

Signed, Sealed and Delivered in presence of

Haywood W. Corbett — Albert P. Clark Seal

State of Maine, CUMBERLAND, ss. January 3, 1931. Personally appeared the above named Albert P. Clark and acknowledged the above instrument to be his free act and deed.

Before me, Albert E. Libby, Notary Public ~~Justice of the Peace.~~ Notarial Seal

Received January 8, 1931, at 4 o'clock - m. P. M., and recorded according to the original.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:55 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
6613	DEED	01352/153	07/24/1930

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
REDLON FRANKLIN R	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Know all Men by these Presents, That

I, Franklin R. Redlon of Portland in the County of Cumberland and State of Maine,

in consideration of twenty-two thousand five hundred dollars ($22,500.00) paid by the City of Portland, a body politic, incorporated and located in said County of Cumberland and State of Maine,
the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said City of Portland, its successors and assigns forever, a certain lot or parcel of land situated on the southerly side of Deering Avenue in said Portland and bounded and described as follows:

Beginning at a point in the southerly side of Deering Avenue at an angle in said southerly side line of Deering Avenue, said angle being six hundred eight and fifteen hundredths (608.15) feet northerly of the northerly side line of Park Avenue; thence westerly along the northerly line of land formerly of Rines Bros. and now of the Maine Institute for the Blind, three hundred thirty-five and eight tenths (335.8) feet to a point; thence northerly one hundred thirty-five and seventy-five hundredths (135.75) feet, more or less, to the southerly side of Longfellow Avenue now discontinued, as relocated by the City Council of the City of Portland by an order duly passed November 6, 1905; thence easterly by said southerly side of said Longfellow Avenue as relocated two hundred and fifty-four (254) feet, more or less, to the said southerly side line of Deering Avenue; thence southeasterly along said southerly side line of Deering Avenue to the point of beginning. Being the same premises conveyed to N.E. Redlon Co. by deed of N. E. Redlon dated December 31, 1902, and recorded in the Registry of Deeds for said County of Cumberland, Book 727, page 295; by deed of the City of Portland dated December 8, 1905, and recorded in said Registry of Deeds, Book 779, page 44; by deed of the City of Portland dated February 1, 1906, and recorded in said Registry of Deeds, Book 777, page 234; and being the same premises conveyed to Franklin R. Redlon by N. E. Redlon Co. by deed dated April 5, 1912, recorded in said Registry of Deeds, Book 884, page 448.

Meaning and intending hereby to convey all the land owned by Franklin R. Redlon southerly of Deering Avenue and between the land of the Maine Institute for the Blind and the land of the City of Portland. The lot of land described in the deed of N. E. Redlon Co. to the City of Portland, dated December 9, 1905, recorded in the Cumberland County Registry of Deeds, Book 779, page 45, is not included in this conveyance.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland, its successors ~~heirs~~ and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Franklin R. Redlon (unmarried) have hereunto set my hand and seal this twenty-fourth day of July in the year of our Lord one thousand nine hundred and thirty.

Signed, Sealed and Delivered in presence of

H. C. Wilbur — Franklin R. Redlon Seal

State of Maine, CUMBERLAND, ss. July 24th, 1930. Personally appeared the above named Franklin R. Redlon and acknowledged the above instrument to be his free act and deed.

Before me, H. C. Wilbur, *Justice of the Peace.*

Received July 24, 1930, at 2 o'clock 45m. P. M., and recorded according to the original.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:47 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
3336	DEED	01316/336	07/11/1929

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
PORTLAND TERMINAL CO	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

336

Know all Men by these Presents, That

Portland Terminal Company, a corporation existing under the laws of the State of Maine, with a principal office in Portland, Cumberland County, said state

in consideration of one dollar and other valuable considerations paid by City of Portland in said County of Cumberland

the receipt whereof it does ~~do~~ hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said City of Portland, its successors and assigns forever, a certain parcel of land situated in said City of Portland, bounded and described as follows:

Beginning on the southwesterly side line of Deering Avenue, formerly called Grove Street, at a point thirty-three (33) feet southeasterly, measured at right angles from the base line of location of the extension of the Portland and Rochester Railroad as recorded March 20, 1889, in Book 16, Page 169, of County Commissioners' Records of Cumberland County;

Thence southwesterly on a line parallel with said base line of location four hundred seventy (470) feet more or less to the southwesterly side line of land conveyed by the Rochester Savings Bank to the Portland and Rochester Railroad by deed dated February 6, 1888, and recorded in Cumberland County Registry of Deeds, Book 542, Page 280;

Thence southeasterly along said southwesterly side line of said land conveyed to said Railroad one hundred twenty-two (122) feet more or less to the southeasterly side line of said land described in said deed;

Thence northeasterly along said last mentioned southeasterly side line four hundred sixty-three (463) fee t, more or less, to the aforesaid side line of said Avenue;

Thence northwesterly along said line of said Avenue one hundred fifteen (115) feet, more or less, to point of beginning.

Containing 55,300 square feet, more or less.

Hereby conveying all that part of the above mentioned land conveyed by said Rochester Savings Bank to said Railroad by said deed recorded as aforesaid, which lies south of a line parallel with and thirty-three (33) feet distant southerly measured at right angles, from the aforesaid base line of location of the extension of the Portland and Rochester Railroad.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to it the said City of Portland, its successors ~~heirs~~ and assigns forever.

~~And do covenant with the said heirs and assigns, that will warrant and defend the premises to the said heirs and assigns forever, against the lawful claims and demands of all persons claiming by, through or under me.~~

In Witness Whereof, it the said Portland Terminal Company has caused these presents to be signed, and its corporate seal affixed, by Morris McDonald, its President, hereunto duly authorized

~~have hereunto set hand and seal~~ this first day of July in the year of our Lord one thousand nine hundred and twenty-nine.

Signed, Sealed and Delivered in presence of

Edward W. Wheeler

PORTLAND TERMINAL COMPANY, CORPORATE SEAL
By Morris McDonald President.

State of Maine, Cumberland, ss. Portland, July 1, 1929.

Personally appeared the above named Morris McDonald and acknowledged the above instrument to be the free act and deed of said Portland Terminal Company and of himself as said President.

BEFORE ME, Edward W. Wheeler, *Justice of the Peace.*

RECEIVED July 11, 1929., at 1 o'clock --m. P. M., and recorded according to the original.

196

Know all Men by these Presents, That

The City of Portland, a body corporate and politic, created and existing under the laws of the State of Maine and located at Portland in the County of Cumberland in said State

in consideration of Five thousand dollars and other valuable considerations paid by Maine Institution for the Blind, a corporation legally orgamized and existing under and by virtue of the laws of the State of Maine and located at said Portland.

the receipt whereof it do es hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Maine Institution For The Blind, its successors and assigns forever a certain lot or parcel of land situated in said Portland and bounded and described as follows:- Beginning on the northerly side of Portland street in the southwesterly corner of land owned and occupied by Isaac Walton, thence extending westerly on said Portland street a distance of three hundred feet to a point and extending back from these two points at right angles to said Portland street, keeping the width of three hundred feet a distance of three hundred and fifty feet.

it

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Maine Institution for the Blind, its successors and assigns ~~heirs and assigns,~~ to their use and behoof forever. And said City of Portland doth ~~do~~ covenant with the said Grantee, its successors heirs and assigns, that it is lawfully seized in fee of the premises; that they are free of all incumbrances;

that it has ~~have~~ good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors ~~heirs~~, shall and will warrant and defend the same to the said Grantee,--- heirs and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said City of Portland has caused its corporate seal to be affixed and these presents to be signed in its behalf, by Samuel S.Gilbert its Treasurer, hereunto duly authorized (by order of the City Council passed.

~~hand and seal this~~ this fourth day of April ~~have hereunto set~~ in the year of our Lord one thousand nine hundred and eight

Signed, Sealed and Delivered in presence of

John W. Turner, Jr.

CITY OF PORTLAND Seal

By Samuel S. Gilbert, Treas.

State of Maine, CUMBERLAND, ss. April 4th 190 8. Personally appeared the above-named

and acknowledged the above instrument to be his free act and deed. and the free act and deed of the City of Portland

Before me, John W. Turner, Jr. *Justice of the Peace.*

Received April 6, 190 8, at 2 o'clock 35 m., P.M., and recorded according to the original.

Attest, Frank L Clark *Register.*

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:57 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
6047	DEED	00779/45	12/09/1905

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
N E REDLON CO	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Know all Men by these Presents, That

the N. E. Redlon Co., a corporation existing under the laws of the State of Maine and having its place of business in said Portland, in the County of Cumberland and State of Maine

in consideration of a conveyance of even date herewith by the City of Portland ~~paid by~~ to said N. E. Redlon Co. of a certain parcel of land, which is more particularly described in said conveyance of said City of Portland to said N. E. Redlon Co.

~~the receipt whereof~~ ~~do~~ ~~hereby acknowledge~~, do es hereby give, grant, bargain, sell and convey unto the said City of Portland, a body corporate and politic and situated in the County of Cumberland and State of Maine, its successors ~~heirs~~ and assigns forever, a certain lot or parcel of land situated on the Westerly side of Deering Avenue and bounded and described as follows: Beginning at a point in the southerly side line of Deering Avenue one hundred and forty and seven hundredths (140.07) feet distant north-westerly from the angle in said southerly side line of Deering Avenue, said angle being one hundred and eight and fifteen hundredths (108.15) feet north of the northerly side line of Portland Street; thence westerly a distance of two hundred and four (204) feet, more or less, to land of the City of Portland; thence northerly by the division line between land of Nathan E. Redlon and land of said City of Portland a distance of one hundred and forty-five (145) feet, more or less, to a point in the southerly side line of Deering Avenue; thence southeasterly by said southerly side line of Deering Avenue a distance of two hundred and fifty-five (255) feet, more or less, to the point of beginning.

N. E. Redlon Co. To City of Portland

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland, its successors ~~heirs~~ and assigns, to their use and behoof forever. And it does ~~do~~ covenant with the said Grantee, its successors ~~heirs~~ and assigns, that it is lawfully seized in fee of the premises; that they are free of all incumbrances;

that it has ~~have~~ good right to sell and convey the same to the said Grantee to hold as aforesaid; and that it and its successors ~~heirs~~, shall and will warrant and defend the same to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said N. E. Redlon Co. by Franklin R. Redlon its treasurer hereunto duly authorized by a vote of its directors has hereunto set its corporate name and seal ~~hand and seal~~ this ninth day of December in the year of our Lord one thousand nine hundred and five. ~~have hereunto set~~

Signed, Sealed and Delivered in presence of

Scott Wilson

N. E. Redlon Co.
Franklin R. Redlon
Treas.

State of Maine, CUMBERLAND, SS. December 9th A.D. 1905. Personally appeared the above-named Franklin R. Redlon and acknowledged the above instrument to be his free act and deed, and the free act and deed of said corporation. Before me, Scott Wilson *Justice of the Peace.*

Received December 9 1905, at 9 o'clock 16 m., A.M., and recorded according to the original.

Attest, Ray P. Eaton *Register.*

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:52 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
8917	PARTIAL RELEASE	00569/424	02/04/1891

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
WESCOTT GEO P	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Know all Men by these Presents, That

I, George P. Wescott of Portland, in the County of Cumberland and State of Maine

in consideration of one dollar and other valuable considerations dollars paid by the City of Portland, a body corporate and politic, created and existing and the laws of the State of Maine

the receipt whereof I do hereby acknowledge, do hereby remise, release, bargain, sell and convey, and forever quit-claim unto the said City of Portland, its successors

~~heirs~~ and assigns forever, ~~all right, title and interest in and to~~

Wescott To Portland

A certain lot or parcel of land situated in said Portland, and bounded and described as follows:

Beginning at the corner formed by the intersection of the westerly side line of Grove street with the northerly side line of a certain passage way, which said corner is found by measuring northerly on the easterly side line of said Grove street, a distance of six hundred thirty-nine and sixty-five one-hundredths (639.65) feet from the monument at the Northeasterly corner of Grove and Portland streets, and thence westerly at right angles sixty-six (66) feet; and from said point of beginning running northwesterly with an angle to the left from the westerly side line of Grove street produced northerly, of thirty-eight degrees and forty-eight minutes (38° 48') a distance of five hundred eight and seventy-seven one-hundredths (508.77) feet to an angle in the fence on the westerly side of said Grove street as it existed June 30, 1890; thence southeasterly and southerly by the westerly side line of Grove street as it existed June 30, 1890, to the corner begun at.

The object of this deed is to release to said city all land owned by said Wescott and lying easterly of the first line above mentioned and which has been included within the limits of Grove street as now constructed and established, all as shown upon plan annexed to this deed and made a part of the above description.

To Have and to Hold the same, together with all the privileges and appurtenances thereunto belonging, to the said City of Portland, its successors ~~heirs~~ and assigns forever. And I do covenant with the said Grantee, its successors ~~heirs~~ and assigns, that I will warrant and forever defend the premises to the said Grantee, its successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under me.

In Witness Whereof, I the said Grantor, and Sara G. wife of said George P. Wescott, in testimony of her relinquishment of her right of dower in the above-described premises,

have hereunto set our hands and seals this twenty-ninth day of January in the year of our Lord one thousand eight hundred and ninety-one.

Signed, Sealed and Delivered in presence of

Ardon W. Coombs to G.P.W. — Geo. P. Wescott — Seal

E. C. Hussey to S.G.W. — Sara G. Wescott — Seal

State of Maine

Cumberland, ss. January 29 A.D. 1891

Then Personally appeared the above named George P. Wescott and acknowledged the above instrument to be his free act and deed.

Before me, Ardon W. Coombs, *Justice of the Peace.*

RECEIVED February 4, 1891, at 11 o'clock 25 m., A. M., and recorded according to the original.

Attest, James M Thompson *Register.*

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:03 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
4202	DEED	00349/468	02/15/1867

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
MEAD THOMAS H	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

468

Know all Men by these Presents, That I,

Thomas H. Mead of Bridgton, in the County of Cumberland and State of Maine

in consideration of the sum of Six Hundred and seventy nine Dollars and twenty five cts paid by

the City of Portland, in the same County

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said

City of Portland, its successors

~~heirs~~ and assigns forever, a certain piece or parcel of land, being all that

Mead to City of Portland. W. & L. R. R. One Dollar. T. H. M. Jan. 8 '67

part of my land, situated in the said City of Portland, lying and adjoining Portland Street, and bounded South-westerly on said Street, and South-westerly and North-westerly by land owned by the City of Portland, and South-easterly by land owned by Mrs Elias Banks; the same containing six thousand one hundred and seventy five feet, more or less.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said

City of Portland, its successors

~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said

City of Portland, its successors

~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said

City of Portland

to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said

City of Portland, its successors

~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, I the said Thomas H. Mead and Harriet P. Mead wife of the said Thomas H. Mead in testimony of her relinquishment of her right of dower in the above described premises, have hereunto set our hands and seals this eighth day of January in the year of our Lord one thousand eight hundred and sixty-seven.

Signed, Sealed, and Delivered, in presence of

Augusta E. Mead.
Ella F. Mead.

Thomas H. Mead. Seal
Harriet P. Mead. Seal

Cumberland, ss. Bridgton, Jan. 8th 1867 Personally appeared the above-named Thomas H. Mead

and acknowledged the above instrument to be his free act and deed. Before me,

M. Gould, Justice of the Peace.

Received Feb. 15, 1867, at 10 o'clock m., A. M., and recorded according to the original.

Attest: Thomas Mancon Register.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:01 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
4203	DEED	00349/469	02/15/1867

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
BANKS ELIAS, BANKS DORCAS H	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Know all Men by these Presents, That we,

Elias Banks of the City of Portland, in the County of Cumberland and and State of Maine, and Dorcas H. Banks, his wife, in her right

in consideration of the sum of Twenty five Hundred and forty seven & 82/100 Dollars paid by the said City of Portland.

the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said City of Portland, their successors ~~heirs~~ and assigns forever, a lot of land, situate near the Alms House, on the Northerly side of Portland street, in said Portland, bounded and described as follows, Beginning at the South easterly corner of a lot of land, on said street, owned by Thomas H. Mead; thence North westerly by said Mead's land 146 feet, more or less, to land owned by the City of Portland, thence North easterly by said City's land 96½ feet, more or less, to a post; thence South easterly by said City's land 240 3/10 feet, more or less, to a post; thence South westerly by said City's land 32 3/10 feet, more or less, to Portland street; thence Westerly by the line of said Portland street 132½ feet, more or less, to the first bound; the same containing 23,162 square feet, more or less.

Banks to City of Portland,

W. & P. R. Thos Dolias & B. Jan 4 "67

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland, their successors ~~heirs~~ and assigns, to their use and behoof forever. And we do covenant with the said City of Portland, their successors ~~heirs~~ and assigns, that we are lawfully seized in fee of the premises; that they are free of all incumbrances; that we have good right to sell and convey the same to the said City of Portland, their successors and assigns to hold as aforesaid; and that we and our heirs shall and will warrant and defend the same to the said City of Portland, their successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, we the said Elias Banks and Dorcas H. Banks wife of the said Elias Banks ~~in testimony of her relinquishment of her right of dower in the above described premises,~~ have hereunto set our hand, and seal, this twenty sixth day of December in the year of our Lord one-thousand-eight-hundred and sixty-six (1866).

Signed, Sealed, and Delivered, ~~and Acknowledged~~ in presence of

R. H. Hinkley,

Elias Banks Seal
Dorcas H. Banks Seal

Cumberland, ss. December 31st 1866 Personally appeared the above-named Elias Banks and Dorcas H. Banks and acknowledged the above instrument to be their free act and deed. Before me,

Rufus H. Hinkley, Justice of the Peace.

Received Feb. 15, 1867, at 10 o'clock m., A. M., and recorded according to the original.

Attest: Thomas Hancock, Register.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:03 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
2647	DEED	00218/163	08/25/1849

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
WEYMOUTH LEVI	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

KNOW ALL MEN BY THESE PRESENTS, THAT I

Levi Weymouth of Portland in the County of Cumberland & State of Maine

in consideration of the sum of one hundred dollars

paid by The City of Portland in said County & State

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said City of Portland their successors

~~heirs~~ and assigns forever,

A certain triangular piece of land in said Portland, southwesterly of the City Alms House situated on Portland Street, and bounded as follows: viz: beginning at a post on the north side line of said Portland Street at the corner of Sophia Meads land; thence running north 10½° west by said Meads land 106½ feet to the centre of the salt water creek, which divides the premises from land of said City; thence southwesterly by said creek as the same now runs about 178 feet to said Portland Street; thence south 78° 40' east by said street 171 feet to the bounds begun at; being the same premises which I purchased in part of Danl Boyle by deed dated Nov. 3. 1846. recorded Book 199. page 358. and in part of John H. Ingraham by deed dated April 3. 1846. recorded book 197. page 132. reference there to being had.

To Have and to Hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland their successors ~~heirs~~ and assigns, to their use and behoof forever.

And I do covenant with the said City of Portland their successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said City of Portland to hold as aforesaid: and that I and my heirs shall and will warrant and defend the same to the said City of Portland their successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

In Witness Whereof, the said Levi Weymouth and Mary wife of the said Levi Weymouth in testimony of her relinquishment of her right of Dower in the above described premises have hereunto set our hands and seals this seventeenth day of April in the year of our Lord, one thousand eight hundred and forty eight

Signed, Sealed, and Delivered, In Presence of

Wm Boyd
Sarah C. Weymouth

Levi Weymouth L S
Mary Weymouth L S

CUMBERLAND, SS. Portland Apl. 17th 1848 Personally appeared the above named ~~the above named~~ Levi Weymouth and acknowledged the above instrument to be his free act and deed. BEFORE ME,

Wm Boyd
Justice of the Peace.

Received Augt. 25. 1849 at 5 o'clock, and 12 m. P. M., and recorded from the original. By William Ross *Register.*

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:48 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
519	DEED	00146/159	01/22/1836

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
FOX CHARLES	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

KNOW ALL MEN BY THESE PRESENTS, THAT I Charles Foy of Portland, County of Cumberland

in consideration of the sum of Seven hundred and fifty dollars paid by the City of Portland

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said City of Portland their Successors

~~heirs~~ and assigns forever a certain lot of land in said Portland & lying on the Northwesterly side of the New County road on Portland Street and bounded as follows, viz, beginning at the Corner or intersection of said Portland Street and Alms Street thence Northeasterly by said Portland Street about sixteen rods and seven links to the land belonging to said City of Portland, thence Northwesterly by said Citys land about ~~seventeen~~ rods and seven links to a stake, thence by Alms house lot or Citys land Southwesterly about twenty rods and a half to Alms Street, thence Southeasterly by the Easterly side of Alms Street about Eight rods to the first bounds ——

TO HAVE AND TO HOLD, the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said City of Portland their Successors ~~heirs~~ and assigns, to their use and behoof forever. And I do covenant with the said City of Portland their Successors ~~heirs~~ and assigns, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said City of Portland to hold as aforesaid; and that I and my heirs shall and will warrant and defend the same to the said City of Portland & their Successors ~~heirs~~ and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, I THE SAID Charles Foy & Ennis my wife who hereby relinquishes her dower

have hereunto set my hand and seal this twelfth day of October in the year of our Lord one thousand eight hundred and thirty-five

SIGNED, SEALED AND DELIVERED, IN PRESENCE OF

E M Foy
Ellen Foy

Charles Foy {L S}
E Foy {L S}

CUMBERLAND, ss. Octr 13th 1835 Personally appeared the above named Charles Foy and acknowledged the above instrument to be his free act and deed....Before me,

Neal Dow
Justice of the Peace.

RECEIVED January 22d 1836 AND RECORDED FROM THE ORIGINAL, BY

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:07:00 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
1556	DEED	00134/357	08/05/1833

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
ADAMS JOSEPH	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

KNOW ALL MEN BY THESE PRESENTS, THAT
I Joseph Adams of Portland in the County of Cumberland & State
in consideration of the sum of one hundred & fifty dollars
paid by the Inhabitants of the same Portland

the receipt whereof I do hereby acknowledge, do hereby give, grant, bargain, sell and convey ~~unto~~ the said Inhabitants & to their Successors

~~heirs and assigns~~ forever the following described tract of land situated in said Portland bounded on the Northeasterly side thereof by Alms Street, on the Northwesterly side thereof by the powder house lot so called & on the Southerly side thereof by the road lately laid out crossing said Alms Street & leading therefrom to Westbrook said tract being of a triangular form.

TO HAVE AND TO HOLD THE ~~AFOREGRANTED AND BARGAINED~~ same **PREMISES**, with ~~all the privileges and appurtenances thereof~~, to the said Inhabitants & to their Successors forever ~~heirs and assigns~~, to their use and behoof forever. And I do covenant with the said Inhabitants ~~heirs and assigns~~, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the ~~said~~ as to hold as aforesaid; and that I ~~and~~ ~~heirs shall and~~ will warrant and defend the same to the ~~said~~ & their Successors ~~heirs and assigns forever~~, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, I ~~the said~~ have hereunto set my hand and seal this tenth day of June in the year of our Lord one thousand eight hundred and thirty three. Also Sarah B my wife who relinquishes her right to dower in the premises has hereto set her hand & seal

SIGNED, SEALED AND DELIVERED
IN PRESENCE OF
Amelia H Bagelow
Sarah B Thacher

Joseph Adams (Seal)
Sarah B. Adams (Seal)

CUMBERLAND....SS. June 13. 1833 Personally appeared
Joseph Adams above named
and acknowledged the above instrument to be his free act and deed.—BEFORE ME,
Nathan Cummings Justice of the Peace.

RECEIVED August 5. 1833 AND RECORDED BY Samuel Small REGISTER.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:58 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
1138	MISCELLANEOUS	00109/246	05/25/1827

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
ROBIE TOPPAN, CUMMINGS WM, RACKLIFF CHANDLER	PORTLAND CITY OF , FOX CHARLES, JEWETT JOSEPH		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

The proceedings of the Committee on the foregoing petition of Dorcas Fowler being returned are read seen and understood It is therefore considered by the Court here that the same be accepted and recorded as the law directs and that the petitioner hereafter have and holde her said Share in severalty accordingly

Attest Wm S Vaughan Clerk

Cumberland ss Registry of Deeds received May 25 1827 and recorded from the Original Samuel Small Register

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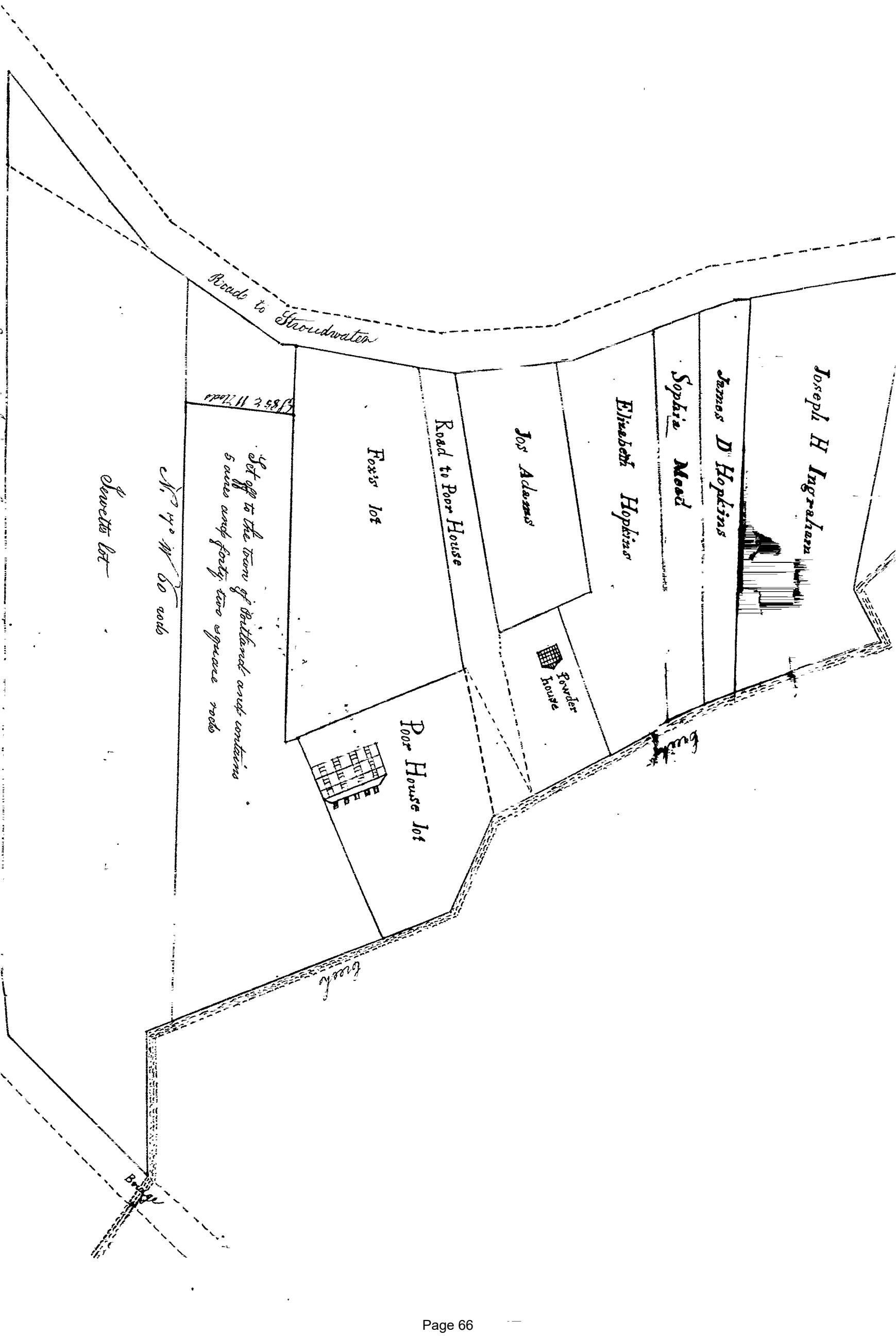
Warrant on the Petn of the Inhabt of Portland

State of Maine

Cumberland ss

To Tobijah Robie William Cummings & Chandler Rackliff Esquires all freeholders in said County Greeting Whereas at our Supreme Judicial Court began and holden at Portland within and for said County of Cumberland on the first Tuesday of May A D 1827. Upon the petition of the Inhabitants of Portland in said County of Cumberland setting fourth that they are interested in and seized in fee as tenants in common with certain persons to them unknown of a certain tract or parcel of land situated in said Portland containing about thirty six acres and bounded thus viz Begining where the roads coming from back Cove meets the road coming from Stroudwater thence running by the westerly side of said roads to Back Cove bridge & the Creek over which said bridge is built thence up said Creek to land formerly belonging to Thomas Hopkins thence Southerly by said land formerly belonging to said Hopkins to said roads coming from Stroudwater thence by said last mentioned roads to the bounds first began at Excepting that part of said premises which was set off to Charles Fox by order of the Judge of Probate and that part thereof which was set off to Joseph Jewett deceased. also that part thereof which was conveyed to the Town of Portland by Joseph H Ingraham Esq also that part thereof which has been set off to said Ingraham by order of the Supreme Judicial Court and that part thereof which has been sett off to Joseph Adams Esq by the order of the Court of common Pleas That their share or proportion of said tract is twenty two one hundredth parts of the whole of said tract which they are desirous of holding in severalty And the Court did thereupon appoint you to make partition accordingly you are therefore hereby authorized to make such partition being under oath and assign to the Petitioners their said purparty therein and that said commissioners return with their doings

Book 109 Page 246



a plan of the premises made by them from actual survey exhibiting thereon such lines and monuments as any party in interest may require and giving due notice to all concerned that are known and live within the State that they may be present if they see meet at the time and make return thereof into the Clerks office of said Court

For any person or persons who may be beyond sea or out of the State for the space of one year and have no sufficient Attorney within the same the Court have appointed William B Sewall Esquire as an agent to be advising on their behalf in making such partition

Witness Prentiss Mellen Esquire at Portland the fourth day of May in the year of our Lord one thousand eight hundred and twenty seven Wm J Vaughan Clerk

Cumberland ss: Portland May 10 1827

Then personally appeared William Cummings Joseph Robie & Chandler Rackliff Esquires and made oath that they would faithfully and impartially perform the service assigned them in the foregoing warrant

Before me John Ewelth. Justice Peace

Pursuant to the foregoing Order of Court we the subscribers having been duly sworn and having notified all parties known to us to be interested of the time and place of our meeting met accordingly and have set off to the Inhabitants of Portland their share or proportion of the whole of said tract viz twenty two one hundredth parts thereof which share or proportion thus set off by us is bounded as follows viz Beginning at a stake standing in the easterly line of the share set off to Charles Fox which stake stands six and a half rods from the main road leading from Portland over Bromhalls hill to Stroutwater thence running South 85° East about seven rods to a Canal set off to Deacon Joseph Jewett thence N 7 0° W by said Jewetts about 60 rods to back Cove Creek thence westerly by said Creek to that part of said tract now owned and in possession of said Inhabitants thence by said Inhabitants Lands to said Fox's lands thence to the Northeasterly corner of said Fox's lands and thence southerly by said Fox's lands to the bound first mentioned containing five acres and forty two square rods more or less a plan of which is hereunto annexed, We notified Wm B. Sewal Elizabeth Hopkins and James D Hopkins for himself and as attorney to Sophia Mead they being all the persons known to be interested in said premises and said James D Hopkins attended, said Sewall has examined our doings and has expressed his satisfaction therewith

Portland May 11th 1827

Joseph Robie
Wm Cummings
Chandler Rackliff

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State of Maine

Cumberland ss

At the Supreme Judicial Court begun & holden at Portland within and for the County of Cumberland on the first Tuesday of May A D 1827

By the Hon: Prentiss Mellen Chief Justice
Hon: William Pitt Preble } Justices
Hon: Nathan Weston Jr }

The proceedings of the committee on the foregoing petition of the Inhabitants of Portland being returned are read seen and understood it is therefore considered by the Court here that the same be accepted and recorded as the law directs and that the petitioners hereafter have and hold their said share in severalty

Att Wm J Vaughan Clerk

Cumberland ss Registry of Deeds received May 25th 1827 and recorded from the Original Samuel Small Register

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Sophia Noyes to Thomas Greely Q C

Know all men by these Presents That I Sophia Noyes of Cumberland in the County of Cumberland and State of Maine ——— Widow in consideration of seventy five dollars paid by Thomas Greely of said Cumberland Cordwainer the receipt whereof I do hereby acknowledge do hereby remise release bargain sell and convey & forever quitclaim unto the said Greely his heirs and assigns forever all my right title and interest in and to two acres and a half of land situated in said Cumberland it being a part of the hundred acre lot Number sixty three in said Cumberland or N Yarmouth Proprietors book of Records and lying on the west side of Royals River bounded as follows beginning at the most Southerly corner of said lot thence to run Northeast twenty four Rods thence Northwest ten rods thence Southwest Eight rods thence Northwest ten rods thence sixteen rods southwest to the Town road thence southeast by said road to the corner first mentioned and is the same land conveyed by Moses Noyes to Nathaniel Noyes by deed dated September 18th 1815 and recorded in the Cumberland Registry Book 91 Page 315

To have and to hold the same together with all the privileges and appurtenances thereunto belonging to him the said Thomas his heirs and assigns forever And I do covenant with the said Thomas Greely his heirs and assigns that I will warrant and forever defend the premises to him the said Thomas Greely his heirs and assigns forever against the lawful claims and demands of all persons claiming by through or under me

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:56 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
942	DEED	00105/115	03/11/1826

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
NEAL JAMES	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

Therefore Know ye that I the said Barnett Potter in consideration of one hundred and seventy five dollars to me paid by the said Ingersoll do by these Presents grant bargain sell convey and assign to the said Nathaniel L Ingersoll his heirs and assigns forever the said Mortgage and premises therein contained To have and to hold the same to him the said Nathaniel L. Ingersoll his heirs and assigns forever, together with the balance of the debt due ~~due~~ and described in the condition of said Mortgage deed now being in a judgment recovered by the said Potter against the said Samuel Nason at the Court of Common Pleas in the County of Cumberland June term Anno Domini eighteen hundred and twenty four on which the sum of ninety five dollars has only been paid in part satisfaction thereof. And I the said ~~Barnett~~ Potter for myself my heirs executors and administrators do covenant with the said Ingersoll his heirs and assigns that I have good right to assign said Mortgage and judgment, and that I will if necessary execute any further assignment and acquittance to the said Ingersoll his heirs or assigns that they may require to convey and assign all the right I have in and to said premises and judgment as aforesaid. In witness whereof I the said Barnett Potter have hereunto set my hand and seal this twenty sixth day of July Anno Domini eighteen hundred and twenty five

Signed sealed and delivered in presence of } Barnett Potter (Seal)
us Horatio Southgate Wm Bradbury Jr }

Cumberland ss July 26th 1825 Personally appeared Barnett Potter and acknowledged the above instrument by him signed and sealed to be his free act and deed before me

Horatio Southgate Justice of the Peace

Cumberland ss Registry of Deeds received March 11th 1826 and recorded from the original. Samuel Small Register

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1

James Neal to Town of Portland

D

Know all men by these presents, That I James Neal of Portland in the County of Cumberland Merchant in consideration of the sum of three hundred and twenty two dollars paid by the inhabitants of the Town of Portland the receipt whereof, I do hereby acknowledge do hereby give grant bargain sell and convey unto the said Inhabitants of the town of Portland their successors and assigns forever all my right title and interest

in and to a certain tract of land in Portland aforesaid Bounded beginning where the road coming from Back cove meets the road came from Stroudwater thence running by the westerly side of said road to Back cove Bridge and the brook over which the bridge is built thence up said brook to land formerly Thomas Hopkins thence South by said Hopkins to the road coming from Stroudwater and by said Stroudwater road to the first beginning being the same I purchased of George Mead Oct. 30th 1822 by deed recorded Book 94 Page 335 being about 100 parts of said tracts.

To have and to hold the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said Inhabitants of Portland aforesaid their successors and assigns to their use and behoof forever. And I do covenant with the said Inhabitants their successors and assigns that I am lawfully seized in fee of the premises, that they are free of all incumbrances: that I have good right to sell and convey the same to the said Inhabitants of Portland to hold as aforesaid And that I will warrant and defend the same to the said Inhabitants of Portland their successors and assigns forever against the lawful claims and demands of all persons.

In witness whereof I the said ——— have hereunto set my hand and seal this third day of August in the year of our Lord one thousand eight hundred and twenty five

Signed Sealed and delivered in presence of Stephen Patten Rufus Emerson ——— James Neal (SEAL)

Cumberland ss Portland Aug 20. 1825 Personally appeared James Neal and acknowledged the above instrument to be his free act and deed before me. Isaac Adams Justice of the Peace.

Cumberland ss Registry of Deeds received March 11th 1826 and recorded from the original, Samuel Small Register

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N

Betsey Campbell to Jeremiah O'Brien E. R. for Mortgage see Book 73 Page 307

Know all men by these presents, that I Betsey Campbell of Brunswick in the County of Cumberland in consideration of forty three dollars and fifty two cents to me paid by Jeremiah O'Brien of Brunswick aforesaid Merchant the receipt whereof I do hereby acknowledge, do hereby give grant sell and convey to him the said Jeremiah O'Brien the right in equity of redeeming the within Mortgaged premises, whereof my late mother Sarah Rose died seized and possessed.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:53 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
648	DEED	00101/188	04/28/1825

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
BRACKETT JOHN, FABYAN JOHN, FABYAN SARAH, SAWYER JANE B, REED JOSEPH, REED MARY	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

188

good right to sell and convey the same to the said Philip Chandler his heirs and assigns: And that I will warrant and defend the same Premises to the said Philip Chandler his heirs and assigns, forever against the lawful claims and demands of all persons:

In witness whereof, I the said Samuel Jackson Junr have hereunto set my hand and seal this thirty first day of December in the year of our Lord one thousand seven hundred and ninety six

Signed Sealed and delivered in presence of Dennis Ryons — William Tucker — Samuel Jackson Jr [seal]

Cumberland ss New Gloucester Dec. 31 1796 Then the above named Samuel Jackson Junior personally appeared and acknowledged the above Instrument to be his free act and deed before me Samuel Thaxter Justice of the Peace

Cumberland ss Clerk's Office received April 27th 1825 and recorded from the original.

Attest William Vaughan
Clerk of the Judicial Courts

2

John Brackett et als to Portland Town Inhabitants of

Know all men by these presents That we John Brackett yeoman and John Fabyan and Sarah Fabyan his wife in her right, and Jane Bowyer, singlewoman, all of Portland in the County of Cumberland and State of Maine and Joseph Reed yeoman and Mary Reed his wife in her right both of Durham in said County in consideration of the sum of three hundred Dollars paid by the Inhabitants of the Town of Portland aforesaid the receipt whereof we do hereby acknowledge, do hereby give grant bargain sell and convey unto the said Inhabitants of the Town of Portland their successors and assigns forever all our right title and interest in and to a parcel of land situated in said Portland and bounded as follows, viz beginning where the road leading from back cove meets the road coming from Stroudwater thence running by the Westerly side of said road to Back cove bridge and the creek over which said bridge is built thence up said creek to land formerly belonging to Thomas Hopkins thence Southerly by said land formerly owned by said Hopkins to said road coming from Stroudwater thereby said road coming from said Stroudwater to the bounds first begun at it being the same that descended to us as heirs of Thomas Brackett late of said Portland deceased the whole being in common and undivided and is Eleven one hundredths parts of the above described premises

To have and to hold the afore granted and bargained premises with all the privileges and appurtenances thereof to the said

Inhabitants of the Town of Portland their successors and assigns to their use and behoof forever And we do covenant with the inhabitants of the Town of Portland their successors and assigns that we are lawfully seized in fee of the premises: that they are free of all incumbrances that we have good right to sell and convey the same to the said Inhabitants of the Town of Portland to hold as aforesaid And that we will warrant and defend the same to the said Inhabitants of the Town of Portland their successors and assigns forever against the lawful claims and demands of all persons

In Witness whereof, we the said John Brackett John Fabyan and Sarah Fabyan and Jane B Sawyer and Joseph Reed and Mary Reed and Lucy Brackett wife of said John Brackett for the consideration aforesaid does hereby sell grant & relinquish all her right to Dower in the foremises have hereunto set our hands and seals this twenty eighth day of April in the year of our Lord one thousand eight hundred and twenty five

Signed Sealed and delivered in presence of AB the erasure of the word "heirs" in four several places made before sealing:

Rufus Emerson
John Anderson

John Brackett
John Fabyan
Sarah Fabyan
Joseph Reed
Mary Reed
Jane B Sawyer
Lucy + Brackett
her mark

Cumberland ss April 28, 1825 Personally appeared the above named John Brackett John Fabyan Sarah Fabyan Jane B. Sawyer Joseph Reed and Mary Reed and Lucy Brackett and acknowledged the above instrument to be their free act and deed

Before me John Anderson Justice of the Peace

Cumberland ss Clerks Office received April 28th 1825 and recorded from the original,

Wm S Vaughan
Clerk of the Judicial Courts

No
H Titcomb
to
Charles L. Clapp

Know all men by these presents That I Henry Titcomb of Portland in the County of Cumberland and State of Maine Merchant in consideration of the sum of Twelve hundred dollars paid by Charles L. Clapp of the same Portland Merchant, the receipt whereof I do hereby acknowledge, do hereby give grant bargain sell and convey unto the said Charles L. Clapp his heirs and assigns forever a certain lot of land situate on the eastern side of Union Street in said Portland beginning twelve feet from the Southerly corner of the brick store

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:49 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
855	DEED	00090/81	10/03/1821

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
SAWYER M P	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year
S/06727/302	EASEMENT	1985

Legal Description\Remarks

Lot	Block	Subdivision	Plat

81

M P Sawyer

to

Inh'ts Portland

Know all men by these presents. That I Matthias P. Sawyer of Portland in the County of Cumberland Merchant in consideration of twenty three hundred dollars paid by Samuel Trask of said Portland as Treasurer for and in behalf of the Inhabitants of the Town of Portland aforesaid in their corporate capacity. the receipt whereof I do hereby acknowledge, do hereby remise, release bargain sell and convey and forever quitclaim unto the said Inhabitants of Portland their successors and assigns forever, all right, title and interest in and to a certain tract of land situate in said Portland, being a part of the Freeman Fosm so called, lately owned by Ralph Cross dec'd the said part being all of said Fosm which I purchased of Jacob Cutter and wife and Clarissa Cross by their deed to me bearing even date with these presents, excepting so much thereof as is now included within the boundaries following viz. Beginning at the Northerly corner of David Ross' land, on the Westerly side of the highway leading by said Fosm from the guide board to Northyarmouth, thence Northerly by the Westerly side of said highway fifty three rods and five links to within two rods of James Deerings land, thence South sixty one and one half degrees West keeping at the distance of two rods from said Deerings land twenty six rods and fourteen links- thence South twenty two degrees East by the fence now standing fifty seven and one fourth rods- thence North fifty five degrees East adjoining David Ross' land to the beginning. The said part hereby intended to be conveyed being bounded Northerly by said Deerings land, Westerly by land of William and Barnard Douglass- Southerly by Buck cove brook, and Easterly by the land excepted as aforesaid and said highway, reserving a right to pass and repass in the two rod strip adjoining said Deerings land in common with said grantees, To have and and to hold, the same, together with all the privileges and appurtenances thereto belonging, to the said Inhabitants of Portland their successors and assigns forever. and I do covenant with the said Inhabitants of Portland their successors and assigns, that I will warrant and forever defend the premises to them the said Inhabitants their successors and assigns, against the lawful claims and demans of all persons claiming by, through or under me. In witness whereof I the said Matthias P. Sawyer have hereunto set my hand and seal this twenty eighth day of September in the year of our Lord one thousand eight hundred & twenty one

Signed Sealed and Delivered in presence of

E. Whitman Josiah Robie

M P Sawyer Ls

Cumberland

Cumberland ss. October 3. 1821 Personally appeared Matthias P. Sawyer & acknowledged the above instrument to be his free act and deed.
Before me Joseph Tobie Justice of the Peace
Recorded October 3. 1821 and recorded from the original
Elias Merrill Reg.

Eben Lord wife
to
Aaron Richardson
estate

Know all men by these presents, That we Ebenezer Lord and Ruth Lord wife of the said Eben.r Lord in the right both of Standish in the County of Cumberland and State of Maine, in consideration of three hundred dollars paid by William Tompson of Standish in said County Esq.r administrator De Bonis non of Aaron Richardson late of Newton dec.d the receipt whereof we do hereby acknowledge. do hereby remise, release, bargain sell and convey, and forever quit-claim unto the said William Tompson Esq for the benefit of the creditors of said estate for ever, all right, title and interest in and to the three thirty acre lots of land in Standish numbered 27. 28 and 29 with the dwelling house stable and barn standing thereon, seized as the reversion of the widdows dower in said estate, and not heretofore sold as the estate of said Richardson. To have and to hold the same together with all the privileges thereto belonging, to him the said Tompson his heirs and assigns forever. And we the Grantors covenant with the said Tompson as administrator &c. that we will warrant and forever defend the premises to the said administrator for the creditors aforesaid against the lawful claims and demands of all persons claiming by through or under us or either of us or our heirs.

In witness whereof we the said Ebenezer Lord and Ruth Lord have hereunto set our hands and seals this fifteenth day of October in the year of our Lord one thousand eight hundred and twenty one.

Signed Sealed and Delivered in presence of — Eben Lord L.S. — Ruth Lord L.S.
Jon.a Jackson Charles Jackson

Cumberland ss. October 16. 1821 Personally appeared Ebenezer Lord and Ruth Lord and acknowledged the above instrument to be their free act and deed. Before me
Leun Cram Justice of the Peace
Received October 16. 1821 and recorded from the original
Elias Merrill Reg.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:54 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
867	DEED	00049/356	05/15/1806

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
BRACKETT JOSHUA, BRACKETT NATHANIEL, INGRAHAM JOSEPH H, BRACKETT THOMAS, HOPKINS THOS	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

356

Wm Cushing
to
Jon.a Pratt

Know all Men, that I William Cushing named in the within written deed of Mortgage as Grantee, In Consideration of a Note of hand made to me by Luther Cary & Joseph Copeland, for the Money due on said Mortgage do hereby release & discharge to Jonathan Pratt Grantor Named therein, his heirs & assigns, the Mortgage aforesaid with all interest, & state, right & title which accrued to me thereby, together with the Note of said Jonathan mentioned therein, In Witness whereof I have hereto set my hand & seal this 19th day of September A.D. 1805.

Signed, Sealed & Delivd
in presence of —
Wm Jackson. Margaret Bowers

Wm Cushing Seal

Plymouth ss. September the 19. day A. D. 1805
Then the above Named William Cushing acknowledged the above written Deed of Release by him subscribed to be his act & Deed, before me —

Wm Jackson Just. Peace —

Received May 20. 1806. & recorded from the Original

Per Elias Merrill Regr.

Whereas Joseph Holt Ingraham, of Portland, in the County of Cumberland, Merchant, by deed bearing date this day hath sold & conveyed to the Inhabitants of said Portland two acres of land lying in Common with thirty four acres more, which thirty five acres were sett off as part of the Dower of Hannah Appleby Brackett, Now Know all Men by these presents, that we the aforesaid Joseph H. Ingraham, Joshua Brackett & Nathaniel Brackett of Gorham, in said County Gorman, and Thomas Brackett and Thomas Hopkins of said Portland Gentleman In Consideration of the sum of ten Dollars paid us by the said Inhabitants of Portland, do by these presents Covenant & agree to & with the said Inhabitants that the said two acres of land shall, in all or any future Division or partitions of said thirty five acres, & from & after the Signing of these presents, be Located & bounded as follows viz, beginning at a Monument Stone about eighteen rods from Back Cove creek, thence running North 63°. East Eighteen rods to another Monument Stone, thence on a Course North 21°. West from the two Stones aforesaid, keeping the width of Eighteen Rods to Back Cove Creek; and we do further

Covenant

Covenant & agree to & with the said Inhabitants, as well for Ourselves as for our heirs & Assigns that Neither we our heirs or Assigns shall or will Obstruct the said Inhabitants in their taking & possession of said two acres so bounded as aforesaid, nor in any manner disturb them in their possession of the same, from this time henceforth and forever — In Witness whereof we have hereunto set our hands and seal this 12th day of October in the year ---- 1802

Signed, Sealed & Delivered in presence of ---- Samuel Wells ---

Joshua Brackett — Seal
Nathaniel Brackett — Seal
Thomas Brackett — Seal
Tho[s] Hopkins — Seal

Recived May 15. 1806. and Recorded from the Original
Attest Elias Merill Reg[r]

Know all Men — That Aaron Hinkley & Edmund Hinkley of Brunswick, in the County of Cumberland and Commonwealth of Massachusetts, for and in Consideration of two thousand Dollars paid us by James Curtis Jun[r] of said Brunswick, the Receipt whereof we do hereby Acknowledge & do hereby give grant sell and Convey to the said James Curtis Jun[r] — a certain Lot of land Lying in Brunswick aforesaid, Containing about one hundred Acres & bounded as follows viz, Fronting about thirty Rods on Stevens' River & Northerly on Capt. James Curtis's Lot, and Southerly on land belonging to the Heirs of Capt. Sam[l] Harding, & running on parallel lines to Androscoggin River — all within the above Mentioned bounds Except — two Acres we sold to Joseph Blackmon — To Have and to hold the above described premises — to the said James Curtis to his use & his heirs and Assigns forever, & we do Covenant with the said James Curtis his Heirs and Assigns, that we are the true and lawfull Owners, and we are Lawfully seized in fee of the premises, that they are free from all Incumbrances, that we have good right to Sell and Convey the same to the said Curtis, and that we for Ourselves & our Heirs, will warrant and Defend the said premises to the said Curtis his heirs and Assigns, against the Lawfull Claims and demands of all persons what-soever — In Testimony whereof we have hereby set our hands & Seals this ---- in the year of Our Lord one thousand Eight hundred and Six — Aaron Hinkley Seal

Signed, Sealed & Delivered in presence of Hannah Sewall — Edmund Hinkley Seal
Anna Hinkley — Seal

Edmund Hinkley & al[s] to James Curtis Jr.

Lincoln ss. 29. April 1806. Personally appeared Aaron Hinkley & Edmund Hinkley and acknowledged the above written Instrument by them Subscribed to be their free act and Deed — before me Dum[r] Sewall Just. of the Peace

Recivid May 20. 1806. and recorded from the Original Attest Elias Merrill Reg[r]

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:57 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
1569	DEED	00048/20	11/21/1805

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
INGRAHAM JOSEPH H	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

20

KNOW ALL MEN BY THESE PRESENTS,

That I Joseph Hott Ingraham of Portland, in the County of Cumberland, Merchant—

in consideration of the sum of One Dollar -

paid by the Inhabitants of the Town of Portland

the receipt whereof I do hereby acknowledge—do hereby give, grant, bargain, sell and convey unto the said Inhabitants - ~~heirs and assigns forever~~

One quarter of an acre of land, situate in the said Town of Portland and lying in common with thirty five acres and three quarters more, which thirty six acres are the same that was set off to Hannah Brackett, widow of the late Anthony Brackett, as part of her Dower as by the Record thereof in the Probate Court of said County may appear, and is bounded southerly and Easterly by Road, Northerly by a brook, and Westerly by land lately in the Possession of the Reverend Samuel Deane, but since sold by him to one or more persons of the Name of Douglass, With the Appurtenances - - -

To have and to hold the aforegranted and bargained premises, with all the privileges and appurtenances thereof, to the said Inhabitants and their Successors ~~heirs and assigns~~, to their use and behoof forever. And I do covenant with the said Inhabitants ~~heirs and assigns~~, that I am lawfully seized in fee of the premises; that they are free of all incumbrances; that I have good right to sell and convey the same to the said Inhabitants as aforesaid - - - to hold as aforesaid. And that I will warrant and defend the same to the said Inhabitants and their Successors ~~heirs and assigns~~ forever, against the lawful claims and demands of all persons. In Witness Whereof I the said Joseph Hott Ingraham, and Ann Ingraham wife of said Joseph, in token of my Release of Dower in the premises aforesaid -

have hereunto set our hands and seals this ~~Sixth~~ day of June - - in the year of our Lord, one thousand eight hundred and five

Signed, Sealed, and Delivered, in presence of us. Joseph H. Ingraham (Seal)
Melzer Lincoln. Eliza R. Ingraham Ann Ingraham (Seal)

Cumberland ss. Portland June 6. 1805. Personally Appeared Joseph Hott Ingraham and Acknowledged the above Instrument to be his free act and Deed before me
John Frothingham Just. of the Peace

Rec. Nov. 21. 1805. and Recorded from the Original
Attest Elias Merrill Reg.

Cumberland County Register of Deeds Current datetime: 12/13/2023 1:06:50 PM

DETAILS REPORT

**Note: Report is Sorted in Ascending Order by Office, Recorded Date, Document Number

Doc#	Document Type	Book/Vlm/Page	File Date
504	DEED	00045/512	06/05/1805

Street	Street Name	Description

Grantors	Grantees	Street	Property Description
INGRAHAM JOSEPH H	PORTLAND CITY OF		

References

Book/Vlm/Page	Description	Recorded year

Legal Description\Remarks

Lot	Block	Subdivision	Plat

512

in the above described ~~xxxxxxxx~~ Lots of Land have hereunto set our hands and seals this first day of June in the year of our LORD one thousand eight hundred and five -

Signed Sealed & delivered in presence of us
I bought, & enw Alexander Ros interlined before signing
John Frothingham Solomon Boyce
Anna Lowell Betsey Lowell -

Abner Lowell (Seal)
Mary Lowell (Seal)

Cumberland ss. Portland June 5th. 1805. Personally appeared Abner Lowell and acknowledged the above Instrument to be his free act and Deed.

Before me - John Frothingham Justice Peace

Received June 5th 1805 and Recorded from the Original. Elias Merrill Regr:

J. H. Ingraham to Inhabitants of Portland

Know all Men by these Presents, That I Joseph Hott Ingraham of Portland in the County of Cumberland Merchant in consideration of Ten dollars paid by the Inhabitants of the Town of Portland aforesaid, the receipt whereof I do hereby acknowledge, do hereby give, grant, sell and convey unto the said Inhabitants two acres of Land situate in the said town of Portland & Lying in common with thirty four acres more, which thirty five acres are the same that was set off to Kunkhappunk Brackett widow of Anthony Brackett as part of her dower as by the record thereof in the ~~xxxx~~ Probate Court of said County may appear, & is bounded southerly & easterly by woods, northerly by a creek, & westerly by Land lately in the Possession of the Rev. Samuel Deane, but since sold by him to one or more persons of the name of Douglas, with the appurtenances - To have and to hold the aforegranted premises to the said Inhabitants & their successors to their use and behoof forever, And I do covenant with the said Inhabitants, that I am lawfully seized in fee of the aforegranted Premises, ~~to the same~~ that they are free of all Incumbrances; that I have good right to sell and convey the same to the said Inhabitants as aforesaid. And that I will warrant and defend the same premises to the said Inhabitants & their successors forever, against the lawfully claims and demands of all persons. In Witness whereof I the said Joseph H. Ingraham and I Ann Ingraham wife of said Joseph in token of my ~~relinquish~~ release

release of Dower in the premises have hereunto set ~~my~~ our hands and seals this twelvth day of October in the Year of our LORD one thousand eight hundred and two ——————

Signed Sealed and delivered in presence of us } Joseph Hall Ingraham (Seal)
Will.m Cambell Isaac Ilsley — } Ann Ingraham (Seal)

Cumberland ss. ~~Oct.~~ October 12.th 1802. Then the above named Joseph H. Ingraham and Ann Ingraham acknowledged the above Instrument to be their act and deed — before Isaac Ilsley Justice of the Peace —

~~Rec.d~~ October 12.th 1802 Then the above named Joseph H. ~~Ingraham & Ann~~ Ingraham acknowledged the above Instrument to be their free ~~act and deed~~ — before me Isaac Ilsley Justice Peace —

Received June 5.th 1805 and Recorded from the Original —

J. Elias Merrill Regr.

Know all Men by these Presents, That I John Coe of Portland in the County of Cumberland Apothecary, in consideration of the Sum of Six hundred & fifty dollar paid by Stephen Cummings of the same Portland Physician, the receipt whereof I do hereby acknowledge, have remised released and forever quitclaimed, and do by these presents remise, release and forever quitclaim unto the said Stephen Cummings his heirs and assigns forever, all my right, Title and Interest in and upon a certain piece of Land situated in Portland and bounded as follows viz beginning at a Stake, ~~Standing~~ and a heap of Stones Standing on the bank of Fore river at the western line of the ~~same~~ Widow Mariots Dower, thence Northerly by the line of said dower eight rods to a Stake and from the two abovementioned bounds to keep the width of eight rods on a course South Sixty four degrees west to the eastern line of Mrs. Mary Thomas's Land including all the Land and Flatts lying below the above described Land said Flatts to keep the width of nine rods bounded by the dower on the east to the Channel in fore River — To have and to hold the

John Coe to S. Cummings

same

Zoning Assessment Table

ZONING ANALYSIS Relevant Zone(s) Recreation Open Space (ROS)

All Projects:

	Required	Proposed
Lot Size	NA	NA
Area Per Dwelling Unit	NA	NA
Minimum Street Frontage	NA	NA
Front Yard Minimum	NA	NA
Front Yard Maximum	NA	NA
Rear Yard	25	NA
Yard Right	NA	NA
Yard Left	12	11
Side Street Setback	NA	NA
Step Back	NA	NA
Maximum Lot Coverage	NA	NA
Minimum Lot Coverage	NA	NA
Maximum Height	45	40
Open Space	NA	NA
Maximum Impervious Area	75%	< 75%
Pavement Setback	NA	NA
Floor Area Ratio	0.5	< 0.5
Off Street Parking Spaces	NA	NA
Loading Bays	NA	NA
Other 1	NA	NA
Other 2	NA	NA
Other 3	NA	NA

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

Site Plan Standards Assessment

To: Kevin Craft
Planning and Urban Development Director
City of Portland
389 Congress Street, Floor 4
Portland, Maine 04101

Date: April 19, 2024

Project #: 55748.00

From: David Senus, P.E.
Jason Howe

Re: Major Site Plan Review – Site Plan Standards Assessment
Portland Sea Dogs Clubhouse Addition

Please find the information below pertaining to the Site Plan Standards Assessment:

14.6.3 Public infrastructure and community safety standards

A. Consistency with City master plans

1. All developments shall be designed so as to be consistent with City Council-approved master plans and facilities plans and with off-premises infrastructure.

The project will allow for the Sea Dogs organization to comply with league rules through upgrades to the Hadlock Stadium facility, a City of Portland property maintained by the Sea Dog's organization through agreements with the City. The Sea Dogs have contracted with the City of Portland to be the primary tenant at Hadlock Stadium. The project is consistent with the Athletic Facilities Task Force Report (February 2011). Specifically, the project allows for the Sea Dogs organization to continue using and maintaining Hadlock Stadium both now and into the future, a use that is noted in the report as an existing and anticipated future use for this facility. The project will not result in impacts to off-premises infrastructure, as it will not create additional traffic, nor will the physical impacts of the project extend beyond the property boundaries. The project will preserve the former rail ROW that abuts the side and rear of the property, a parcel of land owned by the City of Portland and planned as a future greenway/trail system. In net the project will result in 500 less bleacher seats within the ballpark. All public utility infrastructure servicing the project will be connected to existing City systems in Park Ave with negligible or no anticipated change or impact to these systems.

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

The project does not require any easements or rights to obtain access to the facilities, to construct the overall improvements, or to connect to abutting public infrastructure in Park Ave.

B. Public safety and fire prevention

1. All development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime:

a. Natural surveillance that promotes visibility of public spaces and areas.

The clubhouse addition will largely be visible from Park Ave and from the parking lot utilized by the Sea Dogs along south and west facades of the new structure, an area managed and overseen by Seadogs organization staff. This area is illuminated at night from existing parking lot light poles and building-mounted lights on the existing stadium, and planned lights mounted on the new clubhouse addition. The north façade of the clubhouse will face a City of Portland parcel that runs along the side and rear of Hadlock Stadium. This parcel is a former railroad ROW, programmed to become a future trail/greenway by the City. The drive-lane alley formed on the north side of the building will be fenced and gated for restricted access in this area, with a building-mounted lighting system illuminated this alleyway. The east

Memorandum

façade of the building is proposed along an access-controlled alley internal to the stadium, adjacent to the existing stadium wall. The internal alley terminates at a future bullpen/field area at the north end of the alley (also internal to the stadium, with controlled access).

b. Access control that promotes authorized and/or appropriate access to the site.

The alley that is formed by the clubhouse addition will provide maintenance and emergency service access to the rear of the stadium and to left field. This area will be fenced in with a vehicle fence gate, and there will be lighting on the building to increase security and visibility in this zone. The alley that is formed on the east edge of the addition is internal to the stadium, which is a controlled-access area.

c. Territorial reinforcement that promotes a sense of ownership and responsibility through environmental design.

The use of fences, gates, and stadium access controls along with facility signage will clearly delineate private, semi-private, and public spaces on the property.

2. All developments shall be designed to provide adequate emergency vehicle access to the site and comply with the Public Safety standards of the Technical Manual.

The project includes a rear vehicle alley to allow for emergency vehicle access to the north side of the building. The south and west sides of the new clubhouse are open to and accessible from an existing parking lot.

DBH-Portland LLC
Portland, Maine

April 19, 2024

Project Narrative: Major League Baseball is requiring the Portland Seadogs to add a new clubhouse to Hadlock Field so that they can provide facilities for both teams. The proposed building is a 23,600 sf 2-story pre-engineered metal building that will provide lockers, restrooms, showers, lounge space, baseball workout areas and general utilities for the building. This project is primarily for the players, umpires, and ground crew; there will be no public access to this building. The exterior material of the proposed building will be finished with a metal panel that will match the color of the existing Hadlock Field. The proposed construction type will be IBC – type IIB (IBC 602) with a maximum building height not to exceed 40'. The building will support an elevator for ADA access to the second level and will have provisions to allow a stretcher to fit within the elevator cab. The proposed project completion date is estimated to be March 2025.

Financial Capability: See the owner's financial information attached.

Technical Capability: See the owner, architect, civil, and construction manager attached profiles.

Massing, Ventilations and Wind Impact: The new Clubhouse Addition will replace the existing detached bleacher and concession buildings. The new building will be adjacent, but not attached to the exiting stadium's third baseline concourse. Its overall height will be below that of the stadiums. On the opposite side of the building is an existing field access path that will be maintained. Beyond that, outside the clubhouse's property line is an existing abandoned rail line and wooded area, backing up to a residential neighborhood. The proposed project has similar access points and building area currently on site and will not create any wind or ventilation impacts.

Massing, Ventilations and Wind Impact: The Clubhouse overall area is 20,632 sf evenly divided between two stories with an additional 3,194 sf "Bullpen" space exposed to the elements at grade next to the field. The new Clubhouse height will be roughly 39'-9" above grade at the roofs peak, below that of the existing stadiums box seats ~ 40'-0" above grade. The new structure will wrap in an "L" shape around a portion of the Stadiums third baseline concourse.

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Exterior Lighting: The site related lighting consists of building mounted full cut off area lighting located at 16 feet AFG (W5) and (W6), wall mounted full cut off egress lighting mounted over the entry doors (W4), downlights under the canopy of the walkway (R2). See attachment for additional information.

Noise and Vibration: The Heating, ventilation, and air conditioning system are high-efficient units commonly used on new commercial projects. The units are located on the project to minimize any noise levels to surrounding neighbors.

Construction Management Plan: See attached information.

ARCHITECTURAL PLANS AND RENDERINGS: See attached drawings.

ZONING ANALYSIS Relevant Zone(s) Recreation Open Space (ROS)

All Projects:

	Required	Proposed
Lot Size	NA	NA
Area Per Dwelling Unit	NA	NA
Minimum Street Frontage	NA	NA
Front Yard Minimum	NA	NA
Front Yard Maximum	NA	NA
Rear Yard	25	NA
Yard Right	NA	NA
Yard Left	12	11
Side Street Setback	NA	NA
Step Back	NA	NA
Maximum Lot Coverage	NA	NA
Minimum Lot Coverage	NA	NA
Maximum Height	45	40
Open Space	NA	NA
Maximum Impervious Area	75%	< 75%
Pavement Setback	NA	NA
Floor Area Ratio	0.5	< 0.5
Off Street Parking Spaces	NA	NA
Loading Bays	NA	NA
Other 1	NA	NA
Other 2	NA	NA
Other 3	NA	NA

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

To: Kevin Craft
Planning and Urban Development Director
City of Portland
389 Congress Street, Floor 4
Portland, Maine 04101

Date: April 19, 2024

Project #: 55748.00

From: David Senus, P.E.
Jason Howe

Re: Major Site Plan Review – Site Plan Standards Assessment
Portland Sea Dogs Clubhouse Addition

Please find the information below pertaining to the Site Plan Standards Assessment:

14.6.3 Public infrastructure and community safety standards

A. Consistency with City master plans

1. All developments shall be designed so as to be consistent with City Council-approved master plans and facilities plans and with off-premises infrastructure.

The project will allow for the Sea Dogs organization to comply with league rules through upgrades to the Hadlock Stadium facility, a City of Portland property maintained by the Sea Dog's organization through agreements with the City. The Sea Dogs have contracted with the City of Portland to be the primary tenant at Hadlock Stadium. The project is consistent with the Athletic Facilities Task Force Report (February 2011). Specifically, the project allows for the Sea Dogs organization to continue using and maintaining Hadlock Stadium both now and into the future, a use that is noted in the report as an existing and anticipated future use for this facility. The project will not result in impacts to off-premises infrastructure, as it will not create additional traffic, nor will the physical impacts of the project extend beyond the property boundaries. The project will preserve the former rail ROW that abuts the side and rear of the property, a parcel of land owned by the City of Portland and planned as a future greenway/trail system. In net the project will result in 500 less bleacher seats within the ballpark. All public utility infrastructure servicing the project will be connected to existing City systems in Park Ave with negligible or no anticipated change or impact to these systems.

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

The project does not require any easements or rights to obtain access to the facilities, to construct the overall improvements, or to connect to abutting public infrastructure in Park Ave.

B. Public safety and fire prevention

1. All development shall incorporate the following public safety principles for Crime Prevention through Environmental Design (CPTED) into site design to enhance the security of public and private spaces and to reduce the potential for crime:

a. Natural surveillance that promotes visibility of public spaces and areas.

The clubhouse addition will largely be visible from Park Ave and from the parking lot utilized by the Sea Dogs along south and west facades of the new structure, an area managed and overseen by Seadogs organization staff. This area is illuminated at night from existing parking lot light poles and building-mounted lights on the existing stadium, and planned lights mounted on the new clubhouse addition. The north façade of the clubhouse will face a City of Portland parcel that runs along the side and rear of Hadlock Stadium. This parcel is a former railroad ROW, programmed to become a future trail/greenway by the City. The drive-lane alley formed on the north side of the building will be fenced and gated for restricted access in this area, with a building-mounted lighting system illuminated this alleyway. The east

Memorandum

façade of the building is proposed along an access-controlled alley internal to the stadium, adjacent to the existing stadium wall. The internal alley terminates at a future bullpen/field area at the north end of the alley (also internal to the stadium, with controlled access).

b. Access control that promotes authorized and/or appropriate access to the site.

The alley that is formed by the clubhouse addition will provide maintenance and emergency service access to the rear of the stadium and to left field. This area will be fenced in with a vehicle fence gate, and there will be lighting on the building to increase security and visibility in this zone. The alley that is formed on the east edge of the addition is internal to the stadium, which is a controlled-access area.

c. Territorial reinforcement that promotes a sense of ownership and responsibility through environmental design.

The use of fences, gates, and stadium access controls along with facility signage will clearly delineate private, semi-private, and public spaces on the property.

2. All developments shall be designed to provide adequate emergency vehicle access to the site and comply with the Public Safety standards of the Technical Manual.

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ARCHITECTURAL PLANS AND RENDERINGS: See attached drawings.

General Notes

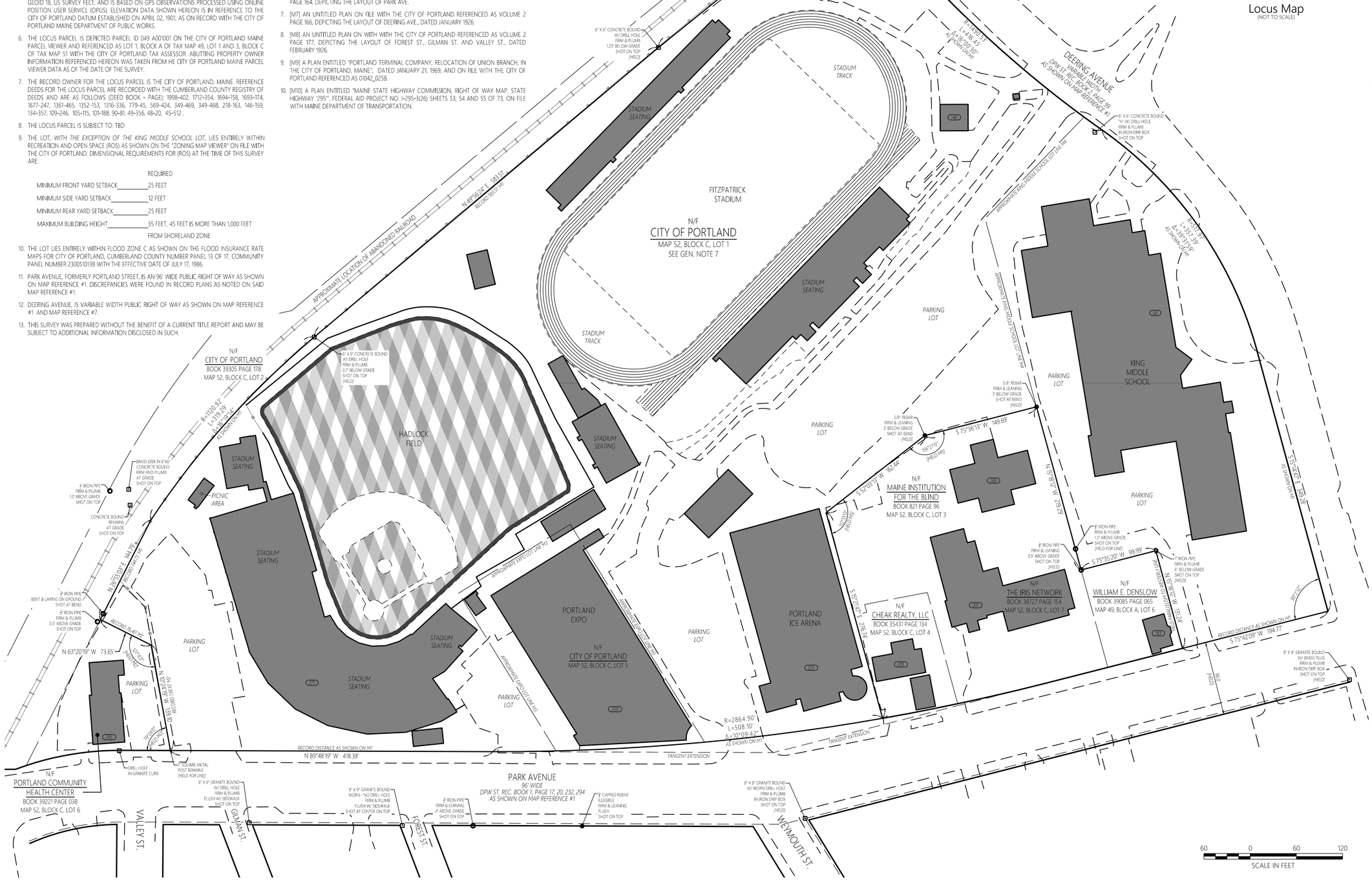
1. THIS PLAN AND ALL WORK ASSOCIATED WITH IT WAS PERFORMED BY VANASSE HANGEN BRUSTLIN, INC. (VHB, INC.) PURSUANT TO A PROFESSIONAL SERVICES CONTRACT BETWEEN LAVALLEE / BRENSINGER ARCHITECTS AND VHB, INC. DATED OCTOBER 19, 2023.
2. THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON A BOUNDARY RETRACEMENT SURVEY CONDUCTED BY VHB, INC. IN DECEMBER OF 2023 AND FROM DEEDS AND PLANS OF RECORD.
3. THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED ON PLANIMETRIC MAPPING OF AERIAL IMAGERY, DATED APRIL 20, 2023 ACQUIRED FROM NEARMAP. EXISTING CONDITIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY WAS PERFORMED BY VHB, INC. IN DECEMBER OF 2023 AND IS SHOWN ON SHEET 2 OF 2.
4. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON SURFACE OBSERVABLE FEATURES THAT WERE LOCATED AT THE TIME OF THE SURVEY. THIS EFFORT WAS SUPPLEMENTED BY STRUCTURE INVERTS AND PAINT MARKS FOUND DURING THE ON-THE-GROUND SURVEY. DIG-SAFE SHOULD BE CONTACTED PRIOR TO COMMENCING ANY EXCAVATION. (888-344-7233)
5. HORIZONTAL DATUM IS BASED ON GRID NORTH AND REFERS TO THE MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802, NORTH AMERICAN DATUM OF 1983 (2011), 2010 EPOCH, GEOID 18, US SURVEY FEET; AND IS BASED ON GPS OBSERVATIONS PROCESSED USING ONLINE POSITION USER SERVICE (OPUS). ELEVATION DATA SHOWN HEREON IS IN REFERENCE TO THE CITY OF PORTLAND DATUM ESTABLISHED ON APRIL 02, 1901, AS ON RECORD WITH THE CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS.
6. THE LOCUS PARCEL IS DEPICTED PARCEL ID 049 A001001 ON THE CITY OF PORTLAND MAINE PARCEL VIEWER AND REFERENCED AS LOT 1, BLOCK A OF TAX MAP 49, LOT 1 AND 3, BLOCK C OF TAX MAP 51 WITH THE CITY OF PORTLAND TAX ASSESSOR. ABUTTING PROPERTY OWNER INFORMATION REFERENCED HEREON WAS TAKEN FROM HE CITY OF PORTLAND MAINE PARCEL VIEWER DATA AS OF THE DATE OF THE SURVEY.
7. THE RECORD OWNER FOR THE LOCUS PARCEL IS THE CITY OF PORTLAND, MAINE. REFERENCE DEEDS FOR THE LOCUS PARCEL ARE RECORDED WITH THE CUMBERLAND COUNTY REGISTRY OF DEEDS AND ARE AS FOLLOWS (DEED BOOK + PAGE): 1998-402, 1712-354, 1694-158, 1693-174, 1677-247, 1361-465, 1352-153, 1316-336, 779-45, 569-424, 349-469, 348-468, 218-163, 146-159, 134-357, 109-246, 105-115, 101-188, 90-81, 49-356, 48-20, 45-512 .
8. THE LOCUS PARCEL IS SUBJECT TO: TBD
9. THE LOT, *WITH THE EXCEPTION OF THE KING MIDDLE SCHOOL LOT*, LIES ENTIRELY WITHIN RECREATION AND OPEN SPACE (ROS) AS SHOWN ON THE "ZONING MAP VIEWER" ON FILE WITH THE CITY OF PORTLAND. DIMENSIONAL REQUIREMENTS FOR (ROS) AT THE TIME OF THIS SURVEY ARE:

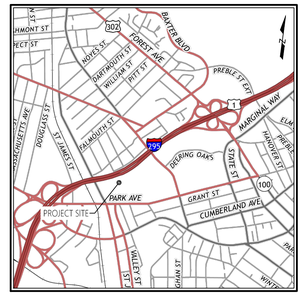
	REQUIRED
MINIMUM FRONT YARD SETBACK	25 FEET
MINIMUM SIDE YARD SETBACK	12 FEET
MINIMUM REAR YARD SETBACK	25 FEET
MAXIMUM BUILDING HEIGHT	35 FEET, 45 FEET IS MORE THAN 1,000 FEET FROM SHORELAND ZONE

10. THE LOT LIES ENTIRELY WITHIN FLOOD ZONE C AS SHOWN ON THE FLOOD INSURANCE RATE MAPS FOR CITY OF PORTLAND, CUMBERLAND COUNTY NUMBER PANEL 13 OF 17, COMMUNITY PANEL NUMBER 2300510138 WITH THE EFFECTIVE DATE OF JULY 17, 1986.
11. PARK AVENUE, FORMERLY PORTLAND STREET, IS AN 96' WIDE PUBLIC RIGHT OF WAY AS SHOWN ON MAP REFERENCE #1. DISCREPANCIES WERE FOUND IN RECORD PLANS AS NOTED ON SAID MAP REFERENCE #1.
12. DEERING AVENUE, IS VARIABLE WIDTH PUBLIC RIGHT OF WAY AS SHOWN ON MAP REFERENCE #1 AND MAP REFERENCE #7.
13. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO ADDITIONAL INFORMATION DISCLOSED IN SUCH.

Map References

1. [M1] A PLAN ENTITLED "BOUNDARY LINE RETRACEMENT PLAN FOR, HADLOCK FIELD, FITZPATRICK STADIUM, PORTLAND ICE ARENA, PORTLAND EXPOSITION BUILDING, KING MIDDLE SCHOOL", PREPARED BY CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING SECTION, DATED JUNE 2005, LAST REVISED JULY 2013, AND ON FILE WITH THE CITY OF PORTLAND AS PLAN # 992/9.
2. [M2] A PLAN ENTITLED "PLAN OF PARK AVE. FIRE STATION PARCEL" DATED JUNE 5, 1985, PREPARED BY CITY OF PORTLAND PUBLIC WORKS, AND SHOWN IN PLAN BOOK 148 PAGE 37 RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
3. [M3] A PLAN ENTITLED "PLAN OF EXPOSITION BUILDING LOT", PREPARED CITY OF PORTLAND'S CITY ENGINEER, DATED APRIL 1914, AND ON FILE WITH THE CITY OF PORTLAND.
4. [M4] A PLAN ENTITLED "STANDARD BOUNDARY SURVEY OF KING MIDDLE SCHOOL, DEERING AVENUE, PORTLAND, MAINE", PREPARED BY THE CITY OF PORTLAND DEPARTMENT OF PARKS AND PUBLIC WORKS, ENGINEERING DIVISION, DATED MAY 31, 1994.
5. [M5] A PLAN ENTITLED "PLAN OF LAND IN PORTLAND , MAINE, FOR, MAINE INSTITUTION FOR THE BLIND", PREPARED BY OWEN HASKELL, INC., DATED JANUARY 25, 1977, AND ON FILE WITH THE CITY OF PORTLAND AS PLAN # 992 / 42.
6. [M6] AN UNTITLED PLAN ON FILE WITH THE CITY OF PORTLAND REFERENCED AS VOLUME 2 PAGE 164, DEPICTING THE LAYOUT OF PARK AVE.
7. [M7] AN UNTITLED PLAN ON FILE WITH THE CITY OF PORTLAND REFERENCED AS VOLUME 2 PAGE 166, DEPICTING THE LAYOUT OF DEERING AVE., DATED JANUARY 1926.
8. [M8] AN UNTITLED PLAN ON WITH WITH THE CITY OF PORTLAND REFERENCED AS VOLUME 2 PAGE 177, DEPICTING THE LAYOUT OF FOREST ST., GILMAN ST. AND VALLEY ST., DATED FEBRUARY 1926.
9. [M9] A PLAN ENTITLED "PORTLAND TERMINAL COMPANY, RELOCATION OF UNION BRANCH, IN THE CITY OF PORTLAND, MAINE", DATED JANUARY 21, 1969, AND ON FILE WITH THE CITY OF PORTLAND REFERENCED AS 01042_025B.
10. [M10] A PLAN ENTITLED "MAINE STATE HIGHWAY COMMISSION, RIGHT OF WAY MAP, STATE HIGHWAY "295", FEDERAL AID PROJECT NO. I-295-3(26) SHEETS 53, 54 AND 55 OF 73, ON FILE WITH MAINE DEPARTMENT OF TRANSPORTATION.





Locus Map
(NOT TO SCALE)

Legend

- DRAIN MANHOLE
- FIRE HYDRANT
- WATER GATE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- UTILITY POLE W/ LIGHT
- TREE
- SHRUB
- BOUNDARY MONUMENT
- BOUNDARY MONUMENT
- SIGN
- SIGN POST
- GATE POST
- MAILBOX
- WATER MANHOLE
- ELECTRIC METER
- ELECTRIC HANDHOLE
- WATER VALVE
- CATCH BASIN
- MANHOLE
- TELEPHONE MANHOLE
- FIRE HOSE BIB
- FLOODLIGHT
- LIGHT POLE
- FFE = 45.27'
- FINISHED FLOOR ELEVATION
- TREE
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- DYL DOUBLE YELLOW LINE
- DWL DASHED WHITE LINE
- SYL SINGLE YELLOW LINE
- LSA LANDSCAPED AREA

- GIS PROPERY LINE
- GIS TOWN LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- EOP EDGE OF PAVEMENT
- SINGLE WHITE FOG LINE
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- SGB SLOPED GRANITE CURB
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
- EDGE OF GRAVEL
- TREELINE
- STOCKADE FENCE
- STONEWALL
- UNDERGROUND ELECTRIC LINE
- OVERHEAD WIRES
- UNDERGROUND WATER LINE
- UNDERGROUND GAS LINE
- GUARD RAIL
- CHAIN LINK FENCE
- DRAINAGE LINE
- SEWER LINE
- BUILDING
- EDGE OF CONCRETE
- CENTERLINE OF DITCH
- BARBWIRE FENCE
- STREAM
- ABUTTER PARCEL
- LOCUS PARCEL
- RIGHT OF WAY LINE
- EASEMENT LINE
- LEASE LINE
- SETBACK LINE

vhb.com
500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Hadlock Field Improvements

271 Park Avenue
Portland, Maine

No.	Revision	Date	Appvd.
A	Preliminary issued for client review	01/26/24	

Designed by JA | Checked by DTO

Issued for: **CM Pricing Set** | Date: **January 26, 2024**

Drawing Title
Boundary Retracement Survey

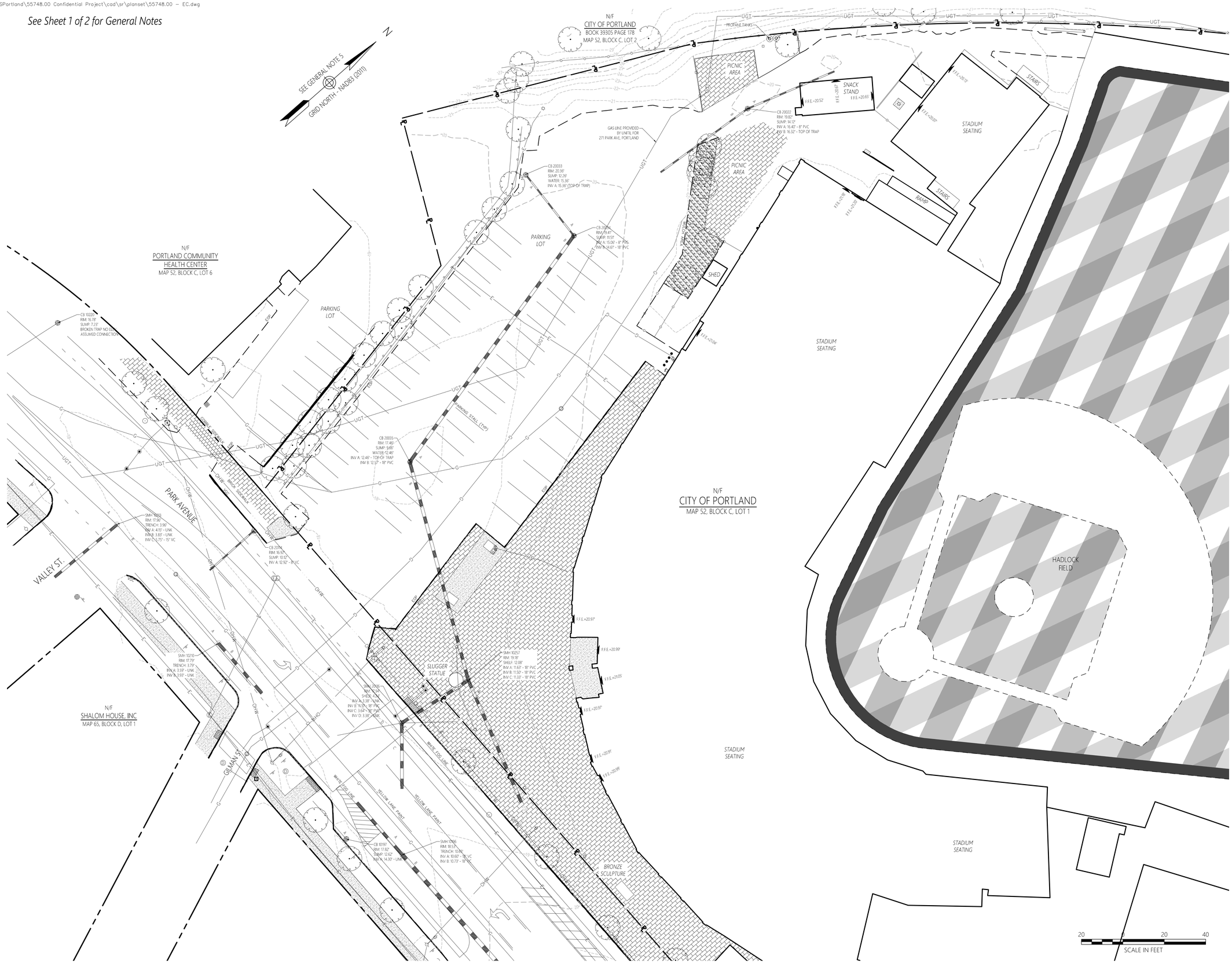
Drawing Number
Sv-1

Sheet 1 of 2

Project Number
55748.00

Saved Thursday, January 25, 2024 1:24:11 PM JADAMS Plotted Thursday, January 25, 2024 1:26:54 PM Josh Adams

See Sheet 1 of 2 for General Notes



vhb.com

vhb

500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Legend

- DRAIN MANHOLE
- FIRE HYDRANT
- WATER GATE
- UTILITY POLE
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Hadlock Field Improvements

271 Park Avenue
Portland, Maine

No.	Revision	Date	Appvd.
A	Preliminary issued for client review	01/26/24	

Designed by: JA
Checked by: EGW

Issued for: CM Pricing Set
Date: January 26, 2024

Drawing Title: Existing Conditions

Drawing Number: Sv-2

Sheet 2 of 2

Project Number: 55748.00

Saved Thursday, January 25, 2024 3:28:03 PM JADAMS Plotted Thursday, January 25, 2024 3:28:35 PM Josh Adams

HSBC BANK USA, NATIONAL ASSOCIATION
66 Hudson Boulevard
New York, New York 10001

Date April 10th, 2024

Re: DIAMOND BASEBALL HOLDINGS LLC

Dear Walter Bater,

Reference is made to the above-captioned Customer of HSBC Bank USA, National Association (the "Bank").

Please be advised that the Customer has maintained accounts with the Bank since 2021. All accounts are routine, non-borrowing accounts and have been maintained and operated in a satisfactory manner. Balances in the account are in aggregate in low 9-figure amounts.

This letter and the information herein is provided to you without engagement or liability on the part of the Bank (or any of our affiliates or our or their respective directors, officers, employees or agents) and is furnished on the condition that it is held strictly confidential. This letter makes no representations regarding the general condition of the Customer, its management, or its ability to meet its obligations and this letter refers only to facts as they exist as of the date hereof. The Bank shall not be under any duty or obligation to inform the addressee hereof of any future changes in such facts.

Very truly yours,

HSBC Bank USA, National Association

By: 

Name: Paul Weeks
Title: Regional Head



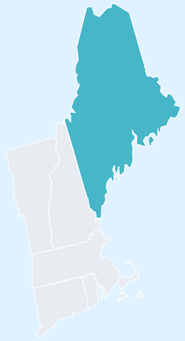
April 18, 2024

To Whom It May Concern:

DBH Portland, LLC DBA Portland Sea Dogs has owned the team since 2023. The team is led by President and General Manager Geoff Iacuessa who has been with the team since 2001 and served as GM since September of 2010. The team is the primary tenant of the city owned Hadlock Field. The relationship with the city of Portland is strong and the team enjoys great community support.

Thank you,

Geoff Iacuessa
President and General Manager
Portland Sea Dogs



30+ Years Supporting Communities throughout Maine

For more than 30 years, VHB has worked with developers, retailers, corporations, municipalities, and state agencies throughout Maine to grow and enhance communities. We help create sought after institutional campuses, retail and restaurant destinations, office parks, residential communities, and four-season resorts, and design infrastructure improvements that have enabled mobility and improved connectivity throughout the region.

We offer technical excellence and local context in the markets in which we operate. VHB maintains strong relationships with cities, counties, brokers, attorneys, developers, retailers, architects, and state and local agencies that your development will directly benefit. We work alongside our clients and stakeholders to maneuver through complex permitting environments; prepare site designs; meet sustainability and budgetary goals; develop transportation options to better move staff, residents, and visitors; and deliver projects on time.

Core Service Areas

» Transportation Engineering & Permitting

» Land Development

» Environmental

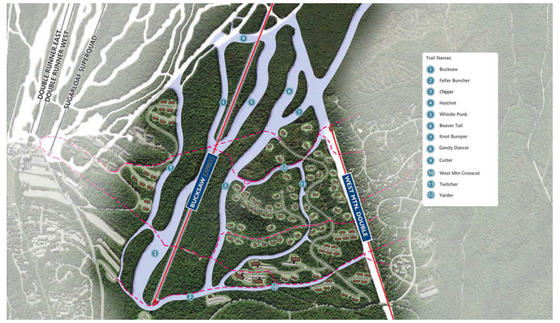
» Applied Technologies

» Planning & Design

VHB provided **transportation planning** services for the Maine Medical Center Campus Replacement and Modernization Project



The West Mountain project is considered **one of the most transformative enhancements in Sugarloaf's 70 years** and is a key part of the 10-year "Sugarloaf 2030 Road Map"





Courtesy of the Institute for Digital Engineering and Life Sciences

Highlighted Experience

Maine Medical Center Campus Replacement & Modernization

When the Maine Medical Center embarked on the most ambitious 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, they entrusted VHB to provide transportation planning services, such as access, circulation, and parking solutions, and the development of a Transportation Demand Management (TDM) Plan for the healthcare system.

Sugarloaf West Mountain Expansion

Sugarloaf is one of the largest ski areas in the northeastern United States. VHB led the master planning and permitting effort to design a new residential real estate development for Sugarloaf's West Mountain. The project included ski-in/ski-out single-family lots, condominiums, and town homes, 130 acres of new ski terrain, and a new high-speed detachable lift. The master plan incorporated onsite storm water treatment and sensitive design around natural resources to minimize potential impacts, which required VHB to work closely with permitting agencies.

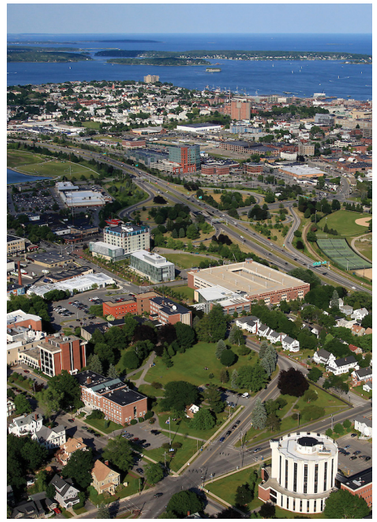
The Roux Institute at Northeastern University in Portland

The Initiative for Digital Engineering and Life Sciences (IDEALS) is a non-profit organization founded by David and Barbara Roux which is now developing a permanent home for the Roux Institute at Northeastern University in Portland. The Roux Institute combines graduate education, research, and support for entrepreneurs in partnership with business and community partners in the high-tech fields of artificial intelligence, big data, and genomics, among others.

VHB is leading the permitting of the new Roux Institute Campus on the former B&M site in Portland Maine. The campus will ultimately consist of the 4,500 student Roux Institute in addition to up to 500,000 square-feet of office and laboratory partners, up to 800 units of housing, a business incubator and supporting retail. VHB is working with the City of Portland, MaineDOT and Metro to ensure that the transportation network can accommodate this large multiuse development. Through increased transit options, new shared use paths and on street bicycle facilities and an extensive pedestrian network, the site will significantly limit reliance on single occupant automobiles.



VHB's passionate professionals partner with clients from 30+ locations, with three locations in Maine, including South Portland, Augusta, and Westbrook.



In 2019, the University of Southern Maine selected VHB to provide transportation consulting services in support of the university's advancement of its capital planning efforts for its Portland campus



VHB is providing site/civil engineering and transportation planning support for the update to **Colby College's Campus Framework Plan** (Colby College pictured to the left).

Besides competing for the best and the brightest students and faculty through program and curricula offerings, institutions recognize the need to renew and transform their physical environment. VHB is at the forefront of collaborating with colleges and universities as they build for the future. We offer the best of two worlds: the focus and personal attention of a small, local consulting firm backed by the in-house resources of an 1,800-person multidisciplinary company. **Our skilled professionals provide a range of services to help our institutional clients fulfill their fundamental role and mission.**



Brown University, Wellness Center and Residence Hall

National Reach, Local Expertise

VHB has worked with some of the nation's most distinguished universities and corporations. We bring a national perspective to our development projects in Maine with significant local knowledge, experience, depth, and skills. Below are some featured clients we have partnered with throughout Maine to support their development goals.







Colby College
- » Gordon Center for Creative & Performing Arts
- » Cotter Walk Access Study
- » Mayflower Hill Residential Hall
- » 2022 Framework Plan Update
- » Johnson Pond Housing
- » Bixler & Runnals Walk – Utility & Pedestrian Improvements
- » Alumni Drive
- » South Lot Parking
- » Campus Parking Strategic Plan
- » Energy Master Plan Support
- » Hillside Parking
- » Colby Green

University of Maine School of Law
- » Transportation Demand Management (TDM) Plan

Nouria Energy
- » Site Selection Support
- » ALTA Survey
- » Design, Permitting, and Construction Services

T.T. Maine Ventures
- » Time and Temperature Building Revitalization

The Jackson Laboratory
- » Permitting & Traffic Calming
- » Civil work including grading, stormwater and utilities, for Ellsworth Building 250

Travelers Insurance
- » Transportation Consulting

Portland Foreside Development
- » Transportation Demand Management (TDM) Plan

Program Retail Clients
- » CVS
- » Stop & Shop
- » Taco Bell
- » Jiffy Lube

Scarborough Downs
- » Offsite Mitigation Design

Flagpole of Freedom Park
- » Traffic & Transportation, Environmental Permitting

Maine Medical Center
- » Campus Replacement and Modernization Project
- » Traffic, Parking, and Transportation Demand Management (TDM) Plan

University of Southern Maine
- » Center for the Arts
- » Transportation Consulting
- » Residence Hall
- » Parking garage
- » Transportation Demand Management (TDM) Plan and Parking Demand Analysis

Waterstone Properties: Rock Row, Westbrook
- » TOD Transit Feasibility Study
- » Federal Railroad Administration Study

U.S. Customs & Border Protection
- » Madawaska Port of Entry Full Services



Firm Profile

ESTABLISHED
1976

PROFESSIONAL STAFF
47 Architectural Design
5 Interior Designers
4 Marketing / Graphic Design
6 Administrative

REGISTRATIONS
CA, CT, MA, ME, NH, NY, PA, RI, VT

LOCATIONS
MANCHESTER
155 Dow Street, Suite 400
Manchester, NH 03101
603.622.5450

BOSTON
99 Bedford Street, Suite 501
Boston MA 02111
617.398.2035

PORTLAND
305 Commercial Street
Portland, ME 04101
207.558.7200

PRIMARY CONTACT
Robert Robicsek, AIA
603.622.5450
robert.robicsek@LBPA.com

We are passionate about creative design that fulfills your vision and needs while building a lasting relationship. This is achieved through collaboration and being your advisor and advocate. Our approach is innovative, imaginative, and thoughtful, resulting in a design which is reflective of your brand, vision, and budget. We are trustworthy, fun to work with, diligent, and sincere in our commitment to help you reach your goals. Our staff and firm culture fully embraces this tenet; who we are, how we work, and our mission statement are all built on this principle.

OUR MISSION
Your Mission inspires us.
Our creativity and knowledge empower you.
Together we achieve excellence.

We offer extensive experience, focused expertise, a comprehensive complement of in-house services, and an extraordinary depth of portfolio. We serve a wide spectrum of market sectors including: healthcare; behavioral health; medical education / simulation; municipal / community; primary, secondary, and higher education; senior care; science and technology and workplace / corporate.

Together, in close collaboration with you and your team, we pledge our full commitment of resources with principal level staff who will lead your project from inception through successful completion!

PROFESSIONAL SERVICES
- 3-D modeling and animations
- ADA surveys
- Adaptive reuse
- Building code reviews
- Building design
- Construction budgeting
- Construction scheduling
- Environmental sustainability studies
- Facility assessment
- Feasibility studies
- Furniture and equipment
- Graphic design
- Historic renovation
- Interior design
- Life-cycle cost analysis
- Master planning
- Operations analysis
- Post-construction evaluation
- Project team management
- Signage and wayfinding
- Site analysis and land planning



Community Outreach

A Community Engagement Plan

The success of a project starts with community buy-in. This support is solely based on voter confidence. We believe in working closely with all community members, establishing vital connections with all stakeholders, and engaging in a constructive discourse regarding the value and return on investment your project will provide. Focusing discussions on community participation and community values, as well as the process used to arrive at decisions, helps justify the needs and cost.

Based on our successful track record, we are confident in our ability to assist you to do the same. Key components of our recommended community communication plan may include:

Strategic Planning

We will facilitate a Kick-Off Meeting to discuss the history, current opinions, and opportunities for building strong voter consensus. We will solicit input from the stakeholders regarding the key constituents and their issues and concerns. A time line will be generated and communication protocols established.

Media and Public Information

Based on your needs, we will devise a strategy which utilizes various media to engage and inform the community of the projects value and benefits. Communication tools may include:

- Informational brochures
- Community television and radio
- Internet-based discussion board, blogs, social networking sites
- On-line surveys, webcasts, podcasts
- Press releases and newsletters

Public Charrettes

Once sufficient information has been assembled to begin design of conceptual options and solutions, we will facilitate a series of public design meetings (a/k/a charrettes) at which the public will be encouraged to join the Building Committee, and the design team in considering design possibilities and alternatives. Often these charrettes include review and discussion of a physical model, or a 3-D computer-based “fly through” presentation.

Support Materials

Lavallee Brensinger Architects has a fully staffed marketing and graphic design group that will develop a variety of print and graphic materials to assist in the public outreach component of the development process. Our many successes have included very complex and sometimes controversial projects. We will bring our vast resources, skills, and expertise to help move your project forward.

GREAT FALLS
CONSTRUCTION SERVICES



- COMMERCIAL
- RESIDENTIAL
- MUNICIPAL & GOVERNMENT FACILITIES
- K-12 SCHOOLS
- HIGHER EDUCATION
- MIXED-USE FACILITIES
- MULTI-FAMILY HOUSING
- RENOVATION
- HISTORICAL RENOVATION

GREAT FALLS CONSTRUCTION
INDUSTRY ORGANIZATION MEMBERSHIPS

AGC MAINE
THE CONSTRUCTION ASSOCIATION

EMERGING CONTRACTOR'S GROUP
BUILDING MAINE'S FUTURE

ABC Associated Builders and Contractors Maine

PORTLAND Regional Chamber of Commerce

Lewiston Auburn METROPOLITAN CHAMBER of COMMERCE

MEREDA

The Falls CHAMBER OF COMMERCE

GrowSmart Maine

MAINE MUNICIPAL ASSOCIATION

GORHAM BUSINESS EXCHANGE

GORHAM VILLAGE ALLIANCE

smps Northern New England

Institute for Family-Owned Business

PROPEL
The Next Generation of Portland's Business Leaders
In Partnership with the Portland Regional Chamber of Commerce



Great Falls CONSTRUCTION

DESIGN BUILD, CONSTRUCTION MANAGEMENT & GENERAL CONTRACTING

CONSTRUCTING WITH A PURPOSE SINCE 1988

FAMILY OWNED & OPERATED

20 MECHANIC STREET
GORHAM, ME 04038

(207) 839-2744
info@greatfallsinc.com





ABOUT GREAT FALLS CONSTRUCTION

Great Falls Construction has been "Constructing with a Purpose" since 1988 as a premier Construction Management, Design-Build, and General Contracting firm respected throughout Maine and New Hampshire for meticulous craftmanship and committed customer service.

Great Falls has extensive experience working with clients on specialized projects. Regardless of the project type and contracted delivery method, we work closely with the project team to determine the scope of work, budget, and schedule that works best for the client and project at hand.

ESTABLISHED
Design Builder, General Contractor, and Construction Manager, Since 1988

ORGANIZATIONAL STRUCTURE
Family Owned and Operated Single Source Corporation with over 65 employees.
Bonding underwritten by Westfield Insurance. Current program to $225,000,000.

OWNERS
Jon Smith, President and Secretary
Cindy Smith, Vice President and Treasurer

OUR Great TEAM!

Our team of over 65 talented employees showcase Great Falls' strengths daily in our skills, constructability knowledge, experience, and the relationships we maintain with design, engineering and subcontractor professionals. We are confident you will find our team's unique approach to each project to be extremely personal, precise and efficient.





GREAT FALLS CONSTRUCTION EXPERIENCE

COMMERCIAL





INDUSTRIAL

RESIDENTIAL



GREAT FALLS SPECIALTIES



One of the reasons Great Falls is so adept at providing value as your construction partner is as a team we self-perform on many aspects of the project, when it provides value to the client and fits within the project's availability and schedule needs. Our on staff team is equipped to self-perform:

- ROUGH CARPENTRY
- FINISH CARPENTRY
- SIDING
- WINDOW INSTALLATION
- ROOFING
- PAINTING
- MISCELLANEOUS BUILDING SPECIALTIES
- OVERALL DEMOLITION
- CONCRETE PREP
- FRAMING
- CABINETRY INSTALLATION
- SMALL SCALE SITE DEVELOPMENT
- EXTERIOR TRIM
- LANDSCAPING
- DOORS
- FRAMES AND HARDWARE

May 29, 2024

Ref: Portland Sea Dogs Clubhouse Addition - Site Plan Review Process
Neighborhood Meeting Invitation

Dear Neighbor:

On Wednesday, June 12, 2024 at 6 PM, VHB invites you to attend a Neighborhood Meeting where we will present plans for a clubhouse addition to Hadlock Field for the Portland Sea Dogs (271 Park Avenue, Portland, Maine). The Portland Sea Dogs are adding a new clubhouse to Hadlock Field for conformance with league rules. The proposed building is a 23,600 sf, 2-story pre-engineered metal building to be located adjacent to the existing stadium. The building addition will provide lockers, restrooms, showers, baseball workout areas and general utilities. This project is primarily for the players, umpires, and ground crew; there will be no public access to this new building addition.

Meeting Location: Hadlock Field Function Room (located within the Stadium)
271 Park Avenue, Portland, Maine

Meeting Date: June 12, 2024

Meeting Time: 6 PM to 7 PM

The City of Portland's Land Use Code requires that neighboring property owners and residents on an "interested parties list" be invited to participate in this neighborhood meeting. A sign-in sheet will be circulated, and a record of the meeting will be taken. Both the sign-in sheet and record will be submitted to the Planning Board.

If you have any questions, please call 207.536.2583.

Sincerely,

David Senus, PE
VHB Senior Project Manager

Note:
Under the City of Portland land use code, an applicant for a major site plan, master development plan, subdivision of over five lots, or zoning map amendment is required to hold a neighborhood meeting within 30 days of an application being deemed complete and no less than seven calendar days before a public hearing. Should you wish to offer additional comments on this proposed development, you may forward them by e-mail to planning@portlandmaine.gov or by mail to the Planning and Urban Development Department, Planning Division, 4th Floor, 389 Congress Street Portland, ME 04101.

Memorandum

To: City of Portland
389 Congress Street
4th Floor
Portland, ME 04101

Date: April 30, 2024

Project #: 55748.00

From: VHB
500 Southborough Drive
Suite 105B
South Portland, ME 04106

Re: Proposed Portland Sea Dogs Clubhouse Addition
271 Park Avenue
Portland, Maine 04102

Project Summary

The Applicant, Portland Sea Dogs, is proposing the construction of a 2-story clubhouse addition in the vicinity of the existing left field bullpen and General Admission bleacher seating, player bullpen, and associated utility infrastructure (the "Project"). The Site is located at 271 Park Avenue in Portland, Maine (see Figure 1: Site Location Map) on an approximate 22.3–acre parcel. The Site is bounded by an abandoned rail corridor to the west and north, Hadlock Field to the east, and residential buildings to the south. There are no wetlands located within the Project's limit of disturbance.

Existing Conditions

The Site consists of one lot, identified as City of Portland, Maine, Tax Map 51 Book C Lot 1. The lot is currently developed with Fitzpatrick Stadium, a mixed-use recreational complex, to the northeast, William B. Troubh Ice Arena in the south, and Hadlock Field in the west of the parcel. The project is not located within an area of minimal flood hazard as represented on the City of Portland, Maine FEMA Flood Insurance Rate Map, area number 2300510013B, dated 7/17/1986, attached. Underlying soils have been mapped by the Natural Resources Conservation Service (NRCS) and categorized as cut and fill surrounded by Hydrologic Soils Group Type A soils, attached.

The Site has minimal elevation changes with stormwater runoff primarily flowing northwest to southeast across the site. A majority of the hillside runoff flows to the wetland area northwest of the site which primarily drains to the north and to the south. A small portion of the wetland area extends east into the site area which drains towards the railroad tracks.

The existing conditions drainage area characteristics are summarized in Table 1 below.

Table 1 Existing Conditions Drainage Area Characteristics Summary

Discharge Points		Subcatchment(s)		Area (Acres)	Tc (Min.)	CN
DP-1	Park Avenue	EX-1	Project Site	0.59	6	89

*Weighted CN value

Proposed Conditions

The proposed Project includes the development of a 2-story clubhouse addition as a separate structure from the existing Hadlock Field stadium. Site improvements include sewer infrastructure, water infrastructure, and drainage improvements.

Grades were minimally altered and wherever possible, existing drainage and grading patterns were maintained. Although significant grading is not proposed, a small area of Parcel: 035 I002001, which is also owned by the City of Portland, will be disturbed to enhance the drainage design for the Site. The area around the modular block retaining wall and edge of pavement will be vegetated with a meadow mix, or planted per the Landscape Architect plans, which will help to stabilize the area from erosion and provide water quality treatment for stormwater runoff. In addition, porous pavement associated with an outlet control structure is proposed and designed to attenuate the peak flows for the 2-, 10-, 25-year, 24-hour storms.

Stormwater Management

A hydrologic model, using TR-20 methodology, was developed to evaluate the existing and proposed drainage conditions on the Site. The results of the analyses indicate that there is no increase in peak discharge rates between the pre- and post-development conditions for the 2-, 10-, and 25-year storm events with an overall increase of impervious surfaces calculated to be 3,776 SF. These rainfall events are based on a 24-hour storm duration using a Type III distribution curve. Rainfall volumes used for this analysis were based on data provided by Maine Department of Environmental Protection Appendix H. Precipitation estimates are 3.10, 4.6, and 5.8 inches, respectively.

The proposed conditions drainage area characteristics are summarized in Table 2 below.

Table 2 Proposed Conditions Drainage Area Characteristics Summary

Discharge Points		Subcatchment(s)		Area (Acres)	Tc (Min.)	CN
DP-1	Park Avenue	PR-1	Portion of Site	0.477	6	98
DP-1	Park Avenue	PR-2	Porous Pavement	0.111	6	98
Total				0.59		98*

*Weighted CN value

The proposed development qualifies for a Maine DEP Permit By Rule (PBR), however has been designed to meet the regulations set in Chapter 500 – Stormwater Management Rules, Basic and Flooding Standards. The proposed development is also subject to local requirements as stated in the Comprehensive Land Use Code for the City of Portland, Maine. The requirements include a design that shall reflect, as nearly possible, natural runoff conditions and evaluation of offsite impacts if post development runoff exceeds predevelopment runoff conditions.

The proposed stormwater management system will preserve natural drainage ways as much as is feasible and will generally maintain existing drainage patterns. The proposed detention basins have been designed to attenuate peak flows using outlet control structures and overflow weirs, so that the resulting post construction peak discharge rate is less than the pre-construction discharge rates (see Table 3 and supporting HydroCAD reports, attached). The outlet control structure has been designed to convey the 25-year, 24-hour storm event.

Table 3 Peak Stormwater Runoff Rates Summary

			Peak Rate Runoff (cfs)		
Discharge Point		Condition	2-Year	10-Year	25-Year
DP-1	Park Avenue	Existing	1.4	2.3	3.0
		Proposed	1.4	2.3	3.0

Porous Pavement

Porous pavement is designed to capture, infiltrate, and gradually release a volume of stormwater to an outlet control structure to attenuate and delay stormwater runoff peaks thereby reducing peak rates of runoff and providing filtering for post development conditions.

The porous pavement is designed as directed by the Maine Stormwater Best Management Practices Manual in accordance with the Maine DEP's Chapter 500 Stormwater Management Rules to handle the flow from the northern portion of the developed area. The porous bituminous asphalt pavement section will be 3 feet deep with a 4-inch perforated High Density Polyethylene (HDPE) outlet pipe located 4 inches from the bottom of the porous pavement section. The outlet is positioned to discharge to an outlet control structure prior to proceeding to the remaining drainage pipe and exiting the site in a closed City of Portland system.

The site contractor will be responsible for the implementation of an Erosion and Sediment Control Plan in accordance with the Maine Pollutant Discharge Elimination System (MPDES) Maine Construction General Permit (MCGP). The Erosion and Sediment Control Plan outlines components to be employed to provide erosion and sedimentation control during the construction period.

Conclusion

By implementing the provided stormwater management techniques, the proposed Project can successfully mitigate its impacts on peak stormwater runoff rates. Furthermore, the Basic and Flooding Standards as regulated by Stormwater Management Law can be addressed through the proposed implementation of standard practices (i.e. porous bituminous asphalt pavement) as well as implementation of erosion and sedimentation control and inspection and maintenance that are accepted by the local government and the Maine Department of Environmental Protection.

Figure 1: Site Location Map



0 500 1000 Feet

Site Location Map
Portland Sea Dogs Clubhouse Addition
165 Park Avenue
Portland, Maine 04102

Figure 1

04/19/2024

Figure 2: Existing Drainage Conditions



Legend

SYMBOLS

- X — DESIGN POINT
- X — DRAINAGE AREA DESIGNATION
- X — POND

LINETYPES

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION FLOW LINE
- SOIL TYPE BOUNDARY

NRCS SOIL CLASSIFICATIONS

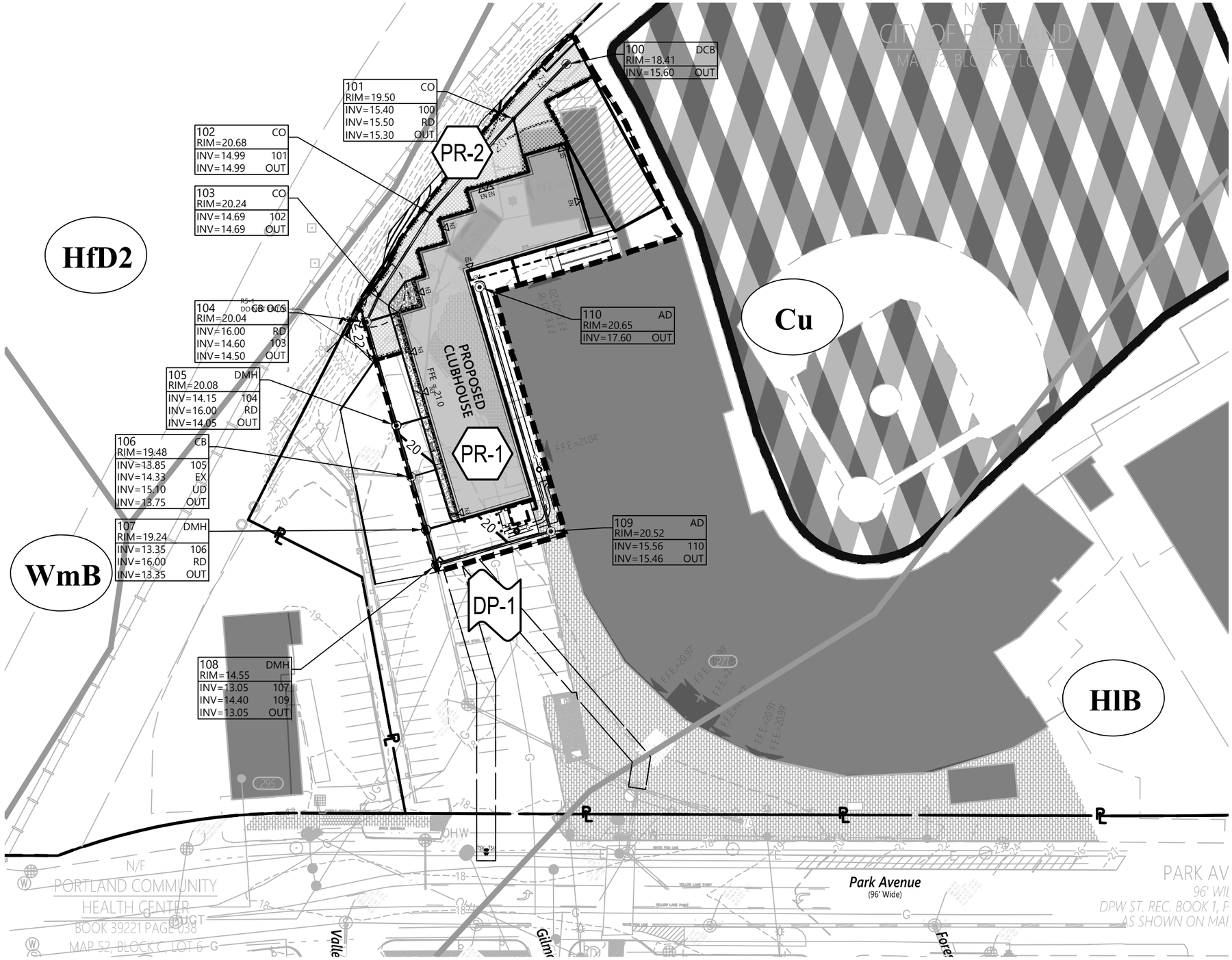
Cu	CUT AND FILL LAND
HfD2	HARTLAND VERY FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES, ERODED
HlB	HINCLEY LOAMY SAND, 3 TO 8 PERCENT SLOPES
WmB	WINDSOR LOAMY SAND, 0 TO 8 PERCENT SLOPES

0 30 60 Feet

Existing Drainage Conditions
Portland Sea Dogs Clubhouse Addition
165 Park Avenue
Portland, Maine 04102

Figure 2
04/19/2024

Figure 3: Proposed Drainage Conditions



Legend

SYMBOLS

- **DESIGN POINT**
- **DRAINAGE AREA DESIGNATION**
- **POND**

LINETYPES

- **DRAINAGE AREA BOUNDARY**
- **SOIL TYPE BOUNDARY**
- **NOTE: TIME OF CONCENTRATION DETERMINED TO BE 6 MINUTES FOR URBAN DESIGN**

NRCS SOIL CLASSIFICATIONS

- **Cu** — **CUT AND FILL LAND**
- **HfD2** — **HARTLAND VERY FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES, ERODED**
- **HlB** — **HINCLEY LOAMY SAND, 3 TO 8 PERCENT SLOPES**
- **WmB** — **WINDSOR LOAMY SAND, 0 TO 8 PERCENT SLOPES**

0 30 60 Feet

Proposed Drainage Conditions
Portland Sea Dogs Clubhouse Addition
165 Park Avenue
Portland, Maine 04102

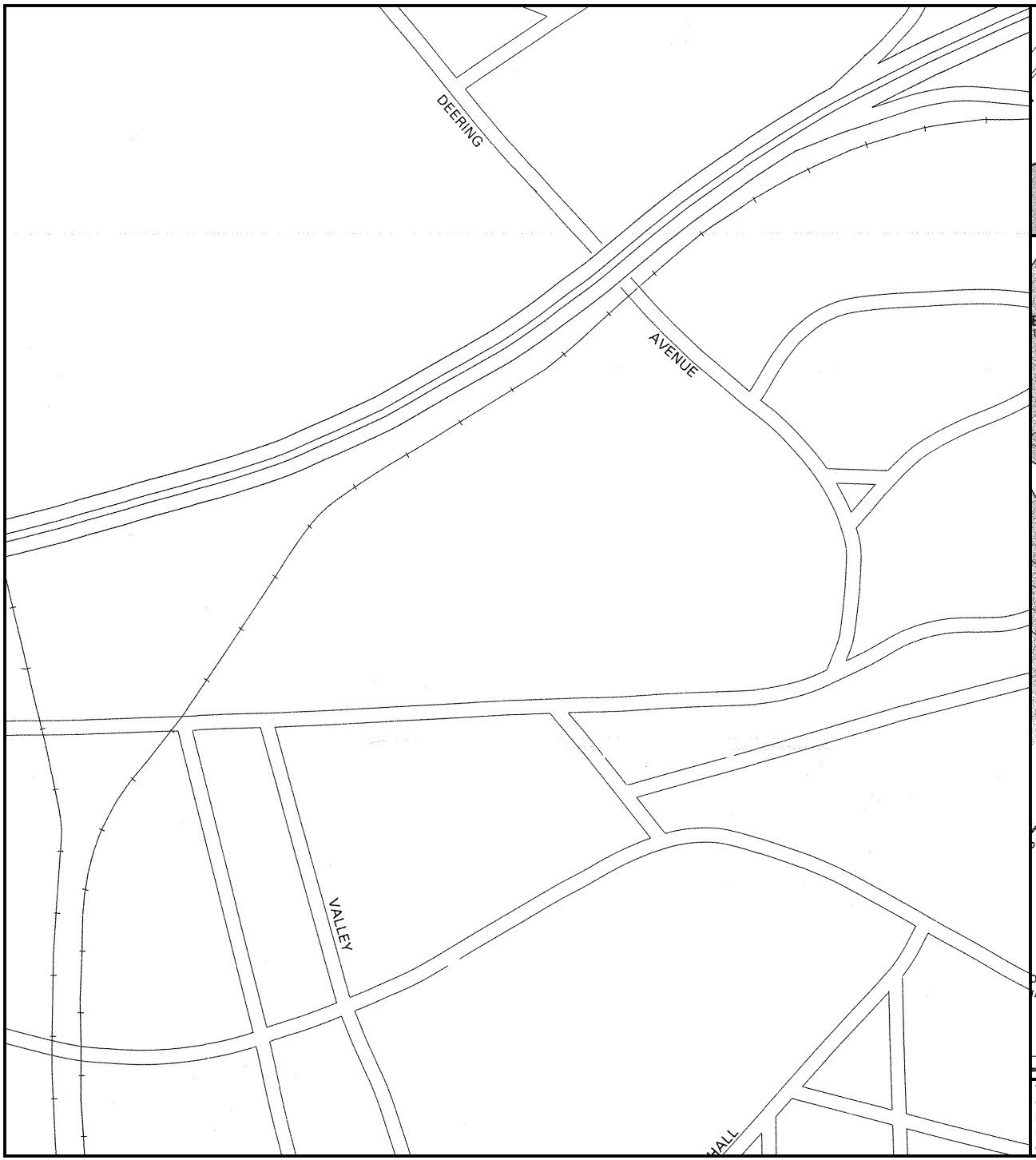
Figure 3
04/19/2024

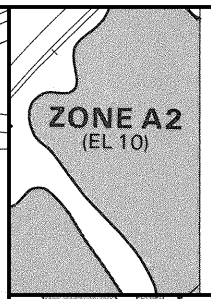
Attachment A: Support Data

- City of Portland, Maine FEMA Flood Insurance Rate Map (Area #2300510013B)
- Natural Resources Conservation Service (NRCS) Soil Report
- Maine Department of Environmental Protection Chapter 500: Stormwater Management Appendix H, 24-Hour Duration Rainfalls for Various Return Periods

Memorandum

City of Portland, Maine FEMA Flood Insurance Rate Map (Area #2300510013B)

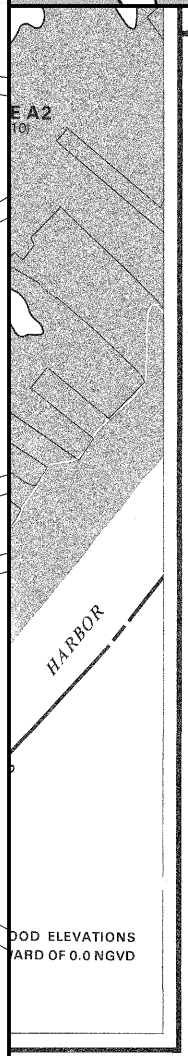




Program, at (800) 638-6620.

APPROXIMATE

400 0



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 FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.

Natural Resources Conservation Service (NRCS) Soil Report


70° 16' 51" W
70° 16' 33" W
396700
396740
396780
396820
396860
396900
396940
396980
397020
397060
397100
43° 39' 27" N
43° 39' 19" N
4834640
4834600
4834560
4834520
4834480
4834440
4834400
295
WmB
HfD2
Cu
WmB
HIB
Saint John
Park Ave
22
1
Soil Map may not be valid at this scale.
Map Scale: 1:1,860 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 25 50 100 150
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 20, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cu	Cut and fill land	6.6	53.7%
HfD2	Hartland very fine sandy loam, 15 to 25 percent slopes, eroded	1.4	11.6%
HlB	Hinckley loamy sand, 3 to 8 percent slopes	4.2	34.0%
WmB	Windsor loamy sand, 0 to 8 percent slopes	0.1	0.6%
Totals for Area of Interest		**12.3**	**100.0%**

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Cumberland County and Part of Oxford County, Maine

Cu—Cut and fill land

Map Unit Composition

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

Description of Cut And Fill Land

Typical profile

H1 - 0 to 65 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 35 percent
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: About 24 to 42 inches
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

HfD2—Hartland very fine sandy loam, 15 to 25 percent slopes, eroded

Map Unit Setting

National map unit symbol: blhd
Elevation: 0 to 330 feet
Mean annual precipitation: 48 to 49 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 150 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition

Hartland and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hartland

Setting

Landform: Lakebeds
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

H1 - 0 to 9 inches: very fine sandy loam
H2 - 9 to 29 inches: silt loam
H3 - 29 to 65 inches: silt loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods), F144BY508ME - Silty Slope
Hydric soil rating: No

HlB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Hinckley and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting
Landform: Outwash deltas, outwash terraces, kames, kame terraces, moraines, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile
Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

WmB—Windsor loamy sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w2x2
Elevation: 0 to 1,410 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Dunes, outwash plains, deltas, outwash terraces
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144BY601ME - Dry Sand
Hydric soil rating: No

Memorandum

Maine Department of Environmental Protection Chapter 500: Stormwater Management Appendix H, 24-Hour Duration Rainfalls for Various Return Periods

APPENDIX H. 24-hour duration rainfalls for various return periods

COUNTY	Storm Type	1-YR	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR
ANDROSCOGGIN	III	2.5	3.0	3.7	4.3	5.4	6.4	7.6	11.1
AROOSTOOK C (Presque Isle Area)	II	1.9	2.3	2.8	3.2	3.9	4.6	5.3	7.6
AROOSTOOK N (Fort Kent Area)	II	1.9	2.2	2.7	3.1	3.7	4.3	5.0	7.0
AROOSTOOK S (Houlton Area)	II	2.1	2.5	3.0	3.4	4.1	4.7	5.4	7.5
CUMBERLAND NW (Bridgton Area)	III	2.5	3.0	3.7	4.3	5.4	6.3	7.5	10.9
CUMBERLAND SE (N Windham Area)	III	2.6	3.1	3.9	4.6	5.8	6.9	8.1	12.1
FRANKLIN	II	2.0	2.4	2.9	3.4	4.2	4.9	5.7	8.2
HANCOCK	III	2.5	2.9	3.6	4.2	5.2	6.1	7.2	10.5
KENNEBEC	III	2.4	2.8	3.5	4.2	5.2	6.1	7.2	10.6
KNOX	III	2.6	3.2	3.9	4.6	5.7	6.7	7.9	11.5
LINCOLN	III	2.5	3.1	3.8	4.5	5.5	6.5	7.6	11.1
OXFORD E (Rumford Area)	II[1]	2.3	2.7	3.3	3.9	4.8	5.7	6.7	9.7
OXFORD W (Gilead Area)	II	2.2	2.7	3.4	4.0	4.9	5.8	6.9	10.1
PENOBSCOT N (Millinocket Area)	II	2.2	2.6	3.2	3.8	4.7	5.6	6.5	9.5
PENOBSCOT S (Hudson Area)	II	2.3	2.7	3.4	3.9	4.9	5.7	6.7	9.7
PISCATAQUIS N (Chesuncook Area)	II	2.0	2.4	2.9	3.4	4.2	5.0	5.8	8.5
PISCATAQUIS S (Monson Area)	II	2.2	2.7	3.3	3.9	4.8	5.7	6.8	10.0
SAGADAHOC	III	2.6	3.2	3.9	4.6	5.7	6.7	7.8	11.4
SOMERSET N (Pittston Farm Area)	II	2.0	2.3	2.8	3.3	4.0	4.7	5.4	7.8
SOMERSET S (Solon Area)	II	2.3	2.7	3.4	3.9	4.9	5.7	6.7	9.8
WALDO	III	2.4	2.9	3.6	4.2	5.2	6.1	7.2	10.5
WASHINGTON	III	2.5	2.8	3.4	3.9	4.8	5.5	6.4	9.0
YORK	III	2.6	3.3	4.1	4.9	6.2	7.3	8.7	13.2

1 Use Type III rainfall for the towns of Brownfield, Buckfield, Denmark, Hartford, Hebron, Hiram, Oxford, and Porter.

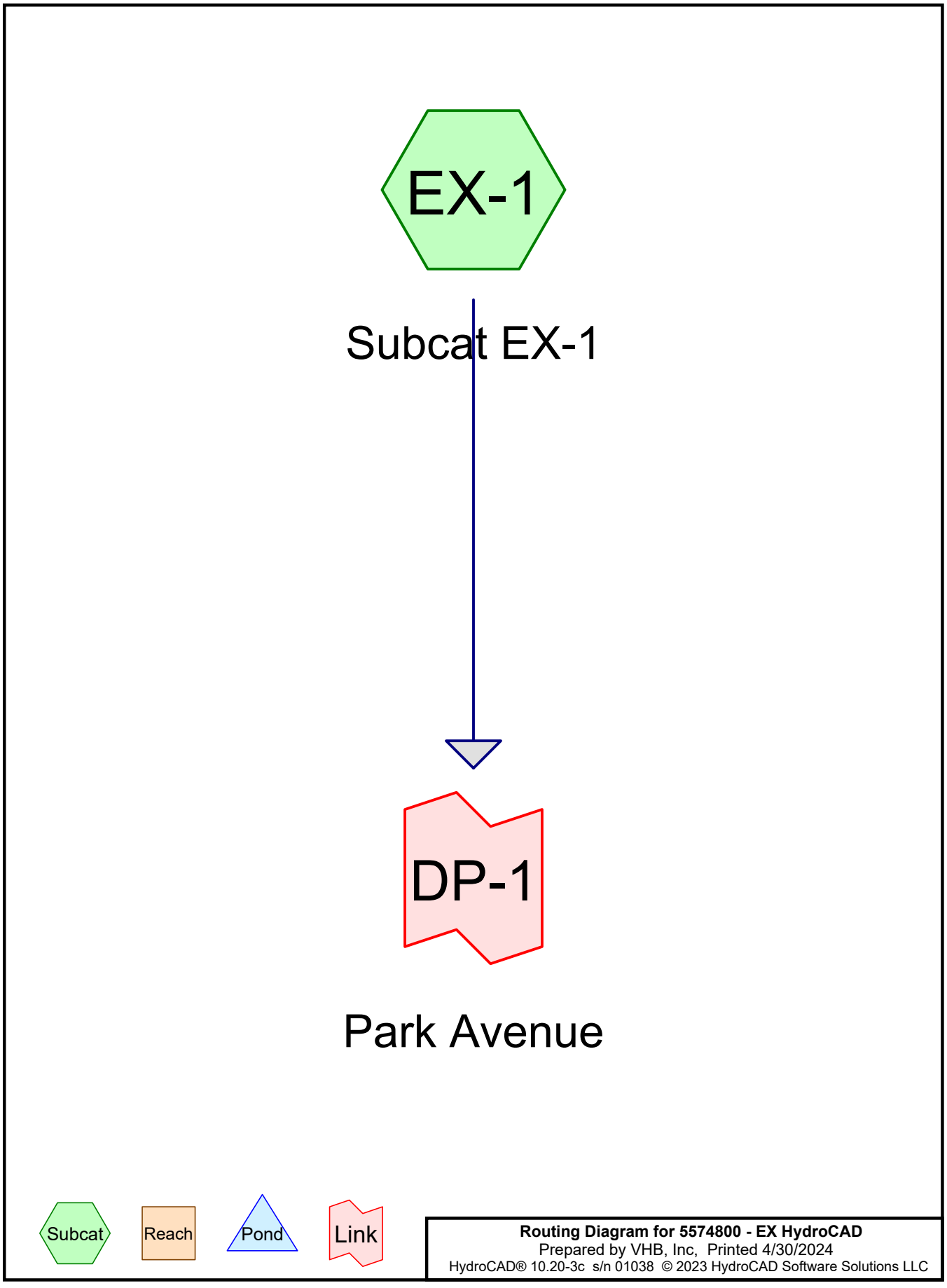
Source: Data extracted by the Maine Department of Environmental Protection from the Northeast Regional Climate Center website (http://precip.eas.cornell.edu), Extreme Precipitation Tables. Data from this website was obtained from the National Oceanic and Atmospheric Administration's Regional Climate Center Program.
June 2014

Attachment B: Hydrologic Calculations

- Existing Drainage Conditions HydroCAD Report (2, 10, 25-Year)
- Proposed Drainage Conditions HydroCAD Report (2, 10, 25-Year)

Memorandum

Existing Drainage Conditions HydroCAD Report


EX-1
Subcat EX-1
DP-1
Park Avenue
Subcat
Reach
Pond
Link
Routing Diagram for 5574800 - EX HydroCAD
Prepared by VHB, Inc, Printed 4/30/2024
HydroCAD® 10.20-3c s/n 01038 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	3.10	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.60	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.80	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.040	49	50-75% Grass cover, Fair, HSG A (EX-1)
0.056	39	>75% Grass cover, Good, HSG A (EX-1)
0.340	98	Paved parking, HSG A (EX-1)
0.104	98	Roofs, HSG A (EX-1)
0.047	98	Unconnected pavement, HSG A (EX-1)
0.588	**89**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.588	HSG A	EX-1
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.588		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.040	0.000	0.000	0.000	0.000	0.040	50-75% Grass cover, Fair	EX-1
0.056	0.000	0.000	0.000	0.000	0.056	>75% Grass cover, Good	EX-1
0.340	0.000	0.000	0.000	0.000	0.340	Paved parking	EX-1
0.104	0.000	0.000	0.000	0.000	0.104	Roofs	EX-1
0.047	0.000	0.000	0.000	0.000	0.047	Unconnected pavement	EX-1
0.588	**0.000**	**0.000**	**0.000**	**0.000**	**0.588**	**TOTAL AREA**	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.588 ac 83.61% Impervious Runoff Depth=1.99"
Tc=6.0 min CN=89 Runoff=1.4 cfs 0.097 af

Link DP-1: Park Avenue Inflow=1.4 cfs 0.097 af
Primary=1.4 cfs 0.097 af

Total Runoff Area = 0.588 ac Runoff Volume = 0.097 af Average Runoff Depth = 1.99"
16.39% Pervious = 0.096 ac 83.61% Impervious = 0.491 ac

Summary for Subcatchment EX-1: Subcat EX-1

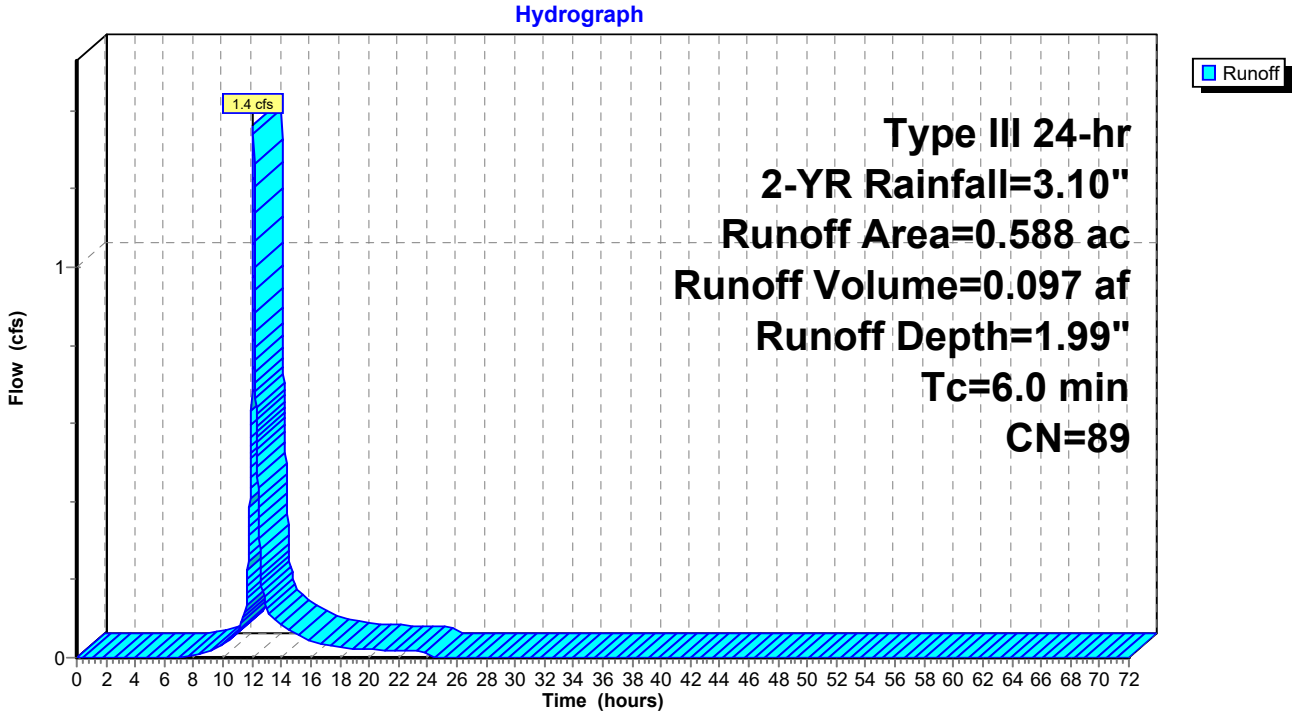
Runoff = 1.4 cfs @ 12.09 hrs, Volume= 0.097 af, Depth= 1.99"
Routed to Link DP-1 : Park Avenue

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (ac)	CN	Description
0.056	39	>75% Grass cover, Good, HSG A
0.020	49	50-75% Grass cover, Fair, HSG A
0.020	49	50-75% Grass cover, Fair, HSG A
0.007	98	Unconnected pavement, HSG A
0.027	98	Unconnected pavement, HSG A
0.013	98	Unconnected pavement, HSG A
0.000	98	Unconnected pavement, HSG A
0.013	98	Roofs, HSG A
0.015	98	Roofs, HSG A
0.003	98	Roofs, HSG A
0.071	98	Roofs, HSG A
0.002	98	Roofs, HSG A
0.340	98	Paved parking, HSG A
0.588	89	Weighted Average
0.096		16.39% Pervious Area
0.491		83.61% Impervious Area
0.047		9.67% Unconnected

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

Subcatchment EX-1: Subcat EX-1



Hydrograph for Subcatchment EX-1: Subcat EX-1

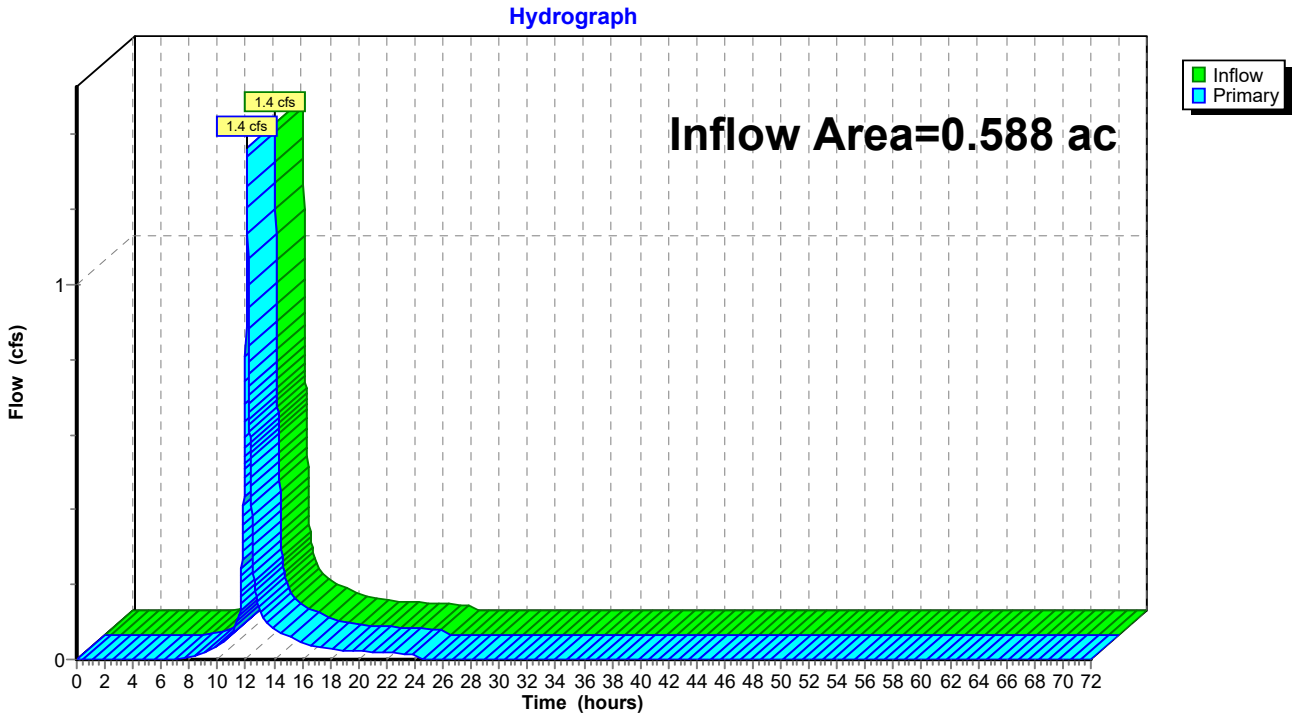
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.03	0.00	0.0
2.00	0.06	0.00	0.0
3.00	0.10	0.00	0.0
4.00	0.13	0.00	0.0
5.00	0.18	0.00	0.0
6.00	0.22	0.00	0.0
7.00	0.28	0.00	0.0
8.00	0.35	0.01	0.0
9.00	0.45	0.03	0.0
10.00	0.59	0.07	0.0
11.00	0.78	0.16	0.1
12.00	1.55	0.67	**0.8**
13.00	2.32	1.30	**0.1**
14.00	2.51	1.47	0.1
15.00	2.65	1.59	0.1
16.00	2.75	1.67	0.0
17.00	2.82	1.74	0.0
18.00	2.88	1.79	0.0
19.00	2.92	1.83	0.0
20.00	2.97	1.87	0.0
21.00	3.01	1.90	0.0
22.00	3.04	1.94	0.0
23.00	3.07	1.96	0.0
24.00	**3.10**	**1.99**	0.0
25.00	3.10	1.99	0.0
26.00	3.10	1.99	0.0
27.00	3.10	1.99	0.0
28.00	3.10	1.99	0.0
29.00	3.10	1.99	0.0
30.00	3.10	1.99	0.0
31.00	3.10	1.99	0.0
32.00	3.10	1.99	0.0
33.00	3.10	1.99	0.0
34.00	3.10	1.99	0.0
35.00	3.10	1.99	0.0
36.00	3.10	1.99	0.0
37.00	3.10	1.99	0.0
38.00	3.10	1.99	0.0
39.00	3.10	1.99	0.0
40.00	3.10	1.99	0.0
41.00	3.10	1.99	0.0
42.00	3.10	1.99	0.0
43.00	3.10	1.99	0.0
44.00	3.10	1.99	0.0
45.00	3.10	1.99	0.0
46.00	3.10	1.99	0.0
47.00	3.10	1.99	0.0
48.00	3.10	1.99	0.0
49.00	3.10	1.99	0.0
50.00	3.10	1.99	0.0
51.00	3.10	1.99	0.0
52.00	3.10	1.99	0.0
53.00	3.10	1.99	0.0
54.00	3.10	1.99	0.0
55.00	3.10	1.99	0.0
56.00	3.10	1.99	0.0
57.00	3.10	1.99	0.0
58.00	3.10	1.99	0.0
59.00	3.10	1.99	0.0
60.00	3.10	1.99	0.0
61.00	3.10	1.99	0.0
62.00	3.10	1.99	0.0
63.00	3.10	1.99	0.0
64.00	3.10	1.99	0.0
65.00	3.10	1.99	0.0
66.00	3.10	1.99	0.0
67.00	3.10	1.99	0.0
68.00	3.10	1.99	0.0
69.00	3.10	1.99	0.0
70.00	3.10	1.99	0.0
71.00	3.10	1.99	0.0
72.00	3.10	1.99	0.0

Summary for Link DP-1: Park Avenue

Inflow Area = 0.588 ac, 83.61% Impervious, Inflow Depth = 1.99" for 2-YR event
Inflow = 1.4 cfs @ 12.09 hrs, Volume= 0.097 af
Primary = 1.4 cfs @ 12.09 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP-1: Park Avenue



Hydrograph for Link DP-1: Park Avenue

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.0	**0.00**	0.0	51.00	0.0	0.00	0.0
1.00	0.0	0.00	0.0	52.00	0.0	0.00	0.0
2.00	0.0	0.00	0.0	53.00	0.0	0.00	0.0
3.00	0.0	0.00	0.0	54.00	0.0	0.00	0.0
4.00	0.0	0.00	0.0	55.00	0.0	0.00	0.0
5.00	0.0	0.00	0.0	56.00	0.0	0.00	0.0
6.00	0.0	0.00	0.0	57.00	0.0	0.00	0.0
7.00	0.0	0.00	0.0	58.00	0.0	0.00	0.0
8.00	0.0	0.00	0.0	59.00	0.0	0.00	0.0
9.00	0.0	0.00	0.0	60.00	0.0	0.00	0.0
10.00	0.0	0.00	0.0	61.00	0.0	0.00	0.0
11.00	0.1	0.00	0.1	62.00	0.0	0.00	0.0
12.00	**0.8**	0.00	**0.8**	63.00	0.0	0.00	0.0
13.00	**0.1**	0.00	**0.1**	64.00	0.0	0.00	0.0
14.00	0.1	0.00	0.1	65.00	0.0	0.00	0.0
15.00	0.1	0.00	0.1	66.00	0.0	0.00	0.0
16.00	0.0	0.00	0.0	67.00	0.0	0.00	0.0
17.00	0.0	0.00	0.0	68.00	0.0	0.00	0.0
18.00	0.0	0.00	0.0	69.00	0.0	0.00	0.0
19.00	0.0	0.00	0.0	70.00	0.0	0.00	0.0
20.00	0.0	0.00	0.0	71.00	0.0	0.00	0.0
21.00	0.0	0.00	0.0	72.00	0.0	0.00	0.0
22.00	0.0	0.00	0.0				
23.00	0.0	0.00	0.0				
24.00	0.0	0.00	0.0				
25.00	0.0	0.00	0.0				
26.00	0.0	0.00	0.0				
27.00	0.0	0.00	0.0				
28.00	0.0	0.00	0.0				
29.00	0.0	0.00	0.0				
30.00	0.0	0.00	0.0				
31.00	0.0	0.00	0.0				
32.00	0.0	0.00	0.0				
33.00	0.0	0.00	0.0				
34.00	0.0	0.00	0.0				
35.00	0.0	0.00	0.0				
36.00	0.0	0.00	0.0				
37.00	0.0	0.00	0.0				
38.00	0.0	0.00	0.0				
39.00	0.0	0.00	0.0				
40.00	0.0	0.00	0.0				
41.00	0.0	0.00	0.0				
42.00	0.0	0.00	0.0				
43.00	0.0	0.00	0.0				
44.00	0.0	0.00	0.0				
45.00	0.0	0.00	0.0				
46.00	0.0	0.00	0.0				
47.00	0.0	0.00	0.0				
48.00	0.0	0.00	0.0				
49.00	0.0	0.00	0.0				
50.00	0.0	0.00	0.0				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.588 ac 83.61% Impervious Runoff Depth=3.39"
Tc=6.0 min CN=89 Runoff=2.3 cfs 0.166 af

Link DP-1: Park Avenue Inflow=2.3 cfs 0.166 af
Primary=2.3 cfs 0.166 af

Total Runoff Area = 0.588 ac Runoff Volume = 0.166 af Average Runoff Depth = 3.39"
16.39% Pervious = 0.096 ac 83.61% Impervious = 0.491 ac

Summary for Subcatchment EX-1: Subcat EX-1

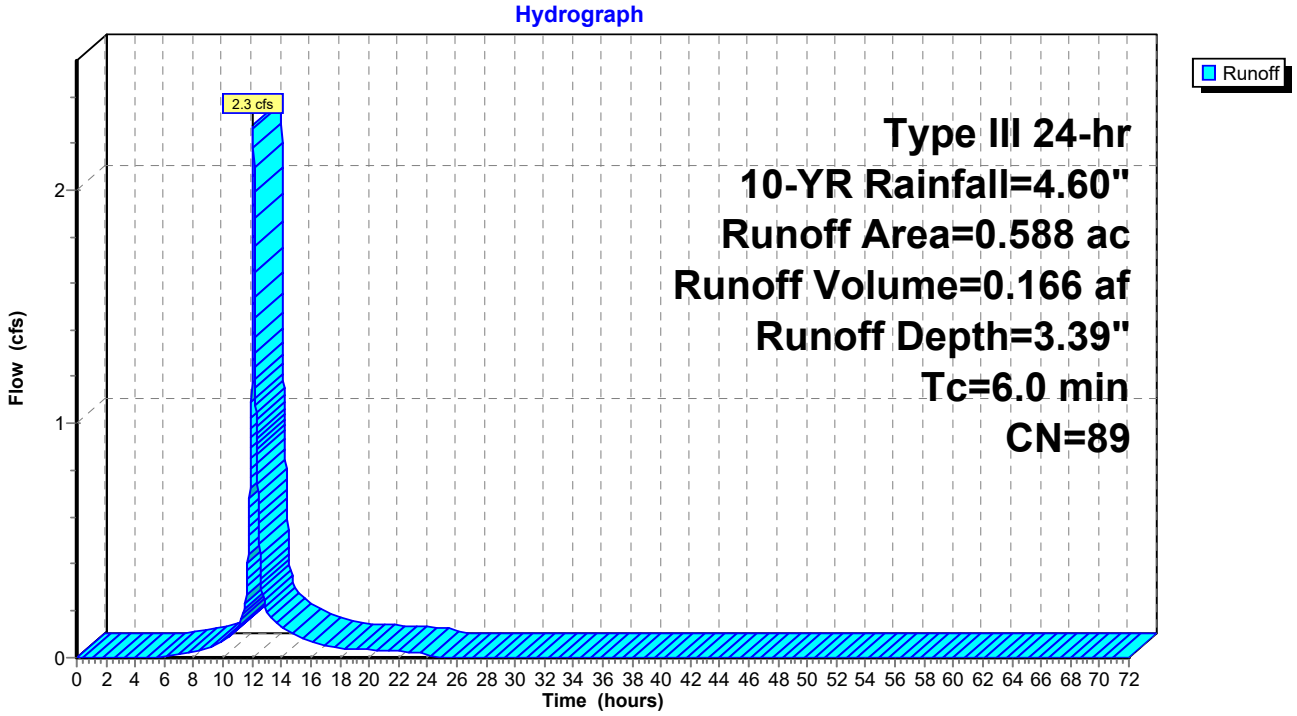
Runoff = 2.3 cfs @ 12.09 hrs, Volume= 0.166 af, Depth= 3.39"
Routed to Link DP-1 : Park Avenue

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (ac)	CN	Description
0.056	39	>75% Grass cover, Good, HSG A
0.020	49	50-75% Grass cover, Fair, HSG A
0.020	49	50-75% Grass cover, Fair, HSG A
0.007	98	Unconnected pavement, HSG A
0.027	98	Unconnected pavement, HSG A
0.013	98	Unconnected pavement, HSG A
0.000	98	Unconnected pavement, HSG A
0.013	98	Roofs, HSG A
0.015	98	Roofs, HSG A
0.003	98	Roofs, HSG A
0.071	98	Roofs, HSG A
0.002	98	Roofs, HSG A
0.340	98	Paved parking, HSG A
0.588	89	Weighted Average
0.096		16.39% Pervious Area
0.491		83.61% Impervious Area
0.047		9.67% Unconnected

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

Subcatchment EX-1: Subcat EX-1



Hydrograph for Subcatchment EX-1: Subcat EX-1

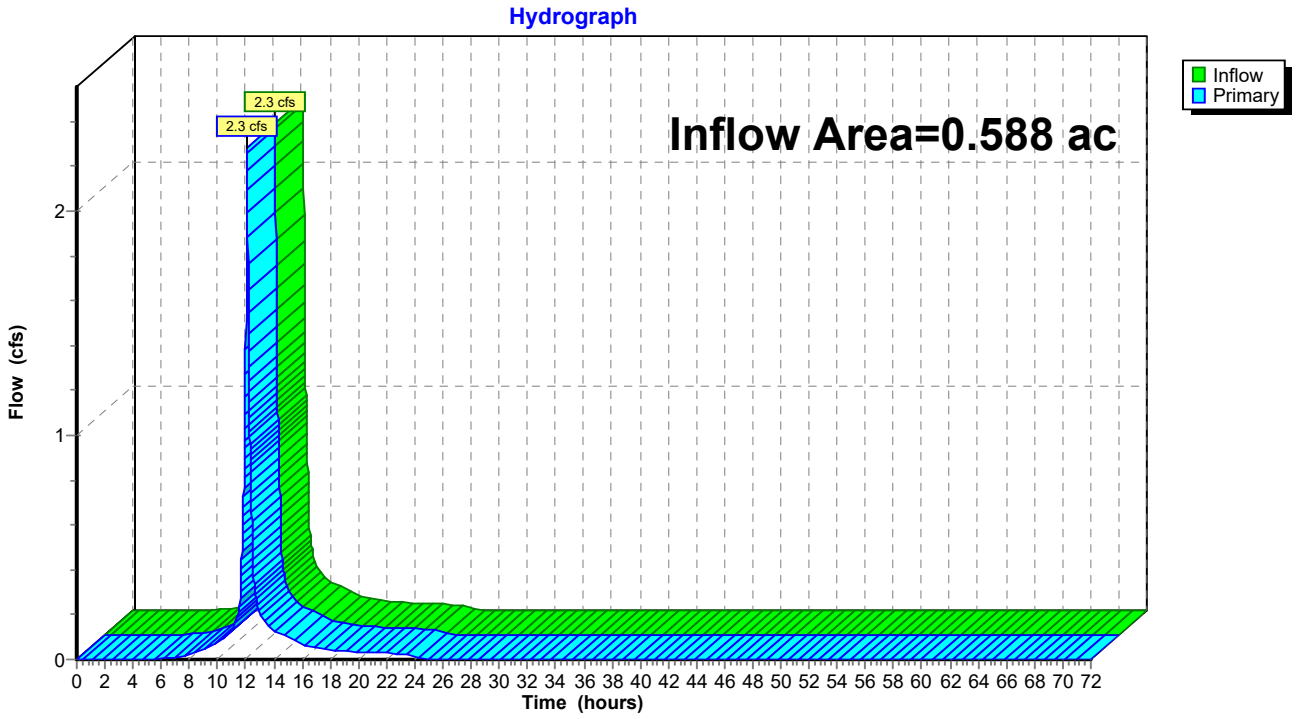
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.05	0.00	0.0
2.00	0.09	0.00	0.0
3.00	0.14	0.00	0.0
4.00	0.20	0.00	0.0
5.00	0.26	0.00	0.0
6.00	0.33	0.01	0.0
7.00	0.42	0.02	0.0
8.00	0.52	0.05	0.0
9.00	0.67	0.11	0.0
10.00	0.87	0.21	0.1
11.00	1.15	0.38	0.1
12.00	2.30	1.28	**1.4**
13.00	3.45	2.31	**0.2**
14.00	3.73	2.57	0.1
15.00	3.93	2.76	0.1
16.00	4.08	2.89	0.1
17.00	4.18	3.00	0.1
18.00	4.27	3.08	0.0
19.00	4.34	3.14	0.0
20.00	4.40	3.20	0.0
21.00	4.46	3.26	0.0
22.00	4.51	3.31	0.0
23.00	4.56	3.35	0.0
24.00	**4.60**	**3.39**	0.0
25.00	4.60	3.39	0.0
26.00	4.60	3.39	0.0
27.00	4.60	3.39	0.0
28.00	4.60	3.39	0.0
29.00	4.60	3.39	0.0
30.00	4.60	3.39	0.0
31.00	4.60	3.39	0.0
32.00	4.60	3.39	0.0
33.00	4.60	3.39	0.0
34.00	4.60	3.39	0.0
35.00	4.60	3.39	0.0
36.00	4.60	3.39	0.0
37.00	4.60	3.39	0.0
38.00	4.60	3.39	0.0
39.00	4.60	3.39	0.0
40.00	4.60	3.39	0.0
41.00	4.60	3.39	0.0
42.00	4.60	3.39	0.0
43.00	4.60	3.39	0.0
44.00	4.60	3.39	0.0
45.00	4.60	3.39	0.0
46.00	4.60	3.39	0.0
47.00	4.60	3.39	0.0
48.00	4.60	3.39	0.0
49.00	4.60	3.39	0.0
50.00	4.60	3.39	0.0
51.00	4.60	3.39	0.0
52.00	4.60	3.39	0.0
53.00	4.60	3.39	0.0
54.00	4.60	3.39	0.0
55.00	4.60	3.39	0.0
56.00	4.60	3.39	0.0
57.00	4.60	3.39	0.0
58.00	4.60	3.39	0.0
59.00	4.60	3.39	0.0
60.00	4.60	3.39	0.0
61.00	4.60	3.39	0.0
62.00	4.60	3.39	0.0
63.00	4.60	3.39	0.0
64.00	4.60	3.39	0.0
65.00	4.60	3.39	0.0
66.00	4.60	3.39	0.0
67.00	4.60	3.39	0.0
68.00	4.60	3.39	0.0
69.00	4.60	3.39	0.0
70.00	4.60	3.39	0.0
71.00	4.60	3.39	0.0
72.00	4.60	3.39	0.0

Summary for Link DP-1: Park Avenue

Inflow Area = 0.588 ac, 83.61% Impervious, Inflow Depth = 3.39" for 10-YR event
Inflow = 2.3 cfs @ 12.09 hrs, Volume= 0.166 af
Primary = 2.3 cfs @ 12.09 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP-1: Park Avenue



Hydrograph for Link DP-1: Park Avenue

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.0	**0.00**	0.0	51.00	0.0	0.00	0.0
1.00	0.0	0.00	0.0	52.00	0.0	0.00	0.0
2.00	0.0	0.00	0.0	53.00	0.0	0.00	0.0
3.00	0.0	0.00	0.0	54.00	0.0	0.00	0.0
4.00	0.0	0.00	0.0	55.00	0.0	0.00	0.0
5.00	0.0	0.00	0.0	56.00	0.0	0.00	0.0
6.00	0.0	0.00	0.0	57.00	0.0	0.00	0.0
7.00	0.0	0.00	0.0	58.00	0.0	0.00	0.0
8.00	0.0	0.00	0.0	59.00	0.0	0.00	0.0
9.00	0.0	0.00	0.0	60.00	0.0	0.00	0.0
10.00	0.1	0.00	0.1	61.00	0.0	0.00	0.0
11.00	0.1	0.00	0.1	62.00	0.0	0.00	0.0
12.00	**1.4**	0.00	**1.4**	63.00	0.0	0.00	0.0
13.00	**0.2**	0.00	**0.2**	64.00	0.0	0.00	0.0
14.00	0.1	0.00	0.1	65.00	0.0	0.00	0.0
15.00	0.1	0.00	0.1	66.00	0.0	0.00	0.0
16.00	0.1	0.00	0.1	67.00	0.0	0.00	0.0
17.00	0.1	0.00	0.1	68.00	0.0	0.00	0.0
18.00	0.0	0.00	0.0	69.00	0.0	0.00	0.0
19.00	0.0	0.00	0.0	70.00	0.0	0.00	0.0
20.00	0.0	0.00	0.0	71.00	0.0	0.00	0.0
21.00	0.0	0.00	0.0	72.00	0.0	0.00	0.0
22.00	0.0	0.00	0.0				
23.00	0.0	0.00	0.0				
24.00	0.0	0.00	0.0				
25.00	0.0	0.00	0.0				
26.00	0.0	0.00	0.0				
27.00	0.0	0.00	0.0				
28.00	0.0	0.00	0.0				
29.00	0.0	0.00	0.0				
30.00	0.0	0.00	0.0				
31.00	0.0	0.00	0.0				
32.00	0.0	0.00	0.0				
33.00	0.0	0.00	0.0				
34.00	0.0	0.00	0.0				
35.00	0.0	0.00	0.0				
36.00	0.0	0.00	0.0				
37.00	0.0	0.00	0.0				
38.00	0.0	0.00	0.0				
39.00	0.0	0.00	0.0				
40.00	0.0	0.00	0.0				
41.00	0.0	0.00	0.0				
42.00	0.0	0.00	0.0				
43.00	0.0	0.00	0.0				
44.00	0.0	0.00	0.0				
45.00	0.0	0.00	0.0				
46.00	0.0	0.00	0.0				
47.00	0.0	0.00	0.0				
48.00	0.0	0.00	0.0				
49.00	0.0	0.00	0.0				
50.00	0.0	0.00	0.0				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=0.588 ac 83.61% Impervious Runoff Depth=4.54"
Tc=6.0 min CN=89 Runoff=3.0 cfs 0.222 af

Link DP-1: Park Avenue Inflow=3.0 cfs 0.222 af
Primary=3.0 cfs 0.222 af

Total Runoff Area = 0.588 ac Runoff Volume = 0.222 af Average Runoff Depth = 4.54"
16.39% Pervious = 0.096 ac 83.61% Impervious = 0.491 ac

Summary for Subcatchment EX-1: Subcat EX-1

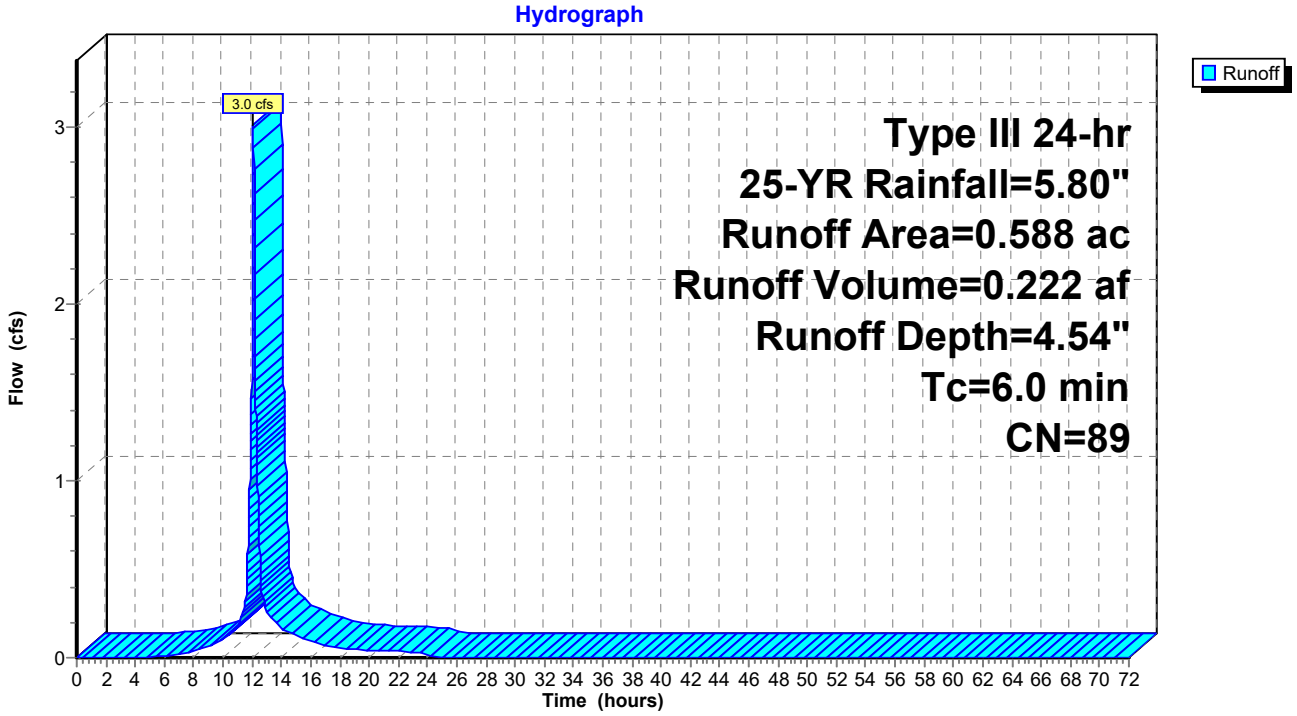
Runoff = 3.0 cfs @ 12.08 hrs, Volume= 0.222 af, Depth= 4.54"
Routed to Link DP-1 : Park Avenue

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (ac)	CN	Description
0.056	39	>75% Grass cover, Good, HSG A
0.020	49	50-75% Grass cover, Fair, HSG A
0.020	49	50-75% Grass cover, Fair, HSG A
0.007	98	Unconnected pavement, HSG A
0.027	98	Unconnected pavement, HSG A
0.013	98	Unconnected pavement, HSG A
0.000	98	Unconnected pavement, HSG A
0.013	98	Roofs, HSG A
0.015	98	Roofs, HSG A
0.003	98	Roofs, HSG A
0.071	98	Roofs, HSG A
0.002	98	Roofs, HSG A
0.340	98	Paved parking, HSG A
0.588	89	Weighted Average
0.096		16.39% Pervious Area
0.491		83.61% Impervious Area
0.047		9.67% Unconnected

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

Subcatchment EX-1: Subcat EX-1



Hydrograph for Subcatchment EX-1: Subcat EX-1

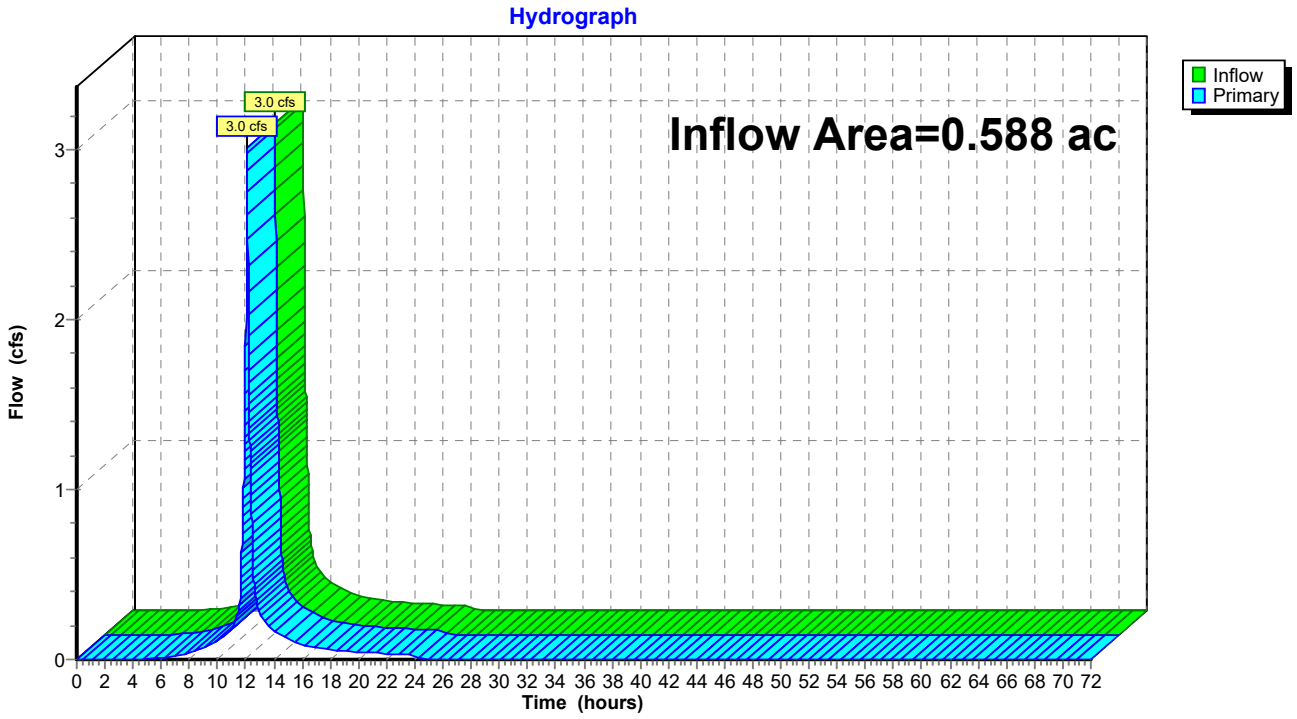
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.06	0.00	0.0
2.00	0.12	0.00	0.0
3.00	0.18	0.00	0.0
4.00	0.25	0.00	0.0
5.00	0.33	0.01	0.0
6.00	0.42	0.02	0.0
7.00	0.52	0.05	0.0
8.00	0.66	0.10	0.0
9.00	0.85	0.20	0.1
10.00	1.10	0.35	0.1
11.00	1.45	0.59	0.2
12.00	2.90	1.81	**1.8**
13.00	4.35	3.15	**0.3**
14.00	4.70	3.49	0.2
15.00	4.95	3.73	0.1
16.00	5.14	3.90	0.1
17.00	5.28	4.04	0.1
18.00	5.38	4.14	0.1
19.00	5.47	4.22	0.0
20.00	5.55	4.30	0.0
21.00	5.62	4.37	0.0
22.00	5.69	4.43	0.0
23.00	5.75	4.49	0.0
24.00	**5.80**	**4.54**	0.0
25.00	5.80	4.54	0.0
26.00	5.80	4.54	0.0
27.00	5.80	4.54	0.0
28.00	5.80	4.54	0.0
29.00	5.80	4.54	0.0
30.00	5.80	4.54	0.0
31.00	5.80	4.54	0.0
32.00	5.80	4.54	0.0
33.00	5.80	4.54	0.0
34.00	5.80	4.54	0.0
35.00	5.80	4.54	0.0
36.00	5.80	4.54	0.0
37.00	5.80	4.54	0.0
38.00	5.80	4.54	0.0
39.00	5.80	4.54	0.0
40.00	5.80	4.54	0.0
41.00	5.80	4.54	0.0
42.00	5.80	4.54	0.0
43.00	5.80	4.54	0.0
44.00	5.80	4.54	0.0
45.00	5.80	4.54	0.0
46.00	5.80	4.54	0.0
47.00	5.80	4.54	0.0
48.00	5.80	4.54	0.0
49.00	5.80	4.54	0.0
50.00	5.80	4.54	0.0
51.00	5.80	4.54	0.0
52.00	5.80	4.54	0.0
53.00	5.80	4.54	0.0
54.00	5.80	4.54	0.0
55.00	5.80	4.54	0.0
56.00	5.80	4.54	0.0
57.00	5.80	4.54	0.0
58.00	5.80	4.54	0.0
59.00	5.80	4.54	0.0
60.00	5.80	4.54	0.0
61.00	5.80	4.54	0.0
62.00	5.80	4.54	0.0
63.00	5.80	4.54	0.0
64.00	5.80	4.54	0.0
65.00	5.80	4.54	0.0
66.00	5.80	4.54	0.0
67.00	5.80	4.54	0.0
68.00	5.80	4.54	0.0
69.00	5.80	4.54	0.0
70.00	5.80	4.54	0.0
71.00	5.80	4.54	0.0
72.00	5.80	4.54	0.0

Summary for Link DP-1: Park Avenue

Inflow Area = 0.588 ac, 83.61% Impervious, Inflow Depth = 4.54" for 25-YR event
Inflow = 3.0 cfs @ 12.08 hrs, Volume= 0.222 af
Primary = 3.0 cfs @ 12.08 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP-1: Park Avenue

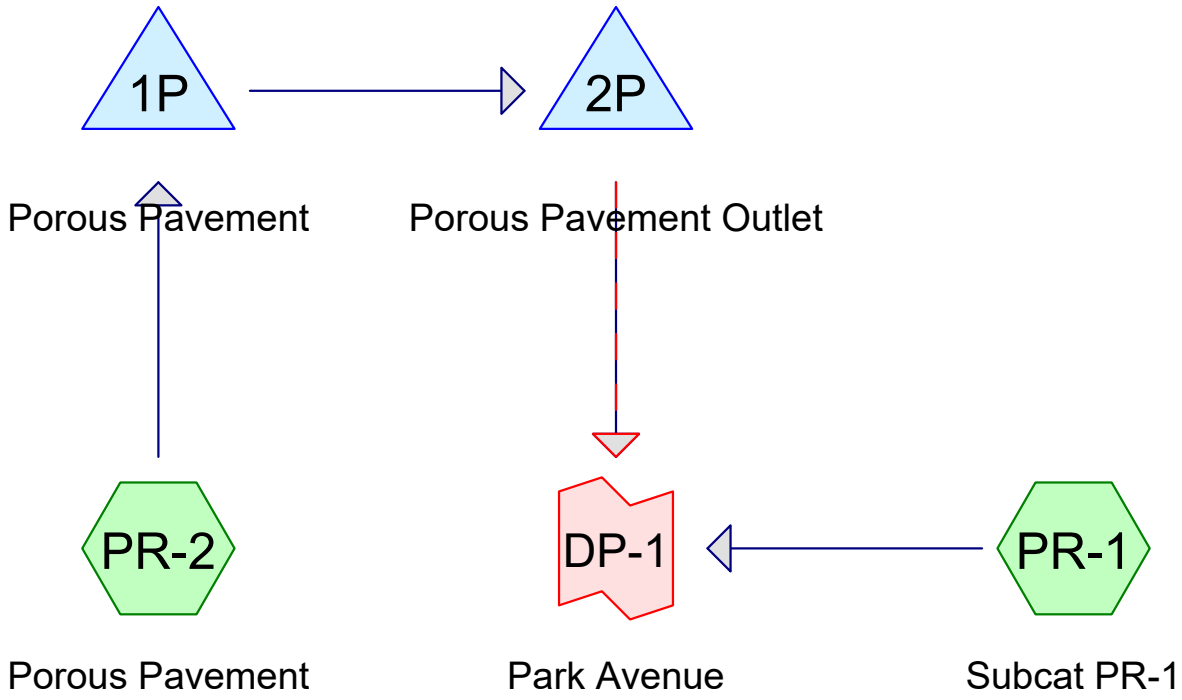


Hydrograph for Link DP-1: Park Avenue

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.0	**0.00**	0.0	51.00	0.0	0.00	0.0
1.00	0.0	0.00	0.0	52.00	0.0	0.00	0.0
2.00	0.0	0.00	0.0	53.00	0.0	0.00	0.0
3.00	0.0	0.00	0.0	54.00	0.0	0.00	0.0
4.00	0.0	0.00	0.0	55.00	0.0	0.00	0.0
5.00	0.0	0.00	0.0	56.00	0.0	0.00	0.0
6.00	0.0	0.00	0.0	57.00	0.0	0.00	0.0
7.00	0.0	0.00	0.0	58.00	0.0	0.00	0.0
8.00	0.0	0.00	0.0	59.00	0.0	0.00	0.0
9.00	0.1	0.00	0.1	60.00	0.0	0.00	0.0
10.00	0.1	0.00	0.1	61.00	0.0	0.00	0.0
11.00	0.2	0.00	0.2	62.00	0.0	0.00	0.0
12.00	**1.8**	0.00	**1.8**	63.00	0.0	0.00	0.0
13.00	**0.3**	0.00	**0.3**	64.00	0.0	0.00	0.0
14.00	0.2	0.00	0.2	65.00	0.0	0.00	0.0
15.00	0.1	0.00	0.1	66.00	0.0	0.00	0.0
16.00	0.1	0.00	0.1	67.00	0.0	0.00	0.0
17.00	0.1	0.00	0.1	68.00	0.0	0.00	0.0
18.00	0.1	0.00	0.1	69.00	0.0	0.00	0.0
19.00	0.0	0.00	0.0	70.00	0.0	0.00	0.0
20.00	0.0	0.00	0.0	71.00	0.0	0.00	0.0
21.00	0.0	0.00	0.0	72.00	0.0	0.00	0.0
22.00	0.0	0.00	0.0				
23.00	0.0	0.00	0.0				
24.00	0.0	0.00	0.0				
25.00	0.0	0.00	0.0				
26.00	0.0	0.00	0.0				
27.00	0.0	0.00	0.0				
28.00	0.0	0.00	0.0				
29.00	0.0	0.00	0.0				
30.00	0.0	0.00	0.0				
31.00	0.0	0.00	0.0				
32.00	0.0	0.00	0.0				
33.00	0.0	0.00	0.0				
34.00	0.0	0.00	0.0				
35.00	0.0	0.00	0.0				
36.00	0.0	0.00	0.0				
37.00	0.0	0.00	0.0				
38.00	0.0	0.00	0.0				
39.00	0.0	0.00	0.0				
40.00	0.0	0.00	0.0				
41.00	0.0	0.00	0.0				
42.00	0.0	0.00	0.0				
43.00	0.0	0.00	0.0				
44.00	0.0	0.00	0.0				
45.00	0.0	0.00	0.0				
46.00	0.0	0.00	0.0				
47.00	0.0	0.00	0.0				
48.00	0.0	0.00	0.0				
49.00	0.0	0.00	0.0				
50.00	0.0	0.00	0.0				

Memorandum

Proposed Drainage Conditions HydroCAD Report



Subcat Reach Pond Link

Routing Diagram for 5574800 - PR HydroCAD
Prepared by VHB, Inc, Printed 4/30/2024
HydroCAD® 10.20-3c s/n 01038 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	3.10	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.60	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.80	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	39	>75% Grass cover, Good, HSG A (PR-2)
0.266	98	Paved parking, HSG A (PR-1, PR-2)
0.292	98	Roofs, HSG A (PR-1)
0.029	98	Unconnected pavement, HSG A (PR-1, PR-2)
0.588	**98**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.588	HSG A	PR-1, PR-2
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.588		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.000	0.000	>75% Grass cover, Good	PR-2
0.266	0.000	0.000	0.000	0.000	0.266	Paved parking	PR-1, PR-2
0.292	0.000	0.000	0.000	0.000	0.292	Roofs	PR-1
0.029	0.000	0.000	0.000	0.000	0.029	Unconnected pavement	PR-1, PR-2
0.588	**0.000**	**0.000**	**0.000**	**0.000**	**0.588**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	2P	14.50	14.15	62.4	0.0056	0.013	0.0	12.0	0.0	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=0.476 ac 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=1.4 cfs 0.114 af

Subcatchment PR-2: Porous Pavement Runoff Area=0.111 ac 100.00% Impervious Runoff Depth=2.87"
Tc=6.0 min CN=98 Runoff=0.3 cfs 0.027 af

Pond 1P: Porous Pavement Peak Elev=18.62' Storage=37 cf Inflow=0.3 cfs 0.027 af
Outflow=0.3 cfs 0.027 af

Pond 2P: Porous Pavement Outlet Peak Elev=17.55' Storage=510 cf Inflow=0.3 cfs 0.027 af
Outflow=0.2 cfs 0.026 af

Link DP-1: Park Avenue Inflow=1.4 cfs 0.140 af
Primary=1.4 cfs 0.140 af

Total Runoff Area = 0.588 ac Runoff Volume = 0.140 af Average Runoff Depth = 2.87"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.588 ac

Summary for Subcatchment PR-1: Subcat PR-1

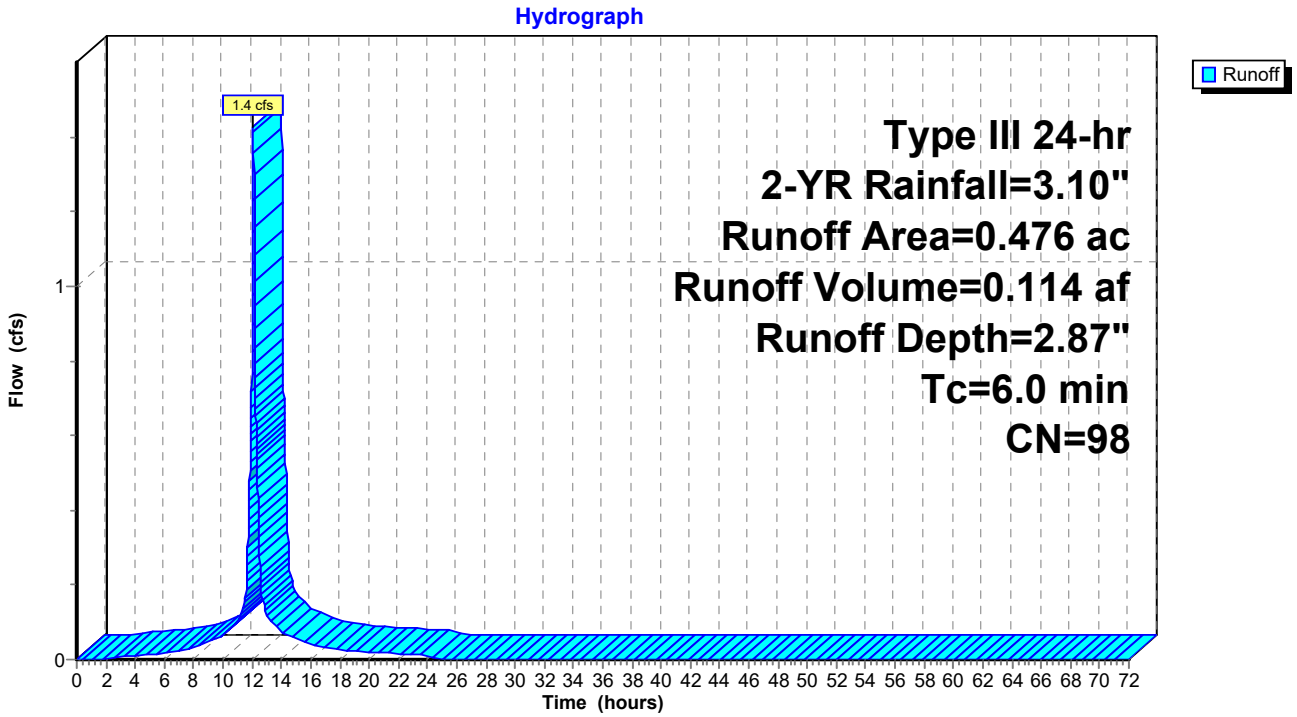
Runoff = 1.4 cfs @ 12.08 hrs, Volume= 0.114 af, Depth= 2.87"
Routed to Link DP-1 : Park Avenue

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (ac)	CN	Description
0.004	98	Unconnected pavement, HSG A
0.007	98	Unconnected pavement, HSG A
0.011	98	Unconnected pavement, HSG A
0.060	98	Roofs, HSG A
0.232	98	Roofs, HSG A
0.163	98	Paved parking, HSG A
0.476	98	Weighted Average
0.476		100.00% Impervious Area
0.021		4.49% Unconnected

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

Subcatchment PR-1: Subcat PR-1



Hydrograph for Subcatchment PR-1: Subcat PR-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.03	0.00	0.0
2.00	0.06	0.00	0.0
3.00	0.10	0.01	0.0
4.00	0.13	0.03	0.0
5.00	0.18	0.05	0.0
6.00	0.22	0.09	0.0
7.00	0.28	0.13	0.0
8.00	0.35	0.19	0.0
9.00	0.45	0.27	0.0
10.00	0.59	0.40	0.1
11.00	0.78	0.57	0.1
12.00	1.55	1.33	**0.9**
13.00	2.32	2.10	**0.1**
14.00	2.51	2.28	0.1
15.00	2.65	2.42	0.1
16.00	2.75	2.52	0.0
17.00	2.82	2.59	0.0
18.00	2.88	2.65	0.0
19.00	2.92	2.69	0.0
20.00	2.97	2.74	0.0
21.00	3.01	2.77	0.0
22.00	3.04	2.81	0.0
23.00	3.07	2.84	0.0
24.00	**3.10**	**2.87**	0.0
25.00	3.10	2.87	0.0
26.00	3.10	2.87	0.0
27.00	3.10	2.87	0.0
28.00	3.10	2.87	0.0
29.00	3.10	2.87	0.0
30.00	3.10	2.87	0.0
31.00	3.10	2.87	0.0
32.00	3.10	2.87	0.0
33.00	3.10	2.87	0.0
34.00	3.10	2.87	0.0
35.00	3.10	2.87	0.0
36.00	3.10	2.87	0.0
37.00	3.10	2.87	0.0
38.00	3.10	2.87	0.0
39.00	3.10	2.87	0.0
40.00	3.10	2.87	0.0
41.00	3.10	2.87	0.0
42.00	3.10	2.87	0.0
43.00	3.10	2.87	0.0
44.00	3.10	2.87	0.0
45.00	3.10	2.87	0.0
46.00	3.10	2.87	0.0
47.00	3.10	2.87	0.0
48.00	3.10	2.87	0.0
49.00	3.10	2.87	0.0
50.00	3.10	2.87	0.0
51.00	3.10	2.87	0.0
52.00	3.10	2.87	0.0
53.00	3.10	2.87	0.0
54.00	3.10	2.87	0.0
55.00	3.10	2.87	0.0
56.00	3.10	2.87	0.0
57.00	3.10	2.87	0.0
58.00	3.10	2.87	0.0
59.00	3.10	2.87	0.0
60.00	3.10	2.87	0.0
61.00	3.10	2.87	0.0
62.00	3.10	2.87	0.0
63.00	3.10	2.87	0.0
64.00	3.10	2.87	0.0
65.00	3.10	2.87	0.0
66.00	3.10	2.87	0.0
67.00	3.10	2.87	0.0
68.00	3.10	2.87	0.0
69.00	3.10	2.87	0.0
70.00	3.10	2.87	0.0
71.00	3.10	2.87	0.0
72.00	3.10	2.87	0.0

Summary for Subcatchment PR-2: Porous Pavement

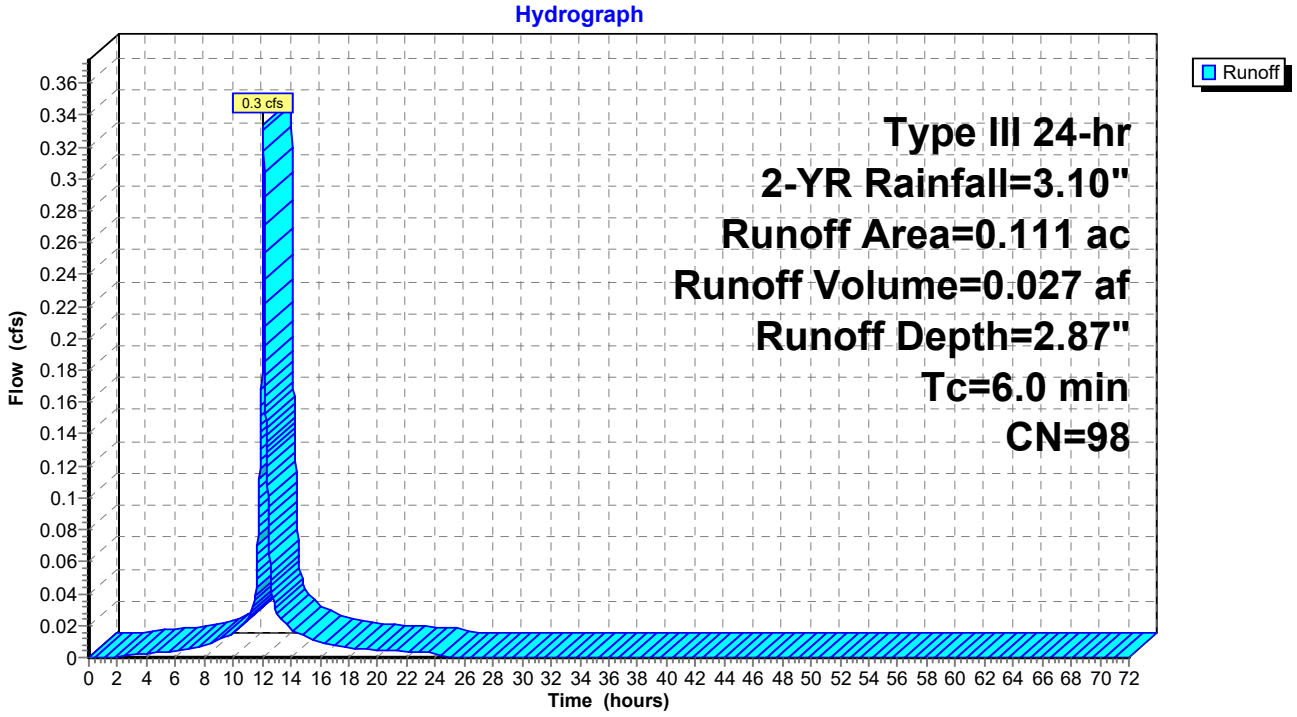
Runoff = 0.3 cfs @ 12.08 hrs, Volume= 0.027 af, Depth= 2.87"
Routed to Pond 1P : Porous Pavement

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YR Rainfall=3.10"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.007	98	Unconnected pavement, HSG A
0.104	98	Paved parking, HSG A
0.111	98	Weighted Average
0.000		0.00% Pervious Area
0.111		100.00% Impervious Area
0.007		6.73% Unconnected

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

Subcatchment PR-2: Porous Pavement



Hydrograph for Subcatchment PR-2: Porous Pavement

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.03	0.00	0.0
2.00	0.06	0.00	0.0
3.00	0.10	0.01	0.0
4.00	0.13	0.03	0.0
5.00	0.18	0.05	0.0
6.00	0.22	0.09	0.0
7.00	0.28	0.13	0.0
8.00	0.35	0.19	0.0
9.00	0.45	0.27	0.0
10.00	0.59	0.40	0.0
11.00	0.78	0.57	0.0
12.00	1.55	1.33	**0.2**
13.00	2.32	2.10	**0.0**
14.00	2.51	2.28	0.0
15.00	2.65	2.42	0.0
16.00	2.75	2.52	0.0
17.00	2.82	2.59	0.0
18.00	2.88	2.65	0.0
19.00	2.92	2.69	0.0
20.00	2.97	2.74	0.0
21.00	3.01	2.77	0.0
22.00	3.04	2.81	0.0
23.00	3.07	2.84	0.0
24.00	**3.10**	**2.87**	0.0
25.00	3.10	2.87	0.0
26.00	3.10	2.87	0.0
27.00	3.10	2.87	0.0
28.00	3.10	2.87	0.0
29.00	3.10	2.87	0.0
30.00	3.10	2.87	0.0
31.00	3.10	2.87	0.0
32.00	3.10	2.87	0.0
33.00	3.10	2.87	0.0
34.00	3.10	2.87	0.0
35.00	3.10	2.87	0.0
36.00	3.10	2.87	0.0
37.00	3.10	2.87	0.0
38.00	3.10	2.87	0.0
39.00	3.10	2.87	0.0
40.00	3.10	2.87	0.0
41.00	3.10	2.87	0.0
42.00	3.10	2.87	0.0
43.00	3.10	2.87	0.0
44.00	3.10	2.87	0.0
45.00	3.10	2.87	0.0
46.00	3.10	2.87	0.0
47.00	3.10	2.87	0.0
48.00	3.10	2.87	0.0
49.00	3.10	2.87	0.0
50.00	3.10	2.87	0.0
51.00	3.10	2.87	0.0
52.00	3.10	2.87	0.0
53.00	3.10	2.87	0.0
54.00	3.10	2.87	0.0
55.00	3.10	2.87	0.0
56.00	3.10	2.87	0.0
57.00	3.10	2.87	0.0
58.00	3.10	2.87	0.0
59.00	3.10	2.87	0.0
60.00	3.10	2.87	0.0
61.00	3.10	2.87	0.0
62.00	3.10	2.87	0.0
63.00	3.10	2.87	0.0
64.00	3.10	2.87	0.0
65.00	3.10	2.87	0.0
66.00	3.10	2.87	0.0
67.00	3.10	2.87	0.0
68.00	3.10	2.87	0.0
69.00	3.10	2.87	0.0
70.00	3.10	2.87	0.0
71.00	3.10	2.87	0.0
72.00	3.10	2.87	0.0

Summary for Pond 1P: Porous Pavement

Inflow Area = 0.111 ac,100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
Inflow = 0.3 cfs @ 12.08 hrs, Volume= 0.027 af
Outflow = 0.3 cfs @ 12.05 hrs, Volume= 0.027 af, Atten= 22%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.05 hrs, Volume= 0.027 af
Routed to Pond 2P : Porous Pavement Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 18.62' @ 12.15 hrs Surf.Area= 4,517 sf Storage= 37 cf

Plug-Flow detention time= 1.3 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (758.3 - 757.1)

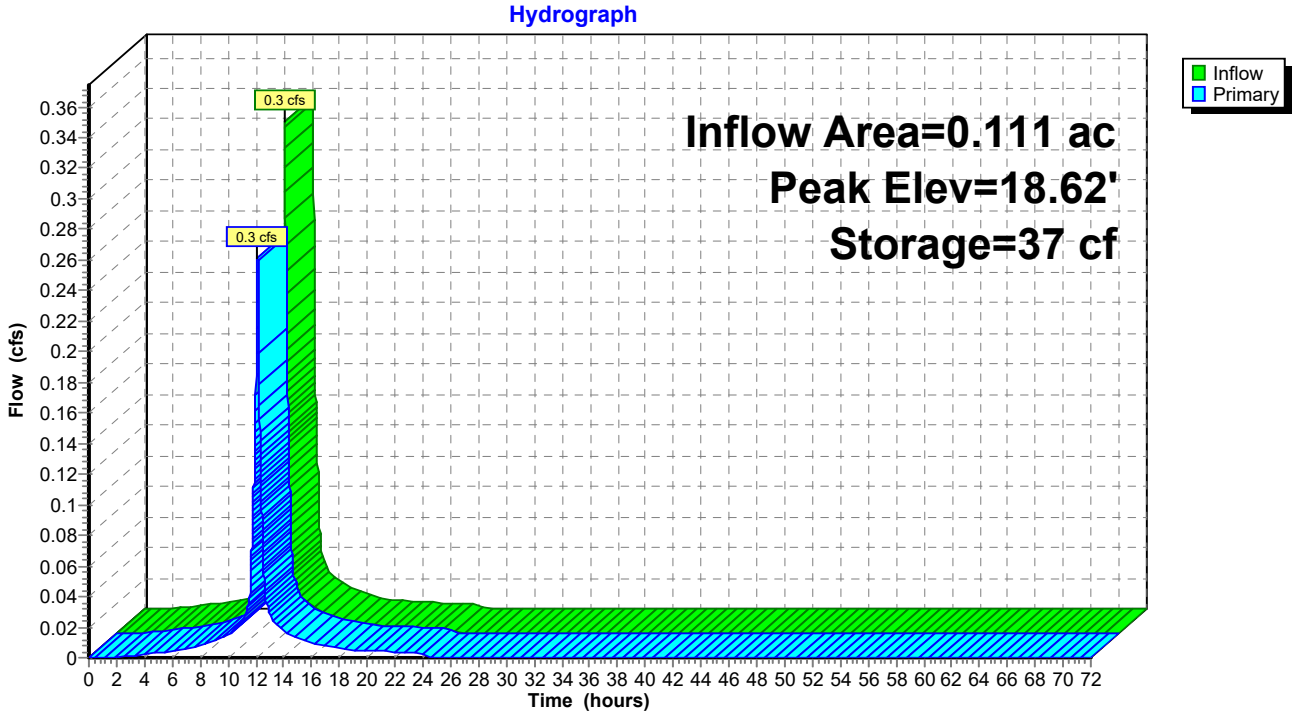
Volume	Invert	Avail.Storage	Storage Description
#1	18.60'	1,807 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,517 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
18.60	4,517	541.7	0	0	4,517
19.60	4,517	541.7	4,517	4,517	5,059

Device	Routing	Invert	Outlet Devices
#1	Primary	18.60'	**2.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.3 cfs @ 12.05 hrs HW=18.61' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.3 cfs)

Pond 1P: Porous Pavement



Hydrograph for Pond 1P: Porous Pavement

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	18.60	0.0
2.00	0.0	0	18.60	0.0
4.00	0.0	0	18.60	0.0
6.00	0.0	0	18.60	0.0
8.00	0.0	1	18.60	0.0
10.00	0.0	1	18.60	0.0
12.00	**0.2**	**13**	**18.61**	**0.2**
14.00	**0.0**	**1**	**18.60**	**0.0**
16.00	0.0	1	18.60	0.0
18.00	0.0	0	18.60	0.0
20.00	0.0	0	18.60	0.0
22.00	0.0	0	18.60	0.0
24.00	0.0	0	18.60	0.0
26.00	0.0	0	18.60	0.0
28.00	0.0	0	18.60	0.0
30.00	0.0	0	18.60	0.0
32.00	0.0	0	18.60	0.0
34.00	0.0	0	18.60	0.0
36.00	0.0	0	18.60	0.0
38.00	0.0	0	18.60	0.0
40.00	0.0	0	18.60	0.0
42.00	0.0	0	18.60	0.0
44.00	0.0	0	18.60	0.0
46.00	0.0	0	18.60	0.0
48.00	0.0	0	18.60	0.0
50.00	0.0	0	18.60	0.0
52.00	0.0	0	18.60	0.0
54.00	0.0	0	18.60	0.0
56.00	0.0	0	18.60	0.0
58.00	0.0	0	18.60	0.0
60.00	0.0	0	18.60	0.0
62.00	0.0	0	18.60	0.0
64.00	0.0	0	18.60	0.0
66.00	0.0	0	18.60	0.0
68.00	0.0	0	18.60	0.0
70.00	0.0	0	18.60	0.0
72.00	0.0	0	18.60	0.0

Stage-Discharge for Pond 1P: Porous Pavement

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
18.60	0.0	19.11	0.3
18.61	**0.3**	19.12	0.3
18.62	0.3	19.13	0.3
18.63	0.3	19.14	0.3
18.64	0.3	19.15	0.3
18.65	0.3	19.16	0.3
18.66	0.3	19.17	0.3
18.67	0.3	19.18	0.3
18.68	0.3	19.19	0.3
18.69	0.3	19.20	0.3
18.70	0.3	19.21	0.3
18.71	0.3	19.22	0.3
18.72	0.3	19.23	0.3
18.73	0.3	19.24	0.3
18.74	0.3	19.25	0.3
18.75	0.3	19.26	0.3
18.76	0.3	19.27	0.3
18.77	0.3	19.28	0.3
18.78	0.3	19.29	0.3
18.79	0.3	19.30	0.3
18.80	0.3	19.31	0.3
18.81	0.3	19.32	0.3
18.82	0.3	19.33	0.3
18.83	0.3	19.34	0.3
18.84	0.3	19.35	0.3
18.85	0.3	19.36	0.3
18.86	0.3	19.37	0.3
18.87	0.3	19.38	0.3
18.88	0.3	19.39	0.3
18.89	0.3	19.40	0.3
18.90	0.3	19.41	0.3
18.91	0.3	19.42	0.3
18.92	0.3	19.43	0.3
18.93	0.3	19.44	0.3
18.94	0.3	19.45	0.3
18.95	0.3	19.46	0.3
18.96	0.3	19.47	0.3
18.97	0.3	19.48	0.3
18.98	0.3	19.49	0.3
18.99	0.3	19.50	0.3
19.00	0.3	19.51	0.3
19.01	0.3	19.52	0.3
19.02	0.3	19.53	0.3
19.03	0.3	19.54	0.3
19.04	0.3	19.55	0.3
19.05	0.3	19.56	0.3
19.06	0.3	19.57	0.3
19.07	0.3	19.58	0.3
19.08	0.3	19.59	0.3
19.09	0.3	19.60	0.3
19.10	0.3		

Stage-Area-Storage for Pond 1P: Porous Pavement

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.60	**4,517**	0	19.11	4,517	921
18.61	4,517	18	19.12	4,517	940
18.62	4,517	36	19.13	4,517	958
18.63	4,517	54	19.14	4,517	976
18.64	4,517	72	19.15	4,517	994
18.65	4,517	90	19.16	4,517	1,012
18.66	4,517	108	19.17	4,517	1,030
18.67	4,517	126	19.18	4,517	1,048
18.68	4,517	145	19.19	4,517	1,066
18.69	4,517	163	19.20	4,517	1,084
18.70	4,517	181	19.21	4,517	1,102
18.71	4,517	199	19.22	4,517	1,120
18.72	4,517	217	19.23	4,517	1,138
18.73	4,517	235	19.24	4,517	1,156
18.74	4,517	253	19.25	4,517	1,174
18.75	4,517	271	19.26	4,517	1,192
18.76	4,517	289	19.27	4,517	1,211
18.77	4,517	307	19.28	4,517	1,229
18.78	4,517	325	19.29	4,517	1,247
18.79	4,517	343	19.30	4,517	1,265
18.80	4,517	361	19.31	4,517	1,283
18.81	4,517	379	19.32	4,517	1,301
18.82	4,517	397	19.33	4,517	1,319
18.83	4,517	416	19.34	4,517	1,337
18.84	4,517	434	19.35	4,517	1,355
18.85	4,517	452	19.36	4,517	1,373
18.86	4,517	470	19.37	4,517	1,391
18.87	4,517	488	19.38	4,517	1,409
18.88	4,517	506	19.39	4,517	1,427
18.89	4,517	524	19.40	4,517	1,445
18.90	4,517	542	19.41	4,517	1,464
18.91	4,517	560	19.42	4,517	1,482
18.92	4,517	578	19.43	4,517	1,500
18.93	4,517	596	19.44	4,517	1,518
18.94	4,517	614	19.45	4,517	1,536
18.95	4,517	632	19.46	4,517	1,554
18.96	4,517	650	19.47	4,517	1,572
18.97	4,517	669	19.48	4,517	1,590
18.98	4,517	687	19.49	4,517	1,608
18.99	4,517	705	19.50	4,517	1,626
19.00	4,517	723	19.51	4,517	1,644
19.01	4,517	741	19.52	4,517	1,662
19.02	4,517	759	19.53	4,517	1,680
19.03	4,517	777	19.54	4,517	1,698
19.04	4,517	795	19.55	4,517	1,716
19.05	4,517	813	19.56	4,517	1,735
19.06	4,517	831	19.57	4,517	1,753
19.07	4,517	849	19.58	4,517	1,771
19.08	4,517	867	19.59	4,517	1,789
19.09	4,517	885	19.60	4,517	**1,807**
19.10	4,517	903			

Summary for Pond 2P: Porous Pavement Outlet

Inflow Area = 0.111 ac,100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
Inflow = 0.3 cfs @ 12.05 hrs, Volume= 0.027 af
Outflow = 0.2 cfs @ 12.27 hrs, Volume= 0.026 af, Atten= 36%, Lag= 13.1 min
Primary = 0.2 cfs @ 12.27 hrs, Volume= 0.026 af
Routed to Link DP-1 : Park Avenue

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 17.55' @ 12.27 hrs Surf.Area= 4,530 sf Storage= 510 cf

Plug-Flow detention time= 326.2 min calculated for 0.026 af (100% of inflow)
Center-of-Mass det. time= 324.1 min (1,082.4 - 758.3)

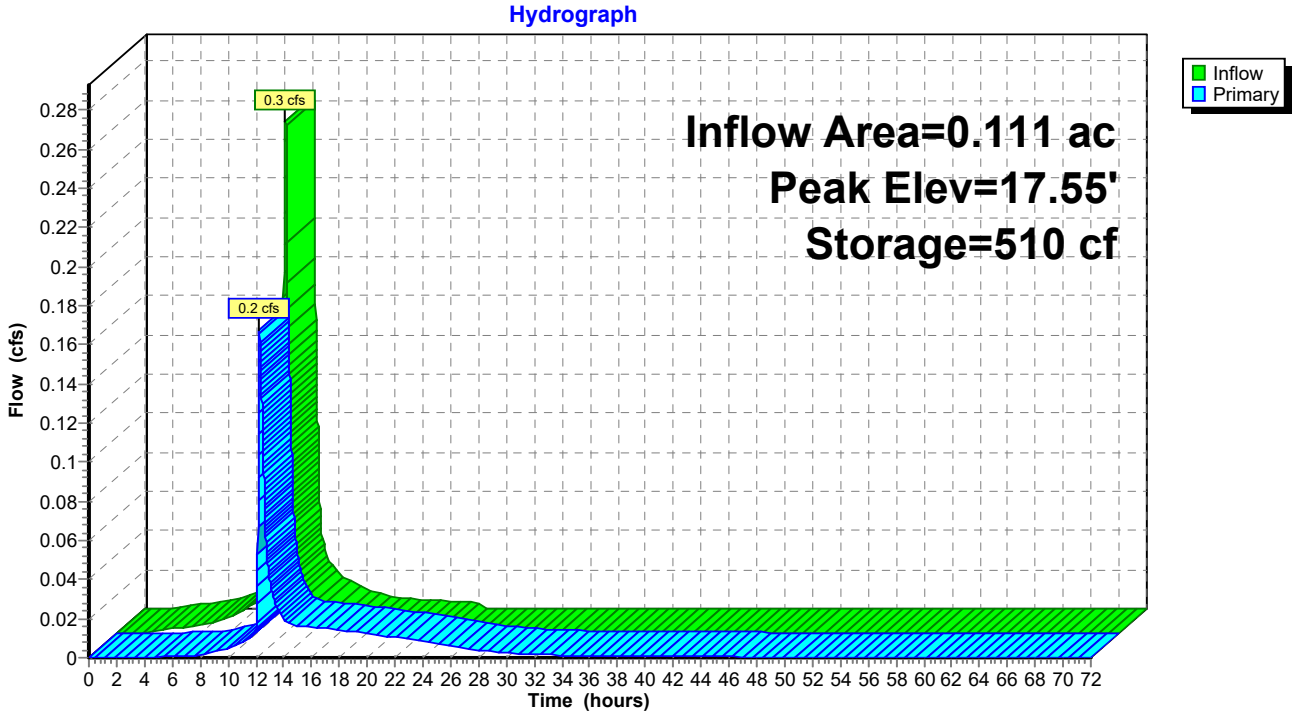
Volume	Invert	Avail.Storage	Storage Description
#1	17.27'	1,800 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,517 cf Overall - 17 cf Embedded = 4,500 cf x 40.0% Voids
#2	17.60'	17 cf	**4.0" Round Pipe Storage** Inside #1 L= 200.0'
#3	17.27'	35 cf	**4.00'D x 2.77'H Vertical Cone/Cylinder**
		1,852 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
17.27	4,517	541.7	0	0	4,517
18.27	4,517	541.7	4,517	4,517	5,059

Device	Routing	Invert	Outlet Devices
#1	Primary	14.50'	**12.0" Round Culvert** L= 62.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 14.50' / 14.15' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	17.27'	**1.2" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	17.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.2 cfs @ 12.27 hrs HW=17.55' (Free Discharge)
└**1=Culvert** (Passes 0.2 cfs of 5.3 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.0 cfs @ 2.31 fps)
  └**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.73 fps)

Pond 2P: Porous Pavement Outlet



Hydrograph for Pond 2P: Porous Pavement Outlet

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	17.27	0.0
2.00	0.0	1	17.27	0.0
4.00	0.0	10	17.28	0.0
6.00	0.0	30	17.29	0.0
8.00	0.0	63	17.30	0.0
10.00	0.0	122	17.34	0.0
12.00	**0.2**	**340**	**17.46**	**0.0**
14.00	**0.0**	**423**	**17.50**	**0.0**
16.00	0.0	400	17.49	0.0
18.00	0.0	347	17.46	0.0
20.00	0.0	287	17.43	0.0
22.00	0.0	234	17.40	0.0
24.00	0.0	189	17.37	0.0
26.00	0.0	137	17.35	0.0
28.00	0.0	103	17.33	0.0
30.00	0.0	81	17.31	0.0
32.00	0.0	65	17.31	0.0
34.00	0.0	55	17.30	0.0
36.00	0.0	47	17.30	0.0
38.00	0.0	41	17.29	0.0
40.00	0.0	35	17.29	0.0
42.00	0.0	31	17.29	0.0
44.00	0.0	27	17.28	0.0
46.00	0.0	23	17.28	0.0
48.00	0.0	20	17.28	0.0
50.00	0.0	17	17.28	0.0
52.00	0.0	15	17.28	0.0
54.00	0.0	13	17.28	0.0
56.00	0.0	11	17.28	0.0
58.00	0.0	10	17.28	0.0
60.00	0.0	8	17.27	0.0
62.00	0.0	7	17.27	0.0
64.00	0.0	6	17.27	0.0
66.00	0.0	5	17.27	0.0
68.00	0.0	5	17.27	0.0
70.00	0.0	4	17.27	0.0
72.00	0.0	4	17.27	0.0

Stage-Discharge for Pond 2P: Porous Pavement Outlet

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
17.27	0.0	18.29	6.0	19.31	6.9
17.29	0.0	18.31	6.0	19.33	6.9
17.31	0.0	18.33	6.0	19.35	6.9
17.33	0.0	18.35	6.1	19.37	7.0
17.35	0.0	18.37	6.1	19.39	7.0
17.37	0.0	18.39	6.1	19.41	7.0
17.39	0.0	18.41	6.1	19.43	7.0
17.41	0.0	18.43	6.1	19.45	7.0
17.43	0.0	18.45	6.2	19.47	7.0
17.45	0.0	18.47	6.2	19.49	7.1
17.47	0.0	18.49	6.2	19.51	7.1
17.49	0.0	18.51	6.2	19.53	7.1
17.51	0.0	18.53	6.2	19.55	7.1
17.53	0.1	18.55	6.2	19.57	7.1
17.55	0.2	18.57	6.3	19.59	7.1
17.57	0.3	18.59	6.3	19.61	7.2
17.59	0.4	18.61	6.3	19.63	7.2
17.61	0.5	18.63	6.3	19.65	7.2
17.63	0.6	18.65	6.3	19.67	7.2
17.65	0.8	18.67	6.4	19.69	7.2
17.67	0.9	18.69	6.4	19.71	7.2
17.69	1.1	18.71	6.4	19.73	7.3
17.71	1.3	18.73	6.4	19.75	7.3
17.73	1.5	18.75	6.4	19.77	7.3
17.75	1.6	18.77	6.4	19.79	7.3
17.77	1.8	18.79	6.5	19.81	7.3
17.79	2.0	18.81	6.5	19.83	7.3
17.81	2.2	18.83	6.5	19.85	7.3
17.83	2.5	18.85	6.5	19.87	7.4
17.85	2.7	18.87	6.5	19.89	7.4
17.87	2.9	18.89	6.6	19.91	7.4
17.89	3.2	18.91	6.6	19.93	7.4
17.91	3.4	18.93	6.6	19.95	7.4
17.93	3.6	18.95	6.6	19.97	7.4
17.95	3.9	18.97	6.6	19.99	7.5
17.97	4.1	18.99	6.6	20.01	7.5
17.99	4.4	19.01	6.7	20.03	**7.5**
18.01	4.7	19.03	6.7		
18.03	4.9	19.05	6.7		
18.05	5.2	19.07	6.7		
18.07	5.5	19.09	6.7		
18.09	5.8	19.11	6.7		
18.11	5.8	19.13	6.8		
18.13	5.8	19.15	6.8		
18.15	5.9	19.17	6.8		
18.17	5.9	19.19	6.8		
18.19	5.9	19.21	6.8		
18.21	5.9	19.23	6.8		
18.23	5.9	19.25	6.9		
18.25	6.0	19.27	6.9		
18.27	6.0	19.29	6.9		

Stage-Area-Storage for Pond 2P: Porous Pavement Outlet

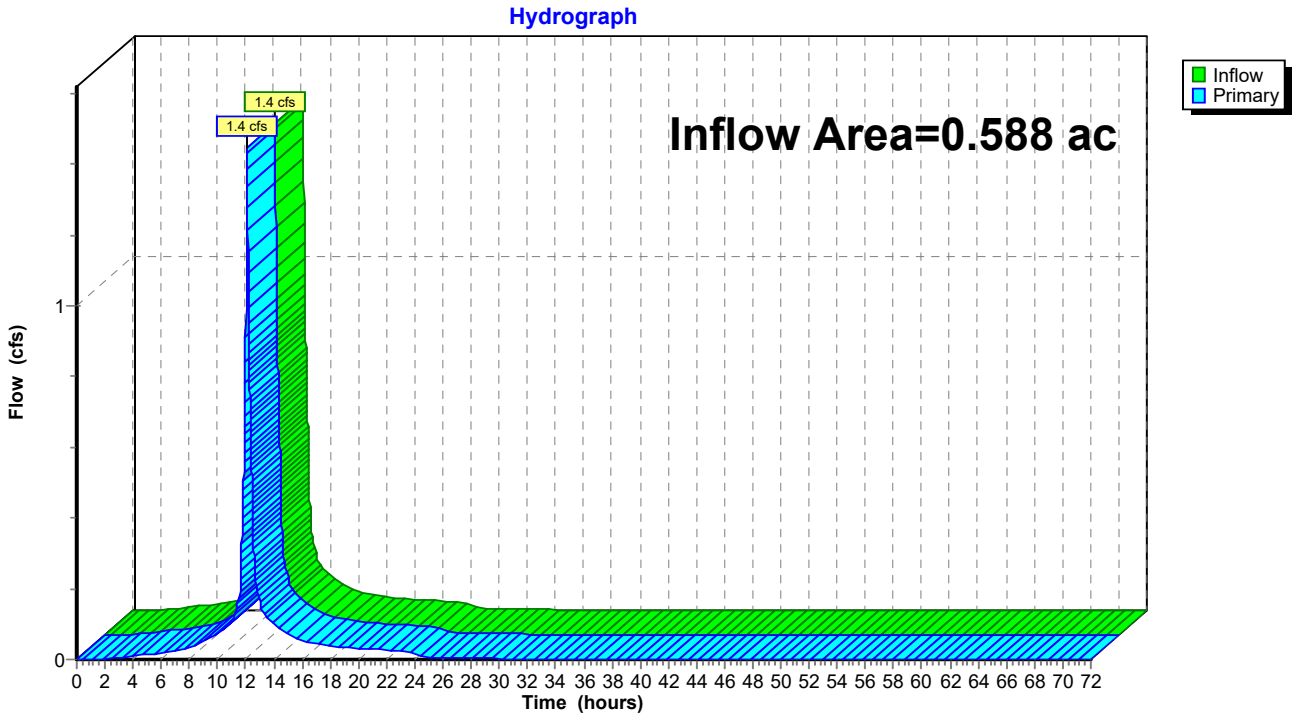
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
17.27	0	18.29	1,830	19.31	1,843
17.29	36	18.31	1,830	19.33	1,843
17.31	73	18.33	1,831	19.35	1,843
17.33	109	18.35	1,831	19.37	1,844
17.35	146	18.37	1,831	19.39	1,844
17.37	182	18.39	1,831	19.41	1,844
17.39	218	18.41	1,832	19.43	1,844
17.41	255	18.43	1,832	19.45	1,845
17.43	291	18.45	1,832	19.47	1,845
17.45	327	18.47	1,832	19.49	1,845
17.47	364	18.49	1,833	19.51	1,845
17.49	400	18.51	1,833	19.53	1,846
17.51	437	18.53	1,833	19.55	1,846
17.53	473	18.55	1,833	19.57	1,846
17.55	509	18.57	1,834	19.59	1,846
17.57	546	18.59	1,834	19.61	1,847
17.59	582	18.61	1,834	19.63	1,847
17.61	619	18.63	1,834	19.65	1,847
17.63	655	18.65	1,835	19.67	1,847
17.65	692	18.67	1,835	19.69	1,848
17.67	729	18.69	1,835	19.71	1,848
17.69	766	18.71	1,835	19.73	1,848
17.71	804	18.73	1,836	19.75	1,848
17.73	841	18.75	1,836	19.77	1,849
17.75	878	18.77	1,836	19.79	1,849
17.77	915	18.79	1,836	19.81	1,849
17.79	952	18.81	1,837	19.83	1,849
17.81	989	18.83	1,837	19.85	1,850
17.83	1,027	18.85	1,837	19.87	1,850
17.85	1,064	18.87	1,837	19.89	1,850
17.87	1,101	18.89	1,838	19.91	1,850
17.89	1,138	18.91	1,838	19.93	1,851
17.91	1,175	18.93	1,838	19.95	1,851
17.93	1,211	18.95	1,838	19.97	1,851
17.95	1,248	18.97	1,839	19.99	1,851
17.97	1,284	18.99	1,839	20.01	1,852
17.99	1,320	19.01	1,839	20.03	**1,852**
18.01	1,357	19.03	1,839		
18.03	1,393	19.05	1,840		
18.05	1,430	19.07	1,840		
18.07	1,466	19.09	1,840		
18.09	1,502	19.11	1,840		
18.11	1,539	19.13	1,841		
18.13	1,575	19.15	1,841		
18.15	1,612	19.17	1,841		
18.17	1,648	19.19	1,841		
18.19	1,684	19.21	1,842		
18.21	1,721	19.23	1,842		
18.23	1,757	19.25	1,842		
18.25	1,793	19.27	1,842		
18.27	1,830	19.29	1,843		

Summary for Link DP-1: Park Avenue

Inflow Area = 0.588 ac,100.00% Impervious, Inflow Depth = 2.87" for 2-YR event
Inflow = 1.4 cfs @ 12.08 hrs, Volume= 0.140 af
Primary = 1.4 cfs @ 12.08 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP-1: Park Avenue



Hydrograph for Link DP-1: Park Avenue

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.0	**0.00**	0.0	51.00	0.0	0.00	0.0
1.00	0.0	0.00	0.0	52.00	0.0	0.00	0.0
2.00	0.0	0.00	0.0	53.00	0.0	0.00	0.0
3.00	0.0	0.00	0.0	54.00	0.0	0.00	0.0
4.00	0.0	0.00	0.0	55.00	0.0	0.00	0.0
5.00	0.0	0.00	0.0	56.00	0.0	0.00	0.0
6.00	0.0	0.00	0.0	57.00	0.0	0.00	0.0
7.00	0.0	0.00	0.0	58.00	0.0	0.00	0.0
8.00	0.0	0.00	0.0	59.00	0.0	0.00	0.0
9.00	0.1	0.00	0.1	60.00	0.0	0.00	0.0
10.00	0.1	0.00	0.1	61.00	0.0	0.00	0.0
11.00	0.1	0.00	0.1	62.00	0.0	0.00	0.0
12.00	**0.9**	0.00	**0.9**	63.00	0.0	0.00	0.0
13.00	**0.2**	0.00	**0.2**	64.00	0.0	0.00	0.0
14.00	0.1	0.00	0.1	65.00	0.0	0.00	0.0
15.00	0.1	0.00	0.1	66.00	0.0	0.00	0.0
16.00	0.1	0.00	0.1	67.00	0.0	0.00	0.0
17.00	0.0	0.00	0.0	68.00	0.0	0.00	0.0
18.00	0.0	0.00	0.0	69.00	0.0	0.00	0.0
19.00	0.0	0.00	0.0	70.00	0.0	0.00	0.0
20.00	0.0	0.00	0.0	71.00	0.0	0.00	0.0
21.00	0.0	0.00	0.0	72.00	0.0	0.00	0.0
22.00	0.0	0.00	0.0				
23.00	0.0	0.00	0.0				
24.00	0.0	0.00	0.0				
25.00	0.0	0.00	0.0				
26.00	0.0	0.00	0.0				
27.00	0.0	0.00	0.0				
28.00	0.0	0.00	0.0				
29.00	0.0	0.00	0.0				
30.00	0.0	0.00	0.0				
31.00	0.0	0.00	0.0				
32.00	0.0	0.00	0.0				
33.00	0.0	0.00	0.0				
34.00	0.0	0.00	0.0				
35.00	0.0	0.00	0.0				
36.00	0.0	0.00	0.0				
37.00	0.0	0.00	0.0				
38.00	0.0	0.00	0.0				
39.00	0.0	0.00	0.0				
40.00	0.0	0.00	0.0				
41.00	0.0	0.00	0.0				
42.00	0.0	0.00	0.0				
43.00	0.0	0.00	0.0				
44.00	0.0	0.00	0.0				
45.00	0.0	0.00	0.0				
46.00	0.0	0.00	0.0				
47.00	0.0	0.00	0.0				
48.00	0.0	0.00	0.0				
49.00	0.0	0.00	0.0				
50.00	0.0	0.00	0.0				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=0.476 ac 100.00% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=2.1 cfs 0.173 af

Subcatchment PR-2: Porous Pavement Runoff Area=0.111 ac 100.00% Impervious Runoff Depth=4.36"
Tc=6.0 min CN=98 Runoff=0.5 cfs 0.040 af

Pond 1P: Porous Pavement Peak Elev=18.67' Storage=126 cf Inflow=0.5 cfs 0.040 af
Outflow=0.3 cfs 0.040 af

Pond 2P: Porous Pavement Outlet Peak Elev=17.57' Storage=545 cf Inflow=0.3 cfs 0.040 af
Outflow=0.3 cfs 0.040 af

Link DP-1: Park Avenue Inflow=2.3 cfs 0.214 af
Primary=2.3 cfs 0.214 af

Total Runoff Area = 0.588 ac Runoff Volume = 0.214 af Average Runoff Depth = 4.36"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.588 ac

Summary for Subcatchment PR-1: Subcat PR-1

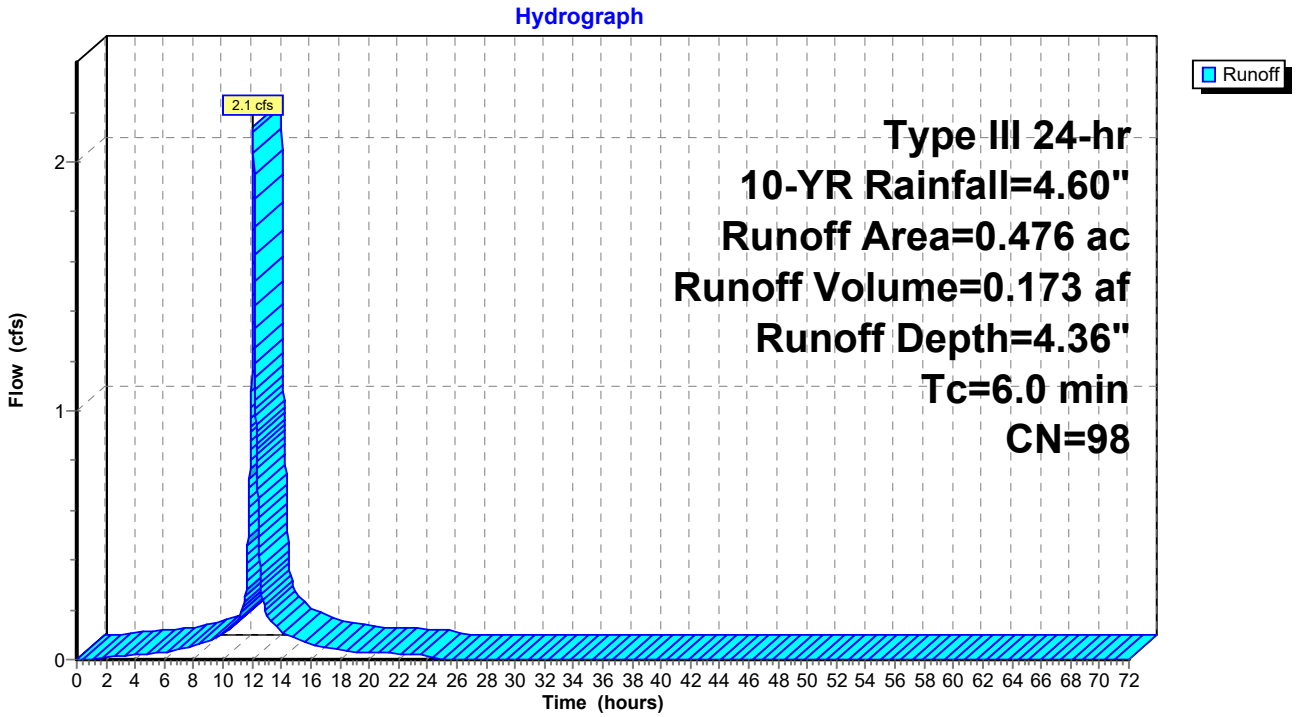
Runoff = 2.1 cfs @ 12.08 hrs, Volume= 0.173 af, Depth= 4.36"
Routed to Link DP-1 : Park Avenue

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (ac)	CN	Description
0.004	98	Unconnected pavement, HSG A
0.007	98	Unconnected pavement, HSG A
0.011	98	Unconnected pavement, HSG A
0.060	98	Roofs, HSG A
0.232	98	Roofs, HSG A
0.163	98	Paved parking, HSG A
0.476	98	Weighted Average
0.476		100.00% Impervious Area
0.021		4.49% Unconnected

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

Subcatchment PR-1: Subcat PR-1



Hydrograph for Subcatchment PR-1: Subcat PR-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.05	0.00	0.0
2.00	0.09	0.01	0.0
3.00	0.14	0.03	0.0
4.00	0.20	0.07	0.0
5.00	0.26	0.11	0.0
6.00	0.33	0.17	0.0
7.00	0.42	0.24	0.0
8.00	0.52	0.34	0.1
9.00	0.67	0.48	0.1
10.00	0.87	0.66	0.1
11.00	1.15	0.94	0.2
12.00	2.30	2.07	**1.3**
13.00	3.45	3.22	**0.2**
14.00	3.73	3.50	0.1
15.00	3.93	3.69	0.1
16.00	4.08	3.84	0.1
17.00	4.18	3.95	0.0
18.00	4.27	4.03	0.0
19.00	4.34	4.10	0.0
20.00	4.40	4.17	0.0
21.00	4.46	4.22	0.0
22.00	4.51	4.28	0.0
23.00	4.56	4.32	0.0
24.00	**4.60**	**4.36**	0.0
25.00	4.60	4.36	0.0
26.00	4.60	4.36	0.0
27.00	4.60	4.36	0.0
28.00	4.60	4.36	0.0
29.00	4.60	4.36	0.0
30.00	4.60	4.36	0.0
31.00	4.60	4.36	0.0
32.00	4.60	4.36	0.0
33.00	4.60	4.36	0.0
34.00	4.60	4.36	0.0
35.00	4.60	4.36	0.0
36.00	4.60	4.36	0.0
37.00	4.60	4.36	0.0
38.00	4.60	4.36	0.0
39.00	4.60	4.36	0.0
40.00	4.60	4.36	0.0
41.00	4.60	4.36	0.0
42.00	4.60	4.36	0.0
43.00	4.60	4.36	0.0
44.00	4.60	4.36	0.0
45.00	4.60	4.36	0.0
46.00	4.60	4.36	0.0
47.00	4.60	4.36	0.0
48.00	4.60	4.36	0.0
49.00	4.60	4.36	0.0
50.00	4.60	4.36	0.0
51.00	4.60	4.36	0.0
52.00	4.60	4.36	0.0
53.00	4.60	4.36	0.0
54.00	4.60	4.36	0.0
55.00	4.60	4.36	0.0
56.00	4.60	4.36	0.0
57.00	4.60	4.36	0.0
58.00	4.60	4.36	0.0
59.00	4.60	4.36	0.0
60.00	4.60	4.36	0.0
61.00	4.60	4.36	0.0
62.00	4.60	4.36	0.0
63.00	4.60	4.36	0.0
64.00	4.60	4.36	0.0
65.00	4.60	4.36	0.0
66.00	4.60	4.36	0.0
67.00	4.60	4.36	0.0
68.00	4.60	4.36	0.0
69.00	4.60	4.36	0.0
70.00	4.60	4.36	0.0
71.00	4.60	4.36	0.0
72.00	4.60	4.36	0.0

Summary for Subcatchment PR-2: Porous Pavement

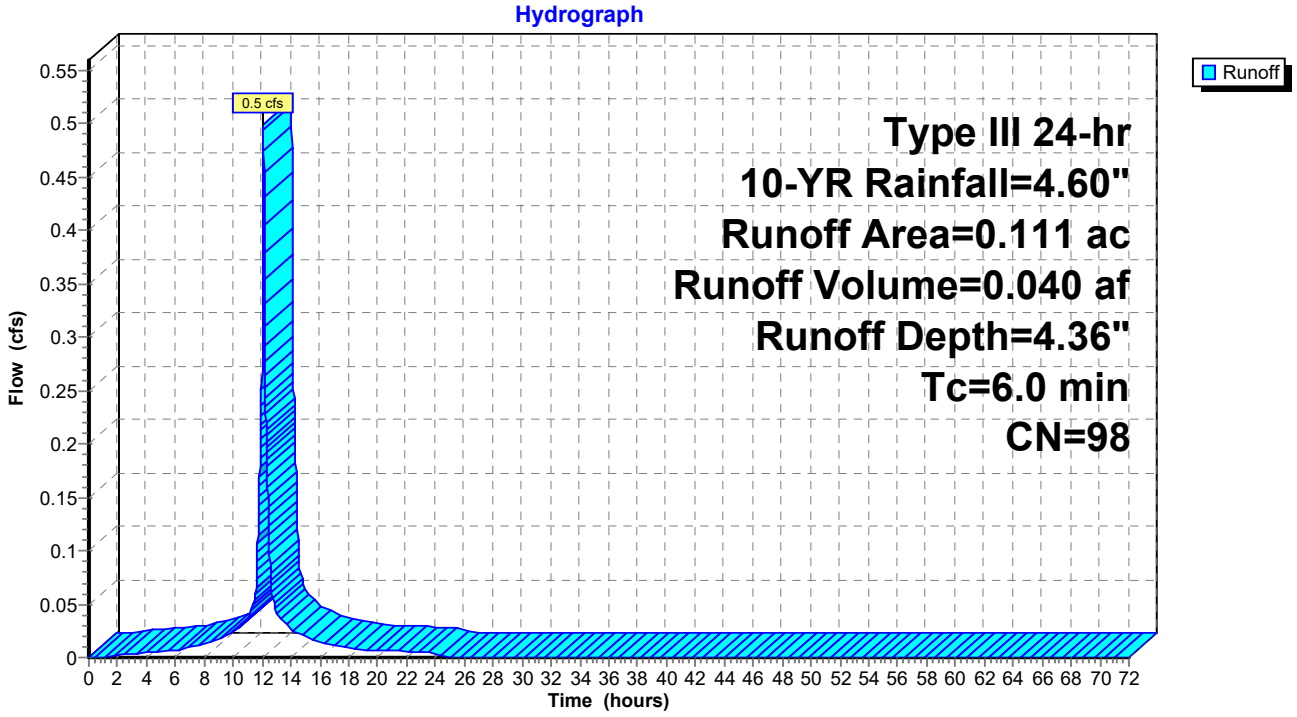
Runoff = 0.5 cfs @ 12.08 hrs, Volume= 0.040 af, Depth= 4.36"
Routed to Pond 1P : Porous Pavement

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YR Rainfall=4.60"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.007	98	Unconnected pavement, HSG A
0.104	98	Paved parking, HSG A
0.111	98	Weighted Average
0.000		0.00% Pervious Area
0.111		100.00% Impervious Area
0.007		6.73% Unconnected

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

Subcatchment PR-2: Porous Pavement



Hydrograph for Subcatchment PR-2: Porous Pavement

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.05	0.00	0.0
2.00	0.09	0.01	0.0
3.00	0.14	0.03	0.0
4.00	0.20	0.07	0.0
5.00	0.26	0.11	0.0
6.00	0.33	0.17	0.0
7.00	0.42	0.24	0.0
8.00	0.52	0.34	0.0
9.00	0.67	0.48	0.0
10.00	0.87	0.66	0.0
11.00	1.15	0.94	0.0
12.00	2.30	2.07	**0.3**
13.00	3.45	3.22	**0.0**
14.00	3.73	3.50	0.0
15.00	3.93	3.69	0.0
16.00	4.08	3.84	0.0
17.00	4.18	3.95	0.0
18.00	4.27	4.03	0.0
19.00	4.34	4.10	0.0
20.00	4.40	4.17	0.0
21.00	4.46	4.22	0.0
22.00	4.51	4.28	0.0
23.00	4.56	4.32	0.0
24.00	**4.60**	**4.36**	0.0
25.00	4.60	4.36	0.0
26.00	4.60	4.36	0.0
27.00	4.60	4.36	0.0
28.00	4.60	4.36	0.0
29.00	4.60	4.36	0.0
30.00	4.60	4.36	0.0
31.00	4.60	4.36	0.0
32.00	4.60	4.36	0.0
33.00	4.60	4.36	0.0
34.00	4.60	4.36	0.0
35.00	4.60	4.36	0.0
36.00	4.60	4.36	0.0
37.00	4.60	4.36	0.0
38.00	4.60	4.36	0.0
39.00	4.60	4.36	0.0
40.00	4.60	4.36	0.0
41.00	4.60	4.36	0.0
42.00	4.60	4.36	0.0
43.00	4.60	4.36	0.0
44.00	4.60	4.36	0.0
45.00	4.60	4.36	0.0
46.00	4.60	4.36	0.0
47.00	4.60	4.36	0.0
48.00	4.60	4.36	0.0
49.00	4.60	4.36	0.0
50.00	4.60	4.36	0.0
51.00	4.60	4.36	0.0
52.00	4.60	4.36	0.0
53.00	4.60	4.36	0.0
54.00	4.60	4.36	0.0
55.00	4.60	4.36	0.0
56.00	4.60	4.36	0.0
57.00	4.60	4.36	0.0
58.00	4.60	4.36	0.0
59.00	4.60	4.36	0.0
60.00	4.60	4.36	0.0
61.00	4.60	4.36	0.0
62.00	4.60	4.36	0.0
63.00	4.60	4.36	0.0
64.00	4.60	4.36	0.0
65.00	4.60	4.36	0.0
66.00	4.60	4.36	0.0
67.00	4.60	4.36	0.0
68.00	4.60	4.36	0.0
69.00	4.60	4.36	0.0
70.00	4.60	4.36	0.0
71.00	4.60	4.36	0.0
72.00	4.60	4.36	0.0

Summary for Pond 1P: Porous Pavement

Inflow Area = 0.111 ac,100.00% Impervious, Inflow Depth = 4.36" for 10-YR event
Inflow = 0.5 cfs @ 12.08 hrs, Volume= 0.040 af
Outflow = 0.3 cfs @ 12.00 hrs, Volume= 0.040 af, Atten= 48%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.00 hrs, Volume= 0.040 af
Routed to Pond 2P : Porous Pavement Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 18.67' @ 12.21 hrs Surf.Area= 4,517 sf Storage= 126 cf

Plug-Flow detention time= 2.3 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 2.3 min (751.8 - 749.4)

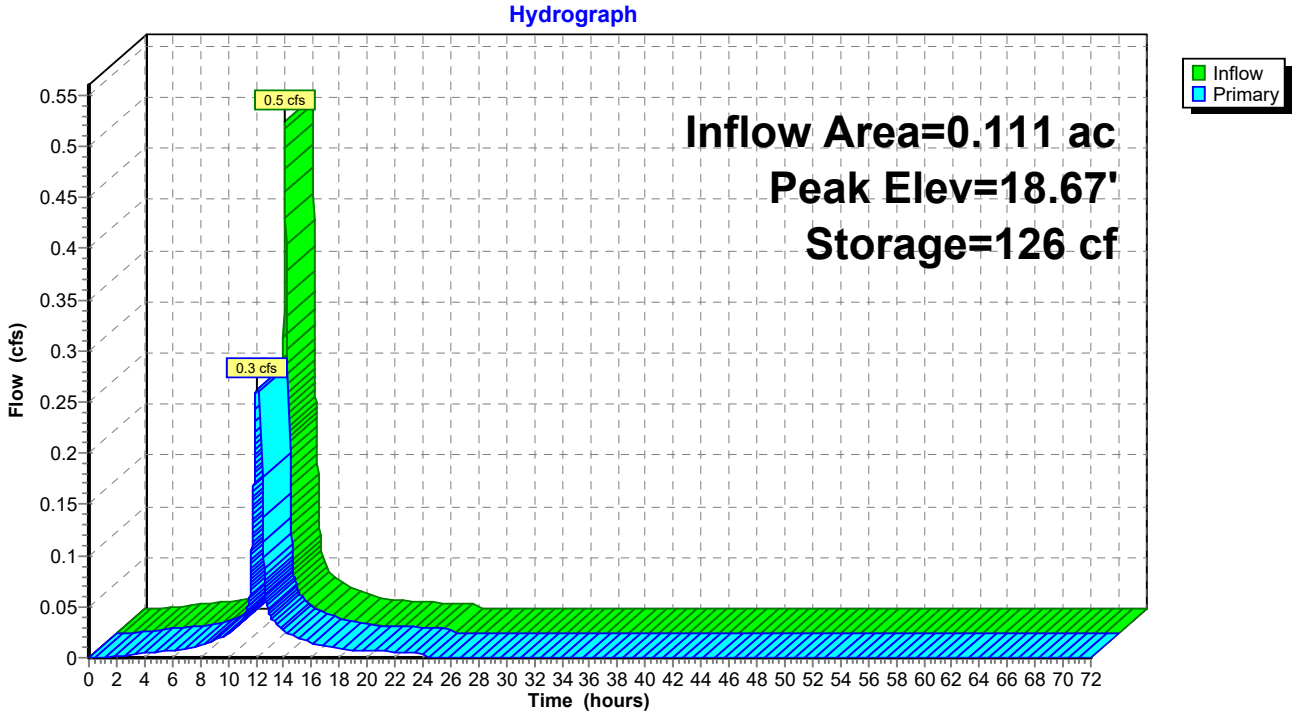
Volume	Invert	Avail.Storage	Storage Description
#1	18.60'	1,807 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,517 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
18.60	4,517	541.7	0	0	4,517
19.60	4,517	541.7	4,517	4,517	5,059

Device	Routing	Invert	Outlet Devices
#1	Primary	18.60'	**2.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.3 cfs @ 12.00 hrs HW=18.61' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.3 cfs)

Pond 1P: Porous Pavement



Hydrograph for Pond 1P: Porous Pavement

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	18.60	0.0
2.00	0.0	0	18.60	0.0
4.00	0.0	0	18.60	0.0
6.00	0.0	0	18.60	0.0
8.00	0.0	1	18.60	0.0
10.00	0.0	2	18.60	0.0
12.00	**0.3**	**19**	**18.61**	**0.3**
14.00	**0.0**	**2**	**18.60**	0.0
16.00	0.0	1	18.60	0.0
18.00	0.0	1	18.60	0.0
20.00	0.0	0	18.60	0.0
22.00	0.0	0	18.60	0.0
24.00	0.0	0	18.60	0.0
26.00	0.0	0	18.60	0.0
28.00	0.0	0	18.60	0.0
30.00	0.0	0	18.60	0.0
32.00	0.0	0	18.60	0.0
34.00	0.0	0	18.60	0.0
36.00	0.0	0	18.60	0.0
38.00	0.0	0	18.60	0.0
40.00	0.0	0	18.60	0.0
42.00	0.0	0	18.60	0.0
44.00	0.0	0	18.60	0.0
46.00	0.0	0	18.60	0.0
48.00	0.0	0	18.60	0.0
50.00	0.0	0	18.60	0.0
52.00	0.0	0	18.60	0.0
54.00	0.0	0	18.60	0.0
56.00	0.0	0	18.60	0.0
58.00	0.0	0	18.60	0.0
60.00	0.0	0	18.60	0.0
62.00	0.0	0	18.60	0.0
64.00	0.0	0	18.60	0.0
66.00	0.0	0	18.60	0.0
68.00	0.0	0	18.60	0.0
70.00	0.0	0	18.60	0.0
72.00	0.0	0	18.60	0.0

Stage-Discharge for Pond 1P: Porous Pavement

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
18.60	0.0	19.11	0.3
18.61	**0.3**	19.12	0.3
18.62	0.3	19.13	0.3
18.63	0.3	19.14	0.3
18.64	0.3	19.15	0.3
18.65	0.3	19.16	0.3
18.66	0.3	19.17	0.3
18.67	0.3	19.18	0.3
18.68	0.3	19.19	0.3
18.69	0.3	19.20	0.3
18.70	0.3	19.21	0.3
18.71	0.3	19.22	0.3
18.72	0.3	19.23	0.3
18.73	0.3	19.24	0.3
18.74	0.3	19.25	0.3
18.75	0.3	19.26	0.3
18.76	0.3	19.27	0.3
18.77	0.3	19.28	0.3
18.78	0.3	19.29	0.3
18.79	0.3	19.30	0.3
18.80	0.3	19.31	0.3
18.81	0.3	19.32	0.3
18.82	0.3	19.33	0.3
18.83	0.3	19.34	0.3
18.84	0.3	19.35	0.3
18.85	0.3	19.36	0.3
18.86	0.3	19.37	0.3
18.87	0.3	19.38	0.3
18.88	0.3	19.39	0.3
18.89	0.3	19.40	0.3
18.90	0.3	19.41	0.3
18.91	0.3	19.42	0.3
18.92	0.3	19.43	0.3
18.93	0.3	19.44	0.3
18.94	0.3	19.45	0.3
18.95	0.3	19.46	0.3
18.96	0.3	19.47	0.3
18.97	0.3	19.48	0.3
18.98	0.3	19.49	0.3
18.99	0.3	19.50	0.3
19.00	0.3	19.51	0.3
19.01	0.3	19.52	0.3
19.02	0.3	19.53	0.3
19.03	0.3	19.54	0.3
19.04	0.3	19.55	0.3
19.05	0.3	19.56	0.3
19.06	0.3	19.57	0.3
19.07	0.3	19.58	0.3
19.08	0.3	19.59	0.3
19.09	0.3	19.60	0.3
19.10	0.3		

Stage-Area-Storage for Pond 1P: Porous Pavement

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.60	**4,517**	0	19.11	4,517	921
18.61	4,517	18	19.12	4,517	940
18.62	4,517	36	19.13	4,517	958
18.63	4,517	54	19.14	4,517	976
18.64	4,517	72	19.15	4,517	994
18.65	4,517	90	19.16	4,517	1,012
18.66	4,517	108	19.17	4,517	1,030
18.67	4,517	126	19.18	4,517	1,048
18.68	4,517	145	19.19	4,517	1,066
18.69	4,517	163	19.20	4,517	1,084
18.70	4,517	181	19.21	4,517	1,102
18.71	4,517	199	19.22	4,517	1,120
18.72	4,517	217	19.23	4,517	1,138
18.73	4,517	235	19.24	4,517	1,156
18.74	4,517	253	19.25	4,517	1,174
18.75	4,517	271	19.26	4,517	1,192
18.76	4,517	289	19.27	4,517	1,211
18.77	4,517	307	19.28	4,517	1,229
18.78	4,517	325	19.29	4,517	1,247
18.79	4,517	343	19.30	4,517	1,265
18.80	4,517	361	19.31	4,517	1,283
18.81	4,517	379	19.32	4,517	1,301
18.82	4,517	397	19.33	4,517	1,319
18.83	4,517	416	19.34	4,517	1,337
18.84	4,517	434	19.35	4,517	1,355
18.85	4,517	452	19.36	4,517	1,373
18.86	4,517	470	19.37	4,517	1,391
18.87	4,517	488	19.38	4,517	1,409
18.88	4,517	506	19.39	4,517	1,427
18.89	4,517	524	19.40	4,517	1,445
18.90	4,517	542	19.41	4,517	1,464
18.91	4,517	560	19.42	4,517	1,482
18.92	4,517	578	19.43	4,517	1,500
18.93	4,517	596	19.44	4,517	1,518
18.94	4,517	614	19.45	4,517	1,536
18.95	4,517	632	19.46	4,517	1,554
18.96	4,517	650	19.47	4,517	1,572
18.97	4,517	669	19.48	4,517	1,590
18.98	4,517	687	19.49	4,517	1,608
18.99	4,517	705	19.50	4,517	1,626
19.00	4,517	723	19.51	4,517	1,644
19.01	4,517	741	19.52	4,517	1,662
19.02	4,517	759	19.53	4,517	1,680
19.03	4,517	777	19.54	4,517	1,698
19.04	4,517	795	19.55	4,517	1,716
19.05	4,517	813	19.56	4,517	1,735
19.06	4,517	831	19.57	4,517	1,753
19.07	4,517	849	19.58	4,517	1,771
19.08	4,517	867	19.59	4,517	1,789
19.09	4,517	885	19.60	4,517	**1,807**
19.10	4,517	903			

Summary for Pond 2P: Porous Pavement Outlet

Inflow Area = 0.111 ac,100.00% Impervious, Inflow Depth = 4.36" for 10-YR event
Inflow = 0.3 cfs @ 12.00 hrs, Volume= 0.040 af
Outflow = 0.3 cfs @ 12.52 hrs, Volume= 0.040 af, Atten= 0%, Lag= 31.2 min
Primary = 0.3 cfs @ 12.52 hrs, Volume= 0.040 af
Routed to Link DP-1 : Park Avenue

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 17.57' @ 12.52 hrs Surf.Area= 4,530 sf Storage= 545 cf

Plug-Flow detention time= 252.8 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 251.3 min (1,003.0 - 751.8)

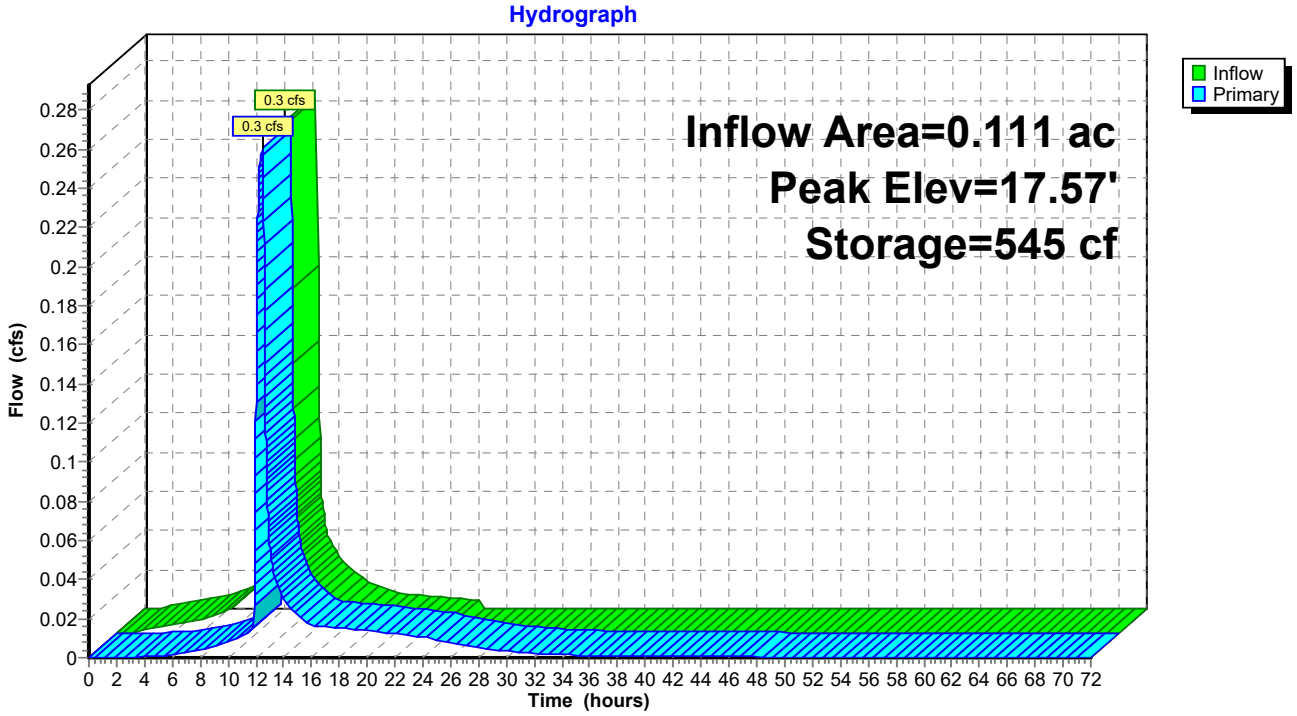
Volume	Invert	Avail.Storage	Storage Description
#1	17.27'	1,800 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,517 cf Overall - 17 cf Embedded = 4,500 cf x 40.0% Voids
#2	17.60'	17 cf	**4.0" Round Pipe Storage** Inside #1 L= 200.0'
#3	17.27'	35 cf	**4.00'D x 2.77'H Vertical Cone/Cylinder**
		1,852 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
17.27	4,517	541.7	0	0	4,517
18.27	4,517	541.7	4,517	4,517	5,059

Device	Routing	Invert	Outlet Devices
#1	Primary	14.50'	**12.0" Round Culvert** L= 62.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 14.50' / 14.15' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	17.27'	**1.2" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	17.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.3 cfs @ 12.52 hrs HW=17.57' (Free Discharge)
└**1=Culvert** (Passes 0.3 cfs of 5.3 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.0 cfs @ 2.41 fps)
  └**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.86 fps)

Pond 2P: Porous Pavement Outlet



Hydrograph for Pond 2P: Porous Pavement Outlet

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	17.27	0.0
2.00	0.0	3	17.27	0.0
4.00	0.0	24	17.28	0.0
6.00	0.0	58	17.30	0.0
8.00	0.0	106	17.33	0.0
10.00	0.0	188	17.37	0.0
12.00	**0.3**	**494**	**17.54**	**0.1**
14.00	0.0	**432**	**17.51**	**0.0**
16.00	0.0	418	17.50	0.0
18.00	0.0	385	17.48	0.0
20.00	0.0	335	17.45	0.0
22.00	0.0	285	17.43	0.0
24.00	0.0	238	17.40	0.0
26.00	0.0	173	17.36	0.0
28.00	0.0	125	17.34	0.0
30.00	0.0	96	17.32	0.0
32.00	0.0	76	17.31	0.0
34.00	0.0	62	17.30	0.0
36.00	0.0	52	17.30	0.0
38.00	0.0	45	17.29	0.0
40.00	0.0	39	17.29	0.0
42.00	0.0	34	17.29	0.0
44.00	0.0	29	17.29	0.0
46.00	0.0	25	17.28	0.0
48.00	0.0	22	17.28	0.0
50.00	0.0	19	17.28	0.0
52.00	0.0	17	17.28	0.0
54.00	0.0	14	17.28	0.0
56.00	0.0	12	17.28	0.0
58.00	0.0	11	17.28	0.0
60.00	0.0	9	17.28	0.0
62.00	0.0	8	17.27	0.0
64.00	0.0	7	17.27	0.0
66.00	0.0	6	17.27	0.0
68.00	0.0	5	17.27	0.0
70.00	0.0	5	17.27	0.0
72.00	0.0	4	17.27	0.0

Stage-Discharge for Pond 2P: Porous Pavement Outlet

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
17.27	0.0	18.29	6.0	19.31	6.9
17.29	0.0	18.31	6.0	19.33	6.9
17.31	0.0	18.33	6.0	19.35	6.9
17.33	0.0	18.35	6.1	19.37	7.0
17.35	0.0	18.37	6.1	19.39	7.0
17.37	0.0	18.39	6.1	19.41	7.0
17.39	0.0	18.41	6.1	19.43	7.0
17.41	0.0	18.43	6.1	19.45	7.0
17.43	0.0	18.45	6.2	19.47	7.0
17.45	0.0	18.47	6.2	19.49	7.1
17.47	0.0	18.49	6.2	19.51	7.1
17.49	0.0	18.51	6.2	19.53	7.1
17.51	0.0	18.53	6.2	19.55	7.1
17.53	0.1	18.55	6.2	19.57	7.1
17.55	0.2	18.57	6.3	19.59	7.1
17.57	0.3	18.59	6.3	19.61	7.2
17.59	0.4	18.61	6.3	19.63	7.2
17.61	0.5	18.63	6.3	19.65	7.2
17.63	0.6	18.65	6.3	19.67	7.2
17.65	0.8	18.67	6.4	19.69	7.2
17.67	0.9	18.69	6.4	19.71	7.2
17.69	1.1	18.71	6.4	19.73	7.3
17.71	1.3	18.73	6.4	19.75	7.3
17.73	1.5	18.75	6.4	19.77	7.3
17.75	1.6	18.77	6.4	19.79	7.3
17.77	1.8	18.79	6.5	19.81	7.3
17.79	2.0	18.81	6.5	19.83	7.3
17.81	2.2	18.83	6.5	19.85	7.3
17.83	2.5	18.85	6.5	19.87	7.4
17.85	2.7	18.87	6.5	19.89	7.4
17.87	2.9	18.89	6.6	19.91	7.4
17.89	3.2	18.91	6.6	19.93	7.4
17.91	3.4	18.93	6.6	19.95	7.4
17.93	3.6	18.95	6.6	19.97	7.4
17.95	3.9	18.97	6.6	19.99	7.5
17.97	4.1	18.99	6.6	20.01	7.5
17.99	4.4	19.01	6.7	20.03	**7.5**
18.01	4.7	19.03	6.7		
18.03	4.9	19.05	6.7		
18.05	5.2	19.07	6.7		
18.07	5.5	19.09	6.7		
18.09	5.8	19.11	6.7		
18.11	5.8	19.13	6.8		
18.13	5.8	19.15	6.8		
18.15	5.9	19.17	6.8		
18.17	5.9	19.19	6.8		
18.19	5.9	19.21	6.8		
18.21	5.9	19.23	6.8		
18.23	5.9	19.25	6.9		
18.25	6.0	19.27	6.9		
18.27	6.0	19.29	6.9		

Stage-Area-Storage for Pond 2P: Porous Pavement Outlet

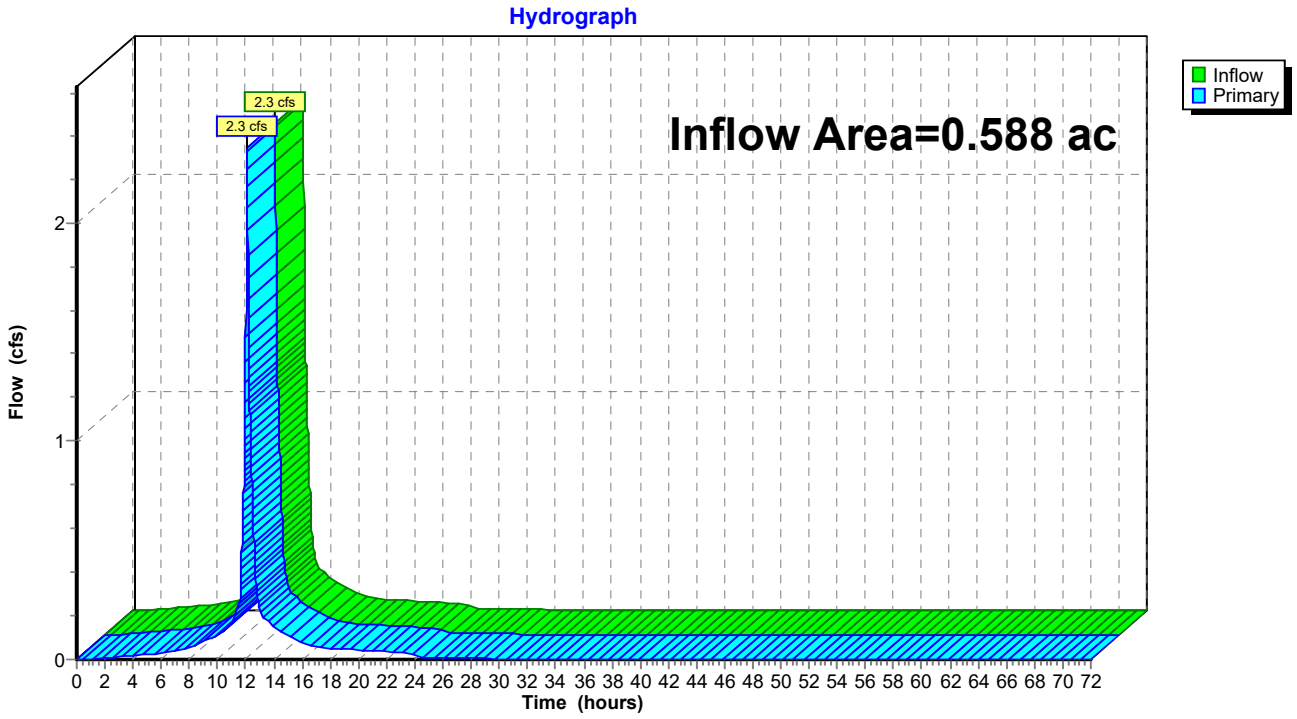
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
17.27	0	18.29	1,830	19.31	1,843
17.29	36	18.31	1,830	19.33	1,843
17.31	73	18.33	1,831	19.35	1,843
17.33	109	18.35	1,831	19.37	1,844
17.35	146	18.37	1,831	19.39	1,844
17.37	182	18.39	1,831	19.41	1,844
17.39	218	18.41	1,832	19.43	1,844
17.41	255	18.43	1,832	19.45	1,845
17.43	291	18.45	1,832	19.47	1,845
17.45	327	18.47	1,832	19.49	1,845
17.47	364	18.49	1,833	19.51	1,845
17.49	400	18.51	1,833	19.53	1,846
17.51	437	18.53	1,833	19.55	1,846
17.53	473	18.55	1,833	19.57	1,846
17.55	509	18.57	1,834	19.59	1,846
17.57	546	18.59	1,834	19.61	1,847
17.59	582	18.61	1,834	19.63	1,847
17.61	619	18.63	1,834	19.65	1,847
17.63	655	18.65	1,835	19.67	1,847
17.65	692	18.67	1,835	19.69	1,848
17.67	729	18.69	1,835	19.71	1,848
17.69	766	18.71	1,835	19.73	1,848
17.71	804	18.73	1,836	19.75	1,848
17.73	841	18.75	1,836	19.77	1,849
17.75	878	18.77	1,836	19.79	1,849
17.77	915	18.79	1,836	19.81	1,849
17.79	952	18.81	1,837	19.83	1,849
17.81	989	18.83	1,837	19.85	1,850
17.83	1,027	18.85	1,837	19.87	1,850
17.85	1,064	18.87	1,837	19.89	1,850
17.87	1,101	18.89	1,838	19.91	1,850
17.89	1,138	18.91	1,838	19.93	1,851
17.91	1,175	18.93	1,838	19.95	1,851
17.93	1,211	18.95	1,838	19.97	1,851
17.95	1,248	18.97	1,839	19.99	1,851
17.97	1,284	18.99	1,839	20.01	1,852
17.99	1,320	19.01	1,839	20.03	**1,852**
18.01	1,357	19.03	1,839		
18.03	1,393	19.05	1,840		
18.05	1,430	19.07	1,840		
18.07	1,466	19.09	1,840		
18.09	1,502	19.11	1,840		
18.11	1,539	19.13	1,841		
18.13	1,575	19.15	1,841		
18.15	1,612	19.17	1,841		
18.17	1,648	19.19	1,841		
18.19	1,684	19.21	1,842		
18.21	1,721	19.23	1,842		
18.23	1,757	19.25	1,842		
18.25	1,793	19.27	1,842		
18.27	1,830	19.29	1,843		

Summary for Link DP-1: Park Avenue

Inflow Area = 0.588 ac,100.00% Impervious, Inflow Depth = 4.36" for 10-YR event
Inflow = 2.3 cfs @ 12.09 hrs, Volume= 0.214 af
Primary = 2.3 cfs @ 12.09 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP-1: Park Avenue



Hydrograph for Link DP-1: Park Avenue

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.0	**0.00**	0.0	51.00	0.0	0.00	0.0
1.00	0.0	0.00	0.0	52.00	0.0	0.00	0.0
2.00	0.0	0.00	0.0	53.00	0.0	0.00	0.0
3.00	0.0	0.00	0.0	54.00	0.0	0.00	0.0
4.00	0.0	0.00	0.0	55.00	0.0	0.00	0.0
5.00	0.0	0.00	0.0	56.00	0.0	0.00	0.0
6.00	0.0	0.00	0.0	57.00	0.0	0.00	0.0
7.00	0.0	0.00	0.0	58.00	0.0	0.00	0.0
8.00	0.1	0.00	0.1	59.00	0.0	0.00	0.0
9.00	0.1	0.00	0.1	60.00	0.0	0.00	0.0
10.00	0.1	0.00	0.1	61.00	0.0	0.00	0.0
11.00	0.2	0.00	0.2	62.00	0.0	0.00	0.0
12.00	**1.5**	0.00	**1.5**	63.00	0.0	0.00	0.0
13.00	**0.2**	0.00	**0.2**	64.00	0.0	0.00	0.0
14.00	0.1	0.00	0.1	65.00	0.0	0.00	0.0
15.00	0.1	0.00	0.1	66.00	0.0	0.00	0.0
16.00	0.1	0.00	0.1	67.00	0.0	0.00	0.0
17.00	0.1	0.00	0.1	68.00	0.0	0.00	0.0
18.00	0.1	0.00	0.1	69.00	0.0	0.00	0.0
19.00	0.0	0.00	0.0	70.00	0.0	0.00	0.0
20.00	0.0	0.00	0.0	71.00	0.0	0.00	0.0
21.00	0.0	0.00	0.0	72.00	0.0	0.00	0.0
22.00	0.0	0.00	0.0				
23.00	0.0	0.00	0.0				
24.00	0.0	0.00	0.0				
25.00	0.0	0.00	0.0				
26.00	0.0	0.00	0.0				
27.00	0.0	0.00	0.0				
28.00	0.0	0.00	0.0				
29.00	0.0	0.00	0.0				
30.00	0.0	0.00	0.0				
31.00	0.0	0.00	0.0				
32.00	0.0	0.00	0.0				
33.00	0.0	0.00	0.0				
34.00	0.0	0.00	0.0				
35.00	0.0	0.00	0.0				
36.00	0.0	0.00	0.0				
37.00	0.0	0.00	0.0				
38.00	0.0	0.00	0.0				
39.00	0.0	0.00	0.0				
40.00	0.0	0.00	0.0				
41.00	0.0	0.00	0.0				
42.00	0.0	0.00	0.0				
43.00	0.0	0.00	0.0				
44.00	0.0	0.00	0.0				
45.00	0.0	0.00	0.0				
46.00	0.0	0.00	0.0				
47.00	0.0	0.00	0.0				
48.00	0.0	0.00	0.0				
49.00	0.0	0.00	0.0				
50.00	0.0	0.00	0.0				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=0.476 ac 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=2.7 cfs 0.221 af

Subcatchment PR-2: Porous Pavement Runoff Area=0.111 ac 100.00% Impervious Runoff Depth=5.56"
Tc=6.0 min CN=98 Runoff=0.6 cfs 0.052 af

Pond 1P: Porous Pavement Peak Elev=18.73' Storage=228 cf Inflow=0.6 cfs 0.052 af
Outflow=0.3 cfs 0.052 af

Pond 2P: Porous Pavement Outlet Peak Elev=17.57' Storage=545 cf Inflow=0.3 cfs 0.052 af
Outflow=0.3 cfs 0.051 af

Link DP-1: Park Avenue Inflow=3.0 cfs 0.272 af
Primary=3.0 cfs 0.272 af

Total Runoff Area = 0.588 ac Runoff Volume = 0.272 af Average Runoff Depth = 5.56"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.588 ac

Summary for Subcatchment PR-1: Subcat PR-1

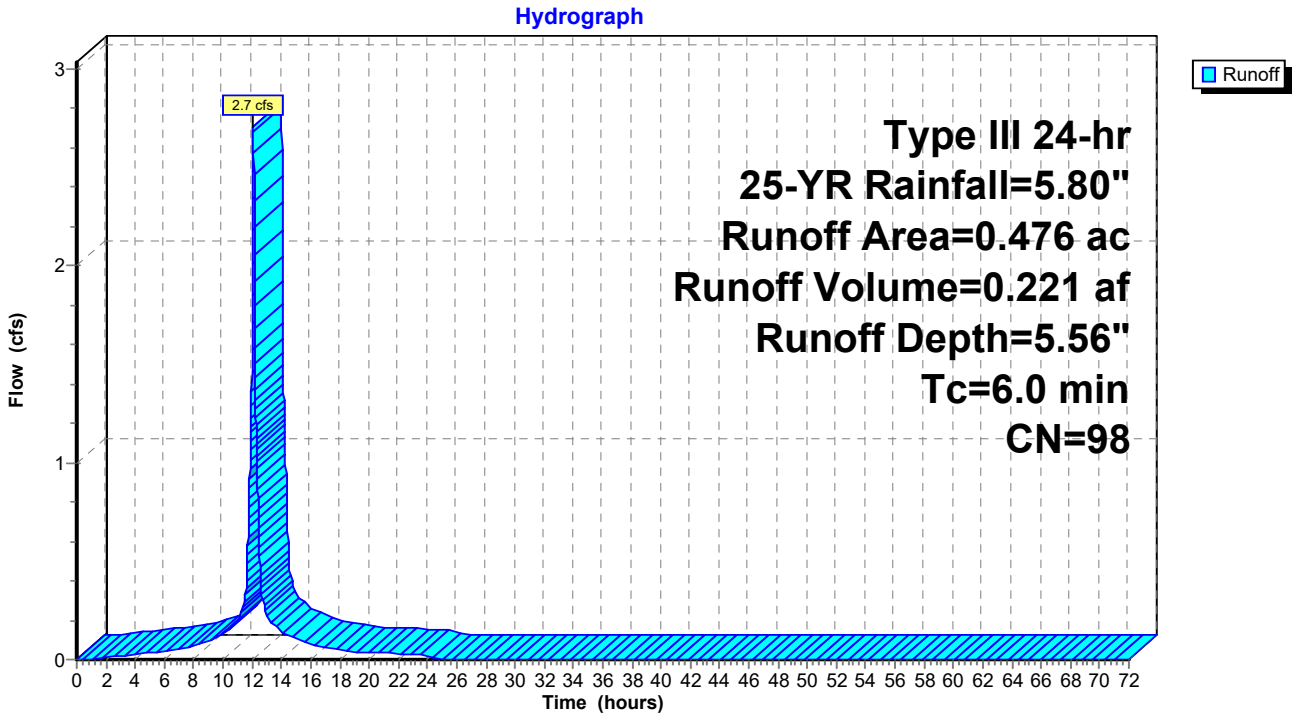
Runoff = 2.7 cfs @ 12.08 hrs, Volume= 0.221 af, Depth= 5.56"
Routed to Link DP-1 : Park Avenue

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (ac)	CN	Description
0.004	98	Unconnected pavement, HSG A
0.007	98	Unconnected pavement, HSG A
0.011	98	Unconnected pavement, HSG A
0.060	98	Roofs, HSG A
0.232	98	Roofs, HSG A
0.163	98	Paved parking, HSG A
0.476	98	Weighted Average
0.476		100.00% Impervious Area
0.021		4.49% Unconnected

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

Subcatchment PR-1: Subcat PR-1



Hydrograph for Subcatchment PR-1: Subcat PR-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.06	0.00	0.0
2.00	0.12	0.02	0.0
3.00	0.18	0.06	0.0
4.00	0.25	0.11	0.0
5.00	0.33	0.17	0.0
6.00	0.42	0.24	0.0
7.00	0.52	0.34	0.1
8.00	0.66	0.47	0.1
9.00	0.85	0.64	0.1
10.00	1.10	0.88	0.1
11.00	1.45	1.23	0.2
12.00	2.90	2.67	**1.7**
13.00	4.35	4.11	**0.2**
14.00	4.70	4.47	0.1
15.00	4.95	4.72	0.1
16.00	5.14	4.90	0.1
17.00	5.28	5.04	0.1
18.00	5.38	5.15	0.0
19.00	5.47	5.23	0.0
20.00	5.55	5.31	0.0
21.00	5.62	5.39	0.0
22.00	5.69	5.45	0.0
23.00	5.75	5.51	0.0
24.00	**5.80**	**5.56**	0.0
25.00	5.80	5.56	0.0
26.00	5.80	5.56	0.0
27.00	5.80	5.56	0.0
28.00	5.80	5.56	0.0
29.00	5.80	5.56	0.0
30.00	5.80	5.56	0.0
31.00	5.80	5.56	0.0
32.00	5.80	5.56	0.0
33.00	5.80	5.56	0.0
34.00	5.80	5.56	0.0
35.00	5.80	5.56	0.0
36.00	5.80	5.56	0.0
37.00	5.80	5.56	0.0
38.00	5.80	5.56	0.0
39.00	5.80	5.56	0.0
40.00	5.80	5.56	0.0
41.00	5.80	5.56	0.0
42.00	5.80	5.56	0.0
43.00	5.80	5.56	0.0
44.00	5.80	5.56	0.0
45.00	5.80	5.56	0.0
46.00	5.80	5.56	0.0
47.00	5.80	5.56	0.0
48.00	5.80	5.56	0.0
49.00	5.80	5.56	0.0
50.00	5.80	5.56	0.0
51.00	5.80	5.56	0.0
52.00	5.80	5.56	0.0
53.00	5.80	5.56	0.0
54.00	5.80	5.56	0.0
55.00	5.80	5.56	0.0
56.00	5.80	5.56	0.0
57.00	5.80	5.56	0.0
58.00	5.80	5.56	0.0
59.00	5.80	5.56	0.0
60.00	5.80	5.56	0.0
61.00	5.80	5.56	0.0
62.00	5.80	5.56	0.0
63.00	5.80	5.56	0.0
64.00	5.80	5.56	0.0
65.00	5.80	5.56	0.0
66.00	5.80	5.56	0.0
67.00	5.80	5.56	0.0
68.00	5.80	5.56	0.0
69.00	5.80	5.56	0.0
70.00	5.80	5.56	0.0
71.00	5.80	5.56	0.0
72.00	5.80	5.56	0.0

Summary for Subcatchment PR-2: Porous Pavement

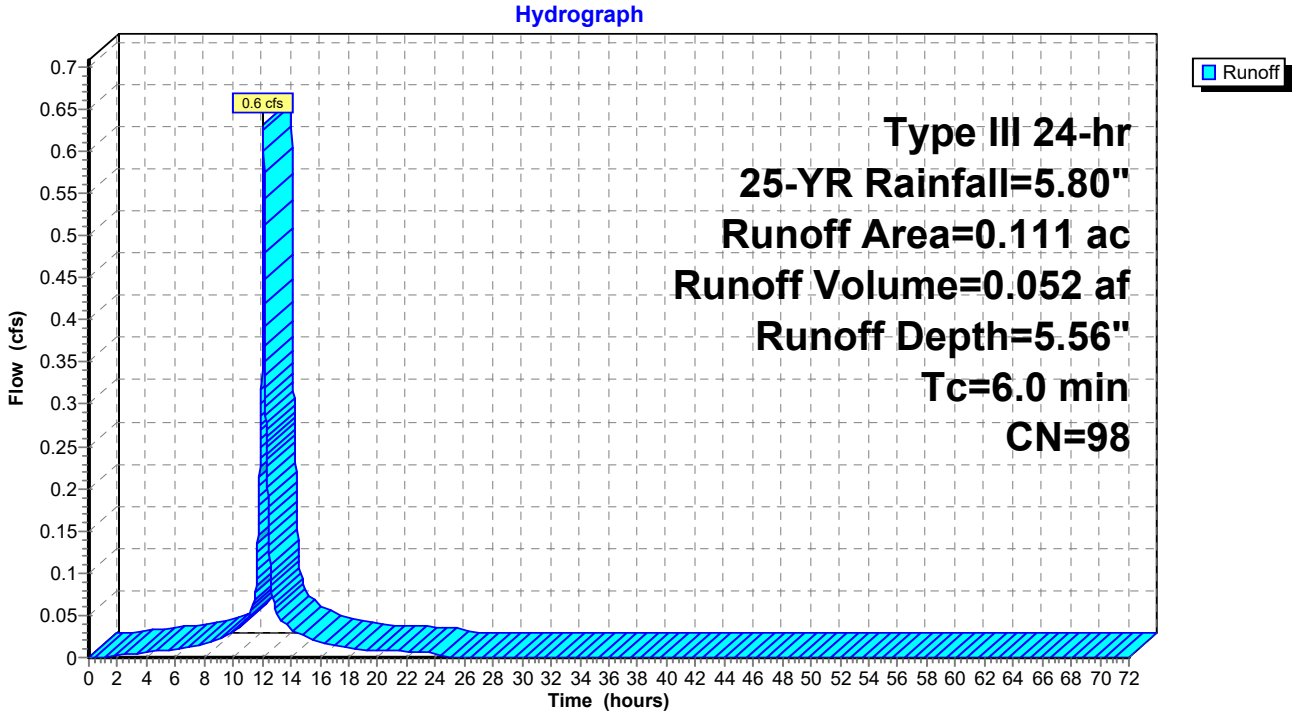
Runoff = 0.6 cfs @ 12.08 hrs, Volume= 0.052 af, Depth= 5.56"
Routed to Pond 1P : Porous Pavement

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-YR Rainfall=5.80"

Area (ac)	CN	Description
0.000	39	>75% Grass cover, Good, HSG A
0.007	98	Unconnected pavement, HSG A
0.104	98	Paved parking, HSG A
0.111	98	Weighted Average
0.000		0.00% Pervious Area
0.111		100.00% Impervious Area
0.007		6.73% Unconnected

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

Subcatchment PR-2: Porous Pavement



Hydrograph for Subcatchment PR-2: Porous Pavement

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.0
1.00	0.06	0.00	0.0
2.00	0.12	0.02	0.0
3.00	0.18	0.06	0.0
4.00	0.25	0.11	0.0
5.00	0.33	0.17	0.0
6.00	0.42	0.24	0.0
7.00	0.52	0.34	0.0
8.00	0.66	0.47	0.0
9.00	0.85	0.64	0.0
10.00	1.10	0.88	0.0
11.00	1.45	1.23	0.0
12.00	2.90	2.67	**0.4**
13.00	4.35	4.11	**0.1**
14.00	4.70	4.47	0.0
15.00	4.95	4.72	0.0
16.00	5.14	4.90	0.0
17.00	5.28	5.04	0.0
18.00	5.38	5.15	0.0
19.00	5.47	5.23	0.0
20.00	5.55	5.31	0.0
21.00	5.62	5.39	0.0
22.00	5.69	5.45	0.0
23.00	5.75	5.51	0.0
24.00	**5.80**	**5.56**	0.0
25.00	5.80	5.56	0.0
26.00	5.80	5.56	0.0
27.00	5.80	5.56	0.0
28.00	5.80	5.56	0.0
29.00	5.80	5.56	0.0
30.00	5.80	5.56	0.0
31.00	5.80	5.56	0.0
32.00	5.80	5.56	0.0
33.00	5.80	5.56	0.0
34.00	5.80	5.56	0.0
35.00	5.80	5.56	0.0
36.00	5.80	5.56	0.0
37.00	5.80	5.56	0.0
38.00	5.80	5.56	0.0
39.00	5.80	5.56	0.0
40.00	5.80	5.56	0.0
41.00	5.80	5.56	0.0
42.00	5.80	5.56	0.0
43.00	5.80	5.56	0.0
44.00	5.80	5.56	0.0
45.00	5.80	5.56	0.0
46.00	5.80	5.56	0.0
47.00	5.80	5.56	0.0
48.00	5.80	5.56	0.0
49.00	5.80	5.56	0.0
50.00	5.80	5.56	0.0
51.00	5.80	5.56	0.0
52.00	5.80	5.56	0.0
53.00	5.80	5.56	0.0
54.00	5.80	5.56	0.0
55.00	5.80	5.56	0.0
56.00	5.80	5.56	0.0
57.00	5.80	5.56	0.0
58.00	5.80	5.56	0.0
59.00	5.80	5.56	0.0
60.00	5.80	5.56	0.0
61.00	5.80	5.56	0.0
62.00	5.80	5.56	0.0
63.00	5.80	5.56	0.0
64.00	5.80	5.56	0.0
65.00	5.80	5.56	0.0
66.00	5.80	5.56	0.0
67.00	5.80	5.56	0.0
68.00	5.80	5.56	0.0
69.00	5.80	5.56	0.0
70.00	5.80	5.56	0.0
71.00	5.80	5.56	0.0
72.00	5.80	5.56	0.0

Summary for Pond 1P: Porous Pavement

Inflow Area = 0.111 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.6 cfs @ 12.08 hrs, Volume= 0.052 af
Outflow = 0.3 cfs @ 11.94 hrs, Volume= 0.052 af, Atten= 59%, Lag= 0.0 min
Primary = 0.3 cfs @ 11.94 hrs, Volume= 0.052 af
Routed to Pond 2P : Porous Pavement Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 18.73' @ 12.28 hrs Surf.Area= 4,517 sf Storage= 228 cf

Plug-Flow detention time= 3.9 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 3.9 min (749.5 - 745.7)

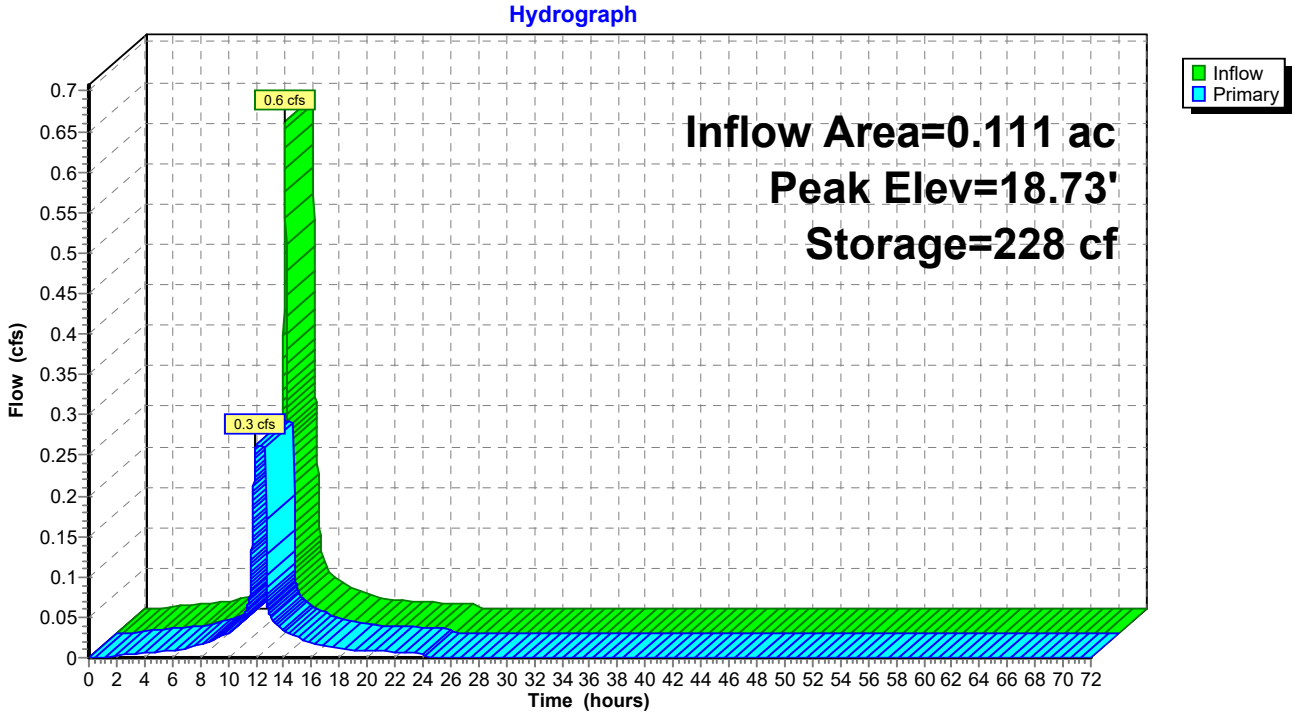
Volume	Invert	Avail.Storage	Storage Description
#1	18.60'	1,807 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,517 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
18.60	4,517	541.7	0	0	4,517
19.60	4,517	541.7	4,517	4,517	5,059

Device	Routing	Invert	Outlet Devices
#1	Primary	18.60'	**2.500 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.3 cfs @ 11.94 hrs HW=18.61' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.3 cfs)

Pond 1P: Porous Pavement



Hydrograph for Pond 1P: Porous Pavement

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	18.60	0.0
2.00	0.0	0	18.60	0.0
4.00	0.0	0	18.60	0.0
6.00	0.0	1	18.60	0.0
8.00	0.0	1	18.60	0.0
10.00	0.0	2	18.60	**0.0**
12.00	**0.4**	**32**	**18.62**	**0.3**
14.00	**0.0**	**2**	**18.60**	0.0
16.00	0.0	1	18.60	0.0
18.00	0.0	1	18.60	0.0
20.00	0.0	1	18.60	0.0
22.00	0.0	0	18.60	0.0
24.00	0.0	0	18.60	0.0
26.00	0.0	0	18.60	0.0
28.00	0.0	0	18.60	0.0
30.00	0.0	0	18.60	0.0
32.00	0.0	0	18.60	0.0
34.00	0.0	0	18.60	0.0
36.00	0.0	0	18.60	0.0
38.00	0.0	0	18.60	0.0
40.00	0.0	0	18.60	0.0
42.00	0.0	0	18.60	0.0
44.00	0.0	0	18.60	0.0
46.00	0.0	0	18.60	0.0
48.00	0.0	0	18.60	0.0
50.00	0.0	0	18.60	0.0
52.00	0.0	0	18.60	0.0
54.00	0.0	0	18.60	0.0
56.00	0.0	0	18.60	0.0
58.00	0.0	0	18.60	0.0
60.00	0.0	0	18.60	0.0
62.00	0.0	0	18.60	0.0
64.00	0.0	0	18.60	0.0
66.00	0.0	0	18.60	0.0
68.00	0.0	0	18.60	0.0
70.00	0.0	0	18.60	0.0
72.00	0.0	0	18.60	0.0

Stage-Discharge for Pond 1P: Porous Pavement

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
18.60	0.0	19.11	0.3
18.61	**0.3**	19.12	0.3
18.62	0.3	19.13	0.3
18.63	0.3	19.14	0.3
18.64	0.3	19.15	0.3
18.65	0.3	19.16	0.3
18.66	0.3	19.17	0.3
18.67	0.3	19.18	0.3
18.68	0.3	19.19	0.3
18.69	0.3	19.20	0.3
18.70	0.3	19.21	0.3
18.71	0.3	19.22	0.3
18.72	0.3	19.23	0.3
18.73	0.3	19.24	0.3
18.74	0.3	19.25	0.3
18.75	0.3	19.26	0.3
18.76	0.3	19.27	0.3
18.77	0.3	19.28	0.3
18.78	0.3	19.29	0.3
18.79	0.3	19.30	0.3
18.80	0.3	19.31	0.3
18.81	0.3	19.32	0.3
18.82	0.3	19.33	0.3
18.83	0.3	19.34	0.3
18.84	0.3	19.35	0.3
18.85	0.3	19.36	0.3
18.86	0.3	19.37	0.3
18.87	0.3	19.38	0.3
18.88	0.3	19.39	0.3
18.89	0.3	19.40	0.3
18.90	0.3	19.41	0.3
18.91	0.3	19.42	0.3
18.92	0.3	19.43	0.3
18.93	0.3	19.44	0.3
18.94	0.3	19.45	0.3
18.95	0.3	19.46	0.3
18.96	0.3	19.47	0.3
18.97	0.3	19.48	0.3
18.98	0.3	19.49	0.3
18.99	0.3	19.50	0.3
19.00	0.3	19.51	0.3
19.01	0.3	19.52	0.3
19.02	0.3	19.53	0.3
19.03	0.3	19.54	0.3
19.04	0.3	19.55	0.3
19.05	0.3	19.56	0.3
19.06	0.3	19.57	0.3
19.07	0.3	19.58	0.3
19.08	0.3	19.59	0.3
19.09	0.3	19.60	0.3
19.10	0.3		

Stage-Area-Storage for Pond 1P: Porous Pavement

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.60	**4,517**	0	19.11	4,517	921
18.61	4,517	18	19.12	4,517	940
18.62	4,517	36	19.13	4,517	958
18.63	4,517	54	19.14	4,517	976
18.64	4,517	72	19.15	4,517	994
18.65	4,517	90	19.16	4,517	1,012
18.66	4,517	108	19.17	4,517	1,030
18.67	4,517	126	19.18	4,517	1,048
18.68	4,517	145	19.19	4,517	1,066
18.69	4,517	163	19.20	4,517	1,084
18.70	4,517	181	19.21	4,517	1,102
18.71	4,517	199	19.22	4,517	1,120
18.72	4,517	217	19.23	4,517	1,138
18.73	4,517	235	19.24	4,517	1,156
18.74	4,517	253	19.25	4,517	1,174
18.75	4,517	271	19.26	4,517	1,192
18.76	4,517	289	19.27	4,517	1,211
18.77	4,517	307	19.28	4,517	1,229
18.78	4,517	325	19.29	4,517	1,247
18.79	4,517	343	19.30	4,517	1,265
18.80	4,517	361	19.31	4,517	1,283
18.81	4,517	379	19.32	4,517	1,301
18.82	4,517	397	19.33	4,517	1,319
18.83	4,517	416	19.34	4,517	1,337
18.84	4,517	434	19.35	4,517	1,355
18.85	4,517	452	19.36	4,517	1,373
18.86	4,517	470	19.37	4,517	1,391
18.87	4,517	488	19.38	4,517	1,409
18.88	4,517	506	19.39	4,517	1,427
18.89	4,517	524	19.40	4,517	1,445
18.90	4,517	542	19.41	4,517	1,464
18.91	4,517	560	19.42	4,517	1,482
18.92	4,517	578	19.43	4,517	1,500
18.93	4,517	596	19.44	4,517	1,518
18.94	4,517	614	19.45	4,517	1,536
18.95	4,517	632	19.46	4,517	1,554
18.96	4,517	650	19.47	4,517	1,572
18.97	4,517	669	19.48	4,517	1,590
18.98	4,517	687	19.49	4,517	1,608
18.99	4,517	705	19.50	4,517	1,626
19.00	4,517	723	19.51	4,517	1,644
19.01	4,517	741	19.52	4,517	1,662
19.02	4,517	759	19.53	4,517	1,680
19.03	4,517	777	19.54	4,517	1,698
19.04	4,517	795	19.55	4,517	1,716
19.05	4,517	813	19.56	4,517	1,735
19.06	4,517	831	19.57	4,517	1,753
19.07	4,517	849	19.58	4,517	1,771
19.08	4,517	867	19.59	4,517	1,789
19.09	4,517	885	19.60	4,517	**1,807**
19.10	4,517	903			

Summary for Pond 2P: Porous Pavement Outlet

Inflow Area = 0.111 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 0.3 cfs @ 11.94 hrs, Volume= 0.052 af
Outflow = 0.3 cfs @ 12.74 hrs, Volume= 0.051 af, Atten= 0%, Lag= 48.0 min
Primary = 0.3 cfs @ 12.74 hrs, Volume= 0.051 af
Routed to Link DP-1 : Park Avenue

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 17.57' @ 12.74 hrs Surf.Area= 4,530 sf Storage= 545 cf

Plug-Flow detention time= 219.0 min calculated for 0.051 af (100% of inflow)
Center-of-Mass det. time= 218.1 min (967.6 - 749.5)

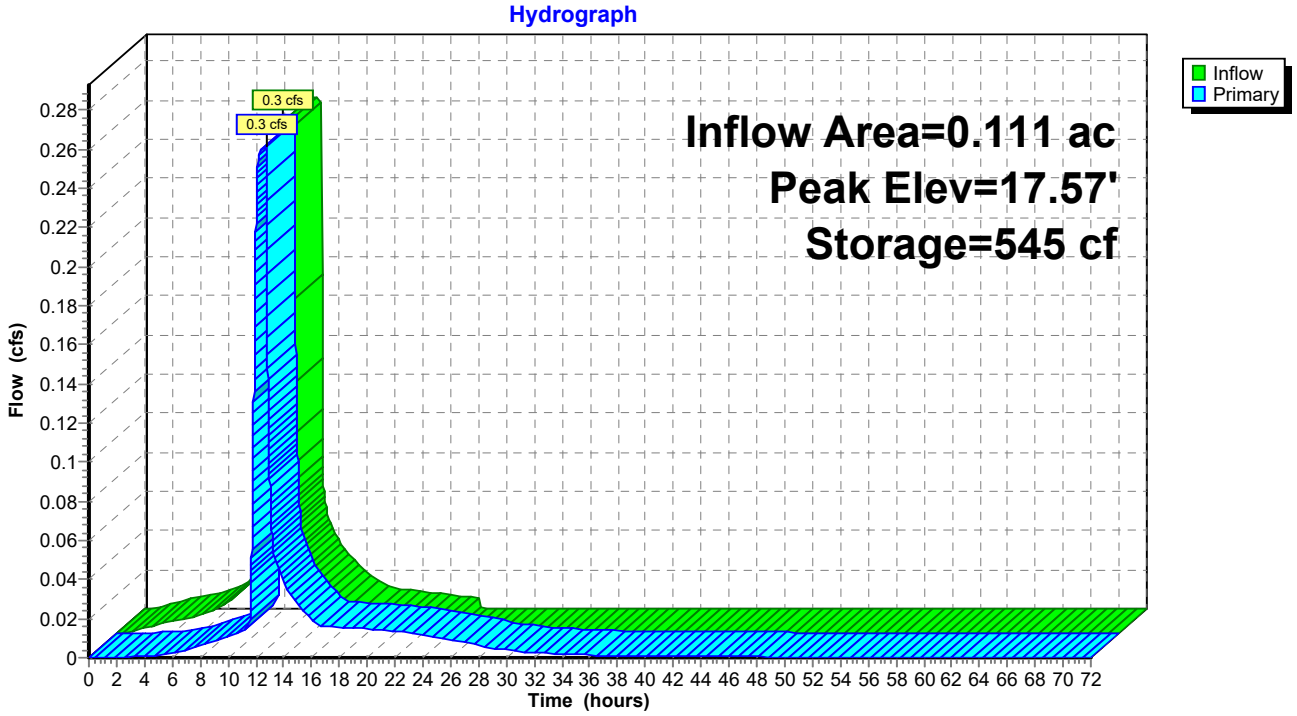
Volume	Invert	Avail.Storage	Storage Description
#1	17.27'	1,800 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,517 cf Overall - 17 cf Embedded = 4,500 cf x 40.0% Voids
#2	17.60'	17 cf	**4.0" Round Pipe Storage** Inside #1 L= 200.0'
#3	17.27'	35 cf	**4.00'D x 2.77'H Vertical Cone/Cylinder**
		1,852 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
17.27	4,517	541.7	0	0	4,517
18.27	4,517	541.7	4,517	4,517	5,059

Device	Routing	Invert	Outlet Devices
#1	Primary	14.50'	**12.0" Round Culvert** L= 62.4' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 14.50' / 14.15' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	17.27'	**1.2" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	17.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.3 cfs @ 12.74 hrs HW=17.57' (Free Discharge)
└**1=Culvert** (Passes 0.3 cfs of 5.3 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.0 cfs @ 2.41 fps)
  └**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.86 fps)

Pond 2P: Porous Pavement Outlet



Hydrograph for Pond 2P: Porous Pavement Outlet

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.0	0	17.27	0.0
2.00	0.0	7	17.27	0.0
4.00	0.0	37	17.29	0.0
6.00	0.0	81	17.31	0.0
8.00	0.0	139	17.35	0.0
10.00	**0.0**	241	17.40	0.0
12.00	**0.3**	**531**	**17.56**	**0.2**
14.00	0.0	**440**	**17.51**	**0.0**
16.00	0.0	422	17.50	0.0
18.00	0.0	404	17.49	0.0
20.00	0.0	364	17.47	0.0
22.00	0.0	319	17.45	0.0
24.00	0.0	273	17.42	0.0
26.00	0.0	199	17.38	0.0
28.00	0.0	143	17.35	0.0
30.00	0.0	107	17.33	0.0
32.00	0.0	83	17.32	0.0
34.00	0.0	67	17.31	0.0
36.00	0.0	56	17.30	0.0
38.00	0.0	48	17.30	0.0
40.00	0.0	42	17.29	0.0
42.00	0.0	36	17.29	0.0
44.00	0.0	31	17.29	0.0
46.00	0.0	27	17.28	0.0
48.00	0.0	23	17.28	0.0
50.00	0.0	20	17.28	0.0
52.00	0.0	18	17.28	0.0
54.00	0.0	15	17.28	0.0
56.00	0.0	13	17.28	0.0
58.00	0.0	11	17.28	0.0
60.00	0.0	10	17.28	0.0
62.00	0.0	9	17.27	0.0
64.00	0.0	7	17.27	0.0
66.00	0.0	6	17.27	0.0
68.00	0.0	6	17.27	0.0
70.00	0.0	5	17.27	0.0
72.00	0.0	4	17.27	0.0

Stage-Discharge for Pond 2P: Porous Pavement Outlet

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
17.27	0.0	18.29	6.0	19.31	6.9
17.29	0.0	18.31	6.0	19.33	6.9
17.31	0.0	18.33	6.0	19.35	6.9
17.33	0.0	18.35	6.1	19.37	7.0
17.35	0.0	18.37	6.1	19.39	7.0
17.37	0.0	18.39	6.1	19.41	7.0
17.39	0.0	18.41	6.1	19.43	7.0
17.41	0.0	18.43	6.1	19.45	7.0
17.43	0.0	18.45	6.2	19.47	7.0
17.45	0.0	18.47	6.2	19.49	7.1
17.47	0.0	18.49	6.2	19.51	7.1
17.49	0.0	18.51	6.2	19.53	7.1
17.51	0.0	18.53	6.2	19.55	7.1
17.53	0.1	18.55	6.2	19.57	7.1
17.55	0.2	18.57	6.3	19.59	7.1
17.57	0.3	18.59	6.3	19.61	7.2
17.59	0.4	18.61	6.3	19.63	7.2
17.61	0.5	18.63	6.3	19.65	7.2
17.63	0.6	18.65	6.3	19.67	7.2
17.65	0.8	18.67	6.4	19.69	7.2
17.67	0.9	18.69	6.4	19.71	7.2
17.69	1.1	18.71	6.4	19.73	7.3
17.71	1.3	18.73	6.4	19.75	7.3
17.73	1.5	18.75	6.4	19.77	7.3
17.75	1.6	18.77	6.4	19.79	7.3
17.77	1.8	18.79	6.5	19.81	7.3
17.79	2.0	18.81	6.5	19.83	7.3
17.81	2.2	18.83	6.5	19.85	7.3
17.83	2.5	18.85	6.5	19.87	7.4
17.85	2.7	18.87	6.5	19.89	7.4
17.87	2.9	18.89	6.6	19.91	7.4
17.89	3.2	18.91	6.6	19.93	7.4
17.91	3.4	18.93	6.6	19.95	7.4
17.93	3.6	18.95	6.6	19.97	7.4
17.95	3.9	18.97	6.6	19.99	7.5
17.97	4.1	18.99	6.6	20.01	7.5
17.99	4.4	19.01	6.7	20.03	**7.5**
18.01	4.7	19.03	6.7		
18.03	4.9	19.05	6.7		
18.05	5.2	19.07	6.7		
18.07	5.5	19.09	6.7		
18.09	5.8	19.11	6.7		
18.11	5.8	19.13	6.8		
18.13	5.8	19.15	6.8		
18.15	5.9	19.17	6.8		
18.17	5.9	19.19	6.8		
18.19	5.9	19.21	6.8		
18.21	5.9	19.23	6.8		
18.23	5.9	19.25	6.9		
18.25	6.0	19.27	6.9		
18.27	6.0	19.29	6.9		

Stage-Area-Storage for Pond 2P: Porous Pavement Outlet

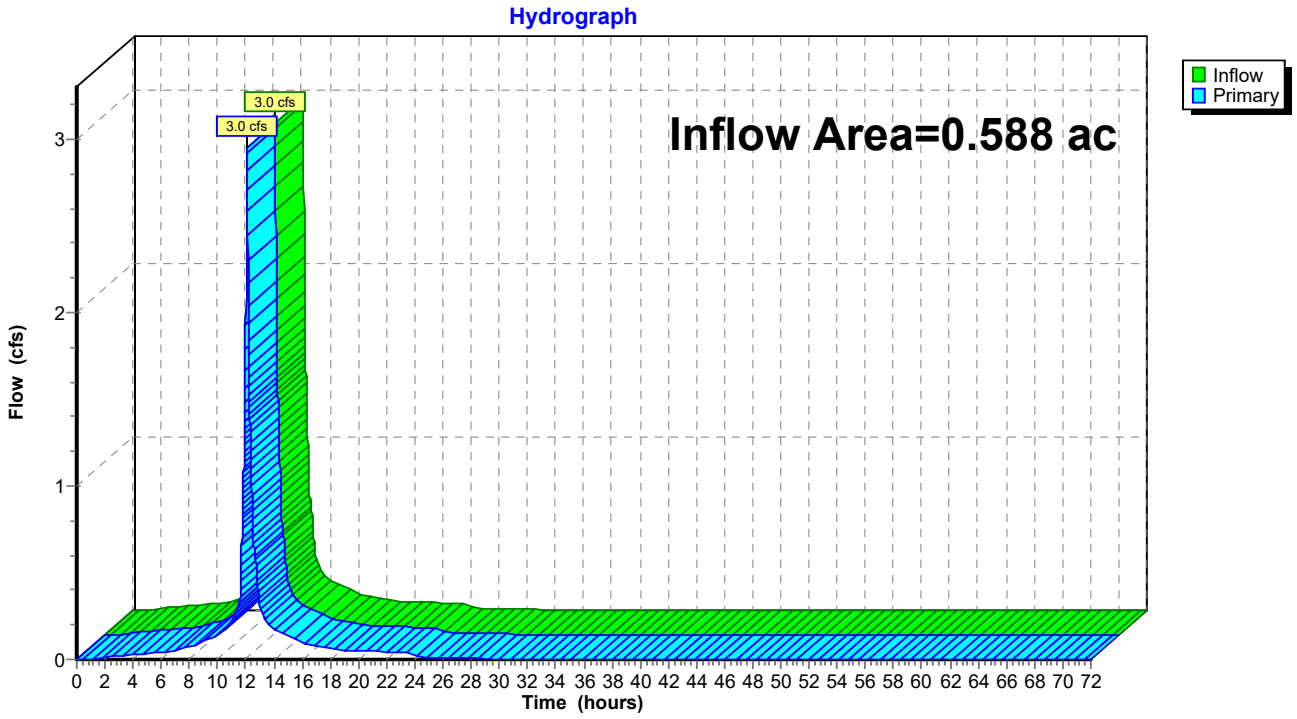
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
17.27	0	18.29	1,830	19.31	1,843
17.29	36	18.31	1,830	19.33	1,843
17.31	73	18.33	1,831	19.35	1,843
17.33	109	18.35	1,831	19.37	1,844
17.35	146	18.37	1,831	19.39	1,844
17.37	182	18.39	1,831	19.41	1,844
17.39	218	18.41	1,832	19.43	1,844
17.41	255	18.43	1,832	19.45	1,845
17.43	291	18.45	1,832	19.47	1,845
17.45	327	18.47	1,832	19.49	1,845
17.47	364	18.49	1,833	19.51	1,845
17.49	400	18.51	1,833	19.53	1,846
17.51	437	18.53	1,833	19.55	1,846
17.53	473	18.55	1,833	19.57	1,846
17.55	509	18.57	1,834	19.59	1,846
17.57	546	18.59	1,834	19.61	1,847
17.59	582	18.61	1,834	19.63	1,847
17.61	619	18.63	1,834	19.65	1,847
17.63	655	18.65	1,835	19.67	1,847
17.65	692	18.67	1,835	19.69	1,848
17.67	729	18.69	1,835	19.71	1,848
17.69	766	18.71	1,835	19.73	1,848
17.71	804	18.73	1,836	19.75	1,848
17.73	841	18.75	1,836	19.77	1,849
17.75	878	18.77	1,836	19.79	1,849
17.77	915	18.79	1,836	19.81	1,849
17.79	952	18.81	1,837	19.83	1,849
17.81	989	18.83	1,837	19.85	1,850
17.83	1,027	18.85	1,837	19.87	1,850
17.85	1,064	18.87	1,837	19.89	1,850
17.87	1,101	18.89	1,838	19.91	1,850
17.89	1,138	18.91	1,838	19.93	1,851
17.91	1,175	18.93	1,838	19.95	1,851
17.93	1,211	18.95	1,838	19.97	1,851
17.95	1,248	18.97	1,839	19.99	1,851
17.97	1,284	18.99	1,839	20.01	1,852
17.99	1,320	19.01	1,839	20.03	**1,852**
18.01	1,357	19.03	1,839		
18.03	1,393	19.05	1,840		
18.05	1,430	19.07	1,840		
18.07	1,466	19.09	1,840		
18.09	1,502	19.11	1,840		
18.11	1,539	19.13	1,841		
18.13	1,575	19.15	1,841		
18.15	1,612	19.17	1,841		
18.17	1,648	19.19	1,841		
18.19	1,684	19.21	1,842		
18.21	1,721	19.23	1,842		
18.23	1,757	19.25	1,842		
18.25	1,793	19.27	1,842		
18.27	1,830	19.29	1,843		

Summary for Link DP-1: Park Avenue

Inflow Area = 0.588 ac,100.00% Impervious, Inflow Depth = 5.56" for 25-YR event
Inflow = 3.0 cfs @ 12.08 hrs, Volume= 0.272 af
Primary = 3.0 cfs @ 12.08 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP-1: Park Avenue



Hydrograph for Link DP-1: Park Avenue

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.0	**0.00**	0.0	51.00	0.0	0.00	0.0
1.00	0.0	0.00	0.0	52.00	0.0	0.00	0.0
2.00	0.0	0.00	0.0	53.00	0.0	0.00	0.0
3.00	0.0	0.00	0.0	54.00	0.0	0.00	0.0
4.00	0.0	0.00	0.0	55.00	0.0	0.00	0.0
5.00	0.0	0.00	0.0	56.00	0.0	0.00	0.0
6.00	0.0	0.00	0.0	57.00	0.0	0.00	0.0
7.00	0.1	0.00	0.1	58.00	0.0	0.00	0.0
8.00	0.1	0.00	0.1	59.00	0.0	0.00	0.0
9.00	0.1	0.00	0.1	60.00	0.0	0.00	0.0
10.00	0.1	0.00	0.1	61.00	0.0	0.00	0.0
11.00	0.2	0.00	0.2	62.00	0.0	0.00	0.0
12.00	**1.9**	0.00	**1.9**	63.00	0.0	0.00	0.0
13.00	**0.3**	0.00	**0.3**	64.00	0.0	0.00	0.0
14.00	0.2	0.00	0.2	65.00	0.0	0.00	0.0
15.00	0.1	0.00	0.1	66.00	0.0	0.00	0.0
16.00	0.1	0.00	0.1	67.00	0.0	0.00	0.0
17.00	0.1	0.00	0.1	68.00	0.0	0.00	0.0
18.00	0.1	0.00	0.1	69.00	0.0	0.00	0.0
19.00	0.1	0.00	0.1	70.00	0.0	0.00	0.0
20.00	0.1	0.00	0.1	71.00	0.0	0.00	0.0
21.00	0.0	0.00	0.0	72.00	0.0	0.00	0.0
22.00	0.0	0.00	0.0				
23.00	0.0	0.00	0.0				
24.00	0.0	0.00	0.0				
25.00	0.0	0.00	0.0				
26.00	0.0	0.00	0.0				
27.00	0.0	0.00	0.0				
28.00	0.0	0.00	0.0				
29.00	0.0	0.00	0.0				
30.00	0.0	0.00	0.0				
31.00	0.0	0.00	0.0				
32.00	0.0	0.00	0.0				
33.00	0.0	0.00	0.0				
34.00	0.0	0.00	0.0				
35.00	0.0	0.00	0.0				
36.00	0.0	0.00	0.0				
37.00	0.0	0.00	0.0				
38.00	0.0	0.00	0.0				
39.00	0.0	0.00	0.0				
40.00	0.0	0.00	0.0				
41.00	0.0	0.00	0.0				
42.00	0.0	0.00	0.0				
43.00	0.0	0.00	0.0				
44.00	0.0	0.00	0.0				
45.00	0.0	0.00	0.0				
46.00	0.0	0.00	0.0				
47.00	0.0	0.00	0.0				
48.00	0.0	0.00	0.0				
49.00	0.0	0.00	0.0				
50.00	0.0	0.00	0.0				

Memorandum

Attachment C: Inspection and Maintenance Manual

Portland Sea Dogs Clubhouse Addition

271 Park Avenue
Portland, Maine 04102

PREPARED FOR

Portland Sea Dogs
271 Park Avenue
Portland, ME 04102
207.874.9300

PREPARED BY

500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

APRIL 30, 2024

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Introduction

VHB has prepared the following Stormwater Management System Inspection & Maintenance Manual and Spill Response Procedures for the Portland Sea Dogs clubhouse addition located at 271 Park Avenue, Portland, Maine. The Site primarily drains to the south, primarily towards the adjacent Park Avenue roadway which is collected by existing catch basins and flows south. The intent of this plan is to provide the applicant/owner with a list of procedures that document the inspection and maintenance requirements and spill procedures for this development.

Inspection & Maintenance

The following inspection and maintenance program is necessary to keep the Stormwater Management System functioning properly. By following the enclosed procedures, the applicant will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

Pavement Systems

Standard Asphalt Pavement

› Sweep or vacuum standard asphalt pavement areas at least four times per year with a rotary brush sweeper, vacuum or regenerative air sweeper [select based on TSS credit required] and properly dispose of removed material.

› Recommended sweeping schedule:

› Oct/Nov

› Feb/Mar

› Apr/May

› Aug/Sep

› More frequent sweeping of paved surfaces will result in less accumulation in catch basins, less cleaning of subsurface structures, and less disposal costs.

› Check loading docks and dumpster areas frequently for spillage and/or pavement staining and clean as necessary.

Porous Asphalt Pavement

Regular maintenance of the porous pavement will prevent premature failure of the drainage and water quality treatment benefits of the system. Any areas that drain to the porous pavement must be free from erosion. Heavy sediment loads in these areas can clog the pavement surface and result in premature failure.

Preventing Clogging of Porous Pavement Surfaces

› Vacuum pavement at least four times per year with a commercial cleaning unit (Schwarze Industries "A" series regenerative air sweeper or equivalent) and properly dispose of removed material.

› The use of pavement washing systems or compressed air units is not recommended as it may result in diminished permeability.

› Maintain vegetated areas adjacent to porous asphalt pavement to prevent washout of soil onto surface.

› Do not allow construction staging, soil/mulch storage, etc. on unprotected pavement surface. If necessary, place tarp or other impermeable material beneath the stockpiled materials and do not allow to runoff onto pavement.

› Do not apply any type of sealant to porous asphalt pavement.

Snow and Ice Removal

› Do not stockpile snow on pavement surface. Sand and grit in snow will clog pavement.

› Plow parking areas paved with porous asphalt pavement carefully. Plow blades should be set approximately 1" higher than usual to avoid scarring the pavement and loosening material that could potentially clog surface pores.

› Do not apply abrasives such as sand or grit on or adjacent to porous asphalt pavement.

› Monitor application rates of deicing materials and reduce application rate accordingly. Porous pavements tend to require less deicer per unit area because the water is not required to remain liquid over the entire parking surface area before discharge.

Inspecting the System

› Inspect areas paved with porous asphalt pavement monthly during the first three months following installation and annually thereafter.

› Inspect the porous pavement surface annually for deterioration or spalling. Annual inspections should take place after large storms, when puddles will make any clogging obvious

Repairing Damages

› Do not apply any type of sealant to porous asphalt pavement.

› Spot-clogging may be fixed by drilling 1.3 centimeter (half-inch) holes through the porous pavement layer every few feet.

› Damaged areas less than 50 square feet may be patched with porous or standard asphalt.

› Larger areas will be patched with approved porous asphalt.

› Repairs of drainage structures shall be completed promptly to ensure continued proper functioning of the system.

Catch Basins

The proper removal of sediments and associated pollutants and trash occurs only when catch basin inlets and sumps are cleaned out regularly. The more frequent the cleaning, the less likely sediments will be re-suspended and subsequently discharged. In addition, frequent cleaning also results in more volume available for future deposition and enhances the overall performance. As noted in the pavement Inspection and Maintenance (I&M) section, more frequent sweeping of paved surfaces will result in less accumulation in catch basins, less cleaning of subsurface structures, and less disposal costs.

There are four (4) catch basins at the Site. These catch basins are constructed with sumps (minimum 4 feet) and hooded outlets to trap debris, sediments, and floating contaminants. Disposal of all sediments must be in accordance with applicable local, state, and federal guidelines.

Inspections and Cleaning

› All catch basins shall be inspected at least four times per year and cleaned a minimum of at least once per year.

› Sediment (if more than six inches deep) and/or floatable pollutants shall be pumped from the basin and disposed of at an approved offsite facility in accordance with all applicable regulations.

› Any structural damage or other indication of malfunction will be reported to the site manager and repaired as necessary

› During colder periods, the catch basin grates must be kept free of snow and ice.

› During warmer periods, the catch basin grates must be kept free of leaves, litter, sand, and debris.

Roof Drain Leader

Roof runoff from buildings and parking areas (description or name of contributing areas) at Project Name are directed to the rain garden units and to the subsurface infiltration units.

› Perform routine roof inspections quarterly.

› Keep roofs clean and free of debris.

› Keep roof drainage systems clear.

› Keep roof access limited to authorized personnel.

› Clean inlets twice per year or as necessary.

During Construction

The following procedures shall be implemented during construction. The Contractor shall adhere to the Erosion and Sediment Control (ESC) Plan associated with the Maine Construction General Permit (MCGP).

Erosion and Sediment Control Plan

- Impervious area, erosion control measures, materials storage areas exposed to precipitation and construction exits shall be inspected, at a minimum, once a week. Additional inspections shall be performed before and within 24 hours after a rainfall event and prior to permanent stabilization.
- BMPs shall be repaired upon discovery of problem and no later than the end of the next working day.
- Significant repairs to BMPs shall be completed within 7 calendar days and prior to a rainfall event.
- A Construction Inspection & Maintenance Log shall be completed for each inspection and maintenance activity.
- Inspection shall be performed by a person with knowledge of erosion and stormwater control which include the standards and conditions in the permit.
- The Inspection & Maintenance Logs shall be accessible to the Maine Department of Environmental Protection staff and a copy shall be provided upon request.
- The permittee shall retain copies of the logs for a period of at least three years from the completion of permanent stabilization.

Post-Construction

The following procedures shall be implemented after construction. The Inspection & Maintenance Plan does not include items and requirements specifically associated with the equipment located on the concrete pads.

Inspection & Maintenance Plan

By implementing the following procedures, the applicant will be able to maintain the functional design of the Stormwater Management System and maximize the system's ability to remove sediment and other contaminants from site generated stormwater runoff.

Regular Maintenance

- Routinely pick up and remove litter from the access road and gravel areas.
- Remove all trash litter from the access road and dispose of properly.

Vegetated Areas

- Inspect two times per year in Spring and Late Fall.
- Armor eroded areas or divert runoff to stabilized areas.
- Mow vegetation no more than twice in a 12-month period.

Record Keeping

- Inspections of the stormwater management system shall be conducted in accordance with the Inspection & Maintenance Checklist provided in this Manual.
- A Post-Construction Inspection & Maintenance Log shall be completed for each inspection and maintenance activity.
- Inspection shall be performed by a person with knowledge of erosion and stormwater control which include the standards and conditions in the permit.
- The Inspection & Maintenance Logs shall be accessible to the Maine Department of Environmental Protection staff and a copy shall be provided upon request.
- The permittee shall retain copies of the logs for a period of at least three years from the completion of permanent stabilization.

Re-Certification

- Re-certification shall be submitted within three months of the expiration of each five-year interval from the date of issuance of the permit.
- Submission of re-certification shall include: Identification of repair and erosion problems, Inspection and repair of stormwater system, and evidence that the maintenance plan has been implemented and modifications approved by the City.

Duration of Maintenance

Maintenance as described in the Inspection & Maintenance Plan shall be performed by the Responsible Party unless and until the system is formally accepted by its successor, heirs and assigns, the City or other entity.

Inspection & Maintenance Checklist

The following pages contain an Inspection & Maintenance Checklists for Construction and Post-Construction requirements and a reduced copy of the Erosion and Sediment Control Plan and Detail Sheets. These forms/plans are provided to assist the applicant with the inspection and maintenance of the Stormwater Management System.

Stormwater Management System

Inspection & Maintenance Checklist - Construction

Best Management Practice	Inspection Frequency	Date Inspected	Inspector Initials	Minimum Maintenance and Key Items to Check	Cleaning or Repair Needed Yes/No (List Items)	Date of Cleaning or Repair	Performed by:
Silt Sock Erosion Control Barriers	Weekly and after rainfall ≥0.5"	/ /		Flow around or under barrier, Sediment build up >half barrier height, excessive sag, erosion			
Stone Checkdam	Weekly and after any rainfall	/ /		Sediment build up, broken barrier or stakes			
Stabilized Construction Exit	Weekly and after any rainfall	/ /		Filled voids, runoff/sediments into street			
Erosion Control Blanket	Weekly and after any rainfall	/ /		Cracking, erosion, breakout, sediment buildup			
Diversion Channels	Weekly and after any rainfall	/ /		Maintained, moved as necessary to correct locations, Check for erosion or breakout			
Temporary Sedimentation Basins	Weekly and after any rainfall	/ /		Cracking, erosion, breakout, sediment buildup, contaminants			
Materials Storage Areas	Weekly and after any rainfall	/ /		Maintained, spills, breakout			

Inspector Name and Qualifications _____

Stormwater Management System

Inspection & Maintenance Checklist – Post-Construction

Best Management Practice	Inspection Frequency	Date Inspected	Inspector Initials	Minimum Maintenance and Key Items to Check	Cleaning or Repair Needed Yes/No (List Items)	Date of Cleaning or Repair	Performed by:
Vegetated Areas, Swales and Slopes	Spring and Late Fall	/ /		Inspect for erosion and bare areas Remove trash and debris as necessary Armor or divert flow to stabilized areas. Mow no more than twice per 12 months.			
Porous Pavement	Spring and Late Fall. Clean as needed based on sediment accumulation	/ /		Inspect and repair erosion at inlets, outlets, and within basins Clean and dispose sediments and trash legally Replace dislodged stone or exposed filter fabric			

Inspector Name and Qualifications _____

Spill Response Procedure

Spill response procedure is limited to during the construction of the facility. Spill prevention equipment and training for post-construction operations will be provided by the property management company.

Initial Notification

In the event of a spill the facility and/or construction manager or supervisor will be notified immediately.

Facility Manager (name): _____

Facility Manager (phone): _____

Construction Manager (name): _____

Construction Manager (phone): _____

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. The supervisor will first contact the Fire Department and then notify the Police Department. The fire department is ultimately responsible for matters of public health and safety and should be notified immediately.

Further Notification

The Maine Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

Emergency Notification Phone Numbers

1.	FACILITY MANAGER NAME: _____ ALTERNATE CONTACT: NAME: _____	PHONE:_____ CELL: _____, _____ HOME PHONE: _____ PHONE:_____ BEEPER/CELL: _____, _____ HOME PHONE: _____
2.	FIRE & POLICE DEPARTMENT	EMERGENCY: **911**
3.	CLEANUP CONTRACTOR: _____ ADDRESS: _____ _____	PHONE:_____
4.	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)	Oil Spills: **(800) 482-0777** Hazardous Materials: **(800) 452-4664** Central Maine Regional Office: **(800) 452-1942**
5.	NATIONAL RESPONSE CENTER ALTERNATE: U.S. ENVIRONMENTAL PROTECTION AGENCY	PHONE: **(800) 424-8802** EMERGENCY: **(800) 424-8802** BUSINESS (Region 1): **(888) 372-7341**
6.	MAINE EMERGENCY MANAGEMENT AGENCY	PHONE: (**800) 452-8735**

Hazardous Waste / Oil Spill Report

Date: ____/____/_____ Time: _____ AM / PM

Exact location _____

Type of equipment:_____ Make:_____ Size:_____

License or S/N:_____ Weather Conditions:_____

On or near water ☐ Yes If yes, name of body of water:_____

☐ No

Type of chemical / oil spilled: _____

Amount of chemical / oil spilled: _____

Cause of spill: _____

_____

_____

Measures taken to contain or clean up spill: _____

_____

_____

Amount of chemical / oil recovered: _____ Method:_____

Material collected as a result of clean up

_____ drums containing: _____

_____ drums containing: _____

_____ drums containing: _____

Location and method of debris disposal:_____

Name and address of any person, firm, or corporation suffering damages:_____

_____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring: :_____

_____

Spill reported to General Office by:_____Time: _____AM / PM

Spill reported to DEP / National Response Center by:_____

DEP Date: ____/_____/_____ Time:_____AM / PM Inspector:_____

NRC Date: ____/_____/_____ Time:_____AM / PM Inspector: _____

Additional comments: _____

_____

Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following page.

Emergency Response Equipment

The following equipment and materials shall be maintained at all times and stored in a secure area for long-term emergency response need.

--	SORBENT PADS	2 BALES
--	SORBENT BOOM	100 FEET
--	SAND BAGS (empty)	50
--	SEWER PIPE PLUGS	
--	12 INCH DIAM.	1
--	SPEEDI-DRI ABSORBENT	5 40# BAGS
--	SQUARE END SHOVELS	1
--	PICK	1
--	PRY BAR	1
--	DRAIN COVERS	2

Construction Management Plan 1

Construction Management Plan

Project Address: **Hadlock Field,** 271 Park Ave., Portland Maine, 04102

Project Description:

The proposed project includes the new construction of a 2-story Clubhouse with support space for Portland Sea Dogs staff, team and umpires.

Project Team Summary:

Owner:	DBH-Portland LLC
General Contractor:	Great Falls Construction
Civil Engineer:	VHB
Architect:	Lavallee Brensinger Architects
Structural Engineer:	Foley Buhi Roberts & Associates Inc.

The Owner/GC and all subcontractors will work with the City of Portland and adjacent landowners to minimize any project impacts.

The GC will remain responsible for enforcement of all compliance with 1) all contract plans and specifications in their scope of work and 2) all site working conditions and safety requirements, day and night, for both persons and property, in each case for the duration of their work. These include OSHA, NIOSH, U.S. EPA, local ordinance and any other applicable governmental regulations. Both the Owner/GC and any subcontractors will remain responsible for safeguarding the general public.

The GC shall review all permits and conditions associated with the project. Refer to the Civil/Site Plan Set, Sheet C7.2 Construction Management Plan for visual representation of the measures to be taken during construction.

The following outline has been developed in accordance with the City of Portland Construction Management Plan General Template and shall be referenced by the GC during construction.

A. Construction Management Principles

The control of noise, vibrations, ground movement, truck traffic, and other construction related factors will be of utmost importance. Care shall be taken to minimize these effects in the best interest of neighbors and the general public. GC to ensure that work hours conform to the City of Portland's Ordinance.

B. Development Review of Construction Management Plan

Logistics and safety program shall be submitted at or prior to the preconstruction meeting by the GC with all pertinent information required by the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, and Permits

Guarantees and fees will be paid at the time of the respective application. Sections 14-11 will be complied with all necessary permits will be obtained prior to work.

1. Street Opening and Street Occupancy Permits:

   Required permits regarding street opening and occupancy will be obtained from the Department of Public Works. The requests shall conform to the approved Construction Management Plan.

2. Blasting:

   Although not anticipated, if blasting occurs, it shall conform to Article VIII. In Chapter 14 of the City Code and Section 3.7 in the City's Technical Manual.

3. Building Code:

   Employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the 2009 International Building Code. In addition to the best practices set forth in the Inclusionary Zoning Guidelines for Developers of rental housing.

D. Construction Administration and Communication

The Contractor will work closely with adjacent abutters, businesses, and all parties informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Communication in order to comply with all agreements, ordinances, and special permits will be of the utmost importance. Contractor and Subcontractor contact information shall be posted somewhere along the project's street frontage. Additional signage necessary for communication shall be provided but will be temporary and removed upon completion of the project.

E. Construction Schedule

The GC shall submit a construction timeline at or prior to the preconstruction meeting. Construction may occur during the daytime hours as defined in Section 17-18. Construction Activities for Building permit and City Code Section 25-129, Noise, dust and debris. Between September 1 and May 31, the following year, no person shall engage in construction activities generating noise exceeding 50 decibels, between the hours of 7 pm and 7 am of the following day within 500 feet of any buildings. From June 1 to August 31, construction activity may continue until 8 pm. No construction activity shall begin before 8 am on a Saturday, Sunday, or legal holiday. Extended hours or night work may be requested for special circumstances and street utility work if needed. These requests will be subject to approval by the Public Works Authority.

Deliveries will be scheduled between 7 am and 5 pm.

The estimated timeframe of the proposed project is outlined below:

Project Start Date:	Summer 2024
Project End Date:	Spring 2025

A more detailed work schedule shall be provided by the GC at or before the pre-construction meeting with the City.

F. Security

1. The Construction Management Plan, Sheet C7.2, depicts all proposed fencing and other barriers, with the intent of separating pedestrian and vehicle circulation from the construction site. If applicable, Construction entrances per detail shall be installed.

2. Structures undergoing construction, alteration, or demolition operations, including those in underground locations, shall comply with NFPA 1 Chapter 16. *Safeguarding Construction, Alteration, and Demolition Operations.*

3. Fire Safety Program: Prior to construction, an overall construction and demolition fire safety program shall be developed. Essential items to be emphasized include the following:
    - Good Housekeeping
    - On-site security
    - Installation of new fire protection systems as construction progresses
    - Preservation of existing systems during demolition
    - Organization and training of an on-site fire brigade
    - Development of a pre-fire plan with the local fire department
    - Rapid communication
    - Consideration of special hazards resulting from previous occupancies
    - Protection of existing structures and equipment from exposure fires resulting from construction, alteration, and demolition operations.

4. Blasting, if required, shall conform with all measures of Article VIII. Regulation of Explosives in the Land Use Code and Section 3.7 Standards for Blasting and Regulation of Explosives in Portland's Technical Manual.

5. Temporary security lighting shall be shown on the Construction Management Plan, and all fixtures shall be full cutoffs.

G. Construction Permitting and Traffic Control Plans

1. Construction Activity in Public Streets

   Construction activity in the public right-of-way shall be compliant with Chapter 25 Article VII of the City Code. At no time will it be permissible for construction

activity including delivery vehicle to close or block streets or affect public safety access without prior notice and approval of the Department of Public Works.

2. Sewer and Stormwater

   Sewer and stormwater system connections are controlled by Chapters 24 and 32 of the City code of Ordinance. Required permits for new connections and/or abandonment of existing connections are available through the Street Opening Clerk at the Department of Public Works. Rules and Regulations for these utility systems are available through the City Engineer's office of the Department of Public Works and in Section II of the Technical Manual.

3. Traffic Control Plans

   Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. The contractor shall submit a satisfactory "Maintenance of Traffic" (MOT) plan prior to any street opening permit approval. This document shall contain all pertinent information from the Maine Department of Transportation's Traffic Control Plan Standard Specification 652.3.3.

   The MOT will address the work required for utility connections in Park Ave. Traffic will be channelized utilizing drums and cones. Proper signage will be installed prior to the through work zone. Alternating traffic will be controlled with flaggers. Trenches will be patched with pavement daily.

   The MOT plan shall provide for the safe passage of the public through or along the construction work zone. It may be permissible to close a portion of the street during utility connections and/or detour a mode of traffic when absolutely necessary for safety. All requests shall be subject to City approval. MOT plans shall employ the appropriate techniques and devices as called for in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

   - Construction speed signing may be used as needed to slow traffic.
   - Traffic Control signs shall not be placed where they would create any obstructions to bicycles or pedestrians.
   - Flaggers will be utilized when necessary.

   All existing modes of travel in the work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning and laying out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Department of Public Works. The MOT should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, analysis of roadway capacity or diversion capacity if street closure or change to roadway capacity is required, and coordination with other on-going or future construction or utility projects in the vicinity.

- Traffic control bicycle and pedestrian facilities or routes through work zones shall be maintained until the bicycle and pedestrian facilities or routes are ready for safe operation. Traffic control will not be removed to allow auto travel at the expense of bicycle and pedestrians.
- Barrier systems utilized to separate the construction activity from the public street and /or sidewalk shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists.
- ADA compliance in all capacities shall be maintained.

Use of public parking spaces or the blockage of any portion of sidewalk for the purpose of construction activity shall require an occupancy permit and appropriate fee as assessed by the Department of Public Works.

H. Site Management and Controls

1. Regular trash and debris shall be managed appropriately, and its removal shall comply with all local, state, and federal regulations.

2. Street cleaning and sweeping shall be followed as outlined in the erosion and sedimentation control notes and report. Damage to the street shall be avoided and shall be the responsibility of the contractor.

3. Dust shall be controlled and shall comply with Section 25-129 and the erosion and sedimentation control notes, plan, and details.

4. Noise shall be controlled and shall comply with Section 17-18 and Section 25-129.

5. Rodent Control shall be provided, if applicable, by a professional exterminator and shall be consistent with Chapter 22 of the City Code.

6. Snow and Ice Removal shall be provided. Pursuant to Section 25-173, the Contractor shall ensure a safe means of travel within the work zone by the following steps:

    a. Snow/ice removal or commence automatically from 1" or greater of snow or ice
    b. Remove snow as needed within the work zone, including parking spaces. Driveways and site lines shall not be blocked by piles of snow.
    c. Clear all walks and ramps within the work zone
    d. Sand or salt as needed
    e. Clear all basin or drainage to help snow melt
    f. The above steps shall be carried out Sunday-Saturday including holidays.

I. Erosion & Sedimentation Control

1. The Contractor shall install all erosion and sedimentation controls as depicted on the approved Construction Management Plan, C7.2, and the approved erosion and sedimentation control report, prior to the pre-construction meeting for inspection

by the City. The Contractor shall regularly inspect the control measures, no less than weekly and after storm events (0.5" or more in 24 hours). Additionally, temporary or permanent stormwater management systems shall be inspected and maintained to ensure working order. The Contractor shall document all inspection activities and corrective actions and be prepared to provide these documents for inspection by the City, Maine Department of Environmental Protection (MDEP) or the U.S. Environmental Protection Agency (EPA) upon request.

2. Due to the existing, sparse landscaping on site, only minor protection during construction will be necessary.

3. Stored materials shall be identified and avoid being located under/near trees.

J. Construction Staging Area

1. The Contractor shall submit a plan with locations depicted for the location of material staging areas, the location of on-site temporary construction trailers, the location of on-site truck delivery holding areas, the location of on-site truck washing stations, masonry mixing stations, the general location of the construction security fence and the general location of temporary construction dumpsters. This plan shall be submitted at or prior to the pre-construction meeting. Any open storage areas shall be shown on the plan.

2. Delivery Truck Holding Areas On-Site: The majority of materials delivered to the site will be scheduled such that they are able to be off-loaded immediately. On days when the construction activities require multiple truck deliveries, these deliveries will be carefully scheduled so that there is always adequate on-site area for the holding of trucks until they can be unloaded. Once at the site all vehicles will be brought within the fence line and will make every attempt to avoid queuing on public streets. If, for any reason, on-site holding of trucks is not feasible, an off-site location must be designated and shown on the submitted plan referenced above in J.1.

3. All deliveries for materials shall comply with the City's noise requirements.

K. Parking During Construction

1. Adequate parking for construction workers shall be provided on site.

L. Dewatering Plans

1. A basic dewatering plan for any construction work is required and shall be submitted by the Contractor. The plan must cover construction sites where groundwater is not expected but the impact of rainwater may require dewatering. The plan must include operating procedures, equipment to be used, including filters, erosion and sediment control measures, or other methods of removing sediment from approved discharges.

2. For construction work that will require frequent dewatering of groundwater from site, a dewatering plan must be prepared by the Contractor and approved by the Department of Public Works. Groundwater and/or soil testing may be required to determine course of action if treatment is necessary. Approval for all discharges to City infrastructure is required. The proposed plan must address the following:

    - Project duration, discharge location, storage equipment on-site, dewatering schematic, and emergency contact.
    - General requirements include trained staff on-site for all approve discharges and required site log for documentation of all discharges.
    - Storage and/or treatment process should include proper settling time and maintain proper use of filtering medium as required.
    - Contingency/maintenance plan for all dewatering equipment devices and filtration mediums.

    Any water that is removed from an excavation must be pumped from a perforated device buried in crush stone prior discharge and/or prior to storage and treatment. There will be no discharge allowed during precipitation events.

M. Special Measures as Necessary

No special measures are necessary for the proposed reconstruction.

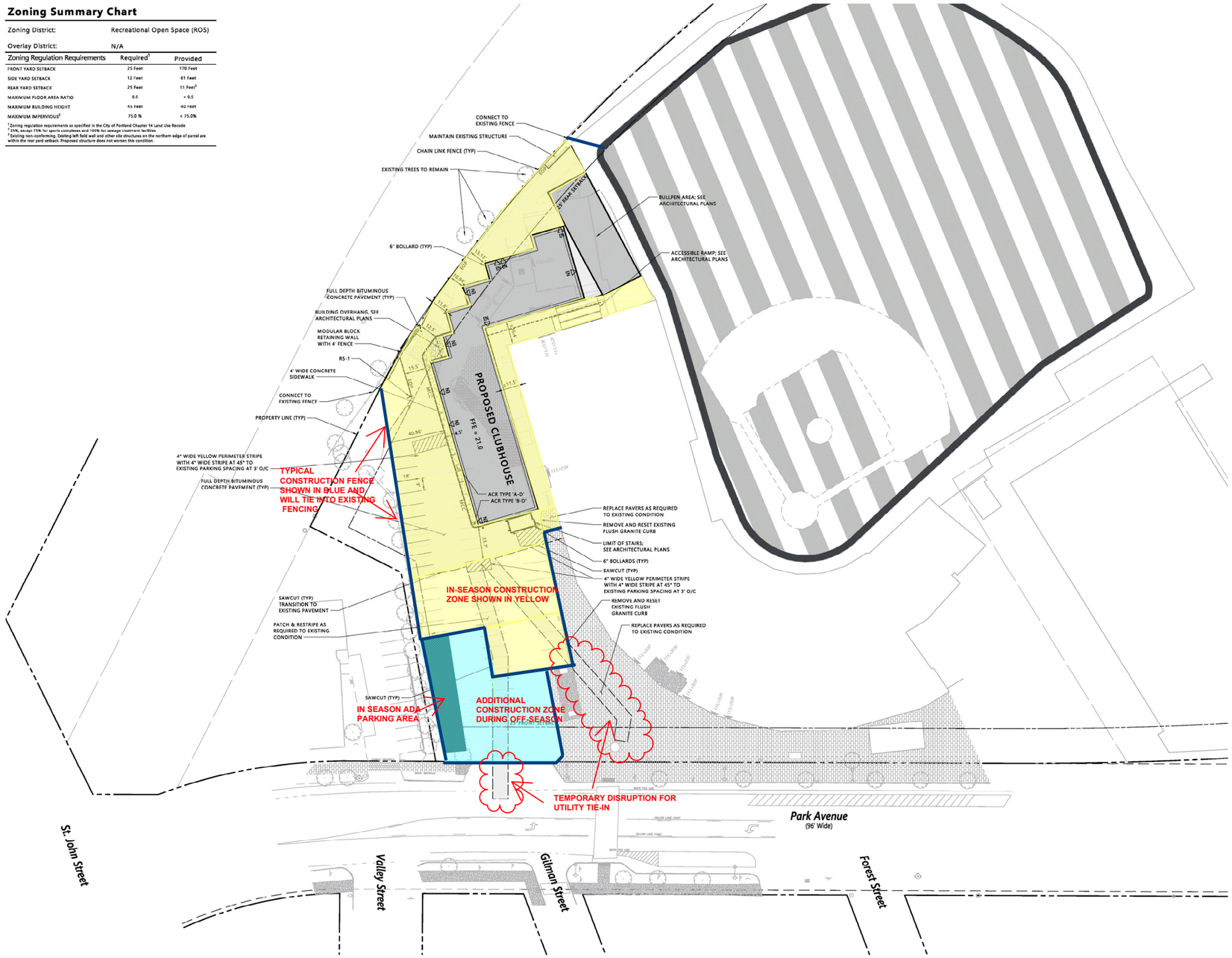
Construction Management Plan 2

Zoning Summary Chart

Zoning District:	Recreational Open Space (ROS)
Overlay District:	N/A

Zoning Regulation Requirements	Required[1]	Provided
FRONT YARD SETBACK	25 Feet	170 Feet
SIDE YARD SETBACK	12 Feet	61 Feet
REAR YARD SETBACK	25 Feet	11 Feet[2]
MAXIMUM FLOOR AREA RATIO	0.5	< 0.5
MAXIMUM BUILDING HEIGHT	45 Feet	40 Feet
MAXIMUM IMPERVIOUS[1]	75.0 %	< 75.0%

[1] Zoning regulation requirements as specified in the City of Portland Chapter 14 Land Use Recode
[1] 25%, except 75% for sports complexes and 100% for sewage treatment facilities
[2] Existing non-conforming. Existing left field wall and other site structures on the northern edge of parcel are within the rear yard setback. Proposed structure does not worsen this condition.



*NOTE: REFER TO BASIS OF DESIGN FOR CONSTRUCTION AND MATERIAL INFORMATION.
*NOT FOR CONSTRUCTION.

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207.889.3150

Great Falls CONSTRUCTION

DBH - PORTLAND LLC

CLUBHOUSE ADDITION

Hadlock Field, 271 Park Ave.
Porland, ME 04102

NO.	DESCRIPTION	DATE

CONTENT:
Great Falls Construction's Construction Management Plan

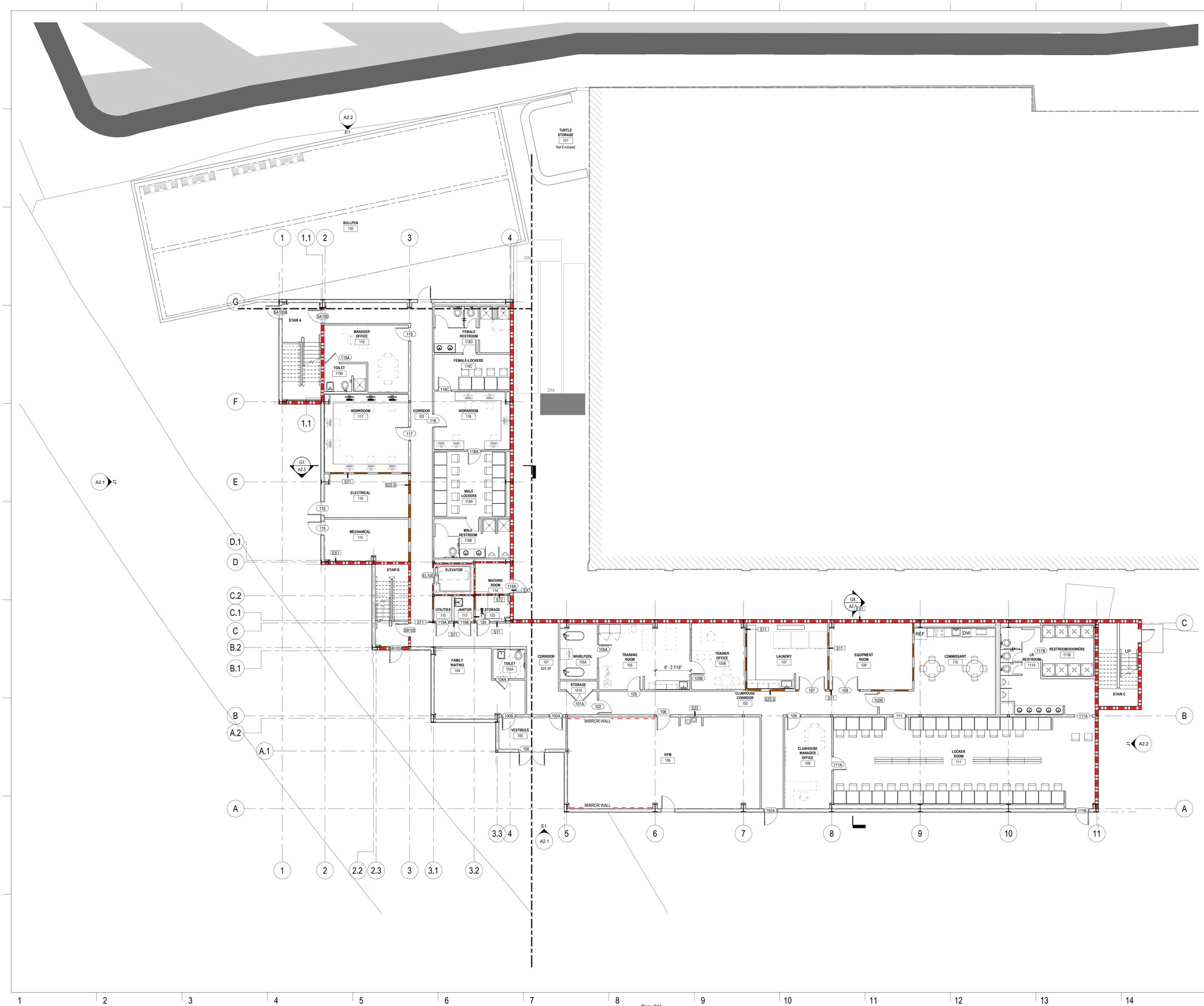
DRAWN BY:	JRH
PROJECT NO:	23-104-00
DATE:	04/12/2024
REVISED:	
SCALE:	1" = 30'

C7.2

Project Phase
BID PACKAGE #1

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DBH - PORTLAND LLC

CLUBHOUSE ADDITION

Hadlock Field, 271 Park Ave.
Porland, ME 04102

NO.	DESCRIPTION	DATE

CONTENT:
FIRST FLOOR PLAN

DRAWN BY:	JEA
PROJECT NO:	23-104-00
DATE:	04/19/2024
REVISED:	
SCALE:	1/8" = 1'-0"

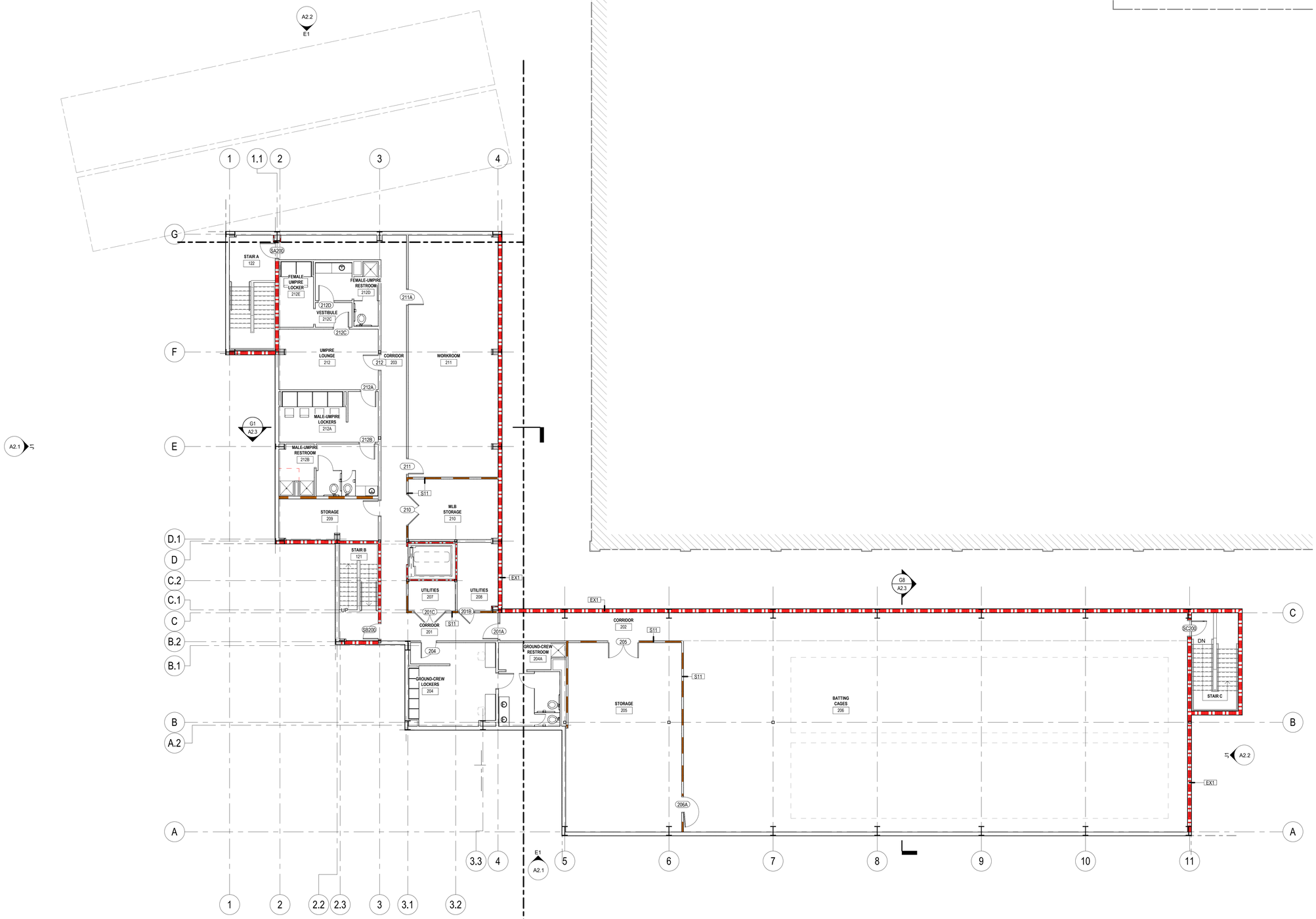
A1.1a

Project Phase
BID PACKAGE #1

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Hadlock Field, 271 Park Ave.
Porland, ME 04102

NO.	DESCRIPTION	DATE

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CONTENT:
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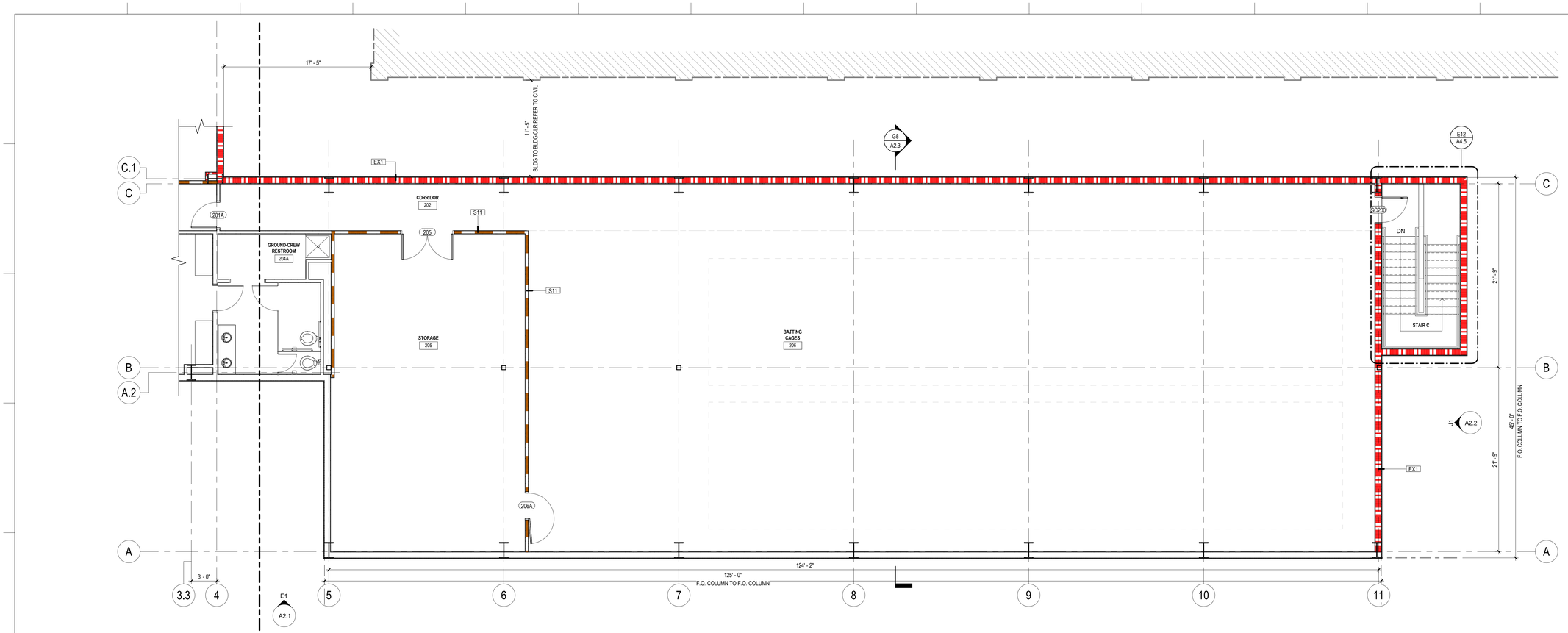
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DATE:	04/19/2024
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A1.2a

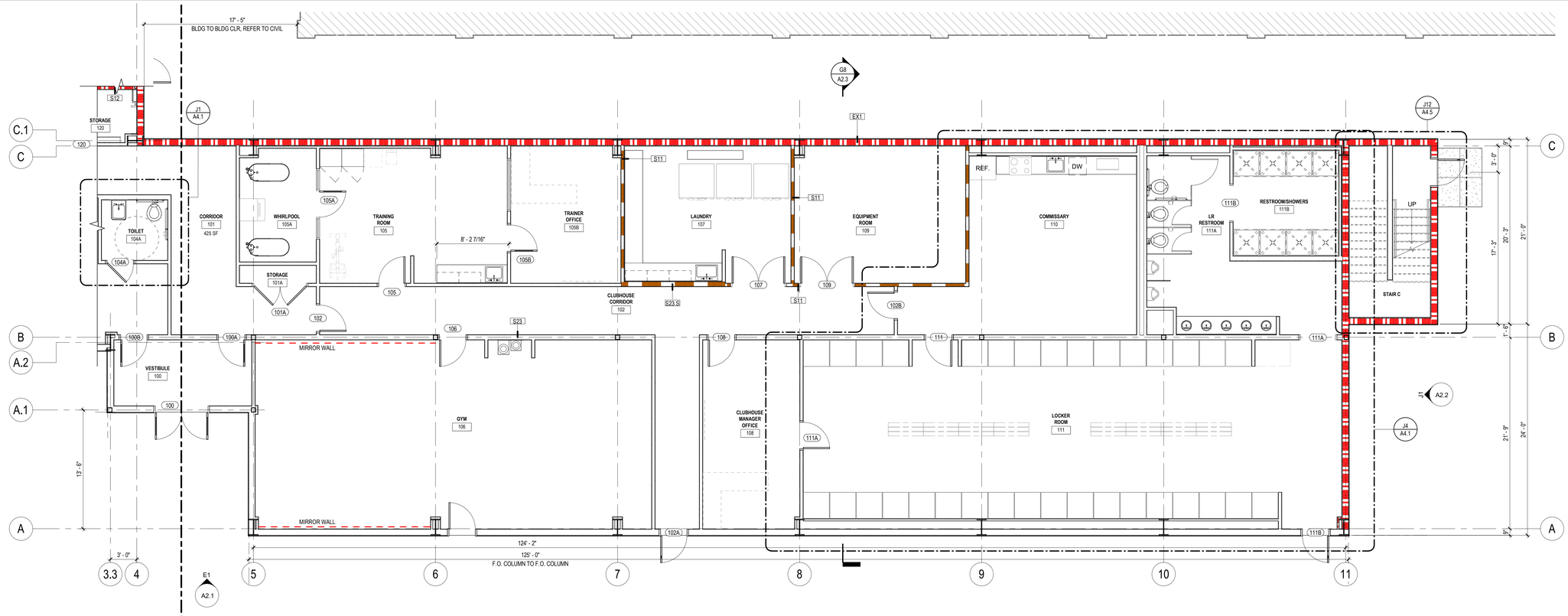
Project Phase
BID PACKAGE #1

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E1 LEVEL 2 - CONSTRUCTION PLAN - AREA A
A1.1b 3/16" = 1'-0"



J1 LEVEL 1 - CONSTRUCTION PLAN - AREA A
A1.1b 3/16" = 1'-0"

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Hadlock Field, 271 Park Ave.
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CONTENT:
LEVEL 1 / LEVEL 2 FLOOR PLAN - AREA A

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PROJECT NO:	23-104-00
DATE:	04/19/2024
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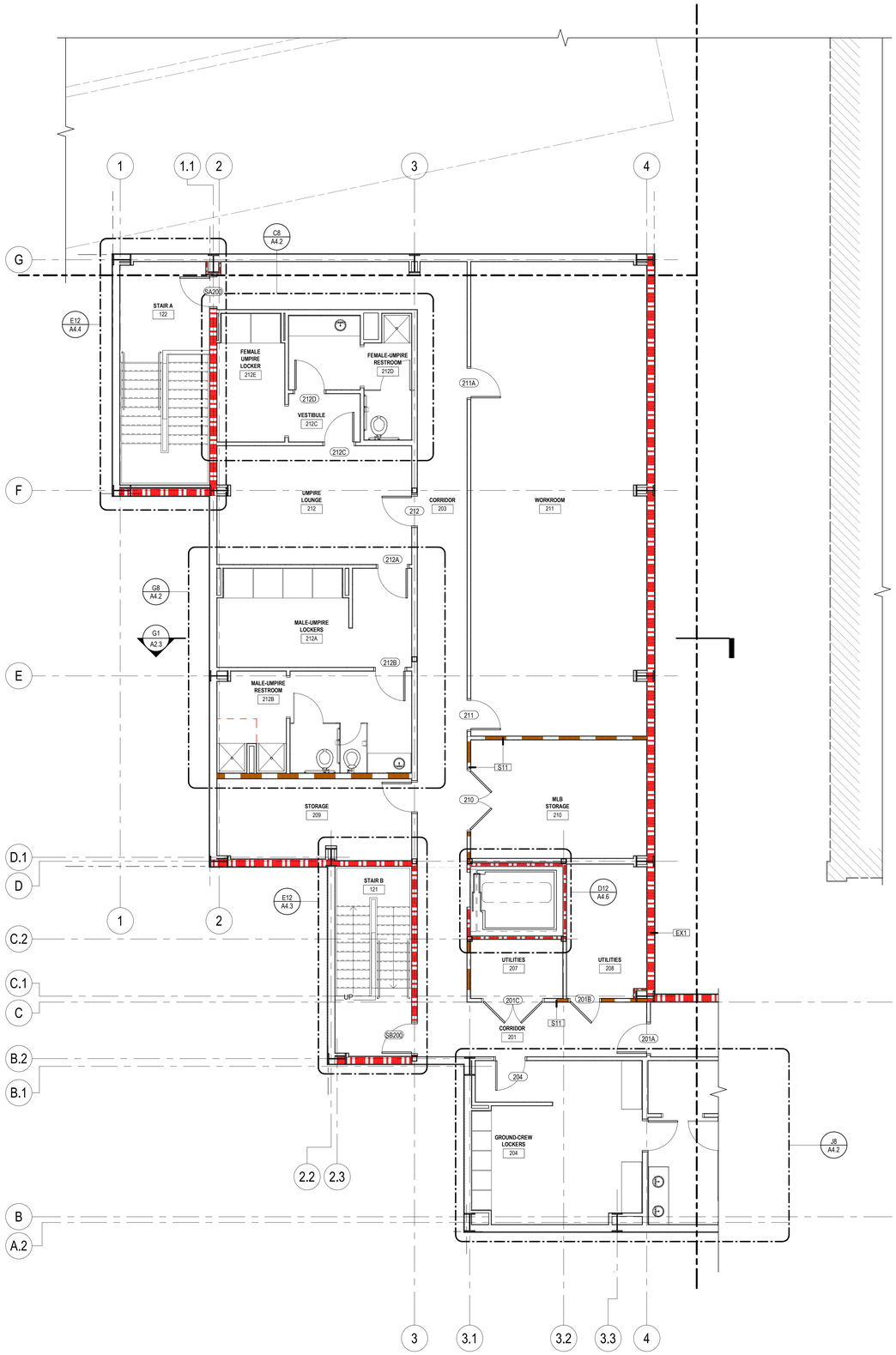
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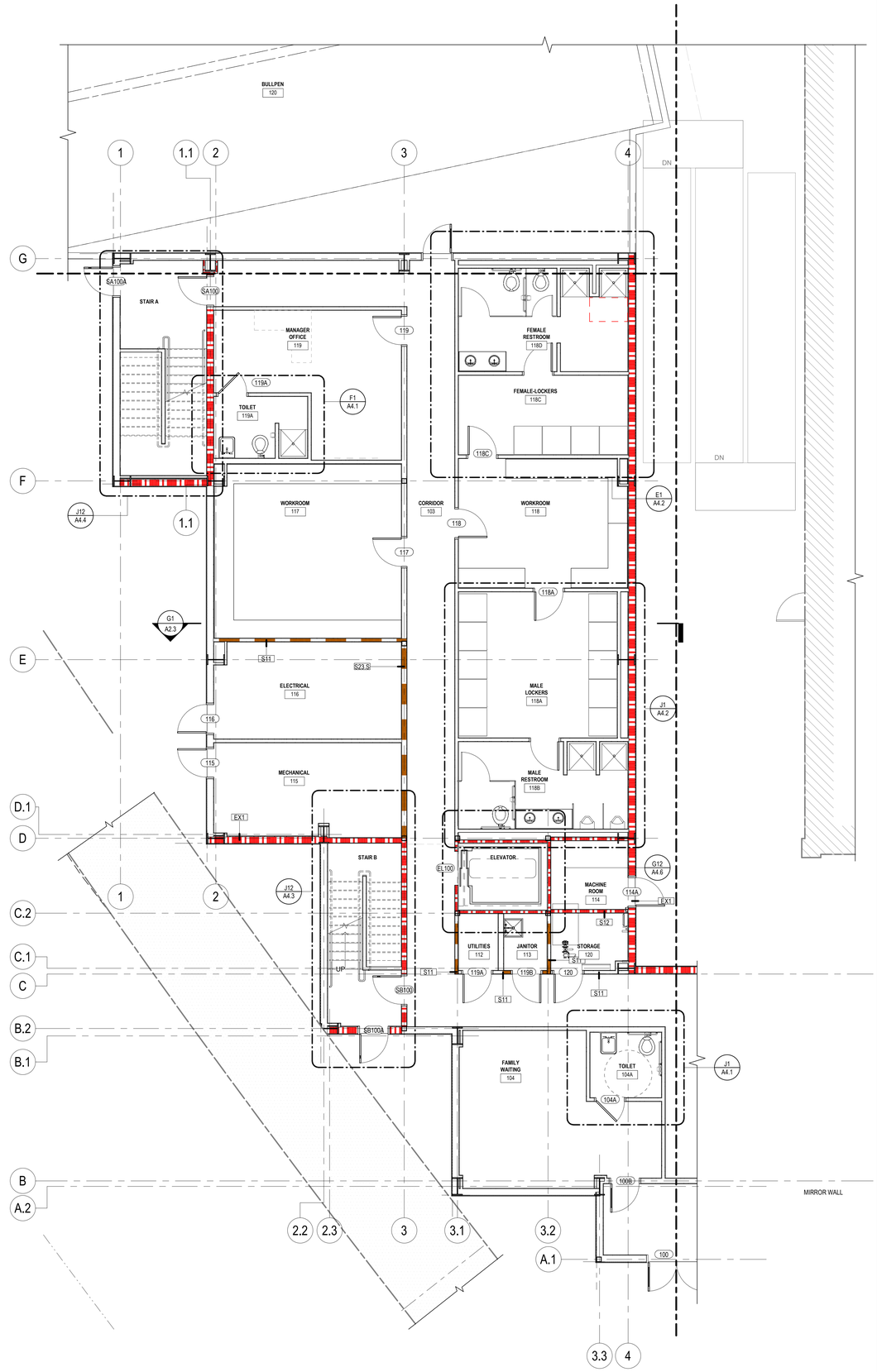
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J1 LEVEL 2 - CONSTRUCTION PLAN - AREA B
A1.2b 3/16" = 1'-0"

J8 LEVEL 1 - CONSTRUCTION PLAN - AREA B
A1.2b 3/16" = 1'-0"

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CONTENT:
LEVEL 1 / LEVEL 2 FLOOR PLAN - AREA B

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DATE:	04/19/2024
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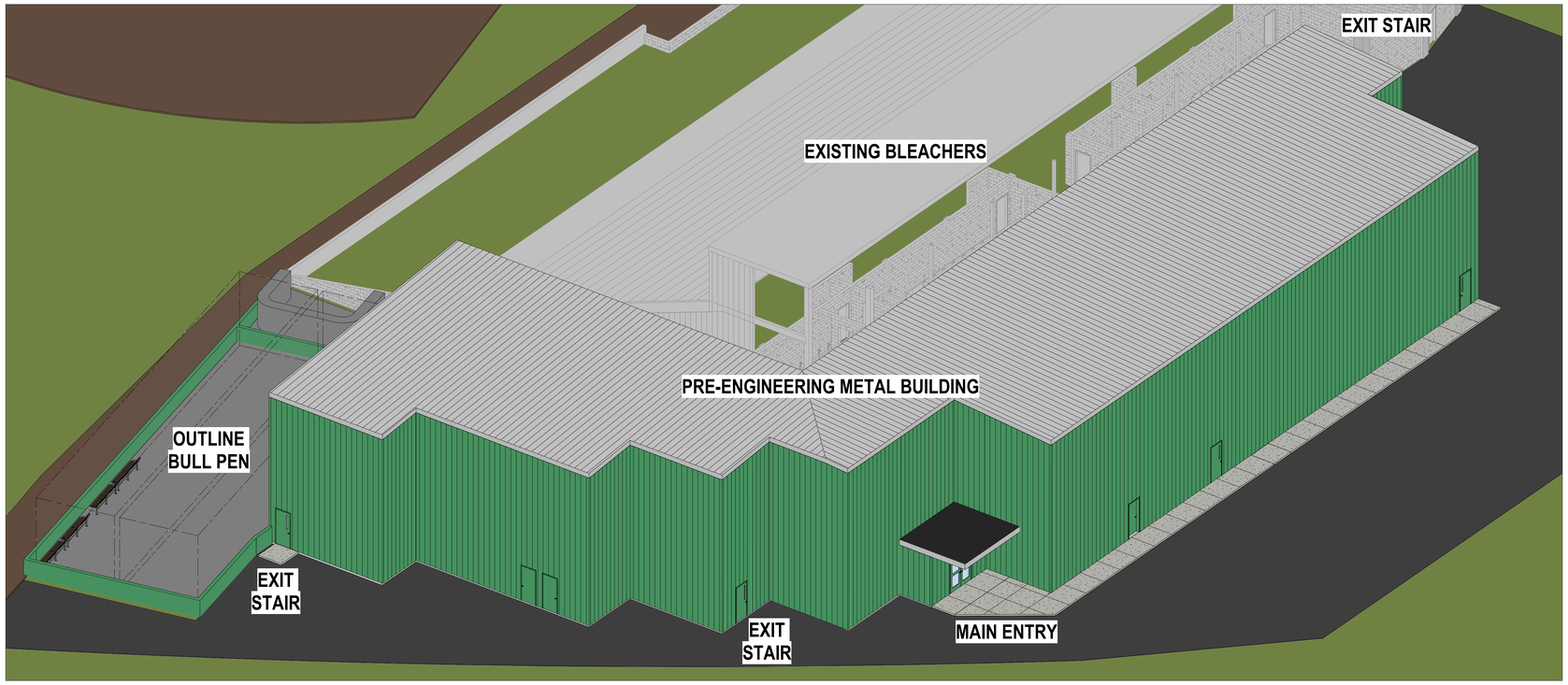
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J1
A2.0a
ISOEMTRIC #2

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CONTENT:
EXTERIOR ISOMETRIC

DRAWN BY:	MOL
PROJECT NO:	23-104-00
DATE:	04/19/2024
REVISED:	
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A2.0a

Project Phase
BID PACKAGE #1

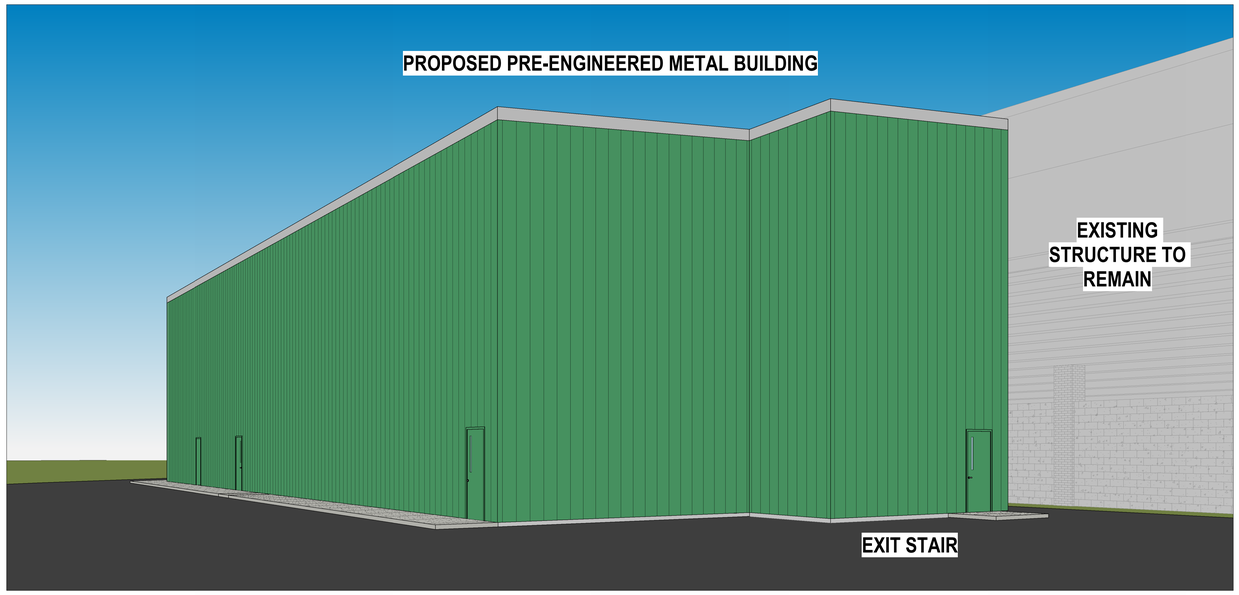
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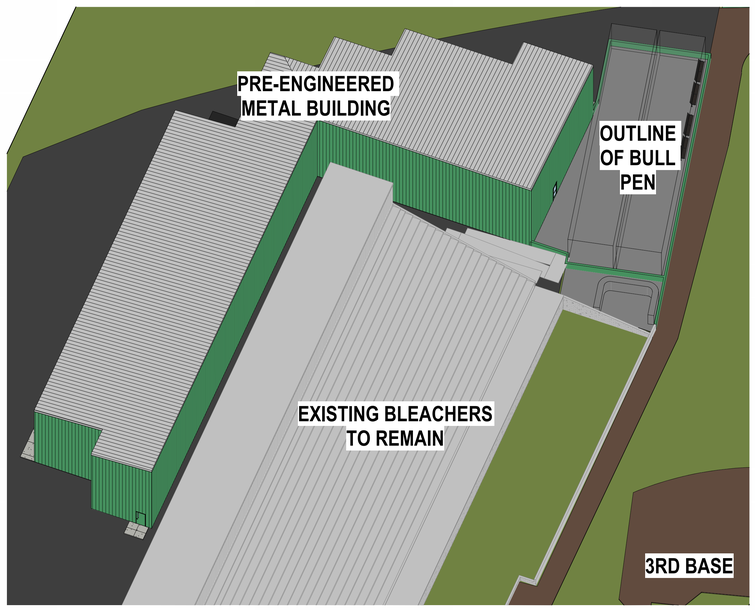
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2 A2.0b PERSPECTIVE FROM BACK DRIVEWAY



1 A2.0b PERSPECTIVE FROM PARKING AREA



4 A2.0b ISOMETRIC VIEW



3 A2.0b PERSPECTIVE FROM OUTFIELD (3RD BASE)

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Hadlock Field, 271 Park Ave.
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NO.	DESCRIPTION	DATE

CONTENT: PERSPECTIVES AND ISOMETRIC

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PROJECT NO: 23-104-00
DATE: 04/19/2024
REVISED:
SCALE:

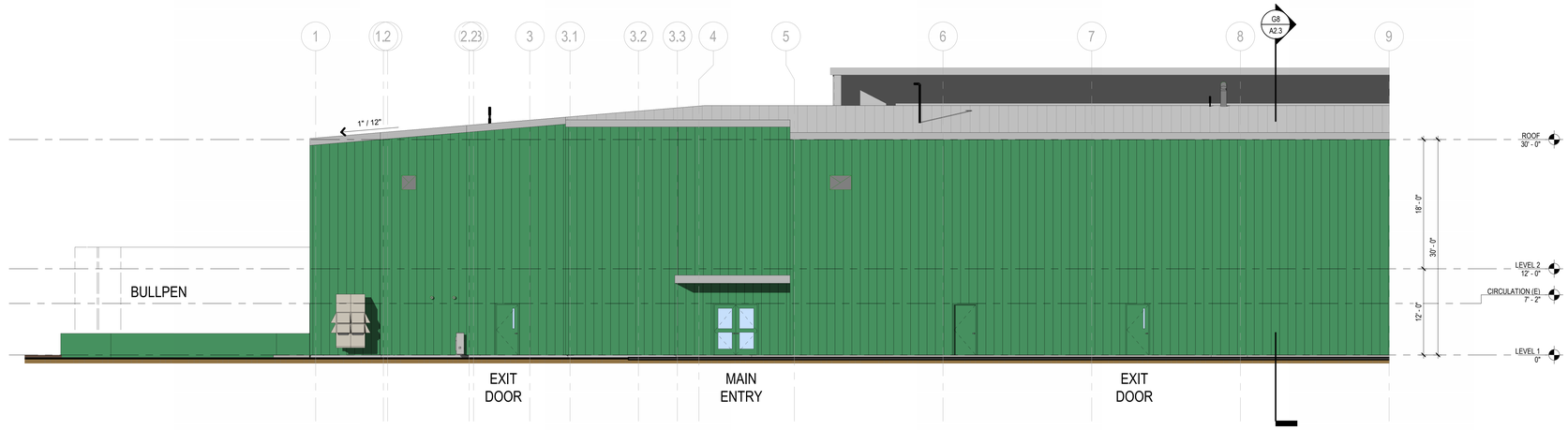
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E1 WEST ELEVATION
A2.1 1/8" = 1'-0"



J1 NORTH ELEVATION
A2.1 1/8" = 1'-0"

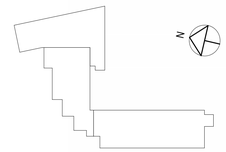
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CONTENT:
EXTERIOR ELEVATIONS

DRAWN BY:	MOL
PROJECT NO:	23-104-00
DATE:	04/19/2024
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SCALE:	1/8" = 1'-0"

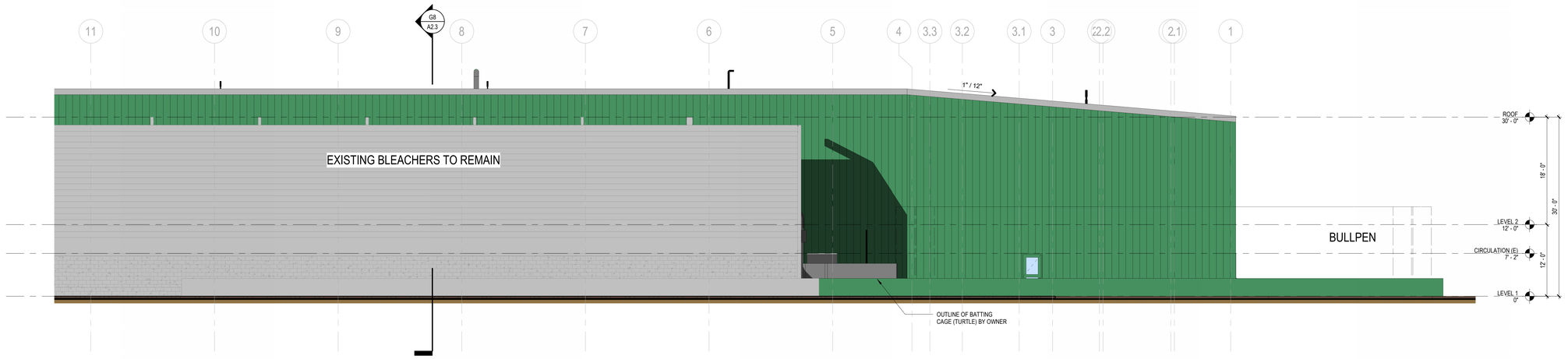
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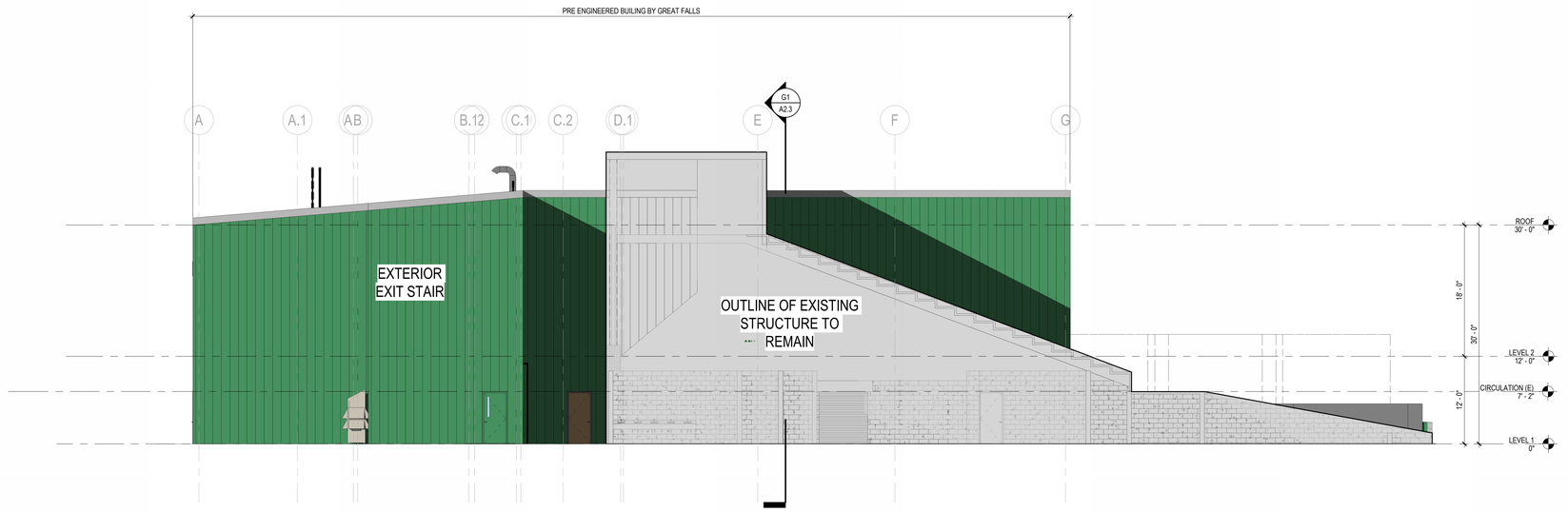
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E1 EAST ELEVATION
A2.2 1/8" = 1'-0"



J1 SOUTH ELEVATION
A2.2 1/8" = 1'-0"

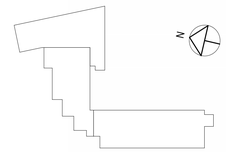
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CONTENT:
EXTERIOR ELEVATIONS

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PROJECT NO:	23-104-00
DATE:	04/19/2024
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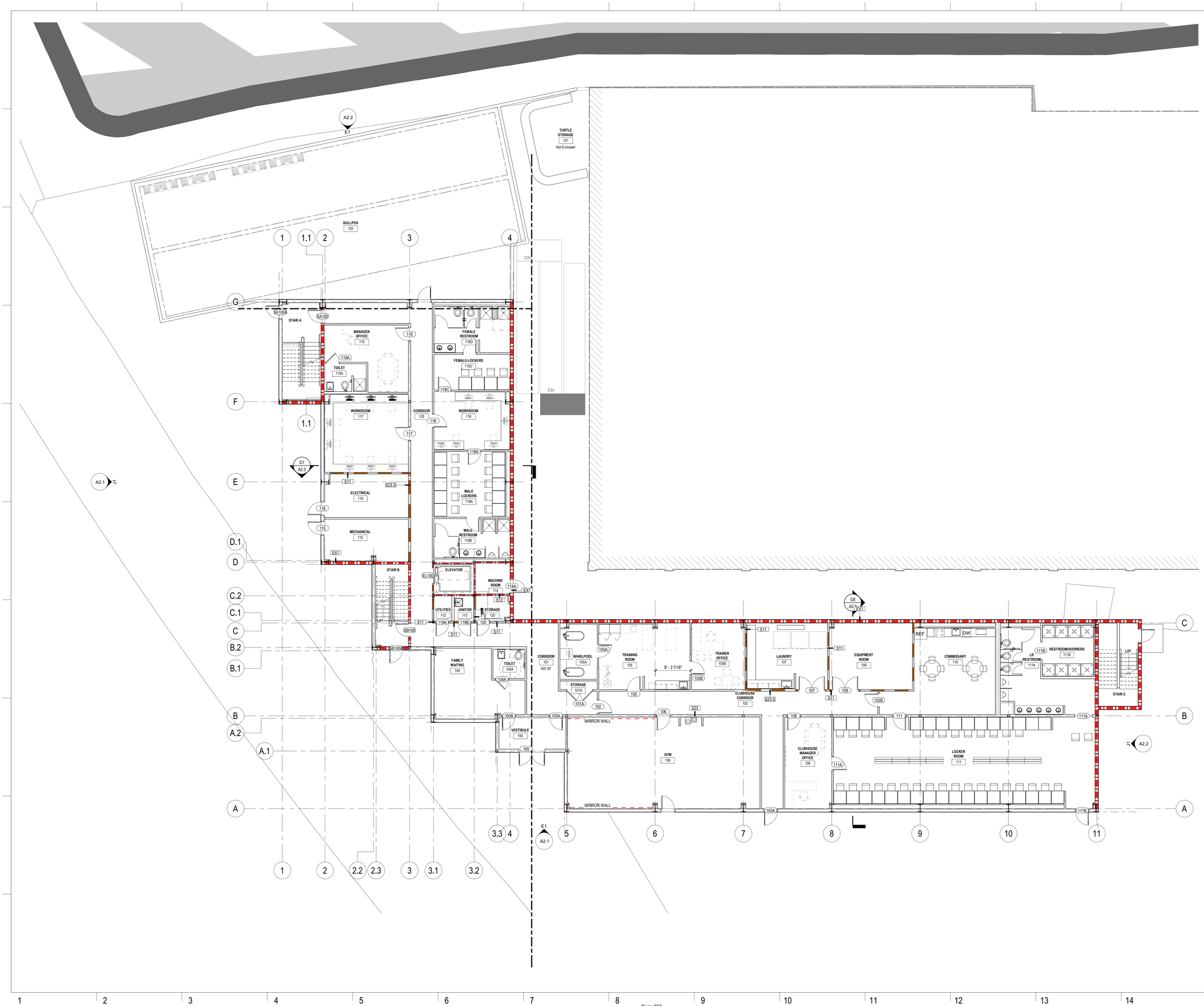
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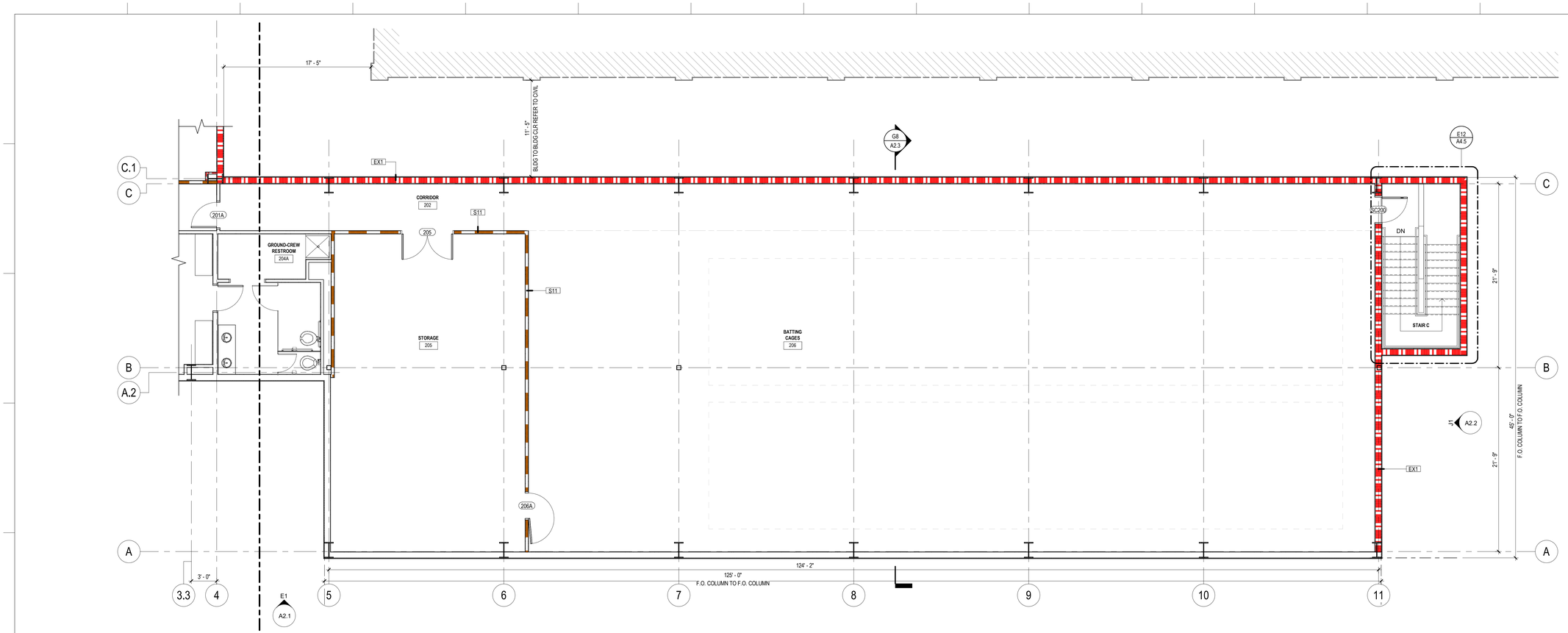
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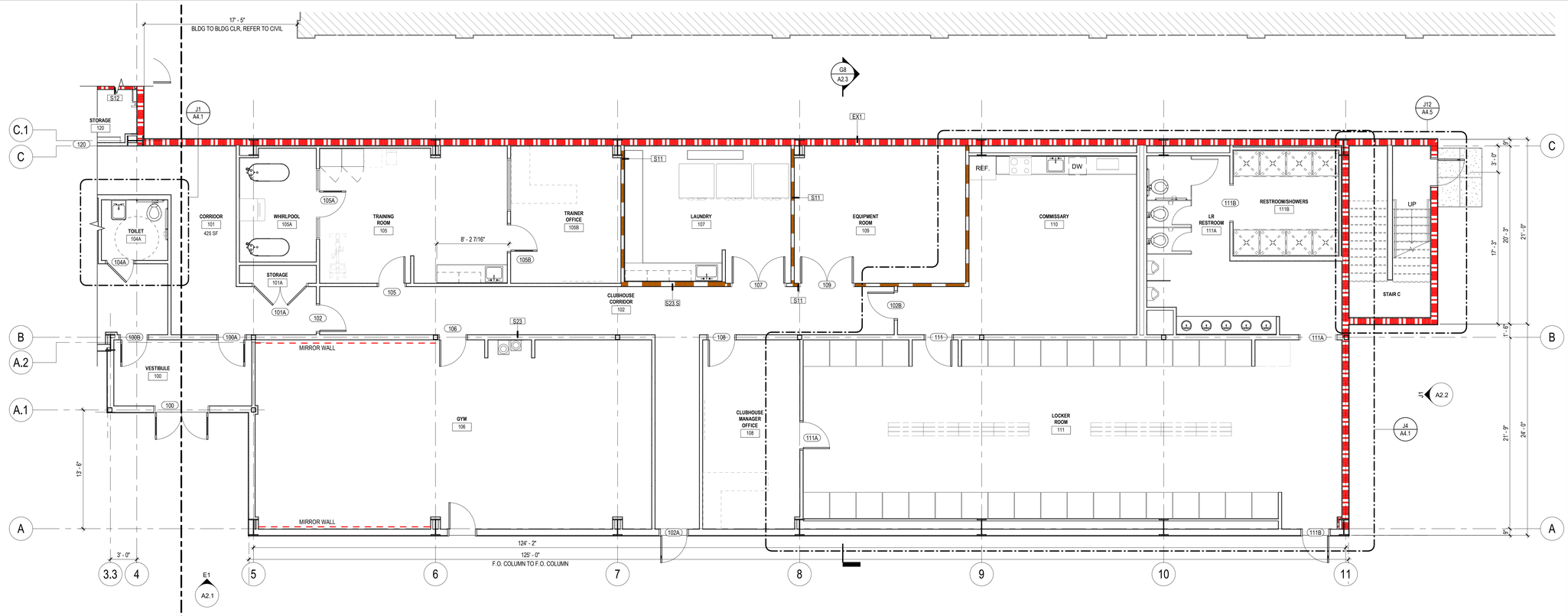
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E1 LEVEL 2 - CONSTRUCTION PLAN - AREA A
A1.1b 3/16" = 1'-0"



J1 LEVEL 1 - CONSTRUCTION PLAN - AREA A
A1.1b 3/16" = 1'-0"

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NO.	DESCRIPTION	DATE

CONTENT:
LEVEL 1 / LEVEL 2 FLOOR PLAN - AREA A

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DATE:	04/19/2024
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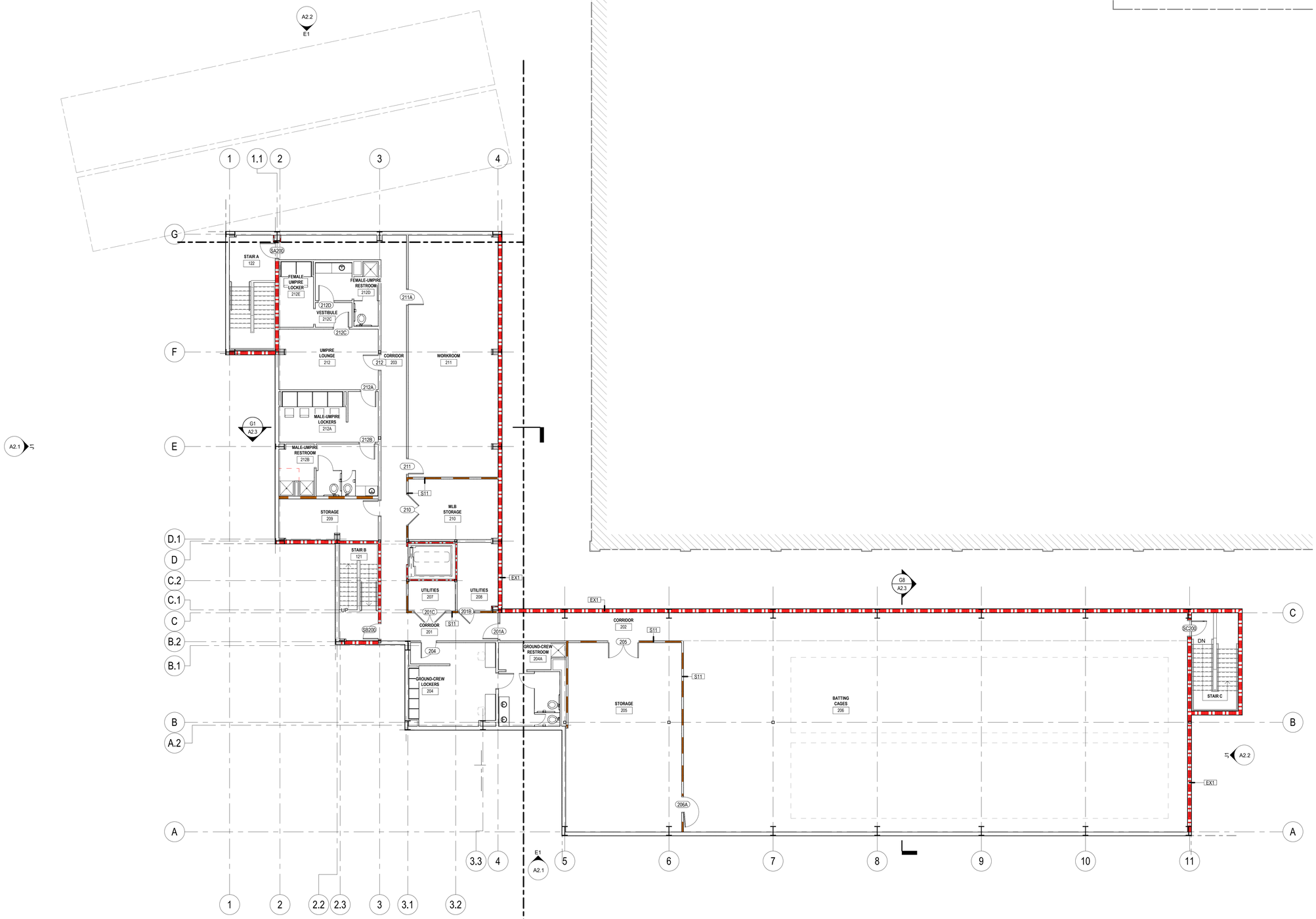
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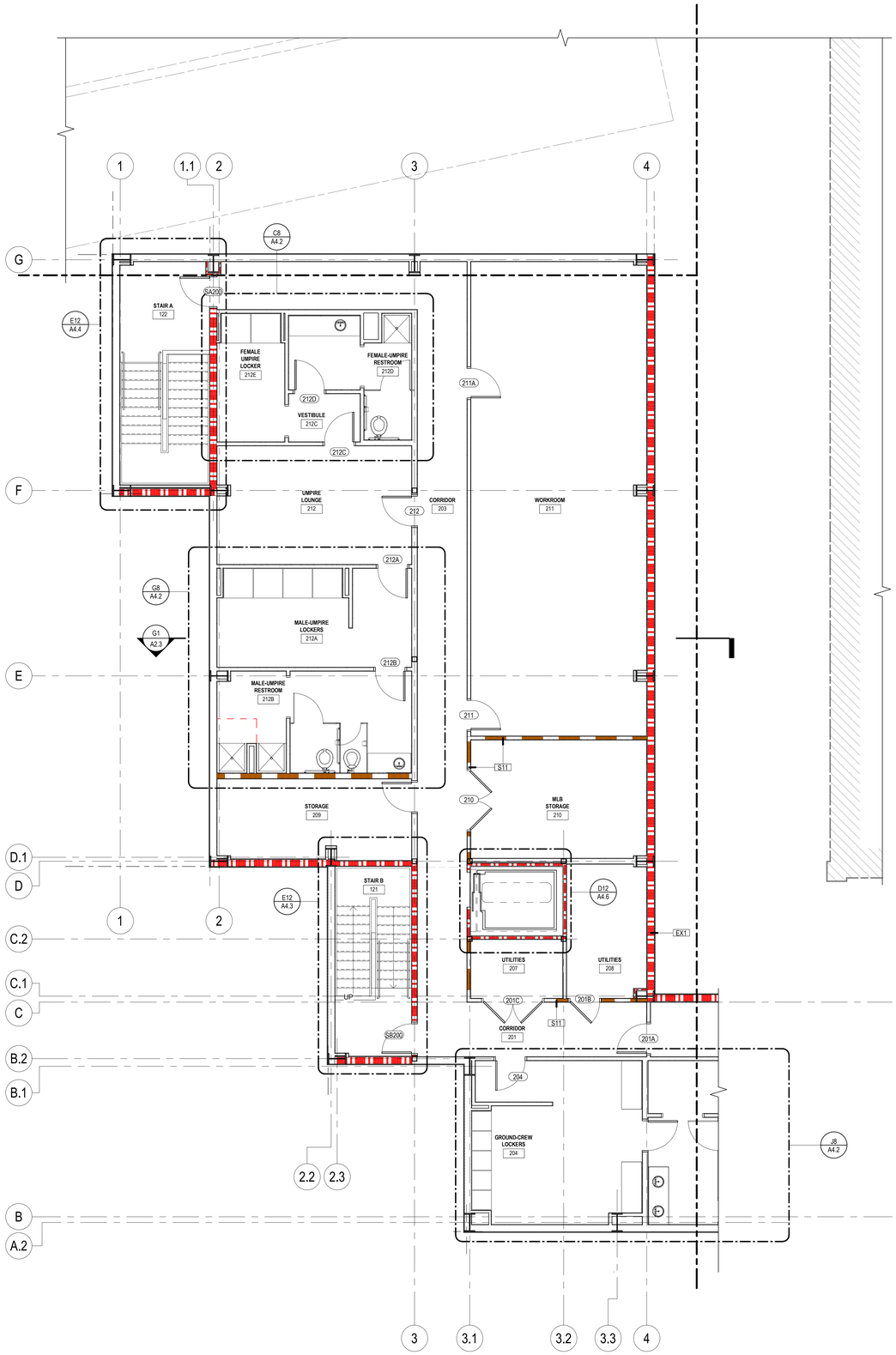
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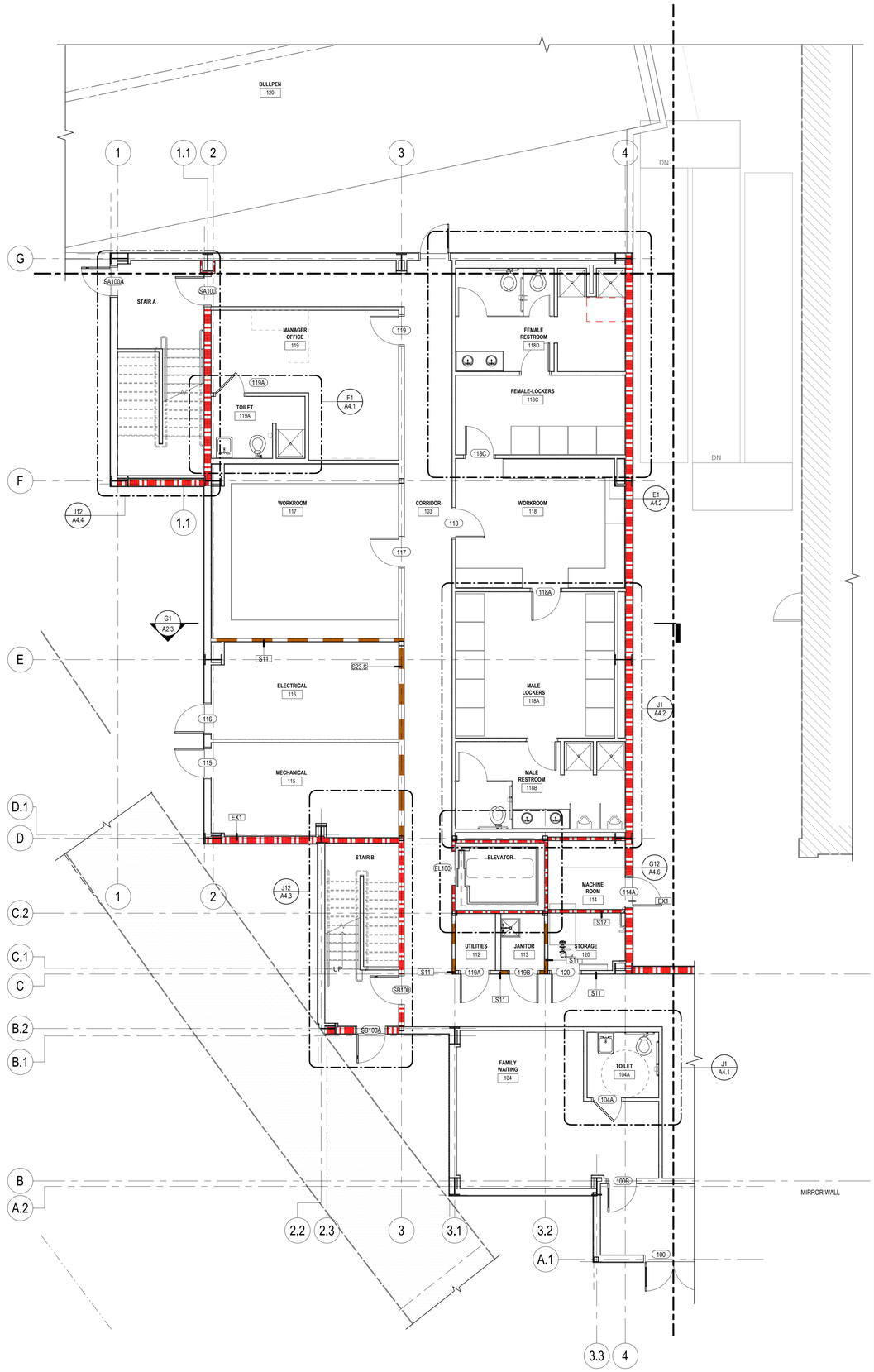
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J1 LEVEL 2 - CONSTRUCTION PLAN - AREA B
A1.2b 3/16" = 1'-0"



J8 LEVEL 1 - CONSTRUCTION PLAN - AREA B
A1.2b 3/16" = 1'-0"

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NO.	DESCRIPTION	DATE

CONTENT:
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DATE:	04/19/2024
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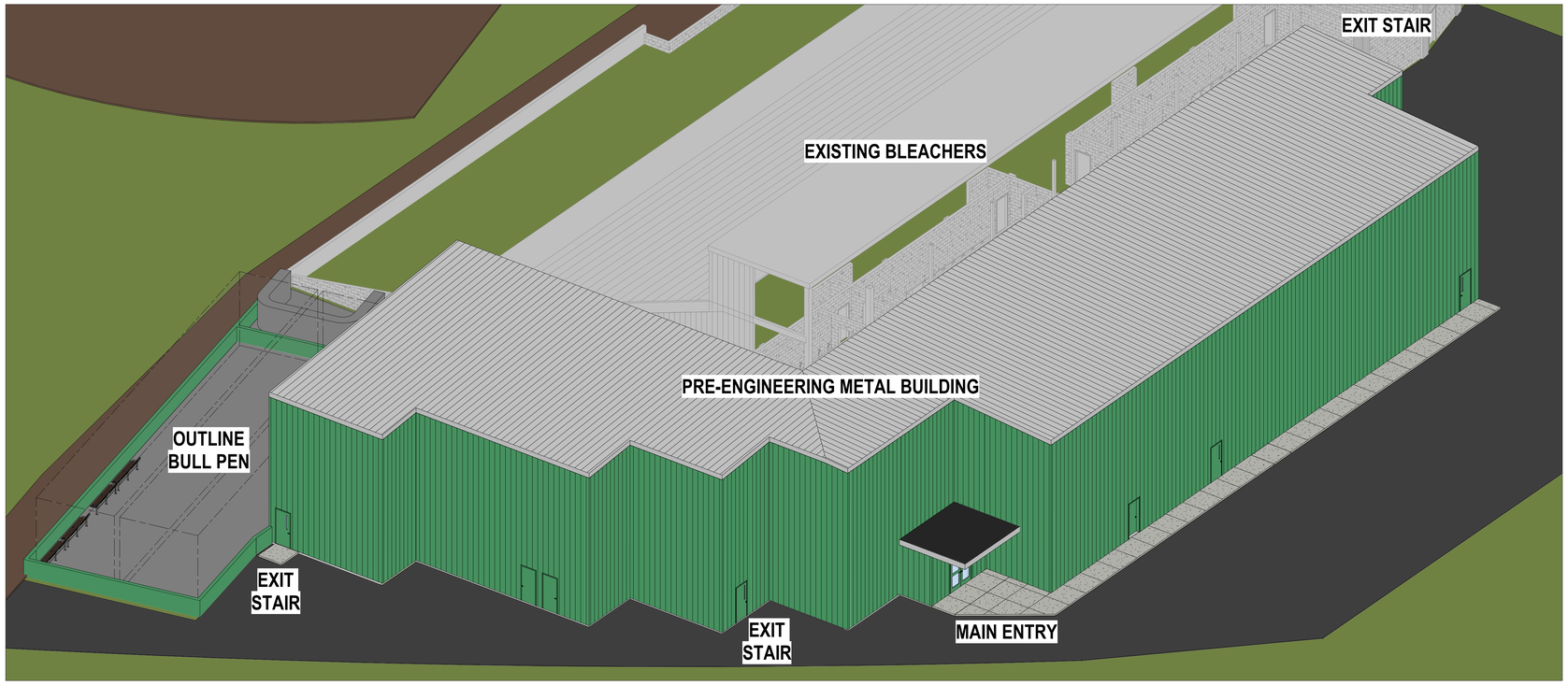
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J1 A2.0a ISOEMTRIC #2

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NO.	DESCRIPTION	DATE

CONTENT:
EXTERIOR ISOMETRIC

DRAWN BY:	MOL
PROJECT NO:	23-104-00
DATE:	04/19/2024
REVISED:	
SCALE:	

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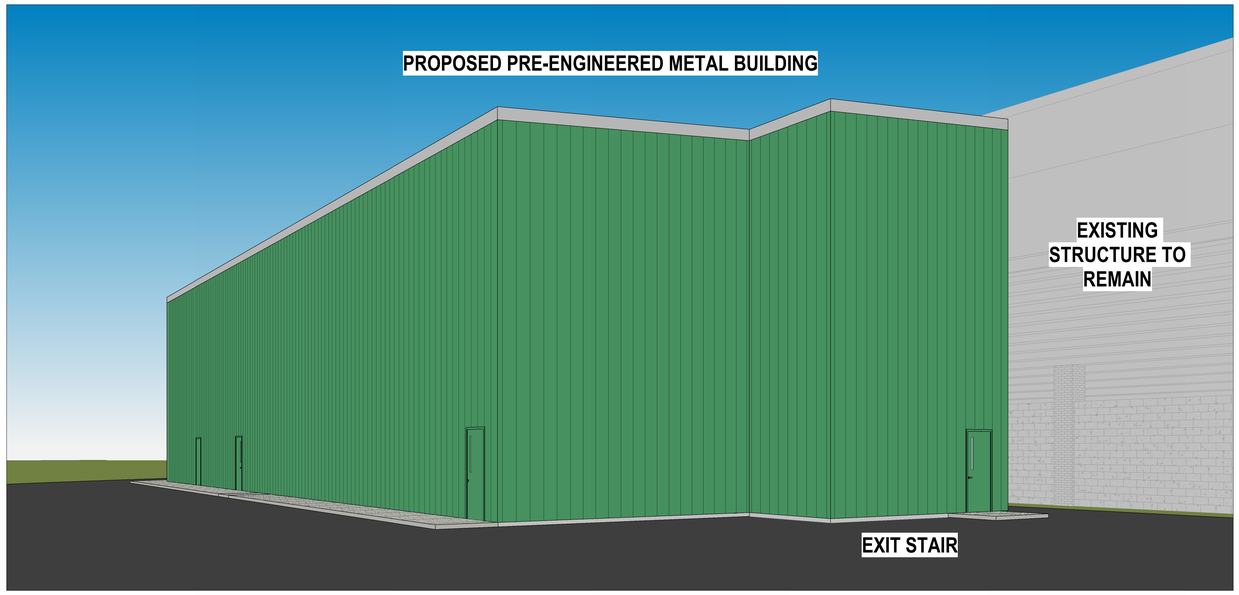
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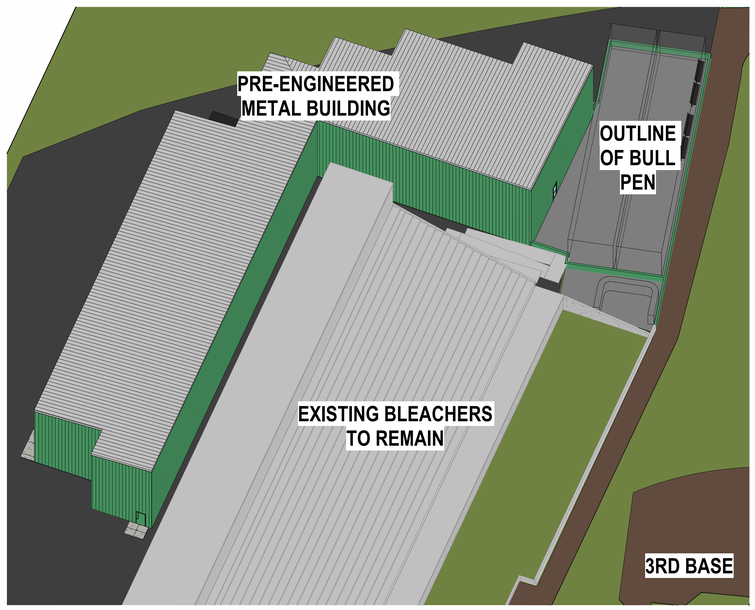
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2 A2.0b PERSPECTIVE FROM BACK DRIVEWAY



1 A2.0b PERSPECTIVE FROM PARKING AREA



4 A2.0b ISOMETRIC VIEW



3 A2.0b PERSPECTIVE FROM OUTFIELD (3RD BASE)

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CONTENT:
PERSPECTIVES AND ISOMETRIC

DRAWN BY:	JEA III
PROJECT NO:	23-104-00
DATE:	04/19/2024
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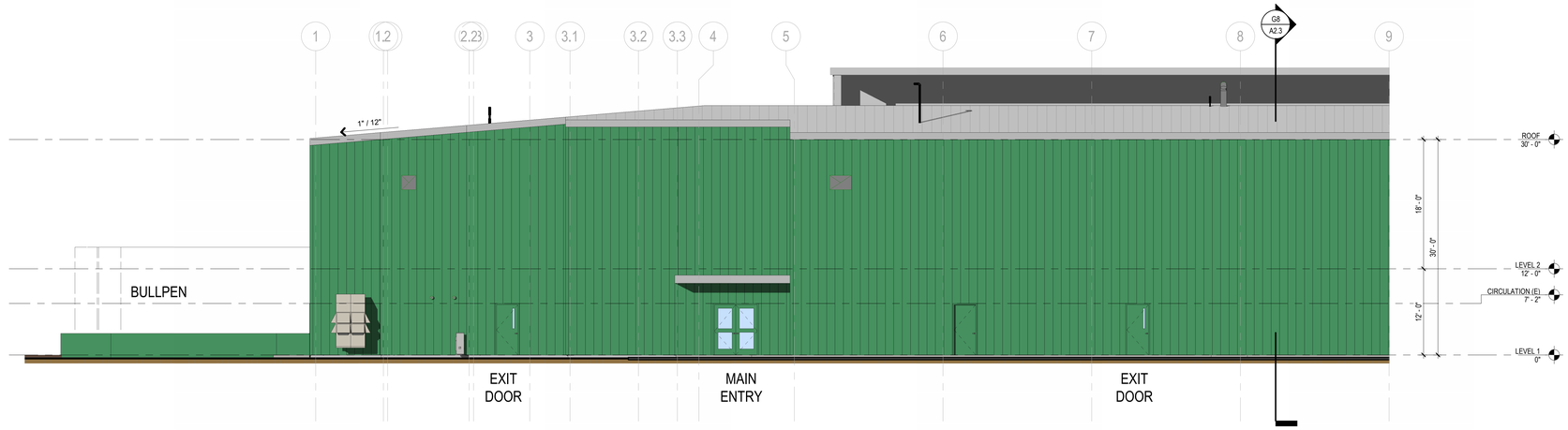
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E1 WEST ELEVATION
A2.1 1/8" = 1'-0"



J1 NORTH ELEVATION
A2.1 1/8" = 1'-0"

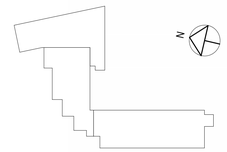
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CONTENT:
EXTERIOR ELEVATIONS

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PROJECT NO:	23-104-00
DATE:	04/19/2024
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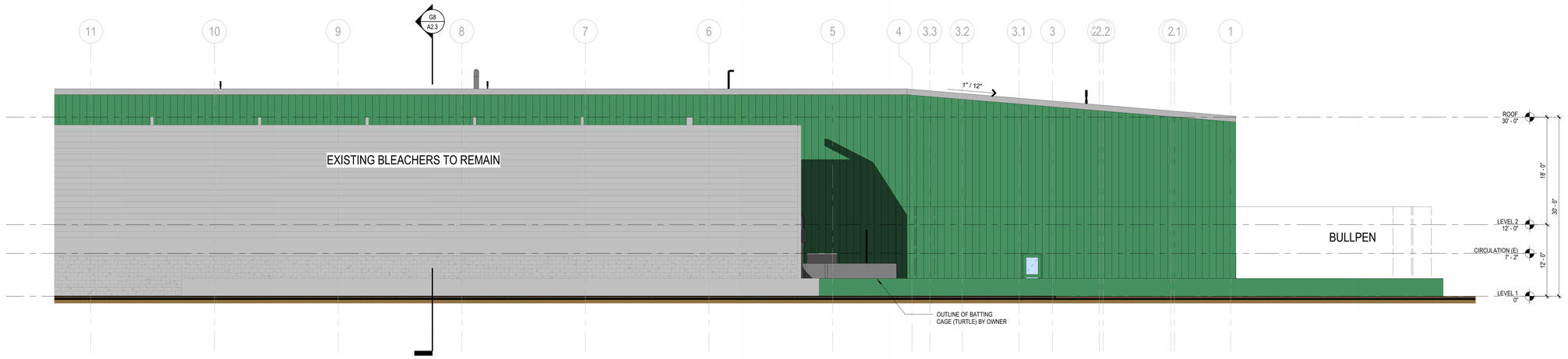
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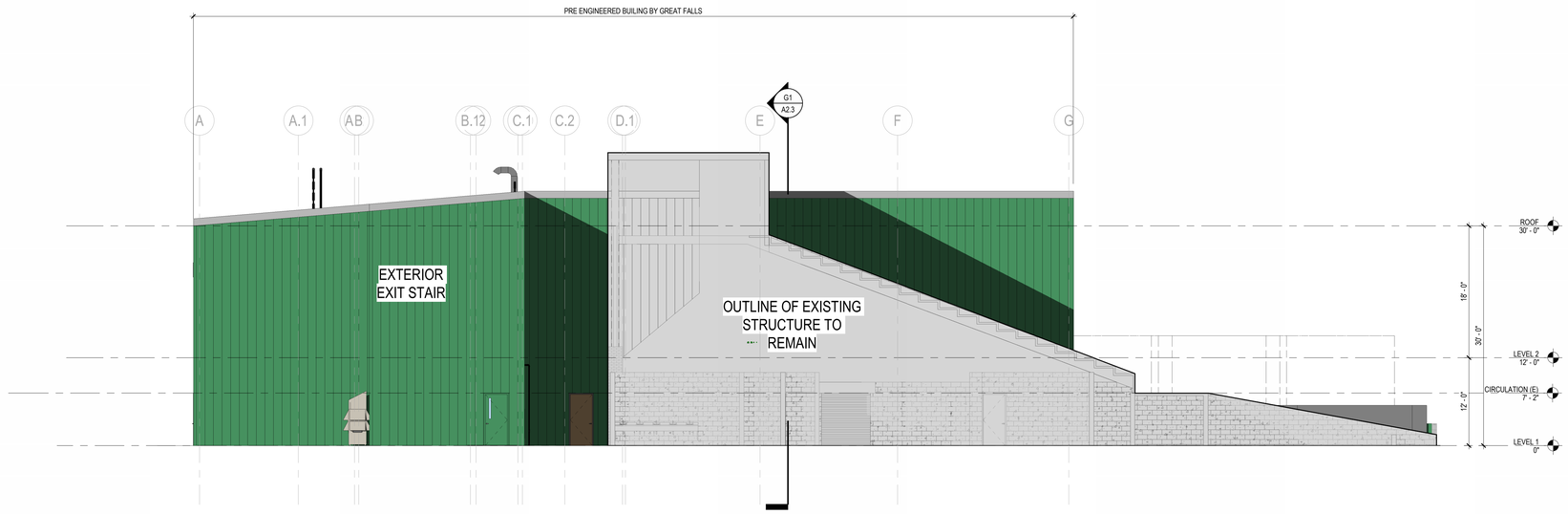
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E1 EAST ELEVATION
A2.2 1/8" = 1'-0"



J1 SOUTH ELEVATION
A2.2 1/8" = 1'-0"

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DBH - PORTLAND LLC

CLUBHOUSE ADDITION

Hadlock Field, 271 Park Ave.
Porland, ME 04102

NO.	DESCRIPTION	DATE

CONTENT:
EXTERIOR ELEVATIONS

DRAWN BY:	MOL
PROJECT NO:	23-104-00
DATE:	04/19/2024
REVISED:	
SCALE:	1/8" = 1'-0"

A2.2

Project Phase
BID PACKAGE #1

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FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL

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Site Plans

Issued for	**Site Plan Review**
Date Issued	**April 19, 2024**
Latest Issue	**April 19, 2024**

Portland Sea Dogs Clubhouse Addition

Hadlock Field
165 Park Avenue
Portland, Maine 04102



vhb.com

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Assessor's Map: 52
Lot: 1

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STATE OF MAINE
DAVID A. SENUS
10791
REGISTERED PROFESSIONAL ENGINEER
LICENSED

\\VHB.COM\GBL\PRO\SPORTLAND\55748.00 CONFIDENTIAL PROJECT\CAD\LD\PLANSET\55748.00-COV 22X34 19 April 2024

VHB Project : 55748.00 Portland Sea Dogs Clubhouse Addition
Issued for : Site Plan Review 04/19/2024

Legend

Exist.	Prop.	
		PROPERTY LINE
		PROJECT LIMIT LINE
		RIGHT-OF-WAY/PROPERTY LINE
		EASEMENT
		BUILDING SETBACK
		PARKING SETBACK
10+00	10+00	BASELINE
		CONSTRUCTION LAYOUT
		ZONING LINE
		TOWN LINE
		LIMIT OF DISTURBANCE
		WETLAND LINE WITH FLAG
		FLOODPLAIN
BLSF	BLSF	BORDERING LAND SUBJECT TO FLOODING
BZ	BZ	WETLAND BUFFER ZONE
NDZ	NDZ	NO DISTURB ZONE
200'RA	200'RA	200' RIVERFRONT AREA
		GRAVEL ROAD
EOP	EOP	EDGE OF PAVEMENT
BB	BB	BITUMINOUS BERM
BC	BC	BITUMINOUS CURB
CC	CC	CONCRETE CURB
	CG	CURB AND GUTTER
CC	ECC	EXTRUDED CONCRETE CURB
CC	MCC	MONOLITHIC CONCRETE CURB
CC	PCC	PRECAST CONC. CURB
SGE	SGE	SLOPED GRAN. EDGING
VGC	VGC	VERT. GRAN. CURB
		LIMIT OF CURB TYPE
		SAWCUT
		BUILDING
	EN	BUILDING ENTRANCE
	LD	LOADING DOCK
		BOLLARD
D	D	DUMPSTER PAD
		SIGN
		DOUBLE SIGN
		STEEL GUARDRAIL
		WOOD GUARDRAIL
		PATH
		TREE LINE
		WIRE FENCE
		FENCE
		STOCKADE FENCE
		STONE WALL
		RETAINING WALL
		STREAM / POND / WATER COURSE
		DETENTION BASIN
		HAY BALES
		SILT FENCE
		SILT SOCK / STRAW WATTLE
4	4	MINOR CONTOUR
20	20	MAJOR CONTOUR
10	10	PARKING COUNT
	C10	COMPACT PARKING STALLS
DYL	DYL	DOUBLE YELLOW LINE
SL	SL	STOP LINE
		CROSSWALK
		ACCESSIBLE CURB RAMP
		ACCESSIBLE PARKING
VAN	VAN	VAN-ACCESSIBLE PARKING

Exist.	Prop.	
		CONCRETE
		HEAVY DUTY PAVEMENT
		BUILDINGS
		RIPRAP
		CONSTRUCTION EXIT
		POROUS PAVEMENT
27.35 TC ×	27.35 TC ×	TOP OF CURB ELEVATION
26.85 BC ×	26.85 BC ×	BOTTOM OF CURB ELEVATION
132.75 ×	132.75 ×	SPOT ELEVATION
45.0 TW × 38.5 BW	45.0 TW × 38.5 BW	TOP & BOTTOM OF WALL ELEVATION
		BORING LOCATION
		TEST PIT LOCATION
MW	MW	MONITORING WELL
UD	UD	UNDERDRAIN
12"D	12"D	DRAIN
6"RD	6"RD	ROOF DRAIN
12"S	12"S	SEWER
FM	FM	FORCE MAIN
OHW	OHW	OVERHEAD WIRE
6"W	6"W	WATER
4"FP	4"FP	FIRE PROTECTION
	2"DW	DOMESTIC WATER
3"G	G	GAS
E	E	ELECTRIC
STM	STM	STEAM
T	T	TELEPHONE
FA	FA	FIRE ALARM
CATV	CATV	CABLE TV
		CATCH BASIN CONCENTRIC
		CATCH BASIN ECCENTRIC
		DOUBLE CATCH BASIN CONCENTRIC
		DOUBLE CATCH BASIN ECCENTRIC
		GUTTER INLET
		DRAIN MANHOLE CONCENTRIC
		DRAIN MANHOLE ECCENTRIC
TD		TRENCH DRAIN
		PLUG OR CAP
CO	CO	CLEANOUT
		FLARED END SECTION
		HEADWALL
S	S	SEWER MANHOLE CONCENTRIC
S	S	SEWER MANHOLE ECCENTRIC
CS	CS	CURB STOP & BOX
WV	WV	WATER VALVE & BOX
FDC		FIRE DEPARTMENT CONNECTION
TSV (PWD)	TSV FH	TAPPING SLEEVE, VALVE & BOX FIRE HYDRANT
WM	WM	WATER METER
PIV	PIV	POST INDICATOR VALVE
W	W	WATER WELL
GG	GG	GAS GATE
GM	GM	GAS METER
E	EMH	ELECTRIC MANHOLE
EM	EM	ELECTRIC METER
		LIGHT POLE
T	TMH	TELEPHONE MANHOLE
T	T	TRANSFORMER PAD
		UTILITY POLE
		GUY POLE
		GUY WIRE & ANCHOR
HH	HH	HAND HOLE
PB	PB	PULL BOX
		MATCHLINE

Abbreviations

General

ABAN	ABANDON
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
BIT	BITUMINOUS
BS	BOTTOM OF SLOPE
BWLL	BROKEN WHITE LANE LINE
CONC	CONCRETE
DYCL	DOUBLE YELLOW CENTER LINE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FDN	FOUNDATION
FFE	FIRST FLOOR ELEVATION
GRAN	GRANITE
GTD	GRADE TO DRAIN
LA	LANDSCAPE AREA
LOD	LIMIT OF DISTURBANCE
MAX	MAXIMUM
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PERF	PERFORATED
PROP	PROPOSED
REM	REMOVE
RET	RETAIN
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
TS	TOP OF SLOPE
TYP	TYPICAL

Utility

CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DCB	DOUBLE CATCH BASIN
DMH	DRAIN MANHOLE
CIP	CAST IRON PIPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
FM	FORCE MAIN
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GI	GUTTER INLET
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
I=	INVERT ELEVATION
LP	LIGHT POLE
MES	METAL END SECTION
PIV	POST INDICATOR VALVE
PWW	PAVED WATER WAY
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
R=	RIM ELEVATION
RIM=	RIM ELEVATION
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE, VALVE AND BOX
UG	UNDERGROUND
UP	UTILITY POLE

Notes

General

1. CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
2. THIS PROJECT REQUIRES REVIEW AND APPROVAL FROM THE CITY OF PORTLAND PLANNING AND URBAN DEVELOPMENT BOARD FOR MAJOR SITE PLAN REVIEW, AND WILL REQUIRE CHANGES TO THESE PLANS PRIOR TO START OF CONSTRUCTION, POTENTIALLY IMPACTING THE FINAL BUILDING LAYOUT, ACCESS WAYS, AND STORMWATER MANAGEMENT. ADDITIONALLY, ANY REQUIRED CONDITIONS OF APPROVAL WILL BE INCORPORATED IN TO THE FINAL DOCUMENTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
4. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
5. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 6 INCHES LOAM AND SEED.
6. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS.
7. WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
8. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
9. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
10. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
11. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
12. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
13. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
14. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.

Utilities

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
   A. PAVEMENTS AND CONCRETE SURFACES: FLUSH
   B. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
   C. LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
6. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
   A. WATER PIPES SHALL BE CLASS 52 THICKNESS DUCTILE IRON CEMENT LINED PIPE.
   B. SANITARY SEWER PIPES SHALL BE POLYVINYL CHLORIDE (PVC) RING TYPE SEWER PIPE (SDR 35 OR EQUIVALENT, MINIMUM PS-46 RATING).
   C. STORM DRAINAGE PIPES SHALL BE SMOOTH BORE HIGH PERFORMANCE POLYPROPYLENE DUAL WALL STORM DRAIN PIPE (ADS HP STORM OR EQUAL) MEETING A MINIMUM PS-46.
   D. PIPE INSTALLATION AND MATERIALS SHALL COMPLY WITH THE STATE PLUMBING CODE WHERE APPLICABLE. CONTRACTOR SHALL COORDINATE WITH LOCAL PLUMBING INSPECTOR PRIOR TO BEGINNING WORK.
8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASEMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
9. CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.

Layout and Materials

1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
2. CURB RADII ARE AS NOTED ON PLANS.
3. CURBING SHALL BE VGC WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS.
4. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LAND SURVEYOR.
6. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.

Demolition

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
2. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
3. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
4. THE DEMOLITION LIMITS DEPICTED IN THE PLANS IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
5. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.

Erosion Control

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS (MINIMUM) OR AS REQUIRED. THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.

Existing Conditions Information

1. BASE PLAN: THE PROPERTY LINES SHOWN ARE BASED UPON A BOUNDARY RETRACEMENT SURVEY CONDUCTED BY VHB, INC. IN DECEMBER OF 2023 AND FROM DEEDS AND PLANS OF RECORD. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY PERFORMED ON THE GROUND BY VHB, INC. IN DECEMBER 2023.
2. TOPOGRAPHY: ELEVATIONS ARE BASED ON THE CITY OF PORTLAND DATUM.
3. GEOTECHNICAL DATA INCLUDING TEST PIT AND BORING LOCATIONS AND ELEVATIONS WERE OBTAINED FROM S.W. COLE ENGINEERING, INC.

Document Use

1. THESE PLANS AND CORRESPONDING CADD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE, AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED, WRITTEN CONSENT OF VHB. ANY UNAUTHORIZED USE, REUSE, MODIFICATION OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO VHB.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

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Portland Sea Dogs Clubhouse Addition

165 Park Avenue
Portland, Maine 04102

No.	Revision	Date	Appvd.

Designed by JRH | Checked by DAS

Issued for: Site Plan Review | Date: April 19, 2024

Not Approved for Construction

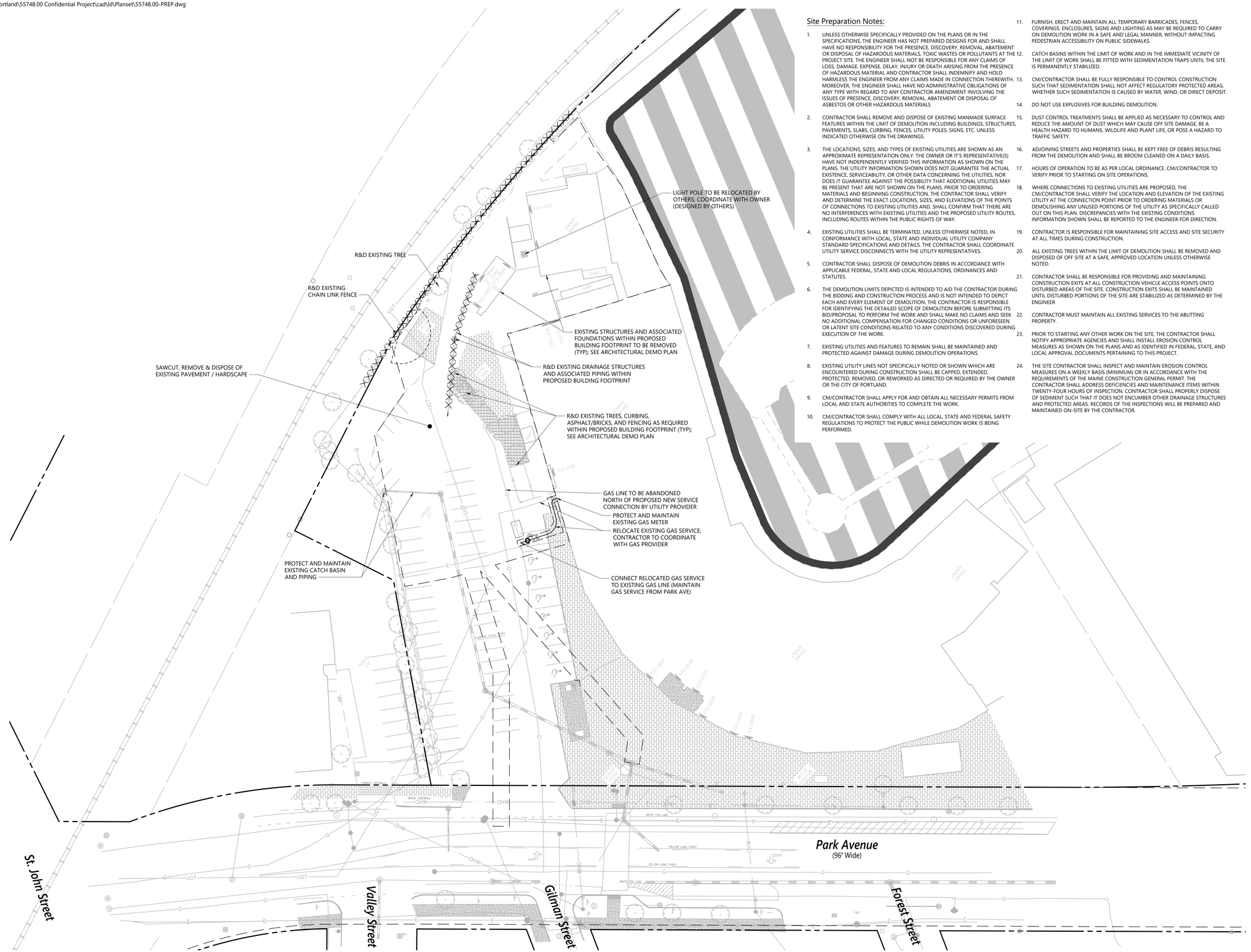
Drawing Title: Legend and General Notes

Drawing Number: C1.00

Sheet 1 of 8

Project Number: 55748.00

STATE OF MAINE · DAVID A. SENUS 10791 · PROFESSIONAL ENGINEER · LICENSED



Site Preparation Notes:

1. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS
2. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF DEMOLITION INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
3. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
4. EXISTING UTILITIES SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES.
5. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
6. THE DEMOLITION LIMITS DEPICTED IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION BEFORE SUBMITTING ITS BID/PROPOSAL TO PERFORM THE WORK AND SHALL MAKE NO CLAIMS AND SEEK NO ADDITIONAL COMPENSATION FOR CHANGED CONDITIONS OR UNFORESEEN OR LATENT SITE CONDITIONS RELATED TO ANY CONDITIONS DISCOVERED DURING EXECUTION OF THE WORK.
7. EXISTING UTILITIES AND FEATURES TO REMAIN SHALL BE MAINTAINED AND PROTECTED AGAINST DAMAGE DURING DEMOLITION OPERATIONS.
8. EXISTING UTILITY LINES NOT SPECIFICALLY NOTED OR SHOWN WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE CAPPED, EXTENDED, PROTECTED, REMOVED, OR REWORKED AS DIRECTED OR REQUIRED BY THE OWNER OR THE CITY OF PORTLAND.
9. CM/CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY PERMITS FROM LOCAL AND STATE AUTHORITIES TO COMPLETE THE WORK.
10. CM/CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL SAFETY REGULATIONS TO PROTECT THE PUBLIC WHILE DEMOLITION WORK IS BEING PERFORMED.
11. FURNISH, ERECT AND MAINTAIN ALL TEMPORARY BARRICADES, FENCES, COVERINGS, ENCLOSURES, SIGNS AND LIGHTING AS MAY BE REQUIRED TO CARRY ON DEMOLITION WORK IN A SAFE AND LEGAL MANNER, WITHOUT IMPACTING PEDESTRIAN ACCESSIBILITY ON PUBLIC SIDEWALKS.
12. CATCH BASINS WITHIN THE LIMIT OF WORK AND IN THE IMMEDIATE VICINITY OF THE LIMIT OF WORK SHALL BE FITTED WITH SEDIMENTATION TRAPS UNTIL THE SITE IS PERMANENTLY STABILIZED.
13. CM/CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
14. DO NOT USE EXPLOSIVES FOR BUILDING DEMOLITION.
15. DUST CONTROL TREATMENTS SHALL BE APPLIED AS NECESSARY TO CONTROL AND REDUCE THE AMOUNT OF DUST WHICH MAY CAUSE OFF SITE DAMAGE, BE A HEALTH HAZARD TO HUMANS, WILDLIFE AND PLANT LIFE, OR POSE A HAZARD TO TRAFFIC SAFETY.
16. ADJOINING STREETS AND PROPERTIES SHALL BE KEPT FREE OF DEBRIS RESULTING FROM THE DEMOLITION AND SHALL BE BROOM CLEANED ON A DAILY BASIS.
17. HOURS OF OPERATION TO BE AS PER LOCAL ORDINANCE. CM/CONTRACTOR TO VERIFY PRIOR TO STARTING ON SITE OPERATIONS.
18. WHERE CONNECTIONS TO EXISTING UTILITIES ARE PROPOSED, THE CM/CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF THE EXISTING UTILITY AT THE CONNECTION POINT PRIOR TO ORDERING MATERIALS OR DEMOLISHING ANY UNUSED PORTIONS OF THE UTILITY AS SPECIFICALLY CALLED OUT ON THIS PLAN. DISCREPANCIES WITH THE EXISTING CONDITIONS INFORMATION SHOWN SHALL BE REPORTED TO THE ENGINEER FOR DIRECTION.
19. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SITE ACCESS AND SITE SECURITY AT ALL TIMES DURING CONSTRUCTION.
20. ALL EXISTING TREES WITHIN THE LIMIT OF DEMOLITION SHALL BE REMOVED AND DISPOSED OF OFF SITE AT A SAFE, APPROVED LOCATION UNLESS OTHERWISE NOTED.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING CONSTRUCTION EXITS AT ALL CONSTRUCTION VEHICLE ACCESS POINTS ONTO DISTURBED AREAS OF THE SITE. CONSTRUCTION EXITS SHALL BE MAINTAINED UNTIL DISTURBED PORTIONS OF THE SITE ARE STABILIZED AS DETERMINED BY THE ENGINEER
22. CONTRACTOR MUST MAINTAIN ALL EXISTING SERVICES TO THE ABUTTING PROPERTY.
23. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
24. THE SITE CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A WEEKLY BASIS (MINIMUM) OR IN ACCORDANCE WITH THE REQUIREMENTS OF THE MAINE CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR SHALL ADDRESS DEFICIENCIES AND MAINTENANCE ITEMS WITHIN TWENTY-FOUR HOURS OF INSPECTION. CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT SUCH THAT IT DOES NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS. RECORDS OF THE INSPECTIONS WILL BE PREPARED AND MAINTAINED ON-SITE BY THE CONTRACTOR.

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0 15 30 60 Feet

Portland Sea Dogs Clubhouse Addition

165 Park Avenue
Portland, Maine 04102

No.	Revision	Date	Appvd.

Designed by JRH | Checked by DAS

Issued for: Site Plan Review
Date: April 19, 2024

Not Approved for Construction

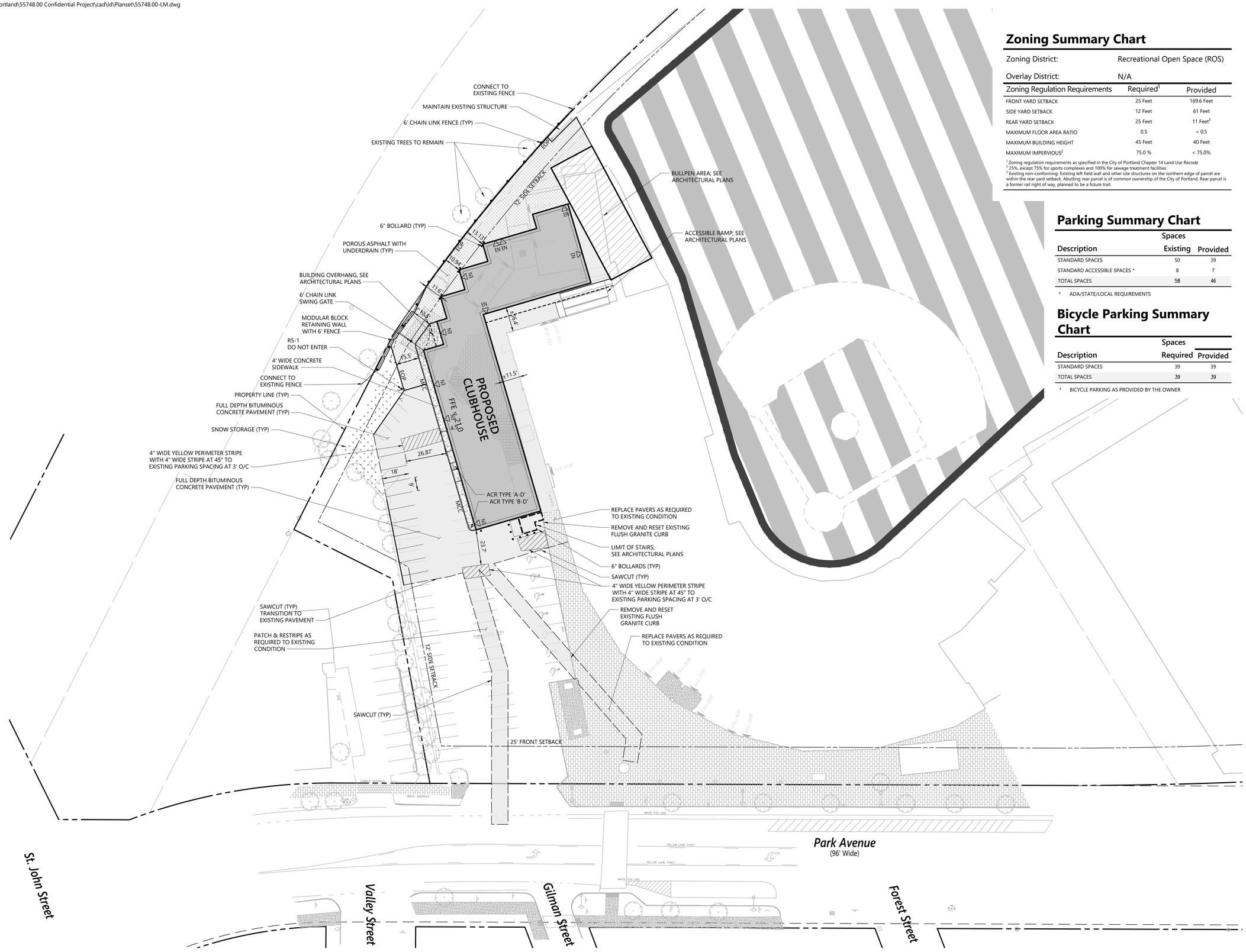
Drawing Title
Site Preparation Plan

Drawing Number
C2.00

STATE OF MAINE · DAVID A. SENUS 10791 · PROFESSIONAL ENGINEER · LICENSED

Sheet 2 of 8

Project Number 55748.00



Zoning Summary Chart

Zoning District: Recreational Open Space (ROS)

Overlay District: N/A

Zoning Regulation Requirements	Required[1]	Provided
FRONT YARD SETBACK	25 Feet	169.6 Feet
SIDE YARD SETBACK	12 Feet	61 Feet
REAR YARD SETBACK	25 Feet	11 Feet[3]
MAXIMUM FLOOR AREA RATIO	0.5	< 0.5
MAXIMUM BUILDING HEIGHT	45 Feet	40 Feet
MAXIMUM IMPERVIOUS[2]	75.0 %	< 75.0%

[1] Zoning regulation requirements as specified in the City of Portland Chapter 14 Land Use Recode
[2] 25%, except 75% for sports complexes and 100% for sewage treatment facilities
[3] Existing non-conforming. Existing left field wall and other site structures on the northern edge of parcel are within the rear yard setback. Abutting rear parcel is of common ownership of the City of Portland. Rear parcel is a former rail right of way, planned to be a future trail.

Parking Summary Chart

Description	Spaces Existing	Spaces Provided
STANDARD SPACES	50	39
STANDARD ACCESSIBLE SPACES *	8	7
TOTAL SPACES	58	46

* ADA/STATE/LOCAL REQUIREMENTS

Bicycle Parking Summary Chart

Description	Spaces Required	Spaces Provided
STANDARD SPACES	39	39
TOTAL SPACES	39	39

* BICYCLE PARKING AS PROVIDED BY THE OWNER

0 15 30 60 Feet

Portland Sea Dogs Clubhouse Addition

165 Park Avenue
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Drawing Title: Layout and Materials Plan

Drawing Number: C3.00

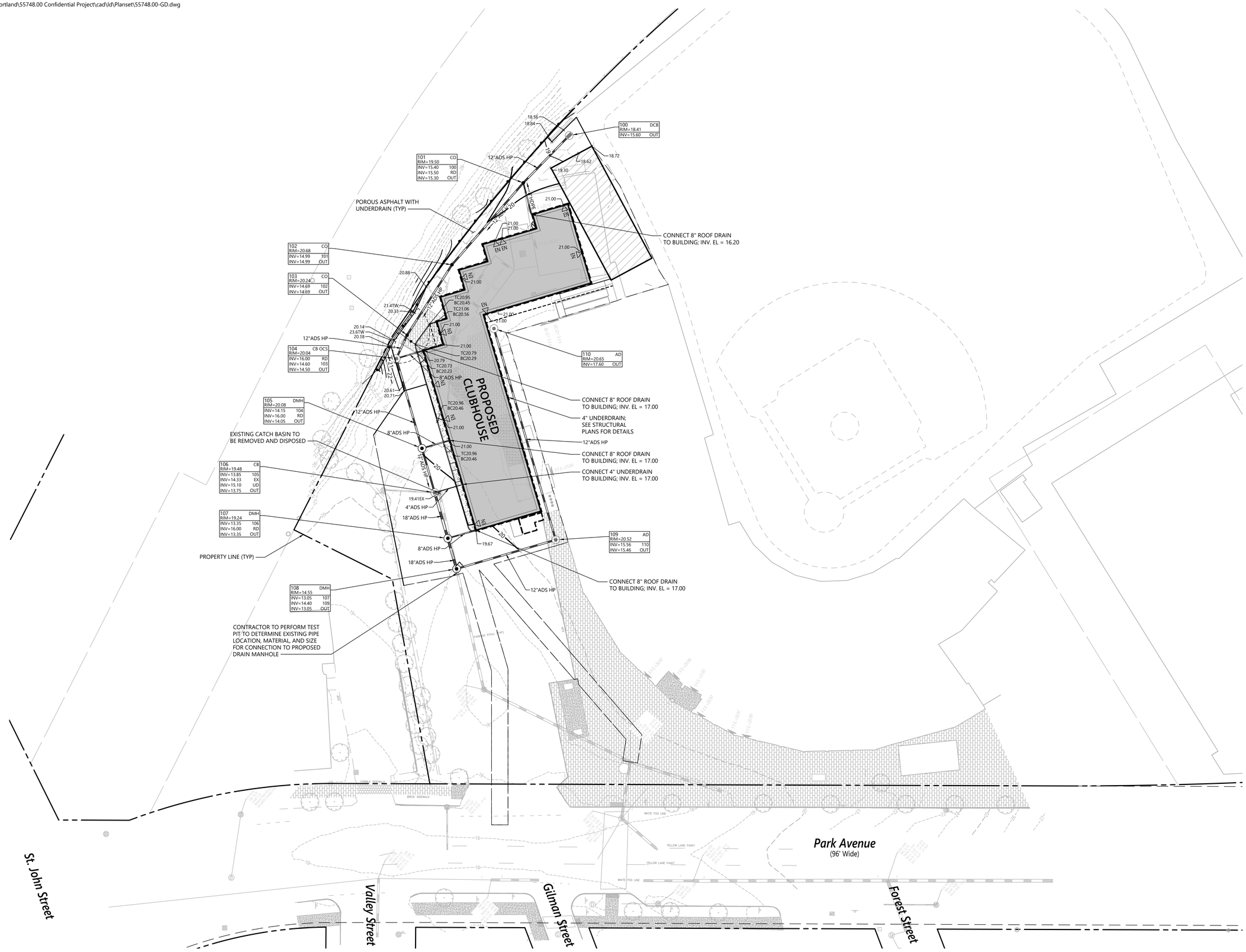
Sheet 3 of 8

Project Number: 55748.00

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Portland Sea Dogs Clubhouse Addition

165 Park Avenue
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Not Approved for Construction

Drawing Title: **Grading and Drainage Plan**

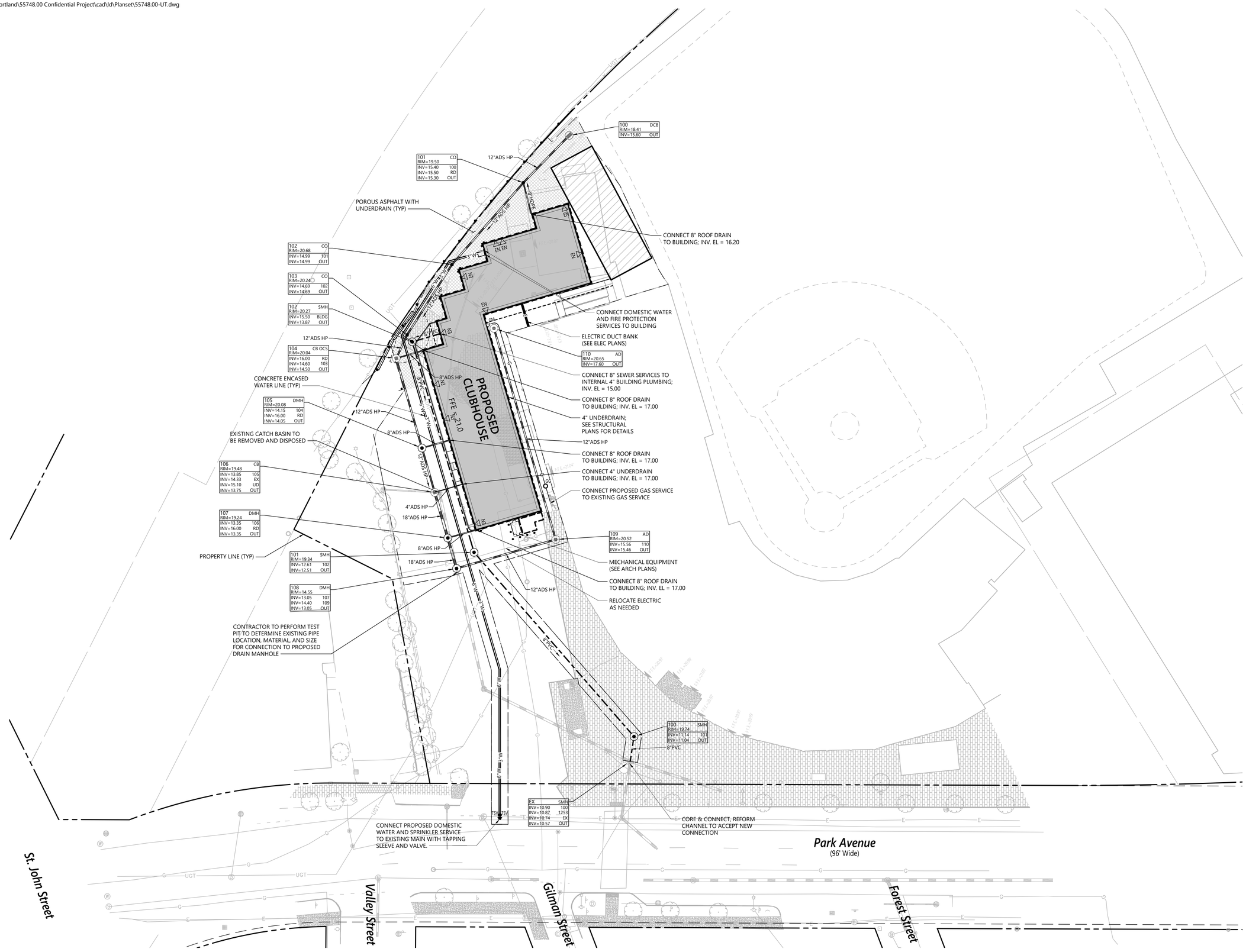
Drawing Number: C4.00

Sheet 4 of 8

Project Number: 55748.00

STATE OF MAINE
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0 15 30 60 Feet

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Drawing Title
Utility Plan

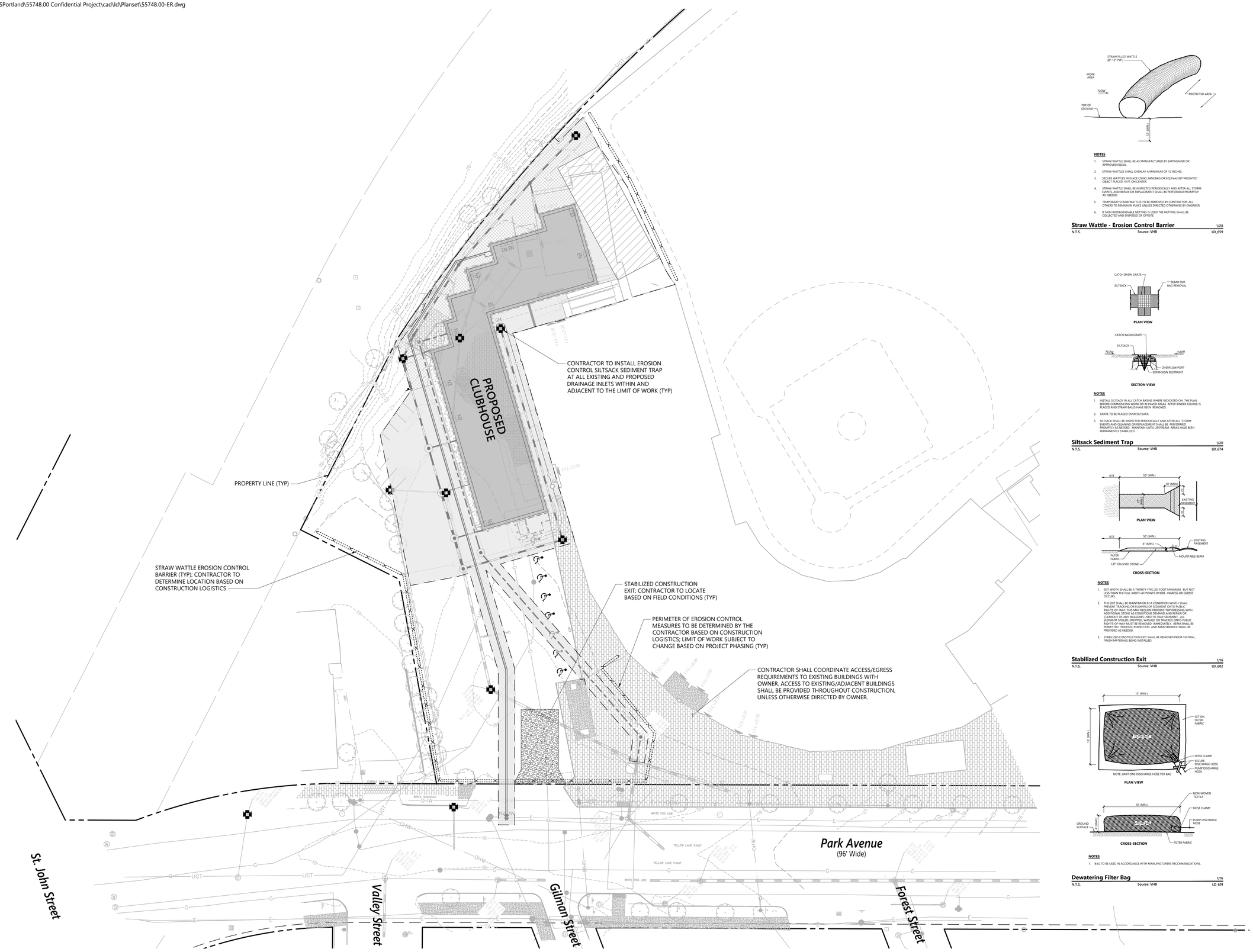
Drawing Number
C5.00

Sheet 5 of 8

Project Number
55748.00

STATE OF MAINE
DAVID A SENUS
10791
REGISTERED PROFESSIONAL ENGINEER
LICENSED

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NOTES

1. STRAW WATTLE SHALL BE AS MANUFACTURED BY EARTHSAVER OR APPROVED EQUAL.
2. STRAW WATTLES SHALL OVERLAP A MINIMUM OF 12 INCHES.
3. SECURE WATTLES IN PLACE USING SANDBAG OR EQUIVALENT WEIGHTED OBJECT PLACED 10 FT ON CENTER.
4. STRAW WATTLE SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
5. TEMPORARY STRAW WATTLES TO BE REMOVED BY CONTRACTOR. ALL OTHERS TO REMAIN IN PLACE UNLESS DIRECTED OTHERWISE BY ENGINEER.
6. IF NON BIODEGRADABLE NETTING IS USED THE NETTING SHALL BE COLLECTED AND DISPOSED OF OFFSITE.

Straw Wattle - Erosion Control Barrier 1/20
N.T.S. Source: VHB LD_659

PLAN VIEW

SECTION VIEW

NOTES

1. INSTALL SILTSACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS, AFTER BINDER COURSE IS PLACED AND STRAW BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED

Siltsack Sediment Trap 1/20
N.T.S. Source: VHB LD_674

PLAN VIEW

CROSS-SECTION

NOTES

1. EXIT WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ANY SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

Stabilized Construction Exit 1/16
N.T.S. Source: VHB LD_682

PLAN VIEW

CROSS-SECTION

NOTES

1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

Dewatering Filter Bag 1/16
N.T.S. Source: VHB LD_691

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Portland Sea Dogs Clubhouse Addition

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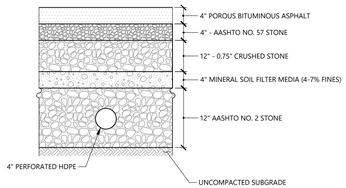
Drawing Title
Erosion Control Plan

Drawing Number
C6.00

Sheet 6 of 8

Project Number
55748.00

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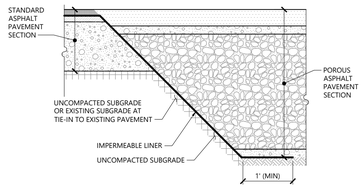


NOTES:

1. PROVIDE IMPERMEABLE LINER ON VERTICAL SIDES OF EXCAVATION AS INDICATED IN DETAILS.
2. UNLESS OTHERWISE INDICATED, INSTALL ALL UTILITY PIPES, CONDUIT, AND DUCT BANKS BELOW POROUS PAVEMENT SECTION.

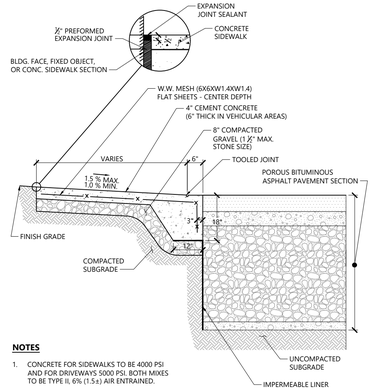
Porous Bituminous Asphalt Pavement Section 10/20

N.T.S. Source: VHB 14899.00



Porous Pavement Tie-In to Standard Pavement 4/19

N.T.S. Source: VHB 55748.00

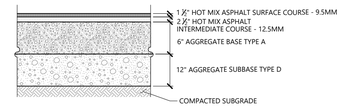


NOTES

1. CONCRETE FOR SIDEWALKS TO BE 4000 PSI AND FOR DRIVEWAYS 5000 PSI. BOTH MIXES TO BE TYPE II, 6% (1.5±) AIR ENTRAINED.
2. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE-FORMED EXPANSION JOINT FILLER & SEALER.
3. PROVIDE TOOLED CONTROL JOINTS AT 6' O.C.
4. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.

Monolithic Concrete Curb (MCC) & Sidewalk 1/16

N.T.S. Source: VHB REV LD_421



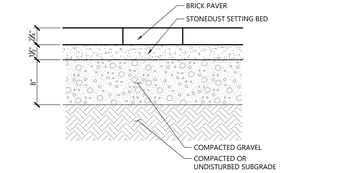
STANDARD DUTY FLEXIBLE PAVEMENT

NOTES

PAVEMENT SECTIONS ARE SUBJECT TO CHANGE AND WILL BE BASED ON THE RESULTS OF FURTHER GEOTECHNICAL INVESTIGATIONS.

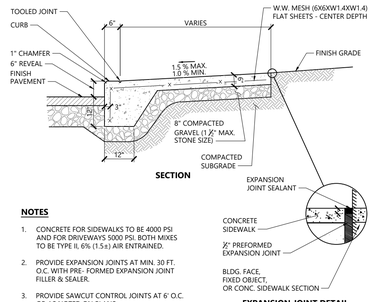
Bituminous Concrete Pavement Sections

N.T.S. Source: VHB



Dryset Unit Pavers on Stonedust Bed 1/16

N.T.S. Source: VHB LD_835

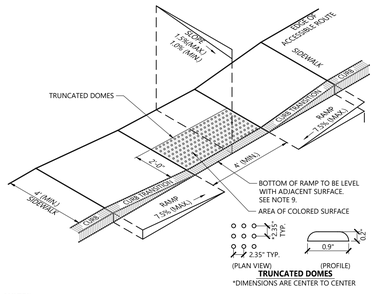


NOTES

1. CONCRETE FOR SIDEWALKS TO BE 4000 PSI AND FOR DRIVEWAYS 5000 PSI. BOTH MIXES TO BE TYPE II, 6% (1.5±) AIR ENTRAINED.
2. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE- FORMED EXPANSION JOINT FILLER & SEALER.
3. PROVIDE SAWCUT CONTROL JOINTS AT 6' O.C. OR AS NOTED ON PLANS.
4. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
5. ALL EXPOSED CONCRETE SURFACES SHALL BE SEALED WITH A SILANE-SILOXANE PRODUCT.

Monolithic Concrete Curb (MCC) & Sidewalk 3/20

N.T.S. Source: VHB LD_421

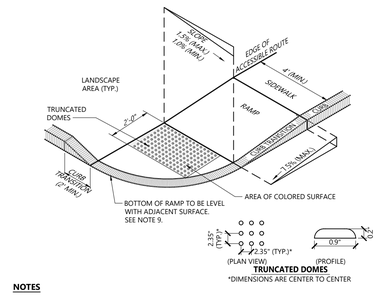


NOTES

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO ACCESSIBLE ROUTE.

Accessible Curb Ramp (ACR) Type 'A-D' 12/20

N.T.S. Source: VHB LD_500

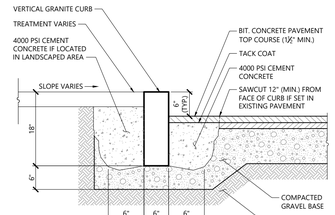


NOTES

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4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE INSTALLED AND SET FLUSH.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.
12. CONTRACTOR TO SUBMIT R.F.I. FOR THIS TYPE OF ACCESSIBLE CURB RAMP FOR APEX ROADWAY CROSSINGS.

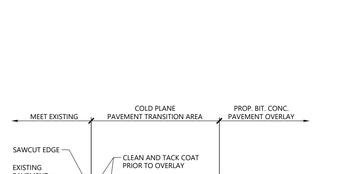
Accessible Curb Ramp (ACR) - Type 'B-D' 12/20

N.T.S. Source: VHB LD_501



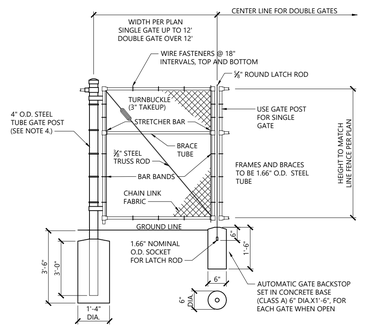
Vertical Granite Curb (VGC) 3/20

N.T.S. Source: VHB LD_402



Pavement Overlay Transition Section 1/16

N.T.S. Source: VHB LD_435

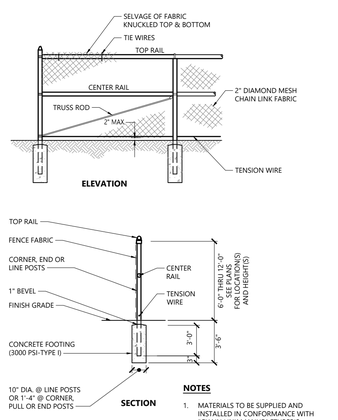


NOTES

1. CHAIN LINK FABRIC FOR GATES TO BE THE SAME AS REQUIRED FOR FENCE.
2. GATE POST BASE-PORTLAND CEMENT CONCRETE (3000 PSI).
3. FENCE FABRIC, POSTS, FRAMEWORKS, AND HARDWARE SHALL BE GALVANIZED STEEL PER SPECIFICATIONS.
4. GATE POSTS TO BE USED ON EACH SIDE OF SINGLE AND DOUBLE GATE OPENINGS.

Chain Link Fence Gate 12/19

N.T.S. Source: VHB LD_482

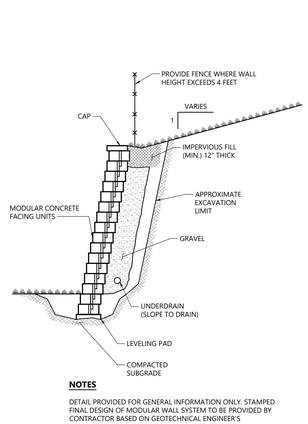


NOTES

1. MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH "CHAIN LINK MANUFACTURER'S INSTITUTE" PRODUCT MANUAL.

6' to 12' Chain Link Fence 10/20

N.T.S. Source: VHB LD_480

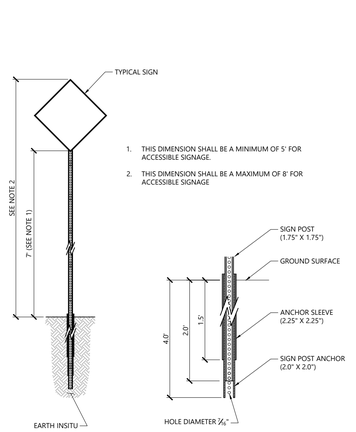


NOTES

DETAIL PROVIDED FOR GENERAL INFORMATION ONLY. STAMPED FINAL DESIGN OF MODULAR WALL SYSTEM TO BE PROVIDED BY CONTRACTOR BASED ON GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

Modular Retaining Wall 10/20

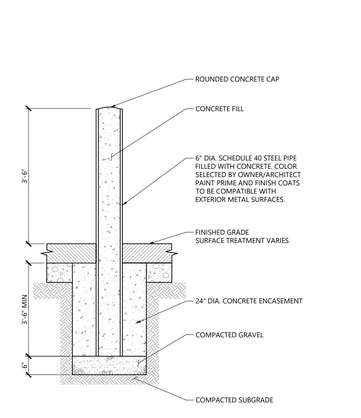
N.T.S. Source: VHB LD_750



1. THIS DIMENSION SHALL BE A MINIMUM OF 5' FOR ACCESSIBLE SIGNAGE.
2. THIS DIMENSION SHALL BE A MAXIMUM OF 8' FOR ACCESSIBLE SIGNAGE

Sign Post - Type 'B' 3/19

N.T.S. Source: VHB LD_702



Bollard 12/19

N.T.S. Source: VHB LD_700

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Portland Sea Dogs Clubhouse Addition

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No.	Revision	Date	Appvd.

Designed by JRH | Checked by DAS

Issued for: Site Plan Review — Date: April 19, 2024

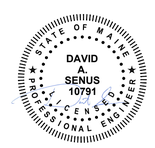
Not Approved for Construction

Drawing Title: Site Details 1

Drawing Number: C7.01

Sheet 7 of 8

Project Number: 55748.00

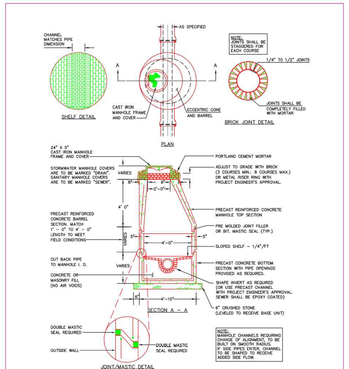


\\vhb.com\gbl\proj\SPortland\55748.00 Confidential Project\cad\ld\Planset\55748.00-DT.dwg

1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL PIPES ENTERING MANHOLES AND CATCH BASINS SHALL HAVE FLEXIBLE BOOT CONNECTIONS WITH STAINLESS STEEL BANDS. FILL ANY ANNUAL SPACE WITH NON-SHRINK GROUT.
5. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID
6. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. INVERTS SHALL BE BUILT TO THE HEIGHT OF THE FOLLOWING AS DETERMINED BY THE LARGEST PIPE SIZE.
   - 8.1. FOR PIPE SIZES 4"-12" INVERTS SHALL GO TO THE TOP OF THE PIPE.
   - 8.2. FOR PIPE SIZES 15"-30" INVERTS SHALL GO TO THE SPRING LINE.
   - 8.3. FOR PIPE SIZES 42"-60" INVERTS SHALL GO TO THE 1/3 OF PIPE SIZE
9. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48–CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS: SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A HOOD / CASCO TRAP. SEE FIGURE II-09.
13. ALL MANHOLES AND CATCH BASINS REQUIRE BUOYANCY CALCULATIONS AND THE STRUCTURES SHALL BE MODIFIED AS NECESSARY BASED ON THOSE CALCULATIONS.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

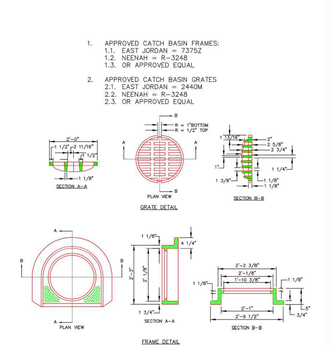
DATE: MARCH 2019 REVISED: AUG 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-4
	GENERAL NOTES FOR MANHOLES AND CATCH BASINS		



PRECAST CONCRETE MANHOLE
NOT TO SCALE

DATE: DEC. 2009 REVISED: DEC. 2021	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-2
	PRECAST CONCRETE MANHOLE		

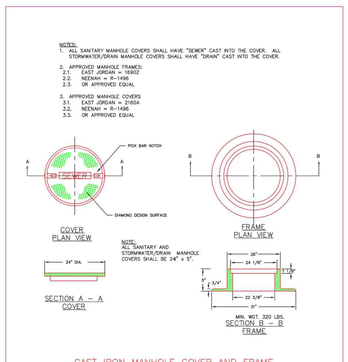
1. APPROVED CATCH BASIN FRAMES:
   - 1.1. EAST JORDAN = 7375Z
   - 1.2. NEENAH = R-3248
   - 1.3. OR APPROVED EQUAL
2. APPROVED CATCH BASIN GRATES
   - 2.1. EAST JORDAN = 2440M
   - 2.2. NEENAH = R-3248
   - 2.3. OR APPROVED EQUAL



CATCH BASIN FRAME & GRATE

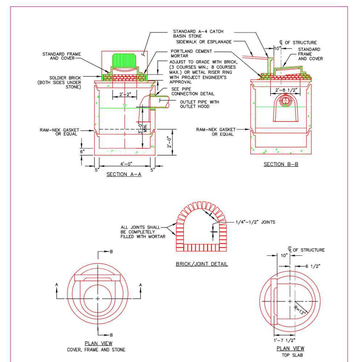
DATE: AUGUST 2009 REVISED: DEC. 2021	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-8
	CATCH BASIN FRAME AND GRATE		

NOTES:
1. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
2. APPROVED MANHOLE FRAMES:
   - 2.1. EAST JORDAN = 1892Z
   - 2.2. NEENAH = R-1496
   - 2.3. OR APPROVED EQUAL
3. APPROVED MANHOLE COVERS
   - 3.1. EAST JORDAN = 2160A
   - 3.2. NEENAH = R-1496
   - 3.3. OR APPROVED EQUAL



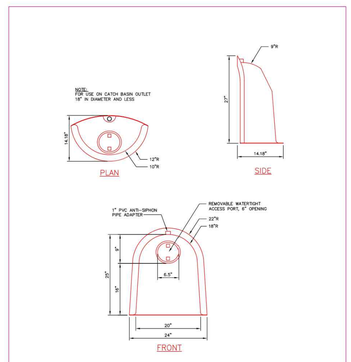
CAST IRON MANHOLE COVER AND FRAME
NOT TO SCALE

DATE: AUG 2009 REVISED: DEC 2021	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-5
	CAST IRON MANHOLE COVER AND FRAME		



PRECAST CONCRETE CATCH BASIN — TYPE "E"
NOT TO SCALE

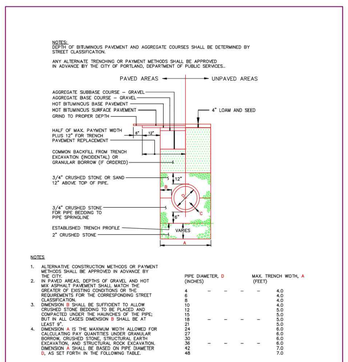
DATE: MARCH 2009 REVISED: AUG 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-7
	PRECAST CONCRETE CATCH BASIN		



CATCH BASIN HOOD
NOT TO SCALE

DATE: MARCH 2019 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-9
	CATCH BASIN HOOD		

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.
ANY ALTERNATE TRENCHING OR PAVEMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES.

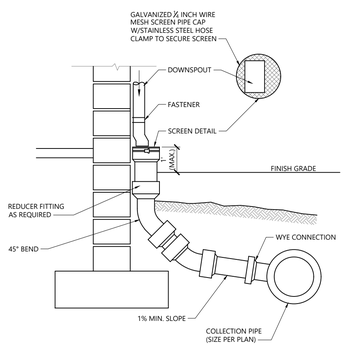


NOTES
1. ALTERNATIVE CONSTRUCTION METHODS OR PAVEMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN UNPAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE MINIMUM DEPTH FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION B SHALL BE SUFFICIENT TO ALLOW PROPER PLACEMENT AND REQUIRED DENSITY OF COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST A+12".
4. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, ROCK EXCAVATION, AND STRUCTURAL ROCK EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE FOLLOWING TABLE:

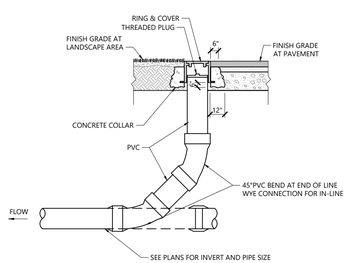
PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4 – 6	4.0
8	4.0
10	4.0
12	4.5
15	5.0
18	5.5
21	6.0
24	6.0
27	6.0
30	6.0
36	6.0
42	7.0
48	7.0

TYPICAL PIPE TRENCH INSTALLATION
NOT TO SCALE

DATE: AUGUST 2009 REVISED: SEPTEMBER 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-12
	TYPICAL PIPE TRENCH INSTALLATION AND NOTES		

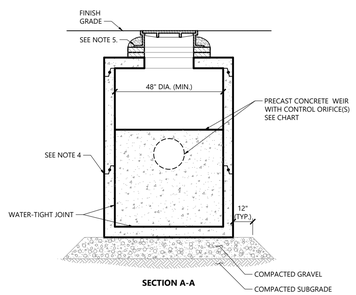


Downspout Rain Leader 1/16
N.T.S. Source: VHB LD_195



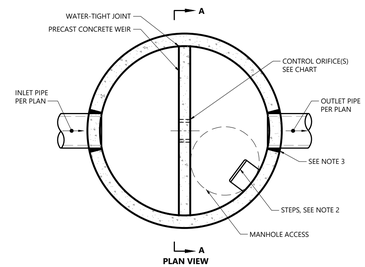
Cleanout (CO) 12/19
N.T.S. Source: VHB LD_303

STRUCTURE NUMBER	TOP OF WEIR ELEVATION	DIMENSIONS ORIFICE A	INVERT ORIFICE A
104	17.5'	1.5"	17.27'



SECTION A-A

Outlet Control Structure with Weir (OCS) 3/20
N.T.S. Source: VHB LD_162A



NOTES

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING. DIAMETER OF STRUCTURES SHALL BE COORDINATED WITH PIPE CONFIGURATIONS.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. FOR HDPE, PVC, AND DI PIPE, PROVIDE FLEXIBLE BOOT CONNECTION INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. FOR RCP, PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE AND MORTAR CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

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Portland Sea Dogs Clubhouse Addition

165 Park Avenue
Portland, Maine 04102

No.	Revision	Date	Appvd.

Designed by JRH Checked by DAS

Issued for: Site Plan Review — Date: April 19, 2024

Not Approved for Construction

Drawing Title: Site Details 2

Drawing Number: C7.02

Sheet 8 of 8

Project Number: 55748.00

STATE OF MAINE DAVID A. SENUS 10791 PROFESSIONAL ENGINEER

Saved Friday, April 19, 2024 2:26:35 PM JHOWE Plotted Friday, April 19, 2024 3:32:26 PM Jason Howe

General Notes

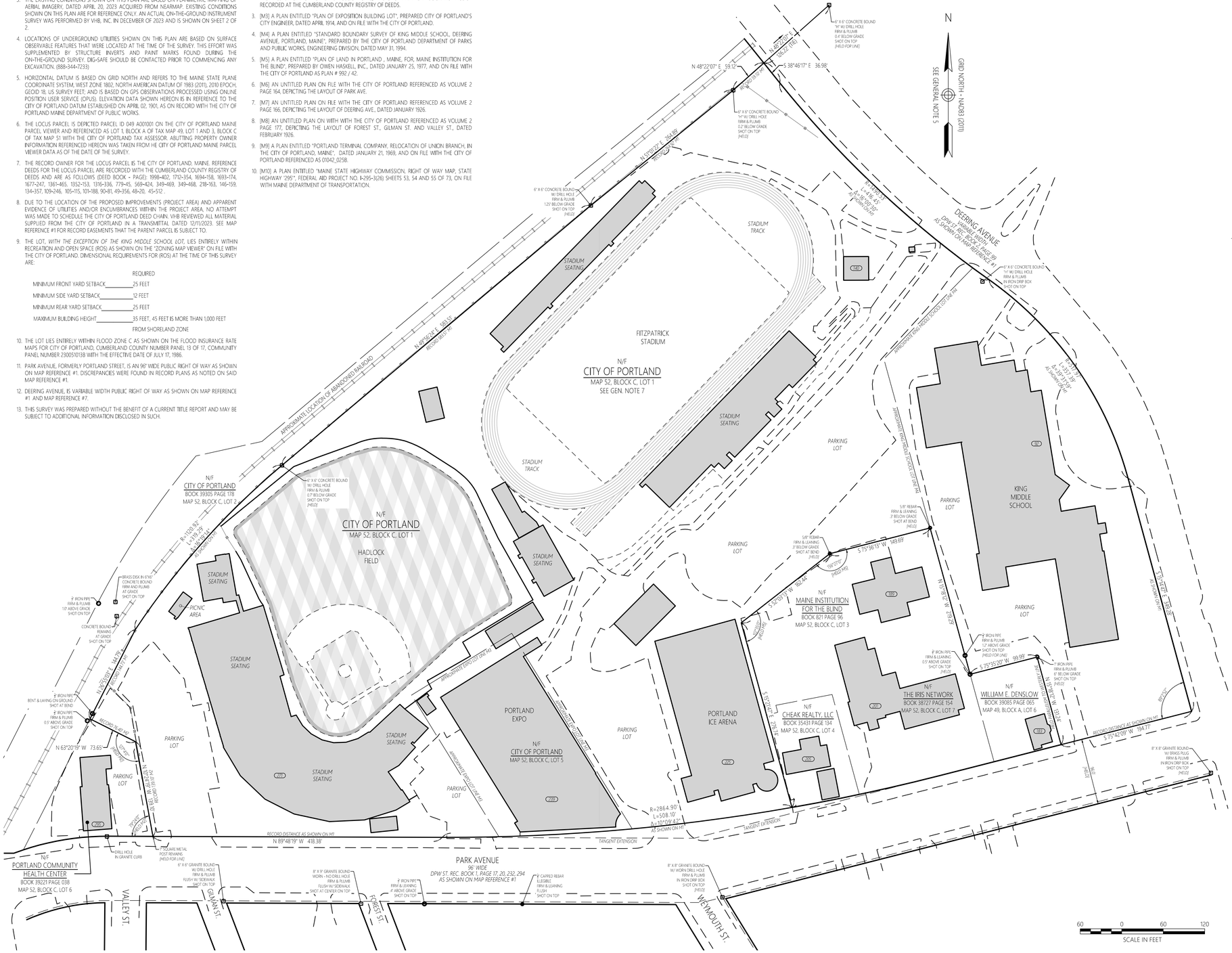
1. THIS PLAN AND ALL WORK ASSOCIATED WITH IT WAS PERFORMED BY VANASSE HANGEN BRUSTLIN, INC. (VHB, INC.) PURSUANT TO A PROFESSIONAL SERVICES CONTRACT BETWEEN LAVALLEE / BRENSINGER ARCHITECTS AND VHB, INC. DATED OCTOBER 19, 2023.
2. THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON A BOUNDARY RETRACEMENT SURVEY CONDUCTED BY VHB, INC. IN DECEMBER OF 2023 AND FROM DEEDS AND PLANS OF RECORD.
3. THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED ON PLANIMETRIC MAPPING OF AERIAL IMAGERY, DATED APRIL 20, 2023 ACQUIRED FROM NEARMAP. EXISTING CONDITIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY WAS PERFORMED BY VHB, INC. IN DECEMBER OF 2023 AND IS SHOWN ON SHEET 2 OF 2.
4. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON SURFACE OBSERVABLE FEATURES THAT WERE LOCATED AT THE TIME OF THE SURVEY. THIS EFFORT WAS SUPPLEMENTED BY STRUCTURE INVERTS AND PAINT MARKS FOUND DURING THE ON-THE-GROUND SURVEY. DIG-SAFE SHOULD BE CONTACTED PRIOR TO COMMENCING ANY EXCAVATION. (888-344-7233)
5. HORIZONTAL DATUM IS BASED ON GRID NORTH AND REFERS TO THE MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802, NORTH AMERICAN DATUM OF 1983 (2011), 2010 EPOCH, GEOID 18, US SURVEY FEET, AND IS BASED ON GPS OBSERVATIONS PROCESSED USING ONLINE POSITION USER SERVICE (OPUS). ELEVATION DATA SHOWN HEREON IS IN REFERENCE TO THE CITY OF PORTLAND DATUM ESTABLISHED ON APRIL 02, 1901, AS ON RECORD WITH THE CITY OF PORTLAND MAINE DEPARTMENT OF PUBLIC WORKS.
6. THE LOCUS PARCEL IS DEPICTED PARCEL ID 049 A001001 ON THE CITY OF PORTLAND MAINE PARCEL VIEWER AND REFERENCED AS LOT 1, BLOCK A OF TAX MAP 49, LOT 1 AND 3, BLOCK C OF TAX MAP 51 WITH THE CITY OF PORTLAND TAX ASSESSOR. ABUTTING PROPERTY OWNER INFORMATION REFERENCED HEREON WAS TAKEN FROM HE CITY OF PORTLAND MAINE PARCEL VIEWER DATA AS OF THE DATE OF THE SURVEY.
7. THE RECORD OWNER FOR THE LOCUS PARCEL IS THE CITY OF PORTLAND, MAINE. REFERENCE DEEDS FOR THE LOCUS PARCEL ARE RECORDED WITH THE CUMBERLAND COUNTY REGISTRY OF DEEDS AND ARE AS FOLLOWS (DEED BOOK - PAGE): 1998-402, 1712-254, 1694-158, 1693-174, 1677-247, 1361-465, 1352-153, 1316-336, 779-45, 569-424, 349-469, 349-468, 218-163, 146-159, 134-357, 109-246, 105-115, 101-188, 90-81, 49-356, 48-20, 45-512 .
8. DUE TO THE LOCATION OF THE PROPOSED IMPROVEMENTS (PROJECT AREA) AND APPARENT EVIDENCE OF UTILITIES AND/OR ENCUMBRANCES WITHIN THE PROJECT AREA, NO ATTEMPT WAS MADE TO SCHEDULE THE CITY OF PORTLAND DEED CHAIN. VHB REVIEWED ALL MATERIAL SUPPLIED FROM THE CITY OF PORTLAND IN A TRANSMITTAL DATED 12/11/2023. SEE MAP REFERENCE #1 FOR RECORD EASEMENTS THAT THE PARENT PARCEL IS SUBJECT TO.
9. THE LOT, *WITH THE EXCEPTION OF THE KING MIDDLE SCHOOL LOT*, LIES ENTIRELY WITHIN RECREATION AND OPEN SPACE (ROS) AS SHOWN ON THE "ZONING MAP VIEWER" ON FILE WITH THE CITY OF PORTLAND. DIMENSIONAL REQUIREMENTS FOR (ROS) AT THE TIME OF THIS SURVEY ARE:

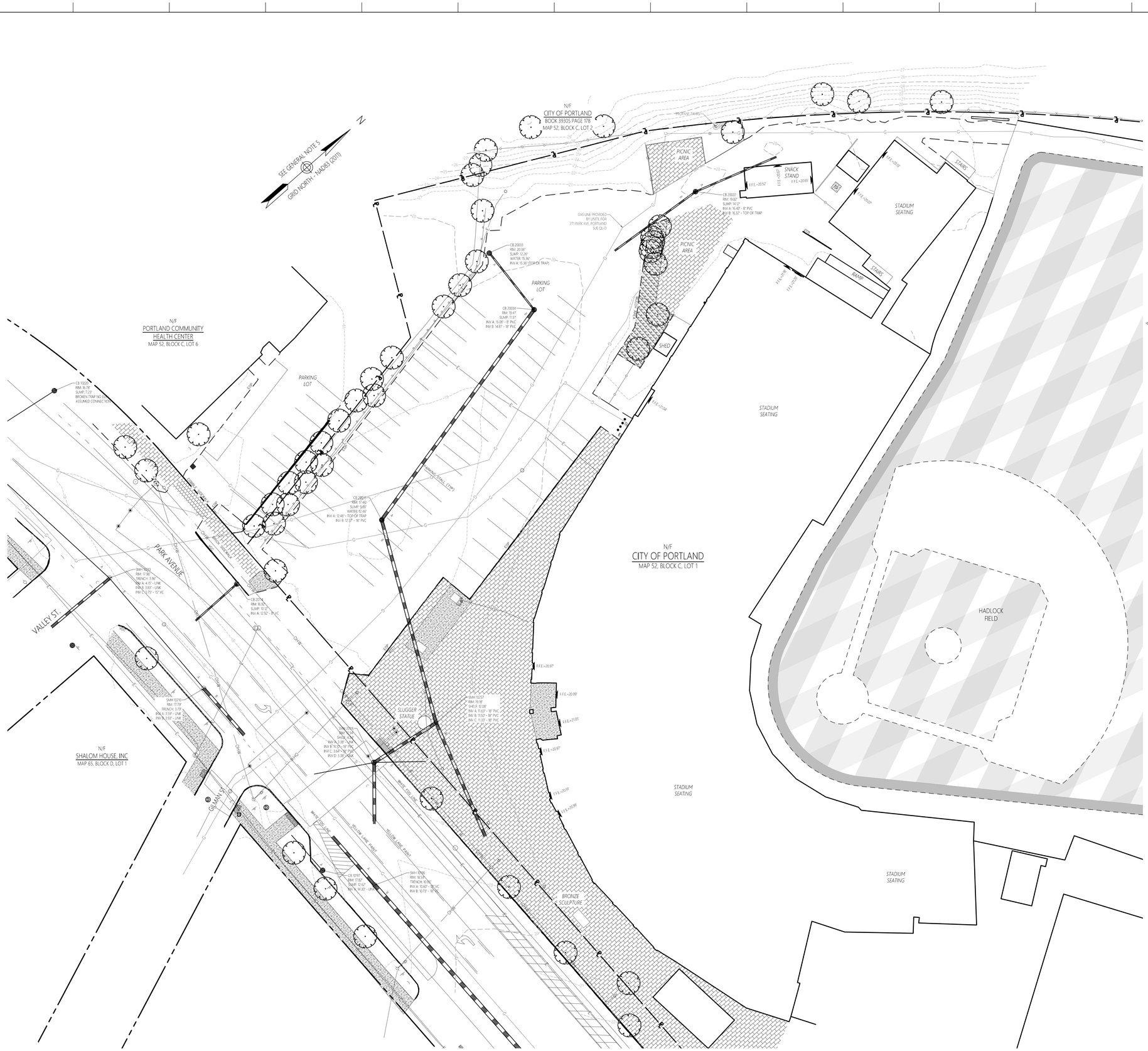
	REQUIRED
MINIMUM FRONT YARD SETBACK	25 FEET
MINIMUM SIDE YARD SETBACK	12 FEET
MINIMUM REAR YARD SETBACK	25 FEET
MAXIMUM BUILDING HEIGHT	35 FEET, 45 FEET IS MORE THAN 1,000 FEET FROM SHORELAND ZONE

10. THE LOT LIES ENTIRELY WITHIN FLOOD ZONE C AS SHOWN ON THE FLOOD INSURANCE RATE MAPS FOR CITY OF PORTLAND, CUMBERLAND COUNTY NUMBER PANEL 13 OF 17, COMMUNITY PANEL NUMBER 2300510138 WITH THE EFFECTIVE DATE OF JULY 17, 1986.
11. PARK AVENUE, FORMERLY PORTLAND STREET, IS AN 96' WIDE PUBLIC RIGHT OF WAY AS SHOWN ON MAP REFERENCE #1. DISCREPANCIES WERE FOUND IN RECORD PLANS AS NOTED ON SAID MAP REFERENCE #1.
12. DEERING AVENUE, IS VARIABLE WIDTH PUBLIC RIGHT OF WAY AS SHOWN ON MAP REFERENCE #1 AND MAP REFERENCE #7.
13. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND MAY BE SUBJECT TO ADDITIONAL INFORMATION DISCLOSED IN SUCH.

Map References

1. [M1] A PLAN ENTITLED "BOUNDARY LINE RETRACEMENT PLAN FOR, HADLOCK FIELD, FITZPATRICK STADIUM, PORTLAND ICE ARENA, PORTLAND EXPOSITION BUILDING, KING MIDDLE SCHOOL", PREPARED BY CITY OF PORTLAND, MAINE PUBLIC WORKS DEPARTMENT ENGINEERING SECTION, DATED JUNE 2005, LAST REVISED JULY 2013, AND ON FILE WITH THE CITY OF PORTLAND AS PLAN # 992/9.
2. [M2] A PLAN ENTITLED "PLAN OF PARK AVE. FIRE STATION PARCEL" DATED JUNE 5, 1985, PREPARED BY CITY OF PORTLAND PUBLIC WORKS, AND SHOWN IN PLAN BOOK 148 PAGE 37 RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
3. [M3] A PLAN ENTITLED "PLAN OF EXPOSITION BUILDING LOT", PREPARED CITY OF PORTLAND'S CITY ENGINEER, DATED APRIL 1914, AND ON FILE WITH THE CITY OF PORTLAND.
4. [M4] A PLAN ENTITLED "STANDARD BOUNDARY SURVEY OF KING MIDDLE SCHOOL, DEERING AVENUE, PORTLAND, MAINE", PREPARED BY THE CITY OF PORTLAND DEPARTMENT OF PARKS AND PUBLIC WORKS, ENGINEERING DIVISION, DATED MAY 31, 1994.
5. [M5] A PLAN ENTITLED "PLAN OF LAND IN PORTLAND , MAINE, FOR, MAINE INSTITUTION FOR THE BLIND", PREPARED BY OWEN HASKELL, INC., DATED JANUARY 25, 1977, AND ON FILE WITH THE CITY OF PORTLAND AS PLAN # 592 / 42 .
6. [M6] AN UNTITLED PLAN ON FILE WITH THE CITY OF PORTLAND REFERENCED AS VOLUME 2 PAGE 164. DEPICTING THE LAYOUT OF PARK AVE.
7. [M7] AN UNTITLED PLAN ON FILE WITH THE CITY OF PORTLAND REFERENCED AS VOLUME 2 PAGE 166. DEPICTING THE LAYOUT OF DEERING AVE., DATED JANUARY 1926.
8. [M8] AN UNTITLED PLAN ON WITH WITH THE CITY OF PORTLAND REFERENCED AS VOLUME 2 PAGE 177, DEPICTING THE LAYOUT OF FOREST ST., GILMAN ST. AND VALLEY ST., DATED FEBRUARY 1926.
9. [M9] A PLAN ENTITLED "PORTLAND TERMINAL COMPANY, RELOCATION OF UNION BRANCH, IN THE CITY OF PORTLAND, MAINE", DATED JANUARY 21, 1969, AND ON FILE WITH THE CITY OF PORTLAND REFERENCED AS 01042_025B.
10. [M10] A PLAN ENTITLED "MAINE STATE HIGHWAY COMMISSION, RIGHT OF WAY MAP, STATE HIGHWAY "295", FEDERAL AID PROJECT NO. I-295-3(26) SHEETS 53, 54 AND 55 OF 73, ON FILE WITH MAINE DEPARTMENT OF TRANSPORTATION.


N
GRID NORTH - NAD83 (2011)
SEE GENERAL NOTE 5
N/F
CITY OF PORTLAND
MAP 52, BLOCK C, LOT 1
SEE GEN. NOTE 7
HADLOCK FIELD
FITZPATRICK STADIUM
STADIUM SEATING
STADIUM TRACK
PARKING LOT
PORTLAND EXPO
PORTLAND ICE ARENA
KING MIDDLE SCHOOL
N/F
CITY OF PORTLAND
BOOK 39305 PAGE 178
MAP 52, BLOCK C, LOT 2
N/F
CITY OF PORTLAND
MAP 52, BLOCK C, LOT 5
N/F
MAINE INSTITUTION FOR THE BLIND
BOOK 821 PAGE 96
MAP 52, BLOCK C, LOT 3
N/F
CHEAK REALTY, LLC
BOOK 35431 PAGE 134
MAP 52, BLOCK C, LOT 4
N/F
THE IRIS NETWORK
BOOK 38727 PAGE 154
MAP 52, BLOCK C, LOT 7
N/F
WILLIAM E. DENSLOW
BOOK 39085 PAGE 065
MAP 49, BLOCK A, LOT 6
N/F
PORTLAND COMMUNITY HEALTH CENTER
BOOK 39221 PAGE 038
MAP 52, BLOCK C, LOT 6
PARK AVENUE
96' WIDE
DPW ST. REC. BOOK 1, PAGE 17, 20, 232, 294
AS SHOWN ON MAP REFERENCE #1
DEERING AVENUE
VARIABLE WIDTH
DPW ST. REC. BOOK 1, PAGE 99
AS SHOWN ON MAP REFERENCE #7
VALLEY ST.
GILMAN ST.
FOREST ST.
WEYMOUTH ST.
PICNIC AREA
APPROXIMATE LOCATION OF ABANDONED RAILROAD
APPROXIMATE EXPOSITION LINE M1
APPROXIMATE PARK AVENUE SCHOOL OUTLINE M4
N 48°22'07" E 59.12'
N 89°37'53" E 1000.00'
S 38°46'17" E 36.98'
N 41°19'22" E 264.89'
RECORD DISTANCE AS SHOWN ON M7
N 49°59'24" E 585.51'
RECORD DISTANCE AS SHOWN ON M7
N 89°48'19" W 418.38'
TANGENT EXTENSION
N 63°20'19" W 73.65'
RECORD DISTANCE AS SHOWN ON M7
S 75°36'15" W 149.69'
S 52°05'19" W 98.48'
S 75°35'20" W 99.99'
S 75°47'09" W 198.77'
R=1130.92'
L=319.39'
Δ=16°10'49"
AS SHOWN ON M1
R=2864.90'
L=508.10'
Δ=10°09'42"
AS SHOWN ON M1
R=1377.69'
L=397.37'
Δ=16°31'25"
AS SHOWN ON M1
6" X 6" CONCRETE BOUND W/ DRILL HOLE FIRM & PLUMB 0.7' BELOW GRADE SHOT ON TOP (HELD)
6" X 6" CONCRETE BOUND W/ DRILL HOLE FIRM & PLUMB 0.2' BELOW GRADE SHOT ON TOP (HELD)
6" X 6" CONCRETE BOUND W/ DRILL HOLE FIRM & PLUMB 1.29' BELOW GRADE SHOT ON TOP (HELD)
6" X 6" CONCRETE BOUND W/ DRILL HOLE FIRM & PLUMB IN IRON DRIP BOX SHOT ON TOP (HELD)
8" X 8" GRANITE BOUND W/ BRASS PLUG FIRM & PLUMB IN IRON DRIP BOX SHOT ON TOP (HELD)
8" X 9" GRANITE BOUND WORN - NO DRILL HOLE FIRM & PLUMB FLUSH W/ SIDEWALK SHOT AT CENTER ON TOP
8" X 8" GRANITE BOUND W/ WORN DRILL HOLE FIRM & PLUMB IN IRON DRIP BOX SHOT ON TOP (HELD)
6" X 6" GRANITE BOUND W/ DRILL HOLE FIRM & PLUMB FLUSH W/ SIDEWALK SHOT ON TOP
BRASS DISK IN 6"X6" CONCRETE BOUND FIRM AND PLUMB AT GRADE SHOT ON TOP
CONCRETE BOUND REMAINS AT GRADE SHOT ON TOP
DRILL HOLE IN GRANITE CURB
1" SQUARE METAL POST REMAINS (HELD FOR LINE)
2" IRON PIPE FIRM & PLUMB 1.0' ABOVE GRADE SHOT ON TOP
2" IRON PIPE BENT & LAYING ON GROUND SHOT AT BEND
2" IRON PIPE FIRM & PLUMB 0.5' ABOVE GRADE SHOT ON TOP
2" IRON PIPE FIRM & LEANING 0.5' ABOVE GRADE SHOT ON TOP (HELD FOR LINE)
2" IRON PIPE FIRM & PLUMB 1.2' ABOVE GRADE SHOT ON TOP (HELD FOR LINE)
1" IRON PIPE FIRM & PLUMB 0" BELOW GRADE SHOT ON TOP (HELD)
2" IRON PIPE FIRM & LEANING 3" BELOW GRADE SHOT AT BEND (HELD)
5/8" REBAR FIRM & LEANING 3" BELOW GRADE SHOT AT BEND (HELD)
2" CAPPED REBAR ILEGIBLE FIRM & LEANING FLUSH SHOT ON TOP
5/8" REBAR FIRM & LEANING 3" BELOW GRADE SHOT AT BEND (HELD)
S 52°05'19" W - RECALC
S 63°20'19" E - 146.78'
N 63°20'19" W - RECALC
N 26°39'41" E - 100.00' RECALC
N 63°20'19" W - 100.00' RECALC
S 26°39'41" W - 100.00' RECALC
S 63°20'19" E - 146.78' RECALC
S 26°39'41" W - 100.00' RECALC
N 63°20'19" W - 100.00' RECALC
N 26°39'41" E



Legend

- DRAIN MANHOLE
- FIRE HYDRANT
- WATER GATE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- UTILITY POLE W/ LIGHT
- TREE
- SHRUB
- BOUNDARY MONUMENT
- BOUNDARY MONUMENT
- SIGN
- SIGN POST
- GATE POST
- MB MAILBOX
- WATER MANHOLE
- EM ELECTRIC METER
- EHH ELECTRIC HANDHOLE
- WATER VALVE
- CATCH BASIN
- MANHOLE
- TELEPHONE MANHOLE
- FIRE HOSE BIB
- FLOODLIGHT
- LIGHT POLE
- FFE = 45.27' FINISHED FLOOR ELEVATION
- TREE
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- DYL DOUBLE YELLOW LINE
- DWL DASHED WHITE LINE
- SYL SINGLE YELLOW LINE
- LSA LANDSCAPED AREA

- GIS PROPERTY LINE
- GIS TOWN LINE
- MAJOR CONTOUR
- MINOR CONTOUR
- EOP EDGE OF PAVEMENT
- SINGLE WHITE FOG LINE
- DOUBLE YELLOW LINES
- CC CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGE SLOPED GRANITE CURB
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
- EDGE OF GRAVEL
- TREELINE
- STOCKADE FENCE
- STONEWALL
- UNDERGROUND ELECTRIC LINE
- OVERHEAD WIRES
- UNDERGROUND WATER LINE
- UNDERGROUND GAS LINE
- GUARD RAIL
- CHAIN LINK FENCE
- DRAINAGE LINE
- SEWER LINE
- EDGE OF CONCRETE
- CENTERLINE OF DITCH
- BARBWIRE FENCE
- STREAM
- ABUTTER PARCEL
- LOCUS PARCEL
- RIGHT OF WAY LINE
- EASEMENT LINE
- LEASE LINE
- SETBACK LINE

20 0 20 40
SCALE IN FEET

*NOTE: REFER TO BASIS OF DESIGN FOR CONSTRUCTION AND MATERIAL INFORMATION.
*NOT FOR CONSTRUCTION.

SEE Sv-1 FOR GENERAL NOTES

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207.889.3150

DBH - PORTLAND LLC

CLUBHOUSE ADDITION

Hadlock Field, 271 Park Ave.
Porland, ME 04102

NO.	DESCRIPTION	DATE
A	CM PRICING SET	01/26/24
B	CM PRICING SET - REVISED	05/09/24

STATE OF MAINE
DANIEL T. OAKES
No. 2549
REGISTERED LANDSCAPE ARCHITECT

CONTENT:
EXISTING CONDITIONS Sv-2

DRAWN BY:	JA
PROJECT NO:	23-104-00
DATE:	01/26/2024
REVISED:	
SCALE:	1"=20'

Project Phase
CM PRICING SET

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FOR ADDITIONAL INFORMATION, REFER TO PROJECT MANUAL.

54 York Street
Major Site Plan Amendment
PL-002954-2024
54 York, LLC & Falmouth Companies, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Sean King
Public Hearing Date:	June 11, 2024	**Date:**	June 7, 2024

I. INTRODUCTION AND PROPOSED AMENDMENT

54 York, LLC & Falmouth Companies has submitted a Major Site Plan Amendment application to amend the previous application (PL-001838-2021) approved on April 26, 2022 (Report Attachment 2). The original site plan as approved would facilitate the change of use of an existing three-story building into 14 residential units and two commercial units, with associated site and landscape improvements on the property located at 54 York Street in the B-5b Urban Commercial zone.

The original site plan approved is subject to the City's Inclusionary Zoning (IZ) Conditional Use requirements under Land Use Code (LUC) Article 18.2.3. As stated in Attachment 1. 54 York Street - Planning Board Report, dated April 22, 2022 (Report Attachment 2), the Applicant may:

1.) Create four IZ units on-site;
2.) Create three IZ units on-site and pay a proportional fee-in-lieu;
3.) Pay the fee-in-lieu for the 3.5 units.

The Applicant had originally chosen to create four IZ units on-site at 80% or less of Area Median Income (AMI).

The amendment proposes a change of use from a 14-unit residential project, to a hotel with 14 guest rooms and two commercial units, with no proposed changes to either the interior or exterior of the building, or to the site.. This amendment is being brought to the Planning Board in accordance with Land Use Code Section 18.2.5.C Hotel projects conditional use, which states that all hotel projects are conditional uses subject to Planning Board review on the condition that they comply with the requirements of this Subsection 18.2.5.

This application is considered a major site plan amendment due to the introduction of a new use for the property, which in accordance Sec. 14.14.2 and Sec. 14.14.3, is a trigger for a major site plan amendment to application PL-001831-2021. Staff would note that the property at 54 York Street was historically in commercial use, and therefore, had the applicant initially requested to convert this building to a hotel, which is considered a commercial use, this application would not have triggered either a minor or major site plan application per Table 14-A. Given this fact, the report does not include discussion of the amendment's consistency with the City's site plan standards.

The Planning and Urban Development Department mailed 223 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the June 1 and 4, 2024 editions of the Portland Press Herald.

Applicant:	54 York, LLC & Falmouth Companies
Applicant Representatives:	Acorn Engineering, Inc.

II. INCLUSIONARY ZONING FOR HOTEL PROJECTS (Section 18.2.5)

Notwithstanding anything to the contrary in this Land Use Code, all hotel projects are conditional uses subject to Planning Board review on the condition that they comply with the requirements of Subsection 18.2.5.

All hotel projects consisting of 10 or more guest rooms for rent are required to provide one unit of low-income housing (80% or less AMI) for rent in the City of Portland for every 28 rooms in the hotel project, or as an alternative, the hotel project may pay a fee-in-lieu of $4,692 per guest room, which is the 2024 hotel IZ rate, as adjusted in accordance with Article 18.1.8. The Applicant has indicated that they will proceed with the fee-in-lieu alternative to meet IZ for hotel projects, for a total fee of $65,562, to be paid into the City's Housing Trust Fund.

III. GENERAL CONDITIONAL USE (Section 6.5.2)

As required under Section 6.5.1.A of the City's Land Use Code, the Zoning Board of Appeals shall review all conditional use applications, with the exception that the Planning Board shall review all conditional use applications on projects that are otherwise before the Planning Board. Notwithstanding anything to the contrary in this Land Use Code, all hotel projects are conditional uses subject to Planning Board review on the condition that they comply with the requirements of Subsection 18.2.5

The ordinance under Section 6.5.2 requires the review authority shall find the following standards satisfied:

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 original site plan approved did not provide parking on site, based upon the Table 19-B Categorical exemption for historic structures and transit proximate development and uses. Under this amendment, the applicant is not proposing any additional off-street parking, as is permitted under Table 19-B.

The City's Consulting Traffic Engineer has reviewed the amendment application materials to recommend a 15-minute loading zone at Maple Street within close proximity to the corner for hotel guests.

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.***

City staff finds the proposed change of use for a hotel project will not create unsanitary or harmful conditions based upon the building's number of units and bedroom layout that is consistent with the approved plans.

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.*

City staff finds the proposed change of use for a hotel project is consistent with the approved plans related to landscaping, screening, signs, arrangement of structures and material storage.

City staff will provide additional comments related to the proposed change of use for a hotel project related to loading, deliveries, trash or waste generation.

D. The proposed use will meet any additional zone or use-specific standards identified in Tables 6-A to 6-F and Subsections 6.5.6 and 6.5.7.

The proposed change of use for a hotel project is not subject to additional zone or use-specific standards identified in Table 6-C: Permitted and conditional uses in Mixed-Use Zone or Subsection 6.5.6 and 6.5.7.

IV. STAFF RECOMMENDATION

Subject to the proposed motions listed below, Planning Department staff recommends that the Planning Board find the major site plan amendment at 54 York Street to change the use of the approved 14 residential units and two commercial units to a hotel with 14 rooms and two commercial units meets the applicable standards of Portland's Land Use Code.

V. PROPOSED MOTIONS

A. CONDITIONAL USE – INCLUSIONARY ZONING

On the basis of the application, documents, and other information submitted by the Applicant, findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002954-2024 relevant to Portland's Inclusionary Zoning Conditional Use Standards and other regulations, and the testimony presented at the Planning Board public hearing, the Planning Board, [finds/does not find] the proposed conditional use for hotel projects meets the standards of Land Use Code Article 18.2.5 with the following conditions:

PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY

1. The Applicant shall pay an agreed upon fee-in-lieu into the City's Jill C. Duson Housing Trust Fund for the 14 guest rooms. The Inclusionary Zoning Fee-in-Lieu for 2024 is $4,692 per guest room for a total fee of $65,562.

B. SITE PLAN REVIEW

On the basis of the application, documents and other information submitted by the Applicant; findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002954-2024 relevant to the site plan regulations; and the testimony presented at the

Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with the site plan standards of the land use code.

B. PLANNING BOARD DECISION

On the basis of the findings, conclusions and recommendations contained in the Planning Board report for the public hearing on June 11, 2024 related to application PL-002954-2024 at 54 York Street, which is attached to the draft approval letter and incorporated therein, the Planning Board [adopts/does not adopt] the approval letter as drafted as the Planning Board's decision for application PL-002954-2024, and authorizes the Planning Board Chair to sign the approval letter as drafted.

VI. ATTACHMENTS

Applicant Submittal

A. 54 York Street – Major site plan application amendment cover letter
B. 54 York Street – Major site plan application amendment IZ Letter
C. Major site plan amendment checklist
D. 54 York Street - Meeting Posting Certification

Report Attachments

1. 54 York Street – Approval letter (PL-001838-2021)
2. 54 York Street – Draft Approval letter (PL-002954-2024)
3. Zoning - 54 York St - PL-002954-2024.

Plans

Plans – Stamped site plans (Pl-001838-2021)

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

May 3, 2022

54 York, LLC
c\o Jay Hibbard
400 Commercial Avenue, Unit 101
Portland, ME 04101

Acorn Engineering
c/o Peter Heil
65 Hanover Street
Portland, ME 04101

Project Name:	54 York Street	**Project ID:**	PL-001838-2021
Address:	54 York Street	**CBL:**	042 A007001
Applicant:	54 York, LLC		
Planner:	Sean King		

Dear Jay Hibbard:

On April 26, 2022, the Planning Board approved a major site plan application for the change of use of an existing three-story building into fourteen residential units and two commercial units totaling (building floor area 22,770 sf) at 54 York Street, located in the B-5b Urban Commercial Zone. The decision is based upon the application, documents and plans as submitted. The Planning Board reviewed the proposal for conformance with the standards of the Site Plan Ordinance. The Planning Board voted to approve the application with the following condition as presented below.

Site Plan Review

The Planning Board voted (6-0, Mazer absent) to find that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following condition of approval:

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

1. Due to site constraints preventing the planting of all required street trees in the right-of-way, only (2) new street trees are included. The remaining (7) street trees as required in Sec. 14.6.2.C.4 of the Site Plan Ordinance cannot be met; the applicant shall contribute to the tree fund in the amount of $400 per tree for (7) trees x $400 for a total of $2,800.

The approval is based on the submitted plans and findings related to site plan review as contained in the Planning Board report dated April 22, 2022 for application # PL-001838-2021 which is attached.

Standard Procedures

Note: The following standard procedures and requirements apply to all approved site plans:

1. Site Plan Expiration The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

2. Separate Building Permits Are Required This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

3. Performance Guarantee and Inspection Fees A performance guarantee covering the site improvements and an inspection fee payment of 2.0% of the guarantee amount and three (3) final sets of plans must be submitted to and approved by the Planning and Urban Development Department and Public Works Department prior to the release of a building permit, street opening permit or certificate of occupancy for site plans.

4. Construction Management Plans The applicant, contractor and subcontractors are required to conform to the approved Construction Management Plan, and all conditions contained within the project's approval, for the entire duration of the project. Any amendments to the approved Construction Management Plan shall be reviewed and approved by the Department of Public Works prior to the execution. The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan. The applicant shall coordinate the project's construction schedule with the timing of nearby construction activities to avoid cumulative impacts on a neighborhood and prevent unsafe vehicle and pedestrian movements. Accordingly, nearby construction activities could involve a delay in the commencement of construction.

5. Preconstruction Meeting Prior to the release of a building permit and scheduling of a preconstruction meeting, a hard copy set of approved plans shall be submitted to the Development Review Coordinator. A pre-construction meeting shall be held at the project site with the contractor, Development Review Coordinator, Public Works representative, and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan and the approved Construction Management Plan. The site/building contractor shall provide one (1) copy 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 pre-construction meeting.

6. Department of Public Works Permits If work or obstructions will occur within the public right-of-way, such as utilities, curb, sidewalk, driveway construction, site deliveries and equipment siting, a Street Opening and/or Occupancy Permits are required for your site. Please contact the Department of Public Works Permit Clerk at (207) 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

7. Develop Site According to Plan The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Any modifications of an approved site plan or alteration of a parcel, or of any approved exterior elevations, which were the subject of

site plan approval after May 20, 1974, shall require the prior approval of an amended site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

8. Defect Guarantee A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

9. As-Built Final Plans Final sets of as-built plans shall be submitted digitally to the Planning and Urban Development Department, on a CD or DVD, in AutoCAD format (.dwg), release AutoCAD 2005 or greater. Hard copies of as-built plans are to be provided as well.

10. Mylar Copies Mylar copies of the as-built drawings for the public streets and other public infrastructure in the subdivision must be submitted to Public Works prior to the issuance of a certificate of occupancy.

11. Impact Fees New development or changes of use that result in net new residential dwelling units, non- residential building square footage, or water meters, are subject to the City of Portland's impact fee ordinance (Chapter 14, Article XVII). Impact fees are calculated at the time of building permit and must be paid prior to the certificate of occupancy. For more information, visit https://www.portlandmaine.gov/2409/Impact-Fees

The Development Review Coordinator must be **notified five (5) working days** prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning and Urban Development Department at (207) 874-8984 or via email mjmartin@portlandmaine.gov. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Sean King at (207)874-8901 or via sking@portlandmaine.gov.

Sincerely,

Maggie Stanley, Chair

Attachments:
1. 54 York Street – Planning Board Report (4-22-2022)
2. Performance Guarantee Packet

Planning Board Report
Planning and Urban Development Department

Change of Use Residential & Commercial Development
54 York Street
Major Site Plan Review
PL-001838-2021
54 York, LLC, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Sean King, Urban Designer
Public Hearing Date:	April 26, 2022	**Date:**	April 22, 2022

I. INTRODUCTION



Figure 1 – Site Aerial

54 York, LLC has submitted a Major Site Plan and Inclusionary Zoning Conditional Use application to convert an existing three-story building into a mixed-use development to include 14 residential units and two ground-floor commercial spaces with associated residential storage, common areas, and other amenities at 54 York Street. The applicant proposes to utilize existing interior square footage and preserve the exterior under Historic Preservation review. This application is being referred to the Planning Board for compliance with the City of Portland's Land Use Code Site Plan Standards, Section 14.6 and Inclusionary Zoning Conditional Use Standards, Section 18.2.3.

The Planning and Urban Development Department mailed notices advertising this meeting to 202 property owners within 500 feet of the site. A legal advertisement ran in the April 15th and 16th, 2022 editions of the *Portland Press Herald*.

The Planning Board held a workshop for this project on March 8, 2022 (See Section VII for more information).

Applicant: Jim Hibbard of 54 York, LLC

Applicant Team: Will Savage and Pete Heil of Acorn Engineering, Patrick Booth & Josh Jacques of Caleb Johnson Studio, Owen Haskell of Owen Haskell Inc.

II. REQUIRED REVIEWS

Review	*Applicable Standards*
Site Plan	Section 14.6
Historic Preservation Review	Section 17.8
Inclusionary Zoning Conditional Use	Section 18.2.3

III. PROJECT DATA

Existing Zoning	B-5b Urban Commercial
Property Size	9,715 sf
Existing Use	Vacant (previously institutional use 'Baxter Academy')
Proposed Use	Mixed-Use (Residential Units & Commercial Spaces)

	Existing	*Proposed*	*Net Change*
Building Footprint	7,590 sf	7,590 sf	0
Building Floor Area	22,770 sf	22,770 sf	0
Impervious Surface Area	9,007 sf	9,356 sf	+349 sf
Parking Spaces	None	None	0
Bicycle Parking Spaces	9	17 (8 within interior room)	+8

IV. BACKGROUND

The subject building at 54 York Street is an existing brick structure that is listed as a contributing structure within the Waterfront (Old Port) Historic District. The building was built by George C. Littlefield and Albert M. Wilson in 1867 and later bought by C.J. McDonald in partnership with Rufus Deering and served as a wood sash and molding factory from 1888-1927. Later uses included general commercial, storage and the Baxter Academy.

V. EXISTING CONDITIONS AND SURROUNDING AREA

The property is currently occupied by an existing three-story building (Figures 2, 3, & 4) with frontage along York Street and Maple Street. The surrounding neighborhood contains a mix of uses and building types that range between one and five-stories and include hospitality, commercial / service, office, retail and residential uses. Hobsons Landing, a large-scale mixed-use development, which includes ground floor retail, the Aloft Hotel, and residential uses abuts 54 York Street to the east and south. The site is proximate to public transit with access to multiple METRO bus lines including METRO Route 8, 21. 24A, 24B, which run along York and High streets.



Figure 2 - Corner of York & Maple St



Figure 3- Maple St towards Commercial St



Figure 4 - Existing photo at Maple St towards York St

VI. PROPOSED DEVELOPMENT

The applicant has proposed a change of use for an existing three-story building into 14 residential units and two commercial spaces with associated residential storage, common areas, fitness room, bike room, and trash room. Per Inclusionary Zoning (IZ) Conditional Use requirements, the applicant has chosen to create four IZ units on-site at 80% AMI in compliance with the Inclusionary Zoning ordinance. The proposed multi-family component of the development includes 10 one-bedroom and 4 two-bedroom units that are all ADA accessible through shared corridors accessed from York Street and a new elevator to access all floor levels.

The proposed commercial spaces and secondary residential entrance are provided at the lower floor level of the building with access provided via an existing access easement. Residential tenants may access the first floor via a primary entrance along York Street. Associated residential storage, common areas, fitness room, bike room, trash room and building mechanical rooms can be accessed via a common corridor along with four exterior access doors.

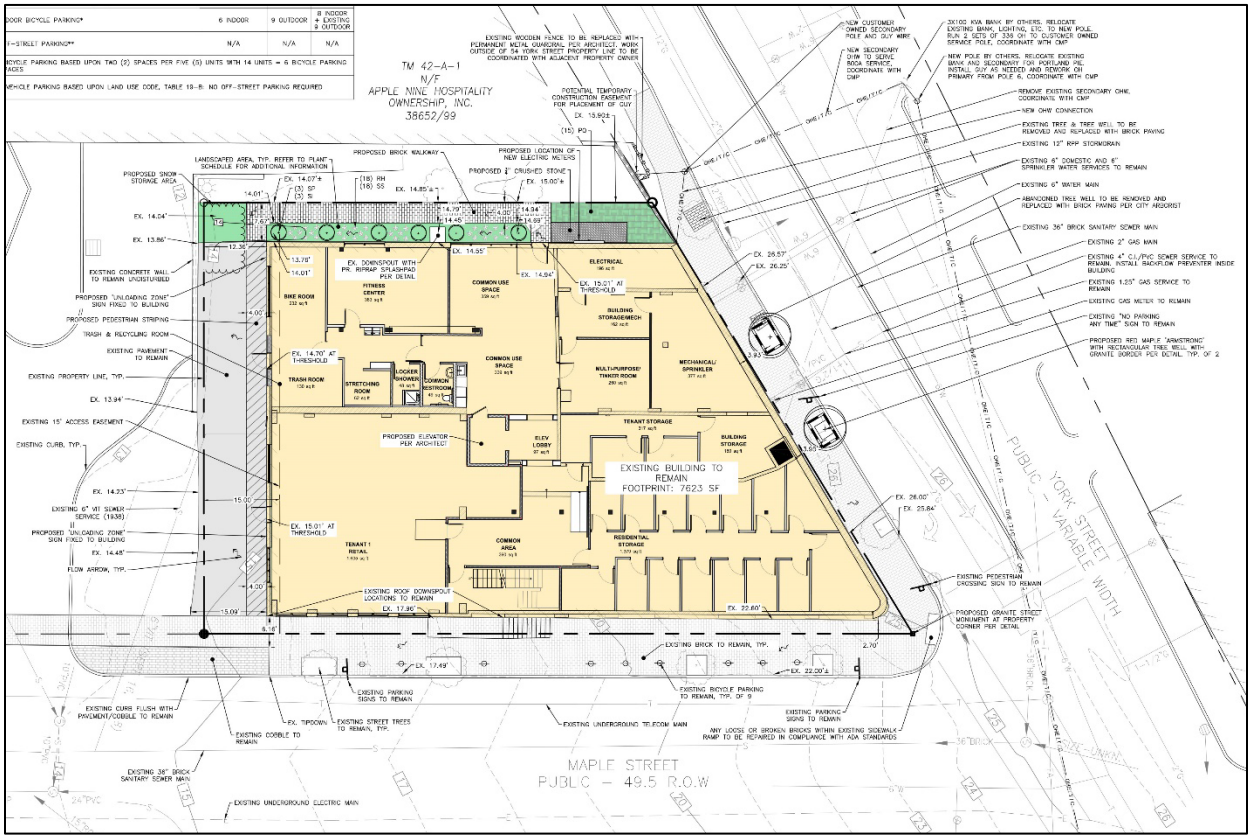


Figure 5 – Site & Utility Plan

VII. PREVIOUS WORKSHOP – March 8, 2022

The project was introduced to the Planning Board by the applicant and staff at a workshop held on March 8, 2022. The Board provided initial feedback about the site plan, street trees and safety barrier along York Street, which is as follows:

- Site plan – Current use of building confirmed as vacant, last previous use was Baxter Academy. Passageway identified as an existing 15 foot access easement at Maple Street, no proposed changes. A clarification regarding the proposed retail space entry along existing 15 foot access easement for proposed pedestrian striping, lighting, wayfinding and access.

- Street trees – Concerns regarding the replacement of trees within the existing tree well locations and the survivability of new trees.

- Accessibility – Proposed elevator will provide accessibility for all levels of the building.

- National Parks Service Tax Credits for historic structures – HP Board acknowledges that the existing chimney is a contributing feature for the character of the existing building. For historic tax credits, applicant is proceeding with QRE (Qualified Rehabilitation Expenses) for a list of exterior and interior items. Additions beyond the existing envelope would not be allowed to receive tax credits.

- Safety barrier – The Board recommended a permanent solution for the wooden guardrail along York Street.

VIII. RIGHT, TITLE, & INTEREST

The owner of the property is 54 York, LLC. The applicant has provided copy of Quitclaim deed with Covenant dated June 15, 2018 that was recorded in the Cumberland County Registry of Deeds in Book 34935, Page 196 to demonstrate their right, title and interest in the property at 54 York Street (Attachment C).

IX. FINANCIAL & TECHNICAL CAPACITY

The applicant has submitted a Statement of Financial Capacity letter from their financial institution to demonstrate their financial capacity (Attachment G).

The applicant team for 54 York, LLC consist of Christopher Dimillo, Principal, and Jay Hibbard, Director of Development, along with other key representatives that include Peter Chavonelle Jr., President of Masonry Preservation Associates, Robert Jacobs, Jacobs Glass Inc., Scott Hanson, MacRostie Historic Advisors, Acorn Engineering & Caleb Johnson Studio. The applicant has submitted a Statement of Technical Capacity to demonstrate their professional background in development expertise, consulting services, and relevant experience to complete the proposed change of use development (Attachment H)

X. ZONING ANALYSIS

The subject property is located in the B-5b Urban Commercial zone. Per Article 6 of City's Land Use Code, the proposed change of use to multi-family dwelling units is permitted in the B-5b zone. Regarding the proposed commercial spaces, Table 6-C permits a broad range of commercial / service uses including general office (<5,000sf), general service (<5,000sf), restaurants, retail (<5,000sf), theaters and performance halls.

The following Table 7-E is provided to show the dimensional requirement standards for the B-5b mixed-use zone (Land Use Code Sec. 7.3) which are met by the proposal.



Figure 6 – Zoning Map

	Required	*Proposed*
Front setback min.	0 ft.	0 ft.
Front setback max. (from all street frontages)	10 ft.	2.70 ft.
Structure height max.	65 ft.	45.17 ft.

No parking in excess of that existing on the site of a historic structure shall be required (Table 19-B Categorical Exceptions to Off-street parking minimums). Exception applies for uses within any contributing structure in a local or national register historic district or locally-designated or national register landmark building. In addition, the site is located within a ¼ of a fixed route transit service and therefore no parking is required.

XI. INCLUSIONARY ZONING STANDARDS (Section 18.2.3)

As the proposed development at 54 York Street will create 14 units consisting of 10 one-bedroom and 4 two-bedroom apartments, it is subject to the City's Inclusionary Zoning Conditional Use requirements.

Per Inclusionary Zoning Conditional Use, the applicant may:
1) Create four IZ units on-site;
2) Create three IZ units on-site and pay a proportional fee-in-lieu;
3) Pay the fee-in-lieu for the 3.5 units;

The applicant has chosen to create four IZ units on-site at 80% AMI.

Based on the information presented, the applicant intends to provide four IZ units on site, therefore 54 York Street is in compliance with the Inclusionary Zoning Ordinance. Please see Attachment A2 for the Inclusionary Zoning Review memorandum from the Housing Program Manager confirming compliance.

XII. SITE PLAN REVIEW STANDARDS (Section 14.6)

The proposed development has been reviewed by staff for conformance with the relevant review standards of the City of Portland's Site Plan Ordinance, Section 14.6. Staff comments are below.

1. Transportation Standards (Section 14.6.1)

A. Impact on surrounding street systems

- Given that this is a change of use for an existing, operational commercial building, the proposed project would not be expected to have a significant traffic or safety impact to the adjacent roadway system. In addition, the project will not generate 100 or more cars during peak hour, therefore a Traffic Movement Permit is not required. As the site is situated within a walkable, downtown context, pedestrian circulation to and from the site is provided by an existing network of sidewalks and pathway connections along York Street and surrounding areas. The Transportation Systems Engineer recommends that the right turn lane should not be perpetuated along York Street to accommodate for bike lane extension to Gorham's Corner.

B. Access and circulation

- The existing building is fronted by five-foot wide brick sidewalks in the public right-of-way, which meets the City's minimum sidewalk width requirements. The sidewalks are in acceptable condition and reconstruction will not be required; however, DPW has asked that the applicant ensure the ramp at the corner of York and Maple streets is ADA compliant and that any loose or broken bricks within the existing sidewalk be repaired.

- The applicant has documented one existing easement identified on the Boundary & Topographic Survey dated September 23, 2021, by Owen Haskell, Inc. A 15-foot Access Easement, recorded in the Cumberland County Registry of Deeds, Book 1555, Page 24. There are no newly proposed easements as part of this redevelopment.

C. Public transit access

- All residential development consisting of 20 or more dwelling units shall provide a transit shelter adjacent to or within the public right-of-way along its frontage when along a transit line. The proposed project includes 14 dwelling units, therefore this standard is not applicable.

D. Parking

- There are no existing parking spaces on-site and the proposal does not include providing parking spaces. Under Table 19-B of the City's Land Use Code, no parking in excess of that existing on the site of a historic structure shall be required. Exception applies for uses within any contributing structure in a local or national register historic district or locally-designated or national register landmark building.

E. Transportation Demand Management (TDM)

- Not applicable. A TDM plan is not required.

2. Environmental Quality Standards (Section 14.6.2)

A. Preservation of significant natural features

- The site is a fully developed parcel. No significant natural features exist onsite. Not applicable.

B. Landscape preservation

- The existing site includes an existing building with minimal lawn located at south portion of the parcel. Existing street trees include two along York Street and four along Maple Street that will remain.

C. Site landscaping and buffers

- Under Technical Manual Section 4.6 Street Trees, a multi-family residential development shall provide one street tree per unit, planted in the City right of way. The applicant is subject to provide 14 street trees or a contribution to the City's Tree Fund to the amount of $400 per new street tree. The applicant has chosen to include two new street trees along York Street and pay for 12 new street trees required per street tree alternatives to the amount of $4,800 into the City's Tree Fund.

- In response to concerns raised by the Board the City Arborist recommends two new street trees along York Street with a rectangular tree well of granite border to avoid conflicts with existing underground utilities. The existing two abandoned tree wells will be removed and replaced with brick paving. An existing linden tree and tree well will be removed and replaced with brick paving due to a conflict with the proposed overhead electrical connection from the new secondary pole to the building. The proposed landscaping within the property is appropriately specified for the dry, shade conditions at the existing building.

D. Water quality/storm water management/erosion control

- The applicant has provided proposed grades and location of downspouts per the City's Consulting Stormwater Engineer's request to confirm adequate drainage around the existing building. The proposed change of use utilizes the existing footprint and does not exceed 1,000sf of new impervious surface, thus Maine DEP Chapter 500 standards related to stormwater treatment do not apply.

3. Public Infrastructure and Community Safety Standards (Section 14.6.3)

A. Consistency with City Master Plans



The proposed project is in keeping with the stated goals of *Portland Plan 2030* regarding housing and the policy of creating complete neighborhoods. The project takes advantage of a central, downtown location near transit and walkable services.

Livable City: Housing – local goals met by this project:
-Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences, and financial capabilities of all Portland residents.
-Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.
-Pursue policies to enable people who work in Portland to have the option to live in Portland.

A Healthy City: Environment – local goals met by this project:
-Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation.

An Enduring City: Historic Resources – local goals met by this project
- Stabilize and enhance historic areas of the city by ensuring quality investment in existing structures and compatible infill development.
- Ensure an appropriate balance of continuity and change as Portland grows and evolves.

B. Public safety and fire prevention

- City staff have observed the temporary quality of the wood guardrail above the existing stone wall at the southwest corner of the site along York Street. The applicant has provided a sufficient permanent solution for a metal guardrail to match the adjacent property and to secure all work outside of the 54 York Street property line with the adjacent property owner.

C. Availability and capacity of public utilities

- The building is served by existing utilities. The applicant has provided ability to serve letters (Attachment FF.) for the proposed change of use, including a new electrical service that includes relocation of existing bank, lighting to new pole / guy, new overhead electrical lines and secondary service for the Portland Pie Company building in coordination with CMP. A new secondary overhead electrical line will provide 800 amp service to 54 York Street from the opposite side of York Street, along with a new secondary pole / guy proposed at the public right-of-way at York Street adjacent to the existing building at 54 York Street. The Applicant, in coordination with CMP, has indicated grading constraints that restrict the ability to locate service at the building and maintain the need for overhead service.

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impacts

- Proposed HVAC mechanisms will be located on the existing rooftop. City staff has confirmed that the distance and screening by existing parapet walls based on applicants view studies (Attachment plan 15) at public ways meet zoning requirements.

B. Shadows

- Not applicable. The development is not anticipated to have adverse impacts related to shadows.

C. Snow and ice loading

- The applicant is utilizing the existing flat roof in order to prevent snow and ice falling. Based on the submitted materials, staff find that the applicant has produced sufficient snow storage area for impervious surfaces and evidence that prevents significant amounts of accumulated snow and ice from loading or falling onto adjacent properties or public ways.

D. View corridors

- As the project is located on York Street and is an existing building, with no proposed alterations to its massing, this standard does not apply.

E. Historic resources

- The site is located within the Waterfront (Old Port) Historic District and is a contributing building. Design review is under the purview of Historic Preservation. According to the applicant, they intend to pursue historic tax credits through the National Park Service. An initial Historic Preservation workshop was held on Wednesday, February 16, 2022. Historic Preservation Board approved with conditions on April 6, 2022 for a Certificate of Appropriateness for the comprehensive rehabilitation and exterior alterations (Attachment EE.). Conditions based on additional details required for HP staff final review and approval that include:
    1. Masonry treatments, mortar, chimney preservation, coating and/or waterproofing.
    2. Design details for guardrail at northwest corner of the property along York Street.
    3. Wall treatment at north and south entries, including siding type and finish.
    4. Final details for all signs including painted walls signs (font, layout, and content).

a. Exterior lighting

- The applicant has provided cut sheet information showing the specifications for the proposed fixture (Attachment 14. Lighting Plan) that comply with City's lighting standards. The site currently has existing street lighting complying with the specific lighting district requirements.

b. Noise and vibration

- No adverse impacts related to noise and vibration are anticipated as mechanical equipment is located on rooftop away from adjacent properties and screened from traveled public ways. The applicant has provided cut sheets for HVAC Rooftop units to confirm compliance with this standard.

c. Signage and wayfinding

- The applicant has proposed an 'Unloading Zone' sign fixed to the building that specifies the function of the existing access easement.

d. Zoning-related design standards

- The development is located in the Waterfront (Old Port) Historic District, therefore the City of Portland Historic Preservation standards supersede the design requirements of this section.

Historic Preservation Board approved with conditions on April 6, 2022 for a Certificate of Appropriateness for the comprehensive rehabilitation and exterior alterations (Attachment EE.).

XIII. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting via Zoom on January 26, 2022 with six community members in attendance. A total of 15 comments, questions & answers were discussed with meeting notes shared on February 8, 2022. Public comments ranged in concern from parking requirements, project construction schedule, accessible entrances, commercial uses permitted, clarification of residential rental units (monthly rent, affordable housing), historical exterior and interpretive signage, exterior lighting, landscape, property management company and future building name. A detailed description of each public comment and response is available in the attachment as a record of meeting minutes.

XIV. STAFF RECOMMENDATION

Subject to the proposed motions of approval listed below, staff recommends that the Planning Board approve application #PL-001838-2021 as a change of use to (14) residential units and (2) commercial unit spaces at 54 York Street which meets the applicable standards of Portland's Land Use Code.

XV. PROPOSED MOTIONS

A. SITE PLAN REVIEW

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board Report for the public hearing on April 26, 2022 for application # PL-001838-2021 relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following conditions of approval:

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

1. Due to site constraints preventing the planting of required street trees in the right-of-way, the remaining 12 street trees as required in Sec. 14.6.2.C4 of the Site Plan Ordinance cannot be met; the applicant shall contribute to the tree fund in the amount of $400 per tree for 12 trees x $400 minus $800 credit for the planting of two new trees for a total of $4,800.

XVI. ATTACHMENTS

A1. City Arborist Review comments
A2. Inclusionary Zoning Review comments
A3. Corporation Counsel review comments
A4. Department of Public Works Ability to Serve comments
A5. Department of Public Works Review comments
A6. Consulting Civil Engineer Review comments
A7. Transportation Systems review comments
A8. Zoning review comments
A9. City Arborist Review comments – 2nd round

Applicants document(s) submittal

A. Cover letter
B. Major Site Plan Application

C. Right, Title & Interests
D. Zoning Assessment
E. Easements
F. Waivers Table
G. Financial Capacity
H. Technical Capacity
I. Conformity with Land Use Ordinance
J. Stormwater Management Report
K. Erosion and Sedimentation Control Report
L. Fire Department Letter
M. Wastewater Capacity
O. Architecture Design Narrative
P. Utilities
Q. Construction Management Report
R. Solid Waste Disposal
S. Parking Analysis
T. Certification Letter
U. 54 York Neighborhood Letter
V. Sign-in Sheet
W. Neighborhood Meeting Minutes_01-26-2022
X. Comment Response Letter I_02-25-2022
Y. Public Notice Sign Certification Letter_02-25-2022
Z. HVAC Rooftop Cut Sheets
AA. Comment Response letter II_03-25-2022
BB. Comment Response letter III_04-11-2022
CC. Public Notice Sign Certification_04-19-2022
DD. Inclusionary Zoning Letter
EE. Historic Preservation Approval Letter_04-20-2022
FF. CMP Ability to Serve Letter

Applicant plan(s) submittal

1. Cover Page
2. General Notes
3. Boundary and Topographic Survey
4. Site & Utility Plan
5. Subdivision Plat
6. Site Details
7. Erosion Control Notes and Details
8. Lower Floor Plan
9. First Floor Plan
10. Second Floor Plan
11. Roof Plan
12. North & West Elevations
13. South & East Elevations
14. Lighting Plan
15. View Study
16. Photos
17. Window Details
18. Construction Management Plan

19. Guardrail Section

Performance Guarantee, Inspection Fee, and Infrastructure Financial Contribution Packet
Portland, Maine
Planning and Urban Development Department

A. Site Plan/Subdivision Performance GuaranteesRequired
Portland's Land Use Code requires all developers with approved site plan and/or subdivision applications to submit a performance guarantee to the City prior to the start of any construction or site improvements. The performance guarantee represents 100% of the total cost of site improvements, as determined by the City.
The code further requires developers to pay an inspection fee of 2% of the performance guarantee amount to the City for the administrative costs associated with inspecting construction activity to ensure that it conforms with plans and specifications.
(Portland's Land Use Code, Sections 14.11.3 and 14.11.4)

B. Cost Estimate Form and Inspection Fee
The performance guarantee covers major site improvements related to site plan and subdivision review, such as paving, roadway, utility connections, drainage, landscaping, lighting, etc. Please submit an itemized cost estimate form to determine the detailed costs of both public and private site improvements to the Planning office for review and approval. The cost estimate form (excel format) can be downloaded from the city's website here: http://portlandmaine.gov/costestimate The approved amount on the Cost Estimate form is the amount to be covered by the performance guarantee and is the basis for calculating the 2% inspection fee.

C. Acceptable Types of Performance Guarantees
The accepted forms of a performance guarantee, covering the amount approved on the Cost Estimate form, must be one of the following options consistent with the attached templates, with **NO** exceptions. The templates and instructions be located on our website at: https://www.portlandmaine.gov/2157/Performance-Guarantee

1. A letter of credit from a bank/credit union
2. A deposit into a bank-held escrow account
3. A deposit into a City-held escrow account

NOTE: No land use application of any kind shall be processed, reviewed or issued, no signed subdivision plat shall be released or recorded, and no building permit of any kind shall be issued unless all fees have been paid and every aspect of the proposed development is in compliance with City Codes as determined by the Development Review Coordinator in the Planning office.

The developer is eligible to receive up to three reductions from the performance guarantee in a calendar year equal to the estimated cost of the completed improvements. In no case, however, shall any performance guarantee be reduced 1) in any line item where improvements remain to be completed; or 2) to a value which is less than the estimated cost of completing all remaining required improvements; or 3) to a value less than 10% of the Performance Guarantee. *(The Cost Estimate Form can also be used during the construction phase to submit reductions of fully completed site work items)*

At the conclusion of the project, the City will release 90% of the performance guarantee after the Development Review Coordinator determines that site improvements have been satisfactorily completed at the time of the final inspection. The City will then retain a 10% defect guarantee to cover the workmanship and durability of materials used in construction. The defect guarantee will be released one
(1) year from date of acceptance, subject to the Development Review Coordinator inspecting the site and finding it in compliance with the approved site plan.

D. Housing Replacement Performance Guarantees

For those projects that are subject to Portland's Housing Preservation and Replacement Ordinance (Section 18.1) and have an approved plan, then a performance guarantee is required for housing replacement. An owner or developer must post a performance guarantee in the form of a letter of credit in the amount equivalent to the amount the applicant would have been required to contribute to the City's Housing Fund, if the applicant had chosen that option. The guarantee shall be valid for no more than three years, after which the full amount shall be provided to the City's Housing Trust Fund, if replacement units meeting the code do not have certificates of occupancy. The guarantee can be released upon the issuance of a certificate of occupancy for the replacement units. A suggested template for a Housing Replacement Performance Guarantee is included as Attachment 4.

E. Infrastructure Accounts

Contributions to infrastructure accounts may be required as part of the conditions of site plan approval. The contributions must be submitted prior to the issuance of any permits, unless stated otherwise in the approval. The form for submitted required contributions is included as Attachment 5.

F. Administrative Process for Submitting Performance Guarantee

- **Step 1 – Submit a Cost Estimate for Review**

  Submit completed cost estimate form to the Planning Division for review and approval. Once approved, use this total amount as the performance guarantee amount in Step 2.

- **Step 2 – Drafting a Performance Guarantee**

  Complete a draft of 1 of the 3 attached performance guarantee templates, inputting project specific information (Reference Guide for Drafting for help) into blank and bracketed areas, and submit to the Planning Division for final approval. Submit a draft to **planning@portlandmaine.gov** to

ensure fields are correctly entered. Once staff approved the draft, the applicant shall submit the official signed original performance guarantee document, which for option 1) or 2) must be on Bank/Credit Union letterhead with original signatures.

□ **Step 3 - Submit Performance Guarantee, Inspection Fee, and Infrastructure Contributions** Submit the final original Performance Guarantee, the required inspection fee, and any infrastructure contributions (Include Attachment 6 form) to the Planning Division. The Planning Division will confirm that the final documents are accurate and acceptable.

□ **Step 4 - Release of Recording Plat and Permits**
Only after the performance guarantee is issued, fees paid, and all other conditions of site plan approval and compliance are met, will the recording plat be released for recording at the Cumberland County Registry of Deeds and/or City permits issued.

Contact: Please email the Cost Estimate Form to Max Martin at **mjmartin@portlandmaine.gov** After the cost estimate is approved, all Performance Guarantees and Infrastructure Contributions can be submitted by mail to: **City of Portland Planning and Urban Development, 389 Congress Street, 4th Floor, Portland, ME 04101**.

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

June 11, 2024

Jay Hibbard
54 York, LLC
400 Commercial Street, Unit 101
Portland, ME 04101

Marieke Thormann
Fathom Companies
80 Exchange Street, Suite 400
Portland, ME 04101

Project Name: Major Site Plan Amendment
Project ID: PL-002954-2024
Address: 54 York Street
CBL: 042 A007
Applicant: 54 York, LLC & Fathom Companies
Planner: Sean King, Urban Designer

Dear Jay Hibbard and Marieke Thormann:

On June 11, 2024 the Planning Board approved a major site plan amendment at 54 York Street for a change of use of 14 residential units and two commercial units into a hotel with 14 guest room and two commercial units within the existing three-story building. The property is located in the B-5b Urban Commercial zone, and is located within the Waterfront (Old Port) historic district. Based on the information provided to the Board in the application, documents, through testimony and other information submitted by the applicant, the Planning Board [adopts/does not adopt] the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024, which is attached hereto and incorporated herein by reference. Based upon those findings, conclusions and recommendations, the Planning Board found that the application met all relevant standards and voted [vote count] to approve the application with the following conditions as presented below.

A. CONDITIONAL USE – INCLUSIONARY ZONING

On the basis of the application, documents, and other information submitted by the Applicant, findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002954-2024 relevant to Portland's Inclusionary Zoning Conditional Use Standards and other regulations, and the testimony presented at the Planning Board public hearing, the Planning Board, [finds/does not find] the proposed conditional use for hotel projects meets the standards of Land Use Code Article 18.2.5 with the following conditions:

PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY

1. The Applicant shall pay an agreed upon fee-in-lieu into the City's Jill C. Duson Housing Trust Fund for the 14 guest rooms. The Inclusionary Zoning Fee-in-Lieu for 2024 is $4,692 per guest room for a total fee of $65,562.

B. SITE PLAN REVIEW

On the basis of the application, documents and other information submitted by the Applicant; findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002954-2024 relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with the site plan standards of the land use code.

C. PLANNING BOARD DECISION

On the basis of the findings, conclusions and recommendations contained in the Planning Board report for the public hearing on June 11, 2024 related to application PL-002954-2024 at 54 York Street, which is attached to the draft approval letter and incorporated therein, the Planning Board [adopts/does not adopt] the approval letter as drafted as the Planning Board's decision for application PL-002954-2024, and authorizes the Planning Board Chair to sign the approval letter as drafted.

The approval is based on the submitted plans and findings related to site plan review as contained in the Planning Board report dated June 11, 2024 for application PL-002954-2024 which is attached.

Standard Procedures

Note: The following standard procedures and requirements apply to all approved site plans:

1. Site Plan Expiration The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

2. Separate Building Permits Are Required This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

3. Performance Guarantee and Inspection Fees A performance guarantee covering the site improvements and an inspection fee payment of 2.0% of the guarantee amount and three (3) final sets of plans must be submitted to and approved by the Planning and Urban Development Department and Public Works Department prior to the release of a building permit, street opening permit or certificate of occupancy for site plans.

4. Construction Management Plans The applicant, contractor and subcontractors are required to conform to the approved Construction Management Plan, and all conditions contained within the project's approval, for the entire duration of the project. Any amendments to the approved Construction Management Plan shall be reviewed and approved by the Department of Public Works prior to the execution. The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan. The applicant shall coordinate the project's construction schedule with the timing of nearby construction activities to avoid cumulative impacts on a neighborhood and prevent unsafe vehicle and pedestrian movements. Accordingly, nearby construction activities could involve a delay in the commencement of construction.

5. Preconstruction Meeting Prior to the release of a building permit and scheduling of a preconstruction meeting, a hard copy set of approved plans shall be submitted to the Development Review Coordinator. A pre-construction meeting shall be held at the project site with the contractor, Development Review Coordinator, Public Works representative, and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan and the approved Construction Management Plan. The site/building contractor shall provide one (1) copy 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 pre-construction meeting.

6. Department of Public Works Permits If work or obstructions will occur within the public right-of-way, such as utilities, curb, sidewalk, driveway construction, site deliveries and equipment siting, a Street Opening and/or Occupancy Permits are required for your site. Please contact the Department of Public Works Permit Clerk at (207) 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

7. Develop Site According to Plan The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Any modifications of an approved site plan or alteration of a parcel, or of any approved exterior elevations, which were the subject of site plan approval after May 20, 1974, shall require the prior approval of an amended site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

8. Defect Guarantee A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

9. As-Built Final Plans Final sets of as-built plans shall be submitted digitally to the Planning and Urban Development Department, on a CD or DVD, in AutoCAD format (.dwg), release AutoCAD 2005 or greater. Please provide one hard copy of the mylar.

10. Mylar Copies Mylar copies of the as-built drawings for the public streets and other public infrastructure in the subdivision must be submitted to Public Works prior to the issuance of a certificate of occupancy.

11. Impact Fees New development or changes of use that result in net new residential dwelling units, non-residential building square footage, or water meters, are subject to the City of Portland's impact fee ordinance (Chapter 14, Article XVII). Impact fees are calculated at the time of building permit and must be paid prior to the certificate of occupancy. For more information, visit https://www.portlandmaine.gov/2409/Impact-Fees

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning and Urban Development Department at drc@portlandmaine.gov or (207)874-8984. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Sean King at (207) 874-8901 or via email at sking@portlandmaine.gov.

Sincerely,

Brandon Mazer, Planning Board Chair

Attachments:
1. Planning Board Report
2. Performance Guarantee Packet

Sean King <sking@portlandmaine.gov>

54 York St - PL-002954-2024

Ann Machado <amachado@portlandmaine.gov> Wed, Jun 5, 2024 at 12:06 PM
To: Sean King <sking@portlandmaine.gov>

Sean -

Here are my comments:

1. The applicant needs to provide floor plans.

2. The applicant needs to provide information on how the services as a hotel are going to be provided.

Let me know if you have any questions.

Ann Machado
Zoning Administrator
Permitting and Inspections Department
City of Portland, Maine
(207) 874-8709
amachado@portlandmaine.gov

May 9, 2024

Att. A

Department of Planning & Urban Development
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

Subject: Major Site Plan Application Amendment – 54 York Street, Portland, Maine (PL-001838-2021)

Dear City of Portland Planning Department,

On behalf of 54 York, LLC, Fathom Development is submitting an amendment to the existing approval for Site Plan Application Permit PL-001838-2021 for 54 York Street located in the B-5b Urban Commercial Zone.

The 3-story building was recently converted into a mixed-use development with (14) residential units, (2) commercial spaces, with associated storage, common areas, fitness room, bike room, and trash room. This amendment proposes to change the use to a (14) key hotel, (2) commercial spaces, with associated storage, common areas, fitness room, bike room, and trash room. There are no proposed changes to any other application information or drawings.

If you have any questions regarding this amendment or the completeness of the application materials, please do not hesitate to contact us.

Sincerely,



Marieke Thormann
VP of Development

May 9, 2024

Att. B

Inclusionary Zoning for Hotel Projects Conditional Use Application
Planning & Urban Development Department
City of Portland, Maine
389 Congress Street, 4th Floor
Portland, ME 04101

Subject: 54 York Street, Portland, Maine – Inclusionary Zoning Memorandum (PL-001838-2021)

On behalf of 54 York, LLC, we have reviewed the Amendment to Portland City Code Chapter 14 and the related options for Hotel Project Inclusionary Zoning. This memorandum summarizes our understanding of the compliance options to meet the requirements outlined in 14-448.1 and acts as an application to the City of Portland stating the approach that 54 York, LLC has selected for the property located at 54 York Street located in the B-5b Urban Commercial Zone.

Compliance Options:

14-488.1-c (Option 1) Create on-site low-income rental housing units
14-488.1-d (Option 2) Fee-in-lieu
14-488.1-c,d (Option 3) Combination of on-site low income rental units and fee-in-lieu

The 54 York Street project will consist of 14 guest rooms and has selected the Fee-in-lieu Alternative option to meet the Inclusionary Zoning ordinance. In accordance with 14-488.1-d, a fee of $4,692 per hotel guest room that results in a total fee of $65,688 will be paid into the City of Portland Housing Trust.

Conclusion:

54 York, LLC is providing this memorandum as the Inclusionary Zoning for Hotel Projects Conditional Use Application to the City of Portland to supplement the Site Plan Application Amendment for 54 York Street.

CITY OF PORTLAND
Planning & Urban Development Department

PLAN AMENDMENT FOR MAJOR AND MINOR SITE PLANS GENERAL DOCUMENT AND DRAWINGS CHECKLIST **Please submit each document as a separate PDF file** **Please confirm by electronically checking the boxes to the left** **All drawings must be submitted in a 24 x 36 sheet size.**	
GENERAL APPLICATION DOCUMENTS	
Yes NA	**Written Statement of the Proposed Amendment(s)** (Identify any conditions of approval being met and any changes to waivers)
Yes NA	**Any supporting documents of the original application that are being revised.** (Revisions should be clearly identified)
DRAWINGS	
Yes **NA**	**All amended plans affected by the proposed revisions. The plans shall clearly depict proposed modifications.**

I, Robyn Smith-Payne with Fathom Companies hereby certify that a notice of neighborhood meeting sign was posted from 6/3/24 to 6/12/24 prior to the public hearing held on 6/11/24 for the proposed project PL-002954-2024 located at 54 York Street, Portland, ME 04101.





Note that it is the applicant's responsibility to remove the notice of public meeting sign within three days following the date of the meeting.

Signed,

6/3/24

Sean King <sking@portlandmaine.gov>

54 York Street Conversion to Hotel

Lori Alexander <lorialexan@gmail.com> Wed, Jun 5, 2024 at 11:18 AM
To: sking@portlandmaine.gov

Hello Sean

Regarding the hearing by the Planning Board to consider a change from an approved 14 unit apartment building at 54 York to a 14 unit hotel, there are 3 large existing hotels with a few hundred feet of this project and it doesn't seem reasonable at all to approve yet another hotel when there is such a well publicized need for more housing units for the people who live and work here. I will try to attend this meeting in person, but if not please register my comments for consideration. I urgently hope this change is NOT approved.

Lori Alexander
207-837-0804

54 YORK STREET REDEVELOPMENT

54 YORK LLC
PORTLAND, MAINE

CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233

LEGEND

EXISTING

REFER TO BOUNDARY & TOPOGRAPHIC SURVEY FOR ADDITIONAL INFORMATION

PROPOSED

	GREEN SPACE
	UTILITY PAVEMENT CUTS
	STRIPING
	SEDIMENTATION BARRIER
	EDGE OF PAVEMENT
	CURB
	SIGN
	LAMP OR LIGHT POLE
	GAS VALVE
	UTILITY POLE
	GUY WIRE
	WATER VALVE OR SHUTOFF
	BOLLARD
	FIRE HYDRANT
	MANHOLE
	LIGHTING WALLPACK
	OVERHEAD LIGHTING
	SANITARY MANHOLE
	DOGHOUSE MANHOLE
	SANITARY CATCH BASIN
	STORM DRAIN CATCH BASIN
	STORM DRAIN MANHOLE
UGE	UNDERGROUND ELECTRIC LINE
W	UNDERGROUND WATER LINE
64	MINOR CONTOURS (1 FT)
65	MAJOR CONTOURS (5 FT)
EM/GM	ELECTRIC OR GAS METER
	TELEPHONE
	FIRE ALARM
G	GAS LINE
SD	STORM DRAIN LINE
	FOUNDATION DRAIN LINE
S	SEWER LINE
	BUILDING
OHU	OVERHEAD ELECTRICAL/TELEPHONE/CABLE
	PROPERTY LINE

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UTILITIES

SEWER

CITY OF PORTLAND
DEPARTMENT OF PUBLIC WORKS (DPW)
250 CANCO ROAD
PORTLAND, MAINE 04101
CONTACT: BRAD ROLAND, P.E.
(207) 874-8834

WATER

PORTLAND WATER DISTRICT
225 DOUGLASS STREET
PO BOX 3553
PORTLAND, MAINE 04104
CONTACT: ROBERT BARTELS, P.E.
(207) 774-5961

ELECTRIC

CENTRAL MAINE POWER COMPANY (CMP)
162 CANCO ROAD
PORTLAND, MAINE 04103
CONTACT: PAUL DUPERRE
(207) 828-2882

TELEPHONE

CONSOLIDATED COMMUNICATIONS
(FORMERLY FAIRPOINT)
45 FOREST AVE
PORTLAND, MAINE 04101
CONTACT: JAY CUNHA
603-433-2090

CABLE

SPECTRUM CABLE
118 JOHNSON ROAD
PORTLAND, MAINE, 04102
CONTACT: MARK PELLETIER
(877) 546-0962

NATURAL GAS

UNITIL SERVICE CORP
1075 FOREST AVENUE
PORTLAND, ME 04103
CONTACT: BRIDGET HARMON
(207) 541-2536



VICINITY MAP
SCALE: 1"=500'

PROJECT TEAM

DEVELOPER

54 YORK, LLC
PORTLAND MAINE
CONTACT: JAY HIBBARD
(207) 232-8749

ARCHITECT

CALEB JOHNSON STUDIO
PORTLAND, MAINE
CONTACT: PATRICK BOOTH, R.A.
(207) 283-8777

SURVEYOR

OWEN HASKELL, INC
FALMOUTH, MAINE
CONTACT: SAMUEL D. GLIDDEN, PLS
(207) 774-0424

CIVIL ENGINEER

ACORN ENGINEERING, INC
PORTLAND, MAINE
CONTACT: PETE HEIL, P.E.
(207) 775-2655

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

A.C.	ASBESTOS CEMENT
APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
CAD	COMPUTER AIDED DESIGN
CB	CATCH BASIN
CF	CUBIC FOOT
C.I.	CAST IRON
CIP	CAST IN PLACE
CL	CENTERLINE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
CY	CUBIC YARD
DI	DUCTILE IRON
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV; EL.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FD	FOUNDATION DRAIN
FT.	FEET
GAL.	GALVANIZED
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
M.E.P	MECHANICAL, ELECTRICAL, PLUMBING DESIGNER
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PERF	PERFORATED
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PR.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
RPP	REINFORCED PLASTIC PIPE
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	
UD	
UGE	
VIF	

ISSUED FOR	BY	DATE
SITE PLAN	PFH	11/12/21
COMMENT RESPONSE	PFH	2/25/2022

DRAWING NAME: COVER SHEET
PROJECT NAME/ADDRESS: 54 YORK STREET REDEVELOPMENT
54 YORK STREET, PORTLAND, MAINE 04101
CLIENT/OWNER OF RECORD: 54 YORK LLC
400 COMMERCIAL STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC
PORTLAND, MAINE 04101
PO BOX 4593
(207) 775-2655

FILE:	2.87_CIVIL
JN:	2.87
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	EGJ
CHECKED BY:	WHS/PFH

STATE OF MAINE
PETER F. HEIL
15318

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE (IF APPLICABLE), ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF PORTLAND AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN .DWG FORMAT AND PAPER, STAMPED ''AS-BUILT''. IF AUTOCAD CAPABILITY IS NOT AVAILABLE, EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED BOUNDARY AND TOPOGRAPHIC SURVEY BY OWEN HASKELL, INC, DATED 9/23/21.
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE PORTLAND PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
9. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
10. NO HOLES, TRENCHES, OR STRUCTURES SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT IN ANY AREA ACCESSIBLE TO THE PUBLIC OR WITHIN THE PUBLIC RIGHT-OF-WAY.
11. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. THIS SHALL BE COMPLETED AT A MINIMUM FOR STRUCTURES ADJACENT TO THE SITE AND STRONGLY RECOMMENDED FOR STRUCTURES DIRECTLY ACROSS THE SITE ALONG YORK STREET AND MAPLE STREET. A COPY OF THE SURVEY SHOULD BE PROVIDED TO THE OWNER. DOCUMENT WITH PICTURES AT A MINIMUM.
12. THE CONTRACTOR SHALL PROVIDE A GPS MODEL OF THE PROPERTY TO PROVIDE TO ACORN ENGINEERING.
13. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH THE ENGINEER, ACORN ENGINEERING INC. (ACORN), IF ANY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL TREES AND SHRUBS ON THE PROJECT WHICH ARE NOT TO BE REMOVED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY TRENCH PAVEMENT THAT HAS EXPERIENCED EXCESSIVE SETTLEMENT, CRACKING, OR OPENING OF JOINTS. REPAIRS MAY INCLUDE OVERLAY. REMOVAL OF WORK MAY BE NECESSARY AFTER THE FINAL ACCEPTANCE OF WORK OR PRIOR TO THE END OF THE WARRANTY PERIOD. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO ACORN TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP, ERECTION, AND CONSTRUCTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR ACORN'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY ACORN OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. PRIOR TO BACKFILLING, CONCRETE SHALL BE CURED PER STRUCTURAL ENGINEER'S SPECIFICATIONS.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE, IF APPLICABLE.
12. ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
13. ACORN BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND SITE OBSERVATION VISITS DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.
14. EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBPART P OF 29 CRF PART 1926.650-.652 (CONSTRUCTION STANDARD FOR EXCAVATIONS).
15. ALL TRENCH PAVEMENT REPAIR SHALL BE COMPLETED WITH THE USE OF A STREET PAVER WITH A SCREED WIDTH CAPABLE OF SPANNING THE FULL WIDTH OF THE TRENCH UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

SPECIAL INSPECTION NOTES

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ALL SITE DRAINAGE-RELATED WORK SHALL BE REVIEWED BY ACORN ENGINEERING.
3. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

5.1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.

5.2. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY, INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.

5.3. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.

5.4. SPECIAL INSPECTOR SHALL BE EMPLOYED BY THE OWNER AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A LICENSED PROFESSIONAL LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF PORTLAND, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED STRUCTURE CORNERS.
6. CONTRACTOR TO ENSURE THAT ACCESS, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVEWAYS, AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND AVAILABLE FOR USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE TERMS AND CONDITIONS OF SITE PLAN – MAJOR SITE PLAN APPLICATION AND SUBDIVISION PERMIT FROM THE CITY OF PORTLAND.
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.
3. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A STREET OPENING PERMIT FROM THE CITY OF PORTLAND. ADDITIONALLY, COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM (MEETS THE REQUIREMENTS WITHIN SECTION 615 OF THE MDOT STANDARD SPECIFICATIONS, MOST RECENT VERSION AND IS FREE OF TRACEABLE AMOUNTS OF CONTAMINANTS) SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY STRIPPED TOPSOIL WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. DEWATERING SHALL INCLUDE TREATMENT OF SILT THROUGH THE USE OF A DIRTBAG BY ACF ENVIRONMENTAL OR APPROVED EQUIVALENT. FLOWS FROM DEWATERING ACTIVITIES SHALL NOT BE DISCHARGED INTO SANITARY SEWERS. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE ADJACENT LAND OWNERS. PRIOR TO THE CONTRACTOR PRICING THE WORK, THEY SHALL PROVIDE ACORN WITH PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE, THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES WHERE NOT NOTED ON THE GRADING PLAN. SLOPES IDENTIFIED ON THE GRADING PLAN TAKE PRECEDENT. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. NO ADDITIONAL PAYMENT WILL BE MADE FOR UNSUITABLE MATERIALS THAT MAY EXIST ON SITE.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, CONTACT ACORN. THE DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER.
10. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER, IF APPLICABLE.

EROSION CONTROL NOTES:

1. DISTURBED AREAS ARE DEFINED AS THOSE SURFACES WHERE EXISTING VEGETATION OR STRUCTURES HAVE BEEN REMOVED, EXPOSING NATIVE SOIL TO THE ELEMENTS.
2. ALL ROUTINE WORK ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
3. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
4. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
5. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
6. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
7. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR TO BYPASS EXISTING SEWER FLOW CONTROL AT CONNECTION TO EXISTING SYSTEM AT NO ADDITIONAL COST.
3. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES, PRIOR TO THE ORDERING OF STRUCTURES.
4. ALL NEW SANITARY MANHOLES SHALL BE VACUUM TESTED BEFORE BACKFILLING. TESTING SHALL BE COMPLETED IN ACCORDANCE WITH TECHNICAL REPORT #16 (TR-16): GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS, PREPARED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.
5. SEWER MANHOLES SHALL BE 4' ID UNLESS OTHERWISE STATED ON THE PLANS.
6. CONTRACTOR TO PROVIDE 5.5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
7. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAIN ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN WITHIN THE PLAN SET.
8. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT DOCUMENT ''WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURE'', MOST RECENT REVISION.
9. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF PORTLAND, STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
10. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE PORTLAND WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
11. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE PORTLAND WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
13. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY PLUMBING, ELECTRICAL, AND MECHANICAL DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
14. COORDINATE EXIT POINT FOR SECONDARY UTILITY SERVICES WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN WITHIN THE UTILITY PLAN.
15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL PRIOR TO ANY WORK.
16. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
17. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS OR SAGS IN THE PIPING WILL BE PERMITTED. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED PIPE LINES SHALL BE SUITABLY RESTRAINED WITH THRUST BLOCKS OR RETAINER GLANDS. RETAINER GLANDS ALLOWED FOR DUCTILE IRON PIPE ONLY. PROVIDE ALL BENDS, HORIZONTAL AND VERTICAL, AS REQUIRED TO MEET THE GRADES AND ALIGNMENTS INDICATED ON THE DRAWINGS.
18. ALL WASTEWATER PIPING, EXCLUDING BUILDING DRAINS, AND ALL PRESSURIZED PIPING, TO INCLUDE WATER MAINS, INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE.
19. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS AND ADDITIONAL PIPE AS REQUIRED TO ENSURE A COMPLETE AND PROPERLY FUNCTIONING CONNECTION. CONTRACTOR TO VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. ADAPTERS AND FITTINGS ARE INCIDENTAL TO THE PIPE INSTALLATION.
20. WHENEVER POSSIBLE, WATER LINES SHOULD BE INSTALLED OVER WASTEWATER LINES. A MINIMUM SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER LINE SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A WATER LINE CROSSES UNDER THE WASTEWATER LINE, A FULL LENGTH OF WASTEWATER PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE,
21. THE CONTRACTOR SHALL BE ANTICIPATE THAT THE NATIVE SILT AND CLAY SOILS WILL NOT BE SUITABLE FOR PIPE TRENCH BACKFILL IN PAVED AREAS.
22. GROUNDWATER SHALL BE CONTROLLED TO A LEVEL OF AT LEAST ONE FOOT BELOW SUBGRADE OF THE PIPE OR STRUCTURE. THE CONTRACTOR SHALL MAINTAIN THE LOWERED GROUNDWATER LEVEL UNTIL CONSTRUCTION HAS BEEN COMPLETED TO SUCH AN EXTENT THAT THE STRUCTURES OR PIPES WILL NOT BE FLOATED OR OTHERWISE DAMAGED.
23. EXCAVATION TO SUBRADE IN NATIVE SILT AND CLAY SHALL BE COMPLETED WITH A SMOOTH EDGE BUCKET TO MINIMIZE SUBGRADE DISTURBANCE.
24. ALL ADJUSTMENTS TO FINISHED GRADE ARE TO BE COMPLETED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONFIRM STRUCTURES THAT REQUIRE ADJUSTMENT WITH THE ENGINEER OR OWNERS REPRESENTATIVE PRIOR TO ADJUSTING FRAMES.

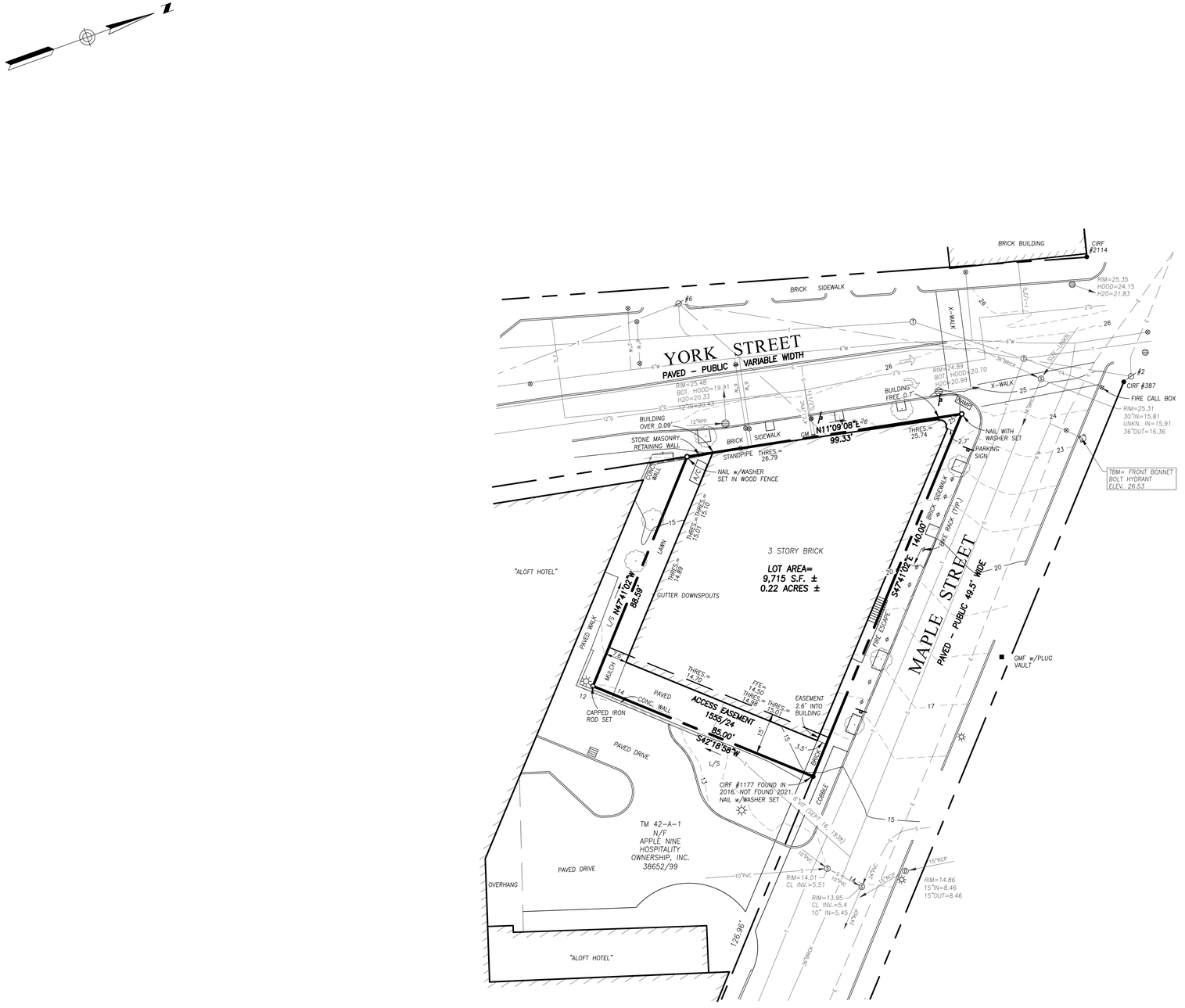
DEMOLITION NOTES:

1. THE FOLLOWING ITEMS ARE TYPICAL OF MATERIAL WHICH MAY BE ON SITE:
   - ROCK AND CONCRETE FOUNDATIONS
   - CONCRETE SLABS
   - BITUMINOUS ASPHALT PAVEMENT
   - CONCRETE PADS AND BLOCKS
   - FENCE POST AND FENCING
   - UNDERGROUND UTILITY LINES
   - ABOVE AND OR BELOW FUEL OIL AND PROPANE GAS TANKS
   - STORM DRAIN PIPES AND APPURTENANCE STRUCTURES
   - OTHER TRASH & MISCELLANEOUS SOLID WASTES
2. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED
3. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.

ISSUED FOR | BY | DATE
SITE PLAN | PFH | 11/12/21

DRAWING NAME: GENERAL NOTES
PROJECT NAME/ADDRESS: 54 YORK STREET REDEVELOPMENT, 54 YORK STREET, PORTLAND, MAINE 04101
CLIENT/OWNER OF RECORD: 54 YORK LLC, 400 COMMERCIAL STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.

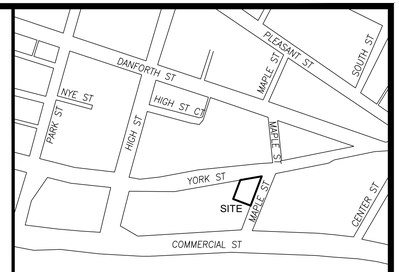


SCALE : 1" = 20'

0' 10' 20' 40'

UTILITY NOTE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEY HAS NOT PHYSICALLY LOCATION THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.



LOCATION MAP

N.T.S.

LEGEND

● IRON PIPE OR ROD FOUND	-X-X- FENCE
■ MONUMENT FOUND	═══ CURB
○ CAPPED IRON ROD SET	OHW OVERHEAD WIRES
UTILITY POLE	W WATER LINE
MANHOLE	G GAS LINE
SIGN	T TELEPHONE
CATCH BASIN	SD STORM DRAIN
HYDRANT	S SANITARY SEWER
WATER VALVE OR SHUTOFF	20 1' CONTOUR
LIGHT POLE	IPF/IRF IRON PIPE OR ROD FOUND
DECIDUOUS TREE	N/F NOW OR FORMERLY
	000/000 DEED BOOK / PAGE
	FFE FINISHED FLOOR ELEVATION
	THRES. THRESHOLD

PLAN REFERENCES

1. *"PLAN OF LAND ON COMMERCIAL, HIGH, YORK, & MAPLE STREETS, PORTLAND, MAINE FOR RUFUS DEERING COMPANY," BY OWEN HASKELL, INC. DATED JANUARY 9, 1989.*

2. *STANDARD BOUNDARY SURVEY FOR WILLIAM J. DOWD LOCATED IN PORTLAND, MAINE," BY D.A. MAXFIELD, JR. DATED NOVEMBER, 1987.*

3. *"ALTA/ACSM LAND TITLE SURVEY ON HIGH, DANFORTH, MAPLE, & YORK STREETS MADE FOR J.B. BROWN & SONS," BY OWEN HASKELL, INC. DATED DECEMBER 3, 2013.*

4. *"BOUNDARY & TOPOGRAPHIC SURVEY ON 383 COMMERCIAL STREET, PORTLAND, MAINE MADE FOR BERNSTEIN SHUR" SEPT. 6, 2016 REVISED 11-16-16 BY OWEN HASKELL, INC.*

5. *"SUBDIVISION PLAN OF: 383 COMMERCIAL STREET, PORTLAND, MAINE FOR RECORD OWNER: DEERING PROPERTY DEVELOPMENT, LLC," BY SEBAGO TECHNICS, DATED 10-22-18. RECORDED IN PLAN BOOK 218, PAGE 510.*

GENERAL NOTES

1. *OWNER OF RECORD:* 54 YORK, LLC
TAX MAP 42 BLOCK A LOT 7-8
C.C.R.D. BOOK 38325 PAGE 284

2. *BEARINGS ARE BASED ON STATE PLANE COORDINATE SYSTEM MAINE WEST ZONE, NAD 83 PER PLAN REFERENCE 1.*

3. *ELEVATIONS ARE BASED ON CITY DATUM.*

4. *SANITARY SERVICE CONNECTIONS ARE TAKEN FROM DEPARTMENT OF PUBLIC WORKS SEWER CARDS AND NOT FIELD VERIFIED.*

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 #2520

9/24/21
DATE

STATE OF MAINE
SAMUEL D GLIDDEN
2520
PROFESSIONAL
LAND SURVEYOR

Boundary & Topographic Survey

At

390 L
DRAW
CHECK

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

GENERAL NOTES:

1. ALL BRICK SIDEWALK AND VERTICAL GRANITE CURB TO BE REPLACED SHALL BE REBUILT TO CITY OF PORTLAND STANDARD.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF PORTLAND STANDARDS.
3. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. ALL RAMPS TO CONFORM TO ADA GUIDELINES. SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
5. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
6. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.

UTILITY NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE. CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTLAND STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE PORTLAND WATER DISTRICT STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE PORTLAND WATER DISTRICT AND CITY OF PORTLAND.
7. GAS UTILITIES: PROJECT GAS LOAD, GAS UTILITY DESIGN, AND FINAL GAS SERVICE LOCATION AND METERS TO BE DEFINED BY M.E.P. AND IN ACCORDANCE WITH UNITIL.
   7.1. EXISTING GAS MAIN INFORMATION OBTAINED FROM UNITIL 54 YORK STREET MAIN RECORD ON 11/5/2021. EXISTING PROPERTY'S GAS SERVICE INFORMATION OBTAINED FROM UNITIL ON 11/5/2021. COORDINATE WITH UNITIL FOR ADDITIONAL INFORMATION.
8. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
9. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CHARTER COMMUNICATIONS AND FAIRPOINT PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.

SPACE AND BULK STANDARDS

ZONE: B5b – URBAN COMMERCIAL BUSINESS	REQUIRED	EXISTING	PROPOSED
MIN LOT AREA	NONE	9,715 SF	9,715 SF
BUILDING (PRINCIPAL): MIN. FRONT SETBACK	10'	0'	0'
BUILDING MIN. SIDE SETBACK	NONE	7.67'	7.67'
BUILDING MIN. REAR SETBACK	NONE	12.36'	12.36'
LOT AREA PER DWELLING UNIT	NONE	N/A	693 SF
LOT COVERAGE (MAX.)	100%	78.6%	78.6%
STRUCTURE HEIGHT (MAX.)	65'	45.17'	45.17'
IMPERVIOUS SURFACE RATIO (MAX.)	NONE	92.7%	96.3%
INDOOR BICYCLE PARKING*	6 INDOOR	9 OUTDOOR	8 INDOOR + EXISTING 9 OUTDOOR
OFF-STREET PARKING**	N/A	N/A	N/A

*BICYCLE PARKING BASED UPON TWO (2) SPACES PER FIVE (5) UNITS WITH 14 UNITS = 6 BICYCLE PARKING SPACES

**VEHICLE PARKING BASED UPON LAND USE CODE, TABLE 19-B: NO OFF-STREET PARKING REQUIRED

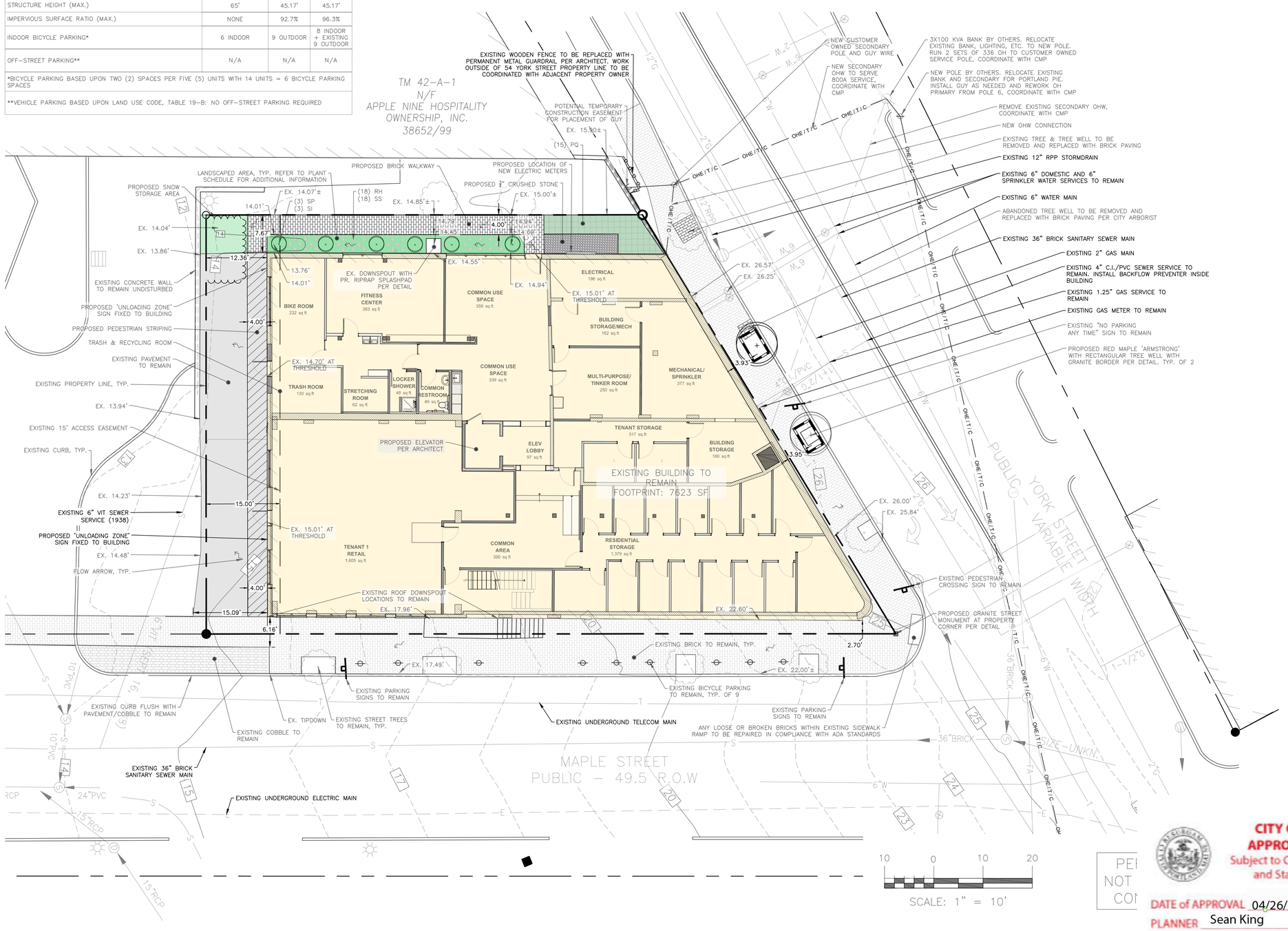
MINIMUM HORIZONTAL UTILITY SEPARATION

UTILITY	UGE/T/C	WATER	SEWER	GAS	STORMWATER
UGE/T/C	–	6'	5'	4'	6'
WATER	6'	–	5'*	6'	3'
SEWER	5'	5'*	–	5'	10'
GAS	4'	6'	5'	–	3'
STORMWATER	6'	3'	10'	3'	–

*PERMISSIBLE ONLY IF SEWER IS LAID MIN. 18" BELOW WATER SERVICE; OTHERWISE, 10' OF HORIZONTAL SEPARATION MUST BE MAINTAINED.

PLANT SCHEDULE

ID	BOTANICAL NAME	COMMON NAME	QTY	SIZE
TREES				
AR	ACER RUBRUM	RED MAPLE	2	2" CAL.
SHRUBS				
SP	SALIX PURPUREA 'NANA'	PURPLE WILLOW	3	3 GAL.
SI	SALIX INTEGRA 'HAKURO NISHIKI'	DAPPLED WILLOW	3	3 GAL.
PERENNIALS				
RH	RUDBECKIA HIRTA	BLACK-EYED SUSAN	18	1 GAL
SS	SLVIA SYLVESTRIS	SAGE 'MAY NIGHT'	18	1 GAL
GRASSES AND GROUND COVER				
PQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	15	1 GAL



ISSUED FOR	BY DATE
SITE PLAN	PFH 11/12/2021
COMMENT RESPONSE	PFH 2/25/2022
COMMENT RESPONSE – 2	PFH 3/25/2022
COMMENT RESPONSE – 3	PFH 4/7/2022

DRAWING NAME: SITE, UTILITY, & GRADING PLAN
PROJECT NAME: 54 YORK STREET REDEVELOPMENT
54 YORK STREET, PORTLAND, MAINE 04101
CLIENT: 54 YORK LLC
400 COMMERCIAL STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
ENGINEERING, INC.
THESE PLANS ARE NOT TO BE USED, MODIFIED, ANY ALTERATIONS OR REUSE WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
70 ELM STREET, SACO, MAINE 04104
P.O. BOX 1222, SACO, MAINE 04072 (207) 775-2655

FILE:	2.87_CIVIL
JN:	2.87
SCALE:	1"=10'
DESIGNED BY:	PFH
DRAWN BY:	ZMS
CHECKED BY:	WHS

STATE OF MAINE
PETER F. HEIL
15318

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions
DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

GENERAL NOTES:

1. FOR INFORMATION REGARDING THE PROPOSED SITE, UTILITIES, GRADING, AND STORMWATER REFER TO THE SITE PLAN, C-10, MOST RECENT VERSION.
2. UNIT TABULATION PROVIDED BY CALEB JOHNSON STUDIO; REFER TO ARCHITECTURAL PLANS FOR FLOOR PLANS AND BUILDING HEIGHTS.
3. PROPERTY PINS WERE SET BY PROFESSIONAL LAND SURVEYOR.
4. AS OF 11/10/2021, THE SITE IS BOUNDED BY THE B5b ZONE & OLD PORT HISTORIC DISTRICT PER THE CITY OF PORTLAND GIS WEBSITE.
5. PARCEL IS SHOWN ON THE CITY OF PORTLAND ASSESSOR'S MAP 42, BLOCK A, LOTS 7 & 8.
6. PARCEL DOES NOT FALL IN A SPECIAL FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 2300510013B, DATED 7/17/1986.
7. ALL BUILDING CORNER OFFSETS TO BOUNDARY LINES ARE FROM THE BUILDING FOUNDATION, UNLESS OTHERWISE NOTED.
8. THIS SHEET IS THE SUBDIVISION PLAT FOR THE CREATION OF UP TO FOURTEEN (14) DWELLING UNITS ON THE EXISTING SUBJECT PROPERTY.
9. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
10. PLAN REFERENCES:
    - 10.1. PLAN TITLED "BOUNDARY & TOPOGRAPHIC SURVEY" PREPARED BY OWEN HASKELL, INC. DATED SEPTEMBER 24TH, 2021

SURVEY NOTES:

1. OWNER OF RECORD: 54 YORK, LLC 54 YORK, LLC
   - 1.1. TAX MAP 42 BLOCK A LOT 7-8
   - 1.2. C.C.R.D. BOOK 38325 PAGE 284
2. BEARINGS ARE BASED ON STATE PLANE COORDINATE SYSTEM MAINE WEST ZONE, NAD 83.
3. ELEVATIONS ARE BASED ON CITY DATUM.
4. SANITARY SERVICE CONNECTIONS ARE TAKEN FROM DEPARTMENT OF PUBLIC WORKS SEWER CARDS AND NOT FIELD VERIFIED.

EASEMENTS:

THERE IS ONE EXISTING EASEMENT AS IDENTIFIED BY PLAN TITLED BOUNDARY & TOPOGRAPHIC SURVEY BY OWEN HASKELL, INC. DATED SEPTEMBER 24TH 2021.
1.) 15' ACCESS EASEMENT, BOOK 1555, PAGE 24

THERE ARE NO PROPOSED EASEMENTS.

WAIVERS & CONDITIONS OF APPROVAL:

TBD.

SPACE AND BULK STANDARDS			
ZONE: B5b – URBAN COMMERCIAL BUSINESS	REQUIRED	EXISTING	PROPOSED
MIN LOT AREA	NONE	9,715 SF	9,715 SF
BUILDING (PRINCIPAL): MIN. FRONT SETBACK	10'	0'	0'
BUILDING MIN. SIDE SETBACK	NONE	7.67'	7.67'
BUILDING MIN. REAR SETBACK	NONE	12.36'	12.36'
LOT AREA PER DWELLING UNIT	NONE	N/A	693 SF
LOT COVERAGE (MAX.)	100%	78.6%	78.6%
STRUCTURE HEIGHT (MAX.)	65'	45.17'	45.17'
IMPERVIOUS SURFACE RATIO (MAX.)	NONE	92.7%	96.3%
INDOOR BICYCLE PARKING*	6 INDOOR	9 OUTDOOR	8 INDOOR + EXISTING 9 OUTDOOR
OFF-STREET PARKING**	N/A	N/A	N/A
*BICYCLE PARKING BASED UPON TWO (2) SPACES PER FIVE (5) UNITS WITH 14 UNITS = 6 BICYCLE PARKING SPACES			
**VEHICLE PARKING BASED UPON LAND USE CODE, TABLE 19-B: NO OFF-STREET PARKING REQUIRED			

UNIT TABULATION	
UNIT NUMBER	SIZE (SF)
1A	415
1B	772
1C	762
1D	736
1E	956
1F	643
2A	1008
2B	580
2C	762
2D	736
2E	994
2F	660
2G	735
2H	716

PROPERTY LINE
PROPOSED BUILDING
LANDSCAPED AREA
EXISTING PAVEMENT
BRICK
SNOW STORAGE
CAST IRON ROD/NAIL WITH WASHER FOUND/SET
GRANITE MONUMENT SET

DEVELOPER:
54 YORK, LLC
PORTLAND, MAINE
CONTACT: JAY HIBBARD
(207)-232-8749

SURVEYOR:
OWEN HASKELL, INC.
FALMOUTH, MAINE
CONTACT: SAMUEL D. GLIDDEN, PLS
(207) 774-0424

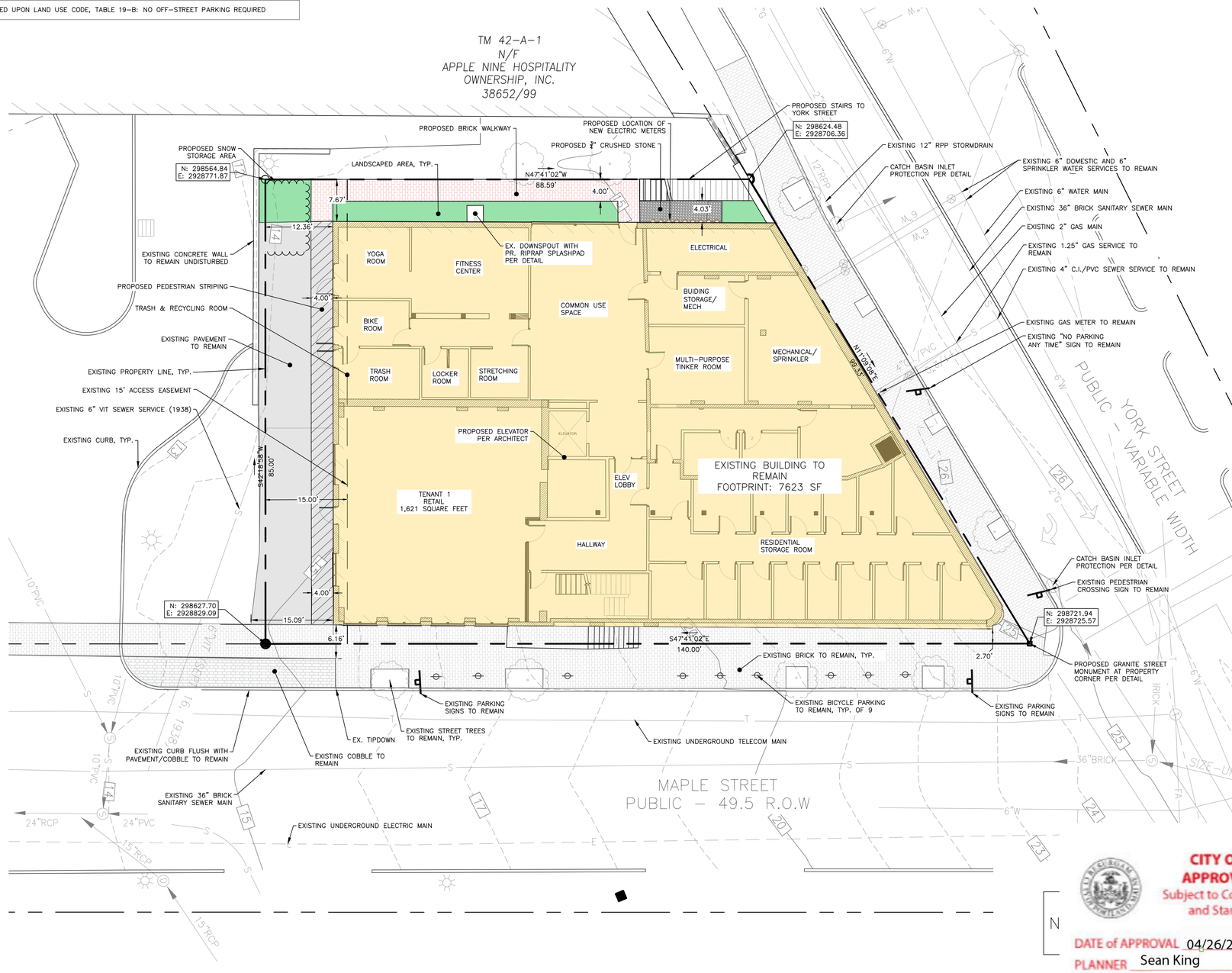
ARCHITECT:
CALEB JOHNSON STUDIO
PORTLAND, MAINE
CONTACT: JOSH JACQUES
(207)-283-8777

CIVIL ENGINEER:
ACORN ENGINEERING, INC
PORTLAND, MAINE
CONTACT: PETER HEIL, PE
(207) 775-2655

10 0 10 20
SCALE: 1" = 10'

THIS SURVEY CONFORMS TO THE CURRENT STANDARDS OF PRACTICE SET FORTH BY THE MAINE STATE BOARD OF LICENSURE FOR LAND SURVEYORS.

SAMUEL D. GLIDDEN, MAINE P.L.S. #2520 DATE:
OWEN HASKELL, INC.



RECORDING INFORMATION
STATE OF MAINE, CUMBERLAND
COUNTY REGISTRY OF DEEDS

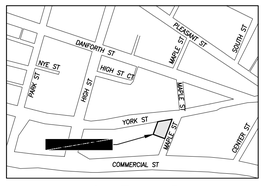
RECEIVED: _____

RECORDED IN: _____

ATTEST: _____
REGISTRAR

APPROVED: PORTLAND PLANNING BOARD

CHAIRPERSON: DATE:



VICINITY MAP
NOT TO SCALE

ISSUED FOR: SITE PLAN | BY: PFH | DATE: 11/12/2021

DRAWING NAME: SUBDIVISION PLAT – 54 YORK STREET
PROJECT NAME: 54 YORK STREET REDEVELOPMENT
54 YORK STREET, PORTLAND, MAINE 04101
CLIENT: 54 YORK LLC
400 COMMERCIAL STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.

THESE PLANS SHALL NOT BE MODIFIED OR USED FOR OTHER PROJECTS WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ACORN ENGINEERING, INC. ANY MODIFICATION OR REUSE WITHOUT SUCH CONSENT SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO ACORN ENGINEERING, INC.

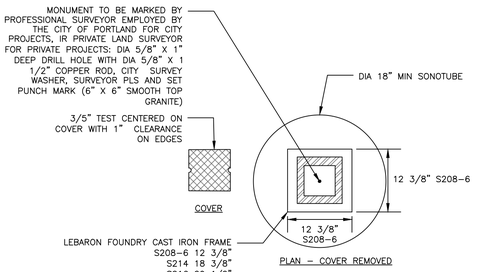
ACORN ENGINEERING, INC
PO BOX 3294 PORTLAND, MAINE 04104
(207) 775-2655

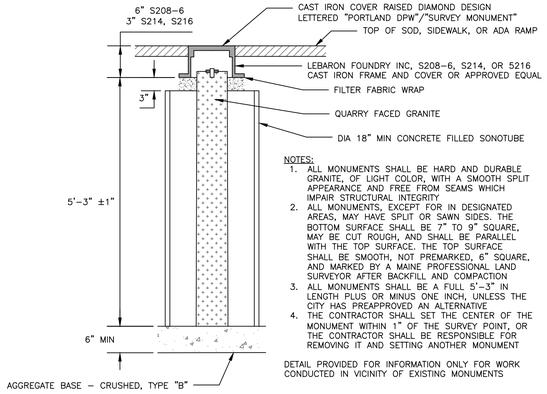
FILE:	2.87_CIVIL
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DRAWN BY:	ZMS
CHECKED BY:	WHS

STATE OF MAINE
PETER F. HEIL
15318

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021



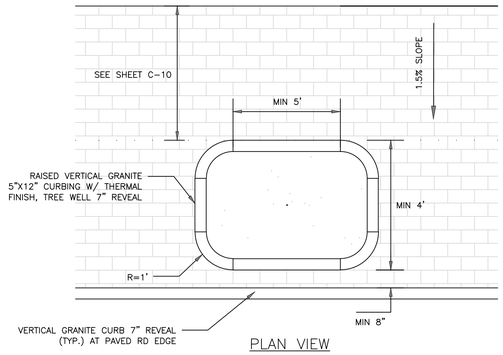


NOTES:
1. ALL MONUMENTS SHALL BE HARD AND DURABLE GRANITE, OF LIGHT COLOR, WITH A SMOOTH SPLIT APPEARANCE AND FREE FROM SEAMS WHICH IMPAIR STRUCTURAL INTEGRITY
2. ALL MONUMENTS, EXCEPT FOR IN DESIGNATED AREAS, MAY HAVE SPLIT OR SAWN SIDES. THE BOTTOM SURFACE SHALL BE 7" TO 9" SQUARE, MAY BE CUT ROUGH, 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
3. ALL MONUMENTS SHALL BE A FULL 5'-3" IN LENGTH PLUS OR MINUS ONE INCH, UNLESS THE CITY HAS PREAPPROVED AN ALTERNATIVE
4. 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

DETAIL PROVIDED FOR INFORMATION ONLY FOR WORK CONDUCTED IN VICINITY OF EXISTING MONUMENTS

GRANITE STREET MONUMENT
NOT TO SCALE

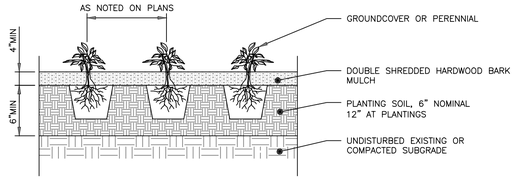
GENERAL NOTES:
1. ALL TREE WELLS SHALL COMPLY WITH CITY TECHNICAL STANDARDS AND MUST BE APPROVED BY THE CITY ARBORIST
2. GRANITE CURB TREE WELL SHALL BE SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY
3. NEW CONSTRUCTION: 4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM # 193623, PINE HALL PATHWAY PAVER BRICK.
4. REPAIR/MAINTENANCE TO EXISTING BRICK SIDEWALKS: VERMONT PAVER, SUPPLIED BY GAGNE AND SONS. SPECIFICATION NUMBER: "VERMONT BACKER BRICK", ITEM NUMBER #VBBB



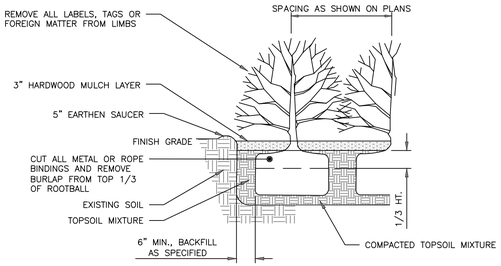
PLAN VIEW

TREEWELL IN BRICK SIDEWALK
NOT TO SCALE

PLANTING NOTES:
1. ALL PLANT SELECTION AND INSTALLATION SHALL BE IN COMPLIANCE WITH THE CITY OF PORTLAND TECHNICAL MANUAL (SECTION 4).
2. CONTRACTOR TO VERIFY ALL UTILITIES ON PROPERTY AND TO PROTECT ALL UTILITIES DURING EXCAVATION FOR PLANTS.
3. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER OF PLANTS SHOWN IN PLANT LIST (IF ANY), THE NUMBER OF PLANTS SHOWN ON PLAN WILL TAKE PRECEDENCE.
4. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
5. ALL DISTURBED AREAS NOT TO BE PAVED OR PLANTED SHALL BE LOAMED AND SEEDED AS SHOWN. THE SEED MIX SPECIFICATIONS ARE AS FOLLOWS: LESCO FINE FESCUE LINKS BLEND OF 35% HARD FESCUE, 35% CREEPING RED FESCUE, 20% CHEWINGS FESCUE AND 10% SHEEP FESCUE. ADD 5% LITTLE BLUESTEM AND 5% NORTHEAST WILDFLOWER SEED MIXTURE BY WEIGHT TO THE LINKS BLEND.
6. FOR PRICING PURPOSES, PROVIDE A PER TREE UNIT COST FOR STAKING AND GUYING. IF STAKING AND GUYING IS REQUIRED, REMOVE TREE WRAP, STAKES, AND GUY WIRES AT END OF FIRST GROWING SEASON.
7. FOR TREE PLANTING IN LAWN AREAS, ANY DISTURBED LAWN SHALL BE LOAMED AND SEEDED AS NECESSARY.
8. NEW TREES TO BE INSTALLED WITH A SLOW RELEASE WATERING BAG.
9. CONTRACTOR TO BE HELD RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS FOR AT LEAST 30 DAYS FOLLOWING INSTALLATION. FOLLOWING THIS PERIOD, THE LANDOWNER OR PROPERTY MANAGEMENT SHALL BE RESPONSIBLE FOR CONTINUED WATERING AND MAINTENANCE. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING FINAL INSTALLATION.
10. ALL PROPOSED PLANTS SHALL BE LOCATED AS SHOWN ON THE PLANS. CONTRACTOR TO NOTIFY ENGINEER WHEN PLANTINGS HAVE BEEN MOBILIZED ON SITE. ENGINEER TO INSPECT AND ACCEPT OR REJECT ANY SPECIMENS ON THE BASIS OF APPARENT HEALTH, HARDINESS, AND CONFORMANCE WITH THE PLANTING SCHEDULE. REJECTED SPECIMENS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER. ACCEPTANCE DOES NOT WAIVE THE REQUIRED ONE YEAR PLANTING WARRANTY.

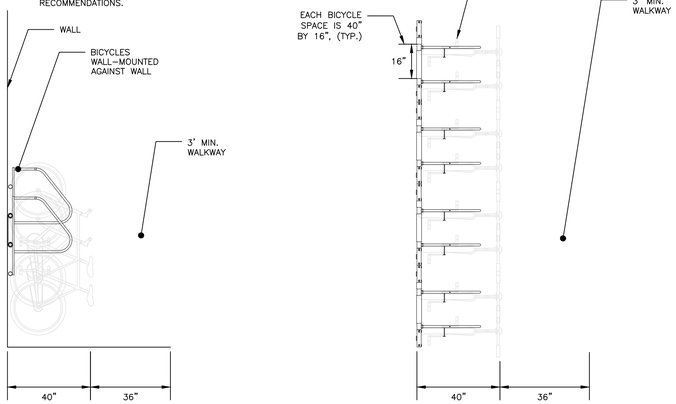


PERENNIAL PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

NOTES:
1. FINAL LOCATION OF INTERIOR BICYCLE RACKS SHALL CONFORM TO ALL ARCHITECTURAL DRAWINGS. CONTRACTOR TO NOTIFY ENGINEER AND ARCHITECT WITH ANY DISCREPANCIES.
2. BICYCLE MOUNT SHALL BE ULTRA SPACE SAVER AS MANUFACTURED BY DERO, OR APPROVED EQUAL.
3. BICYCLES SHALL BE WALL MOUNTED OR FLOOR MOUNTED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.



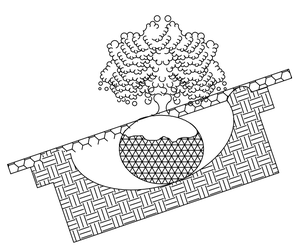
BICYCLE RACK INTERIOR
NOT TO SCALE

DIG HOLE AT LEAST 2 TIMES THE DIAMETER OF THE ROOT BALL AND AS DEEP AS THE ROOT BALL (NO DEEPER). SET ROOT BALL CENTERED, WITH THE TOP AT DOWNHILL EDGE OF THE HOLE.

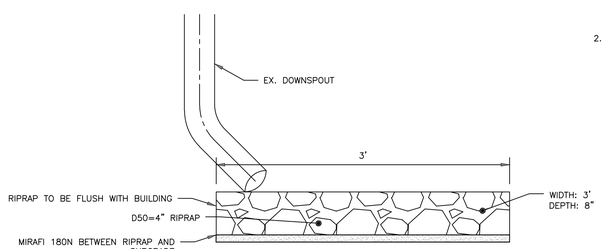
TOPSOIL BACKFILL SHALL BE NATURAL FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING THE CHARACTERISTICS OF TOPSOIL IN THE VICINITY WHICH PRODUCE A HEAVY GROWTH. TOPSOIL SHALL CONTAIN NOT LESS THAN 6% NOR MORE THAN 20% ORGANIC MATTER. TOP SOIL SHALL HAVE A pH VALUE OF NOT LESS THAN 5.5 NOR MORE THAN 7.0.

CONTAINER GROWN STOCK – REMOVE CONTAINER PROTECTING THE ROOT BALL. GENTLY COMB OUT THE ROOTS. PRUNE DAMAGED ROOTS.

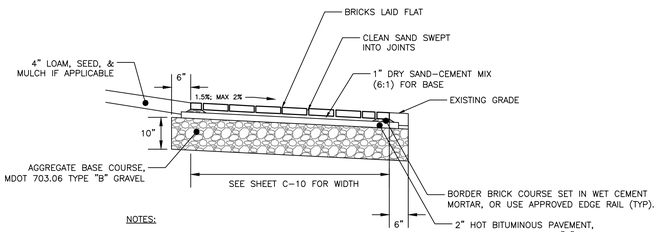
BACKFILL THE HOLE WITH TOPSOIL TO A DEPTH NOT TO EXCEED 8" THEN WATER SUFFICIENTLY TO SETTLE TOPSOIL. REPEAT SOIL BACKFILL, WATER, DRAIN. TOPSOIL SHALL BE TAMPED UNDER EDGES OF THE BALLED PLANTS. BACKFILL TO FINISH GRADE AND CREATE AN EARTHEN SAUCER. SOAK PLANTS TWICE WITHIN THE FIRST TWENTY-FOUR HOURS OF PLANTING.



TYPICAL PLANTING
NOT TO SCALE



RIPRAP SPLASHPAD
NOT TO SCALE



NOTES:
1. BRICKS TO BE USED:

   NEW CONSTRUCTION:
   4"X8" PINE HALL PATHWAY PAVER BRICK; MFG. BY PINE HALL BRICK CO., MADISON, NORTH CAROLINA. LACHANCE ITEM #193623;. PINE HALL PATHWAY PAVER BRICK.
2. INSTALL BRICK FLUSH UP TO BUILDING, PAVEMENT, STAIRS, CONCRETE SURFACES, CURB OR LANDSCAPED AREAS.

BRICK SIDEWALK WITH BITUMINOUS BASE DETAIL
NOT TO SCALE

ISSUED FOR	BY DATE
SITE PLAN	PFH 11/12/21
COMMENT RESPONSE	PFH 2/25/2022
COMMENT RESPONSE – 2	PFH 3/25/2022
COMMENT RESPONSE – 3	PFH 4/7/2022

DRAWING NAME: **SITE DETAILS**

PROJECT NAME/ADDRESS: 54 YORK STREET REDEVELOPMENT
54 YORK STREET, PORTLAND, MAINE 04101

CLIENT/OWNER OF RECORD: 54 YORK LLC
400 COMMERCIAL STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.

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ACORN ENGINEERING, INC
277 COMMERCIAL STREET, PORTLAND, MAINE 04101
PO BOX 4593 (207) 775-2655

FILE:	2.87_CIVIL
JN:	2.87
SCALE:	AS NOTED
DESIGNED BY:	PFH
DRAWN BY:	EGJ
CHECKED BY:	WHS/PFH

STATE OF MAINE
PETER F. HEIL
15318

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 SILTATION FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE SILT FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR BERM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 YORK STREET AND MAPLE STREET SHALL BE SWEPT TO CONTROL MUD AND DUST FROM THE CONSTRUCTION SITE AS NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.7 SILT FENCE STAKE SPACING SHALL NOT EXCEED 6 FEET UNLESS THE FENCE IS SUPPORTED WITH 14 GAUGE WIRE IN WHICH CASE THE MAXIMUM SPACING SHALL NOT EXCEED 10 FEET. THE SILT FENCE SHALL BE "TOED" INTO THE GROUND.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL THE TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM AND SHALL BE LIMED, AND MULCHED.

EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.2 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED OPEN.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCHING AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1,000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.
- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.
- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 1ST. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.
- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.
- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST 0.5 INCHES OF RAIN WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 STABILIZED STONE CONSTRUCTION ENTRANCES

THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS, WHICH HAVE EXPERIENCED MUD–TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: PETER F. HEIL, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

Ø MAINE PROFESSIONAL ENGINEERING LICENSE #15318
Ø MAINE DEP – CERTIFIED THIRD–PARTY INSPECTOR
Ø MAINE DEP – CERTIFIED IN INSPECTION & MAINTENANCE OF STORMWATER BMPS
Ø CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #7071

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. PRIORITIZE THE DOWNHILL SIDE TO CONTAIN RUNOFF WITHIN THE SITE WHILE PROVIDING AN ENGINEERED OUTLET WITH SILTATION BARRIER TO THE MUNICIPAL STORMWATER SYSTEM WITHIN YORK STREET AND MAPLE STREET.
6. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
7. COMMENCE INSTALLATION OF UTILITIES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
10. COMPLETE REMAINING EARTHWORK OPERATIONS.
11. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
12. INSTALL PAVING, CURBING AND BRICKWORK.
13. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
14. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
16. COMPLETE SITE SIGNAGE AND STRIPING.
17. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 SEEDING PLAN

7.1 SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

7.2 SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P205–K20) OR EQUIVALENT.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

7.3 SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES

SEED	LBS / ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	2.57	8/15 TO 10/1
OATS	1.84	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYGRASS	0.92	4/1 TO 7/1
SUDANGRASS	0.92	5/15 TO 8/15
PERENNIAL	0.92	8/15 TO 9/15
TOTAL	7.17 LBS/ACRE	

PERMANENT SEED APPLICATION RATES

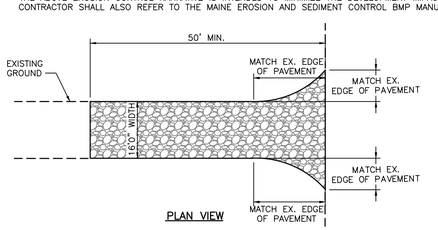
SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

7.4 MULCHING

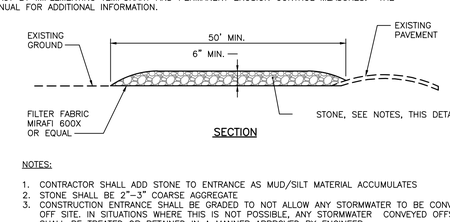
MULCH SHALL BE HARDWOOD AND APPLIED AT A RATE OF 70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT. REFER TO DETAIL FOR MORE INFORMATION.

8.0 CONCLUSION

THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.



PLAN VIEW



SECTION

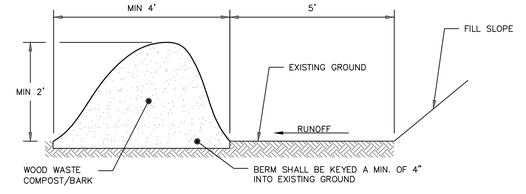
NOTES:

1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
2. STONE SHALL BE 2"–3" COARSE AGGREGATE
3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
4. WHEN NECESSARY, ON–SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT–OF–WAY

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:

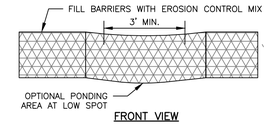
1. THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS AND IN ACCORDANCE WITH THE MAINE DOT CHAPTER 700, SECTION 717.04(D):
   1.1. pH BETWEEN 5.0 – 8.0
   1.2. PARTICLE SIZE (BY WEIGHT):
   1.2.1. 100% PASSING A 150 MM (6 IN) SCREEN
   1.2.2. 75 TO 85% PASSING A 19 MM (0.75 IN) SCREEN
   1.3. SOLUBLE SALTS CONTENT < 4.0 MMHOS/CM
   1.4. ORGANIC MATTER 20 TO 100% , DRY WEIGHT BASIS
2. THE BERM SHOULD BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR, WHEN NECESSARY THE BERM MAY BE PLACED PERPENDICULAR TO THE SLOPE ALONG THE PROPERTY LINE TO CONTAIN THE SEDIMENT PROVIDED A BERM IS LOCATED AT THE BASE OF THE SLOPE.
3. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED OR 90% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED OFFSITE OR BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.



EROSION CONTROL MIX BERM DETAIL
NOT TO SCALE

NOTES:

1. FULL CONTACT WITH THE GROUND IS CRITICAL TO PREVENT SHORT CIRCUITING UNDER THE TUBE – THE GROUND SURFACE SHOULD BE SMOOTH AND LEVEL. IN WOODED AREAS, PROTRUDING ROOTS AND DEBRIS MAY NEED TO BE REMOVED. IN GRASSED AREAS, THE GRASS NEEDS TO BE EITHER MOWED OR COMPRESSED DOWN.
2. UPON FINAL STABILIZATION, THE TUBE CAN BE CUT OPEN AND THE MATERIAL USED WITHIN LANDSCAPED AREAS. THE MESH MATERIAL SHOULD BE REMOVED.
3. LOOSE COMPOST MAY BE BACKFILLED ALONG THE UPSLOPE SIDE OF THE COMPOST FILTER SOCK, IMPROVING FILTRATION AND SEDIMENT RETENTION.

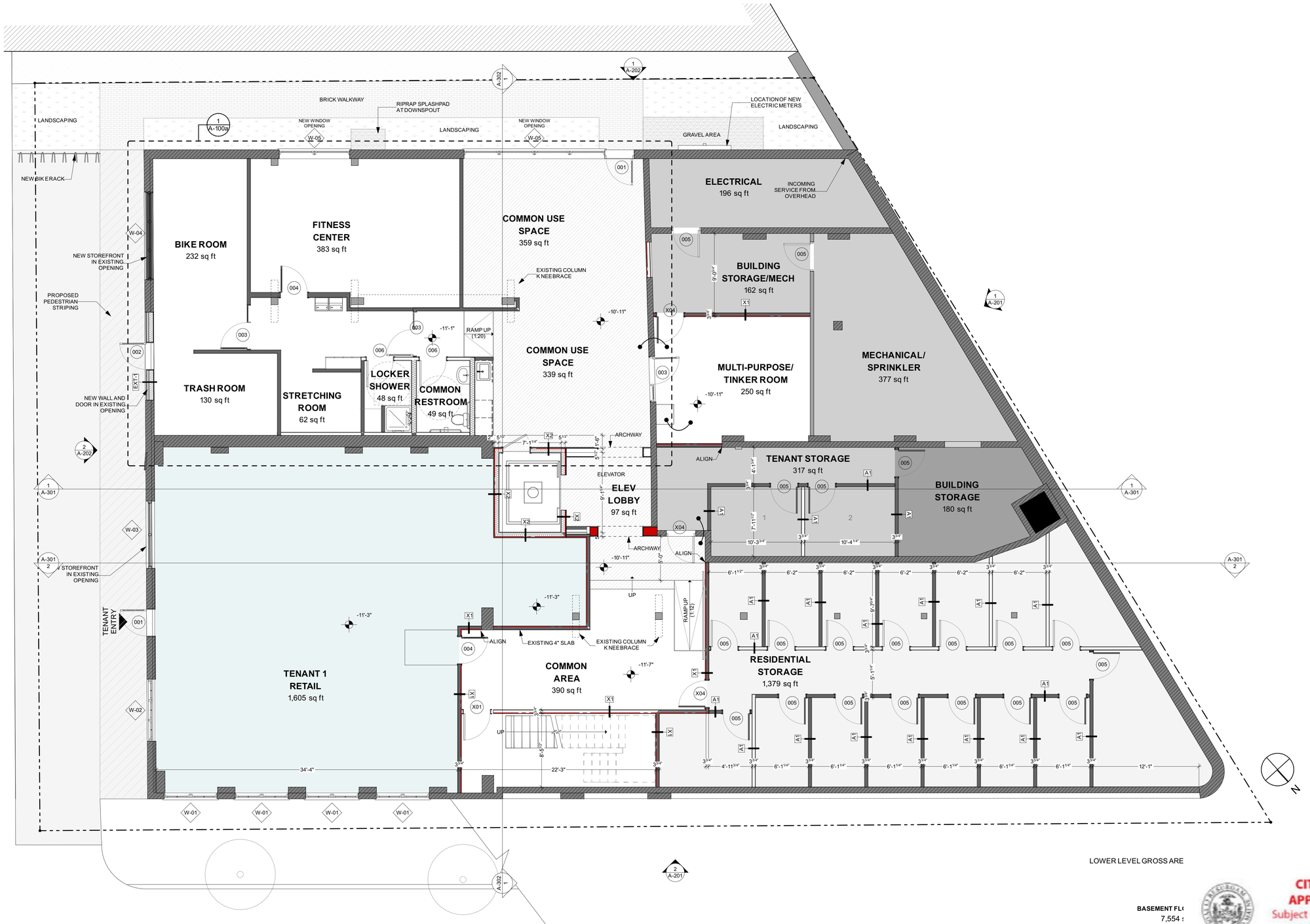

FILL BARRIERS WITH EROSION CONTROL MIX
3' MIN.
OPTIONAL PONDING AREA AT LOW SPOT

FLOOR PLAN GENERAL NOTES

1. These Drawings constitute a permit set. Additional information, dimensions and specifications will be provided by the Architect and/or Owner as requested for clarification. Field verify all dimensions taken from existing building elements. All dimensions to new walls are from stud-to-stud.
2. Refer to Outline Specification on Sheets G-003 and G-004 for additional information.
3. MEP: Refer to included mechanical and plumbing sheets prepared by project Mechanical Engineer (Above Group, Inc.). Contractor is to review and bring to the Architect's attention if additional information is required. Each trade contractor responsible to meet local code.
4. Elevator: Elevator is to be design build by elevator subcontractor. Basis of Design is a 3-stop Holeless Hydraulic Elevator with a capacity of 3500 lbs. with control access through door located at lower floor. Pit to be drained. See Spec. for additional information.
5. Automatic Sprinkler System: New sprinkler system is to be design build by the sprinkler subcontractor. Fire department connection to be near York Street Entrance. See RCP for additional notes regarding design intent of sprinkler piping.
6. Fire alarms systems, emergency lighting, smoke detection, etc are to be provided by the Contractor and/or fire alarm subcontractor, refer to Life Safety sheets, locations TBD, quantities by FA subcontractor.
7. Finishes: See Finish Schedule on sheet A-603

FLOOR PLAN LEGEND

- Existing Masonry Wall
- New Wood Framed Wall - Refer to Wall Types on Sheet A-601
- New Floor Overframing
- New Floor Overframing to match existing adjacent slab height



1 UNIT 08 ENLARGED PLAN
SCALE: 3/16" = 1'-0"

LOWER LEVEL GROSS ARE

BASEMENT FL
7,554 s

CITY OF PORTLAND APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

CALEB JOHNSON STUDIO
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207 283 8777
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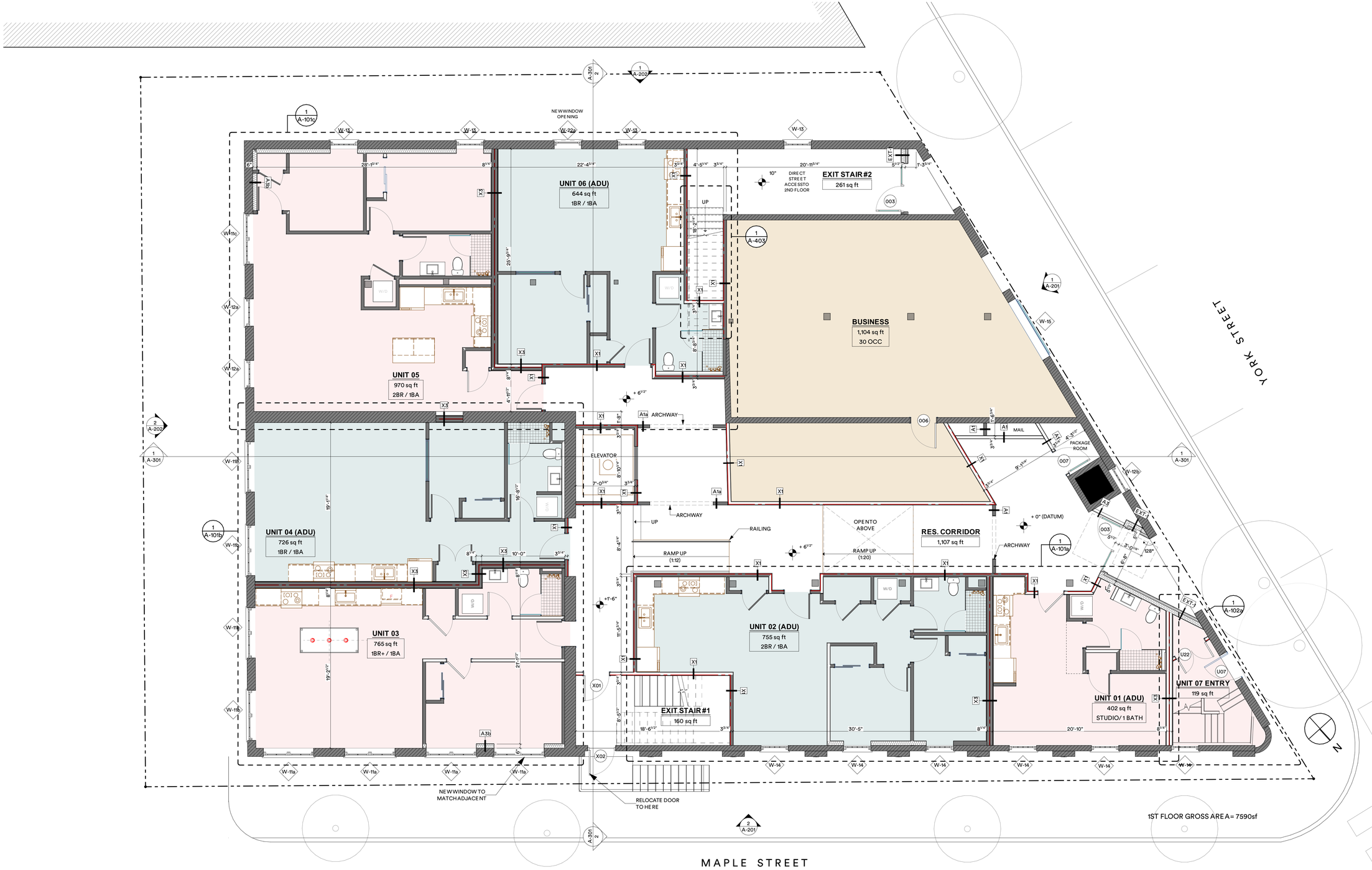
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1 1ST FLOOR PLAN
SCALE: 3/16" = 1'-0"

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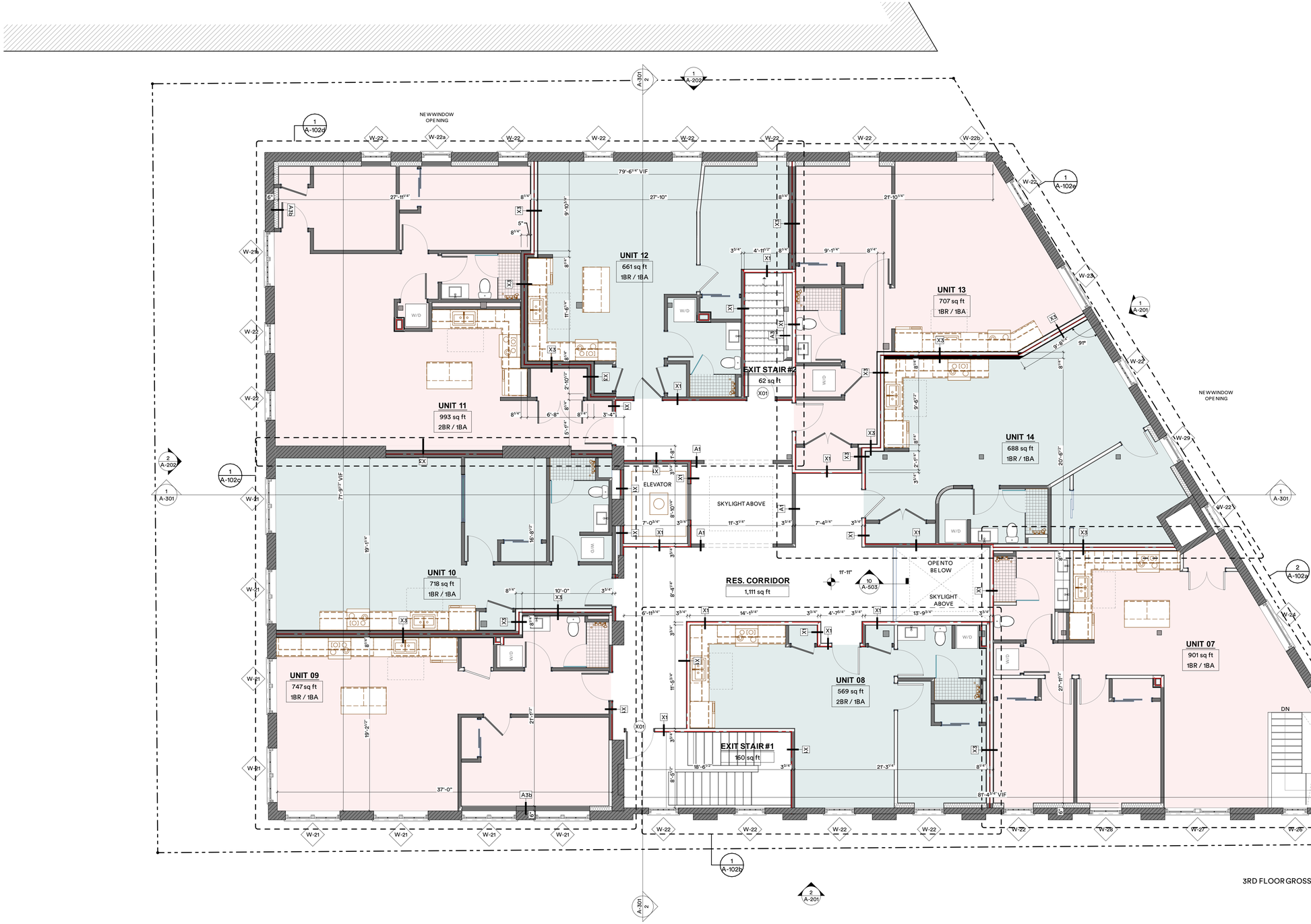
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3RD FLOOR GROSS AREA = 7590sf

1 2ND FLOOR PLAN
SCALE: 3/16" = 1'-0"

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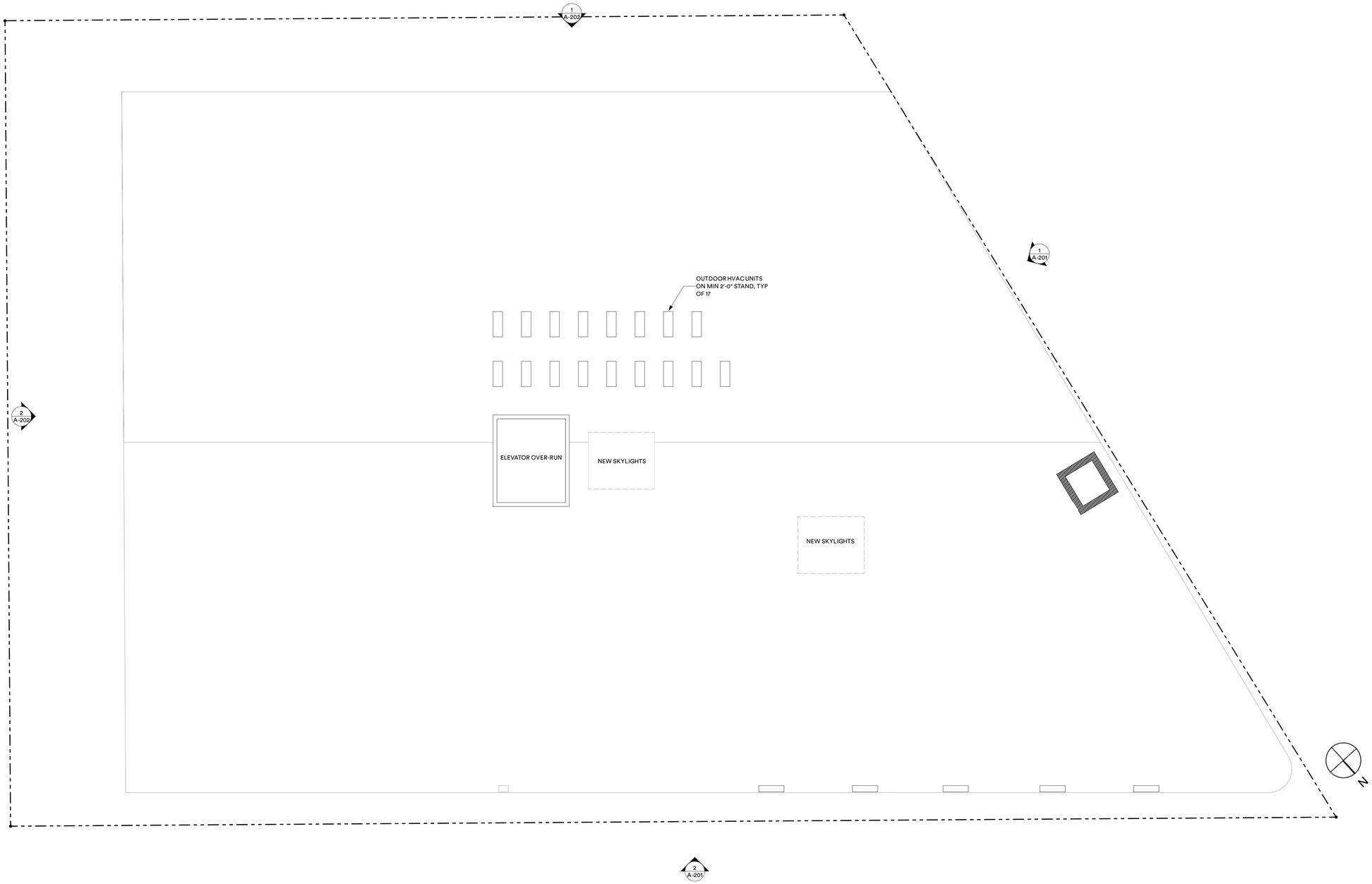
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1 ROOF PLAN
SCALE: 3/16" = 1'-0"

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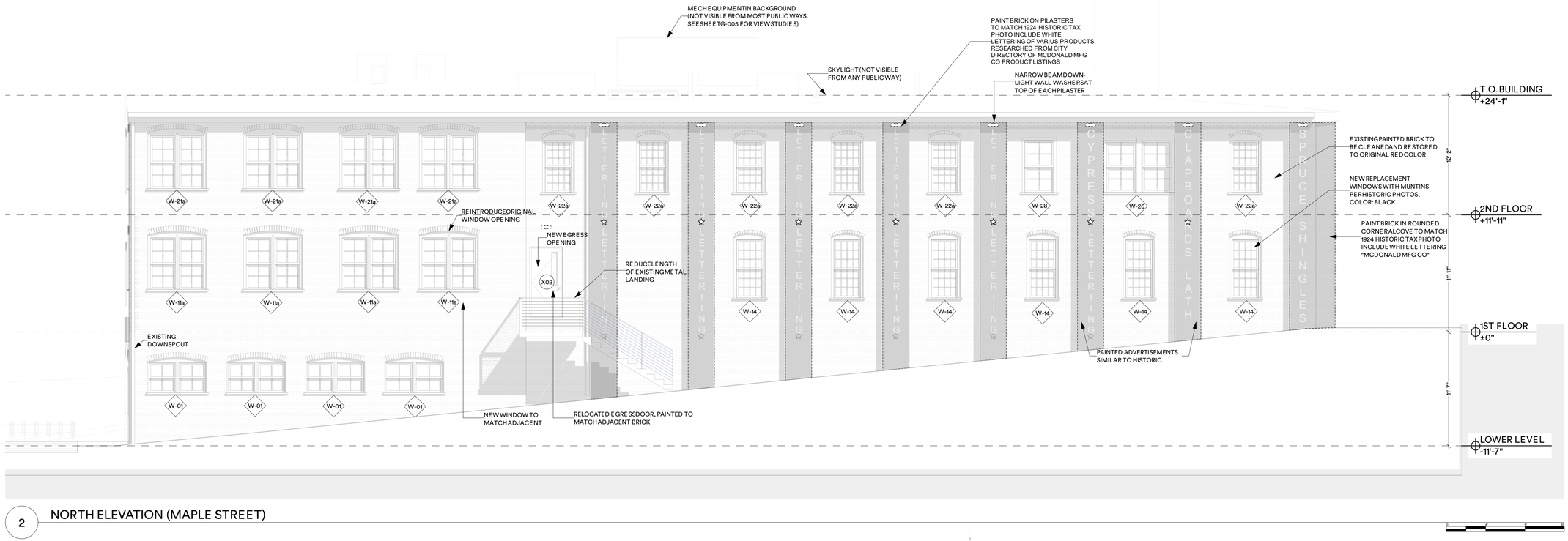
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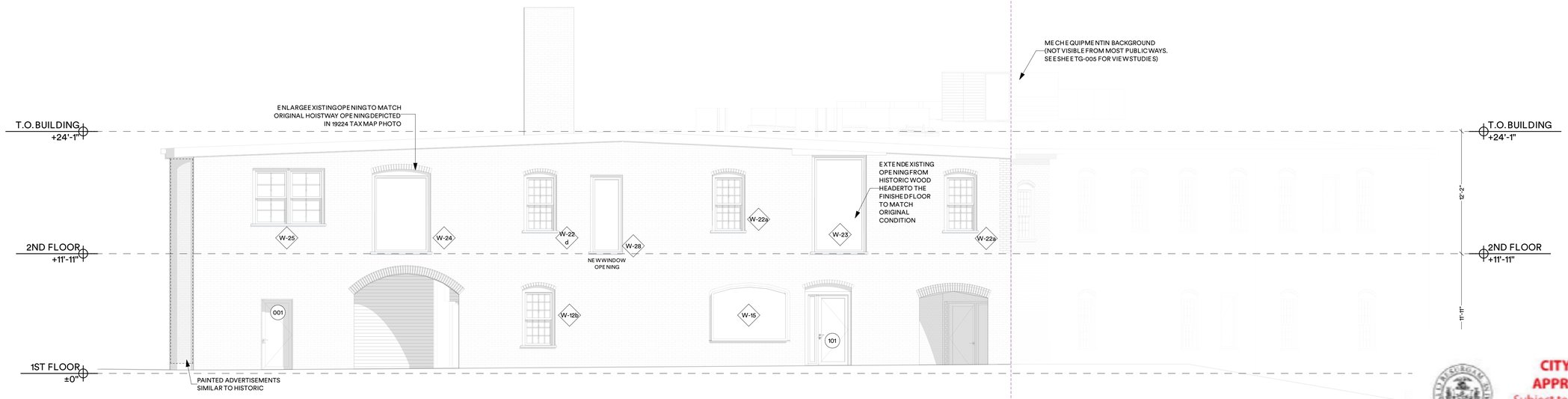
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2 NORTH ELEVATION (MAPLE STREET)

SEE SOUTH ELEVATION FOR FURTHER INFORMATION



1 WEST ELEVATION (YORK STREET)

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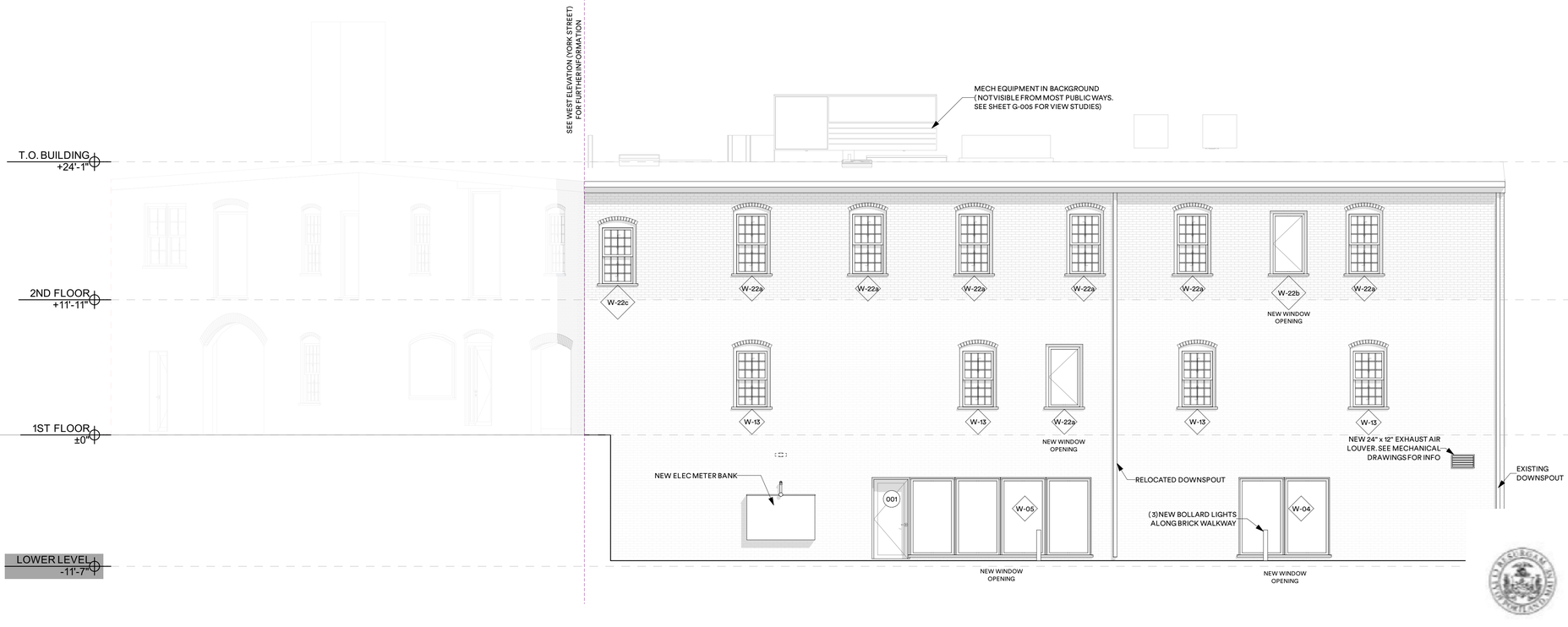
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2 EAST ELEVATION



1 SOUTH ELEVATION

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EXTERIOR LUMINAIRE SCHEDULE

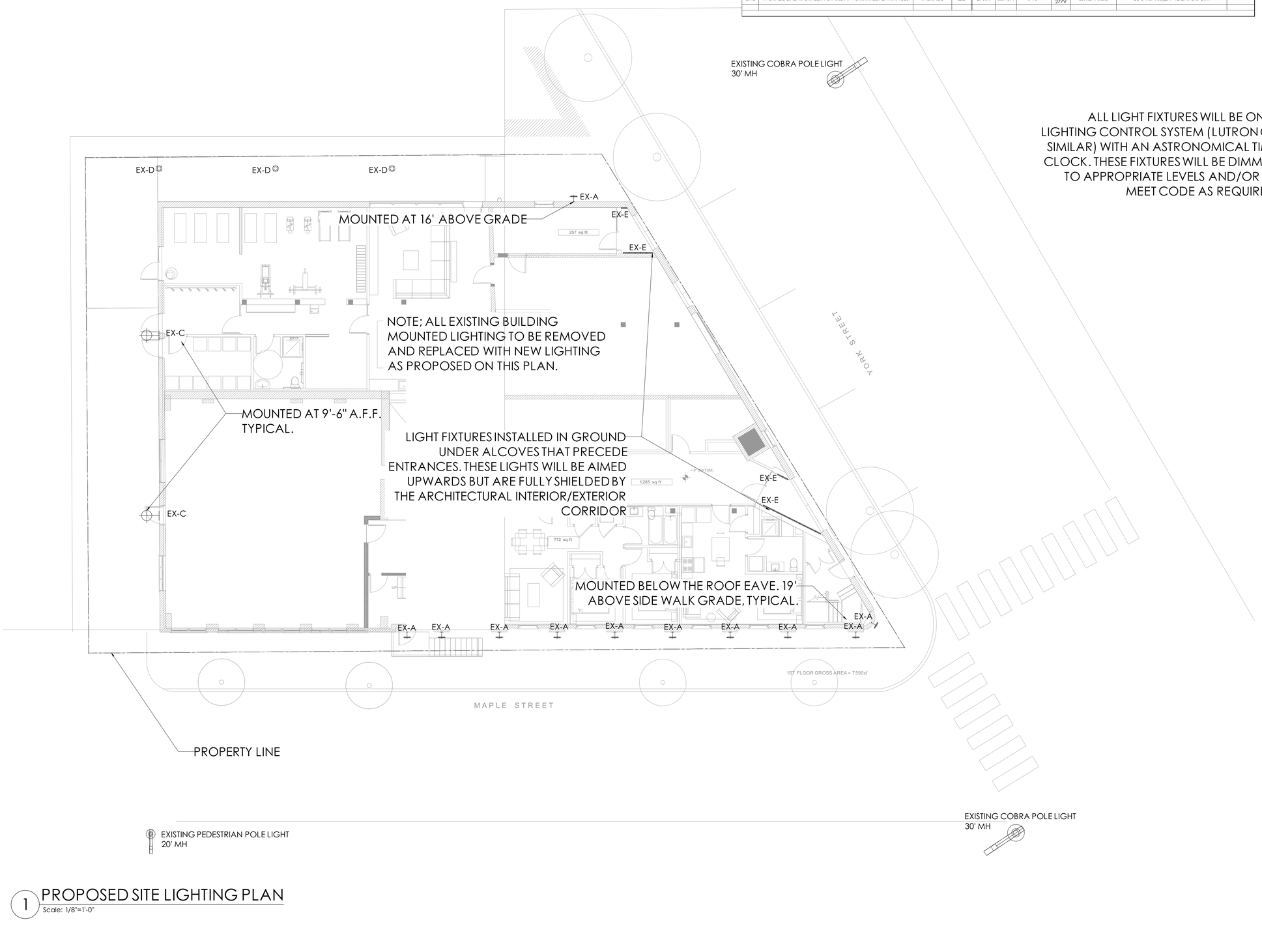
TYPE	DESCRIPTION	MOUNTING	LAMP / LIGHT SOURCE		INPUT WATTS	DIMMING	VOLT	MANUFACTURER	CATALOG NUMBER	SPECIFIC NOTES
			TYPE	CCT						
EX-A	WET RATED LINEAR DOWNLIGHT GRAZER ARM MOUNTED 12" OFF OF FACADE OF BUILDING, NARROWEST GRAZE OPTICS, ASYMMETRIC LOUVER	WALL	LED	2700K	4W	ELV	120-277V	ECOSENSE	L50-E-12-4-27-90-MULT-9X9 WAM-L-SINGLE WMA-L-CA-12	
EX-C	WALL MOUNTED GOOSENECK SCONCE, FINISH TBD	WALL	LED	2700K	36W	TRIAC/0-10V	120-277V	MARSET	SOHO A- [FINISH TBD]	
EX-D	32.5" EXTERIOR BOLLARD WITH 180 DEGREE OPTICS, CORTEN FINISH, TO BE CONFIRMED PRIOR TO ORDERING, 0-10V DIMMING, MOUNTING TBD	BOLLARD	LED	3000K	15W	0-10V	120-277V	LOUIS POULSEN	FLINDT BOLLARD 10000139069 [REQUEST 2700K]	
EX-E	INGRADE LINEAR GRAZER FOR USE AT YORK STREET ENTRANCES	INGRADE	LED	2700K	8.5W/FT	0-10V	120-277V	LUMENPULSE	LOG-RO-100_277-12-27K-8x8-DIM	

EXISTING COBRA POLE LIGHT
30' MH

ALL LIGHT FIXTURES WILL BE ON A LIGHTING CONTROL SYSTEM (LUTRON OR SIMILAR) WITH AN ASTRONOMICAL TIME CLOCK. THESE FIXTURES WILL BE DIMMED TO APPROPRIATE LEVELS AND/OR TO MEET CODE AS REQUIRED.

LIGHT FIXTURE SYMBOLS

- DECORATIVE WALL SCONCE
- BOLLARD
- LINEAR WALL MOUNTED DOWNLIGHT
- INGRADE LINEAR UPLIGHT GRAZER



EXISTING PEDESTRIAN POLE LIGHT
20' MH

EXISTING COBRA POLE LIGHT
30' MH

1 PROPOSED SITE LIGHTING PLAN
Scale: 1/8"=1'-0"

CONSULTANT: PRISM LIGHTING DESIGN
Portland, ME
207.221.8997
www.PrismLightingDesign.com

YORK STREET RESIDENCES
K STREET PORTLAND ME 04101
BARD

CJS PROJECT LEAD:
JJ PB
DATE OF ISSUE:
04/07/2022
PROJECT STATUS:
DESIGN DEVELOPMENT

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

CALEB JOHNSON
STUDIO
110 EXCHANGE ST - 2ND FLOOR, PORTLAND, ME 04101
207 253 9777
caleb@calebjohnsonstudio.com

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Illuminance	Fc	0.16	0.6	0.0	N.A.	N.A.
Maple Street Light Levels	Illuminance	Fc	1.43	5.6	0.1	14.30	56.00
York Street Light Levels	Illuminance	Fc	1.26	3.2	0.5	2.52	6.40

EXISTING COBRA POLE LIGHT
30' MH

MOUNTED AT 16' ABOVE GRADE

MOUNTED AT 9'-6" A.F.F.
TYPICAL.

LIGHT FIXTURES INSTALLED IN GROUND UNDER ALCOVES THAT PRECEDE ENTRANCES. THESE LIGHTS WILL BE AIMED UPWARDS BUT ARE FULLY SHIELDED BY THE ARCHITECTURAL INTERIOR/EXTERIOR CORRIDOR

MOUNTED BELOW THE ROOF EAVE. 19' ABOVE SIDE WALK GRADE, TYPICAL.

PROPERTY LINE

EXISTING COBRA POLE LIGHT
30' MH

EXISTING PEDESTRIAN POLE LIGHT
20' MH

York Street Light Levels
Illuminance (Fc)
Average = 1.26
Maximum = 3.2
Minimum = 0.5
Avg/Min Ratio = 2.52
Max/Min Ratio = 6.40

Maple Street Light Levels
Illuminance (Fc)
Average = 1.43
Maximum = 5.6
Minimum = 0.1
Avg/Min Ratio = 14.30
Max/Min Ratio = 56.00

1ST FLOOR GROSS AREA = 7,590sf

YORK STREET

MAPLE STREET

ALL LIGHT FIXTURES WILL BE ON A LIGHTING CONTROL SYSTEM (LUTRON OR SIMILAR) WITH AN ASTRONOMICAL TIME CLOCK. THESE FIXTURES WILL BE DIMMED TO APPROPRIATE LEVELS AND/OR TO MEET CODE AS REQUIRED.

LIGHT FIXTURE SYMBOLS

- DECORATIVE WALL SCONCE
- BOLLARD
- LINEAR WALL MOUNTED DOWNLIGHT
- INGRADE LINEAR UPLIGHT GRAZER

Luminaire Schedule							
Qty	Label	Description	Tag	Luminaire Lumens	Luminaire Watts	Total Watts	BUG Rating
18	LOG RO-100_277-12-27K-8x8-NO	Ingrade Uplight Graze	Type EX-E	450	8.5	153	N.A.
11	LSO-I-12-04-27-80-MULT-9x9	Trov Graze Downlight	Type EX-A	367	4	44	B1-U1-G0
3	LP Corten 30K_V01_BOD65_louis	Flindt Bollard	Type EX-D	536	15	45	B0-U1-G0
2	SOHO 57_38W_1	Marset Soho Sconce	Type EX-C	1051	16.23	32.46	N.A.

1 PROPOSED LIGHTING PLAN PHOTOMETRIC WITH EXISTING STREET LIGHTS
Scale: 1/8"=1'-0"

CONSULTANT:
PRISM LIGHTING DESIGN
Portland, ME
207 221 0000
www.PrismLightingDesign.com

ORK STREET RESIDENCES
K STREET PORTLAND ME 04101

C&B PROJECT LEAD:
JJ/ PB

DATE OF ISSUE:
04/07/2022

PROJECT STATUS:
DESIGN DEVELOPMENT

BARD

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Conditions of Approval and Standard Conditions

DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

TYPE EX-A

TRÖV

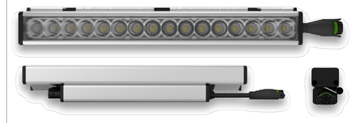
OVERVIEW • SPECIFICATIONS • ORDERING | INTERIOR + EXTERIOR | **L50 GRAZE**

DATE	PROJECT	FIRM	TYPE

THE L50 INCLUDES PATENTED OPTICAL DESIGN THAT DELIVERS THE WIDEST RANGE OF BEAM ANGLE OPTIONS FOR PRECISE COVE, WALL GRAZING, WALL WASHING OR LINE OF LIGHT APPLICATIONS. EXCLUSIVE FLIP TO FLAT™ HINGE DESIGN PROVIDES FLEXIBILITY WHEN MANAGING SMALL COVE DETAILS. TROV OFFERS SMOOTH, FLICKER FREE DIMMING DOWN TO 0%.

FEATURES :

- DIM TO 0%, ELV REVERSE PHASE
- 24 BEAM ANGLES
- MULTI-VOLT
- FLIP TO FLAT™
- 6 CCT OPTIONS
- 80+ AND 90+ CRI OPTIONS
- IP54 INTERIOR AND IP66 EXTERIOR OPTIONS



MODEL/ SIZE	INTERIOR/ EXTERIOR	LENGTH	POWER	CCT	CRI	VOLTAGE	OPTICS
L50	I E	12" 48"	02 04 06 08 10 12	**WHITE CCT** 22 27 30 35 40 50	**MONO COLOR** GR**** BL AM RD***	80 90* Blank For Color	MULT (120-277V)

GRAZING
9 x 9
9 x 17
9 x 29
9 x 59
15 x 15
15 x 23
15 x 35
15 x 65

COVE
120°°
Asym

LINE OF LIGHT
LOL

WASHING
25 x 25
25 x 33
25 x 45
25 x 75
33 x 33
33 x 25
40 x60
40 x 48
40 x 60
40 x 90
45 x 15
70 x 60
70 x 70

EXAMPLE: L50-I-48-10-27-90-MULT-15x65 *90 CRI not available in 2200K or 5000K **120 is only available with Exterior option. See L35 spec sheet for interior cove options. ***Red is not available in 12W or 10W. ****Green is not available in 12W.

PERFORMANCE	WATTS	OPTIC	LUMEN OUTPUT	EFFICACY
	2W	9°x 29°	158 lm/LF (519 lm/m)	79 lm/W
	4W	9°x 29°	389 lm/LF (1277 lm/m)	97 lm/W
	6W	9°x 29°	620 lm/LF (2035 lm/m)	103 lm/W
	8W	9°x 29°	864 lm/LF (2833 lm/m)	108 lm/W
	10W	9°x 29°	1046 lm/LF (3432 lm/m)	105 lm/W
	12W	9°x 29°	1217 lm/LF (3990 lm/m)	101 lm/W

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX 80+, 90+
COLOR CONSISTENCY 2-STEP MACADAM ELLIPSE
LUMEN DEPRECIATION / RATED LIFE

WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
2W-12W	>150,000	>70,000	>50,000	>25,000

*CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR

* CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR

ELECTRICAL	
POWER CONSUMPTION	2W*/LF (6.6W/M) ; 4W/LF (13.2W/M) ; 6W/LF (19.8W/M) ; 8W/LF (26.4W/M) ; 10W/LF (33W/M) ; 12W/FL (39.6W/M) * 3W/LF (9.9W/M) at 220V -277V

MAX FIXTURE RUN LENGTH

	2W/LF		4W/LF		6W/LF		8W/LF		10W/LF		12W/LF	
Volts	Max Run at6 1'	Max Run at6 4'	Max Run at6 1'	Max Run at6 4'	Max Run at6 1'	Max Run at6 4'	Max Run at6 1'	Max Run at6 4'	Max Run at6 1'	Max Run at6 4'	Max Run at6 1'	Max Run at6 4'
120	214	214	186	186	152	152	114	114	91	91	76	76
220	374	392	340	340	277	277	209	209	95	167	95	139
277	374	494	374	428	349	349	263	263	95	190	95	175

POWER FACTOR 4W, 6W, 8W, 10W, 12W >0.9, 2W<0.9
OPERATING VOLTAGE MULTIVOLT: 110-277VAC, 50/60 Hz
DRIVER INTEGRAL TO FIXTURE; DE-RATED POWER AND SYNCHRONOUS START-UP AT FULL BRIGHTNESS
STARTUP TEMPERATURE -40°F TO 122°F (-40°C TO 50°C)
OPERATING TEMPERATURE -40°F TO 122°F (-40°C TO 50°C)
STORAGE TEMPERATURE -40°F TO 176°F (-40°C TO 80°C)

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/rise for the most updated information.

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20210818

TYPE EX-A

TRÖV

OVERVIEW • SPECIFICATIONS • ORDERING | INTERIOR + EXTERIOR | **L50 GRAZE**

DATE	PROJECT	FIRM	TYPE

CONTROL	**DIMMING**	110-277VAC, ELV TYPE 0.07%-100%, REVERSE PHASE, TRAILING EDGE ETC control systems require 0-10V control using Ecosense LDCM. TROV will not work with ETC phase dimmers.
PHYSICAL	**DIMENSIONS** **HOUSING /LENS** **WEIGHT** **CONNECTORS** **ENVIRONMENT** **BEAM ANGLE** **MOUNTING OPTIONS**	W 1.6" x H 2" x L 12"/48" ; (41.6mm x 50.5mm x 304.7mm/1201mm) EXTRUDED ALUMINUM; UV STABILIZED POLYCARBONATE; STAINLESS STEEL FASTENERS; PLASTIC ENDCAPS RUBBER OVERMOLD FOR CABLE ASSEMBLY 1.52LBS / 0.69KG (1FT) ; 4.95LBS / 2.25KG (4FT) INTEGRAL MALE/ FEMALE CONNECTORS INDOOR + ETL CERTIFIED FOR DRY/DAMP LOCATIONS IP54 OUTDOOR + ETL CERTIFIED FOR WET LOCATIONS IP66 IMPACT RATED TO IK10 Not intended to be used in water features such as waterfalls, fountains, etc. GRAZING, WASHING, COVE, ASYMMETRIC, LINE OF LIGHT INTEGRAL MOUNTING AND ADJUSTABLE AIMING FROM 0°-180° IN 15° INCREMENTS
FIXTURE RATING & CERTIFICATIONS	**CE, ETL CERTIFIED** **RoHS COMPLIANT** **ENERGY STAR COMPLIANT** **RCM CERTIFIED**	Title 24 JA8-2016 *90 CRI models only
LIMITED WARRANTY	**5 YEARS**	

WIRING OPTIONS (MVOLT): 110-277VAC

Power Cable Assembly, TROV, Leader/Jumper, 10 foot CBL-3P-L-UNV-10*
Power Cable Assembly, TROV, Leader/Jumper, 50 foot CBL-3P-L-UNV-50*
Power Cable Assembly, TROV, Jumper, 5 foot CBL-3P-L-UNV-05**
Power Cable Assembly, TROV, Jumper, 1 foot CBL-3P-L-UNV-01**
Power Cable Assembly, TROV, Adjustable Jumper, 0" to 7" CBL-3P-L-UNV-ADJ
Power Cable Assembly, TROV, Male and Female terminator caps CBL-3P-L-UNV-CAPS
*Two (2) terminators are included with the 10' and 50' power cable. One Leader need per circuit/fixture run. Cables are not pinnen rated.
** If using the 5' or 1' power cable assembly as a leader to power a run one set of CBL-3P-L-UNV-CAPS will also be need per cable.

0-10V CONTROL OPTIONS

100-120VAC / 277VAC Linear Dimming Control Module 0-10V - Plenum Rated LDCM-PL-120-277-010V-GR
All products come standard with ELV dimming capabilities. 0-10V Control options required for operation at 0-10V.

OPTIONAL ACCESSORIES

Mounting

Mounting Track and Clips Set, 48 Inch Track, 8 Clips ..... MNT-L-TRKCLIP-48 ..... 48" track and clips set will work with one 48" fixture or four 12" fixtures. (FOR INTERIOR USE ONLY)
Mounting Track and Clips Set, 12 Inch Track, 2 Clips ..... MNT-L-TRKCLIP-12 ..... 12" track will not work with 48" fixtures. (FOR INTERIOR USE ONLY)
Mounting Track Clip, TROV, Set of 2 ..... MNT-L-CLIP ..... Clips needed = 12" fixtures need 1 set of 2 and 48" fixture needs 2 sets of 2.
90 Degree L bracket, TROV, Set of 2 ..... MNT-L-LBKT ..... L-Brackets needed = 12" fixtures need 1 set of 2 and 48" fixture needs 1 set of 2.
Angle Locking Clip, TROV, Pack of 10 ..... MNT-L-ANGLOCK ..... Angle Locks needed = 12" fixtures need 1 and 48" fixtures need 2. (Must order separately)
Mounting, Fine Adjustment Bracket, TROV ..... MNT-L-FAB ..... Fine Adjustment Brackets needed = 12" fixtures need 1 and 48" fixtures need 2.
*Fine Adjustment Bracket is highly recommended for Grazing Optics.
Mounting, Fine Adjustment L-Bracket, TROV ..... MNT-L-LFAB ..... Fine Adjustment L-Brackets needed = 12" fixtures need 1 and 48" fixtures need 2.
*Fine Adjustment L-Bracket is recommended for Asymetric Optics when aiming is needed.

Snap-on Lenses

Snap-on Lens, Frosted, 12 Inch, L50 ..... LENS-L50-FROST-12
Snap-on Lens, Frosted, 48 inch, L50 ..... LENS-L50-FROST-48
Snap-on Lens, Clear, 12 inch, L50 ..... LENS-L50-CLEAR-12
Snap-on Lens, Clear, 48 inch, L50 ..... LENS-L50-CLEAR-48

Snap-on Lenses need = One 12" lens is needed per 12" fixture and one 48" lens is needed per 48" fixture. Snap on Lenses will not work with the asymmetric fixture. Clear lenses can be used to hold colored filters to customize the output color of any TROV fixture, except the ASYM. Color filters supplied by others.

Wall Mount Arm

Wall Mount Arm, 6 inch, TROV WMA-L-CA-06
Wall Mount Arm, 12 inch, TROV WMA-L-CA-12
Wall Mount Arm, 18 inch, TROV WMA-L-CA-18
Wall Mount Arm, 24 inch, TROV WMA-L-CA-24
Wall Mount Arm End Plate Set, TROV, Includes Left and Right ..... WMA-L-END
Wall Mount Arm Joiner Plate, TROV ..... WMA-L-JNR

Wall Mount Arms needed = For individual fixture installations two arms and one end set will be needed per fixture. For continuous run installation one endset will be needed per run. Each end set contains one left and one right end plate. One joining set will be needed per joint. One arm per fixture will be need plus one extra arm to complete the run. For example: A 10ft run made with two 4ft and two 1ft fixtures will contain; 1 x WMA-L-END, 3 x WMA-L-JNR, and 5 x WMA-L-CA-12. Leader cables are not included with wall mount arms, end sets, or joiners sets.

Louvers

Louver, Asymmetric, 12 inch, L50 ..... LV-L50-ASYM-12
Louver, Asymmetric, 48 inch, L50 ..... LV-L50-ASYM-48
Louver, Symmetric, 12 inch, L50 ..... LV-L50-SYM-12
Louver, Symmetric, 48 inch, L50 ..... LV-L50-SYM-48
Louver, Honeycomb, 12 inch, L50 ..... LV-L50-HCOMB-12
Louver, Honeycomb, 48 inch, L50 ..... LV-L50-HCOMB-48

Louvers Needed = One 12" louver is needed per 12" fixture and one 48" louver is needed per 48" fixture. 48" louver is made up of four 12" louvers. Louvers cannot be used with the asymmetric fixture

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20210818

TYPE EX-A ECOSENSE®

TRÖV

OVERVIEW • SPECIFICATIONS | ACCESSORIES | **SINGLE WALL MOUNT ARM**

DATE	PROJECT	FIRM	TYPE

TROV SINGLE MOUNTING PLATES ARE USED TO HOLD ONE 12" FIXTURE WITH ONE ARM. THEY ARE IDEAL FOR INDIVIDUALLY MOUNTING 12" FIXTURES OR FOR JOINING 12" FIXTURES ALONG A CURVED WALL. THEY ALLOW FOR INDIVIDUAL POWER CONNECTIONS TO A JUNCTION BOX FOR EACH FIXTURE. A PASS THROUGH HOLE CAN BE DRILLED IN THE SIDE FOR CONTINUOUS POWER CONNECTIONS.

FEATURES :

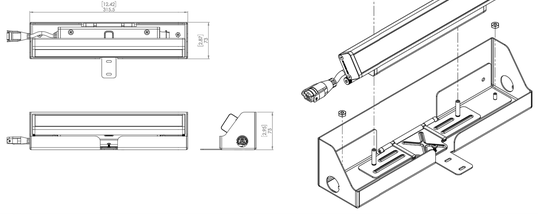
- COMPATIBLE WITH L35 AND L50 SERIES FIXTURES
- AVAILABLE IN 6", 12", 18" AND 24" LENGTHS
- MOUNTS TO ALL COMMON JUNCTION BOXES
- NO VISIBLE MOUNTING HARDWARE OR LEADER CABLE



PHYSICAL	**DIMENSIONS**	W 12.42" x H 2.87" x L 2.95" ; (315.5mm x 73mm x 75mm)
	MATERIAL	ARMS AND CANOPY: PAINTED SILVER

SINGLE WALL MOUNT ARM FOR L35 AND L50

For continuous end-to-end row mounting, order one jumper cable, CBL-3P-L-UNV-01, per connection.



ORDERING

PART NUMBER	DESCRIPTION
WMA-L-CA-06	6 INCH WALL MOUNT ARM
WMA-L-CA-12	12 INCH WALL MOUNT ARM
WMA-L-CA-18	18 INCH WALL MOUNT ARM
WMA-L-CA-24	24 INCH WALL MOUNT ARM
WMA-L-SINGLE*	WALL MOUNT ARM SINGLE PLATE

*ONE MNT-L-LFAB IS REQUIRED PER SINGLE PLATE AND IS INCLUDED WITH IT.

LIMITED WARRANTY **5 YEARS**

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20190222

CALEB JOHNSON STUDIO
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207 253 8777
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TYPE EX-C

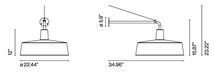
Soho Joan Gaspar

marset

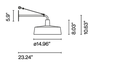




Soho A



Soho 38 A LED



Soho C Fixed Stem



The striking, industrial shapes in the Soho collection are reminiscent of the lamps that were traditionally used in markets and taverns, but they contrast through the use of thoroughly contemporary materials and textures.

Soho A / Soho C Fixed Stem
LED SMD 36W 700mA
2700K* CRI80
Source lumens 2086lm (included)
* 3000K on request
Dual dimming driver: Triac (120V only) or 0-10v (120-277V)

Soho 38 A
LED SMD 16W 700mA 2700K CRI80
Source lumens 1050lm (included)
Triac phase control dimmer 0-10V (90-130V)

Black electrical cord.

Shade in rotary moulded polyethylene. Methacrylate opal diffuser. Metal support lacquered in black with stainless anti-oxidant cataphoresis treatment for outdoor.

- ○ White
- Stone Grey
- ● Black
- Sand (only available in Soho 38)
- Sky blue (only available in Soho 38)

Suitable for wet locations

Dimmable

cULus

Download Assembly Instructions
Download Photometric Data
Download 2D
Download 3D

Range



⚠**WARNING.** California Proposition 65 Warning for California Consumers. This product can expose you to chemicals including wood dust and lead which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

marsetusa@marset.com
www.marset.com

TYPE EX-D

1/3

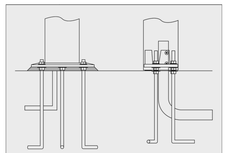
Flindt Bollard

Project name:

Project type:

Notes:





Mounting options: Direct burial, outer flange, or hidden anchorage. Flange includes (4) anchor bolts Ø1/2" x 15" long. Galvanized Steel. To be set in concrete pad on Ø11" baseplate with Ø8.9" bolt circle at 90°. Hidden anchorage includes (3) anchor bolts M8 x 14" long. Galvanized Steel, to be set in concrete pad on Ø3.5" bolt circle, not evenly spaced. Fixture head rotates horizontally +/-5°.

Design

Christian Flindt

Product description

Beautifully crafted slender post with a carved surface that is gently illuminated. Top section conceals downward facing LEDs that are positioned for wide distribution. Two horizontal connection lines underline the three parts of the bollard. A facet increases the visibility of the connection lines. Available in two heights, 43.3 IN and 31.5 IN. Available in three different mounting methods: with an 11 inch base plate and visible anchor bolts, with internally hidden anchor bolts, or direct burial in soil or gravel. Part of a family.

Variant options

Dimension	Color	Mounting	Light source	Lumen	Voltage frequency
31.5 IN 43.3 IN	Corten color Natural paint aluminum	POST W/ANCHORAGE UNIT POST W/BASE PLATE POST W/DIRECT BURIAL	15W LED/3000K 15W LED/4000K	536 548 578 591	120-277V/60HZ

Specification notes

a. Direct burial mounting only available with 43.3" size.

louis poulsen

© Louis Poulsen 2019

louispoulsen.com

TYPE EX-D

2/3
Flindt Bollard

Light description

The luminaire provides a non-glaring wide characteristic asymmetrical and functional illumination. The design of the cut-out creates a reflector part which is gradually illuminated to emphasize the depth in the luminaire. The cut-out reflector and precise location of the LED's provides an wing-shaped light pattern on the ground. A white highly reflective material around the LED's ensure a wide distribution of light and high efficacy. The cut-out reflector part can be adjusted ± 10° after installation to fine tune alignment of several luminaires and light distribution. Standard CCT in 3000K or 4000K, controlled by electronic dimmable driver.

Mounting

Top section housing holds driver and LED's connected with quick-disconnect plug for easy servicing. Terminal block is located in the reflector section. Thru wiring approved. Supplied with IP66 (water-tight) glands to seal mid-section for pass thru wiring. Mounted to a concrete base with (6) anchor bolts on a bolt circle of 8.9 inches.

Information

Electrical:
System Wattage: 15W
LED Wattage: 14W
Delivered lumens: 536-591 lm
Efficacy: 35.7-39.4 lm/W
Certifications:
cULus, Wet Location
Protection class IP65
IK class 10
BUG Rating: B0-U0-G1
Controllability: 0-10V Dimming
Min.-Max. Ambient Temp: -40°C to +70°C
Color Rendering: Ra≥80

Other functions

Alternative mounting options include an 11" base plate, a hidden anchor base or for direct burial. LED in 2700K or 3500K. Amber LED available for sea turtle nesting areas. Custom finishes. Custom pole heights. Alternative dimming controls, including wireless systems.

Voltage

120-277V/60HZ

Material

Top and reflector part: Cast aluminum. Post: Extruded aluminum 0. 14" thick. Diffuser: Injection molded U. V. stabilized clear polycarbonate. Internal structure bolts: Galvanized steel 0. 23" thick. Internal rotational plate: Cast aluminum 0. 23" thick. Anchor bolts: Hot-dipped galvanized steel anchor bolts ¾"-dia. X15". Standard finish are matte, textured surface powder coat with minimum 2 mils thickness in corten color or natural painted aluminum.

Weight

Min: 15.712 lbs Max: 23.018 lbs

Dimensions

31.5 IN, 43.3 IN

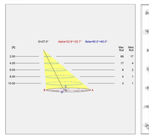
Finish

Corten color, Natural paint aluminum

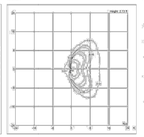
Light distribution diagrams

For the full data set on all variants, see louispoulsen.com.

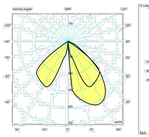
Cartesian



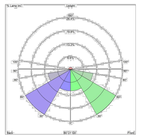
Isolux



Polar



Bug



louis poulsen

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louispoulsen.com

CONSULTANT:
PRISM LIGHTING DESIGN
Portland, ME
(207) 200-0070
www.PrismLightingDesign.com

CJS PROJECT LEAD:
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PROJECT STATUS:
DESIGN DEVELOPMENT

ORK STREET RESIDENCES
K STREET PORTLAND ME 04101
BARD

CITY OF PORTLAND
APPROVED SITE PLAN
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DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021

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TYPE EX-E

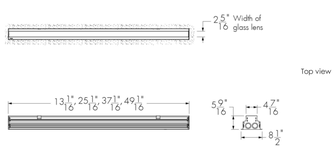
lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

Project Name _____ Qty _____

Type _____ Catalog / Part Number _____



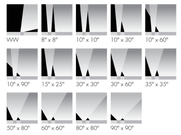


Photometric Summary

	Delivered output (lm)	Intensity (peak cd)
WW	3634	10,795
8°x8°	4512	59,238
10°x10°	4410	33,872
10°x30°	4586	25,296
10°x60°	3876	12,069
10°x90°	4077	6927
15°x25°	4346	19,773
30°x30°	4730	16,886
30°x60°	4035	5317
35°x35°	4612	11,616
50°x80°	4656	3904
60°x60°	3868	3368
80°x80°	4548	2992
90°x90°	4070	2132

Based on 40K full output, 4ft (1219mm), DMX/RDM configuration.
2.5" Factory-set tilt setting for WW optic, 0° tilt setting for all other optics.
Photometric performance is measured in compliance with IESNA LM-79-08.

Optics



Description

The Lumenfacade Inground is an LED luminaire designed for ground-recessed lighting applications, including asymmetric wall washing, grazing, and linear wayfinding. An innovative, plug and play design simplifies installation, protecting the system from water infiltration and ensuring long-lasting performance. Featuring second generation LED technology, the Lumenfacade Inground is available in four different sizes (12 in, 24 in, 36 in or 48 in), with a wide choice of outputs, color temperatures, color-mixing systems, optics and controls. A unique asymmetric wallwash distribution is also available, providing exceptional uniformity and brightness for walls and signage.

Features

Construction	Walk over compliant up to 500 kg in any type of ground. Walk over compliant up to 1000 kg in concrete
Color and Color Temperature	2200K, 2700K, 3000K, 3500K, 4000K, Red, Green, Blue
Length (nominal)	12 in, 24 in, 36 in, 48 in
Optics	Asymmetric wallwash, 8° x 8°, 10° x 10°, 10° x 30°, 10° x 60°, 10° x 90°, 15° x 25°, 30° x 30°, 30° x 60°, 35° x 35°, 50° x 80°, 60° x 60°, 80° x 80°, 90° x 90°
Tilt Setting (factory set)	0 degrees, 2.5 degrees, 5 degrees, 20 degrees
Optical Option	Internal louver
Options	Anti-slip lens, CE (certification covers European Economic Area)
Power Consumption	5 W/ft (meets ASHRAE standards for linear lighting on building facades - not available for 12 in fixture lengths), 8.5 W/ft (RO version), 15.25 W/ft (HO version), Typically 20% higher for 12 in fixture lengths
Warranty	5-year limited warranty

Performance

Maximum Delivered Output	4,730 lm (48 in fixture, 4000K, 30° x 30°, 0° tilt setting, DMX/RDM)

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TYPE EX-E

lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

Colors and Color Temperatures

2200K 2700K 3000K 3500K 4000K

Red Green Blue

Controls

ON/OFF 0-10V DALI

lumentalk DMXrdm EcoSystem Enabled

Ratings

IP68 IK10

Certifications

cULus CE RoHS 5 Years

Maximum Delivered Intensity	59,238 cd at nadir (48 in fixture, 4000K, 8° x 8°, 0° tilt setting, DMX/RDM)
Illuminance at Distance	Minimum 1 fc at 243 ft (48 in fixture, 4000K, 8° x 8°, 0° tilt setting, DMX/RDM)
Color Consistency	2 SDCM, 3 SDCM (2200K)
Color Rendering	Minimum CRI 80
Lumen Maintenance	L70 280,000 hrs, L95 35,000 hrs

Physical

Optical Chamber Material	Aluminum
Blockout Material	Polymer recycled PVC reinforced with a stainless steel frame
Trim Material	Anodized aluminum
Lens Material	Tempered glass
End Cap Material	Die cast aluminum
Hardware Material	Stainless steel
Weight	12 in: 7.5 lbs, 24 in: 15.3 lbs, 36 in: 21.4 lbs, 48 in: 27 lbs

Electrical and control

Voltage	120 to 277 volts
Fixture Cable	Power and data in one cable
Leader Cable Conductor	5C #16-5
Connectors	IP68 push-lock
Control	On/Off control, Lumentalk, 0-10V dimming, DALI dimming, Lutron® EcoSystem® Enabled dimming, DMX/RDM enabled
Resolution (DMX/RDM)	Per foot or per fixture (configured with LumenID V3 software), 8-bit or 16-bit

Environmental

Storage Temperature	-40 °F to 185 °F (device must reach start-up temperature value before operating)
Start-up Temperature	-13 °F to 122 °F
Operating Temperature	-40 °F to 122 °F
Ingress Protection Rating	IP68 rated for up to 1 ft, not suitable for permanent immersion applications
Impact Resistance Rating	IK10

Accessories (order separately)

Cables	Lumenfacade Inground Leader Cable, Lumenfacade Inground Jumper Cable
Electrical Accessories	Lumenfacade Inground Junction Box
Control Boxes	DMX/RDM enabled (daisy chain or star configuration), Ethernet enabled (daisy chain or star configuration)
Control Systems	Lumentone™ 2, Pharos® kit
Diagnostic and Addressing Tools	LumenID, LumentalkID

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TYPE EX-E

lumenfacade
Inground
LOI

WHITE AND STATIC COLORS

How to order

Housing [1] [2] [4]	Voltage	Length	Color and Color Temperature [5]	Optics	Tilt Setting [9] [10]	Optical Option	Control	Options
LOI ASHRAE Lumenfacade™ Inground, 5 W/ft ASHRAE compliant [1] **LOI RO** Lumenfacade™ Inground, Regular Output, 8.5 W/ft **LOI HO** Lumenfacade™ Inground, High Output, 15.25 W/ft	**120/277** 120-277 volts	**12** 13 1/16 in (7.5 lbs) [4] **24** 25 1/16 in (15.3 lbs) **36** 37 1/16 in (21.4 lbs) **48** 49 1/16 in (27 lbs)	**22K** 2200K **27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K **RD** Red [6] **GR** Green [6] **BL** Blue [6]	**WW** Asymmetric Wallwash [7] **8x8** 8° x 8° [7] [8] **10x10** 10° x 10° [7] [8] **10x30** 10° x 30° [7] **10x60** 10° x 60° [7] **10x90** 10° x 90° [7] **15x25** 15° x 25° [7] **30x30** 30° x 30° **30x60** 30° x 60° **35x35** 35° x 35° **50x80** 50° x 80° **60x60** 60° x 60° **80x80** 80° x 80° **90x90** 90° x 90°	**TS0** 0 degrees **TS2.5** 2.5 degrees **TS5** 5 degrees **TS20** 20 degrees	**INTL** Internal louver [11]	**NO** On/Off control **LT** Lumentalk [12] **DIM** 0-10V dimming **DALI** DALI dimming **ES** Lutron® EcoSystem® Enabled dimming **DMX/RDM** DMX/RDM enabled [13]	**ASL** Anti-slip lens **CE** CE (certification covers European Economic Area) [14]

Notes:
1. A Lumenfacade Inground fixture includes one optical chamber (LOC), one power and control box (PACBOX) and one recessed blockout (RBO). The LOIC, PACBOX and RBO are provided according to the output/color, length and control configuration.
2. ASHRAE version not available for 12 in fixture lengths.
3. Consult the installation instructions to plan all aspects of the fixture installation.
4. 12 in fixture lengths are typically 20% higher for 12 in fixture lengths.
5. Consult factory for availability of Red, Green, Blue, 6500K and 90+ CRI.
6. 2500+ colors made to order 8-10 weeks.
7. 8x8, 10x10, 10x30, 10x60, 10x90, 15x25 and WW distributions come with a half-frosted lens to bring light low on the wall for grazing applications. Clear lens also available, consult factory.
8. For best results use with HO fixtures at a 6 in setback from surface. Contact factory for application support.
9. Do not specify a tilt setting for the asymmetric wallwash option. The asymmetric wallwash optic is factory set with a 2.5 degree tilt.
10. Tilt setting is factory set and cannot be adjusted in the field.
11. For additional internal louver options, contact LMPG Distributors. Consult factory for application support.
12. Lumentalk interface (LT3) and Lumentalk (LT2) must be specified for Lumentalk applications. Consult Lumentranslator 2 and Lumentalk pages for application support for details.
13. A control box (CB3) and LumenID (LID) must be specified.
14. Consult European specification sheet and installation instructions for CE wiring information.

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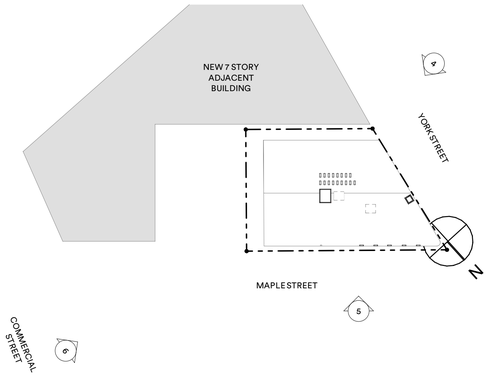
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PRISM
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www.PrismLightingDesign.com

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DATE of APPROVAL 04/26/2022
PLANNER Sean King
PROJECT NO. PL-001838-2021



1 VIEW STUDY

VIEW SW FROM COMMERCIAL STREET

VIEW S FROM MAPLE STREET

VIEW W FROM COMMERCIAL STREET

VIEW NE FROM YORK STREET

VIEW SE FROM YORK STREET

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2/1/22
PROJECT STATUS:
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CLEANED BRICK FACADE

PORTION TO BE CLEANED

PAINTED BRICK DETAIL

SIDE BY SIDE COMPARISON

THESE PHOTOS WERE TAKEN ON 2/1/2020

DETAIL OF CLEANED BRICK

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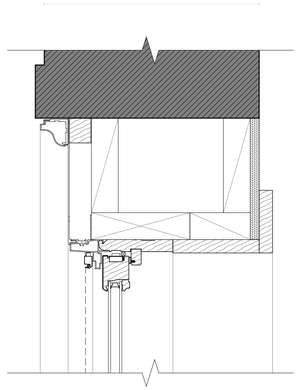
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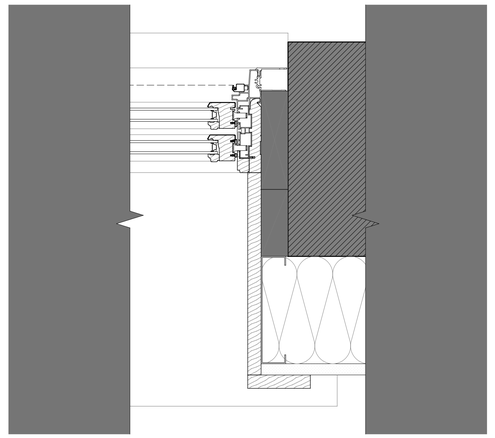
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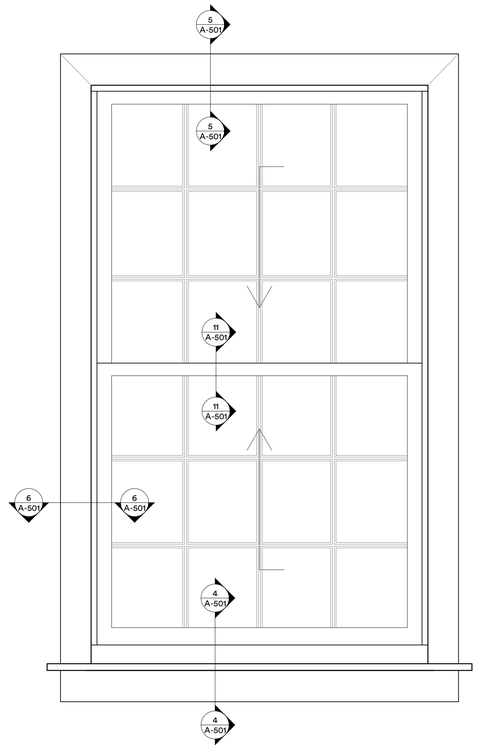
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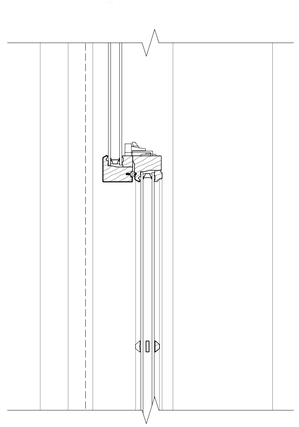
12 WINDOW HEAD DETAIL @ MASONRY WALL
SCALE: 3" = 1'-0"



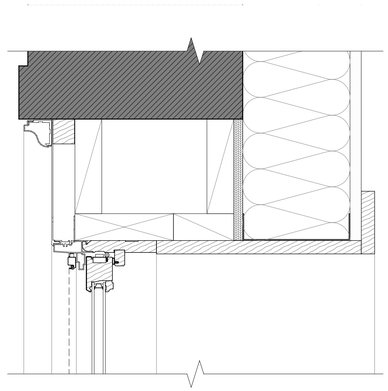
6 WINDOW JAMB DETAIL @ FURRED WALL
SCALE: 3" = 1'-0"



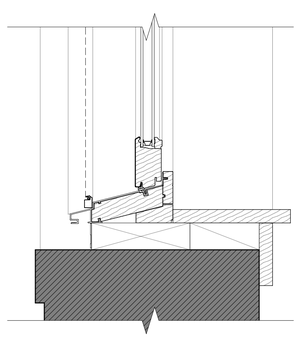
2 PROPOSED WINDOW TRIM ELEVATION
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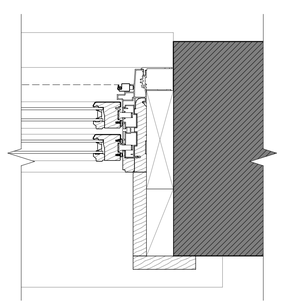
11 WINDOW DETAIL @ CHECK RAIL
SCALE: 3" = 1'-0"



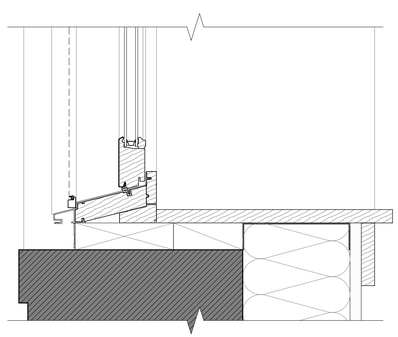
5 WINDOW HEAD DETAIL @ FURRED WALL
SCALE: 3" = 1'-0"



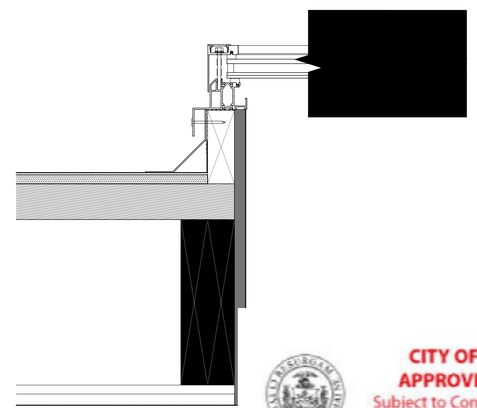
10 WINDOW SILL DETAIL @ MASONRY WALL
SCALE: 3" = 1'-0"



7 WINDOW JAMB DETAIL @ MASONRY WALL
SCALE: 3" = 1'-0"



4 WINDOW SILL DETAIL @ FURRED WALL
SCALE: 3" = 1'-0"



1 SECTION DETAIL -
SCALE: 3" = 1'

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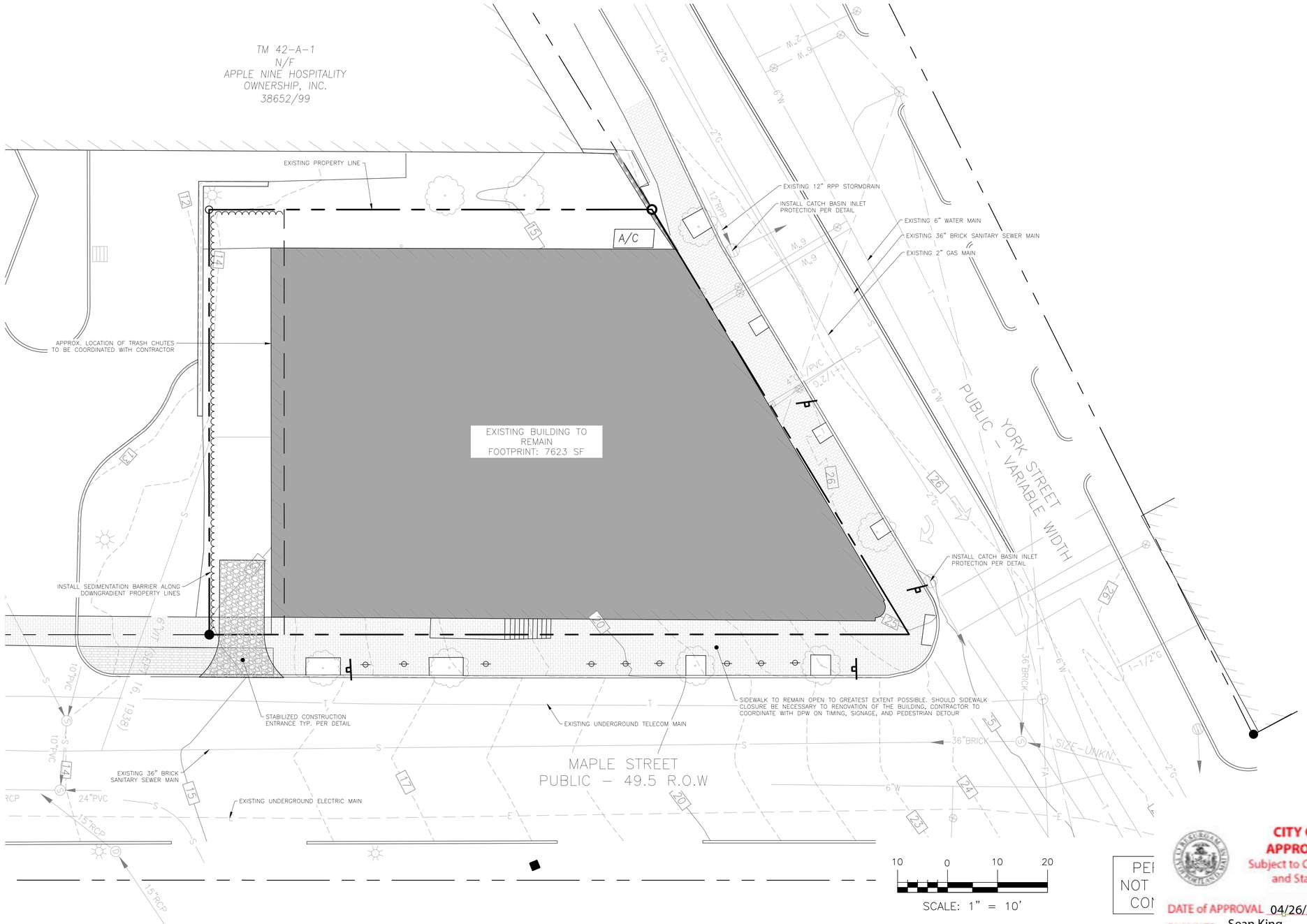
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CONSTRUCTION MANAGEMENT NOTES:

1. EXISTING ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTOR SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" TO DEMONSTRATE PROPER DISPOSAL OF ALL MATERIALS.
3. SITE DEMOLITION SHALL NOT OCCUR UNTIL PROPER ABATEMENT PROCEDURES HAVE OCCURRED. ABATEMENT, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE POTENTIAL CONFLICT WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
5. ALL CONSTRUCTION SIGNAGE IS TEMPORARY AND SHALL BE REMOVED AT PROJECT COMPLETION. FINAL SIGNAGE WORDING AND PLACEMENT LOCATION TO BE ACCEPTED BY THE CITY.
6. SEDIMENT BARRIERS TO BE PLACED DIRECTLY ON THE FRONT AND SIDE PROPERTY LINES, DOWN GRADIENT OF THE PROPOSED PROJECT WORK PER DETAIL. FENCES ARE OFFSET OF THE PROPERTY LINES AS SHOWN ON THE PLAN FOR CLARITY PURPOSES AND DO NOT NECESSARILY DEPICT THE PHYSICAL LOCATION.
7. CONTRACTOR SHALL PLACE CATCH BASIN INLET PROTECTION ON CATCH BASINS AND FIELD INLETS DOWN-GRADIENT OF ALL NON-STABILIZED SURFACES, PER DETAIL.
8. DEMOLITION PLAN IS NOT INCLUSIVE OF ALL EXISTING ITEMS TO BE REMOVED AS PART OF SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO LANDSCAPING, UTILITIES, WORK WITHIN THE ROW, ETC. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND REGULATIONS.
9. CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING OFF-SITE PARKING TO EMPLOYEES; ON-SITE PARKING WILL NOT BE PROVIDED OR GUARANTEED. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE PERMITS FROM THE CITY FOR CLOSING ANY ON-STREET PARKING SPACES DURING THE CONSTRUCTION PERIOD.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR SNOW REMOVAL ALONG CONSTRUCTION FENCE AND GATE.



ISSUED FOR	BY DATE
SITE PLAN	PFH 11/12/2021
COMMENT RESPONSE	PFH 2/25/2022

DRAWING NAME: **CONSTRUCTION MANAGEMENT PLAN**

PROJECT NAME: 54 YORK STREET REDEVELOPMENT
54 YORK STREET, PORTLAND, MAINE 04101

CLIENT: 54 YORK LLC
400 COMMERCIAL STREET, PORTLAND, MAINE 04101

ACORN ENGINEERING, INC.
ENGINEERING
ACORN ENGINEERING, INC
PO BOX 3377 PORTLAND, MAINE 04104
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT PERMISSION FROM ACORN ENGINEERING, INC. AND IF ALTERED WITHOUT PERMISSION OR, OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

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JN:	2.87
SCALE:	1"=10'
DESIGNED BY:	PFH
DRAWN BY:	ZMS
CHECKED BY:	WHS

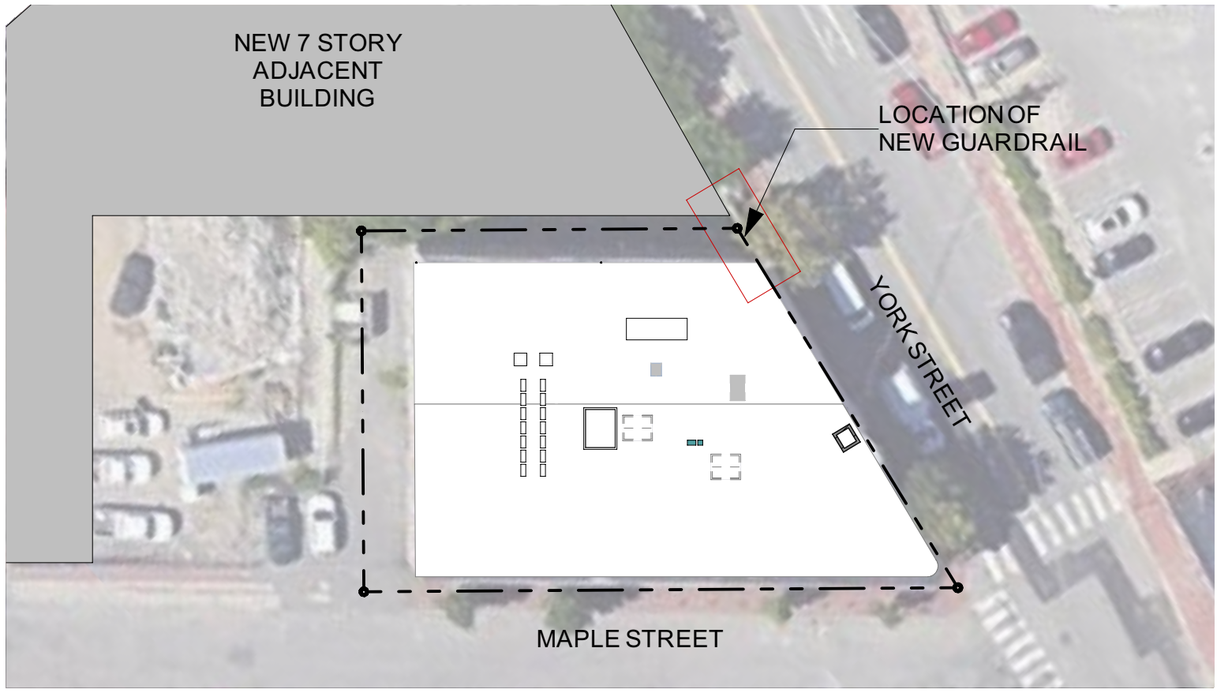
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PETER F. HEIL
15318

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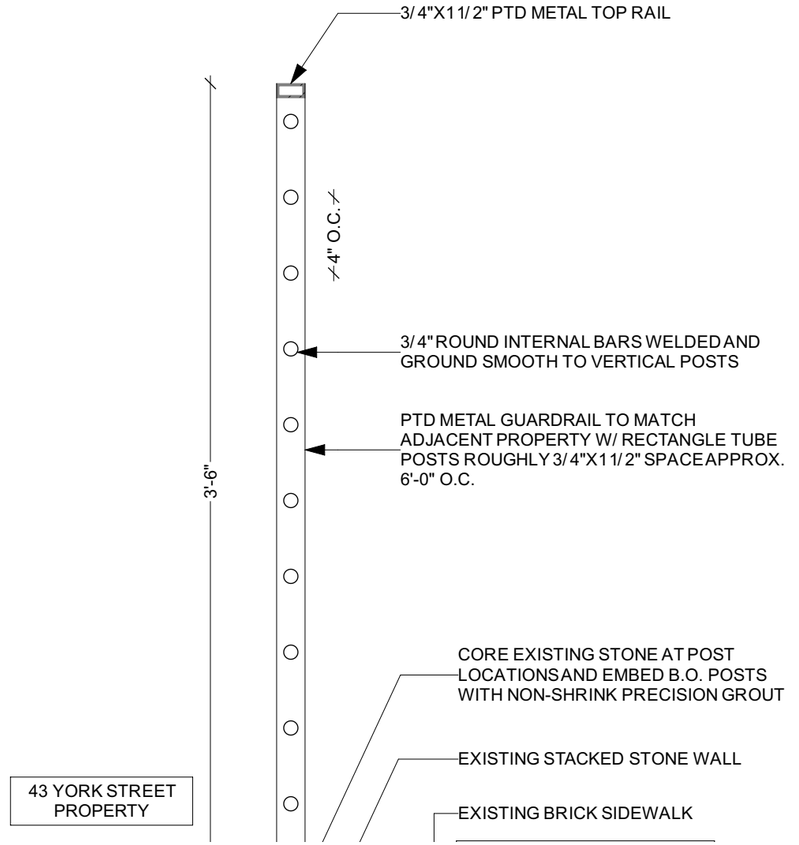
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PHOTO OF GUARDRAIL CONDITION ALONG YORK STREET



2 SITE PLAN



1 GUAR

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CALEB JOHNSON STUDIO
110 EXCHANGE ST, 2ND FLOOR, PORTLAND, ME 04101
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TREET RESIDENCES

Conditional Use Application
501 Forest Avenue
CU-002955-2024
DC 509 Forest LLC, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Maya Balassa
Public Hearing Date:	June 11, 2024	**Date:**	June 7, 2024

I. INTRODUCTION

This application from DC 509 Forest LLC, submitted by Gorrill Palmer, proposes to convert 3,985 square feet of garage space to warehouse storage for Bow Street Beverage. The site is located on Forest Avenue, with the warehouse accessed from Indian Lane, and is located in the B-2b Community Business zone.

The change of use from commercial to warehouse, storage, and distribution is permitted as a conditional use in the B-2b if the use is 10,000 square feet of less. No exterior site alterations have been proposed and as such, no site plan application is associated with this proposal.

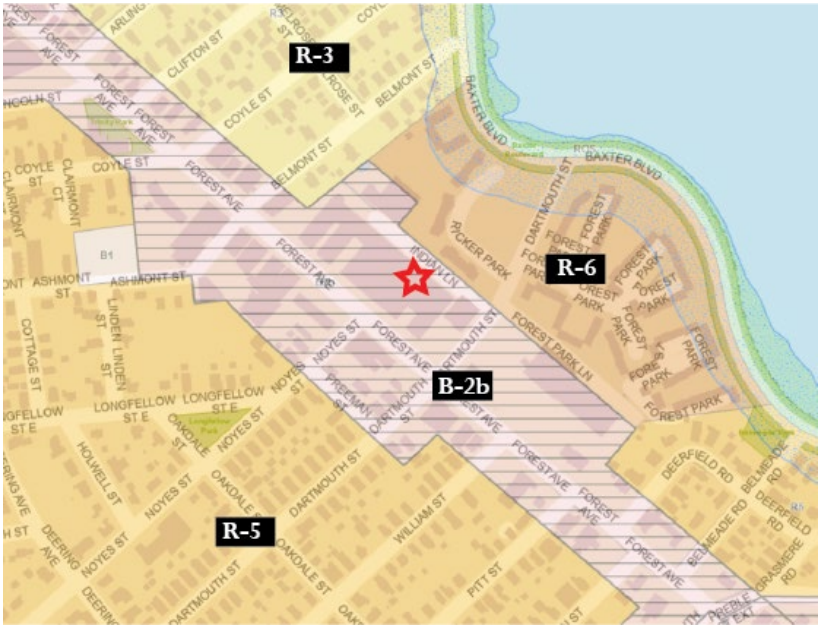


Figure 1 501 Forest Avenue Zoning Map

The application is being referred to the Planning Board for compliance with the City of Portland's Land Use Code General Conditional Use Standards, Section 6.5.2.

The Planning and Urban Development Department mailed 114 notices to residences within 500 feet of the subject property. A legal advertisement ran in the June 1 and 4, 2024 editions of the *Portland Press Herald*.

Applicant: DC 509 Forest LLC, Applicant
Applicant Team: Steven Bushey, Gorrill Palmer Consulting

II. PROJECT ACTIONS

Applicant's Proposal	Applicable Standards
Warehousing, storage, and distribution (<10,000 SF) Conditional Use	Land Use Code, Section 6.5.2

III. PROJECT DATA

SUBJECT	*501 Forest Avenue*
Total area of the site	17, 598 square feet (0.4 aces)

Existing Zoning	B-2b Community Business
Existing Use	Commercial
Proposed Use	Warehousing, storage, distribution
Building Footprint	
-Existing	26,400 square feet
-Proposed	26,400 square feet
-Net Change	+0 square feet
Warehouse/Storage Area	
-Existing	0 square feet
-Proposed	3,984 square feet
-Net Change	+3,984 square feet

IV. BACKGROUND AND EXISTING CONDITIONS

The property at 501 Forest Avenue is located between Forest Avenue and Indian Lane. The building contains 26,400 square feet of floor area, with the first floor being 13,437 square feet. The front office use, 9,278 square feet, is proposed to remain and will continue to be utilized by Gateway Community Services. The rear of the building, which totals 3,985 square feet, is currently a garage and is used for occasional storage by Gateway Community Storage. Abutting the building to the southeast is Bow Street Beverage at 495 Forest Avenue, which is the proposed tenant of the rear warehouse at 501 Forest Avenue.

V. PROPOSED DEVELOPMENT

There are no exterior or site changes proposed with the change of use application. There are some minor interior changes proposed to create a new hallway to access the front offices from the back of the building without going through the warehouse space.

VI. RIGHT, TITLE AND INTEREST AND FINANCIAL/TECHNICAL CAPACITY

The owner and lessee of the property, DC 509 Forest LLC, has provided a deed dated August 31, 2022 showing right, title and interest.

VII. ZONING ANALYSIS

The property at 509 Forest Avenue is location in the B-2b Community Business zone. Warehousing, storage, distribution is a conditional use in the B-2b if 10,000 square feet of less in Table 6-C of the Land Use Code. Therefore, the proposed conversion of 3,985 square feet of floor area to a warehouse requires a conditional use review, and is subject to the General Conditional Use Standards, Section 6.5.2, and the use specific conditional use standards listed in Section 6.5.6.E.

The B-2b Community Business zone runs along Forest Avenue, with R-3, R-5 and R-6 Residential zones to the northeast and southwest of Forest.

There are no changes to the exterior of the site or building footprint proposed for this project.

VIII. CONDITIONAL USE REVIEW

A. GENERAL CONDITIONAL USE STANDARDS – SECTION 6.5.2

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.**

The proposed use is located along an arterial street within the City. There are many other commercial uses along Forest Avenue that require deliveries, and were the warehouse to be included as part of the property at 495 Forest Avenue, would be considered a permissible accessory use. The applicant has stated that deliveries would occur either once or twice a week. No additional parking is proposed for the change of use. The warehouse is accessed from Indian Lane. The proposed use is expected to generate substantially less traffic than other uses that are permitted by right within the B-2 zone.

Staff finding:
The standard has been met.

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.
The 3,985 square feet of warehouse space for the abutting retail use is not anticipated to create unsanitary or harmful conditions.

Staff finding:
This standard has been met.

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.
No alterations to landscaping, screening, or the arrangement of structures is proposed.
Signage, waste generation, and materials storage are not expected to differ substantially from the existing allowable retail use of Bow Street Beverages. Deliveries for the proposed change of use will occur once or twice a week to the warehouse. While delivery trucks do not create a greater impact or effect on the area than other uses, the site is not currently receiving truck deliveries. To confirm Indian Lane can feasibly handle the deliveries, a condition has been added to submit a truck turning template to the site.

Staff finding:
The standard has been met.

4. The proposed use will meet any additional zone or use-specific standards identified in Tables 6-C to 6-F and Subsections 6.5.6 and 6.5.7.
There are three conditional use standards for industrial uses in the B-2b Community Business zone.
    a. The Planning Board shall be the review authority.
    The application is coming to the Planning Board for approval.

    Staff finding:
    This standard has been met

    b. The site shall have an adequate traffic circulation pattern designed to avoid hazards to vehicular circulation on adjoining streets. All stacking of motor vehicles shall be on site, and loading facilities shall be located to the rear of the building and shall not be visible from the street.
    A condition has been added the show turning movements for the delivery trucks. The traffic is not anticipated to increase due from the change of use and warehouse designation.

Staff finding:
This standard has been met.

c. The exterior design of the structures, including architectural style, facade materials, roof pitch, building form, established setbacks, and height shall be of a commercial rather than industrial character. The site shall contain screening and landscaping which shall meet the requirements of Article 14 for screening between land uses and the City of Portland Technical Manual.
No exterior changes are proposed as part of this application.

Staff finding:
This standard has been met

IX. PUBLIC COMMENT

At the time of writing this memo, the Planning Department has received no public comment.

X. STAFF RECOMMENDATION

Subject to the proposed motions listed below, Planning Department staff find that the proposal to convert a garage into a warehouse for Bow Street Beverage at 501 Forest Avenue meets the applicable conditional use standards of the City of Portland's Land Use Code.

XI. PROPOSED MOTIONS

A. CONDITIONAL USE

On the basis of the application, plans, reports and other information submitted by the applicant; findings and recommendations contained in the Planning Board report for the public hearing on June 11, 2024 for application CU-002955-2024 relevant to Land Use Code Section 6.5.2 and the testimony presented at the Planning Board hearing, the Planning Board finds that the plan **is/is not** in conformance with the conditional use standards of the Land Use Code, subject to the following conditions of approval;

PRIOR TO APPLYING FOR A BUILDING PERMIT:

1. The applicant shall submit turning templates for trucks intended to access the warehouse, to be reviewed and approved by the Planning Authority.

B. PLANNING BOARD DECISION

On the basis of the findings, conclusions and recommendations contained in the Planning Board report for the public hearing on June 11, 2024 related to application CU-002955-2024 for 501 Forest Avenue, which is attached to the draft approval letter and incorporated therein, the Planning Board [adopts/does not adopt] the approval letter as drafted as the Planning Board's decision for application CU-002955-2024, and authorizes the Planning Board Chair to sign the approval letter as drafted.

XII. ATTACHMENTS

A. STAFF ATTACHMENTS

1. Draft Approval Letter – 501 Forest Avenue

B. APPLICANT'S SUBMITTAL

A. Project Summary Letter
B. Deed
C. Conditional Use Checklist

C. PLANS

P1. Land Title Survey
P2. Land Title Survey pg. 2
P3. Bow Street Space
P4. Existing Floor Plan
P5. Proposed Floor Plan

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

June 11, 2024

Josh Trombley
DC 509 Forest LLC
631 Stevens Avenue STE 203
Portland, ME 04103

Steve Bushey
Gorrill Palmer Consulting
300 Southborough Drive #200
South Portland, ME 04106

Project Name: Conditional Use for Warehouse
Address: 501 Forest Avenue
Applicant: DC 509 Forest LLC
Planner: Maya Balassa

Project ID: CU-002955-2024
CBL: 127 A005001

Dear DC 509 Forest LLC:

On June 11, 2024, the Planning Board approved a conditional use application to permit the rezoning of 3,985 square feet to warehousing at 501 Forest Avenue, located in the B-2b Community Business zone. Based upon the information provided to the Board in the application, plans, reports, through testimony and other information submitted by the applicant, the Planning Board adopted the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024, which is attached hereto and incorporated herein by reference. Based upon those findings, conclusions and recommendations, the Planning Board found that the application met all relevant standards and voted [add vote] to approve the application.

Conditional Use

Based upon the information provided to the Board in the application, plans, reports, through testimony and other information as submitted by the applicant, the Planning Board adopted the findings, conclusions and recommendations contained in Section XI of the Planning Board Report for the public hearing on June 11, 2024, which is attached hereto and incorporated herein by reference. The Planning Board voted [add vote] to find that the proposed conditional use for a 3,985 square foot warehouse meets the general conditional use standards as listed in Section 6.5.2 in the Land Use Code.

The conditional use approval is valid from six months from the date of approval, unless the conditional use has been commenced within that period, consistent with section 6.5.5 of the City of Portland Land Use Code. This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

Standard Procedures

Note: The following standard procedures and requirements apply to all approved site plans:

1. Separate Building Permits Are Required This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

2. Department of Public Works Permits If work or obstructions will occur within the public right-of-way, such as utilities, curb, sidewalk, driveway construction, site deliveries and equipment siting, a Street Opening and/or Occupancy Permits are required for your site. Please contact the Department of Public Works Permit Clerk at (207) 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

3. Impact Fees New development or changes of use that result in net new residential dwelling units, non- residential building square footage, or water meters, are subject to the City of Portland's impact fee ordinance (Chapter 14, Article XVII). Impact fees are calculated at the time of building permit and must be paid prior to the certificate of occupancy. For more information, visit https://www.portlandmaine.gov/2409/Impact-Fees

If there are any questions, please contact Maya Balassa at (207) 874-8718 or via email at mbalassa@portlandmaine.gov.

Sincerely,

Brandon Mazer, Planning Board Chair

Attachments:
1. Planning Board Report

GORRILL PALMER

300 Southborough Drive, Suite 200
South Portland, Maine 04106
207.772.2515

May 20, 2024

Mr. Kevin Kraft – Interim Director
City of Portland Planning & Urban Development
389 Congress Street, 4th Floor
Portland, ME 04101

Subject: 501 Forest Avenue – Conditional Use Application
Industrial use in the B-2b zone
Applicant – DC 509 Forest LLC

Dear Kevin:

On behalf of **DC 509 Forest LLC,** Gorrill Palmer is submitting a Conditional Use Application, for 3,985 SF of warehouse storage at 501 Forest Ave. The applicant is seeking to lease storage space to Bow Street Beverage located next door at 495 Forest Avenue. According to Table 6-C of the Land Use Code, warehousing, storage, and Distribution is permitted as a Conditional use in the B-2b zone if it is 10,000 SF or less. The proposal includes the palletized storage of alcohol products that will be moved to the retail store at 495 Forest as needed. The product will be on pallets on the floor that are moved by forklift, using the rear doors off Indian Lane. The product will be typical retail size with nothing larger than 1.75-liter containers. The products will be about 30% wine, 30% beer and 40% spirits. The original building was constructed in 1927 and contains approximately 26,400 SF (including the basement) according to City GIS records. The existing commercial uses on the ground floor will remain, although some spaces may have new tenants over time. This application is only for storage space. According to the City Assessing data the 501 Forest site is 17,598 SF (0.40 acres) in size.

Existing Conditions

The existing site is located at 501 Forest Avenue and contains an existing a single-story structure and shared vehicular access route off Indian Lane and pedestrian access off Forest Avenue. The Indian Lane access includes shared access to the abutting property, which is under common ownership. The building is part of a total of six lots under common deed identified as #501 Forest Avenue to #537 Forest Avenue[1]. There are undefined parking spaces behind the #501 Building, and access to

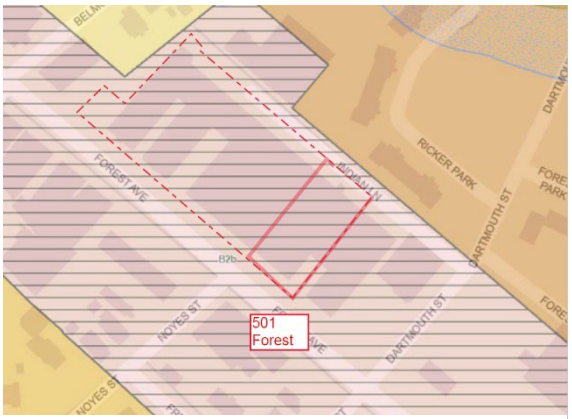


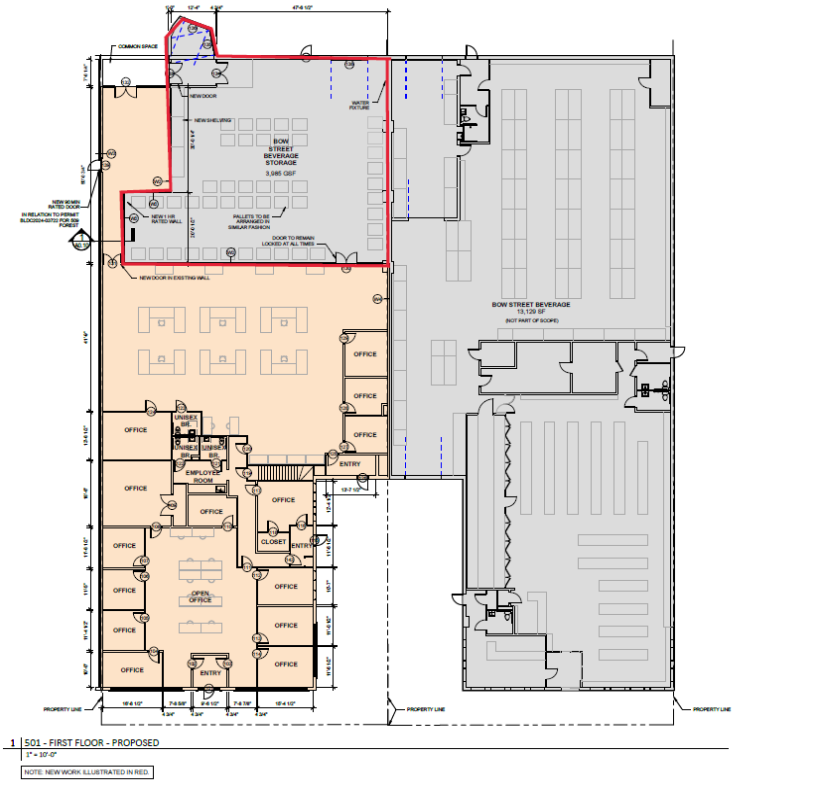
Figure 1 - Zoning Map Excerpt

[1] See CCRD Book 39688 page 7. The deed also includes land containing a parking lot at 41 Ashmont Street.

the basement where additional parking is available. The basement parking is accessed via a single overhead door off Indian Lane. Indian Lane also provides shared deed rights and access to the Ricker Park development north of the building[2]. Forest Avenue in front of the site contains some parallel parking capacity. The site is located in the B-2b zone as identified in Figure 1.

In accordance with Section 6.5 Conditional uses we offer the following to address Sections 6.5.2 General Conditional Use Standards and Section 6.5.6.E. Supplement use-specific conditions use standards for Industrial Uses:

Section 6.5.2 – General Conditional Use standards



A. The proposed warehouse use will support the existing Bow Street Beverage retail store at 495 Forest Avenue. The retail store has an existing parking lot off Forest Ave/Dartmouth Street. There will be no additional parking nor any substantial increase in traffic or parking resulting from this additional storage space.
B. The proposed storage space will be neatly organized to allow for safe movement of store staff to move pallets between the storage space and the main store. All products are boxed until placed on the sale shelves in the main store. Product will be moved via hand carry or forklift using the existing overhead doors at the rear of 495 and 501 Forest. Deliveries to the location are typically done during regular business hours and the operation of the forklift is also typically only during regular daytime hours from 9:00 AM to 8:00 PM. The storage space will not have bathroom facilities, which are already provided for staff in the main store. The storage use will not result in unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.
C. The operation of the storage space for Bow Street Beverage will remain as historically operated in the past. The space is concealed within the building and the existing overhead doors into both 501 and 495 are adequate for the movement of product between the spaces. Bow Street

[2] Indian Lane is identified as a 20-foot-wide private way per the ALTA Survey.

will manage recycling as they have in the past, including the collection and recycling of cardboard boxes. Waste generation is expected to be minimal.

D. The storage use will meet the supplemental standards of Section 6.5.6.E.

Section 6.5.6.E.1 – Supplemental Use standards.

a. The planning board shall be the review authority.
b. The access between 495 Forest and 501 Forest is facilitated by two existing overhead doors that are but a few feet apart from each other. Access between the two doors is within the private property and does not required movement into the shared Indian Lane. There is an existing loading dock at the rear of 501 Forest that will remain for unloading of larger vehicles. Most deliveries are done with pallets offloaded via forklift or handcart and brought into the storage space through the overhead door. These locations are at the rear of the buildings and are not visible from Forest Avenue. Activity at these doors may be visible from the nearby Ricker Park Apartments, as it has been since Ricker Park was constructed.
c. There are no changes to the building architecture which is largely brick façade. Exterior lighting will remain unchanged.

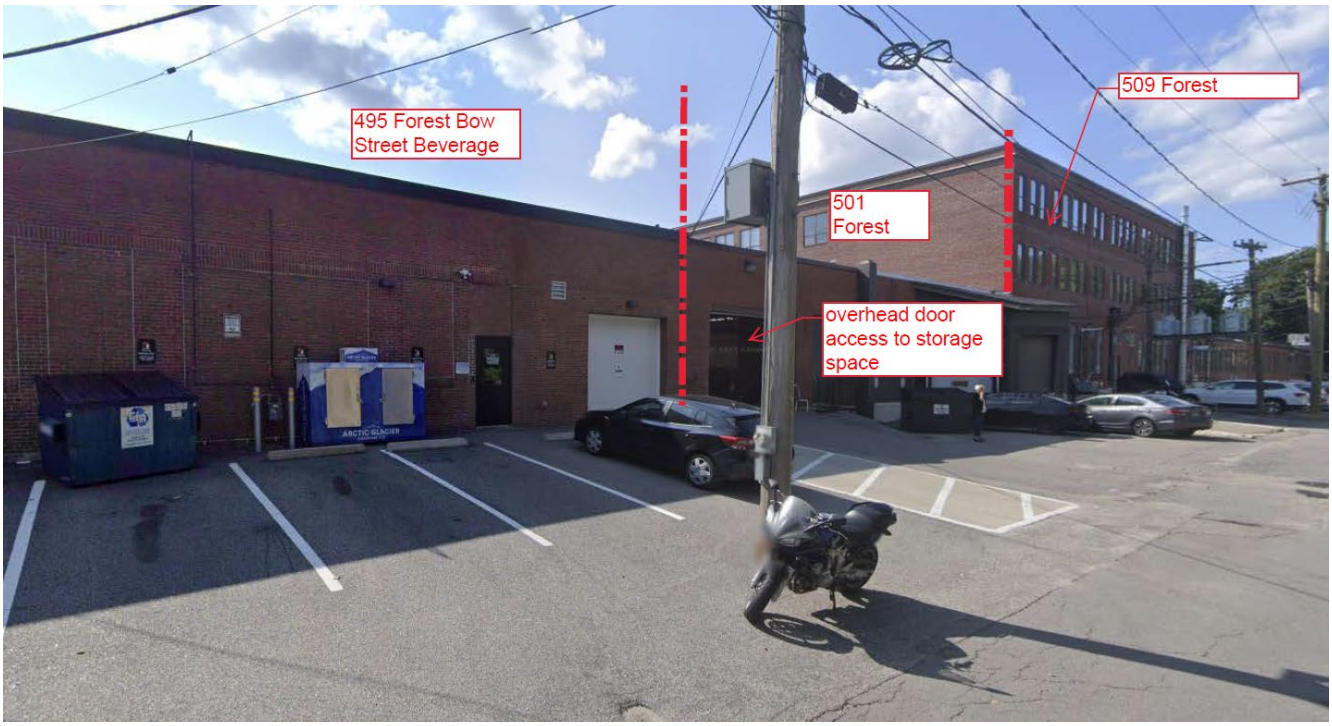
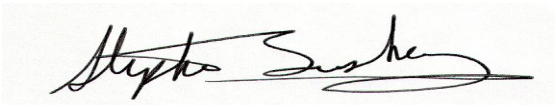


Fig. 2 – Indian Lane Streetview of rear of buildings

We trust the supporting application materials are acceptable and we look forward to the Planning Authority's prompt review and scheduling of a workshop with the Planning Board.

Sincerely,

GORRILL-PALMER



Stephen Bushey, PE
Senior Associate
Phone: 207-772-2515 x286
sbushey@gorrillpalmer.com

Attachments – Invivid Plans and Boundary survey

c: Josh Trombley, DC 509 Forest LLC
Virginie Stanley, Invivid

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Att. B

MAINE REAL ESTATE TAX-Paid

DLN: 1002240208447

QUITCLAIM DEED WITH COVENANT
Statutory Short Form

JOSEPH B. WOJCIK, JR., of the Town of Falmouth, County of Cumberland State of Maine

For Consideration Paid, GRANTS with QUITCLAIM COVENANT to:

DC 509 Forest LLC, a Maine Limited Liability Company, with a mailing address of 631 Stevens Avenue, Suite 203, Portland, ME 04103

Certain lots or parcel of lands with the buildings and improvements thereon, situated in the City of Portland, County of Cumberland and State of Maine, bounded and described in Exhibit A annexed hereto and made a part hereof.

Being the same premises conveyed to Grantor herein by deed of Delta Realty, LLC, dated August 31, 2017, and recorded at the Cumberland County Registry of Deeds in Book 34280, Page 136 along with the same premises conveyed to Grantor herein by deed of Alpine Realty Corp., dated August 31, 2017, and recorded at the said Registry of Deeds in Book 34280, Page 146.

This conveyance is made SUBJECT to the current real estate taxes to the City of Portland, subject to proration at the closing, which the Grantee herein by its acceptance of this deed hereby assumes and agrees to pay.

In Witness Whereof, I, Joseph B. Wojcik, Jr., have hereunto set my hand and seal this 31st day of August, 2022.

Signed, Sealed and Delivered
In the presence of:

Joseph B. Wojcik, Jr.

STATE OF MAINE
CUMBERLAND, SS

Dated: August 31st, 2022

Personally appeared the above-named Joseph B. Wojcik, Jr., and acknowledged the foregoing instrument to be his free act and deed.

Before me,

Notary Public/Attorney at Law
Nicholas F. Merrill

Exhibit A

Certain lots of parcels of land, together with the buildings and improvements thereon located at Forest Avenue and Ashmont Street, Portland, Cumberland County, Maine, more particularly bounded and described as follows, to wit:

PARCEL ONE: (509 Forest Avenue, Portland)

Beginning at a point on the Northeasterly sideline of said Forest Avenue, said point being distant 249.20 feet as measured on a bearing of North 34° 20' 30" West along said sideline of Forest Avenue from its intersection with the Northwesterly sideline of Dartmouth Street, said point also being on the southwesterly extension of the centerline of the 12 inch party wall between the building on the premises herein described and the building on the adjacent premises at 501 Forest Avenue formerly of Shirley M. George;

Thence North 55° 38' 30" East along said extension of, and through the center line of said 12-inch party wall and its extension Northeasterly, 220.04 feet to a point on the Southwesterly sideline of a private way known as Indian Lane;

Thence North 34° 20' 00" West along said sideline of Indian Lane 121.38 feet to a point; said point being on the extension Northeasterly of the centerline of the 12-inch party wall between the building on the premises herein described and the building on the adjacent premises at 517 Forest Avenue formerly of The Dartmouth Company, and being Parcel Two described below;

Thence 55° 37' 30" West along said extension of, and through the centerline of said 12-inch party wall and its extension Southwesterly, 220.04 feet to a point on the Northeasterly sideline of said Forest Avenue;

Thence South 34° 20' 30" East along said Northeasterly sideline of Forest Avenue 121.38 feet to the point of beginning.

ALSO conveying all of the grantor's right, title and interest in and to an undivided one-half interest in common in that adjacent portion of Indian Lane which portion is more particularly bounded and described as follows:

Beginning at a point marked by an iron pin set on the southwesterly sideline of Indian Lane which point is located 249.13 feet, more or less, from the intersection of the southwesterly sideline of Indian Lane and the northwesterly sideline of Dartmouth Street;

Thence northeasterly 20 feet, more or less, to a point on the northeasterly sideline off Indian Lane;

Thence North 34° 20' West along Indian Lane 121.38 feet, more or less, to a point;

Thence southwesterly 20 feet, more or less, to a point on the southwesterly sideline off Indian Lane;

Thence South 34° 20' East along Indian Lane 121.38 feet, more or less, to the point of beginning.

ALSO conveying all of the grantor's right, title and interest, if any, in and to those portions of Forest Avenue adjacent to the above described premises.

PARCEL TWO: (517 Forest Avenue, Portland)

Beginning at a point on the Northeasterly sideline of Forest Avenue, said point being distant 177.83 feet on a bearing of South 34° 20' 30" East from the southwesterly corner of land now or formerly of Dewey W. Couri (formerly Adam D. MacLean) and said point of beginning also being distant 313.29 feet on a bearing of South 34° 20' 30" East from the intersection of the Northeasterly sideline of Forest Avenue with the Southeasterly sideline of Belmont Street;

Thence North 55° 41" East to and along the Southerly face of a concrete curb 130.00 feet to a point on the Southwesterly face of the garage-office building on the premises conveyed herewith;

Thence North 34° 25' West along the brick face of said garage-office building 0.25 feet to a point;

Thence North 55° 35' 30" East in the center of a 12-inch brick wall 59.80 feet to a point on the Northeasterly face of the said garage-office building, said 12 inch brick wall being a party wall between the said garage-office building and the garage on the remaining land now or formerly of Couri Pontiac, Inc.;

Thence continuing North 55° 35' 30" East 30.26 feet to a point on the Southwesterly side of Indian Lane;

Thence South 34° 20' East along the Southwesterly side of Indian Lane 79.30 feet to a point;

Thence South 55° 37' West 30.00 feet to a point on the Northeasterly face of the aforesaid garage-office building;

Thence continuing South 55° 37' West in the center off a 12-inch brick wall 180.12 feet to a point on the Southwesterly face of the said garage-office building; said 12 inch brick wall being a party wall between the said garage-office building and the building on land formerly of The Dartmouth Company, and being Parcel One described above;

Thence continuing South 55° 37' West 9.92 feet to the Northeasterly sideline of Forest Avenue;

Thence North 34° 20' 30" West along the Northeasterly sideline of Forest Avenue 79.18 feet to the point of beginning, containing 17,420 square feet.

ALSO, all right, title and interest of grantor, if any, in and to that portion of Forest Avenue adjacent to and lying to the southwest of the above described premises.

ALSO, an undivided one-half interest in common in and to a certain lot or parcel of land adjacent to the above described premises, being a portion of Indian Lane and bounded and described as follows:

Beginning at the Southeasterly corner of the above described parcel;

Thence North 34° 20' West along the northeasterly boundary of the above described premises 79.30 feet to a point;

Thence North 55° 35' 30" East 20 feet to a point;

Thence South 34° 20' East 79.30 feet to a point;

Thence South 55° 37' 30" West 20.00 feet to the point of beginning.

Grantor hereby grants an easement to grantee, its successors and assigns, for pedestrian and vehicular ingress and egress across and along that part of Indian Lane, which is bounded and described as follows:

Beginning at a point on the Northwesterly sideline of Dartmouth Street, said point being distant 220 feet Northeasterly from the intersection of the Northwesterly sideline of Dartmouth Street With the Northeasterly sideline of Forest Avenue;

Thence North 34° 20' West 370.52 feet to the Southeasterly corner of the first above described parcel;

Thence continuing North 34° 20' West along the Northeasterly boundary of the above described parcel 79.30 feet to the Northeasterly corner thereof;

Thence North 55° 35' 30" East 20 feet to a point;

Thence South 34° 20' East 449.82 feet to a point on the Southwesterly sideline of Dartmouth Street;

Thence South 55° 37' 30" West 20 feet to the point of beginning.

All bearings are magnetic in the year 1964.

PARCEL THREE: (41 Ashmont Street, Portland)

ALSO, another certain lot or parcel of land situated in the City of Portland, County of Cumberland and State of Maine, being bounded and described as follows:

Beginning at a railroad spike on the northeasterly side of Ashmont Street;

Thence South 79° 23' West by said Ashmont Street a distance of One Hundred Twenty-Eight and Thirty-Six Hundredths (128.36) feet, more or less, to a point and land now or formerly of Ralph L. Allen and Helen L. Allen:

Thence North 10° 37' East along Allen land a distance of One Hundred (100) feet, more or less to an iron pipe and land now or formerly of James Kelley;

Thence North 8° 36' East along said Kelley land a distance of fifty-five (55) feet, more or less to a point and land now or formerly part of Clairmont Court Condominium;

Thence North 81° 24' 00" East, along said Clairmont Court Condominium land, a distance of One Hundred Twenty-Two and Fifty Hundredths (122.50) feet, more or less, to a point and land now or formerly of Dwight L. Sanborn and Elaine Sanborn;

Thence South 7° 47' West, along land of said Sanborn land, a distance of approximately One Hundred Fifty-Nine and Fifty-Five Hundredths (159.55) feet, more or less, (incorrectly referenced as One Hundred Eighty-One and Twenty-Hundredths (181.22) feet by scrivener's error in prior instrument), to the point of beginning.

The above-described premises are more clearly depicted on a plan entitled "Survey Plan of Clairmont Court. Condominium" in Portland, Maine for Clairmont Court, Inc., dated March 16, 1981.

Subject to and together with all easements, covenants, restrictions and takings of record, if any, insofar as they may be in force and applicable.

PARCEL FOUR: (501 Forest Avenue, Portland)

A certain lot or parcel of land with the buildings thereon situated on the Northeasterly side of Forest Avenue in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a point on the Northeasterly sideline of said Forest Avenue, said point being distant two hundred forty-nine and twenty hundredths (249.20) feet as measured on a bearing of North 34° 20' 30" West along said sideline of Forest Avenue from its

intersection with the Northwesterly sideline of Dartmouth Street, said point also being on the Southwesterly extension of the centerline of the twelve (12) inch party wall between the building on the premises herein described and the building on the adjacent premises at 509 Forest Avenue formerly of the Dartmouth Company;

Thence North 55° 38' 30" East along said extension of, and through the centerline of said twelve (12) inch party wall and its extension Northeasterly, two hundred twenty and four hundredths (220.04) feet to a point on the Southwesterly sideline of a private way known as Indian Lane;

Thence South 34° 20' 00" East along said sideline of Indian Lane Seventy-nine and sixty-one hundredths (79.61) feet to a point, said point being on the extension Northeasterly of the centerline of the twelve (12) inch party wall between the building on the premises herein described and the building on the adjacent premises at 495 Forest Avenue now or formerly of the Dartmouth Company;

Thence South 55° 37' 30" West along said extension of, and through the centerline of said twelve (12) inch party wall and its extension Southwesterly, two hundred twenty and three hundredths (220.03) feet to a point on the Northeasterly sideline of said Forest Avenue;

Thence North 34° 20' 30" West along said Northeasterly sideline of Forest Avenue seventy-nine and sixty-eight hundredths (79.68) feet to the point of beginning. The above described premises contain 17,524 square feet and are shown on a plan entitled, "Plan of Land in Portland, Maine for George Business Forms," by Owen Haskell, Inc. dated September 9, 1980. Bearings are magnetic as of the year 1964.

Subject, however, to existing public utility and service easements of record.

ALSO conveying all of the Grantor's right, title and interest in and to an undivided one-half (1/2) interest in common in that adjacent portion of Indian Lane, which portion is more particularly bounded and described as follows:

Beginning at a point marked by an iron pin to be set on the southwesterly sideline of Indian Lane which point is located two hundred fifty-two and five tenths (252.5) feet, more or less, from the intersection of the southwesterly sideline of Indian lane and the northwesterly sideline of Dartmouth Street;

Thence northeasterly twenty (20) feet, more or less, to a point on the northeasterly sideline of Indian Lane;

Thence South 34° 20' East along Indian Lane eighty (80) feet, more or less, to a point;

Thence southwesterly twenty (20) feet, more or less, to a point marked by an iron pin to be set on the southwesterly sideline of Indian Lane;

Thence North 34° 20' West along Indian Lane eighty (80) feet, more or less, to the point of beginning.

TOGETHER WITH an easement for pedestrian and vehicular ingress and egress from the above described premises across Indian Lane to Dartmouth Street. Subject, however, to all existing easements for pedestrian and vehicular ingress and egress across Indian lane to Dartmouth Street in common with others and specifically excepting and reserving the same ingress and egress rights across Indian Lane to Dartmouth Street for the benefit of adjoining premises granted of record by the Dartmouth Company.

SUBJECT TO the restriction, which restriction shall run with the land and be binding upon the Grantee, its successors and assigns, that Indian Lane shall be kept in a reasonable state of repair and that the cost of said repairs and real estate taxes and assessments applicable to Indian Lane shall be borne by the owner or owners of all parcels of real estate abutting Indian Lane or portions of such parcels, whether or not the portion owned abuts Indian lane, in proportion to the respective total land area of each such owner of a parcel or portion thereof.

ALSO CONVEYING all of the Grantor's right, title and interest, if any, in and to those portions of Forest Avenue adjacent to the above described premises.

EXCEPTING AND RESERVING the perpetual right and easement to repair, maintain, replace and remove the existing storm sewer pipes and mains with all necessary fixtures and appurtenances. Said storm sewer runs northwesterly two hundred sixty (260) feet, more or less, from Dartmouth Street along the northeasterly side of Indian Lane to a point, and thence westerly to a point at the rear of the existing building on the above described premises near the northwesterly side of the ramp serving said building.

ALSO CONVEYING to the Grantee, its successors and assigns, the perpetual right and easement in common with others to repair, maintain, replace and remove the existing storm sewer pipes and mains with all necessary fixtures and appurtenances, the location of which is described above.

EXCEPTING AND RESERVING the perpetual right and easement, for the benefit of the adjoining premises, to repair, maintain, replace and remove the existing storm sewer connection running southeasterly from the building at 509 Forest Avenue through the party wall to said storm sewer located at the rear of a building on the above described premises.

ALSO CONVEYING to the Grantee, its successors and assigns, the perpetual right and easement, in common with others, to repair maintain, replace and remove existing sewer line, together with all necessary fixtures and appurtenances, which sewer line runs from the basement of the above described premises southeasterly to Dartmouth Street, the center line of said sewer easement being described as follows:

Beginning at a point on the northwesterly sideline of Dartmouth Street one hundred (100) feet, more or less, from the intersection of the southwesterly sideline of Indian Lane and the northwesterly sideline of Dartmouth Street; thence northwesterly and running parallel to the existing building at 49 Dartmouth Street one hundred seventy-three (173) feet, more or less, to the above described premises and a point which is located one hundred eighteen (118) feet, more or less, from the northeasterly sideline of Forest Avenue.

TOGETHER WITH AND SUBJECT TO the obligations under a Sewer Easement Maintenance Agreement between 49 Dartmouth LLC and The George Family, LLC dated June 28, 2002 and recorded in said Registry of Deeds in Book 18009, Page 278.

ALSO CONVEYING to the Grantee, its successors and assigns, the perpetual right and easement, in common with the others, to repair, maintain, replace and remove the existing water mains and pipes which service the above described premises, together with all necessary fixtures and appurtenances, the center line of said easement being described as follows:

Beginning at a point on the northeasterly sideline of Forest Avenue which point is located one hundred seventy (170) feet, more or less, from the intersection of the northeasterly sideline of Forest Avenue and the northwesterly sideline of Dartmouth Street; thence northeasterly at approximately right angles to Forest Avenue through the paved drive of premises located at 495 Forest Avenue and parallel to the concrete curb which divides the paved drive, seventy-three (73) feet, more or less, to a point at the rear of said paved drive; thence northwesterly three (3) feet, more or less, to the above described premises.

The above described premises are conveyed SUBJECT TO AND TOGETHER WITH THE BENEFIT OF the easements and rights granted in an agreement between Couri Pontiac, Inc. and Dartmouth Real Estate Company dated August 18, 1970 and recorded in said Registry of Deeds, Book 3139, Page 689, to the extent said easements and rights affect the above described premises, which shall run with the land and be binding upon and inure to the benefit of Grantee, its successors and assigns, and Grantee, its successors and assigns, by acceptance of this deed, hereby agrees to be bound by said terms and conditions of said agreement.

SUBJECT TO the matters referred to in the Affidavit of Scott Scully dated January 14, 1987 and recorded in Book 7596, Page 245 (as affected by Affidavit of Scott Scully dated January 14, 1987 and recorded in Book 10175, Page 113), regarding the forgoing Agreement recorded in said Registry of Deeds, Book 3139, Page 689.

EXCEPTING AND RESERVING the easements over the within conveyed premises to maintain and repair existing utility lines and appurtenances on said premises which serve all adjacent property now or formerly of The Dartmouth Company, referenced in said agreement dated August 19, 1970 and recorded in said Registry of Deeds in Book 3139, Page 689.

The premises are also conveyed together with the benefit of the agreement of Boulevard Associates, Inc., its successors and assigns, to furnish heat and maintain utility lines and appurtenances thereto and necessary easements in connection herewith for the benefit of the above described premises on generally the same terms and conditions as set forth in said agreement recorded in said Registry of Deeds, Book 3139, Page 689, all as provided for in the deed from Dartmouth Real Estate Company to Boulevard Associates dated December 10, 1971 and recorded in said Registry of Deeds, Book 3204, Page 373.

SUBJECT TO AND TOGETHER WITH THE BENEFIT OF a twelve (12) inch party wall one hundred twenty (120) feet, more or less, in length connects 495 Forest Avenue (also being premises formerly owned by The Dartmouth Company) and the 501 Forest Avenue premises herein conveyed. Said walls shall be preserved and maintained so long as either abuttor desires to maintain a structure adjacent to the walls, or of which the walls are a part. So long as there is a structure on both sides of either wall, structural maintenance of that common party wall shall be shared equally. In the event that either abutter elects to raze the structure adjacent to either wall, said razing shall not disturb that common party wall, but the expense of maintaining that wall shall be assumed by whichever party continues utilization of that wall.

PARCEL FIVE: (525 Forest Avenue, Portland)

A certain lot or parcel of land with the buildings thereon, situated on the northeasterly side of Forest Avenue in said Portland, bounded and described as follows:

Beginning at a point on the northeasterly sideline of Forest Avenue, said point being distant 177.83 feet on a bearing of S 34° 20' 30" E from the southwesterly corner of land now or formerly of Dewey W. Couri (formerly Adam D. MacLean) and said point of beginning also being distance 318.29 feet on a bearing of S 34° 20' 30" E from the intersection of the northeasterly sideline of Forest Avenue with the southeasterly sideline of Belmont Street and also being the northwesterly corner of premises

conveyed by Couri Pontiac, Inc. to Robert E. Adair et al. by deed dated July 20, 1972 and recorded in the Cumberland County Registry of Deeds in Book 3270, Page 206;

Thence N 55° 41' 30" E to and along the southerly face of a concrete curb and by said land of Adair et al. 130.00 feet to a point on the southwesterly face of the garage-office building on the premises conveyed to Adair et al. as aforesaid;

Thence N 34° 25' W along the brick face of said garage-office building 0.25 feet to a point;

Thence N 55° 35' 30" E in the center of a 12-inch brick wall 59.80 feet to a point on the northeasterly face of the side garage-office building, said 12-inch brick wall being a party wall between the said garage-office building and the garage on the within conveyed premises;

Thence continuing N 55° 35' 30" E 30.26 feet to a point on the southwesterly side of Indian Lane;

Thence N 34° 20' W along the southwesterly side of Indian Lane 78.75 feet, more or less, to a point which is and extension N 55° 35' 30" E 30.26, more or less, feet from the center of a 12-inch brick wall, being a party wall between the garage on the within conveyed premises and the adjacent building on other land formerly of Couri Pontiac, Inc;

Thence S 55° 35' 30" W 30.26 feet, more or less, to the center of said brick wall;

Thence continuing in the center of said brick wall S 55° 35' 30" W 59.00 feet, more or less, to the end of said brick wall;

Thence S 55° 41' 30" W 130.00 feet, more or less, to the northeasterly sideline of Forest Avenue;

Thence S 34° 20' 30" E along the northeasterly sideline of Forest Avenue 79.00 feet, more or less, to the point of beginning, containing approximately 17,400 square feet.

ALSO, all the right, title and interest of grantor, if any, in and to that portion of Forest Avenue adjacent to and lying to the southwest of the above described premises.

ALSO, an undivided one-half interest in common in and to a certain lot or parcel of land adjacent to the above described premises, being a portion of Indian Lane and bounded and described as follows:

Beginning at the southeasterly corner of the above described parcel;

Thence N 34° 20' W along the northeasterly boundary of the above described premises 78.75 feet to a point;

Thence N 55° 35' 30" E 20.00 feet to a point;

Thence S 34° 20' E 78.75 feet to a point;

Thence S 55° 35' 30" W 20.00 feet to the point of beginning, subject to an easement for vehicular and pedestrian passage of The Dartmouth Company, and such other abutters on Indian Lane as may have similar rights of record, and their respective successors and assigns and the duty to keep Indian Lane in a reasonable state of repair as more specifically provided herein.

This conveyance is subject to public utility and service easements of record, including but not limited to an easement from Couri Pontiac, Inc. to Portland Water District dated August 16, 1977 and recorded in said Registry of Deeds in Book 4079, Page 139.

This conveyance is made subject to and with the benefit of the terms and conditions of an agreement between Couri Pontiac, Inc. and Dartmouth Real Estate Company dated August 18, 1970 and recorded in the Cumberland County Registry of Deeds in Book 3139, Page 689, to the extent said terms and conditions affect or pertain to the within described premises. The duties of Dartmouth Real Estate Company under said agreement were transferred to Boulevard Associates, Inc. by Dartmouth Real Estate Company by deed dated December 10, 1971, and recorded in said registry of Deeds in Book 3204, Page 373. Grantor and Grantee, their successors and assigns, covenant and warrant that if notice is received by either of them from Boulevard Associates, Inc., its successors and assigns, under Paragraph 8 of said agreement, they will immediately give a copy of any such notice to the other party, their successors and assigns.

PARCELS SIX AND SEVEN: (533 and 537 Forest Avenue, Portland)

A certain lot or parcel of land, with the buildings and improvements thereon, situated on the easterly side of Forest Avenue in said Portland and bounded and described as follows:

Beginning at a stake on the easterly side of Forest Avenue distant southerly ninety and thirty six hundredths (90.36) feet from a drill hole marking the intersection of said easterly side of Forest Avenue with the southerly side of Belmont Street;

Thence easterly making an excluded angle with Forest Avenue of 96° 22' and by an existing chain link fence seventy nine and seventy four hundredths (79.74) feet to an angle in said fence;

Thence southerly and making an included angle with the last described course of 88° 32' 30" and by said fence fifty-seven (57) feet, more or less, to land now or formerly of the Dartmouth Real Estate Co.;

Thence westerly by said Dartmouth Real Estate Co. land seventy-five (75) feet, more or less, to Forest Avenue;

Thence northerly by said Forest Avenue, fifty (50) feet, more or less, to the point of beginning. Subject to any and all existing rights of the City of Portland in and to said premises for sewer and other purposes.

ALSO, another lot or parcel of land, with the buildings thereon, situated on the northeasterly side of Forest Avenue, in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at a point on the northwesterly side line of Forest Avenue, said point being the southwesterly corner of land now or formerly of Dewey W. Couri (formerly Adam D. MacLean) and said point being distant 140.46 feet on a bearing of S 34° 20' 30" E from the intersection of the northeasterly side line of Forest Avenue with the southeasterly side line of Belmont Street;

Thence N 65° 49' 30" E along said land now or formerly of Dewey W. Couri 72.76 feet to a point;

Thence S 23° 09' 30" E along land now or formerly of George David Corey, et al., 4.67 feet to a point;

Thence N 55° 37" E along said land now or formerly of George David Corey, et al., and along other land now or formerly of Dartmouth Real Estate Company and along land now or formerly of Sidney Ginsberg, et al., 167.21 feet to a point (this line runs along or near the outside face of the garage-office building on the premises conveyed herewith);

Thence S 23° 09' 30" E along land now or formerly of Eugene Glickstein, et al., 37.59 feet to a point;

Thence S 51° 28' 30" W, 10.60 feet to a point;

Thence S 34° 20' E along the southwesterly side of Indian Lane, 43.85 feet, more or less, to a point which is the extension N 55° 35' 30" E, 30.26 feet, more or less, from the

center of a 12-inch brick wall, being a party wall between the building on the within conveyed premises and the garage building on adjacent premises now or formerly of The Dartmouth Company;

Thence S 55° 35' 30" W, 30.26 feet, more or less, to the center of said brick wall;

Thence continuing in the center of said brick wall S 55° 35' 30" E, 59 feet, more or less, to the end of said brick wall;

Thence S 59° 41' 30" W, 130 feet, more or less, to the northerly side line of Forest Avenue;

Thence N 34° 20' 30" W along the northwesterly side of Forest Avenue, 98.83 feet, more or less, to the point of beginning.

ALSO, all right, title and interest in common in and to a certain lot or parcel of land adjacent to the above parcel being a portion of Indian Lane and bounded and described as follows:

Beginning at the southeasterly corner of the above described parcel;

Thence N 34° 20' W, along the northeasterly boundary of the above described premises, 43.85 feet, more or less, to a point;

Thence N 51° 28' 30" E, 20.05 feet to a point;

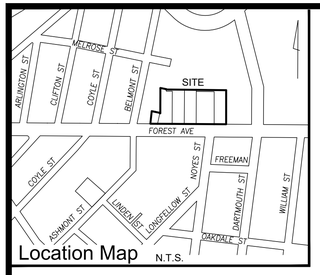
Thence S 34° 20' E, 45.31 feet, more or less, to a point;

Thence S 55° 30' 30" W, 20.00 feet to the point of beginning.

ALSO, including the easement across Indian Lane for pedestrian and vehicular ingress and egress in common with others conveyed to Ethel J. Young by deed dated December 18, 1984 and recorded in the Cumberland County Registry of Deeds in Book 6643, Page 322, and subject to the conditions in said deed.

CITY OF PORTLAND
Planning & Urban Development Department

CONDITIONAL USE – PLANNING BOARD REVIEW SUBMISSION CHECKLIST Please submit each document as a separate PDF file. Please confirm by electronically checking the boxes in the left-hand column.	
Conditional uses are listed in the land use code for each zone. The applicant must address the general standards as well as any use- or zone-based conditional use standards contained in Article 6.5 of the land use code in the written application.	
GENERAL APPLICATION DOCUMENTS	
Yes N/A	**Project Description** • Cover letter with detailed project description
Yes N/A	**Completed Checklist – Conditional Use** (this document)
Yes N/A	**Evidence of Right, Title and Interest** • Deeds, leases, or purchase and sales agreements
CONDITIONAL USE STANDARDS AND CRITERIA	
Yes N/A	**Traffic** • Demonstrate that the 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 N/A	**Environmental Impacts** • Demonstrate that the proposed use will not create any unsanitary or harmful conditions by reason of noise, glare, dust, sewage disposal, emissions to the air, odor, lighting, or litter.
Yes N/A	**Design and Operation** • Demonstrate that 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.
Yes N/A	**Use- and Zone-Specific Criteria** • Address any use- or zone-specific standards in Sections 6.5.6 and 6.5.7 of the land use code.



Location Map N.T.S.

Legend

- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- EM/GM ELECTRIC/GAS METER
- SIGN
- CATCH BASIN
- HYDRANT
- WATER VALVE OR SHUTOFF
- GAS VALVE
- LIGHT POLE
- DECIDUOUS TREE
- CURB
- X — X FENCE
- OHW OVERHEAD WIRES
- E UNDERGROUND POWER
- W WATER LINE
- G GAS LINE
- T TELEPHONE
- C COMMUNICATION
- SD STORM DRAIN
- SS SANITARY SEWER
- N/F NOW OR FORMERLY
- 000/000 DEED BOOK / PAGE
- P.O.B. POINT OF BEGINNING
- L/S LANDSCAPED AREA
- TP TELEPHONE PEDESTAL
- CONC. CONCRETE
- A POSSIBLE ENCROACHMENT
- 1 SCHEDULE B EXCEPTION

Flood Zone Note

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE C (AREAS OF MINIMAL FLOODING) OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 0013B, WHICH BEARS AN EFFECTIVE DATE OF JULY 17, 1986 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

Possible Encroachments

A METAL GUARDRAIL ENCROACHES ONTO ABUTTER 1'±

Schedule B Exceptions

FIRST AMERICAN TITLE INSURANCE COMPANY
AGENT FILE NO. 20981–00354 EFFECTIVE DATE: SEPTEMBER 8, 2022

1 – 7. NON SURVEY

AFFECT 501–537 FOREST AVENUE:

8. RIGHTS AND EASEMENTS GRANTED BY DARTMOUTH COMPANY TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY IN INSTRUMENTS RECORDED IN BOOK 1989, PAGE 378, BOOK 2905, PAGE 27, BOOK 2937, PAGE 382 AND BOOK 3038, PAGE 761 (AFFECT FOREST AVENUE PROPERTY). –1989/378 AS SHOWN, 2905/27 NON LOCUS, 2937/382 NON LOCUS, 3038/761 AS SHOWN.

9. RIGHTS AND EASEMENTS RELATIVE TO SEWAGE PIPELINE GRANTED BY COURI PONTIAC, INC. TO PORTLAND WATER DISTRICT DATED AUGUST 16, 1977 AND RECORDED IN BOOK 4079, PAGE 139 (AFFECTS A PORTION OF 533 FOREST AVENUE). – AS SHOWN.

10. RIGHTS AND EASEMENTS RELATIVE TO SEWAGE PIPELINE GRANTED BY ROBERT E. ADAIR, LUTHER B. FRANCIS AND REYNOLDS E. MOULTON TO PORTLAND WATER DISTRICT DATED AUGUST 16, 1977 AND RECORDED IN BOOK 4081, PAGE 56 (AFFECTS 517 FOREST AVENUE). – AS SHOWN.

11. RIGHTS AND EASEMENTS RELATIVE TO SEWAGE PIPELINE GRANTED BY DARTMOUTH REAL ESTATE COMPANY TO PORTLAND WATER DISTRICT DATED AUGUST 16, 1977 AND RECORDED IN BOOK 4081, PAGE 59 (AFFECTS 533 FOREST AVENUE). – AS SHOWN.

12. AGREEMENT BY AND BETWEEN COURI PONTIAC, INC. AND DARTMOUTH REAL ESTATE COMPANY DATED AUGUST 18, 1970 AND RECORDED IN BOOK 3139, PAGE 689 (AFFECTS 501–533 FOREST AVENUE), AS AFFECTED BY DEED FROM DARTMOUTH REAL ESTATE COMPANY TO BOULEVARD ASSOCIATES DATED DECEMBER 10, 1971 AND RECORDED IN BOOK 3204, PAGE 373, AS FURTHER AFFECTED BY AFFIDAVIT OF SCOTT SCULLY DATED JANUARY 14, 1987 AND RECORDED IN BOOK 10175, PAGE 113, AND AS PARTIALLY AMENDED AND RESTATED IN UTILITY EASEMENT AGREEMENT BY AND BETWEEN RICKER PARK ASSOCIATION AND ALINE REALTY CORP. DATED MAY 23, 2010 AND RECORDED IN BOOK 27805, PAGE 93 (AFFECTS 509–517 FOREST AVENUE). – AS SHOWN.

13. RIGHTS OF OTHERS IN AND TO THE USE OF INDIAN LANE AS WELL AS THE CONDITIONAL USE RESTRICTION RELATIVE TO REPAIRS THERETO AND SHARED COSTS THEREFOR, BY VIRTUE OF THE FOLLOWING:

A. ONE–HALF UNDIVIDED INTEREST IN COMMON WITH OTHERS IN THE ENTIRE LENGTH OF INDIAN LANE, VESTED IN BOULEVARD ASSOCIATES, INC. (NOW RICKER PARK ASSOCIATION) BY VIRTUE OF A DEED FROM DARTMOUTH REAL ESTATE COMPANY DATED DECEMBER 10, 1971 AND RECORDED IN BOOK 3204, PAGE 373, SUBJECT TO ACCESS RIGHTS OF OTHERS ACROSS ALL OF INDIAN LANE TO DARTMOUTH STREET. – AS SHOWN.

B. ONE–HALF UNDIVIDED INTEREST IN COMMON WITH OTHERS IN THAT ADJACENT PORTION OF INDIAN LANE DESCRIBED IN DEED FROM WILLCO, LLC TO ALTA VISTA, LLC DATED APRIL 3, 2017 AND RECORDED IN BOOK 33920, PAGE 91, SUBJECT TO ACCESS RIGHTS OF OTHERS ACROSS ALL OF INDIAN LANE TO DARTMOUTH STREET (AFFECTS APPURTENANT EASEMENT RIGHTS OVER INDIAN LANE ABUTTING 495 FOREST AVENUE). – AS SHOWN.

C. ONE–HALF UNDIVIDED INTEREST IN COMMON WITH OTHERS IN THAT ADJACENT PORTION OF INDIAN LANE DESCRIBED IN DEED FROM JOHN H. FINLEY 3RD, ET ALS TO 49 DARTMOUTH, LLC DATED JUNE 22, 1999 AND RECORDED IN BOOK 14869, PAGE 97, SUBJECT TO ACCESS RIGHTS OF OTHERS ACROSS ALL OF INDIAN LANE TO DARTMOUTH STREET (AFFECTS APPURTENANT EASEMENT RIGHTS OVER INDIAN LANE ABUTTING 49 DARTMOUTH STREET). – AS SHOWN.

14. SUBJECT TO THE CONDITIONAL USE RESTRICTION RELATIVE TO THE USE OF INDIAN LANE, ALONG WITH REPAIRS THERETO AND SHARED COSTS THEREFOR, SET FORTH IN DEEDS FROM THE DARTMOUTH COMPANY TO (A) COURI PONTIAC, INC. RECORDED IN BOOK 3139, PAGE 686 (AFFECTS 517–533 FOREST AVENUE); (B) SHIRLEY GEORGE RECORDED IN BOOK 4662, PAGE 168 (AFFECTS 501 FOREST AVENUE); AND (C) GREEN ONE DEVELOPMENT CORP. RECORDED IN BOOK 9638, PAGE 234 (AFFECTS 509 FOREST AVENUE). – AS SHOWN.

15. SEWER EASEMENT MAINTENANCE AGREEMENT BETWEEN 49 DARTMOUTH, LLC AND THE GEORGE FAMILY, LLC DATED JUNE 28, 2002 AND RECORDED IN BOOK 18009, PAGE 278 (BENEFITS AND BURDENS 501 FOREST AVENUE). – AS SHOWN.

16. SUBJECT TO THE RIGHTS AND EASEMENTS RESERVED TO THE DARTMOUTH COMPANY AND OTHERS, ALL AS MORE PARTICULARLY DESCRIBED IN BOOK 4662, PAGE 168 (WHICH BENEFIT AND BURDEN 501 FOREST AVENUE), WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

A. TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING STORM SEWER PIPES AND MAINS AND STORM SEWER CONNECTION, WHICH RUNS NORTHWESTERLY 260 FEET FROM DARTMOUTH STREET ALONG INDIAN LANE, THENCE WESTERLY TO A POINT AT THE REAR OF THE INSURED PREMISES; – AS SHOWN.

B. PARTY WALL RIGHTS IN THE BRICK WALL SHARED WITH THE BUILDING AT 495 FOREST AVENUE; – AS SHOWN.

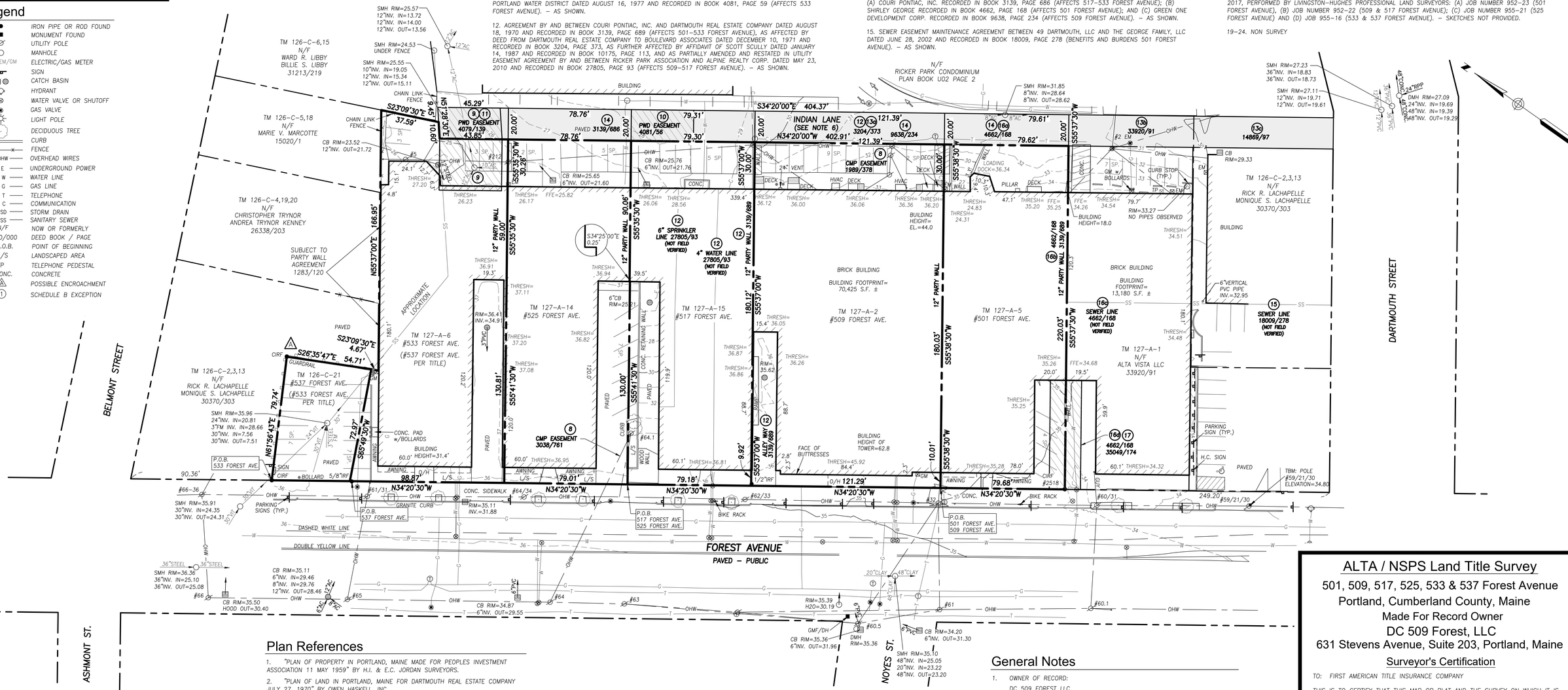
C. TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING SEWER LINE WHICH RUNS WESTERLY FROM DARTMOUTH STREET 173 FEET TO THE INSURED PREMISES; AND – AS SHOWN.

D. TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING WATER MAINS AND PIPES WHICH RUN NORTHEASTERLY FROM FOREST AVENUE THROUGH 495 FOREST AVENUE AND THENCE WESTERLY TO THE INSURED PREMISES. – AS SHOWN.

17. AGREEMENT REGARDING SHARED WATER MAIN EASEMENT BY AND BETWEEN ALTA VISTA, LLC AND JOSEPH B. WOJCIK, JR. DATED AUGUST 2, 2018 AND RECORDED IN BOOK 35049, PAGE 174 (AFFECTS 501 FOREST AVENUE). – AS SHOWN.

18. STATE OF FACTS AS DISCLOSED BY COMMERCIAL MORTGAGE LOAN INSPECTION SKETCHES DATED AUGUST 29, 2017, PERFORMED BY LIVINGSTON–HUGHES PROFESSIONAL LAND SURVEYORS: (A) JOB NUMBER 952–23 (501 FOREST AVENUE), (B) JOB NUMBER 952–22 (509 & 517 FOREST AVENUE); (C) JOB NUMBER 955–21 (525 FOREST AVENUE) AND (D) JOB 955–16 (533 & 537 FOREST AVENUE). – SKETCHES NOT PROVIDED.

19–24. NON SURVEY


TM 126–C–6,15
N/F
WARD R. LIBBY
BILLIE S. LIBBY
31213/219
TM 126–C–5,18
N/F
MARIE V. MARCOTTE
15020/1
TM 126–C–4,19,20
N/F
CHRISTOPHER TRYNOR
ANDREA TRYNOR KENNEY
26338/203
SUBJECT TO PARTY WALL AGREEMENT 1283/120
TM 126–C–2,3,13
N/F
RICK R. LACHAPELLE
MONIQUE S. LACHAPELLE
30370/303
TM 126–C–21
#537 FOREST AVE.
(#533 FOREST AVE. PER TITLE)
TM 127–A–6
#533 FOREST AVE.
(#537 FOREST AVE. PER TITLE)
TM 127–A–14
#525 FOREST AVE.
TM 127–A–15
#517 FOREST AVE.
TM 127–A–2
#509 FOREST AVE.
TM 127–A–5
#501 FOREST AVE.
TM 127–A–1
N/F
ALTA VISTA LLC
33920/91
TM 126–C–2,3,13
N/F
RICK R. LACHAPELLE
MONIQUE S. LACHAPELLE
30370/303
N/F
RICKER PARK CONDOMINIUM
PLAN BOOK U02 PAGE 2
INDIAN LANE
(SEE NOTE 6)
N34°20'00"W 402.91
S34°20'00"E 404.37
FOREST AVENUE
PAVED – PUBLIC
BELMONT STREET
DARTMOUTH STREET
ASHMONT ST.
NOYES ST.
PWD EASEMENT 4079/139
PWD EASEMENT 4081/56
CMP EASEMENT 1989/378
6" SPRINKLER LINE 27805/93 (NOT FIELD VERIFIED)
4" WATER LINE 27805/93 (NOT FIELD VERIFIED)
SEWER LINE 4662/168 (NOT FIELD VERIFIED)
SEWER LINE 18009/278 (NOT FIELD VERIFIED)
CMP EASEMENT 3038/761
AUG'Y WAY 3136/689
12" PARTY WALL 3139/689
12" PARTY WALL
BRICK BUILDING
BUILDING FOOTPRINT= 70,425 S.F. ±
BUILDING FOOTPRINT= 13,180 S.F. ±
BUILDING HEIGHT=44.0
BUILDING HEIGHT=18.0
BUILDING HEIGHT OF TOWER=62.8
P.O.B. 533 FOREST AVE.
P.O.B. 537 FOREST AVE.
P.O.B. 525 FOREST AVE.
P.O.B. 517 FOREST AVE.
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Legal Description

THE REAL ESTATE INCLUDING ALL LAND, BUILDINGS AND IMPROVEMENTS LOCATED IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE, FURTHER DESCRIBED AS FOLLOWS:

501 FOREST AVENUE, PORTLAND

A CERTAIN LOT OR PARCEL OF LAND WITH THE BUILDINGS THEREON SITUATED ON THE NORTHEASTERLY SIDE OF FOREST AVENUE IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHEASTERLY SIDELINE OF SAID FOREST AVENUE, SAID POINT BEING DISTANT TWO HUNDRED FORTY–NINE AND TWENTY HUNDREDTHS (249.20) FEET AS MEASURED ON A BEARING OF NORTH 34° 20' 30" WEST ALONG SAID SIDELINE OF FOREST AVENUE FROM ITS INTERSECTION WITH THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET, SAID POINT ALSO BEING ON THE SOUTHWESTERLY EXTENSION OF THE CENTERLINE OF THE TWELVE (12) INCH PARTY WALL BETWEEN THE BUILDING ON THE PREMISES HEREIN DESCRIBED AND THE BUILDING ON THE ADJACENT PREMISES AT 509 FOREST AVENUE NOW OR FORMERLY OF THE DARTMOUTH COMPANY;

THENCE NORTH 55° 38' 30" EAST ALONG SAID EXTENSION OF, AND THROUGH THE CENTERLINE OF SAID TWELVE (12) INCH PARTY WALL AND ITS EXTENSION NORTHEASTERLY, TWO HUNDRED TWENTY AND FOUR HUNDREDTHS (220.04) FEET TO A POINT ON THE SOUTHWESTERLY SIDELINE OF A PRIVATE WAY KNOWN AS INDIAN LANE;

THENCE SOUTH 34° 20' 00" EAST ALONG SAID SIDELINE OF INDIAN LANE SEVENTY–NINE AND SIXTY–ONE HUNDREDTHS (79.61) FEET TO A POINT, SAID POINT BEING ON THE EXTENSION NORTHEASTERLY OF THE CENTERLINE OF THE TWELVE (12) INCH PARTY WALL BETWEEN THE BUILDING ON THE PREMISES HEREIN DESCRIBED AND THE BUILDING ON THE ADJACENT PREMISES AT 495 FOREST AVENUE NOW OR FORMERLY OF THE DARTMOUTH COMPANY;

THENCE SOUTH 55° 37' 30" WEST ALONG SAID EXTENSION OF, AND THROUGH THE CENTERLINE OF SAID TWELVE (12) INCH PARTY WALL AND ITS EXTENSION SOUTHWESTERLY, TWO HUNDRED TWENTY AND THREE HUNDREDTHS (220.03) FEET TO A POINT ON THE NORTHEASTERLY SIDELINE OF SAID FOREST AVENUE;

THENCE NORTH 34° 20' 30: WEST ALONG SAID NORTHEASTERLY SIDELINE OF FOREST AVENUE SEVENTY–NINE AND SIXTY–EIGHT HUNDREDTHS (79.68) FEET TO THE POINT OF BEGINNING. THE ABOVE DESCRIBED PREMISES CONTAIN 17,524 SQUARE FEET AND ARE SHOWN ON A PLAN ENTITLED, "PLAN OF LAND IN PORTLAND, MAINE FOR GEORGE BUSINESS FORMS," BY OWEN HASKELL, INC. DATED SEPTEMBER 9, 1980. BEARINGS ARE MAGNETIC AS OF THE YEAR 1964.

SUBJECT, HOWEVER, TO EXISTING PUBLIC UTILITY AND SERVICE EASEMENTS OF RECORD.

ALSO CONVEYING ALL OF THE GRANTOR'S RIGHT, TITLE AND INTEREST IN AND TO AN UNDIVIDED ONE–HALF (1/2) INTEREST IN COMMON IN THAT ADJACENT PORTION OF INDIAN LANE, WHICH PORTION IS MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT MARKED BY AN IRON PIN TO BE SET ON THE SOUTHWESTERLY SIDELINE OF INDIAN LANE WHICH POINT IS LOCATED TWO HUNDRED FIFTY–TWO AND FIVE TENTHS (252.5) FEET, MORE OR LESS, FROM THE INTERSECTION OF THE SOUTHWESTERLY SIDELINE OF INDIAN LANE AND THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET; THENCE NORTHEASTERLY TWENTY (20) FEET, MORE OR LESS, TO A POINT ON THE NORTHEASTERLY SIDELINE OF INDIAN LANE;

THENCE SOUTH 34° 20' EAST ALONG INDIAN LANE EIGHTY (80) FEET, MORE OR LESS, TO A POINT;

THENCE SOUTHWESTERLY TWENTY (20) FEET, MORE OR LESS, TO A POINT MARKED BY AN IRON PIN TO BE SET ON THE SOUTHWESTERLY SIDELINE OF INDIAN LANE;

THENCE NORTH 34° 20' WEST ALONG INDIAN LANE EIGHTY (80) FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

TOGETHER WITH AN EASEMENT FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS FROM THE ABOVE DESCRIBED PREMISES ACROSS INDIAN LANE TO DARTMOUTH STREET. SUBJECT, HOWEVER, TO ALL EXISTING EASEMENTS FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS ACROSS INDIAN LANE TO DARTMOUTH STREET IN COMMON WITH OTHERS AND SPECIFICALLY EXCEPTING AND RESERVING THE SAME INGRESS AND EGRESS RIGHTS ACROSS INDIAN LANE TO DARTMOUTH STREET FOR THE BENEFIT OF ADJOINING PREMISES GRANTED OF RECORD BY THE DARTMOUTH COMPANY.

SUBJECT TO THE RESTRICTION, WHICH RESTRICTION SHALL RUN WITH THE LAND AND BE BINDING UPON THE GRANTEE, ITS SUCCESSORS AND ASSIGNS, THAT INDIAN LANE SHALL BE KEPT IN A REASONABLE STATE OF REPAIR AND THAT THE COST OF SAID REPAIRS AND REAL ESTATE TAXES AND ASSESSMENTS APPLICABLE TO INDIAN LANE SHALL BE BORNE BY THE OWNER OR OWNERS OF ALL PARCELS OF REAL ESTATE ABUTTING INDIAN LANE OR PORTIONS OF SUCH PARCELS, WHETHER OR NOT THE PORTION OWNED ABUTS INDIAN LANE, IN PROPORTION TO THE RESPECTIVE TOTAL LAND AREA OF EACH SUCH OWNER OF A PARCEL OR PORTION THEREOF.

ALSO CONVEYING ALL OF THE GRANTOR'S RIGHT, TITLE AND INTEREST, IF ANY, IN AND TO THOSE PORTIONS OF FOREST AVENUE ADJACENT TO THE ABOVE DESCRIBED PREMISES.

EXCEPTING AND RESERVING THE PERPETUAL RIGHT AND EASEMENT TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING STORM SEWER PIPES AND MAINS WITH ALL NECESSARY FIXTURES AND APPURTENANCES. SAID STORM SEWER RUNS NORTHWESTERLY TWO HUNDRED SIXTY (260) FEET, MORE OR LESS, FROM DARTMOUTH STREET ALONG THE NORTHEASTERLY SIDE OF INDIAN LANE TO A POINT, AND THENCE WESTERLY TO A POINT AT THE REAR OF THE EXISTING BUILDING ON THE ABOVE DESCRIBED PREMISES NEAR THE NORTHWESTERLY SIDE OF THE RAMP SERVING SAID BUILDING.

ALSO CONVEYING TO THE GRANTEE, ITS SUCCESSORS AND ASSIGNS, THE PERPETUAL RIGHT AND EASEMENT IN COMMON WITH OTHERS TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING STORM SEWER PIPES AND MAINS WITH ALL NECESSARY FIXTURES AND APPURTENANCES, THE LOCATION OF WHICH IS DESCRIBED ABOVE.

EXCEPTING AND RESERVING THE PERPETUAL RIGHT AND EASEMENT, FOR THE BENEFIT OF THE ADJOINING PREMISES, TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING STORM SEWER CONNECTION RUNNING SOUTHEASTERLY FROM THE BUILDING AT 509 FOREST AVENUE THROUGH THE PARTY WALL TO SAID STORM SEWER LOCATED AT THE REAR OF A BUILDING ON THE ABOVE DESCRIBED PREMISES.

ALSO CONVEYING TO THE GRANTEE, ITS SUCCESSORS AND ASSIGNS, THE PERPETUAL RIGHT AND EASEMENT, IN COMMON WITH OTHERS, TO REPAIR MAINTAIN, REPLACE AND REMOVE EXISTING SEWER LINE, TOGETHER WITH ALL NECESSARY FIXTURES AND APPURTENANCES, WHICH SEWER LINE RUNS FROM THE BASEMENT OF THE ABOVE DESCRIBED PREMISES SOUTHEASTERLY TO DARTMOUTH STREET, THE CENTER LINE OF SAID SEWER EASEMENT BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET ONE HUNDRED (100) FEET, MORE OR LESS, FROM THE INTERSECTION OF THE SOUTHWESTERLY SIDELINE OF INDIAN LANE AND THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET; THENCE NORTHWESTERLY AND RUNNING PARALLEL TO THE EXISTING BUILDING AT 49 DARTMOUTH STREET ONE HUNDRED SEVENTY–THREE (173) FEET, MORE OR LESS, TO THE ABOVE DESCRIBED PREMISES AND A POINT WHICH IS LOCATED ONE HUNDRED EIGHTEEN (118) FEET, MORE OR LESS, FROM THE NORTHEASTERLY SIDELINE OF FOREST AVENUE.

TOGETHER WITH AND SUBJECT TO THE OBLIGATIONS UNDER A SEWER EASEMENT MAINTENANCE AGREEMENT BETWEEN 49 DARTMOUTH LLC AND THE GEORGE FAMILY, LLC DATED JUNE 28, 2002 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 18009, PAGE 278.

501 FOREST AVE, PORTLAND – CONT'D

ALSO CONVEYING TO THE GRANTEE, ITS SUCCESSORS AND ASSIGNS, THE PERPETUAL RIGHT AND EASEMENT, IN COMMON WITH THE OTHERS, TO REPAIR, MAINTAIN, REPLACE AND REMOVE THE EXISTING WATER MAINS AND PIPES WHICH SERVICE THE ABOVE DESCRIBED PREMISES, TOGETHER WITH ALL NECESSARY FIXTURES AND APPURTENANCES, THE CENTER LINE OF SAID EASEMENT BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHEASTERLY SIDELINE OF FOREST AVENUE WHICH POINT IS LOCATED ONE HUNDRED SEVENTY (170) FEET, MORE OR LESS, FROM THE INTERSECTION OF THE NORTHEASTERLY SIDELINE OF FOREST AVENUE AND THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET; THENCE NORTHEASTERLY AT APPROXIMATELY RIGHT ANGLES TO FOREST AVENUE THROUGH THE PAVED DRIVE OF PREMISES LOCATED AT 495 FOREST AVENUE AND PARALLEL TO THE CONCRETE CURB WHICH DIVIDES THE PAVED DRIVE, SEVENTY–THREE (73) FEET, MORE OR LESS, TO A POINT AT THE REAR OF SAID PAVED DRIVE; THENCE NORTHWESTERLY THREE (3) FEET, MORE OR LESS, TO THE ABOVE DESCRIBED PREMISES.

THE ABOVE DESCRIBED PREMISES ARE CONVEYED SUBJECT TO AND TOGETHER WITH THE BENEFIT OF THE EASEMENTS AND RIGHTS GRANTED IN AN AGREEMENT BETWEEN COURI PONTIAC, INC. AND DARTMOUTH REAL ESTATE COMPANY DATED AUGUST 18, 1970 AND RECORDED IN SAID REGISTRY OF DEEDS, BOOK 3139, PAGE 689, TO THE EXTENT SAID EASEMENTS AND RIGHTS AFFECT THE ABOVE DESCRIBED PREMISES, WHICH SHALL RUN WITH THE LAND AND BE BINDING UPON AND INURE TO THE BENEFIT OF GRANTEE, ITS SUCCESSORS AND ASSIGNS, AND GRANTEE, ITS SUCCESSORS AND ASSIGNS, BY ACCEPTANCE OF THIS DEED, HEREBY AGREES TO BE BOUND BY SAID TERMS AND CONDITIONS OF SAID AGREEMENT.

SUBJECT TO THE MATTERS REFERRED TO IN THE AFFIDAVIT OF SCOTT SCULLY DATED JANUARY 14, 1987 AND RECORDED IN BOOK 7596, PAGE 245 (AS AFFECTED BY AFFIDAVIT OF SCOTT SCULLY DATED JANUARY 14, 1987 AND RECORDED IN BOOK 10175, PAGE 113) REGARDING THE FORGOING AGREEMENT RECORDED IN SAID REGISTRY OF DEEDS, BOOK 3139, PAGE 689.

EXCEPTING AND RESERVING THE EASEMENTS OVER THE WITHIN CONVEYED PREMISES TO MAINTAIN AND REPAIR EXISTING UTILITY LINES AND APPURTENANCES ON SAID PREMISES WHICH SERVE ALL ADJACENT PROPERTY NOW OR FORMERLY OF THE DARTMOUTH COMPANY, REFERENCED IN SAID AGREEMENT DATED AUGUST 19, 1970 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 3139, PAGE 689.

THE PREMISES ARE ALSO CONVEYED TOGETHER WITH THE BENEFIT OF THE AGREEMENT OF BOULEVARD ASSOCIATES, INC., ITS SUCCESSORS AND ASSIGNS, TO MAINTAIN UTILITY LINES AND APPURTENANCES THERETO AND NECESSARY EASEMENTS IN CONNECTION HEREWITH FOR THE BENEFIT OF THE ABOVE DESCRIBED PREMISES ON GENERALLY THE SAME TERMS AND CONDITIONS AS SET FORTH IN SAID AGREEMENT RECORDED IN SAID REGISTRY OF DEEDS, BOOK 3139, PAGE 689, ALL AS PROVIDED FOR IN THE DEED FROM DARTMOUTH REAL ESTATE COMPANY TO BOULEVARD ASSOCIATES DATED DECEMBER 10, 1971 AND RECORDED IN SAID REGISTRY OF DEEDS, BOOK 3204, PAGE 373.

SUBJECT TO AND TOGETHER WITH THE BENEFIT OF A TWELVE (12) INCH PARTY WALL ONE HUNDRED TWENTY (120) FEET, MORE OR LESS, IN LENGTH CONNECTS 495 FOREST AVENUE AND THE 501 FOREST AVENUE PREMISES HEREIN CONVEYED. SAID WALL SHALL BE PRESERVED AND MAINTAINED SO LONG AS EITHER ABUTTER DESIRES TO MAINTAIN A STRUCTURE ADJACENT TO THE WALLS, OR OF WHICH THE WALLS ARE A PART. SO LONG AS THERE IS A STRUCTURE ON BOTH SIDES OF THE WALL, STRUCTURAL MAINTENANCE OF THAT COMMON PARTY WALL SHALL BE SHARED EQUALLY. IN THE EVENT THAT THE ABUTTER ELECTS TO RAZE THE STRUCTURE ADJACENT TO THE WALL, SAID RAZING SHALL NOT DISTURB THAT COMMON PARTY WALL, BUT THE EXPENSE OF MAINTAINING THAT WALL SHALL BE ASSUMED BY WHICHEVER PARTY CONTINUES UTILIZATION OF THAT WALL.

509 FOREST AVE, PORTLAND

A CERTAIN LOT OR PARCEL OF LAND, TOGETHER WITH THE BUILDINGS AND IMPROVEMENTS THEREON LOCATED AT FOREST AVENUE, PORTLAND, CUMBERLAND COUNTY, MAINE, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS, TO WIT:

BEGINNING AT A POINT ON THE NORTHEASTERLY SIDELINE OF SAID FOREST AVENUE, SAID POINT BEING DISTANT 249.20 FEET AS MEASURED ON A BEARING OF NORTH 34° 20' 30"WEST ALONG SAID SIDELINE OF FOREST AVENUE FROM ITS INTERSECTION WITH THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET, SAID POINT ALSO BEING ON THE SOUTHWESTERLY EXTENSION OF THE CENTERLINE OF THE 12 INCH PARTY WALL BETWEEN THE BUILDING ON THE PREMISES HEREIN DESCRIBED AND THE BUILDING ON THE ADJACENT PREMISES AT 501 FOREST AVENUE NOW OR FORMERLY OF
SHIRLEY M. GEORGE;

THENCE NORTH 55° 38' 30" EAST ALONG SAID EXTENSION OF, AND THROUGH THE CENTER LINE OF SAID 12 INCH PARTY WALL AND ITS EXTENSION NORTHEASTERLY, 220.04 FEET TO A POINT ON THE SOUTHWESTERLY SIDELINE OF A PRIVATE WAY KNOWN AS INDIAN LANE;

THENCE NORTH 34° 20' 00" WEST ALONG SAID SIDELINE OF INDIAN LANE 121.38 FEET TO A POINT; SAID POINT BEING ON THE EXTENSION NORTHEASTERLY OF THE CENTERLINE OF THE 12 INCH PARTY WALL BETWEEN THE BUILDING ON THE PREMISES HEREIN DESCRIBED AND THE BUILDING ON THE ADJACENT PREMISES AT 517 FOREST AVENUE NOW OR FORMERLY OF THE DARTMOUTH COMPANY, AND BEING PARCEL TWO DESCRIBED BELOW;

THENCE 55° 37' 30"WEST ALONG SAID EXTENSION O±: AND THROUGH THE CENTERLINE OF SAID 12 INCH PARTY WALL AND ITS EXTENSION SOUTHWESTERLY, 220.04 FEET TO A POINT ON THE NORTHEASTERLY SIDELINE OF SAID FOREST AVENUE;

THENCE SOUTH 34° 20' 30" EAST ALONG SAID NORTHEASTERLY SIDELINE OF FOREST AVENUE 121.38 FEET TO THE POINT OF BEGINNING.

ALSO CONVEYING ALL OF THE GRANTOR'S RIGHT, TITLE AND INTEREST IN AND TO AN UNDIVIDED ONE–HALF INTEREST IN COMMON IN THAT ADJACENT PORTION OF INDIAN LANE WHICH PORTION IS MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT MARKED BY AN IRON PIN SET ON THE SOUTHWESTERLY SIDELINE OF INDIAN LANE WHICH POINT IS LOCATED 249.13 FEET, MORE OR LESS, FROM THE INTERSECTION OF THE SOUTHWESTERLY SIDELINE OF INDIAN LANE AND THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET;

THENCE NORTHEASTERLY 20 FEET, MORE OR LESS, TO A POINT ON THE NORTHEASTERLY SIDELINE OFF INDIAN LANE;

THENCE NORTH 34° 20'WEST ALONG INDIAN LANE 121.38 FEET, MORE OR LESS, TO A POINT;

THENCE SOUTHWESTERLY 20 FEET, MORE OR LESS, TO A POINT ON THE SOUTHWESTERLY SIDELINE OFF INDIAN LANE;

THENCE SOUTH 34° 20'EAST ALONG INDIAN LANE 121.38 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

ALSO CONVEYING ALL OF THE GRANTOR'S RIGHT, TITLE AND INTEREST, IF ANY, IN AND TO THOSE PORTIONS OF FOREST AVENUE ADJACENT TO THE ABOVE DESCRIBED PREMISES.

517 FOREST AVENUE, PORTLAND

A CERTAIN LOT OR PARCEL OF LAND, WITH THE BUILDINGS AND IMPROVEMENTS THEREON, SITUATED ON THE EASTERLY SIDE OF FOREST AVENUE IN SAID PORTLAND, MAINE AND BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHEASTERLY SIDELINE OF FOREST AVENUE, SAID POINT BEING DISTANT 177.83 FEET ON A BEARING OF SOUTH 34° 20'30"EAST FROM THE SOUTHWESTERLY CORNER OF LAND NOW OR FORMERLY OF DEWEY W. COURI (FORMERLY ADAM D. MACLEAN) AND SAID POINT OF BEGINNING ALSO BEING DISTANT 313 .29 FEET ON A BEARING OF SOUTH 34° 20'30"EAST FROM THE INTERSECTION OF THE NORTHEASTERLY SIDELINE OF FOREST AVENUE WITH THE SOUTHEASTERLY SIDELINE OF BELMONT STREET;

THENCE NORTH 55° 41'EAST TO AND ALONG THE SOUTHERLY FACE OF A CONCRETE CURB 130.00 FEET TO A POINT ON THE SOUTHWESTERLY FACE OF THE GARAGE–OFFICE BUILDING ON THE PREMISES CONVEYED HEREWITH;

THENCE NORTH 34° 25'WEST ALONG THE BRICK FACE OF SAID GARAGE–OFFICE BUILDING 0.25 FEET TO A POINT;

THENCE NORTH 55° 35'30"EAST IN THE CENTER OF A 12 INCH BRICK WALL 59.80 FEET TO A POINT ON THE NORTHEASTERLY FACE OF THE SAID GARAGE–OFFICE BUILDING, SAID 12 INCH BRICK WALL BEING A PARTY WALL BETWEEN THE SAID GARAGE–OFFICE BUILDING AND THE GARAGE ON THE REMAINING LAND NOW OR FORMERLY OF COURI PONTIAC, INC.;

THENCE CONTINUING NORTH 55° 35'30"EAST 30.26 FEET TO A POINT ON THE SOUTHWESTERLY SIDE OF INDIAN LANE;

THENCE SOUTH 34° 20'EAST ALONG THE SOUTHWESTERLY SIDE OF INDIAN LANE 79.30 FEET TO A POINT;

THENCE SOUTH 55° 37'WEST 30.00 FEET TO A POINT ON THE NORTHEASTERLY FACE OF THE AFORESAID GARAGE–OFFICE BUILDING;

THENCE CONTINUING SOUTH 55° 37'WEST IN THE CENTER OFF A 12 INCH BRICK WALL 180.12 FEET TO A POINT ON THE SOUTHWESTERLY FACE OF THE SAID GARAGE–OFFICE BUILDING; SAID 12 INCH BRICK WALL BEING A PARTY WALL BETWEEN THE SAID GARAGE–OFFICE BUILDING AND THE BUILDING ON LAND NOW OR FORMERLY OF THE DARTMOUTH COMPANY, AND BEING PARCEL ONE DESCRIBED ABOVE;

THENCE CONTINUING SOUTH 55° 37'WEST 9.92 FEET TO THE NORTHEASTERLY SIDELINE OF FOREST AVENUE;

THENCE NORTH 34° 20'30"WEST ALONG THE NORTHEASTERLY SIDELINE OF FOREST AVENUE 79.18 FEET TO THE POINT OF BEGINNING, CONTAINING 17,420 SQUARE FEET.

ALSO ALL RIGHT, TITLE AND INTEREST OF GRANTOR, IF ANY, IN AND TO THAT PORTION OF FOREST AVENUE ADJACENT TO AND LYING TO THE SOUTHWEST OF THE ABOVE DESCRIBED PREMISES.

ALSO AN UNDIVIDED ONE–HALF INTEREST IN COMMON IN AND TO A CERTAIN LOT OR PARCEL OF LAND ADJACENT TO THE ABOVE DESCRIBED PREMISES, BEING A PORTION OF INDIAN LANE AND BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEASTERLY COMER OF THE ABOVE DESCRIBED PARCEL;

THENCE NORTH 34° 20'WEST ALONG THE NORTHEASTERLY BOUNDARY OF THE ABOVE DESCRIBED PREMISES 79.30 FEET TO A POINT;

THENCE NORTH 55° 35'30"EAST 20 FEET TO A POINT;

THENCE SOUTH 34° 20'EAST 79.30 FEET TO A POINT;

THENCE SOUTH 55° 3 7'30"WEST 20.00 FEET TO THE POINT OF BEGINNING.

GRANTOR HEREBY GRANTS AN EASEMENT TO GRANTEE, ITS SUCCESSORS AND ASSIGNS, FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS ACROSS AND ALONG THAT PART OF INDIAN LANE, WHICH IS BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET, SAID POINT BEING DISTANT 220 FEET NORTHEASTERLY FROM THE INTERSECTION OF THE NORTHWESTERLY SIDELINE OF DARTMOUTH STREET WITH THE NORTHEASTERLY SIDELINE OF FOREST AVENUE;

THENCE NORTH 34° 20'WEST 370.52 FEET TO THE SOUTHEASTERLY CORNER OF THE FIRST ABOVE DESCRIBED PARCEL;

THENCE CONTINUING NORTH 34° 20'WEST ALONG THE NORTHEASTERLY BOUNDARY OF THE ABOVE DESCRIBED PARCEL 79.30 FEET TO THE NORTHEASTERLY CORNER THEREOF;

THENCE NORTH 55° 35'30"EAST 20 FEET TO A POINT;

THENCE SOUTH 34° 20'EAST 449.82 FEET TO A POINT ON THE SOUTHWESTERLY SIDELINE OF DARTMOUTH STREET;

THENCE SOUTH 55° 37'30"WEST 20 FEET TO THE POINT OF BEGINNING.

ALL BEARINGS ARE MAGNETIC IN THE YEAR 1964.

525 FOREST AVENUE, PORTLAND

A CERTAIN LOT OR PARCEL OF LAND WITH THE BUILDINGS THEREON, SITUATED ON THE NORTHEASTERLY SIDE OF FOREST AVENUE IN SAID PORTLAND, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHEASTERLY SIDELINE OF FOREST AVENUE, SAID POINT BEING DISTANT 177.83 FEET ON A BEARING OF S 34° 20'30"E FROM THE SOUTHWESTERLY CORNER OF LAND NOW OR FORMERLY OF DEWEY W. COURI (FORMERLY ADAM D. MACLEAN) AND SAID POINT OF BEGINNING ALSO BEING DISTANCE 318.29 FEET ON A BEARING OF S 34° 20'30"E FROM THE INTERSECTION OF THE NORTHEASTERLY SIDELINE OF FOREST AVENUE WITH THE SOUTHEASTERLY SIDELINE OF BELMONT STREET AND ALSO BEING THE NORTHWESTERLY CORNER OF PREMISES CONVEYED BY COURI PONTIAC, INC. TO ROBERT E. ADAIR ET AT. BY DEED DATED JULY 20, 1972 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3270, PAGE 206;

THENCE N 55° 41'30"E TO AND ALONG THE SOUTHERLY FACE OF A CONCRETE CURB AND BY SAID LAND OF ADAIR ET AL. 130.00 FEET TO A POINT ON THE SOUTHWESTERLY FACE OF THE GARAGE–OFFICE BUILDING ON THE PREMISES CONVEYED TO ADAIR ET AL. AS AFORESAID;

THENCE N 34° 25'W ALONG THE BRICK FACE OF SAID GARAGE–OFFICE BUILDING 0.25 FEET TO A POINT;

THENCE N 55° 35'30"E IN THE CENTER OF A 12 INCH BRICK WALL 59.80 FEET TO A POINT ON THE NORTHEASTERLY FACE OF THE SIDE GARAGE–OFFICE BUILDING, SAID 12–INCH BRICK WALL BEING A PARTY WALL BETWEEN THE SAID GARAGE OFFICE BUILDING AND THE GARAGE ON THE WITHIN CONVEYED PREMISES;

THENCE CONTINUING N 55° 35'30"E 30.26 FEET TO A POINT ON THE SOUTHWESTERLY SIDE OF INDIAN LANE;

THENCE N 34° 20'W ALONG THE SOUTHWESTERLY SIDE OF INDIAN LANE 78.75 FEET, MORE OR LESS, TO A POINT WHICH IS AND EXTENSION N 55° 35' 30"E 30.26, MORE OR LESS, FEET FROM THE CENTER OF A 12–INCH BRICK WALL, BEING A PARTY WALL BETWEEN THE GARAGE ON THE WITHIN CONVEYED PREMISES AND THE ADJACENT BUILDING ON OTHER
LAND FORMERLY OF COURI PONTIAC, INC;

THENCE S 55° 35'30"W 30.26 FEET, MORE OR LESS, TO THE CENTER OF SAID BRICK WALL;

THENCE CONTINUING IN THE CENTER OF SAID BRICK WALL S 55° 35'30"W 59.00 FEET, MORE OR LESS, TO THE END OF SAID BRICK WALL;

THENCE S 55° 41'30"W 130.00 FEET, MORE OR LESS, TO THE NORTHEASTERLY SIDELINE OF FOREST AVENUE;

THENCE S 34° 20'30"E ALONG THE NORTHEASTERLY SIDELINE OF FOREST AVENUE 79.00 FEET, MORE OR LESS, TO THE POINT OF BEGINNING, CONTAINING APPROXIMATELY 17,400 SQUARE FEET.

ALSO ALL THE RIGHT, TITLE AND INTEREST OF GRANTOR, IF ANY, IN AND TO THAT PORTION OF FOREST AVENUE ADJACENT TO AND LYING TO THE SOUTHWEST OF THE ABOVE DESCRIBED PREMISES.

ALSO AN UNDIVIDED ONE HALF INTEREST IN COMMON IN AND TO A CERTAIN LOT OR PARCEL OF LAND ADJACENT TO THE ABOVE DESCRIBED PREMISES, BEING A PORTION OF INDIAN LANE AND BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEASTERLY CORNER OF THE ABOVE DESCRIBED PARCEL;

THENCE N 34° 20'W ALONG THE NORTHEASTERLY BOUNDARY OF THE ABOVE DESCRIBED PREMISES 78.75 FEET TO A POINT;

THENCE N 55° 35'30"E 20.00 FEET TO A POINT;

THENCE S 34° 20'E 78.75 FEET TO A POINT;

THENCE S 55° 35'30"W 20.00 FEET TO THE POINT OF BEGINNING, SUBJECT TO AN EASEMENT FOR VEHICULAR AND PEDESTRIAN PASSAGE OF THE DARTMOUTH COMPANY, AND SUCH OTHER ABUTTERS ON INDIAN LANE AS MAY HAVE SIMILAR RIGHTS OF RECORD, AND THEIR RESPECTIVE SUCCESSORS AND ASSIGNS AND THE DUTY TO DEEP INDIAN LANE IN A
REASONABLE STATE OF REPAIR AS MORE SPECIFICALLY PROVIDED HEREIN.

THIS CONVEYANCE IS MADE SUBJECT TO AND WITH THE BENEFIT OF THE TERMS AND CONDITIONS OF AN AGREEMENT BETWEEN COURI PONTIAC, INC. AND DARTMOUTH REAL ESTATE COMPANY DATED AUGUST 18, 1970 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3139, PAGE 689, TO THE EXTENT SAID TERMS AND
CONDITIONS AFFECT OR PERTAIN TO THE WITHIN DESCRIBED PREMISES. THE DUTIES OF DARTMOUTH REAL ESTATE COMPANY UNDER SAID AGREEMENT WERE TRANSFERRED TO BOULEVARD ASSOCIATES, INC. BY DARTMOUTH REAL ESTATE COMPANY BY DEED DATED DECEMBER 10, 1971 AND RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 3204, PAGE
373.

533 FOREST AVENUE, PORTLAND

A CERTAIN LOT OR PARCEL OF LAND, WITH THE BUILDINGS AND IMPROVEMENTS THEREON, SITUATED ON THE EASTERLY SIDE OF FOREST AVENUE IN SAID PORTLAND AND BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A STAKE ON THE EASTERLY SIDE OF FOREST AVENUE DISTANT SOUTHERLY NINETY AND THIRTY SIX HUNDREDTHS (90.36) FEET FROM A DRILL HOLE MARKING THE INTERSECTION OF SAID EASTERLY SIDE OF FOREST AVENUE WITH THE SOUTHERLY SIDE OF BELMONT STREET;

THENCE EASTERLY MAKING AN EXCLUDED ANGLE WITH FOREST AVENUE OF 96° 22'AND BY AN EXISTING CHAIN LINK FENCE SEVENTY NINE AND SEVENTY FOUR HUNDREDTHS (79. 74) FEET TO AN ANGLE IN SAID FENCE;

THENCE SOUTHERLY AND MAKING AN INCLUDED ANGLE WITH THE LAST DESCRIBED COURSE OF 88° 32'30"AND BY SAID FENCE FIFTY SEVEN (57) FEET, MORE OR LESS, TO LAND NOW OR FORMERLY OF THE DARTMOUTH REAL ESTATE CO.;

THENCE WESTERLY BY SAID DARTMOUTH REAL ESTATE CO. LAND SEVENTY FIVE (75) FEET, MORE OR LESS, TO FOREST AVENUE;

THENCE NORTHERLY BY SAID FOREST AVENUE, FIFTY (50) FEET, MORE OR LESS, TO THE POINT OF BEGINNING. SUBJECT TO ANY AND ALL EXISTING RIGHTS OF THE CITY OF PORTLAND IN AND TO SAID PREMISES FOR SEWER AND OTHER PURPOSES.

537 FOREST AVENUE, PORTLAND

A CERTAIN LOT OR PARCEL OF LAND, WITH THE BUILDINGS THEREON, SITUATED ON THE NORTHEASTERLY SIDE OF FOREST AVENUE, IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHWESTERLY SIDELINE OF FOREST AVENUE, SAID POINT BEING THE SOUTHWESTERLY CORNER OF LAND NOW OR FORMERLY OF DEWEY W. COURI (FORMERLY ADAM D. MAC LEAN) AND SAID POINT BEING DISTANT 140.46 FEET ON A BEARING OF S 34° 20'30"E FROM THE INTERSECTION OF THE NORTHEASTERLY SIDELINE OF FOREST AVENUE WITH THE SOUTHEASTERLY SIDELINE OF BELMONT STREET; THENCE N 65° 49'30"E ALONG SAID LAND NOW OR FORMERLY OF DEWEY W. COURI 72.76 FEET TO A POINT;

THENCE S 23° 09'30"E ALONG LAND NOW OR FORMERLY OF GEORGE DAVID COREY, ET AL., 4.67 FEET TO A POINT;

THENCE N 55° 37' 00"E (INCORRECTLY WRITTEN N 55° 3 7" E IN TITLE) ALONG SAID LAND NOW OR FORMERLY OF GEORGE DAVID COREY, ET AL., AND ALONG OTHER LAND NOW OR FORMERLY OF DARTMOUTH REAL ESTATE COMPANY AND ALONG LAND NOW OR FORMERLY OF SIDNEY GINSBERG, ET AL., 167.21 FEET TO A POINT (THIS LINE RUNS ALONG OR NEAR THE OUTSIDE FACE OF THE GARAGE–OFFICE BUILDING ON THE PREMISES CONVEYED HEREWITH); THENCE S 23° 09'30"E ALONG LAND NOW OR FORMERLY OF EUGENE GLICKSTEIN, ET AL., 37.59 FEET TO A POINT;

THENCE S 51° 28'30"W, 10.60 FEET TO A POINT;

THENCE S 34° 20'E ALONG THE SOUTHWESTERLY SIDE OF INDIAN LANE, 43.85 FEET, MORE OR LESS, TO A POINT WHICH IS THE EXTENSION N 55° 35'30"E, 30.26 FEET, MORE OR LESS, FROM THE CENTER OF A 12 INCH BRICK WALL, BEING A PARTY WALL BETWEEN THE BUILDING ON THE WITHIN CONVEYED PREMISES AND THE GARAGE BUILDING ON ADJACENT PREMISES NOW OR FORMERLY OF THE DARTMOUTH COMPANY;

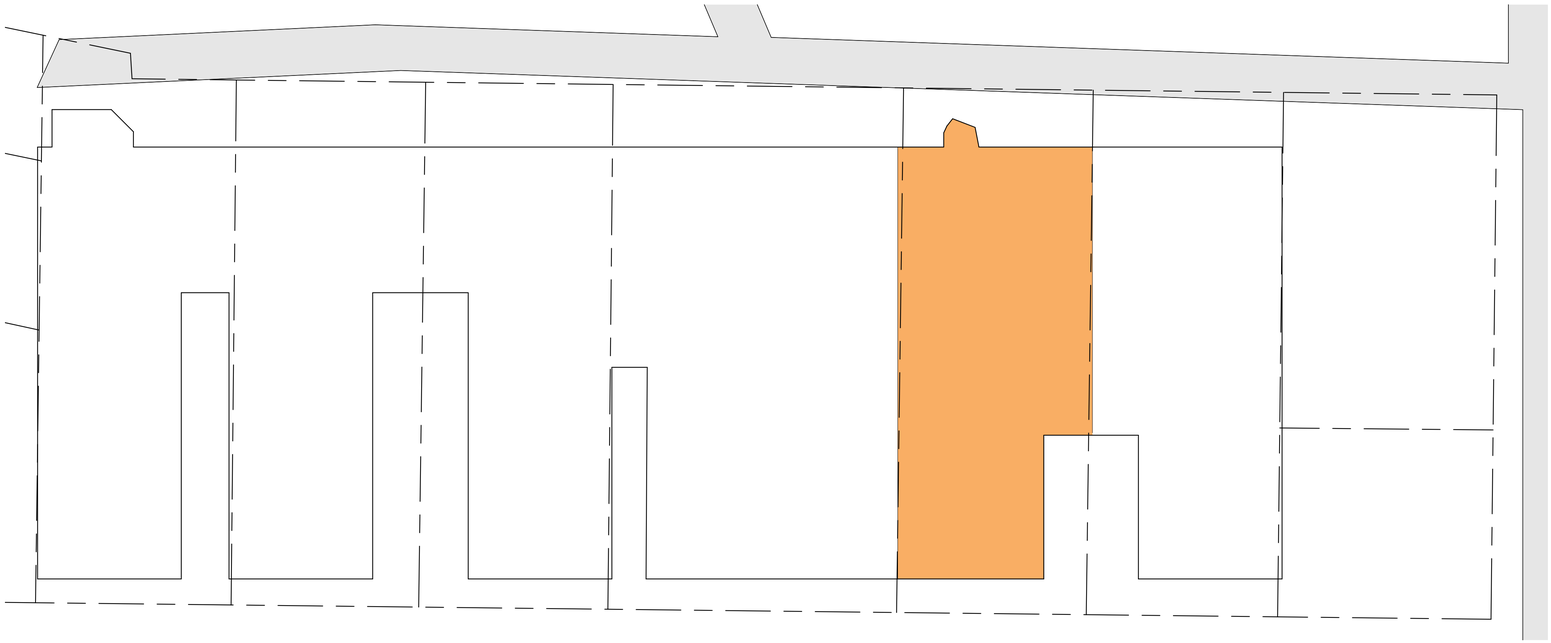
THENCE S 55° 35'30"W, 30.26 FEET, MORE OR LESS, TO THE CENTER OF SAID BRICK WALL;

THENCE CONTINUING IN THE CENTER OF SAID BRICK WALL S 55° 35'30"E, 59 FEET, MORE OR LESS, TO THE END OF SAID BRICK WALL;

501 FOREST AVE

501 FOREST AVE, PORTLAND, ME





1 501 FOREST AVENUE SITE PLAN

1" = 30'-0" 0 7'-6" 15'-0" 30'-0" 60'-0"

architecture invivid

DATE OF ISSUE

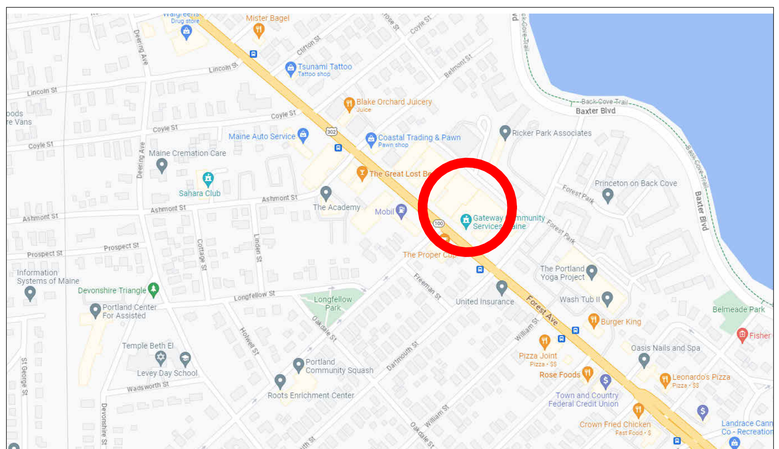
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DRAWING LIST

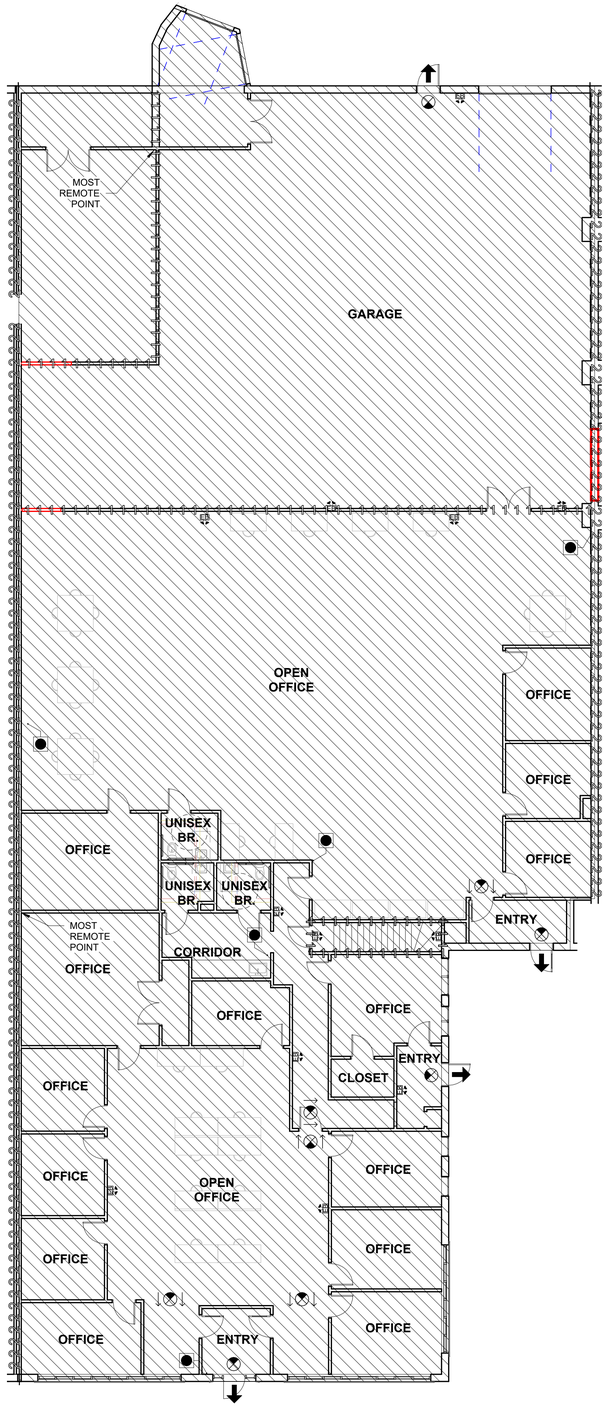
ARCHITECTURAL DRAWINGS -501		A0.10	501 - DOOR SCHEDULE & SECTION
A0.01	501 - COVER SHEET	A0.11	501 - WALL & CEILING TYPES
A0.02	501 - LIFE SAFETY		
A0.03	501 - LIFE SAFETY		
A0.04	501 - CODE STUDY		
A0.05	501 - ACCESSIBILITY STANDARDS		
A0.06	501 - EXISTING FLOOR PLAN		
A0.07	501 - PROPOSED FLOOR PLAN		
A0.08	501 - RCP PLANS		
A0.09	501 - ELECTRICAL PLANS		

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Architect:
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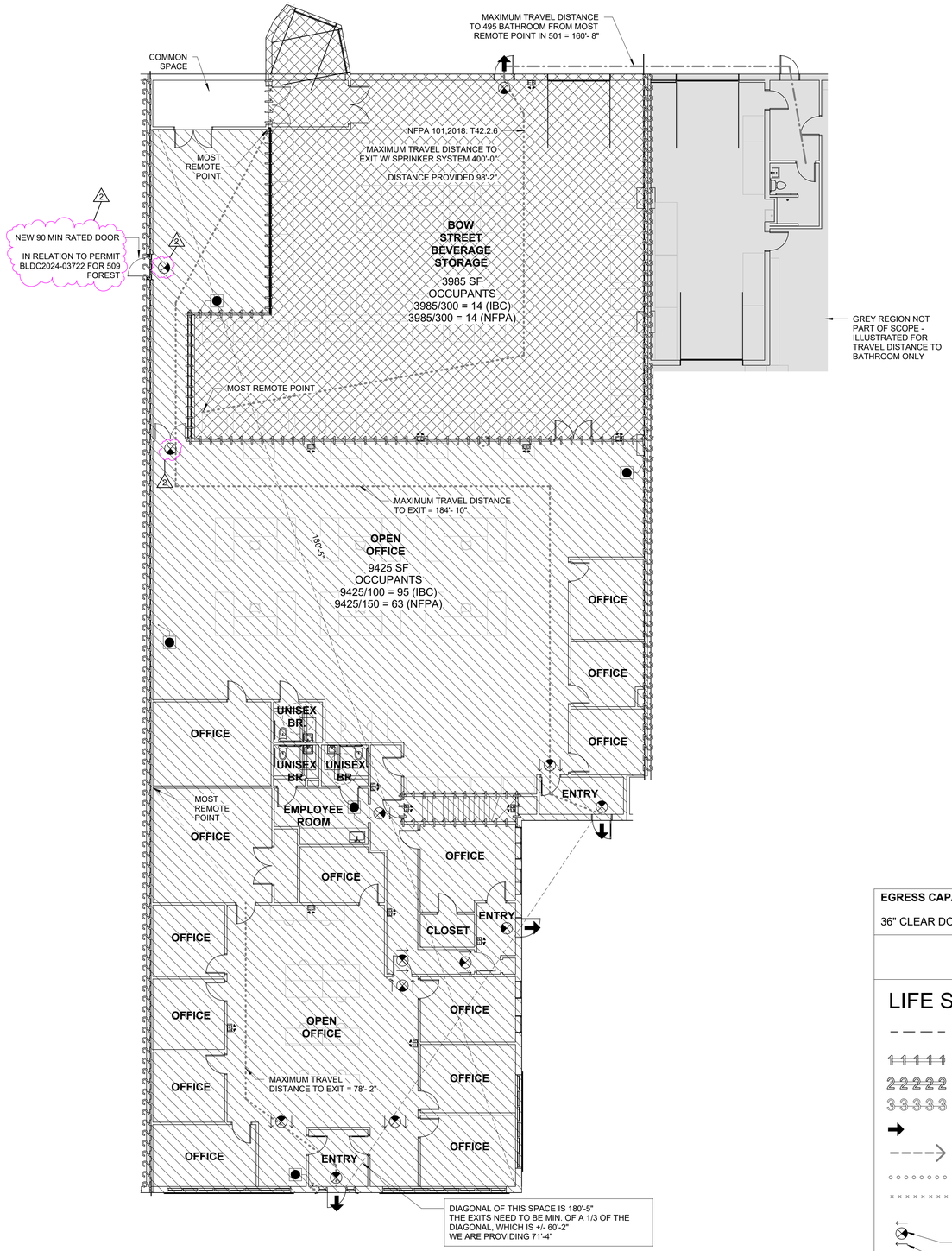


LOCATION MAP NOT TO SCALE



1 501 - FIRST FLOOR - EXISTING LIFE SAFETY

1" = 10'-0"



2 501 - FIRST FLOOR - PROPOSED LIFE SAFETY

1" = 10'-0"

EGRESS CAPACITY

36" CLEAR DOOR - 0.2 IN / PERSON - 180 PEOPLE

TOTAL = 180 PEOPLE

LIFE SAFETY LEGEND

- EXIT ACCESS REMOTENESS
- 1 HR PARTITION
- 2 HR PARTITION
- 3 HR PARTITION
- EXIT ENTRANCE OR DISCHARGE
- UNIT TRAVEL DISTANCE
- DEAD END CORRIDOR DISTANCE
- TRAVEL DISTANCE FROM MOST REMOTE POINT TO EXIT DISCHARGE
- EXIT SIGN
- EXIT SIGN DISPLAY SURFACE
- EXIT SIGN INDICATOR DIRECTION
- FIRE EXTINGUISHER CABINET
- EMERGENCY LIGHTING

architecture invivid
631 Stevens Ave Ste #200
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LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

Owner/Client:

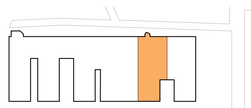
Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

2	03/19/24	Revision 2

Key Plan:

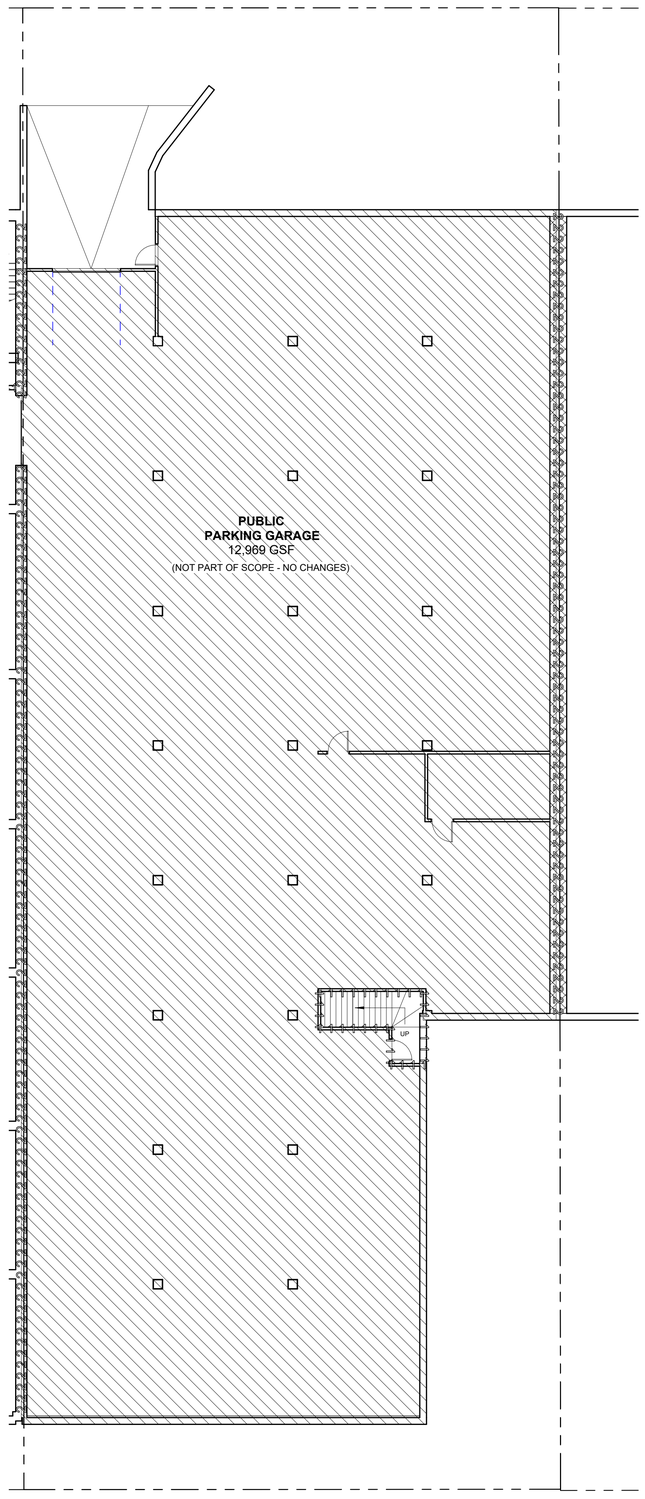


501 - LIFE SAFETY

Scale: As indicated

MARCH 19, 2024

A0.02



EGRESS CAPACITY

36" CLEAR DOOR - 0.2 IN / PERSON - 180 PEOPLE

TOTAL = 180 PEOPLE

LIFE SAFETY LEGEND

- EXIT ACCESS REMOTENESS
- 1 HR PARTITION
- 2 HR PARTITION
- 3 HR PARTITION
- EXIT ENTRANCE OR DISCHARGE
- UNIT TRAVEL DISTANCE
- DEAD END CORRIDOR DISTANCE
- TRAVEL DISTANCE FROM MOST REMOTE POINT TO EXIT DISCHARGE
- EXIT SIGN
- EXIT SIGN DISPLAY SURFACE
- EXIT SIGN INDICATOR DIRECTION
- FIRE EXTINGUISHER CABINET
- EMERGENCY LIGHTING

1 501 - BASEMENT LIFE SAEFTY

3/32" = 1'-0"

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LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

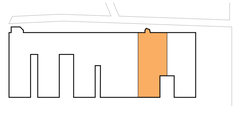
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - LIFE SAFETY

Scale: As indicated

MARCH 19, 2024

A0.03

CODE SUMMARY

APPLICABLE CODES:

1. MUBEC - Maine Uniform Building and Energy Code is made up of the following codes and standards. Maine has adopted the national codes and standards with amendments:
   a. 2015 International Building Code - IBC
   b. 2015 International Existing Building Code - IEBC
   c. 2021 International Energy Conservation Code - IECC
   d. 2015 International Mechanical Code - IMC
2. American Society of Heating, Refrigerationand Air Conditioning Engineers (ASHRAE) Standards:
   a. 62.1 - 2016 (Ventilation for Acceptable Indoor Air Quality)
   b. 90.1 (Energy Standard for Buildings except Low-Rise Residential Buildings) editions without addenda.
3. Maine Plumbing Code (Uniform Plumbing Code - 2021)

- 2018 NFPA 101 Life Safety (as adopted by State of Maine Fire Code)

Accessibility Codes
- State of Maine Human Rights Act
- ADAAG Americans with Disabilities Act
- ICC ANSI 117.1, 2009 Accessible and Usable Buildings and Facilities

PROJECT SUMMARY:

501 Forest Avenue, situated in Portland, is an existing single story building with a basement. The building is construction type 5B, it is has a sprinkler system installed. The building is currently used as an office spaces with interior parking in the rear. The building will have offices in the same location, and the parking in the rear will become mercantile storage for Bow Street Beverage, the mercantile business next door. The office space will remain the same with the exception to two new corridors in the rear.

Total Building SQFT: 13,386 SQFT

Total SQFT Utilized by Business: 13,386 SQFT

BUSINESS

501 FOREST - OCCUPANCY CALCULATIONS

*OCCUPANCY BASED ON TABLE 1004.1.2, IBC 2015 & NFPA 7.3.1.2

FIRST FLOOR

ASSEMBLY AREAS	TOTAL (S.F.)	CALC. OCCUPANTS
BUSINESS 100 SQ. FT. GROSS/OCCUPANT	**9,425 S.F.**	**95**

501 FOREST - FIXTURE CALCULATIONS

*FIXTURE CALCULATIONS BASED ON TABLE 422.1, UPC 2021

BUSINESS SPACE - TOTAL OCCUPANT LOAD (BUSINESS): **95**

ASSEMBLY AREAS	OCCUPANTS	FIXTURES REQUIRED	FIXTURES PROVIDED
BUSINESS (B) **(SPACE IS DECREASING IN SIZE)**	**95 TOTAL:** **48 MEN** **48 WOMEN**	**WATER CLOSETS = 1M, 3F** **URINALS = 1** **LAVATORIES = 1M, 1F** **DRINKING FOUNTAINS = 1** **SERVICE SINK = 1**	**WATER CLOSETS = 3M/F** **URINALS = 0** **LAVATORIES = 3M/F** **DRINKING FOUNTAINS = 1** **SERVICE SINK = 1**

MERCANTILE

495 FOREST - OCCUPANCY CALCULATIONS

*OCCUPANCY BASED ON TABLE 1004.1.2, IBC 2015 & NFPA 7.3.1.2

FIRST FLOOR

ASSEMBLY AREAS	TOTAL (S.F.)	CALC. OCCUPANTS
MERCANTILE IBC: 60 SQ. FT. GROSS/OCCUPANT NFPA: 30 SQ. FT. GROSS/OCC.	**5,703 S.F.**	IBC: **96** NFPA: **191**
MERCANTILE STORAGE 300 SQ. FT. GROSS/OCCUPANT (EXISTING - 495 FOREST)	**7425 S.F.**	**25**
MERCANTILE STORAGE 300 SQ. FT. GROSS/OCCUPANT (ADT. (PROPOSED) - 501 FOREST)	**3,985 S.F.**	**14**

495 FOREST - FIXTURE CALCULATIONS

*FIXTURE CALCULATIONS BASED ON TABLE 422.1, UPC 2021

MERCANTILE SPACE & STORAGE - OCCUPANT LOAD: 121 (495 FOREST(M)) + 14 (501 FOREST (S1))
TOTAL OCCUPANT LOAD: 135

ASSEMBLY AREAS	OCCUPANTS	FIXTURES REQUIRED	FIXTURES PROVIDED
MERCANTILE (M) (NO CHANGES TO MERCANTILE SPACE - ADDITION OF STORAGE @ 501 FOREST)	**135 TOTAL:** **68 MEN** **68 WOMEN**	**WATER CLOSETS = 1M, 1F** **URINALS = 0** **LAVATORIES = 1M, 1F** **DRINKING FOUNTAINS = 1** **SERVICE SINK = 1**	**WATER CLOSETS = 3M/F** **URINALS = 0** **LAVATORIES = 3M/F** **DRINKING FOUNTAINS = 0** **SERVICE SINK = 1**

501 FOREST CODE

	IBC 2015		NFPA 101 2018	
1 Floors Above Grade	502.1			
Sprinklers		NFPA 13		NFPA 13
Fire Alarm		Monitored Fire Alarm Required		Monitored Fire Alarm Required
Smoke and CO Detectors		Smoke and CO Detectors Required		Smoke and CO Detectors Required
Occupant Load	T 1004.1.1		7.3.1.2	
		Floor 1 = 9,425 SF B (Office) (100 GSF/OC) = 95		Floor 1 = 9,425 SF Business (150 GSF/OC) = 63
		Floor 1 = 3,985 SF S2 (Alcohol Storage) (300 GSF/OC) = 14		Floor 1 = 3,985 SF Storage (300 GSF/OC) = 14
		Total Building Occupant Load = 109		**Total Building Occupant Load = 77**
Use Group(s)	304.1	B - Business	39.1	Existing Mercantile
	311.3	S-2 - Storage	42.1	Storage, Ordinary Hazard
Construction Type, B & 1	T 503	5B - combustible protected		5 (000) combustible protected
Building Height	T 504.3	Sprinkler NFPA13 = 60' max. For B, M, S2		
Number of Stories	T 504.4	B = 1 Story with sprinkler < 3 allowable		
		S2 = 1 Story with sprinkler < 3 allowable		
Building Area	T 506.2	Sprinkler 13 = 36,000 SF max per floor		
		Current: 9,425 + 3,985 SF < 36,000 SF allowable		
Building Elements 5B	T 601	0 HR Structural Frame		
	T 602	0 HR Bearing Walls Exterior (sep. distance ≥ 10')		
	T 602	0 HR Bearing Walls Exterior (sep. distance < 10')		
	T 601	0 HR Bearing Walls Interior		
	T 601	0 HR Non-Bearing Walls Interior		
	T 602	0 HR Non-Bearing Walls Exterior (sep. distance ≥ 10')		
	T 602	0 HR Non-Bearing Walls Exterior (sep. distance < 10')		
	705.5	Exterior Wall with > 10' sep. needs rating only from inside		
	T 601	0 HR Floor Construction		
	T 601	0 HR Roof Construction		
Separations	T 508.4	B & S2 (Sprinkled) = 1 hr	T6.1.14.4.1	Business & Storage, Ordinary Hazard (Sprinkled) = 2 hr
	713.4	1 HR....Mechanical Shaft < 4 stories		
	1022.1	1 HR....Stair Shaft < 4 stories		
	1020.1	0 HR....Corridor	30.2.4.4.7	1 HR Corridor
Distances and Exits	1017.2	300' Travel Distance to Exits w/ Sprinklers	39.2.6.2	200' Travel Distance from any point to Exit
			39.2.6.3	300' Travel Distance from any point to Exit w/ sprinkler system
	1006.2.1	100' Common Path of Travel For Use	39.2.4.5	100' Common Path of Travel w/ sprinkler system
	1020.4	50' Dead End	39.2.5.2	50' Dead End
Unprotected Openings	T 705.8	15% When Exterior Wall Sep. Dist. Is 3' > 5'		
	T 705.8	25% When Exterior Wall Sep. Dist. Is 5' > 10'		
	T 705.8	45% When Exterior Wall Sep. Dist. Is 10' > 15'		
	T 705.8	75% When Exterior Wall Sep. Dist. Is 15' > 20'		
	T 705.8	Unlimited When Exterior Wall Sep. Dist. Is 25' > 30'		
	T 705.8	Unlimited When Exterior Wall Sep. Dist. Is > 30'		
Egress Stairs	1009.1	Occ. Load > 50 = 44" Min. Width		
	1003.3	Handrails Can Protrude into Stair 4.5" Max.	7.2.2.2.1.2	Handrails Can Protrude Into Stair 4 1/2" Max.
	1005.2	Door Swings May Not Reduce Egress Width by > 50%		
	1009.2	80" Min. Headroom	7.2.2.2.1.2 (b)	6'-8" Min. Headroom
	1009.3	7" Max. Riser	7.2.2.2.1.2 (b)	8" Max. Riser
	1009.3	11" Min. Tread Depth	7.2.2.2.1.2 (b)	9" Min. Tread
	1009.6	12' Max. Total Rise Between Floors or Landings	7.2.2.2.1.2 (b)	12' Max. Height Between Landings
Ramps	1010.2	1:12 (8%) Max. Slope	7.2.5.2 (a)	1:8 Max. Slope
	1010.6	60" Long Landings at Top and Bottom		
	1010.6	2% Max. Slope of Landings	7.2.5.2 (a)	1:48 Max. Cross Slope
	1010.8	> 6" Rise Must Have Handrails on Both Sides of Ramp		
Egress Corridors	1018.2	44" Min. When Occ. > 50		
	1018.2	24" Min. at Service Corridors to Mechanical Equipment		
Sound	1207.2	STC > 50 at Walls, Floors, and Ceilings		
	1207.3	IIC > 50 at Walls, Floors, and Ceilings		

495 FOREST CODE

Occupant Load	T 1004.1.1		7.3.1.2	
		Floor 1 = 5,704 SF M (60 GSF/OC) = 95		Floor 1 = 5,704 SF Mercantile (30 GSF/OC) = 190
		Floor 1 = 7,425 SF S2 (Alcohol Storage) (300 GSF/OC) = 25		Floor 1 = 7,425 SF Storage (300 GSF/OC) = 25
		Total Building Occupant Load = 120		Total Building Occupant Load = 215

architecture invivid
631 Stevens Ave Ste #200
Portland, ME 04103
207 - 939 - 7602

LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

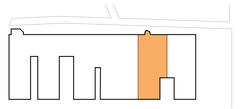
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - CODE STUDY

Scale: As indicated

MARCH 19, 2024

A0.04

NOTE: ALL REFERENCES ARE TO THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN UNLESS NOTED OTHERWISE

CHAPTER 3: BUILDING BLOCKS



LONG DIMENSION PERPENDICULAR TO DIRECTION OF TRAVEL

PREDOMINANT DIRECTION OF TRAVEL

FIG. 302.3 - OPENINGS IN FLOOR OR GROUND SURFACES



FIG. 303.2 - VERTICAL CHANGES IN LEVEL



FIG. 303.3 - BEVELED CHANGES IN LEVEL

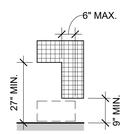


FIG. 306.2 - TOE CLEARANCE

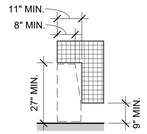


FIG. 306.3 - KNEE CLEARANCE

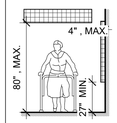


FIG. 307.2 - LIMITS OF PROTRUDING OBJECTS

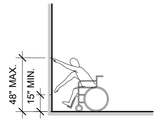


FIG. 308.2.1 - UNOBSTRUCTED FORWARD REACH

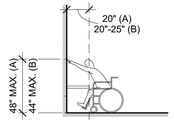


FIG. 308.2.2 - OBSTRUCTED HIGH FORWARD REACH

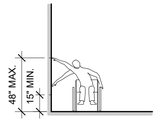


FIG. 308.3.1 - UNOBSTRUCTED SIDE REACH

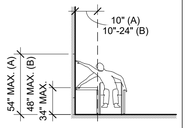
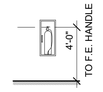


FIG. 308.3.2 - OBSTRUCTED SIDE REACH



FIRE EXTINGUISHING CABINET MOUNTING HEIGHT

CHAPTER 4: ACCESSIBLE ROUTES

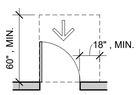
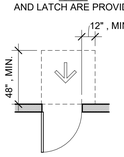
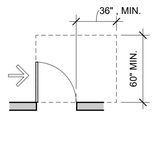


FIG. 404.2.4.1 - MANUEVERING CLEARNACE AT SWING DOOR

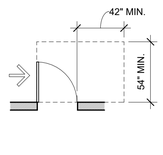
(A) FRONT APPROACH, PULL SIDE



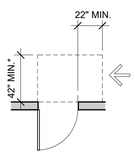
(B/C) FRONT APPROACH, PUSH SIDE



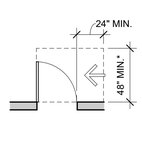
(D) HINGE APPROACH, PULL SIDE



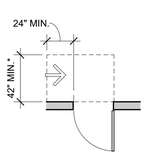
(E) HINGE APPROACH, PULL SIDE



(F/G) HINGE APPROACH, PULL SIDE



(H/I) LATCH APPROACH, PULL SIDE



(J/K) LATCH APPROACH, PUSH SIDE

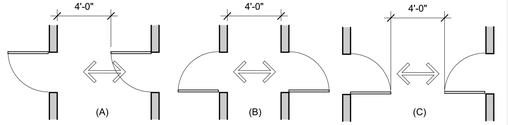
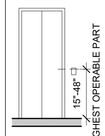


FIG. 404.2.6

TWO DOORS IN A SERIES



(REF. 407.2.2) ELEV. CALL BUTTONS

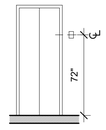


FIG. 407.2.2.2 HEIGHT OF ELEV. VISIBLE SIGNALS

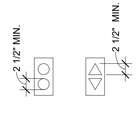


FIG. 407.2.2.2 SIZE OF ELEV. VISIBLE SIGNALS

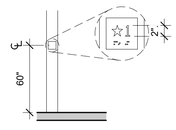


FIG. 407.2..3.1 TACTILE CHARACTERS ON ELEV. HOISTWAY ENTRANCES

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

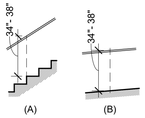


FIG. 505.4.

HANDRAIL HEIGHT
(A) STAIRS
(B) RAMPS



PER NFPA 101 HANDRAIL CLEARANCE

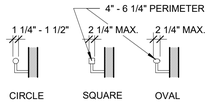


FIG. 505.6 FIG. 505.7

HANDRAIL CROSS SECTION

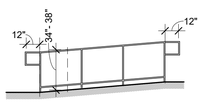


FIG. 505.10.1

TOP AND BOTTOM HANDRAIL EXTENSIONS AT RAMPS

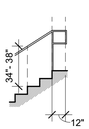


FIG. 505.10.2

TOP HANDRAIL EXTENSION AT STAIRS

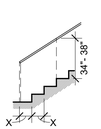


FIG. 505.10.3

BOTTOM HANDRAIL EXTENSION AT STAIRS

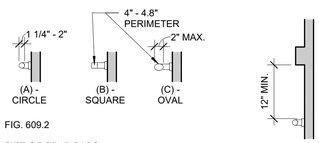


FIG. 609.2

SIZE OF GRAB BARS

(A) CIRCULAR
(B) AND (C) NON CIRCULAR

FIG. 609.3

SPACING OF GRAB BARS

CHAPTER 6: PLUMBING ELEMENTS AND FACILITIES

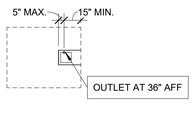


FIG. 602.5

DRINKING FOUNTAIN SPOUT LOCATION

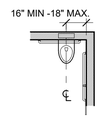


FIG. 604.2

WATER CLOSET LOCATION

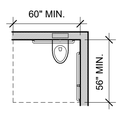


FIG. 604.3.1

SIZE OF CLEARANCE FOR WATER CLOSET

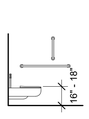


FIG. 604.4

HEIGHT TO TOP OF SEAT

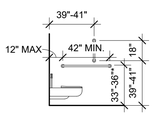


FIG. 604.5.1

SIDE WALL GRAB BAR FOR WATER CLOSET

* TO TOP OF GRAB BAR

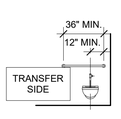


FIG. 604.5.2

REAR WALL GRAB BAR FOR WATER CLOSET

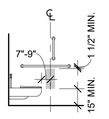


FIG. 604.7

TOILET PAPER DISPENSER LOCATION



FIG. 605.2

HEIGHT OF URINALS

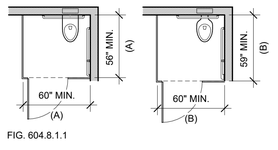


FIG. 604.8.1.1

WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS

(A) WALL-HUNG WATER CLOSET
(B) FLOOR-MOUNTED WATER CLOSET

FIG. 604.8.1.4

TOILET CAMPARTMENT TOES CLEARANCE

(A) ELEVATION
(B) PLAN

FIG. 604.8.1.2

TOILET COMPARTMENT DOORS

FIG. 606.3 - HEIGHT OF LAVATORIES AND SINKS

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VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

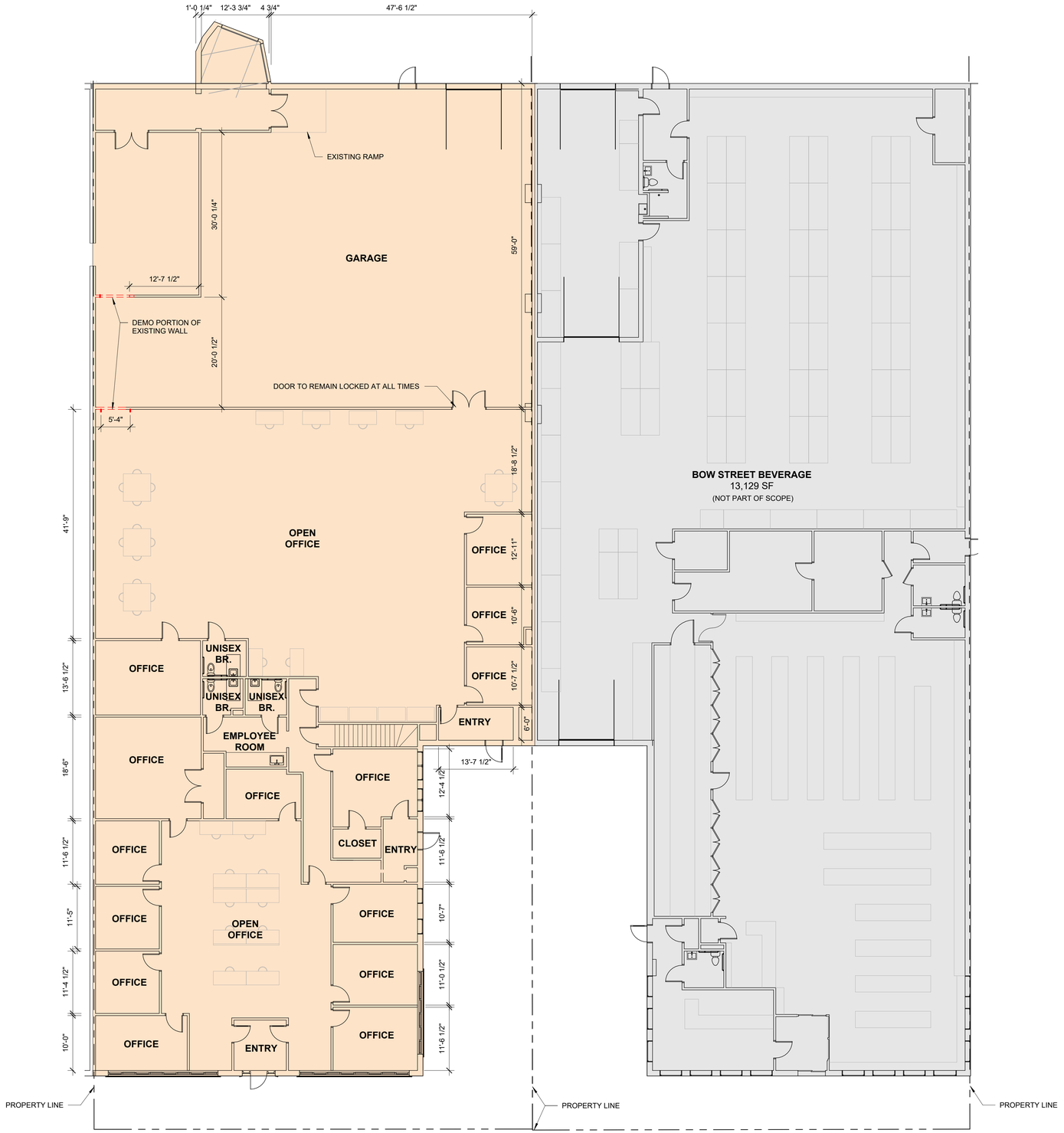
Key Plan:

501 - ACCESSIBILITY STANDARDS

Scale: As indicated

MARCH 19, 2024

A0.05



1 | 501 - FIRST FLOOR - EXISTING / DEMO

1" = 10'-0"

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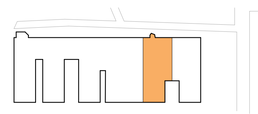
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Key Plan:

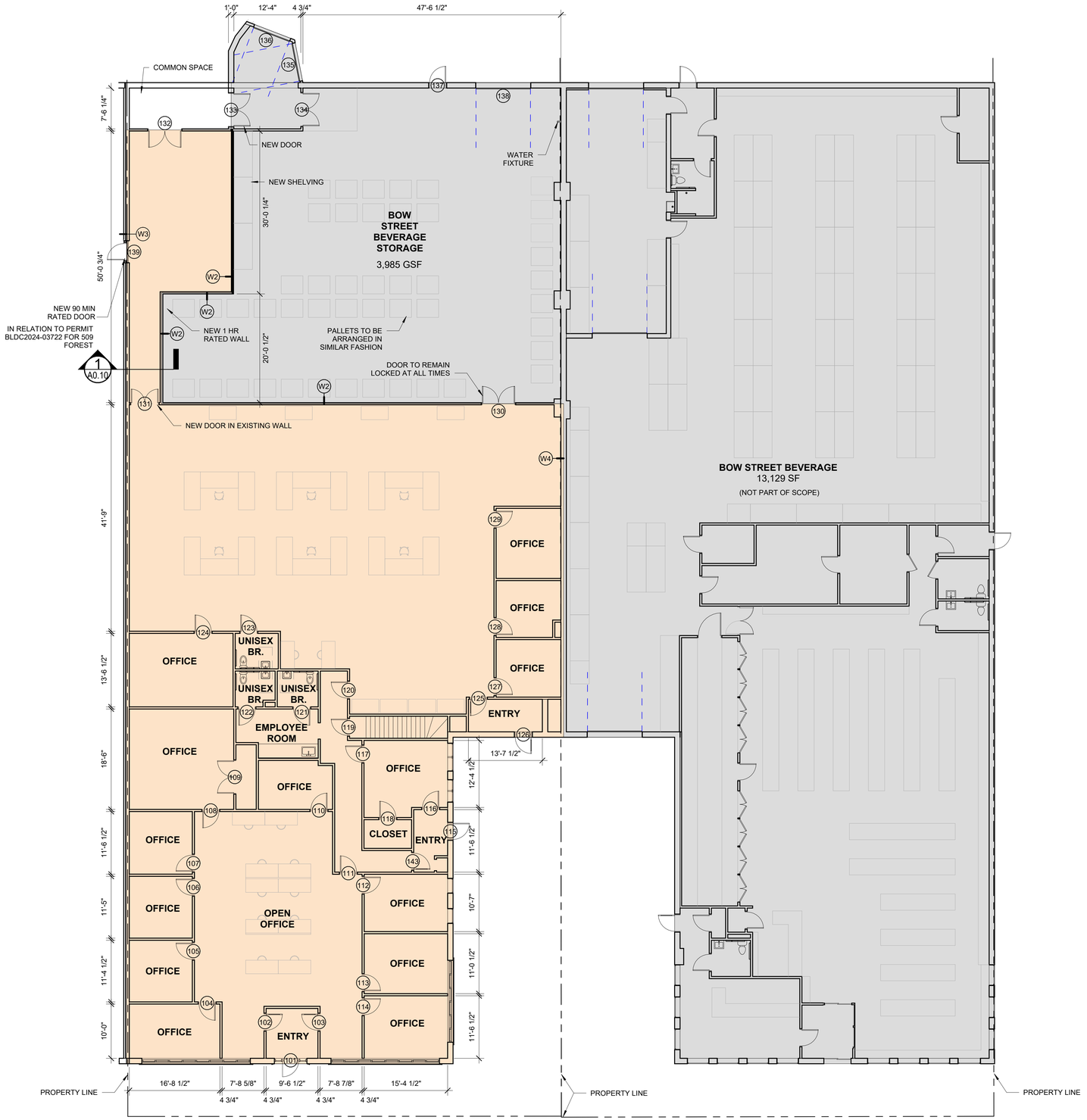


501 - EXISTING FLOOR PLAN

Scale: As indicated

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A0.06



1 | 501 - FIRST FLOOR - PROPOSED

1" = 10'-0"

NOTE: NEW WORK ILLUSTRATED IN RED.

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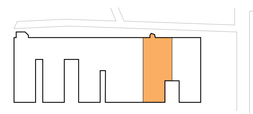
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Revisions:

Key Plan:

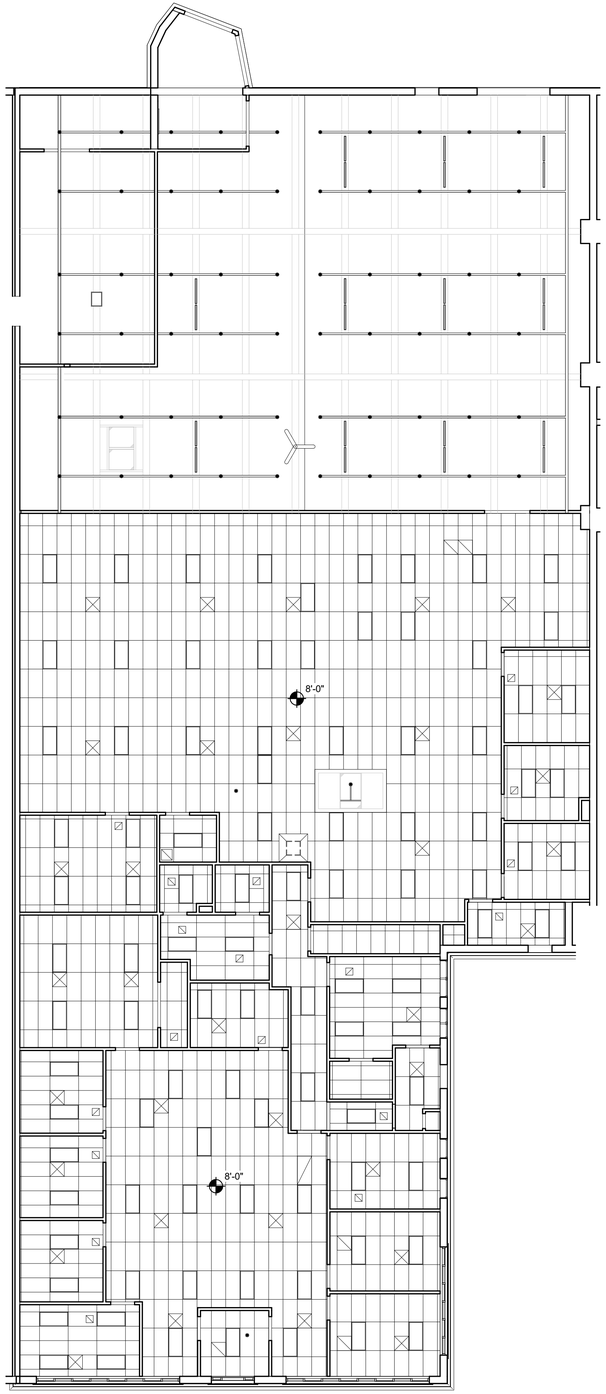


501 - PROPOSED FLOOR PLAN

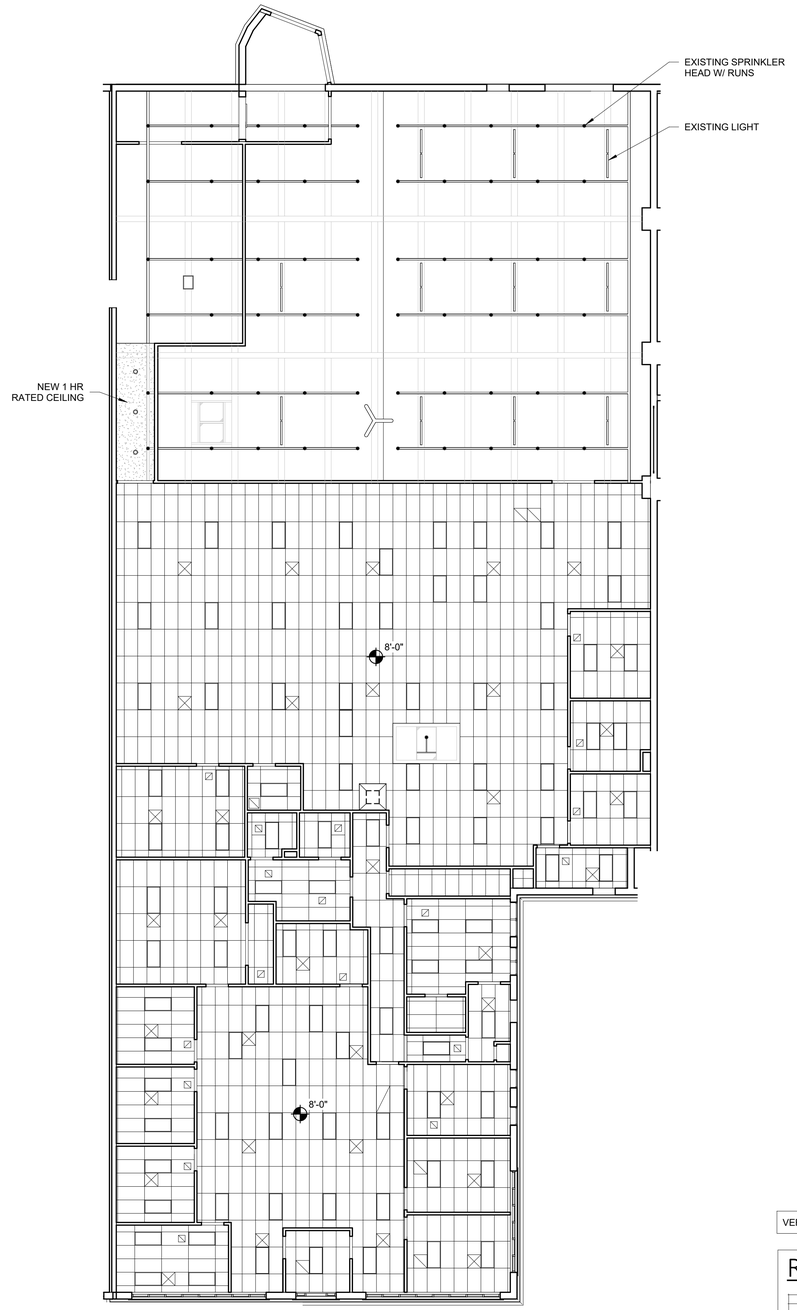
Scale: As indicated

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A0.07



1 501 - FIRST FLOOR - EXISTING RCP
1" = 10'-0"



2 501 - FIRST FLOOR - PROPOSED RCP
3/32" = 1'-0"

VERIFY MECHANICAL LOCATIONS IN FIELD

RCP LEGEND

- GYPSUM SOFFIT - SEE RCP FOR HEIGHT
- LIGHT FIXTURE - PENDANT
- LIGHT FIXTURE - PENDANT
- LIGHT FIXTURE - 2'X4' CEILING MOUINTED
- LIGHT FIXTURE - 2'X2' CEILING MOUINTED
- LIGHT FIXTURE - 1'X4' CEILING MOUINTED
- AIR RETURN - 2'X2'
- AIR RETURN - 2'X4'
- AIR SUPPLY - 2'X2'
- LIGHT FIXTURE - TRACK LIGHTS

RCP LEGEND
1" = 10'-0"

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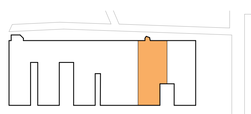
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Consultant:

Revisions:

Key Plan:

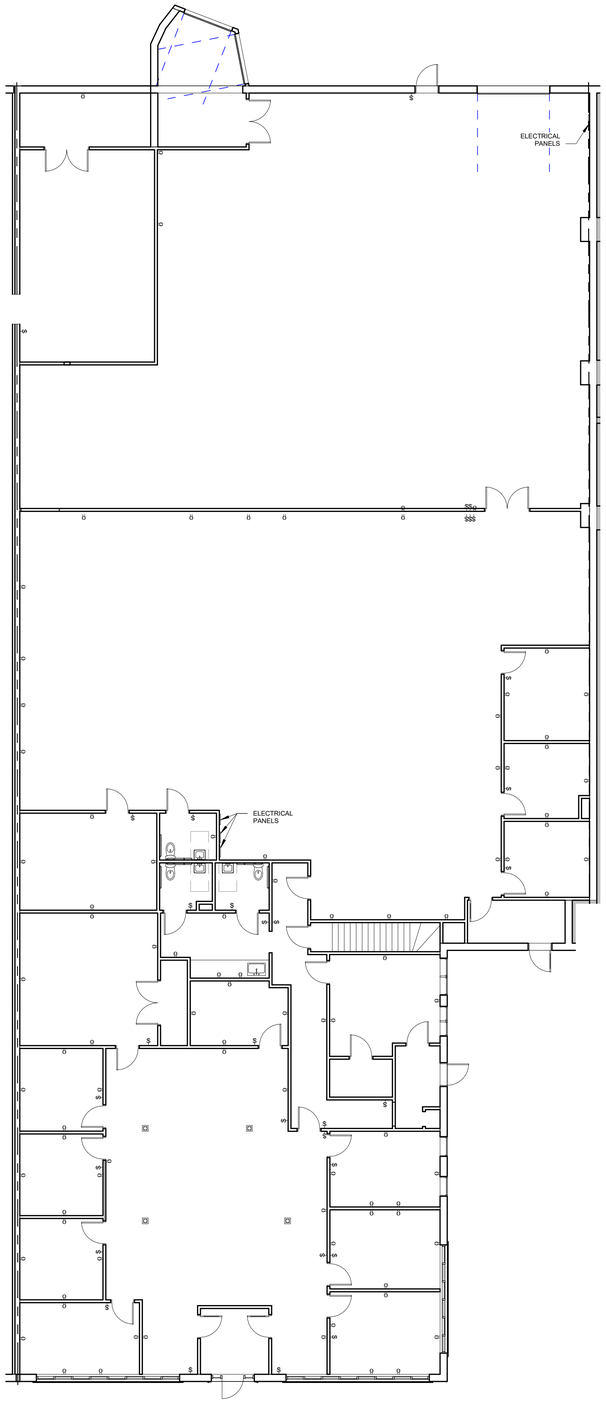


501 - RCP PLANS

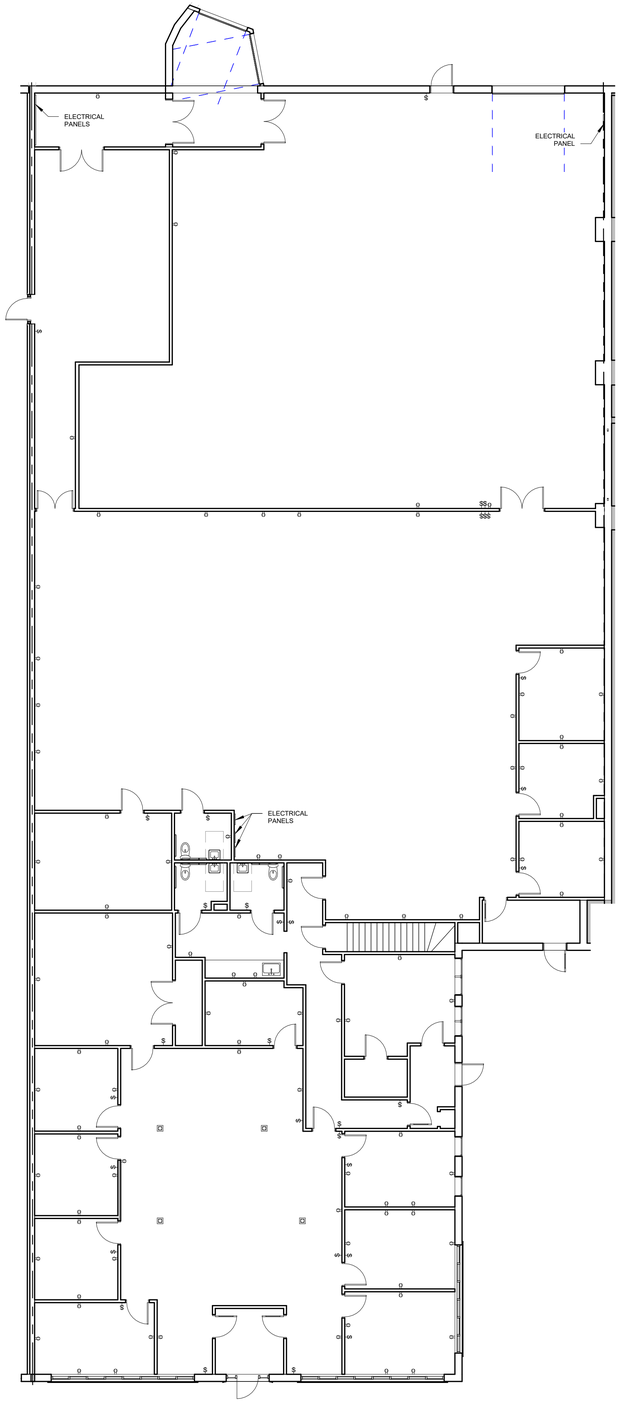
Scale:
As indicated

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A0.08



1 | 501 - FIRST FLOOR - EXISTING ELECTRICAL PLAN
1" = 10'-0"



2 | 501 - FIRST FLOOR - PROPOSED ELECTRICAL PLAN
1" = 10'-0"

VERIFY LIGHTING LOCATIONS IN FIELD

ELEC. PLAN LEGEND

- $ LIGHT SWITCH
- OUTLET
- WIRE COLUMN OUTLET

ELECTRICAL PLAN LEGEND
1" = 10'-0"

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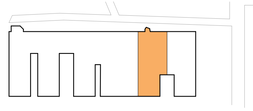
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Revisions:

Key Plan:

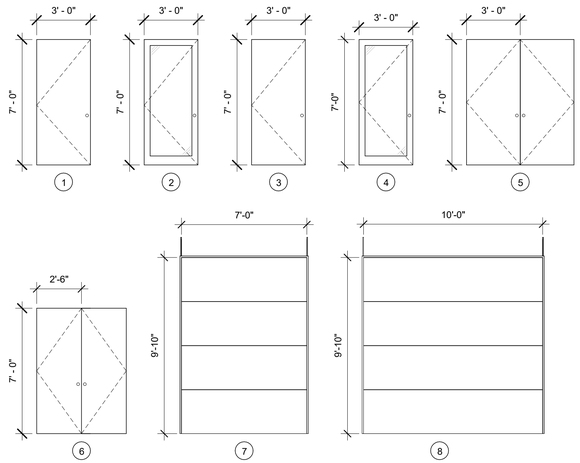


501 - ELECTRICAL PLANS

Scale:
As indicated

MARCH 19, 2024

A0.09

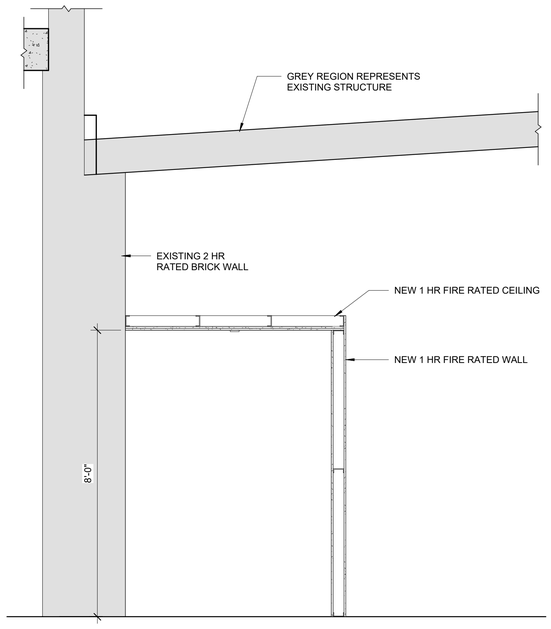


501 DOOR SCHEDULE

1/4" = 1'-0"

501 DOOR SCHEDULE

DOOR No.	LOCATION	SIZE			DOOR LEAF			DOOR FRAME		THRESHOLD	LABEL	OPERATION	SWEEP	CLOSER	FIRE RATING	REMARKS
		WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	MATERIAL	FINISH							
1ST FLOOR																
101	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
102	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		PASSAGE	No	Yes		EXISTING TO REMAIN
103	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		PASSAGE	No	Yes		EXISTING TO REMAIN
104	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
105	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
106	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
107	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
108	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
109	OFFICE	6'-0"	7'-0"	1 3/4"	05	SOLID CORE WOOD	PAINT	WOOD	PAINT			PASSAGE				EXISTING TO REMAIN
110	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
111	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT			PASSAGE				EXISTING TO REMAIN
112	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
113	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
114	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
115	ENTRY	3'-0"	7'-0"	1 3/4"	03	HM / GLASS	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
116	ENTRY	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
117	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
118	CLOSET	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
119	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
120	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
121	UNISEX BR.	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
122	UNISEX BR.	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
123	UNISEX BR.	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
124	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
125	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		PASSAGE		Yes		EXISTING TO REMAIN
126	ENTRY	3'-0"	7'-0"	1 3/4"	02	HM / GLASS	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
127	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
128	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
129	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
130	BOW STREET BEVERAGE STORAGE	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	WOOD	PAINT			PASSAGE	Yes	Yes	90 MIN.	EXISTING TO REMAIN
131	CORRIDOR	5'-0"	7'-0"	1 3/4"	06	HM	PAINT	HM	PAINT			PASSAGE		Yes		
132	CORRIDOR	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	HM	PAINT			PASSAGE				EXISTING TO REMAIN
133	CORRIDOR	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	HM	PAINT			PASSAGE		Yes		
134	CORRIDOR	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	HM	PAINT			PASSAGE			90 MIN.	EXISTING TO REMAIN
135	CORRIDOR	7'-0"	9'-10"	1 3/4"	07	HM	PAINT	HM	PAINT	ALUM.		GARAGE				EXISTING TO REMAIN
136	CORRIDOR	7'-0"	9'-10"	1 3/4"	07	HM	PAINT	HM	PAINT	ALUM.		GARAGE				EXISTING TO REMAIN
137	BOW STREET BEVERAGE STORAGE	3'-0"	7'-0"	1 3/4"	03	HM	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
138	BOW STREET BEVERAGE STORAGE	10'-0"	9'-10"	1 3/4"	08	HM	PAINT	HM	PAINT	ALUM.		GARAGE				EXISTING TO REMAIN
139	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	HM	PAINT	HM	PAINT			CLASSROOM		Yes	90 MIN.	



1 SECTION THROUGH THE NEW 1 HR RATED CORRIDOR

1/2" = 1'-0"

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STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

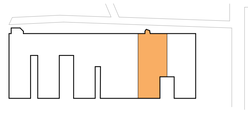
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Revisions:

Key Plan:



501 - DOOR SCHEDULE & SECTION

Scale: As indicated

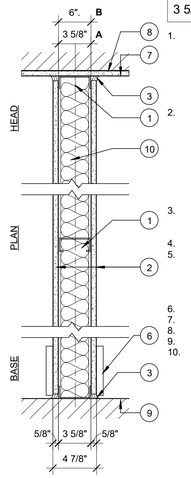
MARCH 19, 2024

A0.10

WALL TYPES

A	B
3 5/8"	6"

NON-RATED NON-BEARING PARTITION



1. **STUDS -** CHANNEL-SHAPED, MIN 3-5/8" WIDE BY 1-1/4" DEEP WITH 5/16" FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM NO. 25 MSG GALV STEEL. MAX STUD SPACING 24" O.C. STUDS TO BE CUT 1" LESS THAN ASSEMBLY HEIGHT. **NOTE: WALL TYPE 'B' USES 6" STUDS IN PLACE OF 3-5/8" STUDS.**
2. **TYPE X GYP BOARD -** 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.
3. **CAULKING AND SEALANTS -** A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL, BOTH SIDES OF WALL.
4. **BLOCKING - (NOT SHOWN)** WOOD BLOCKING AS NEEDED
5. **TAPE AND COMPOUND - (NOT SHOWN)** VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE, 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.
6. **BASE -** AS SCHEDULED
7. UNDERSIDE OF CEILING
8. 5/8" GYPSUM BOARD CEILING
9. TOP OF STRUCTURE
10. 3 1/2" FIBERGLASS BATT INSULATION FOR WALL TYPE 'A'; 6" FIBERGLASS BATT INSULATION FOR WALL TYPE 'B';

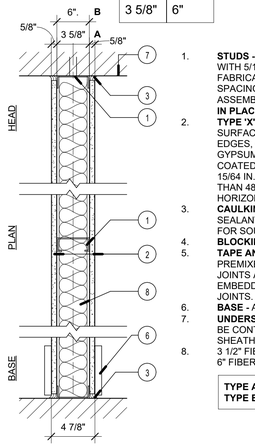
TYPE A WALLS = 3 5/8" STUDS
TYPE B WALLS = 6" STUDS

W1 | WALL 01- NON-RATED INTERIOR PARTITION

1 1/2" = 1'-0"

LABEL 1 HR	A	B
	3 5/8"	6"

1 HR NON-BEARING PARTITION
DESIGN NUMBER - UL U419



1. **STUDS -** CHANNEL-SHAPED, MIN 3-5/8" WIDE BY 1-1/4" DEEP WITH 5/16" FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM NO. 25 MSG GALV STEEL. MAX STUD SPACING 24" O.C. STUDS TO BE CUT 1" LESS THAN ASSEMBLY HEIGHT. **NOTE: WALL TYPE 'B' USES 6" STUDS IN PLACE OF 3-5/8" STUDS.**
2. **TYPE 'X' GYPSUM BOARD -** 5/8 IN. THICK PAPER OR VINYL SURFACED, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS NAILED 7 IN. OC WITH 6D CEMENT COATED NAILS 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 15/64 IN. DIAM HEADS. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.
3. **CAULKING AND SEALANTS -** A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL, BOTH SIDES OF WALL.
4. **BLOCKING - (NOT SHOWN)** WOOD BLOCKING AS NEEDED
5. **TAPE AND COMPOUND - (NOT SHOWN)** VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE, 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.
6. **BASE -** AS SCHEDULED
7. **UNDERSIDE OF FLOOR/ROOF SHEATHING ABOVE** WALL TO BE CONTINUOUS THROUGH FLOOR/ROOF FRAMING TO SHEATHING
8. 3 1/2" FIBERGLASS BATT INSULATION FOR WALL TYPE 'A'; 6" FIBERGLASS BATT INSULATION FOR WALL TYPE 'B';

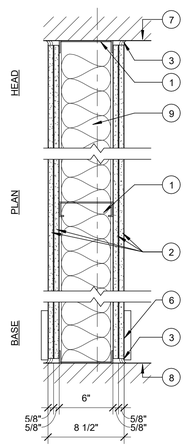
TYPE A WALLS = 3 5/8" STUDS
TYPE B WALLS = 6" STUDS

W2 | WALL 02 - 1 HR RATED INTERIOR PARTITION

1 1/2" = 1'-0"

LABEL 2 HR

2 HR RATED NON-BEARING PARTITION
DESIGN NUMBER - UL U419



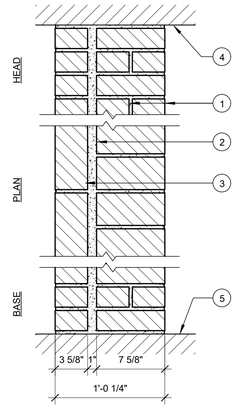
1. **STUDS -** CHANNEL-SHAPED, 6" WIDE BY 1-1/4" DEEP WITH 5/16" FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM NO. 25 MSG GALV STEEL. MAX STUD SPACING 24" O.C. STUDS TO BE CUT 1" LESS THAN ASSEMBLY HEIGHT.
2. **TYPE X GYP BOARD -** 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.
3. **CAULKING AND SEALANTS -** A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL, BOTH SIDES OF WALL.
4. **BLOCKING - (NOT SHOWN)** WOOD BLOCKING AS NEEDED
5. **TAPE AND COMPOUND - (NOT SHOWN)** VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE, 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.
6. **BASE -** AS SCHEDULED
7. UNDERSIDE OF CEILING
8. TOP OF STRUCTURE
9. 6" FIBERGLASS BATT INSULATION

W3 | WALL 03- 2 HR-RATED - 6" MTL STD INTERIOR PARTITION

1 1/2" = 1'-0"

LABEL 2 HR

EXISTING BRICK DIVIDING WALL
2 HOUR RATED ASSEMBLY



1. **MASONRY -** (2) LAYERS OF BRICK WITH MORTAR INFILL
2. **AIR BARRIER -** 1" AIR GAP WITH MORTAR CAPPING EXPOSED ENDS
3. **MASONRY -** (1) LAYER OF BRICK WITH GROUT INFILL
4. UNDERSIDE OF STRUCTURE
5. TOP OF STRUCTURE

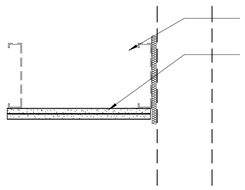
W4 | WALL TYPE 04 - EXISTING BRICK ASSEMBLY

1 1/2" = 1'-0"

CEILING TYPES

LABEL 1 HR

2-HOUR RATED CEILING ASSEMBLY
UL L556
FIRE RATING PROVIDED BY MEMBRANE ONLY.

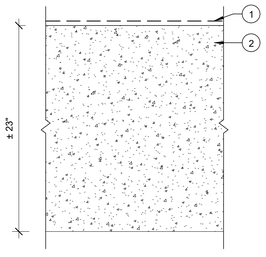


C1 | CEILING TYPE C1 - 1 HR RATED

1 1/2" = 1'-0"

LABEL MIN. 4 HR

FLOOR SYSTEM - EXISTING FIRST FLOOR SLAB
STC 58, IIC 32 FOR SIM. 8" SLAB



1. **FINISH FLOOR -** EXISTING TO REMAIN
2. **CONCRETE SLAB -** EXISTING BOARD-FORMED CONCRETE SLAB TO BE POLISHED AND USED AS FINISHED FLOOR IN SOME LOCATIONS

FLOOR SYSTEM - SLAB ON COLUMNS

F1 | FLOOR TYPE 01 - EXISTING FIRST FLOOR ASSEMBLY

1 1/2" = 1'-0"

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207 - 939 - 7602

LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

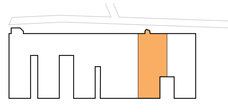
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - WALL & CEILING TYPES

Scale:
As indicated

MARCH 19, 2024

A0.11

OWNER'S INFORMATION CERTIFICATE

Name/address of property to be protected with sprinkler protection:
501 Forest Avenue, Portland ME

Name of owner: Building Owner: Kevin Bunker Tenant Owner: ~~Adam Nappi~~ PIAZZA LLC

Existing or planned construction is:

- ■ Fire resistive or noncombustible
- ❑ Wood frame or ordinary (masonry walls with wood beams)
- ❑ Unknown

Describe the intended use of the building: The rear portion of 501 will be storage for Bow Street Beverage (495 Forest Ave). This storage space will store alcohol.

Note regarding speculative buildings: The design and installation of the fire sprinkler system is dependent on an accurate description of the likely use of the building. Without specific information, assumptions will need to be made that will limit the actual use of the building. Make sure that you communicate any and all use considerations to the fire sprinkler contractor in this form and that you abide by all limitations regarding the use of the building based on the limitations of the fire sprinkler system that is eventually designed and installed.

Is the system installation intended for one of the following special occupancies:

Aircraft hangar	❑ Yes	■ No
Fixed guideway transit system	❑ Yes	■ No
Race track stable	❑ Yes	■ No
Marine terminal, pier, or wharf	❑ Yes	■ No
Airport terminal	❑ Yes	■ No
Aircraft engine test facility	❑ Yes	■ No
Power plant	❑ Yes	■ No
Water-cooling tower	❑ Yes	■ No

If the answer to any of the above is "yes," the appropriate NFPA standard should be referenced for sprinkler density/area criteria.

Indicate whether any of the following special materials are intended to be present:

Flammable or combustible liquids	■ Yes	❑ No
Aerosol products	❑ Yes	■ No
Nitrate film	❑ Yes	■ No
Pyroxylin plastic	❑ Yes	■ No
Compressed or liquefied gas cylinders	❑ Yes	■ No
Liquid or solid oxidizers	❑ Yes	■ No
Organic peroxide formulations	❑ Yes	■ No
Idle pallets	■ Yes	❑ No

If the answer to any of the above is "yes," describe type, location, arrangement, and intended maximum quantities.
This space will be storing alcohol on pallets until the product is moved into Bow Street Beverages neighboring location, 495 Forest Ave. The pallets of alcohol will be along the walls as well as in rows on the floor, in an organized fashion for fork lifts to access them.

© 2015 National Fire Protection Association NFPA 13 (p. 1 of 2)

FIGURE A.23.1(b) Owner's Information Certificate.

Alcohol consists of both beer and other alcohol. There will be roughly +/- 46 pallets located in this location. This number will increase in the summer and decrease in the winter months. This space will be used for overflow product.

Indicate whether the protection is intended for one of the following specialized occupancies or areas:

Spray area or mixing room	❑ Yes	■ No
Solvent extraction	❑ Yes	■ No
Laboratory using chemicals	❑ Yes	■ No
Oxygen-fuel gas system for welding or cutting	❑ Yes	■ No
Acetylene cylinder charging	❑ Yes	■ No
Production or use of compressed or liquefied gases	❑ Yes	■ No
Commercial cooking operation	❑ Yes	■ No
Class A hyperbaric chamber	❑ Yes	■ No
Cleanroom	❑ Yes	■ No
Incinerator or waste handling system	❑ Yes	■ No
Linen handling system	❑ Yes	■ No
Industrial furnace	❑ Yes	■ No
Water-cooling tower	❑ Yes	■ No

If the answer to any of the above is "yes," describe type, location, arrangement, and intended maximum quantities.

Will there be any storage of products over 12 ft (3.7 m) in height? ❑ Yes ■ No

If the answer is "yes," describe product, intended storage arrangement, and height.

Will there be any storage of plastic, rubber, or similar products over 5 ft (1.5 m) high except as described above? ❑ Yes ■ No

If the answer is "yes," describe product, intended storage arrangement, and height.

Is there any special information concerning the water supply? ❑ Yes ■ No

If the answer is "yes," provide the information, including known environmental conditions that might be responsible for corrosion, including microbiologically influenced corrosion (MIC).

I certify that I have knowledge of the intended use of the property and that the above information is correct.

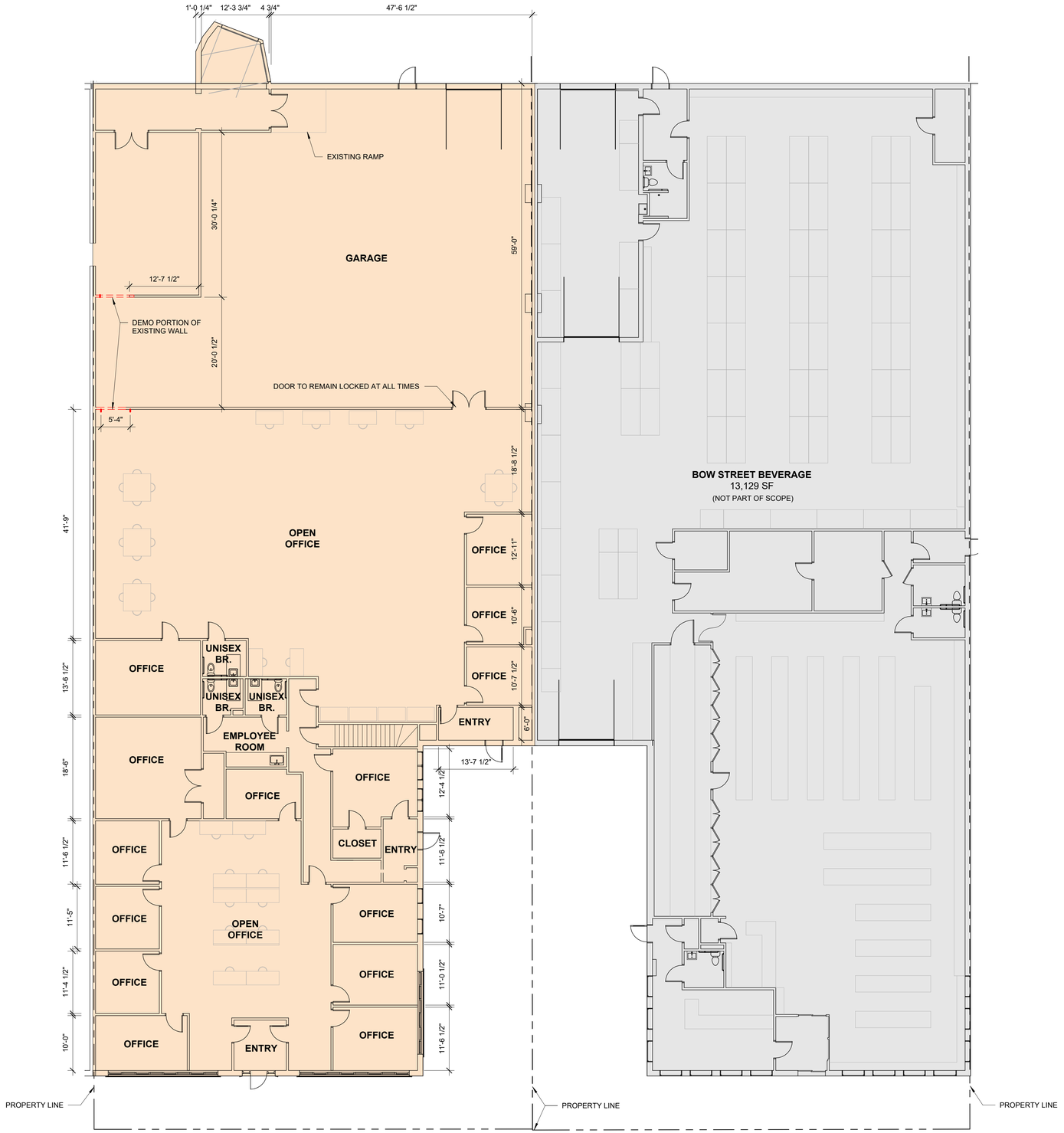
Signature of owner's representative or agent: member Date: 02/29/2024

Name of owner's representative or agent completing certificate (print): Virginie Stanley

Relationship and firm of agent (print): Architect

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FIGURE A.23.1(b) ***Continued***



1 | 501 - FIRST FLOOR - EXISTING / DEMO

1" = 10'-0"

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Portland, ME 04103
207 - 939 - 7602

LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

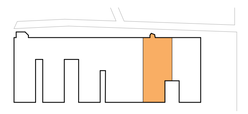
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - EXISTING FLOOR PLAN

Scale: As indicated

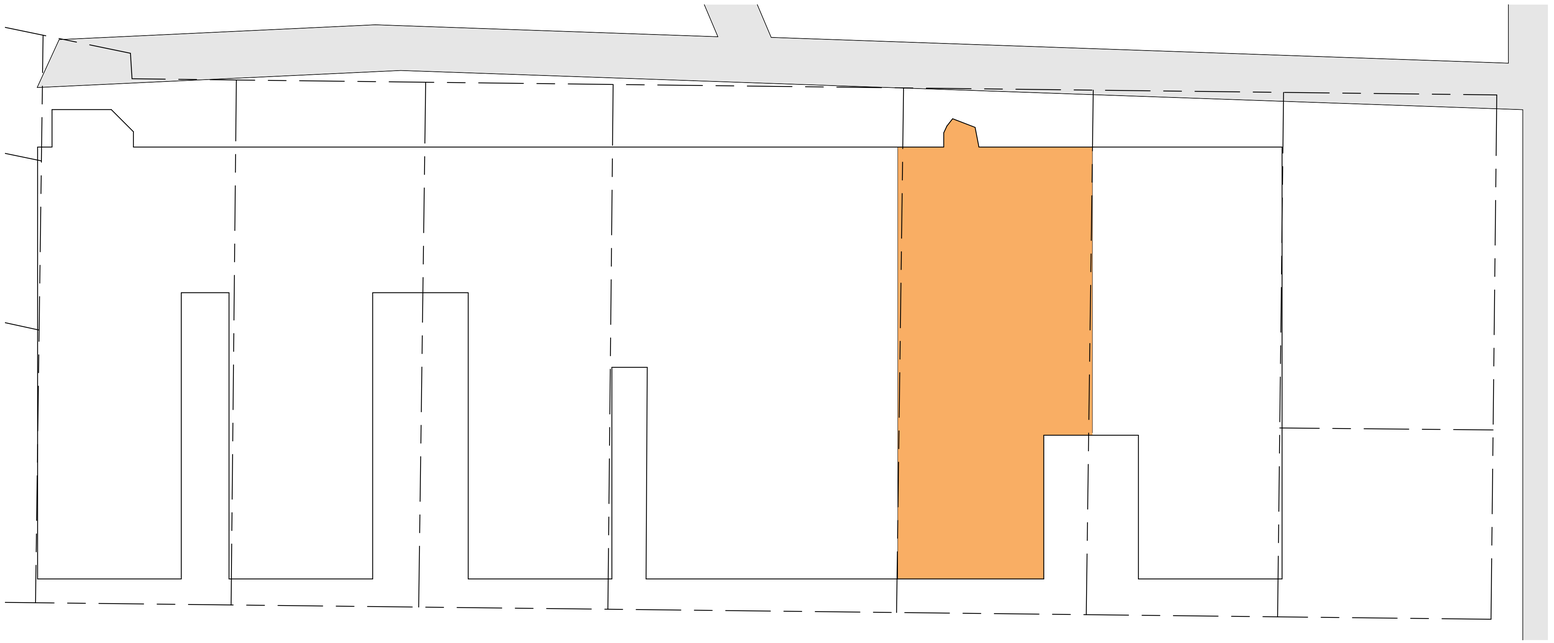
MARCH 19, 2024

A0.06

501 FOREST AVE

501 FOREST AVE, PORTLAND, ME





1 501 FOREST AVENUE SITE PLAN

1" = 30'-0" 0 7'-6" 15'-0" 30'-0" 60'-0"

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DATE OF ISSUE

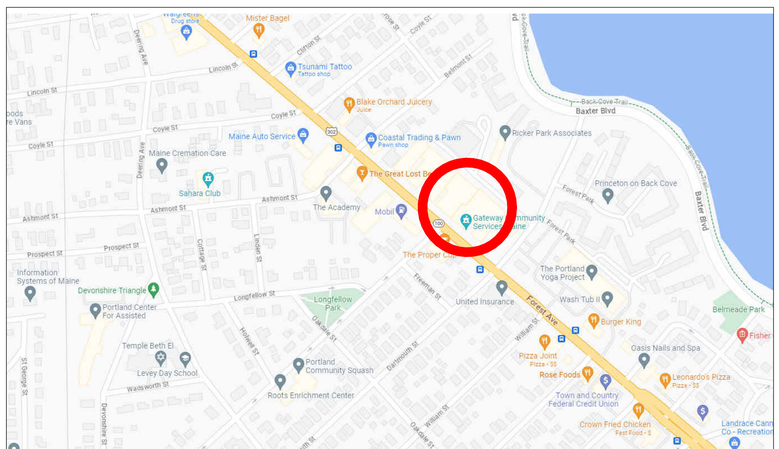
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DRAWING LIST

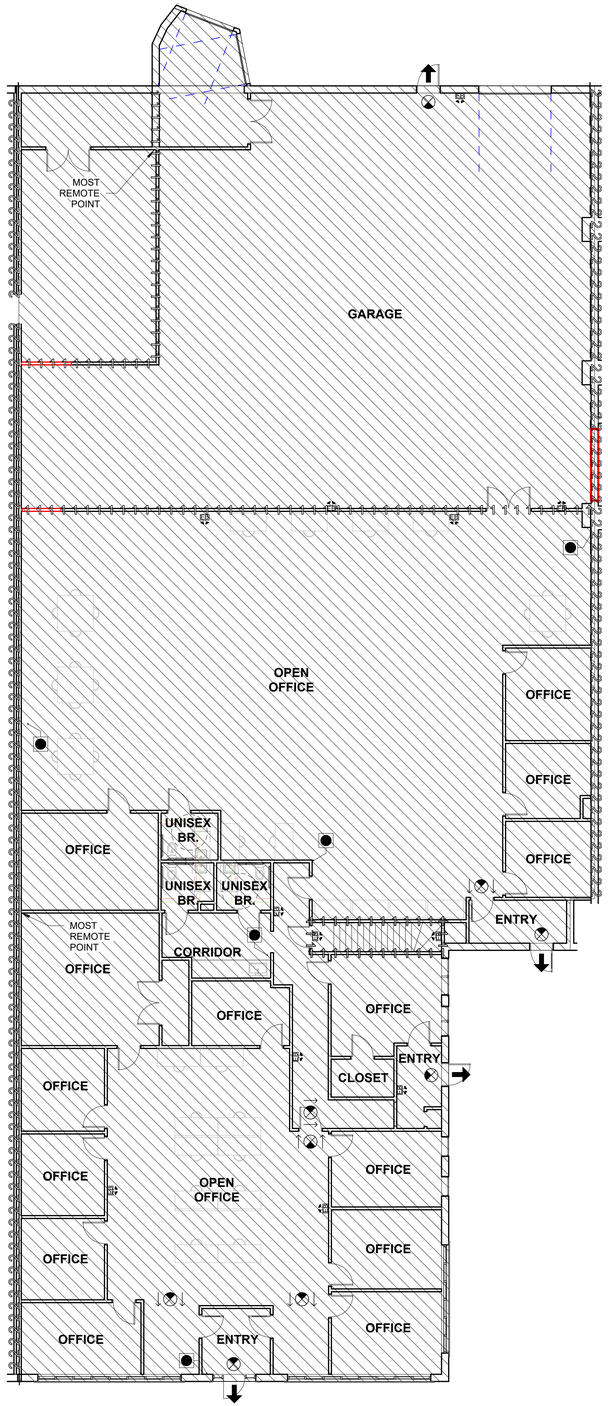
ARCHITECTURAL DRAWINGS -501		A0.10	501 - DOOR SCHEDULE & SECTION
A0.01	501 - COVER SHEET	A0.11	501 - WALL & CEILING TYPES
A0.02	501 - LIFE SAFETY		
A0.03	501 - LIFE SAFETY		
A0.04	501 - CODE STUDY		
A0.05	501 - ACCESSIBILITY STANDARDS		
A0.06	501 - EXISTING FLOOR PLAN		
A0.07	501 - PROPOSED FLOOR PLAN		
A0.08	501 - RCP PLANS		
A0.09	501 - ELECTRICAL PLANS		

Client:
DC Hancock LP
631 Stevens Ave, Ste #203
Portland, ME 04103
207.772.7673

Architect:
Invivid Architecture
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207.939.7602

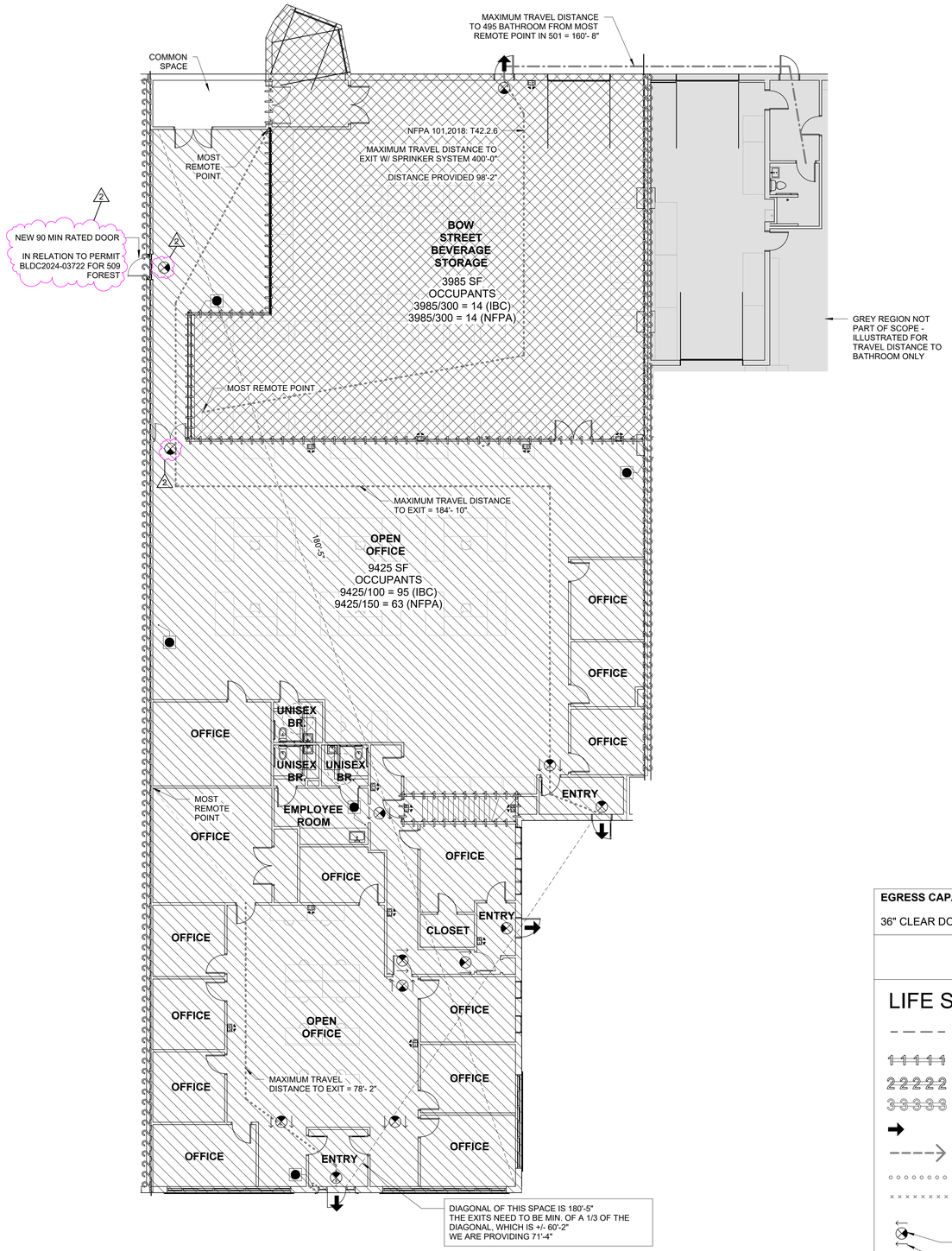


LOCATION MAP NOT TO SCALE



1 | 501 - FIRST FLOOR - EXISTING LIFE SAFETY

1" = 10'-0"



2 | 501 - FIRST FLOOR - PROPOSED LIFE SAFETY

1" = 10'-0"

EGRESS CAPACITY

36" CLEAR DOOR - 0.2 IN / PERSON - 180 PEOPLE

TOTAL = 180 PEOPLE

LIFE SAFETY LEGEND

- EXIT ACCESS REMOTENESS
- 1 HR PARTITION
- 2 HR PARTITION
- 3 HR PARTITION
- EXIT ENTRANCE OR DISCHARGE
- UNIT TRAVEL DISTANCE
- DEAD END CORRIDOR DISTANCE
- TRAVEL DISTANCE FROM MOST REMOTE POINT TO EXIT DISCHARGE
- EXIT SIGN
- EXIT SIGN DISPLAY SURFACE
- EXIT SIGN INDICATOR DIRECTION
- FIRE EXTINGUISHER CABINET
- EMERGENCY LIGHTING

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Portland, ME 04103
207 - 939 - 7602

LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

Owner/Client:

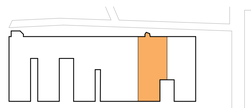
Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

2	03/19/24	Revision 2

Key Plan:

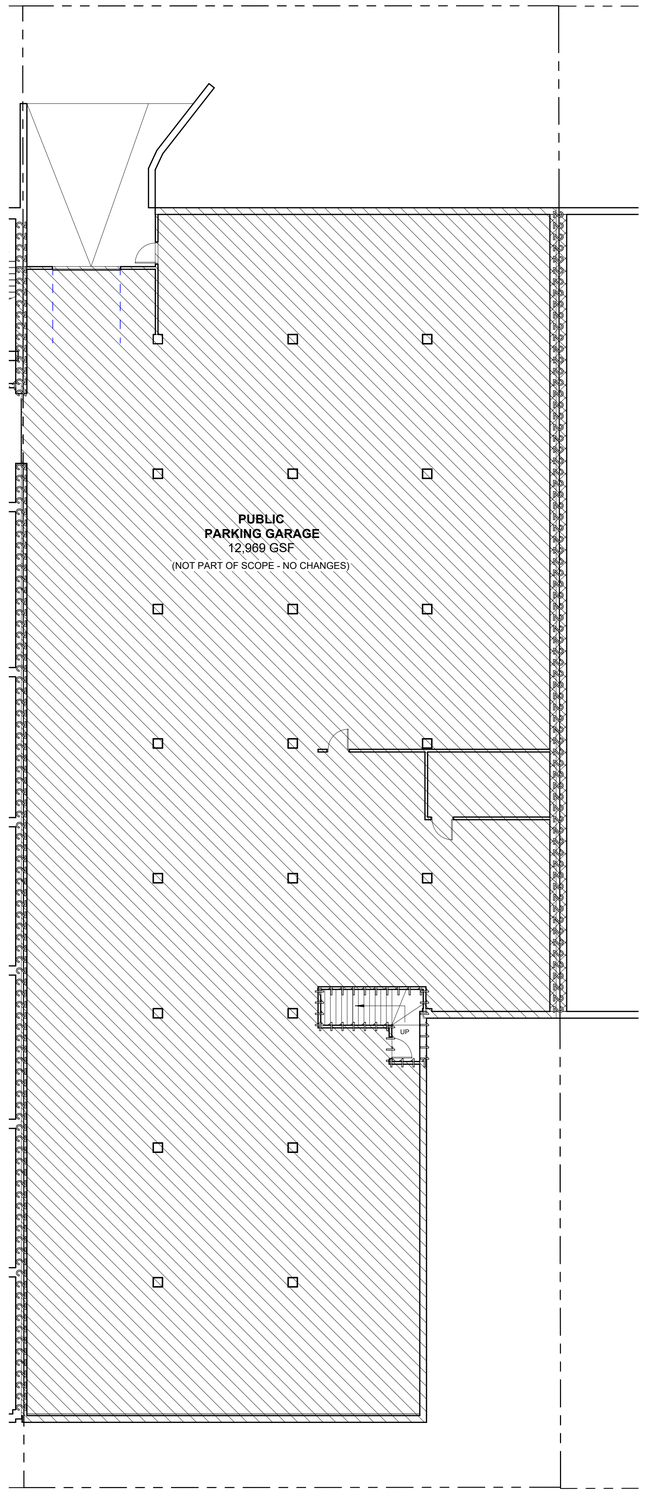


501 - LIFE SAFETY

Scale: As indicated

MARCH 19, 2024

A0.02



EGRESS CAPACITY

36" CLEAR DOOR - 0.2 IN / PERSON - 180 PEOPLE

TOTAL = 180 PEOPLE

LIFE SAFETY LEGEND

- EXIT ACCESS REMOTENESS
- 1 HR PARTITION
- 2 HR PARTITION
- 3 HR PARTITION
- EXIT ENTRANCE OR DISCHARGE
- UNIT TRAVEL DISTANCE
- DEAD END CORRIDOR DISTANCE
- TRAVEL DISTANCE FROM MOST REMOTE POINT TO EXIT DISCHARGE
- EXIT SIGN
- EXIT SIGN DISPLAY SURFACE
- EXIT SIGN INDICATOR DIRECTION
- FIRE EXTINGUISHER CABINET
- EMERGENCY LIGHTING

1 501 - BASEMENT LIFE SAEFTY

3/32" = 1'-0"

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LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

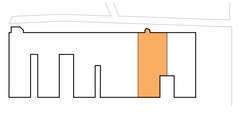
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - LIFE SAFETY

Scale: As indicated

MARCH 19, 2024

A0.03

CODE SUMMARY

APPLICABLE CODES:

1. MUBEC - Maine Uniform Building and Energy Code is made up of the following codes and standards. Maine has adopted the national codes and standards with amendments:
   a. 2015 International Building Code - IBC
   b. 2015 International Existing Building Code - IEBC
   c. 2021 International Energy Conservation Code - IECC
   d. 2015 International Mechanical Code - IMC
2. American Society of Heating, Refrigerationand Air Conditioning Engineers (ASHRAE) Standards:
   a. 62.1 - 2016 (Ventilation for Acceptable Indoor Air Quality)
   b. 90.1 (Energy Standard for Buildings except Low-Rise Residential Buildings) editions without addenda.
3. Maine Plumbing Code (Uniform Plumbing Code - 2021)

- 2018 NFPA 101 Life Safety (as adopted by State of Maine Fire Code)

Accessibility Codes
- State of Maine Human Rights Act
- ADAAG Americans with Disabilities Act
- ICC ANSI 117.1, 2009 Accessible and Usable Buildings and Facilities

PROJECT SUMMARY:

501 Forest Avenue, situated in Portland, is an existing single story building with a basement. The building is construction type 5B, it is has a sprinkler system installed. The building is currently used as an office spaces with interior parking in the rear. The building will have offices in the same location, and the parking in the rear will become mercantile storage for Bow Street Beverage, the mercantile business next door. The office space will remain the same with the exception to two new corridors in the rear.

Total Building SQFT: 13,386 SQFT

Total SQFT Utilized by Business: 13,386 SQFT

BUSINESS

501 FOREST - OCCUPANCY CALCULATIONS

*OCCUPANCY BASED ON TABLE 1004.1.2, IBC 2015 & NFPA 7.3.1.2

FIRST FLOOR

ASSEMBLY AREAS	TOTAL (S.F.)	CALC. OCCUPANTS
BUSINESS 100 SQ. FT. GROSS/OCCUPANT	**9,425 S.F.**	**95**

501 FOREST - FIXTURE CALCULATIONS

*FIXTURE CALCULATIONS BASED ON TABLE 422.1, UPC 2021

BUSINESS SPACE - TOTAL OCCUPANT LOAD (BUSINESS): **95**

ASSEMBLY AREAS	OCCUPANTS	FIXTURES REQUIRED	FIXTURES PROVIDED
BUSINESS (B) **(SPACE IS DECREASING IN SIZE)**	**95 TOTAL:** **48 MEN** **48 WOMEN**	**WATER CLOSETS = 1M, 3F** **URINALS = 1** **LAVATORIES = 1M, 1F** **DRINKING FOUNTAINS = 1** **SERVICE SINK = 1**	**WATER CLOSETS = 3M/F** **URINALS = 0** **LAVATORIES = 3M/F** **DRINKING FOUNTAINS = 1** **SERVICE SINK = 1**

MERCANTILE

495 FOREST - OCCUPANCY CALCULATIONS

*OCCUPANCY BASED ON TABLE 1004.1.2, IBC 2015 & NFPA 7.3.1.2

FIRST FLOOR

ASSEMBLY AREAS	TOTAL (S.F.)	CALC. OCCUPANTS
MERCANTILE IBC: 60 SQ. FT. GROSS/OCCUPANT NFPA: 30 SQ. FT. GROSS/OCC.	**5,703 S.F.**	IBC: **96** NFPA: **191**
MERCANTILE STORAGE 300 SQ. FT. GROSS/OCCUPANT (EXISTING - 495 FOREST)	**7425 S.F.**	**25**
MERCANTILE STORAGE 300 SQ. FT. GROSS/OCCUPANT (ADT. (PROPOSED) - 501 FOREST)	**3,985 S.F.**	**14**

495 FOREST - FIXTURE CALCULATIONS

*FIXTURE CALCULATIONS BASED ON TABLE 422.1, UPC 2021

MERCANTILE SPACE & STORAGE - OCCUPANT LOAD: 121 (495 FOREST(M)) + 14 (501 FOREST (S1))
TOTAL OCCUPANT LOAD: 135

ASSEMBLY AREAS	OCCUPANTS	FIXTURES REQUIRED	FIXTURES PROVIDED
MERCANTILE (M) (NO CHANGES TO MERCANTILE SPACE - ADDITION OF STORAGE @ 501 FOREST)	**135 TOTAL:** **68 MEN** **68 WOMEN**	**WATER CLOSETS = 1M, 1F** **URINALS = 0** **LAVATORIES = 1M, 1F** **DRINKING FOUNTAINS = 1** **SERVICE SINK = 1**	**WATER CLOSETS = 3M/F** **URINALS = 0** **LAVATORIES = 3M/F** **DRINKING FOUNTAINS = 0** **SERVICE SINK = 1**

501 FOREST CODE

	IBC 2015		NFPA 101 2018	
1 Floors Above Grade	502.1			
Sprinklers		NFPA 13		NFPA 13
Fire Alarm		Monitored Fire Alarm Required		Monitored Fire Alarm Required
Smoke and CO Detectors		Smoke and CO Detectors Required		Smoke and CO Detectors Required
Occupant Load	T 1004.1.1		7.3.1.2	
		Floor 1 = 9,425 SF B (Office) (100 GSF/OC) = 95		Floor 1 = 9,425 SF Business (150 GSF/OC) = 63
		Floor 1 = 3,985 SF S2 (Alcohol Storage) (300 GSF/OC) = 14		Floor 1 = 3,985 SF Storage (300 GSF/OC) = 14
		Total Building Occupant Load = 109		**Total Building Occupant Load = 77**
Use Group(s)	304.1	B - Business	39.1	Existing Mercantile
	311.3	S-2 - Storage	42.1	Storage, Ordinary Hazard
Construction Type, B & 1	T 503	5B - combustible protected		5 (000) combustible protected
Building Height	T 504.3	Sprinkler NFPA13 = 60' max. For B, M, S2		
Number of Stories	T 504.4	B = 1 Story with sprinkler < 3 allowable		
		S2 = 1 Story with sprinkler < 3 allowable		
Building Area	T 506.2	Sprinkler 13 = 36,000 SF max per floor		
		Current: 9,425 + 3,985 SF < 36,000 SF allowable		
Building Elements 5B	T 601	0 HR Structural Frame		
	T 602	0 HR Bearing Walls Exterior (sep. distance ≥ 10')		
	T 602	0 HR Bearing Walls Exterior (sep. distance < 10')		
	T 601	0 HR Bearing Walls Interior		
	T 601	0 HR Non-Bearing Walls Interior		
	T 602	0 HR Non-Bearing Walls Exterior (sep. distance ≥ 10')		
	T 602	0 HR Non-Bearing Walls Exterior (sep. distance < 10')		
	705.5	Exterior Wall with > 10' sep. needs rating only from inside		
	T 601	0 HR Floor Construction		
	T 601	0 HR Roof Construction		
Separations	T 508.4	B & S2 (Sprinkled) = 1 hr	T6.1.14.4.1	Business & Storage, Ordinary Hazard (Sprinkled) = 2 hr
	713.4	1 HR.....Mechanical Shaft < 4 stories		
	1022.1	1 HR.....Stair Shaft < 4 stories		
	1020.1	0 HR.....Corridor	30.2.4.4.7	1 HR Corridor
Distances and Exits	1017.2	300' Travel Distance to Exits w/ Sprinklers	39.2.6.2	200' Travel Distance from any point to Exit
			39.2.6.3	300' Travel Distance from any point to Exit w/ sprinkler system
	1006.2.1	100' Common Path of Travel For Use	39.2.4.5	100' Common Path of Travel w/ sprinkler system
	1020.4	50' Dead End	39.2.5.2	50' Dead End
Unprotected Openings	T 705.8	15% When Exterior Wall Sep. Dist. Is 3' > 5'		
	T 705.8	25% When Exterior Wall Sep. Dist. Is 5' > 10'		
	T 705.8	45% When Exterior Wall Sep. Dist. Is 10' > 15'		
	T 705.8	75% When Exterior Wall Sep. Dist. Is 15' > 20'		
	T 705.8	Unlimited When Exterior Wall Sep. Dist. Is 25' > 30'		
	T 705.8	Unlimited When Exterior Wall Sep. Dist. Is > 30'		
Egress Stairs	1009.1	Occ. Load > 50 = 44" Min. Width		
	1003.3	Handrails Can Protrude into Stair 4.5" Max.	7.2.2.2.1.2	Handrails Can Protrude Into Stair 4 1/2" Max.
	1005.2	Door Swings May Not Reduce Egress Width by > 50%		
	1009.2	80" Min. Headroom	7.2.2.2.1.2 (b)	6'-8" Min. Headroom
	1009.3	7" Max. Riser	7.2.2.2.1.2 (b)	8" Max. Riser
	1009.3	11" Min. Tread Depth	7.2.2.2.1.2 (b)	9" Min. Tread
	1009.6	12' Max. Total Rise Between Floors or Landings	7.2.2.2.1.2 (b)	12' Max. Height Between Landings
Ramps	1010.2	1:12 (8%) Max. Slope	7.2.5.2 (a)	1:8 Max. Slope
	1010.6	60" Long Landings at Top and Bottom		
	1010.6	2% Max. Slope of Landings	7.2.5.2 (a)	1:48 Max. Cross Slope
	1010.8	> 6" Rise Must Have Handrails on Both Sides of Ramp		
Egress Corridors	1018.2	44" Min. When Occ. > 50		
	1018.2	24" Min. at Service Corridors to Mechanical Equipment		
Sound	1207.2	STC > 50 at Walls, Floors, and Ceilings		
	1207.3	IIC > 50 at Walls, Floors, and Ceilings		

495 FOREST CODE

Occupant Load	T 1004.1.1		7.3.1.2	
		Floor 1 = 5,704 SF M (60 GSF/OC) = 95		Floor 1 = 5,704 SF Mercantile (30 GSF/OC) = 190
		Floor 1 = 7,425 SF S2 (Alcohol Storage) (300 GSF/OC) = 25		Floor 1 = 7,425 SF Storage (300 GSF/OC) = 25
		Total Building Occupant Load = 120		Total Building Occupant Load = 215

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LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

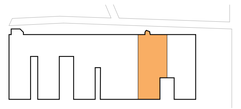
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631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - CODE STUDY

Scale: As indicated

MARCH 19, 2024

A0.04

NOTE: ALL REFERENCES ARE TO THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN UNLESS NOTED OTHERWISE

CHAPTER 3: BUILDING BLOCKS



LONG DIMENSION PERPENDICULAR TO DIRECTION OF TRAVEL

PREDOMINANT DIRECTION OF TRAVEL

FIG. 302.3 - OPENINGS IN FLOOR OR GROUND SURFACES



FIG. 303.2 - VERTICAL CHANGES IN LEVEL



FIG. 303.3 - BEVELED CHANGES IN LEVEL

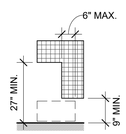


FIG. 306.2 - TOE CLEARANCE

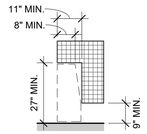


FIG. 306.3 - KNEE CLEARANCE

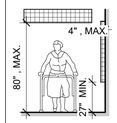


FIG. 307.2 - LIMITS OF PROTRUDING OBJECTS

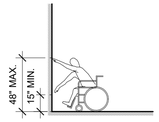


FIG. 308.2.1 - UNOBSTRUCTED FORWARD REACH

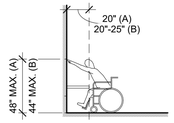


FIG. 308.2.2 - OBSTRUCTED HIGH FORWARD REACH

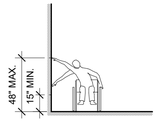


FIG. 308.3.1 - UNOBSTRUCTED SIDE REACH

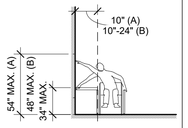
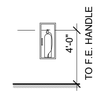


FIG. 308.3.2 - OBSTRUCTED SIDE REACH



FIRE EXTINGUISHING CABINET MOUNTING HEIGHT

CHAPTER 4: ACCESSIBLE ROUTES

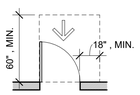
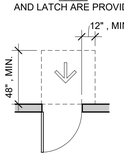
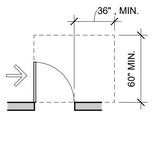


FIG. 404.2.4.1 - MANUEVERING CLEARNACE AT SWING DOOR

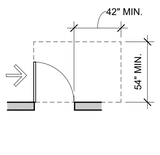
(A) FRONT APPROACH, PULL SIDE



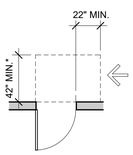
(B/C) FRONT APPROACH, PUSH SIDE



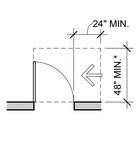
(D) HINGE APPROACH, PULL SIDE



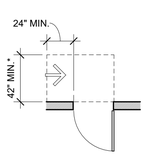
(E) HINGE APPROACH, PULL SIDE



(F/G) HINGE APPROACH, PULL SIDE



(H/I) LATCH APPROACH, PULL SIDE



(J/K) LATCH APPROACH, PUSH SIDE

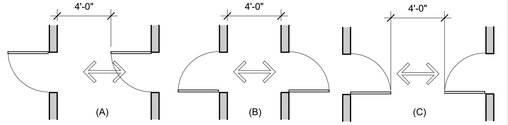
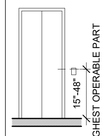


FIG. 404.2.6

TWO DOORS IN A SERIES



(REF. 407.2.2) ELEV. CALL BUTTONS

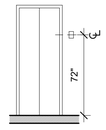


FIG. 407.2.2.2 HEIGHT OF ELEV. VISIBLE SIGNALS

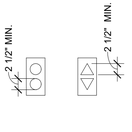


FIG. 407.2.2.2 SIZE OF ELEV. VISIBLE SIGNALS

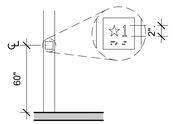


FIG. 407.2..3.1 TACTILE CHARACTERS ON ELEV. HOISTWAY ENTRANCES

CHAPTER 5: GENERAL SITE AND BUILDING ELEMENTS

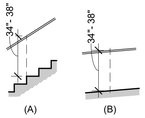


FIG. 505.4.

HANDRAIL HEIGHT
(A) STAIRS
(B) RAMPS



PER NFPA 101 HANDRAIL CLEARANCE

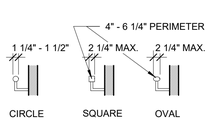


FIG. 505.6 FIG. 505.7 HANDRAIL CROSS SECTION

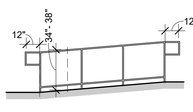


FIG. 505.10.1

TOP AND BOTTOM HANDRAIL EXTENSIONS AT RAMPS

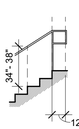


FIG. 505.10.2 TOP HANDRAIL EXTENSION AT STAIRS

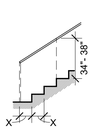


FIG. 505.10.3 BOTTOM HANDRAIL EXTENSION AT STAIRS

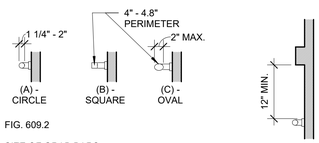


FIG. 609.2

SIZE OF GRAB BARS

(A) CIRCULAR
(B) AND (C) NON CIRCULAR

FIG. 609.3

SPACING OF GRAB BARS

CHAPTER 6: PLUMBING ELEMENTS AND FACILITIES

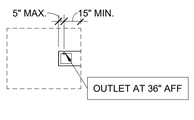


FIG. 602.5

DRINKING FOUNTAIN SPOUT LOCATION

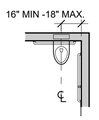


FIG. 604.2

WATER CLOSET LOCATION

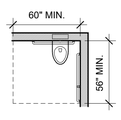


FIG. 604.3.1

SIZE OF CLEARANCE FOR WATER CLOSET

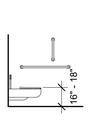


FIG. 604.4

HEIGHT TO TOP OF SEAT

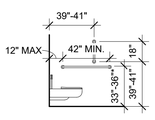


FIG. 604.5.1

SIDE WALL GRAB BAR FOR WATER CLOSET

* TO TOP OF GRAB BAR

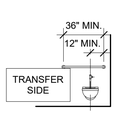


FIG. 604.5.2

REAR WALL GRAB BAR FOR WATER CLOSET

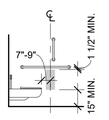


FIG. 604.7

TOILET PAPER DISPENSER LOCATION

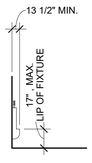


FIG. 605.2

HEIGHT OF URINALS

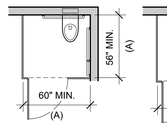


FIG. 604.8.1.1

WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS

(A) WALL-HUNG WATER CLOSET
(B) FLOOR-MOUNTED WATER CLOSET

FIG. 604.8.1.4

TOILET CAMPARTMENT TOES CLEARANCE

(A) ELEVATION
(B) PLAN

FIG. 604.8.1.2

TOILET COMPARTMENT DOORS

FIG. 606.3 - HEIGHT OF LAVATORIES AND SINKS

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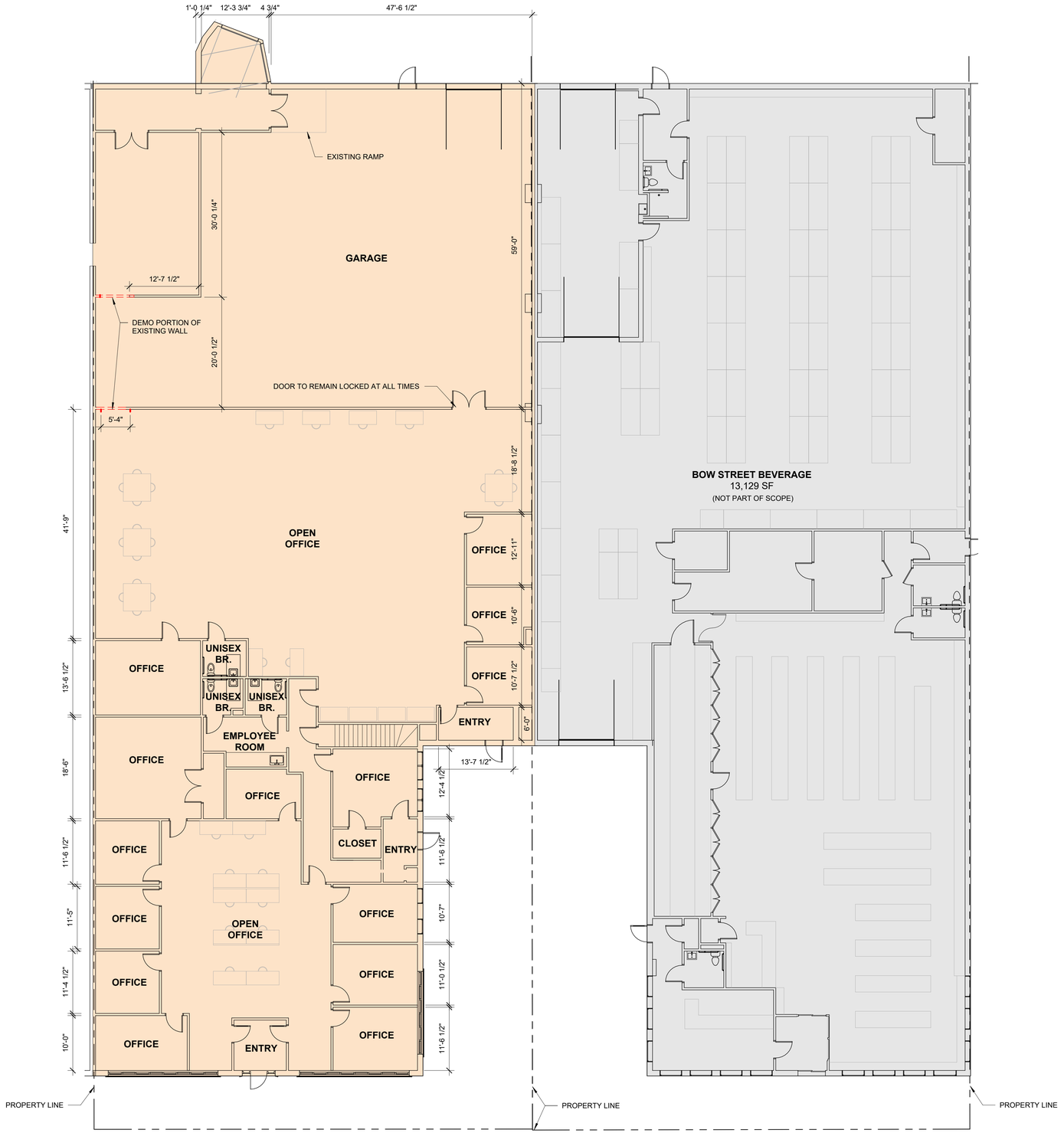
Key Plan:

501 - ACCESSIBILITY STANDARDS

Scale: As indicated

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A0.05



1 | 501 - FIRST FLOOR - EXISTING / DEMO

1" = 10'-0"

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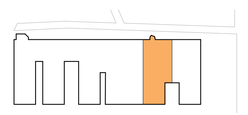
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Consultant:

Revisions:

Key Plan:

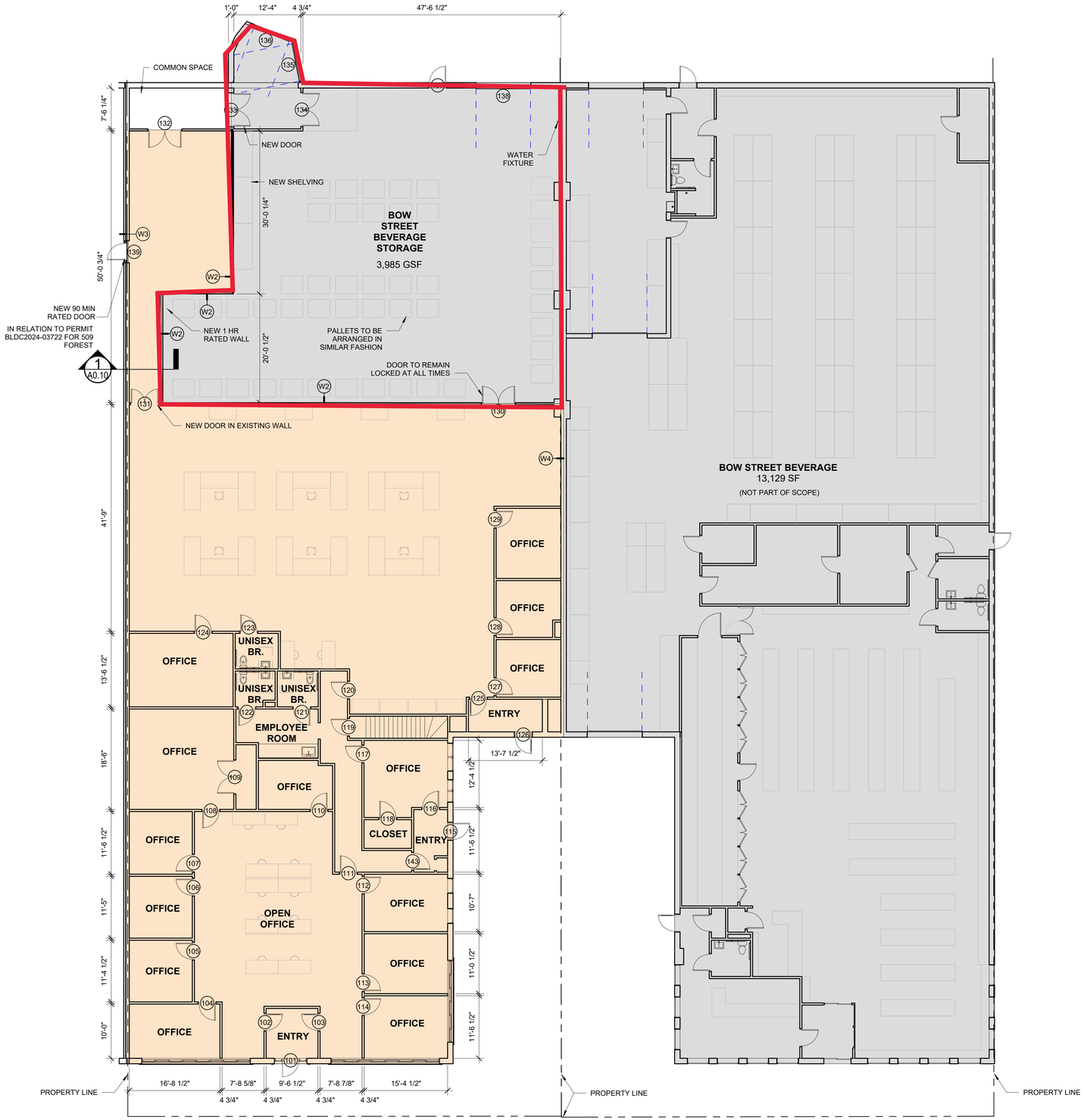


501 - EXISTING FLOOR PLAN

Scale: As indicated

MARCH 19, 2024

A0.06



1 | 501 - FIRST FLOOR - PROPOSED

1" = 10'-0"

NOTE: NEW WORK ILLUSTRATED IN RED.

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Project:

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Developers Collaborative
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Consultant:

Revisions:

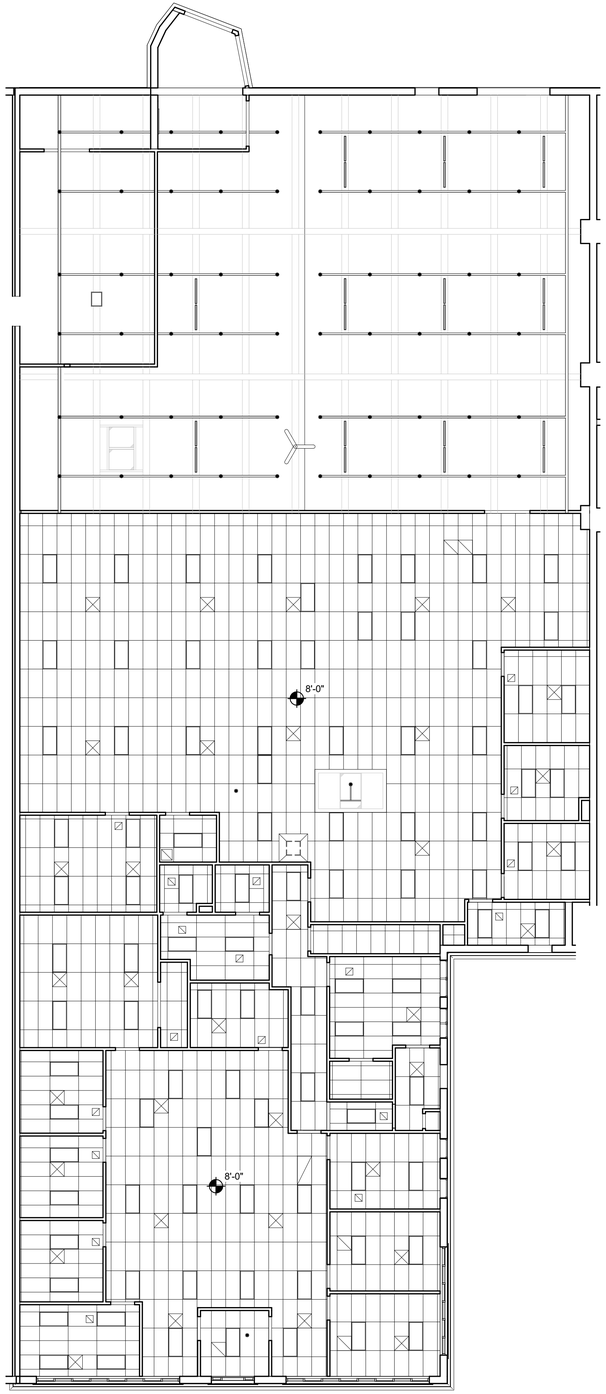
Key Plan:

501 - PROPOSED FLOOR PLAN

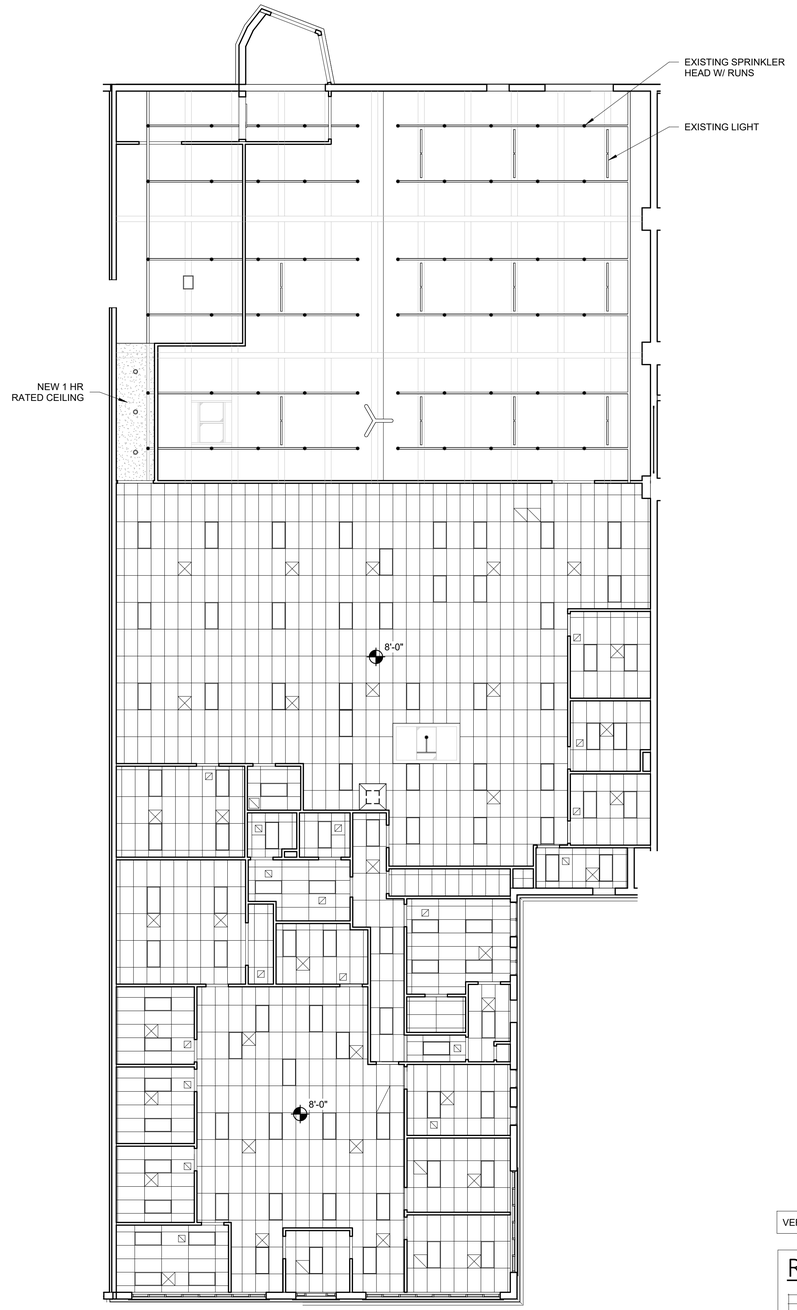
Scale: As indicated

MARCH 19, 2024

A0.07



1 501 - FIRST FLOOR - EXISTING RCP
1" = 10'-0"



2 501 - FIRST FLOOR - PROPOSED RCP
3/32" = 1'-0"

VERIFY MECHANICAL LOCATIONS IN FIELD

RCP LEGEND

- GYPSUM SOFFIT - SEE RCP FOR HEIGHT
- LIGHT FIXTURE - PENDANT
- LIGHT FIXTURE - PENDANT
- LIGHT FIXTURE - 2'X4' CEILING MOUINTED
- LIGHT FIXTURE - 2'X2' CEILING MOUINTED
- LIGHT FIXTURE - 1'X4' CEILING MOUINTED
- AIR RETURN - 2'X2'
- AIR RETURN - 2'X4'
- AIR SUPPLY - 2'X2'
- LIGHT FIXTURE - TRACK LIGHTS

RCP LEGEND
1" = 10'-0"

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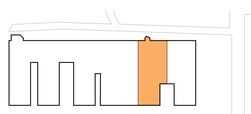
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Consultant:

Revisions:

Key Plan:

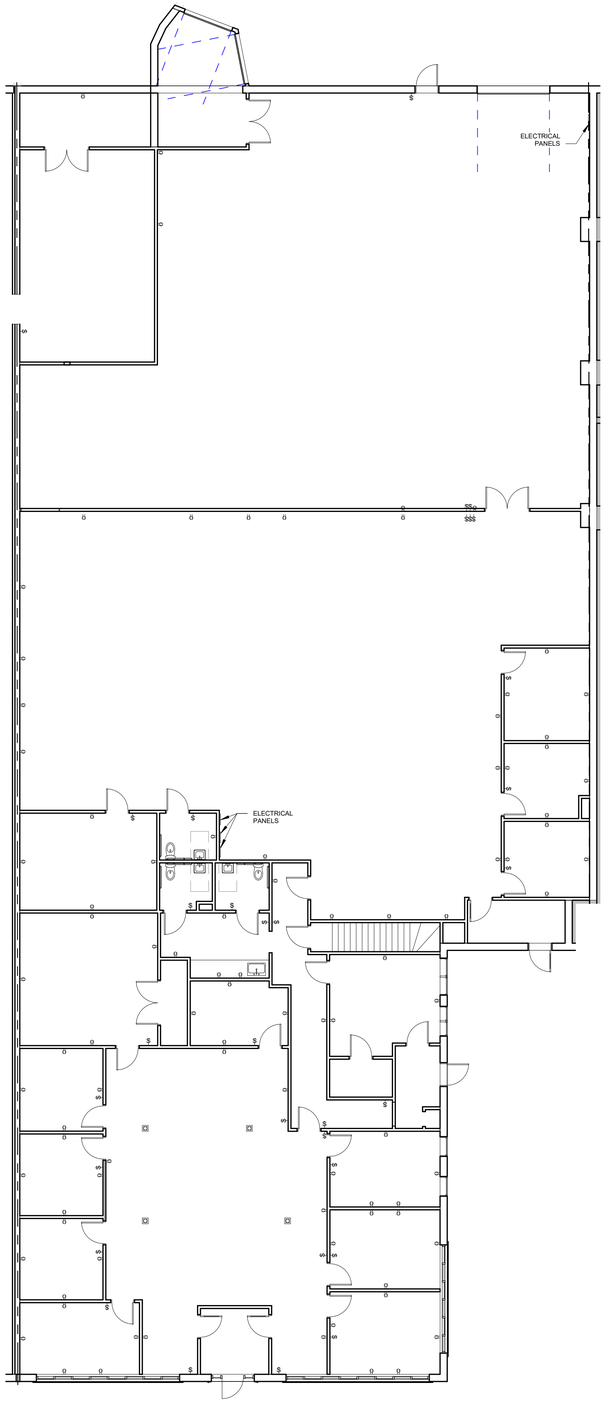


501 - RCP PLANS

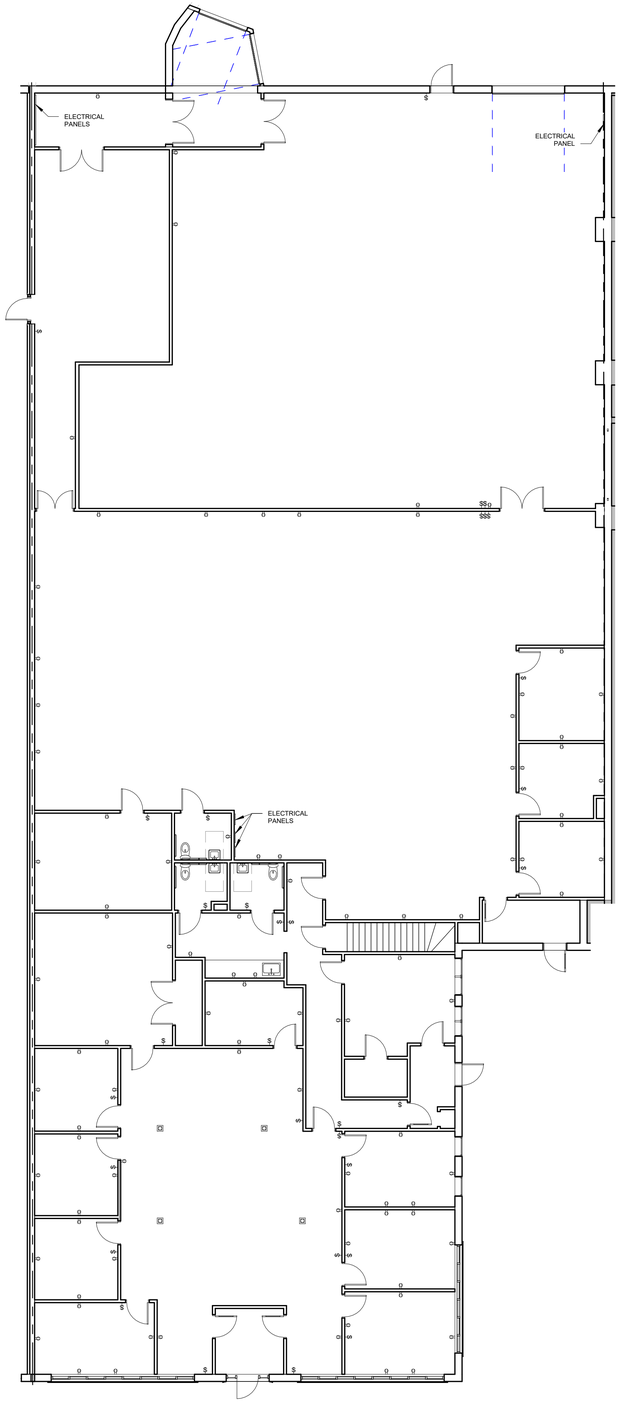
Scale:
As indicated

MARCH 19, 2024

A0.08



1 501 - FIRST FLOOR - EXISTING ELECTRICAL PLAN
1" = 10'-0"



2 501 - FIRST FLOOR - PROPOSED ELECTRICAL PLAN
1" = 10'-0"

VERIFY LIGHTING LOCATIONS IN FIELD

ELEC. PLAN LEGEND

- $ LIGHT SWITCH
- OUTLET
- WIRE COLUMN OUTLET

ELECTRICAL PLAN LEGEND
1" = 10'-0"

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Portland, ME 04103
207 - 939 - 7602

LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

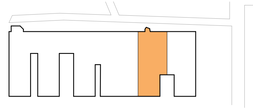
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:

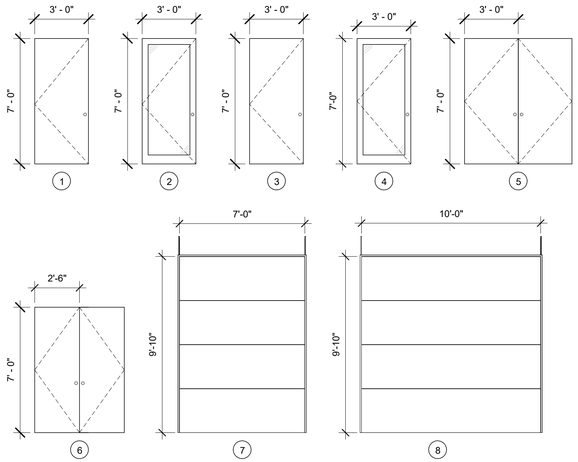


501 - ELECTRICAL PLANS

Scale:
As indicated

MARCH 19, 2024

A0.09

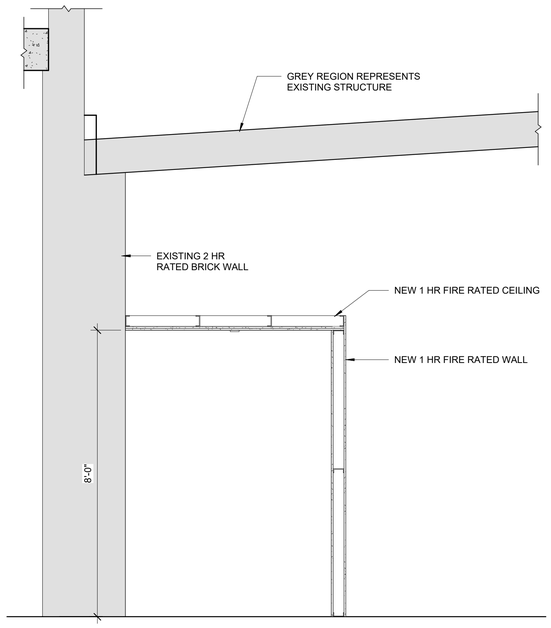


501 DOOR SCHEDULE

1/4" = 1'-0"

501 DOOR SCHEDULE

DOOR No.	LOCATION	SIZE			DOOR LEAF			DOOR FRAME		THRESHOLD	LABEL	OPERATION	SWEEP	CLOSER	FIRE RATING	REMARKS
		WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	MATERIAL	FINISH							
1ST FLOOR																
101	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
102	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		PASSAGE	No	Yes		EXISTING TO REMAIN
103	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		PASSAGE	No	Yes		EXISTING TO REMAIN
104	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
105	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
106	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
107	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
108	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
109	OFFICE	6'-0"	7'-0"	1 3/4"	05	SOLID CORE WOOD	PAINT	WOOD	PAINT			PASSAGE				EXISTING TO REMAIN
110	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
111	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT			PASSAGE				EXISTING TO REMAIN
112	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
113	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
114	OPEN OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
115	ENTRY	3'-0"	7'-0"	1 3/4"	03	HM / GLASS	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
116	ENTRY	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
117	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
118	CLOSET	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
119	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
120	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
121	UNISEX BR.	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
122	UNISEX BR.	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
123	UNISEX BR.	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
124	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			PRIVACY				EXISTING TO REMAIN
125	ENTRY	3'-0"	7'-0"	1 3/4"	04	HM / GLASS	PAINT	HM	PAINT	ALUM.		PASSAGE		Yes		EXISTING TO REMAIN
126	ENTRY	3'-0"	7'-0"	1 3/4"	02	HM / GLASS	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
127	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
128	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
129	OFFICE	3'-0"	7'-0"	1 3/4"	01	SOLID CORE WOOD	PAINT	WOOD	PAINT			CLASSROOM				EXISTING TO REMAIN
130	BOW STREET BEVERAGE STORAGE	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	WOOD	PAINT			PASSAGE	Yes	Yes	90 MIN.	EXISTING TO REMAIN
131	CORRIDOR	5'-0"	7'-0"	1 3/4"	06	HM	PAINT	HM	PAINT			PASSAGE		Yes		
132	CORRIDOR	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	HM	PAINT			PASSAGE				EXISTING TO REMAIN
133	CORRIDOR	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	HM	PAINT			PASSAGE		Yes		
134	CORRIDOR	6'-0"	7'-0"	1 3/4"	05	HM	PAINT	HM	PAINT			PASSAGE			90 MIN.	EXISTING TO REMAIN
135	CORRIDOR	7'-0"	9'-10"	1 3/4"	07	HM	PAINT	HM	PAINT	ALUM.		GARAGE				EXISTING TO REMAIN
136	CORRIDOR	7'-0"	9'-10"	1 3/4"	07	HM	PAINT	HM	PAINT	ALUM.		GARAGE				EXISTING TO REMAIN
137	BOW STREET BEVERAGE STORAGE	3'-0"	7'-0"	1 3/4"	03	HM	PAINT	HM	PAINT	ALUM.		ENTRANCE	Yes	Yes		EXISTING TO REMAIN
138	BOW STREET BEVERAGE STORAGE	10'-0"	9'-10"	1 3/4"	08	HM	PAINT	HM	PAINT	ALUM.		GARAGE				EXISTING TO REMAIN
139	CORRIDOR	3'-0"	7'-0"	1 3/4"	01	HM	PAINT	HM	PAINT			CLASSROOM		Yes	90 MIN.	



1 SECTION THROUGH THE NEW 1 HR RATED CORRIDOR

1/2" = 1'-0"

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LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

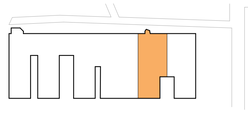
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - DOOR SCHEDULE & SECTION

Scale: As indicated

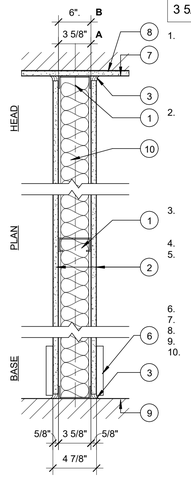
MARCH 19, 2024

A0.10

WALL TYPES

A	B
3 5/8"	6"

NON-RATED NON-BEARING PARTITION



1. **STUDS -** CHANNEL-SHAPED, MIN 3-5/8" WIDE BY 1-1/4" DEEP WITH 5/16" FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM NO. 25 MSG GALV STEEL. MAX STUD SPACING 24" O.C. STUDS TO BE CUT 1" LESS THAN ASSEMBLY HEIGHT. **NOTE: WALL TYPE 'B' USES 6" STUDS IN PLACE OF 3-5/8" STUDS.**
2. **TYPE X GYP BOARD -** 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.
3. **CAULKING AND SEALANTS -** A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL, BOTH SIDES OF WALL.
4. **BLOCKING - (NOT SHOWN)** WOOD BLOCKING AS NEEDED
5. **TAPE AND COMPOUND - (NOT SHOWN)** VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE, 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.
6. **BASE -** AS SCHEDULED
7. UNDERSIDE OF CEILING
8. 5/8" GYPSUM BOARD CEILING
9. TOP OF STRUCTURE
10. 3 1/2" FIBERGLASS BATT INSULATION FOR WALL TYPE 'A'; 6" FIBERGLASS BATT INSULATION FOR WALL TYPE 'B';

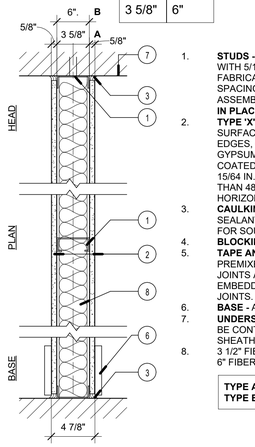
TYPE A WALLS = 3 5/8" STUDS
TYPE B WALLS = 6" STUDS

W1 | WALL 01- NON-RATED INTERIOR PARTITION

1 1/2" = 1'-0"

LABEL 1 HR	A	B
	3 5/8"	6"

1 HR NON-BEARING PARTITION
DESIGN NUMBER - UL U419



1. **STUDS -** CHANNEL-SHAPED, MIN 3-5/8" WIDE BY 1-1/4" DEEP WITH 5/16" FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM NO. 25 MSG GALV STEEL. MAX STUD SPACING 24" O.C. STUDS TO BE CUT 1" LESS THAN ASSEMBLY HEIGHT. **NOTE: WALL TYPE 'B' USES 6" STUDS IN PLACE OF 3-5/8" STUDS.**
2. **TYPE 'X' GYPSUM BOARD -** 5/8 IN. THICK PAPER OR VINYL SURFACED, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS NAILED 7 IN. OC WITH 6D CEMENT COATED NAILS 1-7/8 IN. LONG, 0.0915 IN. SHANK DIAM AND 15/64 IN. DIAM HEADS. WHEN USED IN WIDTHS OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.
3. **CAULKING AND SEALANTS -** A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL, BOTH SIDES OF WALL.
4. **BLOCKING - (NOT SHOWN)** WOOD BLOCKING AS NEEDED
5. **TAPE AND COMPOUND - (NOT SHOWN)** VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE, 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.
6. **BASE -** AS SCHEDULED
7. **UNDERSIDE OF FLOOR/ROOF SHEATHING ABOVE** WALL TO BE CONTINUOUS THROUGH FLOOR/ROOF FRAMING TO SHEATHING
8. 3 1/2" FIBERGLASS BATT INSULATION FOR WALL TYPE 'A'; 6" FIBERGLASS BATT INSULATION FOR WALL TYPE 'B';

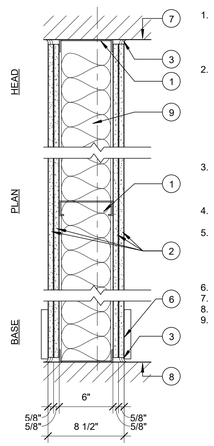
TYPE A WALLS = 3 5/8" STUDS
TYPE B WALLS = 6" STUDS

W2 | WALL 02 - 1 HR RATED INTERIOR PARTITION

1 1/2" = 1'-0"

LABEL 2 HR

2 HR RATED NON-BEARING PARTITION
DESIGN NUMBER - UL U419



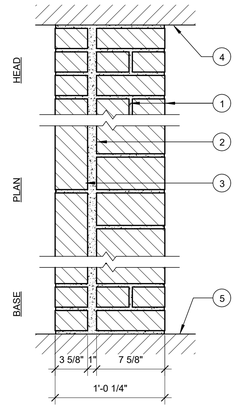
1. **STUDS -** CHANNEL-SHAPED, 6" WIDE BY 1-1/4" DEEP WITH 5/16" FOLDED BACK RETURN FLANGE LEGS. FABRICATED FROM NO. 25 MSG GALV STEEL. MAX STUD SPACING 24" O.C. STUDS TO BE CUT 1" LESS THAN ASSEMBLY HEIGHT.
2. **TYPE X GYP BOARD -** 5/8 IN. THICK GYPSUM PANELS, WITH BEVELED, SQUARE, OR TAPERED EDGES, APPLIED EITHER HORIZONTALLY OR VERTICALLY. GYPSUM PANELS FASTENED TO FRAMING WITH 1-1/4 IN. LONG TYPE W COARSE THREAD GYPSUM PANEL STEEL SCREWS SPACED A MAX 8 IN. OC, WITH LAST SCREW 1 IN. FROM EDGE OF BOARD. WHEN USED IN WIDTHS OF OTHER THAN 48 IN., GYPSUM BOARDS ARE TO BE INSTALLED HORIZONTALLY.
3. **CAULKING AND SEALANTS -** A BEAD OF ACOUSTICAL SEALANT APPLIED AROUND THE PARTITION PERIMETER FOR SOUND CONTROL, BOTH SIDES OF WALL.
4. **BLOCKING - (NOT SHOWN)** WOOD BLOCKING AS NEEDED
5. **TAPE AND COMPOUND - (NOT SHOWN)** VINYL, DRY OR PREMIXED JOINT COMPOUND, APPLIED IN TWO COATS TO JOINTS AND SCREW HEADS, PAPER TAPE, 2 IN. WIDE, EMBEDDED IN FIRST LAYER OF COMPOUND OVER ALL JOINTS.
6. **BASE -** AS SCHEDULED
7. UNDERSIDE OF CEILING
8. TOP OF STRUCTURE
9. 6" FIBERGLASS BATT INSULATION

W3 | WALL 03- 2 HR-RATED - 6" MTL STD INTERIOR PARTITION

1 1/2" = 1'-0"

LABEL 2 HR

EXISTING BRICK DIVIDING WALL
2 HOUR RATED ASSEMBLY



1. **MASONRY -** (2) LAYERS OF BRICK WITH MORTAR INFILL
2. **AIR BARRIER -** 1" AIR GAP WITH MORTAR CAPPING EXPOSED ENDS
3. **MASONRY -** (1) LAYER OF BRICK WITH GROUT INFILL
4. UNDERSIDE OF STRUCTURE
5. TOP OF STRUCTURE

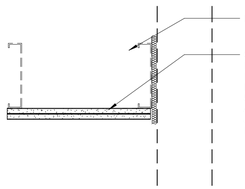
W4 | WALL TYPE 04 - EXISTING BRICK ASSEMBLY

1 1/2" = 1'-0"

CEILING TYPES

LABEL 1 HR

2-HOUR RATED CEILING ASSEMBLY
UL L556
FIRE RATING PROVIDED BY MEMBRANE ONLY.

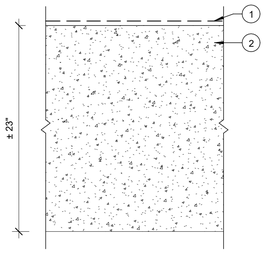


C1 | CEILING TYPE C1 - 1 HR RATED

1 1/2" = 1'-0"

LABEL MIN. 4 HR

FLOOR SYSTEM - EXISTING FIRST FLOOR SLAB
STC 58, IIC 32 FOR SIM. 8" SLAB



1. **FINISH FLOOR -** EXISTING TO REMAIN
2. **CONCRETE SLAB -** EXISTING BOARD-FORMED CONCRETE SLAB TO BE POLISHED AND USED AS FINISHED FLOOR IN SOME LOCATIONS

FLOOR SYSTEM - SLAB ON COLUMNS

F1 | FLOOR TYPE 01 - EXISTING FIRST FLOOR ASSEMBLY

1 1/2" = 1'-0"

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LICENSED ARCHITECT
VIRGINIE V. STANLEY
NO. 4515
STATE OF MAINE

Project:

501 FOREST AVE

PORTLAND, ME

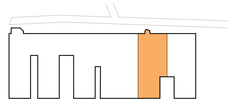
Owner/Client:

Developers Collaborative
631 Stevens Avenue
Portland, ME 04103

Consultant:

Revisions:

Key Plan:



501 - WALL & CEILING TYPES

Scale:
As indicated

MARCH 19, 2024

A0.11

OWNER'S INFORMATION CERTIFICATE

Name/address of property to be protected with sprinkler protection:
501 Forest Avenue, Portland ME

Name of owner: Building Owner: Kevin Bunker Tenant Owner: ~~Adam Nappi~~ PIAZZA LLC

Existing or planned construction is:

- ■ Fire resistive or noncombustible
- ❑ Wood frame or ordinary (masonry walls with wood beams)
- ❑ Unknown

Describe the intended use of the building: The rear portion of 501 will be storage for Bow Street Beverage (495 Forest Ave). This storage space will store alcohol.

Note regarding speculative buildings: The design and installation of the fire sprinkler system is dependent on an accurate description of the likely use of the building. Without specific information, assumptions will need to be made that will limit the actual use of the building. Make sure that you communicate any and all use considerations to the fire sprinkler contractor in this form and that you abide by all limitations regarding the use of the building based on the limitations of the fire sprinkler system that is eventually designed and installed.

Is the system installation intended for one of the following special occupancies:

Aircraft hangar	❑ Yes	■ No
Fixed guideway transit system	❑ Yes	■ No
Race track stable	❑ Yes	■ No
Marine terminal, pier, or wharf	❑ Yes	■ No
Airport terminal	❑ Yes	■ No
Aircraft engine test facility	❑ Yes	■ No
Power plant	❑ Yes	■ No
Water-cooling tower	❑ Yes	■ No

If the answer to any of the above is "yes," the appropriate NFPA standard should be referenced for sprinkler density/area criteria.

Indicate whether any of the following special materials are intended to be present:

Flammable or combustible liquids	■ Yes	❑ No
Aerosol products	❑ Yes	■ No
Nitrate film	❑ Yes	■ No
Pyroxylin plastic	❑ Yes	■ No
Compressed or liquefied gas cylinders	❑ Yes	■ No
Liquid or solid oxidizers	❑ Yes	■ No
Organic peroxide formulations	❑ Yes	■ No
Idle pallets	■ Yes	❑ No

If the answer to any of the above is "yes," describe type, location, arrangement, and intended maximum quantities.
This space will be storing alcohol on pallets until the product is moved into Bow Street Beverages neighboring location, 495 Forest Ave. The pallets of alcohol will be along the walls as well as in rows on the floor, in an organized fashion for fork lifts to access them.

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FIGURE A.23.1(b) Owner's Information Certificate.

Alcohol consists of both beer and other alcohol. There will be roughly +/- 46 pallets located in this location. This number will increase in the summer and decrease in the winter months. This space will be used for overflow product.

Indicate whether the protection is intended for one of the following specialized occupancies or areas:

Spray area or mixing room	❑ Yes	■ No
Solvent extraction	❑ Yes	■ No
Laboratory using chemicals	❑ Yes	■ No
Oxygen-fuel gas system for welding or cutting	❑ Yes	■ No
Acetylene cylinder charging	❑ Yes	■ No
Production or use of compressed or liquefied gases	❑ Yes	■ No
Commercial cooking operation	❑ Yes	■ No
Class A hyperbaric chamber	❑ Yes	■ No
Cleanroom	❑ Yes	■ No
Incinerator or waste handling system	❑ Yes	■ No
Linen handling system	❑ Yes	■ No
Industrial furnace	❑ Yes	■ No
Water-cooling tower	❑ Yes	■ No

If the answer to any of the above is "yes," describe type, location, arrangement, and intended maximum quantities.

Will there be any storage of products over 12 ft (3.7 m) in height? ❑ Yes ■ No

If the answer is "yes," describe product, intended storage arrangement, and height.

Will there be any storage of plastic, rubber, or similar products over 5 ft (1.5 m) high except as described above? ❑ Yes ■ No

If the answer is "yes," describe product, intended storage arrangement, and height.

Is there any special information concerning the water supply? ❑ Yes ■ No

If the answer is "yes," provide the information, including known environmental conditions that might be responsible for corrosion, including microbiologically influenced corrosion (MIC).

I certify that I have knowledge of the intended use of the property and that the above information is correct.

Signature of owner's representative or agent: member Date: 02/29/2024

Name of owner's representative or agent completing certificate (print): Virginie Stanley

Relationship and firm of agent (print): Architect

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NFPA 13 (p. 2 of 2)

FIGURE A.23.1(b) ***Continued***

Major Site Plan & SLOD Application
1 Bean Pot Circle
PL-002724-2023
IDEALS & Northeastern University, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Zach Powell
Public Hearing Date:	June 11, 2024	**Date:**	June 7, 2024

I. INTRODUCTION

The Initiative for Digital Engineering and Life Sciences (IDEALS) & Northeastern University has submitted a Major Site Plan and Site Location of Development (SLOD) application to facilitate the construction of a ±238,000 square foot post-secondary education building with on-site restaurant (Identified in **Figure 1** as the Learning, Research & Collaboration building), construction of a ±241,950 square foot mixed-use building with 610 automobile parking spaces and ±7,500 square feet of daycare facility space, and the adaptive reuse of the ±58,000 square foot Cannery Building, along with associated site improvements & landscaping. This application is the first site plan application reviewed under the Roux Institute Institutional Overlay Zone (hereafter referred to as Roux IOZ), which was approved by the City Council on February 6, 2023, under Orders 125-22/23 & 127-22/23.



Figure 1: View of the proposed development from the Eastern Promenade Trail

Two workshops have been held on this development proposal. The first workshop occurred on February 13, 2024 and provided the Board and public a comprehensive overview of the project. The second workshop occurred on April 23, 2024 and focused on transportation-related elements of the project. The Planning and Urban Development Department mailed 81 notices advertising this meeting to property owners within 500 feet of the site. Legal advertisements ran in the June 1, 2024, and June 4, 2024 editions of the *Portland Press Herald*.

Applicant: IDEALS & Northeastern University
Applicant Representative: Denise Cameron, Woodard & Curran & Sam Reiche, IDEALS

II. REQUIRED REVIEWS & REQUESTED WAIVERS

Review	Applicable Standards
Roux IOZ	Section 8.5.7
Major Site Plan Review	Section 14.6
Historic Preservation	Sections 8.5.7 (J) & 17.7.1
B-5 Design Review Standards	Design Manual
Shoreland Overlay Zone	Section 11.5.1
Site Location of Development	Technical Manual Section 14

City Staff are supportive of all of the following submitted waiver requests.

Waiver Requests	*Applicable Standards*
Parking garage space width of 8'6"	City of Portland Technical Manual §1.10 Parking Lot and Parking Space Design – Standard parking spaces shall be 9 feet wide by 18 feet long, except that low turnover parking spaces, such as those used by residents or employees, may be designed with a width of 8'6" and considered a standard parking space
Permit pre-treated stormwater discharge directly into Casco Bay	City of Portland Technical Manual Section 5 - Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management Section IV.
Installation of street lights on private property that do not meet residential street lighting requirements of the Technical Manual	City of Portland Technical Manual Section 10 - Municipal Street Lighting Standards - Subsection 10.2 General Standards

III. PROJECT DATA

Existing Zoning	B-5 Urban Commercial Zone Roux IOZ Shoreland Overlay Zone		
Property Size	1,152,589 square feet (~26.46 acres including 12.86 acres of submerged land)		
Existing Use	Vacant		
Proposed Use	Post-secondary school	230,000 square feet	
	Parking	234,450 square feet (610 structured spaces)	
	Office	58,000 square feet	
	Restaurant	8,000 square feet	
	Daycare facility	7,500 square feet	
	Existing	**Proposed**	**Net Change**
Building Footprint	47,160 sq. ft.	96,190 sq. ft.	+49,030 sq. ft.
Building Floor Area	58,000 square feet	537,950 square feet	+479,950 square feet
Parking Spaces	171	610 structured 14 surface	+453
Bicycle Parking Spaces	-	166	+166
EV Charging Stations	-	24	24

IV. SITE CONTEXT



Figure 2: Photo of project site looking northwest

The former B&M Baked Beans facility operated continuously from this site between 1913 and 2021, with the signature cannery building dating back to 1912. This property totals 26.46 acres, with an additional 12.86 acres of submerged land. The site is zoned Urban Commercial (B-5) and is also mapped within the Roux IOZ. Several interconnected structures on the site were demolished in 2023, with the five-story Cannery Building and three-story Cod Fish Building, built over the existing pier, still occupying the site as shown in **Figure 2**. The Cannery Building was unanimously recommended by the Historic Preservation Board for designation as a local landmark, which was designated by the City Council on October 17, 2022, under Order 86-22/23. The majority of the non-submerged portion of the property is impervious surface, with 10 acres being either building area, off-street surface parking, or vehicle maneuvering/loading area. The remainder of the site is either lawn or early successional non-lawn area.

In terms of surrounding context, the site is bordered by Casco Bay to the South, Maine DOT rail right-of-way to the north and east, and Maine DOT Interstate 295 right-of-way to the north and west. Surrounding uses, include the Maine Yacht Center, located just north of the rail corridor, which is zoned Low Impact Industrial (I-L), residential uses to the north and west of the site, zoned R-3 and R-5 Residential, respectively, and commercial uses along both Veranda Street and Washington Avenue, zoned Community Business (B-2b).

Automobile, bicycle, and pedestrian access to the site is provided by Sherwood Street via Veranda Street. Two METRO routes (7 & 9A/9B) have existing stops within the vicinity of the project, and an additional ten local and express routes are accessible via one transfer. The site is also proximate to shared-use facilities on the Back Cove Trail and the western portion of Tukey's Bridge, which provides connections to the Eastern Promenade and Bayside Trail.

V. PROPOSED DEVELOPMENT

A summary of the proposed uses is included below in **Table 1** and is shown in **Figure 3.**

Table 1: Proposed Uses by Size	
Use	*Scale of Use*
Post-secondary education (shown in purple)	3,123 students (230,000 square feet)
Office (shown in orange)	58,000 square feet
Restaurant & Retail (shown in purple)	8,000 square feet
Structured parking (shown in yellow)	610 spaces (234,450 square feet)
Daycare center (shown in magenta)	7,500 square feet

The Applicant proposes the demolition of the Codfish Building and supporting pier, which were locally deemed non-contributing structures due to infrastructure concerns, adaptive reuse of the local historically designated Cannery Building (shown in orange in **Figure 3**), reconstruction of the pier, and construction of two new buildings: the Learning, Research & Collaboration Building that will house the post-secondary education, restaurant & retail uses for the site, and a building with 610 structured parking spaces and a ±7,500 square foot daycare center.

Associated site improvements include the removal of existing vegetation along the site to facilitate shoreline stabilization, a robust landscape & lighting plan, and the creation of shared-use pathways throughout the site that will provide pedestrian and bicycle connections to the Back Cove Trail & Sherwood Street.

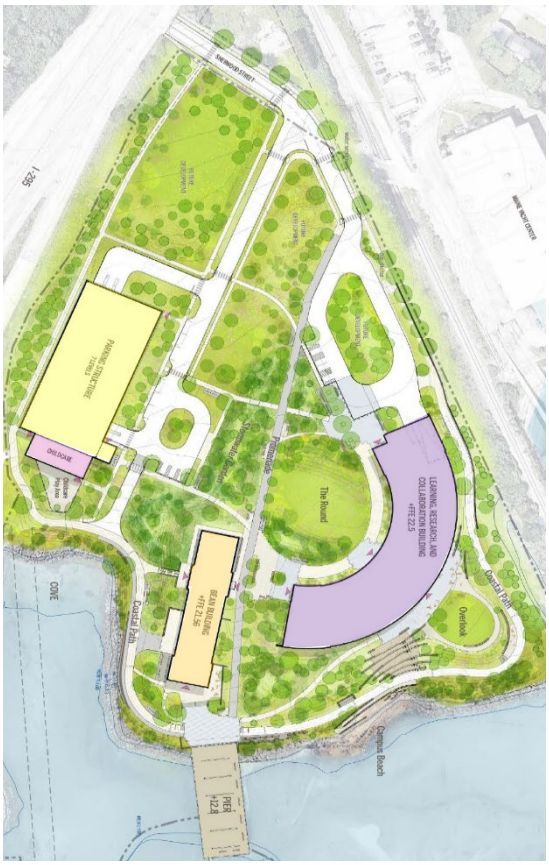


Figure 3: Rendered site plan, with shading by proposed use

VI. PRIOR WORKSHOPS

At the February 13, 2024 workshop, the Applicant team provided an overview of the project and the discussion focused on related review processes such as the Traffic Movement Permit (TMP), transportation demand management (TDM) measures, connections to the East Deering Pathways to Bridge the Gap RAISE grant application, and provisions for community access onto the site. The Applicant and City Staff informed the Board that the TMP was under the jurisdiction of the Maine Department of Transportation (MaineDOT) and that City Staff was participating in those conversations. In addition, the Applicant explained to the Board the propose development is not reliant on the RAISE grant which contemplates infrastructure beyond the scope of the proposal. Coming out of this workshop, Board members requested a second workshop solely focusing on the transportation elements of the project.

At the April 23, 2024 workshop, Planning Staff presented recommended mitigation measures required for site plan and how those mitigation measures would interact with potential mitigation measures that would be required through MaineDOT's review of the TMP application. The Applicant team provided additional information on supporting transportation data for the site plan & TMP applications, proposed TDM measures, and anticipated traffic impacts of the project. Board comments focused on:

- The proposed left-hand turn prohibition from Veranda Street onto Interstate 295 resulting in motorists making traffic movements to circumvent the prohibition;
- A request for additional information on the timing & scope of anticipated METRO service on- site;
- A requesting for videos of the traffic modelling for the project at Sherwood & Veranda Streets and Veranda Street & Washington Avenue, including the left-hand turn prohibition for motorists; and
- Request for additional information to demonstrate financial capacity for the project

VII. RIGHT, TITLE, AND INTEREST

The Applicant has submitted a purchase and sale agreement between IDEALS & Northeastern University as demonstration of Right, Title, and Interest (**Attachment G**). The Applicant notes that the proposed transfer of property from IDEALS to Northeastern University will occur before the submission of a building permit application for the project.

VIII. FINANCIAL AND TECHNICAL CAPACITY

The Applicant has provided a letter from Northeastern University in **Attachment D** stating that the project costs of Phase 1 (Approximately $470 million) would come from already pledged philanthropic resources and debt. The Applicant has submitted additional materials in **Attachments G1 & G2** documenting the vote by Northeastern University trustees to dedicate funds to the project, along with a financial summary from 2023.

Also included in **Attachment D** is a summary of the engineering, landscape architecture, and architecture firms and partners who are completing various aspects of design. The project team includes Woodard & Curran (Engineering), Stephen Stimson Associates (Landscape architecture), Cambridge Seven Associates (New construction architecture), and Bruner/Cott Architects (Historic preservation architecture). The combined experiences and portfolios of all partners demonstrate technical capacity.

IX. ZONING ANALYSIS

A zoning review has been completed for this application and the project has been found to meet the dimensional and use requirements of the B-5 Urban Commercial & Roux Institutional Overlay Zone (IOZ) standards as shown in Table 2 below:

Table 2: Dimensional and Use Standard Analysis

Zoning Use Review (Article 6)

Use Permissions (Table 6-A – Table 6-F)

Proposed Use	***Zones***	***Type of Use***
General office (>5,000 SF)	***B-5 & Roux IOZ***	Permitted.
Laboratory and research facility		
Off-street parking		
Post-secondary school		
Preschool facility		
Restaurant		

Zoning Dimensional Review (Article 7)

Standard	***Requirement – Roux IOZ***	***Proposed – LRC building***	***Proposed – Structured parking & preschool facility building***	***Finding***
Structure height	Comply with Roux Height Map	75' Height Zone: **53.2'** 150' Height Zone: **128.3'** 155' Height Zone: **133.1'**	75' Height Zone: **66.2'** 155' Height Zone: **86.7'** 170' Height Zone: **66.2'**	Met.

Supplemental Dimensional Standards (Sec. 7.4)				
Standard	***Requirement 1***	***Requirement 2***	***Proposed***	***Finding***
7.4.3(B)(2)(c)	**Photovoltaic structures can have a maximum height of 8 feet and must be setback from the building façade 1' for 1' of the proposed height.**	**4-6' heights**	Setback 12+' from building edges	Met.

B-5 Urban Commercial Zone Purpose Statement

*To provide **areas of the peninsula** near the downtown where a **mixture of uses**, including marine, **industrial, commercial**, and residential, is encouraged. The B-5 and B-5b zones are characterized by **larger underdeveloped lots with great potential for denser, clustered, urban mixed-use development and more efficient reuse of existing land and buildings.** It is anticipated that the dense, mixed-uses of the B-5 and B-5b zones will rely on a shared infrastructure system, including service alleys, parking lots, public transportation facilities, stormwater management, and driveways.*

All of the proposed uses are permitted in the B-5 zone per Table 6-C, except laboratory and research facility. Table 8-E in the Roux IOZ permits the use of laboratory and research facility on the site.

X. STATUS OF MAINEDOT TRAFFIC MOVEMENT PERMIT (TMP) APPLICATION

A draft of the Traffic Movement Permit has been included as **Attachment 8** which outlines the recommended mitigation, overall requirements for work, and approval length (5 years if building permits have not been issued and 7 years if certificates of occupancy have not been issued) for the project. City Staff will continue to review and provide comment before final action from MaineDOT. Action on the TMP is anticipated to take place within the next month.

XI. STAFF REVIEW

The application is subject to the following standards:

- Site Plan Review Standards (§14.6 of the Land Use Code)
- The Roux Institute at Northeastern University Overlay Zone Regulatory Framework (§8.5.7 of the Land Use Code)
- Shoreland Zone Site Plan Standards (§11.5.1 of the Land Use Code)
- Site Law of Development (SLOD) Review Standards (§14.3 of the Technical Manual)

The proposed development has been reviewed by staff for conformance with these relevant review standards and have provided comments below:

Site Plan Review Standards (Section 14.6 of the Land Use Code)

Transportation Standards (Section 14.6.1)

A. Impact on surrounding street systems

Efforts have been made over the course of this project's multiple reviews to coordinate this project with the surrounding neighborhood and transportation system it abuts, and to safely plan and mitigate for anticipated road impacts. The primary access point to the site is Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street

consists of a 30-foot-wide roadway in a 50-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. Sherwood Street will continue to serve as vehicular access into and out of the campus. The Applicant is proposing to reconstruct Sherwood Street to improve connectivity and pedestrian safety to the East Deering neighborhood from the campus by providing a new concrete sidewalk on the south side and a shared use path on the north side of Sherwood Street. As part of the Traffic Movement Permit mitigation, a raised intersection will be implemented across Sherwood Street at Veranda Street along with other mitigation measures.

The Applicant has also committed to provide the City with $75,000 to be used for the installation of at least three traffic calming devices on Sherwood Street between Veranda and Presumpscot streets. This commitment has been added as a condition of approval and would require the Applicant to provide the City with these funds prior to the issuance of a building permit.

The Applicant also has provided a Transportation Demand Management Plan (TDM) that identifies a number of strategies for managing and reducing traffic trips and parking demand including 100% subsidization of transit fares for students, staff, and faculty, facilitating GP METRO service onto the site, and enhancing bicycle & pedestrian connections to the site along Sherwood Street & under Tukey's Bridge.

Consulting traffic engineer Tom Errico reviewed the submitted traffic analysis and concurred that following an assessment of on-site parking conditions, "*the parking garage supply will limit traffic volumes entering the site.The traffic study analysis completed by the Applicant represented conditions with traffic volumes higher than can be accommodated by the garage and thus represents a worst-case condition. I have no further comment.*" Additionally, the Applicant provided back up information on the SimTraffic model field calibration. Tom Errico, confirmed the model is reasonably calibrated stating: "*Based upon my review of the information provided, the Sim Traffic model is reasonably calibrated. I have no further comment.*"

The proposed project is subject to a MAINEDOT Traffic Movement Permit (TMP) and a draft TMP to address impacts on the surrounding street systems has been issued by the MaineDOT for review by the Applicant and City Staff. As part of the TMP, the Applicant held a scoping hearing open to the public on December 13, 2023. During this initial process, the study area for the project was established, with areas of further study identified for impacts to the Washington Avenue, Presumpscot Street & Veranda Street corridors.

An area of focus in the TMP review is the intersection of Sherwood & Veranda Streets, given that it is the sole automobile access point to the site. Given the increase in traffic at this intersection, an analysis to determine if the anticipated traffic necessitates the installation of a traffic signal (also known as a signal warrant analysis) was required. The Applicant team collected baseline data on April 11, 2024 to compare with the anticipated increases to 2032 traffic volumes. The signal warrant analysis found that the necessary traffic signal warrant thresholds for installation of a signal were not met at this time. It is anticipated in contemplated future development phases that a signal will be required for the intersection.

As a requirement of the MAINEDOT issued TMP, the Applicant will be responsible for providing off-site mitigation improvements as outlined in the permit. The Applicant is also reconstructing Sherwood Street to improve connectivity and will include new sidewalks and shared use path.

This standard is considered met as a result of the proposed improvements related to the major site plan application described above and provided in the Applicant's application materials, combined with the MAINEDOT traffic movement permit mitigation requirements to address impacts on the surrounding street network.

B. Access and circulation

The site is relatively isolated with the primary vehicular access point provided via Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street consists of a 30-foot-wide roadway in a 50-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. The site is in close proximity to Interstate 295, Route 1, Washington Avenue, and Baxter Boulevard. The traffic signal system along Washington Avenue is an adaptive signal that can respond to traffic conditions. The intersections of Washington Avenue at Veranda Street, at Presumpscot Street, and at Ocean Avenue are each signalized intersections.

There has been extensive coordination on the part of the Applicant, City of Portland, including third party traffic consultant Tom Errico with TY Lin, MaineDOT, and neighborhood traffic consultant Bill Bray from Traffic Solutions to ensure the establishment of safe and efficient systems for all users and the neighborhood.

Sherwood Street will continue to serve as vehicular access into and out of the campus in the future, similar to how vehicles historically used Sherwood Street as the primary access point for B&G Foods, Inc. industrial operations of the B&M Baked Beans factory. However, the Applicant is proposing to reconstruct Sherwood Street to improve connectivity and pedestrian safety to the East Deering neighborhood from the campus by providing a new concrete sidewalk on the south side and a shared-use path on the north side of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. While Sherwood Street is identified as an asphalt sidewalk area, the Department of Public Works (DPW) has reviewed the Applicant's proposal and supports concrete in this location. Once on the site, pedestrian facilities will connect site uses and points along the waterfront and throughout the campus, which will significantly increase walkability for the site.

DPW recommended that the Applicant explore the installation of a small roundabout on Sherwood Street east of Interstate 295. The Applicant analyzed the installation of a roundabout in this location and has determined that a roundabout on the development block would result in negative queuing and safety impacts, and would impede METRO operations on-site. Therefore, it was determined that a stop condition would provide a safer and more efficient experience for METRO bus service, as well as bicycle and pedestrian crossings. The current design of Sherwood Street east of Interstate 295 leading into the site provides safe and reasonable access and circulation for all users of the site. Private on-site roadways will connect from the end of Sherwood Street to the proposed garage and drop-off areas. No additional public or private vehicular rights of way are proposed as part of this phase of development.

The surrounding East Deering neighborhood provides pedestrian amenities including sidewalks along Washington Avenue and Veranda Street. A sidewalk runs along the west side of Bates Street but narrows and is periodically blocked by utility poles. There is no sidewalk present on the east side of Bates Street. The Back Cove Trail (multi-use path) runs along the Back Cove and Tukey's Bridge near the site. The sidewalk connecting from the intersection of Washington Avenue/Veranda Street

is narrow and adjacent to vehicular traffic on the ramp to Interstate 295. The existing sidewalk merges with the Back Cove Trail which adds bicycle and pedestrian demand to a narrow, shared use path over Tukey's Bridge. There is no existing direct connection to this shared use path from the campus, therefore under current conditions pedestrians and bicyclists on the Back Cove Trail must travel down Bates Street through the Washington Avenue/Veranda Street intersection to eventually access the campus or points north on Veranda Street.

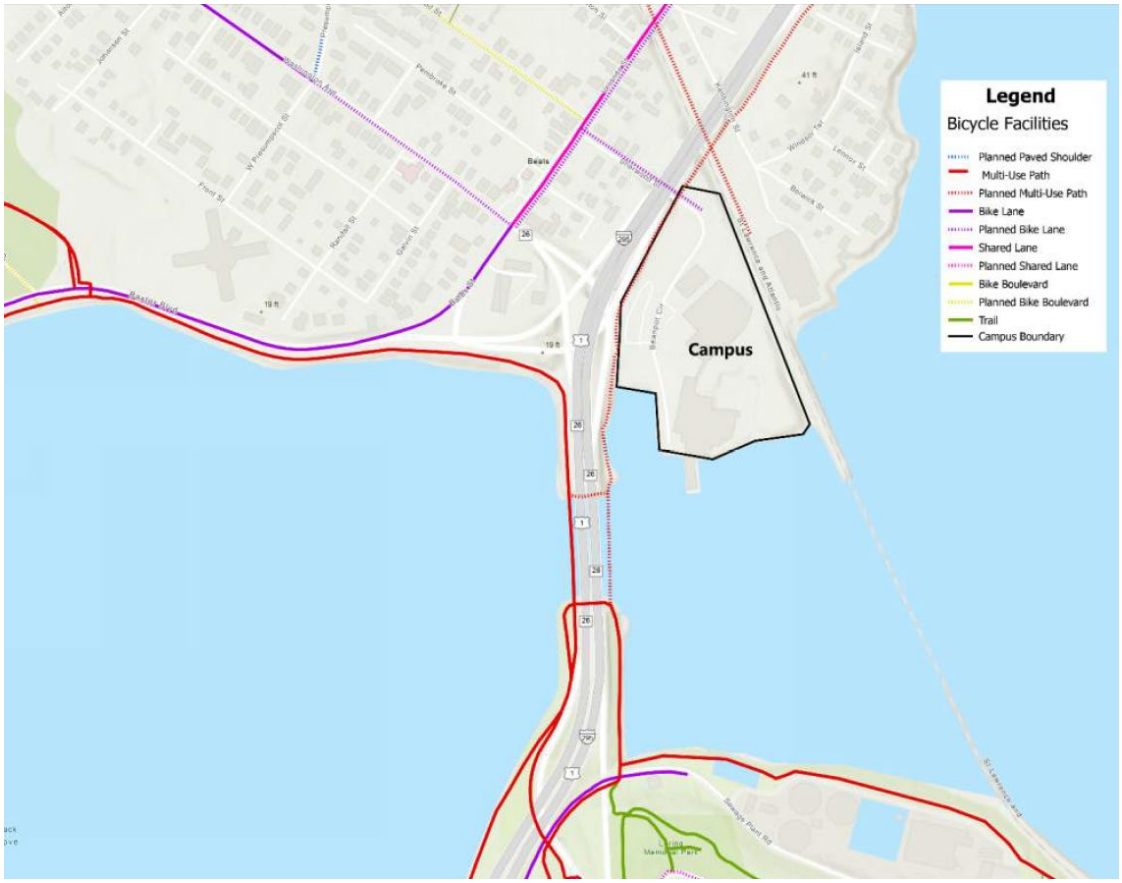


Figure 4: Existing and Potential Future Bicycle Facilities figure from TDM plan

The Applicant will improve pedestrian safety and connectivity to the surrounding neighborhood from the campus by providing a new shared use path under Tukey's Bridge that will directly connect the Roux Institute campus to the Back Cove trail. This new connection will provide direct access to the peninsula by connecting to the existing multi-use path on the west side of Tukey's Bridge, leading to other citywide trail connections, such as the Bayside Trail, Eastern Promenade Trail, and Fore River Trail via the Eastern Promenade Trail. Furthermore, the new multi-use path will provide easier access to off-peninsula neighborhoods via Baxter Boulevard and the Back Cove Trail. The Applicant is also proposing to widen the multi-use pathway junction near Tukey's Bridge. Both shared use paths would provide wider, safer, and more comfortable accommodations for pedestrians and improve connectivity to several neighborhoods throughout the City. Furthermore, as mentioned above, the Applicant will be reconstructing Sherwood Street east of Veranda Street to include concrete sidewalks and multi-use path.

During the second workshop, several Board members requested that the Applicant explore installing a crosswalk connection on the east side of Bates and Veranda streets where it intersects with

Washington Avenue. While this request is outside of the Planning Board's purview for review as part of the Major Site Plan application the Applicant did explore adding a new crosswalk as part of the TMP. In coordination with City Staff, third party traffic engineer Tom Errico, DPW, and MAINEDOT it was determined that a new crosswalk would not be feasible in this location due to proposed slopes for the landing next to Howie's Pub not being ADA-compliant.

Staff is recommending that the transportation impact fee be modified through the impact fee program's formal modification process by the Planning Board as outlined in Section 16.5 of the Land Use Code because the developer, as part of the development approval is required to make infrastructure improvements for which the impact fee would be collected or an equivalent improvement. Specifically, the transportation impact fee will be credited toward the completion of the following eligible projects: completion of the multi-use pathway under Tukey's Bridge connecting Back Cove Trail to the Roux Institute campus and the completion of improvements to the junction to the existing bicycle and pedestrian path on Tukey's Bridge.

This standard is considered met as a result of the proposed improvements related to the major site plan application described above and provided in the Applicant's application materials, combined with the MAINEDOT traffic movement permit mitigation requirements to address impacts on surrounding streets to ensure safe access and circulation to and from the site.

C. Public transit access

Two METRO bus routes currently serve bus stops near the campus: METRO Route 7 and METRO Routes 9A/9B. Route 7 provides services between Portland and Falmouth with a stop at the METRO Pulse located in Downtown Portland on the peninsula as well as a stop near the campus at Veranda Street/Sherwood Street approximately a quarter of a mile from the center of the campus. Routes 9A/9B provide bi-directional bus service between downtown Portland and North Deering with service running along Washington Avenue and Congress Street. Route 9A/9B stops on Washington Avenue near the site at Galvin Street and Veranda Street respectively which is less than a half mile from the site. Bus transfers can be made at Pulse and other stops on the peninsula to reach the rest of Portland and several outlying towns. Buses run throughout the day, readily accommodating the varied schedules of students and other campus users. METRO BREEZ express bus service to Yarmouth, Freeport, and Brunswick and the Husky Line to Westbrook and Gorham establish a regional footprint for transit service.

The Applicant proposes the construction of a transit shelter on site that connects to the public sidewalk system. In **Attachment 6**, GP METRO has clarified that the Roux Institute will be providing 100% subsidization of transit fares and Route #5 will stop at the site. The submission of a transit service plan between the Applicant and GP METRO at least six months prior to the issuance of a certificate of occupancy has been recommended as a component of the requested TDM plan updates.

D. Parking

The Applicant's original application submission included a parking garage with 708 spaces. Based on Planning Board and public feedback concerning the amount of parking spaces proposed on-site within the garage the Applicant has revised the total capacity and reduced the structure to accommodate 610 total parking spaces. An additional 14 surface parking spaces are also proposed, including ADA spaces. A parking demand analysis was submitted as a component of the TDM plan

identifying a peak demand of 581 spaces at opening (581), 610 spaces proposed in the garage and 14 surface parking spaces, and an anticipated demand in 2032 of 881 spaces. In the May 23rd response letter, the Applicant has identified that the parking ratio for this phase of development to be 2.06 spaces/1,000 square feet of building area. The proposed parking ratio aligns the number of proposed spaces (2.06 spaces/ (303,600 total square feet/1,000) = 625) and aims to constrain parking compared to industry standards for general office buildings (2.39 spaces/1,000 square feet). Consulting traffic engineer Tom Errico reviewed the submitted parking demand analysis and concurred that the proposed number of automobile parking spaces meets the anticipated demand and is appropriate.

The *City of Portland Technical Manual Section 1.10 Parking Lot and Parking Space Design*, requires standard parking spaces to be 9 feet wide by 18 feet long, except that low turnover parking spaces, such as those used by residents or employees, may be designed with a width of 8' 6" and considered a standard parking space. Tom Errico has reviewed the Applicant's waiver request and supports the minor deviation of the proposed parking spaces in the garage based on the anticipated low vehicle turnover at this location. The campus will provide 166 bicycle parking spaces for students, staff, faculty, and visitors. This quantity is more than triple the required amount of bicycle parking per the City's regulations described in Table 19-A of the Land Use Code.

E. Transportation demand management (TDM)

The Applicant has submitted a TDM plan that provides a cohesive approach to establish a targeted set of strategies aimed at reducing single occupancy vehicle trips to and from the site. Key strategies from the plan include:

- Establishing METRO service on-site with Route #5
- Providing 100% subsidization of METRO passes for students, faculty, and staff
- Installation of shared-use path connections to the site from Sherwood Street & the Back Cove Trail via a connection under Tukey's Bridge
- Constraining on-site parking to prioritize use of alternative transportation modes

The submitted TDM plan has been reviewed by Transportation Program Manager Bruce Hyman, who has found that the TDM measures are consistent with the City's requirements. Upon issuance of the TMP, staff is requesting that the TDM plan be updated to incorporate mitigation measures required as part of the MAINEDOT TMP. A condition of approval to provide a final TDM plan that incorporates this information for review by the Planning Authority has been added for the Board's consideration.

Environmental Quality Standards (Section 14.6.2)

A. Preservation of significant natural features

Immediately adjacent to this former industrial site are natural resource areas including: an estuarine intertidal emergent marsh located east of the site near the rail corridor; coastal wetlands for all areas below highest annual tide; tidal waterfowl and wading bird habitat, and blue mussel habitat. A wetland delineation investigation, including functions and values assessment was conducted by FB Environmental in June of 2023, and is summarized in the Applicant's submission. Portions of the site are delineated as Special Flood Hazard Areas according to FEMA's Flood Insurance Rate Map (FIRM)

Official species identified in association with the project area includes the northern long-eared bat, roseate tern, and monarch butterfly. However, there are no critical habitat areas located within the project area. Based on US Fish and Wildlife information, the northern-long eared bat typically lives in caves during the winter months, and in trees larger than three inches in diameter during the summer, with migration between these two habitats in the spring and fall. Tree clearance will occur between August and May to mitigate impacts on the northern long-eared bat to avoid migratory periods. Continuing assessment of impacts will occur through the review processes of the associated NRPA permit and Army Corps of Engineers General Permit

In addition to NRPA permit and Army Corps of Engineers permits, the proposed project is not anticipated to have a negative impact on natural features, therefore this standard is considered met.

B. Landscape preservation

A tree survey of all existing trees 10" DBH or greater on the site has been submitted, with nine trees identified. All of these trees are proposed to be removed as part of the development. §14.6.2(B)(1) of the Land Use Code requires development to incorporate, limit disturbance to, and limit removal of existing trees.

The Applicant has provided justification clarifying that the vegetation must be removed to support shoreline stabilization efforts and regrading of the site would make the retention of the existing vegetation infeasible. New plantings are proposed in their place using native plantings that will help support the accompanying shoreline stabilization efforts.

C. Site landscaping and buffers

The site location being buffered by Interstate 295, the rail line, and Casco Bay will sufficiently buffer the proposed site uses from the public right-of-way and neighboring properties.

The site includes two surface parking lots, each with five parking spaces, and requires the planting of two trees in parking islands. Both surface parking areas provide more than two trees in the parking islands and meet parking lot landscaping requirements. Loading, servicing areas, trash and recycling areas are screened from view of public sidewalks, streets, and adjacent properties.

The site has 288.57 feet of street frontage and is required to plant one tree per 25-35 feet on center, or 8-12 street trees, within the public right-of-way. As submitted and approved by the City Forester, two London Plane trees are proposed to be planted in the right-of-way and seven London Plane trees are proposed to be planted within 20 feet of the property line, which is an alternative identified in §4.6.4 of the Technical Manual. With the proposed plantings as described and shown in the Applicant's submitted materials this standard is considered met.

The proposed site plan and landscape plan creates a complete design through the use of active and passive recreation facilities, plantings & gardens, and shared-use pathways that define future development blocks, which is consistent with the approach described in the Roux Institute Regulatory Framework in Section 8.5.7 of the Land Use Code.

D. Water quality/storm water management/erosion control

The proposed development is not located within an urban impaired stream watershed and does not need to meet the urban impaired stream standards of the Technical Manual.

Minor clarification on treatment areas and updates to drain manhole and catch basin sizing have been requested by third-party stormwater consultants Wright Pierce for the stormwater management plan. The Applicant has provided a response addressing these comments in **Attachment A4**. Additionally, the design of Sherwood Street storm drain is still under review and coordination with the Department of Public Works. Updates to the stormwater management plan and finalization & approval of the storm drain design for Sherwood Street are recommended as conditions of approval. Through addressing these recommended conditions of approval, the project demonstrates compliance with the water quality, stormwater management, and erosion control standards of the Land Use Code.

Public Infrastructure and Community Safety Standards (Section 14.6.3)

A. Consistency with City Master Plans

Overall, the submitted application aligns with the goals of One Climate Future, through the inclusion of renewable energy infrastructure, goals to reduce single occupancy vehicle miles traveled through transit and shared-use connections & facilities, and sustainable development practices outlined in the Sustainability Charter. In addition, the proposed project is alignment with the Roux Institute's Institutional Development Plan. This standard is considered met.

B. Public safety and fire prevention

The application has been reviewed by Captain Jason Grant of the Portland Fire Department, who has confirmed that the application provides sufficient access and infrastructure for the site. As part of the review of the Roux IOZ, the Fire Department confirmed that there was sufficient clearance under the Interstate 295 underpass for City fire trucks to access the site.

Evidence of coordination to establish E-911 addresses with the Department of Public Works has been sent to Planning Staff.

The western elevation of the structured parking & preschool facility building has been updated to screen parking from the perimeter access loop and the loop has been widened to create a more welcoming experience for pedestrians & cyclists.

C. Availability and capacity of public utilities

A copy of an ability-to-serve letter for sewer service has been submitted for the site, with a recommended condition of approval to finalize connections into Sherwood Street. To demonstrate compliance with this standard for other utilities, City Staff is recommending a condition of approval that ability to serve letters must be submitted prior to issuance of a building permit for the site.

B. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

The allowable building heights on the campus are informed by the location and prominence of the historic Bean Building, the desire to create substantial public open space while meeting all programmatic goals for the Roux Institute at Northeastern University, resilient building design, and potential shadow and other impacts to neighboring buildings. The proposed development meets the massing and height requirements specified and permitted in the Roux Institute IOZ, which governs the dimensional standards.

The property abuts elevated portions of Interstate 295 to the west, Casco Bay to the east and south, and railroad right of way to the north. The proposed project is isolated from the nearby neighborhoods and therefore does not result in ventilation impacts to abutting structures.

HVAC venting is directed upwards away from public spaces on-site and is not proximate to any residential properties.

B. Shadows

Shadow standards are not applicable in the B-5 zone. The Roux Institute IOZ governs dimensional standards for the site and requires minimum and maximum street wall heights as well as stepback requirements that create transitions from smaller scale buildings onto the campus. The transition of height in strategic locations further mitigates potential shadow impacts.

C. Snow and ice loading

The proposed building designs are not located in close proximity to Sherwood Street or lot lines with adjacent properties to result in significant ice/snow loading/accumulation. Snow storage is proposed to not encroach onto surface parking spaces or sidewalks, or to impact stormwater treatment systems.

D. View corridors

The site is not located along a public view corridor identified in the Downtown Vision View Corridor Protection Plan.

E. Historic resources

The project site includes a locally designated landmark (The Cannery Building and a 25-foot radius surrounding the building). Rehabilitation of the Cannery Building, site improvements within the 25-foot radius, and interpretative elements on the reconstructed pier have been reviewed and approved by the Historic Preservation Board on April 17, 2024 (**Attachment 7**).

The subject application proposes the demolition of the existing Codfish Building and supporting pier. As part of the review of the Cannery Building designation, the condition of the Building and use of hazardous materials was determined to make preservation infeasible. No other archaeological or historic resources are documented within the project boundary.

F. Exterior lighting

The photometric plan has been updated to show average foot candles, uniformity ratio (average-to-minimum), and maximum foot candles values at ground level.

A waiver request has been submitted for the required streetlights along the street frontage and the Applicant proposes to utilize lighting on the property to provide a similar level of lighting at a height of 20 feet, instead of 15 feet. The Department of Public Works has reviewed the waiver request and supports the proposed waiver.

The Applicant has requested to deviate from the following standards of Section 12 of the Technical Manual:

- Average illumination at grade: 1.16 fc (1.25 fc required)

- Maximum Lumens (Path lighting): 5,439 (1,500 maximum permitted)
- Average Illumination (Surface Parking near Structured Parking: 1.54 fc (0.5 fc required)
- Maximum illumination (Structured Parking): 3.5 fc (2.0 maximum permitted)

§12.3(11) of the Technical Manual permits general exceptions to these standards when found to not create a nuisance for abutting residential properties. These exceptions have been reviewed by the Department of Planning and Urban Development and the department supports the requests based on the documented constraints to meet average and maximum illumination standards for such a large campus, increased lumen allowance for path lighting given the higher volumes of pedestrian traffic anticipated, and the limited impacts to neighboring property owned by MaineDOT and used for transportation rights-of-way. Through the approval of the submitted waiver request, the submitted application complies with the street & site lighting standards of the Technical Manual.

G. Noise and vibration
Mechanical equipment is located interior to the roofs of proposed buildings & the site. Equipment is also not proximate to residential properties.

H. Signage and wayfinding
The proposed monument signage for the campus includes a variety of typologies with a unified design. Given that none of the building signage is proposed to be building mounted, signage will not conceal architectural features, and the proportionality of the signage to a building façade, and attachment to rooftop appurtenances is not applicable. Signage is sufficiently setback from Sherwood Street and access drives do not adversely affect visibility. All proposed lighting associated with signage is internally illuminated.

I. Zoning-related design standards
Design standards for the project have been reviewed in the Zoning Worksheet and meet the Roux IOZ design standards

Roux IOZ Regulatory Framework (Section 8.5.7 of the Land Use Code)

A. Uses

Overview of Uses
The proposed application aligns with the envisioned and permitted uses documented in this subsection.

Community Engagement and Connectivity
The proposed design includes passive and active public open space along the waterfront and building entrances to enhance connectivity for visitors. Public space on the ground floor of the Cannery Building, as well as a maker's space and café in the Learning, Research & Collaboration Building (LRC), promote social permeability between indoor and outdoor spaces for members of the public while providing separate meeting/recreational space on upper floors for students & faculty. Public open spaces are proposed to be accessed through shared-use connections, including under Tukey's Bridge, which support the reduction of automobile trips to and from the site and foster connectivity with the surrounding neighborhood.

Ground-Floor Uses
Complies. All of the buildings in the submitted application include ground-floor community-oriented uses.

Hotel Use Standards
Not applicable. The submitted application does not include hotel uses.

B. Dimensional Requirements

Applicability
The submitted application complies with all of the zoning performance standards and IOZ dimensional requirements.

Minimum and Maximum Street Wall Heights
The proposed Structured Parking & Preschool Facility Building and LRC have minimum street wall heights of 45 and 51 feet, respectively, meeting the street wall height requirements.

Stepbacks
The proposed Structured Parking & Preschool Facility Building provides a street wall stepback of 10 feet at 45 feet and the LRC building provides a street wall stepback of 13.5 feet at 51 feet, which meet the minimum stepback requirements.

Building Length
The LRC and Structured Parking & Preschool Facility Building have lengths less than 250 feet, which do not necessitate a continuous, publicly accessible corridor. Therefore, this standard is not applicable for the project under review.

Transitions and Buffers
The shoreline transition space connects occupants of the three buildings to the water and includes a variety of passive and active recreational facilities. Proposed building heights within the buffer areas along the perimeter of the site comply with the maximum permitted heights of 75 feet.

The western façade of the Structured Parking & Preschool Facility Building serves as a transition area onto the site and has been updated to screen the lower parking levels, which positively contributes to the thoughtful pedestrian-scale design.

C. Transportation

Transportation Demand Management
§8.5.7(E)(1)(a) requires that a campus-wide TDM Plan be submitted at the time of the first site plan review. The Applicant has submitted a TDM Plan in accordance with this requirement.

Traffic Movement Permit
The Applicant has submitted a Traffic Movement Permit application for the subject application, for which the review has been led by MaineDOT. A draft Traffic Movement Permit has been provided in the Board's packet for reference. Planning Staff recommend approval of the Traffic Movement Permit as a condition of approval prior to applying for a building permit.

Bicycle and Pedestrian Access and Safety

Updates to the site design have expanded the width of the perimeter access loop to 12 feet to ameliorate connections off-site.

A shared-use path on Sherwood Street and under Tukey's Bridge is being proposed to provide sufficient capacity & enable safe connections to and from the site.

After consultation with CMP & the Water District, the Applicant is in the process of updating the utility plan to relocate utility poles and hydrants that interrupt the flow of the shared-use path. One utility pole is anticipated to be located on the southern Sherwood Street sidewalk west of Interstate 295 that will result in a pinch point of 4.5 feet, which is a permitted temporary width.

Parking

A parking demand analysis was submitted as a component of the TDM plan identifying a peak demand of 581 spaces at opening (581), 610 spaces proposed in the garage and 14 surface parking spaces, and an anticipated demand in 2032 of 881 spaces. This standard has been considered met, please refer to Section XI.D of this report for detailed findings.

Circulation

The site plan includes a circulation network that includes a perimeter access loop, internal pedestrian pathways, and a promenade that help define development blocks, enhance the relationship with the built and natural environment, and include a combination of lighting, wayfinding, buffers, and open space. The perimeter access loop has been updated to have a consistent 12-foot width to respond to Staff and Planning Board comments on pedestrian & cyclist conflicts and path allocation by mode.

D. Environment

Open Space

The Applicant has submitted Figure 3-18, which identifies the proposed public open space for this phase and a draft public access easement for the access loop has been submitted and is currently under review by Corporation Counsel. Finalization of the access agreement has been included as a condition of approval.

Sustainability and Resilience Charter

A Sustainability and Resilience Charter was submitted before the submission of the site plan application, including standards on energy, water, transportation, equity, and resilience. The separate Design Development document indicates that the charter is aligning with components of LEED standards. Staff has reviewed the charter in **Attachment 3A** and have found application materials consistent with the goals outlined in the Charter.

Lighting

The Applicant has submitted interior lighting plans for the Learning, Research, and Collaboration building, exterior lighting, and rooftop lighting for the Structured parking & preschool facility building. Upon review, the designs comply with ANSI/ASHRAE/IES Standard 90.1-2022.

A note has been added to the Structured parking & preschool facility building that electrical lighting shall comply with ANSI/ASHRAE/IES Standard 90.1-2022.

Design Flood Elevation (DFE)
The proposed finished floor elevation (FFE) of the LRC is 22.5 feet while the proposed grade for the lowest point of the building is 19.5 feet, which exceeds the 2-foot above base flood elevation (BFE) requirement. The Cannery Building proposes an FFE of 12.79, with a BFE of 9 feet, which exceeds the 2-foot above base flood elevation requirement. The Structured Parking & Preschool Facility Building proposes an FFE of 16 feet and is located outside of a flood zone.

Shoreline Stabilization & Natural Resource Impacts
Given the high-wave action along the shoreline of the property, the Applicant has proposed shoreline stabilization via rip rap armoring since many living shorelines are better suited for lower-wave activity.

Work within wetlands and significant wildlife habitats is still currently under review with the Maine Department of Environmental Protection and future General Construction Permit applications with the Army Corps of Engineers. Receipt of approvals from these relative entities is recommended by Staff as a condition of approval to demonstrate compliance with this standard.

Bird-Safe Design
Site lighting is proposed to be cut off and down-lit to minimize the potential of bird collisions.

E. Mitigation Measures

Off-Site Infrastructure
As part of the Major Site Plan application the Applicant will be required to reconstruct Sherwood Street, which will include a new crosswalk at Sherwood and Veranda streets, new concrete sidewalks and multi-use path, in addition the Applicant will be required to construct a new shared-use path connection under Tukey's Bridge that connects the site to the Back Cove Trail and will widen the multi-use pathway junction near Tukey's Bridge.

Although not within the Planning Board's review authority, the Applicant will be responsible for the following off-site mitigation measures as part of the TMP issued by MaineDOT, and described in further detail in (**Attachment 8**):

1. Baxter-Bates concept plan 5/16/2024
2. Veranda-Sherwood Raised Intersection Plan 6/4/2024
3. Veranda-Arcadia concept Plan 5/16/2024
4. Veranda/Dalton Concept Plan 5/16/2024
5. Veranda-Pembroke Concept Plan 5/16/2024
6. Washington-Presumpscot Concept Plan 5/16/2024
7. Washington-Veranda Concept Plan 5/16/2024
8. Washington Avenue Corridor Plan 5/16/2024

MAINEDOT TMP permit will lapse five years from the date signed for all development for which building permits have not been issued. The MAINEDOT TMP will lapse seven years from the date signed for all development for which occupancy permits have not been issued.

Natural Resources

Assessment and mitigation of habitat impacts will continue through the review processes of the associated NRPA permit and Army Corps of Engineers General Permit. Planning Staff are recommending receipt of these approvals as a condition of approval.

F. Design

Waterfront

The Applicant has proposed three acres of permanent publicly accessible open space within the Phase 1 development plan, including waterfront recreational space and a network of shared-use pathways. Staff finds the network of paved pathways along the perimeter of the site allows for public access to the waterfront. The Applicant proposes access to the water's edge, viewing destinations with seating, bike storage, and other publicly accessible social gathering spaces that Staff finds appropriate.

The Applicant has proposed a curved principal structure, functioning as the Academic (LRC) Building, that responds to the coastal edge and allows for a publicly accessible entrance at the waterfront facade. Staff finds the waterfront facing façade material of the LRC welcomes ground-level glazing to indicate a publicly accessible corridor in addition to a social gathering defined with unique paving material, landscape areas, and seating opportunities.

Cohesive Campus

The Applicant's Phase 1 submission is consistent with the Roux Institutional Development Plan (IDP) and incorporates a composition of new structures of transitional heights to create an overall campus identity.

Historic Preservation

The Applicant has submitted a response and updated site plan set indicating a service access-only arrival area near the western surface parking area. The design of the area includes a vehicular double swing gate, granite cobblestone pavers, and signage to restrict passenger vehicles from driving onto the perimeter access loop that Staff finds appropriate to minimize vehicles along the publicly accessible path.

In addition, Staff anticipates that service vehicles intended for delivery, trash management, and other maintenance, will unload/load deliveries off of the coastal path at the designated granite cobblestone paver area to allow for clear access to the loop that Staff finds appropriate.

Connectivity

The Applicant has proposed a circulation network for Phase 1 that is consistent with the approved IDP that emphasizes pedestrian connectivity and limits personal vehicles to the peripheries. The Applicant has proposed material selections for asphalt paving and granite cobblestone pavers to facilitate emergency vehicular use and occasional service vehicles that Staff finds appropriate.

The Applicant has submitted updated plans for the structured parking that include multiple garage entrances along the north and east facades, along with signage to minimize passenger vehicle traffic to the center of the Roux campus, which Staff finds appropriate.

Open Space

The proposed landscape areas transition varies property edges and open space program, with updates that identify native Maine plant species and future coordination with the City Arborist along the coastal edges of the property.

Staff finds the organization of site materials to include retaining walls, seating elements, paving materials, and amenities to unify the site design with multiple opportunities for public engagement.

Sustainable Practice

The project has avoided the placement of buildings in areas with sensitive natural resources and is updating application materials to align with the Sustainability Charter to incorporate sustainable building technologies and energy production in the current phase and facilitate sustainable design in future phases.

Resilience

The submitted design includes several resilient design choices for the proposed buildings and includes several publicly accessible spaces that are out of the floodplain for the site. Outstanding resiliency items from the sustainability charter should be addressed as part of updated application materials.

The Applicant has indicated that standby powers for campus elevators and emergency loads for lighting/fire alarms will be provided for the Structured Parking & Preschool Facility Building either through local battery units or a central lighting inverter.

Building Design

The Applicant's submission for the LRC includes a scaled massing with articulation along the first 35 feet through the organization of proposed materials with glass/aluminum curtainwall and stone, the upper floors include a transition of materials with glass, and aluminum panels and metal screening of the mechanical equipment that Staff finds appropriate. Planning Board and/or Staff may request physical samples for the proposed materials.

The Applicant has clarified the differing functions and access restrictions required for the preschool facility that necessitate no internal connection with the structured parking.
Staff finds the metal screening reduces the negative visual impacts of the structural concrete parking garage and utilizes a consistent material in the type and color of the overall campus.

Building Entrances

The Applicant submission indicates several vestibules along the street wall east and west facing façades of the Academic (LRC) Building. An example of these vestibules has been submitted and includes a recessed entry within the ground-level curtain wall system that Staff finds to be appropriate articulation for public access.

The promenade and perimeter access loop have been appropriately designed to respond to the existing entrance points for the Cannery Building.

Building entrances have been provided for the structured parking on the eastern and western sides to correspond with the interior pathways and perimeter access loop.

Mitigation of Impacts

Staff finds the Applicant submission for Phase 1 is consistent with the shadow impacts outlined in the approved IDP and submitted materials. The Applicant has designed the Phase 1 buildings in compliance with the IOZ Height Overlay Map and spacing of buildings 40 feet apart to reduce the impacts of wind.

The Applicant has calculated allowable noise designed to not exceed city guidelines, Staff will review with further comments if required. Staff finds the arrangement of buildings, limited surface parking, and site programming to mitigate heat throughout the Phase 1 development plan.

Staff finds the implementation of building materials to include aluminum fins or "sails" to reduce glare significantly, along with the arrangement of glass panels in the concave facade. Staff finds the Applicant submission for Phase 1 is universally consistent to include comfortable and safe lighting solutions.

Staff finds the Applicant employs design strategies to mitigate environmental threats such as bird strikes, flooding, and locally sourced materials where possible.

G. Neighborhood Integration

Neighborhood Engagement

The IDP and regulatory framework require the creation and maintenance of a project website, the creation of a community advisory group with quarterly meetings, and quarterly neighborhood forums. Four neighborhood forums have been held on February 28th, April 27th, June 29th, and October 18th, with videos and meeting notes posted to the project website. On October 30th, the community advisory group met with a list of meeting attendees and minutes provided to Staff.

Confirmation has been provided that Sam Reiche is serving as the Applicant's community contact.

Construction Management

The submitted Construction Management Plan provides an overview of communication strategies, site maintenance, relevant City permits, and erosion & sediment controls. An example construction webpage has been referenced that includes communication methods, schedule, and narrative overview. A comprehensive construction schedule and truck routing plan have been submitted for the site.

Clarification has been made that temporary erosion & sedimentation control measures will be removed post-construction and that demolition of the Codfish Building is proposed as part of the scope of work. Plans have been updated to include two wheel washes for foundation & site work.

H. Historic Preservation

The project site includes a locally designated landmark: The Cannery Building and a 25-foot radius surrounding the building. Building and site improvements to the building, the 25-foot radius, and interpretative elements on the reconstructed pier have been reviewed and approved by the Historic Preservation Board on April 17, 2024 and a Certificate of Appropriateness has been issued.

Shoreland Zone Supplemental Site Plan Standards (Section 11.5.1 of the Land Use Code)

A. Safe and Healthful Conditions

The proposed use of the site as an academic campus, office space, and parking is not anticipated to result in unsafe & unhealthful conditions. Structures for these uses have been designed for primary services to be located above the base flood elevation and include backup energy generation in the event of electrical outages.

B. Impact to Surface Water

The project proposes to reduce the total amount of impervious lot area on the former industrial site by 2.6 acres and reduce the footprint of the site covered by surface parking, which will improve surface water impacts. The Applicant has submitted a waiver request to permit the direct discharge of pre-treated stormwater into Casco Bay, which City Staff supports. Water Resources continues to work with the Applicant to finalize connections on Sherwood Street and has recommended a condition of approval for the completion of this design work.

C. Wastewater Disposal

The Portland Water District confirmed on December 12, 2023, that there is sufficient wastewater capacity for the site.

D. Impacts to Habitats

The site includes a coastal wetland, that encompasses a blue mussel habitat, a habitat for candidate endangered species (Monarch Butterfly, and a habitat for endangered species (Northern Long-eared Bat & Roseate Tern). No critical habitats have been identified within the project area.

Tree clearance will occur between August and May to mitigate impacts on the northern long-eared bat to avoid migratory periods. Assessment and mitigation of habitat impacts will continue through the review processes of the associated NRPA permit and Army Corps of Engineers General Permit.

E. Shore Cover & Access

Not applicable since sites located in the B-5 are exempted from clearing or removal of vegetation standards by §11.4.3(B) of the Land Use Code.

F. Archaeological & Historic Resources

The Cannery Building and a 25-foot buffer around the Cannery Building are listed as a local historic landmark. Improvements within the Cannery Building designation boundary and interpretive pier materials were reviewed and approved by the Historic Preservation Board on April 17, 2024.

As mentioned above, a recommendation has been included that approval of the Army Corps of Engineers General Permit be received prior to demolition activities commencing on the Codfish Building and supporting pier.

G. Fishing & Maritime Activities

While the site is proximate to the Maine Yacht Center, the proposed use of the site is not anticipated to impact the activities of the Yacht Center. No commercial fishing activities are located in the vicinity of the application. Reconstruction of the pier is anticipated to facilitate water taxi and recreational marine activities, which will support active waterfront use of the site.

H. Floodplain Development

Portions of the site are located within special flood hazard areas as delineated on the FEMA Flood Insurance Rate Map, Portland, Cumberland County, 230051 0007C (Effective Date: 12/8/1998) within the 100-year floodplain at a base flood elevation of 9 feet (NGVD29).

Updated flood maps will take effect on June 21, 2024, and include a greater portion of the site with a base flood elevation (BFE) of 10.79 feet. As proposed, the Bean Building & Learning, Research & Collaboration (LRC) Building are proposed to have a finished floor elevation (FFE) (also known as design flood elevation (DFE)) of 22.5 feet and 12.79 feet, which both meet the floodplain requirements for a DFE 2 feet above the BFE. The project will require flood hazard permits and elevation certificates for the existing Cannery Building and the proposed Learning, Research & Collaboration Building.

I. Conformance with Shoreland Standards

The proposal is in conformance with all applicable subsections of §11.4.

SLOD Review Standards (Section 14.3 of the Technical Manual)

In connection with the Major Site Plan application, the Applicant also prepared a Site Law of Development (SLOD) application which has been transmitted to Maine DEP.

The City of Portland's delegated review authority from Maine DEP for large projects that trigger SLOD review, with review standards included in §14.3 of the Technical Manual. SLOD review standards overlap with several site plan standards, which are listed below and demonstrate compliance with SLOD standards:

- Financial & Technical Capacity: Refer to Section VIII of this Report
- Traffic Movement: Refer to the assessment of §14.6.1(A) under Site Plan Standards
- No Adverse Effect on the Natural Environment, Ground Water, Flooding, Storm Water Management & Erosion and Sedimentation Control: Refer to the assessment of §14.6.2 under Site Plan Standards. A portion of the site is located within a flood hazard zone, where construction is proposing to meet the minimum design flood elevation of 2 feet above the base flood elevation of 10.79 feet, elevate mechanical infrastructure, and include non-critical uses on the lowest floors of the Cannery & LRC buildings. The proposed development is not anticipated to cause or increase flooding or cause an unreasonable hazard to proximate structures.
- Soil Types: The Applicant has submitted an Environmental Media Management Plan (**Attachment M1**) which concludes that overall, the site is comprised of fill material that does not exceed MaineDEP minimum acceptable concentration levels for volatile organic compounds (VOCs), SVOCs, EPH, VPH, pesticides, PCBs, metals, and petroleum. Excess soil can be reused on the site and the plan includes provisions for monitoring and disposal of unsafe soils that may be found during construction.
- Infrastructure: Refer to the assessment of §14.6.3(C) under Site Plan Standards

XII. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The Applicant held a Neighborhood Meeting on December 13, 2023, and 46 people attended the meeting. Comments focused on parking on and off-site, the scope of the traffic study, how future growth is being integrated into the design of the site, and maintenance of transportation facilities (e.g., bicycle lanes, bus stops).

Over 30 comments have been received throughout the review process, focusing on the traffic impacts, proposed shared-use connections to the site, and support of transit service in and around the site. Since the last workshop, the Planning & Urban Development Department has received six public comments. Comments generally provide support for the project noting the academic, economic, and open space benefits of the project.

XIII. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, Planning staff determines that the application PL-002724-2023, a Major Site Plan and Site Law of Development application at 1 Bean Pot Circle, proposing the construction of a ±238,000 square foot post-secondary education building with on-site restaurant, construction of a ±241,950 square foot mixed-use building with 610 automobile parking spaces and ±7,500 square feet of daycare facility space, redevelopment of the ±58,000 square foot Cannery Building, and associated site improvements & landscaping, meets the applicable standards of Portland's Land Use Code.

XIV. PROPOSED MOTIONS

A. WAIVERS

On the basis of the application, plans, reports, and other information submitted by the Applicant, findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002724-2023 at 1 Bean Pot Circle relevant to the Site Plan Standards, Roux IOZ Regulatory Framework, Shoreland Standards, and Site Law of Development Standards of the Land Use Code and the City of Portland's Technical Manual, and other regulations, and the testimony presented at the Planning Board hearing:

1. Parking Garage Space Width
   The Planning Board [**finds/does not find**] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard Section 1.10, Parking Lot and Parking Space Design, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [**waives/does not waive**] the Technical Manual standard Section 1.10, to allow parking spaces with a width of 8.5', when 9' or 8.6' is required.

2. Direct Discharge of Treated Stormwater into Casco Bay
   The Planning Board [**finds/does not find**] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard Section 5 and Maine DEP Chapter 500, Stormwater Management Section IV, which does not permit direct discharge of stormwater into a surface water body source, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [**waives/does not waive**] the Technical Manual Section 5 and Maine DEP Chapter 500, Stormwater Management Section IV, to allow for the direct discharge of pre-treated stormwater into Casco Bay.

3. Installation of Street Lights on Private Property that vary from residential street lighting standards

The Planning Board [finds/does not find] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual Section 10.2, which requires the installation of residential street lights listed in Figure X-1 in the public right-of-way, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] the Technical Manual standard of Section 10.2 to allow for the installation of street lights on private property that vary from the residential lighting standards identified in Figure X-1.

B. SITE PLAN REVIEW

On the basis of the application, plans, reports, and other information submitted by the Applicant, findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002724-2023 at 1 Bean Pot Circle relevant to the Site Plan Standards, Roux IOZ Regulatory Framework, Shoreland Standards, and Site Law of Development Standards; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with these standards of the Land Use Code subject to the following conditions of approval:

PRIOR TO APPLICATION FOR A BUILDING PERMIT

1. The Applicant shall provide a copy of the final issued Maine Department of Transportation Traffic Movement Permit (TMP) to the Planning Authority.
2. The Applicant shall submit a final TDM plan that incorporates mitigation measures required as part of the MAINEDOT TMP for review by the Planning Authority.

PRIOR TO ISSUANCE OF A BUILDING PERMIT

3. The Applicant shall provide the City with $75,000 for the installation of at least three traffic calming devices on Sherwood Street between Veranda & Presumpscot Streets.
4. The Applicant shall provide evidence of all necessary permits from the Department of Environmental Protection and the Army Corps of Engineers to the Planning Authority prior to issuance of a building permit for any construction activity that requires approval from said state or federal agencies.
5. The Applicant shall provide ability to serve letters from the Portland Water District (PWD) and Central Maine Power (CMP).
6. The Applicant shall provide updated site plan drawings demonstrating final streetscape improvements along Sherwood Street east of Veranda Street informed by final utility locations for review and approval by the Planning Authority.
7. The Applicant shall submit and receive approval from the Department of Public Works and the Planning Authority for water utility connections within Sherwood Street.

PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY

8. The Applicant shall provide a public access easement over the bicycle and pedestrian perimeter access loop for review and approval by the Planning Authority and Corporation Counsel.
9. The Applicant shall provide updated site plan drawings for the final design of the bicycle and pedestrian path under Tukey's Bridge connecting the existing terminus of the Back Cove Trail to the Roux Camps and improvements to the approaches to the existing bicycle and pedestrian path on Tukey's Bridge for review by the Planning Authority. This alignment shall include an acceptable functional pathway width dimensioned with the shy distance from fixed objects.

IMPACT FEES

On the basis of the application, plans, reports, and other information submitted by the Applicant, and findings, recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002724-2023 at 1 Bean Pot Circle relevant to the Site Plan Standards, Roux IOZ Regulatory Framework, Shoreland Standards, and Site Law of Development Standards; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that a transportation impact fee modification shall be granted under the following conditions:

1. Prior to issuance of Certificate of Occupancy, the Applicant shall use a portion of their impact fee credit on the plans, details, and cost estimates to be prepared by a licensed professional engineer and approved by the Planning Authority and the Department of Public Works for the construction of the bicycle and pedestrian path under Tukey's Bridge connecting to the existing terminus of the Back Cove Trail and improvements to the approaches to the existing bicycle and pedestrian path on Tukey's Bridge.

2. Within 24 months of receiving the Certificate of Occupancy, the Applicant, in coordination with Maine DOT, shall construct the bicycle and pedestrian path under Tukey's Bridge connecting existing terminus of the Back Cove Trail to the Roux Campus and improvements to the approaches to the existing bicycle and pedestrian path on Tukey's Bridge. The Planning Authority may extend the completion of either or both projects in the event circumstances arise which impact the completion. In the event Northeastern determines that either or both of the projects are not feasible, it shall apply to the Planning Board for a major amendment to the site plan.

C. PLANNING BOARD DECISION

On the basis of the findings, conclusions, and recommendations contained in the Planning Board report for the public hearing on June 11, 2024 related to application PL-002724-2023 at 1 Bean Pot Circle, which is attached to the draft approval letter and incorporated therein, the Planning Board [adopts/does not adopt] the approval letter as drafted as the Planning Board's decision for application PL-002724-2023, and authorizes the Planning Board Chair to sign the approval letter as drafted.

XV. ATTACHMENTS

STAFF ATTACHMENTS

1. Site Plan Worksheet 2024-05-07
2. Zoning Worksheet 2024-05-07
3. Sustainability Charter Comments 2024-05-07

3A. Sustainability Charter Comments 2024-06-07

4. Peer Reviewer Comments 2024-05

4A. Peer Reviewer Comments 2024-06

5. Annotated TDM Plan 2024-06-07
6. GP METRO Letter 2024-06-05
7. Certificate of Appropriateness Approval Letter 2024-04-18
8. Draft Traffic Movement Permit 2024-06-07

APPLICANT DOCUMENTS

A. Summary

A1. February 5, 2024 Response Letter
A2. March 28, 2024 Response Letter
A3. May 23, 2024 Response Letter
A4. June 5, 2024 Response Letter
B. Major Site Plan Checklist
C. Permitting & Approvals
D. Zoning
E. Zoning Analysis Table
F. Waiver Table
F1. Waiver Table 2024-03-28
F2. Supporting Waiver Memorandum (Lighting)
F3. Supporting Waiver Requests Letter 2024-05-23
G. Right, Title, & Interest
H. Transportation Standards
I. TMP Application
J.TDM Plan 2023-11-17
J1. TDM Plan 2024-03
J2. TDM Plan 2024-05
K. Environmental Quality Standards
L. Stormwater Management Report
L1. Stormwater Management Report 2024-03
L2. Wastewater Capacity Authorization 2023-12-12
L3. Stormwater Management Report 2024-05-23
M. SLOD Report
M1. Environmental Media Management Plan
N. Sustainability Charter
O. Infrastructure & Safety Standards
P. Site Design Standards
Q. Comprehensive Plan Standards
R. Construction Management Plan 2023-09-14
R1. Construction Management Plan 2024-01-25
S. October 30, 2023 Community Advisory Group Meeting Summary
T. December 13, 2023 Neighborhood Meeting Summary
U. Enlarged Set of Figures
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PUBLIC COMMENT
PC 1. Benjamin Dudley (May 29, 2024)
PC 2. Elyse Doyle (May 31, 2024)
PC 3. Sarah Maloney (June 3, 2024)
PC 4. Christina Consigli (June 4, 2024)
PC5. Todd Zukowski (June 5, 2024)
PC6. Richard Anderson (June 5, 2024)

Site Plan Review Standards (Sec. 14.6)

Transportation Standards (Sec. 14.6.1)

Standard	Discussion	Finding
Impact on Surrounding Street Systems	Overview: The project is being reviewed under a Traffic Movement Permit (TMP) application to assess impacts on the surrounding street network and anticipated increases in traffic congestion. Planning Staff and MaineDOT continue to review the TMP application and the ongoing review will better assess anticipated impacts and associated mitigation strategies. Updates Requested • Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	No action at this time.
Access and Circulation	Overview: As mentioned above, the TMP review process is reviewing elements of the site access and circulation that will help inform future updates to the design of the site. Additional comments will come up as the TMP review process continues and as future public-private projects to enhance site connections are more clearly defined. A waiver has been submitted to use concrete for the proposed sidewalk on Sherwood Street, instead of asphalt. The Department of Public Works has reviewed and supports the waiver request. The Department of Public Works has requested a justification for why a traffic circle is not being implemented at the three-way intersection to the site. Maintenance and design questions related to utility poles, curbing, lighting, and materiality have been raised on portions of Sherwood Street east and west of I-295. Updates Requested • Update application materials to satisfy comments provided in Attachment 3. • Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	Not Met.
Public Transit Access	Overview: The application proposes the construction of a transit shelter that connects to the public sidewalk system.	Met.
Parking	Overview: Consulting traffic engineer Tom Errico reviewed the submitted parking demand analysis and concurred that the proposed number of automobile parking spaces meets the anticipated demand. Tom Errico has supported the submitted waiver for the size of the proposed parking spaces in the garage based on the anticipated low vehicle turnover.	Met.
Transportation Demand Management	Overview: The project exceeds the thresholds for §14.6.1(E)(1)(b&c) of the Land Use Code and is required to submit a TDM plan. The updated TDM plan has been reviewed by Transportation Program Manager Bruce Hyman, who has provided in-line comments in Attachment 3. Overall, comments primarily focus on seeking additional definition for the proposed strategies. Updates Requested • Update TDM plan to satisfy comments in Attachment 3.	Not Met.

Environmental Quality Standards (Sec. 14.6.2)		
Standard	***Discussion***	***Finding***
Preservation of Significant Natural Features	Overview: The site plan set has been updated to identify significant natural features on and adjacent to the site. The site includes a coastal wetland, that encompasses a blue mussel habitat, a habitat for candidate endangered species (Monarch Butterfly, and a habitat for endangered species (Northern Long-eared Bat & Roseate Tern). No critical habitats have been identified within the project area. Tree clearance will occur between August and May to mitigate impacts on the northern long-eared bat to avoid migratory periods. Continuing assessment of impacts will occur through the review processes of the associated NRPA permit and Army Corps of Engineers General Permit.	Met.
Landscape Preservation	Overview: A tree survey of all existing trees 10" DBH or greater on the site has been submitted, with nine trees identified. All of these trees are proposed to be removed as part of the development. §14.6.2(B)(1) of the Land Use Code requires development to incorporate, limit disturbance to, and limit removal of existing trees. Some of the existing vegetation, including the evergreen tree near Sherwood Street and canopy near the southeastern portion of the site are located in areas where landscaping is proposed and appear to have the potential to be protected.	Not Met.
	Updates Requested • Submit a waiver request for the removal of all existing vegetation on the site that demonstrates that the preservation of existing vegetation would compromise the development of the site.	
Site Landscaping and Buffers	Overview: The site location being buffered by I-295, the rail line, and Casco Bay will sufficiently buffer the proposed site uses from the public right-of-way and neighboring properties. The site includes two surface parking lots, each with five parking spaces, and requires the planting of two trees in parking islands. Both surface parking areas provide more than two trees in the parking islands and meet parking lot landscaping requirements. The site has 288.57 feet of street frontage and is required to plant one tree per 25-35 feet on center, or 8-12 street trees, within the public right-of-way. As submitted, two London Plane trees are proposed to be planted in the right-of-way and seven London Plane trees are proposed to be planted within 20 feet of the property line, which is an alternative identified in §4.6.4 of the Technical Manual. Staff encourages continued coordination with the City Forester to confirm that the proposed species and planting locations are appropriate.	Not Met.
	Updates Requested • Continue coordination with the City Forester to confirm that the proposed species and planting locations for street trees are appropriate.	
Water Quality, Stormwater Management	Overview: The stormwater management application materials were reviewed by third-party stormwater consultants Wright Pierce. Upon their review, the team requested application updates in Attachment 3. Overall, requested application updates focused on perimeter barriers & controls, minor clarifications and updates	Not Met.

and Erosion Control	on notes, and ongoing notes to address coordination with Staff on improvements in Sherwood Street.	
	Updates Requested • Update the application to satisfy comments from Wright Pierce.	

Public Infrastructure and Community Safety Standards (Sec. 14.6.3)

Standard	***Discussion***	***Finding***
Consistency with City Master Plans	Overview: Overall, the submitted application aligns with the goals of One Climate Future, through the inclusion of renewable energy infrastructure, goals to reduce single occupancy vehicle miles traveled through transit and shared-use connections & facilities, and sustainable development practices outlined in the Sustainability Charter.	Met.
Public Safety and Fire Prevention	The application has been reviewed by Captain Jason Grant of the Portland Fire Department, who has confirmed that the application provides sufficient access and infrastructure for the site. Evidence of coordination to establish E-911 addresses with the Department of Public Works has been sent to Planning Staff. The western elevation of the structured parking & preschool facility building has been updated to screen parking from the perimeter access loop and the loop has been widened to create a more welcoming experience for pedestrians & cyclists.	Met.
Public Utilities	Overview: A copy of an ability-to-serve letter for sewer service has been submitted for the site. Staff will await final approval from these utilities and will request copies of letters as conditions of approval or sooner, if feasible.	No action at this time.
	Updates Requested • Submit ability to serve letters from utilities when available and provide any additional information requested by the Portland Water District, as requested.	

Site Design Standards (Sec. 14.6.4)

Standard	***Discussion***	***Finding***
Massing, Ventilation and Wind Impact	Overview: The property abuts Maine DOT rights-of-way and Casco Bay, which does not result in ventilation impacts to abutting structures or a diminution in the value of neighboring structures. HVAC venting is directed upwards away from public spaces on-site and is not proximate to any residential properties.	Met.
Shadow	Overview: Shadow standards are not applicable in the B-5 zone.	Met.
Snow and Ice Loading	Overview: The proposed building designs are not located close enough to Sherwood Street or lot lines with adjacent properties to result in significant ice/snow loading/accumulation.	Met.
View Corridors	Overview: The site is not located along a public view corridor identified in the *Downtown Vision View Corridor Protection Plan*.	Met.
Historic Resources	Overview: The project site includes a locally designated landmark (The Cannery Building and a 25-foot radius surrounding the building). Building and site improvements to the building, the 25-foot radius, and interpretative elements on the reconstructed pier have been reviewed and approved by the Historic Preservation Board on April 17, 2024. No further action is required.	Met.

Exterior Lighting	**Overview:** A waiver request has been submitted for the required streetlights along the street frontage and proposes to utilize lighting on the property to provide a similar level of lighting at a height of 20 feet, instead of 15 feet. The Department of Public Works has reviewed the waiver request and supports the proposed waiver. The Department has requested that the Applicant confirm the poles are being maintained by the Applicant. Any poles proposed with the City right-of-way would require a draft maintenance agreement to be submitted for review and approval. Waiver requests and supporting justification have also been submitted for: • Average illumination at grade: 1.16 fc (1.25 fc required) • Maximum Lumens (Path lighting): 5,439 (1,500 maximum permitted) • Average Illumination (Surface Parking near Structured Parking: 1.54 (0.5 required) Waiver requests have been reviewed by the Department of Public Works and Planning and Urban Development, who are not opposed to the requests. A note has been added to the Photometrics Plan that all exterior lights shall have a maximum of 3000K CCT. The photometric plan has been updated to show average foot candles, uniformity ratio (average-to-minimum), and maximum foot candles values at ground level for rooftop lights. However, Sheet E1.01D shows that GE02 and GE03 lights are proposed to be installed at 9 & 14.5 feet and the illumination calculations do not include these lights. Calculations for average foot candles, uniformity ratio (average-to-minimum), and maximum foot candles need to be provided for GE02 and GE03 lights for the structured parking at ground level. Given that entrances to the structured parking garage exceed the maximum permitted foot candles for structured parking lots but are below the maximum permitted illumination levels identified in §12.3(2), the Department of Planning and Urban Development is supportive of waivers for the proposed entrance lighting.	Not Met.
	Updates Requested • Add note within the Site Security, Lighting, and Photometrics Plan set that the two E02B lights along Sherwood Street are to be maintained by the Applicant. • Update photometric plans to provide average illumination, uniformity ratio, and maximum illuminance at ground level for the proposed GE02 and GE03 lights around the structured parking. • Revise proposed maximum illumination levels for the structured parking at ground level or submit a waiver request for maximum permitted exterior lighting for the structured parking.	
Noise and Vibration	**Overview:** Mechanical equipment is located interior to the roofs of proposed buildings & the site. Equipment is also not proximate to residential properties.	Met.

Signage and Wayfinding	**Overview:** The proposed monument signage for the campus includes a variety of typologies with a unified design. Given that none of the building signage is proposed to be building mounted, signage will not conceal architectural features, and the proportionality of the signage to a building façade, and attachment to rooftop appurtenances is not applicable. Signage is sufficiently setback from Sherwood Street and access drives do not adversely affect visibility. All proposed lighting associated with signage is internally illuminated.	Met.
Design Standards	**Overview:** Design standards for the project have been reviewed in the Zoning Worksheet and meet the Roux IOZ design standards	Met.

Zoning Use Review (Article 6)

Use Permissions (Table 6-A – Table 6-F)

Proposed Use	*Zones*	*Type of Use*
General office (>5,000 SF)	***B-5 & Roux IOZ***	Permitted.
Laboratory and research facility		
Off-street parking		
Post-secondary school		
Preschool facility		
Restaurant		

Zoning Performance Standards (Sec. 6.8)

Standard	*Discussion*	*Finding*
§6.8.8(A)	Overview: Elevations have been updated to screen parking on all sides. No further action is required.	Met.

Zoning Dimensional Review (Article 7)

Dimensional Standards (Table 7-A – Table 7-H)

Standard	*Requirement -IOZ*	*Proposed – LRC building*	*Proposed – Structured parking & preschool facility building*	*Finding*
Structure height	Comply with Roux Height Map	75' Height Zone: **53.2'** 150' Height Zone: **128.3'** 155' Height Zone: **133.1'**	75' Height Zone: **66.2'** 155' Height Zone: **86.7'** 170' Height Zone: **66.2'**	Met.

Supplemental Dimensional Standards (Sec. 7.4)

Standard	*Requirement 1*	*Requirement 2*	*Proposed*	*Finding*
7.4.3(B)(2)(c)	Photovoltaic structures can have a maximum height of 8 feet and must be setback from the building façade 1' for 1' of the proposed height.	4-6' heights	Setback 12+' from building edges	Met.

Roux IOZ Standards (§8.5.7)

Applicability Standards (§8.5.7(A))

Standard	*Discussion*	*Finding*
Applicability	Overview: Please refer to the accompanying site plan worksheet on the conformance of the submitted application and comments from Staff in Attachment 3.	Not Met.
	Updates Requested • Revise application materials to satisfy requested updates identified in Attachment 3.	

Phasing and Monitoring (§8.5.7(B))		
Standard	***Discussion***	***Finding***
Monitoring and Amendments	Overview: Monitoring reports are required to be filed every three years, which will be required in 2026. Minor updates to the IDP not rising to the level of an IDP amendment have updated the IDP to provide more current information. Based on the requirement for a connection under Tukey's Bridge as part of this development phase, Staff are requesting that the Development Plan page be updated to show the connection under Tukey's Bridge in the Near Term and update the legend to clarify the difference between anticipated and potential shared-use path connections. Updates Requested • Update the IDP Development Plan to reflect the creation of a shared-use path under Tukey's Bridge in the Near-Term and accompanying legend.	Not Met.
Public Space	Overview: The proposed site plan and landscaping plan create a complete design through the use of active and passive recreation facilities, plantings & gardens, and shared-use pathways that define future development blocks.	Met.
Minor & Major Amendments	Overview: Based on the review of the updates that need to be made to the IDP, the changes do not rise to a level that meets a minor or major amendment threshold. No further action is required.	Met.
Uses (§8.5.7(C))		
Standard	***Discussion***	***Finding***
Overview of Uses	Overview: The subsection provides an overview of permitted uses. The proposed application aligns with the envisioned and permitted uses for the campus. No action is needed.	Met.
Community Engagement and Connectivity	Overview: The proposed design includes passive and active public open space along the waterfront and building entrances to enhance connectivity for visitors. Public space on the ground floor of the Cannery Building, as well as a maker's space and café in the Learning, Research & Collaboration Building (LRC), promote social permeability between indoor and outdoor spaces for members of the public while providing separate meeting/recreational space on upper floors for students & faculty. Public open spaces are proposed to be accessed through shared-use connections, which support the reduction of automobile trips to and on-site. Based on discussions with the Planning Board and Staff, a shared-use connection under Tukey's Bridge is being required to foster connectivity and community engagement with the site, in concert with a wider shared-use path connection around the perimeter of the site and on Sherwood Street. General updates to application materials to reflect the connection under Tukey's Bridge should be provided. Updates Requested • Update application materials to show the required shared-use path connection under Tukey's Bridge. Staff recommends that final engineered drawings be provided as a condition of approval, given the related State & federal permits associated with the work, with a minimum width of at least 12 feet.	Not Met.
Ground-floor Uses	Overview: All of the buildings in the submitted application include ground-floor community-oriented uses. No further action is required.	Met.

Hotel Use Standards	Overview: Not applicable. The submitted application does not include hotel uses.	Met.
Dimensional Requirements (§8.5.7(D))		
Standard	***Discussion***	***Finding***
Applicability	Overview: The submitted application complies with all of the zoning performance standards and IOZ dimensional requirements. No further action is required.	Met.
Minimum and Maximum Street wall heights	Overview: The proposed Structured Parking & Preschool Facility Building and LRC have minimum street wall heights of 45 and 51 feet, respectively. Both buildings provide stepbacks >10 feet at 45 and 51 feet respectively. No further action is required.	Met.
Stepbacks	Overview: The proposed Structured Parking & Preschool Facility Building provides a street wall stepback of 10 feet at 45 feet. The LRC provides a street wall stepback of 13.5 feet at 51 feet. No further action is required.	Met.
Building Length	Overview: The LRC has a current length of 244 feet, which does not necessitate a continuous, publicly accessible corridor. The Applicant has indicated that the center is intended to have an addition at a later phase of development that would necessitate a continuous, publicly accessible corridor. Based on the current design, the space identified as Gather Portal Auditorium Multi-Purpose mostly meets the corridor requirements providing visual interest between both ends of the corridor, including informal seating, and adequate lighting. However, while the majority of the corridor is>30 feet in height, there is a 21-foot-long segment along the western entrance that only has a 17-foot height. The proposed Structured Parking & Preschool Facility Building includes a building length is less than 250 feet, which complies with the building length requirements. Staff encourages the consideration of an alternate design (e.g., Incorporating the preschool facility within the footprint of the structured parking area, shifting the preschool facility to the eastern façade of the building).	Met.
Transitions and buffers	Overview: The shoreline transition space connects occupants of the three buildings to the water and includes a variety of passive and active recreational facilities. Proposed building heights within the buffer areas along the perimeter of the site comply with the maximum permitted heights of 75 feet. The western façade of the Structured Parking & Preschool Facility Building serves as a transition area onto the site and has been updated to screen the lower parking levels, which positively contributes to the thoughtful pedestrian-scale design.	Met.
Transportation (§8.5.7(E))		
Standard	***Discussion***	***Finding***
Transportation Demand Management	Overview: §8.5.7(E)(1)(a) requires that a campus-wide TDM Plan be submitted at the time of the first site plan review. The submitted TDM plan has been reviewed by Transportation Program Manager Bruce Hyman, who has provided in-line comments in Attachment 3. As submitted, the TDM plan only accounts for the first phase of development.	Not Met.

	Updates Requested • Update the TDM plan to reflect comments from Transportation Program Manager Bruce Hyman and establish a framework for all envisioned phases of development, including a data collection plan. Staff encourages establishing a plan differentiating parking passes by types of garage users (e.g., Staff vs. student; resident vs. hotel guest vs. off-site visitor), as well as installing permanent bicycle & pedestrian counters at planned & potential shared-use entrances to the site.	
Traffic Movement Permit	**Overview:** Comments on the Traffic Movement Permit (TMP) application are provided in Attachment 3 from Consulting Traffic Engineer Tom Errico. Continuing comments will be provided as the review of the TMP continues.	Not Met.
	Updates Requested • Update the application to provide materials requested in Attachment 3 and continue to coordinate with MaineDOT & Staff for future comments & requested revisions.	
Bicycle and pedestrian access and safety	**Overview:** An updated Transportation, Access, and Circulation Plan has been submitted. As part of the recommended mitigation for the site, a shared-use path under Tukey's Bridge connecting the perimeter access loop to the Back Cove Trail will be included within this phase of development and should be added to the Transportation, Access, and Circulation Plan. Updates to the site design have expanded the width of the perimeter access loop to ameliorate connections off-site. A shared-use path on Sherwood Street and under Tukey's Bridge is being required by Staff to provide sufficient capacity & enable safe connections to the site. As mentioned in the site plan worksheet, Staff have raised questions about the proposed utility pole relocations along Sherwood Street in providing sufficient widths for the proposed sidewalk and shared-use path.	Not Met.
	Updates Requested • Submit an updated Transportation, Access, and Circulation Plan to include the shared-use path connection under Tukey's Bridge • Update application materials to reflect comments from Staff regarding utility pole relocation on Sherwood Street.	
Parking	**Overview:** A parking demand analysis was submitted as a component of the TDM plan. While peak demand at opening (581), the proposed number of spaces (610), and anticipated demand in 2032 (881) were provided, the Parking standard requires that a parking ratio be established for this phase.	Not Met.
	Updates Requested • Updated application materials to include a parking ratio based on the parking analysis.	

Circulation	Overview: The site plan includes a circulation network that includes a perimeter access loop, internal pedestrian pathways, and a promenade that help define development blocks, enhance the relationship with the built and natural environment, and include a combination of lighting, wayfinding, buffers, and open space. The perimeter access loop has been updated to have a consistent 12-foot width to respond to Staff and Planning Board comments on pedestrian & cyclist conflicts and path allocation by mode.	Met.
Environment (§8.5.7(F))		
Standard	***Discussion***	***Finding***
Open Space	Overview: Figure 3-18 identifies the proposed public open space for this phase and a draft public access easement for the access loop has been submitted and is currently under review by Corporation Counsel. Finalization of the access agreement is recommended as a condition of approval and Staff will notify the Applicant if any additional changes to the draft need to be made before action by the Planning Board.	No action required at this time.
Sustainability and Resilience Charter	Overview: A Sustainability and Resilience Charter was submitted before the submission of the site plan application, including standards on energy, water, transportation, equity, and resilience. The separate Design Development document indicates that the charter is aligning with some of the elements from LEED standards. Staff has reviewed the charter and in Attachment 4 identified missing/unclear information to ensure that the submitted application is consistent with the goals outlined in the Charter.	Not Met.
	Updates Requested • Update application materials to respond to the comments in Attachment 4.	
Lighting	Overview: The Applicant has submitted interior lighting plans for the Learning, Research, and Collaboration building, exterior lighting, and rooftop lighting for the Structured parking & preschool facility building. Upon review, the designs comply with ANSI/ASHRAE/IES Standard 90.1-2022. A note has been added to the Structured parking & preschool facility building that electrical lighting shall comply with ANSI/ASHRAE/IES Standard 90.1-2022. Staff are recommending that confirmation of compliance for the LRC building, Cannery building, and Structured parking & preschool facility building with ANSI/ASHRAE/IES Standard 90.1-2022 be included as a condition of approval.	No action required at this time.

Design Flood Elevation (DFE)	Overview: The proposed finished floor elevation (FFE) of the LRC is 22.5 feet while the proposed grade for the lowest point of the building is 19.5 feet, which exceeds the 2-foot above base flood elevation (BFE) requirement. The Cannery Building proposes an FFE of 12.79, with a BFE of 9 feet, which exceeds the 2-foot above base flood elevation requirement. The Structured Parking & Preschool Facility Building proposes an FFE of 16 feet and is located outside of a flood zone.	Met.
Shoreline Stabilization & Natural Resource Impacts	Overview: Given the high-wave action along the shoreline of the property, the Applicant has proposed rip rap armoring since many living shorelines are better suited for lower-wave activity. Staff encourages the use of vegetative breakwater solutions, such as an oyster breakwater reef, in concert with the rip rap to decrease tidal action and promote habitat stability. Work within wetlands and significant wildlife habitats is still currently under review through multiple entities and based on these review processes, this section will be updated accordingly.	No action required at this time.
Bird-Safe Design	Overview: Site lighting is proposed to be cut-off and down-lit to minimize the potential of bird collisions. A review of building materials as part of the building permit to confirm compliance with American Bird Conservancy and Cornell Ornithology Lab standards will be recommended as a condition of approval.	No action required at this time.
Mitigation Measures (§8.5.7(G))		
Standard	***Discussion***	***Finding***
Off-Site Infrastructure	Overview: Mitigation for off-site infrastructure is continuing to be assessed through the review of the site plan & TMP applications. Significant mitigation measures identified for the site plan process include, but are not limited to: • Shared-use path connection under Tukey's Bridge with a minimum width of 12 feet • Shared-use path connection on Sherwood Street from the project site to Veranda Street • Traffic calming measures along Veranda Street between Washington Avenue & Arcadia Street • Financial contribution for three full-road width traffic calming devices on Sherwood Street between Presumpscot & Veranda Streets • Intersection improvements at Washington & Veranda, Bates & Baxter Boulevard, and Veranda & Sherwood Street Mitigation measures continue to be finalized as part of this review and will be included as recommended conditions of approval as part of the site plan application.	No action required at this time.

Natural Resources	Overview: Mitigation for natural resources will continue to be assessed through the review of the site plan & TMP applications. An assessment of the proportionality of mitigation measures will be assessed later on based on feedback from local, state, and federal reviewers.	No action required at this time.
Design (§8.5.7(H))		
Standard	***Discussion***	***Finding***
Waterfront	Overview: The Applicant has proposed three acres of permanent publicly accessible open space within the Phase 1 development plan, to include waterfront recreational space and a network of shared-use pathways. Staff finds the network of paved pathways along the perimeter of the site allows for public access to the waterfront. The Applicant proposes access to the water's edge, viewing destinations with seating, bike storage, and other publicly accessible social gathering spaces that Staff finds appropriate. The Applicant has proposed a curved principal structure, functioning as the Academic (LRC) Building, that responds to the coastal edge and allows for a publicly accessible entrance at the waterfront facade. Staff finds the waterfront facing façade material of the LRC welcomes ground-level glazing to indicate a publicly accessible corridor in addition to a social gathering defined with unique paving material, landscape areas, and seating opportunities.	Met.
Cohesive Campus	Overview: The Applicant's Phase 1 submission is consistent with the Roux Institutional Development Plan (IDP) and incorporates a composition of new structures of transitional heights to create an overall campus identity.	Met.
Historic preservation	Overview: The Applicant has submitted a response and updated site plan set indicating a service access-only arrival area near the western surface parking area. The design of the area includes a vehicular double swing gate, granite cobblestone pavers, and signage to restrict passenger vehicles from driving onto the perimeter access loop that Staff finds appropriate to minimize vehicles along the publicly accessible path. In addition, Staff anticipates that service vehicles intended for delivery, trash management, and other maintenance, will unload/load deliveries off of the coastal path at the designated granite cobblestone paver area to allow for clear access to the loop that Staff finds appropriate.	Met.
Connectivity	Overview: The Applicant has proposed a circulation network for Phase 1 that is consistent with the approved IDP that emphasizes pedestrian connectivity and limits personal vehicles to the peripheries. The Applicant has proposed material selections for asphalt paving and granite cobblestone pavers to facilitate emergency vehicular use and occasional service vehicles that Staff finds appropriate. The Applicant has submitted updated plans for the structured parking that include multiple garage entrances along the north and east facades, along with signage to minimize passenger vehicle traffic to the center of the Roux campus, which Staff finds appropriate.	Met.

Open space	Overview: The proposed landscape areas transition varies property edges and open space program, with updates that identify native Maine plant species and future coordination with the City Arborist along the coastal edges of the property. Staff finds the organization of site materials to include retaining walls, seating elements, paving materials, and amenities to unify the site design with multiple opportunities for public engagement.	Met.
Sustainable practice	Overview: The project has avoided placement of buildings in areas with sensitive natural resources and is updating application materials to align with the Sustainability Charter to incorporate sustainable building technologies and energy production in the current phase and facilitate sustainable design in future phases.	Met.
Resilience	Overview: The submitted design includes several resilient design choices for the proposed buildings and includes several publicly accessible spaces that are out of the floodplain for the site. Outstanding resiliency items from the sustainability charter should be addressed as part of updated application materials. The Applicant has indicated that standby powers for campus elevators and emergency loads for lighting/fire alarms will be provided for the Structured Parking & Preschool Facility Building either through local battery units or a central lighting inverter.	Met.
Building design	Overview: The Applicant's submission for the LRC includes a scaled massing with articulation along the first 35 feet through the organization of proposed materials with glass/aluminum curtainwall and stone, the upper floors include a transition of materials with glass, and aluminum panels and metal screening of the mechanical equipment that Staff finds appropriate. Planning Board and/or Staff may request physical samples for the proposed materials. The Applicant has clarified the differing functions and access restrictions required for the preschool facility that necessitate no internal connection with the structured parking. Staff finds the metal screening reduces the negative visual impacts of the structural concrete parking garage and utilizes a consistent material in the type and color of the overall campus.	Met.
Building entrances	Overview: The Applicant submission indicates several vestibules along the street wall east and west facing façades of the Academic (LRC) Building. An example of these vestibules has been submitted and includes a recessed entry within the ground-level curtain wall system that Staff finds to be appropriate articulation for public access. The promenade and perimeter access loop have been appropriately designed to respond to the existing entrance points for the Cannery Building. Building entrances have been provided for the structured parking on the eastern and western sides to correspond with the interior pathways and perimeter access loop.	Met.

Mitigation of impacts	Overview: Staff finds the Applicant submission for Phase 1 is consistent with the shadow impacts outlined in the approved IDP and submitted materials. The Applicant has designed the Phase 1 buildings in compliance with the IOZ Height Overlay Map and spacing of buildings 40 feet apart to reduce the impacts of wind. The Applicant has calculated allowable noise designed to not exceed city guidelines, Staff will review with further comments if required. Staff finds the arrangement of buildings, limited surface parking, and site programming to mitigate heat throughout the Phase 1 development plan. Planning Board and/or Staff may request the thermal comfort analysis study performed by the Applicant. Staff finds the implementation of building materials to include aluminum fins or "sails" to reduce glare significantly, along with the arrangement of glass panels in the concave facade. Planning Board and/or Staff may request the reflected solar irradiance study performed by the Applicant. Staff finds the Applicant submission for Phase 1 is universally consistent to include comfortable and safe lighting solutions. Staff finds the Applicant employs design strategies to mitigate environmental threats such as bird strikes, flooding, and locally sourced materials where possible.	No action required at this time.
Neighborhood integration (§8.5.7(I))		
Standard	***Discussion***	***Finding***
Neighborhood engagement	Overview: The IDP and regulatory framework require the creation and maintenance of a project website, the creation of a community advisory group with quarterly meetings, and quarterly neighborhood forums. Four neighborhood forums have been held on February 28th, April 27th, June 29th, and October 18th, with videos and meeting notes posted to the project website. On October 30th, the community advisory group met with a list of meeting attendees and minutes provided to Staff. Confirmation has been provided that Sam Reiche is serving as the community contact As the project review progresses, the website shall be updated to provide current information to site users.	No action required at this time.

Construction management	Overview: The submitted Construction Management Plan provides an overview of communication strategies, site maintenance, relevant City permits, and erosion & sediment controls. An example construction webpage has been referenced that includes communication methods, schedule, and narrative overview. A comprehensive construction schedule and truck routing plan have been submitted for the site. Clarification has been made that temporary erosion & sedimentation control measures will be removed post-construction and that demolition of the Codfish Building is proposed as part of the scope of work. Plans have been updated to include two wheel washes for foundation & site work. As the review continues, minor updates will be required to respond to current conditions, the pre-construction meeting for the project, and updates to the construction schedule.	No action required at this time.

Historic Preservation (§8.5.7(J))		
Standard	***Discussion***	***Finding***
Historic preservation review *Required interpretive elements*	Overview: The project site includes a locally designated landmark (The Cannery Building and a 25-foot radius surrounding the building). Building and site improvements to the building, the 25-foot radius, and interpretative elements on the reconstructed pier have been reviewed and approved by the Historic Preservation Board on April 17, 2024. No further action is required.	Met.

Roux LRC, Bean Building, Site & Future Development Charter

	Commitment	Applicability	Strategies	City Staff Review - Phase 1 (January 12, 2024)	Applicant Response (March 28, 2024)	City Staff Response (May 7, 2024)
Code mandated items						
Energy	Design the building to achieve the energy requirements of IECC 2021 (ASHRAE 90.1-2019).	All buildings	Meet code applicable at time of permitting.	To be determined at time of permitting.	We understand these will be reviewed as part of the building permit process.	No action needed at this time.
Responsible Materials	Specify, at a minimum, PFAS free carpet, rugs, and fabrics to align with the State of Maine's PFAS ban.	All buildings	Utilize PFAS free carpets.			
Occupant Experience	Provide mechanical or mixed mode ventillation to all residential units.	All buildings	Provide ERVs or other energy efficient ventilation systems to each regularly occupied space.			
Energy						
	Eliminate on-site fossil fuels in building HVAC and Food service.	All buildings	All electric mechanical systems utilizing efficient equipment such as ASHPs and energy recovery ventilators.	Heat pumps are proposed in the LRC building. Additional information will need to be submitted for the Cannery Building and the Structured parking & preschool facility building to confirm that efficient electrical mechanical systems are being utilized.	Fossil fuels will not be utilized for HVAC and food services. Design of mechanical systems will be provided as part of the building permit process.	Understood. No action needed at this time.
		All buildings	Eliminate the combustion of fossil fuels on-site except for emergency backup power and non-permanently installed equipment.	Submit a narrative confirming how fossil fuels will not be combusted on the site for any of the uses of the site (e.g., lab, café space).	The project is committed to utilizing all electric kitchens throughout. The design of these systems will be provided as part of the building permit process.	Understood. No action needed at this time.
		All buildings	All electric domestic hot water.	Hot water is provided through electric heaters, as noted in Sheet P1.01.	No action required.	Standard met.
	Provide infrastructure for future PV installation.	All buildings	Identify location for future PV equipment in building. Provide conduit from roof to central electrical room.	PV locations identified for the LRC and Cannery buildings, but is not identified for the Structured parking & preschool facility building. Update the floor plans for the Structured parking & preschool facility building to identify the location of future PV equipment for the building.	Conduits will be provided from roof areas to central electrical rooms to provide infrastructure for potential PV systems in the future. Details of this design will be provided as part of the building permit process.	Understood. No action needed at this time.
	Design the building to be 30% better than ASHRAE 90.1-2019 and 15% of roof area dedicated for PV.	The LRC	Utilize geothermal HVAC system and on/off site PV to achieve aggressive energy targets for project.	Geothermal HVAC shown in Sheet GT-01 and photovoltaic systems >15% of the roof area are proposed for the roof of the LRC building. Applicant shall submit a narrative demonstrating how the combined systems will be designed to be 30% better than ASHRAE 90.1-2019.	Thorton Tomasetti ("TT") is performing an energy model for the project. The report will be submitted to the city for review prior to or as part of the building permit application.	Understood. No action needed at this time.
Embodied Carbon						
	Reuse existing historic building.	Bean Building	Efficient engineering to optimize material selection.	Applicant shall provide narrative clarifying how the submitted strategy is being achieved through the proposed renovation of the Cannery Building.	The Bean Building is being designed to support a flexible program. This includes limited use of permanent partitions which supports the strategy indicated.	Standard met.
	Advocate for Environmental Product Declarations (EPDs) for all concrete used on the project.	All buildings	Design and construction team to work with suppliers and request EPDs are generated. Availability of EPDs will be included in procurement decisions.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	The project teams will require EPDs in specifications. A procurement schedule will be generated and shared with City when available.	Understood. A draft procurement schedule shall be submitted prior to or as part of the building permit process.
	Perform a whole building life cycle analysis (LCA) to study carbon conservation measures.	All Buildings	Quantify the embodied carbon of project by completing an LCA.	Identify when a LCA will be completed/be able to be submitted for review by City Staff prior to issuance of building permits for the project.	An LCA of each building will be submitted to the City for review prior to or as part of the building permit application.	Understood. No action needed at this time.
	Reduce the embodied carbon of structural materials in the building by 15% from a typical design. Demonstrate a reduction of at least 10% for building embodied carbon.	The LRC	Utilize Mass Timber for a portion of building .	Mass timber is proposed for a portion of the building.	No action required.	Standard met.
		The LRC	Utilize interior materials with lower than average carbon footprint.	Identify through EPDs and/or LCA how the 10% reduction in embodied carbon will be achieved and at what point City Staff can confirm reduction prior to issuance of building permits for the project.	An LCA of each building will be submitted to the City for review prior to or as part of the building permit application.	Understood. No action needed at this time.
Responsible Materials						
	Source wood products from Maine forests and/or sustainably managed forests or salvaged/reclaimed wood suppliers.	All buildings	Wood products sourced from sustainable managed forests will be prioritized. Wood sourcing considerations will be included in procurement decisions.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	A procurement schedule will be generated and shared with City when available.	Understood. A draft procurement schedule shall be submitted prior to or as part of the building permit process.
		All buildings	Utilize Maine products to the maximum extent possible. Wood sourcing			
	Advocate for the removal of PFAS chemicals in other targeted product categories.	Bean Building	Team to identify targeted categories. PFAS content will be included in procurement decisions.			
	In coordination with the contractor, identify key materials to procure from the state of Maine.	All buildings	Team to identify targeted categories. Sourcing availability content will be included in procurement decisions.			
	Divert at least 50% of non-hazardous construction and demolition waste from the landfill.	All buildings	Source separate construction and demolition waste.	Prior to a certificate of occupancy, a waste hauler contract for the site shall be submitted to review and confirm that 50% landfill diversion of non-hazardous materials will be ensured.	No action required.	Understood. No action needed at this time.
		All buildings	Include requirements in contract with			
		Site areas	Identify opportunities for reuse/salvage of existing materials.	Reuse of rail lines and bean pots have been proposed as part of interpretive work related to historic preservation. On the project website, under Site Work, a July 28, 2023 post identified historic elements that will be reused and construction materials to be reused/recycled. Update application materials to identify how the construction materials are being reused/recycled.	Website content from July is not the most current material. Review of project should be contained to the site plan application. If materials will be reused/recycled, the documents will be updated accordingly. Landscaping design details have not been finalized.	Comment stands. Update application materials to list what construction materials are being reused/recycled prior to Planning Board approval.
	Target Red List free finishes in targeted spaces.	The LRC	Classrooms and offices will target red list free flooring, ceilings, and furniture.	October 19, 2023 Design Development document states that red list free materials shall be used.	No action required.	Standard met.
	Use best practices for bird friendly design.	The LRC	Include bird safe glass and design measures to reduce bird strike hazards.	Bird safe glass treatments are proposed for some of the glass in the LRC building. Confirmation that the entirety of the building glass is bird safe has been requested to meet §8.5.7(F)(6) of the Land Use Code.	The Roux campus buildings will follow the City of Portland's Bird Friendly Ordinance LD-670. Per the ordinance, all new buildings on campus will comply by providing facades that have been treated to have a Maximum Threat Factor of 30 (TF 30) up to 75 feet above grade. A maximum of TF 30 will be achieved through a combination of ceramic fritted glass, angled glass facades and a variety of articulated materials such as metal fins and granite window systems. Final spec and design of glass will be provided as part of the building permit submission.	Understood. No action needed at this time.
Water						
	Reduce indoor water use from 25% from a code baseline building.	All buildings	Select high efficiency, low flow plumbing fixtures for all spaces with lower then code flow rates.	Flow rates for plumbing fixtures have not been provided as part of the submitted application materials. Update application materials to state the proposed flow rate for plumbing fixtures and the applicable code requirements for flow rate.	Flow rates for plumbing fixtures will be provided as part of the building permit process.	Understood. No action needed at this time.
		Public spaces	Maximize the use of urinals while providing gender inclusive restrooms.	Urinals are proposed in public bathrooms for the LRC, but are not shown in the Cannery Building or the Structured parking & preschool facility building. Clarify why urinals are not proposed in the Cannery Building and whether any urinals are proposed for the Structured parking & preschool facility building.	Urinal counts will be provided as part of the building permit process.	Understood. Counts will be reviewed as part of the building permit process.
	Maximize the use of native and drought tolerant landscape plants.	Associated Site areas	Landscaping to be primarily drought tolerant native woody, perennial, or meadow mix plants requiring minimal irrigation after establishment and during severe/extended drought events.	Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.	Standard met.
	Stormwater Management in accordance with Maine Department of Environmental Protection Best Management Practices Manual and City of Portland	Site Areas	Incorporate Low Impact Development Design Strategies and Stormwater Quality Treatment Systems.	Application is designed to meet Chapter 500 standards and has incorporated LID strategies such as protecting natural drainage systems, utilizing low-maintenance landscaping, minimizing impervious surfaces, and providing vegetated open-channel conveyance systems.	No action required.	Standard met.
	Prohibit the use of all synthetic pesticides and fertilizers for the operation and maintenance of landscape and agriculture through Integrated pest management (IPM)conducted as part of an overall Plant Health Care Program for the Roux site.	Site Areas	Consideration will be given, during the initial site design, to plants that require fewer chemical inputs for both establishment and long- term maintenance needs. This includes anticipated needs that will likely arise as the landscape itself evolves and matures.	Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.	Standard met.
Occupant Experience & Equity						

	Optimize natural daylight and mitigate glare.	All buildings	Provide shades or curtains at all regularly occupied spaces which face east, west, or south.	Confirmed in General Note 8 on Sheet A12.01 of the architectural plans for the LRC building. Confirmation of shades or curtains for the Cannery Building and the Structured parking & preschool facility building have not been provided. Update architectural drawings to confirm that shades or curtains will be provided for regularly occupied spaces that face east, west, and south for the Cannery Building and the Structured parking & preschool facility building.	Information regarding shades or curtains for the Cannery Building and Daycare facility will be provided as part of the building permit process. Shades are not assumed at structured parking as space is not regularly occupied.	Understood. Review of shades or curtains as part of building permit process will be limited to the LRC building, the Cannery Building, and the preschool facility.
	Incorporate biophilic design principles.	All buildings	Use of natural materials.	Mass timber and stone are proposed to be used for the LRC building. Currently, only non-natural materials are identified for the Structured parking & preschool facility building. Update architectural drawings to identify what natural materials are proposed to be used for the Structured parking & preschool facility building.	The daycare facility will incorporate natural material on the interior. The materials will be indicated during the Planning board process. The structured parking will incorporate a biophilic design through the expression of waves in the design of the west facade.	Updated floor plans for the daycare center were submitted, but the materiality of the interior was not included. Update the floor plans to indicate the interior materiality for the daycare center as part of the Planning Board process. While the structured parking implements a biophilic design, the Sustainability Charter commits to the use of natural materials in all buildings. Update the elevations and/or floor plans for the structured parking to include the use of natural materials as part of the Planning Board process. Opportunities for use of natural materials could include the lobby materiality.
		The LRC & Bean Buildings	Create cultural and ecological connections to place - art and signage.	Provide a supplemental narrative and/or sample designs on how the proposed art and signage for the campus will create cultural and ecological connections to place, as well as the locations for the proposed locations for art and signage.	Design of the proposed art/signage will be provided as part of the building permit process.	Understood. Review of the design and location of signage will be reviewed as part of the building permit process. Signage must meet the standards of Article 20 of the Land Use Code.
	Use the building to educate building and site users.	The LRC & Bean Buildings	Incorporate signage that tells about sustainability features of building.	Identification of informational signage on sustainability features of the LRC & Cannery buildings is not included in the signage plans. Update the architectural drawings and/or signage plans to identify where the proposed informational signage on sustainability features of each building will be located and the proposed design of the signage.	Design of the proposed signage will be provided as part of the building permit process.	Understood. Review of the design and location of signage will be reviewed as part of the building permit process.
	Provide amenities to support public access.	All buildings	Provide drinking fountains and/or bottle fillers.	The submitted floor plans for the LRC building include drinking fountains and/or bottle filters. The submitted floor plans for the Cannery Building and the Structured parking & preschool facility buildings do not show drinking fountains and/or bottle filters. Update floor plans for the Cannery Building and the Structured parking & preschool facility building to identify the location(s) of drinking fountains and/or bottle fillers.	Plans for drinking fountains/bottle fillers for Cannery Building will be provide as part of the building permit process. The Parking garage is a transient space so water fountains are not planned. The Daycare facility is not accessible to the public and the water needs of the staff and children are met by traditional sinks.	Traditional sinks provide an appropriate alternative for water access for users of the daycare facility. The structured parking will facilitate public access to the site and a water fountain or bottle filler would serve as an amenity for public access to the perimeter access loop, waterfront path, and guardians dropping off children at the daycare center. Update floor plan for the structured parking facility to include a water fountain or bottle filer. Opportunities for locations could include the lobby and/or parking office.
		All buildings	Provide publicly accessible restrooms adjacent to public spaces.	Publicly accessible restrooms are provided in the LRC and Cannery buildings. Submitted floor plans for the Structured parking & preschool facility building do not provide enough detail to confirm whether restrooms will be publicly accessible next to the proposed shoreland open space. Update architectural drawings to clarify if and how publicly accessible restrooms will be provided.	For security and safety the Daycare facility is not publicly accessible. No public restrooms are planned for the structured parking.	Understood. Standard met.
		Site Areas	Provide bike/pedestrian paths.	Complies. Shared-use facilities are provided throughout the site.	No action required.	Standard met.
		Site Areas	Provide benches.	Complies. Benches are provided throughout the site.	No action required.	Standard met.
		Site Areas	Provide site wayfinding.	Complies. Site wayfinding package is included as part of the application materials.	No action required.	Standard met.
	Provide Gender inclusive restrooms.	All buildings	Provide gender inclusive restrooms in public areas.	Public, gender inclusive restrooms are provided in public areas in the LRC building. The split of restroom facilities in the Cannery Building connotes that bathroom facilities will not be gender inclusive. Confirm that the both public area bathrooms on the lower level of the Cannery Building are gender inclusive.	Both public area bathrooms on the lower level of the Cannery Building are gender inclusive.	Standard met.
	Provide lactation rooms.	The LRC & Bean Buildings	Provide a designated lactation room with a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets	Lactation rooms not identified in the floor plans for the LRC and Cannery buildings. Update floor plans to identify lactation rooms that include a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets.	Updated floor plans will be provided as part of the building permit process.	Understood. Updated floor plans will be reviewed as part of the building permit process.
Transportation						
	Conduct study of EV charging needs. Provide required EV capacity to meet anticipated demand.	Campus	Work with city to determine appropriate approach to EV charging	EV Charging Study is still under review by City Staff. As Study is under review, Application should confirm whether the charging should meet the demand in coordination with EV or PV requirements approved by the City.	The EV charging provided is intended to be in compliance with site plan standards.	Standard met.
		Site Areas	Provide EV charging to meet demand identified in coordination with PV			
		Site Areas	Annually evaluate the EV charging capacity needs by the campus.	EV Charging assessment should be coordinated with the submission of TDM reports. City staff encourage the assessment of EV charging for automobiles and bicycles as part of the campus goals to reduce SOV automobile trips.	No action required at this time.	No action needed at this time.
	Integrate quality/ secure bicycle storage into the site design and provide shower facilities.	Residential buildings	Provide at least one bike storage space per four units.	**Not applicable for this phase.**		
		The LRC & Bean Buildings	Provide secure bicycle storage.	Bicycle storage is proposed on the lower level of the Cannery Building. Bicycle storage is not provided in the LRC building. Update floor plans for the LRC building to identify interior, secure bicycle storage.	Users of the LRC building will utilize bike storage on site, provided in either the Bean Building and/or in the structured parking.	Understood. Standard met.
		Bean Building	Provide shower facilities for bike commuters.	Showers are provided on the lower level of the Cannery Building.	No action required.	Standard met.
		Site Areas	Provide Portland Bike Share stations.	Bikeshare stations are not currently identified in the submitted application materials. Update application materials to identify proposed locations for bikeshare stations for review and further discussion with City staff.	The bike shared location is shown on the Figure 5-1 Bike Amenities and Circulation.	Standard met.
		Site Areas	Provide quality and dispersed bike parking for site users near each building.	Exterior bicycle parking is distributed throughout the site for buildings in the first phase and future phases of development. As mentioned three standards above, secure bicycle storage will need to be provided for in the LRC building.	No action required regarding exterior bicycle parking. Sufficient indoor bicycle storage will be provided in Cannery building or the Parking Structure.	Standard met.
	In collaboration with the surrounding community, work to improve multi-modal transportation to the Roux Site.	Community	Maximize non single occupancy vehicle transportation to the site, by charging for parking, working with Metro and/or shuttle services to efficiently connect the site to key city locations, encourage bike and pedestrian access, and enabling water taxi service.	Application identifies opportunities to reduce SOV trips through unbundled parking, ongoing collaboration with METRO and MaineDOT, on-site shared-use facilities with anticipated connection points to the rest of the peninsula and off-peninsula, as well as pier improvements to facilitate water taxi service.	No action required.	Standard met.
Resilience						
	Incorporate near-term future-projected climate change data (2050s) in design of mechanical, electrical, and plumbing systems and/or components on a regular replacement cycle. Incorporate long-term future-projected climate change data (2100+) in the design of the building and infrastructure, including flood resistant materials below the 2100 sea level rise design flood elevation and elevate critical infrastructure above this elevation.	All New buildings	All critical building infrastructure shall be located above the design flood elevation (DFE) of 22.5ft NAVD88.	Critical building infrastructure has been identified in the LRC building to be located above 22.5 feet NAVD88. Additional information still needs to be provided to confirm that no critical building infrastructure is located below 22.5 feet NAVD88 for the Structured parking & preschool facility building, particularly in the Preschool Facility portion of the	No critical infrastructure ill be located below 22.5 feet in the structured parking or daycare facility. That will be confirmed in the building permit process.	No action needed at this time. Elevations of critical building infrastructure will be confirmed as part of the building permit process.
		All buildings	Review the extreme heat projections with MEP consultant for consideration of future cooling degree days. Allow additional cooling and heating capacity. Utilize weather shift model anticipating conditions in year 2050 for calculations.	Heat projections with MEP consultant not included with application materials. Applicant should clarify the anticipated development of the projections and point for City staff to review prior to Certificate of Occupancy.	Required information will be provided prior to Certificate of Occupancy.	No action needed at this time. Review of heat projections with MEP consultant shall be submitted prior to issuance of a Certificate of Occupancy.
	Prepare emergency action plan and provide appropriate level of backup power to support life safety. Incorporate campus-wide emergency preparedness planning to enhance overall resilience of the campus/site community.	The LRC & Bean Buildings	Provide emergency generator with capacity to support essential operations such as research requirements in addition to life safety for 48 hours.	Unable to confirm whether generator can provide 48 hours of energy for essential operations. Applicant should provide supporting documentation based on the proposed storage capacity or the manufacturer that the proposed nitrogen generator can supply energy for 48 hours to essential operations.	Refer to mechanical drawings for fuel oil tank size and location. LRC generator has been sized for 48 hours of run time.	While the size of the fuel oil tank was originally provided, it is unclear how the size of the tank was determined to meet the needs of the Cannery& LRC buildings. Submit calculations or manufacturer verification that the proposed tank size provides sufficient capacity for the Cannery & LRC buildings for 48 hours.
		Student Housing	Developer to provide emergency generator with capacity to support operations including food service and life safety for 48 hours.	**Not applicable for this phase.**		
		All buildings	Provide campus wide emergency preparedness plan and coordinate with local jurisdictions.	Emergency preparedness plan not submitted. Applicant should clarify the anticipated development date of the plan and point for City staff to review prior to Certificate of Occupancy.	An emergency preparedness plan will be submitted prior to Certificate of Occupancy.	No action needed. An emergency preparedness plan shall be submitted to City Staff prior to issuance of a Certificate of Occupancy.
		All other	Provide emergency generator.	Generator provided on Level 1 of LRC building.	No action required.	Standard met.

	Complies
	Confirmation of compliance to occur at later point
	Does not comply
	Not applicable to current phase

Roux LRC, Bean Building, Site & Future Development Charter

	Commitment	Applicability	Strategies	City Staff Review - Phase 1 (January 12, 2024)	Applicant Response (March 28, 2024)	City Staff Response (May 7, 2024)	Applicant Response (May 29, 2024)	City Staff Response (June 7, 2024)
Code mandated items								
Energy	Design the building to achieve the energy requirements of IECC 2021 (ASHRAE 90.1-2019).	All buildings	Meet code applicable at time of permitting.	To be determined at time of permitting.	We understand these will be reviewed as part of the building permit process.	No action needed at this time.	No action needed at this time.	No action needed at this time.
Responsible Materials	Specify, at a minimum, PFAS free carpet, rugs, and fabrics to align with the State of Maine's PFAS ban.	All buildings	Utilize PFAS free carpets.					
Occupant Experience	Provide mechanical or mixed mode ventilation to all residential units.	All buildings	Provide ERVs or other energy efficient ventilation systems to each regularly occupied space.					
Energy								
	Eliminate on-site fossil fuels in building HVAC and Food service.	All buildings	All electric mechanical systems utilizing efficient equipment such as ASHPs and energy recovery ventilators.	Heat pumps are proposed in the LRC building. Additional information will need to be submitted for the Cannery Building and the Structured parking & preschool facility building to confirm that efficient electrical mechanical systems are being utilized.	Fossil fuels will not be utilized for HVAC and food services. Design of mechanical systems will be provided as part of the building permit process.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
		All buildings	Eliminate the combustion of fossil fuels on-site except for emergency backup power and non-permanently installed equipment.	Submit a narrative confirming how fossil fuels will not be combusted on the site for any of the uses of the site (e.g., lab, café space).	The project is committed to utilizing all electric kitchens throughout. The design of these systems will be provided as part of the building permit process.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
		All buildings	All electric domestic hot water.	Hot water is provided through electric heaters, as noted in Sheet P1.01.	No action required.	Standard met.		
	Provide infrastructure for future PV installation.	All buildings	Identify location for future PV equipment in building. Provide conduit from roof to central electrical room.	PV locations identified for the LRC and Cannery buildings, but is not identified for the Structured parking & preschool facility building. Update the floor plans for the Structured parking & preschool facility building to identify the location of future PV equipment for the building.	Conduits will be provided from roof areas to central electrical rooms to provide infrastructure for potential PV systems in the future. Details of this design will be provided as part of the building permit process.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
	Design the building to be 30% better than ASHRAE 90.1-2019 and 15% of roof area dedicated for PV.	The LRC	Utilize geothermal HVAC system and on/off site PV to achieve aggressive energy targets for project.	Geothermal HVAC shown in Sheet GT-01 and photovoltaic systems >15% of the roof area are proposed for the roof of the LRC building. Applicant shall submit a narrative demonstrating how the combined systems will be designed to be 30% better than ASHRAE 90.1-2019.	Thorton Tomasetti ("TT") is performing an energy model for the project. The report will be submitted to the city for review prior to or as part of the building permit application.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
Embodied Carbon								
	Reuse existing historic building.	Bean Building	Efficient engineering to optimize material selection.	Applicant shall provide narrative clarifying how the submitted strategy is being achieved through the proposed renovation of the Cannery Building.	The Bean Building is being designed to support a flexible program. This includes limited use of permanent partitions which supports the strategy indicated.	Standard met.		
	Advocate for Environmental Product Declarations (EPDs) for all concrete used on the project.	All buildings	Design and construction team to work with suppliers and request EPDs are generated. Availability of EPDs will be included in procurement decisions.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	The project teams will require EPDs in specifications. A procurement schedule will be generated and shared with City when available.	Understood. A draft procurement schedule shall be submitted prior to or as part of the building permit process.	No action needed at this time.	No action needed at this time.
	Perform a whole building life cycle analysis (LCA) to study carbon conservation measures.	All Buildings	Quantify the embodied carbon of project by completing an LCA.	Identify when a LCA will be completed/be able to be submitted for review by City Staff prior to issuance of building permits for the project.	An LCA of each building will be submitted to the City for review prior to or as part of the building permit application.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
	Reduce the embodied carbon of structural materials in the building by 15% from a typical design. Demonstrate a reduction of at least 10% for building embodied carbon.	The LRC	Utilize Mass Timber for a portion of building.	Mass timber is proposed for a portion of the building.	No action required.	Standard met.		
		The LRC	Utilize interior materials with lower than average carbon footprint.	Identify through EPDs and/or LCA how the 10% reduction in embodied carbon will be achieved and at what point City Staff can confirm reduction prior to issuance of building permits for the project.	An LCA of each building will be submitted to the City for review prior to or as part of the building permit application.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
Responsible Materials								
	Source wood products from Maine forests and/or sustainably managed forests or salvaged/reclaimed wood suppliers.	All buildings	Wood products sourced from sustainable managed forests will be prioritized. Wood sourcing considerations will be included in procurement decisions.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	A procurement schedule will be generated and shared with City when available.	Understood. A draft procurement schedule shall be submitted prior to or as part of the building permit process.	No action needed at this time.	No action needed at this time.
		All buildings	Utilize Maine products to the maximum extent possible. Wood sourcing					
	Advocate for the removal of PFAS chemicals in other targeted product categories.	Bean Building	Team to identify targeted categories. PFAS content will be included in procurement decisions.					
	In coordination with the contractor, identify key materials to procure from the state of Maine.	All buildings	Team to identify targeted categories. Sourcing availability content will be included in procurement decisions.					
	Divert at least 50% of non-hazardous construction and demolition waste from the landfill.	All buildings	Source separate construction and demolition waste.	Prior to a certificate of occupancy, a waste hauler contract for the site shall be submitted to review and confirm that 50% landfill diversion of non-hazardous materials will be ensured.	No action required.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
		All buildings	Include requirements in contract with					
		Site areas	Identify opportunities for reuse/salvage of existing materials.	Reuse of rail lines and bean pots have been proposed as part of interpretive work related to historic preservation. On the project website, under Site Work, a July 28, 2023 post identified historic elements that will be reused and construction materials to be reused/recycled. Update application materials to identify how the construction materials are being reused/recycled.	Website content from July is not the most current material. Review of project should be contained to the site plan application. If materials will be reused/recycled, the documents will be updated accordingly. Landscaping design details have not been finalized.	Comment stands. Update application materials to list what construction materials are being reused/recycled prior to Planning Board approval.	The following items will be repurposed for use on the site: • Granite cobble pavers • Historic railroad rail artifacts • Historic railroad cart stop • Historic pier cleats and bollards • Salvaged granite blocks will be incorporated in seat wall compositions along the shoreline/ coastal path	Standard met.
	Target Red List free finishes in targeted spaces.	The LRC	Classrooms and offices will target red list free flooring, ceilings, and furniture.	October 19, 2023 Design Development document states that red list free materials shall be used.	No action required.	Standard met.		
	Use best practices for bird friendly design.	The LRC	Include bird safe glass and design measures to reduce bird strike hazards.	Bird safe glass treatments are proposed for some of the glass in the LRC building. Confirmation that the entirety of the building glass is bird safe has been requested to meet §8.5.7(F)(6) of the Land Use Code.	The Roux campus buildings will follow the City of Portland's Bird Friendly Ordinance LD-670. Per the ordinance, all new buildings on campus will comply by providing facades that have been treated to have a Maximum Threat Factor of 30 (TF 30) up to 75 feet above grade. A maximum of TF 30 will be achieved through a combination of ceramic fritted glass, angled glass facades and a variety of articulated materials such as metal fins and granite window systems. Final spec and design of glass will be provided as part of the building permit submission.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
Water								
	Reduce indoor water use from 25% from a code baseline building.	All buildings	Select high efficiency, low flow plumbing fixtures for all spaces with lower then code flow rates.	Flow rates for plumbing fixtures have not been provided as part of the submitted application materials. Update application materials to state the proposed flow rate for plumbing fixtures and the applicable code requirements for flow rate.	Flow rates for plumbing fixtures will be provided as part of the building permit process.	Understood. No action needed at this time.	No action needed at this time.	No action needed at this time.
		Public spaces	Maximize the use of urinals while providing gender inclusive restrooms.	Urinals are proposed in public bathrooms for the LRC, but are not shown in the Cannery Building or the Structured parking & preschool facility building. Clarify why urinals are not proposed in the Cannery Building and whether any urinals are proposed for the Structured parking & preschool facility building.	Urinal counts will be provided as part of the building permit process.	Understood. Counts will be reviewed as part of the building permit process.	No action needed at this time.	No action needed at this time.
	Maximize the use of native and drought tolerant landscape plants.	Associated Site areas	Landscaping to be primarily drought tolerant native woody, perennial, or meadow mix plants requiring minimal irrigation after establishment and during severe/extended drought events.	Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.	Standard met.		
	Stormwater Management in accordance with Maine Department of Environmental Protection Best Management Practices Manual and City of Portland Technical Manual.	Site Areas	Incorporate Low Impact Development Design Strategies and Stormwater Quality Treatment Systems.	Application is designed to meet Chapter 500 standards and has incorporated LID strategies such as protecting natural drainage systems, utilizing low-maintenance landscaping, minimizing impervious surfaces, and providing vegetated open-channel conveyance systems.	No action required.	Standard met.		
	Prohibit the use of all synthetic pesticides and fertilizers for the operation and maintenance of landscape and agriculture through Integrated pest management (IPM)conducted as part of an overall Plant Health Care Program for the Roux site.	Site Areas	Consideration will be given, during the initial site design, to plants that require fewer chemical inputs for both establishment and long- term maintenance needs. This includes anticipated needs that will likely arise as the landscape itself evolves and matures.	Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.	Standard met.		
Occupant Experience & Equity								
	Optimize natural daylight and mitigate glare.	All buildings	Provide shades or curtains at all regularly occupied spaces which face east, west, or south.	Confirmed in General Note 8 on Sheet A12.01 of the architectural plans for the LRC building. Confirmation of shades or curtains for the Cannery Building and the Structured parking & preschool facility building have not been provided. Update architectural drawings to confirm that shades or curtains will be provided for regularly occupied spaces that face east, west, and south for the Cannery Building and the Structured parking & preschool facility building.	Information regarding shades or curtains for the Cannery Building and Daycare facility will be provided as part of the building permit process. Shades are not assumed at structured parking as space is not regularly occupied.	Understood. Review of shades or curtains as part of building permit process will be limited to the LRC building, the Cannery Building, and the preschool facility.	No action needed at this time.	No action needed at this time.
	Incorporate biophilic design principles.	All buildings	Use of natural materials.	Mass timber and stone are proposed to be used for the LRC building. Currently, only non-natural materials are identified for the Structured parking & preschool facility building. Update architectural drawings to identify what natural materials are proposed to be used for the Structured parking & preschool facility building.	The daycare facility will incorporate natural material on the interior. The materials will be indicated during the Planning board process. The structured parking will incorporate a biophilic design through the expression of waves in the design of the west facade.	Updated floor plans for the daycare center were submitted, but the materiality of the interior was not included. Update the floor plans to indicate the interior materiality for the daycare center as part of the Planning Board process. While the structured parking implements a biophilic design, the Sustainability Charter commits to the use of natural materials in all buildings. Update the elevations and/or floor plans for the structured parking to include the use of natural materials as part of the Planning Board process. Opportunities for use of natural materials could include the lobby materiality.	The daycare facility and the lobby of the garage will incorporate responsible materials that are natural and/or sustainably sourced. Classrooms and offices will target red list free flooring, ceilings, and furniture. Specifications for these items will be reviewed as part of the building permit process.	Understood. No action needed at this time.
		The LRC & Bean Buildings	Create cultural and ecological connections to place - art and signage.	Provide a supplemental narrative and/or sample designs on how the proposed art and signage for the campus will create cultural and ecological connections to place, as well as the locations for the proposed locations for art and signage.	Design of the proposed art/signage will be provided as part of the building permit process.	Understood. Review of the design and location of signage will be reviewed as part of the building permit process. Signage must meet the standards of Article 20 of the Land Use Code.	No action needed at this time.	No action needed at this time.
	Use the building to educate building and site users.	The LRC & Bean Buildings	Incorporate signage that tells about sustainability features of building.	Identification of informational signage on sustainability features of the LRC & Cannery buildings is not included in the signage plans. Update the architectural drawings and/or signage plans to identify where the proposed informational signage on sustainability features of each building will be located and the proposed design of the signage.	Design of the proposed signage will be provided as part of the building permit process.	Understood. Review of the design and location of signage will be reviewed as part of the building permit process.	No action needed at this time.	No action needed at this time.
	Provide amenities to support public access.	All buildings	Provide drinking fountains and/or bottle fillers.	The submitted floor plans for the LRC building include drinking fountains and/or bottle fillers. The submitted floor plans for the Cannery Building and the Structured parking & preschool facility buildings do not show drinking fountains and/or bottle fillers. Update floor plans for the Cannery Building and the Structured parking & preschool facility building to identify the location(s) of drinking fountains and/or bottle fillers.	Plans for drinking fountains/bottle fillers for Cannery Building will be provide as part of the building permit process. The Parking garage is a transient space so water fountains are not planned. The Daycare facility is not accessible to the public and the water needs of the staff and children are met by traditional sinks.	Traditional sinks provide an appropriate alternative for water access for users of the daycare facility. The structured parking will facilitate public access to the site and a water fountain or bottle filler would serve as an amenity for public access to the perimeter access loop, waterfront path, and guardians dropping off children at the daycare center. Update floor plan for the structured parking facility to include a water fountain or bottle filler. Opportunities for locations could include the lobby and/or parking office.	Bottle filling/drinking fountains, as requested, will be provided in the daycare and garage lobby and will be included as part of the building permit process.	Understood. No action needed at this time.
		All buildings	Provide publicly accessible restrooms adjacent to public spaces.	Publicly accessible restrooms are provided in the LRC and Cannery buildings. Submitted floor plans for the Structured parking & preschool facility building do not provide enough detail to confirm whether restrooms will be publicly accessible next to the proposed shoreland open space. Update architectural drawings to clarify if and how publicly accessible restrooms will be provided.	For security and safety the Daycare facility is not publicly accessible. No public restrooms are planned for the structured parking.	Understood. Standard met.	Standard met.	Standard met.
		Site Areas	Provide bike/pedestrian paths.	Complies. Shared-use facilities are provided throughout the site.	No action required.	Standard met.		
		Site Areas	Provide benches.	Complies. Benches are provided throughout the site.	No action required.	Standard met.		

		Site Areas	Provide site wayfinding.	Complies. Site wayfinding package is included as part of the application materials.	No action required.	Standard met.		
	Provide Gender inclusive restrooms.	All buildings	Provide gender inclusive restrooms in public areas.	Public, gender inclusive restrooms are provided in public areas in the LRC building. The split of restroom facilities in the Cannery Building connotes that bathroom facilities will not be gender inclusive. Confirm that the both public area bathrooms on the lower level of the Cannery Building are gender inclusive.	Both public area bathrooms on the lower level of the Cannery Building are gender inclusive.	Standard met.		
	Provide lactation rooms.	The LRC & Bean Buildings	Provide a designated lactation room with a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets.	Lactation rooms not identified in the floor plans for the LRC and Cannery buildings. Update floor plans to identify lactation rooms that include a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets.	Updated floor plans will be provided as part of the building permit process.	Understood. Updated floor plans will be reviewed as part of the building permit process.	No action needed at this time.	No action needed at this time.
Transportation								
	Conduct study of EV charging needs. Provide required EV capacity to meet anticipated demand.	Campus	Work with city to determine appropriate approach to EV charging	EV Charging Study is still under review by City Staff. As Study is under review, Application should confirm whether the charging should meet the demand in coordination with EV or PV requirements approved by the City.	The EV charging provided is intended to be in compliance with site plan standards.	Standard met.		
		Site Areas	Provide EV charging to meet demand identified in coordination with PV					
		Site Areas	Annually evaluate the EV charging capacity needs by the campus.	EV Charging assessment should be coordinated with the submission of TDM reports. City staff encourage the assessment of EV charging for automobiles and bicycles as part of the campus goals to reduce SOV automobile trips.	No action required at this time.	No action needed at this time.	No action needed at this time.	No action needed at this time.
	Integrate quality/ secure bicycle storage into the site design and provide shower facilities.	Residential buildings	Provide at least one bike storage space per four units.	**Not applicable for this phase.**				
		The LRC & Bean Buildings	Provide secure bicycle storage.	Bicycle storage is proposed on the lower level of the Cannery Building. Bicycle storage is not provided in the LRC building. Update floor plans for the LRC building to identify interior, secure bicycle storage.	Users of the LRC building will utilize bike storage on site, provided in either the Bean Building and/or in the structured parking.	Understood. Standard met.		
		Bean Building	Provide shower facilities for bike commuters.	Showers are provided on the lower level of the Cannery Building.	No action required.	Standard met.		
		Site Areas	Provide Portland Bike Share stations.	Bikeshare stations are not currently identified in the submitted application materials. Update application materials to identify proposed locations for bikeshare stations for review and further discussion with City staff.	The bike shared location is shown on the Figure 5-1 Bike Amenities and Circulation.	Standard met.		
		Site Areas	Provide quality and dispersed bike parking for site users near each building.	Exterior bicycle parking is distributed throughout the site for buildings in the first phase and future phases of development. As mentioned three standards above, secure bicycle storage will need to be provided for in the LRC building.	No action required regarding exterior bicycle parking. Sufficient indoor bicycle storage will be provided in Cannery building or the Parking	Standard met.		
	In collaboration with the surrounding community, work to improve multi-modal transportation to the Roux Site.	Community	Maximize non single occupancy vehicle transportation to the site, by charging for parking, working with Metro and/or shuttle services to efficiently connect the site to key city locations, encourage bike and pedestrian access, and enabling water taxi service.	Application identifies opportunities to reduce SOV trips through unbundled parking, ongoing collaboration with METRO and MaineDOT, on-site shared-use facilities with anticipated connection points to the rest of the peninsula and off-peninsula, as well as pier improvements to facilitate water taxi service.	No action required.	Standard met.		
Resilience								
	Incorporate near-term future-projected climate change data (2050s) in design of mechanical, electrical, and plumbing systems and/or components on a regular replacement cycle. Incorporate long-term future-projected climate change data (2100+) in the design of the building and infrastructure, including flood resistant materials below the 2100 sea level rise design flood elevation and elevate critical infrastructure above this elevation.	All New buildings	All critical building infrastructure shall be located above the design flood elevation (DFE) of 22.5ft NAVD88.	Critical building infrastructure has been identified in the LRC building to be located above 22.5 feet NAVD88. Additional information still needs to be provided to confirm that no critical building infrastructure is located below 22.5 feet NAVD88 for the Structured parking & preschool facility building, particularly in the Preschool Facility	No critical infrastructure will be located below 22.5 feet in the structured parking or daycare facility. That will be confirmed in the building permit process.	No action needed at this time. Elevations of critical building infrastructure will be confirmed as part of the building permit process.	No action needed at this time.	No action needed at this time.
		All buildings	Review the extreme heat projections with MEP consultant for consideration of future cooling degree days. Allow additional cooling and heating capacity. Utilize weather shift model anticipating conditions in year 2050 for calculations.	Heat projections with MEP consultant not included with application materials. Applicant should clarify the anticipated development of the projections and point for City staff to review prior to Certificate of Occupancy.	Required information will be provided prior to Certificate of Occupancy.	No action needed at this time. Review of heat projections with MEP consultant shall be submitted prior to issuance of a Certificate of Occupancy.	No action needed at this time.	No action needed at this time.
	Prepare emergency action plan and provide appropriate level of backup power to support life safety. Incorporate campus-wide emergency preparedness planning to enhance overall resilience of the campus/site community.	The LRC & Bean Buildings	Provide emergency generator with capacity to support essential operations such as research requirements in addition to life safety for 48 hours.	Unable to confirm whether generator can provide 48 hours of energy for essential operations. Applicant should provide supporting documentation based on the proposed storage capacity or the manufacturer that the proposed nitrogen generator can supply energy for 48 hours to essential operations.	Refer to mechanical drawings for fuel oil tank size and location. LRC generator has been sized for 48 hours of run time.	While the size of the fuel oil tank was originally provided, it is unclear how the size of the tank was determined to meet the needs of the Cannery& LRC buildings. Submit calculations or manufacturer verification that the proposed tank size provides sufficient capacity for the Cannery & LRC buildings for 48 hours.	The LRC Academic building has its own 1000kW generator which has a full load fuel consumption rate of 72 GPH. The main fuel tank is sized for 4000Gal. The fuel tank is able to be filled to roughly 82% of capacity or 3,280 gallons: 3,280Gal/ 72GPH = 46 Hours The generator is also supplied with a belly tank that stores 2 hours of fuel, making the total run time 48 hours at full load. The Bean building is currently still in early stages of design but is planned to have its own generator and fuel storage system with a total run time of 6 hours. The Bean building fuel oil system will not be shared with the Garage or Academic building.	Understood. Finalized designs and run time will continue to be reviewed as part of the building permit process.
		Student Housing	Developer to provide emergency generator with capacity to support operations including food service and life safety for 48 hours.	**Not applicable for this phase.**				
		All buildings	Provide campus wide emergency preparedness plan and coordinate with local jurisdictions.	Emergency preparedness plan not submitted. Applicant should clarify the anticipated development date of the plan and point for City staff to review prior to Certificate of Occupancy.	An emergency preparedness plan will be submitted prior to Certificate of Occupancy.	No action needed. An emergency preparedness plan shall be submitted to City Staff prior to issuance of a Certificate of Occupancy.	No action needed at this time.	No action needed at this time.
		All other	Provide emergency generator.	Generator provided on Level 1 of LRC building.	No action required.	Standard met.		

	Complies
	Confirmation of compliance to occur at later point
	Does not comply
	Not applicable to current phase

WRIGHT-PIERCE
Engineering a Better Environment

Memorandum

Date: 4/23/2024

Project No.: 21697A

To: Zach Powell, AICP, City of Portland Planner

From: Jaime Wallace, PE, Wright-Pierce
Brooke Springer, EI, Wright-Pierce

Subject: Major Site Plan – Northeastern University's Roux Institute Phase 1 (PL-002724-2023)

On December 23, 2023, Wright-Pierce performed a stormwater review of the Major Site Plan application to develop Phase 1 of the Roux Institute at Northeastern University's campus located at 1 Beanpot Circle on the Portland Waterfront (PL-002724-2023). The applicant provided responses to the December 2023 review comments and provided updated supporting information under cover of their March 28, 2024, letter. Wright-Pierce performed a second stormwater review of the subject Major Site Plan by reviewing the March 28, 2024 responses and supporting information and provides the subsequent review comments.

Documents Reviewed by Wright-Pierce

- Project Plans:
  - Average Grade Plan Set developed by CambridgeSeven consisting of sheets AS61.01 through AS61.03 dated October 27, 2023.
  - Civil Plans developed by CambridgeSeven and Woodard & Curran consisting of sheets G-000, G-001, C-001, C-002, C-100, C-101, C-102, C-201, C-202, C-301 through C-304, and D-401 through D-407 dated March 27. 2024.
  - Landscape Plans developed by Cambridge Seven consisting of sheets L1.00, L3.00, L3.01, L3.10, L4.00, L4.01, L4.02, L5.00, L6.00 through L6.03, and L8.00 dated March 22, 2024.
  - Sherwood Street Plans developed by VHB consisting of sheets 1 through 16 dated November 1, 2023.
  - Existing Conditions Survey developed by VHB consisting of sheets Sv-1 through Sv-3 dated September 15, 2023.
- Project Figures:
  - Figure 3-14 - Planting Zone Plan developed by CambridgeSeven dated November 17, 2023.
  - Figure 5-1 – Bike Amenities and Circulation developed by CambridgeSeven dated November 17, 2023.
  - Figure 5-2 – Emergency Access Routes developed by CambridgeSeven dated November 17, 2023.
  - Figure 5-3 – Bean Building Service Access developed by Bruner/Cott undated.
- Application Documents
  - Construction Management Plan developed by Consigli updated January 25, 2024.
  - Site Location of Development Application developed by Woodard & Curran dated November 2023.
  - Stormwater Management Plan developed by Woodard & Curran dated March 2024.
  - Waiver Table developed by Woodard & Curran.
  - Response to City Staff Comments by Woodard & Curran dated March 28, 2024.

Comments:

It is our understanding that the site plan and associated documents have been previously reviewed by the City of Portland Water Resources Division and Portland Water District. The applicant has provided responses to our

previous review comments dated December 22, 2023. The following additional comments provided by Wright-Pierce focus on the stormwater infrastructure on site with respect to the City of Portland Technical Manual and Maine DEP Chapter 500 and Best Management Practices.

1. **Maine DEP Chapter 500 Review:**
   The applicant has provided a narrative report in support of a Site Location of Development (SLOD) permit application. The following comments are related to review of this SLOD report and associated plan details.

   a. Urban Impaired Stream Standard
      i. As noted by the applicant, the proposed development is not located within an urban impaired stream watershed. Therefore, this standard is not applicable.
   b. Basic Standard
      i. Per Appendix A of Chapter 500, if disturbance activities take place less than 30 feet from any protected natural resource, and stormwater discharges through the disturbed areas toward the protected natural resource, perimeter erosion controls must be doubled and disturbed areas must be temporarily or permanently stabilized within 7 days. We would recommend a double barrier adjacent to the protected resource shown on the plans and discussed in the Stormwater Management Plan.
      ii. On Sheet C-002 of the Civil Plans, it appears the perimeter barrier falls within existing riprap called out on the plans. It is recommended to relocate the perimeter barrier upgradient to keep it out of the riprap.
      iii. The applicant shows a dewatering discharge sediment control device detail on sheet D-401. We recommend the applicant show approximately where the dewatering treatment units will be located on the plans.
      iv. The applicant shows a Dewatering Discharge Sediment Control Device detail as a dirt bag on sheet D-401. We recommend the applicant confirm they do not anticipate contaminated groundwater on the site. If so, please provide details for treatment of contaminated groundwater.
      v. The applicant shows a stabilized construction entrance detail on sheet D-401. We recommend the applicant show approximately where this will be located on the plans.
      vi. We recommend the applicant list authorized and unauthorized non-stormwater discharges per Appendix C of Maine DEP Chapter 500 on the project plans.
      vii. The applicant notes that trash, debris, and sediment must be removed from storm drainage pipes and catch basins as needed on a semi-annual basis in the Stormwater Inspection & Maintenance Plan. We recommend the applicant also include catch basins as a part of the Stormwater Inspection Checklist.
      viii. The applicant notes that paved areas must be inspected annually each spring in the Stormwater Inspection & Maintenance Plan. We recommend the applicant also include paved areas as a part of the Stormwater Inspection Checklist.
      ix. Sheet D-401 of the Civil Plans notes Winter Construction is between November 1 and April 15 and that areas must be stabilized by November 15 or winter stabilization methods will be required. However, in Appendix A.7 of Maine DEP Chapter 500 it is noted that Winter Construction must be stabilized by November 1 or winter stabilization methods will be required. We recommend the applicant update the dates in the Civil Plans to match Maine DEP requirements.

c. General Standard
    i. The applicant has demonstrated that they meet the treatment requirements for a redevelopment project under the General Standards of Maine DEP Chapter 500.
d. Flooding Standard
    i. The applicant has indicated the City of Portland is in favor of granting the Flooding Standard wavier.

2. Stormwater Management Plan

a. We understand that the Applicant is working with the City of Portland on resolving the connection of stormwater infrastructure within Sherwood Street. We also understand that additional information will be provided once available. We maintain the recommendation to provide updated stormwater plans for Sherwood Street once completed, for tracking purposes.
b. The sizing calculations for Subsurface System 1 and Subsurface System 6 indicate the entire area being treated is impervious. However, the Treatment Area Figure (Fig. D) shows landscaped area within the treatment area for Subsurface System 1 and 6. We would recommend verifying the impervious and pervious areas for these systems.
c. The sizing calculations for Subsurface System 5 indicate the total treatment area is 46,959 square feet. Based on the Treatment Area Figure (Fig. D) the total measured area of the treatment area for Subsurface System 5 is approximately 35,000 square feet. We would recommend verifying the total area for this system.
d. Sizing calculations for Bioretention Basin 1, 2, and 3 list the total volume required for pretreatment. We would recommend also listing the total pre-treatment volume that has been provided to verify the pre-treatment requirements have been met.

3. Plan Comments

a. Matchlines should be shown in each Inset as called out on Sheet C-001 and 002. Consider if Inset on Sheet C-100 is necessary since there is reference to an Inset B on Sheet C-303.
b. The applicant states that the Applicant's landscape architect will be meeting with the City Arborist to review proposed plantings, and the planting plans, including sheet L.400 will be submitted following that meeting. We maintain this comment for tracking purposes until the plan is submitted and reviewed.
c. CB-15 and DMH-39 appear on Sheet C-302 but are not listed in the Structure Table on C-304. We would recommend including the information for these structures in the Structure Table.
d. The applicant provides a Catch Basin Hood detail on Sheet C-403 with a note to "provide in catch basins in paved areas only." In Section 2.9.11 of the City of Portland's Technical Manual it states, "All catch basins are required to have a hood on the outlet pipe as shown in Figure II-09." We would recommend the applicant update the Catch Basin Hood detail note to match the City's Technical Standards.

Zachary Powell <zpowell@portlandmaine.gov>

Waivers for PL-002724-2023 1 Bean Pot Circle

Janine Ba <janineba@portlandmaine.gov> Thu, Apr 25, 2024 at 8:42 AM
To: Zachary Powell <zpowell@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Kristoffer DeVolder <kdevolder@portlandmaine.gov>

Below are DPW's responses for the following requests to waive City standards for the proposed development.

PL-002724-2023 1 Bean Pot Circle

Standard to be Waived: City of Portland Technical Manual Appendix 1 Sidewalk Materials Policy
Waiver Being Sought: The applicant is requesting a waiver of the material policy for Sherwood Street to allow for use of concrete instead of asphalt.
DPW response: The Department of Public Works supports the waiver of the material policy for Sherwood Street to allow for use of concrete instead of asphalt for the sidewalk.

PL-002724-2023 1 Bean Pot Circle

Standard to be Waived: City of Portland Technical Manual Section 10 - Municipal Street Lighting Standards - Subsection 10.2 General Standards
Waiver Being Sought: The applicant is requesting a waiver to utilize light poles located within the project property line to illuminate the Sherwood Street that are consistent with the project light poles specification in lieu of the city standard X-series light types within the city right-of-way. Illumination of Sherwood Street will comply with illumination and pole spacing requirements as outlined in Table 10.2.1.
DPW response: The Department of Public Works supports the waiver for the lights poles that will be maintained by the applicant. These poles shall be clearly identified on the plans as being maintained by the applicant. The Department requires that a copy of the draft maintenance agreement for the poles within the ROW be submitted for review.

PL-002724-2023 1 Bean Pot Circle

Standard to be Waived: City of Portland Technical Manual Section 12 - Site Lighting Standards - Subsection 12.3.2 Illumination Levels
Waiver Being Sought: The applicant is requesting a waiver to provide 1.16 foot candles (fc) average design value for the project site at the ground plane. The site is very large and meeting an exact value of 1.25 is not possible.
DPW response: The Department of Public Works is not opposed to this waiver request.

PL-002724-2023 1 Bean Pot Circle

Standard to be Waived: City of Portland Technical Manual Section 12 - Site Lighting Standards - Subsection 12.3.3 Lumens
Waiver Being Sought: The applicant is requesting a waiver to provide lighting along pathways for the project with a maximum lumen output of 5439 lumens. The E01 series poles are used along pathways, and have been specified to be similar in height and lumen output as the X-8B City Standard used along Trails/Waterfront (Commercial/Thames Street).
DPW response: The Department of Public Works is not opposed to this waiver request.

PL-002724-2023 1 Bean Pot Circle

Standard to be Waived: City of Portland Technical Manual Section 12 - Site Lighting Standards - Subsection 12.3.2 Illumination Levels

Waiver Being Sought: The applicant is requesting a waiver to consider the limited parking spaces as part of the comprehensive site illumination requirements in lieu of the specific value for the average 0.5 Foot candles in this table. The small number of parking spaces are in close proximity to adjacent exit discharge pathways and/or drive-aisles for vehicles and mixed-use pedestrian/cyclist pathways. The adjacent uses to the small number of parking spots make it not possible to comply with the stated average.

DPW response: The Department of Public Works is not opposed to this waiver request.

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Janine Ba
Project Engineer
City of Portland Department of Public Works
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Desk: 207-874-8463
Cell: 207-245-2074

Zachary Powell <zpowell@portlandmaine.gov>

Roux - Status Traffic Review Comments

Tom Errico <thomas.errico@tylin.com> Wed, Apr 17, 2024 at 4:04 PM
To: "zpowell@portlandmaine.gov" <zpowell@portlandmaine.gov>
Cc: Bruce Hyman <bhyman@portlandmaine.gov>, Kevin Kraft <kkraft@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>

Hi Zack – The following is a list of comments and status given the most current information provided by the applicant. Many of these comments are associated with the review of the MaineDOT Traffic Movement Permit Section 7 Study.

- The actual field intersection count data should be provided.

Status: The applicant has provided the noted information and I find it to be acceptable.

- The applicant should note the specific hour of the trip generation estimate noted in Table 5.

Status: The AM was from 8-9am and PM from 5-6pm. This should be noted in the final Section 7 report.

- The trip generation for 300 staff seems low if assumed to be part of Faculty, Staff, and Researchers.

Status: Most staff is part of the General Office Category. The faculty was assumed to be 75. This should be clarified in the final Section 7 report.

- The percentage of internal capture trips is high, particularly during the PM peak hour, where there is a reduction of 202 trips.

Status: It was agreed that a sensitivity analysis be performed with an additional 100 trips added to and from the site driveway and distributed throughout the network.

- The capacity analysis table should include information on existing lane storage lengths in the assessment of queues exceeding storage.

Status: Outstanding.

- Back up information on the SimTraffic model field calibration shall be provided.

Status: The requested information has been provided and I continue to review existing base conditions.

- Some intersections see improved levels of service or delay when comparting existing volumes to future volumes or No-Build to Build volumes.

Status: A detailed response should be provided.

- The SimTraffic model delay estimates seem better than actual field conditions.

Status: As noted above, I continue to review field calibration information.

- The applicant recommends improving traffic signal coordination and timing optimization. The applicant should note how whether the SimTraffic model already accounts for optimization.

Status: Outstanding.

- The applicant is recommending the prohibition of left-turns from Vernada Street onto I-295 at Washington Avenue, with the exception of Metro buses. The applicant shall provide specific details on similar prohibitions employed in other communities with documentation from those communities on operations.

Status: Outstanding.

- The SimTraffic model included left-turn volumes for the scenario where left-turns from Vernada Street are prohibited.

Status: The model has been revised.

- The SimTraffic Model should include current “No Turn on Red” restrictions.

Status: The model has been revised for Build and Mitigation options. The full Section 7 Study should be updated.

- We are concerned about the offset configuration of the Veranda Street/Sherwood Street intersection. We would suggest that the applicant conduct an evaluation that includes full build out of the site to understand long-term improvements needs.

Status: The city continues to review model results, signal warrant analysis, traffic calming considerations, and active transportation considerations.

- The SimTraffic model should reflect unequal lane utilization on the I-295 approach to Veranda Street at Washington Avenue.

Status: The model has been revised.

- The SimTraffic model should reflect some pedestrian calls, Currently, no calls are included in the model.

Status: The model has been revised for Build and Mitigation options. The full Section 7 Study should be updated.

- The applicant should assess project traffic impacts on conditions at Presumpscot School on Sherwood Street and Presumpscot Street.

Status: Outstanding.

- The applicant shall perform an analysis of providing a Lead Pedestrian Interval (LPI) at the Washington Avenue/Veranda Street intersection.

Status: This has been performed, but the model alternatives are being modified.

- The applicant shall investigate the feasibility of providing a crosswalk on the I295 approach to Veranda Street at Washington Avenue.

Status: General information has been provided, but the city requests that an improvement plan be provided that details how this change can be implemented.

- The applicant shall investigate reconfiguring Washington Avenue between Veranda Street and Presumpscot Street with two outbound lanes and a single inbound lane. Additionally, investigate access management improvements for this segment.

Status: Initial traffic modeling has been performed, but revised analysis is expected.

- The applicant shall investigate providing two approach lanes on Presumpscot Street and modifying intersection geometry to reduce the crossing distance across Presumpscot Street.

Status: Plans should be prepared that depict this change. Also, specific changes to levels or service with and without the additional lane should be provided.

- The applicant shall investigate the feasibility of providing an All-Way STOP condition at the Baxter Boulevard/Bates Street intersection.

Status: It is our understanding, MaineDOT is investigating this change, so this is outstanding.

- The applicant conducted several improvement alternatives along Washington Avenue from Veranda Street to Presumpscot. The applicant has been requested to expand the alternatives so that improvements (LPI, Veranda turn prohibition, Washington Avenue single inbound lane) are combined. It was also request that the Washington Avenue single lane inbound alternative, assume bike lanes would be provided and not a center two-way left turn lane.

Status: Outstanding.

- The applicant shall revise the Build with the Left-Turn Prohibited at Veranda Street volumes to account for incorrect volume shift at Exit 9.

Status: Outstanding.

- The level of service results at the Veranda Street intersection and Sherwood Street with left turns prohibited is counterintuitive. The model shows the southbound Sherwood Street approach improving, with increased left turn volume.

Status: Outstanding.

- I continue to review the traffic signal warrant analysis at the Veranda Street/Sherwood Street intersection. The applicant is updating the analysis to reflect volume inconsistencies in the calculations**.**

Status: Outstanding.

- **The city identified an alternative to convert the northerly Sherwood Street approach to one-way from Vernada Street (a short section). This was identified to simply traffic movements. The East Deering Neighborhood does not support this alternative.**
- **The city suggests the implementation of a comprehensive traffic calming plan on Veranda Street that would include a vertical device at Sherwood Street, Kensington Street, and Arcadia Street.**

Please contact me if you have any questions.

Best regards,

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PL-002724-2023 1 Bean Pot Circle DPW Comments

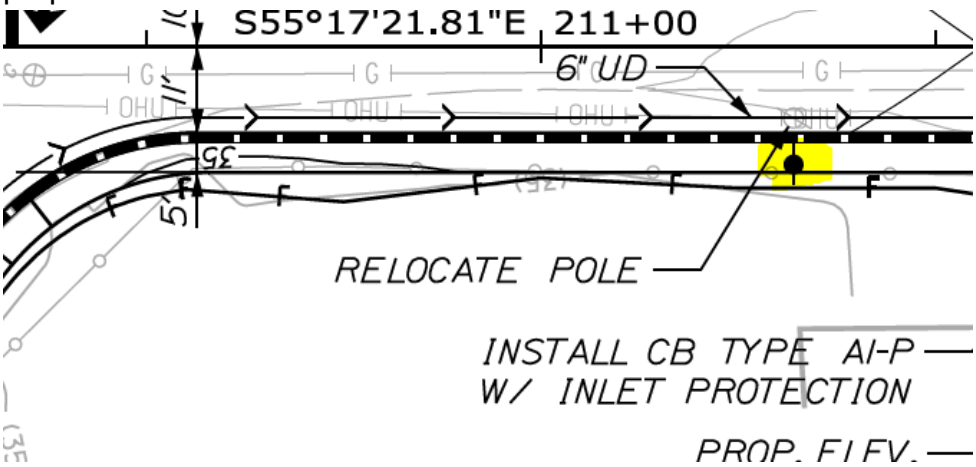
Janine Ba <janineba@portlandmaine.gov> Tue, Apr 23, 2024 at 3:30 PM
To: Zachary Powell <zpowell@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, Justin Pellerin <jrp@portlandmaine.gov>, Benjamin Pearson <bnp@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>, Tom Errico <thomas.errico@tylin.com>, Jeremiah Bartlett <jbartlett@portlandmaine.gov>, Kristoffer DeVolder <kdevolder@portlandmaine.gov>

Zachary,

Below are DPW's comments for PL-002724-2023 1 Bean Pot Circle. Let me know if you have any questions.

PL-002724-2023
1 Bean Pot Circle
DPW Development Review Comments
04/23/2024

- DPW Transportation
  - DPW feels a traffic circle is feasible at the three way intersection. The applicant shall provide justification as to why a traffic circle will not work at this location.
  - DPW is concerned with how well the proposed narrow esplanade will thrive along Sherwood Street. Will the maintenance of the green space be done by the applicant?
  - A proposed power pole is within the proposed 5 ft sidewalk reducing the clear path to less than 4 ft. A 5 ft min clear space between any elevated object and the property line must be maintained within the City ROW. Revise the plans to maintain a 5ft min clear space between any elevated object and the back of the proposed sidewalk



  - Identify the proposed lighting on the Sherwood Street plans and reference who will be responsible for maintaining them.
  - The minimum asphalt section for the proposed sidewalk and multi-use path for Sherwood Street shall be 3 inches. The minimum asphalt for Sherwood Street shall be 4 inches. See collector street cross section figure I-2 and figure I-11C or

I-11B (for the sidewalk depending on the material that will be used) of the Technical manual. The typical sections do not match the details in the plan set. The applicant shall update the plans, sections and details to reflect these changes.

- What is the proposed curb reveal for Sherwood Street? This needs to be shown on the plans.
- The paving limits for the proposed driveways along Sherwood Street are not clearly defined on the plans. The sidewalk material shall be continued through the driveway aprons at grade with the proposed sidewalk and or path and not in excess of 2% cross-slope per the current City standards. Update the plans to reflect these changes.
- How will the reconstructed Sherwood Street (from Veranda Street to the overpass) reference / transition to the proposed campus improvements for Sherwood Street. The two plan sets need to reference each other. Provide a note or a match line that line the plans to each other.
- The proposed radius on to Sherwood Street off Veranda Street is too large. Reduce the radius to allow for a better aligned accessible ramp.
- The applicant shall update the plans to label or provide spot grades and slopes for the proposed accessible ramps and driveways at grade breaks.
- The plans show cut and fill grading limits that fall outside the ROW of Sherwood Street. Have agreements been obtained to enter the properties? Existing fences, walls and structures are also impacted but the plans do not note how they will be repaired. Update the plans to show how these things will be addressed.

- DPW Water Resources
  - DPW and the applicant continue to review and assess the existing storm drainage infrastructure in Sherwood Street. It's anticipated that upgrades to the system in Sherwood Street will be required to be implemented by the applicant. Final comments on the proposed Sherwood Street storm drain design and connections will be provided at a later date.
  -
  - A second row of sediment barriers should be added to the perimeter of the site in locations where the work zone abuts the bay.
  - The applicant indicates that documentation will be provided for the following comments in a subsequent submission:

2.	PWD should review the proposed sanitary connection into Ex SMH-1. The City's mapping indicates this structure is owned by PWD; however, that is somewhat unclear.	PWD confirmed the structures are owned by PWD. We are working with PWD on this sewer connection and will provide documentation of approval upon receipt.
5.	The existing condition of the structure (EX-SMH-1) and outlet pipe out of EX-SMH 1 should be thoroughly inspected and possibly replaced if in poor shape. If EX-SMH is found to be in poor condition it appears an alternate alignment could be utilized which would result in the Elimination of EX-SMH-1 and Proposed SMH-1 (And S-1) by connecting S-2 directly to un-named EX SMH.	Noted. We are working with PWD on this sewer connection and will provide documentation of approval upon receipt.

--
Janine Ba
Project Engineer
City of Portland Department of Public Works
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Portland, ME 04103

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Desk: 207-874-8463
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The Roux Institute at Northeastern University

Transportation Demand Management Plan

PREPARED FOR

Roux Institute at Northeastern University / IDEALS
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Portland, ME 04101

PREPARED BY

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MARCH 2024

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1

Introduction

Pursuant to Section 17.3 of the City of Portland Technical Manual, the Roux Institute at Northeastern University's Transportation Demand Management Plan (TDM) provides a cohesive approach to establish a targeted set of strategies aimed at reducing single occupancy vehicle trips to and from the proposed campus in Portland, Maine. The TDM plan describes how the Roux Institute at Northeastern University will provide information and education, enhance alternative transportation infrastructure and mobility, and incentivize students, faculty, and staff so that they use more sustainable, multimodal commuting options such as walking, bicycling, transit, carpooling and telecommuting. The Roux Institute at Northeastern University is committed to ongoing annual surveying to monitor the implementation and success of the TDM plan.

1.1 Program Summary and Project Status

In 2020, the Roux Institute at Northeastern University was launched to build expertise at the intersection of humans and technology. The campus is currently temporarily operating at 100 Fore Street but will be relocating to the redeveloped B&M Baked Beans facility. In its permanent waterfront location in East Deering, the Roux Institute at Northeastern University will continue to provide educational, research, and collaborative programs in areas including artificial intelligence, computer and data sciences, digital engineering, advanced life sciences, and medicine. The Roux Institute at Northeastern University offers post-graduate degrees and certifications, conducts research, assists start-ups, and partners with private, public and non-profit organizations. The mission of the Roux Institute at Northeastern University is *a vision to enable the creation of a synergistic technology and life science-driven economy and workforce, the Roux Institute at Northeastern University designs, curates, and integrates learning, research, and entrepreneurial solutions in collaboration with industry, academic institutions, and community organizations to catalyze talent development and economic impact throughout Maine.*

In February 2023, the Portland City Council approved the Institutional Overlay Zone for the campus at the old B&M Baked Beans site. The project team is currently embarking on the site plan review and public input process with the City of Portland, which includes the preparation and submission of a MaineDOT Traffic Movement Permit application. Permits are expected by the summer of 2024, when construction will begin, with an opening date in 2027. The campus will continue to grow over time in subsequent years and phases.

1.1.1 Existing Conditions

The Roux Institute at Northeastern University currently leases 84,000 sf of institutional space at 100 Fore Street adjacent to the East End neighborhood and near the waterfront in downtown Portland. In the fall of 2023, there were 665 enrolled students and 175 staff, researchers and faculty. There are currently 16 graduate programs in computer and data science, analytics, cloud software, cybersecurity, life sciences, and project management. To realize its full potential, the Roux Institute at Northeastern University is seeking to relocate its campus and expand in size as described in the following section.

1.1.2 Proposed Development Program

The campus will be anchored by a 238,000 square foot Learning, Research and Collaboration building and the 58,000 square foot Bean Building housing a start-up incubator program. By 2032, the campus plans to accommodate 3,123 graduate students in addition to supporting uses as shown in Table 1. An 8,000 square foot café and a day care center providing care for 50 children will be located on-site primarily for the families of students, staff, and faculty. In addition to its academic offerings, the campus will benefit the community by contributing to local economic growth and providing open space along the waterfront, active transportation accommodations throughout the site, job creation, and innovation space. The site plan is shown in Figure 1.

Table 1 Development Program

Program Component		2027 (Opening)	2032
Day care center		50 Children	50 Children
Academic Café		8,000 sf	8,000 sf
Roux Institute at Northeastern University	Graduate students	1,899 students	3,123 students
	Faculty, Staff, and Researchers[1]	225 staff	300 staff
	Embedded startup[1]	60 staff	100 staff
	JAX and Other Signature Partners[1]	55 staff	64 staff
	Affiliated Users[2]	35 visitors	100 visitors
	Special Events (daily)	150 attendees	150 attendees

1 All staff counts are in full-time equivalents.
2 Affiliated Users is a broad category for occasional visitors such as corporate learners, investors, donors, mentors, and neighbors.

The garage has been designed to accommodate 625 vehicular parking spaces, and parking for 66 bicycles. In addition to the garage spaces, there will be 14 parking spaces provided at grade on the site. All on-site parking will be paid parking, and a parking office will be created to manage permitting and enforcement for the campus. Parking costs and regulations may vary between categories of users (students, staff, faculty, visitors, etc.). Parking will be shared between uses

within the campus only. This development will not rely on any off site on-street parking. The campus may include on-site car sharing, enabling travel to and from the site using other modes, with the comfort that vehicles are available if necessary. The TDM measures presented in this plan will be critical to maintaining the expected parking demand.

Will the full capacity of the parking garage be available during Phase I? Will parking costs be market rate? If so, for whom? - this is key to understanding incentives/ disincentives to driving.

Figure 1 Proposed Site Plan



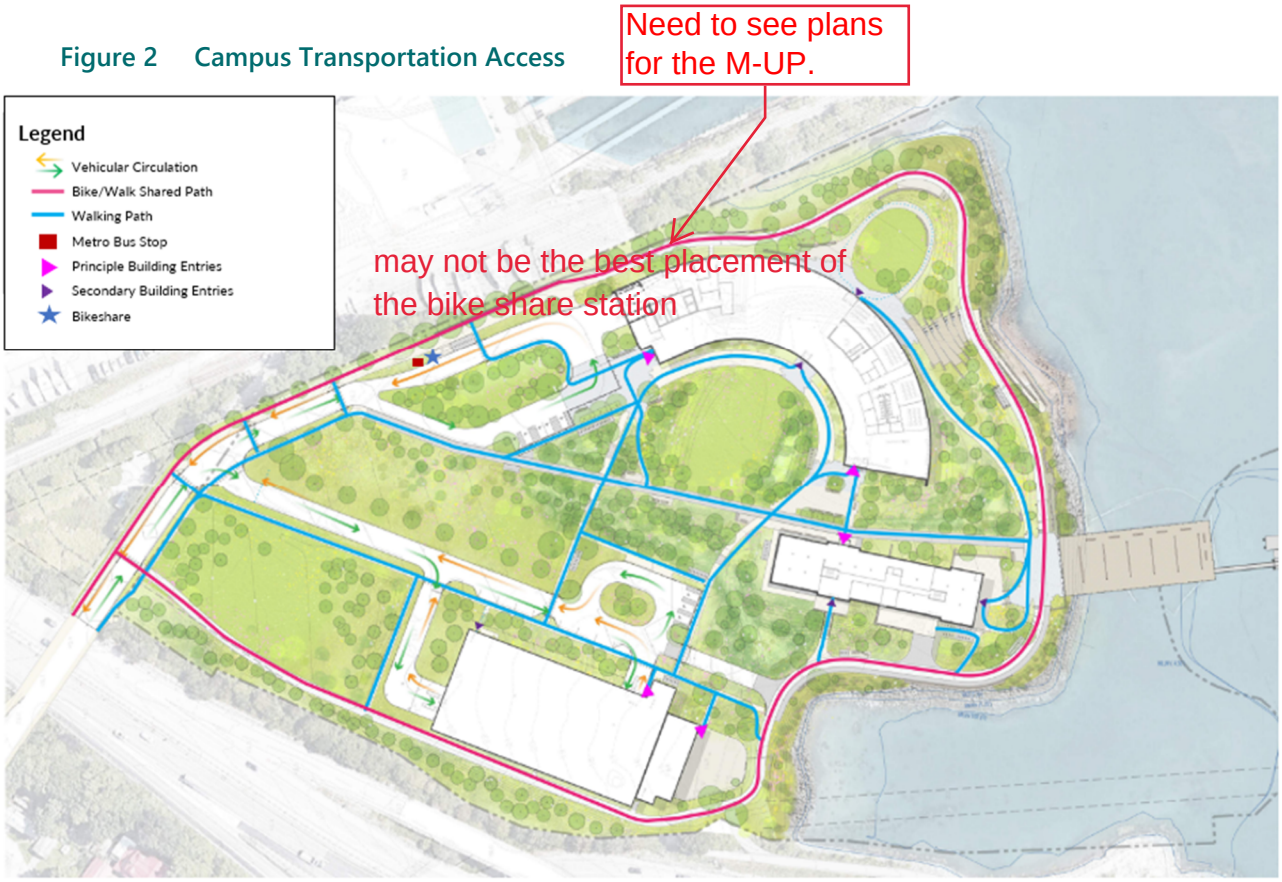
2

Mobility Context

For a TDM plan to be successful in shifting drive alone vehicle trips to transit, carpool, walk, and bicycle trips, it is essential to understand the multimodal transportation system surrounding the site. This section describes the existing transportation network challenges and future opportunities the Roux Institute at Northeastern University faces in redeveloping the site for their permanent campus.

The proposed waterfront site is located in East Deering adjacent to a marina and residential neighborhood comprising of single and multifamily homes as well as a commercial area which includes restaurants, bars, auto mechanics, and offices. I-295 runs along the western edge of the site, however the site will be well connected to the East Deering neighborhood, Back Cove, and the Portland Peninsula on the eastern promenade via vehicle, pedestrian, bicycle, transit and potential water taxi facilities. As shown in Figure 2, there are several promising opportunities to enhance and expand these transportation systems as part of the project to improve transportation mobility in and around the campus.

Figure 2 Campus Transportation Access



2.1 Vehicular Access and Circulation

A single vehicular access point to the site is provided via Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street will continue to serve as vehicular access into and out of the campus in the future. The site is in close proximity to I-295, Route 1, Washington Avenue, and Baxter Boulevard. The traffic signal system along Washington Avenue is a traffic responsive system operating with high efficiency. Intersections of Washington Avenue at Veranda Street, at Presumpscot Street, and at Ocean Avenue are each signalized intersections.

2.2 Walking and the Pedestrian Environment

2.2.1 Existing Conditions

The surrounding East Deering neighborhood provides pedestrian amenities including sidewalks along Washington Avenue and Veranda Street. A sidewalk runs along the west side of Bates Street but narrows and is periodically blocked by utility poles. There is no sidewalk present on the east side of Bates Street. The Back Cove trail (multi-use path) runs along the Back Cove and Tukey's Bridge near the site. The main roadway access to the site is via Sherwood Street which consists of a 30-foot-wide roadway in a 50-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. The pedestrian connectivity to the Portland

Peninsula is accessible from the Back Cove Trail across the west side of Tukey's Bridge. The sidewalk connecting from the intersection of Washington Avenue/Veranda Street is narrow and adjacent to vehicular traffic on the ramp to I-295. The sidewalk merges with the Back Cove Trail which adds bicycle and pedestrian demand to a narrow, shared use path over Tukey's Bridge. There is no existing direct connection to this shared use path from the campus.

Commitments vs requirements TBD

2.2.2 Future Commitment

The Roux Institute at Northeastern University will improve pedestrian safety and connectivity to the East Deering neighborhood from the campus by providing continuous sidewalks on both sides of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. Once on the site, pedestrian facilities will connect site uses and points along the waterfront. Improvements to pedestrian connections will increase walkability for the site.

2.2.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a shared use path under Tukey's Bridge would improve pedestrian access to and from the campus to the Back Cove trail and for pedestrians traveling between East Deering and the Portland Peninsula using the future shared use path bridge. These new shared use paths would provide wider, safer, and more comfortable accommodations for pedestrians and improve connectivity.

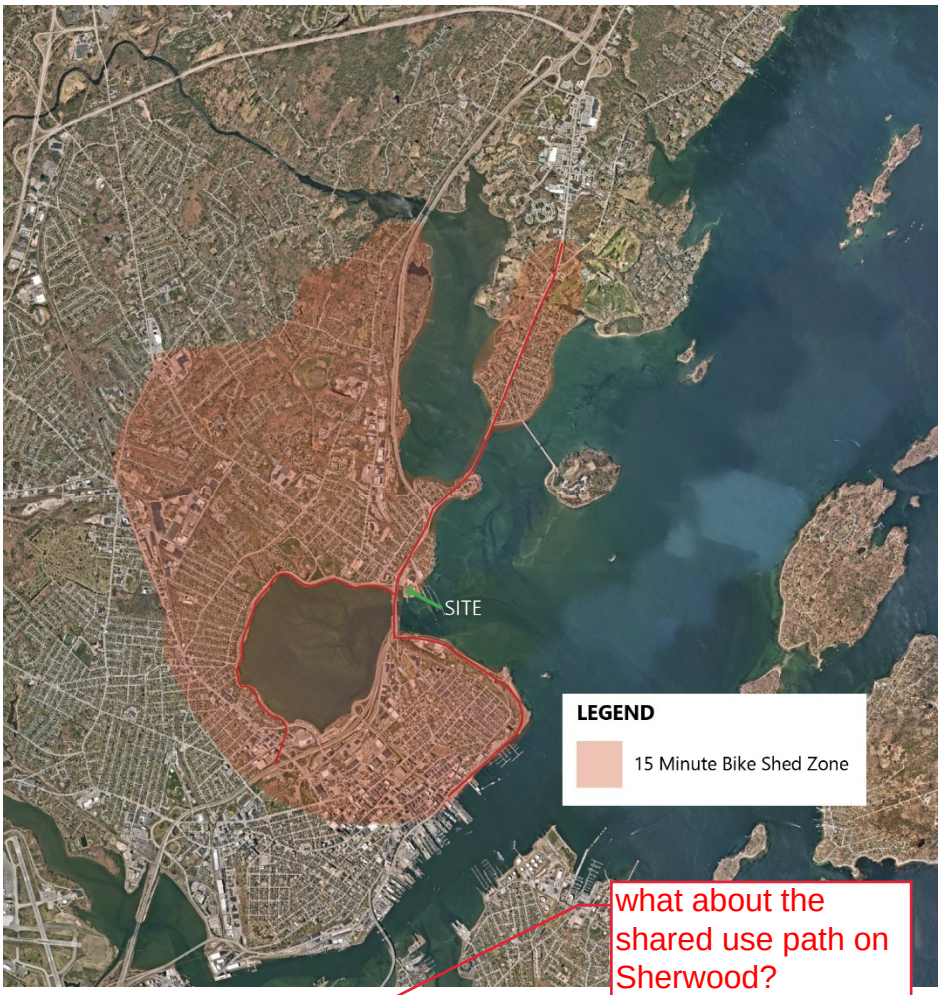
2.3 Bicycling Environment and Facilities

2.3.1 Existing Conditions

Bicycle facilities are present in the East Deering neighborhood on Washington Avenue including buffered bike lanes north of Presumpscot Street and faded sharrows along Veranda Street. Bates Street provides a bike lane from Washington Avenue to Baxter Boulevard. The Back Cove trail (multi use path) runs along the Back Cove and Tukey's Bridge near the site. There are currently no bicycle facilities on Sherwood Street. Similar to the discussion above describing the pedestrian access across the shared use path on Tukey's Bridge, bicyclists must also use the narrow path or bike to Baxter Boulevard and the Back Cove Trail to connect to the Portland Peninsula. Although this shared use path provides access to the Back Cove trail, it does not provide direct access to the campus. There are 8 public U-racks totaling 16 bicycle parking spaces located within the 970 Baxter Boulevard parking lot.

Walkscore.com rates East Deering with a Bikescore of 58/"Bikeable" indicating some bike infrastructure is present. The 15-minute bike shed zone from the campus is illustrated in Figure 3.

Figure 3 15 Minute Bike Shed Zone



2.3.2 Future Commitment

The Roux Institute at Northeastern University is dedicated to creating a safer, complete street along Sherwood Street to accommodate bicyclists into and out of the site by providing bicycle lanes. The campus will provide 166 bicycle parking spaces for students, staff, faculty and visitors. This quantity is more than triple the required amount of bicycle parking per the Portland Technical Manual. Shower and locker facilities will be provided for those commuters who bicycle to campus. The Roux Institute at Northeastern University will explore providing a Bike Fix-it Station for bike commuters and other visitors to the site.

TDM strategies says WILL provide fix it station.

2.3.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future constructed connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a 10 foot wide shared use path under Tukey's Bridge would improve bicycle access from the campus to the Back Cove trail and bicycle connectivity between East Deering and greater Portland.

2.3.4 Other Potential Future Infrastructure

The City of Portland is currently working on the *Baxter Boulevard | Bates Street | Veranda Street Bikeway Project*[1] to implement buffered bicycle lanes on Veranda Street and a two-way bi-directional separated bike lane on Bates Street. Other potential opportunities for multi-use paths in the area include the Berlin Subdivision railroad right-of-way to points north ending at the Yarmouth Park and Ride on Exit 15 of I-295. Additionally, the Martin's Point Shared Use Path study considered a shared use path from Sherwood Street to the recently installed shared use path west of the Martin's Point Bridge starting at Wordsworth Street.

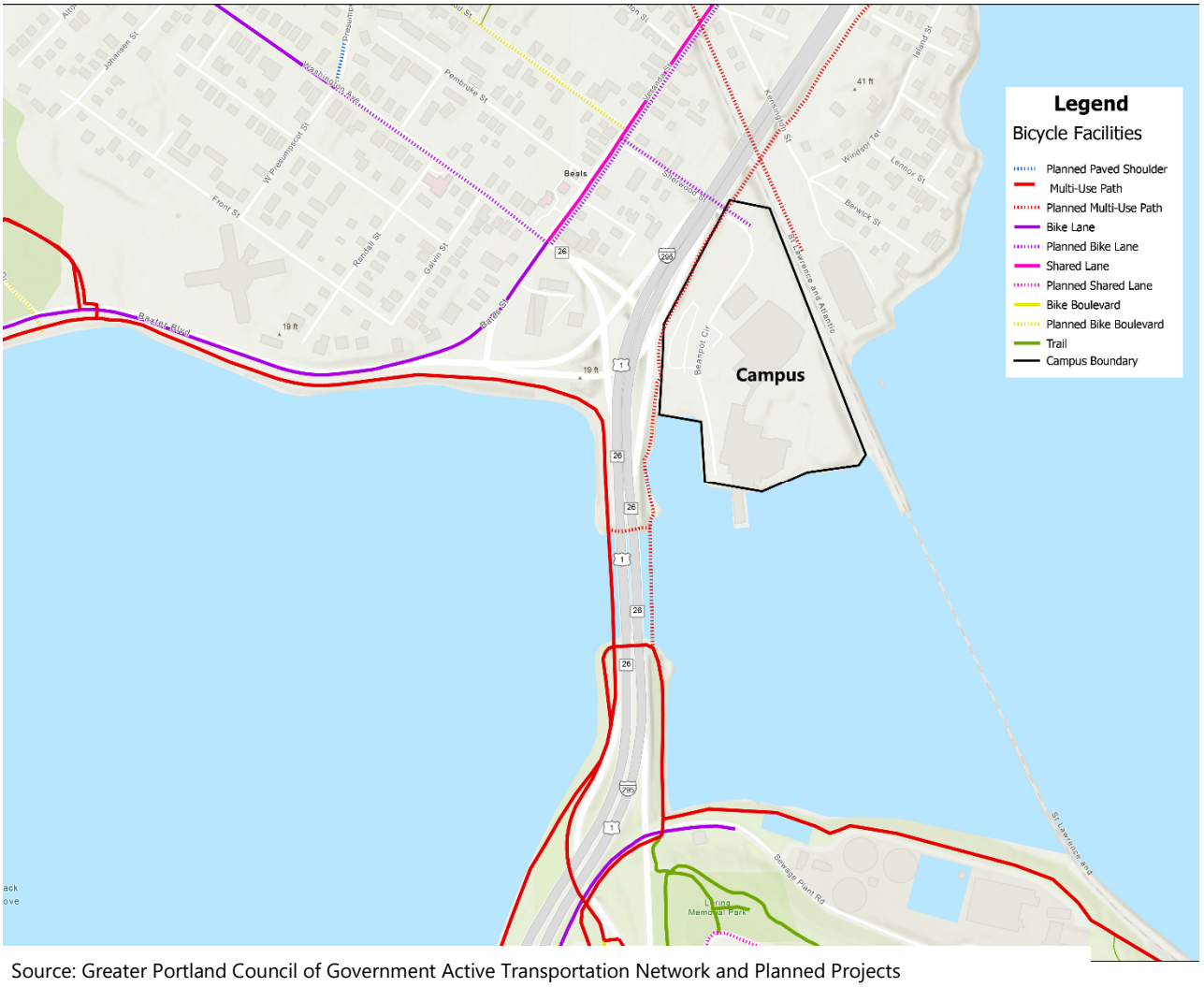
The City of Portland and Tandem Mobility have partnered to provide a bike share system in Portland. There are over 200 bicycles at over 40 stations predominately throughout the Portland peninsula. Pedal bikes and electric bikes are available by the minute and memberships are available on a monthly or yearly basis. There are currently no Portland BIKESHARE locations within the East Deering neighborhood in close proximity to the site, however there are a few on the East End across Tukey's Bridge. There is an opportunity to explore providing a new station on the campus which would expand the BIKESHARE network to the East Deering neighborhood.

Figure 4 presents the existing and potential future bicycle facilities surrounding the campus.

TDM strategies says WILL provide bike share station.

[1] Baxter Boulevard| Bates Street| Veranda Street Bikeway Project https://portland.civilspace.io/en/projects/better-bikeways-initiative

Figure 4 Existing and Potential Future Bicycle Facilities



Source: Greater Portland Council of Government Active Transportation Network and Planned Projects
https://gpcog.maps.arcgis.com/apps/View/index.html?appid=d5d7dbbc69534242b5fd4092c78f26e4

2.4 Public Transit

2.4.1 Existing Conditions

As shown in Figure 5, two bus lines currently stop near the campus: Metro Route 7 and Metro Routes 9A / 9B. Route 7 provides service between Portland and Falmouth with a stop at the Metro Pulse on the Peninsula as well as a stop near the campus at Veranda Street/Sherwood Street approximately a quarter of a mile from the center of the campus. Routes 9A/9B provide circular bus service between downtown Portland and North Deering with service running along Washington Avenue and Congress Street. Route 9A/9B stops on Washington Avenue near the site at Galvin Street and Veranda Street respectively which is under a half mile from the site. Bus transfers can be made at the Pulse and other stops on the Peninsula to reach the rest of Portland and several outlying towns.

Buses run continuously throughout the day, readily accommodating the varied schedules of students and other campus users. Metro BREEZ express bus service to Yarmouth, Freeport, and Brunswick and the Husky Line to Westbrook and Gorham establish a regional footprint for transit service. Ten local and express routes connect the campus to most of the Portland area with no more than one transfer.

During both weekday peak hours Metro Route 7 is expected to operate at 50% or less capacity. The Metro bus policy capacity of 52 passengers per bus was assumed. There are 35 seats per bus and a bus is considered "full" at 150% of the seated capacity. There is one bus per peak hour on this route. In 2023, on an average weekday during the AM and PM hours there were 9 and 22 boardings on Route 7 respectively, which leaves plenty of capacity on Route 7 to accommodate site related traffic.

In addition to the local Metro system, the Portland Transportation Center (PTC) in Thompson's Point provides regional bus and train service. Concord Coach Lines runs bus service from Portland to Boston, Massachusetts, Logan International Airport, and New York City as well as points north of Portland. The Amtrak Downeaster provides train service between Brunswick and Boston with a stop in Portland. Greyhound provides bus service between East Bayside in Portland and Boston, Massachusetts.

The Roux Institute at Northeastern University is currently subsidizing Metro bus passes at 100% for all students faculty and staff who choose to participate.

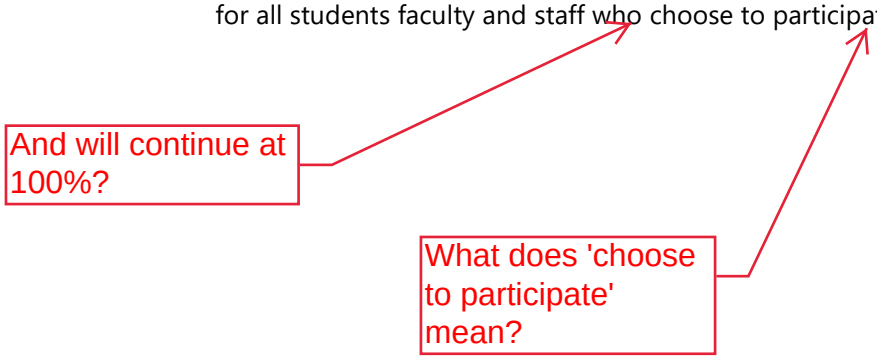


Figure 5 Public Transit Access



2.4.2 Future Opportunities

Metro is contemplating improvements to the transit system throughout Portland. In addition, the Roux Institute at Northeastern University is working with Metro to consider site specific transit accommodation for an on-campus bus stop that would connect the Roux Institute at Northeastern University to other key locations across the City, including housing, additional transportation connections, and partner organizations. The Roux Institute at Northeastern is also working with Metro and MaineDOT to identify park and ride locations where Roux students, faculty and staff can park and use Metro to travel to the site.

2.4.2.1 Transit Together Plan

In January 2023, The Portland Area Comprehensive Transportation System (PACTS) Policy Board approved the Transit Together Plan[2]. As of August 27, 2023, this plan enabled changes to Route 9 to provide more consistent 30-minute headways from 6am to 6pm on weekdays and from about 8am to 6pm on Saturdays. Route 9B will run one hour later in the evening.

In the Spring of 2024, Metro plans to make improvements to Route 7 by extending the route to the Portland Jetport via Congress Street with improved frequency and hours of operation.

[2] Transit Together - https://gpmetro.org/1644/Transit-Together---Route-and-Schedule-Ch

Frequency for Route 7 will improve from 60 to 30 minutes Monday through Saturday and services will be provided until 10pm or 11pm. The Falmouth loops will be eliminated, and Route 7 will use the Shaw's parking lot in Falmouth to turnaround. In conjunction, Route 5 service to the Jetport and Hutchins Drive will be discontinued to improve travel time between Portland and the Maine Mall. In addition, microtransit service will be implemented in east Falmouth. Microtransit riders within the zone will be able to request a ride using a smartphone app or phone call. These changes significantly increase the frequency and daily service to the campus.

2.4.2.2 Other Metro Opportunities

Metro is in the preliminary planning stages of studying how to extend Route 7 service along US Route 1 to Yarmouth. This extension could provide a bus route for campus commuters, with parking at the MaineDOT Exit 15 Park and Ride in Yarmouth.

The Roux Institute at Northeastern University is working with Metro to improve the quality and frequency of transit connections to the campus. Reduction of headways, modification of Route 5 or Route 7 to make a stop at the campus, and construction of a transit stop and turnaround on the campus, are all under consideration to further the convenience of transit for commuting to and from campus. The Roux Institute at Northeastern University will continue to promote and incentivize transit use by subsidizing transit passes for students, staff, and faculty.

Potential DOT projects: the off-ramp that would improve direct access to the campus

2.5 Ride-Hailing

In addition to driving, transit, walking, bicycling, and carpooling, commuters have the option of using ride hailing services such as Uber, Lyft and/or traditional taxis. Although these services result in vehicle trips to and from the campus, they reduce the parking demand and allow for less vehicle ownership and more flexibility with commute mode choices.

2.6 Current Parking Policies

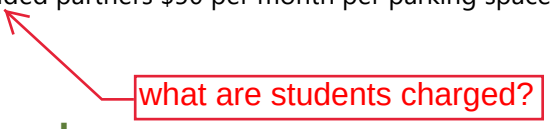
Parking is currently provided to staff, faculty and embedded partners at $50 per month, per spot. There are 176 parking spaces allocated for the Roux Institute at Northeastern University in the on-site garage. Embedded partners and employees who opt out of monthly parking pay $1/hour to park in the garage. Parking for visitors is also provided via a public rate of $5/hour and in adjacent, paid parking lots. Students of the Roux Institute at Northeastern University are not currently charged to park on-site but will be at the future campus.

2.7 Existing TDM Efforts

As part of this TDM plan, the Roux Institute at Northeastern University plans to bolster its current TDM efforts for the permanent campus proposed in East Deering. However, they are currently implementing TDM strategies on the existing campus at 100 Fore Street to help reduce drive alone trips:

- Appointed a transportation coordinator who surveys students, faculty and staff to develop an understanding about mode choice.

- Fully subsidizing transit passes 100% for faculty, staff and students. Posting transit related information in highly visible areas on site. Providing information on transportation commuting options including transit on the Roux Institute at Northeastern University's website.
- Offering convenient, hybrid course formats that blend online and on-site learning thus reducing the demand for commuting.
- Charging staff, faculty and embedded partners $50 per month per parking space.



2.8 Future TDM Framework

Although this document specifically addresses the TDM plan for this phase of development, it is part of a larger TDM framework for the site and supports the continued review of mode share and trip impact and the continual development of additional TDM measures as the site is further developed. Specifically, the Transportation Coordinator will conduct traffic monitoring and employee surveys to identify the mode share as development occurs and identify which of the TDM strategies and alternative modes are more successful at the site. This information will be used in future phases of development to identify accurate impacts and needs and develop additional strategies to best continue to move the needle to reduce vehicle trips generated by the site.

This document outlines a transition from an initial opening year mode share to a mode share at full occupancy of this phase of development that will be consistent with the aspirational mode shares identified for the long term buildout of the site in the zone change process. Future phases will continue to build on the success of this TDM plan and reach mode share targets that continue to reduce vehicular trips.

3

TDM Coordinator

The Roux Institute at Northeastern University will designate a TDM coordinator to oversee the administration of the TDM plan and the annual surveying and reporting process.

The Roux Institute at Northeastern University plans to follow industry best practice by appointing a campus-wide transportation coordinator. The TDM Coordinator will collect data on the TDM progress to ensure it evolves as the site develops. Once the site is operational, the TDM Coordinator will conduct a transportation survey for students, staff, and faculty to establish a baseline for future drive alone mode share reduction goals. They will also collect and disseminate information (including non-automobile travel options) on-site and organize outreach events and campaigns to encourage TDM participation. The TDM Coordinator will promote alternative transportation choices to educate those commuting to and from the campus and coordinate the implementation of TDM strategies to reduce single occupancy vehicle (SOV) trips. In addition, the TDM Coordinator will work with the City of Portland, Metro, GoMaine, car share, and bike share programs to improve non-SOV mode shares. The responsibilities of the TDM Coordinator include the following:

- Promote alternative transportation choices to students, staff, faculty, and visitors to reduce single occupant vehicles (SOV) trips.
- Coordinate the implementation of TDM strategies with students, staff, and faculty and conduct orientations to educate those commuting to and from the campus regarding their transportation options.
- Monitor bike rack usage and make recommendations as needed to accommodate potential growing demand.
- Coordinate with the City of Portland, Metro, GoMaine, car share and bike share, and other potential partners to improve access to non-SOV modes.
- Conduct annual Transportation Monitoring and activities necessary to measure the effectiveness of the TDM program in achieving the mode share reduction target.
- Administer and review TDM surveys on a yearly basis.

- Complete the standard City of Portland TDM Reporting Form, which will summarize how effective the various strategies have been, mode share data based on the surveys and program success and barriers.
- File annual TDM reports by May 15th of each year with the City of Portland.

The TDM Coordinator will be the primary point of contact for students, staff, and faculty regarding the TDM plan. The TDM Coordinator will develop strategies and incentives for students, staff, faculty, and visitors where applicable. The TDM Coordinator will also collaborate with commuters prior to when they start to inform them of the robust network of alternative mode choices available to them.

4

Baseline TDM Data

Baseline travel demand and supply data for the campus has been quantified for the Traffic Movement Permit (TMP) Application being submitted to MaineDOT as part of the site plan review process. Baseline data includes estimated mode split, future trip generation estimates, and proposed parking supply and future demand estimates. Reviewing survey data and how the existing students, faculty and staff are currently commuting to campus, and how they expect to commute to the proposed campus, provides insight to which alternative modes may have the greatest potential to reduce drive alone trips.

4.1 Modal Split

4.1.1 Roux Institute at Northeastern University Transportation Survey

The Roux Institute at Northeastern University conducted transportation surveys on a quarterly basis throughout 2022 and 2023 which collected responses from students, staff, and faculty at the existing 100 Fore Street campus. The survey asked how the respondents commuted to campus and then how they imagine they will commute to the new campus in East Deering. The results of the survey mode share data are presented in Table 2. It is important to note that the data collected slightly varied throughout the time of year. Additionally, the Roux Institute at Northeastern University is an evolving, growing Institute currently in a temporary location and this data is only representative of a portion of students, staff and faculty. Based on feedback collected from the survey, it is anticipated that transit and bicycle trips will increase, walk trips will decrease, and drive trips will slightly decrease due to the proposed campus location and existing transportation system in East Deering. The Roux Institute at Northeastern University will continue to survey on a quarterly basis and make adjustments as circumstances evolve.

Table 2 Transportation Survey Mode Split Data

	Existing Commute at 100 Fore Street		
	August 2022	April 2022	January 2023
Drive	77%	72%	73%
Transit	4%	3%	4%
Walk	13%	16%	19%
Bike	6%	7%	4%
Other	0%	2%	0%

what was response rate to the surveys?

From the August 2022 survey, 135 people responded, of which 40% were students, 35% were full-time staff, 13% were full-time faculty, and 12% were other.

4.1.2 Traffic Movement Permit Mode Split Data

In addition to the data collected as part of the transportation surveys, expected mode share splits assumed in the Traffic Movement Permit (TMP) by land use are also provided in Table 3. The TMP mode splits are slightly more conservative in terms of analyzing vehicular traffic impact on the study area intersections. As additional bicycle and pedestrian connections are constructed in future years, it is likely that those mode shares will increase.

Table 3 TMP Mode Split

Population	Drive	Transit	Walk/Bike
Students	80%	10%	10%
All Other Populations	90%	5%	5%

Source: TMP indicates mode share assumptions presented in the Traffic Movement Permit

4.2 Trip Generation

As part of the TMP application, a trip generation analysis was conducted based on the 2032 development program presented in Table 1 using Institute of Transportation Engineers (ITE) publication, Trip Generation 11th edition as well as a custom trip generation methodology for the academic use of the site. The following assumptions were made to estimate student trip generation based on data from the campus:

- 43% of student enrollment are present on campus each day.
- 40% are daytime students and 60% are evening students.

Mode shares that were previously presented in Table 3, and applicable on site, internal capture trip rates were applied to the trip generation estimate to determine the external vehicle, pedestrian and walk trips as well as transit trips. The resulting estimated trip generation for the campus is presented in Table 4. The campus is expected to generate 237 morning and 521 evening peak hour vehicle trips, 20 morning and 51 evening peak hour transit trips, and 20 morning and 51 evening peak hour pedestrian and bicycle trips.

Table 4 Trip Generation

	Vehicle Trips	Transit Trips	Ped/Bike Trips
AM Peak Hour			
In	227	20	20
Out	10	0	0
Total	237	20	20
PM Peak Hour			
In	276	30	30
Out	245	21	21
Total	521	51	51

Source: Trip Generation Analysis presented in the Traffic Movement Permit

4.3 Proposed Parking Supply/Demand

A parking analysis was performed to estimate parking demand for the Roux Institute at Northeastern University. It was determined that parking demand peaks during the overlap between day and night users. Based on travel patterns of existing daytime and night students, the future enrollment will result in a peak demand of 581 spaces in the opening year and if the auto mode share stays as high as outlined in the TMP, demand would increase to 881 spaces in 2032.

The Roux Institute at Northeastern University is planning on providing parking on campus in a proposed parking garage designed to accommodate 610 vehicular parking spaces and 66 bicycle parking spaces. In addition to the garage spaces, there will be 14 parking spaces provided at grade on site. The parking garage will be constructed in 2027 to accommodate the demand for this phase.

In order to help mitigate the amount of vehicular traffic traveling to the campus, The Roux Institute at Northeastern University is actively exploring opportunities for satellite parking spots at existing park and ride locations within a short commute to the campus via tying into nearby transit routes or a Northeastern University-owned shuttle service.

To ensure parking usage in the structured garage does not exceed the permitted supply for each phase of development, the Roux Institute at Northeastern University will collect annual parking data to determine the number of vehicles parked throughout the day and evening. The TDM coordinator will obtain gate data for in, out, and occupancy counts on an hourly basis during the spring to coincide with the annual survey week. Moving into the future, the TDM coordinator will be working to reduce the automobile mode share to the site so that the garage is able to accommodate campus growth with that parking supply.

All 610 available during Ph 1 instead of the 561 previously proposed for Ph 1 out of a 708 space garage?

5

TDM Mode Split Targets

The TDM plan establishes short-term and long-term modal split targets.

The TDM mode split target includes goals for reducing vehicle trips and increasing multimodal trips. Based on the future transportation system the campus will be supported by and TDM measures that will be implemented, the short and long-term targets that are proposed as part of this TDM plan are presented in Table 5. The mode share goals are within range of the City's *One Climate Future* document that sets a Key Transportation Milestone that by 2035, 26% of trips in the city will use alternative transportation modes, (up from 12%)[3]. The long-term goals are based on mode splits presented as part of the approved Institutional Development Plan for the Roux Institute at Northeastern University. The Roux Institute at Northeastern University is committed to implementing the TDM strategies presented in the following Section 6 to work towards achieving these mode split targets. The targets will be reviewed and updated based upon the annual TDM reporting process.

Table 5 Automobile Mode Split Targets

Population	Mode Split Targets	
	Short-term	Long-term
Students	80%	65%
All Other Populations	90%	75%

[3] https://www.oneclimatefuture.org/wp-content/uploads/2021/02/OneClimateFuture_FinalJan2021_Downsized.pdf

6

Mode Split Target Strategies

The TDM plan includes a set of strategies aimed at achieving the TDM goals described above. The strategies are targeted to students, staff, and faculty traveling to and from the campus in East Deering. The Roux Institute at Northeastern University is committed to enhancing the multimodal transportation systems around the campus including providing improved pedestrian and bicycle facilities and transit access/service.

As part of the quarterly transportation survey, the Roux Institute at Northeastern University gathered data on which TDM strategies would more likely encourage students, staff, and faculty to commute differently to the proposed campus. The feedback indicates that Roux Institute at Northeastern University commuters are most likely to shift to a different mode share when showers, lockers and bike storage is available, there is a credit system for sustainable commuting, a bus route is provided from downtown, a park and go is available and bike share is available for commuters. Additional open-ended comments were provided and are also reflected in the TDM strategies presented in this section.

Table 6 below presents the strategies that the Roux Institute at Northeastern University is committed to fulfilling which are grouped into three main categories: Infrastructure/Transit/Mobility Improvements and Contributions; Incentives; and Information/Education/Marketing. These commitments include timelines for implementation.

Table 6 TDM Strategies – Commitments More possible strategies needed/TBD via the TMP/Site Plan discussions			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Investments				
Public Transit Access	Work with Metro to provide a new transit stop on campus. The transit stop will include a shelter and provide real-time bus information as well as a turnaround area on site.	Students/Staff/Faculty/Visitors	Implement	
Public Transit Access	Subsidize the purchase of student and staff/faculty bus passes. what level, 100%	Students/Staff/Faculty	Implement	
Bicycle Access	Secured bicycle parking will be provided via 100 exterior and 66 interior spaces. This equates to over 3 times the City of Portland Land Use Code parking requirements totaling 166 bicycle spaces. 66 interior spaces where? in the garage or elsewhere	Students/Staff/Faculty/Visitors	Implement	Continue to monitor and provide additional bicycle parking if demand increases.
Bicycle Access	Improve Sherwood Street by adding a shared use path. add to 'Future Commitments'	Students/Staff/Faculty/Visitors	Implement Sherwood Street bicycle lanes.	
Bicycle Access	Provide on-site showers and lockers	Students/Staff/Faculty	Implement	
Pedestrian Access	Improve the pedestrian network by providing a new sidewalk and a shared use path along Sherwood Street and a new crosswalk across Sherwood Street at Veranda Street.	Students/Staff/Faculty/Visitors	Implement Sherwood Street improvements.	
Constrained Parking	Parking on-site will be constrained to a parking garage designed to accommodate 625 parking spaces in addition to 14 at-grade parking spaces.	Students/Staff/Faculty	Implement	Ongoing parking management as long-term phasing is completed.
Water Access/Marine Feature	Build a modern pier over the footprint of the current pier, in order to accommodate water shuttles and taxis.	Students/Staff/Faculty/Visitors		Implement
Incentives				
Flexible Work and/or On-line Learning	Provide a hybrid course format that allows online and on-site learning.	Students/Staff/Faculty	Implement	
Flexible Work and/or On-line Learning	Flexible scheduling (ability to start-stop some class hours outside of peak travel periods, e.g.)	Students/Staff/Faculty	Implement	
Parking Pricing	Parking charge for students, staff/faculty (unbundled parking costs - not included with tuition and not provided as a benefit to staff/faculty)	Students/Staff/Faculty	Implement	
Preferential Parking	Prioritize convenient garage parking for carpools.	Students/Staff/Faculty	Implement	
	Carpools will receive reduced price parking.	Students/Staff/Faculty	Implement	
Programmatic Incentives	Join the Emergency Ride Home program through the GOMAINE program.	Students/Staff/Faculty	Implement	
Electric Vehicle Parking	Monitor EV parking demand study and increase the chargers, their power, and number of EV-ready spaces as demand dictates.	Students/Staff/Faculty/Visitors		Monitor usage and provide additional EV charging infrastructure as needed.
Information/Education/Marketing				
Education on Travel Choices	Join GOMAINE. Encourage staff/faculty to join Go Maine & Record “green trips”.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide a website that will present travel choices to campus available to students/staff/faculty with links to resources. Information on bicycling routes, bicycle parking infrastructure, and walking infrastructure will be provided on the website	Students/Staff/Faculty/visitors	Implement	
Education on Travel Choices	The TDM coordinator will send out organizational emails promoting alternative modes/TDM program to staff/faculty and students.	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will facilitate carpools by maintaining a database of interested parties; commuters will be matched with others who live near them or can access a park and ride location along their route. The Roux Institute at Northeastern University will also participate in the Maine DOT/Maine Turnpike Authority GOMAINE, which facilitates carpools across nearby sites and provides participants with rewards for carpooling	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will provide new students, staff, and faculty with orientation packets describing non drive-alone commutes and incentives.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide transit maps and schedules on-campus.	Students/Staff/Faculty/Visitors	Implement	

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Education on Travel Choices	Provide a real-time electronic screen displaying transit information – 'Next Bus' at bus stop.	Students/Staff/Faculty/Visitors	Implement	
Future Investments	Also added to the lobbies of the two main Ph 1 buildings for increased visibility of multimodal options?			
Bicycle Access	Installing a bike repair station Put in narrative	Students/Staff/Faculty/Visitors	Implement	
Bicycle Access	Consider providing electric bike charging	Students/Staff/Faculty/Visitors		Investigate through surveys to determine if this would be effective and used.
Portland BIKESHARE	Establish a new BIKESHARE station on campus. Currently, there are no BIKESHARE stations located in East Deering. Put in narrative	Students/Staff/Faculty/Visitors	Implement	
Car Share	Explore providing one car share vehicle on campus.	Students/Staff/Faculty		Provide car share parking as future program is developed.

7

Monitoring and Reporting Plan

Program monitoring and reporting are important components of a successful TDM program because they provide a quantitative benchmark of the program's effectiveness in reducing single occupancy vehicle trips and resulting parking demand over time. The monitoring process provides feedback on whether progress toward the TDM targets is being made. The TDM Coordinator will use the information gathered through the monitoring plan to direct the ongoing implementation of the TDM program, allowing for adjustments and the introduction of new strategies.

The TDM Coordinator will be responsible for monitoring the efficacy of the TDM plan and making adjustments to the plan as needed to achieve modal split targets.

An annual survey will be administered to gather data for student, staff, and faculty commuting characteristics. Surveys provide a qualitative understanding of how well TDM program elements are working. This survey will ask respondents how they commuted to campus for the last five days and will provide a comprehensive list of mode share choices. Additional information including vehicle ownership, parking costs, and mode share barriers and incentives will also be collected. Parking utilization count data will be obtained annually to support the monitoring process. The TDM Coordinator will obtain data to quantify the hourly in, out, and number of parked vehicles in the garage. This data will help to establish the resulting parking demand for the enrollment at that time.

Should additional data such as bicycle parking counts or other TDM tracking efforts be needed to support the monitoring effort, additional data will be collected. This might include the following data needs:

- Should bicycle parking utilization counts be needed to support the monitoring process, the number of bicycles parked on campus will be tracked. This data will be reviewed for trends in

bicycle usage over time to determine if bicycle parking is adequate and meets the needs of the bicyclists.

› The TDM Coordinator will work with Metro to track the transit usage of commuters via the pass program implemented. The data for the same time period as outlined above in the surveys will be obtained and reviewed.

The results of monitoring effort will be reported to the City of Portland on an annual basis by May 15th using the standard reporting tools provided by the city.

WRIGHT-PIERCE
Engineering a Better Environment

Memorandum

Date: 6/3/2024

Project No.: 21697A

To: Zach Powell, AICP, City of Portland Planner

From: Jaime Wallace, PE, Wright-Pierce
Brooke Springer, EI, Wright-Pierce

Subject: Major Site Plan – Northeastern University's Roux Institute Phase 1 (PL-002724-2023)

On December 23, 2023, Wright-Pierce performed a stormwater review of the Major Site Plan application to develop Phase 1 of the Roux Institute at Northeastern University's campus located at 1 Beanpot Circle on the Portland Waterfront (PL-002724-2023). Wright-Pierce performed a second stormwater review of the subject Major Site Plan on April 23, 2024. The applicant provided responses to the April 2024 review comments and provided updated supporting information under cover of their May 23, 2024, letter. Wright-Pierce performed a third stormwater review of the subject Major Site Plan by reviewing the May 23, 2024 responses and supporting information, and provides the subsequent review comments.

Documents Reviewed by Wright-Pierce

- Project Plans:
  - Civil Plans developed by CambridgeSeven and Woodard & Curran consisting of sheets G-000, G-001, C-001, C-002, C-100, C-101, C-102, C-201, C-202, C-301 through C-304, and D-401 through D-407 dated May 17. 2024.
  - Illustrative Site Plan developed by Stimson consisting of one sheet, dated March 28, 2024.
- Application Documents
  - Stormwater Management Plan developed by Woodard & Curran dated March 2024.
  - Response to City Staff Comments by Woodard & Curran dated May 23, 2024.
  - Site Location of Development Application by Woodard & Curran dated November 2023.

Comments:

It is our understanding that the site plan and associated documents have been previously reviewed by the City of Portland Water Resources Division and Portland Water District. The applicant has provided responses to our previous review comments dated April 23, 2024. For tracking purposes of repeat comments, Wright-Pierce's original comments are in standard text, followed by the applicant's response in italics, and our follow-up response in bold. Comments from previous reviews that did not require a response or clarification or that were addressed are not listed. Our comments focus on the stormwater infrastructure on site with respect to the City of Portland Technical Manual and Maine DEP Chapter 500 and Best Management Practices.

1. **Maine DEP Chapter 500 Review**
   The applicant has provided a narrative report in support of a Site Location of Development (SLOD) permit application. The following comments are related to review of this SLOD report and associated plan details.

a. Urban Impaired Stream Standard
    i. As noted by the applicant, the proposed development is not located within an urban impaired stream watershed. Therefore, this standard is not applicable.
b. Basic Standard
    i. The applicant has demonstrated that they meet Maine DEP Chapter 500 Basic Standards.
c. General Standard
    i. Please see comments regarding the Maine DEP Chapter 500 General Standards for redevelopment projects under the Stormwater Management Plan section of this review.
d. Flooding Standard
    i. The applicant has indicated the City of Portland is in favor of granting the Flooding Standard wavier.
e. Section 1.4 of the SLOD Permit application states that "Construction of Phase 1 is anticipated to begin in Spring 2024." It is recommended the applicant confirm and update the construction date as appropriate.
f. Section 16 of the SLOD Permit application states that the water supply ability to serve documentation from Portland Water District will be provided upon receipt. Please submit the ability to serve documentation once received.

2. **Stormwater Management Plan**
    a. WP Original Comment: The sizing calculations for Subsurface System 5 indicate the total treatment area is 46,959 square feet. Based on the Treatment Area Figure (Fig. D) the total measured area of the treatment area for Subsurface System 5 is approximately 35,000 square feet. We would recommend verifying the total area for this system.
    Applicant Response: A larger drainage area was utilized for the sizing of subsurface system 5 to allow for some flexibility as future phases are developed on the site. As the next phases are developed and the site changes, we will evaluate our systems to determine what areas are managed by the existing systems.
    WP Follow Up Response: We understand that the Applicant is sizing the subsurface system to accommodate future development. However, the Applicant is claiming 46,958 square feet of proposed treated area which appears to be artificially inflating the provided stormwater treatment to meet the 50% treatment requirement. Since it is not known what or if future development will occur at this site, we recommend the Applicant provide the actual square footage of area treating stormwater and update the provided stormwater treatment calculation to prove the 50% requirement is being met for this proposed development.
    b. The sum of impervious and pervious area for water quality volume Bioretention Basin 1 calculations is 25,175 square feet whereas the proposed treated area for Bioretention Basin 1 under the Redevelopment Treatment Calculations is listed as 21,684 square feet. It is recommended the applicant verify the treatment area for Bioretention Basin 1 and revise as appropriate. Furthermore, the non-roof impervious area, 8,864 square feet, for sediment pre-treatment is greater than the water quality volume impervious area, 6,648 square feet. It is our understanding this is because the water quality volume impervious area is limited based on the maximum size of the Bioretention Basin. Please verify this assumption.

3. Plan Comments

a. We recommend the applicant review drain manhole and catch basin sizing for structures that have multiple drainpipes or large diameter pipes at angles less than 90-dgrees at similar elevations discharging into the structure. The following drain manholes were flagged, DMH's 10, 17, 18, 19, 31, 32, 33, and 38.

b. It appears the vertical distance between SD40 and S14 where the pipes cross is approximately 1.8 inches. We recommend the applicant provide a vertical clearance for a minimum of 2 layers of rigid foam installation.

Zachary Powell <zpowell@portlandmaine.gov>

PL-002724-2023 1 Bean Pot Circle DPW Comments

Justin Pellerin <jrp@portlandmaine.gov> Tue, Jun 4, 2024 at 1:22 PM
To: Kristoffer DeVolder <kdevolder@portlandmaine.gov>
Cc: Zachary Powell <zpowell@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, Benjamin Pearson <bnp@portlandmaine.gov>, "thomas.errico@tylin.com" <Thomas.Errico@tylin.com>, lswett@woodardcurran.com

Hi Zach

- DPW and the applicant continue to discuss the scope of work surrounding the proposed Sherwood Street storm drain improvements. DPW suggests that a condition of approval be added to the site plan approval which requires the applicant to finalize the design of the Sherwood Street storm drain in coordination with DPW prior to the issuance of any building permits associated with the approval.

Thanks
Justin Pellerin, P.E.
Senior Water Resources Engineer
Department of Public Works
jrp@portlandmaine.gov
207-874-8881

public works

On Mon, Jun 3, 2024 at 11:06 AM Kristoffer DeVolder <kdevolder@portlandmaine.gov> wrote:

> Hello Zach,
>
> Below are DPW's comments for PL-002724-2023 1 Bean Pot Circle. Let me know if you have any questions.
>
> - Comments for Review
> - DPW Transportation
>   - Applicant Comment 1
>   - VHB evaluated potential roundabout designs for this location. A compact roundabout (90 foot diameter) provides a design that enables Metro busses to maneuver the roundabout without having to travel over the center island. Large trucks (greater than WB40) would still have to travel over it, making the need for a portion of it to be mountable with some raised area in the center. Unfortunately, a footprint of this size would reduce the queuing space between the intersection and the future I-295 off ramp which would likely not be met with support from MaineDOT. In addition, a roundabout of this size would significantly impact the size of the future parcels anticipated to be used for housing etc) which would limit the size of the Roux Institute. As a result, we do not recommend the compact roundabout. Any roundabout above this size would further reduce the area between the roundabout and the future ramp and is not recommended.
>   - In a mini roundabout (60 foot diameter) both Metro busses and all trucks would have to travel over the center area, so the center island could not be raised, reducing its effect as a traffic calming feature as all vehicles can travel across that area. Metro would be most impacted by using cobbles in that center area (to get some compliance with the desired

movement for passenger cars) as the busses are anticipated to be on site at a minimum of every 30 minutes if not more in the future. A mini roundabout is also not recommended as it will be less effective in meeting the City's goals based on the design constraints.

- DPW Response 1
  - City staff continues to be of the opinion that a small roundabout would provide safety and operational advantages versus a stop-controlled intersection, ranging from reduced delay, emissions, and pedestrian exposure to traffic. Staff are well aware of the design constraints associated with a mini-roundabout, as Portland is in the preliminary design process for a mini roundabout slated to replace a traffic signal at the five-way Gorham's Corner intersection. This design direction was made a City goal in no small part due to input from the Fire Department, who have expressed their preference for such an intersection type in certain conditions. As staff has not been involved with the design considerations of the proposed I-295 off-ramp and its junction with Sherwood Street, we cannot comment as to relative operations of the two intersections, or whether the stop control proposed for that intersection is an ideal configuration. However, we understand that availability of land for future parcel development is of great importance to long-term outcomes of this project, and are hopeful that long-term considerations for operations have been taken into account for these two intersections.
- Applicant Comment 2
  - The Sherwood Street design is currently advanced to the 50% design level. Additional design details, such as those identified in the DPW comments will be determined as the design is advanced. It is anticipated that the design will be completed as part of the Planning Board's condition of approval with full City of Portland Public Works review required as a part of that condition.
- DPW Response 2
  - Applicant must comply with the City Technical Manual, previous comments provided on design still apply and will need to be addressed as design is advanced.

- DPW Water Resources
  - Comments to Follow

Thank you,
Kris
--
Kris DeVolder, PE
Sr. Engineer
City of Portland Department of Public Works
212 Canco Rd, City of Portland, ME 04103
kdevolder@portlandmaine.gov



Zachary Powell <zpowell@portlandmaine.gov>

1 Bean Pot Circle - PL-002724-2023

Ann Machado <amachado@portlandmaine.gov> Mon, Jun 3, 2024 at 4:49 PM
To: Zachary Powell <zpowell@portlandmaine.gov>

Zach -

Just following up from our conversation about the floodplain on the new flood maps which go into effect on June 20, 2024.

Here is a screenshot of the new map.



Since the building permit will not be issued until after June 20, 2024, the cannery building and the proposed Learning Research and Collaboration building will be located partially within the AE flood zone with a base flood elevation of 10'. The applicant needs to provide an updated site plan that shows the location of the flood zone in relation to the buildings.

Elevation certificates will need to be submitted as part of the building permit applications.

Ann

Ann Machado
Zoning Administrator
Permitting and Inspections Department
City of Portland, Maine
(207) 874-8709
amachado@portlandmaine.gov

Zachary Powell <zpowell@portlandmaine.gov>

Roux - Final Status Review Comments

Tom Errico <thomas.errico@tylin.com> Thu, Jun 6, 2024 at 8:18 AM
To: "zpowell@portlandmaine.gov" <zpowell@portlandmaine.gov>
Cc: Bruce Hyman <bhyman@portlandmaine.gov>, Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>

Hi Zack – The following is a list of comments and final status given the most current information provided by the applicant. Many of these comments are associated with the review of the MaineDOT Traffic Movement Permit Section 7 Study.

- The actual field intersection count data should be provided.

  4/17/24 Status: The applicant has provided the noted information and I find it to be acceptable.

  Final Status: RESOLVED - I have no further comment.

- The applicant should note the specific hour of the trip generation estimate noted in Table 5.

  4/17/24 Status: The AM was from 8-9am and PM from 5-6pm. This should be noted in the final Section 7 report.

  Final Status: *This is pending the preparation of the final Section 7 report.*

- The trip generation for 300 staff seems low if assumed to be part of Faculty, Staff, and Researchers.

  4/17/24 Status: Most staff are part of the General Office Category. The faculty was assumed to be 75. This should be clarified in the final Section 7 report.

  Final Status: *This is pending the preparation of the final Section 7 report.*

- The percentage of internal capture trips is high, particularly during the PM peak hour, where there is a reduction of 202 trips.

  4/17/24 Status: It was agreed that a sensitivity analysis be performed with an additional 100 trips added to and from the site driveway and distributed throughout the network.

  Final Status: RESOLVED - Following an assessment of on-site parking conditions, the parking garage supply will limit traffic volumes entering the site. The traffic study analysis represented conditions with traffic volumes higher than can be accommodated by the garage and thus represents a worst-case condition. I have no further comment.

- The capacity analysis table should include information on existing lane storage lengths in the assessment of queues exceeding storage.

  4/17/24 Status: Outstanding.

  Final Status: *This is pending the preparation of the final Section 7 report*.

- Back up information on the SimTraffic model field calibration shall be provided.

  4/17/24 Status: The requested information has been provided and I continue to review existing base conditions.

  Final Status: RESOLVED - Based upon my review of the information provided, the SimTraffic model is reasonably calibrated. I have no further comment.

- Some intersections see improved levels of service or delay when comparing existing volumes to future volumes or No-Build to Build volumes.

  4/17/24 Status: A detailed response should be provided.

Final Status: RESOLVED - The applicant has revised the traffic models, and, in some cases, it is a function of changing signal timings. I have no further comment.

- The SimTraffic model delay estimates seem better than actual field conditions.

  4/17/24 Status: As noted above, I continue to review field calibration information.

  Final Status: RESOLVED - As noted above, the model has been reasonably calibrated, and I have no further comment.

- The applicant recommends improving traffic signal coordination and timing optimization. The applicant should note how whether the SimTraffic model already accounts for optimization.

  4/17/24 Status: Outstanding.

  Final Status: RESOLVED - The applicant noted that the model does account for signal coordination. *An outcome of the TMP process will be implementing an improved traffic signal timing and coordination plan*.

- The applicant is recommending the prohibition of left-turns from Vernada Street onto I-295 at Washington Avenue, except for Metro buses. The applicant shall provide specific details on similar prohibitions employed in other communities with documentation from those communities on operations.

  4/17/24 Status: Outstanding.

  Final Status: *The city supports this change but would like to have the applicant provide specific examples of this treatment/condition in operation in other communities. I would suggest that this information be provided as part of the final design of the turn prohibition.*

- The SimTraffic model included left-turn volumes for the scenario where left-turns from Vernada Street are prohibited.

  4/17/24 Status: The model has been revised.

  Final Status: RESOLVED - I have no further comment.

- The SimTraffic Model should include current “No Turn on Red” restrictions.

  4/17/2024 Status: The model has been revised for Build and Mitigation options. The full Section 7 Study should be updated.

  Final Status: RESOLVED - I have no further comment.

- We are concerned about the offset configuration of the Veranda Street/Sherwood Street intersection. We would suggest that the applicant conduct an evaluation that includes full build out of the site to understand long-term improvements needs.

  4/17/24 Status: The city continues to review model results, signal warrant analysis, traffic calming considerations, and active transportation considerations.

  Final Status: *The applicant has developed improvement concepts that seek to calm traffic and provide safer conditions for pedestrians, bicyclists, and motorists. Additionally, the city expects the TMP to include a monitoring provision for the installation of a traffic signal.*

- The SimTraffic model should reflect unequal lane utilization on the I-295 approach to Veranda Street at Washington Avenue.

  4/17/24 Status: The model has been revised.

  Final Status: RESOLVED - I have no further comment.

- The SimTraffic model should reflect some pedestrian calls, Currently, no calls are included in the model.

  4/17/24 Status: The model has been revised for Build and Mitigation options. The full Section 7 Study should be updated.

  Final Status: *This is pending the preparation for the final Section 7 report.*

- The applicant should assess project traffic impacts on conditions at Presumpscot School on Sherwood Street and Presumpscot Street.

  4/17/24 Status: Outstanding.

  Final Status: RESOLVED - *The applicant has agreed to make a monetary contribution towards the implementation of traffic calming improvements along Sherwood Street between Veranda Street and Presumpscot Street as part of the Traffic Movement Permit.* I have no further comment.

- The applicant shall perform an analysis of providing a Lead Pedestrian Interval (LPI) at the Washington Avenue/Veranda Street intersection.

  4/17/24 Status: This has been performed, but the model alternatives are being modified.

  Final Status: RESOLVED - The models and analysis account for LPI's and *implementation will be a requirement of the TMP*. I have no further comment.

- The applicant shall investigate the feasibility of providing a crosswalk on the I295 approach to Veranda Street at Washington Avenue.

  4/17/24 Status: General information has been provided, but the city requests that an improvement plan be if details how this change can be implemented.

  Final Status: RESOLVED - The city has coordinated with MaineDOT and the implementation of the crosswalk is technically infeasible and could not be made compliant within the scope of the project.

- The applicant shall investigate reconfiguring Washington Avenue between Veranda Street and Presumpscot Street with two outbound lanes and a single inbound lane. Additionally, investigate access management improvements for this segment.

  4/17/24 Status: Initial traffic modeling has been performed, but revised analysis is expected.

  Final Status: RESOLVED - A comprehensive analysis of Washington Avenue has been performed and at this time no recommendations have been identified other *than durable pavement markings which will be specified in the TMP*.

- The applicant shall investigate providing two approach lanes on Presumpscot Street and modifying intersection geometry to reduce the crossing distance across Presumpscot Street.

  4/17/24 Status: Plans should be prepared that depict this change. Also, specific changes to levels or service with and without the additional lane should be provided.

  Final Status: RESOLVED - The applicant has prepared a concept improvement plan, and the city supports the recommendations. This will be included in the TMP.

- The applicant shall investigate the feasibility of providing an All-Way STOP condition at the Baxter Boulevard/Bates Street intersection.

  4/17/24 Status: It is our understanding, MaineDOT is investigating this change, so this is outstanding.

  Final Status: RESOLVED - *The TMP will include the installation of an All-Way STOP sign condition and associated improvements*. I have no further comment.

- The applicant conducted several improvement alternatives along Washington Avenue from Veranda Street to Presumpscot. The applicant has been requested to expand the alternatives so that improvements (LPI, Veranda turn prohibition, Washington Avenue single inbound lane) are combined. It was also request that the Washington Avenue single lane inbound alternative, assume bike lanes would be provided and not a center two-way left turn lane.

  4/17/24 Status: Outstanding.

  Final Status: RESOLVED - A comprehensive analysis of Washington Avenue has been performed and at this time no recommendations have been identified *other than durable pavement markings which will be specified in the TMP*.

- The applicant shall revise the Build with the Left-Turn Prohibited at Veranda Street volumes to account for incorrect volume shift at Exit 9.

  4/17/24 Status: Outstanding.

  Final Status: RESOLVED - The models have been revised and I have no further comment.

- The level of service results at the Veranda Street intersection and Sherwood Street with left turns prohibited is counterintuitive. The model shows the southbound Sherwood Street approach improving, with increased left turn volume.

  4/17/24 Status: Outstanding.

  Final Status: RESOLVED - The volumes have been revised and I have no further comment.

- I continue to review the traffic signal warrant analysis at the Veranda Street/Sherwood Street intersection. The applicant is updating the analysis to reflect volume inconsistencies in the calculations**.**

  4/17/24 Status: Outstanding.

  Final Status: RESOLVED - An updated signal warrant analysis has been provided and notes a traffic signal is not warranted under the initial buildout of the project. *As noted previously, the TMP will likely include a condition to monitor traffic conditions following build out of the project*.

- The city identified an alternative to convert the northerly Sherwood Street approach to one-way from Veranda Street (a short section). This was identified to simply traffic movements. The East Deering Neighborhood does not support this alternative.

  Final Status: RESOLVED - I have no further comment.

- The city suggests the implementation of a comprehensive traffic calming plan on Veranda Street that would include a vertical device at Sherwood Street, Kensington Street, and Arcadia Street.

  Final Status: RESOLVED - *The applicant has developed a traffic calming plan for Veranda Street and the plan will be included in the TMP*.

Please contact me if you have any questions.

Best regards,

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Zachary Powell <zpowell@portlandmaine.gov>

PL-002724-2023 1 Bean Pot Circle, Final Comments - On-Site Plan Multimodal Access

Bruce Hyman <bhyman@portlandmaine.gov> Fri, Jun 7, 2024 at 11:17 AM
To: Zachary Powell <zpowell@portlandmaine.gov>

Good morning, Zach,

Below are my final comments on the Site Plan submittals prior to the June 11th public hearing for the Roux Institute Campus related to multimodal access site plan design considerations as part of a package of proposed Conditions of Approval.

Shared Use Pathway

- The site plan is to show all vertical elements included within and adjacent to the shared use pathway including utilities, fire hydrants, etc and dimensions for offsets/clearances from the pathway's edges. No vertical elements (including landscaping) are to be within the footprint of the shared use pathways or within 2' of the edge of the pathway. For landscaping, this should account for the growth of the proposed landscape elements.
- Flared curb ramps are not to be used for connections to crosswalks - parallel ramps or other suitable configurations are to be used with ramp running grades suggested to be no greater than 5% with landing areas with cross and running slopes no greater than 2% (designed for 1.5%)
- Curb ramps and crosswalks are to be 12' in width for connections between 12' shared use pathways.

Bus Stop-Shelters and Bike Parking/Bike Share Station

- The bus stop area is to be redesigned to conform to the guidance of the Transit Stop Access Project design guidelines to include queuing for one bus with ADA-compliant bus landing area for the front door and a clear zone for the rear door (see www.gpcog.org/175/Transit-Stop-Access-Project).
- The bus stop is to have access to the crosswalk along the driveway/street frontage without having to traverse the bike station nor use the shared use pathway for access to the crosswalk.

Please don't hesitate to contact me if you have any questions.

--
Bruce Hyman
Transportation Program Manager
City of Portland
Department of Planning and Urban Development
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Portland, Maine 04101
(207) 874-8717 phone
bhyman@portlandmaine.gov

[Quoted text hidden]

** Subject to additional comments pending release of DRAFT TMP document by MaineDOT **



** Add 'Under Tukey's 12' path connection' as future bicycle and pedestrian infrastructure commitment
** Need supporting transit ridership data
** Add to Monitoring:
1) "six months prior to Certificate of Occupancy, will submit a transit operations plan in concert with METRO"
2) "following year 2, Roux will consult with the City regarding levels of transit subsidy to be carried forward based on the levels of non-drive alone mode shares being achieved"
3) "conduct bicycle-pedestrian counts either by by installation of counters at 1-2 locations (under Tukey's connection//potential new bridge [if RAISE successful] and/or Sherwood St pathway" to help validate mode share
4) utilize/report on parking garage occupancy data to help validate mode share
5) utilize/report on METRO pass use to/from the campus to help validate mode share
** I still think a monitor with 'Next Bus' and TDM-related information would be valuable in the main lobby area at the northerly entrance closest to the bus stop - in the winter/inclement weather, riders won't want to be waiting excessively at the bus stop - and the bus stop is quite a ways away.
** Add additional infrastructure mitigation measures as required by final MDOT TMP.

ıte at
niversity

anagement Plan

Roux Institute at Northeastern University / IDEALS
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Portland, ME 04101

500 Southborough Drive
Suite 105B
South Portland, ME 04106
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MAY 2024

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1

Introduction

Pursuant to Section 17.3 of the City of Portland Technical Manual, the Roux Institute at Northeastern University's Transportation Demand Management Plan (TDM) provides a cohesive approach to establish a targeted set of strategies aimed at reducing single occupancy vehicle trips to and from the proposed campus in Portland, Maine. The TDM plan describes how the Roux Institute at Northeastern University will provide information and education, enhance alternative transportation infrastructure and mobility, and incentivize students, faculty, and staff so that they use more sustainable, multimodal commuting options such as walking, bicycling, transit, carpooling and telecommuting. The Roux Institute at Northeastern University is committed to ongoing annual surveying to monitor the implementation and success of the TDM plan.

1.1 Program Summary and Project Status

In 2020, the Roux Institute at Northeastern University was launched to build expertise at the intersection of humans and technology. The campus is currently temporarily operating at 100 Fore Street but will be relocating to the redeveloped B&M Baked Beans facility. In its permanent waterfront location in East Deering, the Roux Institute at Northeastern University will continue to provide educational, research, and collaborative programs in areas including artificial intelligence, computer and data sciences, digital engineering, advanced life sciences, and medicine. The Roux Institute at Northeastern University offers post-graduate degrees and certifications, conducts research, assists start-ups, and partners with private, public and non-profit organizations. The mission of the Roux Institute at Northeastern University is *a vision to enable the creation of a synergistic technology and life science-driven economy and workforce, the Roux Institute at Northeastern University designs, curates, and integrates learning, research, and entrepreneurial solutions in collaboration with industry, academic institutions, and community organizations to catalyze talent development and economic impact throughout Maine*.

In February 2023, the Portland City Council approved the Institutional Overlay Zone for the campus at the old B&M Baked Beans site. The project team is currently embarking on the site plan review and public input process with the City of Portland, which includes the preparation and submission of a MaineDOT Traffic Movement Permit application. Permits are expected by the summer of 2024, when construction will begin, with an opening date in 2027. The campus will continue to grow over time in subsequent years and phases.

1.1.1 Existing Conditions

The Roux Institute at Northeastern University currently leases 84,000 sf of institutional space at 100 Fore Street adjacent to the East End neighborhood and near the waterfront in downtown Portland. In the fall of 2023, there were 665 enrolled students and 175 staff, researchers and faculty. There are currently 16 graduate programs in computer and data science, analytics, cloud software, cybersecurity, life sciences, and project management. To realize its full potential, the Roux Institute at Northeastern University is seeking to relocate its campus and expand in size as described in the following section.

1.1.2 Proposed Development Program

The campus will be anchored by a 238,000 square foot Learning, Research and Collaboration building and the 58,000 square foot Bean Building housing a start-up incubator program. By 2032, the campus plans to accommodate 3,123 graduate students in addition to supporting uses as shown in Table 1. An 8,000 square foot café and a day care center providing care for 50 children will be located on-site primarily for the families of students, staff, and faculty. In addition to its academic offerings, the campus will benefit the community by contributing to local economic growth and providing open space along the waterfront, active transportation accommodations throughout the site, job creation, and innovation space. The site plan is shown in Figure 1.

Table 1 Development Program

Program Component		2027 (Opening)	2032
Day care center		50 Children	50 Children
Academic Café		8,000 sf	8,000 sf
Roux Institute at Northeastern University	Graduate students	1,899 students	3,123 students
	Faculty, Staff, and Researchers[1]	225 staff	300 staff
	Embedded startup[1]	60 staff	100 staff
	JAX and Other Signature Partners[1]	55 staff	64 staff
	Affiliated Users[2]	35 visitors	100 visitors
	Special Events (daily)	150 attendees	150 attendees

1 All staff counts are in full-time equivalents.
2 Affiliated Users is a broad category for occasional visitors such as corporate learners, investors, donors, mentors, and neighbors.

The garage has been designed to accommodate 610 vehicular parking spaces, and parking for 66 bicycles. In addition to the garage spaces, there will be 14 parking spaces provided at grade on the site. All on-site parking will be paid parking, and a parking office will be created to manage permitting and enforcement for the campus. Parking costs and regulations may vary between categories of users (students, staff, faculty, visitors, etc.). Parking will be shared between uses

within the campus only. This development will not rely on any off site on-street parking. The campus may include on-site car sharing, enabling travel to and from the site using other modes, with the comfort that vehicles are available if necessary. The TDM measures presented in this plan will be critical to maintaining the parking demand below the parking supply.

The parking garage size of 610 spaces is more consistent with the anticipated demand opening day of Phase 1 (581 spaces). As a result, there is not the same need to reduce capacity as when a larger garage was contemplated.

Figure 1 Proposed Site Plan



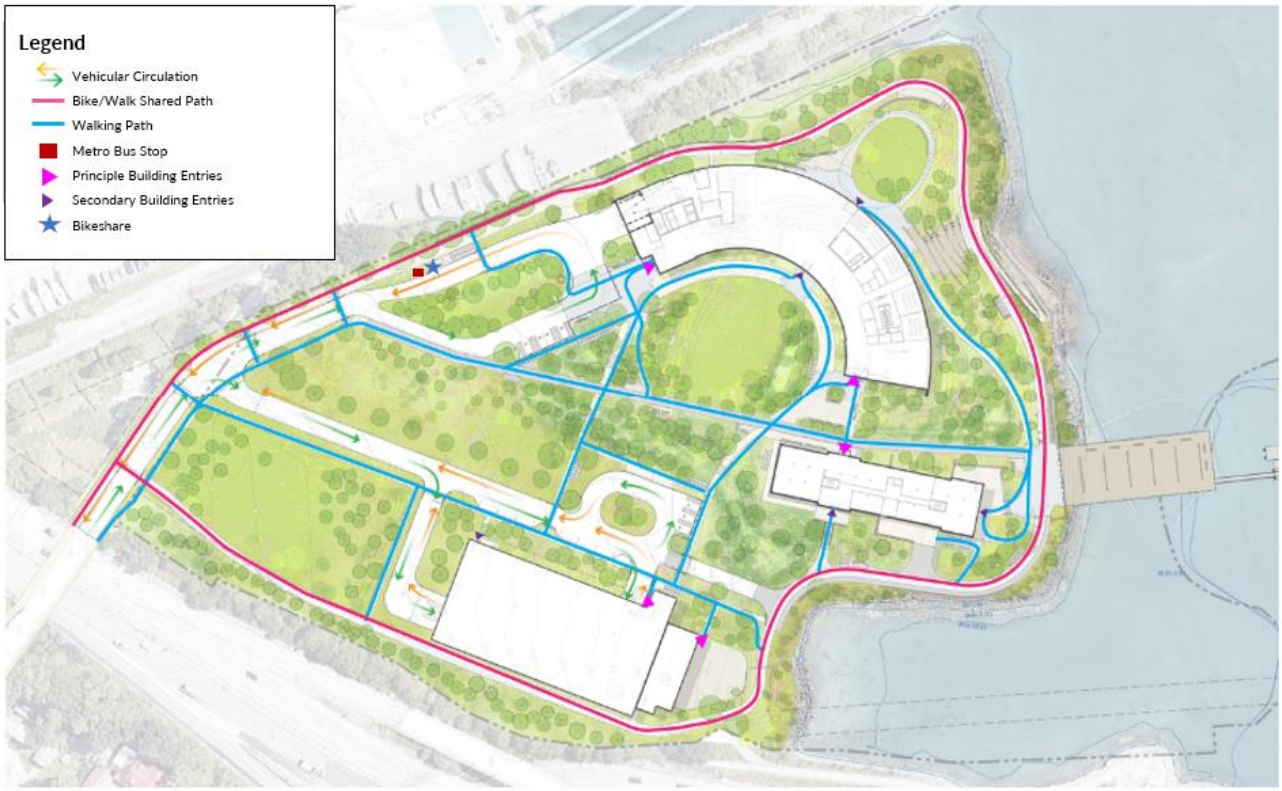
2

Mobility Context

For a TDM plan to be successful in shifting drive alone vehicle trips to transit, carpool, walk, and bicycle trips, it is essential to understand the multimodal transportation system surrounding the site. This section describes the existing transportation network challenges and future opportunities the Roux Institute at Northeastern University faces in redeveloping the site for their permanent campus.

The proposed waterfront site is located in East Deering adjacent to a marina and residential neighborhood comprising of single and multifamily homes as well as a commercial area which includes restaurants, bars, auto mechanics, and offices. I-295 runs along the western edge of the site, however the site will be well connected to the East Deering neighborhood, Back Cove, and the Portland Peninsula on the eastern promenade via vehicle, pedestrian, bicycle, transit and potential water taxi facilities. As shown in Figure 2, there are several promising opportunities to enhance and expand these transportation systems as part of the project to improve transportation mobility in and around the campus.

Figure 2 Campus Transportation Access



2.1 Vehicular Access and Circulation

A single vehicular access point to the site is provided via Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street will continue to serve as vehicular access into and out of the campus in the future. The site is in close proximity to I-295, Route 1, Washington Avenue, and Baxter Boulevard. The traffic signal system along Washington Avenue is a traffic responsive system operating with high efficiency. Intersections of Washington Avenue at Veranda Street, at Presumpscot Street, and at Ocean Avenue are each signalized intersections.

2.2 Walking and the Pedestrian Environment

2.2.1 Existing Conditions

The surrounding East Deering neighborhood provides pedestrian amenities including sidewalks along Washington Avenue and Veranda Street. A sidewalk runs along the west side of Bates Street but narrows and is periodically blocked by utility poles. There is no sidewalk present on the east side of Bates Street. The Back Cove trail (multi-use path) runs along the Back Cove and Tukey's Bridge near the site. The main roadway access to the site is via Sherwood Street which consists of a 30-foot-wide roadway in a 50-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. The pedestrian connectivity to the Portland

Peninsula is accessible from the Back Cove Trail across the west side of Tukey's Bridge. The sidewalk connecting from the intersection of Washington Avenue/Veranda Street is narrow and adjacent to vehicular traffic on the ramp to I-295. The sidewalk merges with the Back Cove Trail which adds bicycle and pedestrian demand to a narrow, shared use path over Tukey's Bridge. There is no existing direct connection to this shared use path from the campus.

2.2.2 Future Commitment

Pedestrian improvements at Wash-Veranda-Bates/Veranda-Sherwood? Veranda-Pembroke?

The Roux Institute at Northeastern University will improve pedestrian safety and connectivity to the East Deering neighborhood from the campus by providing a sidewalk on the south side and a shared use path on the north side of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. Once on the site, pedestrian facilities will connect site uses and points along the waterfront. Improvements to pedestrian connections will increase walkability for the site.

2.2.3 Potential Future MaineDOT Infrastructure

Future Commitment in 2.2.2

The infrastructure described above will be constructed to allow for future connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a shared use path under Tukey's Bridge would improve pedestrian access to and from the campus to the Back Cove trail and for pedestrians traveling between East Deering and the Portland Peninsula using the future shared use path bridge. These new shared use paths would provide wider, safer, and more comfortable accommodations for pedestrians and improve connectivity.

2.3 Bicycling Environment and Facilities

2.3.1 Existing Conditions

Bicycle facilities are present in the East Deering neighborhood on Washington Avenue including buffered bike lanes north of Presumpscot Street and faded sharrows along Veranda Street. Bates Street provides a bike lane from Washington Avenue to Baxter Boulevard. The Back Cove trail (multi use path) runs along the Back Cove and Tukey's Bridge near the site. There are currently no bicycle facilities on Sherwood Street. Similar to the discussion above describing the pedestrian access across the shared use path on Tukey's Bridge, bicyclists must also use the narrow path or bike to Baxter Boulevard and the Back Cove Trail to connect to the Portland Peninsula. Although this shared use path provides access to the Back Cove trail, it does not provide direct access to the campus. There are 8 public U-racks totaling 16 bicycle parking spaces located within the 970 Baxter Boulevard parking lot.

Walkscore.com rates East Deering with a Bikescore of 58/"Bikeable" indicating some bike infrastructure is present. The 15-minute bike shed zone from the campus is illustrated in Figure 3.

Figure 3 15 Minute Bike Shed Zone



Under Tukey's connection Future Commitment in 2.3.2

2.3.2 Future Commitment

The Roux Institute at Northeastern University is dedicated to creating a safer, complete street along Sherwood Street to accommodate bicyclists into and out of the site by providing a shared use path on the north side of the street. The campus will provide 166 bicycle parking spaces for students, staff, faculty, and visitors. This quantity is more than triple the required amount of bicycle parking per the Portland Technical Manual. Shower and locker facilities will be provided for those commuters who bicycle to campus. The Roux Institute at Northeastern University will provide a Bike Fix-it Station for bike commuters and other visitors to the site.

Bike share?

2.3.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future constructed connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a 10 foot wide shared use path under Tukey's Bridge would improve bicycle access from the campus to the Back Cove trail and bicycle connectivity between East Deering and greater Portland.

RAISE Plans show 12' path

2.3.4 Other Potential Future Infrastructure

The City of Portland is currently working on the *Baxter Boulevard | Bates Street | Veranda Street Bikeway Project*[1] to implement buffered bicycle lanes on Veranda Street and a two-way bi-directional separated bike lane on Bates Street. Other potential opportunities for multi-use paths in the area include the Berlin Subdivision railroad right-of-way to points north ending at the Yarmouth Park and Ride on Exit 15 of I-295. Additionally, the Martin's Point Shared Use Path study considered a shared use path from Sherwood Street to the recently installed shared use path west of the Martin's Point Bridge starting at Wordsworth Street.

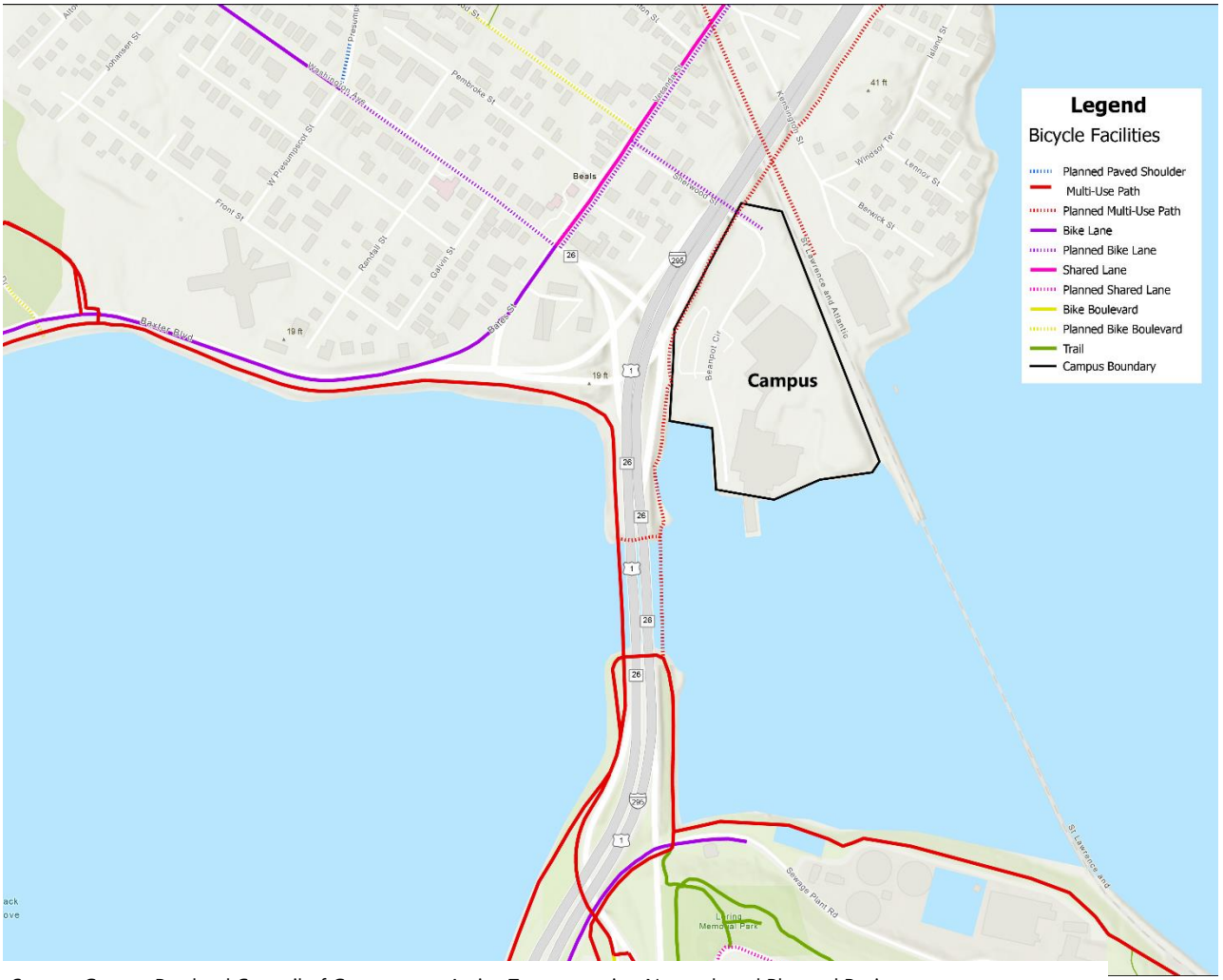
The City of Portland and Tandem Mobility have partnered to provide a bike share system in Portland. There are over 200 bicycles at over 40 stations predominately throughout the Portland peninsula. Pedal bikes and electric bikes are available by the minute and memberships are available on a monthly or yearly basis. There are currently no Portland BIKESHARE locations within the East Deering neighborhood in close proximity to the site, however there are a few on the East End across Tukey's Bridge. The Roux Institute at Northeastern University will provide a new station on the campus which will expand the BIKESHARE network to the East Deering neighborhood.

Move to 2.2.3?

Figure 4 presents the existing and potential future bicycle facilities surrounding the campus.

[1] Baxter Boulevard| Bates Street| Veranda Street Bikeway Project https://portland.civilspace.io/en/projects/better-bikeways-initiative

Figure 4 Existing and Potential Future Bicycle Facilities



Source: Greater Portland Council of Government Active Transportation Network and Planned Projects
https://gpcog.maps.arcgis.com/apps/View/index.html?appid=d5d7dbbc69534242b5fd4092c78f26e4

2.4 Public Transit

2.4.1 Existing Conditions

As shown in Figure 5, two bus lines currently stop near the campus: Metro Route 7 and Metro Routes 9A / 9B. Route 7 provides service between Portland and Falmouth with a stop at the Metro Pulse on the Peninsula as well as a stop near the campus at Veranda Street/Sherwood Street approximately a quarter of a mile from the center of the campus. Routes 9A/9B provide circular bus service between downtown Portland and North Deering with service running along Washington Avenue and Congress Street. Route 9A/9B stops on Washington Avenue near the site at Galvin Street and Veranda Street respectively which is under a half mile from the site. Bus transfers can be made ~~at the~~ near the Pulse and other stops on the Peninsula to reach the rest of Portland and several outlying towns.

Buses run continuously throughout the day, readily accommodating the varied schedules of students and other campus users. Metro BREEZ express bus service to Yarmouth, Freeport, and Brunswick and the Husky Line to Westbrook and Gorham establish a regional footprint for transit service. Ten local and express routes connect the campus to most of the Portland area with no more than one transfer.

During both weekday peak hours Metro Route 7 is expected to operate at 50% or less capacity. The Metro bus policy capacity of 52 passengers per bus was assumed. There are 35 seats per bus and a bus is considered "full" at 150% of the seated capacity. There is one bus per peak hour on this route. In 2023, on an average weekday during the AM and PM hours there were 9 and 22 boardings on Route 7 respectively, which leaves plenty of capacity on Route 7 to accommodate site related traffic.

In addition to the local Metro system, the Portland Transportation Center (PTC) in Thompson's Point provides regional bus and train service. Concord Coach Lines runs bus service from Portland to Boston, Massachusetts, Logan International Airport, and New York City as well as points north of Portland. The Amtrak Downeaster provides train service between Brunswick and Boston with a stop in Portland. Greyhound provides bus service between East Bayside in Portland and Boston, Massachusetts.

The Roux Institute at Northeastern University is currently subsidizing Metro bus passes at 100% for all students faculty and staff.

Figure 5 Public Transit Access



2.4.2 Future Opportunities

Metro is contemplating improvements to the transit system throughout Portland. In addition, the Roux Institute at Northeastern University is working with Metro to consider site specific transit accommodation for an on-campus bus stop that would connect the Roux Institute at Northeastern University to other key locations across the City, including housing, additional transportation connections, and partner organizations. The Roux Institute at Northeastern is also working with Metro and MaineDOT to identify park and ride locations where Roux students, faculty and staff can park and use Metro to travel to the site.

2.4.2.1 Transit Together Plan

In January 2023, The Portland Area Comprehensive Transportation System (PACTS) Policy Board approved the Transit Together Plan[2]. As of August 27, 2023, this plan enabled changes to Route 9 to provide more consistent 30-minute headways from 6am to 6pm on weekdays and from about 8am to 6pm on Saturdays. Route 9B will run one hour later in the evening.

In the Spring of 2024, Metro plans to make improvements to Route 7 by extending the route to the Portland Jetport via Congress Street with improved frequency and hours of operation.

[2] Transit Together - https://gpmetro.org/1644/Transit-Together---Route-and-Schedule-Ch

Frequency for Route 7 will improve from 60 to 30 minutes Monday through Saturday and services will be provided until 10pm or 11pm. The Falmouth loops will be eliminated, and Route 7 will use the Shaw's parking lot in Falmouth to turnaround. In conjunction, Route 5 service to the Jetport and Hutchins Drive will be discontinued to improve travel time between Portland and the Maine Mall. In addition, microtransit service will be implemented in east Falmouth. Microtransit riders within the zone will be able to request a ride using a smartphone app or phone call. These changes significantly increase the frequency and daily service to the campus.

2.4.2.2 Other Metro Opportunities

Metro is in the preliminary planning stages of studying how to extend Route 7 service along US Route 1 to Yarmouth. This extension could provide a bus route for campus commuters, with parking at the MaineDOT Exit 15 Park and Ride in Yarmouth.

The Roux Institute at Northeastern University is working with Metro to improve the quality and frequency of transit connections to the campus. Reduction of headways, modification of Route 5 or Route 7 to make a stop at the campus, and construction of a transit stop and turnaround on the campus, are all under consideration to further the convenience of transit for commuting to and from campus. The Roux Institute at Northeastern University will continue to promote and incentivize transit use by subsidizing transit passes for students, staff, and faculty.

2.5 Ride-Hailing

In addition to driving, transit, walking, bicycling, and carpooling, commuters have the option of using ride hailing services such as Uber, Lyft and/or traditional taxis. Although these services result in vehicle trips to and from the campus, they reduce the parking demand and allow for less vehicle ownership and more flexibility with commute mode choices.

2.6 Current Parking Policies

Parking is currently provided to staff, faculty and embedded partners at $50 per month, per spot. There are 176 parking spaces allocated for the Roux Institute at Northeastern University in the on-site garage. Embedded partners and employees who opt out of monthly parking pay $1/hour to park in the garage. Parking for visitors is also provided via a public rate of $5/hour and in adjacent, paid parking lots. Students of the Roux Institute at Northeastern University are not currently charged to park on-site but will be at the future campus.

2.7 Existing TDM Efforts

As part of this TDM plan, the Roux Institute at Northeastern University plans to bolster its current TDM efforts for the permanent campus proposed in East Deering. However, they are currently implementing TDM strategies on the existing campus at 100 Fore Street to help reduce drive alone trips:

- Appointed a transportation coordinator who surveys students, faculty and staff to develop an understanding about mode choice.

- Fully subsidizing transit passes 100% for faculty, staff and students. Posting transit related information in highly visible areas on site. Providing information on transportation commuting options including transit on the Roux Institute at Northeastern University's website.
- Offering convenient, hybrid course formats that blend online and on-site learning thus reducing the demand for commuting.
- Charging staff and embedded partners $50 per month per parking space.

2.8 Future TDM Framework

Although this document specifically addresses the TDM plan for this phase of development, it is part of a larger TDM framework for the site and supports the continued review of mode share and trip impact and the continual development of additional TDM measures as the site is further developed. Specifically, the Transportation Coordinator will conduct traffic monitoring and employee surveys to identify the mode share as development occurs and identify which of the TDM strategies and alternative modes are more successful at the site. This information will be used in future phases of development to identify accurate impacts and needs and develop additional strategies to best continue to move the needle to reduce vehicle trips generated by the site.

This document outlines a transition from an initial opening year mode share to a mode share at full occupancy of this phase of development that will be consistent with the aspirational mode shares identified for the long term buildout of the site in the zone change process. Future phases will continue to build on the success of this TDM plan and reach mode share targets that continue to reduce vehicular trips.

3

TDM Coordinator

The Roux Institute at Northeastern University will designate a TDM coordinator to oversee the administration of the TDM plan and the annual surveying and reporting process.

The Roux Institute at Northeastern University plans to follow industry best practice by appointing a campus-wide transportation coordinator. The TDM Coordinator will collect data on the TDM progress to ensure it evolves as the site develops. Once the site is operational, the TDM Coordinator will conduct a transportation survey for students, staff, and faculty to establish a baseline for future drive alone mode share reduction goals. They will also collect and disseminate information (including non-automobile travel options) on-site and organize outreach events and campaigns to encourage TDM participation. The TDM Coordinator will promote alternative transportation choices to educate those commuting to and from the campus and coordinate the implementation of TDM strategies to reduce single occupancy vehicle (SOV) trips. In addition, the TDM Coordinator will work with the City of Portland, Metro, GoMaine, car share, and bike share programs to improve non-SOV mode shares. The responsibilities of the TDM Coordinator include the following:

- Promote alternative transportation choices to students, staff, faculty, and visitors to reduce single occupant vehicles (SOV) trips.
- Coordinate the implementation of TDM strategies with students, staff, and faculty and conduct orientations to educate those commuting to and from the campus regarding their transportation options.
- Monitor bike rack usage and make recommendations as needed to accommodate potential growing demand.
- Coordinate with the City of Portland, Metro, GoMaine, car share and bike share, and other potential partners to improve access to non-SOV modes.
- Conduct annual Transportation Monitoring and activities necessary to measure the effectiveness of the TDM program in achieving the mode share reduction target.
- Administer and review TDM surveys on a yearly basis.

- Complete the standard City of Portland TDM Reporting Form, which will summarize how effective the various strategies have been, mode share data based on the surveys and program success and barriers.
- File annual TDM reports by May 15th of each year with the City of Portland.

The TDM Coordinator will be the primary point of contact for students, staff, and faculty regarding the TDM plan. The TDM Coordinator will develop strategies and incentives for students, staff, faculty, and visitors where applicable. The TDM Coordinator will also collaborate with commuters prior to when they start to inform them of the robust network of alternative mode choices available to them.

** Make adjustments to the TDM Plan as needed to ...

4

Baseline TDM Data

Baseline travel demand and supply data for the campus has been quantified for the Traffic Movement Permit (TMP) Application being submitted to MaineDOT as part of the site plan review process. Baseline data includes estimated mode split, future trip generation estimates, and proposed parking supply and future demand estimates. Reviewing survey data and how the existing students, faculty and staff are currently commuting to campus, and how they expect to commute to the proposed campus, provides insight to which alternative modes may have the greatest potential to reduce drive alone trips.

4.1 Modal Split

4.1.1 Roux Institute at Northeastern University Transportation Survey

The Roux Institute at Northeastern University conducted transportation surveys on a quarterly basis throughout 2022 and 2023 which collected responses from students, staff, and faculty at the existing 100 Fore Street campus. The survey asked how the respondents commuted to campus and then how they imagine they will commute to the new campus in East Deering. The results of the survey mode share data are presented in Table 2. It is important to note that the data collected slightly varied throughout the time of year. Additionally, the Roux Institute at Northeastern University is an evolving, growing Institute currently in a temporary location and this data is only representative of a portion of students, staff and faculty. Based on feedback collected from the survey, it is anticipated that transit and bicycle trips will increase, walk trips will decrease, and drive trips will slightly decrease due to the proposed campus location and existing transportation system in East Deering. The Roux Institute at Northeastern University will continue to survey on a quarterly basis and make adjustments as circumstances evolve.

** Provide at least a snapshot of the anticipated commute mode data?

Table 2 Transportation Survey Mode Split Data

	Existing Commute at 100 Fore Street		
	August 2022	April 2022	January 2023
Drive	77%	72%	73%
Transit	4%	3%	4%
Walk	13%	16%	19%
Bike	6%	7%	4%
Other	0%	2%	0%

The August 2022 survey had a 19% response rate. Of the 135 people who responded, 40% were students, 35% were full-time staff, 13% were full-time faculty, and 12% were other.

4.1.2 Traffic Movement Permit Mode Split Data

In addition to the data collected as part of the transportation surveys, expected mode share splits assumed in the Traffic Movement Permit (TMP) by land use are also provided in Table 3. The TMP mode splits are slightly more conservative in terms of analyzing vehicular traffic impact on the study area intersections. As additional bicycle and pedestrian connections are constructed in future years, it is likely that those mode shares will increase.

Table 3 TMP Mode Split

Population	Drive	Transit	Walk/Bike
Students	80%	10%	10%
All Other Populations	90%	5%	5%

Source: TMP indicates mode share assumptions presented in the Traffic Movement Permit

Provide supporting transit usage data from METRO on/off counts (or pass usage)

4.2 Trip Generation

As part of the TMP application, a trip generation analysis was conducted based on the 2032 development program presented in Table 1 using Institute of Transportation Engineers (ITE) publication, Trip Generation 11th edition as well as a custom trip generation methodology for the academic use of the site. The following assumptions were made to estimate student trip generation based on data from the campus:

- 43% of student enrollment are present on campus each day.
- 40% are daytime students and 60% are evening students.

Mode shares that were previously presented in Table 3, and applicable on site, internal capture trip rates were applied to the trip generation estimate to determine the external vehicle, pedestrian and walk trips as well as transit trips. The resulting estimated trip generation for the campus is presented in Table 4. The campus is expected to generate 237 morning and 521 evening peak hour vehicle trips, 20 morning and 51 evening peak hour transit trips, and 20 morning and 51 evening peak hour pedestrian and bicycle trips.

Table 4 Trip Generation

	Vehicle Trips	Transit Trips	Ped/Bike Trips
AM Peak Hour			
In	227	20	20
Out	10	0	0
Total	237	20	20
PM Peak Hour			
In	276	30	30
Out	245	21	21
Total	521	51	51

Source: Trip Generation Analysis presented in the Traffic Movement Permit

4.3 Proposed Parking Supply/Demand

A parking analysis was performed to estimate parking demand for the Roux Institute at Northeastern University. It was determined that parking demand peaks during the overlap between day and night users. Based on travel patterns of existing daytime and night students, the future enrollment will result in a peak demand of 581 spaces in the opening year and if the auto mode share stays as high as outlined in the TMP, demand would increase to 881 spaces in 2032.

166?

The Roux Institute at Northeastern University is planning on providing parking on campus in a proposed parking garage designed to accommodate 610 vehicular parking spaces and 66 bicycle parking spaces. In addition to the garage spaces, there will be 14 parking spaces provided at grade on site. The parking garage will be constructed in 2027 to accommodate the demand for this phase.

In order to help mitigate the amount of vehicular traffic traveling to the campus, The Roux Institute at Northeastern University is actively exploring opportunities for satellite parking spots at existing park and ride locations within a short commute to the campus via tying into nearby transit routes or a Northeastern University-owned shuttle service.

To ensure parking usage in the structured garage does not exceed the permitted supply for each phase of development, the Roux Institute at Northeastern University will collect annual parking data to determine the number of vehicles parked throughout the day and evening. The TDM coordinator will obtain gate data for in, out, and occupancy counts on an hourly basis during the spring to coincide with the annual survey week. Moving into the future, the TDM coordinator will be working to reduce the automobile mode share to the site so that the garage is able to accommodate campus growth with that parking supply.

5

TDM Mode Split Targets

The TDM plan establishes short-term and long-term modal split targets.

The TDM mode split target includes goals for reducing vehicle trips and increasing multimodal trips. Based on the future transportation system the campus will be supported by and TDM measures that will be implemented, the short and long-term targets that are proposed as part of this TDM plan are presented in Table 5. The mode share goals are within range of the City's *One Climate Future* document that sets a Key Transportation Milestone that by 2035, 26% of trips in the city will use alternative transportation modes, (up from 12%)[3]. The long-term goals are based on mode splits presented as part of the approved Institutional Development Plan for the Roux Institute at Northeastern University. The Roux Institute at Northeastern University is committed to implementing the TDM strategies presented in the following Section 6 to work towards achieving these mode split targets. The targets will be reviewed and updated based upon the annual TDM reporting process. & the strategies reviewed/updated too

Table 5 Automobile Mode Split Targets

Population	Mode Split Targets	
	Short-term	Long-term
Students	80%	65%
All Other Populations	90%	75%

[3] https://www.oneclimatefuture.org/wp-content/uploads/2021/02/OneClimateFuture_FinalJan2021_Downsized.pdf

6

Mode Split Target Strategies

The TDM plan includes a set of strategies aimed at achieving the TDM goals described above. The strategies are targeted to students, staff, and faculty traveling to and from the campus in East Deering. The Roux Institute at Northeastern University is committed to enhancing the multimodal transportation systems around the campus including providing improved pedestrian and bicycle facilities and transit access/service.

As part of the quarterly transportation survey, the Roux Institute at Northeastern University gathered data on which TDM strategies would more likely encourage students, staff, and faculty to commute differently to the proposed campus. The feedback indicates that Roux Institute at Northeastern University commuters are most likely to shift to a different mode share when showers, lockers and bike storage is available, there is a credit system for sustainable commuting, a bus route is provided from downtown, a park and go is available and bike share is available for commuters. Additional open-ended comments were provided and are also reflected in the TDM strategies presented in this section.

Table 6 below presents the strategies that the Roux Institute at Northeastern University is committed to fulfilling which are grouped into three main categories: Infrastructure/Transit/Mobility Improvements and Contributions; Incentives; and Information/Education/Marketing. These commitments include timelines for implementation.

Add to Monitoring

Add to Monitoring

Table 6 TDM Strategies – Commitments

** Bus capital contributions?

Category	Strategy	Targeted User/Group	Timeline Years: Short-term (0-2 Years)	Timeline Years: Long-Term (2+ Years)
Investments				
Public Transit Access	Work with Metro to provide a new transit stop on campus. The transit stop will include a shelter and provide real-time bus information as well as a turnaround area on site.	Students/Staff/Faculty/Visitors	Implement	
Public Transit Access	Subsidize the purchase of student and staff/faculty bus passes.	Students/Staff/Faculty	Implement at 100%	Implementation level to be evaluated with the City.
Bicycle Access	Secured bicycle parking will be provided via 100 exterior and 66 interior spaces located in the garage. This equates to over 3 times the City of Portland Land Use Code parking requirements totaling 166 bicycle spaces.	Students/Staff/Faculty/Visitors	Implement	Continue to monitor and provide additional bicycle parking if demand increases.
Bicycle Access	Improve Sherwood Street by adding a shared use path.	Students/Staff/Faculty/Visitors	Implement Sherwood Street shared use path.	
Bicycle Access	Provide on-site showers and lockers	Students/Staff/Faculty	Implement	
Pedestrian Access	Improve the pedestrian network by providing a new sidewalk and a shared use path along Sherwood Street and a new crosswalk across Sherwood Street at Veranda Street. & 3 enhanced crosswalks on Veranda St	Students/Staff/Faculty/Visitors	Implement Sherwood Street improvements.	
Constrained Parking	Parking on-site will be constrained to a parking garage designed to accommodate 624 parking spaces in addition to 14 at-grade parking spaces. 610?	Students/Staff/Faculty	Implement	Ongoing parking management as long-term phasing is completed.
Water Access/Marine Feature	Build a modern pier over the footprint of the current pier, in order to accommodate water shuttles and taxis.	Students/Staff/Faculty/Visitors		Implement
Incentives				
Flexible Work and/or On-line Learning	Provide a hybrid course format that allows online and on-site learning.	Students/Staff/Faculty	Implement	
Flexible Work and/or On-line Learning	Flexible scheduling (ability to start-stop some class hours outside of peak travel periods, e.g.)	Students/Staff/Faculty	Implement	
Parking Pricing	Parking charge for students, staff/faculty (unbundled parking costs - not included with tuition and not provided as a benefit to staff/faculty)	Students/Staff/Faculty	Implement	
Preferential Parking	Prioritize convenient garage parking for carpools.	Students/Staff/Faculty	Implement	
	Carpools will receive reduced price parking.	Students/Staff/Faculty	Implement	
Programmatic Incentives	Join the Emergency Ride Home program through the GOMAINE program.	Students/Staff/Faculty	Implement	
Electric Vehicle Parking	Monitor EV parking demand study and increase the chargers, their power, and number of EV-ready spaces as demand dictates.	Students/Staff/Faculty/Visitors		Monitor usage and provide additional EV charging infrastructure as needed.
Information/Education/Marketing				
Education on Travel Choices	Join GOMAINE. Encourage staff/faculty to join Go Maine & Record “green trips”.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide a website that will present travel choices to campus available to students/staff/faculty with links to resources. Information on bicycling routes, bicycle parking infrastructure, and walking infrastructure will be provided on the website	Students/Staff/Faculty/visitors	Implement	
Education on Travel Choices	The TDM coordinator will send out organizational emails promoting alternative modes/TDM program to staff/faculty and students.	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will facilitate carpools by maintaining a database of interested parties; commuters will be matched with others who live near them or can access a park and ride location along their route. The Roux Institute at Northeastern University will also participate in the Maine DOT/Maine Turnpike Authority GOMAINE, which facilitates carpools across nearby sites and provides participants with rewards for carpooling	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will provide new students, staff, and faculty with orientation packets describing non drive-alone commutes and incentives.	Students/Staff/Faculty	Implement	

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Education on Travel Choices	Provide transit maps and schedules on-campus.	Students/Staff/Faculty/Visitors	Implement	
Future Investments				
Bicycle Access	Installing a bike Fix-It station	Students/Staff/Faculty/Visitors	Implement	
Bicycle Access	Consider providing electric bike charging	Students/Staff/Faculty/Visitors		Investigate through surveys to determine if this would be effective and used.
Portland BIKESHARE	Establish a new BIKESHARE station on campus. Currently, there are no BIKESHARE stations located in East Deering.	Students/Staff/Faculty/Visitors	Implement	
Car Share	Explore providing one car share vehicle on campus.	Students/Staff/Faculty		Provide car share parking as future program is developed.

Bicycle/Pedestrian Access Under Tukey's Pathway

7

Monitoring and Reporting Plan

Program monitoring and reporting are important components of a successful TDM program because they provide a quantitative benchmark of the program's effectiveness in reducing single occupancy vehicle trips and resulting parking demand over time. The monitoring process provides feedback on whether progress toward the TDM targets is being made. The TDM Coordinator will use the information gathered through the monitoring plan to direct the ongoing implementation of the TDM program, allowing for adjustments and the introduction of new strategies.

The TDM Coordinator will be responsible for monitoring the efficacy of the TDM plan and making adjustments to the plan as needed to achieve modal split targets.

An annual survey will be administered to gather data for student, staff, and faculty commuting characteristics. Surveys provide a qualitative understanding of how well TDM program elements are working. This survey will ask respondents how they commuted to campus for the last five days and will provide a comprehensive list of mode share choices. Additional information including vehicle ownership, parking costs, and mode share barriers and incentives will also be collected. Parking utilization count data will be obtained annually to support the monitoring process. The TDM Coordinator will obtain data to quantify the hourly in, out, and number of parked vehicles in the garage. This data will help to establish the resulting parking demand for the enrollment at that time.

Should additional data such as bicycle parking counts or other TDM tracking efforts be needed to support the monitoring effort, additional data will be collected. This might include the following data needs:

- Should bicycle parking utilization counts be needed to support the monitoring process, the number of bicycles parked on campus will be tracked. This data will be reviewed for trends in

bicycle usage over time to determine if bicycle parking is adequate and meets the needs of the bicyclists.

› The TDM Coordinator will work with Metro to track the transit usage of commuters via the pass program implemented. The data for the same time period as outlined above in the surveys will be obtained and reviewed.

The results of monitoring effort will be reported to the City of Portland on an annual basis by May 15th using the standard reporting tools provided by the city.

June 5, 2024

Brandon Mazer, Chair
Portland Planning Board

Dear Mr. Mazer,

I am writing to provide background information on the proposed transit improvements discussed between Greater Portland Metro and the Initiative for Digital Engineering and Life Sciences (IDEALS) as it relates to the new Roux campus at 1 Bean Pot Circle.

IDEALS engaged with Metro over 2.5 years ago, prior to the final determination of its proposed site in East Deering, to discuss how the site could be feasible from a transportation perspective, with transit as a key piece to the transportation demand management puzzle. Since this initial engagement, Metro and IDEALS have met regularly to discuss transit solutions for this site, and have come to several broad agreements, including the following:

1. The Roux Institute partners with Metro on an institutional pass program, similar to Metro's partnership with the University of Southern Maine, Portland Public Schools, and others. This program allows Roux students and faculty to board any Metro, South Portland Bus Service, or BSOOB Transit bus at any time of day, at no cost to the passenger; the Roux Institute pays for the cost of the trip at a discounted rate. This program has already been successful, with over 2,000 monthly boardings in 2024 so far.
2. An extension of an existing transit route (Route 5, which currently runs between downtown Portland and the Maine Mall) to serve the Roux site directly at 30-minute peak weekday frequency, along with evening and weekend service. This new service would be extended from its current terminus in downtown Portland, along Congress Street and Washington Avenue, increasing access to transit along the entire route, not just the Roux Institute. This extension will be funded by fare revenue generated by Roux passholder boardings, as well as a share of the general public boarding along the route's extension along Congress Street and Washington Avenue.
3. The Roux will provide a transit stop at the "front door" to the new campus at 1 Bean Pot Circle, along with shelter amenities, to make transit a convenient option for people accessing and egressing the campus. The transit stop will be more proximate to the academic spaces than most parking spaces. The Roux has also committed to allowing Metro bus operators the use of restroom facilities on campus, which is highly advantageous for Metro as bus stops at the end of a bus route are ideal for bus operator breaks.

www.gpmetro.org
114 Valley St. • Portland, ME • 04102
Phone: 207-774-0351 Fax: 207-774-6241

In addition to the extension of Route 5 bus service to campus, Metro operates Route 7 service along Veranda Street, which will provide direct service between Falmouth and the Greater Portland Jetport beginning on June 16, 2024. Route 7 provides another alternative for Roux-related passengers to access the transit system. While the current intent is to have Route 7 stay on Veranda Street, it could be brought into campus as a mid-route deviation if needed. Even without deviating into the Roux site, improved pedestrian accommodations on Sherwood Street will allow the Route 7 to be quite accessible for most students and faculty who are able to walk from campus to Veranda Street.

As you know, Greater Portland Metro is a quasi-governmental transit agency, governed by a Board made up of representatives from its member municipalities: Portland, Westbrook, Falmouth, Gorham, Freeport, Brunswick, and Yarmouth. We provide public transit within these communities, plus South Portland. Our annual ridership was about 2.1 million in 2019, and is expected to exceed pre-pandemic levels in 2025.

We are confident that IDEALS and the Roux Institute are committed to making transit an attractive and competitive option for accessing their new campus in East Deering. We look forward to working with them as the campus plan progresses.

Thank you,

Mike Tremblay, Director of Transit Development
Greater Portland Metro

CC:
Portland Planning staff
Portland Planning Board

www.gpmetro.org
114 Valley St. • Portland, ME • 04102
Phone: 207-774-0351 Fax: 207-774-6241

April 18, 2024

Owner: Michael Cochrane
Initiative for Digital Engineering and
Life Sciences (IDEALS)
100 Commercial Street, Unit 400
Portland, ME 04101

Applicant: Greg Russell
Bruner Cott and Associates, Inc.
130 Prospect Street
Cambridge, MA 02139

Re: 1 Beanpot Circle – Rehabilitation and Interpretive Elements HPBR-002723-2023

Michael Cochrane and Greg Russell

The Historic Preservation Board has approved your application for a Certificate of Appropriateness for Rehabilitation and Interpretive Elements at 1 Beanpot Circle. Approval was based on the application materials submitted for the public hearing held on April 17, 2024, and stamped for approval on April 18, 2024, except as modified by the following conditions:

- That final shop drawings or other plans for the proposed interpretive elements be submitted to Historic Preservation Staff for review as being consistent with the materials presented at the Public Hearing, and
- That a mock-up of proposed masonry work, (including cleaning, repointing, replacement, patching or other repairs) shall be reviewed and approved by Historic Preservation staff prior to proceeding with the work to ensure that the work is consistent with the historic masonry and will not cause unnecessary damage to historic materials per the Standards for Review of Alterations.

All improvements shall be carried out as shown on the materials submitted for the hearing on April, 17, 2024, and stamped for approval on April 18, 2024, except as to comply with the conditions above. Changes to the approved plans or specifications, and any additional work that may be undertaken must be reviewed and approved by the Historic Preservation program prior to construction, alteration, or demolition. If, during the course of completing the approved work, conditions are encountered which prevent completing the approved work, or which require additional or alternative work, you must apply for and receive a Certificate of Appropriateness or Non-Applicability PRIOR to undertaking additional or alternative work.

This Certificate is granted upon condition that the work authorized herein is commenced within twelve (12) months after the original date of issuance. If the work authorized by this Certificate is not commenced within twelve (12) months after the original date of issuance or if such work is suspended in significant part for a period of one year after the time the work is commenced, such Certificate shall expire and be of no further effect; provided that, for cause, one or more extensions of time for periods not exceeding ninety (90) days each may be allowed in writing by the Department.

Sincerely,



Evan R. Schueckler
Historic Preservation Program Manager

Applicant:	Northeastern University 360 Huntington Ave, 216-201 Boston, MA 02115
Project Location:	Sherwood St, Portland, Me Portland Tax Map #240, Lot #U12-002
Project:	The Roux Institute
Identification #:	Reg. 01-XXXXX-A-N
Permit Category:	200+ PCE's
Traffic Engineer:	VHB Attn: Jenn Conley, PE

Pursuant to the provision of 23 M.R.S.A. § 704-A and Chapter 305 of the MaineDOT's Regulations, the Maine Department of Transportation has considered the application of the Roux Institute at Northeastern University with supportive data, agency review and other related materials on file.

PROJECT DESCRIPTION

The proposed Roux Institute will be anchored by a 240,000 square foot Learning, Research and Collaboration building, a 58,000 square foot Bean building, an 8,000 square foot café, a 7,500 square foot day care facility for up to 50 children and a 610 space parking structure with 14 exterior at grade spaces.

Access to the site will be provided through Sherwood St.

The proposed buildings are estimated to generate a total of 358 AM and 825 PM Peak hour trips. Total adjusted trips based on shared trips, multi-modal and transportation Demand management techniques is 237 Am trips and 521 PM trips

Findings

Based on a review of the files and related information, MaineDOT approves the Traffic Movement Permit Application of the Roux institute at Northeastern University subject to the following conditions:

MITIGATION

The mitigation is intended to describe that conceptually shown on the following plans provided by VHB in an email on 5/16/24:

1. Baxter-Bates concept plan 5/16/2024
2. Vernada-Sherwood Raised Intersection Plan 6/4/24
3. Veranda-Arcadia concept Plan 5/16/24
4. Veranda/Dalton Concept Plan 5/16/24
5. Veranda-Pembroke Concept Pan 6/7/24
6. Veranda-Kensington Concept plan 5/16/24
7. Washington-Presumpscot Concept Plan 5/16/24

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8. Washington-Veranda Concept Plan 5/16/24
9. Washington Ave Corridor Plan 5/16/24

If the descriptions contained herein conflict with the plans, these descriptions shall take precedence over the plans. Not all the mitigation discussed herein may be shown on those or any plan. The following mitigation shall be constructed or implemented to MaineDOT's satisfaction as described below, unless otherwise approved by MaineDOT.

Pedestrian Mitigation Requirements

All Pedestrian facilities, signs and markings shall meet ADA criteria, MUTCD standards, City of Portland requirements, and the MaineDOT crosswalk policy.

On-Site Mitigation

Entrance

Access is to be provided via Sherwood St:

Pedestrian Accommodations

Internal to the site, provide sidewalks and crosswalks interconnecting all buildings and parking areas throughout the development.

General Requirements for All Entrances

The entrance shall provide overhead illumination, if not existing, to illuminate the intersections per MaineDOT standards at a minimum. Overhead lighting shall have an average of 0.6 to 1.0 foot candles, with the maximum to minimum lighting ratio of not more than 10:1 and an average to minimum light level of not more than 4:1.

Off-Site Mitigation

Signing
All signing shall be ASTM D4956 Type XI reflective sheeting and meeting MUTCD requirements. All flashing LED signs required shall be solar powered and have the LED's imbedded into the sign and not a retro-fitted ring on the outside of the sign.

Intersection of Sherwood St and Veranda St
Construct a raised intersection that incorporates both offset legs of Sherwood St and all crosswalks serving the intersection. Raised intersection markings shall meet MUTCD requirements and shall be comprised of a durable product (preformed thermoplastic, poly-urea, epoxy based, etc). The raised intersection shall also be fitted with appropriate MUTCD signage. A refuge island shall be constructed on the north side Veranda pedestrian crossing to act as traffic calming and provide a two-part crossing for pedestrians. Two smaller raised islands shall be placed on the raised intersection of Sherwood and Veranda St. to channel turning traffic into and out of Sherwood St.

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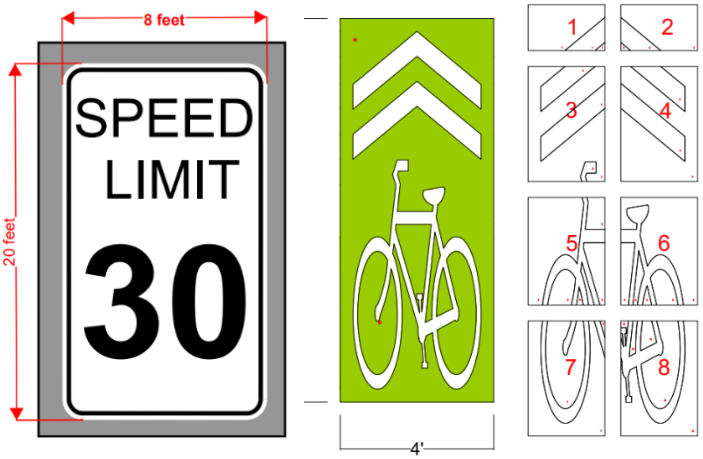
Intersection of Pembroke St and Veranda St
Install a high visibility crosswalk on either the north or south side of the intersection. The high visibility crosswalks shall have proper MUTCD markings and signage. Markings shall be comprised of a durable product (preformed thermoplastic, poly-urea, epoxy based, etc) and be supplemented by a thermoplastic pedestrian symbol and thermoplastic yield bar on either side of the crosswalk.as well as the R1-5 MUTCD compliant signage . The Veranda St pedestrian crossing shall have a solar powered Rectangular Rapid Flashing Beacon (RRFB) installed on each side of the crosswalk. MaineDOT's RRFB standard is double sided pedestrian signs and RRFB flashers with push buttons.

Intersection of Dalton St and Veranda St.
Install a speed table on the north or south side of the intersection. Speed table installation shall have proper MUTCD markings and signage. Markings shall be comprised of a durable product (preformed thermoplastic, poly-urea, epoxy based, etc).

Intersection of Veranda St and Kensington St
Install a dynamic vehicle detection sign or blank-out sign (minimum 36" x 36") to detect northbound Veranda St. vehicles to provide warning to motorists on Kensington St that traffic is approaching from the left. Provide MUTCD compliant signage.

Intersection of Veranda St/Arcadia/Fairfield St
Install a raised crosswalk on either the north or south side of the intersection. Raised crosswalks shall have proper MUTCD markings and signage. Markings shall be comprised of a durable product (preformed thermoplastic, poly-urea, epoxy based, etc).

Washington Ave between Veranda St and Presumpscot St.
Install preformed thermoplastic bicycle and sharrow symbols every 300 feet in both directions. Also, install thermoplastic 30 mph speed limit shields on the pavement in each lane. Install 125 feet of green bike lane in the left portion of the right turn lane for through bikes at the intersection with Presumpscot St. Install durable pavement markings at the intersections of Veranda and Presumpscot St. Install proper MUTCD compliant signage for bicycles (ie "Motorist Share the Road").



Veranda St
Install preformed thermoplastic bicycle and sharrow symbols every 300 feet in both directions between Washington Avenue and Wordsworth Street. Also, install thermoplastic **25 mph** speed limit shields on the pavement in each lane as well as two solar powered flashing LED **25 MPH** speed limit signs (30" x 36") at each end of Veranda St. (EB at Pembroke St, WB at Arcadia St.)

Intersection of Washington and Veranda St
Change SB Veranda St approach to not allow left turns onto the I-295 on Ramp. Install bi-modal "No Right Turn on Red" and "Turning Vehicle Yield to Pedestrian" blank-out signs on all appropriate approaches. Install a lighted "No Left Turn" sign on the mast arm to disallow left turns. Install durable lane line markings on all approaches. Install two stage left turn markings on for the left turn

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from Washington to Veranda and the left turn from Bates onto Washington. Install Leading Pedestrian Intervals on the pedestrian crossings. Install new Mio-Vision traffic signal detection. Install non-intrusive queue detection on the NB off-ramp (approximately 850 from the stop bar) to create pre-emption at the signal for ramp traffic if traffic queues starts backing towards the interstate.

Intersection Washington Ave and Presumpscot St
Install and additional 3 section signal head for SB Presumpscot St. Narrow up Presumpscot St to width needed for 2 SB lanes (10 ft wide left turn lane and a 10.5 foot wide through right lane). Bump-out out curb on the radius (design for school bus) to shorten pedestrian crossings across the North side of Presumpscot St. and the west side of Washington Ave.

Intersection of Bates St and Baxter Blvd.
Convert intersection to an all-way stop, with only one travel lane in each direction. Solar Powered flashing LED Stop signs (36 inch) shall be placed to both sides of each stop approach at the intersection and one flashing LED Stop Ahead sign (36" x 36"). Two flashing LED stop ahead (36 Inch) signs shall be placed on each side of the road on EB Baxter Blvd. approaching Bates St. The SB off-ramp shall have two flashing stop ahead signs placed 350 feet back from the flashing stop signs. Flashing solar powered LED chevron signs (30' x 36") shall be placed on the outside of the curve spaced at 100 feet apart. The inside of the I-295 off-ramp curve shall be cleared to the toe of slope. Camera detection shall be placed at the I-295 SB off -Ramp stop bar to trigger a Blank-out warning sign (36" x 36") on I-295 ramp deceleration lane warning I-295 traffic of "Stopped Traffic Ahead".

Sherwood St (East)
Install pedestrian facilities on both sides of Sherwood St. Install pedestrian level lighting along the sidewalk and under the I-295 overpass.

Lighting
Lighting shall be designed using MaineDOT's new lighting standard and installed at all raised crosswalks, raised intersections and speed tables being constructed as part of this permit. Lighting shall be installed at the crosswalks at Bates and Baxter Blvd. Mid-block crosswalk lighting shall be Acuity's Cyclone crosswalk optics or approved equal.

Overall Requirements

A. Provide all necessary auxiliary signs, striping and pavement markings to implement the improvements described herein according to MaineDOT and/or National standards. All Flashing LED Stop, Stop Ahd and blank-out signs shall be a minimum of 36" x 36". Flashing LED chevrons shall be a minimum of 30" x 36".

B. All plantings and signs (existing and/or proposed; permanent and/or temporary) shall be placed and maintained such that they do not block available sight distances and do not violate the State's "Installations and Obstructions" law. No signage, plantings or structures shall be allowed within the "clear zone" if they constitute a deadly fixed object as determined by MaineDOT. All signs shall meet MRSA Title 23, Chapter 21, Section 1914: "On-Premise Signs".

C. If any of the supporting data or representations for which this permit is based changes in any way or is found to be incorrect / inaccurate, the applicant shall request in writing from MaineDOT a decision of what impacts those changes will have on the permit. The applicant will then be required to

DRAFT

submit those changes for review and approval and additional mitigation as a result of those changes may be required at the expense of the applicant.

D. If the proposed project affects the State Highway and drainage systems and requires improvement to that system, the applicant must obtain approval of the design plans and coordinate work through MaineDOT's Region Engineer in Scarborough, who can be reached by phone at (207) 885-7000.

E. This permit will lapse 5 years from the date signed for all development for which building permits have not been issued. This permit will lapse 7 years from the date signed for all development for which occupancy permits have not been issued.

By:

_____
Stephen Landry, P.E.
State Traffic Engineer

Date: _____

DRAFT

1. PROJECT SUMMARY

On behalf of Northeastern University (Applicant) and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), Woodard & Curran is pleased to submit this Major Site Plan Application to develop Phase 1 of the Roux Institute at Northeastern University campus. A letter authorizing IDEALS and Woodard & Curran to act as the agent on behalf of the Applicant is attached to this Section.

1.1 Background

The Roux Institute at Northeastern University is a graduate-level education, entrepreneurialism and research center designed to build talent, spur innovation, and drive economic growth in Portland, the state of Maine, and the Northeast. The Institute launched in 2020 and is temporarily located in leased space in Portland. A permanent campus for the Roux Institute is essential to fulfill its educational and economic potential. Northeastern University seeks to create a campus that allows for continued growth of the education, research, entrepreneurial, and collaborative programs of the Roux Institute while providing space to support those programs and serve the community.

After completing an exhaustive four-year search both on and off the Portland peninsula and its surrounding area, IDEALS acquired land formerly occupied by the B&M Baked Beans facility along the Portland waterfront. IDEALS is currently in the process of transferring the property to Northeastern University, and a copy of the Purchase and Sale Agreement is included in Section 4. The conveyance of the property will occur subsequent to Site Plan approval and prior to application for a building permit.

As described in more detail herein, the City Council approved The Roux Institute at Northeastern University's Institutional Overlay Zone on February 6, 2023. This Site Plan Application is the first step in carrying out the goals set forth in the Institutional Development Plan and Regulatory Framework.

1.2 Campus Vision

Northeastern University's campus will integrate graduate education in technology and science with groundbreaking research and a wide range of collaborations to spark innovation and economic development. The campus is being designed at a scale that will facilitate learning, collaboration, and research breakthroughs and innovations, attract start-up businesses, and strengthen existing Maine businesses and institutions.

Creation of a new campus provides the opportunity to establish a people-oriented space right from the start. The campus interior will prioritize people over cars by creating a pedestrian-friendly landscape supported by multi-modal programs that provide incentives for alternative transportation options. The campus will improve site resilience and sustainability by replacing much of the existing pavement and rooftops with green space, adopting resilient approaches along the coastline, and incorporating sustainable building practices.

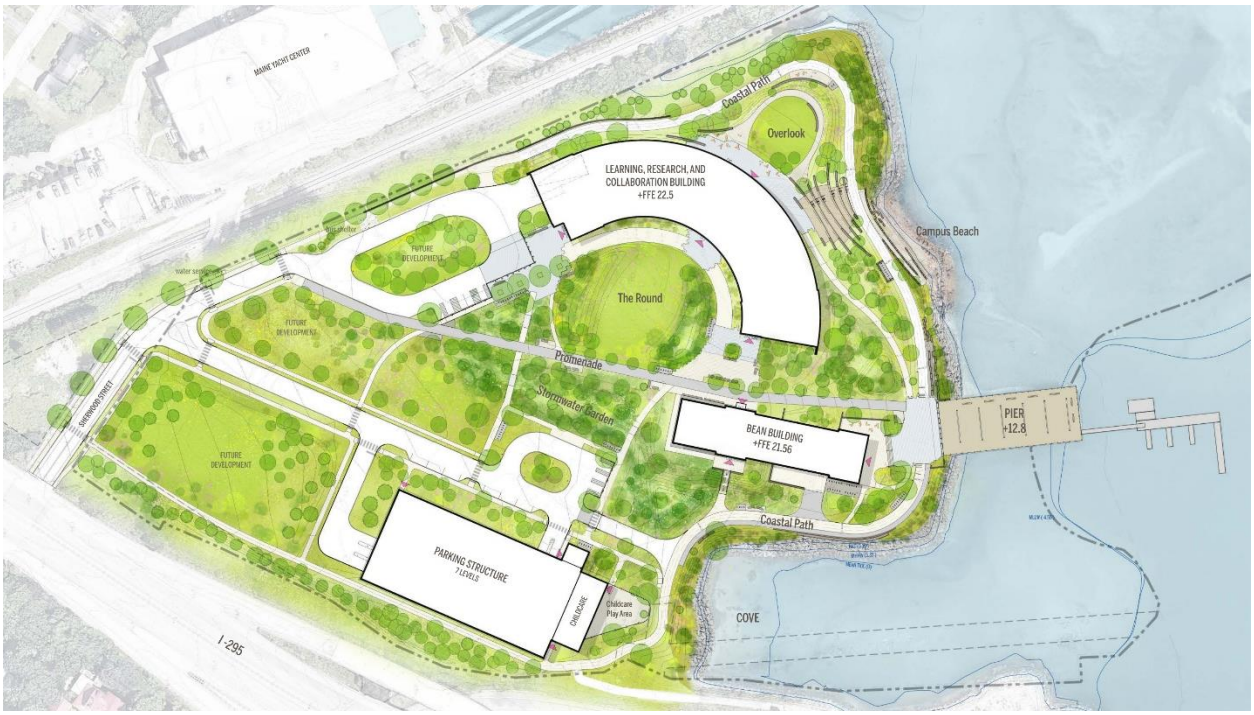


Figure 1-1: Rendered Site Plan

1.3 Rezoning

In 2022, Northeastern University and IDEALS began the process to rezone the site with an Institutional Overlay Zone (IOZ) for the campus at 1 Bean Pot Circle in Portland, Maine (the Site). The IOZ rezoning process involved the development of a long-range plan for the institution, known as an Institutional Development Plan (IDP), that informs the eligible institution's Regulatory Framework, which codifies supplemental zoning regulations to the base zoning district. The Regulatory Framework includes standards related to dimensions, design, transportation and parking, environment, neighborhood integration and engagement, mitigation of future impacts, and on-going monitoring. In addition to zoning amendments associated with the IOZ designation, IDEALS simultaneously sought a zoning map amendment to change the underlying zone for the Site to B-5 Mixed-Use Business. The City of Portland Planning Board approved Northeastern University's Campus IDP on November 22, 2022, and the Portland City Council subsequently and unanimously approved the zoning map and text amendments to establish the IOZ regulatory framework and change the underlying zone to B-5 Mixed-Use Business on February 6, 2023.

The extensive IDP development review process allowed Northeastern University and IDEALS to memorialize the long-term strategic plan for the Campus in consultation with the Portland community at the very outset of development. As required by the approved regulatory framework, regulatory requirements associated with the IOZ will be addressed during the Site Plan Application process for each phase of development.

1.4 Historic Preservation

The Site was occupied by residences and a lobster cannery prior to 1913, when Burnham & Morrill (B&M) relocated its food manufacturing operations to the Site from Franklin Street. Shortly thereafter, the flagship

cannery building (Bean Building) was constructed, as well as the adjacent codfish building on the pier. The Site was further improved with buildings and parking to support operations. Due to its industrial use, the Site is surrounded by security fencing, and the interior and waterfront have historically been inaccessible to the public. Canning operations ceased in 2021.

In 2022, IDEALS submitted a nomination to the City's Historic Preservation Board to designate the Bean Building as a local landmark. The five-story 1913 Bean Building was designated as a landmark by the City Council on October 17, 2022. During the Historic Preservation process, it was determined that the existing Codfish Building and pier were unsalvageable and will be demolished upon approvals from the City of Portland, Board of Harbor Commission, Maine Department of Environmental Protection and Army Corps of Engineers. This Site Plan Application proposes construction of a new pier in its place.

1.5 Existing Site

The Site includes approximately 13 acres above mean higher high water (MHHW) line as well as an adjacent 11 acres of submerged lands. The majority of the Site is developed land, with limited areas of natural vegetation. Approximately 9 acres of land above the mean higher high water line are impervious (paved areas, building roofs, foundations, etc.). The remaining 4 acres of permeable area include lawn and approximately half an acre of vegetated non-lawn area adjacent to the rail corridor abutting the Site to the east.

On May 23, 2023, IDEALS received a demolition permit from the City and commenced demolition of all existing buildings on the Site, retaining only the Bean Building and the Codfish Building.

The Site is located within Portland's East Deering neighborhood, at the end of Sherwood Street, adjacent to Maine Yacht Services and near a residential area of single and multi-family homes (three-story apartment buildings) and a commercial node featuring restaurants, bars, automobile mechanics, and offices. While proximate to these areas, the Site is remarkably buffered; I-295 to the west, state-owned vacant parcels to the north, a disused rail corridor and marine business to the east, and Casco Bay to the south collectively surround the property. Access to the Site from Veranda Street is via Sherwood Street, through a 40-foot-wide highway underpass.

1.6 Proposed Project Description – Phase 1

Phase 1 includes construction of a 238,000-sf Learning, Research & Collaboration Building, renovation of the 58,000-sf Bean Building to create a business incubator space, construction of a 234,450-sf parking garage (692 vehicular and 66 bike spaces), development of a 7,500-sf childcare facility, replacement of the pier, development of a coastal path, and other site improvements. Meaningful public open space will be established in this first phase to ensure public access to this signature waterfront amenity.

1.7 Attachments

- Agent Letter
- Location Map

Northeastern

October 25, 2023

Sam Reiche
Chief Operating Officer and Head of Real Estate
Initiative for Digital Engineering and Life Sciences (IDEALS)
100 Commercial Street, Suite 40
Portland, Maine 04101

Dear Sam:

Northeastern University is preparing plans for the first phase of development at the Roux Institute, located at 1 Bean Pot Circle in Portland Maine. Northeastern University is authorizing the Initiative for Digital Engineering and Life Sciences (IDEALS) and Woodard & Curran, Inc., to assist in the preparation of land-use permit applications for this project. IDEALS and Woodard & Curran are authorized as our agent to represent Northeastern University in addressing questions on the plans and applications for this project.

Sincerely,

Thomas E. Nedell,
Senior Vice President for Finance and Treasurer

Office of the Senior Vice President Finance

177 Huntington Ave.
360 Huntington Ave.
Boston, MA 02115

617.373.2240
fax 617.373.4728

finance.northeastern.edu



Woodard & Curran	Client Info: IDEALS ROUX INSTITUTE PHASE 1 1 BEAN POT CIRCLE PORTLAND, ME 04103	Job No: 0233482.00 Date: SEPT 2023 Scale: 1" = 24,000' Des by: JM Drn by: JM Chk by: AL	Drawing Title SITE LOCATION MAP	Drawing Number 0233482.00 Location Map

12 Mountfort Street
Portland, Maine 04101
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T 207.774.2112
F 207.774.6635

February 5, 2024

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

Re: Response to City Staff Comments –Roux Institute at Northeastern University
Project ID PL-002724-2023

Dear Zach:

Thank you for coordinating the review of the Major Site Plan and Site Location of Development (SLOD) Application for the Roux Institute at Northeastern University. The following document provides written responses to the city review comments. Similar to the comments received, our responses are provided in tables in the following sections:

- Attachment 1. Site Plan Review Comment Responses
- Attachment 2. Zoning Review Comment Responses
- Attachment 3. Peer Review Comment Responses
- Attachment 4. Sustainability Charter Comment Responses

The following supporting documents have been uploaded to ProjectDox:

- Neighborhood Meeting Summary
- Community Advisory Group Meeting Summary
- Construction Management Plan, revised per comments received.
- Full size drawings of the following Figures:
- Figure 3-14 Planting Zone Plan
- Figure 3-17 Site Circulation Plan, revised per comments received.
- Figure 3-18 Areas of Public Open Space Plan, revised per comments received.
- Figure 3-24 Codfish Building Interpretive Elements
- Figure 5-1 Bike Amenities and Circulation
- Figure 5-2 Emergency Access Routes
- Figure 5-3 Bean Building Service Access
- Figure 5-4: Exterior Bicycle Parking

Also attached, please find updated floor plans for the proposed parking garage. These plans have been revised to eliminate the lowest level of vehicular parking spaces, thereby reducing the total parking on site from 706 to 641. The revised parking supply is consistent with projected parking demand at project occupancy and the resulting mode shares at full occupancy are in alignment with the mode shares outlined in the IDP.

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3708 or dcameron@woodardcurran.com.

Sincerely,

WOODARD & CURRAN, INC.



Denise Cameron, P.E.
Project Manager

cc: Sam Reiche, IDEALS

1. ATTACHMENT 1: SITE PLAN REVIEW COMMENT RESPONSES

Site Plan Review Standards (Sec. 14.6)		
Transportation Standards (Sec. 14.6.1)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Impact on Surrounding Street Systems	Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	Acknowledged. No action at this time.
Access and Circulation	Update application materials to satisfy comments provided in Attachment 3. Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	See Attachment 3 table for response.
Public Transit Access	No updates required.	This standard has been met.
Parking	Submit a parking demand analysis that provides evidence supporting the proposed parking supply. As necessary, update the TDM plan for any changes resulting from the parking demand analysis.	Parking demand is calculated hour-by-hour based on projected arrivals and departures. Because there are no components of this program that would create overnight parking (i.e., residential units or hotel rooms), parking demand is zero at the beginning of each day. As detailed in the TMP, time-of-day patterns for graduate student, affiliated user, special event, and some faculty

		trips were developed based on scheduling expectations and observed patterns at the current Fore Street campus. For these users, parking demand is calculated as the balance of arrivals and departures multiplied by the vehicle mode share. For other uses, standard rates from the Institute of Transportation Engineers Parking Generation Manual were applied. These are provided as a peak parking demand and the percent of peak demand at each hour of the day. Mode shares and internal trip reductions were applied using identical factors as for trips. At opening year, parking demand peaks at 601 spaces. Were auto mode share to remain at the TMP levels (80% for students, 90% for all others), peak demand would increase to 881 at completion of the TMP program. To be conservative, trip generation was calculated this way, however this level of demand exceeds parking supply. For this reason, the TDM plan specifies a program of strategies to reduce vehicle mode share below the levels in the TMP. The university will need to progress towards the mode shares in the TDM plan to keep demand within the site's parking constraints.
Transportation Demand Management	Update TDM plan to satisfy comments in Attachment 3.	See Attachment 3 table for response.
Environmental Quality Standards (Sec. 14.6.2)		

Standard	*Updates Requested by City Staff*	*Comment Response Provided by Applicant*
Preservation of Significant Natural Features	Update the site plan set and survey to identify all significant natural features on and immediately adjacent to the site. Updates should specify the approximate boundaries of habitats of endangered species.	Acknowledged. These updates will be included in a subsequent drawing submission.
Landscape Preservation	Submit a tree survey for the site that meets the standards of §4.3.1. of the Technical Manual.	A survey of existing trees 10" DBH or higher is being prepared and will be provided in a subsequent submission.
Site Landscaping and Buffers	Update application materials to provide 8-12 street trees within the City right-of-way or through an alternative strategy meeting the standards of §4.6.4. of the Technical Manual. If alternatives are proposed, alternative street tree planting strategies are subject to the review of the City Arborist and may require additional documentation for future preservation/evidence that proposed planting sites are unlikely to be redeveloped in the near future.	The team is working to designate street trees on the plan in accordance with city requirements. We will also provide substitutions for all maple trees, as requested. This plan will be provided in a subsequent submission.
Water Quality, Stormwater Management and Erosion Control	Update the application to satisfy comments from Wright Pierce.	See Attachment 3 for responses to Wright Pierce comments.

Public Infrastructure and Community Safety Standards (Sec. 14.6.3)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Consistency with City Master Plans	No updates required.	This standard has been met.
Public Safety and Fire Prevention	Email the Department of Public Works to begin the E-911 address process, with Zach Powell copied on the email. The applicant team shall work with the Department of Public Works to identify any additional steps that need to be taken before site plan approval.	The applicant will initiate E-911 address process prior to planning board hearing.
	Update architectural drawings to demonstrate how the western portion of the perimeter access loop is actively integrated into the overall campus design and how the site design enhances the overall experience of using the perimeter access loop for cyclists and pedestrians.	The architectural/landscape drawings are being updated to widen the perimeter shared path to a minimum of 12 feet. A typical section of the revised perimeter path has been added to the attached Figure 3-17: Site Circulation Plan. The architectural drawings are being updated to add screening to the first two levels of the Structured Parking building to enhance pedestrian and cyclists' experience. These updated architectural and landscape drawings will be provided as part of a subsequent submission.
Public Utilities	Submit ability to serve letters from utilities when available and provide any additional information requested by the Portland Water District, as requested.	A request for ability to serve letters has been provided to Portland Water District and the Department of Public Works. The Applicant team has also been actively working with these utilities to review the proposed project design.

		The ability to serve documentation will be provided upon receipt.
Site Design Standards (Sec. 14.6.4)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Massing, Ventilation and Wind Impact	No updates required.	This standard has been met.
Shadow	No updates required.	This standard has been met.
Snow and Ice Loading	No updates required.	This standard has been met.
View Corridors	No updates required.	This standard has been met.
Historic Resources	Submit an updated copy of the site plan set that shows the limits of the designation boundary.	The plan set will be revised to show the limits of the designation boundary. Revisions are in progress and will be provided as part of a subsequent submission.
	Update application materials to satisfy Board and Staff comments from the December 6, 2023 Historic Preservation Board Meeting. Await comments from the Historic Preservation Board and Historic Preservation Staff.	Application materials will be updated in response to Staff comments from 12/6/2023 HP Board Meeting and any subsequent comments from HP Board and HP Staff. An updated set of documents is expected to be issued around February 12, 2024 for HP Staff and Board review.

Exterior Lighting	Update the application to include two street lights that meet the standards of §10.2 and Figure X-1 of the City's Technical Manual or seek waivers.	The applicant assumes the two streetlights requested are for Sherwood Street. Clarification will be provided as part of a subsequent submission.
	Update application to have site lighting meet the standards of §12.3 of the Technical Manual.	The applicant used Section 12.3 of the Technical Manual as the basis of design. The lighting design and photometric plans are currently under review and updates will be provided as part of a subsequent submission, if required.
	Update photometric plans to provide average illumination, uniformity ratio, and maximum illuminance at ground level around the Structured parking & preschool facility building.	The lighting set will be updated as requested and will be provided as part of a subsequent submission.
	Confirm the CCT that will be used for each proposed luminaire.	Confirmed. All site lighting will be LED and shall not exceed 3000K Correlated Color Temperature (CCT). The applicant will clarify on drawings as part of a subsequent submission
	Add information on luminaire E11 to the Luminaire Schedule table.	The lighting Luminaire Schedule table will be updated to add information on luminaire E11 and will be provided as part of a subsequent submission
Noise and Vibration	No updates required.	This standard has been met.
Signage and Wayfinding	No updates required.	This standard has been met.

Design Standards	Please refer to Roux IOZ design comments in the Zoning worksheet.	Design review comment responses are provided in Attachment 2.

2. ATTACHMENT 2: ZONING REVIEW COMMENT RESPONSES

Zoning Use Review (Article 6)		
Zoning Performance Standards (Sec. 6.8)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
§6.8.8(A)	Update architectural drawings to include screening for the first two levels of the Structured parking & preschool facility building.	The architectural drawings are being updated to add screening to the first two levels of the Structured Parking building and will be provided as part of a subsequent submission.
Zoning Dimensional Review (Article 7)		
Dimensional Standards (Table 7-A – Table 7-H)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Structure height	No updates required.	This standard has been met.
Supplemental Dimensional Standards (Sec. 7.4)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
7.4.3(B)(2)(c)	No updates required.	This standard has been met.

Roux IOZ Standards (§8.5.7)		
Applicability Standards (§8.5.7(A))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Applicability	Revise application materials to satisfy requested updates identified in Attachment 3.	See Attachment 3 table for response.
Phasing and Monitoring (§8.5.7(B))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Monitoring and Amendments	Submit an updated copy of the IDP incorporating the proposed changes identified in Attachment 5.	The IDP will be updated as requested and will be provided as part of a subsequent submission
Public Space	No updates required.	This standard has been met.
Minor & Major Amendments	No updates required.	This standard has been met.
Uses (§8.5.7(C))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***

Overview of Uses	No updates required.	This standard has been met.
Community Engagement and Connectivity	Submit a narrative and/or figures that demonstrate how the Sherwood Street connection will achieve connectivity and community engagement with the surrounding neighborhood.	The applicant has proposed to reconstruct Sherwood Street between Veranda St and the site driveway. The work will include a shared use path along the north side of Sherwood Street and a sidewalk along the south side of Sherwood Street, providing direct connections to the neighborhood and the signed bike route on Veranda Street. The applicant is invested in maximizing nonmotorized connectivity, and the site is ready for future connections as they become available. The landscape drawings are being updated to widen the perimeter shared path to a minimum of 12 feet. A typical section of the revised perimeter path has been added to the attached Figure 3-17: Site Circulation Plan. Lighting, pavement markings, and wayfinding will be provided to support community connectivity.
Ground-floor Uses	No updates required.	This standard has been met.
Hotel Use Standards	No updates required.	This standard has been met.
Dimensional Requirements (§8.5.7(D))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***

Applicability	Update the application to comply with zoning performance standards and IOZ dimensional requirements.	See responses below.
Minimum and Maximum Street wall heights	No updates required.	This standard has been met.
Stepbacks	No updates required.	This standard has been met.
Building Length	No updates required.	This standard has been met.
Transitions and buffers	Update architectural drawings to include screening of all structured parking levels on the western façade.	The architectural drawings are being updated to add screening to the first two levels of the Structured Parking building and will be provided as part of a subsequent submission.
Transportation (§8.5.7(E))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Transportation Demand Management	Update the TDM plan to establish a framework for all envisioned phases of development, including a data collection plan. Staff encourages establishing a plan differentiating parking passes by types of garage users (e.g., Staff vs. student; resident vs. hotel guest vs. off-site visitor), as well as installing permanent bicycle & pedestrian counters at planned &	The TDM has been developed to establish TDM measures appropriate for each of the user types at the site rather than by building. This sets the framework for incorporating the anticipated TDM approaches for future phases. Measures have been developed to encourage the use of the full spectrum of alternative modes and are scalable to continue to be expanded as the site and other opportunities are developed.

	potential shared-use entrances to the site.	
Traffic Movement Permit	Update application to provide materials requested in Attachment 3 and continue to coordinate with MaineDOT & City staff for future comments & requested revisions.	See Attachment 3 table for response.
Bicycle and pedestrian access and safety	Submit an updated Transportation, Access, and Circulation Plan as a separate document to include pedestrian facilities, as well as contemplated connection points to the rail trail and Tukey's Bridge. Contemplate connections can be differentiated with a dashed line and for Tukey's Bridge, do not need to provide a finalized alignment.	See Attached Figure 3-17: Site Circulation Plan.
	Update application materials to address comments from Bruce Hyman regarding the proposed design of Sherwood Street.	See Attachment 3 table for response.
	Update floor plans for the Structured parking & preschool facility building to provide additional detail on interior connections between building	The Structured Parking and Daycare facility are separated and are not connected. The site plan drawing is being updated to further

	uses, and ingress/egress points for pedestrians.	illustrate ingress/egress access for pedestrians and will be provided as part of a subsequent submission.
	Update the application to include a minimum perimeter access loop width of 20 feet and a minimum 12-foot width for all other pedestrian facilities.	The design team has reviewed the width of pathways and is currently revising the plans to widen sections of the perimeter path to a consistent 12 feet. A cross section of the perimeter path has been added to Figure 3-17: Site Circulation Plan, illustrating approach for pavement markings to accommodate shared use. This revised width meets or exceeds other existing trail networks within the City of Portland and will be suitable for the anticipated bike/ped volume. Increasing all pedestrian facilities to 12 feet and perimeter path to 20 feet is not warranted given anticipated use levels. The suggested widening would result in an additional 0.7 acres of impervious surface. Where possible, we are seeking to reduce impervious area to improve quality of our water resources.
Parking	Updated application materials to include a parking ratio based on the parking analysis.	Excluding the parking structure, total planned building area is 303,600 square feet. This equates to a peak parking demand of 2.9 spaces per thousand square feet. For comparison, the standard Institute of Transportation Engineers rate for a general office building is 2.39 spaces per thousand square feet. While the site includes a large office component, classrooms are a more person-intensive use of space. The academic uses drive parking demand somewhat higher than a pure office development on this site.

	Identify where the estimated parking demand of 881 spaces for 2032 is in the TMP application.	This is discussed beginning on page 9 of Chapter 6 of the TMP Application.
Circulation	Update the application to include at least a 20-foot wide shared-use path for the entirety of the perimeter access loop.	See above comment response *§8.5.7(E) Transportation: Bicycle and pedestrian access and safe*
Environment (§8.5.7(F))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Open Space	Submit a site plan sheet that shows the proposed public open space with the total amount of open space (in acreage).	This information has been added to the attached Figure 3-18 Areas of Public Open Space Plan
	Submit a draft public access easement for the perimeter access loop and buffer around the loop for review by the Planning Board and Corporation Counsel.	We will provide a draft public easement to Corporation Counsel, under separate cover. Figure 3-18 Areas of Public Open Space has been revised to extend the public access easement along the full length of the perimeter loop.
Sustainability and Resilience Charter	Update application materials to respond to the comments in Attachment 4.	See Attachment 4 table for response.

Lighting	Submit interior lighting plans, sequence of operations, and control details for the Cannery Building and the Structured parking & preschool facility building will be required to confirm compliance with ANSI/ASHRAE/IES Standard 90.1-2022.	The Structured Parking lighting set demonstrates compliance with ANSI/ASHRAE/IES Standard 90.1-2022 and will be provided as part of a subsequent submission. The Bean Building and Daycare facility are currently Shell+Core only. Compliant lighting plans will be provided in future building permit submissions once the 'fit out' designs of the Bean Building and Daycare facility are completed. "
Design Flood Elevation (DFE)	Submit the FFE for the preschool facility.	The FFE elevation of the daycare is 16. This FFE elevation will be added to the plans of the Daycare Center and will be provided as part of a subsequent submission.
Shoreline Stabilization & Natural Resource Impacts	No updates requested.	No action required at this time.
Bird-Safe Design	Update architectural drawings for the Learning and Research Center to clarify how the proposed laminated glass fins identified as GL-C1 will include a bird-safe treatment/design with American Bird Conservancy and Cornell Ornithology Lab standards.	The glass fins noted as type GL-C1 are Interior Structural Fins that are perpendicular fins supporting the facade. Accordingly, they pose no risk for bird collision.

	Submit updated detail drawings for the proposed new windows in the Cannery building to demonstrate that the windows or additional treatment to the windows will provide a bird-safe design with American Bird Conservancy and Cornell Ornithology Lab standards.	The applicant will provide more information as it pertains to bird safe glass in the Bean Building's new windows as part of a subsequent submission.
	Submit detail drawings for the proposed windows for the Structured parking & preschool facility building that demonstrate a bird-safe design with American Bird Conservancy and Cornell Ornithology Lab standards.	The applicant will provide a glazing schedule for the Structured Parking and Daycare Building that includes treatment for Bird Safe glass complying with Maine's Legislation LD 670 and conform to the City of Portland's Bird Friendly Ordinance as part of a subsequent submission.
Mitigation Measures (§8.5.7(G))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Off-Site Infrastructure	No updates requested.	No action required at this time.
Natural Resources	No updates requested.	No action required at this time.
Design (§8.5.7(H))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***

Waterfront	Submit a detailed elevation for Vestibule 3 for further Staff review.	The applicant is developing an updated elevation rendering that illustrates the details of Vestibule 3 as part of a subsequent submission.
Cohesive Campus	No updates required.	This standard has been met.
Historic preservation	Submit clarification on the intended function/s of the radius paved surface leading to the western façade of the Cannery Building, including, but not limited to, any ancillary, delivery, or utility functions.	Paved surface leading to the western facade of the Bean Building to be used for deliveries, trash/recycling pickup, and service access. In addition, this location will be used for bicycle access to a covered, indoor bike parking room. A required egress from the Bean Building will also exit onto this paved surface. See orange triangle graphics on "Figure 5-3 – Bean Building Service Access" designating these locations.
Connectivity	Submit a written description of uses along the coastal path in relation to motorized vehicles.	The coastal path around the Roux Campus is not intended for public vehicles other than emergency vehicles such as Ambulance and Fire Apparatus, and periodic service vehicles needing to access the Bean Building and pier. The coastal path is widened in these areas to accommodate emergency vehicles by incorporating a coble stone shoulder, as reflected in Figure 3-17.
	Submit a narrative discussing the need for multiple garage entrances.	The Garage entrances have been designed with consideration of vehicular flow and safety. The primary entrance will be the North entrance while the East entrance will be used primarily as an accessory entrance during peak hours.

Open space	Update the landscape plan to include native coastal shrubs and grasses along the waterfront edge.	An annotated list confirming native status of all plants within the coastal waterfront edge will be provided as part of our subsequent submission.
Sustainable practice	Confirm whether photovoltaic panels will be installed as part of Phase 1 for the Structured parking & preschool facility building.	Photovoltaic panels will not be installed as part of Phase 1 for the Structured Parking. However, infrastructure will be provided for possible installation in the future.
Resilience	Confirm whether a generator(s) will be included for the Structured parking & preschool facility building. If not, submit a narrative on how emergency power generation & elevator egress will be supplied.	The Elevator must be provided with standby power and comply with the emergency operation and signaling device requirements of the MUBC and NFPA 101. Emergency loads such as lighting and fire alarm will be provided by battery backup through either local battery units or central lighting inverter.
Building design	Submit architectural floor plans and proposed FFE for the preschool facility.	The FFE of the daycare will be 16. This FFE elevation will be added to the plans of the Daycare Center and updated architectural floor plans will be provided as part of a subsequent submission.
Building entrances	Update architectural drawings to include additional entrance articulation that supports wayfinding to publicly accessible entrances.	The applicant is developing updated architectural drawings and renderings that illustrate the details of publicly accessible entrances as part of a subsequent submission.
Mitigation of impacts	No updates requested.	No action required at this time.

Neighborhood integration (§8.5.7(l))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Neighborhood engagement	Submit the October 30th Community Advisory Group meeting minutes, including a complete list of Advisory Group members (present and not present) and a summary of discussion topics.	The following is submitted in response to comments and to demonstrate fulfillment of the commitment in the Institutional Development Plan to create and work collaboratively with a Community Advisory Group broadly reflective of interested constituencies in the City of Portland: <u>Community Advisory Group Members as of 10.30.2023</u> Tiffanie Bentley, Interim President, SMCC Sarah Boltz, Teacher, Presumpscot Elementary School Emma Bond, Portland Bike/Ped Advocacy Committee Charlie Collins, Friends of Payson Park Eamonn Dundon, Dir. of Advocacy, Portland Regional Chamber of Commerce Jason Judd, Executive Director, Educate Maine Cherie Juniwiecz, East Deering resident Cheryl Leeman, East Deering Neighborhood Association Adilah Mohammed, The Third Place Sarah Nadeau, Parent, Presumpscot Elementary School Bill Needelman, Waterfront Coordinator, City of Portland Jack Phillips, Executive Director, Portland Parks Conservancy Angie Taylor, Principal, Presumpscot Elementary School Aaron Townsend, Dep. Superintendent, Portland Public Schools Mike Tremblay, Director of Transit Development, Metro Steve Von Vogt, East Deering Neighborhood for Responsible Development Marie Caspard, The Island Institute

		<u>Positions yet to be filled but still in active recruitment:</u>
		Front Street Neighborhood representative
		Portland Housing Authority's Washington Gardens
		Portland Housing Authority's Front Street Development
		Rail representative
		
		The first meeting of Community Advisory Group was held on October 30, 2023 and a copy of the meeting notes are attached for your reference. Discussion topics of the first meeting included:
		- Overview of Roux Institute
		- Campus development plan and project status
		  o Phase 1 plans, site layout, buildings, landscaping, public access
		  o Institutional Overlay Zone and upcoming permitting process
		- Questions and discussion
		- Role of CAG
		- Draft Charter

	Provide confirmation of who is serving as the designated community contact. City Staff recommends that the community contact be identified on the project website along with the contact email provided at the bottom of each page.	Sam Reiche will continue to serve as the designated community contact, until that responsibility is transferred to the Roux Institute at Northeastern University on or around the time of campus opening. Responsiveness to community questions and input is encouraged through multiple channels on the www.rouxcampusportland.org website, including links to Subscribe to Updates, Leave Feedback and to Reach Out with questions or requests for a one-on-one meeting at info@rouxcampusportland.org. Requests are responded to promptly. This is standard and preferable to including a name and cell phone or email address for a specific individual and will

		facilitate a smooth transfer of responsibilities to Roux Institute at Northeastern University staff. The Reach Out link or Feedback link is on every page of the website. The website has received 10,159 unique visitors and has 320 followers who receive regular updates including notices of meetings, minutes, recordings and presentations.
	In keeping with the goal of the IDP to provide up-to-date information through the project website, review and update accordingly the timeline listed under the Info page of the project website.	The timeline is updated regularly to reflect current understanding of the project schedule. Accordingly, the anticipated date for campus opening is being changed to Fall, 2027.
Construction management	Submit a draft design for a dedicated construction webpage that includes communication methods through social media, texting, and hotline.	Northeastern University plans to establish a construction webpage similar to the one created for their recently completed research center, EXP (seen at this link: https://facilities.northeastern.edu/exp/[facilities.northeastern.edu]). As with the current Roux Campus website, www.rouxcampusportland.org, timely information on construction progress will be provided in the form of news and photos. Neighbors and the public can sign-up to receive regular email updates about construction status and other elements that could impact the neighborhood. Further details for the webpage and construction communication plans will be developed in collaboration with prime contractors and shared in advance of construction.

	A detailed construction schedule is referenced but is not attached to the Construction Management Plan. Submit a detailed construction schedule for City Staff review.	The attached Construction Management Plan has been updated accordingly.
	Submit a truck routing plan that identifies routes to and from the site, along with anticipated hours for deliveries. Temporary off-site storage locations should be identified as part of the truck routing plan.	The attached Construction Management Plan has been updated accordingly.
	Under Erosion Control and Preservation of Trees, clarify that temporary ESC measures shall be removed post-construction.	The attached Construction Management Plan has been updated accordingly.
	A wheel wash is included for the eastern construction entrance, but there is not a wheel wash for the southern entrance/ there is no connection for trucks to enter through the southern entrance and exit through the eastern entrance. Clarify what ESC controls are proposed for the southern entrance and if vehicular connections are proposed between the southern and eastern entrances.	The attached Construction Management Plan has been updated accordingly.

	On the Sitework/Foundation sheet of the Site Logistics Plan, the Codfish Building and Pier are identified to be demolished at a later date. However, the demolition of these elements is included in the site plan set. Clarify.	The attached Construction Management Plan has been updated accordingly.
Historic Preservation (§8.5.7(J))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Historic preservation review	No updates requested.	No action required at this time.
Required interpretive elements	No updates requested.	No action required at this time.

3. ATTACHMENT 3: PEER REVIEW COMMENT RESPONSES

Peer Review Comments		
Wright-Pierce Chapter 500 Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Urban Impaired Stream Standard	As noted by the applicant, the proposed development is not located within an urban impaired stream watershed. Therefore, this standard is not applicable.	Noted.
Basic Standard	On Sheet C-002 of the Civil Plans, it appears the perimeter barrier falls within the edge of water called out on the plans. It is recommended to relocate the perimeter barrier to keep it out of the water.	The perimeter barrier will be revised as requested. The updated Civil Drawings will be provided as part of a subsequent submission.
	On Sheet C-002 Inset B of the Civil Plans, it appears the perimeter barrier crosses an existing building. Please confirm and revise as necessary.	The perimeter barrier will be revised as requested. The updated Civil Drawings will be provided as part of a subsequent submission.
Basic Standard	Please confirm whether de-watering is anticipated on the project. If de-watering is anticipated, please consider including a detail for de-watering treatment in the plans and discussion on proper discharge in the Stormwater Management Plan.	Dewatering is anticipated during construction. A detail will be added to the civil plans, to be submitted at a later date.

	In Appendix B of Maine DEP Chapter 500 it is noted that during post-construction ditches and swales should be inspected after heavy rains in addition to the spring and late fall. We would recommend including this additional inspection requirement in the Stormwater Inspection & Maintenance Plan.	The Stormwater Inspection and Maintenance Manual will be updated accordingly and provided as part of a future submission.
	We recommend the applicant updates winter construction dates on the Civil Plans Sheet D-401 to match Maine DEP requirements.	Sheet D-401 will be updated accordingly and provided as part of a future submission.
	If winter construction is anticipated, we would recommend including Winter Construction requirements outlined in Maine DEP Chapter 500 in the Stormwater Management Plan.	As noted on Sheet D-401, the contractor will be required to comply with the Maine DEP Erosion Control BMP Manual, which includes Winter Construction requirements. In our opinion, this satisfies the Maine DEP requirements.
General Standard	The applicant has demonstrated that they meet the treatment requirements for redevelopment project under the General Standards of Maine DEP Chapter 500.	Noted.
General Standard	We recommend the applicant confirm that proposed pre-treatment meets the requirement of proprietary systems under Appendix B of the Maine DEP BMP manual.	Sediment pretreatment rows designed by the manufacturer are provided for the proposed R-Tank systems in accordance with Chapter 500 requirements. A letter that demonstrates manufacturer review and approval of the design can be provided upon request.

Flooding Standard	The applicant states in the Stormwater Management Plan that the portion of the project which discharges to Casco Bay is eligible for a waiver under Maine DEP Chapter 500 Section 4.F(3) since it is discharging to a tidal waterbody. The drainage within Sherwood Street will not drain to Casco Bay; however, the applicant is requesting a waiver from the Flooding Standard for the campus development.	A waiver from the flooding standard is requested for the site development on private property, which drains in its entirety to Casco Bay. The project also requires upgrades to Sherwood Street, including the stormwater infrastructure in Sherwood Street. We are working with Public Works staff on the appropriate public stormwater infrastructure design in Sherwood Street.
Wright Pierce - General Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
a.	Section 25 of the Site Location of Development Application states that "public notice requirements associated with Maine DEP Site Law do not apply "because the "City of Portland has Delegated Review Authority." Please confirm public notices will not be required for this application.	We understand that the public notice for SLOD is submitted concurrently with public notice for Site Plan by City Staff; therefore, a separate notice sent by the Applicant is not required.
b.	In Chapter 7.2 Bioretention Filters of Volume III. BMP Technical Design Manual, it is stated that the "geotextile fabric should be Mirafi 170N or equivalent." On Sheet D-407 of the Civil Plans, the filter fabric is called out as 140N. We recommend the applicant confirm that 140N is acceptable for this application.	We will review geotextile materials and revise as needed.

Wright Pierce - Stormwater Management Plan Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
a.	It is stated in Section 3 of the Stormwater Management Plan that stormwater infrastructure on Sherwood Street is still being resolved. Please provide updated stormwater plans for Sherwood Street once completed.	We are working with Public Works staff on the stormwater infrastructure design in Sherwood Street; updated plans will be provided once completed.
b.	We would recommend the applicant provide stormwater modeling results to confirm bioretention ponds and R-Tank systems meet the requirements of Maine DEP Stormwater BMP Manual.	Based on conversations with Public Works staff in September 2023 prior to Site Plan submission, we understand that stormwater modeling documentation is not required due to the waiver of the Flooding Standard.
c.	In Section 32-38 City of Portland's Code of Ordinance, it is noted the City requires an annual inspection report completed by qualified post-construction stormwater inspector to be submitted to the Department of Public Works. It is recommended to include this requirement in the Stormwater Inspection & Maintenance Plan.	The Stormwater Inspection and Maintenance Plan will be updated accordingly and provided as part of a subsequent submission.
Wright Pierce – Plan Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
a.	On the Sand Filter details on sheet D-405, there is a callout for "underdrain to outlet structure (size, location,	The underdrains for all proposed Subsurface Sand Filters will discharge into outlet control

	and length to be determined by Engineer of Record)." On Sheet C-302 the underdrains for the sand filters are shown discharging to daylight and not to a structure. Please confirm intent of detail and revise as appropriate.	structures. Underdrain connections will be clarified in revised Civil Drawings to be provided as part of a subsequent submission.
b.	On sheet C-304, one of the structure tables is cut off and appears to be missing OCS-9. Please provide and updated table showing all OCS information.	The structure table will be updated accordingly. The updated table will be provided with revised Civil Drawings provided as part of a subsequent submission.
c.	Information on SD103 should be provided on Sheet C-304 in the pipe table.	The pipe table will be updated accordingly. The updated table will be provided with revised Civil Drawings provided as part of a subsequent submission.
d.	It appears Subsurface Sand Filter 4 collects drainage from the road through CB14. Please verify if a hydrodynamic separator is required for Subsurface Sand Filter 4.	CB14 is located along a gated access way that will only be used occasionally for service and emergency access; therefore, it is our opinion that the drainage area to CB14 does not meet the criteria that would require a separate pretreatment structure.
e.	We would recommend adding a detail for pipe insulation of shallow pipes.	This detail will be added to the revised Civil Drawings, which will be provided as part of a subsequent submission.
f.	We would recommend adding a detail that shows horizontal and vertical utility separation requirements.	This detail will be added to the revised Civil Drawings, which will be provided as part of a subsequent submission.

g.	On sheet L4.00, consider outlining bioretention cell location as it relates to the proposed vegetation. Confirm native shrubs and perennials are located within the bioretention area, per Maine DEP – Chapter 7.2 – Bioretention Filters.	The bioretention cells will be outlined on Sheet L4:00 and included in a subsequent submission.
Tom Errico, P.E. – NE Traffic Eng. Director Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
1.	The applicant shall provide the parking demand analysis back up information in support of the project's parking supply.	With the reduction in the size of the garage, the resulting parking supply (641) is in alignment with the projected demand (581) at project occupancy.
2.	The applicant shall provide sight distance measurements at the Veranda Street/Sherwood Street intersection.	Sight distance looking north from Sherwood Street exceeds the minimum 250 feet (Maine DOT standard at 30 mph). However, when exiting Sherwood Street, the sight distance looking left (south) is blocked by the on-street parking and is only visible to 230 feet. As in most urban areas, in actuality, vehicles pull up further than 10 feet behind the edge of pavement. If existing vehicles pull up to edge of roadway, beyond the impact of the parked vehicles on the south side of Veranda Street, sight lines increase dramatically.

3.	The alignment/configuration of the internal three-way STOP intersection is a concern given the heaviest egress traffic movement will have to make a hard left maneuver. I would be interested in the evaluation of a small roundabout at this location.	A small roundabout will create right of way impacts and there are concerns with buses traversing over a domed truck apron.
4.	I support a waiver for the size of parking spaces in the garage given low vehicle turnover.	Noted.
Janine Ba – DPW Transportation Development Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
1.	DPW agrees with the proposed cross sections provided by the Transportation Program Manager for Sherwood Street that includes a 10' shared use path and feel it should be continued onto the campus and transition at the intersection.	The Sherwood St design will be updated to include a 10' shared use path.
2.	The applicant shall label the roadway (Sherwood Street) ROW and centerline on the plan view and cross section sheets.	Labels will be added to the Civil Drawings to be provided as part of a subsequent submission.
3.	When printed it can be hard to distinguish between existing and proposed elevation. All elevations in the plan set need to be labeled as existing or proposed to prevent confusion. Update the plan set by using EX. Or	Plans will be updated as requested.

	parentheses () to distinguish between the type of elevation.	
4.	DPW feels a traffic circle would work better at the intersection pictured on page 2/2 of email from Janine Ba dated 12/20/23.	A small roundabout will create right of way impacts and there are concerns with buses traversing over a domed truck apron.
5.	DPW has concerns with the minimum 5ft sidewalk width proposed for the site. The sidewalk width should be sized to meet pedestrian demand for the campus.	The Sherwood St design will be updated to include a 10' shared use path on the north side of the street.
6.	Revise the plans to adjust the -LW- within the property or provide documentation that shows the applicant has permission to be on the property.	At this time, the proposed work will occur entirely within the Applicant's property and City Right-of-Way. The limits of work will be adjusted accordingly on Civil Drawings provided as part of a subsequent submission.
Mark Reiland – City Arborist Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
1.	Please include location, species, and DBH of existing trees on site and indicate tree protection measures for existing trees to be preserved. Groups of trees or wooded areas to be preserved can be indicated by showing the location of the collective group canopy dripline.	A survey of existing trees of 10" DBH or higher is being prepared and will be provided in a subsequent submission. The existing trees will not remain, as they will be impacted by the proposed grading and site improvements.

2.	Please choose alternative species for the proposed maple selections; Silver Maple, Red Maple, Sugar Maple and Freeman Maple. The urban forest in the greater Portland area is over saturated with maple (>30% by count) creating a high degree of susceptibility to Asian Longhorned Beetle infestation.	Subsequent submissions of the landscape plans will include substitutions for all maples.
Transportation Demand Management Plan Preliminary Comments Markup (dated 12/5/2023)		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Section 1.1.2	Will the full capacity of the parking garage be available during Phase 1? Will parking costs be market rate? If so, for whom? This is key to understanding incentives/ disincentives to driving.	With the reduction in the size of the garage, the resulting parking supply (641) is in alignment with the projected demand (581) at project occupancy.
Figure 2 Campus Transportation Access	The M-UP substandard width of 6′ for the beginning. Substandard bike lanes proposed on Veranda Street, not a M-UP.	Sherwood Street will be designed to accommodate a shared use path as requested by the City of Portland.
2.2.1 Existing Conditions	Confirm Sherwood Street right-of-way width.	ROW is 3 rod or 49.5 feet.
2.2.3 Potential Future MaineDOT Infrastructure	Discuss Berlin/SLA pathway and Veranda St bike lanes. Confirm shared-use path width.	The Veranda Street bike lanes are mentioned in 2.3.4 which discusses other potential future infrastructure as it is not a MaineDOT project.

2.3.1 Existing Conditions	Add alternative biking route around Baxter Boulevard via Back Cove Trail to narrative.	Agree, bicyclists can also use the Back Cove Trail or Baxter Blvd as a less direct route into the Portland Peninsula.
Figure 3. 15 Minute Bike Shed Zone	Quite skeptical this is the 15 min. bike shed & barely even drive shed. Confirm bike shed boundaries.	Bike shed boundaries will be updated/confirmed. Updates to this figure can be provided as part of a subsequent submission, as necessary.
2.4.2.2 Other Metro Opportunities	Confirm at what level transit passes will be subsidized for students, staff and faculty.	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
2.7 Existing TDM Efforts	Confirm at what level transit passes will be subsidized for students, staff and faculty.	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
	Confirm the rate students will be charged per parking space.	Users will be charged market rates for parking.
Table 2 Transportation Survey Mode Split Data	What was response rate to the Surveys? Is there a meaningful breakdown by students vs staff/faculty/others since mode share targets are different for each?	The surveys include a demographic breakdown between students, faculty, staff, others, ect.

4.3 Proposed Parking Supply/Demand	Confirm how interim phasing of allocated parking spaces will be managed (e.g. restricting parking to 561 within a garage with a capacity of 692 spaces during Ph 1).	With the reduction in the size of the garage, the resulting parking supply (641) is in alignment with the projected demand (581) at initial project occupancy. No further parking modification is required.
Table 5 Drive Mode Split Targets	Does "Drive" include all carpool occupants?	No, only the driver counts towards the percentages in this table.
6 Mode Split Target Strategies	Table 7 is not provided. Revise last sentence on page 20 to confirm intent.	Table number was mislabeled and should read Table 6.
Table 6. TDM Strategies - Commitments	What is the level of subsidy? 100%?	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
	What happens to the interior bike parking when more vehicle parking is needed?	The Roux Institute at Northeastern anticipates that both bicycle parking and vehicular parking demand will continue to increase as enrollment increases, so it is anticipated the bicycle parking remains in the garage until and if it could be accommodated elsewhere. The Roux Institute at Northeastern University will continue to investigate additional measures to support reduction of vehicular trips to the site including remote parking in connection with

		transit and investment in additional alternative mode infrastructure.
	The current plans show substandard width bike lanes (4').	Sherwood Street will be designed to accommodate a shared use path as requested by the City of Portland.
	Where are the on-site showers and lockers planned to be located? Is there a campus gym?	Per Cannery Building Drawing A-100, there are on-site showers and lockers in the Lower Level of the Cannery Building. There is not a campus gym.
	What is the anticipated cost/month for parking spaces --> market rate?	Users will be charged market rates for parking.
	Confirm transit pass subsidy. Not a transit pass provided via employee/student ID as done by most institutions (USM/SMCC, etc) with no out of pocket outlay required?	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
	Where and how will carpool parking be prioritized?	Grade level priority parking spaces will be provided as demand dictates.
	Can electronic screen displaying transit information be provided in the lobbies of the two main Ph 1 buildings for increased visibility of multimodal options?	Informational signage will be provided in both buildings.

	Can 'simple' AC outlets be added in vicinity of interior bike parking in short-term to encourage e-bike/bike usage in general?	Yes.
	Reported survey results said high desirability of bikeshare. Can this be implemented in short-term versus long-term?	Yes. The bike share location is shown on the Figure 5-1 Bike Amenities and Circulation.
Justin Pellerin, P.E. - DPW Sherwood Street and Campus Site Plan Response Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Sherwood Street Roadway Improvement Comments		
1.	New catch basin structures in Sherwood Street should be installed per City of Portland Technical Manual standards. Each basin should have a headstone and be installed with a 3' sump. Include applicable details in the plan set.	Noted. The details will be revised accordingly and provided with revised Civil Drawings to be provided with subsequent submission.
2.	All storm drains and underdrains 10" and greater shall meet the City's stormdrain material specifications listed in section #2 of the technical manual.	Noted.
3.	It appears the proposed 12" underdrain/stormdrain pipe running along the southerly curb line between station 212+00 and 213+00 is in conflict with an existing gas main. Is the applicant working with Until to relocate the gas main in this area?	This Sherwood St design is being revised to alter lane widths and add a shared use path as suggested. Coordination with Unitil will take place during future design if required.

4.	DPW is in the process of inspecting the existing storm drain line in Sherwood Street. Improvements may be needed within the project paving limits of the pipe is found to be in poor condition.	Noted.
Campus Site Plan Comments:		
1.	The existing condition plans and design plans should be updated to address the storm drain alignment issues and to resolve any remaining utility conflicts between the 12" water main and the City's storm drain system in Sherwood Street.	It is our understanding Public Works is completing CCTV evaluation of the storm drain in Sherwood Street. We will update our existing conditions and proposed plans accordingly.
2.	PWD should review the proposed sanitary connection into Ex SMH-1. The City's mapping indicates this structure is owned by PWD; however, that is somewhat unclear.	PWD confirmed the structures are owned by PWD. We are working with PWD on this sewer connection and will provide documentation of approval upon receipt.
5.	The existing condition of the structure (EX-SMH-1) and outlet pipe out of EX-SMH 1 should be thoroughly inspected and possibly replaced if in poor shape. If EX-SMH is found to be in poor condition it appears an alternate alignment could be utilized which would result in the Elimination of EX-SMH-1 and Proposed SMH-1 (And S-1) by connecting S-2 directly to un-named EX SMH.	Noted. We are working with PWD on this sewer connection and will provide documentation of approval upon receipt.

6.	The plans should be updated to depict the locations of all the required ESC Controls including but not limited to dewatering/stockpiling areas with proposed BMPs and the proposed location of the anticipated stone construction entrance.	The Civil Drawings will be updated accordingly, and provided as part of a subsequent submission.
7.	The applicant shall confirm the sizing and design of the proposed external grease trap associated with the LRC building and verify it is designed in accordance with Chapter 7 of the City's sewer use rules and regulations	The applicant will provide updated data on the size and design of external grease trap and verify it complies with Chapter 7 as part of a subsequent submission.
8.	The project will be required to submit a dewatering plan to the Water Resource's Compliance Coordinator in accordance with chapter 8 of the City's sewer use rules and regulations prior to any excavation work and dewatering activities occurring on-site.	Noted. A general note will be added to the Civil Drawings, which will be provided as part of a subsequent submission.
Ann Machado – Zoning Administrator Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Section 8.5.7.D		
1. B-5 is the underlying zone	No dimensional requirements under Table 7-E except height which is governed under the IOZ requirements.	Noted.

3. Street Wall Height	Min. 45′ & max. is 105′ -LRC – 68.6 -Garage – 66.2 stair tower (86.7)	This standard is met.
4. Stepback	Needed at street wall if higher than 105′ – 10′ min. – LRC goes from 22.5′ to 13.5′	This standard is met.
5. Building Length	a. no building is longer than 250′ – don't need publicly accessible corridor – figure 3.3 244′	This standard is met.
Building Height – Figure 8-F	The maximum height for the various height zones based on the average grade appears to be met. My only issue is with the Average Grade plans. The sheet (AS61.0 gives the average grade of the garage as 20.8. I calculate it as 18.8′.	Elevations have been calculated at the four corners of the garage and do not include the daycare building. Please refer to figure 8-FA attached to this document for a visual summary.
Shoreland Zone	The highest annual tide has been located but I don't see a 25′ shoreland zone setback located.	The 250′ Shoreland Zone setback will be clarified on the revised Civil Drawings to be provided as part of a subsequent submission.
Floodplain	Both the approximate FEMA flood zone line and the approximate flood zone line based on EL 9 are shown. I'm not sure what they mean by the approximate FEMA flood zone line. Are they overlaying the FIRM from 1986? EL 9 impacts the LRC building and we will need a floodplain permit application for new construction and elevation certificates.	Both the FEMA FIRM flood zone line (from the FIRM) and an approximate flood zone line based on the existing contours and the flood elevation (EL 9) are provided. While the approximate flood zone line (EL 9) intercepts the LRC, the proposed FFE is 22.5, and therefore a floodplain permit application is not required.

	The other questions that I have is about the timing of the new flood zone maps. We still don't know when the new maps will go into effect. Obviously, we are reviewing the current site plan under the current floodplain maps. My question is, if the new maps go into effect before the building permits are applied for, would the buildings then need to meet the base flood elevation for the new maps?	Noted. We anticipate the City will make a determination on timing.

ATTACHMENT 4: SUSTAINABILITY CHARTER COMMENT RESPONSES

Sustainability Charter		
Code mandated items		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Energy, Responsible Materials, and Occupant Experience	To be determined at time of permitting.	We understand these will be reviewed as part of the building permit process.
Energy		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Eliminate on-site fossil fuels in building HVAC and Food service.	Heat pumps are proposed in the LRC building. Additional information will need to be submitted for the Cannery Building and the Structured parking & preschool facility building to confirm that efficient electrical mechanical systems are being utilized.	Fossil fuels will not be utilized for HVAC and food services. Design of mechanical systems will be provided as part of the building permit process.
	Submit a narrative confirming how fossil fuels will not be combusted on the site for any of the uses of the site (e.g., lab, café space).	The project is committed to utilizing all electric kitchens throughout. The design of

		these systems will be provided as part of the building permit process.
	Complies: Hot water is provided through electric heaters, as noted in Sheet P1.01.	No action required.
Provide infrastructure for future PV installation.	PV locations identified for the LRC and Cannery buildings, but is not identified for the Structured parking & preschool facility building. Update the floor plans for the Structured parking & preschool facility building to identify the location of future PV equipment for the building.	Conduits will be provided from roof areas to central electrical rooms to provide infrastructure for potential PV systems in the future. Details of this design will be provided as part of the building permit process.
Design the building to be 30% better than ASHRAE 90.1 2019 and 15% of roof area dedicated for PV.	Geothermal HVAC shown in Sheet GT-01 and photovoltaic systems >15% of the roof area are proposed for the roof of the LRC building. Applicant shall submit a narrative demonstrating how the combined systems will be designed to be 30% better than ASHRAE 90.1-2019.	Thorton Tomasetti ("TT") is performing an energy model for the project. The report will be submitted to the city for review prior to or as part of the building permit application.
Embodied Carbon		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Reuse existing historic building.	Applicant shall provide narrative clarifying how the submitted strategy is being achieved through the proposed renovation of the Cannery Building.	The Bean Building is being designed to support a flexible program. This includes limited use of permanent partitions which supports the strategy indicated.

Advocate for Environmental Product Declarations (EPDs) for all concrete used on the project.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	The project teams will require EPDs in specifications. A procurement schedule will be generated and shared with City when available.
Perform a whole building life cycle analysis (LCA) to study carbon conservation measures.	Identify when a LCA will be completed/be able to be submitted for review by City Staff prior to issuance of building permits for the project.	An LCA of each building will be submitted to the city for review prior to or as part of the building permit application.
Reduce the embodied carbon of structural materials in the building by 15% from a typical design.	Complies: Mass timber is proposed for a portion of the building.	No action required.
	Identify when a LCA will be completed/be able to be submitted for review by City Staff prior to issuance of building permits for the project.	An LCA of each building will be submitted to the city for review prior to or as part of the building permit application.
Responsible Materials		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***

Source wood products from Maine forests and/or sustainably managed forests or salvaged/reclaimed wood suppliers.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	A procurement schedule will be generated and can be shared with City when available.
Advocate for the removal of PFAS chemicals in other targeted product categories.		
In coordination with the contractor, identify key materials to procure from the state of Maine.		
Divert at least 50% of non-hazardous construction and demolition waste from the landfill.	Prior to a certificate of occupancy, a waste hauler contract for the site shall be submitted to review and confirm that 50% landfill diversion of non-hazardous materials will be ensured.	No action required at this time.
	Reuse of rail lines and bean pots have been proposed as part of interpretive work related to historic preservation. On the project website, under Site Work, a July 28, 2023	Website content from July is not the most current material. Review of project should be contained to the site plan application. If

	post identified historic elements that will be reused and construction materials to be reused/recycled. Update application materials to identify how the construction materials are being reused/recycled.	materials will be reused/recycled, the documents will be updated accordingly. Landscaping design details have not been finalized.
Target Red List free finishes in targeted spaces.	Complies: October 19, 2023 Design Development document states that red list free materials shall be used.	No action required.
Use best practices for bird friendly design.	Bird safe glass treatments are proposed for some of the glass in the LRC building. Confirmation that the entirety of the building glass is bird safe has been requested to meet §8.5.7(F)(6) of the Land Use Code.	The applicant will provide more information as it pertains to bird safe glass in the Cannery Building's new windows as part of a subsequent submission. The applicant will provide a glazing schedule for the Structured Parking and Daycare Building that includes treatment for Bird Safe glass complying with Maine's Legislation LD 670 and conform to the City of Portland's Bird Friendly Ordinance as part of a subsequent submission.
Water		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Reduce indoor water use from	Flow rates for plumbing fixtures have not been provided as part of the submitted application materials. Update application materials to state the proposed flow rate for	Flow rates for plumbing fixtures will be provided as part of the building permit process.

25% from a code baseline building.	plumbing fixtures and the applicable code requirements for flow rate.	
	Urinals are proposed in public bathrooms for the LRC, but are not shown in the Cannery Building or the Structured parking & preschool facility building. Clarify why urinals are not proposed in the Cannery Building and whether any urinals are proposed for the Structured parking & preschool facility building.	Urinal counts will be provided as part of the building permit process.
Maximize the use of native and drought tolerant landscape plants.	Complies: Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.
Stormwater Management in accordance with Maine Department of Environmental Protection Best Management Practices Manual and City of Portland Technical Manual.	Complies: Application is designed to meet Chapter 500 standards and has incorporated LID strategies such as protecting natural drainage systems, utilizing low-maintenance landscaping, minimizing impervious surfaces, and providing vegetated open-channel conveyance systems.	No action required.

Prohibit the use of all synthetic pesticides and fertilizers for the operation and maintenance of landscape and agriculture through Integrated pest management (IPM)conducted as part of an overall Plant Health Care Program for the Roux site.	Complies: Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.
Occupant Experience & Equity		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Optimize natural daylight and mitigate glare.	Confirmed in General Note 8 on Sheet A12.01 of the architectural plans for the LRC building. Confirmation of shades or curtains for the Cannery Building and the Structured parking & preschool facility building have not been provided. Update architectural drawings to confirm that shades or curtains will be provided for regularly occupied spaces that face east, west, and south for the Cannery Building and the Structured parking & preschool facility building.	Information regarding shades or curtains for the Cannery Building and Daycare facility will be provided as part of the building permit process. Shades are not assumed at structured parking as space is not regularly occupied.

Incorporate biophilic design principles.	Mass timber and stone are proposed to be used for the LRC building. Currently, only non-natural materials are identified for the Structured parking & preschool facility building. Update architectural drawings to identify what natural materials are proposed to be used for the Structured parking & preschool facility building.	The daycare facility will incorporate natural material on the interior. The materials will be indicated during the Planning Board process. The structured parking will incorporate a biophilic design through the expression of waves in the design of the west facade.
	Provide a supplemental narrative and/or sample designs on how the proposed art and signage for the campus will create cultural and ecological connections to place, as well as the locations for the proposed locations for art and signage.	Design of the proposed art/signage will be provided as part of the building permit process.
Use the building to educate building and site users.	Identification of informational signage on sustainability features of the LRC & Cannery buildings is not included in the signage plans. Update the architectural drawings and/or signage plans to identify where the proposed informational signage on sustainability features of each building will be located and the proposed design of the signage.	Design of the proposed signage will be provided as part of the building permit process.
Provide amenities to support public access.	The submitted floor plans for the LRC building include drinking fountains and/or bottle filters. The submitted floor plans for the Cannery Building and the Structured parking & preschool facility buildings do not show drinking fountains and/or bottle filters. Update floor plans for the Cannery Building and the Structured parking & preschool facility building to identify the location(s) of drinking fountains and/or bottle fillers.	Plans for drinking fountains/bottle fillers for Cannery Building will be provided as part of the building permit process. The Parking garage is a transient space so water fountains are not planned. The Daycare facility is not accessible to the public and the water needs of the staff and children are met by traditional sinks.

	Publicly accessible restrooms are provided in the LRC and Cannery buildings. Submitted floor plans for the Structured parking & preschool facility building do not provide enough detail to confirm whether restrooms will be publicly accessible next to the proposed shoreland open space. Update architectural drawings to clarify if and how publicly accessible restrooms will be provided.	For security and safety the Daycare facility is not publicly accessible. No public restrooms are planned for the structured parking.
	Complies. Shared-use facilities are provided throughout the site.	No action required.
	Complies. Benches are provided throughout the site.	No action required.
	Complies. Site wayfinding package is included as part of the application materials.	No action required.
Provide Gender inclusive restrooms.	Public, gender inclusive restrooms are provided in public areas in the LRC building. The split of restroom facilities in the Cannery Building connotes that bathroom facilities will not be gender inclusive. Confirm that the both public area bathrooms on the lower level of the Cannery Building are gender inclusive.	Both public area bathrooms on the lower level of the Cannery Building are gender inclusive.
Provide lactation rooms.	Lactation rooms not identified in the floor plans for the LRC and Cannery buildings. Update floor plans to identify lactation rooms that include a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets.	Updated floor plans will be provided as part of the building permit process.

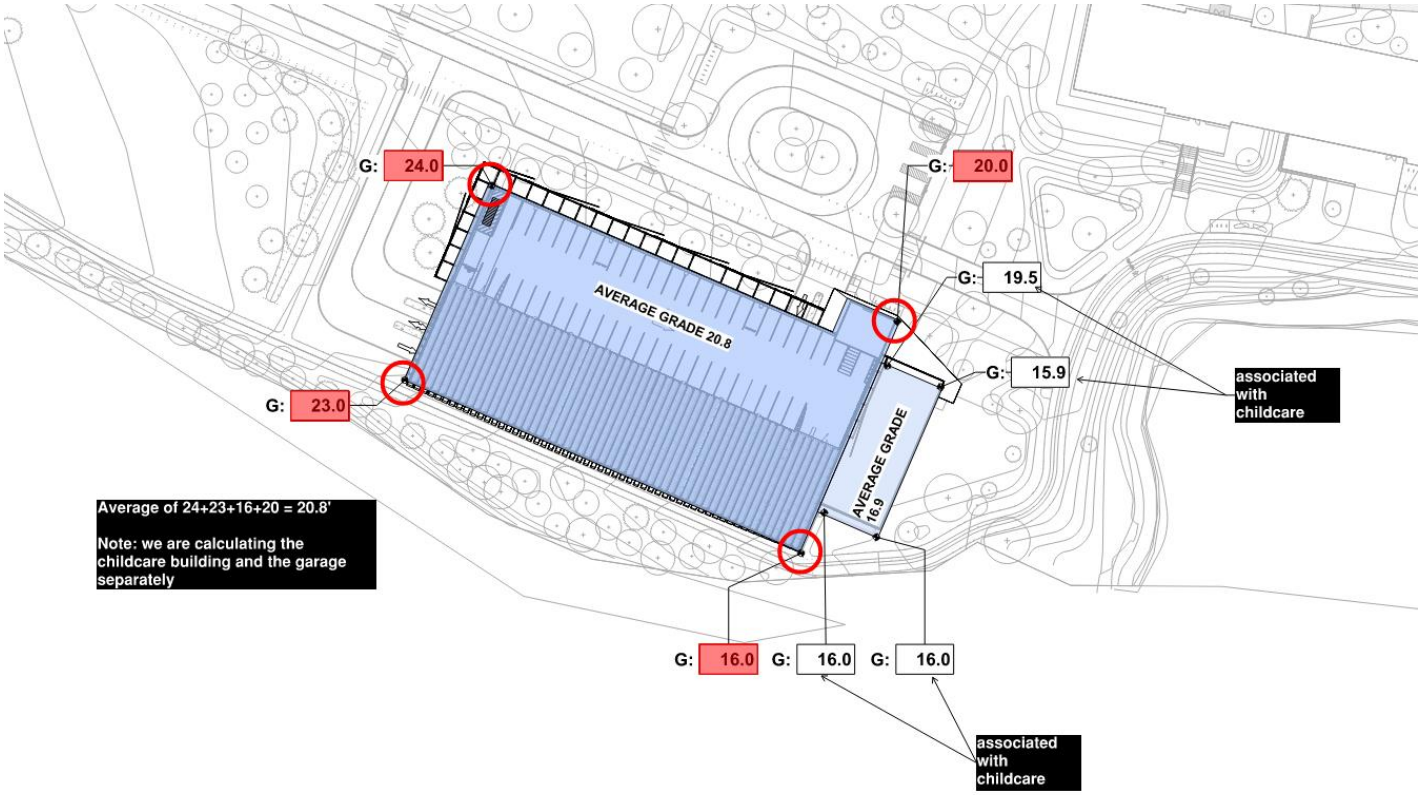
Transportation		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Conduct study of EV charging needs. Provide required EV capacity to meet anticipated demand.	EV Charging Study is still under review by City Staff. As Study is under review, Application should confirm whether the charging should meet the demand in coordination with EV or PV requirements approved by the City.	The EV charging provided is intended to be in compliance with site plan standards.
	EV Charging assessment should be coordinated with the submission of TDM reports. City staff encourage the assessment of EV charging for automobiles and bicycles as part of the campus goals to reduce SOV automobile trips.	No action required at this time.
Integrate quality/ secure bicycle storage into the site design and provide shower facilities.	Bicycle storage is proposed on the lower level of the Cannery Building. Bicycle storage is not provided in the LRC building. Update floor plans for the LRC building to identify interior, secure bicycle storage.	Users of the LRC building will utilize bike storage on site, provided in either the Bean Building and/or in the structured parking.
	Complies: Showers are provided on the lower level of the Cannery Building.	No action required.
	Bikeshare stations are not currently identified in the submitted application materials. Update application materials to identify proposed locations for bikeshare stations for review and further discussion with City staff.	The bike share location is shown on the Figure 5-1 Bike Amenities and Circulation.

	Complies: Exterior bicycle parking is distributed throughout the site for buildings in the first phase and future phases of development. As mentioned three standards above, secure bicycle storage will need to be provided for in the LRC building.	No action required regarding exterior bicycle parking. Sufficient indoor bicycle storage will be provided in Cannery Building or the Parking Structure.
	Complies: Application identifies opportunities to reduce SOV trips through unbundled parking, ongoing collaboration with METRO and MaineDOT, on-site shared-use facilities with anticipated connection points to the rest of the peninsula and off-peninsula, as well as pier improvements to facilitate water taxi service.	No action required.
Resilience		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Incorporate near-term future-projected climate change data (2050s) in design of mechanical, electrical, and	Critical building infrastructure has been identified in the LRC building to be located above 22.5 feet NAVD88. Additional information still needs to be provided to confirm that no critical building infrastructure is located below 22.5 feet NAVD88 for the Structured parking & preschool facility building, particularly in the Preschool Facility portion of the building.	No critical infrastructure will be located below 22.5 feet in the structured parking or daycare facility. That will be confirmed in the building permit process.

plumbing systems and/or components on a regular replacement cycle. Incorporate long-term future-projected climate change data (2100+) in the design of the building and infrastructure, including flood resistant materials below the 2100 sea level rise design flood elevation and elevate critical infrastructure above this elevation.	Heat projections with MEP consultant not included with application materials. Applicant should clarify the anticipated development of the projections and point for City staff to review prior to Certificate of Occupancy.	Required information will be provided prior to Certificate of Occupancy.
Prepare emergency action plan and provide appropriate level of backup power to support life safety.	Unable to confirm whether generator can provide 48 hours of energy for essential operations. Applicant should provide supporting documentation based on the proposed storage capacity or the manufacturer that the proposed nitrogen generator can supply energy for 48 hours to essential operations.	Refer to mechanical drawings for fuel oil tank size and location. LRC generator has been sized for 48 hours of run time.

Incorporate campus-wide emergency preparedness planning to enhance overall resilience of the campus/site community.	Emergency preparedness plan not submitted. Applicant should clarify the anticipated development date of the plan and point for City staff to review prior to Certificate of Occupancy.	An emergency preparedness plan will be submitted prior to Certificate of Occupancy.
	Complies: Generator provided on Level 1 of LRC building.	No action required.

FIGURE 8-FA: AVERAGE GRADE CALCULATION FOR GARAGE AND DAYCARE



March 28, 2024

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

Re: Response to City Staff Comments – Roux Institute at Northeastern University
Project ID PL-002724-2023

Dear Zach:

Thank you for coordinating the review of the Major Site Plan and Site Location of Development (SLOD) Application for the Roux Institute at Northeastern University. We provided written responses to city review comments on February 5, 2023 and at that time we also submitted the requested enlarged figures, neighborhood meeting summary, CAG meeting summary, Construction Management Plan (V2) and Parking Garage Floor Plans (V2). The documents included with this response address most of the remaining comments and requested documents.

In addition to revisions based upon the City Comments, the drawings have also been updated to reflect changes resulting from advancement of the design. These changes are summarized below:

- The hardscape at the plaza areas have been reduced slightly to maximize planting areas and support pedestrian scale.
- Concrete walkways in the future development areas have been converted to greenspace.
- One of the subsurface stormwater treatment systems was moved from future development space and is now located below the Round.
- Bollard lighting has been replaced with pole lights.

We have used the same format as the first response to comments provided to the City in February. Similar to the comments received, our responses are provided in tables in the following sections:

- Attachment 1. Site Plan Review Comment Responses
- Attachment 2. Zoning Review Comment Responses
- Attachment 3. Peer Review Comment Responses
- Attachment 4. Sustainability Charter Comment Responses

Within the tables, we have kept the previous responses from February and, where applicable, we have added to the responses using blue text.

To support this latest response, the following new files have been uploaded to ProjectDox:

- Documents

- NU Revised IDP
- NU Site Lighting Waiver Requests Letter
- NU Wastewater Capacity Authorization

- Plans
  - NU Childcare Floor Plan
  - NU Illustrative Site Plan
  - NU LRC Vestibule Rendering

The following items have been reuploaded as new versions on ProjectDox:

- Documents
  - NU Stormwater Management Report Ph1 (V2)
  - NU TDM Plan (V2)
  - NU Waiver Table (V2)
- Plans
  - Figure 3-17 Site Circulation (V2)
  - NU Civil Plans (V2)
  - NU Landscape Plans (V2)
  - NU Parking Garage Elevations (V2)
  - NU Parking Garage Floor Plans (V3)
  - NU Sherwood Street Plans (V2)
  - NU Signage Plans (V2)
  - NU Site Security, Lighting and Photometrics (V2)

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3708 or dcameron@woodardcurran.com.

Sincerely,

WOODARD & CURRAN, INC.

Denise Cameron

Denise Cameron, P.E.
Project Manager

cc: Sam Reiche, IDEALS

1. ATTACHMENT 1: SITE PLAN REVIEW COMMENT RESPONSES

For the comment responses provided by the Applicant, responses provided on February 5, 2024 remain in black text. Responses added for the March 28, 2024 response have been added in blue text.

Site Plan Review Standards (Sec. 14.6)		
Transportation Standards (Sec. 14.6.1)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Impact on Surrounding Street Systems	Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	Acknowledged. No action at this time.
Access and Circulation	Update application materials to satisfy comments provided in Attachment 3. Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	See Attachment 3 table for response.
Public Transit Access	No updates required.	This standard has been met.
Parking	Submit a parking demand analysis that provides evidence supporting the proposed parking supply. As necessary, update the TDM plan for any changes resulting from the parking demand analysis.	Parking demand is calculated hour-by-hour based on projected arrivals and departures. Because there are no components of this program that would create overnight parking (i.e., residential units or hotel rooms), parking demand is zero at the beginning of each day. As detailed in the TMP, time-of-day patterns for graduate student, affiliated user, special event, and some faculty trips were developed based on scheduling expectations and

		observed patterns at the current Fore Street campus. For these users, parking demand is calculated as the balance of arrivals and departures multiplied by the vehicle mode share. For other uses, standard rates from the Institute of Transportation Engineers Parking Generation Manual were applied. These are provided as a peak parking demand and the percent of peak demand at each hour of the day. Mode shares and internal trip reductions were applied using identical factors as for trips. At opening year, parking demand peaks at 601 spaces. Were auto mode share to remain at the TMP levels (80% for students, 90% for all others), peak demand would increase to 881 at completion of the TMP program. To be conservative, trip generation was calculated this way, however this level of demand exceeds parking supply. For this reason, the TDM plan specifies a program of strategies to reduce vehicle mode share below the levels in the TMP. The university will need to progress towards the mode shares in the TDM plan to keep demand within the site's parking constraints. An updated TDM plan is included with this submission. See Section 4.3 of the TDM for narratives related to Proposed Parking Supply/Demand.
Transportation Demand Management	Update TDM plan to satisfy comments in Attachment 3.	See Attachment 3 table for response. An updated TDM plan is included with this submission. See Attachment 3 for further discussion of the updates to the report.

Environmental Quality Standards (Sec. 14.6.2)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Preservation of Significant Natural Features	Update the site plan set and survey to identify all significant natural features on and immediately adjacent to the site. Updates should specify the approximate boundaries of habitats of endangered species.	Acknowledged. These updates will be included in a subsequent drawing submission. An updated civil plan set is included with this submission.
Landscape Preservation	Submit a tree survey for the site that meets the standards of §4.3.1. of the Technical Manual.	A survey of existing trees 10" DBH or higher is being prepared and will be provided in a subsequent submission. An Existing Trees plan has been added to the landscaping plans as sheet L1.00 and is included with this submission.
Site Landscaping and Buffers	Update application materials to provide 8-12 street trees within the City right-of-way or through an alternative strategy meeting the standards of §4.6.4. of the Technical Manual. If alternatives are proposed, alternative street tree planting strategies are subject to the review of the City Arborist and may require additional documentation for future preservation/evidence that proposed planting sites are unlikely to be redeveloped in the near future.	The team is working to designate street trees on the plan in accordance with city requirements. We will also provide substitutions for all maple trees, as requested. This plan will be provided in a subsequent submission. The site landscaping is being updated to designate street trees and to replace all maple trees. The Applicant has reached out to the City Arborist and is in the process of setting up a meeting with him to review the proposed plantings. The updated planting sheets in the landscaping plans will be submitted following that meeting.
Water Quality, Stormwater Management and Erosion Control	Update the application to satisfy comments from Wright Pierce.	See Attachment 3 for responses to Wright Pierce comments. Attachment 3 has been updated to further address Wright Pierce's comments.

Public Infrastructure and Community Safety Standards (Sec. 14.6.3)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Consistency with City Master Plans	No updates required.	This standard has been met.
Public Safety and Fire Prevention	Email the Department of Public Works to begin the E-911 address process, with Zach Powell copied on the email. The applicant team shall work with the Department of Public Works to identify any additional steps that need to be taken before site plan approval.	The applicant will initiate E-911 address process prior to planning board hearing. The Applicant has reached out to Charles Wordell and has started the E-911 process for addressing. The Applicant will be working with the City on designating appropriate street names and addresses.
	Update architectural drawings to demonstrate how the western portion of the perimeter access loop is actively integrated into the overall campus design and how the site design enhances the overall experience of using the perimeter access loop for cyclists and pedestrians.	The architectural/landscape drawings are being updated to widen the perimeter shared path to a minimum of 12 feet. A typical section of the revised perimeter path has been added to the attached Figure 3-17: Site Circulation Plan. The architectural drawings are being updated to add screening to the first two levels of the Structured Parking building to enhance pedestrian and cyclists' experience. These updated architectural and landscape drawings will be provided as part of a subsequent submission. The perimeter path has been revised to a minimum width of 12 feet and updated civil and landscape plans are included with this submission. Screening has been added to the first two levels of the Structured Parking Building and updated Parking Garage Elevations have been provided.
Public Utilities	Submit ability to serve letters from utilities when available and provide any additional	A request for ability to serve letters has been provided to Portland Water District and the Department of Public Works. The Applicant team has also been actively working

	information requested by the Portland Water District, as requested.	with these utilities to review the proposed project design. The ability to serve documentation will be provided upon receipt. We have received the ability to serve confirmation from Public Works for wastewater. A copy is provided as part of this submission. The confirmation of ability to serve from Portland Water District will be provided upon receipt.
Site Design Standards (Sec. 14.6.4)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Massing, Ventilation and Wind Impact	No updates required.	This standard has been met.
Shadow	No updates required.	This standard has been met.
Snow and Ice Loading	No updates required.	This standard has been met.
View Corridors	No updates required.	This standard has been met.
Historic Resources	Submit an updated copy of the site plan set that shows the limits of the designation boundary.	The plan set will be revised to show the limits of the designation boundary. Revisions are in progress and will be provided as part of a subsequent submission. An updated plan set including the historic designation boundary is included with this submission.
	Update application materials to satisfy Board and Staff comments from the December 6, 2023 Historic Preservation Board Meeting. Await comments from the Historic Preservation Board and Historic Preservation Staff.	Application materials will be updated in response to Staff comments from 12/6/2023 HP Board Meeting and any subsequent comments from HP Board and HP Staff. An updated set of documents is expected to be issued around February 12, 2024 for HP Staff and Board review.

		The Historic Preservation Board is conducting a review of the Bean Building rehabilitation and interpretive elements (reference plan number: HPBR-002723-2023). Workshops with the Historic Preservation Board were held on December 6, 2023 and March 6, 2024. Copies of the submission documentation can be provided, upon request.
Exterior Lighting	Update the application to include two street lights that meet the standards of §10.2 and Figure X-1 of the City's Technical Manual or seek waivers.	The applicant assumes the two streetlights requested are for Sherwood Street. Clarification will be provided as part of a subsequent submission. A waiver is being requested to address the streetlights on Sherwood Street relative to utilizing lights that are more in line with the campus lighting systems. The waiver request form has been updated and included as part of this submission and a letter further describing the waiver requests is also provided. Updated lighting plans with fixture information have also been provided.
	Update application to have site lighting meet the standards of §12.3 of the Technical Manual.	The applicant used Section 12.3 of the Technical Manual as the basis of design. The lighting design and photometric plans are currently under review and updates will be provided as part of a subsequent submission, if required. As noted previously, Section 12.3 was utilized as the basis of design, however waivers have now been requested for three specific standards within that section of the Technical Manual. The waiver request form has been updated and included as part of this submission and a letter further describing the waiver requests is also provided. Updated lighting plans have also been provided.
	Update photometric plans to provide average illumination, uniformity ratio, and maximum illuminance at ground level around the	The lighting set will be updated as requested and will be provided as part of a subsequent submission. Updated lighting plans have also been provided.

	Structured parking & preschool facility building.	
	Confirm the CCT that will be used for each proposed luminaire.	Confirmed. All site lighting will be LED and shall not exceed 3000K Correlated Color Temperature (CCT). The applicant will clarify on drawings as part of a subsequent submission. Updated lighting plans with fixture information have also been provided.
	Add information on luminaire E11 to the Luminaire Schedule table.	The lighting Luminaire Schedule table will be updated to add information on luminaire E11 and will be provided as part of a subsequent submission. Updated lighting plans with fixture information have also been provided.
Noise and Vibration	No updates required.	This standard has been met.
Signage and Wayfinding	No updates required.	This standard has been met.
Design Standards	Please refer to Roux IOZ design comments in the Zoning worksheet.	Design review comment responses are provided in Attachment 2.

2. ATTACHMENT 2: ZONING REVIEW COMMENT RESPONSES

For the comment responses provided by the Applicant, responses provided on February 5, 2024 remain in black text.
Responses added for the March 26, 2024 response have been added in blue text.

Zoning Use Review (Article 6)		
Zoning Performance Standards (Sec. 6.8)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
§6.8.8(A)	Update architectural drawings to include screening for the first two levels of the Structured parking & preschool facility building.	The architectural drawings are being updated to add screening to the first two levels of the Structured Parking building and will be provided as part of a subsequent submission. Updated Parking Garage Elevations are included with this submission.
Zoning Dimensional Review (Article 7)		
Dimensional Standards (Table 7-A – Table 7-H)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Structure height	No updates required.	This standard has been met.
Supplemental Dimensional Standards (Sec. 7.4)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
7.4.3(B)(2)(c)	No updates required.	This standard has been met.

Roux IOZ Standards (§8.5.7)		
Applicability Standards (§8.5.7(A))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Applicability	Revise application materials to satisfy requested updates identified in Attachment 3.	See Attachment 3 table for response. Attachment 3 has been further revised to address these comments.
Phasing and Monitoring (§8.5.7(B))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Monitoring and Amendments	Submit an updated copy of the IDP incorporating the proposed changes identified in Attachment 5.	The IDP will be updated as requested and will be provided as part of a subsequent submission Revised pages 6, 14, 15, and 17 of the IDP are included with this submission to address proposed changes from Attachment 5. Following final review, a complete revised copy of the IDP can be provided.
Public Space	No updates required.	This standard has been met.
Minor & Major Amendments	No updates required.	This standard has been met.
Uses (§8.5.7(C))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Overview of Uses	No updates required.	This standard has been met.

Community Engagement and Connectivity	Submit a narrative and/or figures that demonstrate how the Sherwood Street connection will achieve connectivity and community engagement with the surrounding neighborhood.	The applicant has proposed to reconstruct Sherwood Street between Veranda St and the site driveway. The work will include a shared use path along the north side of Sherwood Street and a sidewalk along the south side of Sherwood Street, providing direct connections to the neighborhood and the signed bike route on Veranda Street. The applicant is invested in maximizing nonmotorized connectivity, and the site is ready for future connections as they become available. The landscape drawings are being updated to widen the perimeter shared path to a minimum of 12 feet. A typical section of the revised perimeter path has been added to the attached Figure 3-17: Site Circulation Plan. Lighting, pavement markings, and wayfinding will be provided to support community connectivity. Revised drawings are provided to reflect the current design of the shared use path for Sherwood Street and the site. An updated signage plan has been provided to support wayfinding.
Ground-floor Uses	No updates required.	This standard has been met.
Hotel Use Standards	No updates required.	This standard has been met.
Dimensional Requirements (§8.5.7(D))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Applicability	Update the application to comply with zoning performance standards and IOZ dimensional requirements.	See responses below.

Minimum and Maximum Street wall heights	No updates required.	This standard has been met.
Stepbacks	No updates required.	This standard has been met.
Building Length	No updates required.	This standard has been met.
Transitions and buffers	Update architectural drawings to include screening of all structured parking levels on the western façade.	The architectural drawings are being updated to add screening to the first two levels of the Structured Parking building and will be provided as part of a subsequent submission. Updated Parking Garage Elevations are included with this submission.
Transportation (§8.5.7(E))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Transportation Demand Management	Update the TDM plan to establish a framework for all envisioned phases of development, including a data collection plan. Staff encourages establishing a plan differentiating parking passes by types of garage users (e.g., Staff vs. student; resident vs. hotel guest vs. off-site visitor), as well as installing permanent bicycle & pedestrian counters at planned & potential shared-use entrances to the site.	The TDM has been developed to establish TDM measures appropriate for each of the user types at the site rather than by building. This sets the framework for incorporating the anticipated TDM approaches for future phases. Measures have been developed to encourage the use of the full spectrum of alternative modes and are scalable to continue to be expanded as the site and other opportunities are developed. An updated TDM plan is included with this submission; see section 2.8 Future TDM Framework.

Traffic Movement Permit	Update application to provide materials requested in Attachment 3 and continue to coordinate with MaineDOT & City staff for future comments & requested revisions.	See Attachment 3 table for response.
Bicycle and pedestrian access and safety	Submit an updated Transportation, Access, and Circulation Plan as a separate document to include pedestrian facilities, as well as contemplated connection points to the rail trail and Tukey's Bridge. Contemplate connections can be differentiated with a dashed line and for Tukey's Bridge, do not need to provide a finalized alignment.	See Attached Figure 3-17: Site Circulation Plan. Figure 3-17 has been further revised and is included with this submission.
	Update application materials to address comments from Bruce Hyman regarding the proposed design of Sherwood Street.	See Attachment 3 table for response.
	Update floor plans for the Structured parking & preschool facility building to provide additional detail on interior connections between building uses, and ingress/egress points for pedestrians.	The Structured Parking and Daycare facility are separated and are not connected. The site plan drawing is being updated to further illustrate ingress/egress access for pedestrians and will be provided as part of a subsequent submission. The Structured Parking and Daycare facility are separated and are not connected. An Illustrative Site Plan drawing has been created to further illustrate ingress/egress access for pedestrians and is being provided as part of this submission.

	Update the application to include a minimum perimeter access loop width of 20 feet and a minimum 12-foot width for all other pedestrian facilities.	The design team has reviewed the width of pathways and is currently revising the plans to widen sections of the perimeter path to a consistent 12 feet. A cross section of the perimeter path has been added to Figure 3-17: Site Circulation Plan, illustrating approach for pavement markings to accommodate shared use. This revised width meets or exceeds other existing trail networks within the City of Portland and will be suitable for the anticipated bike/ped volume. Increasing all pedestrian facilities to 12 feet and perimeter path to 20 feet is not warranted given anticipated use levels. The suggested widening would result in an additional 0.7 acres of impervious surface. Where possible, we are seeking to reduce impervious area to improve quality of our water resources. An updated Civil plan set is included with this submission. Figure 3-17 has been further revised and is included with this submission.
Parking	Updated application materials to include a parking ratio based on the parking analysis.	Excluding the parking structure, total planned building area is 303,600 square feet. This equates to a peak parking demand of 2.9 spaces per thousand square feet. For comparison, the standard Institute of Transportation Engineers rate for a general office building is 2.39 spaces per thousand square feet. While the site includes a large office component, classrooms are a more person-intensive use of space. The academic uses drive parking demand somewhat higher than a pure office development on this site.
	Identify where the estimated parking demand of 881 spaces for 2032 is in the TMP application.	This is discussed beginning on page 9 of Chapter 6 of the TMP Application. An updated TDM plan is included with this submission; see section 4.3 Proposed Parking Supply/Demand.

Circulation	Update the application to include at least a 20-foot wide shared-use path for the entirety of the perimeter access loop.	See above comment response *§8.5.7(E) Transportation: Bicycle and pedestrian access and safe*
Environment (§8.5.7(F))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Open Space	Submit a site plan sheet that shows the proposed public open space with the total amount of open space (in acreage).	This information has been added to the attached Figure 3-18 Areas of Public Open Space Plan
	Submit a draft public access easement for the perimeter access loop and buffer around the loop for review by the Planning Board and Corporation Counsel.	We will provide a draft public easement to Corporation Counsel, under separate cover. Figure 3-18 Areas of Public Open Space has been revised to extend the public access easement along the full length of the perimeter loop.
Sustainability and Resilience Charter	Update application materials to respond to the comments in Attachment 4.	See Attachment 4 table for response.
Lighting	Submit interior lighting plans, sequence of operations, and control details for the Cannery Building and the Structured parking & preschool facility building will be required to confirm compliance with ANSI/ASHRAE/IES Standard 90.1-2022.	The Structured Parking lighting set demonstrates compliance with ANSI/ASHRAE/IES Standard 90.1-2022 and will be provided as part of a subsequent submission. The Bean Building and Daycare facility are currently Shell+Core only. Compliant lighting plans will be provided in future building permit submissions once the 'fit out' designs of the Bean Building and Daycare facility are completed. "

		A general note has been added to the Structured Parking Floor Plans stating "Interior Building Lighting shall comply with ANSI/ASHRAE/IES Standard 90.1-2022."
Design Flood Elevation (DFE)	Submit the FFE for the preschool facility.	The FFE elevation of the daycare is 16. This FFE elevation will be added to the plans of the Daycare Center and will be provided as part of a subsequent submission. The FFE elevation has been added to the plans of the Daycare Center and is being provided as part of this submission.
Shoreline Stabilization & Natural Resource Impacts	No updates requested.	No action required at this time.
Bird-Safe Design	Update architectural drawings for the Learning and Research Center to clarify how the proposed laminated glass fins identified as GL-C1 will include a bird-safe treatment/design with American Bird Conservancy and Cornell Ornithology Lab standards.	The glass fins noted as type GL-C1 are Interior Structural Fins that are perpendicular fins supporting the facade. Accordingly, they pose no risk for bird collision.
	Submit updated detail drawings for the proposed new windows in the Cannery building to demonstrate that the windows or additional treatment to the windows will provide a bird-safe design with American Bird Conservancy and Cornell Ornithology Lab standards.	The applicant will provide more information as it pertains to bird safe glass in the Bean Building's new windows as part of a subsequent submission. The Roux campus buildings will follow the City of Portland's Bird Friendly Ordinance LD-670. Per the ordinance, all new buildings on campus will comply by providing facades that have been treated to have a Maximum Threat Factor of 30 (TF 30) up to 75 feet above grade. A maximum of TF 30 will be achieved through a combination of ceramic fritted glass, angled glass facades and a variety of articulated materials such as metal fins and granite window systems.

		Final spec and design of glass will be provided as part of the building permit submission.
	Submit detail drawings for the proposed windows for the Structured parking & preschool facility building that demonstrate a bird-safe design with American Bird Conservancy and Cornell Ornithology Lab standards.	The applicant will provide a glazing schedule for the Structured Parking and Daycare Building that includes treatment for Bird Safe glass complying with Maine's Legislation LD 670 and conform to the City of Portland's Bird Friendly Ordinance as part of a subsequent submission. The Roux campus buildings will follow the City of Portland's Bird Friendly Ordinance LD-670. Per the ordinance, all new buildings on campus will comply by providing facades that have been treated to have a Maximum Threat Factor of 30 (TF 30) up to 75 feet above grade. A maximum of TF 30 will be achieved through a combination of ceramic fritted glass, angled glass facades and a variety of articulated materials such as metal fins and granite window systems. Final spec and design of glass will be provided as part of the building permit submission.
Mitigation Measures (§8.5.7(G))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Off-Site Infrastructure	No updates requested.	No action required at this time.
Natural Resources	No updates requested.	No action required at this time.

Design (§8.5.7(H))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Waterfront	Submit a detailed elevation for Vestibule 3 for further Staff review.	The applicant is developing an updated elevation rendering that illustrates the details of Vestibule 3 as part of a subsequent submission. A rendering of the LRC Vestibule is included as part of this submission.
Cohesive Campus	No updates required.	This standard has been met.
Historic preservation	Submit clarification on the intended function/s of the radius paved surface leading to the western façade of the Cannery Building, including, but not limited to, any ancillary, delivery, or utility functions.	Paved surface leading to the western facade of the Bean Building to be used for deliveries, trash/recycling pickup, and service access. In addition, this location will be used for bicycle access to a covered, indoor bike parking room. A required egress from the Bean Building will also exit onto this paved surface. See orange triangle graphics on "Figure 5-3 – Bean Building Service Access" designating these locations.
Connectivity	Submit a written description of uses along the coastal path in relation to motorized vehicles.	The coastal path around the Roux Campus is not intended for public vehicles other than emergency vehicles such as Ambulance and Fire Apparatus, and periodic service vehicles needing to access the Bean Building and pier. The coastal path is widened in these areas to accommodate emergency vehicles by incorporating a coble stone shoulder, as reflected in Figure 3-17.
	Submit a narrative discussing the need for multiple garage entrances.	The Garage entrances have been designed with consideration of vehicular flow and safety. The primary entrance will be the North entrance while the East entrance will be used primarily as an accessory entrance during peak hours.

Open space	Update the landscape plan to include native coastal shrubs and grasses along the waterfront edge.	An annotated list confirming native status of all plants within the coastal waterfront edge will be provided as part of our subsequent submission. The site landscaping is being updated to include the native status of proposed plants. The Applicant has reached out to the City Arborist and is in the process of setting up a meeting with him to review the proposed plantings. The updated planting sheets in the landscaping plans will be submitted following that meeting.
Sustainable practice	Confirm whether photovoltaic panels will be installed as part of Phase 1 for the Structured parking & preschool facility building.	Photovoltaic panels will not be installed as part of Phase 1 for the Structured Parking. However, infrastructure will be provided for possible installation in the future.
Resilience	Confirm whether a generator(s) will be included for the Structured parking & preschool facility building. If not, submit a narrative on how emergency power generation & elevator egress will be supplied.	The Elevator must be provided with standby power and comply with the emergency operation and signaling device requirements of the MUBC and NFPA 101. Emergency loads such as lighting and fire alarm will be provided by battery backup through either local battery units or central lighting inverter.
Building design	Submit architectural floor plans and proposed FFE for the preschool facility.	The FFE of the daycare will be 16. This FFE elevation will be added to the plans of the Daycare Center and updated architectural floor plans will be provided as part of a subsequent submission. The FFE elevation has been added to the plans of the Daycare Center and the updated plans are provided as part of this submission.
Building entrances	Update architectural drawings to include additional entrance articulation that supports wayfinding to publicly accessible entrances.	The applicant is developing updated architectural drawings and renderings that illustrate the details of publicly accessible entrances as part of a subsequent submission. The applicant is submitting herein an illustrative rendering of the design approach to the vestibule/entry design for the LRC. The concept includes a recessed entry zone in the glass facade that

		reveals a "canopy" with entry designation. Lighting will be incorporated in the canopy ceiling and differentiated paving will also define the entrance.
Mitigation of impacts	No updates requested.	No action required at this time.
Neighborhood integration (§8.5.7(l))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Neighborhood engagement	Submit the October 30th Community Advisory Group meeting minutes, including a complete list of Advisory Group members (present and not present) and a summary of discussion topics.	The following is submitted in response to comments and to demonstrate fulfillment of the commitment in the Institutional Development Plan to create and work collaboratively with a Community Advisory Group broadly reflective of interested constituencies in the City of Portland: <u>Community Advisory Group Members as of 10.30.2023</u> Tiffanie Bentley, Interim President, SMCC Sarah Boltz, Teacher, Presumpscot Elementary School Emma Bond, Portland Bike/Ped Advocacy Committee Charlie Collins, Friends of Payson Park Eamonn Dundon, Dir. of Advocacy, Portland Regional Chamber of Commerce Jason Judd, Executive Director, Educate Maine Cherie Juniwiecz, East Deering resident Cheryl Leeman, East Deering Neighborhood Association Adilah Mohammed, The Third Place Sarah Nadeau, Parent, Presumpscot Elementary School Bill Needelman, Waterfront Coordinator, City of Portland Jack Phillips, Executive Director, Portland Parks Conservancy Angie Taylor, Principal, Presumpscot Elementary School Aaron Townsend, Dep. Superintendent, Portland Public Schools Mike Tremblay, Director of Transit Development, Metro Steve Von

		Vogt, East Deering Neighborhood for Responsible Development
		Marie Caspard, The Island Institute
		
		<u>Positions yet to be filled but still in active recruitment:</u>
		Front Street Neighborhood representative
		Portland Housing Authority's Washington Gardens
		Portland Housing Authority's Front Street Development
		Rail representative
		
		The first meeting of Community Advisory Group was held on October 30, 2023 and a copy of the meeting notes are attached for your reference. Discussion topics of the first meeting included:
		
		- Overview of Roux Institute
		- Campus development plan and project status
		  o Phase 1 plans, site layout, buildings, landscaping, public access
		  o Institutional Overlay Zone and upcoming permitting process
		- Questions and discussion
		- Role of CAG
		- Draft Charter

	Provide confirmation of who is serving as the designated community contact. City Staff recommends that the community contact be identified on the project website along with the contact email provided at the bottom of each page.	Sam Reiche will continue to serve as the designated community contact, until that responsibility is transferred to the Roux Institute at Northeastern University on or around the time of campus opening. Responsiveness to community questions and input is encouraged through multiple channels on the www.rouxcampusportland.org website, including links to Subscribe to Updates, Leave Feedback and to Reach Out with questions or requests for a one-on-one meeting at info@rouxcampusportland.org. Requests are responded to promptly. This is standard and preferable to including a name and cell phone or email address for a specific individual and will facilitate a smooth transfer of responsibilities to Roux Institute at Northeastern University staff. The Reach Out link or Feedback link is on every page of the website. The website has received 10,159

		unique visitors and has 320 followers who receive regular updates including notices of meetings, minutes, recordings and presentations.
	In keeping with the goal of the IDP to provide up-to-date information through the project website, review and update accordingly the timeline listed under the Info page of the project website.	The timeline is updated regularly to reflect current understanding of the project schedule. Accordingly, the anticipated date for campus opening is being changed to Fall, 2027.
Construction management	Submit a draft design for a dedicated construction webpage that includes communication methods through social media, texting, and hotline.	Northeastern University plans to establish a construction webpage similar to the one created for their recently completed research center, EXP (seen at this link: https://facilities.northeastern.edu/exp/[facilities.northeastern.edu]). As with the current Roux Campus website, www.rouxcampusportland.org, timely information on construction progress will be provided in the form of news and photos. Neighbors and the public can sign-up to receive regular email updates about construction status and other elements that could impact the neighborhood. Further details for the webpage and construction communication plans will be developed in collaboration with prime contractors and shared in advance of construction.
	A detailed construction schedule is referenced but is not attached to the Construction Management Plan. Submit a detailed construction schedule for City Staff review.	The attached Construction Management Plan has been updated accordingly.

	Submit a truck routing plan that identifies routes to and from the site, along with anticipated hours for deliveries. Temporary off-site storage locations should be identified as part of the truck routing plan.	The attached Construction Management Plan has been updated accordingly.
	Under Erosion Control and Preservation of Trees, clarify that temporary ESC measures shall be removed post-construction.	The attached Construction Management Plan has been updated accordingly.
	A wheel wash is included for the eastern construction entrance, but there is not a wheel wash for the southern entrance/ there is no connection for trucks to enter through the southern entrance and exit through the eastern entrance. Clarify what ESC controls are proposed for the southern entrance and if vehicular connections are proposed between the southern and eastern entrances.	The attached Construction Management Plan has been updated accordingly.
	On the Sitework/Foundation sheet of the Site Logistics Plan, the Codfish Building and Pier are identified to be demolished at a later date. However, the demolition of these elements is included in the site plan set. Clarify.	The attached Construction Management Plan has been updated accordingly.

Historic Preservation (§8.5.7(J))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Historic preservation review	No updates requested.	No action required at this time.
Required interpretive elements	No updates requested.	No action required at this time.

3. ATTACHMENT 3: PEER REVIEW COMMENT RESPONSES

For the comment responses provided by the Applicant, responses provided on February 5, 2024 remain in black text.
Responses added for the March 26, 2024 response have been added in blue text.

Peer Review Comments		
Wright-Pierce Chapter 500 Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Urban Impaired Stream Standard	As noted by the applicant, the proposed development is not located within an urban impaired stream watershed. Therefore, this standard is not applicable.	Noted.
Basic Standard	On Sheet C-002 of the Civil Plans, it appears the perimeter barrier falls within the edge of water called out on the plans. It is recommended to relocate the perimeter barrier to keep it out of the water.	The perimeter barrier will be revised as requested. The updated Civil Drawings will be provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
	On Sheet C-002 Inset B of the Civil Plans, it appears the perimeter barrier crosses an existing building. Please confirm and revise as necessary.	The perimeter barrier will be revised as requested. The updated Civil Drawings will be provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
Basic Standard	Please confirm whether de-watering is anticipated on the project. If de-watering is anticipated, please consider including a detail for de-watering treatment in the plans and discussion on proper discharge in the Stormwater Management Plan.	Dewatering is anticipated during construction. A detail will be added to the civil plans, to be submitted at a later date. An updated civil drawing set is included as part of this submission.

	In Appendix B of Maine DEP Chapter 500 it is noted that during post-construction ditches and swales should be inspected after heavy rains in addition to the spring and late fall. We would recommend including this additional inspection requirement in the Stormwater Inspection & Maintenance Plan.	The Stormwater Inspection and Maintenance Manual will be updated accordingly and provided as part of a future submission. The Stormwater Inspection and Maintenance requirements have been updated and this is part of the updated Stormwater Management Report included with this submission.
	We recommend the applicant updates winter construction dates on the Civil Plans Sheet D-401 to match Maine DEP requirements.	Sheet D-401 will be updated accordingly and provided as part of a future submission. An updated civil drawing set is included as part of this submission.
	If winter construction is anticipated, we would recommend including Winter Construction requirements outlined in Maine DEP Chapter 500 in the Stormwater Management Plan.	As noted on Sheet D-401, the contractor will be required to comply with the Maine DEP Erosion Control BMP Manual, which includes Winter Construction requirements. In our opinion, this satisfies the Maine DEP requirements.
General Standard	The applicant has demonstrated that they meet the treatment requirements for redevelopment project under the General Standards of Maine DEP Chapter 500.	Noted.
General Standard	We recommend the applicant confirm that proposed pre-treatment meets the requirement of proprietary systems under Appendix B of the Maine DEP BMP manual.	Sediment pretreatment rows designed by the manufacturer are provided for the proposed R-Tank systems in accordance with Chapter 500 requirements. A letter that demonstrates manufacturer review and approval of the design can be provided upon request. A letter from the manufacturer confirming system design review is part of the Stormwater Management Report included in this submission.

Flooding Standard	The applicant states in the Stormwater Management Plan that the portion of the project which discharges to Casco Bay is eligible for a waiver under Maine DEP Chapter 500 Section 4.F(3) since it is discharging to a tidal waterbody. The drainage within Sherwood Street will not drain to Casco Bay; however, the applicant is requesting a waiver from the Flooding Standard for the campus development.	A waiver from the flooding standard is requested for the site development on private property, which drains in its entirety to Casco Bay. The project also requires upgrades to Sherwood Street, including the stormwater infrastructure in Sherwood Street. We are working with Public Works staff on the appropriate public stormwater infrastructure design in Sherwood Street. The Applicant has discussed the waiver for the flooding standard for the campus with Justin Pellerin from the City of Portland who has indicated he is in favor of granting this waiver. None of the site outside of the Right of Way is draining to the Sherwood Street system. The City is in the process of investigating the existing infrastructure, and we will be working with them on the appropriate design to accommodate the Sherwood Street Right of Way drainage.
Wright Pierce - General Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
a.	Section 25 of the Site Location of Development Application states that "public notice requirements associated with Maine DEP Site Law do not apply "because the "City of Portland has Delegated Review Authority." Please confirm public notices will not be required for this application.	We understand that the public notice for SLOD is submitted concurrently with public notice for Site Plan by City Staff; therefore, a separate notice sent by the Applicant is not required.
b.	In Chapter 7.2 Bioretention Filters of Volume III. BMP Technical Design Manual, it is stated that the "geotextile fabric should be Mirafi 170N or equivalent." On Sheet D-	We will review geotextile materials and revise as needed.

	407 of the Civil Plans, the filter fabric is called out as 140N. We recommend the applicant confirm that 140N is acceptable for this application.	An updated civil drawing set is included as part of this submission.
Wright Pierce - Stormwater Management Plan Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
a.	It is stated in Section 3 of the Stormwater Management Plan that stormwater infrastructure on Sherwood Street is still being resolved. Please provide updated stormwater plans for Sherwood Street once completed.	We are working with Public Works staff on the stormwater infrastructure design in Sherwood Street; updated plans will be provided once completed. We are working with City staff to gather existing conditions information for Sherwood Street to confirm design for that portion of the project and will provide further information as it is available.
b.	We would recommend the applicant provide stormwater modeling results to confirm bioretention ponds and R-Tank systems meet the requirements of Maine DEP Stormwater BMP Manual.	Based on conversations with Public Works staff in September 2023 prior to Site Plan submission, we understand that stormwater modeling documentation is not required due to the waiver of the Flooding Standard.
c.	In Section 32-38 City of Portland's Code of Ordinance, it is noted the City requires an annual inspection report completed by qualified post-construction stormwater inspector to be submitted to the Department of Public Works. It is recommended to include this requirement in the Stormwater Inspection & Maintenance Plan.	The Stormwater Inspection and Maintenance Plan will be updated accordingly and provided as part of a subsequent submission. The Stormwater Inspection and Maintenance requirements have been updated and are included in the revised Stormwater Management Report as part of this submission.

Wright Pierce – Plan Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
a.	On the Sand Filter details on sheet D-405, there is a callout for "underdrain to outlet structure (size, location, and length to be determined by Engineer of Record)." On Sheet C-302 the underdrains for the sand filters are shown discharging to daylight and not to a structure. Please confirm intent of detail and revise as appropriate.	The underdrains for all proposed Subsurface Sand Filters will discharge into outlet control structures. Underdrain connections will be clarified in revised Civil Drawings to be provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
b.	On sheet C-304, one of the structure tables is cut off and appears to be missing OCS-9. Please provide and updated table showing all OCS information.	The structure table will be updated accordingly. The updated table will be provided with revised Civil Drawings provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
c.	Information on SD103 should be provided on Sheet C-304 in the pipe table.	The pipe table will be updated accordingly. The updated table will be provided with revised Civil Drawings provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
d.	It appears Subsurface Sand Filter 4 collects drainage from the road through CB14. Please verify if a hydrodynamic separator is required for Subsurface Sand Filter 4.	CB14 is located along a gated access way that will only be used occasionally for service and emergency access; therefore, it is our opinion that the drainage area to CB14 does not meet the

		criteria that would require a separate pretreatment structure.
e.	We would recommend adding a detail for pipe insulation of shallow pipes.	This detail will be added to the revised Civil Drawings, which will be provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
f.	We would recommend adding a detail that shows horizontal and vertical utility separation requirements.	This detail will be added to the revised Civil Drawings, which will be provided as part of a subsequent submission. Utility locations and inverts are shown on the plans. Considering the layout that is proposed for utilities on the site a detail with standard dimensions would not be warranted.
g.	On sheet L4.00, consider outlining bioretention cell location as it relates to the proposed vegetation. Confirm native shrubs and perennials are located within the bioretention area, per Maine DEP – Chapter 7.2 – Bioretention Filters.	The bioretention cells will be outlined on Sheet L4.00 and included in a subsequent submission. As noted previously, the Applicant's landscape architect will be meeting with the City Arborist to review proposed plantings, and the planting plans, including sheet L4.00 will be submitted following that meeting.
Tom Errico, P.E. – NE Traffic Eng. Director Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
1.	The applicant shall provide the parking demand analysis back up information in support of the project's parking supply.	With the reduction in the size of the garage, the resulting parking supply (641) is in alignment with the projected demand (581) at project occupancy.

		Since the previous submission, the parking count has been reduced, but still remains above the projected demand at occupancy. There are now 610 spaces in the garage and 14 on the site, for a total of 624.
2.	The applicant shall provide sight distance measurements at the Veranda Street/Sherwood Street intersection.	Sight distance looking north from Sherwood Street exceeds the minimum 250 feet (Maine DOT standard at 30 mph). However, when exiting Sherwood Street, the sight distance looking left (south) is blocked by the on-street parking and is only visible to 230 feet. As in most urban areas, in actuality, vehicles pull up further than 10 feet behind the edge of pavement. If existing vehicles pull up to edge of roadway, beyond the impact of the parked vehicles on the south side of Veranda Street, sight lines increase dramatically.
3.	The alignment/configuration of the internal three-way STOP intersection is a concern given the heaviest egress traffic movement will have to make a hard left maneuver. I would be interested in the evaluation of a small roundabout at this location.	A small roundabout will create right of way impacts and there are concerns with buses traversing over a domed truck apron.
4.	I support a waiver for the size of parking spaces in the garage given low vehicle turnover.	Noted.
Janine Ba – DPW Transportation Development Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
1.	DPW agrees with the proposed cross sections provided by the Transportation Program Manager for Sherwood Street that includes a 10' shared use path and feel it	The Sherwood St design will be updated to include a 10' shared use path.

	should be continued onto the campus and transition at the intersection.	The Sherwood St design has been updated to include a 10' shared use path. Revised Sherwood Street Plans are included as part of this submission.
2.	The applicant shall label the roadway (Sherwood Street) ROW and centerline on the plan view and cross section sheets.	Labels will be added to the Civil Drawings to be provided as part of a subsequent submission. ROW and centerline have been labeled as suggested. Revised Sherwood Street Plans are included as part of this submission.
3.	When printed it can be hard to distinguish between existing and proposed elevation. All elevations in the plan set need to be labeled as existing or proposed to prevent confusion. Update the plan set by using EX. Or parentheses () to distinguish between the type of elevation.	Plans will be updated as requested. Contours have been added to the plans and elevations have been labeled as suggested. Revised Sherwood Street Plans are included as part of this submission.
4.	DPW feels a traffic circle would work better at the intersection pictured on page 2/2 of email from Janine Ba dated 12/20/23.	A small roundabout will create right of way impacts and there are concerns with buses traversing over a domed truck apron.
5.	DPW has concerns with the minimum 5ft sidewalk width proposed for the site. The sidewalk width should be sized to meet pedestrian demand for the campus.	The Sherwood St design will be updated to include a 10' shared use path on the north side of the street. The Sherwood St design has been updated to include a 10' shared use path on the north side of the street. Revised Sherwood Street Plans are included as part of this submission.

6.	Revise the plans to adjust the -LW- within the property or provide documentation that shows the applicant has permission to be on the property.	At this time, the proposed work will occur entirely within the Applicant's property and City Right-of-Way. The limits of work will be adjusted accordingly on Civil Drawings provided as part of a subsequent submission. Plans have been revised to accommodate the 10' shared use path and 5' sidewalk while keeping all public infrastructure within the Right of Way. Some temporary agreements may be needed for grading and driveway improvements. Revised Sherwood Street Plans are included as part of this submission.
Mark Reiland – City Arborist Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
1.	Please include location, species, and DBH of existing trees on site and indicate tree protection measures for existing trees to be preserved. Groups of trees or wooded areas to be preserved can be indicated by showing the location of the collective group canopy dripline.	A survey of existing trees of 10" DBH or higher is being prepared and will be provided in a subsequent submission. The existing trees will not remain, as they will be impacted by the proposed grading and site improvements. An Existing Trees plan has been added to the landscaping plans as sheet L1.00 and is included with this submission.
2.	Please choose alternative species for the proposed maple selections; Silver Maple, Red Maple, Sugar Maple and Freeman Maple. The urban forest in the greater Portland area is over saturated with maple (>30% by count) creating a high degree of susceptibility to Asian Longhorned Beetle infestation.	Subsequent submissions of the landscape plans will include substitutions for all maples. The site landscaping is being updated to designate street trees and to replace all maple trees. The Applicant has reached out to the City Arborist and is in the process of setting up a

		meeting with him to review the proposed plantings. The updated planting sheets in the landscaping plans will be submitted following that meeting.
Transportation Demand Management Plan Preliminary Comments Markup (dated 12/5/2023)		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Section 1.1.2	Will the full capacity of the parking garage be available during Phase 1? Will parking costs be market rate? If so, for whom? This is key to understanding incentives/ disincentives to driving.	With the reduction in the size of the garage, the resulting parking supply (641) is in alignment with the projected demand (581) at project occupancy. Since the previous submission, the parking count has been reduced, but still remains above the projected demand at occupancy. There are now 610 spaces in the garage and 14 on the site, for a total of 624.
Figure 2 Campus Transportation Access	The M-UP substandard width of 6' for the beginning. Substandard bike lanes proposed on Veranda Street, not a M-UP.	Sherwood Street will be designed to accommodate a shared use path as requested by the City of Portland. Revised Sherwood Street Plans are included as part of this submission.
2.2.1 Existing Conditions	Confirm Sherwood Street right-of-way width.	ROW is 3 rod or 49.5 feet.
2.2.3 Potential Future MaineDOT Infrastructure	Discuss Berlin/SLA pathway and Veranda St bike lanes. Confirm shared-use path width.	The Veranda Street bike lanes are mentioned in 2.3.4 which discusses other potential future infrastructure as it is not a MaineDOT project.

2.3.1 Existing Conditions	Add alternative biking route around Baxter Boulevard via Back Cove Trail to narrative.	Agree, bicyclists can also use the Back Cove Trail or Baxter Blvd as a less direct route into the Portland Peninsula.
Figure 3. 15 Minute Bike Shed Zone	Quite skeptical this is the 15 min. bike shed & barely even drive shed. Confirm bike shed boundaries.	Bike shed boundaries will be updated/confirmed. Updates to this figure can be provided as part of a subsequent submission, as necessary. Bike shed boundaries have been revised and a revised TDM Plan including this figure is included as part of this submission.
2.4.2.2 Other Metro Opportunities	Confirm at what level transit passes will be subsidized for students, staff and faculty.	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
2.7 Existing TDM Efforts	Confirm at what level transit passes will be subsidized for students, staff and faculty.	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
	Confirm the rate students will be charged per parking space.	Users will be charged market rates for parking.
Table 2 Transportation Survey Mode Split Data	What was response rate to the Surveys? Is there a meaningful breakdown by students vs staff/faculty/others since mode share targets are different for each?	The surveys include a demographic breakdown between students, faculty, staff, others, ect.
4.3 Proposed Parking Supply/Demand	Confirm how interim phasing of allocated parking spaces will be managed (e.g. restricting parking to 561 within a garage with a capacity of 692 spaces during Ph 1).	With the reduction in the size of the garage, the resulting parking supply (641) is in alignment with the projected demand (581) at initial project

		occupancy. No further parking modification is required. Since the previous submission, the parking count has been reduced, but still remains above the projected demand at occupancy. There are now 610 spaces in the garage and 14 on the site, for a total of 624.
Table 5 Drive Mode Split Targets	Does "Drive" include all carpool occupants?	No, only the driver counts towards the percentages in this table.
6 Mode Split Target Strategies	Table 7 is not provided. Revise last sentence on page 20 to confirm intent.	Table number was mislabeled and should read Table 6.
Table 6. TDM Strategies - Commitments	What is the level of subsidy? 100%?	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
	What happens to the interior bike parking when more vehicle parking is needed?	The Roux Institute at Northeastern anticipates that both bicycle parking and vehicular parking demand will continue to increase as enrollment increases, so it is anticipated the bicycle parking remains in the garage until and if it could be accommodated elsewhere. The Roux Institute at Northeastern University will continue to investigate additional measures to support reduction of vehicular trips to the site including remote parking in connection with transit and investment in additional alternative mode infrastructure.

	The current plans show substandard width bike lanes (4').	Sherwood Street will be designed to accommodate a shared use path as requested by the City of Portland. Sherwood Street has been updated to accommodate a shared use path as requested by the City of Portland. Revised Sherwood Street Plans are included as part of this submission.
	Where are the on-site showers and lockers planned to be located? Is there a campus gym?	Per Cannery Building Drawing A-100, there are on-site showers and lockers in the Lower Level of the Cannery Building. There is not a campus gym.
	What is the anticipated cost/month for parking spaces --> market rate?	Users will be charged market rates for parking.
	Confirm transit pass subsidy. Not a transit pass provided via employee/student ID as done by most institutions (USM/SMCC, etc) with no out of pocket outlay required?	The Roux Institute is currently running a pilot program with METRO. Bus passes will be subsidized long term and the level of subsidy will be determined based off the pilot program.
	Where and how will carpool parking be prioritized?	Grade level priority parking spaces will be provided as demand dictates.
	Can electronic screen displaying transit information be provided in the lobbies of the two main Ph 1 buildings for increased visibility of multimodal options?	Informational signage will be provided in both buildings.
	Can 'simple' AC outlets be added in vicinity of interior bike parking in short-term to encourage e-bike/bike usage in general?	Yes.
	Reported survey results said high desirability of bikeshare. Can this be implemented in short-term versus long-term?	Yes. The bike share location is shown on the Figure 5-1 Bike Amenities and Circulation.

Justin Pellerin, P.E. - DPW Sherwood Street and Campus Site Plan Response Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Sherwood Street Roadway Improvement Comments		
1.	New catch basin structures in Sherwood Street should be installed per City of Portland Technical Manual standards. Each basin should have a headstone and be installed with a 3' sump. Include applicable details in the plan set.	Noted. The details will be revised accordingly and provided with revised Civil Drawings to be provided with subsequent submission. An updated drawing set is included as part of this submission.
2.	All storm drains and underdrains 10" and greater shall meet the City's stormdrain material specifications listed in section #2 of the technical manual.	Noted.
3.	It appears the proposed 12" underdrain/stormdrain pipe running along the southerly curb line between station 212+00 and 213+00 is in conflict with an existing gas main. Is the applicant working with Until to relocate the gas main in this area?	This Sherwood St design is being revised to alter lane widths and add a shared use path as suggested. Coordination with Unitil will take place during future design if required. There is approximately 18" of separation between the gas and UD trench at the end of the main. The gas main does end where it is shown on the plans. Based on the street markings it appears that this main is capped stub just beyond the last service just beyond STA 213+00.
4.	DPW is in the process of inspecting the existing storm drain line in Sherwood Street. Improvements may be needed within the project paving limits of the pipe is found to be in poor condition.	Noted.

Campus Site Plan Comments:		
1.	The existing condition plans and design plans should be updated to address the storm drain alignment issues and to resolve any remaining utility conflicts between the 12" water main and the City's storm drain system in Sherwood Street.	It is our understanding Public Works is completing CCTV evaluation of the storm drain in Sherwood Street. We will update our existing conditions and proposed plans accordingly. We are working with City staff to gather existing conditions information for Sherwood Street to confirm design for that portion of the project and will provide further information as it is available.
2.	PWD should review the proposed sanitary connection into Ex SMH-1. The City's mapping indicates this structure is owned by PWD; however, that is somewhat unclear.	PWD confirmed the structures are owned by PWD. We are working with PWD on this sewer connection and will provide documentation of approval upon receipt.
5.	The existing condition of the structure (EX-SMH-1) and outlet pipe out of EX-SMH 1 should be thoroughly inspected and possibly replaced if in poor shape. If EX-SMH is found to be in poor condition it appears an alternate alignment could be utilized which would result in the Elimination of EX-SMH-1 and Proposed SMH-1 (And S-1) by connecting S-2 directly to un-named EX SMH.	Noted. We are working with PWD on this sewer connection and will provide documentation of approval upon receipt.
6.	The plans should be updated to depict the locations of all the required ESC Controls including but not limited to dewatering/stockpiling areas with proposed BMPs and the proposed location of the anticipated stone construction entrance.	The Civil Drawings will be updated accordingly, and provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
7.	The applicant shall confirm the sizing and design of the proposed external grease trap associated with the LRC	The applicant will provide updated data on the size and design of external grease trap and verify

	building and verify it is designed in accordance with Chapter 7 of the City's sewer use rules and regulations	it complies with Chapter 7 as part of a subsequent submission. An external grease trap is no longer required for the site. Internal grease traps will be specified where they are required with future buildout of interior spaces.
8.	The project will be required to submit a dewatering plan to the Water Resource's Compliance Coordinator in accordance with chapter 8 of the City's sewer use rules and regulations prior to any excavation work and dewatering activities occurring on-site.	Noted. A general note will be added to the Civil Drawings, which will be provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
Ann Machado – Zoning Administrator Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Section 8.5.7.D		
1. B-5 is the underlying zone	No dimensional requirements under Table 7-E except height which is governed under the IOZ requirements.	Noted.
3. Street Wall Height	Min. 45' & max. is 105' -LRC – 68.6 -Garage – 66.2 stair tower (86.7)	This standard is met.
4. Stepback	Needed at street wall if higher than 105' – 10' min. – LRC goes from 22.5' to 13.5'	This standard is met.

5. Building Length	a. no building is longer than 250' – don't need publicly accessible corridor – figure 3.3 244'	This standard is met.
Building Height – Figure 8-F	The maximum height for the various height zones based on the average grade appears to be met. My only issue is with the Average Grade plans. The sheet (AS61.0 gives the average grade of the garage as 20.8. I calculate it as 18.8'.	Elevations have been calculated at the four corners of the garage and do not include the daycare building. Please refer to figure 8-FA attached to this document for a visual summary. As site grades have been modified slightly during design, the average grade for the garage has changed, increasing from 20.8 to 21.1. Figure 8-FA attached to this document has been revised to reflect this change.
Shoreland Zone	The highest annual tide has been located but I don't see a 25' shoreland zone setback located.	The 250' Shoreland Zone setback will be clarified on the revised Civil Drawings to be provided as part of a subsequent submission. An updated civil drawing set is included as part of this submission.
Floodplain	Both the approximate FEMA flood zone line and the approximate flood zone line based on EL 9 are shown. I'm not sure what they mean by the approximate FEMA flood zone line. Are they overlaying the FIRM from 1986? EL 9 impacts the LRC building and we will need a floodplain permit application for new construction and elevation certificates.	Both the FEMA FIRM flood zone line (from the FIRM) and an approximate flood zone line based on the existing contours and the flood elevation (EL 9) are provided. While the approximate flood zone line (EL 9) intercepts the LRC, the proposed FFE is 22.5, and therefore a floodplain permit application is not required.
	The other questions that I have is about the timing of the new flood zone maps. We still don't know when the new maps will go into effect. Obviously, we are reviewing the current site plan under the current floodplain maps. My question is, if the new maps go into effect before the building permits are applied for, would the buildings	Noted. We anticipate the City will make a determination on timing. It is our understanding that the new flood zone maps will go into effect in June of 2024, and that any projects that do not yet have building permits will be required to comply with the new maps.

	then need to meet the base flood elevation for the new maps?	The project has been reviewed relative to the new elevations, and we believe we will be in compliance.

4. ATTACHMENT 4: SUSTAINABILITY CHARTER COMMENT RESPONSES

For the comment responses provided by the Applicant, responses provided on February 5, 2024 remain in black text.
Responses added for the March 26, 2024 response have been added in blue text.

Sustainability Charter		
Code mandated items		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Energy, Responsible Materials, and Occupant Experience	To be determined at time of permitting.	We understand these will be reviewed as part of the building permit process.
Energy		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Eliminate on-site fossil fuels in building HVAC and Food service.	Heat pumps are proposed in the LRC building. Additional information will need to be submitted for the Cannery Building and the Structured parking & preschool facility building to confirm that efficient electrical mechanical systems are being utilized.	Fossil fuels will not be utilized for HVAC and food services. Design of mechanical systems will be provided as part of the building permit process.
	Submit a narrative confirming how fossil fuels will not be combusted on the site for any of the uses of the site (e.g., lab, café space).	The project is committed to utilizing all electric kitchens throughout. The design of these systems will be provided as part of the building permit process.

	Complies: Hot water is provided through electric heaters, as noted in Sheet P1.01.	No action required.
Provide infrastructure for future PV installation.	PV locations identified for the LRC and Cannery buildings, but is not identified for the Structured parking & preschool facility building. Update the floor plans for the Structured parking & preschool facility building to identify the location of future PV equipment for the building.	Conduits will be provided from roof areas to central electrical rooms to provide infrastructure for potential PV systems in the future. Details of this design will be provided as part of the building permit process.
Design the building to be 30% better than ASHRAE 90.1 2019 and 15% of roof area dedicated for PV.	Geothermal HVAC shown in Sheet GT-01 and photovoltaic systems >15% of the roof area are proposed for the roof of the LRC building. Applicant shall submit a narrative demonstrating how the combined systems will be designed to be 30% better than ASHRAE 90.1-2019.	Thorton Tomasetti ("TT") is performing an energy model for the project. The report will be submitted to the city for review prior to or as part of the building permit application.
Embodied Carbon		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Reuse existing historic building.	Applicant shall provide narrative clarifying how the submitted strategy is being achieved through the proposed renovation of the Cannery Building.	The Bean Building is being designed to support a flexible program. This includes limited use of permanent partitions which supports the strategy indicated.
Advocate for Environmental Product Declarations (EPDs) for all concrete used on the project.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	The project teams will require EPDs in specifications. A procurement schedule will be generated and shared with City when available.

Perform a whole building life cycle analysis (LCA) to study carbon conservation measures.	Identify when a LCA will be completed/be able to be submitted for review by City Staff prior to issuance of building permits for the project.	An LCA of each building will be submitted to the city for review prior to or as part of the building permit application.
Reduce the embodied carbon of structural materials in the building by 15% from a typical design.	Complies: Mass timber is proposed for a portion of the building.	No action required.
	Identify when a LCA will be completed/be able to be submitted for review by City Staff prior to issuance of building permits for the project.	An LCA of each building will be submitted to the city for review prior to or as part of the building permit application.
Responsible Materials		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Source wood products from Maine forests and/or sustainably managed forests or salvaged/reclaimed wood suppliers.	Applicant shall identify when procurement for materials is anticipated to take place and when copies of procurement notices can be sent to City Staff for confirmation relative to the submission & issuance of building permits.	A procurement schedule will be generated and can be shared with City when available.
Advocate for the removal of PFAS chemicals in other targeted product categories.		

In coordination with the contractor, identify key materials to procure from the state of Maine.		
Divert at least 50% of non-hazardous construction and demolition waste from the landfill.	Prior to a certificate of occupancy, a waste hauler contract for the site shall be submitted to review and confirm that 50% landfill diversion of non-hazardous materials will be ensured.	No action required at this time.
	Reuse of rail lines and bean pots have been proposed as part of interpretive work related to historic preservation. On the project website, under Site Work, a July 28, 2023 post identified historic elements that will be reused and construction materials to be reused/recycled. Update application materials to identify how the construction materials are being reused/recycled.	Website content from July is not the most current material. Review of project should be contained to the site plan application. If materials will be reused/recycled, the documents will be updated accordingly. Landscaping design details have not been finalized.
Target Red List free finishes in targeted spaces.	Complies: October 19, 2023 Design Development document states that red list free materials shall be used.	No action required.
Use best practices for bird friendly design.	Bird safe glass treatments are proposed for some of the glass in the LRC building. Confirmation that the entirety of the building glass is bird safe has been requested to meet §8.5.7(F)(6) of the Land Use Code.	The applicant will provide more information as it pertains to bird safe glass in the Cannery Building's new windows as part of a subsequent submission. The applicant will provide a glazing schedule for the Structured Parking and Daycare Building that includes treatment for Bird Safe glass complying with Maine's Legislation LD 670 and conform to

		the City of Portland's Bird Friendly Ordinance as part of a subsequent submission. The Roux campus buildings will follow the City of Portland's *Bird Friendly Ordinance LD-670*. Per the ordinance, all new buildings on campus will comply by providing facades that have been treated to have a Maximum Threat Factor of 30 (TF 30) up to 75 feet above grade. A maximum of TF 30 will be achieved through a combination of ceramic fritted glass, angled glass facades and a variety of articulated materials such as metal fins and granite window systems. Final spec and design of glass will be provided as part of the building permit submission.
Water		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Reduce indoor water use from 25% from a code baseline building.	Flow rates for plumbing fixtures have not been provided as part of the submitted application materials. Update application materials to state the proposed flow rate for plumbing fixtures and the applicable code requirements for flow rate.	Flow rates for plumbing fixtures will be provided as part of the building permit process.
	Urinals are proposed in public bathrooms for the LRC, but are not shown in the Cannery Building or the Structured parking & preschool facility building. Clarify why urinals are not proposed in the Cannery Building and whether any urinals are proposed for the Structured parking & preschool facility building.	Urinal counts will be provided as part of the building permit process.

Maximize the use of native and drought tolerant landscape plants.	Complies: Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.
Stormwater Management in accordance with Maine Department of Environmental Protection Best Management Practices Manual and City of Portland Technical Manual.	Complies: Application is designed to meet Chapter 500 standards and has incorporated LID strategies such as protecting natural drainage systems, utilizing low-maintenance landscaping, minimizing impervious surfaces, and providing vegetated open-channel conveyance systems.	No action required.
Prohibit the use of all synthetic pesticides and fertilizers for the operation and maintenance of landscape and agriculture through Integrated pest management (IPM)conducted as part of an overall Plant Health Care Program for the Roux site.	Complies: Native and low-maintenance plantings have been prioritized to require fewer short- and long-term maintenance needs.	No action required.

Occupant Experience & Equity		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Optimize natural daylight and mitigate glare.	Confirmed in General Note 8 on Sheet A12.01 of the architectural plans for the LRC building. Confirmation of shades or curtains for the Cannery Building and the Structured parking & preschool facility building have not been provided. Update architectural drawings to confirm that shades or curtains will be provided for regularly occupied spaces that face east, west, and south for the Cannery Building and the Structured parking & preschool facility building.	Information regarding shades or curtains for the Cannery Building and Daycare facility will be provided as part of the building permit process. Shades are not assumed at structured parking as space is not regularly occupied.
Incorporate biophilic design principles.	Mass timber and stone are proposed to be used for the LRC building. Currently, only non-natural materials are identified for the Structured parking & preschool facility building. Update architectural drawings to identify what natural materials are proposed to be used for the Structured parking & preschool facility building.	The daycare facility will incorporate natural material on the interior. The materials will be indicated during the Planning Board process. The structured parking will incorporate a biophilic design through the expression of waves in the design of the west facade.
	Provide a supplemental narrative and/or sample designs on how the proposed art and signage for the campus will create cultural and ecological connections to place, as well as the locations for the proposed locations for art and signage.	Design of the proposed art/signage will be provided as part of the building permit process.
Use the building to educate building and site users.	Identification of informational signage on sustainability features of the LRC & Cannery buildings is not included in the signage plans. Update the architectural drawings and/or signage plans to identify where the proposed informational signage on sustainability features of each	Design of the proposed signage will be provided as part of the building permit process.

	building will be located and the proposed design of the signage.	
Provide amenities to support public access.	The submitted floor plans for the LRC building include drinking fountains and/or bottle filters. The submitted floor plans for the Cannery Building and the Structured parking & preschool facility buildings do not show drinking fountains and/or bottle filters. Update floor plans for the Cannery Building and the Structured parking & preschool facility building to identify the location(s) of drinking fountains and/or bottle fillers.	Plans for drinking fountains/bottle fillers for Cannery Building will be provided as part of the building permit process. The Parking garage is a transient space so water fountains are not planned. The Daycare facility is not accessible to the public and the water needs of the staff and children are met by traditional sinks.
	Publicly accessible restrooms are provided in the LRC and Cannery buildings. Submitted floor plans for the Structured parking & preschool facility building do not provide enough detail to confirm whether restrooms will be publicly accessible next to the proposed shoreland open space. Update architectural drawings to clarify if and how publicly accessible restrooms will be provided.	For security and safety the Daycare facility is not publicly accessible. No public restrooms are planned for the structured parking.
	Complies. Shared-use facilities are provided throughout the site.	No action required.
	Complies. Benches are provided throughout the site.	No action required.
	Complies. Site wayfinding package is included as part of the application materials.	No action required.
Provide Gender inclusive restrooms.	Public, gender inclusive restrooms are provided in public areas in the LRC building. The split of restroom facilities in the Cannery Building connotes that bathroom facilities will not be gender inclusive. Confirm that the both public area bathrooms on the lower level of the Cannery Building are gender inclusive.	Both public area bathrooms on the lower level of the Cannery Building are gender inclusive.

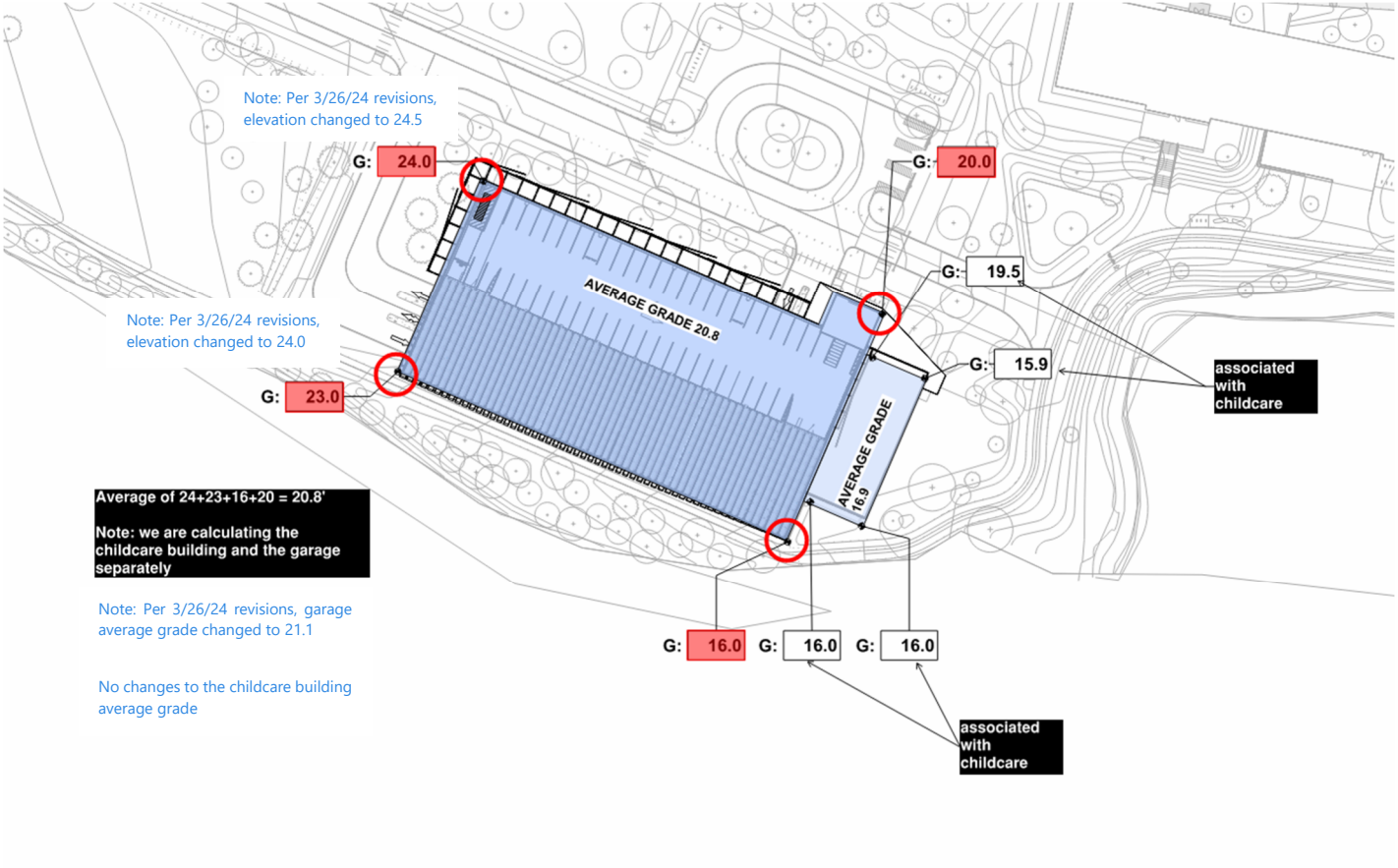
Provide lactation rooms.	Lactation rooms not identified in the floor plans for the LRC and Cannery buildings. Update floor plans to identify lactation rooms that include a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets.	Updated floor plans will be provided as part of the building permit process.
Transportation		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Conduct study of EV charging needs. Provide required EV capacity to meet anticipated demand.	EV Charging Study is still under review by City Staff. As Study is under review, Application should confirm whether the charging should meet the demand in coordination with EV or PV requirements approved by the City.	The EV charging provided is intended to be in compliance with site plan standards.
	EV Charging assessment should be coordinated with the submission of TDM reports. City staff encourage the assessment of EV charging for automobiles and bicycles as part of the campus goals to reduce SOV automobile trips.	No action required at this time.
Integrate quality/ secure bicycle storage into the site design and provide shower facilities.	Bicycle storage is proposed on the lower level of the Cannery Building. Bicycle storage is not provided in the LRC building. Update floor plans for the LRC building to identify interior, secure bicycle storage.	Users of the LRC building will utilize bike storage on site, provided in either the Bean Building and/or in the structured parking.
	Complies: Showers are provided on the lower level of the Cannery Building.	No action required.
	Bikeshare stations are not currently identified in the submitted application materials. Update application	The bike share location is shown on the Figure 5-1 Bike Amenities and Circulation.

	materials to identify proposed locations for bikeshare stations for review and further discussion with City staff.	
	Complies: Exterior bicycle parking is distributed throughout the site for buildings in the first phase and future phases of development. As mentioned three standards above, secure bicycle storage will need to be provided for in the LRC building.	No action required regarding exterior bicycle parking. Sufficient indoor bicycle storage will be provided in Cannery Building or the Parking Structure.
	Complies: Application identifies opportunities to reduce SOV trips through unbundled parking, ongoing collaboration with METRO and MaineDOT, on-site shared-use facilities with anticipated connection points to the rest of the peninsula and off-peninsula, as well as pier improvements to facilitate water taxi service.	No action required.
Resilience		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Incorporate near-term future-projected climate change data (2050s) in design of mechanical, electrical, and	Critical building infrastructure has been identified in the LRC building to be located above 22.5 feet NAVD88. Additional information still needs to be provided to confirm that no critical building infrastructure is located below 22.5 feet NAVD88 for the Structured parking & preschool facility building, particularly in the Preschool Facility portion of the building.	No critical infrastructure will be located below 22.5 feet in the structured parking or daycare facility. That will be confirmed in the building permit process.

plumbing systems and/or components on a regular replacement cycle. Incorporate long-term future-projected climate change data (2100+) in the design of the building and infrastructure, including flood resistant materials below the 2100 sea level rise design flood elevation and elevate critical infrastructure above this elevation.	Heat projections with MEP consultant not included with application materials. Applicant should clarify the anticipated development of the projections and point for City staff to review prior to Certificate of Occupancy.	Required information will be provided prior to Certificate of Occupancy.
Prepare emergency action plan and provide appropriate level of backup power to support life safety. Incorporate campus-wide emergency	Unable to confirm whether generator can provide 48 hours of energy for essential operations. Applicant should provide supporting documentation based on the proposed storage capacity or the manufacturer that the proposed nitrogen generator can supply energy for 48 hours to essential operations.	Refer to mechanical drawings for fuel oil tank size and location. LRC generator has been sized for 48 hours of run time.
	Emergency preparedness plan not submitted. Applicant should clarify the anticipated development date of the	An emergency preparedness plan will be submitted prior to Certificate of Occupancy.

preparedness planning to enhance overall resilience of the campus/site community.	plan and point for City staff to review prior to Certificate of Occupancy.	
	Complies: Generator provided on Level 1 of LRC building.	No action required.

FIGURE 8-FA: AVERAGE GRADE CALCULATION FOR GARAGE AND DAYCARE



May 23, 2024

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

Re: Response to City Staff Comments – Roux Institute at Northeastern University
Project ID PL-002724-2023

Dear Zach:

Thank you for coordinating the review of the Major Site Plan and Site Location of Development (SLOD) Application for the Roux Institute at Northeastern University. We received the comments from the City's reviewers on May 15, 2024, and are providing narratives and updated plans in response. In addition to revisions based upon the City Comments, the drawings have also been updated to reflect changes resulting from advancement of the parking garage structure design. These changes resulted from a reduction in the number of parking spaces and the advancement of the façade design. These updates are reflected on the revised Parking Garage Elevations and Renderings uploaded to ProjectDOX.

We have used the same format as the first response to comments provided to the City in February. Similar to the comments received, our responses are provided in tables in the following sections:

- Attachment 1. Site Plan Review Comment Responses
- Attachment 2. Zoning Review Comment Responses
- Attachment 3. Peer Review Comment Responses
- Attachment 4. Sustainability Charter Comment Responses

To support this latest response, the following new files have been uploaded to ProjectDox:

- Documents
    - TDM Plan
    - Parking Garage Renderings
    - Site Lighting Waiver Request Letter
    - IDP Page Updates
    - Stormwater Management Report
- Plans
    - Civil Plans
    - Parking Garage Elevations
    - Site Security, Lighting and Photometrics
    - Figure 3-17 Site Circulation Plan

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3708 or dcameron@woodardcurran.com.

Sincerely,

WOODARD & CURRAN, INC.



Denise Cameron, P.E.
Project Manager

cc: Sam Reiche, IDEALS

1. ATTACHMENT 1: SITE PLAN REVIEW COMMENT RESPONSES

All standards from the City's Site Plan Worksheet are included in the table below. New comment responses are provided in **blue text** for reference.

Site Plan Review Standards (Sec. 14.6)		
Transportation Standards (Sec. 14.6.1)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Impact on Surrounding Street Systems	Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	No action required at this time.
Access and Circulation	Update application materials to satisfy comments provided in Attachment 3. Continue to update application materials in conjunction with comments and recommended mitigation strategies as part of the TMP review process.	**See Attachment 3 for response.**
Public Transit Access	No updates required.	This standard has been met.
Parking	No updates required.	This standard has been met
Transportation Demand Management	Update TDM plan to satisfy comments in Attachment 3.	**An updated TDM plan is included with this submission. See Attachment 3 for further discussion of the updates to the report.**

Environmental Quality Standards (Sec. 14.6.2)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Preservation of Significant Natural Features	No updates required	This standard has been met.
Landscape Preservation	Submit a waiver request for the removal of all existing vegetation on the site that demonstrates that the preservation of existing vegetation would compromise the development of the site.	**In order to increase resiliency of the campus and mitigate against impacts of sea level rise, significant portions of the site will be re-graded, which makes retention of existing vegetation infeasible. Removal of existing vegetation is necessary to complete development of the site, however a robust planting plan will be implemented to re-vegetate the site as part of this first phase. Per discussions with City staff on May 16, 2024, we understand a formal waiver request is not necessary for removal of vegetation.**
Site Landscaping and Buffers	Continue coordination with the City Forester to confirm that the proposed species and planting locations for street trees are appropriate.	**Per email received from the City Arborist dated May 17, 2024 the proposed planting plan is acceptable.**
Water Quality, Stormwater Management and Erosion Control	Update the application to satisfy comments from Wright Pierce.	**See Attachment 3 for responses to Wright Pierce comments.**

Public Infrastructure and Community Safety Standards (Sec. 14.6.3)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Consistency with City Master Plans	No updates required.	This standard has been met.
Public Safety and Fire Prevention	No updates required.	This standard has been met.
Public Utilities	No updates requested.	No action required at this time.
Site Design Standards (Sec. 14.6.4)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Massing, Ventilation and Wind Impact	No updates required.	This standard has been met.
Shadow	No updates required.	This standard has been met.
Snow and Ice Loading	No updates required.	This standard has been met.
View Corridors	No updates required.	This standard has been met.
Historic Resources	No updates required.	This standard has been met.

Exterior Lighting	Add note within the Site Security, Lighting, and Photometrics Plan set that the two E02B lights along Sherwood Street are to be maintained by the Applicant.	**A note has been added for (3) E02B lights along Sherwood Frontage. Two fixtures include added notes on Sheet E1.00A and one fixture includes added note on E1.00D.**
	Update photometric plans to provide average illumination, uniformity ratio, and maximum illuminance at ground level around the Structured parking & preschool facility building.	**The plans have been updated to add photometric points around all sides of parking structure on drawings E1.01C and E1.01D, and table updated on drawing E1.01A to show average, max, min and uniformity.**
	Revise proposed maximum illumination levels for the structured parking at ground level or submit a waiver request for maximum permitted exterior lighting for the structured parking.	**The Lighting Waiver request has been updated to account for maximum illuminance value at Parking Structure.**
Noise and Vibration	No updates required.	This standard has been met.
Signage and Wayfinding	No updates required.	This standard has been met.
Design Standards	No updates required.	This standard has been met.

2. ATTACHMENT 2: ZONING REVIEW COMMENT RESPONSES

All standards from the City's Zoning Worksheet are included in the table below. New comment responses are provided in **blue text** for reference.

Zoning Use Review (Article 6)		
Use Permissions (Table 6-A – Table 6-F)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Proposed Use	No updates required.	This standard has been met.
Zoning Performance Standards (Sec. 6.8)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
§6.8.8(A)	No updates required.	This standard has been met.
Zoning Dimensional Review (Article 7)		
Dimensional Standards (Table 7-A – Table 7-H)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Structure height	No updates required.	This standard has been met.
Supplemental Dimensional Standards (Sec. 7.4)		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
7.4.3(B)(2)(c)	No updates required.	This standard has been met.

Roux IOZ Standards (§8.5.7)		
Applicability Standards (§8.5.7(A))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Applicability	Revise application materials to satisfy requested updates identified in Attachment 3.	**See Attachment 3 table for responses.**
Phasing and Monitoring (§8.5.7(B))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Monitoring and Amendments	Update the IDP Development Plan to reflect the creation of a shared-use path under Tukey's Bridge in the Near-Term and accompanying legend.	**The Development Plan (Page 15) of the IDP has been updated to reflect the creation of the shared-use path under Tukey's Bridge.**
Public Space	No updates required.	This standard has been met.
Minor & Major Amendments	No updates required.	This standard has been met.
Uses (§8.5.7(C))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Overview of Uses	No updates required.	This standard has been met.

Community Engagement and Connectivity	Update application materials to show the required shared-use path connection under Tukey's Bridge. Staff recommends that final engineered drawings be provided as a condition of approval, given the related State & federal permits associated with the work, with a minimum width of at least 12 feet.	**The Site Circulation Plan (Figure 3-17) has been updated to reflect the creation of the shared-use path under Tukey's Bridge.**
Ground-floor Uses	No updates required.	This standard has been met.
Hotel Use Standards	No updates required.	This standard has been met.
Dimensional Requirements (§8.5.7(D))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Applicability	No updates required.	This standard has been met.
Minimum and Maximum Street wall heights	No updates required.	This standard has been met.
Stepbacks	No updates required.	This standard has been met.
Building Length	No updates required.	This standard has been met.
Transitions and buffers	No updates required.	This standard has been met.

Transportation (§8.5.7(E))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Transportation Demand Management	Update the TDM plan to reflect comments from Transportation Program Manager Bruce Hyman and establish a framework for all envisioned phases of development, including a data collection plan. Staff encourages establishing a plan differentiating parking passes by types of garage users (e.g., Staff vs. student; resident vs. hotel guest vs. off-site visitor), as well as installing permanent bicycle & pedestrian counters at planned & potential shared-use entrances to the site.	**An updated TDM plan is included with this submission. See Attachment 3 for further discussion of the updates to the report.**
Traffic Movement Permit	Update application to provide materials requested in Attachment 3 and continue to coordinate with MaineDOT & City staff for future comments & requested revisions.	**See Attachment 3 table for response.**
Bicycle and pedestrian access and safety	Submit an updated Transportation, Access, and Circulation Plan to include the shared-use path connection under Tukey's Bridge	**The Site Circulation Plan (Figure 3-17) has been updated to reflect the creation of the shared-use path under Tukey's Bridge.**
	Update application materials to reflect comments from Staff regarding utility pole relocation on Sherwood Street.	**See Attachment 3 table for response.**

Parking	Updated application materials to include a parking ratio based on the parking analysis.	**Excluding the parking structure, total planned building area is 303,600 square feet. This equates to a peak parking demand of 2.06 spaces per thousand square feet.** **For comparison, the standard Institute of Transportation Engineers rate for a general office building is 2.39 spaces per thousand square feet. The site is constraining parking to below that level of supply.**
Circulation	No updates required.	This standard has been met.
Environment (§8.5.7(F))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Open Space	No updates requested.	No action required at this time.
Sustainability and Resilience Charter	Update application materials to respond to the comments in Attachment 4.	**See Attachment 4 for responses.**
Lighting	No updates requested.	No action required at this time.
Design Flood Elevation (DFE)	No updates required.	This standard has been met.
Shoreline Stabilization & Natural Resource Impacts	No updates requested.	No action required at this time.
Bird-Safe Design	A review of building materials as part of the building permit to confirm compliance with American Bird Conservancy and Cornell Ornithology Lab standards will be recommended as a condition of approval.	No action required at this time.
Mitigation Measures (§8.5.7(G))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Off-Site Infrastructure	No updates requested.	No action required at this time.

Natural Resources	No updates requested.	No action required at this time.
Design (§8.5.7(H))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Waterfront	No updates required.	This standard has been met.
Cohesive Campus	No updates required.	This standard has been met.
Historic preservation	No updates required.	This standard has been met.
Connectivity	No updates required.	This standard has been met.
Open space	No updates required.	This standard has been met.
Sustainable practice	No updates required.	This standard has been met.

Resilience	No updates required.	This standard has been met.
Building design	No updates required.	This standard has been met.
Building entrances	No updates required.	This standard has been met.
Mitigation of impacts	No updates requested.	No action required at this time.
Neighborhood integration (§8.5.7(I))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Neighborhood engagement	No updates requested.	No action required at this time.
Construction management	No updates requested.	No action required at this time.
Historic Preservation (§8.5.7(J))		
Standard	***Updates Requested by City Staff***	***Comment Response Provided by Applicant***
Historic preservation review	No updates requested.	This standard has been met.
Required interpretive elements	No updates requested.	This standard has been met.

3. ATTACHMENT 3: PEER REVIEW COMMENT RESPONSES

All comments as listed in the latest peer review comments document provided are included in the table below. New comment responses are provided in **blue text** for reference.

Peer Review Comments		
Wright-Pierce Chapter 500 Review Comments		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Urban Impaired Stream Standard	As noted by the applicant, the proposed development is not located within an urban impaired stream watershed. Therefore, this standard is not applicable.	Noted.

Basic Standard	Per Appendix A of Chapter 500, if disturbance activities take place less than 30 feet from any protected natural resource, and stormwater discharges through the disturbed areas toward the protected natural resource, perimeter erosion controls must be doubled and disturbed areas must be temporarily or permanently stabilized within 7 days. We would recommend a double barrier adjacent to the protected resource shown on the plans and discussed in the Stormwater Management Plan.	**A second row of sediment barrier has been added in proximity to the adjacent natural resources.**
	On Sheet C-002 of the Civil Plans, it appears the perimeter barrier falls within existing riprap called out on the plans. It is recommended to relocate the perimeter barrier upgradient to keep it out of the riprap.	**The perimeter sediment barrier has been located to reflect the limits of proposed regrading shown on C-302. In some areas of the site, this regrading will occur within the existing and proposed riprap areas. Relocating the perimeter barrier would not be an option at these locations. The details provide multiple options for sediment barrier to allow flexibility in installation on different ground surface.**
	The applicant shows a dewatering discharge sediment control device detail on sheet D-401. We recommend the applicant show approximately where the dewatering treatment units will be located on the plans.	**The detail has been provided for reference, and specific locations have not been identified. The project construction documents include an Environmental Media Management Plan that addresses the process to follow for dewatering. This document can be provided to the City for review as part of the building permit process and it is understood that a separate dewatering discharge permit will be required.**
	The applicant shows a Dewatering Discharge Sediment Control Device detail as a dirt bag on sheet D-401. We recommend the applicant confirm they do not anticipate contaminated groundwater on the site. If so, please provide details for treatment of contaminated groundwater.	**The project construction documents include an Environmental Media Management Plan that addresses the process to follow for dewatering, including addressing the potential for contaminated groundwater. This document can be provided to the City for review as part of the building permit process and it is understood that a separate dewatering discharge permit will be required.**

	The applicant shows a stabilized construction entrance detail on sheet D-401. We recommend the applicant show approximately where this will be located on the plans.	**A stabilized construction entrance is located on Sheet C-301 at the location that is anticipated to be the primary entrance the to the site. This is in line with the contractor's construction management plan.**
	We recommend the applicant list authorized and unauthorized non-stormwater discharges per Appendix C of Maine DEP Chapter 500 on the project plans.	**Authorized and unauthorized non-stormwater discharges as outlined in MaineDEP Chapter 500 have been added to sheet D-401.**
	The applicant notes that trash, debris, and sediment must be removed from storm drainage pipes and catch basins as needed on a semi-annual basis in the Stormwater Inspection & Maintenance Plan. We recommend the applicant also include catch basins as a part of the Stormwater Inspection Checklist.	**The Stormwater Inspection Checklist has been updated.**
	The applicant notes that paved areas must be inspected annually each spring in the Stormwater Inspection & Maintenance Plan. We recommend the applicant also include paved areas as a part of the Stormwater Inspection Checklist.	**The Stormwater Inspection Checklist has been updated.**
	Sheet D-401 of the Civil Plans notes Winter Construction is between November 1 and April 15 and that areas must be stabilized by November 15 or winter stabilization methods will be required. However, in Appendix A.7 of Maine DEP Chapter 500 it is noted that Winter Construction must be stabilized by November 1 or winter stabilization methods will be required. We recommend the applicant update the dates in the Civil Plans to match Maine DEP requirements.	**The November 15th date is from the MaineDEP Erosion and Sediment Control Best Management Practices guide, allowing for some additional time for grass growth. We have updated the plans with the more conservative November 1st date.**
General Standard	The applicant has demonstrated that they meet the treatment requirements for redevelopment project under the General Standards of Maine DEP Chapter 500.	Noted.
Flooding Standard	The applicant has indicated the City of Portland is in favor of granting the Flooding Standard wavier.	Noted.

Wright Pierce - Stormwater Management Plan Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
a.	We understand that the Applicant is working with the City of Portland on resolving the connection of stormwater infrastructure within Sherwood Street. We also understand that additional information will be provided once available. We maintain the recommendation to provide updated stormwater plans for Sherwood Street once completed, for tracking purposes.	**The updated drawings provided reflect the proposed Sherwood Street connection for stormwater. This has been provided to DPW for review.**
b.	The sizing calculations for Subsurface System 1 and Subsurface System 6 indicate the entire area being treated is impervious. However, the Treatment Area Figure (Fig. D) shows landscaped area within the treatment area for Subsurface System 1 and 6. We would recommend verifying the impervious and pervious areas for these systems.	**The stormwater sizing calculations accounted for the total rooftop area for treatment. The proposed LRC building has an angled wall, with a roof area that extends out over some of the site features. The boundaries of the treatment area for Subsurface Systems 1 and 6 follow the roof line.**
c.	The sizing calculations for Subsurface System 5 indicate the total treatment area is 46,959 square feet. Based on the Treatment Area Figure (Fig. D) the total measured area of the treatment area for Subsurface System 5 is approximately 35,000 square feet. We would recommend verifying the total area for this system.	**A larger drainage area was utilized for the sizing of subsurface system 5 to allow for some flexibility as future phases are developed on the site. As the next phases are developed and the site changes, we will evaluate our systems to determine what areas are managed by the existing systems.**
d.	Sizing calculations for Bioretention Basin 1, 2, and 3 list the total volume required for pretreatment. We would recommend also listing the total pre-treatment volume that has been provided to verify the pre-treatment requirements have been met.	**Approximate pre-treatment volumes are listed. With the required volumes very low, greater than the required pretreatment will be provided through upstream swales as well as within the grassed areas that surround the stormwater features. These proposed areas are quantified on the calculation sheet.**
Wright Pierce – Plan Comments		

	Comments/Recommendations made by Reviewer	*Comment Response provided by Applicant*
a.	Matchlines should be shown in each Inset as called out on Sheet C-001 and 002. Consider if Inset on Sheet C-100 is necessary since there is reference to an Inset B on Sheet C-303.	**Matchlines have been added to insets on Sheet C-001 and 002. The inset on C-100 was kept as a part of the overall site layout plan for reference. The insets on C-303 provide the design detail.**
b.	The applicant states that the Applicant's landscape architect will be meeting with the City Arborist to review proposed plantings, and the planting plans, including sheet L.400 will be submitted following that meeting. We maintain this comment for tracking purposes until the plan is submitted and reviewed.	**Per email received from the City Arborist dated May 17, 2024 the proposed planting plan is acceptable.**
c.	CB-15 and DMH-39 appear on Sheet C-302 but are not listed in the Structure Table on C-304. We would recommend including the information for these structures in the Structure Table.	**CB-15 and DMH-39 have been added to the structure table.**
d.	The applicant provides a Catch Basin Hood detail on Sheet C-403 with a note to "provide in catch basins in paved areas only." In Section 2.9.11 of the City of Portland's Technical Manual it states, "All catch basins are required to have a hood on the outlet pipe as shown in Figure II-09." We would recommend the applicant update the Catch Basin Hood detail note to match the City's Technical Standards.	**This note was removed from the detail.**

Tom Errico, P.E. – NE Traffic Eng. Director Review Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
	See email dated April 17, 2024	**Please refer to attached response letter from Transportation Engineering Consultants at VHB.**
Janine Ba – DPW Transportation Development Review Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
	See email dated April 23, 2024	**Please refer to attached response letter from Transportation Engineering Consultants at VHB.**
Janine Ba – DPW Water Resources Development Review Comments		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
a.	DPW and the applicant continue to review and assess the existing storm drainage infrastructure in Sherwood Street. It's anticipated that upgrades to the system in Sherwood Street will be required to be implemented by the applicant. Final comments on the proposed Sherwood Street storm drain design and connections will be provided at a later date.	**The updated drawings provided reflect the proposed Sherwood Street connection for stormwater. This has been provided to DPW for review.**
b.	A second row of sediment barriers should be added to the perimeter of the site in locations where the work zone abuts the bay.	**A second row of sediment barrier has been added in proximity to the adjacent natural resources.**

c.	The applicant indicates that documentation will be provided for the following comments in a subsequent submission. (image of prior comments on PWD sewer manhole provided)	**The updated drawings provided reflect the connection to the PWD sewer manhole EX-SMH 1 as previously reviewed with PWD. These plans have been provided to PWD for final review.**
Transportation Demand Management Plan Comments Markup		
	Comments/Recommendations made by Reviewer	***Comment Response provided by Applicant***
	See TDM markups in Attachment 3.	**An updated TDM has been provided in response to these comments.**

4. ATTACHMENT 4: SUSTAINABILITY CHARTER COMMENT RESPONSES

Comments listed are the comments from City Staff dated May 7, 2024. New comment responses are provided in **blue text** for reference.

Sustainability Charter		
Code mandated items		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Energy, Responsible Materials, and Occupant Experience	No action needed at this time.	No action needed at this time.
Energy		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Eliminate on-site fossil fuels in building HVAC and Food service.	No action needed at this time.	No action needed at this time.
	No action needed at this time.	No action needed at this time.
	Standard met.	Standard met.
Provide infrastructure for future PV installation.	No action needed at this time.	No action needed at this time.
Design the building to be 30% better than ASHRAE 90.1 2019 and 15% of roof area dedicated for PV.	No action needed at this time.	No action needed at this time.

Embodied Carbon		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Reuse existing historic building.	Standard met.	Standard met.
Advocate for Environmental Product Declarations (EPDs) for all concrete used on the project.	A draft procurement schedule shall be submitted prior to or part of the building permit process.	No action needed at this time.
Perform a whole building life cycle analysis (LCA) to study carbon conservation measures.	No action needed at this time.	No action needed at this time.
Reduce the embodied carbon of structural materials in the building by 15% from a typical design.	Standard met	Standard met
	No action needed at this time.	No action needed at this time.
Responsible Materials		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Source wood products from Maine forests and/or sustainably managed forests or salvaged/reclaimed wood suppliers.	A draft procurement schedule shall be submitted prior to or part of the building permit process.	No action needed at this time.
Advocate for the removal of PFAS chemicals in other targeted product categories.		

In coordination with the contractor, identify key materials to procure from the state of Maine.		
Divert at least 50% of non-hazardous construction and demolition waste from the landfill.	No action needed at this time.	No action needed at this time.
	Reuse of rail lines and bean pots have been proposed as part of interpretive work related to historic preservation. On the project website, under Site Work, a July 28, 2023 post identified historic elements that will be reused and construction materials to be reused/recycled. Update application materials to identify how the construction materials are being reused/recycled. Update application materials to list what construction materials are being reused/recycled prior to Planning Board approval.	**The following items will be repurposed for use on the site:** • **Granite cobble pavers** • **Historic railroad rail artifacts** • **Historic railroad cart stop** • **Historic pier cleats and bollards** • **Salvaged granite blocks will be incorporated in seat wall compositions along the shoreline / coastal path**
Target Red List free finishes in targeted spaces.	Standard met.	Standard met.
Use best practices for bird friendly design.	No action needed at this time.	No action needed at this time.
Water		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***

Reduce indoor water use from 25% from a code baseline building.	No action needed at this time.	No action needed at this time.
	Counts will be reviewed as part of the building permit process.	No action needed at this time.
Maximize the use of native and drought tolerant landscape plants.	Standard met.	Standard met.
Stormwater Management in accordance with Maine Department of Environmental Protection Best Management Practices Manual and City of Portland Technical Manual.	Standard met.	Standard met.
Prohibit the use of all synthetic pesticides and fertilizers for the operation and maintenance of landscape and agriculture through Integrated pest management (IPM)conducted as part of an overall Plant Health Care Program for the Roux site.	Standard met.	Standard met.
Occupant Experience & Equity		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Optimize natural daylight and mitigate glare.	Review of shades or curtains as part of building permit process will be limited to the LRC building, the Cannery Building, and the preschool facility.	No action needed at this time.
Incorporate biophilic design principles.	Updated floor plans for the daycare center were submitted, but the materiality of the interior was not included. Update the floor plans to indicate the interior materiality for the daycare center as part of the Planning Board process.	**The daycare facility and the lobby of the garage will incorporate responsible materials that are natural and/or sustainably sourced. Classrooms and offices will target red list free flooring, ceilings, and furniture. Specifications for these**

	While the structured parking implements a biophilic design, the Sustainability Charter commits to the use of natural materials in all buildings. Update the elevations and/or floor plans for the structured parking to include the use of natural materials as part of the Planning Board process. Opportunities for use of natural materials could include the lobby materiality.	**items will be reviewed as part of the building permit process.**
	Review of the design and location of signage will be reviewed as part of the building permit process. Signage must meet the standards of Article 20 of the Land Use Code.	No action needed at this time.
Use the building to educate building and site users.	Understood. Review of the design and location of signage will be reviewed as part of the building permit process.	No action needed at this time.
Provide amenities to support public access.	Traditional sinks provide an appropriate alternative for water access for users of the daycare facility. The structured parking will facilitate public access to the site and a water fountain or bottle filler would serve as an amenity for public access to the perimeter access loop, waterfront path, and guardians dropping off children at the daycare center. Update floor plan for the structured parking facility to include a water fountain or bottle filler. Opportunities for locations could include the lobby and/or parking office.	**Bottle filling/drinking fountains, as requested, will be provided in the daycare and garage lobby and will be included as part of the building permit process.**
	Standard met.	Standard met.
	Standard met.	Standard met.
	Standard met.	Standard met.

	Standard met.	Standard met.
Provide Gender inclusive restrooms.	Standard met.	Standard met.
Provide lactation rooms.	Updated floor plans will be reviewed as part of the building permit process.	No action needed at this time.
Transportation		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Conduct study of EV charging needs. Provide required EV capacity to meet anticipated demand.	Standard met.	Standard met.
	No action needed at this time.	No action needed at this time.

Integrate quality/ secure bicycle storage into the site design and provide shower facilities.	Standard met.	Standard met.
	Standard met.	Standard met.
	Standard met.	Standard met.
	Standard met.	Standard met.
	Standard met.	Standard met.
Resilience		
Standard	***Comments/Recommendations made by Reviewer***	***Comment Response provided by Applicant***
Incorporate near-term future-projected climate change data (2050s) in design of mechanical, electrical, and plumbing systems and/or components on a regular replacement cycle. Incorporate long-term future-projected climate change data (2100+) in the design of the building and infrastructure, including flood resistant materials below the 2100 sea level rise design flood elevation and elevate critical infrastructure above this elevation.	No action needed at this time. Elevations of critical building infrastructure will be confirmed as part of the building permit process.	No action needed at this time.
	No action needed at this time. Review of heat projections with MEP consultant shall be submitted prior to issuance of a Certificate of Occupancy.	No action needed at this time.

Prepare emergency action plan and provide appropriate level of backup power to support life safety. Incorporate campus-wide emergency preparedness planning to enhance overall resilience of the campus/site community.	While the size of the fuel oil tank was originally provided, it is unclear how the size of the tank was determined to meet the needs of the Cannery& LRC buildings. Submit calculations or manufacturer verification that the proposed tank size provides sufficient capacity for the Cannery & LRC buildings for 48 hours.	**The LRC Academic building has its own 1000kW generator which has a full load fuel consumption rate of 72 GPH. The main fuel tank is sized for 4000Gal. The fuel tank is able to be filled to roughly 82% of capacity or 3,280 gallons: 3,280Gal/ 72GPH = 46 Hours** **The generator is also supplied with a belly tank that stores 2 hours of fuel, making the total run time 48 hours at full load.** **The Bean building is currently still in early stages of design but is planned to have its own generator and fuel storage system with a total run time of 6 hours. The Bean building fuel oil system will not be shared with the Garage or Academic building.**
	No action needed. An emergency preparedness plan shall be submitted to City Staff prior to issuance of a Certificate of Occupancy.	No action needed at this time.
	Standard met.	Standard met.

To: The City of Portland

Date: May 17, 2024

Memorandum

Project #: 58570.00

From: Jennifer Conley, PE, PTOE

Re: Project Review Letter 2024-05-07

Comment Response

The following are responses to the transportation related items in Project Review Letter dated May 7, 2024 including both the City of Portland Public Works development review comments dated April 23, 2024 and email traffic review comments from Tom Errico in email April 17, 2024.

Comments are listed and responses are in **bold**.

1. DPW has indicated that they feel a traffic circle is feasible at the three way intersection (located internal to the site). The applicant shall provide justification as to why a traffic circle will not work at this location.

   VHB evaluated potential roundabout designs for this location. A compact roundabout (90 foot diameter) provides a design that enables Metro busses to maneuver the roundabout without having to travel over the center island. Large trucks (greater than WB40) would still have to travel over it, making the need for a portion of it to be mountable with some raised area in the center. Unfortunately, a footprint of this size would reduce the queuing space between the intersection and the future I-295 off ramp which would likely not be met with support from MaineDOT. In addition, a roundabout of this size would significantly impact the size of the future parcels (anticipated to be used for housing etc) which would limit the size of the Roux Institute. As a result, we do not recommend the compact roundabout. Any roundabout above this size would further reduce the area between the roundabout and the future ramp and is not recommended.

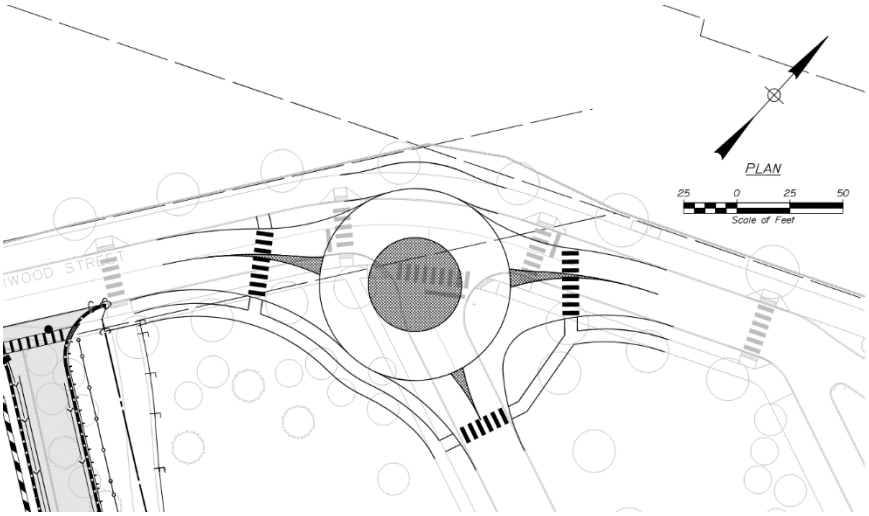


Figure 1 Compact Roundabout

Memorandum

In a mini roundabout (60 foot diameter) both Metro busses and all trucks would have to travel over the center area, so the center island could not be raised, reducing its effect as a traffic calming feature as all vehicles can travel across that area. Metro would be most impacted by using cobbles in that center area (to get some compliance with the desired movement for passenger cars) as the busses are anticipated to be on site at a minimum of every 30 minutes if not more in the future. A mini roundabout is also not recommended as it will be less effective in meeting the City's goals based on the design constraints.

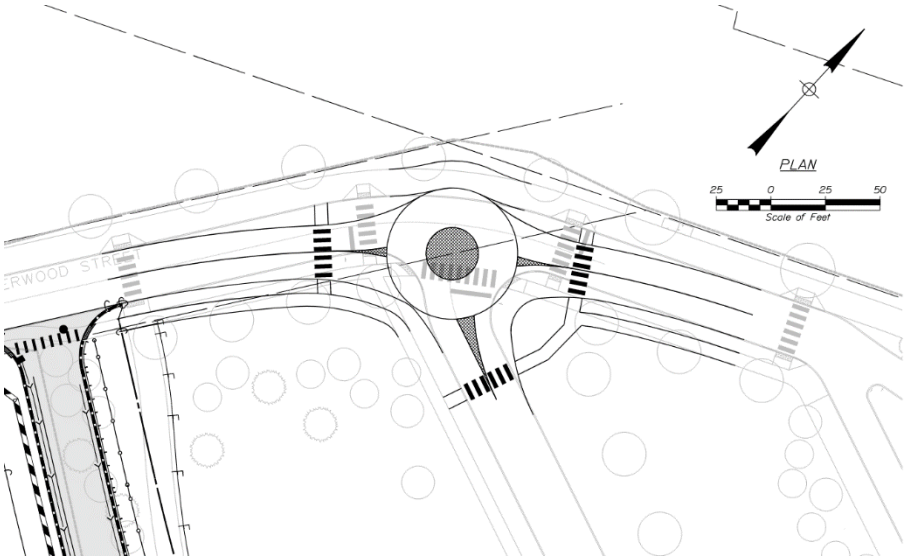


Figure 2 Mini Roundabout

2. Sherwood Street design comments from DPW

   The Sherwood Street design is currently advanced to the 50% design level. Additional design details, such as those identified in the DPW comments will be determined as the design is advanced. It is anticipated that the design will be completed as part of the Planning Board's condition of approval with full City of Portland Public Works review required as a part of that condition.

3. Although the design details will be determined through the final design process as a condition of approval, one specific comment was raised to request a response now. A proposed power pole is within the proposed 5 ft sidewalk reducing the clear path to less than 4 ft. A 5 ft min clear space between any elevated object and the property line must be maintained within the City ROW. Revise the plan to maintain a 5ft min clear space between any elevated object and the back of the proposed sidewalk.

   The Project Team is currently working with CMP to identify the utility poles that need to be moved as a part of the project and specifically the utility pole locations along Sherwood Street. The sidewalk along Sherwood Street is currently shown as 5' wide. As noted, the utility poles will need to be relocated to accommodate that sidewalk. As outlined above, the design details have not been worked

Memorandum

out, but the team will work with CMP to locate the utility poles maintaining a 5 foot clear space between elevated objects and the back of sidewalk. At a recent site visit with CMP, only one pole location was identified where providing this clearance is likely to prove problematic and the sidewalk width may need to be reduced, but only for a length of sidewalk associated with the width of the pole.

4. Tom Errico transportation comments

   Since the date of Tom Errico's email, as a part of the coordination with MaineDOT and the City of Portland during the TMP process, two different workshops have occurred to discuss the technical requests for information (including those in Tom's email). The project team has provided Tom Errico (and the others) with updated information addressing traffic volume, intersection operation and mitigation questions raised in his comments. At each workshop additional questions have been asked and answered. At this date, no additional transportation or traffic information has been requested by Tom Errico that has not been provided to him.

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June 5, 2024

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

Re: Response to City Staff Comments – Roux Institute at Northeastern University
Project ID PL-002724-2023

Dear Zach:

Thank you for coordinating the review of the Major Site Plan and Site Location of Development (SLOD) Application for the Roux Institute at Northeastern University. We provide the following written responses to Wright Pierce review comments dated June 3, 2024.

1a. Noted.

1b. Noted.

1c. Refer to response to comment 2a. below.

1d. Noted.

1e. Construction is anticipated to begin as soon as permits are received, likely late summer 2024.

1f. We are working with Portland Water District on Ability to Serve documentation and will provide it to the City upon receipt.

2a. We are providing greater than 50% treatment for this phase of development and meet the Chapter 500 General Standards for redevelopment. As noted in the Stormwater Report, the footprint of Bioretention Basin 1 is fixed due to site constraints. More area (8,392 SF) discharges to this system than can be treated by it. Therefore, Bioretention Basin 1 and Subsurface Sand Filter 5 were designed in series to ensure the Chapter 500 General Standards for redevelopment are met.

The overflow of Bioretention Basin 1 (AD11) is provided at the water quality elevation (6" above filter surface) in accordance with Maine DEP BMP requirements for bioretention systems. AD11 overflows into storm drain that discharges to Subsurface Sand Filter 5. Subsurface Sand Filter 5 was sized to treat this additional area. Tables 1 and 2 below provide area breakdowns for Bioretention Basin 1 and Subsurface Sand Filter 5, followed by a summary of the total treated area for Phase 1 (Table 3) and Chapter 500 General Standard compliance summary (Table 4).

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Woodard & Curran

Table 1. Bioretention Basin 1 Drainage Area Breakdown

Cover Type	Area Direct Discharge (SF)	Area Overflow to SSF5 (SF)	Total Area Treated (SF)
Impervious	8,864	***2,216***	6,648
Pervious	24,703	***6,176***	18,527
Total	33,567	***8,392***	**25,175**

Table 2. Subsurface Sand Filter 5 Drainage Area Breakdown

Cover Type	Area Direct Discharge (SF)	Area Overflow from BR1 (SF)	Total Area Treated (SF)
Impervious	25,826	***2,216***	28,042
Pervious	9,250	***6,176***	15,426
Total	35,076	***8,392***	**43,468**

Table 3. Phase 1 Stormwater Treatment Area Summary

Stormwater System	Total Area Treated (SF)
Subsurface Sand Filter 1	48,800
Subsurface Sand Filter 2	49,527
Subsurface Sand Filter 3	86,298
Subsurface Sand Filter 4	7,107
Subsurface Sand Filter 5	**43,468**
Subsurface Sand Filter 6	12,500
Bioretention Basin 1	**25,175**
Bioretention Basin 2	28,165
Bioretention Basin 3	20,384
Total Treated	**321,424**

Table 4. Phase 1 Chapter 500 General Standard Compliance Summary

Stormwater Treatment	Treatment Percentage	Treated Area (SF)
Required	50.0%	315,749
Provided	50.9%	**321,424**

As demonstrated by the above tables, Phase 1 of the project complies with the Chapter 500 General Standard for redevelopment. The proposed stormwater system in its entirety (both treatment and conveyance) has been designed with future development and associated impervious areas in consideration. We are confident that the proposed stormwater system can be added onto without major modification to downstream systems to meet the Chapter 500 standards for future phases.

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Woodard & Curran

2b. Refer to comment response 2a. for a treatment area summary for Bioretention Basin 1. Sediment pretreatment for Bioretention Basin 1 was conservatively designed for all non-roof impervious area directly discharging to the basin (8,864 SF).

3a. We conducted a manhole and catch basin sizing analysis and the structure sizes are adequate for the proposed pipe connections.

3b. We lowered the 12" storm drain to increase vertical separation between the pipes to enable installation of 2" rigid insulation. Below is a summary of the changes to the pipe network. In addition, we will add a call out on Sheet to provide 2" rigid insulation at this pipe crossing.

NAME	DIA.	RIM	INV IN/SIZE/FROM	IN OUT/SIZE/TO
DMH19	4'	22.25	11.90/12"HDPE/OCS4 15.70/12"HDPE/DMH16 (DIV)	11.50 ~~11.80~~/12"HDPE/DMH32
DMH32	4'	21.73	11.00 ~~11.30~~/12"HDPE/DMH19 14.70/12"HDPE/OCS1	10.90 ~~11.20~~/18"HDPE/DMH36
DMH36	4'	22.30	13.90/12"HDPE/DMH35 (DIV) 10.70 ~~10.80~~/18"HDPE/DMH32	10.60 ~~10.70~~/24"HDPE/DMH17

PIPE NAME	SIZE	LENGTH	SLOPE
SD48	18" HDPE	37'	0.0054 ~~0.0108~~
SD74	24" HDPE	92'	0.0098 ~~0.0109~~

If you have any questions or require additional information, please do not hesitate to contact me at (207) 558-3708 or dcameron@woodardcurran.com.

Sincerely,

WOODARD & CURRAN, INC.

Denise Cameron

Denise Cameron, P.E.
Project Manager

cc: Sam Reiche, IDEALS

CITY OF PORTLAND
Planning & Urban Development Department

MAJOR SITE PLAN
GENERAL DOCUMENT AND DRAWINGS CHECKLIST
Please submit each document as a separate PDF file.
Please confirm by electronically checking the boxes in the left-hand column.

**** PLEASE FILL OUT AND UPLOAD THE ZONING ASSESSMENT TABLE AND WAIVER TABLE SEPARATELY AS NOTED BELOW ****

At the time of application submission, please contact the Department of Public Works regarding E-911 addressing for your project.

GENERAL APPLICATION DOCUMENTS	
Yes √ NA	**Project Description** ● Cover letter with detailed project description
Yes √ NA	**Completed Checklist** (this document)
Yes √ NA	**Evidence of Right, Title, and Interest** ● Deeds, leases, or purchase and sales agreements
Yes √ NA	**Evidence of State or Federal Approvals** ● Permits or letters of non-jurisdiction, if applicable
Yes √ NA	**Zoning Assessment** (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
Yes √ NA	**Site Plan Standards Assessment** (see Section 14.6 of the land use code) • Summary of project compliance with site plan standards of the land use code
Yes √ NA	**Summary of Existing and/or Proposed Easements or Covenants, applicable.** ● Evidence of existing easements and any proposed easements, covenants, public or private rights-of-way
Yes √ NA	**Waiver Requests** (see Waiver Table) ● Written request for waiver describing request and compliance with applicable waiver standards
Yes √ NA	**Financial Capability** ● Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
Yes √ NA	**Technical Capability** ● Evidence of technical capability of applicant and consultants – resumes and/or examples of past projects

MAJOR SITE PLAN
STANDARDS AND SUBMISSION CHECKLIST

Provide assessment of compliance with standards and include supplemental documentation, as applicable.
Please submit each document as a separate PDF file.

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

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

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

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

MAJOR SITE PLAN
DRAWINGS CHECKLIST

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

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

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

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

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

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

Existing Conditions Plan with the following:

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

Proposed Site Plan with the following:

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

- Location of fire hydrants
- Location of solid waste management receptacles
- Location of all proposed HVAC and mechanical equipment, including proposed screening, where applicable
- Location of proposed easements and rights-of-way, including dimensions
- Please utilize color-coding and/or hatches and shading to delineate changes between the pre and post development condition as needed

UTILITY PLAN including:

- Proposed electrical infrastructure
- Location, sizing and directional flows of all proposed sewer and stormwater infrastructure
- Location and dimensions of off-premises public or publicly accessible infrastructure adjacent to site
- Electric utility infrastructure

GRADING AND DRAINAGE PLAN including:

- Proposed grades
- Proposed stormwater management measures meeting Technical Manual (Section 5) standards
- Any proposed alteration of a watercourse or wetlands
- Any groundwater protection measures
- Proposed buffers and preservation measures for wetlands or significant natural features

LANDSCAPE PLAN including:

- Existing vegetation to be preserved and preservation measures
- Proposed landscaping, screening, and street trees, including caliper widths for trees
- Planting schedule, including street trees

ARCHITECTURAL PLANS AND RENDERINGS including:

- Exterior building elevations, color renderings, illustrations of all sides
- Axonometric and street-level views for structures greater than three stories in height
- Provide context drawings, if applicable (Design Manual, page 1)
- Floor plans

CONSTRUCTION MANAGEMENT PLAN including:

- Specifics on traffic control, sidewalk sheds, and pedestrian rerouting
- Include a drawing and written narrative

OTHER

- Details and cross-sections, as necessary

2. PERMITTING

For the proposed Phase 1 development work, a Major Site Plan Application is required along with a number of associated permit applications.

2.1 Permits Required

2.1.1 Planning Board Review

The proposed Phase 1 development work will require approval by the Planning Board for multiple permit applications.

Major Site Plan

The project's size and scale qualify it for a Major Site Plan that will require review and approval by the Planning Board.

Site Location of Development (SLOD) Permit

The project is subject to the Maine Department of Environmental Protection (Maine DEP) regulations for a Site Location of Development Act (SLOD) or Site Law Permit. It is our understanding that the project will be reviewed as a new SLOD permit by the City of Portland under their Delegated Review Authority. A separate SLOD permit application has been provided with this Site Plan Application, and 3 paper copies will be provided for the City to give to the Maine DEP.

2.1.2 Other Local Permits

Portland Harbor Board of Harbor Commissioners Marine Construction Permit

The project requires review by the Board of Harbor Commissioners for proposed pier construction, waterfront improvements, and outfall installation in navigable waters.

Flood Hazard Development Permit

The project requires review by the Building Authority for building construction and renovation in Special Flood Hazard Areas.

Historic Preservation Certificate of Appropriateness (COA)

The project requires review by the Historic Preservation Board for the building and site areas included in the Historic Landmark Designation, as reflected in **Figure 2-1**. In accordance with the City's Land Use Code, Chapter 14 Section 8.5.7.J, a Certificate of Appropriateness will not be required for the demolition of the Codfish Building or construction of a new pier and related infrastructure, including future alterations to the pier structure. The Board's review of the pier is limited to any activity that would require a Certificate of Appropriateness that is proposed on top of the newly constructed pier. Additional information regarding Historic Preservation is included in Section 3.3.9 and Section 8.5.

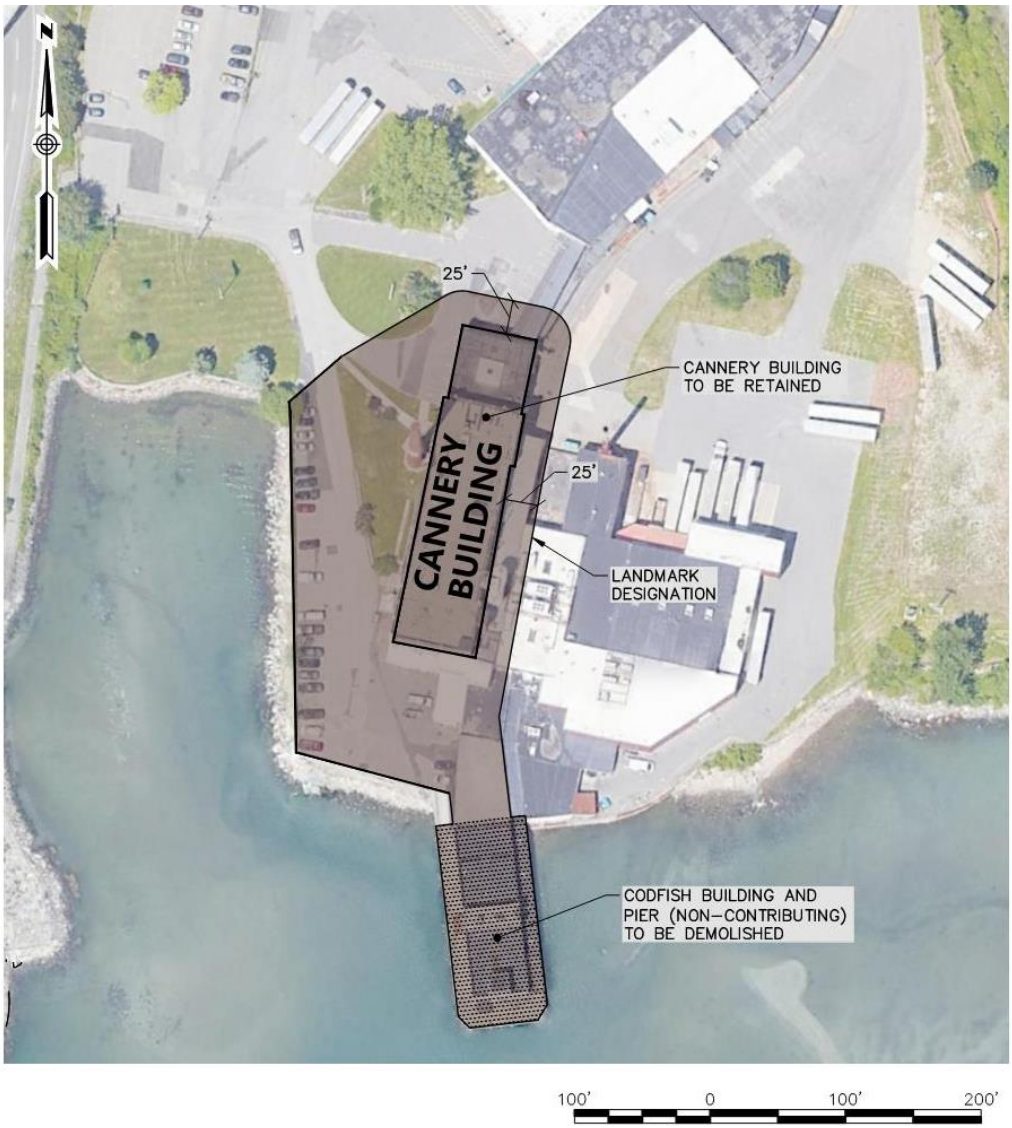


Figure 2-1: Landmark Designation

2.2 Evidence of State and/or Federal Approvals

The following state and federal permits will be required for the proposed work:

- Maine DEP Site Location of Development Act Permit (reviewed by City of Portland under Delegated Review Authority);
- Maine Construction General Permit Notice of Intent;
- Maine DOT Traffic Movement Permit (TMP);
- Maine DEP NRPA Individual Permit;
- Army Corps of Engineers General Permit; and
- FAA Notice of Proposed Construction.

Copies of these permit approvals will be provided to the City of Portland, upon request.

3. ZONING

Phase 1 of development is associated with multiple Zoning Districts including:

- B-5 Urban Commercial Business Zone (B5);
- Shoreland Overlay Zone; and
- The Roux Institute at Northeastern University Institutional Overlay Zone (IOZ).

3.1 B-5 Zone

As previously noted, the Portland City Council unanimously approved the zoning amendments to change the Site's underlying zone from Industrial to B-5 Mixed-Use Business in February 2023. The attached Zoning Assessment Table shows that the project complies with dimensional requirements specified in the City's Land Use Ordinance. For the B5 zone, most standard zoning analysis values are not applicable.

3.2 Shoreland Overlay Zone

The Site has roughly 1,400 linear feet of waterfront, within associated Flood Hazard and Shoreland Zones. The City's Land Use Code designates a shoreland zone within 250 feet of tidal water bodies. A minimum setback of 25 feet from the normal high-water level for principal and accessory structures will be maintained within the shoreland zone.

3.3 The Roux Institute at Northeastern University Institutional Overlay Zone

The following section describes the project's consistency with the regulatory framework of the Institutional Overlay Zone. The regulatory framework was incorporated into the City of Portland Land Use Code, and section references are included below with each standard.

3.3.1 Phasing and Monitoring (8.5.7.B)

As noted in the IDP (Institutional Development Plan), the Roux Institute Campus will present a coherent and holistic site at each phase of construction. The campus plan also enables future growth without sacrificing the near-term completeness. To allow for growth and coherence at each phase, the following design strategies and features are employed in Phase 1.

- Three acres of permanent, significant public space is being set aside in this first phase of development (**Figure 3-18**). It will provide a major focal point and anchor for the public life of the site in both Phase 1 and the long term.
- A complete network of vehicular, pedestrian and bicycle circulation routes are established in Phase 1 (**Figure 3-17**) which will continue to serve long-term development. A comprehensive system from Sherwood Street to the waterfront allows access around and through the site that is appropriate to each mode of transportation. Building a complete system in Phase 1 minimizes the interruption to traffic and circulation patterns during future expansions. These initial circulation networks are enhanced with site-wide lighting and wayfinding that is adaptable to future development. Lighting may be added where future uses require, and wayfinding and directional signs may be augmented with added information while remaining at key waypoints and intersections.

- Major underground utility corridors for water, sewer, electrical and telecommunications are similarly established in Phase 1 and intended to be maintained into the long term. Branch service will be tied to the main distribution corridors when new development occurs.
- Site stormwater management capacity is developed within the first phase to support a fully built-developed site.
- Future development parcels have been set aside with appropriate dimensions for pedestrian buffers, utility service access, building types and programs consistent with the Regulatory Framework.
- A comprehensive landscape strategy considers all areas of the campus in a Phase 1 planting approach. As shown in the Planting Zone Figure Plan (**Figure 3-14**) and detailed planting plans, the campus is composed of distinct ecological regions that are native to Maine ranging from a Coastal Edge at the water and a meadow near the site entry from Sherwood Street. Future development sites occur within the meadow planting zone which features low grasses, shrubs and flowers that establish quickly and yet are easily removed upon initiation of a new phase of construction.

The Learning, Research and Collaboration Building and Bean Building will accommodate initial growth of programs and expanded partnerships within shell space. This means immediate growth does not require new ground-up construction on other parts of the site.

3.3.2 Uses (8.5.7.C)

The proposed uses for Phase 1 are consistent with the IOZ regulatory framework, and include development of a post-secondary school, with associated laboratory, research, office space, and café'; restoration of the historic Bean Building to allow for creation of business incubator space; parking structure, childcare facility, and public pier with ramps and floats.

3.3.3 Dimensional Requirements (8.5.7.D)

Building Height

The Phase 1 buildings have been designed in compliance with the IOZ Height Overlay Map, as shown in **Figure 3-1** and **Figure 3-2** below. Proposed buildings over 50 feet are, at a minimum, 40 feet apart from other buildings. Building heights that span two or more height zones are measured by calculating the highest point of that portion of the building within a particular height zone. If the roof is sloped, height is measured at the midpoint of that portion of the slope located within the particular height zone.

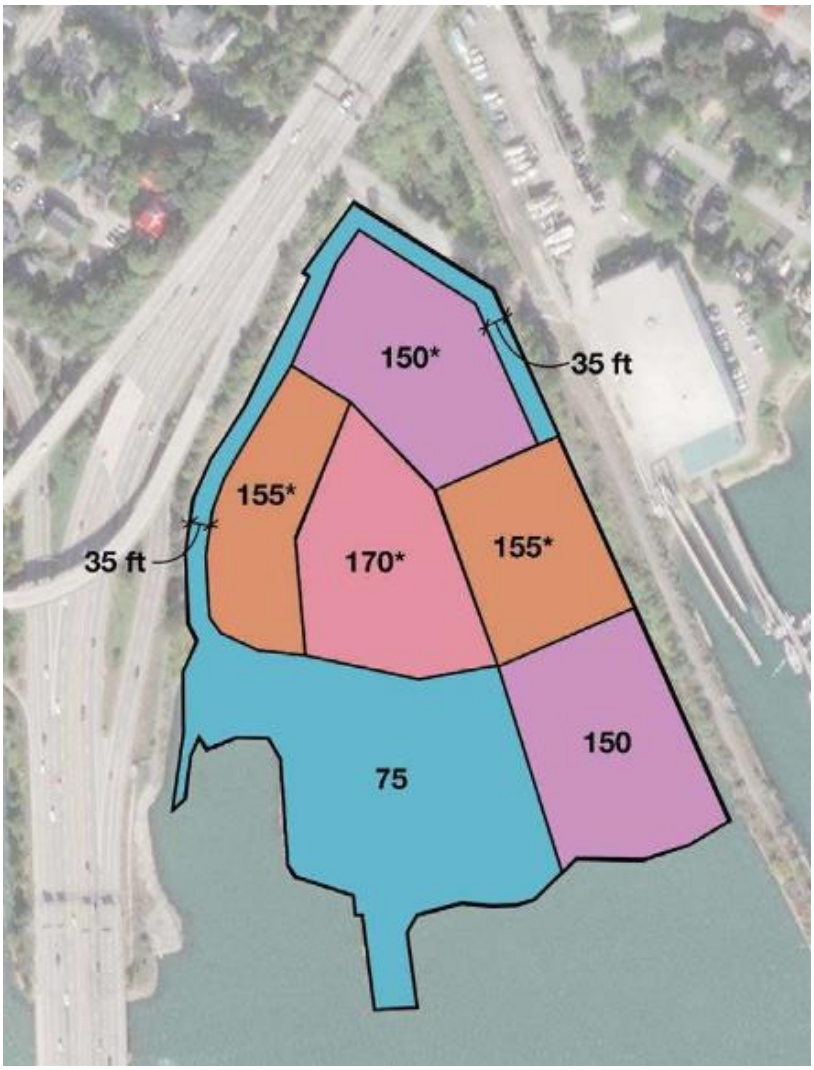


Figure 3-1: IOZ Height Overlay Map (Land Use Code Figure 8-F)

Note: For zones shown with an asterisk (*), no building floorplate shall exceed 35,000 square feet above height of 75 feet.

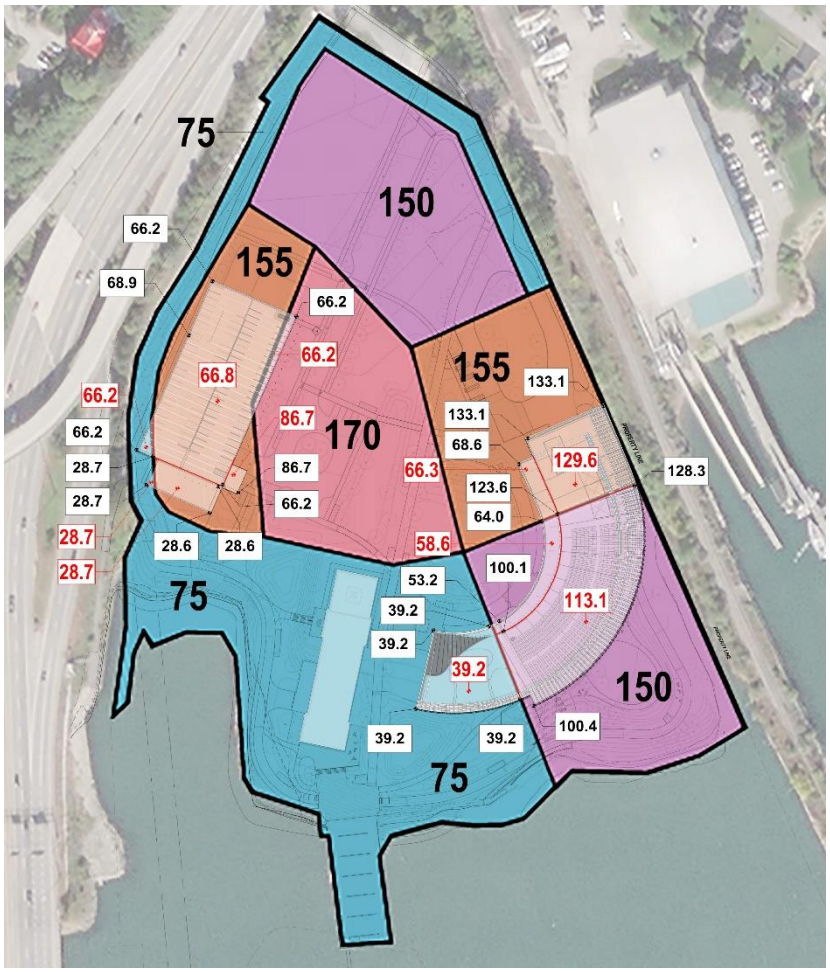


Figure 3-2: Building Heights

Per the City of Portland's Land Use Code, maximum building heights are calculated from average finished grade. **Figure 3-2** shows the calculated building heights around the Site, and figures showing the average grade as well as the height calculations are furnished under separate cover in the Drawings file. The resulting building heights are summarized in the table Below:

Table 3-1: Building Height Summary

Building (Map Color)	Max Height (ft) per Overlay Map	Proposed Maximum Height (ft)
Learning, Research, and Collaboration Building Orange	155	129.6
Learning, Research, and Collaboration Building Purple	150	113.1
Learning, Research, and Collaboration Building Blue	75	39.2
Parking Structure Orange	155	66.8
Parking Structure Pink	170	66.2
Parking Structure Blue	75	66.2
Childcare Facility Blue	75	28.7
Childcare Facility Orange	150	28.7

Street Wall and Building Stepbacks

As demonstrated by **Table 3-2** below, the street walls of principal buildings will have a minimum street wall height exceeding 45 feet and maximum height of 105 feet, in compliance with the IOZ regulations. Street walls are designated at the building's principal entrance, facing the open space, primary pedestrian routes, and entrance drives. A step back with a minimum depth of 10' is provided.

Table 3-2: Building Street Wall Summary

Building	Street Wall Designation	Street Wall Length	Street Wall Height
Learning, Research, and Collaboration Building	West Elevation Facing the Round	244'	68.5' max -51' min
Parking Structure	East Elevation Facing the entry drive and Promenade	219'	45.1

Refer to the following figures for step back and street wall measurements.

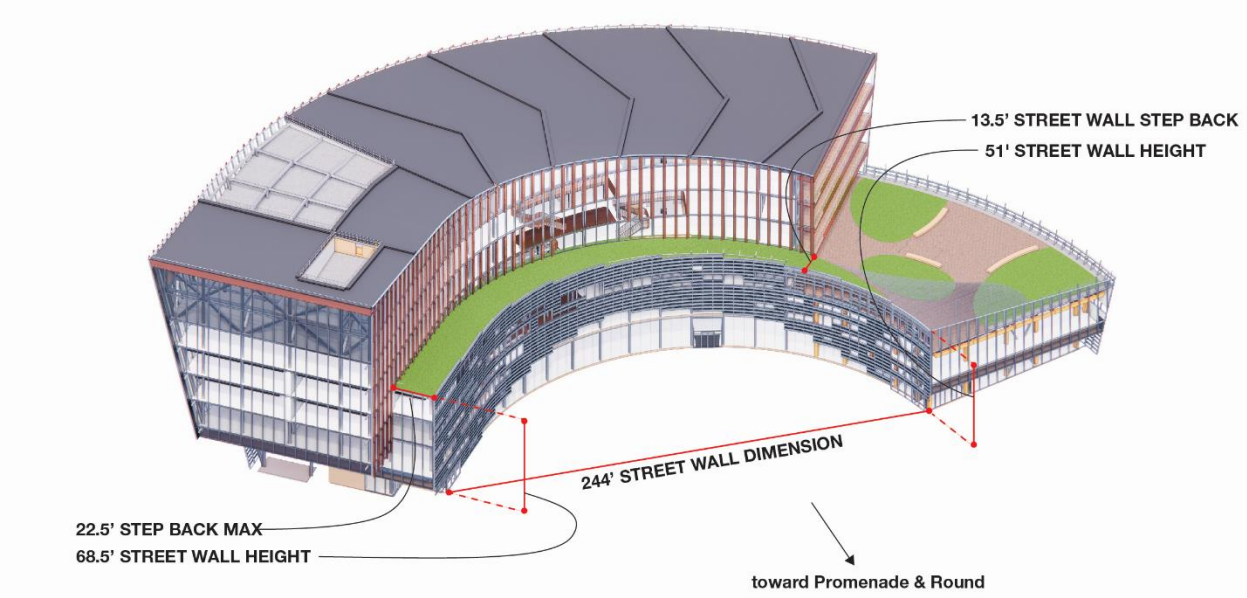


Figure 3-3: Learning, Research, and Collaboration Building Street Wall and Step Back Measurements

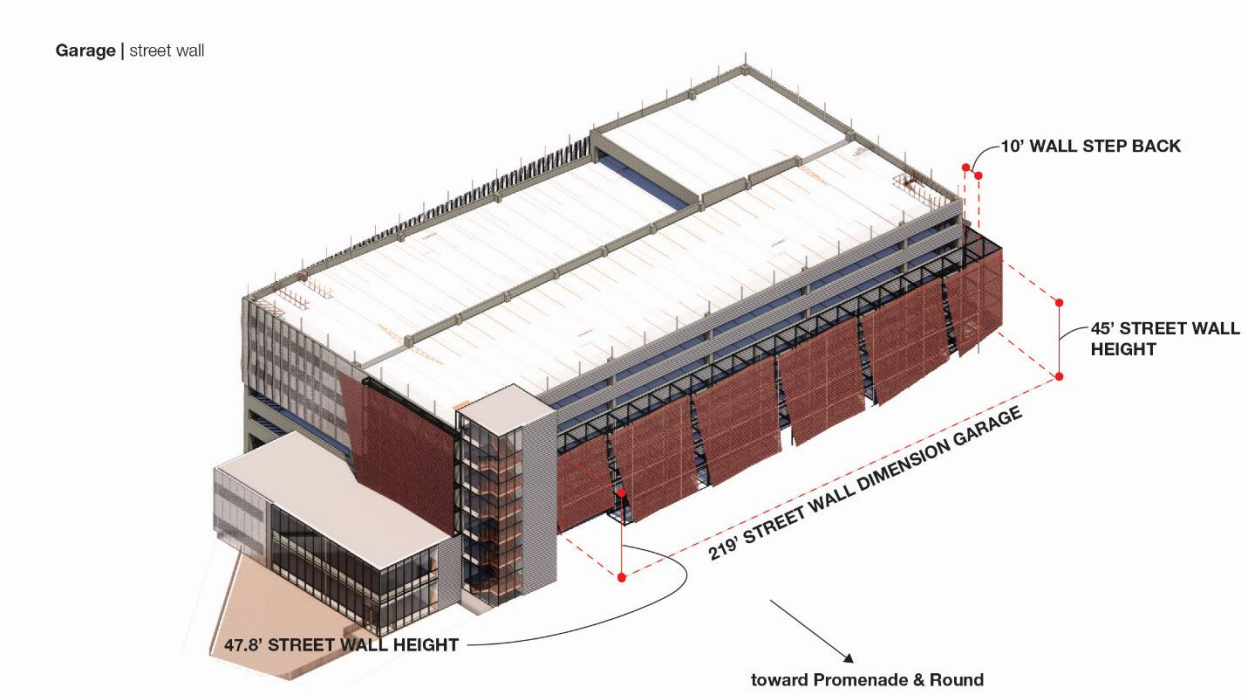


Figure 3-4: Garage Street Wall and Step Back Measurements

Each of these street walls will have the required 10-ft step back at a height above the minimum street wall height of 45 feet, but below the maximum of 105 feet. These street walls are less than 250-ft in length, and therefore publicly accessible corridors are not required.

Transitions and Buffers

In addition to the existing buffers of I-295 and the rail corridor, the development further eases the transition to and from the campus through the design in areas shown in **Figure 3-5** and sections in **Figure 3-6** and **Figure 3-7**.



Figure 3-5: Site Plan Section Key

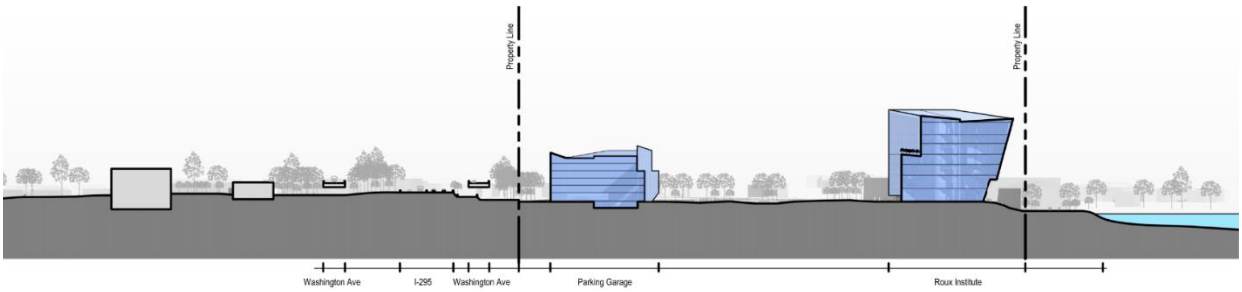


Figure 3-6: Site Section 1

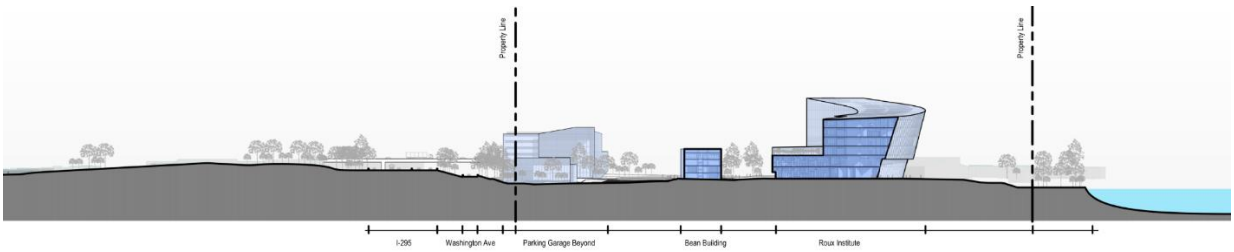


Figure 3-7: Site Section 2

Public open space will ease transition from the smaller scale of Sherwood Street. A transition onto the campus will also be accomplished through thoughtful facade design at the pedestrian level and above. Potential nuisance features like dumpsters, air handlers, backup generators, and parking are appropriately screened. Buildings have visually interesting elevations that avoid blank walls to respect the adjacent neighborhood and facilitate a sense of permeability and welcome.

The shoreline transition area between the buildings and the water serves as meaningful public open space. Building facades facing the water act as public facades with views designed for interest from and across the water including the Eastern Promenade Trail and more broadly the entire peninsula.



Figure 3-8: I-295/Tukey's Bridge Rendering

The transition area between the campus and I-295 contains a height limitation of 75 feet along the edge and between the highway and the B&M Cannery Building, preserving the historic view of the building from the highway and easing the transition to the greater allowable building heights in the center of campus.

The transition area along the edge of the campus adjacent to the rail corridor also contains a height limitation of 75 feet along the edge of the property closest to the residential neighborhood, further easing the transition to the greater allowable building heights at the center of campus, mitigating shadow impacts to adjacent properties.

3.3.4 Transportation (8.5.7.E)

Project consistency with IOZ Transportation requirements is described in Section 5.

3.3.5 Environment (8.5.7.F)

Project consistency with IOZ Environmental requirements is described in Section 3.3.7 and Section 6.

3.3.6 Mitigation Measures (8.5.7.G)

As discussed in Section 6, impacts to natural resources will be mitigated in accordance with local, state, and federal standards.

3.3.7 Design (8.5.7.H)

Landscape and Public Space

The campus provides a variety of landscaped open spaces throughout all phases of development to enhance the beauty of the waterfront and foster social interaction. Each space provides a different character and opportunity to engage with the environment and in a variety of social settings as described below:

Promenade

The central circulation element of the site design is the Promenade, a 12-foot-wide linear pathway that connects the Site by creating a central pedestrian spine from the sidewalks along Sherwood Street to the Pier and Coastal Path.



Figure 3-9: Promenade Rendering

Pier Plaza

The Pier Plaza, sitting at a confluence of circulation, connects the Pier with the Bean Building, the coastal path, and the waterfront.



Figure 3-10: Pier Plaza & Pier Rendering

Pier

The new Pier is a replacement of the existing Cod fish pier. The pier decking will be marine grade timber. Light poles reflect the façade of the codfish building and create an open, central space for multi-purpose gathering. The perimeter railing includes a lean-rail element to allow for comfortable standing, fishing, viewing or other standing activities along the pier edge. The Pier will provide access to water dependent uses, such as water taxi and/or shuttle, paddleboarding and kayaking.



Figure 3-11: Pier Rendering

Coastal Walk

The shoreline includes a Coastal Walk, a 12' wide multi-modal pathway, designed for bicycles, pedestrians, and emergency vehicles. The Coastal Walk provides access to various points along the waterfront, with seating, bike parking, and vantage points. It is part of a trail around the perimeter of the entire campus.



Figure 3-12: Coastal Campus Rendering

Bay Overlook

Spilling out from the Learning, Research, and Collaboration Building, the Bay Overlook space provides a lawn space for gatherings and views to Casco Bay. This space is appropriate for casual or formal gatherings. The Overlook is situated to provide a special vantage point above the adjacent railroad tracks and former rail bridge.

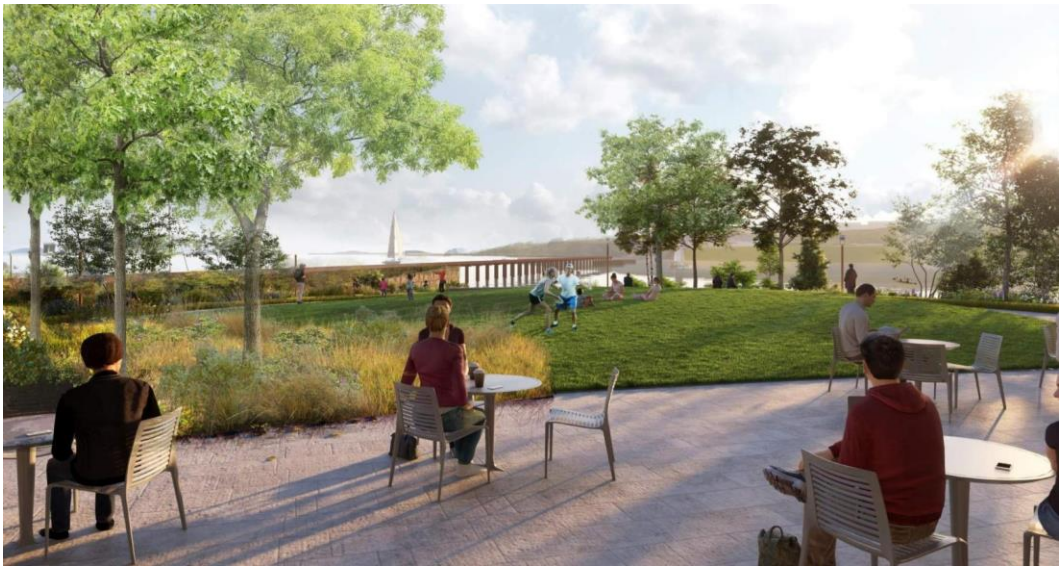


Figure 3-13: Bay Overlook Rendering

Tiered Seating

Adjacent to the Overlook is a series of tiered seating benches set into the hillside. The arrangement of wood and concrete seat-walls overlooks the water and allows for a relaxing informal space for views of Casco Bay the Eastern Promenade, and Munjoy Hill neighborhood.

Planting Approach

The landscape and planting approach for the campus converts a former nearly fully hardened industrial Site into a vibrant new public park-like amenity and private learning campus home for Northeastern University. In crafting the landscape design and planting approach for the project, embracing the region's unique ecology is of paramount importance. Our vision seeks not only to create a functional and visually appealing environment but to honor Maine's natural heritage by utilizing native species endemic to the state.

We understand that the City of Portland has expressed concern over the planting of Maple trees due to susceptibility to Asian Longhorn Beetle (ALB) and current overplanting of Maple trees throughout the City. In order to combat this risk while encouraging species diversity on the campus, the applicant proposes to establish and execute a thorough ALB testing and monitoring program utilizing trained professionals to ensure the long-term health of all trees on the campus.

The landscape and planting design narrative is organized into five distinctive categories: Coastal Edge, Coastal Upland, Scrub Barrens, Upland Meadow, and Stormwater Meadow, as shown in the figure below.

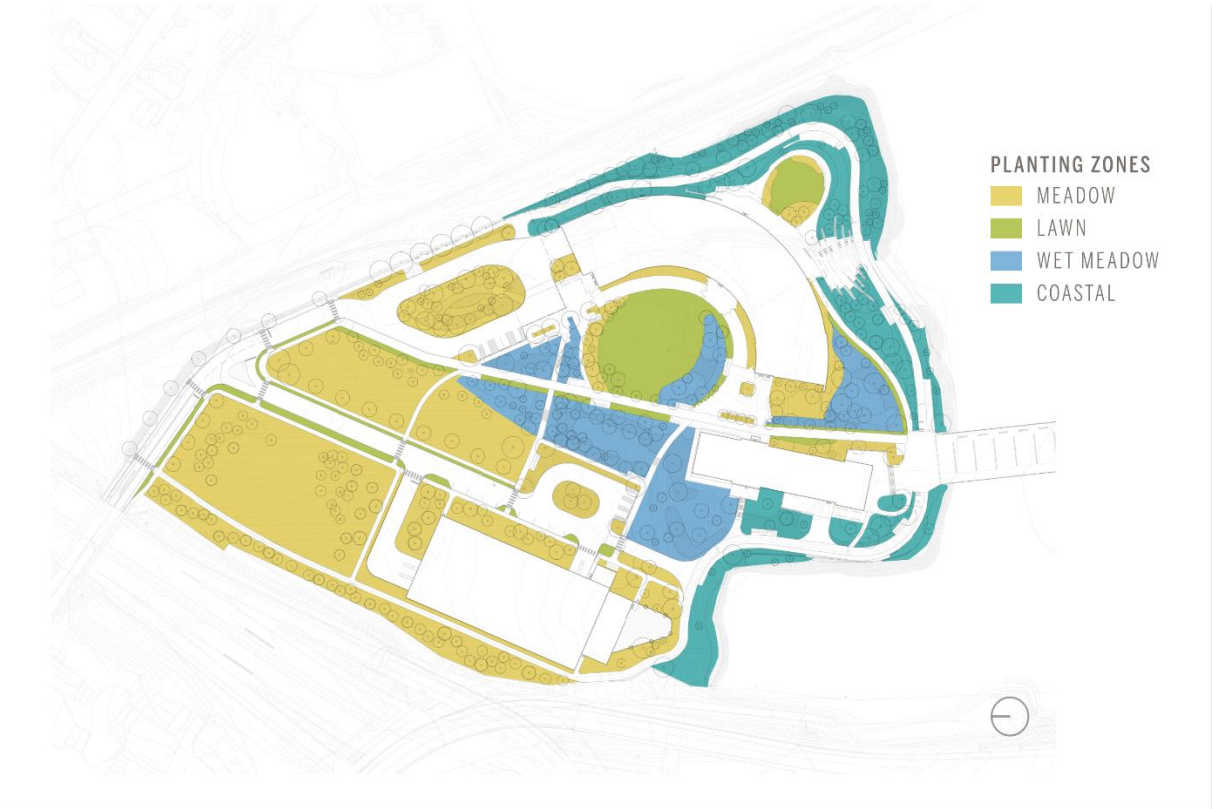


Figure 3-14: Planting Zone Plan

Coastal Edge: A Buffer of Resilience

The Coastal Edge serves as the frontline in the landscape strategy, acting as a resilient buffer against coastal erosion while showcasing the natural beauty of the area. An array of native coastal species, including beach plum, and seaside goldenrod, create a biodiverse buffer zone. These species are specifically chosen for their resilience to salt spray and ability to stabilize the shoreline.

Coastal Upland: A Treasured Oasis

The Coastal Upland represents an oasis for native flora and fauna, offering opportunities for exploration and contemplation while preserving the area's natural character. The Coastal Upland will be populated with native woodland species such as red maple, eastern white pine, and shadbush. These trees not only provide habitat for local wildlife but also offer shade and serenity for visitors. To further support biodiversity, this landscape will encourage nesting areas for ground-nesting birds like American Woodcock, ensuring a thriving community of native wildlife. A thoughtfully designed system of pathways and overlooks will allow residents and students to immerse themselves in the Coastal Upland's beauty while respecting its fragility.

Scrub Barrens: Embracing a Distinctive Ecosystem

The plan acknowledges the ecological significance of Scrub Barrens by preserving and restoring these unique habitats, known for their distinctive plant communities. Certain areas within the Scrub Barrens will be designated as preservation zones, where minimal human intervention will be allowed. These zones will serve as a sanctuary for native scrub barrens flora and fauna. We will initiate restoration efforts using native species like lowbush blueberry, sweet fern, and beach heather to restore natural balance. Interpretive signage will be placed strategically throughout the Scrub Barrens to inform visitors about this unique ecosystem's importance and how our conservation efforts contribute to its preservation.

Upland Meadow: A Haven for Biodiversity

The Upland Meadow is an opportunity to celebrate the beauty and vitality of Maine's coastal landscape while promoting biodiversity and community engagement. A diverse mix of native meadow species, including wild lupine, milkweed, and New England aster, will provide food and habitat for pollinators like monarch butterflies and native bees. This meadow zone will be managed in an ecologically sensitive manner, with periodic mowing and maintenance designed to preserve the meadow character while respecting habitat and ecology.



Figure 3-15: Stormwater Meadow Rendering

Stormwater Meadow: A Sanctuary of Tranquility

The design for the Stormwater Meadow focuses on creating a serene, ecologically rich environment that highlights the beauty of Southeast Maine's ecosystems. The Stormwater Meadow is populated with native draught-tolerant grasses which supports stormwater filtration, conveyance, and water quality improvement.

In conclusion, the landscape design and planting approach for the campus project reflects the project's deep commitment to preserving the state's natural beauty, fostering biodiversity, and creating spaces that educate and inspire. Using native species endemic to Maine can establish an enduring legacy that celebrates the ecological and cultural significance of this remarkable coastal region.

The integration between these ecological regions, the historic Bean Building and the Learning, Research, and Collaboration Building is of great importance as a goal for enhancing indoor/outdoor public space. The Learning, Research, and Collaboration Building has an entrance to an interior public space, known as the Portal, from the waterfront side facing Casco Bay. Another publicly accessible entrance on the upland side of the building, or West elevation, provides access from the Promenade. The Portal may be closed to the public during special events, outside normal operation hours, and when necessary for security or public safety purposes. In all cases the visual connections into and out of the ground floor of the Learning, Research, and Collaboration Building consider views of the special landscape areas, especially the Round, Overlook, Arrival Plaza, and Promenade.

Historic Preservation

The Bean Building is a critical component of the Site, and the site layout including placement of other buildings will allow the Bean building to be a signature feature. The siting of the Learning, Research, and Collaboration Building and the Garage are deferential to historic viewsheds of the Bean Building, especially from Tukey's Bridge/I-295. Plazas and landscape areas are designed to enhance pedestrian connectivity to the Bean Building and maintain this historic structure as a campus focal point.



Figure 3-16: Bean Building Rendering

Campus Cohesion

The project's design team has developed the Site to fit appropriately into the surrounding neighborhood. The position of buildings has been considered in detail to ensure that the campus's layout will support itself while being cohesive with the East Deering neighborhood. The campus will have a sense of completeness in this phase of construction. Areas identified for future development will have well-landscaped lawn and planted spaces that make the campus in its entirety appealing.

Connectivity

The site layout has prioritized the need for bicycle and pedestrian circulation. With parking primarily on one side of the campus, routes for walking and biking from the parking areas or directly from the site entrances have been incorporated into the site layout.

The design for the campus landscape provides a series of social gathering spaces, linked by a carefully orchestrated arrangement of multi-modal circulation. The circulation system has been designed to provide ready access to all parts of the campus. The Shoreline Path is intended to provide access to the water's edge in a variety of ways including, a coastal path for riding and walking parallel to the water, a tiered seating for viewing the water, and a pier allowing users to be over the water with access to seating, viewing, periodic events and water taxi embarkment. The upland circulation network is organized by the central Promenade which has a variety of spur paths that connect the buildings and spaces on the campus. A multimodal loop path occupies the entire perimeter of the Site and connects to the Sherwood Street entrance.

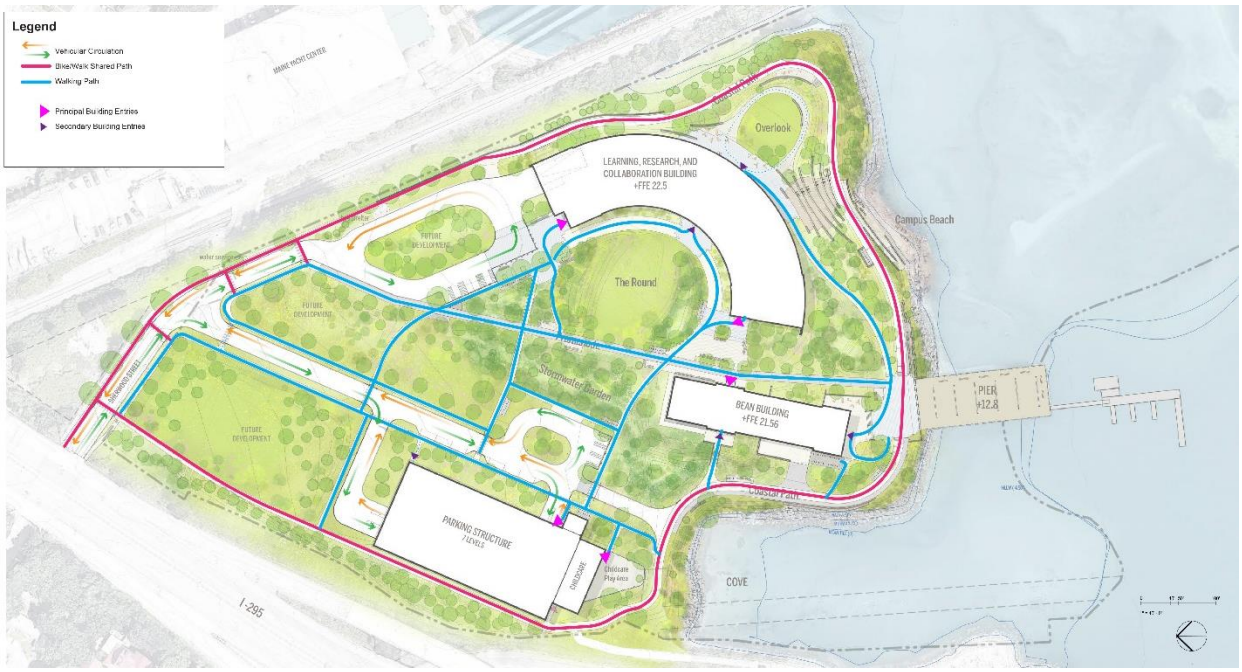


Figure 3-17: Site Circulation Plan

Public Open Space

In Phase 1, the campus contains a minimum of three acres of public open space which is designed to enhance waterfront access and provide bicycle/pedestrian network connectivity. Access to the open space can be provided via a proposed public access easement in the location shown in the figure below. The applicant will work with Corporation Counsel to draft an easement satisfactory to the Applicant and the City, in the event the Planning Board determines that a public access easement is necessary. The public open space functions as recreation areas, social gathering spaces and natural buffers as shown in the figure below.



Figure 3-18: Areas of Public Open Space Plan

Open space is available throughout the campus adjacent to buildings and access routes and at the waterfront. The layout of the Site has considered where open space is needed to support the campus's primary uses. The design of critical site components, like the Site's stormwater management systems, have also included consideration on how to integrate with the public space, adding to it instead of simply working separately for stormwater management.

Sustainable Practice

Northeastern University is reinventing the way universities approach academics. This idea of reinvention will materialize in the design of its new campus, with intent to forge an improved path to climate-responsive regenerative design for the built environment in Maine. Buildings and site development incorporate sustainable technologies in building design, orientation, energy production, and sensitivity to natural resources. A Sustainability and Resilience charter is provided as an appendix and illustrates the commitments the campus is making.

This charter is informed by a combination of industry best practices, Portland's One Climate Future Plan and Northeastern University Standards. The sustainability commitments for the campus fall into the following categories: energy, embodied carbon, responsible materials, water, occupant experience and equity, transportation, and resilience.

Resilience Approach, Sea Level Rise, and Shoreline Protection

The site layout has considered resilience in its design, with building finish floor elevations taking into consideration potential impacts of flooding, severe weather while integrating publicly accessible space within risk mitigation design strategies. While a wide range of risks were analyzed, the Site's waterside location necessitated a unique and careful understanding of present and future risks from sea level rise and coastal storms.

Shoreline protection is primarily improved by the reconstruction of certain sections of the riprap slope and block seawall along the shoreline. This includes providing a better, well-graded armor stone to protect against current and future storms. A section of the existing seawall is also planned to be removed to its foundation and a riprap slope created behind it. This will reduce the current wave reflection and wave energy in these locations. Upland plantings above astronomical high tide will reduce erosion from stormwater runoff. A rebuilt and slightly more elevated pier provides additional improvements to where the existing crumbling Codfish pier currently stands. Work in coastal wetlands and significant wildlife habitats (as defined by the Maine Department of Environmental Protection) will comply with all applicable local, state, and federal permitting requirements.

Portions of the Site are delineated as Special Flood Hazard Areas according to FEMA's Flood Insurance Rate Map (FIRM), attached to this Section. The current and effective FIRMs for Cumberland County, based upon FEMA's 1986 publication, indicate portions of the Site are within the AE Zone, representing 1% annual chance of flooding. Base flood elevations range from 9 to 11 feet along the waterfront.

The design team has performed a comprehensive multi-hazard climate risk and resilience assessment of the proposed campus. The following hazards were assessed for current and future trends, and relevant resilient mitigation strategies were proposed:

- Coastal Flooding and Storm Surge
- Earthquake Ground Shaking
- Liquefaction

- High Winds
- Severe Winter Weather (Snow and Ice)
- Tsunami
- Extreme Precipitation
- Extreme Heat

The design team reviewed existing site survey, site-specific flood hazard risk, and building code requirements, and conducted a technical analysis of flood mitigation options. The new Learning, Research, and Collaboration Building and the existing Bean Building are within the FEMA Special Flood Hazard Area (SFHA) Zone AE with a base flood elevation of 10.79ft City of Portland Vertical Datum (CPVD). To achieve the objective of functional recovery from a coastal flooding scenario for the new Learning, Research, and Collaboration Building, a design flood elevation (DFE) of 22.5ft (CPVD) is implemented which considers the current 100-year storm surge elevation combined with the intermediate sea level rise (SLR) projection for the Site. The finished floor elevation of the new Learning, Research, and Collaboration Building is thus elevated to this elected DFE of 22.5ft. The code compliant DFE of 12.79 ft is implemented at the existing Bean Building. Other buildings on-site, including a new garage and childcare center, are outside of the FEMA SFHA.

The structural design of the Learning, Research, and Collaboration Building is controlled by earthquake loading; thus, the design team performed a probabilistic seismic performance assessment of the current design of the building to draw recommendations for the later stages of the design that ensure an acceptable functional recovery time after a moderate or strong earthquake event.

Building Design

Building façade materials are of high quality, durable to the marine climate and contribute to an attractive public realm. As noted in the IOZ, the first 35 feet of building height shall complement the pedestrian character in materiality, transparency, and detailing.



Figure 3-19: Learning, Research, and Collaboration Building & Round Rendering

Learning, Research, and Collaboration Building Design

Sitting below its upper glass and aluminum "sail," the Learning, Research, and Collaboration Building has a highly articulated lower stone "base" which enriches the 35' high pedestrian zone in a variety of interesting ways. First, the authenticity of natural stone is within reach of pedestrian touch and sightline where scale and material quality can be appreciated at close quarters. The stone is envisioned to be locally sourced and arranged in an alternating open and closed pattern that references the famous crib stone bridge at Bailey Island 14 miles to the east in Casco Bay. Second, this zone of the building contrasts opaque areas of rugged stone with monumental open areas of glazing into the Portal and the principal entrances on the North and West elevations. These areas show off the important social and academic programs within the Learning, Research, and Collaboration Building and invite visitors to participate in the public life inside the building, or simply enjoy the view from the pathway and public space network on the outside.

While above the 35' pedestrian zone, the upper volume of the Learning, Research, and Collaboration Building, referred to as the sail, provides another richly textured visual offering. The facade is composed of alternating glass and copper-toned aluminum panels that change in percentage of glazed and solid in response to views and solar exposure that change at each elevation. The design is directly responsive to environmental conditions in limiting harmful solar glare and admitting desirable solar gain, but the result for the pedestrian is an ever changing experience as one walks along the pathways and promenades. The glass and aluminum curtain wall terminates cleanly at the top of the building and forms an extended parapet that screens all rooftop appurtenances from view. Louvered metal panels in the façade provide side-wall screening for any side-discharging equipment, appearing as an integral part of the building envelope design.

Building rooftop mechanical equipment and appurtenances are incorporated, screened, and set back from roof edges to reduce visual impact from the surrounding neighborhood as described in the figure below.

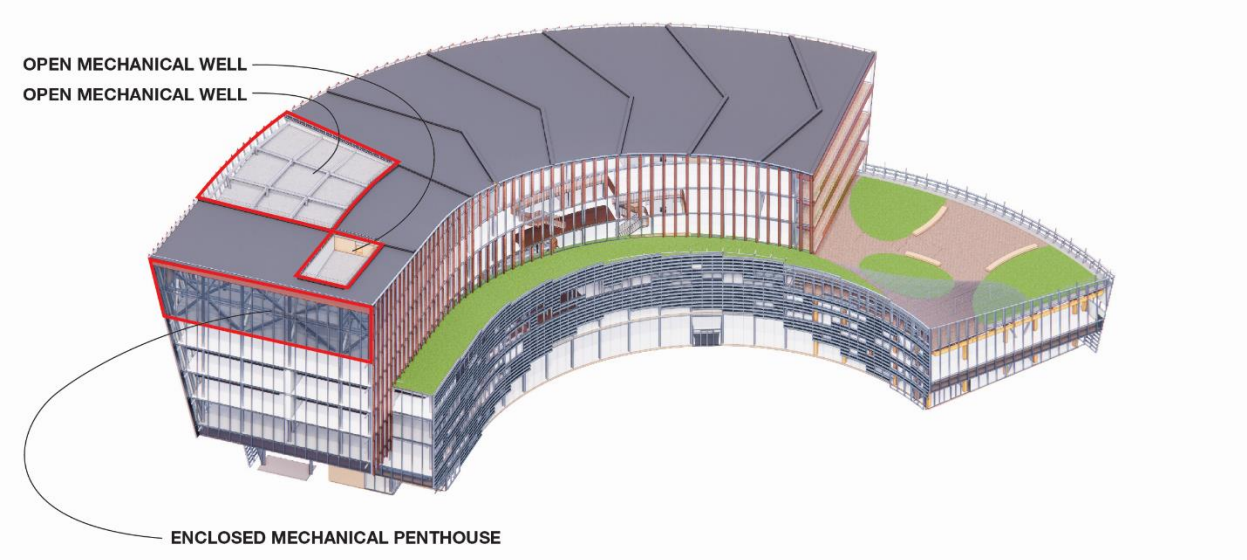


Figure 3-20: Mechanical Screening and Enclosure at Learning, Research, and Collaboration Building

Garage and Childcare Design

While the Garage does not have any rooftop equipment besides an elevator overrun, it nonetheless is wrapped in decorative metal screen on all four elevations. The screen serves to cover all the precast concrete

structural elements of the garage. The garage is planned to include 15,000-sf of photovoltaic canopies at the roof, to provide a source of renewable energy for the campus. It is further punctuated with a series of openings that have a pattern of residential-scaled openings that face the neighborhood as well as the campus, resulting in a thoughtful composition that offers visual interest to highway motorists, neighbors, and campus users.

Garage equipment and mechanical spaces are likewise screened on lower levels with the facade.

The contrast between the programs of childcare and parking is acknowledged in the different façade treatment of the childcare center. Whereas the garage and its vehicles are largely screened from view by a decorative metal façade, the childcare center is a primarily composed of a glass façade facing the principal elevation on the East toward the Round and the arrival, and on the South facing toward the water and adjacent to the protected play space. The openness of the façade allows for occupant daylighting and displays activity from the outside. Appropriate screening and shading will be provided for privacy as needed by the childcare program.



Figure 3-21: Parking Garage Rendering

Building Entrances

Building entrances include prominent facades and are oriented toward, located adjacent to, or accessible from rights-of- way, major pedestrian access routes, or open spaces.

Learning, Research, and Collaboration Building

The Learning, Research, and Collaboration Building has two principal entrances. On the North elevation, the entrance greets visitors arriving from Sherwood Street whether by bike, bus, or automobile with a landscaped Arrival Plaza, and a clearly marked entry vestibule which is protected by a building cantilever which serves as a canopy. At the ground level an integrated paving approach ties the vehicular space and pedestrian space together with common stone paving. Vehicular and pedestrian spaces are separated by

low vehicle bollards. Street trees, low plantings, site, lighting, wayfinding, benches, and bike racks reinforce the entry experience.



Figure 3-22: Arrival Plaza Rendering



Figure 3-23: West Entrance to Learning, Research, and Collaboration Building Plaza & Bean Building Rendering

The West entrance faces the Promenade - the major pedestrian thoroughfare through the campus. This principal entrance consists of a glass vestibule which is also protected by a cantilevered building edge which serves as a canopy. The entry faces a stone plaza which connects to the principal entrance of the Bean Building and is outfitted with benches, low plantings, seating, and lighting.

The Learning, Research, and Collaboration Building has two secondary entrances. The Entrance facing the Round on the Northwest facing elevation gives direct access to the major interior public space known as

the Portal which contains a café, gathering space and restrooms. A glass vestibule serves as the entrance to a small stone paver plaza and beyond that, to the Round.

The South entrance faces the public shore and Casco Bay. Like the Northwest facing entrance, a glass vestibule provides access to the Portal and the amenities described above. The entrance provides access from the interior to a series of important outdoor gathering spaces including the Overlook lawn space, the Bay Terrace tiered seating and several coastal bike and pedestrian paths as well as the Campus Beach.

Bean Building

The principal entrance of the Bean building is sited on the Promenade facing East and directly across from the Learning, Research, and Collaboration Building West entrance.

Garage

The Principal Entrance to the Garage faces East toward the vehicular turnaround and walking path.

Childcare Center

Slightly further to the south but in close proximity to the Garage entrance, the childcare entrance is accessed through a secure playground gate, providing another level of control and buffer to the Campus realm.

Mitigation of Impacts

The buildings and site development are designed to minimize potential negative impacts related to shadows, wind, noise, heat, glare, and lighting; contaminants as described in Section 7.2; and the environment as described in Section 6.

Shadows

Heights and massing of buildings have been designed to minimize shadow impacts to neighbors and avoid negative impacts to existing public open spaces. In general, the buildings step down in deference to the Bean Building and the edges of the Site. To further limit shadow impacts, heights are further restricted at the edge of campus where buildings border other residential uses.

Refer to attached shadow analysis drawings demonstrating shadow impacts at dates prescribed by the City of Portland Technical Manual, section 10 and represented at the times of 9AM, noon and 3PM.

From this analysis it is observed that in nearly all dates/times studied, the new shadows cast by campus buildings largely remain on or within the property line, or on adjacent buffer spaces of the I-295 right of way to the West or the Maine Central Railroad and roof of Maine Yacht Center to the East. It is only in the lowest sun angle scenario of 9AM December 21st that some new shadow from the parking garage reaches residential properties in the East Deering neighborhood. This situation ends by 9:45AM.

Plantings on the property have been chosen for their tolerance to periodic shadow coverage and no adverse effects are anticipated to the growth of vegetation in these spaces. As noted in the wind and heat (thermal comfort) discussion below, some shadows on the north side of the building facing the round have been shown to benefit occupant comfort during the summer.

Noise

The City of Portland Land Use Code Section 6.8.9, Table 6-G, gives maximum permissible sound levels based on the zoning category of an area. For the zones surrounding the project Site, based on the City of Portland Zoning Map the noise limits are as follows:

Table 3-3: Allowable Sound Levels in Zoning Areas

	Daytime/Evening (7 a.m. – 9 p.m.)	Night (9 p.m. – 7 a.m.)
Residential (R3, R5)	55 dBA	55 dBA
Other (IL, C54, B2, B5)	60 dBA	55 dBA

Noise levels due to mechanical equipment, including air source heat pumps, exhaust air handling units, dedicated outside air handing units, fans, and louvers, were calculated and compared to the standards in **Table 3-3**. With this regularly operating equipment, noise at the property lines does not exceed city guidelines. The level is generally within the ambient noise at the Site and would not contribute to significantly raising the ambient level. The existing ambient noise is primarily composed of highway traffic noise and was measured to be 50-55 dBA at the eastern edge of the project Site.

With the current configuration, the noise levels from the smoke exhaust fans or the generator separately do not exceed code levels at the property line. While the fans and generator raise the noise level, they are only used for emergencies and testing.

Wind & Heat (Thermal Comfort)

The design team performed a thermal comfort analysis considering a combination of wind, solar radiation and feel temperature to understand how best to provide a comfortable microclimate. These findings informed the programming of outdoor spaces as well as the planting strategy that can mitigate uncomfortable heat scenarios. The analysis found that in summer months the edges of the Round are generally well-shaded by the buildings, which, along with the calmer winds in the warmer months, will provide a comfortable space for occupants. However, there is more solar exposure further away from the building. This pointed to more active uses along the promenade as well as the lawn areas of the Round. The spaces along the Southern end of the Learning, Research, and Collaboration Building, including the pier, have more solar exposure. This can help counteract the cooler, faster wind speeds coming off the water that may be occasionally experienced in the summer.

Glare

Preventative measures against solar reflected glare are implemented throughout the campus. Specular reflections from concave façades can, in some cases, concentrate reflected solar radiation to produce extreme heat, which can damage skin, foliage, and plastics at the focal point. In order to understand and mitigate these effects, the design team conducted a solar reflected glare study of the Learning, Research, and Collaboration Building to assess the building's glazed areas. Reflected solar irradiance does not exceed 2500 W/m2 (232 W/ft2) at any time during the year on a plane facing the glare source at ground level, except for small portion of the concave west façade of the Learning, Research, and Collaboration Building. This area was found to create a cusp singularity in late afternoons, with potential intensities occurring from April to September. Through simulations, it was determined that mitigation strategies can prevent focusing effects and keep visitors safe and comfortable. At the ground plane where the focusing is most intense, a landscape solution will restrict access to mitigate the glare and heat risk.

Light Pollution and Lighting

The campus lighting designs comply with all safety and comfort requirements and minimize impact to the night sky in accordance with light pollution reduction standards in the most current editions of ANSI/ASHRAE/IESNA 90.1-2007. The goals of the site lighting are to provide a safe nighttime environment, meet all applicable code requirements, support site navigation and wayfinding, enhance the visual coherence of the campus, and avoid light pollution wherever possible.

As defined by the International Dark Sky Association, together with the Illuminating Engineering Society, the site lighting design will take into consideration the Five Principles for Responsible Outdoor Lighting:

- Useful: All light shall have a clear purpose
- Targeted: Light shall be directed only to where needed
- Low Light Levels: Light shall be no brighter than necessary
- Controlled: Light shall be used only when it is useful
- Color: Use warmer color lights where possible

The site lighting will not exceed the luminaire backlight and glare ratings BUG rating method, as defined in IES TM-15-11, to avoid light trespassing to nearby properties and to avoid upward light into the night sky.

The design intent for the Correlated Color Temperature (CCT) is to respect the light pollution principal "color" of using a warm color temperature. The site lighting across the campus shall be 3000K. Refer to attached site lighting plan, photometrics and cutsheets.

Bird Conservancy

Bird safety design will be implemented in the project. Design of exterior building envelopes will be developed in conjunction with the American Bird Conservancy and Cornell Ornithology Lab standards to mitigate bird strikes to the extent practicable. The project also complies with the Bird Friendly Materials Bill, which defines materials with a maximum threat factor of 25 or below as being “bird friendly” and mandates that these must be used on 90% of a façade up mandates above grade. Non-bird friendly materials are limited to 10 ft^2 within any 100 ft^2 area within this region. This provision applies to both new buildings and renovations of existing buildings when the façade is being replaced.

The façade design employs the following bird friendly design strategies:

- Differentiating between texture, color and opacity to fragment reflections and reduce transparency.
- Utilizing surface treatments, etching, fritting, UV patterning or opaque patterned glass to reduce transparency.
- Using glass with external reflectivity below 15%.
- Using interior shades and occupancy sensors to minimize internal illumination which would be visible and attractive to birds.

3.3.8 Neighborhood Integration (8.5.7.I)

Northeastern University and IDEALS have maintained regular contact with neighbors before and following the IDP and IOZ approval, through informal channels such as personal meetings, site visits, calls, and emails,

and through formal channels including Neighborhood Forums and the formation of the Community Advisory Group (CAG). Through all of these channels, neighbors and interested parties have been engaged through regular communication where their views and suggestions have been solicited. Sam Reiche is serving as the community contact for IDEALS and Margaret Angell for Northeastern University, with additional resources from their respective institutions.

IDEALS and Northeastern hold Neighborhood Forums at least quarterly (throughout 2023, the forums have been held to bi-monthly). These forums are held in the community center in East Deering and are open to any neighbor or interested individual. At these meetings, the university and development team provide updates on the operations of the Institute and the progress with the development.

In October, Northeastern launched the CAG to establish a group for the regular discussion of how to maximize the positive social and economic impact of the Institute. In addition, the CAG will draw on the experience of its members to work through challenges and opportunities presented by the development of the new campus. The open sharing of information and perspectives is intended to foster constructive problem-solving and build community around the new Roux Campus.

The CAG is comprised of representatives from key stakeholder groups from across the city. This will be a dynamic group, with membership from the following constituencies, listed below.

- Bicycle and pedestrian
- Business community
- Education
- Higher education
- Neighborhood
- East Deering neighborhood
- East Deering Neighborhood for Responsible Development
- Front Street area neighborhood
- Friends of Payson Park
- Portland Housing Authority Washington Gardens
- Portland Housing Authority Front Street
- Portland Harbor
- Portland Public School System
- Presumpscot School
- Public Transit
- Rail
- Recreation, parks, and trails
- Sustainability
- Transportation

Although a few seats have proved challenging to fill, the response from these groups has been positive and enthusiastic about the opportunity to participate. The CAG held its first meeting in October and will hold meetings quarterly going forward.

Given the long-term role of the CAG, the first task will be to develop a Charter to outline the terms of engagement, including purpose, work scope and structure. As plans unfold for the Roux Campus, and its doors are opened, the CAG will be instrumental in helping to capitalize on the opportunities for Portland.

A detailed project-specific Construction Management Plan (CMP) was developed for Phase 1 and uploaded under separate cover. The CMP was developed based on the following principles outlined in the IDP:

- Open and transparent communication
- One-on-one conversations whenever possible
- Multiple channels to give and receive information
- Timely sharing of plans and considerations
- Receptivity and response to input
- Respect for affected parties

Northeastern University and IDEALS are committed to communicating early and often with neighbors and interested parties. Existing communication platforms: in-person meetings and calls; website; www.rouxcampusportland.org; and Neighborhood Forums will be supplemented with an interactive website and dedicated construction webpage, and a hotline to ensure the public has easy access to timely and accurate information.

3.3.9 Historic Preservation (8.5.7.J)

As previously noted in Section 2.2.2, Bean Building has been designated as a local historic landmark and exterior renovations require Historic Preservation Board review. It should be noted that the Bean Building is exempt from Subsection 14.6.4(E)(2) for review of development within 100 feet of a landmark.

Phase 1 also includes development of a new pier on the footprint of the former Codfish Building pier. Per Section 8.5.7.J.2., the new pier shall include interpretive elements that convey the history and significance of the Codfish Building on top of or within the surface of the pier. While Historic Preservation Board review is not required for demolition of the Codfish Building or construction of the new pier, review and approval of these interpretive elements is required and will be submitted to the Board for review. A summary of the approach is provided below. Additional information regarding Historic Preservation is included in Section 8.5.

The commemoration of the history and significance of the Codfish Building consists of a sequence of connected elements that give visitors multiple perspectives on the building in the context of the site. Moving beyond a single plaque, a whole commemorative pathway leverages the public spaces around the Codfish Building at the pier principally, but also spreading to adjacent plazas and the Promenade to tell a more holistic, comprehensive story of the Building.

The following interpretive elements are envisioned, as shown on **Figure 3-24:**

1. **Railroad Track & Cart Stop** are historic rails and railroad elements that are flush to grade and level to adjacent paving where they are part of the pedestrian surface. Tracks and the cart stop may be exposed in areas of planting or emerging from the hillside slope safely away from pedestrian circulation zones but easily visible.

2. **Bean Pots & Retort Baskets** are repurposed pieces of historic equipment from inside the Bean Building. These ae connected to the industrial process of the Codfish Building and the entire site and will be in lower pier plaza and have a potential reuse as fire pit, table, or seasonal planter. The pots and baskets will be on fixed or lockable casters to remain safely in an intended location.

3. **Granite Interpretive Post** is in Pier Plaza. It will be made of salvaged granite stone from the existing shoreline and repurposed as an interpretive marker with an overall map of the path and the historic elements and commemorative messaging.

4. **Mooring Bollards & Cleats** are salvaged dockside elements from the former pier and will be reused as traffic calming devices separating pedestrian areas from bicycle areas where visitors can safely touch and interact with the artifacts. Bollards and cleats will not be used for current marine service functions.

5. **Pier Decking Inlays** will occur as commemorative metal strips arranged between the light poles to match the Codfish Building footprint and structural system. The strips contain flush text or graphics conveying the Codfish Building's history.

6. **Pier Light Poles** will be arranged in a layout to match the Codfish Building's footprint and structural system. Small interpretive panels at eye level are mounted to poles and provide commemorate signage for the Codfish Building.

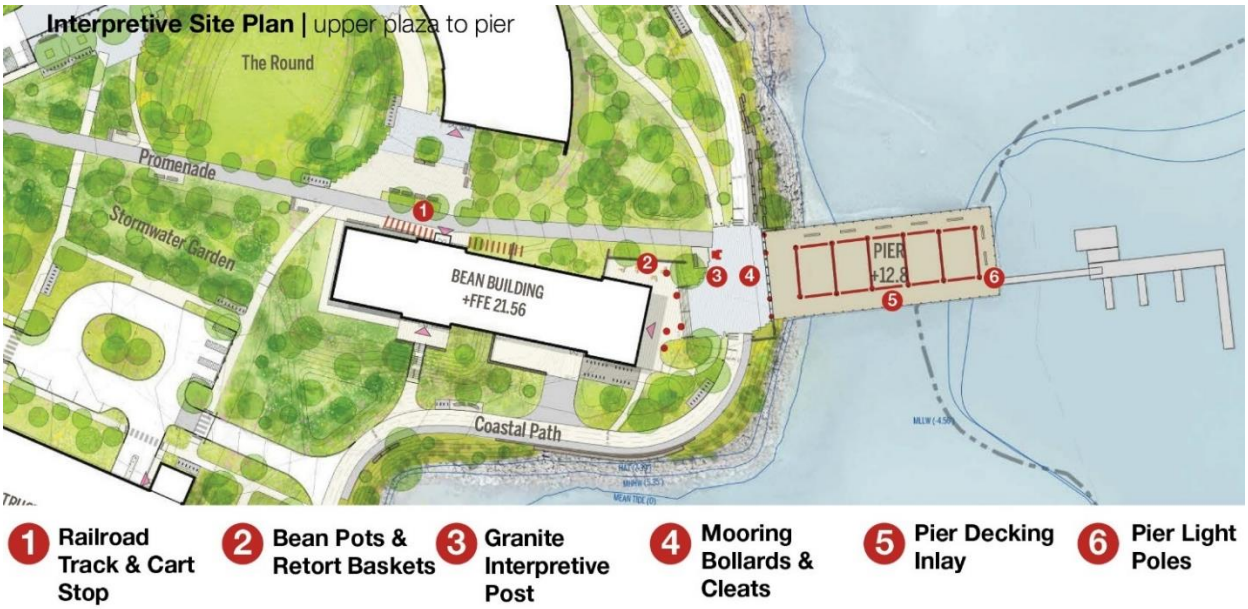


Figure 3-24: Codfish Building Interpretive Elements

3.4 Inclusionary Zoning

The project is required to comply with the City of Portland's Inclusionary Zoning requirements for each phase of development. The Inclusionary Zoning requirements include providing 25% workforce housing for residential developments with 10 or more units, and one low-income rental unit for every 28 hotel rooms. The proposed Phase 1 development does not include residential or hotel units; therefore, this standard is not applicable.

3.5 Waiver Requests

We are requesting the following waivers as a part of the Site Plan process.

- Stormwater Flooding Standard – Per MaineDEP Chapter 500 Stormwater Standards Section 4.F(3), a project is eligible for a waiver from the Flooding Standard if it discharges to a coastal wetland or a major river segment. As described in our Stormwater Management report, the Site discharges directly to Casco Bay, part of a tidal body of water, via the outfall discharge.

- Parking Lot and Parking Space Design – Per City of Portland Technical Manual Section 1.10, standard parking spaces shall be 9 feet by 18 feet. We respectfully request approval of spaces in the parking garage as dimensioned on the plans, which have been designed per industry standards for parking space and drive aisle dimensions. Standard spaces in the parking garage will be 8′-6″x18′-0″ and the 33 compact spaces will be 8′-6″x16′-0″. All parking spaces and aisles exterior to the parking garage meet City standards.
- Sidewalk Material – Per City of Portland Technical Manual Appendix A, the sidewalk and driveway apron material standard for Sherwood Street is asphalt. We respectfully request a waiver of this requirement to utilize concrete as the sidewalk material for Sherwood Street. The existing sidewalk on Veranda Street from the intersection with Sherwood Street is currently concrete. We are also planning to utilize concrete sidewalk within the project Site. The use of concrete for the sidewalk on Sherwood Street will provide consistency with adjacent off-site and on-site sidewalks.

3.6 Evidence of Financial Capability

We have included a copy of a letter verifying the Applicant's financial capacity to undertake the project.

3.7 Evidence of Technical Capacity

The project team includes the following partners completing various engineering, landscape architecture, and architectural components of the project. The project team is also supported by a number of other professional firms providing support with survey, structural design, geotechnical design, mechanical/electrical/plumbing design, and other disciplines. Copies of resumes and information on other members of the project team can be provided upon request.

- **Woodard & Curran (W&C)**, a Portland-based firm, has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, stormwater, and construction management services. W&C has completed projects for colleges, universities, and healthcare institutions that build strong, sustainable infrastructure and environmental programs serving both their business needs and the communities that make them so vibrant. With extensive experience in design and permitting for site development projects, W&C has completed many projects within the City of Portland.
- **Stephen Stimson Associates**, STIMSON is a landscape architecture firm based in Cambridge and Princeton, Massachusetts and is comprised of an urban and rural landscape architecture studio, a working farm, and a plant nursery. STIMSON is a female, minority led partnership between Lauren and Stephen Stimson with 30 staff and 5 principals. The studio was conceived in 1992 by Stephen Stimson, who was born on a 10th generation dairy farm in New England. A devotion to craft, and a simple, agrarian-minded approach to design is the mainstay of the firm's work.
- **Cambridge Seven Associates (C7),** is an architecture firm based in Cambridge, Massachusetts, with a staff of 60 people, including registered architects, planners, LEED Accredited Professionals, exhibit, and graphic designers. Since 1962, they have provided clients with provocative yet sensitive designs by recognizing and acting upon the unique opportunities inherent in every project. C7 has received dozens of awards, including the prestigious National AIA Firm Award, and is internationally acclaimed for its innovative work in architecture, urban design, transportation, planning, graphic design, exhibition, and interiors.

- **Bruner/Cott Architects,** is a 35-person historic preservation architecture firm located in Boston, Massachusetts. Their leadership team brings a broad, integrated perspective to design, giving depth to each of their practice areas. Bruner/Cott's work has been recognized for award-winning design from preservation to adaptive reuse and new construction, with a focus on educational and cultural institutions. Bruner/Cott partners with private developers for residential and commercial buildings. Bruner/Cott is known for creativity in inventing new solutions to complex programs and as design leaders for historic renewal and contemporary design in the context of urban revitalization and institutional re-invention.

3.8 Section Attachments

- FEMA Map
- Financial Capacity Letter

3.9 Attachments Provided as Separate Files

The following materials referenced in this section of the report have been uploaded under separate cover for review.

3.9.1 Drawings

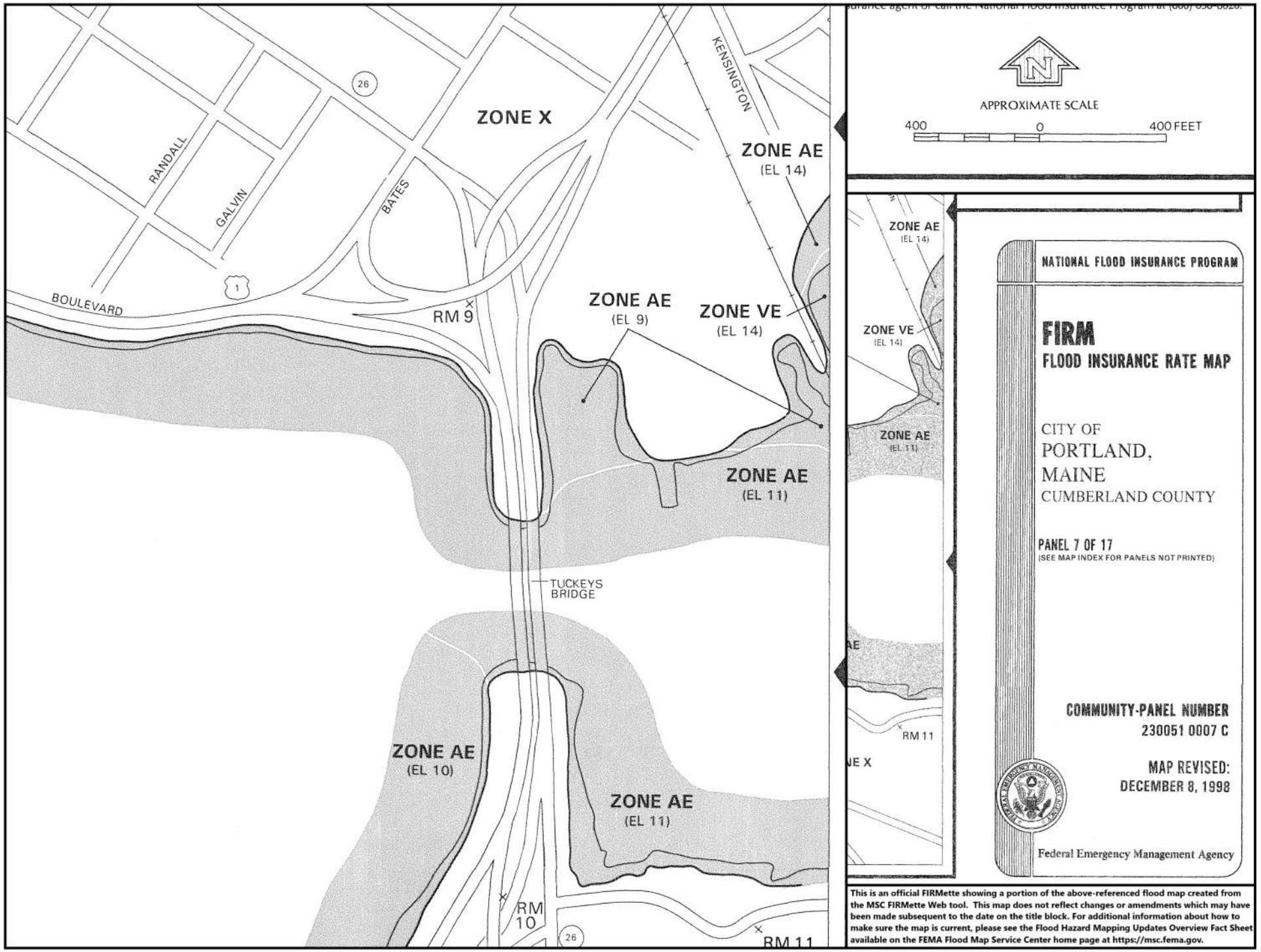
- Average Grade and Building Height Diagrams
- Boundary & Topographic Surveys
- Civil, Landscape, & Architecture Design Plans
- Site Lighting and Photometrics Plans
- Shadow Study

3.9.2 Documents

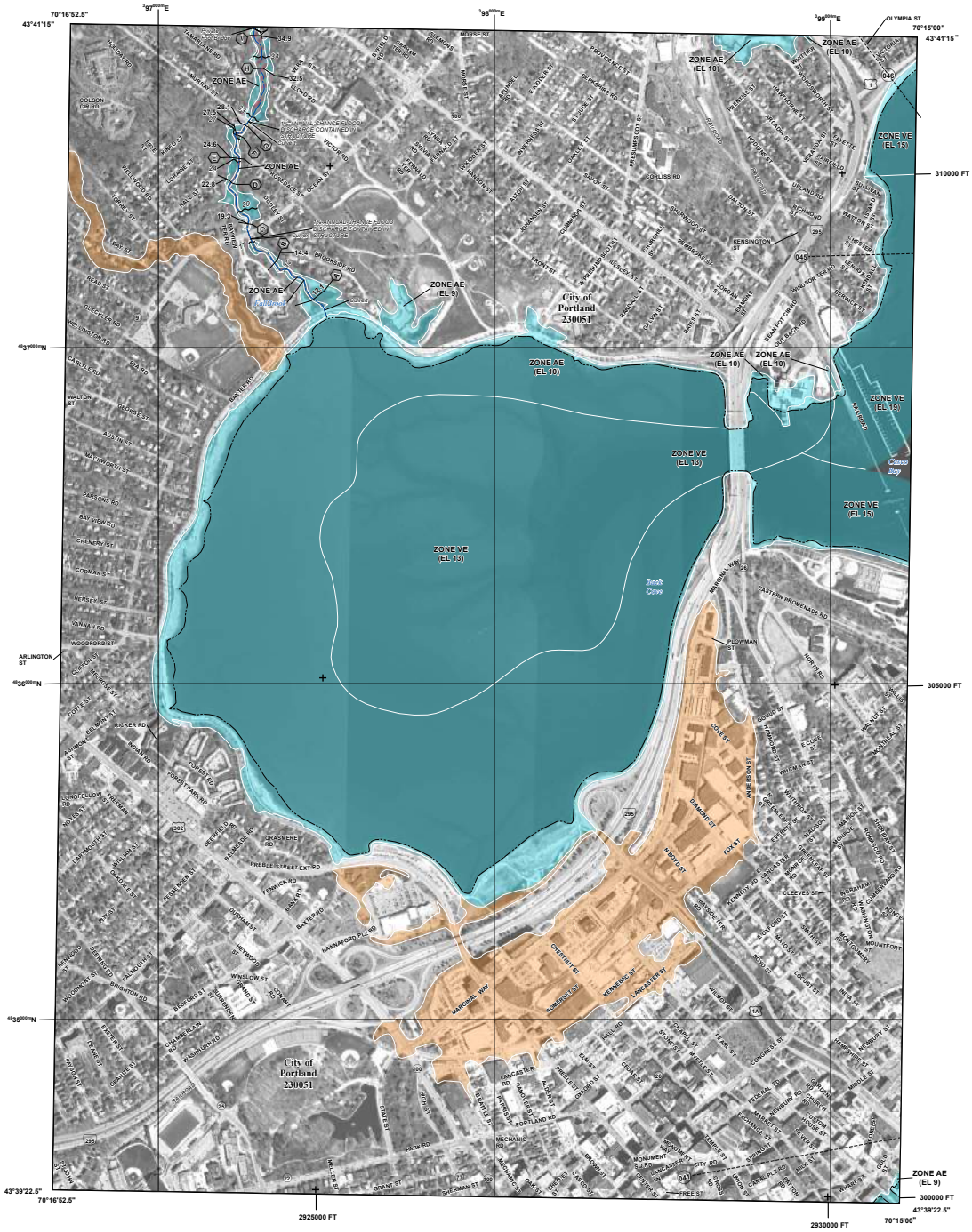
- Application Checklist
- Zoning Assessment Table
- Waiver Table
- Campus Sustainability Charter

3.9.3 Construction Management Plan

A draft Construction Management Plan has been prepared for the proposed development. It should be noted that the constructability of future phases of development has been considered.



This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM provided in digital format by State of Maine, Maine office of GIS (MeGIS). This information was derived from MeGIS, dated 2012.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and FDTs may reflect stream channel distances that differ from what is shown on the map.

SCALE

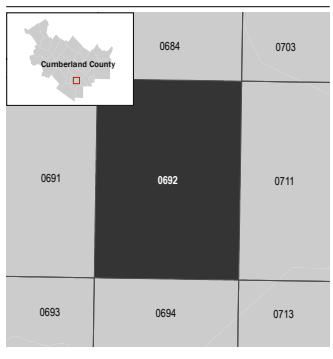
Map Projection:
NAD 1983 UTM Zone 19N;
Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

CUMBERLAND COUNTY, MAINE

All Jurisdictions

PANEL 0692 OF 0837

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
PORTLAND, CITY OF	230051	0692	F

REVISED PRELIMINARY 4/14/2017

VERSION NUMBER 2.3.2.1

MAP NUMBER 23005C0692F

EFFECTIVE DATE

Northeastern

October 25, 2023

Ms. Denise Cameron
Woodard and Curran
12 Mountfort Street
Portland, ME. 04101

Dear Ms. Cameron:

Northeastern University expects phase 1 of the Roux Campus project to cost approximately $470 million dollars.

To fund the project, the University will use a mix of philanthropic resources (the majority of which are already pledged) and debt.

Thank you.

Sincerely,

Thomas Nedell
Senior Vice President for Finance and Treasurer

Office of the Senior Vice President Finance

177 Huntington Ave.
360 Huntington Ave.
Boston, MA 02115

617.373.2240
fax 617.373.4728

finance.northeastern.edu

ZONING ANALYSIS Relevant Zone(s) B5

See narrative for dimensional analysis related to Shoreland Overlay Zone and Institutional Overlay Zone

All Projects:

	Required	Proposed	
Lot Size	NA		
Area Per Dwelling Unit	NA		
Minimum Street Frontage	NA		
Front Yard Minimum	NA		
Front Yard Maximum	NA		
Rear Yard	NA		
Yard Right	NA		
Yard Left	NA		
Side Street Setback	NA		
Step Back	per IOZ	See Narrative	Section 3
Maximum Lot Coverage	NA		
Minimum Lot Coverage	NA		
Maximum Height	per IOZ	See Narrative	Section 3
Open Space	per IOZ	See Narrative	Section 3
Maximum Impervious Area	NA		
Pavement Setback	NA		
Floor Area Ratio	NA		
Off Street Parking Spaces	NA		
Loading Bays	NA		
Other 1	NA		
Other 2	NA		
Other 3	NA		

Planned Residential Unit Developments (PRUD) Requirements Not Applicable (NA)

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

Affordable Housing Density Bonuses (if applicable) Not Applicable (NA)

	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):			

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.
City of Portland Technical Manual Section 1 - Transportation Systems - subsection 1.10 Parking Lot and Parking Space Design	Parking spaces shall meet the following dimensional requirements: Standard parking space: 9 feet wide by 18 feet long, except that low turnover parking spaces, such as those used by residents or employees, may be designed with a width of 8', 6" and considered a	Requesting approval of spaces within the parking garage as dimensioned on the plans sized at 8'6" width	The parking garage has been designed in accordance with industry standards for parking space and drive aisle dimensions. The parking lot dimensions prescribed in the Technical Standards are not efficient when laying out structured parking
City of Portland Technical Manual Section 5 - Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management Section IV.	...provide the following submission items...Flooding Standard: Subcatchment plans with flow paths, full hydrology computations/model output of pre- and post-development conditions, summary of pre- and post-development flow rates, and a written request	Requesting approval of a waiver of the Flooding Standard	As described in our Stormwater Management report, our site discharges directly to Casco Bay, part of a tidal body of water, via the outfall discharge.
City of Portland Technical Manual Appendix 1 Sidewalk Materials Policy	Per the Materials Policy map in Appendix 1, the sidewalk material standard for Sherwood street is asphalt	Requesting a waiver of the material policy for Sherwood Street to allow for use of concrete instead of asphalt.	Sherwood Street provides a connection from Veranda Street to the project site. Existing sidewalks on Veranda Street and proposed sidewalks in the site are both made of concrete. Concrete on Sherwood Street would provide for a continuous

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.
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City of Portland Technical Manual Section 5 - Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management Section IV.	...provide the following submission items...Flooding Standard: Subcatchment plans with flow paths, full hydrology computations/model output of pre- and post-development conditions, summary of pre- and post-development flowrates, and a written request	Requesting approval of a waiver of the Flooding Standard	As described in our Stormwater Management report, our site discharges directly to Casco Bay, part of a tidal body of water, via the outfall discharge.
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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.
City of Portland Technical Manual Section 10 - Municipal Street Lighting Standards - Subsection 10.2 General Standards	For areas not designated with decorative lighting, the City of Portland has adopted the following typical street light pole and fixture standards: Residential (Local/Minor) Street Figure X-1	We respectfully request a waiver to utilize light poles located within the project property line to illuminate the Sherwood Street that are consistent with the project light poles specification in lieu of the city standard X-series light types within the city	The use of light poles that are consistent with the project site will provide uniform appearance and performance of lighting while also complying with requirements for Sherwood Street illumination per Chapter 10. This will enhance the safety and
City of Portland Technical Manual Section 12 - Site Lighting Standards - Subsection 12.3.2 Illumination Levels	Illumination Levels: Minimum, Maximum, and Average illumination levels for areas intended to be lighted, as measured at grade, shall be: Average 1.25 foot candles (fc)	We respectfully request a waiver to provide 1.16 foot candles (fc) average design value for the project site at the ground plane. The site is very large and meeting an exact value of 1.25 is not possible.	The design value for the average illumination in foot candles will not be perceptibly different to the human eye, and otherwise complies with requirements for maximum, minimum, and uniformity requirements.
City of Portland Technical Manual Section 12 - Site Lighting Standards - Subsection 12.3.3 Lumens	Lumens: Types of Lighting: Path lighting Maximum Lumens Allowed: 1,500 lumens	We respectfully request a waiver to provide lighting along pathways for the project with a maximum lumen output of 5439 lumens. The E01 series poles are used along pathways, and have been specified to be similar in height and lumen	Many of the pathways within the site provide mixed-use of pedestrians and cyclists, with a high level of nighttime use. The mixed-use nature of these pathways, as well as the proximity to waterfront area warrant a level of illumination

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.
City of Portland Technical Manual Section 12 - Site Lighting Standards - Subsection 12.3.2 Illumination Levels	Illumination Levels: Minimum, Maximum, and Average illumination levels for areas intended to be lighted, as measured at grade, shall be: Parking Lot - Surface Average: 0.5 Foot candles	We respectfully request a waiver to consider the limited parking spaces as part of the comprehensive site illumination requirements in lieu of the specific value for the average 0.5 Foot candles in this table. The small number of parking spaces are in close proximity to	Designing the limited parking spaces to be uniformly illuminated within the context of the site will provide an enhanced level of safety and improved visual perception at night. The design value for the average illumination in foot candles will be consistent with

ARUP

60 State Street
Boston, MA 02109
USA

t +1 617 864 2987

arup.com

By email
March 25, 2024

Zach Powell, AICP
Senior Planner
Planning & Urban Development Department
389 Congress Street
Portland, Maine 04101
zpowell@portlandmaine.gov

Your ref PL-002724-2023
Our ref 286522/jw

Dear Zach:

The Roux Institute at Northeastern University

Waiver Requests for Technical Manual Section 10 and Section 12

We are requesting the following waivers as a part of the Site Plan process:

- City of Portland Technical Manual Section 10 - Subsection 10.2 General Standards: Typical street light pole and fixture standards.
  - We respectfully request a waiver to utilize light poles located within the project property line to illuminate the Sherwood Street that are consistent with the project light poles specification in lieu of the city standard X-series light types within the city right-of-way. Illumination of Sherwood Street will comply with illumination and pole spacing requirements as outlined in Table 10.2.1.
    - Justification: The use of light poles that are consistent with the project site will provide uniform appearance and performance of lighting while also complying with requirements for Sherwood Street illumination per Chapter 10. This will enhance the safety and nighttime visual experience for visitors to the project.
- City of Portland Technical Manual Section 12 - Subsection 12.3.2 Illumination Levels: Average 1.25 foot candles (fc)
  - We respectfully request a waiver to provide 1.16 foot candles (fc) average design value for the project site at the ground plane. The site is very large and meeting an exact value of 1.25 is not possible.
    - Justification: The design value for the average illumination in foot candles will not be perceptibly different to the human eye, and otherwise complies with requirements for maximum, minimum, and uniformity requirements.

- City of Portland Technical Manual Section 12 - Subsection 12.3.3 Lumens: Path lighting 1,500 lumens
  - We respectfully request a waiver to provide lighting along pathways for the project with a maximum lumen output of 5439 lumens. The E01 series poles are used along pathways, and have been specified to be similar in height and lumen output as the X-8B City Standard used along Trails/Waterfront (Commercial/Thames Street).
    - Justification: Many of the pathways within the site provide mixed-use of pedestrians and cyclists, with a high level of nighttime use. The mixed-use nature of these pathways, as well as the proximity to waterfront area warrant a level of illumination consistent with the Trails/Waterfront areas, to support a safe nighttime environment. Additionally, many pathways must comply with 1.0 foot candle minimum per the Exit Discharge requirements of the 2021 Edition of NFPA 101, Life Safety Code (LSC), as part of an equivalency approach per Section 1.4 in lieu of the current City of Portland Municipal Code Ch. 10 Fire Prevention and Protection.
- City of Portland Technical Manual Section 12 - Subsection 12.3.2 Illumination Levels: Parking Lot Surface Average: 0.5 Foot candles
  - We respectfully request a waiver to consider the limited parking spaces as part of the comprehensive site illumination requirements in lieu of the specific value for the average 0.5 Foot candles in this table. The small number of parking spaces are in close proximity to adjacent exit discharge pathways and/or drive-aisles for vehicles and mixed-use pedestrian/cyclist pathways. The adjacent uses to the small number of parking spots make it not possible to comply with the stated average.
    - Justification: Designing the limited parking spaces to be uniformly illuminated within the context of the site will provide an enhanced level of safety and improved visual perception at night. The design value for the average illumination in foot candles will be consistent with adjacent areas, and not be perceptibly different to the human eye, and comply with requirements for maximum, minimum, and uniformity requirements.

ARUP

Our ref	286522/jw
Date	March 25, 2024

Yours sincerely



Jake Wayne
Associate

d 6173499256
m 4158520628
e jake.wayne@arup.com

cc Patti Intrieri pintrieri@cambridgeseven.com
Denise Cameron dcameron@woodardcurran.com

ARUP

60 State Street
Boston, MA 02109
USA

t +1 617 864 2987

arup.com

By email
May 17, 2024

Zach Powell, AICP
Senior Planner
Planning & Urban Development Department
389 Congress Street
Portland, Maine 04101
zpowell@portlandmaine.gov

Your ref PL-002724-2023
Our ref 286522/jw

Dear Zach:

The Roux Institute at Northeastern University

Waiver Requests for Technical Manual Section 10 and Section 12

We are requesting the following waivers as a part of the Site Plan process:

- City of Portland Technical Manual Section 10 - Subsection 10.2 General Standards: Typical street light pole and fixture standards.
  - We respectfully request a waiver to utilize light poles located within the project property line to illuminate the Sherwood Street that are consistent with the project light poles specification in lieu of the city standard X-series light types within the city right-of-way. Illumination of Sherwood Street will comply with illumination and pole spacing requirements as outlined in Table 10.2.1.
    - Justification: The use of light poles that are consistent with the project site will provide uniform appearance and performance of lighting while also complying with requirements for Sherwood Street illumination per Chapter 10. This will enhance the safety and nighttime visual experience for visitors to the project.
- City of Portland Technical Manual Section 12 - Subsection 12.3.2 Illumination Levels: Average 1.25 foot candles (fc)
  - We respectfully request a waiver to provide 1.16 foot candles (fc) average design value for the project site at the ground plane. The site is very large and meeting an exact value of 1.25 is not possible.
    - Justification: The design value for the average illumination in foot candles will not be perceptibly different to the human eye, and otherwise complies with requirements for maximum, minimum, and uniformity requirements.

- City of Portland Technical Manual Section 12 - Subsection 12.3.3 Lumens: Path lighting 1,500 lumens
  - We respectfully request a waiver to provide lighting along pathways for the project with a maximum lumen output of 5439 lumens. The E01 series poles are used along pathways, and have been specified to be similar in height and lumen output as the X-8B City Standard used along Trails/Waterfront (Commercial/Thames Street).
    - Justification: Many of the pathways within the site provide mixed-use of pedestrians and cyclists, with a high level of nighttime use. The mixed-use nature of these pathways, as well as the proximity to waterfront area warrant a level of illumination consistent with the Trails/Waterfront areas, to support a safe nighttime environment. Additionally, many pathways must comply with 1.0 foot candle minimum per the Exit Discharge requirements of the 2021 Edition of NFPA 101, Life Safety Code (LSC), as part of an equivalency approach per Section 1.4 in lieu of the current City of Portland Municipal Code Ch. 10 Fire Prevention and Protection.
- City of Portland Technical Manual Section 12 - Subsection 12.3.2 Illumination Levels: Parking Lot Surface Average: 0.5 Foot candles
  - We respectfully request a waiver to consider the limited parking spaces as part of the comprehensive site illumination requirements in lieu of the specific value for the average 0.5 Foot candles in this table. The small number of parking spaces are in close proximity to adjacent exit discharge pathways and/or drive-aisles for vehicles and mixed-use pedestrian/cyclist pathways. The adjacent uses to the small number of parking spots make it not possible to comply with the stated average.
    - Justification: Designing the limited parking spaces to be uniformly illuminated within the context of the site will provide an enhanced level of safety and improved visual perception at night. The design value for the average illumination in foot candles will be consistent with adjacent areas, and not be perceptibly different to the human eye, and comply with requirements for maximum, minimum, and uniformity requirements.

ARUP

Our ref	286522/jw
Date	May 17, 2024

- City of Portland Technical Manual Section 12 - Subsection 12.3.2 Illumination Levels: Parking Lot Structure Maximum: 2.0 Foot candles
  - We respectfully request a waiver to provide a maximum illuminance value of 3.5fc at the exterior ground plane around the parking structure; and request a minimum value of 0.0 fc at the ground plane around the parking structure as some areas are not intended for nighttime use and the minimum drops below 0.3fc in these areas where no nighttime lighting is required. We will use 0.3fc as the minimum value for purposes of calculation of the uniformity.
    - Justification: Egress light levels as well as light levels for safety of pedestrians at the ground level exterior of the parking structure where nighttime use is planned are designed to comply with the section 12.3.2 requirements for site lighting. Areas around the parking structure where nighttime use is not planned or required drop to below 0.3 fc minimum. This design approach maintains a consistency with campus design approach, and maintains safe light levels at night where light is needed.

Yours sincerely

Jake Wayne
Associate

d 6173499256
m 4158520628
e jake.wayne@arup.com

cc Patti Intrieri pintrieri@cambridgeseven.com
Denise Cameron dcameron@woodardcurran.com

4. EVIDENCE OF RIGHT, TITLE & INTEREST

4.1 Right, Title & Interest

The Project will occur on parcels of land identified by the City as Map 447 Lot A001 and Lot A002 and owned by IDEALS. IDEALS is in the process of transferring ownership of the parcel to Northeastern University, as documented by the Purchase and Sale Agreement attached to this Section. Conveyance of the property to Northeastern University will occur subsequent to Site Plan approval and prior to application for a building permit. A copy of the City parcel maps is also attached for reference.

4.2 Easements & Other Burdens

Existing easement's locations and descriptions are reflected on the survey drawings, uploaded under separate cover.

4.3 Section Attachments

- Purchase and Sale Agreement
- City Parcel Maps

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EXECUTION VERSION

AGREEMENT FOR THE PURCHASE AND SALE OF REAL ESTATE

THIS AGREEMENT is effective as of October 23, 2023 by and between **NORTHEASTERN UNIVERSITY**, a Massachusetts non-profit corporation with an address of 360 Huntington Avenue, Boston, Massachusetts 02115 ("Buyer"), and **THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCES**, a Maine non-profit corporation with an address of 100 Commercial Street, Portland, Maine 04101 ("Seller").

RECITALS

WHEREAS, in furtherance and fulfillment of that certain Memorandum of Understanding, dated July 27, 2022 by and between Buyer and Seller (the "MOU"), the Seller desires to sell, transfer and convey to Buyer a certain parcel of land, together with the improvements thereon, located on the easterly side of Interstate 295 and the southerly side of Sherwood Street in the City of Portland, County of Cumberland and State of Maine (the "Campus") as more specifically described herein; and

WHEREAS, the MOU and further agreements by and among Buyer, Seller, and David and Barbara Roux (the "Rouxs") envision that Buyer will develop the Campus for the creation of a graduate institute (the "Institute"):

- instructing students in the fields of artificial intelligence, digital science, data visualization, computational medicine, genomics and life sciences and project management, and develop content and pedagogy therefor,
- conducting research in the fields described above, among others, and
- encouraging innovation and entrepreneurialism among new and established companies deploying the above-mentioned skills and technologies,

***WHEREAS*,** the buyer has agreed to develop the Campus as the permanent home of the Institute with other supporting infrastructure to encourage learning, collaboration, innovation and other progress, and

WHEREAS, it is the intent of the Seller and the Rouxs that the Campus will, over time, become a force for education, research, collaboration and entrepreneurialism meaningful to the 21st century economy, innovation and job creation.

WITNESSETH AS FOLLOWS:

1. PURCHASE AND SALE. Seller agrees to sell and Buyer agrees to buy, on the terms and conditions hereinafter set forth, approximately thirteen (13) acres of land and buildings generally situated at 1 Bean Pot Circle, Portland, Maine together with all improvements that may at the time of closing be thereon (except as specified below) and all rights and easements appurtenant thereto, which parcel is more particularly bounded and referenced by the City of Portland Assessor's Office as Map 447-A-001-001 and 447-A-001-002 and as more fully described on **Exhibit A** attached hereto, being the same premises described in a Quitclaim Deed

DocuSign Envelope ID: 93BEB8D2-0DE3-4F1B-A064-562E6257362F

with Covenant from B&G Foods North America, Inc. to Seller, dated March 23, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39282, Page 151 together with and including all abutting or adjacent tidal flats, intertidal lands, and related rights in, to and under any submerged lands easements or leases between Seller and/or any predecessor of Seller with the State of Maine (together the "Property"). The following shall also be delivered and conveyed to Buyer at Closing hereunder:

A. Conveyance of tangible personal property, if any via Bill of Sale.

B. Conveyance of intangible personal property, if any, associated with the Property, to the extent owned by Seller, by Bill of Sale and Assignment.

C. Assignment and Assumption of the Maine Yacht Center lease (the "MYC Lease") of a portion of the Property, in form and substance reasonably acceptable to Buyer.

D. Conveyance/Assignment and Assumption of Submerged Land Easement, which requires notice to the Maine State Bureau of Parks and Lands.

E. Assignment and Assumption of the following MDEP Permits if in effect at the time (for which Buyer shall seek MDEP consent):

i. Maine Department of Environmental Protection Air Emission License A-77-71-M-R(SM)

ii. Maine Department of Environmental Protection Maine Pollutant Discharge Elimination System (MDEPDES) Permit #ME0001741

iii. Maine Waste Discharge License (WDL) License #W000980-5R-H-R.

iv. NRPA Permit (*if any, currently in process*)

(collectively, the "MDEP Permits")

F. Assignment and Assumption of the following City of Portland and/or State permits and approvals:

i. Demolition permit

ii. Any site plan approval and/or building or construction permits

iii. MDOT permits including Traffic Movement Permit

iv. any other issued or pending state, municipal or federal permits or permit applications

(collectively, with the MDEP Permits, the "Governmental Permits")

G. Assignment and Assumption of the construction and development contracts and agreements described on **Exhibit B** (the "Development Contracts").

H. Assignment of any and all warranties relating to any completed contracts for construction or demolition of any of the improvements upon the Campus (the "Construction Warranties"), if any.

I. Assignment of any and all studies, reports, engineering, surveys, appraisals, or other such reports or studies, to the extent assignable (collectively, the "Studies and Reports"), and, if and to the extent requested by Buyer, delivery of reliance letters with respect to such Studies and Reports in a form reasonably acceptable to Buyer. Seller agrees to seek consent to such assignments and any required reliance letters from the professionals or vendors providing the Studies and Reports.

2. OFFER AND ACCEPTANCE. The execution of this Agreement by Buyer represents an offer to Seller on the terms and conditions set forth herein. This offer shall be open for acceptance by Seller until 4:00 p.m. Portland, Maine time on October 23, 2023 unless extended by mutual agreement of Buyer and Seller. Seller's acceptance of this offer shall be evidenced by Seller delivering an executed copy of this Agreement to Buyer at the address set forth in Section 14 below on or before the expiration of this offer. If this offer is not accepted by Seller prior to its expiration, this offer shall automatically expire and this Agreement shall be null and void and of no further force and effect.

3. CONSIDERATION. The consideration for the transfer of the Property is in furtherance and fulfillment of the MOU and the performance under such further agreements by and among Buyer and Seller for Buyer's development of the Property as the site of the Institute for the purposes of instructing students, conducting research, and supporting entrepreneurialism in the fields of artificial intelligence, digital science, data visualization, computational medicine, genomics and life sciences and project management, and develop content and pedagogy therefor, and developing the Property to serve as the permanent home of the Institute with other supporting infrastructure. At closing hereunder, however, the parties shall adjust for any pro-rations and any other payments referenced herein. Except as specified in this Agreement or in any other agreement among the parties including the Rouxs, both Buyer and Seller shall bear their own expenses in connection with the performance of their obligations hereunder. Buyer agrees to pay and Seller agrees to accept One Dollar ($1.00) and other valuable consideration as the Purchase Price for the Property.

[redacted]

4. TITLE. Seller shall convey the Property to Buyer at the closing in fee simple with good, marketable and insurable title, free and clear of liens and encumbrances and other matters of record, except as disclosed in Buyer's Title Insurance Policy # OP 04921177 ME issued by CATIC (the "Title Insurer"), dated March 24, 2022, a copy of which has been provided to Seller (the "Title Policy"). Seller shall deliver the Property free and clear of any leases or occupancies except as otherwise provided herein. Notwithstanding the foregoing, during the period commencing on the date hereof and continuing for a period of thirty (30 days (the "Inspection Period"), Buyer shall have right to review the title and to make any objections to the title in writing to Seller. Upon receipt of Buyer's title objections, Seller shall have a period of up to thirty (30) days to either (i) resolve the title objections to the reasonable satisfaction of Buyer; (ii) or to propose affirmative title insurance coverage addressing any such title objection that the Title Insurer is willing to provide, including an agreement to continue to provide such affirmative coverage to subsequent grantees and mortgagees; or (iii) to refuse to address such title objection, in which case Buyer may elect to terminate this Agreement, or Buyer may elect to close notwithstanding the title objection.

5. CLOSING. The transfer of title and closing hereunder shall take place at the offices of Bernstein, Shur, Sawyer and Nelson, 100 Middle Street, Portland, Maine, no later than ten days prior to Buyer's application for a building permit for the Buyer's initial phase of construction of the Institute is submitted to the City of Portland (the "Closing Date") or at such earlier date and location as Buyer and Seller shall mutually agree in advance and in writing. Buyer shall have the right to request a closing at any time prior to its application for a building permit, provided that Buyer has satisfied the remaining obligations of Buyer under this Agreement, other than such obligations that Seller has agreed to waive in writing. At the closing,

(a) Seller shall execute and/or deliver to Buyer:

i. a Quitclaim Deed with Covenant to the Property, in accordance with the Short Form Deeds Act, 33 M.R.S.A. § 761 et seq., (the "Deed"),

ii. a Quitclaim with Covenant Bill of Sale conveying the personal property to be conveyed to Buyer as set forth in Section 1.A. above;

iii. all keys, access cards, security codes and similar items to the Property in Seller's possession;

iv. the originals of all permits and licenses relating to the Property, if any, in Seller's possession;

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v. such documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Buyer's acquisition and financing of the Property, including without limitation a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations), an affidavit regarding underground storage tanks (as required by Maine Law), a surface/subsurface waste disposal system certificate (if applicable), applicable Maine State REW forms and satisfactory evidence of Seller's existence, authority to convey the Property; and

vi. One or more Assignment and Assumption Agreements signed by Seller to assign to Buyer all of Seller's rights in and to the Maine Yacht Center Lease; the Governmental Permits, the Studies and Reports, the Construction Warranties and the Development Contracts; together with any reliance letters with respect to the Studies and Reports requested by Buyer.

(b) Buyer shall execute and/or deliver to Seller:

i. the purchase price;

ii. evidence that the buyer's Board of Trustees has voted affirmatively to proceed with Phase 1 of the Campus development project (the "Project") and has committed sufficient financial resources to fund Phase 1 of the Project which shall include all work reasonably necessary for the construction of one or more learning, research and collaboration buildings and supporting parking and public infrastructure, construction of a new pier, and renovation of the exterior of the existing historic landmarked Bean Building as shall be further described in the initial Site Plan application (as the same shall be jointly submitted by the parties hereto) as approved by the City of Portland (the contents of which – as approved by the City -- shall be referred to herein as "Phase 1"). Such financial resources may be from various sources including bond financing, Buyer's own resources, pledges and other philanthropic giving and such financial resources as may be available to Buyer over the course of the construction of Phase 1 of the Project as opposed to being fully available at the time of closing;

iii. One or more Assignment and Assumption Agreements signed by Buyer to enable Buyer to assume all of Seller's rights in and to the Maine Yacht Center Lease; the Governmental Permits, the Studies and Reports, the Construction Warranties and the Development Contracts; and

iv. such other documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Seller's disposition of the Property.

Unless this Agreement is extended by mutual agreement of the parties, if the Closing does not occur for any reason by December 31, 2024, then this Agreement shall automatically terminate and be of

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no further force and effect and all obligations of the parties shall cease other than those specifically identified herein as surviving such termination.

6. RISK OF LOSS, DAMAGE AND INSURANCE.

(a) All risk of loss to the Property prior to the closing shall be borne by Seller. Seller shall keep the Property fully insured against fire and other extended coverage risks until the closing and shall name Buyer as an additional insured as Buyer's interest may appear.

(b) In the event that, prior to the closing, the improvements which are part of the Property are destroyed or, in the opinion of Buyer, substantially damaged, Buyer may either (i) terminate this Agreement, or (ii) accept the insurance proceeds payable by reason of such damage or destruction and close this transaction notwithstanding the same. If any part of the Property is damaged by fire or other casualty and Buyer does not elect to terminate this Agreement pursuant to this Section, then Seller and Buyer shall perform their respective obligations under this Agreement and in the event of a closing, Seller shall (x) deliver to Buyer at the Closing any insurance proceeds or condemnation awards received by Seller in respect of or allocable to the Property; and (y) assign to Buyer all of Seller's interest in and to any insurance proceeds and/or condemnation awards allocable to the Property which have not yet been received by Seller on that date; and (z) refrain from accepting or agreeing upon the amount of any payment of any proceeds or awards without Buyer's prior written consent. Notwithstanding the above, Buyer acknowledges that Seller is in the process of abating and demolishing all of the facilities on the site except for the so-called "Cannery" or "Bean Building"

7. INSPECTION/DELIVERY OF DOCUMENTS; AS-IS CONDITION. Reasonably promptly after this Agreement becomes effective, Seller shall deliver to Buyer copies of all of the Studies and Reports in Seller's possession or control to the extent not already provided to Buyer. With reasonable notice which shall be a minimum of three business days, Seller hereby grants Buyer or its agents the right to enter upon or in any part of the Property at all reasonable times and from time to time prior to the closing in order to inspect the Property, conduct surveys, soil tests, engineering and environmental testing and studies and to do such things as are reasonably necessary with respect to its due diligence, acquisition and development of the Property, provided, however, that Buyer's obligations to close hereunder shall not be conditioned upon the results of such due diligence other than as set forth below.

Buyer has commenced its review of the Studies and Reports, including environmental site assessments (ESAs) performed prior to the date hereof and accepts the Property in its as-is condition except as specifically set forth herein. Notwithstanding the foregoing, Seller shall not, after the date hereof, suffer or allow the occurrence of any further event(s) which would create, constitute, or be considered a recognized environmental condition (REC) under any qualified Phase I ESA without prompt and complete remediation or abatement, or else Seller shall be considered in default hereof. Furthermore, if Seller's title to the Property is further encumbered by any matter or means after the date hereof and such further encumbrance is not cleared prior to Closing, Seller shall be in default hereof. The foregoing is not a consent or permission to further encumber the title and Seller specifically agrees it shall not further encumber the title to the Property nor permit any mortgage, lien, claim, or charge to accrue which shall affect Seller's title.

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Further notwithstanding the foregoing, the parties acknowledge that the environmental site assessments conducted by or for Buyer or for which Buyer has been provided were conducted before certain demolition activities on the site that were performed by or for Seller. Buyer shall have the right to conduct further or updated ESAs and to review any remediation activities undertaken by Seller or its agents or contractors since the date of the ESAs conducted by or for Buyer. In the event that such further or updated ESAs reveal any RECs not previously disclosed to Buyer, Buyer shall have the right to terminate this Agreement or to require that further conditions be satisfied by Seller prior to closing.

Except as set forth in this Agreement, the Property will be conveyed "as is" at the time of closing and Seller disclaims all representations and warranties from Seller to Buyer other than any limited representations set forth herein. Buyer will indemnify Seller with respect to any environmental liabilities associated with the Property that may be discovered or arise post-closing, regardless of when the action(s) leading to such liabilities occurred. The foregoing sentence shall survive Closing under this Agreement. Seller will assign any environmental indemnification agreements it obtained from the Seller's grantor to Buyer, if any, with the right of the Buyer to enforce the indemnification obligations contained in any such agreements to the extent permitted therein.

8. CONDITIONS TO BUYER'S OBLIGATIONS TO PERFORM. The Buyer's obligation to perform hereunder and to close on the purchase of the Property are conditional upon the following matters:

(a) Buyer's obligation is conditional upon the Buyer's Board of Trustees approval of the Buyer's acquisition of the Property and the obligations of the Buyer under this Agreement.

(b) Buyer's obligation is conditional upon Buyer's satisfaction with its inspection of the Property during the Inspection Period as more fully set forth in Section 7 of this Agreement.

9. SELLER'S CONTINUATION OF CONSTRUCTION ACTIVITIES PRIOR TO CLOSING. Seller is currently conducting demolition, environmental remediation and site work at the Property. Seller has provided Buyer with copies of all of the plans, specifications, contracts and scope of work being performed by Seller or its agents or contractors at the Property at the time of execution hereof. Seller shall continue to perform such work in accordance with such contracts. To the extent that any such plans, specifications or contracts are modified or supplemented following the execution of this Agreement (the "Construction Modifications"), or to the extent that any additional contracts are to be entered into by Seller prior to the closing (the "New Contracts"), Seller shall endeavor to provide Buyer with notice thereof as soon as practicable, and Buyer shall have the right to comment upon and participate in any discussions regarding the scope and timing of such work; provided, however, that the notice contemplated by this provision shall be deemed satisfied if an agent, employee, or representative of Buyer is present with Seller (whether in person, telephonically, or by email) in conversations, meetings and other communications involving such Construction Modifications or New Contracts. Moreover, notwithstanding the notice provisions set forth in Section 16(b) below, the notice contemplated by this Section 9 may also be made to

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other designated representatives of Buyer involved in the construction activities via telephone in addition to, or in lieu of, any of the other manners of providing notice outlined in Section 9.

10. POSSESSION OF THE PROPERTY. The Property shall be delivered to the Buyer at the time of the closing free and clear of all tenancies or occupancies by any person or entity, unless otherwise agreed herein. The Property shall also be reasonably free and clear of all trash and debris, and free and clear of any and all of Seller's personal property and equipment, except as set forth herein.

11. REPRESENTATIONS AND WARRANTIES OF SELLER. Seller represents and warrants to Buyer that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Seller is duly organized and in good standing under the laws of the State of Maine, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Seller of its obligations hereunder are within the lawful power of Seller, have been duly authorized and approved by all necessary actions on behalf of Seller, and will not conflict with, or result in a breach of any of the terms, covenants and provisions of: (i) Seller's Articles of Incorporation or By-Laws; (ii) any judgment, writ, injunction, regulation, ruling, directive or decree of any court of governmental authority; or (iii) any agreement or instrument to which Seller is a party or by which Seller is bound;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and to bind Seller to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(d) No consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Seller in connection with the execution and delivery of this Agreement or the performance hereof by Seller;

(e) There are no litigation, liens, judgments, violations, or proceedings pending, or to the best of Seller's knowledge, threatened against or relating to the Property nor does Seller know or have reasonable grounds to know of any basis for any such action, or of any governmental investigation relating to the Property;

(f) There is no pending, or to the best of Seller's knowledge, threatened action or proceeding (including, but not limited to, any condemnation or eminent domain action or proceeding) before any court, governmental agency or arbitrator relating to or arising out of Seller's ownership of the Property or any portion thereof, or which may adversely affect Seller's ability to perform its obligations under this Agreement, or which may affect the Property or any portion thereof;

(g) Seller is not a "foreign person" within the meaning of § 1445 of the Internal Revenue Code;

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(h) To the best of Seller's knowledge, no work has been performed or is in progress at, and no materials have been furnished to the Property or any portion thereof which may give rise to mechanic's, materialmen's or other liens against the Property or any portion thereof except as may arise in connection with Seller's further obligations as specifically contemplated by this Agreement; and

(i) All outstanding bills and/or accounts payable concerning the Property are either paid or will be paid prior to or at the time of closing unless otherwise agreed by the parties in writing.

12. REPRESENTATIONS AND WARRANTIES OF BUYER. Buyer represents and warrants to Seller that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Buyer is duly organized and in good standing under the laws of the Commonwealth of Massachusetts, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Buyer of its obligations hereunder are within the lawful power of Buyer, have been duly authorized and approved by all necessary actions on behalf of Buyer, and will not conflict with, or result in a breach of any of the terms, covenants and provisions of: (i) Buyer's Articles of Incorporation or Bylaws; (ii) any judgment, writ, injunction, regulation, ruling, directive or decree of any court of governmental authority; or (iii) any agreement or instrument to which Buyer is a party or by which Buyer is bound;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and to bind Seller to enter into and fully perform the obligations and transactions contemplated by this Agreement; and

(d) No consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Buyer in connection with the execution and delivery of this Agreement or the performance hereof by Buyer.

13. DEFAULT AND REMEDIES. In the event that either Buyer or Seller defaults in the performance of its obligations hereunder, the non-defaulting party may elect to terminate this Agreement by written notice, or seek specific performance of the defaulting party's obligations.

14. BROKERAGE. The parties agree that no broker has been involved in this transaction.

15. ADJUSTMENTS, PRORATIONS AND CLOSING COSTS.

(a) Real estate taxes, assessments, rentals, common area maintenance charges, fuel oil, and utilities shall be prorated as of the date of closing based upon amounts thereof actually paid or received (as the case may be) as of this date.

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(b) The Maine real estate transfer tax (if applicable) shall be paid by Seller and Buyer in accordance with 36 M.R.S.A. § 4641-A.

(c) The recording fee for the deed of conveyance will be paid by Buyer.

(d) A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A unless Seller furnishes to Buyer an affidavit stating, under penalty of perjury, that Seller is a resident of Maine or that the transfer is otherwise exempt from withholding tax.

16. MISCELLANEOUS.

(a) Time. Time is of the essence of this Agreement.

(b) Notices. Any notices required or permitted to be given under this Agreement shall be sufficient if in writing and if sent: (i) by first class mail, postage prepaid, registered or certified, return receipt requested; (ii) by hand delivery; (iii) by FedEx, or similar overnight express mail service, prepaid; or (iv) electronic mail ("e-mail") or by facsimile ("Fax") transmission, each to the addresses and/or Fax numbers listed below:

TO SELLER:
Charles E. Hewett
IDEALS
100 Commercial Street
Portland, ME 04101
chuck.hewett@ideals.org

WITH A COPY TO:
Helen S. Coburn, Esq.
Bernstein Shur
100 Middle Street, PO Box 9729
Portland, ME 04104-5029
hcoburn@bernsteinshur.com

TO BUYER:
Northeastern University
Planning, Real Estate and Facilities
360 Huntington Avenue, 216-201
Boston, MA 02115
Attention: Kathy Spiegelman
Email: k.spiegelman@northeastern.edu

WITH A COPY TO:
Northeastern University
Office of the General Counsel
360 Huntington Avenue, Suite 301

DocuSign Envelope ID: 93BEB8D2-0DE3-4F1B-A064-562E6257362F

Boston, MA 02115
Attention: Michael Glover
Email: m.glover@northeastern.edu

All such communication shall be deemed made upon the earlier of (3) business days following deposit with the U.S. Mail or the date of receipt as disclosed on the return receipt (if sent by registered or certified mail), or upon delivery (if hand delivered), or upon delivery as indicated on the proof of delivery (if sent via FedEx or similar overnight express mail service), or if sent via email with proof of receipt by the primary addressee, effective upon the day sent if received prior to 3:00 p.m. local time or the next business day if received thereafter. With respect to any of the above-referenced methods of delivery, rejection or other refusal to accept or the inability to deliver because of a change of address of which no notice was given shall be deemed to be receipt of the notice sent. Either party may change its address for purposes of this subparagraph by giving the other party notice of the new address in the manner described herein.

(c) Binding Effect/Assignment. This Agreement shall not become a binding contract until signed by both parties and that fact has been communicated to all parties or their agents. This Agreement will inure to the benefit of and bind the respective heirs, successors, personal representatives and assigns of the parties hereto and may be cancelled, modified or amended only by a writing executed by the parties hereto or their legal representatives.

(d) Construction. This Agreement and the Exhibits hereto set forth the entire agreement between the parties, and there are no other agreements or understandings between them related to the subject matter hereof. As used in this Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed by and construed in accordance with the laws of Maine. All representations, warranties, covenants and indemnities made by either party herein shall survive the closing. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof. In the event of any dispute under this Agreement; prior to any litigation, the parties hereto shall first submit the matter to mediation and shall undertake good faith efforts to resolve any such dispute. In the event that a dispute hereunder is not resolved by mediation, the parties agree to submit any litigation to enforce this Agreement to the jurisdiction of the United States District Court for the District of Maine.

(e) Counterparts/Electronic Signatures. This Agreement may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Agreement may be signed electronically and such shall be treated as original signatures.

(f) Attorney's Fees. If any legal action (including without limitation mediation and arbitration) is brought or compelled by either party to enforce any provisions of this Agreement, the prevailing party shall be entitled to recover from the other party its reasonable attorneys' and paralegals' fees and court costs, subject to and limited by the provisions of the Default and Remedies section of this Agreement.

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(g) Effective Date. The Effective Date of this Agreement shall be deemed to be the date first set forth above in this Agreement, provided that if no date is filled in, the Effective Date shall be the last date of the signature of either Buyer or Seller.

[*Signature Page Follows*]

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IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement under seal as of the dates indicated above.

SELLER

THE INSTITUTE FOR DIGITAL ENGINEERING AND LIFE SCIENCES

DocuSigned by:
Charles E. Hewett
4BD10666DAF9434...

By: Charles E. Hewett
Its: Executive Director
Date: October 23, 2023

BUYER

NORTHEASTERN UNIVERSITY

DocuSigned by:
Thomas E. Nedell
FF682479C14A4DA...

By: Thomas E. Nedell
Its: Senior Vice President & Treasurer
Date: October 23, 2023

DocuSign Envelope ID: 93BEB8D2-0DE3-4F1B-A064-562E6257362F

EXHIBIT A
[*Legal Description*]

A certain parcel of land, together with the improvements thereon, located on the easterly sideline of Interstate 295 and the southerly sideline of Sherwood Street in the City of Portland, County of Cumberland and State of Maine being further described as follows:

Beginning at a 6-inch by 6-inch granite monument found inscribed “ECJ #356” marking the southerly sideline of Sherwood Street westerly sideline of the Canadian National Railroad and further described as the most northeasterly corner of described parcel;

THENCE, S 23-36-55 E, along said Railroad 316.33 feet to a 6-inch by 6-inch granite monument found inscribed "ECJ 356";

THENCE, S 23-36-55 E, along said Railroad, 526.90 feet, to a 4-inch by 4-inch granite monument with a drill hole;

THENCE, S 23-36-55 E, along said Railroad, 745 feet, more or less to the low water mark of the Casco Bay,

THENCE, in a general westerly direction along said low water line about 1,685 feet to a point on the easterly sideline of Interstate 295;

THENCE, N 2-23-50 W, along said sideline, 48 feet, more or less to a point;

THENCE, S 87-30-10 W, along said sideline, 30.00 feet to a point;

THENCE, N 2-23-50 W, along said sideline, 61.46 feet to a drill hole found, said drill hole lying on a tie course of S 73-07-39 W, 878.87 feet from the previous mentioned 4-inch by 4-inch granite monument with a drill hole;

THENCE, N 2-23-50 W, along said sideline, 237.87 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 89-44-34 E, along said sideline, 1.05 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 6-28-53 E, along said sideline, 122.88 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 0-24-30 E, along said sideline, 88.91 feet to a 4-inch by 4-inch granite monument found inscribed "ECJ #509";

THENCE, N 24-48-04 E, along said sideline, 60.29 feet to a 6-inch by 6-inch granite highway monument;

THENCE, N 31-29-16 W, along said sideline, 31.96 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 3-26-49 W, along said sideline, 111.10 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 8-40-57 E, along said sideline, 89.05 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 23-15-05 E, along said sideline, 66.28 feet to a 4-inch by 4-inch granite monument Inscribed "ECJ #509";

THENCE, N 34-47-28 E, along said sideline, 96.68 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 25-25-29 E, along said sideline, 160.02 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 23-37-03 E, along said sideline, 63.03 feet to a 4-inch by 4-inch granite

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monument inscribed "ECJ #509";

THENCE, N 39-23-04 E, along said sideline, 6.72 feet to a 6-inch by 6-inch granite monument found inscribed "ECJ #509";

THENCE, N 55-32-30 W, along said sideline, 11.67 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 34-47-50 E, along said sideline, 117.04 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 34-43-38 E, along said sideline, 15.02 feet to a 5/8 inch re-bar found capped "ECJ #509" marking the southerly sideline of Sherwood Street;

THENCE, S 55-12-08 E, along said Sherwood Street, 288.60 feet to the point of beginning.

The foregoing description was prepared based on the Survey prepared by OEST Associates, Inc. dated February, 1999 and last revised February 26, 1999 recorded in in the Cumberland County Registry of Deeds in Plan Book 199, Page 159.

Alternate Legal Description [recent survey; grant to be without covenant of title]:

All right, title and interest in and to the following described lot or parcel of land, together with the buildings and improvements thereon, located in the City of Portland, County of Cumberland, State of Maine, which description is based on a ALTA/NSPS Land Title Survey prepared by VHB, dated June 30, 2021, last revised February 28, 2022, and Seller makes no representations or warranties as to the accuracy of said property description:

Beginning at a granite bound found at the intersection of the southerly sideline of Sherwood Street and the westerly sideline of land now or formerly of the state of Maine as described in the Cumberland County Registry of Deeds in Book 25500, Page 215, and Book 10924, Page 91 being formerly owned by the St. Lawrence & Atlantic Railroad Company, in part, and the Canadian National Railway Company, in part;

THENCE along the westerly sideline of land of the State of Maine South 23°38’41” East for a distance of 316.33 feet to a granite bound found;

THENCE continuing along land of the State of Maine South 23°34’45” East for a distance of 526.95 feet to a granite bound found;

THENCE continuing along the land of the State of Maine South 23°34’45” East for a distance of 745 feet, more or less to the low water mark of Casco Bay,

THENCE in a generally westerly direction along the low water line about 1,720 feet, more or less, to a point in the easterly sideline of Interstate 295;

THENCE along the easterly sideline of Interstate 295 the following courses and distances:

North 2°23’38” West for a distance of 48 feet, more or less to a point;

South 87°36’22” West for a distance of 30.00 feet to a point;

North 2°23’38 West for a distance of 61.46 feet to a point being located South 73°07’57” West at a distance of 878.66 feet from a granite bound found on the westerly sideline of land now or formerly of the State of Maine;

North 2°23’38 West for a distance of 237.87 feet to a point;

North 89°44’46” East for a distance of 1.05 feet to a rebar found;

North 6°29’05” East for a distance of 122.88 feet to a point;

North 0°24’42: East for a distance of 88.91 feet to a granite bound found;

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North 24°48’16 East for a distance of 60.29 feet to a granite bound found;
North 31°29’04” West for a distance of 31.96 feet to a point;
North 3°26’37” West for a distance of 111.10 feet to a point;
North 8°41’09” East for a distance of 89.05 feet to a point;
North 23°15’17” East for a distance of 66.28 feet to point;
North 34°47’40” East for a distance of 96.68 feet to a granite bound found;
North 25°25’41” East for a distance of 160.02 feet to a point;
North 23°37’15” East for a distance of 63.03 feet to a point;
North 39°23’16” East for a distance of 6.72 feet to a point;
North 55°32’18” West for a distance of 11.67 feet to a point;
North 34°48’02” East for a distance of 117.04 feet to a granite bound found;
North 34°43’50” East for a distance of 15.02 feet to a rebar found at the southerly sideline of Sherwood Street;

THENCE departing from the easterly sideline of Interstate 295 and running along the southerly sideline of Sherwood Street South 55°12’19” East for a distance of 288.59 feet to the point of beginning.

Meaning and intending to convey the same premises described in a Quitclaim Deed with Covenant from B&G Foods North America, Inc. to The Initiative for Digital Engineering and Life Sciences dated March 23, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39282, Page 151.

The above described property shall be conveyed subject to the encumbrances listed as items 1-14 on Exhibit A of the Quitclaim Deed with Covenant from The Pillsbury Company to Heritage Acquisition Corp. dated March 15, 1999 and recorded in the Cumberland County Registry of Deeds in Book 14616, at Page 50 and the rights and easements granted by Heritage Acquisition Corp. to Central Maine Power Company and Verizon New England, Inc. by instrument dated February 7, 2006 and recorded in the Cumberland County Registry of Deeds in Book 24049, Page 189.

DocuSign Envelope ID: 93BEB8D2-0DE3-4F1B-A064-562E6257362F

EXHIBIT B
[*Development Contracts*]

1. Design Agreement by and between Bruner/Cott and The Initial for Digital Engineering and Life Sciences ("IDEALS") (*in negotiation; near final form*)

2. Design Agreement by and between CambridgeSeven and IDEALS (*in negotiation; near final form)*

3. Construction Management Agreement, by and between IDEALS and Consigli Construction Co., Inc. dated January 17, 2023

4. Cooperative Agreement by and between the Maine DOT ("MDOT") and IDEALS, dated as of January 18, 2023

5. MDOT Temporary Access Road Rights Agreement by and between MDOT and IDEALS, dated as of March 30, 2023

6. License Agreement with the City of Portland Fire Department by and between the City of Portland and IDEALS dated May 24, 2023

7. License Agreement with the City of Portland Fire Department by and between the City of Portland and IDEALS dated August 2, 2022

8. IDEALS Boiler Purchase Agreement by and between IDEALS and Maine Plywood USA, LLC dated June 19, 2023

9. Consultant Services Agreement, by and between IDEALS and MacRostie Historic Advisors

10. Consultant Services Agreement, by and between IDEALS and Thorton Tomasetti

11. Consultant Services Agreement, by and between IDEALS and Tsoi Kobus Design

12. Consultant Services Agreement by and between IDEALS and Vanasse Hangen Brustlin

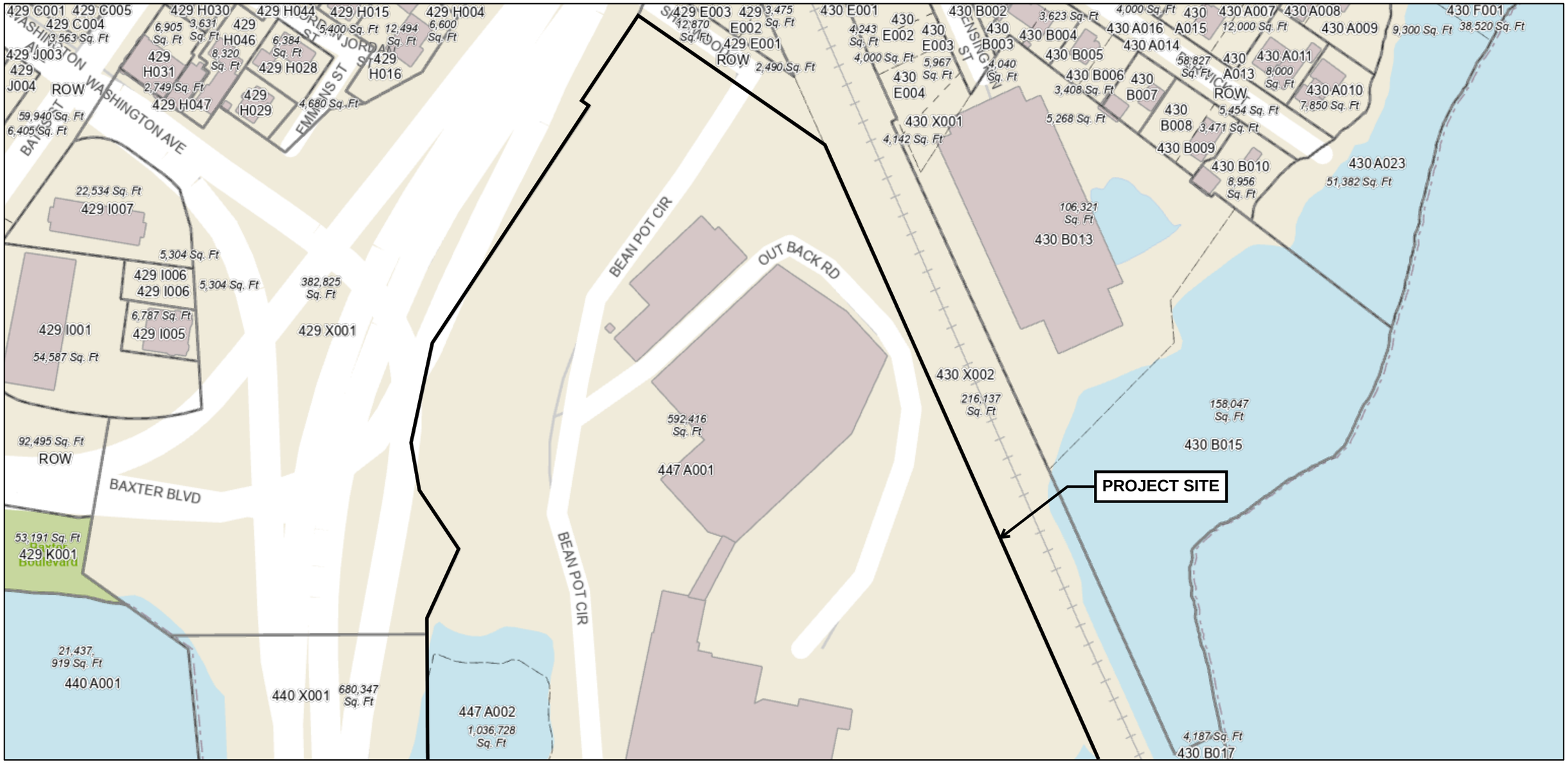
13. Consultant Services Agreement, by and between IDEALS and Woodard & Curran

14. Consultant Services Agreement, by and between IDEALS and Power Engineers

15. Consultant Services Agreement, by and between IDEALS and SW Cole Engineering

16. Consultant Services Agreement, by and between IDEALS and Stephen Stimson Associates

ArcGIS Web Map



8/10/2023, 11:07:21 AM

parcels

Tax

Conveyance

1:1,514

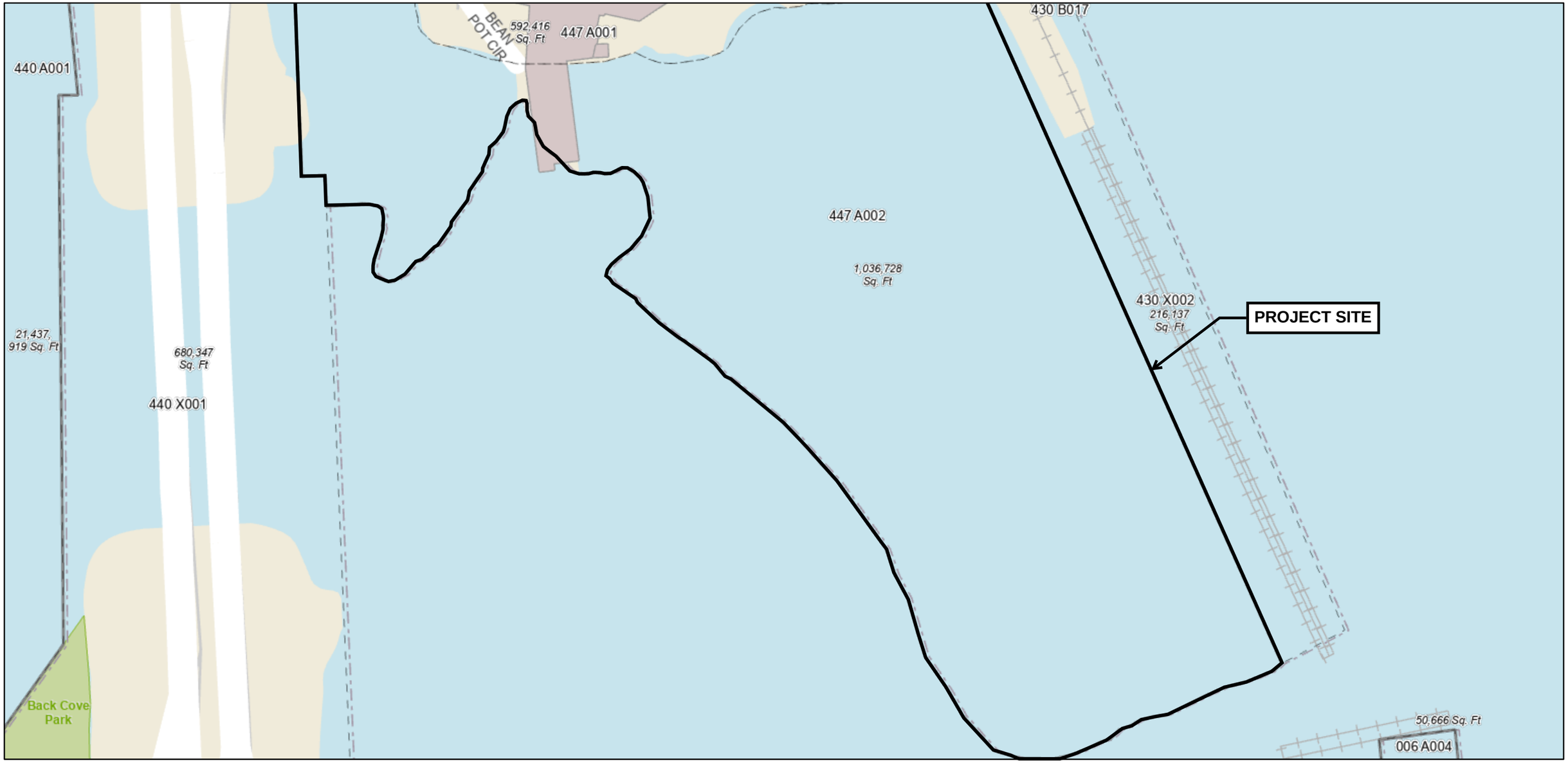
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City of Portland, DPS

Web AppBuilder for ArcGIS
City of Portland, Maine

ArcGIS Web Map



8/10/2023, 11:00:00 AM

parcels

Tax

Conveyance

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0 0.03 0.06 0.11 km

City of Portland, DPS

Web AppBuilder for ArcGIS
City of Portland, Maine

Northeastern

05/22/2024

Ms. Denise Cameron
Woodard and Curran
12 Mountford Street
Portland, MA 04101

Dear Denise:

Office of the Senior Vice President Finance

177 Huntington Ave.
360 Huntington Ave.
Boston, MA 02115

617.373.2240
fax 617.373.4728

finance.northeastern.edu

Northeastern University expects the development of Phase I of the Roux Campus project to cost approximately $470 million.

To fund this project, the University intends to use a mix of philanthropic resources (the vast majority of which are already pledged) and long-term debt. On March 22, 2024, the Northeastern University Board of Trustees voted to approve the construction and development of the project, and authorized the use of University debt to fund the portion of the development costs that will not be funded by philanthropic resources.

In consideration of the foregoing, attached please find the University's most recent audited financial statements, and please be advised that the University has a current Moody's bond rating of A1 with a "stable" outlook.

Thank you.

Sincerely,

Thomas E. Nedell
Senior Vice President for Finance & Treasurer

Northeastern University

Consolidated Financial Statements
June 30, 2023 and 2022

Northeastern University
Index
June 30, 2023 and 2022

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Report of Independent Auditors

To the Board of Trustees of Northeastern University

Opinion

We have audited the accompanying consolidated financial statements of Northeastern University and its subsidiaries (the "University"), which comprise the consolidated statements of financial position as of June 30, 2023 and 2022, and the related consolidated statement of activities for the year ended June 30, 2023, and of cash flows for the years ended June 30, 2023 and 2022, including the related notes (collectively referred to as the "consolidated financial statements").

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of the University as of June 30, 2023 and 2022, the changes in its net assets for the year ended June 30, 2023, and its cash flows for the years ended June 30, 2023 and 2022 in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are required to be independent of the University and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Other Matter

We previously audited the consolidated statements of financial position as of June 30, 2022, and the related consolidated statement of activities and of cash flows for the year then ended (the statement of activities is not presented herein), and in our report dated November 14, 2022, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information for the year ended June 30, 2022 is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

Responsibilities of Management for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the University's ability to continue as a going concern for one year after the date the consolidated financial statements are issued.

PricewaterhouseCoopers LLP, 101 Seaport Boulevard, Boston, Massachusetts 02210
T: (617) 530 5000, www.pwc.com/us



Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with US GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated financial statements.

In performing an audit in accordance with US GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the University’s internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the University's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

PricewaterhouseCoopers LLP

Boston, Massachusetts
October 23, 2023

Northeastern University
Consolidated Statements of Financial Position
June 30, 2023 and 2022

(in thousands of dollars)	2023	2022
Assets		
Cash and cash equivalents	$ 402,335	$ 311,487
Accounts and other receivables, net	158,779	151,006
Prepaids and other assets	90,485	76,035
Pledges receivable, net (Note 5)	215,457	236,262
Student and other loans receivable, net	12,937	17,777
Operating leases - right of use assets (Note 7)	364,670	325,596
Investments (Notes 4)	2,058,371	1,854,732
Special Collection	27,714	3,380
Property, plant and equipment, net (Note 6)	2,678,892	2,480,003
Total assets	$ 6,009,640	$ 5,456,278
Liabilities and Net Assets		
Liabilities		
Accounts payable and accrued liabilities	$ 227,871	$ 222,107
Accounts payable on construction projects	75,472	32,286
Deferred revenue and student deposits	218,268	227,604
Refundable advances	30,191	31,650
Interest rate swap agreement (Notes 4 and 8)	14,304	25,071
Operating lease liabilities (Note 7)	410,194	364,590
Finance lease liabilities (Note 7)	16,678	18,338
Bonds and notes payable (Note 8)	1,275,295	1,063,378
Total liabilities	2,268,273	1,985,024
Net assets		
Without donor restrictions (Note 11)	2,517,413	2,355,652
With donor restrictions (Note 11)	1,223,954	1,115,602
Total net assets	3,741,367	3,471,254
Total liabilities and net assets	$ 6,009,640	$ 5,456,278

The accompanying notes are an integral part of these consolidated financial statements.

Northeastern University
Consolidated Statement of Activities
Year Ended June 30, 2023
(with summarized financial information for the year ended June 30, 2022)

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	2023	2022
Operating				
Revenues and other support				
Tuition and fees (after financial aid of $505,746 in 2023 and $486,115 in 2022)	$ 1,456,996	$ -	$ 1,456,996	$ 1,288,927
Contributions available for operations	6,559	30,767	37,326	27,780
Auxiliary enterprises	189,642	-	189,642	192,207
Sponsored support	212,501	-	212,501	182,740
Indirect cost recovery	49,715	-	49,715	42,114
Endowment spending available for operations (Note 12)	24,951	23,112	48,063	38,810
Other investment return available for operations	28,005	-	28,005	4,366
Other	59,901	-	59,901	35,691
Total operating revenues	2,028,270	53,879	2,082,149	1,812,635
Net assets released for operations	22,237	(22,237)	-	-
Total operating revenues and other support	2,050,507	31,642	2,082,149	1,812,635
Expenses				
Salary and benefits	1,050,908	-	1,050,908	887,390
Other operating expenses	735,296	-	735,296	645,411
Depreciation	122,090	-	122,090	93,594
Interest	41,452	-	41,452	34,526
Total operating expenses (Notes 6, 8 and 14)	1,949,746	-	1,949,746	1,660,921
Increase in net assets from operating activities	100,761	31,642	132,403	151,714
Nonoperating				
Contributions	6,566	71,162	77,728	49,007
Contributions available for operations	(6,559)	(30,767)	(37,326)	(27,780)
Endowment and other investment return	78,203	56,742	134,945	(119,691)
Endowment spending available for operations (Note 12)	(24,951)	(23,112)	(48,063)	(38,810)
Other investment return available for operations	(28,005)	-	(28,005)	(4,366)
Change in annuity and life income funds	-	(379)	(379)	(172)
Other nonoperating changes	5,551	-	5,551	(1,033)
Net realized and change in unrealized gain/(loss) on interest rate swap agreement (Note 8)	8,662	-	8,662	19,280
Inherent contributions from acquisition	24,597	-	24,597	702,545
Net assets released from restrictions and other transfers	(3,064)	3,064	-	-
Change in net assets	161,761	108,352	270,113	730,694
Net assets at beginning of year	2,355,652	1,115,602	3,471,254	2,740,560
Net assets at end of year	$ 2,517,413	$ 1,223,954	$ 3,741,367	$ 3,471,254

The accompanying notes are an integral part of these consolidated financial statements.

Northeastern University
Consolidated Statements of Cash Flows
Years Ended June 30, 2023 and 2022

	2023	2022
Cash flows from operating activities		
Cash received from student-related revenues	$ 1,648,196	$ 1,511,527
Cash received from sponsored programs	238,434	159,167
Cash received from donors	19,349	28,681
Proceeds from sale of contributed securities	17,041	11,509
Cash (used)/received from net endowment and other investment income	41,239	(3,068)
Cash received from auxiliary enterprises other than student housing	10,113	16,702
Cash received from other income	54,750	27,379
Cash paid to employees, students, and vendors	(1,784,242)	(1,506,157)
Interest and other payments	(47,751)	(49,295)
Cash received from premium on bonds premium/discount	45,500	-
Cash provided for acquisition	-	(28,553)
Net cash provided by operating activities	242,629	167,892
Cash flows from investing activities		
Acquisition of property, plant and equipment	(278,127)	(277,613)
Proceeds from sale or maturities of investments	545,789	334,351
Purchases of investments	(655,989)	(429,455)
Student loans and other loans issued	(570)	(1,768)
Proceeds from student and other loans	5,344	4,166
Net cash (used in)/provided by investment activities	(383,553)	(370,319)
Cash flows from financing activities		
Decrease in refundable advances	(1,459)	970
Interest and dividends restricted for long-term investments	185	128
Payments to annuitants and life income funds	(1,040)	(1,133)
Contributions for long-term investments	14,906	20,179
Proceeds from the sale of restricted contributed securities	47,653	4,870
Payments on finance lease obligations	(1,660)	(1,580)
Debt refinancing	(172,460)	-
Net proceeds from issuance of long-term debt	378,510	-
Retirement of bond premium, discount & issuance costs	(4,839)	-
Payments on bonds and notes payable	(27,135)	(23,345)
Bond issuance costs on new financing	(889)	-
Payment of loans for acquisition	-	(20,980)
Net cash provided by/(used in) financing activities	231,772	(20,891)
Increase in cash and cash equivalents	90,848	(223,318)
Cash and cash equivalents		
Beginning of the year	311,487	534,805
End of the year	$ 402,335	$ 311,487

The accompanying notes are an integral part of these consolidated financial statements.

1. Background

Founded in 1898, Northeastern University ("the University" or "Northeastern") is a global research university and recognized leader in experiential lifelong learning. The approach of integrating real-world experience with education, research, and innovation, empowers our students, faculty, alumni, and partners to create worldwide impact. The global university system provides our community and academic, government, and industry partners with unique opportunities to think locally and act globally. The system which includes 13 campuses across the U.S., U.K., and Canada, 300,000-plus alumni, and 3,000 partners worldwide-serves as a platform for scaling ideas, talent, and solutions.

Northeastern's personalized, experiential undergraduate and graduate programs lead to degrees through the doctorate in 9 colleges and schools across our campuses. Learning emphasizes the intersection of data, technology, and human literacies, uniquely preparing graduates for careers of the future and lives of fulfillment and accomplishment.

The research enterprise, with an R1 Carnegie classification, is solutions-oriented and spans the world. The faculty scholars and students work in teams that cross not just disciplines, but also sectors-aligned around solving today's highly interconnected global challenges and focused on transformative impact for humankind.

2. Summary of Significant Accounting Policies

The significant accounting policies followed by the University are set forth below.

Basis of Presentation
The accompanying consolidated financial statements have been prepared on the accrual basis and in accordance with the reporting standards for not-for-profit organizations and include the University and its subsidiaries, the most significant of which includes the Kostas Research Institute and the New College of the Humanities based in the United Kingdom.

Generally Accepted Accounting Principles ("GAAP") require classification of net assets and revenues, expenses, gains, and losses, based on the existence or absence of donor restrictions. The categories, net assets without donor restrictions and net assets with donor restrictions, are defined as follows:

Net Assets Without Donor Restrictions – Net assets available for general use and not subject to donor-imposed stipulations. Net assets without donor restrictions may be designated for specific purposes by management or the Board of Trustees.

Net Assets With Donor Restrictions - Net assets subject to donor-imposed restrictions. Some donor-imposed restrictions are temporary in nature that may or will be met either by the passage of time or the events specified by the donor. Other donor-imposed restrictions are perpetual in nature, where the donor stipulates that resources be maintained in perpetuity.

Net Investment in Plant - Net investment in plant includes the net book value of all capital assets offset by outstanding liabilities associated with those capital assets. Capital assets include prepaid assets and property, plant, and equipment (net of accumulated depreciation). Outstanding liabilities include the conditional asset retirement obligation, accounts payable associated with construction projects, premiums, unamortized debt issuance costs and discounts on bonds and notes payables, finance lease liabilities and outstanding bonds and notes payable, including amounts of the associated interest rate swap agreement.

Revenues are reported as increases in net assets without donor restrictions unless use of the related assets is limited by donor-imposed restrictions. Expenses are reported as decreases in net assets without donor restrictions. Net realized and change in unrealized gains and losses on investments and other assets, or liabilities are reported as increases or decreases in net assets without donor restrictions unless their use is restricted by explicit donor stipulation or by law.

Unconditional promises to give ("Pledges") are recognized as donor restricted revenues in the period received. Pledges are recorded at the present value of expected future cash flows. Conditional promises to give are not recognized until the conditions on which they depend are substantially met. Gifts of noncash assets are recorded at their market value at the date of contribution.

The University has received beneficial interests in irrevocable charitable remainder trusts, for which the University does not serve as the trustee. For these trusts, the University recorded its beneficial interest in those assets as contributions revenue and pledges receivable at the present value of the expected future cash inflows. Trusts are recorded at the date the University has been notified of the trust's existence and sufficient information regarding the trust has been accumulated to form the basis for an accrual. Changes in the value of these assets are recorded as a nonoperating change in the valuation of pledges receivable in net assets with donor restrictions.

Expirations of donor-imposed restrictions on net assets are reported as reclassifications between the applicable classes of net assets in the statement of activities. Gifts with donor-imposed restrictions, which are reported as donor restricted revenues, are released to net assets without donor restrictions when used for an expenditure that satisfies the donor-imposed restriction. Gifts restricted for the purchase of land, buildings and equipment are reported as donor restricted nonoperating revenues and are released to net assets without donor restrictions when the assets are placed into service.

Revenues
Revenues are recognized when control of the promised goods or services is transferred to the University's customers, in an amount that reflects the consideration the University expects to be entitled to in exchange for those goods or services.

Tuition and fees are derived from students participating in degree programs as well as lifelong learning programs. Tuition is recognized ratably over the academic period of the course or program offered based on time elapsed and financial aid awarded to students reduces the amount of revenue recognized. The University's individual schools have various billing and academic cycles, and the majority of the University's programs are designed to be completed within the fiscal year. Tuition and fees and auxiliary revenues received in advance of services to be rendered are recorded as deferred revenue and student deposits which totaled $85,576,000 and $83,086,000, respectively, at June 30, 2023 and 2022.

Scholarships applied to tuition and fees reflect student financial aid funded by the University's operating budget, restricted endowment funds, and federal and state assistance programs. Compensation of students for services provided and tuition benefits for employees are presented as expenses.

The University receives sponsored support from governmental and private sources. Sponsored support primarily consists of contribution revenue, which is recognized when qualifying expenditures are incurred. Sponsored support for which restrictions are met in the same year are reflected in revenues without donor restrictions. Federally funded operating grants and contracts for

the years ended June 30, 2023 and 2022 were $238,503,000 and $197,076,000, respectively, including indirect costs of $46,404,000 and $38,956,000, respectively. Total conditional contributions remaining to be recognized from sponsors for the years ended June 30, 2023 and 2022 were $294,583,000 and $233,771,000, respectively, which primarily relate to support to be received from the federal government. Other sponsored support is considered exchange arrangements, and revenue under these agreements is recognized based on the University's fulfillment of the contract, which is typically based on costs incurred or the achievement of milestones.

Funding received in advance of recognition is recorded as refundable advances. Included in refundable advances at June 30, 2023 and 2022 are $19,233,000 and $15,304,000, respectively, of sponsored receipts, that have not been expended but generally are expended within the next year. Indirect cost recoveries by the University on U.S. Government contracts and grants are based upon a negotiated rate and are recorded in revenues without donor restrictions.

Auxiliary enterprises include the operation of student housing and dining services, the daycare center and managed properties and revenue is recognized ratably over the period during which the services are provided. Student housing and dining revenues received in advance of services to be rendered are recorded as deferred revenue and student deposits and are reflected above with those deposits related to tuition and fees.

Other revenues are recognized at the point in time goods or services are provided. During fiscal 2019, the University entered into a parking arrangement with a third party. The University received an upfront payment for which deferred revenue of $144,168,000 was recorded and will be recognized within other revenues on a straight-line basis over the fifty-year term of the parking arrangement.

Nonoperating Activities

Nonoperating activities include all contributions, endowment, and other investment return, change in annuity and life income funds, other nonoperating changes, net realized and changes in unrealized gains or losses on interest rate swap agreements, and net assets released from restrictions and other transfers during the period used for current operations. Nonoperating activities also include the portion of the endowment return/(loss) in connection with the University's spending policy in excess of the amount appropriated and other investment return. Contributions available for operations are presented as reductions to nonoperating revenues and are reclassified to operating revenues. All other activities are classified as operating.

Expenses incurred in carrying out the fundraising activities of the University, amounted to $37,192,000 and $25,026,000 for the years ended June 30, 2023 and 2022, respectively.

Cash and Cash Equivalents

Cash and cash equivalents consist primarily of cash management accounts, money market funds and short-term bonds with maturities when purchased of three months or less.

Most of the University's banking activity, including cash and cash equivalents, is conducted with several national banks with investment grade credit ratings. From time to time in the regular course of business deposit amounts exceed federal insurance limits. It is the University's policy to monitor these banks' financial strength and deposit balances on a daily basis and no losses have been experienced to date.

Accounts and Loans Receivable
Accounts receivables are stated net of allowance for doubtful accounts of $9,254,000 and $10,372,000 at June 30, 2023 and 2022, respectively. Loans receivables are stated net of allowance for doubtful accounts of $2,091,000 and $687,000 at June 30, 2023 and 2022, respectively. Loans receivable are principally amounts due from students under Federally Sponsored Loan Programs, which are subject to significant restrictions; accordingly, it is not practical to determine the fair value of such amounts.

The University records an allowance for doubtful accounts for student and other loans receivables including those under the Federal Perkins Loan Program. Management regularly assesses the adequacy of the allowance for credit losses by performing evaluations on the student loan portfolio, current economic environment, and level of delinquent loans. The allowance is adjusted based on the results of these evaluations. Loans previously disbursed under the Federal Perkins Loan Program are able to be assigned to the Federal government in certain nonrepayment situations. Management believes that this allowance at June 30, 2023 and 2022 is adequate to absorb credit losses inherent in the portfolio as of that date.

Investments
Investments include short-term investments which are designated for long-term investment by the University. They also include fixed income and equity portfolios with broadly defined investment strategies. Managers of these portfolios may utilize hedging strategies, invest in securities denominated in foreign currencies, or invest in options, futures, forward contracts, or other financial instruments whose value and performance are derived, at least in part, from the performance of an underlying asset or index and the creditworthiness of the counterparty to the transactions. The University also invests in a number of limited partnerships which sell securities short, and which use leverage.

The University values its financial assets and liabilities at fair value in accordance with GAAP.

Net investments return/(loss) is reported in the consolidated statement of activities and consists of interest and dividends, realized and unrealized capital gains and losses, less external and direct internal investment expenses.

Gains and losses upon sale of certain investments are calculated using average cost at trade date.

Property, Plant and Equipment
Property, plant, and equipment are stated at cost on the date of acquisition, net of accumulated depreciation. Plant assets donated to the University are stated at fair market value on the date of the gift, net of subsequent accumulated depreciation.

Depreciation is calculated using the straight-line method over the following estimated useful lives:

Buildings	50 years
Building improvements	30 years
Furniture, equipment, and books	5–20 years
Software	4–7 years

Expenditures for maintenance and repairs are charged to operations as incurred; significant renewals and betterments are capitalized. Costs associated with construction of new facilities are reported as construction in progress until such projects are completed.

The University's Special Collection ("the Collection") is comprised of works of art, historical treasures, or similar assets. The Collection is protected and preserved for public exhibition, education, research, and the furtherance of public service. The Collection is capitalized at its appraised values.

Conditional Asset Retirement Obligations
The University recognizes the fair value of a liability for legal obligations associated with asset retirements in the period in which the obligation is incurred. When the liability is initially recorded, the cost of the asset retirement obligation is capitalized by increasing the carrying amount of the related long-lived asset. The liability is accreted to its present value each period, and the capitalized cost associated with the retirement obligation is depreciated over the useful life of the related asset. Upon settlement of the obligation, any difference between the cost to settle the asset retirement obligation and the liability recorded is recognized as a gain or loss in the consolidated statement of activities.

The University recognized $2,807,000 and $1,336,000 of operating expenses related to the accretion of liabilities recorded for the years ended June 30, 2023 and 2022, respectively. Conditional asset retirement obligations of $36,403,000 and $26,601,000 at June 30, 2023 and 2022, respectively, are included in accounts payable and accrued liabilities on the consolidated statements of financial position.

Endowment
The endowment includes both donor-restricted funds and funds designated by the Board of Trustees ("the Board") to function as endowments. The net assets associated with endowment funds, including funds designated by the Board to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions in accordance with the laws of the Commonwealth of Massachusetts.

The Board has interpreted the Massachusetts Uniform Prudent Management of Institutional Funds Act ("UPMIFA" or "Act") for donor-restricted endowment funds as requiring the preservation of the original value of gifts, as of the gift date, to donor-restricted endowment funds, absent explicit donor stipulations to the contrary. The University retains in perpetuity: (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund, if any. Collectively these amounts are referred to as the historic dollar value of the fund.

In accordance with the Act, the University considers the following factors in making a determination to appropriate or accumulate donor-restricted endowment funds: the duration and preservation of the fund; the purposes of the donor-restricted endowment fund; general economic conditions; the possible effect of inflation and deflation; the expected total return from income and the appreciation of investments; other resources available; and investment policies.

Net assets without donor restrictions include funds designated by the Board to function as endowments.

The University has adopted endowment investment and spending policies that attempt to provide a predictable stream of funding to programs supported by its endowment while seeking to maintain the purchasing power of endowment assets. To achieve its long-term rate of return objectives, the University relies on a total return strategy in which investment returns are achieved through both capital appreciation (realized and unrealized gains) and current yield (interest and dividends). The University expects its endowment funds, over time, to provide an average real rate of return of approximately 4% annually.

The University's endowment spending policy is calculated using 4% of a sixty-month moving average of the endowment fund's market value. This amount is distributed to the appropriate funds and treated as operating revenue in the statement of activities. These distributions consist of dividends, interest and, if necessary, a portion of accumulated investment gains. The amount distributed each year is subject to the Board's approval. During both fiscal years 2023 and 2022, the full payout amount was distributed.

Tax Status
The University and its subsidiaries are tax-exempt organizations as described in section 501(c)(3) of the Internal Revenue Code.

GAAP requires that the University evaluate tax positions taken by the University and recognize a tax liability (or asset) if the University has taken an uncertain position that more likely than not would not be sustained upon examination by the Internal Revenue Service. The University has analyzed the tax positions taken and has concluded that as of June 30, 2023, there are no significant uncertain tax positions taken or expected to be taken that would require recognition of a liability (or asset) or disclosure in the financial statements.

Use of Estimates
The preparation of consolidated financial statements in accordance with GAAP requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results may differ from these estimates.

Recently Adopted Accounting Pronouncements
The University is currently evaluating the impact of accounting standards that have been issued or proposed by the FASB or other standards-setting bodies that do not require adoption until a future date.

3. Available Resources and Liquidity

As of June 30, 2023 and 2022, the following table shows the total financial assets held by the University and the amounts of those financial assets that could readily be made available within one year of the consolidated statements of financial position date to meet expenditures:

(in thousands of dollars)	**2023**	**2022**
Financial assets available to meet general expenditures over the next 12 months		
Cash and cash equivalents	$ 402,335	$ 311,487
Accounts and other receivables, net	158,779	151,006
Pledges receivable due in 1 year or less available for expenditures	53,457	51,650
Forecasted endowment spending available for operations	51,095	47,481
Other investments not invested in the endowment	357,375	295,353
	$ 1,023,041	$ 856,977

Northeastern regularly monitors liquidity required to meet its operating needs and other contractual commitments, while also striving to maximize the investment of its available funds. When reviewing available resources required to meet its expenditures over a 12-month period, the University considers all expenditures related to its ongoing activities.

In addition to financial assets available to meet expenditures over the next 12 months, the University operates with a balanced budget and anticipates collecting sufficient revenue to cover expenditures not covered by donor-restricted resources. Refer to the consolidated statements of cash flows which identify the sources and uses of the University's cash and show positive cash generated by operations for fiscal years 2023 and 2022.

Additionally, the University has quasi endowment assets of $804,836,000 and $778,389,000 as of June 30, 2023 and June 30, 2022, respectively. Although the University does not intend to spend from its quasi-endowment funds other than amounts appropriated for general expenditures as part of its annual budget approval and appropriation process, amounts from its quasi endowment could be made available if necessary. However, these funds contain investments with lock-up provisions that reduce the total investments that could be made available (Please see Note 4 for disclosures about investments).

4. Fair Value Measurements

The University values its financial assets and liabilities at fair value in accordance with GAAP. GAAP defines fair value, establishes a framework for measuring fair value, and delineates the disclosures required about fair value measurements. Financial assets consist primarily of the endowment and other investments. Additionally, GAAP allows the University the use of estimates to fair value alternative investments at the measurement date using net asset values ("NAV") reported by the investment managers without further adjustment, provided that the University does not expect to sell the alternative investments at a value other than the NAV. The University performs due diligence procedures on its alternative investments to determine if the values recorded are appropriate.

GAAP clarifies that fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. The University uses valuation techniques to measure fair value on investments that maximize use of observable inputs and minimize the use of unobservable inputs. As a basis for considering assumptions, this standard establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 Valuations using quoted prices in active markets for identical assets or liabilities. Valuations of these products do not require a significant degree of judgment.

Level 2 Valuations using observable inputs other than Level 1 prices such as quoted prices in active markets for similar assets or liabilities; quoted prices for identical or similar assets or liabilities in markets that are not active; broker or dealer quotations; or other inputs that are observable or can be corroborated by observable market data for substantially the same term of the assets or liabilities.

Level 3 Valuations using unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The following table presents information about assets and liabilities that are measured at fair value on a recurring basis as of June 30, 2023, and indicates the fair value hierarchy utilized to determine such fair value:

		Fair Value Measurements at the End of the Reporting Period Using		
(in thousands of dollars)	**6/30/2023**	**Quoted Prices in Active Markets for Identical Assets Level 1**	**Significant Other Observable Inputs Level 2**	**Significant Unobservable Inputs Level 3**
Beneficial interest in charitable remainder trust investments	$ 14,403	$ -	$ -	$ 14,403
Endowment investments				
Short-term investments	12,542	12,542	-	-
Fixed income	78,968	78,968	-	-
Domestic equity	292,857	292,857	-	-
International equity	41,292	41,292	-	-
Private equity at NAV (a)	473,711	-	-	-
Hedge funds at NAV (a)	782,612	-	-	-
Total endowment investments	1,681,982	425,659	-	-
Other investments				
Short-Term Investments	157	157	-	-
Fixed income	355,359	355,359	-	-
Domestic equity	1,859	1,859	-	-
International Equity	-		-	-
Auction rate securities and other	19,014	-	-	19,014
Total other investments	376,389	357,375	-	19,014
Total investments	2,058,371	783,034	-	19,014
Total assets	$ 2,072,774	$ 783,034	$ -	$ 33,417
Interest rate swap agreements – liability	$ (14,304)	$ -	$ (14,304)	$ -
Total liabilities	$ (14,304)	$ -	$ (14,304)	$ -

a. Certain investments that are measured at fair value using the NAV per share (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the statement of financial position.

The following table presents information about assets and liabilities that are measured at fair value on a recurring basis as of June 30, 2022, and indicates the fair value hierarchy utilized to determine such fair value:

		Fair Value Measurements at the End of the Reporting Period Using		
(in thousands of dollars)	**6/30/2022**	**Quoted Prices in Active Markets for Identical Assets Level 1**	**Significant Other Observable Inputs Level 2**	**Significant Unobservable Inputs Level 3**
Beneficial interest in charitable remainder trust investments	$ 13,788	$ -	$ -	$ 13,788
Endowment investments				
Short-term investments	29,312	29,312	-	-
Fixed income	150,131	150,131	-	-
Domestic equity	214,130	214,130	-	-
International equity	64,981	64,981	-	-
Private equity at NAV (a)	436,023	-	-	-
Hedge funds at NAV (a)	646,788	-	-	-
Investments in-transit	-	-	-	-
Total endowment investments	1,541,365	458,554	-	-
Other investments				
Short-Term Investments	48	48	-	-
Fixed income	292,732	292,732	-	-
Domestic equity	2,181	2,181	-	-
International Equity	392	392	-	-
Auction rate securities and other	18,014	-	-	18,014
Total other investments	313,367	295,353	-	18,014
Total investments	1,854,732	753,907	-	18,014
Total assets	$ 1,868,520	$ 753,907	$ -	$ 31,802
Interest rate swap agreements – liability	$ (25,071)		$ (25,071)	
Total liabilities	$ (25,071)	$ -	$ (25,071)	$ -

a. Certain investments that are measured at fair value using the NAV per share (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the statement of financial position.

All financial instruments are valued using a market approach involving identical or comparable assets or liabilities except for auction rate securities and the University's beneficial interest in charitable remainder trusts, which are valued using an income approach.

At June 30, 2023 the change in the fair value of financial instruments valued using significant unobservable inputs (Level 3) is shown below:

(in thousands of dollars)	Auction Rate Securities and Other	Beneficial Interest in Charitable Remainder Trust	Total
Fair value recorded at June 30, 2021	$ 18,014	$ 5,317	$ 23,331
Additions	-	9,672	9,672
Unrealized gain/(loss)	-	(1,201)	(1,201)
Fair value recorded at June 30, 2022	$ 18,014	$ 13,788	$ 31,802
Additions	1,000	163	1,163
Unrealized gain/(loss)	-	452	452
Fair value recorded at June 30, 2023	$ 19,014	$ 14,403	$ 33,417

The fair values of marketable domestic and international equities and fixed income instruments are determined generally based on quoted market prices in active markets. Alternative investments include private equity funds, hedge funds and other alternative investments. Private equity investments may consist of commitments in a limited partnership that invests in private companies or properties. Hedge funds may include limited partnerships that invest in investments that are publicly traded and may be subject to redemption restrictions.

At June 30, 2023, liquidity terms for investments consist of the following:

(in thousands of dollars) Redemption Terms	Within 30 Days	31-60 Days Prior Written Notice	61-90 Days Prior Written Notice	91-180 Days Prior Written Notice	181-365 Days Prior Written Notice	1-5 Years	Illiquid	Total
Short-term investments	$ 12,699	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,699
Fixed income	434,327	-	-	-	-	-	-	434,327
Domestic equity	294,716	-	-	-	-	-	-	294,716
International equity	41,292	-	-	-	-	-	-	41,292
Private equity	-	-	-	-	-	-	473,711	473,711
Hedge funds	79,496	134,696	-	290,273	111,118	104,713	62,316	782,612
Other investments	-	-	-	-	-	-	19,014	19,014
	$ 862,530	$ 134,696	$ -	$ 290,273	$ 111,118	$ 104,713	$ 555,041	$ 2,058,371

Unfunded commitments of $226,328,000 and $260,375,000 at June 30, 2023 and 2022, respectively, consist of commitments that the University has made to various private equity funds. These funds may be called for a period to extend between one year and until termination of the fund, the timing for which is unknown.

The University is the beneficiary of various charitable remainder trusts held and administered by outside trustees. A receivable is recorded at the present value of the amount held by the trustees that is due to the University, which is calculated using the life expectancy of the beneficiaries. Valuations are reviewed annually by management by updating life expectancy of the beneficiaries, discount rates and the fair value of the underlying investments. The discount rates used for the years ended June 30, 2023 and 2022 ranges from 3.81% to 4.13% and 2.98% to 3.04%, respectively, based on ten-year daily treasury yield curve rates.

The University's auction rate securities at June 30, 2023 and 2022 were determined to have a fair value of $17,000,000 and were reflective of a $3,000,000 discount. The auction rate securities are valued using the income approach, specifically a discounted cash flow analysis. This valuation methodology includes utilizing unobservable inputs such as offered quotes and comparability adjustments to arrive at the estimated fair value. The University performs ongoing due diligence to determine that the auction rate securities' fair value is reasonable.

The estimated fair value of the interest rate swap agreement is based on an independent third-party valuation. The fair value of swap instruments represents the estimated cost to the University to cancel the agreements at the reporting date. The University has performed due diligence on the fair value of its interest rate swap agreement to determine fair value at June 30, 2023 and 2022.

5. Pledges Receivable

Pledges receivable as of June 30 are expected to be realized in the following time periods:

(in thousands of dollars)	2023	2022
One year or less	$ 80,523	$ 88,290
Between one and five years	107,317	123,033
Greater than five years	47,746	47,072
	235,586	258,395
Less: Discount	(13,521)	(14,333)
Less: Allowance for doubtful pledges	(6,608)	(7,800)
Pledges receivable, net	$ 215,457	$ 236,262

At June 30, 2023 and 2022, the University has $17,000,000 and $17,000,000, respectively, in conditional pledges that are not reflected in the consolidated financial statements due to their conditional nature.

6. Property, Plant and Equipment

Property, plant, and equipment at June 30 consisted of the following:

(in thousands of dollars)	2023	2022
Land	$ 205,498	$ 205,498
Building and improvements	2,744,634	2,593,015
Finance lease	37,928	37,928
Furniture and equipment	463,171	415,020
Library books	72,239	68,268
Construction in progress	341,531	231,166
	3,865,001	3,550,895
Less: Accumulated depreciation	(1,186,109)	(1,070,892)
	$ 2,678,892	$ 2,480,003

Depreciation expense amounted to $122,090,000 and $93,594,000 for the years ended June 30, 2023 and 2022, respectively, and is allocated in the functional and natural classification of expenses footnote to functional expenses based on specific use of the related facilities. Operation, maintenance, and security of plant expense totaled $120,942,000 and $100,181,000 for the years ended June 30, 2023 and 2022, respectively, and is allocated to functional expense categories in the functional and natural classification of expenses footnote based on salary expense. Please refer to Note 14.

The value of the Special Collections, located on the Mills campus, has been increased from $3,380,000 to $27,714,126 based on appraisals completed.

7. Leases

The University is the lessee of equipment and space under operating (rental) and finance leases. The University determines whether a contract is a lease at inception. Identified leases are subsequently measured, classified, and recognized at lease commencement. The University categorizes leases with contractual terms longer than twelve months as either operating or finance. The University's leases generally have terms that range from one to five years for equipment and one to twenty-five years for property, with certain leases inclusive of renewal options if they are considered to be reasonably assured at lease commencement. Right of use assets and lease liabilities for operating leases are included in "Operating leases - right of use assets" and "Operating lease liabilities," respectively, in the consolidated statements of financial position. Finance lease right of use assets and lease liabilities are included in "Property, plant and equipment, net" and "Finance lease liabilities", respectively, in the consolidated statements of financial position. Lease assets represent the University's right to use an underlying asset for the lease term and lease liabilities represent the University's obligation to make lease payments arising from the lease. The University elected the short-term lease exemption policy as well as the practical expedient that allows lessees to treat the lease and nonlease components as a single lease component.

Operating and finance lease right of use assets and associated lease liabilities are recognized based on the present value of future minimum lease payments to be made over the expected lease term, using the collateralized incremental borrowing rate at the commencement date in determining the present value of future payments. Total rental expense related to operating leases, including short-term leases and variable lease payments was $110,962,000 and $131,589,000 in fiscal year 2023 and 2022, respectively.

The University commenced the residence hall finance lease in July 2001. The rent, over the 30-year term of the lease, is equal to the actual debt service plus customary fees payable with respect to the $31,130,000 principal amount of the bonds issued to finance the building. The annual lease commitments for future years, principal plus interest, range from $2,593,000 in 2024 to $2,576,000 in 2032.

Maturity analysis of the annual undiscounted cash flows reconciled to the carrying value of the operating and finance lease liabilities:

(in thousands of dollars)	**Operating**	**Finance**
Year		
2024	$ 69,199	$ 2,526
2025	62,292	2,526
2026	53,898	2,526
2027	50,306	2,526
2028	51,228	2,526
Thereafter	330,610	7,578
Total lease payments	617,533	20,208
Less: Imputed interest	(207,339)	(3,530)
Present value of lease liabilities	$ 410,194	$ 16,678

Weighted average remaining lease term and discount rate for operating and finance leases were as follows:

	2023	**2022**
Weighted average remaining lease term		
Operating leases	10.8 years	10.7 years
Finance lease	8 years	9 years
Weighted average discount rate		
Operating leases	4.14 %	4.18 %
Finance lease	4.92 %	4.92 %

8. Bonds and Notes Payable

Bonds and notes payable consists of the following at June 30:

(in thousands of dollars)	Rate	Maturity	2023	2022
Massachusetts Development Finance Agency				
Series T -1 (par value, $63,260)	2.00%-5.00%	2037	$ 3,350	$ 59,710
Series T -2 (par value, $66,315)	3.00%-5.00%	2037	-	62,790
Series T -3 (par value, $70,000)	Variable	2037	65,925	66,475
Series 2012 (par value, $54,385)	4.00%-5.00%	2035	-	54,385
Series 2014A (par value, $150,000)	4.38%-5.25%	2044	150,000	150,000
Series 2018A (par value, $61,005)	3.00%-5.00%	2033	48,560	51,880
Series 2020A (par value, $103,480)	5.00%	2035	88,425	103,480
Series 2022 (par value, $378,510)	4.00%-5.00%	2044	378,510	-
Taxable Revenue Bonds				
Series 2010B (par value, $75,460)	3.35%-6.43%	2035	48,445	49,940
Series 2014B (par value, $100,000)	.098%-5.29%	2032	59,425	65,065
Series 2018B (par value, $70,415)	4.12%	2048	70,415	70,415
Series 2020B (par value, $300,000)	2.89%	2050	300,000	300,000
Line of credit and other notes payable	Variable	2023	-	-
			1,213,055	1,034,140
Add: Unamortized Premium on Bonds			67,575	34,573
Less: Unamortized Discount on Bonds			(3,102)	(3,453)
Less: Unamortized Issuance Cost on Bonds			(2,233)	(1,882)
			$ 1,275,295	$ 1,063,378

Approximate future annual principal requirements are below:

(in thousands of dollars)	Principal Payments
Year	
2024	$ 27,530
2025	28,725
2026	29,980
2027	31,325
2028	32,830
Thereafter	1,062,665
	$ 1,213,055

The tables above reflect the contractual maturities of the debt agreements which were effective as of June 30, 2023.

On October 1, 2019, the Massachusetts Health and Educational Facilities Authority Revenue Bonds, Series Y-1 and Y-2 were redeemed for the amounts of $7,470,000 and $23,530,000, respectively. The University financed the $31,000,000 redemption utilizing its line of credit. This was subsequently paid off in July 2020 with the proceeds of Series 2020B as described below.

On July 7, 2020, the University issued $300,000,000 in US Bank National Association taxable bonds Series 2020B. $31,000,000 of the proceeds were used to pay off the line of credit in July 2020. $17,610,000 of the proceeds were used to refund a portion of the MDFA 2010A bonds in October 2020 and the remaining funds will be used to fund future capital needs. Principal payments commence in October 2045 with final tender in October 2050.

On July 7, 2020, the Massachusetts Development Finance Agency ("MDFA") Series 2020A bonds were issued in the amount of $103,480,000 for the purpose of refunding a portion of the MDFA 2010A bond for $127,118,000 in October 2020. The MDFA Series 2020A bonds were issued with an original premium of $27,047,000. Principal payments commence in October 2022 with final tender in October 2035.

On August 11, 2022, the Massachusetts Development Finance Agency ("MDFA") Series 2022 tax-exempt, fixed-rate bonds were issued in the amount of $378,510,000. The bonds proceeds were used to refund MDFA Series 2012 for $54,385,000, Series T-2 for $62,240,000 and a partial refund of Series T-1 for $55,385,000 the remaining proceeds will be used to fund capital projects. The MDFA Series 2022 bonds were issued with an original premium of $46,500,000. Principal payments commence in October 2023 with final tender in October 2044.

Interest expense on bonds and notes payable totaled $53,367,000 and $38,872,000 for the years ended June 30, 2023 and 2022, respectively. Interest expense has been allocated to each functional expense category in the functional and natural classification of expenses footnote based on specific identification. Total amounts paid in 2023 and 2022 were $59,201,000 and $51,444,000, respectively, to meet interest costs including settlement costs on the related interest rate swap agreement.

The University entered into an interest rate swap agreement on December 22, 2006 to manage the interest cost and variable rate risk associated with its Series T3 outstanding debt. The interest rate swap agreement was not entered into for trading or speculative purposes. Under the terms of the agreement, the University pays a fixed rate, determined at inception, to a third-party who in turn pays the University a variable rate on these respective notional principal amounts.

The University records the interest rate swap at fair value. Net payments or receipts under the swap agreement along with the change in fair value of the swap are included in the nonoperating section on the consolidated statement of activities.

The University has applied guidance related to the *Disclosures about Derivative Instruments and Hedging Activity*. Under this guidance, the University is required to disclose the location and amounts of derivatives within the consolidated financial statements. The tables below depict the impact the derivative has on both the consolidated statements of financial position and consolidated statement of activities.

(in thousands of dollars)	**June 30, 2023 Fair Value**	**June 30, 2022 Fair Value**
Interest rate swap agreement (liability)	$ (14,304)	$ (25,071)

Net realized and unrealized losses on the interest rate swap recorded in the consolidated statement of activities as nonoperating was as follows for the years ended June 30, 2023 and 2022:

(in thousands of dollars)	2023	2022
Realized loss	$ (2,106)	$ (7,118)
Change in unrealized gain/(loss)	10,768	26,398
	$ 8,662	$ 19,280

The following schedule presents the notional principal amounts and fair value of the University's interest rate swap agreement at June 30, 2023:

(in thousands of dollars) Bond Issue	Counterparty	Trade Type	Notional Amount	Date Expiration October 1,	Fair Value at June 30, 2023
MDFA Series T	AIG	Swap	$ 197,775	2037	$ (14,304)

There is no collateral posting requirement for the University related to the swap with AIG.

The University maintained a line of credit in the aggregate amount of $50,000,000 for which there was no outstanding balances for the year ended June 30, 2023 and 2022.

9. Retirement Plan

The University sponsors a retirement plan under which full-time faculty and staff may elect to contribute an amount of their eligible compensation up to the Internal Revenue Service published limit toward the purchase of contracts with Teachers Insurance and Annuity Association of America and College Retirement Equities Fund and/or Fidelity Management Trust Company. After two years of employment, the University contributes 10% of each participant's eligible compensation to each participant's account providing that the participant contributes a minimum of 5% of eligible compensation to the plan. The cost of the University's contribution to this plan was $44,915,000 and $40,609,000 for the years ended June 30, 2023 and 2022, respectively.

10. Post-Retirement Medical Plan

The University sponsors a post-retirement medical plan under which faculty and staff who are 55 years of age and have at least 10 years of service can participate. Under the plan, retirees can contribute 50% of the premium for the medical plan selected. The plan is provided for pre-Medicare coverage and such coverage terminates at age 65. Spouses and dependent children may elect coverage under the plan by contributing 100% of the premium. Spouses are eligible until they are able to participate in Medicare and dependent children until age 26.

For the year ended June 30, net periodic post-retirement medical benefits cost includes the following:

(in thousands of dollars)	**2023**	**2022**
Service cost	$ 1,145	$ 1,170
Interest cost	711	343
	$ 1,856	$ 1,513

Changes in the post-retirement medical benefit obligations are as follows:

(in thousands of dollars)	**2023**	**2022**
Benefit obligations at beginning of year	$ 17,381	$ 15,828
Service cost	1,145	1,170
Interest cost	711	343
Participant contributions	674	545
Actuarial (gain)/loss	585	893
Benefits paid	(1,755)	(1,398)
Benefit obligations at end of year	$ 18,741	$ 17,381

The service cost is allocated to the salaries and benefits expense line item in the statement of activities. Other costs are reflected in other nonoperating activities in the statement of activities. The accrued post-retirement benefit obligation in the table above is included in accounts payable and accrued liabilities on the consolidated statement of financial position. The plan does not hold assets and is funded as benefits are paid.

For measurement purposes, the assumed annual rate of increase in the per capita cost of covered medical benefits was 6.75% for the year ending June 30, 2023, graded down ratably until reaching an ultimate medical trend rate of 4.50% for fiscal year 2032 and thereafter. The discount rate used to determine the accumulated benefit obligation is 4.81% and 4.22% as of June 30, 2023 and 2022, respectively. The discount rate used to determine the net periodic post-retirement benefit cost is 4.22% and 2.23% for the years ended June 30, 2023 and 2022, respectively. The cumulative amount in net assets without donor restrictions related to unamortized losses is $2,693,000 as of June 30, 2023.

Expected future benefit payments and cash contributions to the plan are as follows:

(in thousands of dollars)	Future Benefit Payments
Year	
2024	$ 1,088
2025	1,240
2026	1,403
2027	1,522
2028	1,533
2029-2032	9,747
	$ 16,533

11. Net Assets

The University's net assets are summarized as follows as of June 30:

	2023		
(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Operating funds			
Net invested in plant	$ 1,481,615	$ -	$ 1,481,615
Other unrestricted	230,962		230,962
Donor restricted for			-
Instruction and academic administration		148,320	148,320
Research		29,020	29,020
Scholarships, fellowships and other aid		65,273	65,273
Capital construction and maintenance		41,710	41,710
Other programs		30,546	30,546
Total operating funds	1,712,577	314,869	2,027,446
Endowment and life income funds			
Quasi endowment funds	804,836		804,836
Donor restricted for			-
Instruction and academic administration		424,843	424,843
Research		44,931	44,931
Scholarships, fellowships and other aid		309,318	309,318
Capital construction and maintenance		7,365	7,365
Other programs		98,648	98,648
Life income funds		23,980	23,980
Total endowment and life income funds	804,836	909,085	1,713,921
Total net assets	$ 2,517,413	$ 1,223,954	$ 3,741,367

(in thousands of dollars)	2022 Without Donor Restrictions	2022 With Donor Restrictions	2022 Total
Operating funds			
Net invested in plant	$ 1,316,757	$ -	$ 1,316,757
Other unrestricted	260,056		260,056
Donor restricted for			
Instruction and academic administration		124,383	124,383
Research		26,846	26,846
Scholarships, fellowships and other aid		61,979	61,979
Capital construction and maintenance		40,090	40,090
Other programs		28,309	28,309
Total operating funds	1,576,813	281,607	1,858,420
Endowment and life income funds			
Quasi endowment funds	778,839		778,839
Donor restricted for			
Instruction and academic administration		366,462	366,462
Research		40,516	40,516
Scholarships, fellowships and other aid		367,827	367,827
Capital construction and maintenance		7,030	7,030
Other programs		27,717	27,717
Life income funds		24,443	24,443
Total endowment and life income funds	778,839	833,995	1,612,834
Total net assets	$ 2,355,652	$ 1,115,602	$ 3,471,254

Included in net assets with donor restrictions on the consolidated statements of financial position as of June 30, 2023 and 2022 are $559,902,000 and $519,088,000 of perpetually restricted funds, and $664,052,000 and $596,514,000 of funds restricted for time or purpose, respectively.

12. Endowment and Similar Net Assets

Changes in endowment and similar net assets for the fiscal year ended June 30, 2023:

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment and similar net assets at July 1, 2022	$ 778,839	$ 833,995	$ 1,612,834
Total endowment return	55,595	58,146	113,741
Contributions	7	39,966	39,973
Endowment spending for operations and reinvestment	(24,951)	(23,112)	(48,063)
Other expenses and transfers	(4,654)	90	(4,564)
Endowment funds and similar net assets at June 30, 2023	$ 804,836	$ 909,085	$ 1,713,921

Changes in endowment and similar net assets for the fiscal year ended June 30, 2022:

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment and similar net assets at July 1, 2021	$ 857,357	$ 683,445	$ 1,540,802
Total endowment return	(58,605)	(47,853)	(106,458)
Contributions	8	20,377	20,385
Endowment spending for operations and reinvestment	(22,606)	(16,204)	(38,810)
Other expenses and transfers	(4,221)	(676)	(4,897)
Endowment and similar net assets at June 30, 2022	771,933	639,089	1,411,022
Mills College endowment funds at June 30, 2022	6,906	194,906	201,812
Consolidated endowment funds and similar net assets at June 30, 2022	$ 778,839	$ 833,995	$ 1,612,834

Endowment and similar net assets classified as net assets without donor restrictions include gifts without donor restrictions and other funds designated by the University as endowment for the long-term support of the University. Endowment and similar net assets consist of those funds designated by donors to be invested in perpetuity to provide a permanent source of income, including any accumulated income and appreciation as well as life income, annuities, and trust funds (net of actuarial liability). Endowment and similar net assets are primarily used to fund scholarships and professorships.

From time to time, certain donor-restricted endowment funds may have fair values less than the amount required to be maintained by donors or by law (underwater endowments). These deficits usually result from unfavorable market fluctuations that generally occur shortly after the investment of recently established endowments. The University has interpreted UPMIFA to permit spending from underwater endowments in accordance with prudent measures required under law.

Underwater endowment funds at June 30, 2023 were reported in net assets with donor restrictions as follows:

(in thousands of dollars)	2023
Fair value of underwater endowment funds	$ 77,086
Original endowment gift amount	86,182
Deficiencies of underwater endowment funds	$ (9,096)

13. Commitments and Contingencies

The University has entered into contracts for various construction, maintenance, and renovation projects for which a balance of $125,842,000 is committed at June 30, 2023. The University is subject to certain other legal proceedings and claims that arise in the normal course of operations. In the opinion of management, the ultimate outcome of these actions will not have a material effect on the University's financial position.

14. Functional and Natural Classification of Expenses

The financial statements report certain categories of expenses that are attributable to one or more program or supporting functions of the University. Expenses reported by functional categories include allocations of costs for operation and maintenance of plant, interest on indebtedness and depreciation and amortization expense. The University applies various methods to allocate costs among the program and support functions, the most significant of which is by the amount of building space utilized. Operating expenses by functional and natural classification for the year ended June 30, 2023 are as follows:

(in thousands of dollars)	Salary and Benefits	Other Operating Expenses	Depreciation	Interest	Total
Instruction	$ 467,257	$ 118,804	$ 37,951	$ 5,243	$ 629,255
Research	135,289	105,887	16,146	17,199	274,521
Academic support	174,514	135,760	11,571	5,122	326,967
Student services	104,147	112,970	11,511	486	229,114
Institutional support	145,346	137,316	23,250	2,253	308,165
Auxiliary	20,790	124,551	21,259	11,142	177,742
Other	3,565	8	402	7	3,982
Total	$ 1,050,908	$ 735,296	$ 122,090	$ 41,452	$ 1,949,746

Operating expenses by functional and natural classification for the year ended June 30, 2022 were as follows:

(in thousands of dollars)	Salary and Benefits	Other Operating Expenses	Depreciation	Interest	Total
Instruction	$ 419,758	$ 111,653	$ 26,355	$ 3,230	$ 560,996
Research	109,956	76,936	13,168	12,981	213,041
Academic support	134,821	111,755	9,784	4,411	260,771
Student services	86,337	122,801	7,236	154	216,528
Institutional support	115,187	86,356	20,533	1,505	223,581
Auxiliary	19,847	135,910	16,426	10,382	182,565
Other	1,484	-	92	1,863	3,439
Total	$ 887,390	$ 645,411	$ 93,594	$ 34,526	$ 1,660,921

15. Related-Party Transactions

The University considers related parties to be members of the Board of Trustees, Officers, key employees, and family members of these individuals. The University has a related party transaction loan receivable on June 30, 2023. All goods and services acquired are negotiated at arm's length and follow the University purchasing and procurement procedures. The University also has outstanding pledges from related parties. These transactions are included on the University's Consolidated Financial Statements.

16. Subsequent Events

The University has assessed the impact of subsequent events through October 23, 2023, the date the audited consolidated financial statements were issued, and has concluded that there is no required adjustments to the audited consolidated financial statements.

5. TRANSPORTATION STANDARDS (14.6.1)

The transportation infrastructure associated with the campus will be designed in compliance with Section 1, Transportation Systems and Street Design Standards, of the City of Portland Technical Manual as described in the following Sections. Each of the internal driveways on the Site will be designed consistent with the standards to accommodate vehicles, bicycles, and pedestrians in a safe manner. Additional information is provided in the attached memorandum prepared by VHB.

5.1 Access and Circulation (8.5.7.E.3 and 8.5.7.E.5)

Bike and Pedestrian

Bike and pedestrian circulation and amenities are foundational to the design of the campus. Consistent with the campus IDP, Phase 1 includes a 12-ft wide campus "Promenade" prioritizing pedestrian access through the center of campus, connecting the upland campus to the pier and waterfront. A 12-ft wide coastal path includes seating, amenities, and supports access to the waterfront. A perimeter access loop will provide circulation for bikes and pedestrians. These major organizing features will be complemented by supporting pathways that enhance pedestrian connectivity and circulation.



Figure 5-1: Bike Amenities and Circulation

Vehicular access is provided via proposed driveways for drop-off, parking maintenance, delivery, and emergency access to building loading zones. Additional emergency access is provided along the waterfront bike/ped trail. The design team has met with the Portland Police Department and Fire Department during development of this plan in consideration of emergency access. **Figure 5-2** provides a summary of emergency access route.

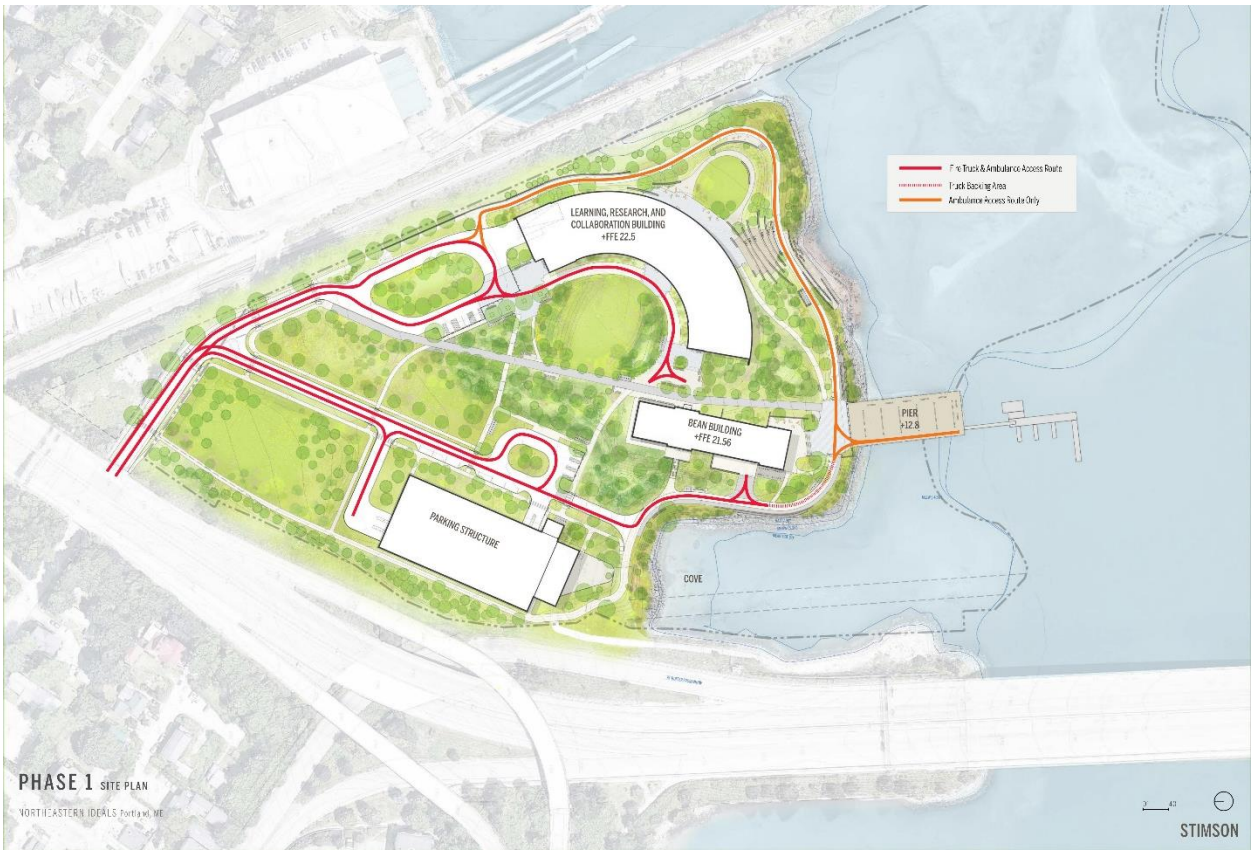


Figure 5-2: Emergency Access Routes

Sherwood Street Curb and Sidewalks

The project will also include improvements to the infrastructure on Sherwood Street to bring it into compliance with the Technical Manual Section 1. Little of the alignment is anticipated to change on Sherwood Street. Existing driveways will be restored according to the table in section 1.5.1 of the Technical Manual unless otherwise approved by Portland Department of Public Works.

The Applicant understands that infrastructure to support pedestrian and bicycle facilities are critical to the success of the campus. This project will add one public crosswalk across Sherwood Street at Veranda and a bicycle or shared-use lane will be added (as part of the Sherwood Street reconstruction).

Loading and Servicing

Loading and trash removal will be addressed in each of the buildings throughout the Site with designated spaces to accommodate deliveries and storage. A loading dock with internal roll-off waste container(s) is located in the service bay at the north side of the Learning, Research, and Collaboration Building, near the terminus of the vehicular turn around. The Bean Building will have a service entrance at the lower level of the west facade. Waste removal from the Bean Building will be managed through maneuverable roller containers, screened by a retaining wall shown near the service entrance and accessed by service vehicles occasionally via the coastal pathway.

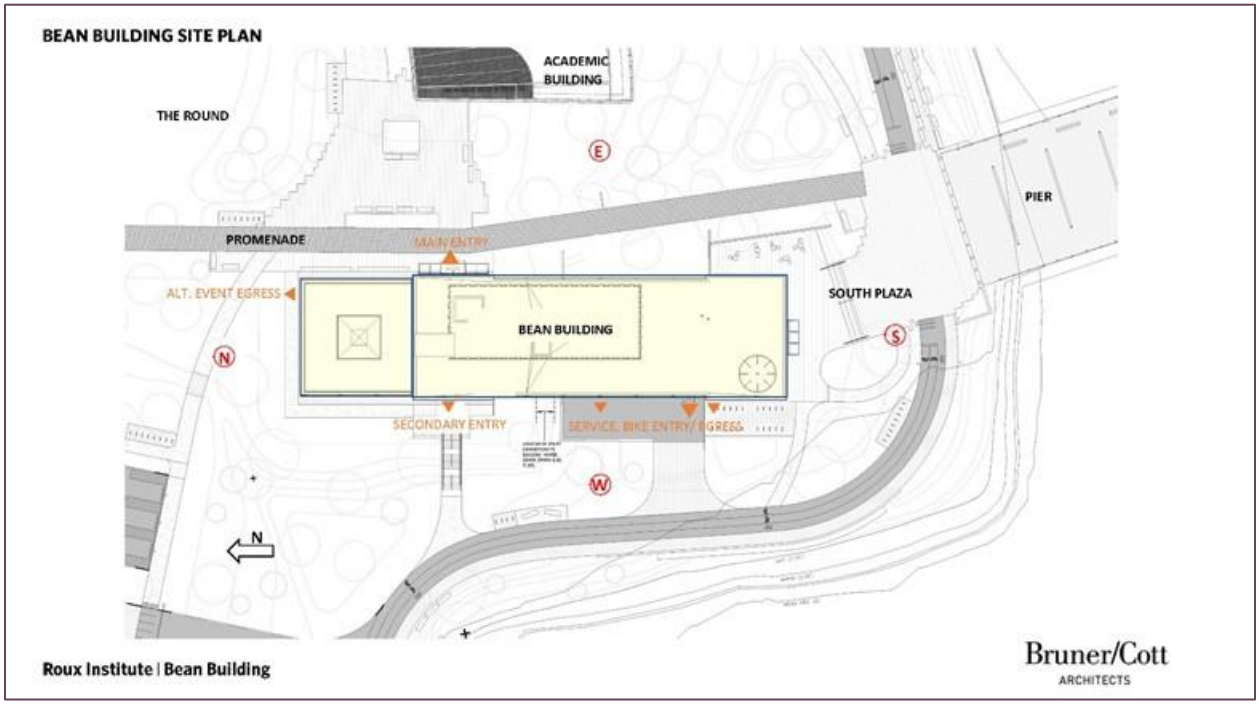


Figure 5-3: Bean Building Service Access

5.2 Public Transit Access

The campus is located along two existing public transit routes, METRO Route 7 and METRO Routes 9A/9B. There are no existing transit shelters within ¼ mile of the Site. Consistent with 14.6.1 (C), a transit shelter will be provided on-site that will connect to the public sidewalk system (which will also be improved providing sidewalks along both sides of Sherwood Street).

5.3 Parking (8.5.7.E.4)

Vehicular Parking

Northeastern University is committed to building off-street parking on campus in accordance with the technical requirements of this Code. A parking demand study has been prepared as part of the Site's Transportation Demand Management (TDM) plan.

Snow Storage

Snow storage areas will not encroach on areas designed to meet minimum parking requirements or on pedestrian walkways and will not be located where they would adversely impact the functionality of stormwater management systems.

Electric Vehicle (EV) Charging

The garage to be constructed with this project will include electric vehicle charging equipment. The applicant has performed an EV parking demand study to determine the final count of chargers, their power, and number of EV-ready spaces. A copy of the study is attached to this section.

Bicycle Parking

All bicycle parking will be in accordance with the parking requirements of this Land Use Code and the Transportation Systems and Street design standards of the Technical Manual. The location and style of racks will conform with the specifications in Section 1.12. Both outdoor and secured indoor bicycle parking will be available on campus. The following table summarizes compliance with bicycle parking space requirements.

Table 5-1: Bicycle Parking

	Provided
Interior Bicycle Parking in Garage	66
Exterior Secure Bicycle Parking	100
Total:	166

Furthermore, additional interior bicycle parking is anticipated to be included in the Bean Building once fit-out of the space is completed. Exterior bicycle parking will be distributed throughout campus, adjacent to points of interest and arrival, as demonstrated by **Figure 5-4**.

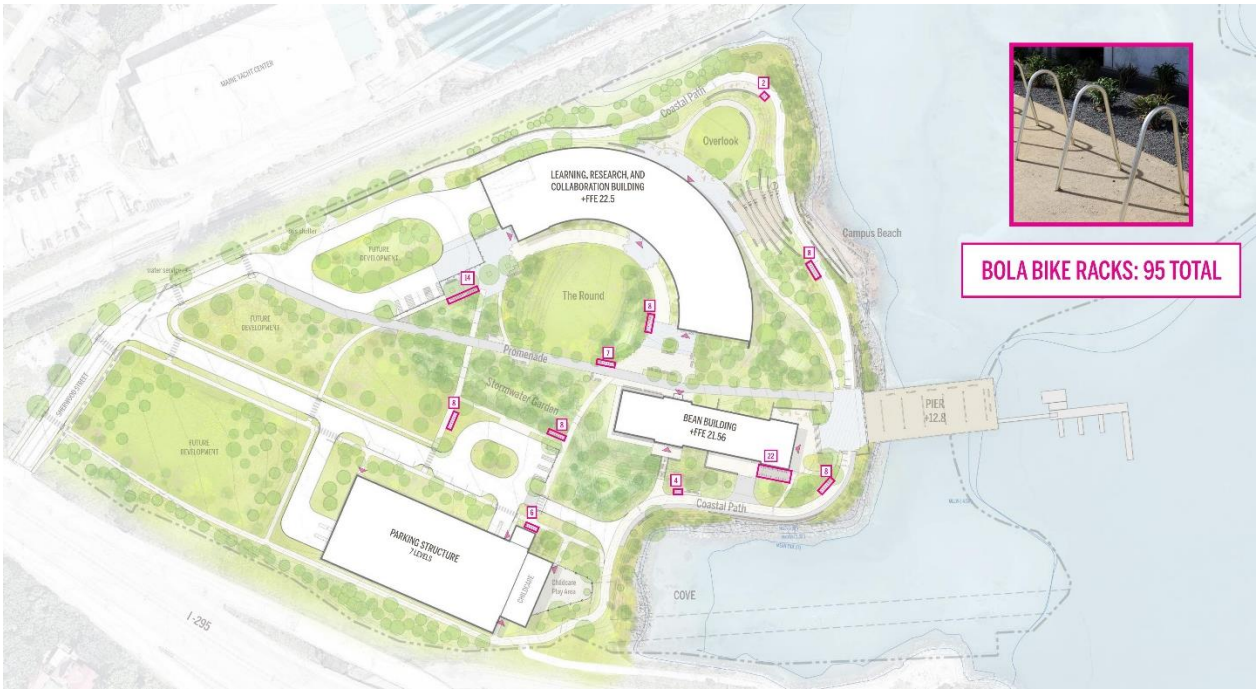


Figure 5-4: Exterior Bicycle Parking

5.4 Transportation Demand Management (8.5.7.E.1)

A TDM Plan was developed by VHB for Phase 1. This report will be uploaded separately to the Documents folder. The goal of the TDM Plan is to reduce parking demand and single occupancy vehicles. The TDM Plan includes parking, mode share, trip reduction strategies targets and a data collection plan.

5.5 Traffic Movement Permit (8.5.7.E.2)

This project will capture all vehicle loading/unloading and parking on-site. There will be a single access at the end of Sherwood Street with all internal circulation occurring off public streets. There will be separated pedestrian facilities, including a new sidewalk or shared use path along Sherwood Street. The incremental traffic volumes are under review by the Maine Department of Transportation as part of the Traffic Movement Permit process. A copy of the TMP permit approval will be provided upon receipt.

5.6 Section Attachments

- Supplemental Transportation Memorandum, prepared by VHB

5.7 Attachments Provided as Separate Files

The following materials referenced by this section of the report have been uploaded under separate cover for review.

- TDM Plan
- EV Parking Demand Study

Memorandum

To: Chuck Hewett
Sam Reiche

Date: November 7, 2023

Project #: 58570.00

From: Jennifer Conley, PE, PTOE

Re: Roux Institute at Northeastern University
Site Plan Transportation standards

The Roux Institute at Northeastern University is submitting a Phase 1 site plan application with the City of Portland. This memorandum is a supporting document that addresses the required Transportation Standards outlined in the city's Portland Plan in Section 14.6 Site Plan Review Standards.

Impact on Surrounding Street Systems (14.6.1(A))

Circulation

Vehicle loading/unloading and parking will occur on-site. A single vehicular access point to the site will be provided via Sherwood Street with all internal circulation occurring off public streets. The project will provide continuous sidewalks and bicycle accommodation on both sides of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. Once on the site, pedestrian facilities will connect site uses and points along the waterfront. Improvements to pedestrian connections will increase walkability for the site.

Trip Generation

The incremental traffic volumes associated with the proposed project (trip generation) have been estimated as part of the Traffic Movement Permit (TMP) application that is being submitted to MaineDOT and are presented below. Any substantial congestion increases to public streets that may be identified through the MaineDOT TMP process will be mitigated with off-site improvements coordinated with MaineDOT and the City of Portland.

The student population is modeled using rates developed for the existing Roux Institute at Northeastern University Fore Street campus (100 Fore Street). Other proposed land uses and user populations are modeled using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*.

For each land use and user population, trip generation was calculated for a weekday (full 24-hour period). This proposed development has disparate user populations whose trips will peak at different times of day. To accurately quantify this activity, 24-hour distributions for each user population were overlaid to identify the overall time and magnitude of the campus' peak times.

Trip rates developed specifically for the Roux Institute at Northeastern University were developed for students and faculty, affiliated users, special events and staff.

The following assumptions were made regarding the student population:

- 43% of student enrollment travels to campus each day.[1]

[1] January 2023 student survey

› 40% are daytime students and 60% are evening students.[2]

To determine the spread of student arrivals and departures throughout the day, a door count was conducted at the 100 Fore Street building on October 3rd, 2023.

The unadjusted ITE vehicle trip generation was calculated for the weekday AM and PM peak hours for the remainder of the land uses on site as presented in Table 1.

Table 1 Total Unadjusted Person Trips

Land Use	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Graduate students	134	0	**134**	282	161	**443**
Affiliated Users	20	0	**20**	0	40	**40**
Faculty, Staff, and Researchers[1]	8	0	**8**	16	9	**25**
Special Events	15	0	**15**	50	15	**65**
Academic Café	15	13	**28**	44	29	**73**
General Office[2]	103	24	**127**	29	114	**143**
Day care	13	13	**26**	17	19	**36**
Total	**308**	**50**	**358**	**438**	**387**	**825**

1 Students and staff in instructional or other student-facing roles (25% of total) were assigned to the student time-of-day distribution.
2 ITE Trip Generation Manual, 11th Edition LUC 710 General Office (Embedded Startups, Staff, and Researchers, and Signature Partners.

The Roux Institute at Northeastern University is anticipating that a significant portion of the peak hour trips presented in Table 1 will be made by alternative travel modes such as walking, biking, and transit and is expected to have internally captured trips for supporting uses (such as the café and day care). The total adjusted trip generation for the project is shown in Table 2. For a more detailed analysis of the trip generation breakdown for time-of-day distribution, internal capture, and mode share, please refer to the TMP application.

[2] Split provided by Northeastern University based on enrollment records and projections

Table 2 Total Adjusted Trips

Land Use	AM Peak Hour All Trips	AM Peak Hour Internal Trips	AM Peak Hour Transit Trips	AM Peak Hour Bike/Ped Trips	AM Peak Hour Vehicle Trips	PM Peak Hour All Trips	PM Peak Hour Internal Trips	PM Peak Hour Transit Trips	PM Peak Hour Bike/Ped Trips	PM Peak Hour Vehicle Trips
Graduate students	134	9	13	13	100	443	51	39	39	314
Affiliated Users	20	0	1	1	18	40	0	2	2	36
Faculty, Staff, and Researchers[1]	8	0	0	1	7	25	0	1	2	22
Special Events	15	0	1	1	14	65	0	3	3	59
Academic Café	28	28	0	0	0	73	73	0	0	0
General Office[2]	127	34	5	5	84	143	64	4	4	70
Day care	27	10	1	1	15	36	14	1	1	20
Total	**359**	**82**	**20**	**20**	**237**	**825**	**202**	**51**	**51**	**521**

1 Students and staff in instructional or other student-facing roles (25% of total) were assigned to the student time-of-day distribution.

During the TMP scoping meeting process, The City of Portland and MaineDOT will outline the requirements for the Traffic Impact Study and as stated above, any substantial congestion increases to public streets anticipated in the permit process will be mitigated with off-site improvements coordinated with MaineDOT and the City of Portland.

Access and Circulation (14.6.1(B))

The Roux Institute at Northeastern University shall provide safe and reasonable access and internal circulation for all users in accommodation with the standards outlined in the Technical Manual. Figures 1-2 below shows an illustrative site plan as well as a diagram showing bicycle, pedestrian, and transit accommodations internal to the site.

Memorandum

Figure 1 Illustrative Site Plan



As shown in Figure 2, a multiuse path will be constructed around the entire campus connecting to Sherwood Street that will serve bicyclists and pedestrians. In addition, multiple exterior bicycle parking locations are planned throughout the site, interior bicycle storage will be provided in the garage, and a bikeshare location and transit shelter are also proposed.

Memorandum

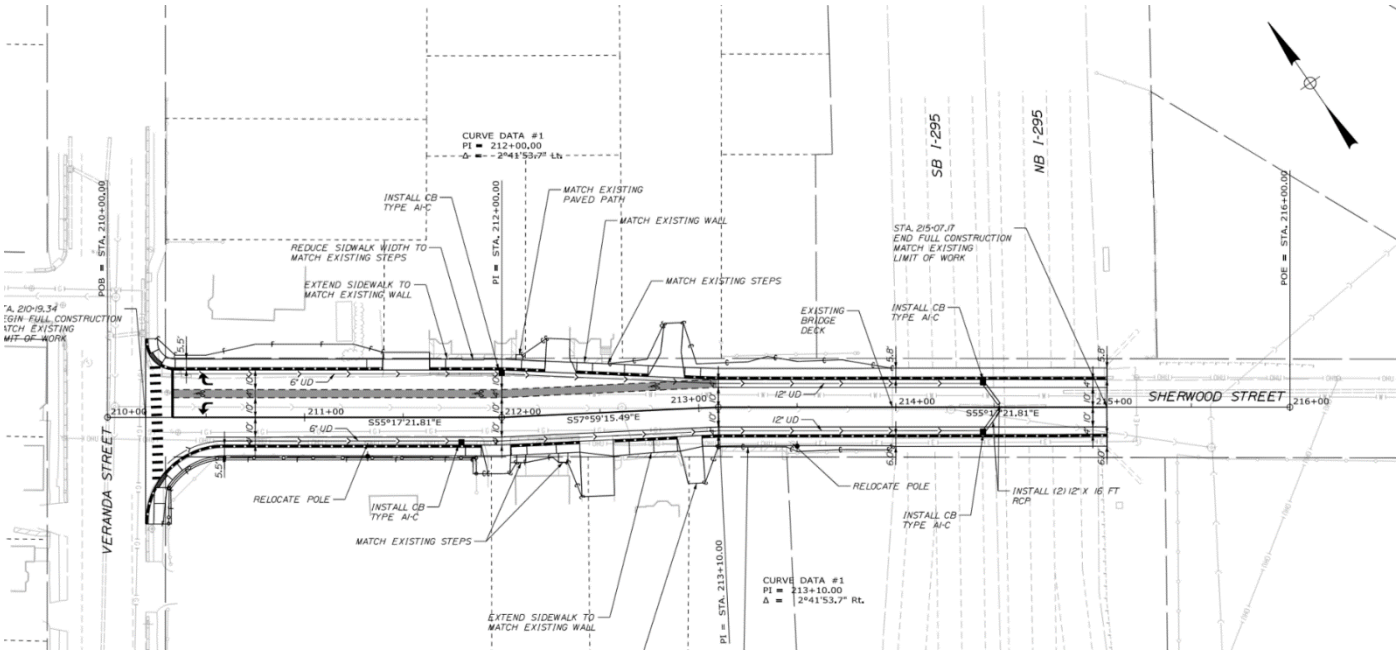
Figure 2 Alternative Modes of Transportation Accommodations



As part of the site plan application the shared use path around the site will connect into a reconstructed Sherwood Street. As shown in Figure 3, the redesign of Sherwood Street will include a bike lane and new sidewalks on each side of the street connecting to Veranda Street.

Memorandum

Figure 3 Sherwood Street Improvements



All public paths, sidewalks, and ADA ramps will be designed and consistent with requirements in the Technical Manual.

Public Transit (14.6.1(C))

The Roux campus is located within short walking distance of two existing public transit routes, METRO Route 7 and METRO Routes 9A/9B and there are no existing transit shelters within ¼ mile of the site. Consistent with 14.6.1 (C), a transit shelter will be provided on site that will connect to the public sidewalk system (which will also be improved providing sidewalks along both sides of Sherwood Street). The Roux Institute is working with METRO for service to be provided into the site.

The Roux Institute is committed to working with Portland METRO to support increased transit opportunities to and from the campus area. These factors, in addition to a Transportation Management Plan (TDM), will reduce auto mode share at the site.

METRO Route 7 and METRO Routes 9A/9B provide direct connections to the peninsula, North Deering, and Falmouth. With a transfer at any of the Downtown Transfer Centers, riders can reach the rest of the Portland and Greater Portland Region.

Buses run continuously throughout the day, readily accommodating the varied schedules of students and other campus users. METRO BREEZ express bus service to Yarmouth, Falmouth, and Brunswick and the Husky Line to

Westbrook and Gorham establish a regional footprint for transit service. Ten local and express routes connect the campus to most of the Portland area with no more than one transfer.

In addition, the Roux Institute at Northeastern University will promote and incentivize transit use by subsidizing transit passes for students, staff, and faculty.

Off-Street Parking (14.6.1(D))

Vehicular Parking

The Roux Institute at Northeastern University is committed to building off-street parking in accordance with the technical requirements. Parking space and aisle designs will meet specifications in the Technical Manual.

A parking demand study has been prepared, determining the capacity needed to accommodate long-term enrollment growth and other development on site. For opening, the peak demand on campus is anticipated to be 561 parking spaces. If the auto mode share remains as high as estimated at opening, demand would grow to 882. However, the Roux Institute proposes a full TDM program as described in the TDM Plan and anticipates that full occupancy parking will be accommodated in the proposed phase 1 parking. The parking garage has been designed to accommodate 708 parking spaces, however for the first phase, 16 of those vehicular parking spaces will be used to accommodate parking for bicycles and the remaining 692 spaces will be used for vehicular parking.

Bicycle Parking

All bicycle parking will be in accordance with the parking requirements of this Land Use Code and the Transportation Systems and Street design standards of the Technical Manual. As indicated above, there will be 66 parking spaces for bicycles in the garage. In addition, there will be another 100 exterior parking spaces provided around the site. Potential locations are shown in Figure 2.

Snow Storage

Snow storage areas and an acceptable snow removal plan will be provided with site plan review. Snow storage areas will not encroach on areas designed to meet minimum parking requirements or on pedestrian walkways and will not be located where they would adversely impact the functionality of stormwater management systems. Landscaping in designated snow storage areas will be such that it can withstand the snow pile.

Electric Vehicle (EV) charging

An EV demand study has been conducted to determine EV requirements. During opening year (2027) there will be a demand of 24 EV spaces and planning for a potential demand of 62 EV spaces by 2032. A formal EV Demand Study has been submitted to the City of Portland separate from this application.

Transportation Demand Management (TDM) (14.6.1(E))

A TDM plan has been drafted in accordance with Technical Manual Section 1 requirements and is submitted as separate document in this application.

November 13, 2023

Mr. Stephen Landry, PE
State Traffic Engineer MaineDOT
16 State House Station
Augusta, Maine 04333

Re: Application for Traffic Movement Permit
The Roux Institute at Northeastern University
Portland, Maine

Dear Stephen,

On behalf of IDEALS and The Roux Institute at Northeastern University (applicant), VHB is pleased to submit this Traffic Movement Permit Application for the development located at the former B&M Baked Beans property, 1 Beanpot Circle, Portland, ME 04103.

We have attached the following information in support of this application:

- Sections 1-6
- Signed Application Form
- Notice of Intent to File
- List of Abutters
- $500 application fee

We look forward to scheduling a Scoping Meeting in the near future.

Very truly yours,

Jennifer Conley, PE, PTOE
Director, Transportation Systems
Jconley@vhb.com

500 Southborough Drive
Suite 105B
South Portland, Maine 04106
P 207.889.3150
F 207.253.5596

Northeastern

October 25, 2023

Sam Reiche
Chief Operating Officer and Head of Real Estate
Initiative for Digital Engineering and Life Sciences (IDEALS)
100 Commercial Street, Suite 40
Portland, Maine 04101

Dear Sam:

Northeastern University is preparing plans for the first phase of development at the Roux Institute, located at 1 Bean Pot Circle in Portland Maine. Northeastern University is authorizing the Initiative for Digital Engineering and Life Sciences (IDEALS) and Woodard & Curran, Inc., to assist in the preparation of land-use permit applications for this project. IDEALS and Woodard & Curran are authorized as our agent to represent Northeastern University in addressing questions on the plans and applications for this project.

Sincerely,

Thomas E. Nedell,
Senior Vice President for Finance and Treasurer

Office of the Senior Vice President Finance

177 Huntington Ave.
360 Huntington Ave.
Boston, MA 02115

617.373.2240
fax 617.373.4728

finance.northeastern.edu

Department of Transportation
Traffic Engineering Division
16 State House Station
Augusta, Maine 04333
Telephone: 207-624-3600

FOR MDOT USE
ID #

Total Fees:

Date: Received

****

PERMIT APPLICATION - TRAFFIC
TRAFFIC MOVEMENT PERMIT, 23 M.R.S.A. § 704 - A

Please type or print:

This application is for:

Traffic 100-200 PCE's	____
Traffic 100-200 PCE's (Expedited)	____
Traffic 200+ PCE's	_X_

Name of Applicant: Northeastern University

Address: 360 Huntington Avenue, Boston, MA 02115 Telephone: 617-594-6092

Name of local contact or agent: Catherine Walsh

Address: 360 Huntington Avenue, Boston, MA 02115 Telephone: 617-594-6092

Name and type of development: The development consists of a 238,000 square foot Learning, Research, and Collaboration building accommodating 3,123 graduate students, 100 affiliated users, 150 person special events, and an 8,000 square foot café. It will also open with a 58,000 square foot Bean Building accommodating 300 faculty, staff, and researchers, 100 employee embedded startups, and 64 employee signature partners. There will also be a 50-child daycare.

Location of development including road, street, or nearest route number: The site is located at 1 Beanpot Circle bounded by Sherwood Street to the north.

City/~~Town/Plantation~~: Portland, County: Cumberland, Tax Map # 447, Lot # A001001

Do you want a consolidated review with DEP pursuant to 23 M.R.S.A. § 704-A (7)? Yes ____ No __X__

Was this development started prior to obtaining a traffic permit? No

Is the project located in an area designated as a growth area (as defined in M.R.S.A. title 30 - A, chapter 187)? Yes ____ No _____

Is this project located within a compact area of an urban compact municipality? Yes __X__No _____

Is this development or any portion of the site currently subject to state or municipal enforcement action? None Known

Existing DEP or MDOT permit number (if applicable): None Known

Name(s) of DOT staff person(s) contacted concerning this application: _____

_____

Name(s) of DOT staff person(s) present at the scoping meeting for 200+ applications: N/A_____

CERTIFICATION

The traffic engineer responsible for preparing this application and/or attaching pertinent site and traffic information hereto, by signing below, certifies that the application for traffic approval is complete and accurate to the best of his/her knowledge.

Signature: _____ Re/Cert/Lic No.: Maine PE #15652

Name (print): Jennifer Conley_____

Date: _11/13/2023_____



If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Sam Reiche, COO, IDEALS — 11/13/23

Signature of Applicants Agent — Date

NOTICE OF INTENT TO FILE
Traffic Movement Permit

Please take notice that

The Roux Institute at Northeastern University
100 Commercial Street
Portland, ME 04101

is intending to file a Traffic Movement Permit application with the Maine Department of Transportation pursuant to the provisions of 23 M.R.S.A. § 704 – A on or about November 13, 2023.

The application is for the development of a 238,000 square foot Learning, Research, and Collaboration building accommodating 3,123 graduate students, 100 affiliated users, 150 person special events, and an 8,000 square foot café. It will also open with a 58,000 square foot Bean Building accommodating 300 faculty, staff, and researchers, 100 employee embedded startups, and 64 employee signature partners. There will also be a 50-child daycare. The project is forecast to generate 358 AM peak hour and 825 PM peak hour trip ends based on ITE Trip Generation, 11th edition for ancillary uses and existing arrival patterns/badge swipes and anticipated populations for academic uses. Each of the uses described are anticipated to be constructed in 2025 and 2026 and occupied by 2027.

at the following location:

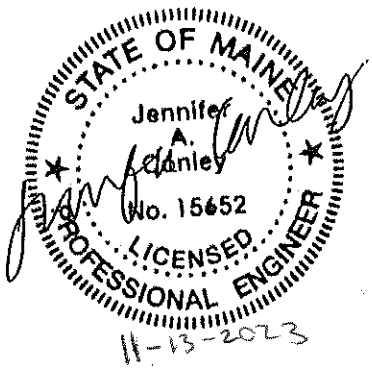
The site is located at 1 Beanpot Circle bounded by Sherwood Street to the north, I-295 to the west, and MaineDOT Railroad Right of Way to the east.

Any interested party may request in writing to participate in the MaineDOT scoping meeting for the subject project no later than 20 days after the application is found by the Department to be complete and is accepted for processing. Requests shall be sent to the State Traffic Engineer, 16 State House Station, Augusta, ME 04333. Public comments on the application pertaining to either congestion or safety will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Transportation Region office in Scarborough (Region 1) during normal working hours. Addresses may be found at the following website: https://www.maine.gov/mdot/about/regions/. A copy of the application may also be seen at the municipal offices in Portland, Maine.

Written public comments concerning congestion or safety only, may be sent to the Department of Transportation, State Traffic Engineer, 16 State House Station, Augusta, Maine 04333.

Jennifer Conley, PE, PTOE
VHB, Inc.



ABUTTERS LIST

Parcel ID	Property Location	Owner	Owner Address	Owner City	Owner State	Owner Zip
429 G001001	65 KENSINGTON ST	MAINE YACHT CENTER LLC	100 KENSINGTON ST	PORTLAND	ME	04103
429 E001001	43 SHERWOOD ST	STATE OF MAINE	N/A	AUGUSTA	ME	04333
429 E008001	73 SHERWOOD ST	STATE OF MAINE	N/A	AUGUSTA	ME	04333
429 H004001	78 SHERWOOD ST	STATE OF MAINE	N/A	AUGUSTA	ME	04333
429 H003001	80 SHERWOOD ST	BRENNAN JOSEPH & KRISTIN BRENNAN JTS	80 SHERWOOD ST	PORTLAND	ME	04103
429 D005001	81 SHERWOOD ST	CARLING GABRIEL BEN & JULIE ANN CARLING JTS	81 SHERWOOD ST	PORTLAND	ME	04103
429 H002001	82 SHERWOOD ST	FITZGERALD RYAN	988 SAWYER ST	SOUTH PORTLAND	ME	04106
429 D004001	87 SHERWOOD ST	87-89 SHERWOOD STREET LLC	4 COUNTRY LN	FALMOUTH	ME	04105

ArcGIS Web Map



11/3/2023, 9:51:17 AM

tax_parcels parcels

Tax

Tax

Conveyance

1:2,850

0 0.02 0.04 0.09 mi

0 0.04 0.07 0.15 km

City of Portland, DPS

Web AppBuilder for ArcGIS

City of Portland, Maine



The Roux Institute at Northeastern University

Traffic Movement Permit (TMP) Application – 2032

PREPARED FOR

Roux Institute at Northeastern University / IDEALS
100 Commercial Street
Portland, ME 04101

PREPARED BY

500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

NOVEMBER 2023

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1

Section 1: Site and Traffic Information

1.A Site Description and Site Plan

The Roux Institute at Northeastern University is a graduate education and research institution temporarily operating at 100 Fore Street in the Old Port neighborhood. The development proposed in this application is a relocation of the Institute to the former B&M Baked Beans site at 1 Beanpot Circle. In its permanent waterfront location in East Deering, the Roux Institute at Northeastern University will continue to provide educational, research, and collaborative programs in areas including artificial intelligence, computer and data sciences, digital engineering, advanced life sciences, and medicine. The Roux Institute at Northeastern University offers post-graduate degrees and certifications, conducts research, assists start-ups, and partners with private, public and non-profit organizations and is proposing to redevelop the B&M Baked Beans facility to establish a permanent campus.

Vehicles can access the site via a single entry and exit point. All vehicles will travel through the intersection of Veranda and Sherwood Streets and under the I-295 underpass to access the site. Other key routes near the site are Interstate 295, US Route 1 (Veranda Street), Washington Avenue, and Baxter Boulevard. Since the former factory buildings are not operational, no trip generation credit for existing use will be taken. The site, which is completely within the City of Portland, is identified by the following parcel number:

- 447 A001001

The site and boundary surveys and proposed site plan are included in Attachment 1A.

1.B Existing and Proposed Site Uses

The following describes the existing and proposed uses:

Existing Uses

The site was previously occupied by B&M Baked Beans. The parcel was zoned I-M (industrial) and had a trip pattern typical of shift work. The factory has been closed since 2021 while the site awaits redevelopment. As the site is currently vacant, no trip credit for existing uses will be taken.

Proposed Site Uses

The Roux Institute at Northeastern University intends to develop a dynamic, mixed-use campus that contributes to the East Deering neighborhood without encroaching on it.

The campus will be anchored by the 238,000 square foot Learning, Research, and Collaboration building housing most of the academic programs. It will also open with the 58,000 square foot Bean Building housing a start-up incubator program. By 2032, the campus plans to accommodate 3,123 graduate students in addition to the ancillary uses shown in Table 1. The campus will also have dining and an on-site day care center for children of students and staff. In addition to its academic offerings, the campus will benefit the community by providing open space along the waterfront, active transportation accommodations throughout the site, job creation, innovation space, and will contribute to economic growth.

Table 1 Proposed Uses

Program Component		2032 Build-Out
Roux Institute at Northeastern University	Graduate students	3,123 students
	Faculty, Staff, and Researchers	300 staff
	Embedded startup	100 staff
	Signature Partners	64 staff
	Affiliated Users	100 visitors
	Special Events (daily)	150 attendees
Day care center		50 Children
Academic Café		8,000 sf

The campus will open with a 708-space parking structure (vehicular capacity of 692 and bicycle capacity of 66 in opening year). All on-site parking will be paid parking, and a parking office will be created to manage permitting and enforcement for the campus. Parking costs and regulations may vary between categories of users (students, staff, faculty, visitors, etc.). Parking will be shared by all uses, not assigned to programs or buildings.

1.C Regional Mapping

Site location maps showing the development area is included in Attachment 1B.

The proposed Roux Campus is located within Portland's East Deering neighborhood with proximity to both residential and commercial areas and I-295.

The site is directly north of downtown Portland, bounded by I-295, Sherwood Street, and Casco Bay.

1.D Proposed Uses in the Study Area

Projects that have been approved but are not yet occupied as well as projects that have applied for approval are required to be included in the predevelopment traffic volumes.

- Front Street Housing Redevelopment
- Winchester Woods Apartments

1.E Trip Generation

Trip generation estimates for the Project are based on the 2032 development program presented in Table 2. The student population is modeled based on anticipated population profiles and existing entries and exits at the Fore Street site. Other uses and users are modeled using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*.

For each use, trip generation was calculated for a weekday (full 24-hour period). This development has disparate uses whose trips will peak at different times of day. To accurately describe this profile, 24-hour distributions for each use were overlaid to identify the time and magnitude of the campus' peak times. Table 2 lists the method used for each use's rate and time of day distribution.

Table 2 Development Program by Land Use

Category	Unit	ITE Land Use Code[1]
Graduate students	Students	*Non-ITE (see narrative)*
Faculty, Staff, and Researchers[2]	Employees	*710 General Office*
Embedded startups	Employees	*710 General Office*
Signature Partners	Employees	*710 General Office*
Affiliated Users	Daily Visitors	*Non-ITE (see narrative)*
Special Events	Daily Attendees	*Non-ITE (see narrative)*
Day care	Children	*565 Day Care Center*
Academic Café	Gross floor area	*932 High-Turnover Restaurant*

1 ITE Trip Generation Manual, 11th Edition

2 Staff in instructional or other student-facing roles (25% of total) were assigned to the student time-of-day distribution.

Site-Specific Trip Rates

Trip rates developed specifically for the Roux Institute at Northeastern University were developed for students, affiliated users, and special events. 25% of staff will also follow the student distribution.

Based on data at the existing facility, and future enrollment projections, the following factors were used to develop the population distribution.

- 43% of student enrollment travels to campus each day.[1]
- 40% are daytime students and 60% are evening students.[2]

To determine the spread of student arrivals and departures throughout the day, a door count was conducted at the 100 Fore Street building on October 3rd, 2023. This count was converted to the time-of-day distribution shown in Table 3.

Table 3 Academic Trips – Time of Day Distribution

	Day Students		Night Students	
Time	In	Out	In	Out
7:00 AM	10%			
8:00 AM	25%			
9:00 AM	20%			
10:00 AM	25%			
11:00 AM	20%			
12:00 PM				
1:00 PM				
2:00 PM		10%		
3:00 PM		25%		
4:00 PM		30%	20%	
5:00 PM		30%	35%	
6:00 PM		5%	20%	15%
7:00 PM			10%	15%
8:00 PM			10%	15%
9:00 PM			5%	35%
10:00 PM				20%
Total	100%	100%	100%	100%

Site-specific trip profiles were also developed for special events and affiliated users (miscellaneous visitors not captured in other categories). These profiles are shown in Table 4.

[1] January 2023 student survey

[2] Split provided by Northeastern University based on enrollment records and projections

Table 4 Affiliated User and Special Event Distribution

	Affiliated Users 25 persons/day		Special Events – Day 25 persons/day		Special Events – Lunch 25 persons/day		Special Events – Night 100 persons/day	
	In	Out	In	Out	In	Out	In	Out
7:00 am	10%		20%					
8:00 am	20%		60%					
9:00 am	40%		20%					
10:00 am	20%							
11:00 am	10%				80%			
12:00 pm					20%			
1:00 pm						20%		
2:00 pm						80%		
3:00 pm		10%						
4:00 pm		20%		20%			10%	
5:00 pm		40%		60%			50%	
6:00 pm		20%		20%			40%	20%
7:00 pm		10%						50%
8:00 pm								30%

The profiles provided were applied to the number of people in each population anticipated to be on campus in a given day. The unadjusted ITE trip generation was calculated for the remaining uses on the campus. The resulting person trip generation for the weekday AM and PM peak hours is presented in Table 5.

Table 5 Total Unadjusted Trips

Land Use	AM Peak Hour			PM Peak Hour		
	Origin (Exiting)	Destination (Entering)	Total	Origin (Exiting)	Destination (Entering)	Total
Graduate students	134	0	**134**	282	161	**443**
Bean Building[1]	103	24	**127**	29	114	**143**
Faculty, Staff, and Researchers[2]	8	0	**8**	16	9	**25**
Affiliated Users	20	0	**20**	0	40	**40**
Special Events	15	0	**15**	50	15	**65**
Day care	13	13	**26**	17	19	**36**
Academic Café	15	13	**28**	44	29	**73**
Total	**308**	**50**	**358**	**438**	**387**	**825**

1 ITE Trip Generation Manual, 11th Edition LUC 710 General Office (Embedded Startups, Faculty, Staff, and Researchers, and Signature Partners.

2 Staff in instructional or other student-facing roles (25% of total) were assigned to the student time-of-day distribution.

Internal Capture

Dining and child care are planned to be developed as ancillary services for the student and employee population. Apart from their own employees, they will not generally attract external trips. To account for this and the crossover between student and office populations (typically students involved with an on-site startup), targeted internal capture reductions were calculated for these specific cases.

Calculations for internal trips were made on the following assumptions:

- 100% of trips to/from the cafeteria are internal, made by either students or staff
- 80% of trips exiting the day care in the AM are to another on site use, and 80% of trips entering the day care in the PM originate on-site
- 10% of the office/lab/startup workforce are students who will combine trips

Table 6 and Table 7 show the resulting internal trip counts.

Table 6 Pedestrian Trips Between Uses, AM Peak Hour

			Total Entering Destination					
			134	20	15	103	13	15
			Students	Affiliated Users	Special Events	Office	Day Care Center	Cafeteria
Total Exit Origin	0	Students						
	0	Affiliated Users						
	0	Special Events						
	24	Office	2					15
	13	Day Care Center				10		
	13	Cafeteria	6			7		

Table 7 Pedestrian Trips Between Uses, PM Peak Hour

			Total Entering Destination					
			282	0	50	29	17	44
			Students	Affiliated Users	Special Events	Office	Day Care Center	Cafeteria
Total Exit Origin	161	Students				3		22
	40	Affiliated Users						
	15	Special Events						
	114	Office	11				14	22
	19	Day Care Center						
	29	Cafeteria	14			15		

Mode Share

The Roux Institute at Northeastern University is anticipating significant percentages of trips to campus will be made by alternative modes (walking, biking, and transit). During the Institutional Development Plan (IDP) process, Ideals and the Roux Institute set aspirational goals for the mode shares associated with the build out of the site. The initial phase will include academic space, business partners, a startup incubator, day care, and a café.

Anticipated future infrastructure investments, including off-street connections, will significantly increase the appeal of biking and walking to campus. The site will also be well-served by transit. The site plan includes a bus stop and layover area, and the applicant is in discussions with Metro to reduce headways and other improvements to transit in the area.

Understanding that some of these improvements are contingent on grant awards and other external factors, the applicant has elected to calculate trips conservatively in this permit. As a result, the auto mode share used for permitting is higher than the goals set out in the IDP and internally. These shares will be more realistic in the campus' first years and likely shift more towards alternative modes as those options continue to improve.

For this permit, trips have been calculated with a 90% auto mode share, 5% transit, and 5% walk/bike for all users except students, which are calculated with an 80/10/10 split.

Peak Hour Trips

After applying the site-specific or ITE person trip profiles outlined above and adjusting for mode share and internal capture, a 24-hour trip generation profile was created for the campus. As shown in Table 8, the peak volume of external vehicle trips occurs from 8:00-9:00 in the morning and 5:00-6:00 pm in the evening. Detailed calculations are provided in Attachment 1C.

Table 8 Peak Hour Trips

Use	AM Peak Hour					PM Peak Hour				
	All Trips	Internal Trips	Transit Trips	Bike/Ped Trips	Vehicle Trips	All Trips	Internal Trips	Transit Trips	Bike/Ped Trips	Vehicle Trips
Students	134	9	13	13	100	443	51	39	39	314
Affiliated Users	20	0	1	1	18	40	0	2	2	36
Special Events	15	0	1	1	14	65	0	3	3	59
Office	127	34	5	5	84	143	64	4	4	70
Faculty[1]	8	0	0	1	7	25	0	1	2	22
Day Care	27	10	1	1	15	36	14	1	1	20
Café	28	28	0	0	0	73	73	0	0	0
Total	**359**	**82**	**20**	**20**	**237**	**825**	**202**	**51**	**51**	**521**

1. Portion of staff/faculty that follow the student distribution

1.F Trip Distribution

Multiple sources of commuting data were consulted to generate a trip distribution pattern for the site. The initial distribution was developed based on US Census Journey to Work data for the City of Portland. Towns were divided into 9 zones based on their likely routing to the campus. This was compared to a roster of student and employee home addresses from the Fall 2023 semester, which found comparable results and supported using the Journey to Work data set. The distribution and routing is shown below in Table 9.

Table 9 Trip Distribution

Zone	% of Commuters	Routing
I-295 Points North	14%	I-295 to Exit 8
I-95 Points North	3%	Exit 53 to ME-100 to Washington Ave
ME-26/100 Points North/West	8%	Washington Ave
US-302 Points North/West	8%	US-302 to Read St to Ocean Ave to Washington Ave
ME-25 Points West	1%	25B-Warren-Forest-Read-Ocean-Washington
I-295 Points South	51%	Entering: 75% to Exit 8 / 25% to Exit 9. Exiting: 50%/50%.
Baxter Blvd	5%	Baxter to Bates to Veranda
US-1 North	7%	Via Martin's Point Bridge
Presumpscot/Rt 9	3%	Presumpscot to Sherwood

1.G Trip Assignment

Using the distribution described above, external vehicle trips were routed through the road network. All vehicle trips are anticipated to start or end at the end of Sherwood Street. New vehicle trips were assigned according to the routing listed in the previous section. The resulting trip assignment is shown in Attachment 1D.

1.H Attachments

Attachment 1A – Site Survey, Proposed Site Plan

Attachment 1B – Site Location Map

Attachment 1C – Trip Generation Calculations

Attachment 1D - Trip Distribution and Project Generated Trips Figures

Attachment 1A

Site Survey

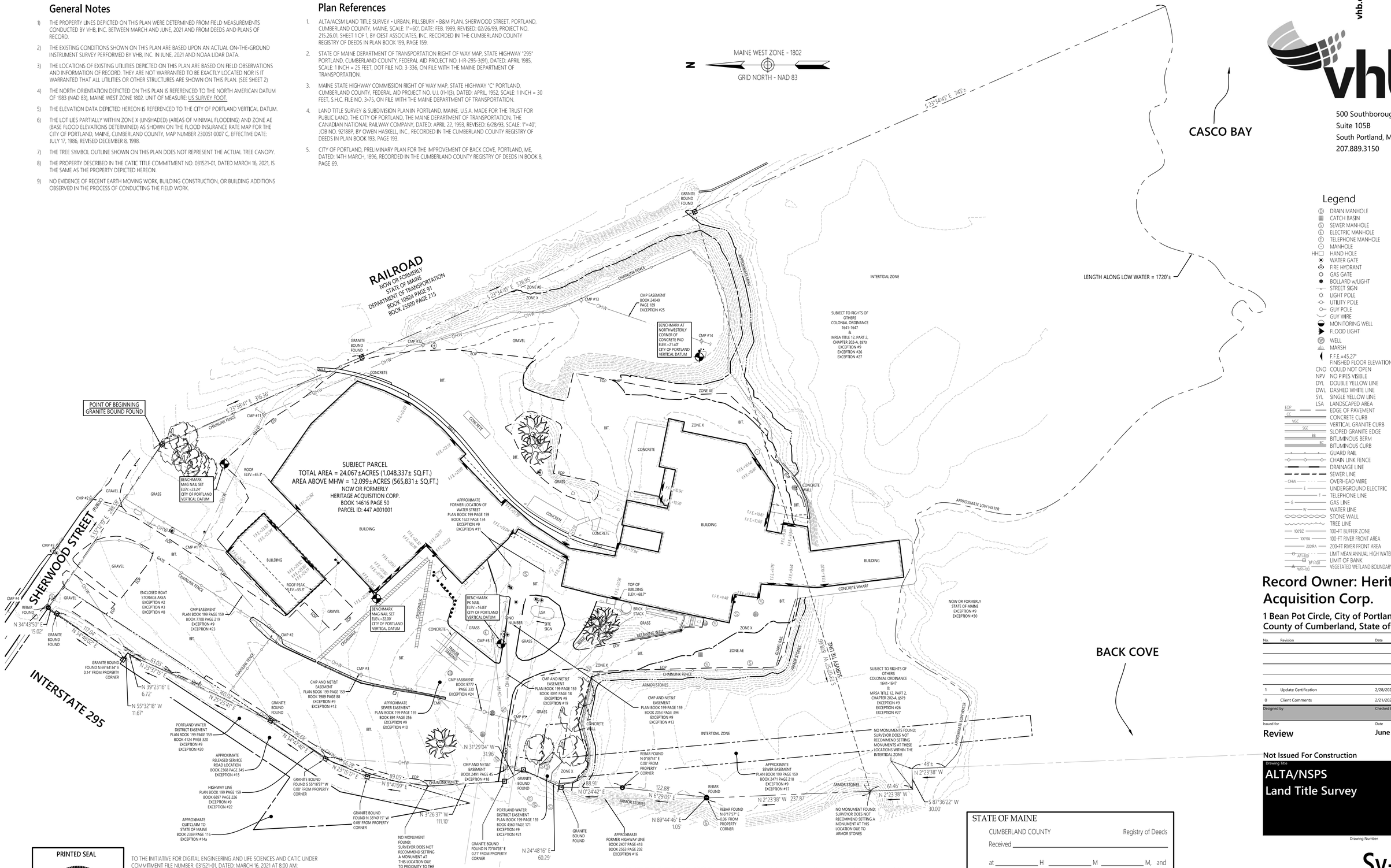
Proposed Site Plan

General Notes

1) THE PROPERTY LINES DEPICTED ON THIS PLAN WERE DETERMINED FROM FIELD MEASUREMENTS CONDUCTED BY VHB, INC. BETWEEN MARCH AND JUNE, 2021 AND FROM DEEDS AND PLANS OF RECORD.
2) THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB, INC. IN JUNE, 2021 AND NOAA LIDAR DATA.
3) THE LOCATIONS OF EXISTING UTILITIES DEPICTED ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. (SEE SHEET 2)
4) THE NORTH ORIENTATION DEPICTED ON THIS PLAN IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), MAINE WEST ZONE 1802. UNIT OF MEASURE: US SURVEY FOOT.
5) THE ELEVATION DATA DEPICTED HEREON IS REFERENCED TO THE CITY OF PORTLAND VERTICAL DATUM.
6) THE LOT LIES PARTIALLY WITHIN ZONE X (UNSHADED) (AREAS OF MINIMAL FLOODING) AND ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF PORTLAND, MAINE, CUMBERLAND COUNTY, MAP NUMBER 230051 0007 C, EFFECTIVE DATE: JULY 17, 1986, REVISED DECEMBER 8, 1998.
7) THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.
8) THE PROPERTY DESCRIBED IN THE CATIC TITLE COMMITMENT NO. 031521-01, DATED MARCH 16, 2021, IS THE SAME AS THE PROPERTY DEPICTED HEREON.
9) NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELD WORK.

Plan References

1. ALTA/ACSM LAND TITLE SURVEY - URBAN, PILLSBURY - B&M PLAN. SHERWOOD STREET, PORTLAND, CUMBERLAND COUNTY, MAINE, SCALE: 1"=60', DATE: FEB. 1999, REVISED: 02/26/99, PROJECT NO. 215.26.01, SHEET 1 OF 1, BY OEST ASSOCIATES, INC. RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 199, PAGE 159.
2. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE HIGHWAY "295" PORTLAND, CUMBERLAND COUNTY, FEDERAL AID PROJECT NO. I-IR-295-3(91), DATED: APRIL 1985, SCALE: 1 INCH = 25 FEET, DOT FILE NO. 3-336, ON FILE WITH THE MAINE DEPARTMENT OF TRANSPORTATION.
3. MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY "C" PORTLAND, CUMBERLAND COUNTY, FEDERAL AID PROJECT NO. U.I. 01-1(3), DATED: APRIL, 1952, SCALE: 1 INCH = 30 FEET, S.H.C. FILE NO. 3-75, ON FILE WITH THE MAINE DEPARTMENT OF TRANSPORTATION.
4. LAND TITLE SURVEY & SUBDIVISION PLAN IN PORTLAND, MAINE, U.S.A. MADE FOR THE TRUST FOR PUBLIC LAND, THE CITY OF PORTLAND, THE MAINE DEPARTMENT OF TRANSPORTATION, THE CANADIAN NATIONAL RAILWAY COMPANY, DATED: APRIL 22, 1993, REVISED: 6/28/93, SCALE: 1"=40', JOB NO. 92188P, BY OWEN HASKELL, INC., RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 193, PAGE 193.
5. CITY OF PORTLAND, PRELIMINARY PLAN FOR THE IMPROVEMENT OF BACK COVE, PORTLAND, ME, DATED: 14TH MARCH, 1896, RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 8, PAGE 69.



Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MONITORING WELL
- FLOOD LIGHT
- W WELL
- MARSH
- F.F.E.=45.27' FINISHED FLOOR ELEVATION
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- DYL DOUBLE YELLOW LINE
- DWL DASHED WHITE LINE
- SYL SINGLE YELLOW LINE
- LSA LANDSCAPED AREA
- EOP EDGE OF PAVEMENT
- CC CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGE SLOPED GRANITE EDGE
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
- GUARD RAIL
- CHAIN LINK FENCE
- DRAINAGE LINE
- SEWER LINE
- OHW OVERHEAD WIRE
- E UNDERGROUND ELECTRIC
- T TELEPHONE LINE
- G GAS LINE
- W WATER LINE
- STONE WALL
- TREE LINE
- 100'BZ 100-FT BUFFER ZONE
- 100'RA 100-FT RIVER FRONT AREA
- 200'RA 200-FT RIVER FRONT AREA
- AHW-100 LIMIT MEAN ANNUAL HIGH WATER
- BH-100 LIMIT OF BANK
- WFT-100 VEGETATED WETLAND BOUNDARY

vhb.com
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500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Record Owner: Heritage Acquisition Corp.

1 Bean Pot Circle, City of Portland
County of Cumberland, State of Maine

No.	Revision	Date	Appvd.
1	Update Certification	2/28/2022	JSG
0	Client Comments	2/21/2022	JSG

Designed by | Checked by

Issued for: **Review** — Date: **June 30, 2021**

Not Issued For Construction

Drawing Title: **ALTA/NSPS Land Title Survey**

Drawing Number: **Sv-1**

Sheet 1 of 3

Project Number: **58570.00**

PRINTED SEAL

STATE OF MAINE — JEFFREY SHERMAN GREINER 2539 PROFESSIONAL LAND SURVEYOR

TO THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCES AND CATIC UNDER COMMITMENT FILE NUMBER: 031521-01, DATED: MARCH 16, 2021 AT 8:00 AM:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6, 7(c), 8, 13, 16, AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED IN JUNE, 2021.

BY Jeffrey Sherman Greiner 2/28/2022
JEFFREY SHERMAN GREINER, P.L.S. #2539 DATE

STATE OF MAINE
CUMBERLAND COUNTY Registry of Deeds
Received _____
at _____ H _____ M _____ M, and
recorded in Book _____ Page _____
ATTEST:
_____ Registrar

Record Owner
HERITAGE ACQUISITION CORP.
4 GATEHOUSE DR. SUITE 110
PARSIPPANY, NJ 07054
PARCEL ID: 447 A001001
BOOK 14616 PAGE 50

Saved Monday, February 28, 2022 10:15:02 AM JGREINER Plotted Monday, February 28, 2022 10:17:10 AM Jeffrey Greiner

vhb.com

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500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

N

MAINE WEST ZONE - 1802

GRID NORTH - NAD 83

CASCO BAY

RAILROAD

SHERWOOD STREET

INTERSTATE 295

BACK COVE

INTERSTATE 295

RECORD DRAINAGE LOCATION

RECORD WATERLINE LOCATION

BENCHMARK MAG NAIL SET ELEV.=23.24' CITY OF PORTLAND VERTICAL DATUM

BENCHMARK MAG NAIL SET ELEV.=22.00' CITY OF PORTLAND VERTICAL DATUM

BENCHMARK PK NAIL ELEV.=16.83' CITY OF PORTLAND VERTICAL DATUM

BENCHMARK AT NORTHWESTERLY CORNER OF CONCRETE PAD ELEV.=21.40' CITY OF PORTLAND VERTICAL DATUM

ASSUMED CONNECTION

GAS LINE MARKED IN FIELD

GAS GATE

LSA

NO NUMBER

TOP OF FRAME = 10.34' INACCESSIBLE AT TIME OF SURVEY

TOP OF FRAME = 8.25' INV A = 3.2' (8" PVC) INV B = 3.4' (12" PVC) INV C = 3.0 (8" PVC)

TOP OF FRAME = 9.63' INV A = 4.1' (10" PVC) INV B = 4.1' (10" PVC) INV C = 3.8' (12" PVC)

TOP OF FRAME = 9.55' INV A = 6.4' (6" PVC) INV B = 6.4' (6" PVC) SUMP = 3.4'

TOP OF FRAME = 9.3' INV A = 4.4' (12" PVC) INV B = 4.8' (6" PVC) INV C = 4.7' (8" PVC) INV D = 4.8' (6" PVC)

TOP OF FRAME = 9.30' FL/ = 5.7' (6" PVC)

TOP OF FRAME = 9.12' INV = 5.7' (12" PVC)

TOP OF FRAME = 8.84' INV A = 3.3' (12" PVC) INV B = 5.0' (12" PVC) INV C = 2.8 (12" PVC)

TOP OF FRAME = 8.41' FL/ = 3.8' (12" PVC)

TOP OF FRAME = 8.71' FL/ = 3.2' (12" PVC)

TOP OF FRAME = 17.60' FULL OF WATER FEATURES NOT VISIBLE

TOP OF FRAME = 17.82' COVER NOT REMOVEABLE AT TIME OF SURVEY

TOP OF FRAME = 11.21' FL/ = 2.5' (12" PVC)

TOP OF FRAME = 15.07' INACCESSIBLE AT TIME OF SURVEY

TOP OF FRAME = 14.93' TOP OF PIPE = 11.3' (6" CAST') TOP OF SILT = 10.9'± OTHER FEATURES NOT VISIBLE

TOP OF FRAME = 15.02' INV = 11.4' (18" CMP) TOP OF SILT = 10.4'±

TOP OF FRAME = 15.47' FL/ = 7.0' (10" CLAY)

32" DIAMETER SMH TOP OF FRAME = 11.15' FL/ = 1.3' (12" PVC)

32" DIAMETER SMH TOP OF FRAME = 11.26' FL/ = -0.4' (12" PVC)

TOP OF FRAME = 11.13' INV A = -0.9' (30" CMP) INV B = -1.0 (30" CMP)

TOP OF FRAME = 14.65'

TOP OF FRAME = 14.75'

FRAME DISLODGED FROM VAULT

TOP OF FRAME = 7.97'

18" CMP INV = 4.1'

18" CMP INV = 4.5'

18" CMP INV = 4.6'

30" CMP

18" CMP INV = 3.6'

12" PVC INV = 1.5'

10" PVC INV = 0.8'

12" PVC

10" PVC

8" PVC

CMP #1

CMP #2

CMP #3

CMP #4

CMP #5.1

CMP #11

CMP #12

CMP #13

CMP #14

OHW

W

G

M

SCALE IN FEET

60 0 60 120

Legend

- DRAIN MANHOLE
- CATCH BASIN
- S SEWER MANHOLE
- E ELECTRIC MANHOLE
- T TELEPHONE MANHOLE
- MANHOLE
- HH HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MONITORING WELL
- FLOOD LIGHT
- W WELL
- MARSH
- F.F.E.=45.27' FINISHED FLOOR ELEVATION
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- DYL DOUBLE YELLOW LINE
- DWL DASHED WHITE LINE
- SYL SINGLE YELLOW LINE
- LSA LANDSCAPED AREA
- EOP EDGE OF PAVEMENT
- CC CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGE SLOPED GRANITE EDGE
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
- GUARD RAIL
- CHAIN LINK FENCE
- DRAINAGE LINE
- SEWER LINE
- OHW OVERHEAD WIRE
- E UNDERGROUND ELECTRIC
- T TELEPHONE LINE
- G GAS LINE
- W WATER LINE
- STONE WALL
- TREE LINE
- 100'BZ 100-FT BUFFER ZONE
- 100'RA 100-FT RIVER FRONT AREA
- 200'RA 200-FT RIVER FRONT AREA
- 30'+/-EM LIMIT MEAN ANNUAL HIGH WATER
- BF=100 LIMIT OF BANK
- WFT-100 VEGETATED WETLAND BOUNDARY

PRINTED SEAL

STATE OF MAINE
JEFFREY SHERMAN GREINER
2358
PROFESSIONAL LAND SURVEYOR

Jeffrey Sherman Greiner

2/28/2022

Heritage Acquisition Corp.

1 Bean Pot Circle, City of Portland
County of Cumberland, State of Maine

No.	Revision	Date	Appvd.
1	Update Certification	2/28/2022	JSG
0	Client Comments	2/21/2022	JSG

Designed by | Checked by

Issued for: **Review** | Date: **June 30, 2021**

Not Issued For Construction

Drawing Title

ALTA/NSPS Land Title Survey Utility Compilation

Drawing Number

Sv-2

Sheet 2 of 3

Project Number **58570.00**

Saved Monday, February 28, 2022 10:15:02 AM JGREINER Plotted Monday, February 28, 2022 10:16:26 AM Jeffrey Greiner

Record Parcel Description

BEGINNING AT A 6-INCH BY 6-INCH GRANITE MONUMENT FOUND INSCRIBED "ECJ #356" MARKING THE SOUTHERLY SIDELINE OF SHERWOOD STREET WESTERLY SIDELINE OF SAID CANADIAN NATIONAL RAILROAD AND FURTHER DESCRIBED AS THE MOST NORTHEASTERLY CORNER OF DESCRIBED PARCEL;

THENCE, S 23-36-55 E, ALONG SAID RAILROAD 316.33 FEET TO A 6-LNCH BY 6-LNCH GRANITE MONUMENT FOUND INSCRIBED "ECJ 356";

THENCE, S 23-36-55 E, ALONG SAID RAILROAD, 526.90 FEET, TO A 4-INCH BY 4-INCH GRANITE MONUMENT WITH A DRILL HOLE;

THENCE, S 23•36•55 E, ALONG SAID RAILROAD, 745 FEET, MORE OR LESS TO THE LOW WATER MARK OF THE CASCO BAY;

THENCE, IN A GENERAL WESTERLY DIRECTION ALONG SAID LOW WATER LINE ABOUT 1,685 FEET TO A POINT ON THE EASTERLY SIDELINE OF INTERSTATE 295;

THENCE, N 2-23-50 W, ALONG SAID SIDELINE, 48 FEET, MORE OR LESS TO A POINT;

THENCE, S 87-30-10 W, ALONG SAID SIDELINE, 30.00 FEET TO A POINT;

THENCE, N 2•23•50 W, ALONG SAID SIDELINE, 61.46 FEET TO A DRILL HOLE FOUND, SAID DRILL HOLE LYING ON A TIE COURSE OF S 73-07-39 W, 878.87 FEET FROM THE PREVIOUS MENTIONED 4-INCH BY 4-INCH GRANITE MONUMENT WITH A DRILL HOLE;

THENCE, N 2-23-50 W, ALONG SAID SIDELINE, 237.87 FEET TO A 5/8 INCH RE-BAR FOUND CAPPED "ECJ #509";

THENCE, N 89-44-34 E, ALONG SAID SIDELINE, 1.05 FEET TO A 5/8 INCH RE-BAR FOUND CAPPED "ECJ #509";

THENCE, N 6-28-53 E, ALONG SAID SIDELINE, 122.88 FEET TO A 5/8 INCH RE-BAR FOUND CAPPED "ECJ #509";

THENCE, N 0•24•30 E, ALONG SAID SIDELINE, 88.91 FEET TO A 4-INCH BY 4-INCH GRANITE MONUMENT FOUND INSCRIBED "ECJ #509";

THENCE, N 24-48-04 E, ALONG SAID SIDELINE, 60.29 FEET TO A 6-INCH BY 6-INCH GRANITE HIGHWAY MONUMENT;

THENCE, N 31-29-16 W, ALONG SAID SIDELINE, 31.96 FEET TO A 4-INCH BY 4-INCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 3•26•49 W, ALONG SAID SIDELINE, 111.10 FEET TO A 5/8 INCH RE-BAR FOUND CAPPED "ECJ #509";

THENCE, N 8-40-57 E, ALONG SAID SIDELINE, 89.05 FEET TO A 4-INCH BY 4-INCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 23-15-05 E, ALONG SAID SIDELINE, 66.28 FEET TO A 4-INCH BY 4-LNCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 34-47-28 E, ALONG SAID SIDELINE, 96.68 FEET TO A 4-LNCH BY 4-LNCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 25-25-29 E, ALONG SAID SIDELINE, 160.02 FEET TO A 5/8 INCH RE-BAR FOUND CAPPED "ECJ #509";

THENCE, N 23-37-03 E, ALONG SAID SIDELINE, 63.03 FEET TO A 4-INCH BY 4-INCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 39-23-04 E, ALONG SAID SIDELINE, 6.72 FEET TO A 6-INCH BY 6-INCH GRANITE MONUMENT FOUND INSCRIBED "ECJ #509";

THENCE, N 55-32-30 W, ALONG SAID SIDELINE, 11.67 FEET TO A 4-INCH BY 4-INCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 34-47-50 E, ALONG SAID SIDELINE, 117.04 FEET TO A 4-INCH BY 4-INCH GRANITE MONUMENT INSCRIBED "ECJ #509";

THENCE, N 34-43-38 E, ALONG SAID SIDELINE, 15.02 FEET TO A 5/8 INCH RE-BAR FOUND CAPPED "ECJ #509" MARKING THE SOUTHERLY SIDELINE OF SHERWOOD STREET;

THENCE, S 55-12-08 E, ALONG SAID SHERWOOD STREET, 288.60 FEET TO THE POINT OF BEGINNING.

As-Surveyed Parcel Description

BEGINNING AT A GRANITE BOUND FOUND AT THE INTERSECTION OF THE SOUTHERLY SIDELINE OF SHERWOOD STREET AND THE WESTERLY SIDELINE OF LAND NOW OR FORMERLY OF THE STATE OF MAINE AS DESCRIBED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 25500, PAGE 215, AND BOOK 10924, PAGE 91 BEING FORMERLY OWNED BY THE ST. LAWRENCE & ATLANTIC RAILROAD COMPANY, IN PART, AND THE CANADIAN NATIONAL RAILWAY COMPANY, IN PART;

THENCE ALONG THE WESTERLY SIDELINE OF LAND OF THE STATE OF MAINE SOUTH 23°38'41" EAST FOR A DISTANCE OF 316.36 FEET TO A GRANITE BOUND FOUND;

THENCE CONTINUING ALONG LAND OF THE STATE OF MAINE SOUTH 23°34'45" EAST FOR A DISTANCE OF 526.95 FEET TO A GRANITE BOUND FOUND;

THENCE CONTINUING ALONG THE LAND OF THE STATE OF MAINE SOUTH 23°34'45" EAST FOR A DISTANCE OF 745 FEET, MORE OR LESS TO THE LOW WATER MARK OF CASCO BAY;

THENCE IN A GENERALLY WESTERLY DIRECTION ALONG THE LOW WATER LINE 1,720 FEET, MORE OR LESS, TO A POINT IN THE EASTERLY SIDELINE OF INTERSTATE 295;

THENCE ALONG THE EASTERLY SIDELINE OF INTERSTATE 295 THE FOLLOWING COURSES AND DISTANCES:

NORTH 2°23'38" WEST FOR A DISTANCE OF 48 FEET, MORE OR LESS TO A POINT;

SOUTH 87°36'22" WEST FOR A DISTANCE OF 30.00 FEET TO A POINT;

NORTH 2°23'38" WEST FOR A DISTANCE OF 61.46 FEET TO A POINT BEING LOCATED SOUTH 73°07'57" WEST AT A DISTANCE OF 878.66 FEET FROM A GRANITE BOUND FOUND ON THE WESTERLY SIDELINE OF LAND NOW OR FORMERLY OF THE STATE OF MAINE;

NORTH 2°23'38" WEST FOR A DISTANCE OF 237.87 FEET TO A POINT;

NORTH 89°44'46" EAST FOR A DISTANCE OF 1.05 FEET TO A REBAR FOUND;

NORTH 6°29'05" EAST FOR A DISTANCE OF 122.88 FEET TO A POINT;

NORTH 0°24'42" EAST FOR A DISTANCE OF 88.91 FEET TO A GRANITE BOUND FOUND;

NORTH 24°48'16" EAST FOR A DISTANCE OF 60.29 FEET TO A GRANITE BOUND FOUND;

NORTH 31°29'04" WEST FOR A DISTANCE OF 31.96 FEET TO A POINT;

NORTH 3°26'37" WEST FOR A DISTANCE OF 111.10 FEET TO A POINT;

NORTH 8°41'09" EAST FOR A DISTANCE OF 89.05 FEET TO A POINT;

NORTH 23°15'17" EAST FOR A DISTANCE OF 66.28 FEET TO A POINT;

NORTH 34°47'40" EAST FOR A DISTANCE OF 96.68 FEET TO A GRANITE BOUND FOUND;

NORTH 25°25'41" EAST FOR A DISTANCE OF 160.02 FEET TO A POINT;

NORTH 23°37'15" EAST FOR A DISTANCE OF 63.03 FEET TO A POINT;

NORTH 39°23'16" EAST FOR A DISTANCE OF 6.72 FEET TO A POINT;

NORTH 55°32'18" WEST FOR A DISTANCE OF 11.67 FEET TO A POINT;

NORTH 34°48'02" EAST FOR A DISTANCE OF 117.04 FEET TO A GRANITE BOUND FOUND;

NORTH 34°43'50" EAST FOR A DISTANCE OF 15.02 FEET TO A REBAR FOUND AT THE SOUTHERLY SIDELINE OF SHERWOOD STREET;

THENCE DEPARTING FROM THE EASTERLY SIDELINE OF INTERSTATE 295 AND RUNNING ALONG THE SOUTHERLY SIDELINE OF SHERWOOD STREET SOUTH 55°12'19" EAST FOR A DISTANCE OF 288.59 FEET TO THE POINT OF BEGINNING.

SAID AS-SURVEYED PARCEL CONTAINS A TOTAL AREA OF APPROXIMATELY 24.067 ACRES, MORE OR LESS (1,048,337 SQUARE FEET, MORE OR LESS), WITH AN AREA ABOVE MEAN HIGH WATER OF APPROXIMATELY 12.099 ACRES, MORE OR LESS (565,831 SQUARE FEET, MORE OR LESS).

Title Notes

REFERENCE SHOULD BE MADE TO CATIC
ALTA COMMITMENT FOR TITLE INSURANCE
FILE NO. 031521-01 DATE OF MARCH 16, 2021 AT 8:00 AM.

1. ANY DEFECT, LIEN, ENCUMBRANCE, ADVERSE CLAIM, OR OTHER MATTER THAT APPEARS FOR THE FIRST TIME IN THE PUBLIC RECORDS OR IS CREATED, ATTACHES, OR IS DISCLOSED BETWEEN THE COMMITMENT DATE AND THE DATE ON WHICH ALL OF THE SCHEDULE B, PART I—REQUIREMENTS ARE MET.
   NOT SURVEY RELATED

2. RIGHTS OR CLAIMS OF PERSONS IN POSSESSION, OTHER THAN THE INSURED, WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS.
   NOT SURVEY RELATED

3. ANY EASEMENTS OR CLAIMS OF EASEMENTS NOT SHOWN BY THE PUBLIC RECORDS, BOUNDARY LINE DISPUTES, OVERLAPS, ENCROACHMENTS, TITLE TO FILLED LANDS (IF ANY) AND ALL OTHER FACTS WHICH AN ACCURATE SURVEY AND INSPECTION OF THE LAND WOULD DISCLOSE AND WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS. WHEN THE POLICY ISSUED IS ON A FORM HAVING A REVISION DATE OF 6-17-06, THIS EXCEPTION ALSO REFERS TO ALL THOSE MATTERS DESCRIBED IN COVERED RISK 2(C).
   NOTED ON PLAN

4. UNRECORDED MECHANICS' LIENS.
   NOT SURVEY RELATED

5. REAL ESTATE TAXES, MUNICIPAL ASSESSMENTS AND PRIVATE ASSOCIATION ASSESSMENTS, IF ANY, INCLUDING LIENS AND ASSESSMENTS, NOT YET DUE AND PAYABLE.
   NOT SURVEY RELATED

6. THE EXACT ACREAGE OR SQUARE FOOTAGE OF THE LAND WILL NOT BE INSURED.
   NOTED ON PLAN

7. TITLE TO AND RIGHTS OF THE PUBLIC AND OTHERS ENTITLED THERETO IN AND TO THOSE PORTIONS OF THE INSURED PREMISES LYING WITHIN THE BOUNDS OF ADJACENT STREETS, ROADS AND WAYS.
   NOTED ON PLAN

8. RIGHTS OF THE TENANTS IN POSSESSION AT WILL OR UNDER UNRECORDED LEASES.
   NOTED ON PLAN

9. SUCH STATE OF FACTS INCLUDING NOTES DISCLOSED ON PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY - URBAN, PILLSBURY - B&M PLANT, SHERWOOD STREET, PORTLAND, CUMBERLAND COUNTY, MAINE FOR B&G FOODS - PILLSBURY COMPANY BY OEST ASSOCIATES, INC. DATED FEBRUARY, 1999 LAST REVISED FEBRUARY 26, 1999, RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 199, PAGE 159.
   PERTINENT INFORMATION ON REFERENCED PLAN DEPICTED HEREON

10. RIGHTS AND EASEMENT SET FORTH IN EASEMENT DEED FROM BURNHAM & MORRILL COMPANY TO SARAH JORDAN AND ISABELLE JORDAN SAUNDERS DATED APRIL 18, 1912 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 891, PAGE 256.
    NOTED ON PLAN

11. AGREEMENT BY AND BETWEEN THE CITY OF PORTLAND AND BURNHAM AND MORRILL COMPANY DATED SEPTEMBER 16, 1940 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 1622, PAGE 134.
    NOTED ON PLAN

12. RIGHTS AND EASEMENTS GRANTED BY BURNHAM & MORRILL COMPANY TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY BY INSTRUMENT DATED JULY 14, 1948 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 1989, PAGE 88.
    NOTED ON PLAN

13. RIGHTS AND EASEMENTS GRANTED BY BURNHAM & MORRILL COMPANY TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY BY INSTRUMENT DATED JULY 5, 1951 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2053, PAGE 394.
    NOTED ON PLAN

14. NOTICE OF TAKING BY THE MAINE STATE HIGHWAY COMMISSION DATED AUGUST 12, 1953 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2146, PAGE 400, AS AFFECTED BY:
    a. QUITCLAIM DEED WITH COVENANT GRANTED BY BURNHAM AND MORRILL COMPANY TO THE STATE OF MAINE DATED JULY 17, 1957 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2369, PAGE 116.
       NON-LOCUS; NOTED ON PLAN

15. RELEASE FROM THE STATE OF MAINE TO BURNHAM & MORRILL COMPANY DATED AUGUST 7, 1957 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2368, PAGE 345.
    NOTED ON PLAN

16. LAYOUT AND NOTICE OF TAKING BY THE MAINE STATE HIGHWAY COMMISSION DATED APRIL 30, 1958 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2407, PAGE 418 AND RELATED RECEIPT OF CONFIRMATION OF TAKING BY BURNHAM & MORRILL COMPANY TO THE STATE OF MAINE DATED SEPTEMBER 11, 1960 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2563, PAGE 202.
    NOTED ON PLAN

17. EASEMENT DEED GRANTED BY BURNHAM & MORRILL CO. TO THE CITY OF PORTLAND DATED MAY 6, 1959 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2471, PAGE 218.
    NOTED ON PLAN

18. RIGHTS AND EASEMENTS GRANTED BY BURNHAM & MORRILL COMPANY TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY BY INSTRUMENT DATED MAY 1, 1959 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 2491, PAGE 45.
    NOTED ON PLAN

19. RIGHTS AND EASEMENTS GRANTED BY GEORGE C. SEYBOLT, MELVILLE CHAPIN, AND RICHARD P. CHAPMAN, TRUSTEES UNDER A DECLARATION OF TRUST DATED MAY 31, 1966 TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY BY INSTRUMENT DATED MARCH 4, 1969 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 3091, PAGE 18.
    NOTED ON PLAN

20. RIGHTS, EASEMENTS, TERMS AND CONDITIONS SET FORTH IN EASEMENT DEED GRANTED BY GEORGE C. SEYBOLT, MELVILLE CHAPIN, AND RICHARD CHAPMAN, TRUSTEES UNDER A DECLARATION OF TRUST FOR THE BENEFIT OF WILLIAM UNDERWOOD COMPANY DATED MAY 31, 1966, TO PORTLAND WATER DISTRICT DATED OCTOBER 26, 1977 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 4124, PAGE 320.
    NOTED ON PLAN

21. RIGHTS, EASEMENTS, TERMS AND CONDITIONS SET FORTH IN EASEMENT DEED FROM GEORGE C. SEYBOLT, MELVILLE CHAPIN, AND RICHARD CHAPMAN, TRUSTEES UNDER A DECLARATION OF TRUST FOR THE BENEFIT OF WILLIAM UNDERWOOD COMPANY DATED MAY 31, 1966 TO PORTLAND WATER DISTRICT DATED DECEMBER 20, 1978 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 4360, PAGE 171.
    NOTED ON PLAN

22. NOTICE OF LAYOUT AND TAKING BY THE STATE OF MAINE BY ITS DEPARTMENT OF TRANSPORTATION DATED SEPTEMBER 3, 1985 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 6897, PAGE 226.
    NOTED ON PLAN

23. RIGHTS AND EASEMENT GRANTED BY BURNHAM & MORRILL CO. A DIVISION OF PET INC. TO CENTRAL MAINE POWER COMPANY BY INSTRUMENT DATED OCTOBER 31, 1986 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 7708, PAGE 219.
    NOTED ON PLAN

24. RIGHTS AND EASEMENTS GRANTED BY P.E.T. INCORPORATED TO CENTRAL MAINE POWER COMPANY AND NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY, BY INSTRUMENT DATED OCTOBER 22, 1991 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 9777, PAGE 330.
    NOTED ON PLAN

25. RIGHTS AND EASEMENTS GRANTED BY HERITAGE ACQUISITION CORP. TO CENTRAL MAINE POWER COMPANY AND VERIZON NEW ENGLAND, INC. BY INSTRUMENT DATED FEBRUARY 7, 2006 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 24049, PAGE 189.
    NOTED ON PLAN

26. TITLE TO AND THE RIGHTS OF OTHERS IN AND TO THE LAND LYING BELOW THE MEAN HIGH WATER MARK.
    NOTED ON PLAN

27. RIGHTS OF THE PUBLIC UNDER THE COLONIAL ORDINANCE OF 1641-1647 AND THE FEDERAL NAVIGATIONAL SERVITUDE TO THAT PORTION OF THE PREMISES THAT LIES BELOW THE HIGH WATER MARK.
    NOTED ON PLAN

28. CLAIMS THAT SOME PORTION OF SAID LAND HAS BEEN CREATED BY ARTIFICIAL MEANS, OR HAS ACCRETED TO SUCH PORTION SO CREATED.
    NOT SURVEY RELATED

29. CLAIMS THAT SOME PORTION OF SAID LAND HAS BEEN BROUGHT WITHIN THE BOUNDARIES THEREOF BY AVULSIVE MOVEMENT OR HAS BEEN FORMED BY ACCRETION TO ANY SUCH PORTION.
    NOT SURVEY RELATED

30. OWNERSHIP RIGHTS OF THE STATE OF MAINE IN SO MUCH OF THE PREMISES AS LIES BELOW THE MEAN LOW WATER MARK AS SHOWN ON THE PLAN.
    NOTED ON PLAN

31. TERMS AND PROVISIONS CREATING A PORTION OF THE INSURED ESTATE AS EVIDENCED BY A SUBMERGED LANDS LEASE BY AND BETWEEN THE BUREAU OF PARKS AND LAND, AS AGENCY FOR THE STATE OF MAINE DEPARTMENT OF CONSERVATION, AS LANDLORD AND HERITAGE ACQUISITION CORPORATION, AS TENANT, DATED MARCH 29, 2006.
    UNABLE TO PLOT

vhb.com
vhb
500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Heritage Acquisition Corp.

1 Bean Pot Circle, City of Portland
County of Cumberland, State of Maine

No.	Revision	Date	Appvd.
1	Update Certification	2/28/2022	JSG
0	Client Comments	2/21/2022	JSG

Designed by | Checked by

Issued for: **Review**
Date: **June 30, 2021**

Not Issued For Construction

Drawing Title:
ALTA/NSPS Land Title Survey Descriptions & Title Notes

Drawing Number:
Sv-3

Sheet 3 of 3

Project Number:
58570.00

Saved Monday, February 28, 2022 10:15:02 AM JGREINER Plotted Monday, February 28, 2022 10:15:52 AM Jeffrey Greiner

NOTES:
1. SEE LANDSCAPE PLANS FOR SITE SURFACE MATERIAL ASSOCIATED WITH LANDSCAPED AREAS, PATIOS, AND NON-BITUMINOUS WALKWAYS & ROADWAYS, PLANTING PLANS AND SITE FURNISHINGS.
2. UTILITY AND DRAINAGE STRUCTURES NOT SHOWN FOR CLARITY, SEE GRADING AND DRAINAGE AND UTILITY PLAN FOR MORE INFORMATION.
3. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN
CONCRETE SIDEWALK, TYP.
PEDESTRIAN RAMP, TYP.
BIKE LANE STRIPING PER CITY OF PORTLAND TECHNICAL MANUAL
DOUBLE YELLOW CENTERLINE STRIPE, TYP.
FLUSH GRANITE CURB, TYP.
CROSSWALK, TYP.
VERTICAL GRANITE CURB, TYP.
PWD SEWER EASEMENT
STOP SIGN, TYP.
STOP BAR, TYP.
LIMIT OF WORK
PROPERTY BOUNDARY, TYP.
4" LOAM & SEED, TYP.
SIDEWALK RAMP DETECTABLE WARNING, TYP.
STOP SIGN, TYP.
STOP BAR, TYP.
CONCRETE PAD, TYP.
CONCRETE SIDEWALK, TYP.
PWD SEWER EASEMENT
BITUMINOUS PAVEMENT, TYP.
TIPDOWN, TYP.
FLUSH GRANITE CURB, TYP.
STOP BAR, TYP.
STOP SIGN, TYP.
VEHICULAR PRECAST CONCRETE PAVERS, TYP. SEE LANDSCAPE PLANS
TREE, TYP. SEE LANDSCAPE PLANS
DO NOT ENTER SIGN, TYP.
5'X8' STANDARD PAD-MOUNTED BUS SHELTER (2) MIN 2'-8" OPENING FOR EACH
ONE WAY AND ROUNDABOUT SIGN, TYP.
TIMBER GUARDRAIL, TYP. SEE LANDSCAPE PLANS
4" LOAM & SEED, TYP.
ARCHITECTURAL CONCRETE RETAINING WALL, SEE STRUCTURAL PLANS
VEHICULAR ASPHALT PAVING, TYP. SEE LANDSCAPE PLANS
ACCESSIBLE PARKING SPACE, TYP.
ONE WAY SIGN, TYP.
4" LOAM & SEED, TYP.
CURB STOP, TYP.
ACCESSIBLE PARKING SPACE SIGN (MUTCD R7-8), TYP. AT MARKED ACCESSIBLE SPACES
MOUNTABLE GRANITE CURB, TYP.
BIKE RACK, TYP. SEE LANDSCAPE PLANS
PARKING GARAGE
MATCHLINE SEE INSET A, SHT. C-303
MATCHLINE SEE SHEET C-102
MATCHLINE SEE SHEET C-102
PARK
PARK
WALK
WALK

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

Drawing Title
SITE LAYOUT PLAN - 1

C-101

MATCHLINE SEE SHEET C-101

MATCHLINE SEE SHEET C-101

PARKING GARAGE

DAY CARE CENTER

LEARNING RESEARCH & COLLABORATION BUILDING

BEAN BUILDING

MATCHLINE SEE INSET A, SHT. C-303

MATCHLINE SEE INSET B, SHT. C-303

DO NOT ENTER SIGN, TYP.

ONE WAY AND ROUNDABOUT SIGN, TYP.

ONE WAY SIGN, TYP.

PEDESTRIAN RAMP, TYP.

CROSSWALK, TYP.

AUTHORIZED VEHICLES ONLY SIGN, TYP.

ACCESSIBLE PARKING SPACE, TYP.

ACCESSIBLE PARKING SPACE SIGN (MUTCD R7-8), TYP. AT MARKED ACCESSIBLE SPACES

SIDEWALK RAMP DETECTABLE WARNING, TYP.

VEHICULAR GATE WITH KNOX LOCKBOX, TYP.

CURB STOP, TYP.

FLUSH GRANITE CURB, TYP.

VERTICAL GRANITE CURB, TYP.

BITUMINOUS PAVEMENT, TYP.

CONCRETE SIDEWALK, TYP.

TIPDOWN, TYP.

PEDESTRIAN GATE, TYP.

FENCE, TYP.

PWD SEWER EASEMENT

BENCH, TYP. SEE LANDSCAPE PLANS

BOLLARD, TYP. SEE LANDSCAPE PLANS

GRANITE COBBLESTONE PAVERS, TYP. SEE LANDSCAPE PLANS

TREE, TYP. SEE LANDSCAPE PLANS

VEHICULAR CONCRETE PAVEMENT, TYP. SEE LANDSCAPE PLANS

4" LOAM & SEED, TYP.

BIKE RACK, TYP. SEE LANDSCAPE PLANS

VEHICULAR GRANITE PAVERS, TYP. SEE LANDSCAPE PLANS

STAIR, TYP. SEE LANDSCAPE PLANS

STONE RETAINING WALL, TYP. SEE LANDSCAPE PLANS

VEHICULAR GRANITE PAVERS, TYP. SEE LANDSCAPE PLANS

APPROXIMATE FLOOD ZONE LINE BY ELEVATION

EXISTING PIERS

MEAN TIDE (0)

ZONE AE (EL. 9)

INTERTIDAL ZONE

HAT (7.39')

MHW (6.30')

MLW (0.80')

MEAN TIDE (0)

ROOF OVERHANG

SEE LANDSCAPE PLANS FOR ROOF LANDSCAPING

VEHICULAR PRECAST CONCRETE PAVERS, TYP. SEE LANDSCAPE PLANS

ARCHITECTURAL CONCRETE RETAINING WALL, TYP. SEE LANDSCAPE PLANS

STAIR, TYP. SEE LANDSCAPE PLANS

STONE RETAINING WALL, TYP. SEE LANDSCAPE PLANS

VEHICULAR GRANITE PAVERS, TYP. SEE LANDSCAPE PLANS

MOUNTABLE GRANITE CURB, TYP.

VEHICULAR ASPHALT PAVING, TYP. SEE LANDSCAPE PLANS

TIMBER GUARDRAIL, TYP., SEE LANDSCAPE PLANS

ARCHITECTURAL CONCRETE RETAINING WALL, TYP.

ROOF OVERHANG, TYP.

RAMP TO LOADING DOCK

PROPERTY BOUNDARY, TYP.

LIMIT OF WORK, TYP.

SEE LANDSCAPE PLAN FOR MORE DETAIL ON SURFACE MATERIALS

APPROXIMATE FLOOD ZONE LINE BY ELEVATION (EL. 9)

APPROXIMATE FEMA FLOOD ZONE LINE

NOTES:
1. REFER TO SHEET C-101 FOR GENERAL SITE LAYOUT PLAN NOTES.
2. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

Drawing Title
SITE LAYOUT PLAN - 2

C-102

Attachment 1B

Site Location Map

SITE LOCATION MAP



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.1 Miles

1 inch = 0.08 miles

Date: 11/3/2023
Time: 9:09:53 AM

Attachment 1C

Trip Generation Calculations

Trip Generation - Opening + 5 Years program

Total Site generated trips (not accounting for internal, pass-by, or diverted trips)

Site Land Uses and Descriptions				WEEKDAY 24-HOUR TRIP GENERATION								HOURLY TRIP GENERATION																							
				average				regression		# trips																											
Code	Land Use	Size	Unit	# studies	Avg Rate	Std Dev.	Total by Avg	r^2	total by Eq'n	Method Chosen	Total Trips	Dir	12am	1am	2am	3am	4am	5am	6am	7am	**8am**	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	**5pm**	6pm	7pm	8pm	9pm	10pm	11pm
	Graduate Students	3123																																	
	AM Users, Daily On Campus	537								Custom	1074	Enter	0	0	0	0	0	0	0	54	**134**	107	134	107	0	0	0	0	161	**282**	161	81	81	40	0	0
	PM Users, Daily On Campus	806								Custom	1611	Exit	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	54	134	161	**161**	148	121	121	282	161	0
												Enter	0	0	0	0	0	0	0	10	**20**	40	20	10	0	0	0	0	0	**0**	0	0	0	0	0	0
	Affiliated Users	100								Custom	200	Exit	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	10	20	**40**	20	10	0	0	0	0
	Special Events	150																																	
	Workday Events	25								Custom	50																									
	Lunch Events	25								Custom	50	Enter	0	0	0	0	0	0	0	5	**15**	5	0	20	5	0	0	0	10	**50**	40	0	0	0	0	0
	Night Events	100								Custom	200	Exit	0	0	0	0	0	0	0	0	**0**	0	0	0	0	5	20	0	5	**15**	25	50	30	0	0	0
710	General Office																																		
	Embedded Startups	100	Employees																																
	Faculty, staff, and researchers	225	Employees																																
	Signature Partners	64	Employees	52	3.33	1.44	1295	0.86	1440	regression	1440	Enter	1	0	0	0	1	3	35	98	**103**	45	40	43	73	65	60	53	39	**29**	12	6	5	4	2	3
												Exit	1	1	0	1	1	1	4	14	**24**	32	43	74	73	48	47	60	109	**114**	19	17	9	12	15	2
	Academic Faculty		:mployees							Custom	150	Enter	0	0	0	0	0	0	0	3	**8**	6	8	6	0	0	0	0	9	**16**	9	5	5	2	0	0
												Exit	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	3	8	9	**9**	8	7	7	16	9	0
												Enter	0	0	0	0	0	1	6	20	**13**	6	3	3	2	3	4	8	14	**17**	2	0	0	0	0	0
565	Day Care Center	50	Child Capacity	14	4.09	1.21	205	0.72	225	average	205	Exit	0	0	0	0	0	0	4	17	**13**	5	3	3	3	3	5	7	14	**19**	7	0	0	0	0	0
												Enter	2	0	1	1	1	3	7	12	**15**	17	24	52	53	28	17	14	27	**44**	43	31	18	11	6	2
932	High Turnover (Sit-Down) Restaurant	8	1k sf GFA	50	107.20	66.72	858	n/a	n/a	average	858	Exit	3	1	1	2	1	1	4	8	**13**	15	19	30	53	48	22	17	17	**29**	37	39	30	21	12	6
												total	7	2	2	3	5	9	60	240	**359**	277	293	348	262	200	231	311	595	**825**	532	366	306	387	206	13
												enter	3	0	1	1	2	7	48	201	**308**	226	228	241	134	96	81	74	260	**437**	268	122	109	57	8	5
												exit	4	2	1	2	3	2	12	39	**51**	51	65	106	128	104	150	236	336	**387**	264	244	197	330	198	8

Trip Generation - Opening + 5 Years program

Total Site generated trips (not accounting for internal, pass-by, or diverted tr

Site Land Uses and Descriptions			
Code	Land Use	Size	Unit
	Graduate Students	3123	
	AM Users, Daily On Campus	537	
	PM Users, Daily On Campus	806	
	Affiliated Users	100	
	Special Events	150	
	Workday Events	25	
	Lunch Events	25	
	Night Events	100	
710	General Office		
	Embedded Startups	100	Employees
	Faculty, staff, and researchers	225	Employees
	Signature Partners	64	Employees
	Academic Faculty	75	Employees
565	Day Care Center	50	Child Capacity
932	High Turnover (Sit-Down) Restaurant	8	1k sf GFA

AM PEAK HOUR DETAIL									
AM PEAK HOUR	8am		Auto		Transit		Bike/Walk	
All Trips	On-Site Ped Trips	External Trips	Mode Share	Trips	Mode Share	Trips	Mode Share	Trips
134	**9**	**125**	**80%**	**100**	**10%**	**13**	**10%**	**13**
0	0	**0**	80%	**0**	10%	**0**	10%	0
20	**0**	**20**	90%	**18**	5%	**1**	5%	**1**
0	0	**0**	90%	**0**	5%	**0**	5%	0
15	**0**	**15**	90%	**14**	5%	**1**	5%	**1**
0	0	**0**	90%	**0**	5%	**0**	5%	0
103	**17**	**86**	**90%**	**77**	**5%**	**4**	**5%**	**4**
24	17	**7**	90%	**7**	5%	**0**	5%	0
8	**0**	**8**	**90%**	**7**	**5%**	**0**	**5%**	**0**
0	0	**0**	90%	**0**	5%	**0**	5%	0
13	**0**	**13**	90%	**12**	5%	**1**	5%	**1**
13	10	**3**	90%	**2**	5%	**0**	5%	0
15	**15**	**0**	90%	**0**	5%	**0**	5%	**0**
13	13	**0**	90%	**0**	5%	**0**	5%	0

PM PEAK HOUR DETAIL									
PM PEAK HOUR	5pm		Auto		Transit		Bike/Walk	
All Trips	On-Site Ped Trips	External Trips	Mode Share	Trips	Mode Share	Trips	Mode Share	Trips
282	**26**	**256**	**80%**	**205**	**10%**	**26**	**10%**	**26**
161	25	**136**	80%	109	10%	14	10%	14
0	**0**	**0**	90%	**0**	5%	**0**	5%	**0**
40	0	**40**	90%	36	5%	2	5%	2
50	**0**	**50**	90%	**45**	5%	**3**	5%	**3**
15	0	**15**	90%	14	5%	1	5%	1
29	**17**	**11**	**90%**	**10**	**5%**	**1**	**5%**	**1**
114	47	**67**	90%	60	5%	3	5%	3
16	**0**	**16**	**90%**	**14**	**5%**	**1**	**5%**	**1**
9	0	**9**	90%	8	5%	0	5%	0
17	**14**	**3**	90%	**3**	5%	**0**	5%	**0**
19	0	**19**	90%	17	5%	1	5%	1
44	**44**	**0**	90%	**0**	5%	**0**	5%	**0**
29	29	**0**	90%	0	5%	0	5%	0

AM Peak Hour (8am)					
All Trips	On-Site Ped	Bike/Ped	Transit	Vehicle	
308	41	20	20	227	Enter
51	41	0	0	10	Exit
359	82	20	20	237	Total

PM Peak Hour (5pm)					
All Trips	On-Site Ped	Bike/Ped	Transit	Vehicle	
437	101	30	30	276	Enter
388	101	21	21	245	Exit
825	202	51	51	521	Total

AM PEAK HOUR ON-SITE PED

1. Origin/Destination Pairs Calculated as a % of Trips Entering Destination Use

Origin ↓ \ Destination →	Students	Affiliated Users	Special Events	Office	Day Care Center	Cafeteria
Students						0%
Affiliated Users						
Special Events						
Office						100%
Day Care Center						
Cafeteria						

2. Origin/Destination Pairs Calculated as a % of Trips Exiting Origin Use

Origin ↓ \ Destination →	Students	Affiliated Users	Special Events	Office	Day Care Center	Cafeteria
Students						
Affiliated Users						
Special Events						
Office	10%					
Day Care Center				80%		
Cafeteria	50%			50%		

PM PEAK HOUR ON-SITE PED

1. Origin/Destination Pairs Calculated as a % of Trips Entering Destination Use

Origin ↓ \ Destination →	Students	Affiliated Users	Special Events	Office	Day Care Center	Cafeteria
Students				10%		50%
Affiliated Users						
Special Events						
Office					80%	50%
Day Care Center						
Cafeteria						

2. Origin/Destination Pairs Calculated as a % of Trips Exiting Origin Use

Origin ↓ \ Destination →	Students	Affiliated Users	Special Events	Office	Day Care Center	Cafeteria
Students						
Affiliated Users						
Special Events						
Office	10%					
Day Care Center						
Cafeteria	50%			50%		

CALCULATED ON-SITE PED TRIPS

AM PEAK HOUR

Total Exit	Origin ↓ \ Destination →	Total Entering: 134 Students	20 Affiliated Users	15 Special Events	103 Office	13 Day Care Center	15 Cafeteria
0	Students						
0	Affiliated Users						
0	Special Events						
24	Office	2					15
13	Day Care Center				10		
13	Cafeteria	7			7		

PM PEAK HOUR

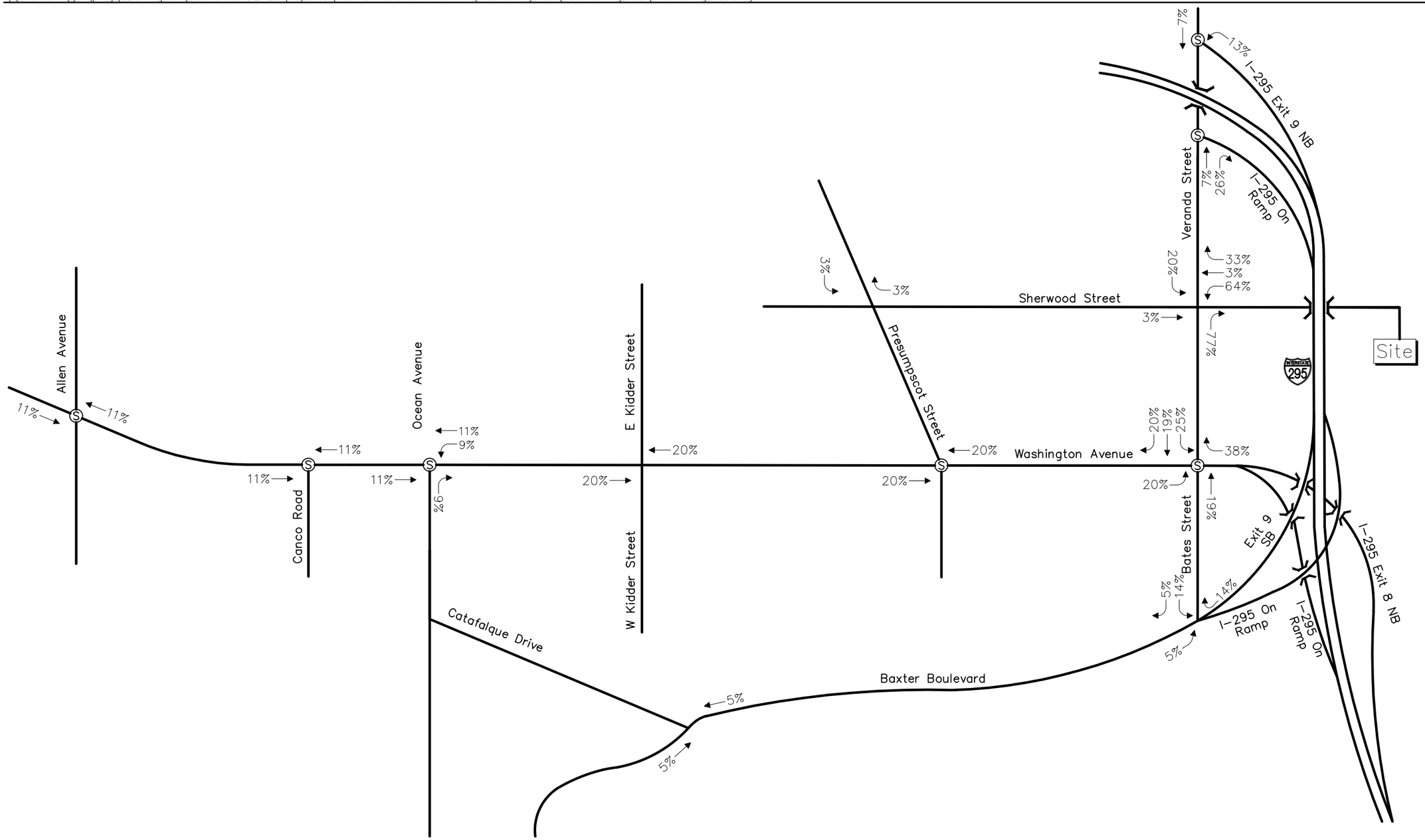
Total Exit	Origin ↓ \ Destination →	Total Entering: 282 Students	0 Affiliated Users	50 Special Events	29 Office	17 Day Care Center	44 Cafeteria
161	Students				3		22
40	Affiliated Users						
15	Special Events						
114	Office	11				14	22
19	Day Care Center						
29	Cafeteria	15			15		

Hourly Distribution of Entering and Exiting Trips, as a % of 24-hour trips

Land Use or User	Students (Day Users)		Students (Night Users)		Affiliated Users		Special Events (Day)		Special Events (Lunch)		Special Events (Night)		Day Care		General Office		Cafeteria	
ITE or Custom	Custom		Custom		Custom		Custom		Custom		Custom		ITE 565		ITE 710		ITE 932	
Time	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
12:00 - 1:00 AM															0.2%	0.1%	0.4%	0.7%
1:00 - 2:00 AM															0.0%	0.1%	0.1%	0.3%
2:00 - 3:00 AM															0.0%	0.0%	0.3%	0.2%
3:00 - 4:00 AM															0.0%	0.1%	0.2%	0.4%
4:00 - 5:00 AM															0.2%	0.2%	0.2%	0.3%
5:00 - 6:00 AM													1.0%	0.2%	0.4%	0.1%	0.7%	0.2%
6:00 - 7:00 AM													6.3%	4.3%	4.8%	0.5%	1.7%	0.9%
7:00 - 8:00 AM	10.0%				10.0%		20.0%						19.5%	16.3%	13.6%	2.0%	2.7%	1.8%
8:00 - 9:00 AM	25.0%				20.0%		60.0%						13.2%	12.8%	14.3%	3.4%	3.4%	3.1%
9:00 - 10:00 AM	20.0%				40.0%		20.0%						5.4%	4.6%	6.3%	4.4%	4.0%	3.4%
10:00 - 11:00 AM	25.0%				20.0%								2.6%	2.9%	5.5%	6.0%	5.5%	4.4%
11:00 - 12:00 PM	20.0%				10.0%				80.0%				2.6%	2.6%	6.0%	10.3%	12.1%	6.9%
12:00 - 1:00 PM									20.0%				2.1%	2.6%	10.2%	10.1%	12.4%	12.3%
1:00 - 2:00 PM										20.0%			3.0%	3.2%	9.0%	6.6%	6.5%	11.2%
2:00 - 3:00 PM		10.0%								80.0%			4.1%	4.5%	8.3%	6.5%	4.0%	5.1%
3:00 - 4:00 PM		25.0%				10.0%							7.5%	6.9%	7.3%	8.4%	3.3%	4.0%
4:00 - 5:00 PM		30.0%	20.0%			20.0%		20.0%			10.0%		13.6%	14.0%	5.4%	15.2%	6.2%	3.9%
5:00 - 6:00 PM		30.0%	35.0%			40.0%		60.0%			50.0%		16.7%	18.7%	4.0%	15.8%	10.2%	6.8%
6:00 - 7:00 PM		5.0%	20.0%	15.0%		20.0%		20.0%			40.0%	20.0%	2.4%	6.4%	1.7%	2.6%	10.1%	8.7%
7:00 - 8:00 PM			10.0%	15.0%		10.0%						50.0%			0.9%	2.3%	7.2%	9.2%
8:00 - 9:00 PM			10.0%	15.0%								30.0%			0.7%	1.3%	4.3%	7.1%
9:00 - 10:00 PM			5.0%	35.0%											0.5%	1.6%	2.6%	4.8%
10:00 - 11:00 PM				20.0%											0.3%	2.1%	1.4%	2.9%
11:00 - 12:00 AM															0.4%	0.3%	0.5%	1.4%

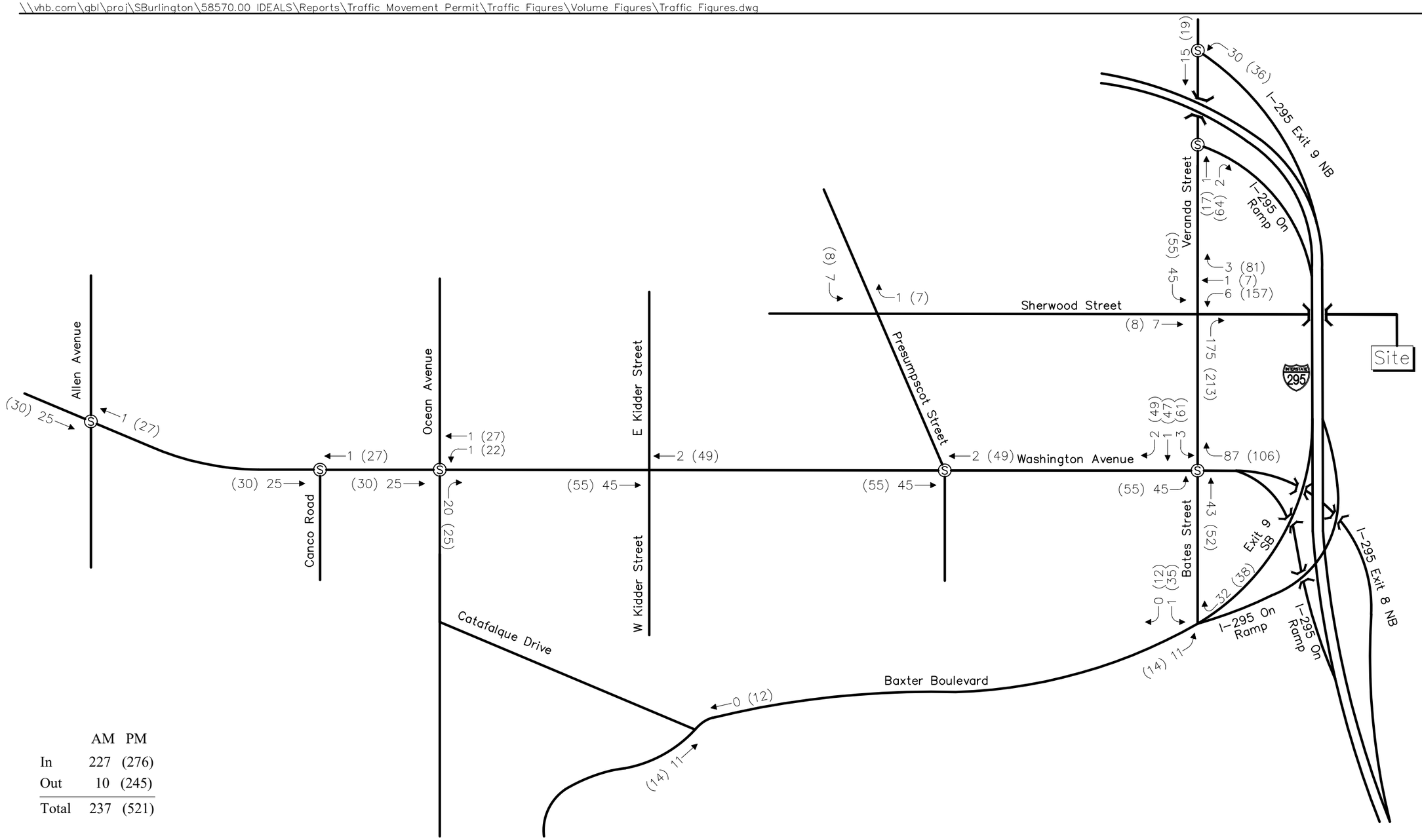
Attachment 1D

Trip Distribution
Project Generated Trips
Figures



Not to Scale

Figure 1
Trip Distribution



	AM	PM
In	227	(276)
Out	10	(245)
Total	237	(521)

Not to Scale

Figure 2
Site Generated Trips

2

Section 2: Traffic Crashes

2.A Crash Summary Data

VHB obtained the crash data from MaineDOT for the period 2020-2022, the most recent three-year period available.

In order to evaluate whether a location has a crash problem, MaineDOT uses two criteria to define a High Crash Location (HCL). Both criteria must be met in order to be classified as an HCL.

1. A critical rate factor (CRF) of 1.00 or more for a three-year period. A CRF compares the actual crash rate to the rate for similar intersections in the state. A CRF of less than 1.00 indicated a rate of less than average and:
2. A minimum of eight crashes over the same three-year period

Based on the crash data provided by MaineDOT, there are four HCLs in the site vicinity.

The crash information for the intersections in the site vicinity is provided in Attachment 2.

Table 5 High Crash Locations

Location	Total (CRF)	Crash Severity		
		Fatal	Injury	PDO
Ocean Ave from Catafalque Dr to Washington Ave	9 (1.90)	0	1	7
Washington Ave from Galvin St to Bates St	8 (1.15)	0	3	5
Washington Ave from Presumpscot St to Cummings	9 (1.15)	0	2	6
Washington Ave from Ocean Ave to Byfield Rd	12 (1.59)	0	3	9

It is important to note that the intersection of Veranda Street / I-295 SB Ramp / Wordsworth Street (Node 60334) is also identified as an HCL during the 2020-2022 period with a total of 10 crashes and a CRF of 4.75. This intersection was part of The Veranda Plan and has been recently reconstructed. MaineDOT has informed VHB that an HCL diagram will not be provided for this intersection until all crashes are current for 2023-2025.

Locations that experienced 8 or more crashes however are not considered high crash locations are listed below:

Intersections:

- Bates Street / Veranda Street / Washington Aveune (17 Crashes / CRF = 0.52)
- Ocean Avenue / Washington Avenue (21 Crashes / CRF = 0.82)
- Presumpscot Street / Washington Avenue (16 Crashes / CRF = 0.57)

Although these locations are not considered high crash locations, they are all located in the projected study area and will be further investigated in the Traffic Impact Study.

2.B Bicycle and Pedestrian Crashes

There have been 8 crashes involving bicycles and 0 crashes involving pedestrians in the past three years in the vicinity of the site. Five of the bicycle crashes were located at intersections, 2 were located at a driveway, and one was on a straight road.

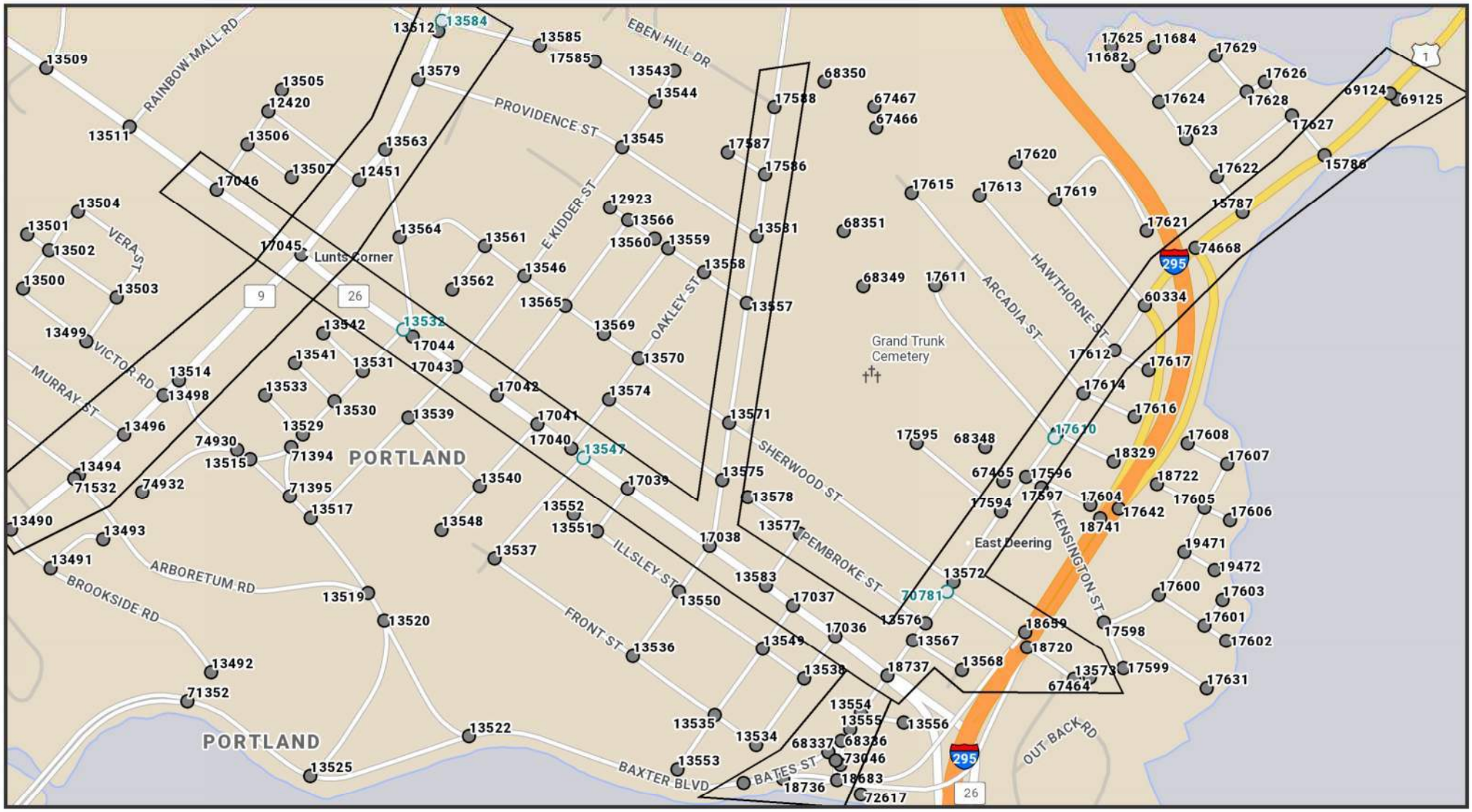
2.C Attachments

Attachment 2A – Node Map, Crash Summary Report, HCL Diagrams

Attachment 2A

Node Map
Crash Summary Report
HCL Diagrams

The Roux Institute at Northeastern University



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0.25 Miles

1 inch = 0.18 miles

Date: 6/1/2023
Time: 11:57:52 AM

LEGEND

LRAP_SEGMENTS_2

RURAL-SA-FC5 | URBAN-TW | RURAL-TW | WCSH | AGREEMENT | URBAN-STW | RURAL-STW | URBAN-SH | NO VALUE | RURAL-SH | RURAL-SA-FC6 | URBAN-SA

LRAP_SEGMENTS_2

RURAL-SA-FC5 | URBAN-TW | RURAL-TW | WCSH | NO VALUE | RURAL-SH | RURAL-SA-FC6 | URBAN-SA | AGREEMENT | URBAN-STW | RURAL-STW | URBAN-SH

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ **Crash Summary I** ☐ **Section Detail** ☑ **Crash Summary II** ☐ **1320 Public** ☐ **1320 Private** ☐ **1320 Summary**

REPORT DESCRIPTION

Portland
Washington Ave., Veranda St., Ocean Ave, Presumpscot St. Area

REPORT PARAMETERS

Year 2020, Start Month 1 through Year 2022 End Month: 12

Route: **0026X**	Start Node: **18737**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **17046**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0009X**	Start Node: **13490**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **17045**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0009X**	Start Node: **17045**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13584**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560753**	Start Node: **18737**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **60334**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0001S**	Start Node: **74668**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **60334**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0001X**	Start Node: **74668**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **69124**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560037**	Start Node: **18737**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18683**	End Offset: **0**	☑ **Exclude Last Node**
Route: **3200512**	Start Node: **68336**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **17592**	End Offset: **0**	☐ **Exclude Last Node**
Route: **3201021**	Start Node: **17592**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18736**	End Offset: **0**	☐ **Exclude Last Node**
Route: **3201022**	Start Node: **18736**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18683**	End Offset: **0**	☐ **Exclude Last Node**
Route: **3209819**	Start Node: **18683**	Start Offset: **0**	☑ **Exclude First Node**

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ **Crash Summary I** ☐ **Section Detail** ☑ **Crash Summary II** ☐ **1320 Public** ☐ **1320 Private** ☐ **1320 Summary**

REPORT DESCRIPTION

Portland
Washington Ave., Veranda St., Ocean Ave, Presumpscot St. Area

REPORT PARAMETERS

Year 2020, Start Month 1 through Year 2022 End Month: 12

	End Node: **13555**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560599**	Start Node: **17038**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **17588**	End Offset: **0**	☐ **Exclude Last Node**
Route: **3209966**	Start Node: **70781**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13573**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
13583	0026X - 1.35	Int of CHURCHILL ST WASHINGTON AV	2	7	0	0	1	1	5	28.6	8.854	0.26	0.27	0.96
												Statewide Crash Rate:	0.12	
P17044	0026X - 1.75	Int of MORSE ST WASHINGTON AV	2	3	0	0	0	1	2	33.3	6.970	0.14	0.29	0.00
												Statewide Crash Rate:	0.12	
18737	0026X - 1.21	Int of BATES ST VERANDA ST WASH AV SB WASHINGTO	9	17	0	0	1	2	13	18.8	11.095	0.51	0.98	0.52
												Statewide Crash Rate:	0.64	
17039	0026X - 1.50	Int of CUMMINGS ST WASHINGTON AV	2	2	0	0	1	0	1	50.0	6.933	0.10	0.29	0.00
												Statewide Crash Rate:	0.12	
17043	0026X - 1.70	Int of E KIDDER ST W KIDDER ST WASHINGTON AV	2	7	0	1	0	3	3	57.1	6.975	0.33	0.29	1.15
												Statewide Crash Rate:	0.12	
P17040	0026X - 1.56	Int of OAKLEY ST WASHINGTON AV	2	3	0	0	0	1	2	33.3	6.761	0.15	0.29	0.00
												Statewide Crash Rate:	0.12	
17045	0026X - 1.88	Int of OCEAN AV WASHINGTON AV	9	21	0	0	1	3	16	20.0	8.242	0.85	1.03	0.82
												Statewide Crash Rate:	0.64	
A13532	0026X - 1.76	Int of FERNALD ST WASHINGTON AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.12	
17036	0026X - 1.27	Int of GALVIN ST WASHINGTON AV	2	6	0	1	0	1	4	33.3	8.966	0.22	0.27	0.00
												Statewide Crash Rate:	0.12	
17041	0026X - 1.60	Int of ALTON ST WASHINGTON AV	2	0	0	0	0	0	0	0.0	6.553	0.00	0.30	0.00
												Statewide Crash Rate:	0.12	
17038	0026X - 1.41	Int of PRESUMPSCOT ST W PRESUMPSCOT ST WASHIN(	9	16	0	0	1	1	14	12.5	9.185	0.58	1.01	0.57
												Statewide Crash Rate:	0.64	
A13547	0026X - 1.55	Int of JOHANSEN ST, WASHINGTON AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.12	
17046	0026X - 1.98	Int of BYFIELD RD WASHINGTON AV	2	0	0	0	0	0	0	0.0	5.974	0.00	0.30	0.00
												Statewide Crash Rate:	0.12	
17037	0026X - 1.32	Int of RANDALL ST WASHINGTON AV	2	7	0	0	0	5	2	71.4	9.002	0.26	0.27	0.95
												Statewide Crash Rate:	0.12	
17042	0026X - 1.65	Int of INVERNESS ST WASHINGTON AV	2	0	0	0	0	0	0	0.0	6.698	0.00	0.29	0.00
												Statewide Crash Rate:	0.12	
13494	0009X - 64.09	Int of OCEAN AV ROSEDALE ST	2	1	0	0	0	1	0	100.0	3.047	0.11	0.36	0.00
												Statewide Crash Rate:	0.12	
13496	0009X - 64.15	Int of MURRAY ST OCEAN AV	2	1	0	0	1	0	0	100.0	2.855	0.12	0.37	0.00
												Statewide Crash Rate:	0.12	
13514	0009X - 64.22	Int of OCEAN AV PAYSON PARK DR	2	1	0	0	0	0	1	0.0	3.372	0.10	0.35	0.00
												Statewide Crash Rate:	0.12	
13498	0009X - 64.20	Int of OCEAN AV VICTOR RD	2	0	0	0	0	0	0	0.0	2.844	0.00	0.37	0.00
												Statewide Crash Rate:	0.12	
13490	0009X - 64	Int of BROOKSIDE RD OCEAN AV	2	0	0	0	0	0	0	0.0	2.517	0.00	0.38	0.00
												Statewide Crash Rate:	0.12	
71532	0009X - 64.08	Int of ARBORETUM RD OCEAN AV	2	3	0	0	0	1	2	33.3	2.844	0.35	0.37	0.00
												Statewide Crash Rate:	0.12	
13579	0009X - 64.58	Int of OCEAN AV PROVIDENCE ST	2	1	0	0	0	0	1	0.0	1.632	0.20	0.42	0.00
												Statewide Crash Rate:	0.12	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
P13512	0009X - 64.63	Int of OCEAN AV RAINBOW MALL RD	2	2	0	0	0	0	2	0.0	1.311	0.51	0.44	1.15
												Statewide Crash Rate:	0.12	
13563	0009X - 64.51	Int of MORSE ST OCEAN AV	2	2	0	0	0	1	1	50.0	1.649	0.40	0.42	0.00
												Statewide Crash Rate:	0.12	
A13584	0009X - 64.64	Int of GRAFTON ST OCEAN AV	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.12	
12451	0009X - 64.47	Int of OCEAN AV, SLEMONS ST	2	0	0	0	0	0	0	0.0	1.500	0.00	0.43	0.00
												Statewide Crash Rate:	0.12	
P13572	0560753 - 0.11	Int of SHERWOOD ST VERANDA ST	2	0	0	0	0	0	0	0.0	1.890	0.00	0.41	0.00
												Statewide Crash Rate:	0.12	
13576	0560753 - 0.06	Int of PEMBROKE ST VERANDA ST	2	0	0	0	0	0	0	0.0	1.782	0.00	0.41	0.00
												Statewide Crash Rate:	0.12	
13567	0560753 - 0.04	Int of JORDAN ST, VERANDA ST	2	0	0	0	0	0	0	0.0	1.795	0.00	0.41	0.00
												Statewide Crash Rate:	0.12	
A17610	0560753 - 0.28	Int of HODGINS ST VERANDA ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.12	
17612	0560753 - 0.38	Int of FAYETTE ST HAWTHORNE ST VERANDA ST	2	0	0	0	0	0	0	0.0	1.558	0.00	0.43	0.00
												Statewide Crash Rate:	0.12	
17594	0560753 - 0.19	Int of DALTON ST VERANDA ST	2	0	0	0	0	0	0	0.0	1.457	0.00	0.43	0.00
												Statewide Crash Rate:	0.12	
17614	0560753 - 0.33	Int of ARCADIA ST FAIRFIELD ST VERANDA ST	2	1	0	0	0	1	0	100.0	1.677	0.20	0.42	0.00
												Statewide Crash Rate:	0.12	
P17609	0560753 - 0.29	Int of UPLAND AV, VERANDA ST	2	0	0	0	0	0	0	0.0	1.739	0.00	0.41	0.00
												Statewide Crash Rate:	0.12	
A70781	0560753 - 0.10	Int of SHERWOOD ST VERANDA ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.12	
17596	0560753 - 0.23	Int of KENSINGTON ST VERANDA ST	2	1	0	0	0	1	0	100.0	1.671	0.20	0.42	0.00
												Statewide Crash Rate:	0.12	
60334	0001S - 16.35	Int of RAMP ON FROM VERANDA ST VERANDA ST WORD	2	10	1	1	0	4	4	60.0	2.010	1.66	0.35	4.75
												Statewide Crash Rate:	0.10	
15786	0001X - 52.42	Int of OREGON ST VERANDA ST	2	2	0	0	0	1	1	50.0	4.144	0.16	0.33	0.00
												Statewide Crash Rate:	0.12	
15787	0001X - 52.33	Int of OLYMPIA ST VERANDA ST	2	2	0	0	0	0	2	0.0	3.044	0.22	0.36	0.00
												Statewide Crash Rate:	0.12	
69124	0001X - 52.50	Int of ENT TO MARTINS POINT VERANDA ST	9	2	0	0	1	0	1	50.0	4.875	0.14	1.14	0.00
												Statewide Crash Rate:	0.64	
74668	0001X - 52.27	Int of US 1 NB VERANDA ST	2	0	0	0	0	0	0	0.0	5.103	0.00	0.28	0.00
												Statewide Crash Rate:	0.10	
13554	0560037 - 0.04	Int of BATES CT BATES ST	2	0	0	0	0	0	0	0.0	2.461	0.00	0.38	0.00
												Statewide Crash Rate:	0.12	
13555	0560037 - 0.06	Non Int BATES ST	2	0	0	0	0	0	0	0.0	2.223	0.00	0.39	0.00
												Statewide Crash Rate:	0.12	
68336	0560037 - 0.07	Int of BATES ST BATES ST CUT	2	0	0	0	0	0	0	0.0	1.167	0.00	0.45	0.00
												Statewide Crash Rate:	0.12	

Crash Summary I

Nodes

Node	Route - MP	Node Description	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual M Ent-Veh	Crash Rate	Critical Rate	CRF
68338	0560037 - 0.09	Int of BATES ST RD INV 3209820	2	0	0	0	0	0	0	0.0	0.251	0.00	0.48	0.00
												Statewide Crash Rate:	0.12	
17592	3200512 - 0.10	Int of BATES ST CUT BAXTER BLVD CHAS LORING HWY	2	2	0	0	0	0	2	0.0	3.696	0.18	0.34	0.00
												Statewide Crash Rate:	0.12	
68337	3200512 - 0.02	Int of BATES ST CUT RD INV 3209820	2	0	0	0	0	0	0	0.0	0.920	0.00	0.48	0.00
												Statewide Crash Rate:	0.12	
18736	3201021 - 2.10	Int of CHAS LORING HWY CHAS LORING SB US 1 NB	2	0	0	0	0	0	0	0.0	1.830	0.00	0.41	0.00
												Statewide Crash Rate:	0.12	
18683	3201022 - 0.05	Int of BATES ST CHAS LORING SB US 1 NB	2	4	0	0	0	0	4	0.0	2.699	0.49	0.32	1.52
												Statewide Crash Rate:	0.10	
73046	3209819 - 0.02	Non Int BATES ST	2	0	0	0	0	0	0	0.0	1.043	0.00	0.46	0.00
												Statewide Crash Rate:	0.12	
13575	0560599 - 0.18	Int of PRESUMPSCOT ST SAVOY ST	2	0	0	0	0	0	0	0.0	2.558	0.00	0.38	0.00
												Statewide Crash Rate:	0.12	
13571	0560599 - 0.23	Int of PRESUMPSCOT ST SHERWOOD ST	2	5	0	0	0	0	5	0.0	2.735	0.61	0.37	1.64
												Statewide Crash Rate:	0.12	
17588	0560599 - 0.52	Non Int PRESUMPSCOT ST	2	0	0	0	0	0	0	0.0	1.686	0.00	0.42	0.00
												Statewide Crash Rate:	0.12	
17586	0560599 - 0.46	Int of GRAFTON ST PRESUMPSCOT ST	2	0	0	0	0	0	0	0.0	1.838	0.00	0.41	0.00
												Statewide Crash Rate:	0.12	
13581	0560599 - 0.40	Int of PRESUMPSCOT ST PROVIDENCE ST	2	1	0	0	0	0	1	0.0	2.153	0.15	0.39	0.00
												Statewide Crash Rate:	0.12	
13557	0560599 - 0.34	Int of BERKSHIRE RD PRESUMPSCOT ST	2	0	0	0	0	0	0	0.0	2.301	0.00	0.39	0.00
												Statewide Crash Rate:	0.12	
13573	3209966 - 0.14	End of SHERWOOD ST	2	0	0	0	0	0	0	0.0	0.035	0.00	-1.92	0.00
												Statewide Crash Rate:	0.12	
Study Years:	3.00	**NODE TOTALS:**		130	1	3	7	28	89	30.0	188.120	0.23	0.26	0.89

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
17036	18737	3123985	0 - 0.06	0026X - 1.21	0.06	2	8	0	0	2	1	5	37.5	0.00532	501.51	435.38	1.15
Int of GALVIN ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17036	17037	3120740	0 - 0.05	0026X - 1.27	0.05	2	4	0	0	0	1	3	25.0	0.00450	296.57	454.10	0.00
Int of GALVIN ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13583	17037	3123939	0 - 0.03	0026X - 1.32	0.03	2	5	0	0	0	0	5	0.0	0.00267	624.59	519.22	1.20
Int of CHURCHILL ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13583	17038	3130464	0 - 0.06	0026X - 1.35	0.06	2	4	0	0	0	1	3	25.0	0.00524	254.42	436.96	0.00
Int of CHURCHILL ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17038	17039	3129290	0 - 0.09	0026X - 1.41	0.09	2	9	0	0	1	1	6	25.0	0.00625	480.15	418.41	1.15
Int of PRESUMPSCOT ST W PRESUMPSCOT ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13547	17039	188353	0 - 0.05	0026X - 1.50	0.05	2	3	0	1	0	1	1	66.7	0.00344	290.66	486.20	0.00
Int of JOHANSEN ST, WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13547	17040	3130189	0 - 0.01	0026X - 1.55	0.01	2	0	0	0	0	0	0	0.0	0.00067	0.00	726.09	0.00
Int of JOHANSEN ST, WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17040	17041	3122273	0 - 0.04	0026X - 1.56	0.04	2	2	0	0	0	0	2	0.0	0.00258	258.86	524.02	0.00
Int of OAKLEY ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17041	17042	3117949	0 - 0.05	0026X - 1.60	0.05	2	1	0	0	0	0	1	0.0	0.00331	100.74	491.11	0.00
Int of ALTON ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17042	17043	3117950	0 - 0.05	0026X - 1.65	0.05	2	0	0	0	0	0	0	0.0	0.00335	0.00	489.59	0.00
Int of INVERNESS ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17043	17044	3122274	0 - 0.05	0026X - 1.70	0.05	2	1	0	0	0	0	1	0.0	0.00350	95.33	484.17	0.00
Int of E KIDDER ST W KIDDER ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13532	17044	3123712	0 - 0.01	0026X - 1.75	0.01	2	0	0	0	0	0	0	0.0	0.00068	0.00	724.31	0.00
Int of FERNALD ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13532	17045	3120381	0 - 0.12	0026X - 1.76	0.12	2	7	0	0	1	1	5	28.6	0.00795	293.67	394.95	0.74
Int of FERNALD ST WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
17045	17046	3122275	0 - 0.10	0026X - 1.88	0.10	2	12	0	0	1	2	9	25.0	0.00594	673.57	423.65	1.59
Int of OCEAN AV WASHINGTON AV				ST RTE 26											Statewide Crash Rate: 187.47		
13490	71532	4047222	0 - 0.08	0009X - 64	0.08	2	0	0	0	0	0	0	0.0	0.00195	0.00	490.54	0.00
Int of BROOKSIDE RD OCEAN AV				ST RTE 9											Statewide Crash Rate: 155.59		
71532	13494	4047090	0 - 0.01	0009X - 64.08	0.01	2	0	0	0	0	0	0	0.0	0.00033	0.00	671.81	0.00
Int of ARBORETUM RD OCEAN AV				ST RTE 9											Statewide Crash Rate: 155.59		
13494	13496	3118903	0 - 0.06	0009X - 64.09	0.06	2	0	0	0	0	0	0	0.0	0.00165	0.00	511.05	0.00
Int of OCEAN AV ROSEDALE ST				ST RTE 9											Statewide Crash Rate: 155.59		
13496	13498	3131557	0 - 0.05	0009X - 64.15	0.05	2	2	0	0	0	1	1	50.0	0.00139	479.39	533.21	0.00
Int of MURRAY ST OCEAN AV				ST RTE 9											Statewide Crash Rate: 155.59		
13498	13514	188273	0 - 0.02	0009X - 64.20	0.02	2	0	0	0	0	0	0	0.0	0.00054	0.00	644.44	0.00
Int of OCEAN AV VICTOR RD				ST RTE 9											Statewide Crash Rate: 155.59		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
13514	17045	3131558	0 - 0.16	0009X - 64.22	0.16	2	9	0	0	0	1	7	12.5	0.00385	779.51	411.32	1.90
Int of OCEAN AV PAYSON PARK DR				ST RTE 9											Statewide Crash Rate: 155.59		
12451	17045	3119184	0 - 0.09	0009X - 64.38	0.09	2	0	0	0	0	0	0	0.0	0.00137	0.00	535.47	0.00
Int of OCEAN AV, SLEMONS ST				ST RTE 9											Statewide Crash Rate: 155.59		
12451	13563	3119183	0 - 0.04	0009X - 64.47	0.04	2	0	0	0	0	0	0	0.0	0.00058	0.00	639.34	0.00
Int of OCEAN AV, SLEMONS ST				ST RTE 9											Statewide Crash Rate: 155.59		
13563	13579	3131561	0 - 0.07	0009X - 64.51	0.07	2	0	0	0	0	0	0	0.0	0.00114	0.00	558.28	0.00
Int of MORSE ST OCEAN AV				ST RTE 9											Statewide Crash Rate: 155.59		
13512	13579	3122200	0 - 0.05	0009X - 64.58	0.05	2	2	0	0	0	0	2	0.0	0.00076	872.45	608.59	1.43
Int of OCEAN AV RAINBOW MALL RD				ST RTE 9											Statewide Crash Rate: 155.59		
13512	13584	188291	0 - 0.01	0009X - 64.63	0.01	2	0	0	0	0	0	0	0.0	0.00016	0.00	584.63	0.00
Int of OCEAN AV RAINBOW MALL RD				ST RTE 9											Statewide Crash Rate: 155.59		
13567	18737	3106268	0 - 0.04	0560753 - 0	0.04	2	1	0	0	0	0	1	0.0	0.00070	475.65	618.54	0.00
Int of JORDAN ST, VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
13567	13576	188382	0 - 0.02	0560753 - 0.04	0.02	2	0	0	0	0	0	0	0.0	0.00037	0.00	669.99	0.00
Int of JORDAN ST, VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
70781	13576	3936420	0 - 0.04	0560753 - 0.06	0.04	2	1	0	0	0	0	1	0.0	0.00067	495.79	623.15	0.00
Int of SHERWOOD ST VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
13572	70781	3936419	0 - 0.01	0560753 - 0.10	0.01	2	0	0	0	0	0	0	0.0	0.00018	0.00	618.07	0.00
Int of SHERWOOD ST VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
13572	17594	3123938	0 - 0.08	0560753 - 0.11	0.08	2	1	0	0	1	0	0	100.0	0.00119	280.27	553.39	0.00
Int of SHERWOOD ST VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
17594	17596	193314	0 - 0.04	0560753 - 0.19	0.04	2	0	0	0	0	0	0	0.0	0.00056	0.00	642.12	0.00
Int of DALTON ST VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
17596	17610	3106608	0 - 0.05	0560753 - 0.23	0.05	2	0	0	0	0	0	0	0.0	0.00086	0.00	594.58	0.00
Int of KENSINGTON ST VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
17609	17610	3106609	0 - 0.01	0560753 - 0.28	0.01	2	0	0	0	0	0	0	0.0	0.00016	0.00	588.07	0.00
Int of UPLAND AV, VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
17609	17614	3130048	0 - 0.04	0560753 - 0.29	0.04	2	0	0	0	0	0	0	0.0	0.00064	0.00	627.67	0.00
Int of UPLAND AV, VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
17612	17614	3122281	0 - 0.05	0560753 - 0.33	0.05	2	0	0	0	0	0	0	0.0	0.00076	0.00	609.48	0.00
Int of FAYETTE ST HAWTHORNE ST VERANDA ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
60334	17612	5402045	0 - 0.02	0560753 - 0.38	0.02	2	0	0	0	0	0	0	0.0	0.00029	0.00	670.69	0.00
Int of RAMP ON FROM VERANDA ST VERANDA ST WORDSWORTH ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
60334	17612	5402045	0.02 - 0.05	0560753 - 0.38	0.03	2	1	0	0	0	0	0	0.0	0.00044	754.25	660.92	1.14
Int of RAMP ON FROM VERANDA ST VERANDA ST WORDSWORTH ST				RD INV 05 60753											Statewide Crash Rate: 155.59		
74668	60334	5402069	0 - 0.04	0001S - 16.28	0.04	2	0	0	0	0	0	0	0.0	0.00095	0.00	581.51	0.00
Int of US 1 NB VERANDA ST				US 1 SB											Statewide Crash Rate: 155.59		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
74668	60334	5402069	0.04 - 0.07	0001S - 16.32	0.03	2	0	0	0	0	0	0	0.0	0.00072	0.00	616.20	0.00
Int of US 1 NB VERANDA ST				US 1 SB											Statewide Crash Rate: 155.59		
15787	74668	5402070	0 - 0.06	0001X - 52.27	0.06	2	1	0	0	0	0	1	0.0	0.00181	184.49	499.79	0.00
Int of OLYMPIA ST VERANDA ST				US 1											Statewide Crash Rate: 155.59		
15786	15787	5402071	0 - 0.09	0001X - 52.33	0.09	2	0	0	0	0	0	0	0.0	0.00260	0.00	455.53	0.00
Int of OREGON ST VERANDA ST				US 1											Statewide Crash Rate: 155.59		
69124	15786	3509045	0 - 0.08	0001X - 52.42	0.08	2	0	0	0	0	0	0	0.0	0.00423	0.00	401.36	0.00
Int of ENT TO MARTINS POINT VERANDA ST				US 1											Statewide Crash Rate: 155.59		
13554	18737	3131559	0 - 0.04	0560037 - 0	0.04	2	0	0	0	0	0	0	0.0	0.00095	0.00	581.88	0.00
Int of BATES CT BATES ST				RD INV 05 60037											Statewide Crash Rate: 155.59		
13554	13555	3139091	0 - 0.02	0560037 - 0.04	0.02	2	0	0	0	0	0	0	0.0	0.00047	0.00	656.39	0.00
Int of BATES CT BATES ST				RD INV 05 60037											Statewide Crash Rate: 155.59		
13555	68336	3503103	0 - 0.01	0560037 - 0.06	0.01	2	0	0	0	0	0	0	0.0	0.00012	0.00	444.66	0.00
Non Int BATES ST				RD INV 05 60037											Statewide Crash Rate: 155.59		
68336	68338	3503129	0 - 0.02	0560037 - 0.07	0.02	2	0	0	0	0	0	0	0.0	0.00005	0.00	-577.91	0.00
Int of BATES ST BATES ST CUT				RD INV 05 60037											Statewide Crash Rate: 155.59		
68338	18683	3503130	0 - 0.02	0560037 - 0.09	0.02	2	0	0	0	0	0	0	0.0	0.00005	0.00	-548.10	0.00
Int of BATES ST RD INV 3209820				RD INV 05 60037											Statewide Crash Rate: 155.59		
68336	68337	3503127	0 - 0.02	3200512 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00018	0.00	617.37	0.00
Int of BATES ST BATES ST CUT				RD INV 3200512											Statewide Crash Rate: 155.59		
68337	17592	3503128	0 - 0.08	3200512 - 0.02	0.08	2	0	0	0	0	0	0	0.0	0.00075	0.00	611.15	0.00
Int of BATES ST CUT RD INV 3209820				RD INV 3200512											Statewide Crash Rate: 155.59		
17592	18736	3119268	0 - 0.04	3201021 - 2.06	0.04	2	0	0	0	0	0	0	0.0	0.00092	0.00	586.34	0.00
Int of BATES ST CUT BAXTER BLVD CHAS LORING HWY				RD INV 3201021											Statewide Crash Rate: 155.59		
18683	18736	2074332	0 - 0.05	3201022 - 0	0.05	2	1	0	0	1	0	0	100.0	0.00081	413.42	602.21	0.00
Int of BATES ST CHAS LORING SB US 1 NB				RD INV 3201022											Statewide Crash Rate: 155.59		
18683	73046	4352985	0 - 0.02	3209819 - 0	0.02	2	0	0	0	0	0	0	0.0	0.00021	0.00	641.04	0.00
Int of BATES ST CHAS LORING SB US 1 NB				RD INV 3209819											Statewide Crash Rate: 155.59		
73046	13555	4352986	0 - 0.04	3209819 - 0.02	0.04	2	0	0	0	0	0	0	0.0	0.00042	0.00	664.36	0.00
Non Int BATES ST				RD INV 3209819											Statewide Crash Rate: 155.59		
13575	17038	3106271	0 - 0.06	0560599 - 0.12	0.06	2	4	0	0	0	0	4	0.0	0.00153	872.25	521.05	1.67
Int of PRESUMPSCOT ST SAVOY ST				RD INV 05 60599											Statewide Crash Rate: 155.59		
13571	13575	3106269	0 - 0.05	0560599 - 0.18	0.05	2	0	0	0	0	0	0	0.0	0.00125	0.00	546.99	0.00
Int of PRESUMPSCOT ST SHERWOOD ST				RD INV 05 60599											Statewide Crash Rate: 155.59		
13557	13571	3106267	0 - 0.11	0560599 - 0.23	0.11	2	4	0	0	0	0	4	0.0	0.00246	541.65	461.79	1.17
Int of BERKSHIRE RD PRESUMPSCOT ST				RD INV 05 60599											Statewide Crash Rate: 155.59		
13557	13581	3131560	0 - 0.06	0560599 - 0.34	0.06	2	0	0	0	0	0	0	0.0	0.00138	0.00	534.42	0.00
Int of BERKSHIRE RD PRESUMPSCOT ST				RD INV 05 60599											Statewide Crash Rate: 155.59		
13581	17586	3106272	0 - 0.06	0560599 - 0.40	0.06	2	2	0	0	0	1	1	50.0	0.00115	580.83	557.96	1.04
Int of PRESUMPSCOT ST PROVIDENCE ST				RD INV 05 60599											Statewide Crash Rate: 155.59		

Crash Summary I

Sections

Start Node	End Node	Element	Offset Begin - End	Route - MP	Section Length	U/R	Total Crashes	Injury Crashes K	A	B	C	PD	Percent Injury	Annual HMVM	Crash Rate	Critical Rate	CRF
17586	17588	3106607	0 - 0.06	0560599 - 0.46	0.06	2	2	0	0	0	0	2	0.0	0.00101	658.90	574.08	1.15
Int of GRAFTON ST PRESUMPSCOT ST				RD INV 05 60599											Statewide Crash Rate: 155.59		
70781	13573	5080143	0 - 0.14	3209966 - 0	0.14	2	1	0	0	0	0	1	0.0	0.00010	3433.24	1378.74	2.49
Int of SHERWOOD ST VERANDA ST				RD INV3209966											Statewide Crash Rate: 334.56		
Study Years: 3.00				**Section Totals:**	3.04		88	0	1	7	11	66	21.6	0.10002	293.28	233.67	1.26
				Grand Totals:	3.04		218	1	4	14	39	155	26.6	0.10002	726.52	338.49	2.15

Crash Summary

Section Details														
Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
17036	18737	3123985	0 - 0.06	0026X - 1.21	8	0	0	2	1	5	2022-31026	10/26/2022	1.22	PD
											2020-19629	08/18/2020	1.23	PD
											2022-10613	03/31/2022	1.23	PD
											2021-30654	11/08/2021	1.23	PD
											2020-16740	06/20/2020	1.24	PD
											2021-7801	03/28/2021	1.25	B
											2022-6794	02/27/2022	1.25	C
											2021-24542	09/15/2021	1.26	B
17036	17037	3120740	0 - 0.05	0026X - 1.27	4	0	0	0	1	3	2022-11713	04/26/2022	1.29	PD
											2020-570	01/08/2020	1.29	PD
											2022-19241	07/08/2022	1.29	PD
											2021-10548	05/02/2021	1.31	C
13583	17037	3123939	0 - 0.03	0026X - 1.32	5	0	0	0	0	5	2021-23522	09/05/2021	1.33	PD
											2020-24631	10/14/2020	1.34	PD
											2022-18638	07/05/2022	1.34	PD
											2021-27480	10/13/2021	1.34	PD
											2021-35328	12/14/2021	1.34	PD
13583	17038	3130464	0 - 0.06	0026X - 1.35	4	0	0	0	1	3	2020-8325	03/17/2020	1.38	PD
											2021-1283	01/08/2021	1.39	PD
											2021-14548	06/13/2021	1.40	C
											2022-95	01/04/2022	1.40	PD
17038	17039	3129290	0 - 0.09	0026X - 1.41	9	0	0	1	1	6	2020-5795	01/24/2020	1.43	PD
											2021-5642	03/02/2021	1.44	PD
											2021-28981	10/26/2021	1.44	PD
											2021-3581	02/09/2021	1.45	PD
											2022-19230	07/09/2022	1.46	B
											2022-31358	10/28/2022	1.46	C
											2020-577	01/08/2020	1.46	PD
											2022-37357	12/15/2022	1.48	
											2022-15896	06/08/2022	1.48	PD
13547	17039	188353	0 - 0.05	0026X - 1.50	3	0	1	0	1	1	2022-20681	07/23/2022	1.52	C
											2022-26880	09/16/2022	1.53	A
											2021-31682	11/12/2021	1.53	PD

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
13547	17040	3130189	0 - 0.01	0026X - 1.55	0	0	0	0	0	0				
17040	17041	3122273	0 - 0.04	0026X - 1.56	2	0	0	0	0	2	2021-33246	11/24/2021	1.57	PD
											2021-10804	04/12/2021	1.59	PD
17041	17042	3117949	0 - 0.05	0026X - 1.60	1	0	0	0	0	1	2022-24535	08/27/2022	1.64	PD
17042	17043	3117950	0 - 0.05	0026X - 1.65	0	0	0	0	0	0				
17043	17044	3122274	0 - 0.05	0026X - 1.70	1	0	0	0	0	1	2020-1425	01/15/2020	1.74	PD
13532	17044	3123712	0 - 0.01	0026X - 1.75	0	0	0	0	0	0				
13532	17045	3120381	0 - 0.12	0026X - 1.76	7	0	0	1	1	5	2020-3007	01/26/2020	1.79	PD
											2020-19019	08/10/2020	1.80	PD
											2022-26242	09/15/2022	1.83	C
											2021-27342	10/08/2021	1.83	PD
											2020-15032	06/25/2020	1.84	PD
											2022-8648	03/16/2022	1.85	B
											2021-2870	01/27/2021	1.87	PD
17045	17046	3122275	0 - 0.10	0026X - 1.88	12	0	0	1	2	9	2020-22434	09/19/2020	1.89	PD
											2021-11755	05/17/2021	1.89	PD
											2021-21220	08/13/2021	1.91	C
											2020-27004	11/05/2020	1.91	PD
											2020-19456	08/17/2020	1.91	PD
											2022-22921	08/14/2022	1.91	PD
											2022-34236	11/15/2022	1.91	PD
											2020-284	01/04/2020	1.91	PD
											2022-12824	05/06/2022	1.91	PD
											2021-17026	06/21/2021	1.92	PD
											2020-13567	06/08/2020	1.93	C
											2020-30644	12/07/2020	1.97	B
13490	71532	4047222	0 - 0.08	0009X - 64	0	0	0	0	0	0				
71532	13494	4047090	0 - 0.01	0009X - 64.08	0	0	0	0	0	0				
13494	13496	3118903	0 - 0.06	0009X - 64.09	0	0	0	0	0	0				
13496	13498	3131557	0 - 0.05	0009X - 64.15	2	0	0	0	1	1	2021-28907	10/25/2021	64.17	C
											2021-32647	11/23/2021	64.19	PD
13498	13514	188273	0 - 0.02	0009X - 64.20	0	0	0	0	0	0				

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
13514	17045	3131558	0 - 0.16	0009X - 64.22	9	0	0	0	1	7	2022-3208	01/31/2022	64.26	PD
											2022-26088	09/14/2022	64.35	PD
											2021-19301	07/27/2021	64.35	PD
											2021-16501	07/01/2021	64.35	PD
											2022-31649	09/23/2022	64.35	PD
											2021-21370	08/09/2021	64.37	
											2021-7238	03/20/2021	64.37	C
											2022-14394	05/26/2022	64.37	PD
											2022-4712	02/10/2022	64.37	PD
12451	17045	3119184	0 - 0.09	0009X - 64.38	0	0	0	0	0	0				
12451	13563	3119183	0 - 0.04	0009X - 64.47	0	0	0	0	0	0				
13563	13579	3131561	0 - 0.07	0009X - 64.51	0	0	0	0	0	0				
13512	13579	3122200	0 - 0.05	0009X - 64.58	2	0	0	0	0	2	2021-7927	03/29/2021	64.59	PD
											2021-10696	05/04/2021	64.60	PD
13512	13584	188291	0 - 0.01	0009X - 64.63	0	0	0	0	0	0				
13567	18737	3106268	0 - 0.04	0560753 - 0	1	0	0	0	0	1	2020-4178	02/06/2020	0.03	PD
13567	13576	188382	0 - 0.02	0560753 - 0.04	0	0	0	0	0	0				
70781	13576	3936420	0 - 0.04	0560753 - 0.06	1	0	0	0	0	1	2022-21589	08/01/2022	0.08	PD
13572	70781	3936419	0 - 0.01	0560753 - 0.10	0	0	0	0	0	0				
13572	17594	3123938	0 - 0.08	0560753 - 0.11	1	0	0	1	0	0	2021-30986	11/10/2021	0.16	B
17594	17596	193314	0 - 0.04	0560753 - 0.19	0	0	0	0	0	0				
17596	17610	3106608	0 - 0.05	0560753 - 0.23	0	0	0	0	0	0				
17609	17610	3106609	0 - 0.01	0560753 - 0.28	0	0	0	0	0	0				
17609	17614	3130048	0 - 0.04	0560753 - 0.29	0	0	0	0	0	0				
17612	17614	3122281	0 - 0.05	0560753 - 0.33	0	0	0	0	0	0				
60334	17612	5402045	0 - 0.02	0560753 - 0.38	0	0	0	0	0	0				
60334	17612	5402045	0.02 - 0.05	0560753 - 0.38	1	0	0	0	0	0	2022-30998	10/27/2022	0.40	
74668	60334	5402069	0.04 - 0.07	0001S - 16.28	0	0	0	0	0	0				
74668	60334	5402069	0 - 0.04	0001S - 16.28	0	0	0	0	0	0				
15787	74668	5402070	0 - 0.06	0001X - 52.27	1	0	0	0	0	1	2021-29118	10/26/2021	52.28	PD
15786	15787	5402071	0 - 0.09	0001X - 52.33	0	0	0	0	0	0				
69124	15786	3509045	0 - 0.08	0001X - 52.42	0	0	0	0	0	0				
13554	18737	3131559	0 - 0.04	0560037 - 0	0	0	0	0	0	0				
13554	13555	3139091	0 - 0.02	0560037 - 0.04	0	0	0	0	0	0				
13555	68336	3503103	0 - 0.01	0560037 - 0.06	0	0	0	0	0	0				
68336	68338	3503129	0 - 0.02	0560037 - 0.07	0	0	0	0	0	0				
68338	18683	3503130	0 - 0.02	0560037 - 0.09	0	0	0	0	0	0				

Crash Summary

Section Details

Start Node	End Node	Element	Offset Begin - End	Route - MP	Total Crashes	Injury Crashes K	A	B	C	PD	Crash Report	Crash Date	Crash Mile Point	Injury Degree
68336	68337	3503127	0 - 0.02	3200512 - 0	0	0	0	0	0	0				
68337	17592	3503128	0 - 0.08	3200512 - 0.02	0	0	0	0	0	0				
17592	18736	3119268	0 - 0.04	3201021 - 2.06	0	0	0	0	0	0				
18683	18736	2074332	0 - 0.05	3201022 - 0	1	0	0	1	0	0	2020-23256	09/29/2020	0.01	B
18683	73046	4352985	0 - 0.02	3209819 - 0	0	0	0	0	0	0				
73046	13555	4352986	0 - 0.04	3209819 - 0.02	0	0	0	0	0	0				
13575	17038	3106271	0 - 0.06	0560599 - 0.12	4	0	0	0	0	4	2020-2143	01/17/2020	0.12	PD
											2020-26110	10/30/2020	0.15	PD
											2021-20907	08/12/2021	0.15	PD
											2021-4517	02/20/2021	0.15	PD
13571	13575	3106269	0 - 0.05	0560599 - 0.18	0	0	0	0	0	0				
13557	13571	3106267	0 - 0.11	0560599 - 0.23	4	0	0	0	0	4	2020-474	01/07/2020	0.28	PD
											2022-34548	11/22/2022	0.31	PD
											2022-30031	10/19/2022	0.31	PD
											2021-23912	09/09/2021	0.33	PD
13557	13581	3131560	0 - 0.06	0560599 - 0.34	0	0	0	0	0	0				
13581	17586	3106272	0 - 0.06	0560599 - 0.40	2	0	0	0	1	1	2022-37245	12/14/2022	0.43	PD
											2022-21108	07/27/2022	0.44	C
17586	17588	3106607	0 - 0.06	0560599 - 0.46	2	0	0	0	0	2	2021-3209	02/06/2021	0.48	PD
											2020-19666	08/19/2020	0.48	PD
70781	13573	5080143	0 - 0.14	3209966 - 0	1	0	0	0	0	1	2020-8326	03/17/2020	0.02	PD
				Totals:	88	0	1	7	11	66				

Crash Summary II - Characteristics

Crashes by Day and Hour

	AM												Hour of Day PM													
Day Of Week	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Un**	**Tot**
SUNDAY	1	0	0	0	0	0	0	0	1	2	0	3	1	1	3	1	1	2	3	0	2	0	0	0	0	21
MONDAY	0	0	0	0	0	0	1	1	4	2	2	2	1	3	4	2	3	2	0	0	1	0	0	0	0	28
TUESDAY	0	0	0	0	0	0	4	3	0	1	4	3	3	4	2	4	3	5	4	2	1	0	0	1	0	44
WEDNESDAY	0	0	0	0	0	0	2	1	5	1	0	2	8	3	3	3	4	5	1	1	0	1	0	1	0	41
THURSDAY	1	0	0	1	1	0	1	3	3	2	2	0	0	2	3	3	0	5	0	1	1	0	1	0	0	30
FRIDAY	0	0	0	0	0	0	0	2	6	0	1	3	0	0	1	5	3	3	3	2	0	0	1	0	0	30
SATURDAY	0	0	0	0	1	0	0	0	0	2	2	2	1	3	3	3	2	1	1	0	1	1	1	0	0	24
Totals	2	0	0	1	2	0	8	10	19	10	11	15	14	16	19	21	16	23	12	6	6	2	3	2	0	**218**

Vehicle Counts by Type

Unit Type	Total	Unit Type	Total
1-Passenger Car	211	23-Bicyclist	8
2-(Sport) Utility Vehicle	131	24-Witness	33
3-Passenger Van	3	25-Other	8
4-Cargo Van (10K lbs or Less)	4	26-Construction	1
5-Pickup	38	27-Farm Vehicle	0
6-Motor Home	0	28-Horse and Buggy	0
7-School Bus	1	**Total**	**455**
8-Transit Bus	0		
9-Motor Coach	0		
10-Other Bus	0		
11-Motorcycle	1		
12-Moped	1		
13-Low Speed Vehicle	0		
14-Autocycle	0		
15-Experimental	0		
16-Other Light Trucks (10,000 lbs or Less)	2		
17-Medium/Heavy Trucks (More than 10,000 lbs)	13		
18-ATV - (4 wheel)	0		
20-ATV - (2 wheel)	0		
21-Snowmobile	0		
22-Pedestrian	0		

Crash Summary II - Characteristics

Crashes by Driver Action at Time of Crash

Driver Action at Time of Crash	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
No Contributing Action	24	160	7	0	0	0	191
Ran Off Roadway	5	0	0	0	0	0	5
Failed to Yield Right-of-Way	59	4	0	0	0	0	63
Ran Red Light	3	0	0	0	0	0	3
Ran Stop Sign	5	0	0	0	0	0	5
Disregarded Other Traffic Sign	2	0	0	0	0	0	2
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	3	3	0	0	0	0	6
Drove Too Fast For Conditions	4	0	0	0	0	0	4
Improper Turn	4	0	0	0	0	0	4
Improper Backing	4	2	0	0	0	0	6
Improper Passing	5	1	0	0	0	0	6
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	53	4	0	0	0	0	57
Failed to Keep in Proper Lane	15	0	0	0	0	0	15
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	6	0	0	0	0	0	6
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	1	0	0	0	0	0	1
Over-Correcting/Over-Steering	3	0	0	0	0	0	3
Other Contributing Action	9	5	0	0	0	0	14
Unknown	1	1	0	0	0	0	2
Total	**206**	**180**	**7**	**0**	**0**	**0**	**393**

Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	193	176	7	0	0	8	384
Physically Impaired	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	1	0	0	0	0	0	1
Ill (Sick)	1	0	0	0	0	0	1
Asleep or Fatigued	1	0	0	0	0	0	1
Under the Influence of Medications/Drugs/Alcohol	3	0	0	0	0	0	3
Other	2	4	0	0	0	0	6
Total	**201**	**180**	**7**	**0**	**0**	**8**	**396**

Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	1	0	0	0	0	1
10-14	0	0	0	0	0	0
15-19	34	0	0	0	0	34
20-24	44	0	0	0	0	44
25-29	45	0	0	0	0	45
30-39	87	0	0	0	0	87
40-49	70	0	0	0	0	70
50-59	40	0	0	0	0	40
60-69	41	0	0	0	0	41
70-79	21	0	0	0	0	21
80-Over	9	0	0	0	0	9
Unknown	22	8	0	0	0	30
Total	**414**	**8**	**0**	**0**	**0**	**422**

Crash Summary II - Characteristics

Most Harmful Event

Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	1	38-Other Fixed Object (wall, building, tunnel, etc.)	1
2-Fire / Explosion	0	39-Unknown	15
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	**Total**	**407**
6-Fell / Jumped from Motor Vehicle	1		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	0		
10-Pedalcycle	1		
11-Railway Vehicle - Train, Engine	0		
12-Animal	0		
13-Motor Vehicle in Transport	373		
14-Parked Motor Vehicle	8		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	1		
16-Work Zone / Maintenance Equipment	0		
17-Other Non-Fixed Object	0		
18-Impact Attenuator / Crash Cushion	0		
19-Bridge Overhead Structure	0		
20-Bridge Pier or Support	0		
21-Bridge Rail	0		
22-Cable Barrier	0		
23-Culvert	0		
24-Curb	0		
25-Ditch	0		
26-Embankment	0		
27-Guardrail Face	0		
28-Guardrail End	0		
29-Concrete Traffic Barrier	0		
30-Other Traffic Barrier	1		
31-Tree (Standing)	1		
32-Utility Pole / Light Support	4		
33-Traffic Sign Support	0		
34-Traffic Signal Support	0		
35-Fence	0		
36-Mailbox	0		
37-Other Post, Pole, or Support	0		

Injury Data

Severity Code	Injury Crashes	Number Of Injuries
K	1	1
A	4	4
B	14	19
C	39	58
PD	155	0
Total	**213**	**82**

Road Character

Road Grade	Total
1-Level	185
2-On Grade	33
3-Top of Hill	0
4-Bottom of Hill	0
5-Other	0
Total	**218**

Traffic Control Devices

Traffic Control Device	Total
1-Traffic Signals (Stop & Go)	74
2-Traffic Signals (Flashing)	2
3-Advisory/Warning Sign	2
4-Stop Signs - All Approaches	1
5-Stop Signs - Other	29
6-Yield Sign	3
7-Curve Warning Sign	1
8-Officer, Flagman, School Patrol	2
9-School Bus Stop Arm	0
10-School Zone Sign	1
11-R.R. Crossing Device	0
12-No Passing Zone	1
13-None	101
14-Other	1
Total	**218**

Light

Light Condition	Total
1-Daylight	173
2-Dawn	3
3-Dusk	3
4-Dark - Lighted	39
5-Dark - Not Lighted	0
6-Dark - Unknown Lighting	0
7-Unknown	0
Total	**218**

Crash Summary II - Characteristics

Crashes by Year and Month

Month	2020	2021	2022	Total
JANUARY	13	4	7	24
FEBRUARY	7	9	5	21
MARCH	6	5	6	17
APRIL	3	4	1	8
MAY	3	5	7	15
JUNE	8	7	2	17
JULY	9	6	8	23
AUGUST	9	5	7	21
SEPTEMBER	7	5	6	18
OCTOBER	10	10	7	27
NOVEMBER	1	6	6	13
DECEMBER	4	4	6	14
Total	**80**	**70**	**68**	**218**

Report is limited to the last 10 years of data.

Crash Summary II - Characteristics

Crashes by Crash Type and Type of Location

Crash Type	Straight Road	Curved Road	Three Leg Intersection	Four Leg Intersection	Five or More Leg Intersection	Driveways	Bridges	Interchanges	Other	Parking Lot	Private Way	Cross Over	Railroad Crossing	Traffic Circle-Roundabout	Total
Object in Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rear End - Sideswipe	38	0	19	44	0	3	0	0	0	0	0	0	0	0	104
Head-on - Sideswipe	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3
Intersection Movement	0	0	22	26	0	31	0	0	0	0	0	0	0	0	79
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Train	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Went Off Road	8	0	5	6	0	1	0	0	0	0	0	0	0	0	20
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	1	0	2	3	0	2	0	0	0	0	0	0	0	0	8
Other	3	0	0	1	0	0	0	0	0	0	0	0	0	0	4
Jackknife	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rollover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fire	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Submersion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thrown or Falling Object	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**52**	**0**	**49**	**80**	**0**	**37**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**218**

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Blowing Sand, Soil, Dirt												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Blowing Snow												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Clear												
Dark - Lighted	23	0	0	0	0	0	0	0	0	0	1	24
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	2	0	0	0	0	0	0	0	0	0	0	2
Daylight	118	2	0	0	0	0	0	1	0	0	8	129
Dusk	2	0	0	0	0	0	0	0	0	0	0	2
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	2	0	0	0	0	0	0	0	0	0	2	4
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	1	1
Daylight	23	0	0	0	0	0	0	0	0	0	5	28
Dusk	0	0	0	0	0	0	0	0	0	0	1	1
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Fog, Smog, Smoke												
Dark - Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Other												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	1	0	0	1
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Rain												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	7	7
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	1	0	0	12	13
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Severe Crosswinds												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0

Crash Summary II - Characteristics

Crashes by Weather, Light Condition and Road Surface

Weather Light	Dry	Ice/Frost	Mud, Dirt, Gravel	Oil	Other	Sand	Slush	Snow	Unknown	Water (Standing, Moving)	Wet	Total
Sleet, Hail (Freezing Rain or Drizzle)												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Snow												
Dark - Lighted	0	0	0	0	0	0	0	3	0	0	0	3
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	1	0	0	1	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**171**	**2**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**38**	**218**

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

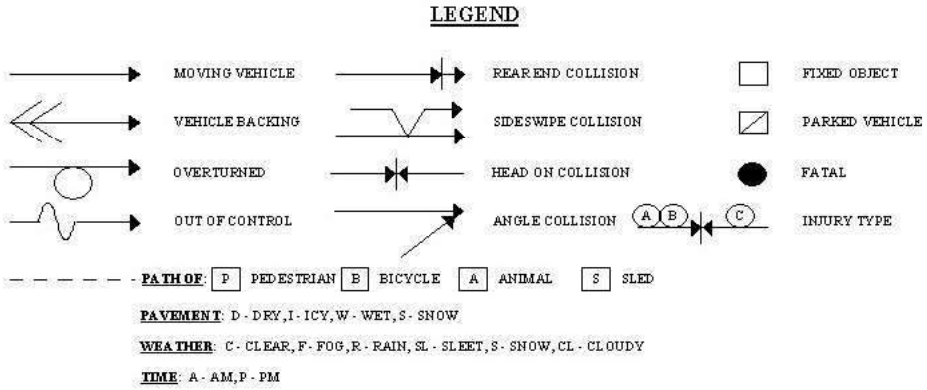
LOW NODE: **13514** HIGH NODE: **17045** REGION: **1** U/R: **URBAN**

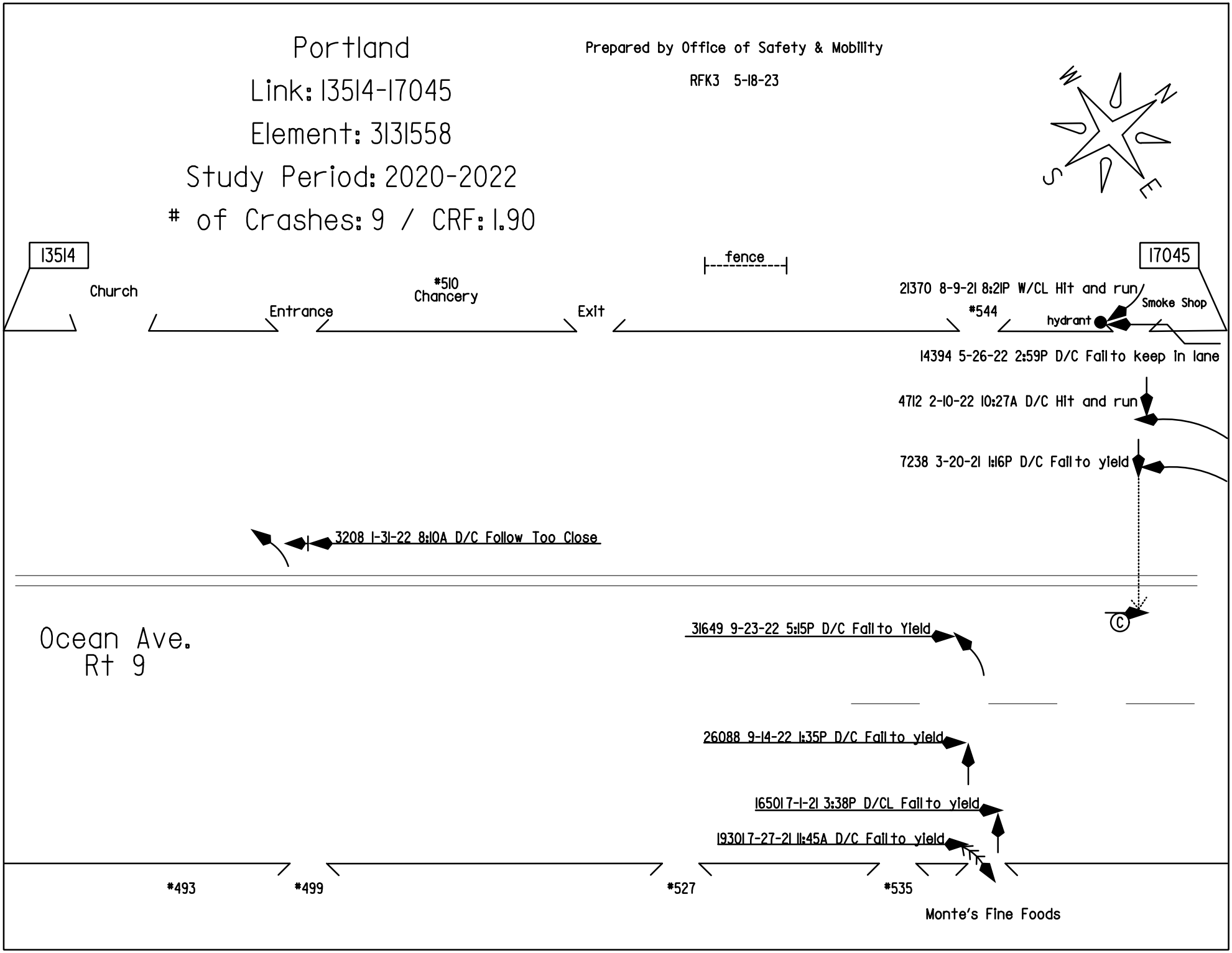
DESCRIPTION: **Ocean Ave from Catafalque Dr to Washington Ave**

RTE # / RD #: **0009X** DATE DRAWN: **5/18/2023** DRAWN BY: **BOB K**

STUDY FROM: **1/1/2020** STUDY TO: **12/31/2022**

CRASH RATE: **779.51** CRF: **1.9** % INJURY: **11.1** TOTAL CRASHES: **9**




Portland
Link: 13514-17045
Element: 3131558
Study Period: 2020-2022
# of Crashes: 9 / CRF: 1.90
Prepared by Office of Safety & Mobility
RFK3 5-18-23
W
N
S
E
13514
17045
fence
Church
Entrance
#510
Chancery
Exit
21370 8-9-21 8:21P W/CL Hit and run
#544
hydrant
Smoke Shop
14394 5-26-22 2:59P D/C Fail to keep in lane
4712 2-10-22 10:27A D/C Hit and run
7238 3-20-21 1:16P D/C Fail to yield
3208 1-31-22 8:10A D/C Follow Too Close
Ocean Ave.
Rt 9
31649 9-23-22 5:15P D/C Fail to Yield
26088 9-14-22 1:35P D/C Fail to yield
16501 7-1-21 3:38P D/CL Fail to yield
19301 7-27-21 11:45A D/C Fail to yield
#493
#499
#527
#535
Monte's Fine Foods

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

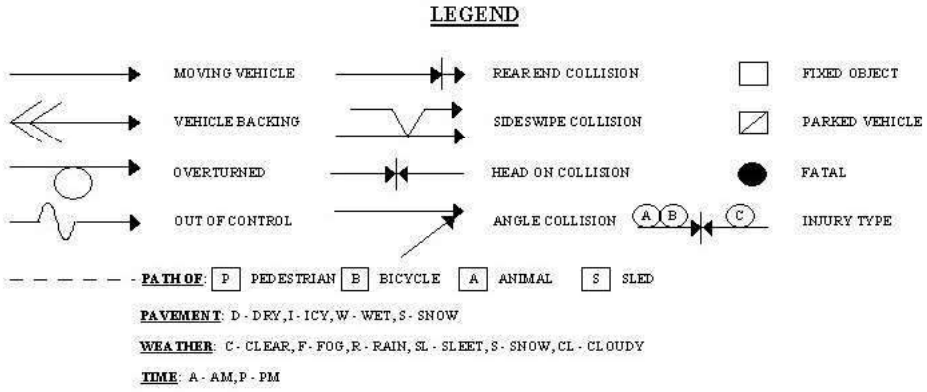
LOW NODE: **17036** HIGH NODE: **18737** REGION: **1** U/R: **URBAN**

DESCRIPTION: **Washington Ave from Galvin St to Bates St**

RTE # / RD #: **0026X** DATE DRAWN: **5/12/2023** DRAWN BY: **BOB K**

STUDY FROM: **1/1/2020** STUDY TO: **12/31/2022**

CRASH RATE: **501.51** CRF: **1.15** % INJURY: **37.5** TOTAL CRASHES: **8**



Prepared by Office of Safety & Mobility

RFK3 5-12-23

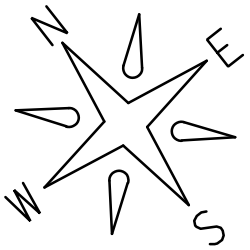
Portland

Link: 17036-18737

Element: 3123985

Study Period: 2020-2022

of Crashes: 8 / CRF: 1.15



17036

Driveway #521

18737

pole (B) 7801 3-28-21 9:00A D/CL Sick

6794 2-27-22 2:33P D/C Reckless driving (C)(C)(C)

19629 8-18-20 4:25P D/C Fail to Yield

30654 11-8-21 5:18P D/C Fail to Yield

31026 10-26-22 12:27P W/R Fail to yield

(B) 24542 9-15-21 12:21P D/CL Follow too close
laid down moped

10613 3-31-22 5:32P D/CL Fail to Yield

16740 6-20-20 10:30P D/C Hit and run

Washington Ave. (Rte. 26)

Driveway

Driveway

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

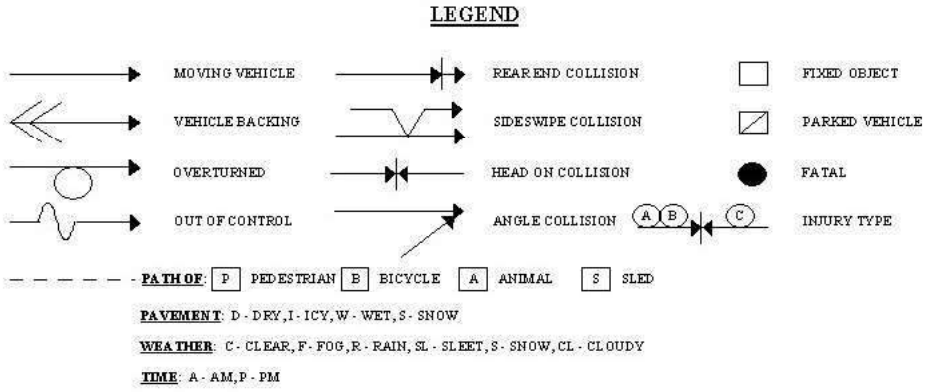
LOW NODE: **17038** HIGH NODE: **17039** REGION: **1** U/R: **URBAN**

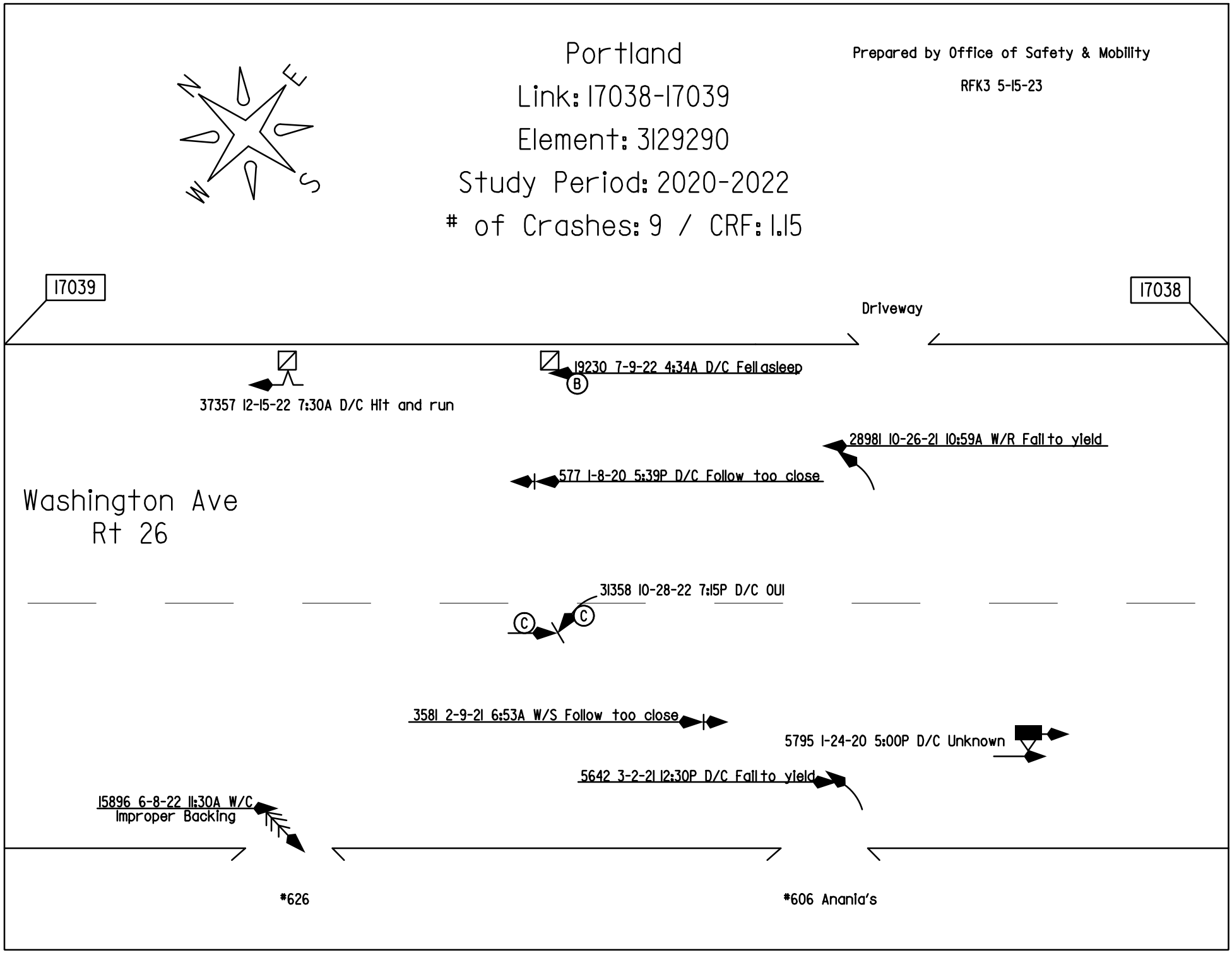
DESCRIPTION: **Washington Ave from Presumpscot St to Cummings**

RTE # / RD #: **0026X** DATE DRAWN: **5/15/2023** DRAWN BY: **BOB K**

STUDY FROM: **1/1/2020** STUDY TO: **12/31/2022**

CRASH RATE: **480.15** CRF: **1.15** % INJURY: **22.2** TOTAL CRASHES: **9**




Portland
Link: 17038-17039
Element: 3129290
Study Period: 2020-2022
# of Crashes: 9 / CRF: 1.15
Prepared by Office of Safety & Mobility
RFK3 5-15-23
N
E
S
W
17039
17038
Driveway
37357 12-15-22 7:30A D/C Hit and run
19230 7-9-22 4:34A D/C Fellasleep
B
28981 10-26-21 10:59A W/R Fail to yield
577 1-8-20 5:39P D/C Follow too close
Washington Ave
Rt 26
31358 10-28-22 7:15P D/C OUI
C
C
3581 2-9-21 6:53A W/S Follow too close
5795 1-24-20 5:00P D/C Unknown
5642 3-2-21 12:30P D/C Fail to yield
15896 6-8-22 11:30A W/C
Improper Backing
#626
#606 Anania's

H. C. L.
CRASH COLLISION DIAGRAM
DATA PACKAGE

COUNTY: **CUMBERLAND** TOWN: **PORTLAND**

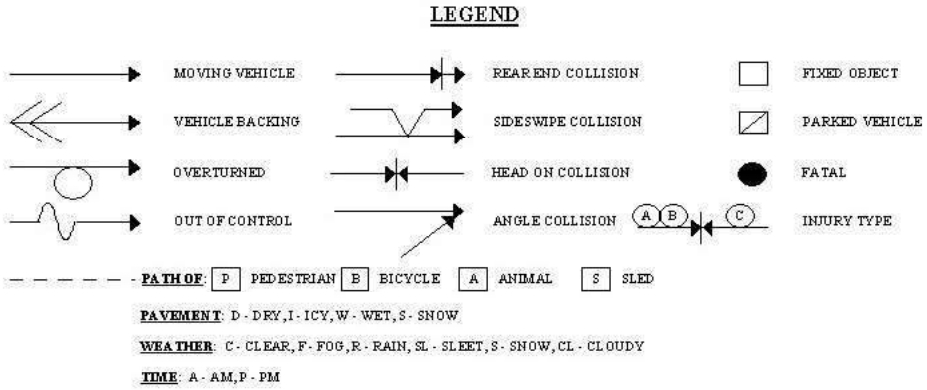
LOW NODE: **17045** HIGH NODE: **17046** REGION: **1** U/R: **URBAN**

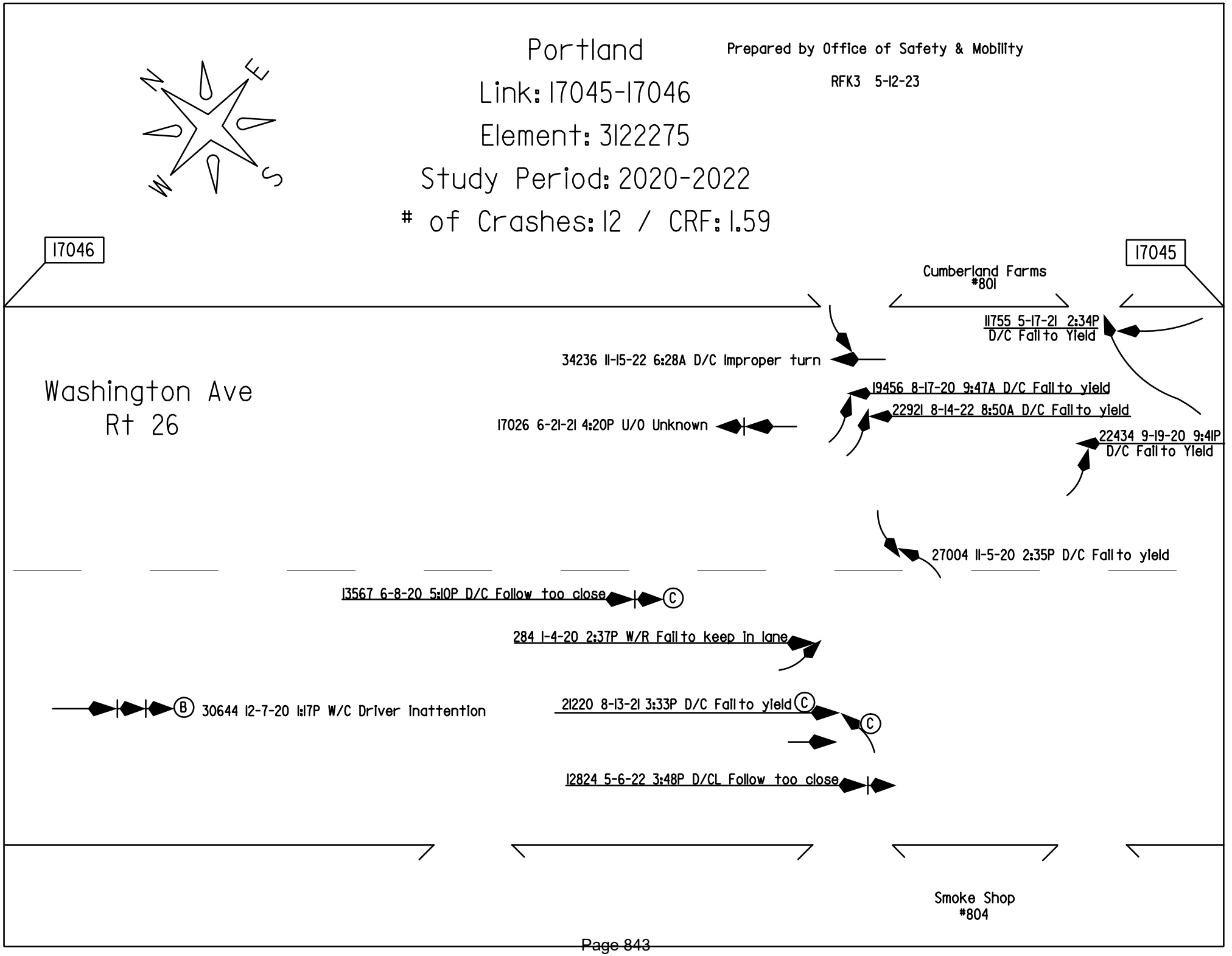
DESCRIPTION: **Washington Ave from Ocean Ave to Byfield Rd**

RTE # / RD #: **0026X** DATE DRAWN: **5/12/2023** DRAWN BY: **BOB K**

STUDY FROM: **1/1/2020** STUDY TO: **12/31/2022**

CRASH RATE: **673.57** CRF: **1.59** % INJURY: **25** TOTAL CRASHES: **12**




Portland
Link: 17045-17046
Element: 3122275
Study Period: 2020-2022
# of Crashes: 12 / CRF: 1.59
Prepared by Office of Safety & Mobility
RFK3 5-12-23
17046
17045
Cumberland Farms
#801
11755 5-17-21 2:34P
D/C Fail to Yield
34236 11-15-22 6:28A D/C Improper turn
19456 8-17-20 9:47A D/C Fail to yield
22921 8-14-22 8:50A D/C Fail to yield
17026 6-21-21 4:20P U/O Unknown
22434 9-19-20 9:41P
D/C Fail to Yield
Washington Ave
Rt 26
27004 11-5-20 2:35P D/C Fail to yield
13567 6-8-20 5:10P D/C Follow too close
C
284 1-4-20 2:37P W/R Fail to keep in lane
B
30644 12-7-20 1:17P W/C Driver Inattention
21220 8-13-21 3:33P D/C Fail to yield
C
C
12824 5-6-22 3:48P D/CL Follow too close
Smoke Shop
#804

3

Section 3: Development Entrances and Exits

3.A Entrance and Exit Locations

The site is located in the East Deering neighborhood of Portland, bounded by I-295, Sherwood Street, and Casco Bay. The site will be accessed directly off Sherwood Street into the proposed campus. All driveway locations are illustrated on the site plans as attachments to Section 1.

There are currently no existing bicycle accommodations on Sherwood Street, and incomplete sidewalks on Sherwood Street leading into the site. The Roux Institute is committed to improving Sherwood Street to accommodate bicycles and pedestrians in separate facilities (i.e. bike lanes and sidewalk) where possible with potential shared accommodations through the limited cross section under the I-295 bridge.

3.B Plan View

Attachment 1A shows the proposed site plan. As shown, the primary entrance to the site is via the end of Sherwood Street.

3.C Stopping Sight Distances

Since access to the site is an extension of Sherwood Street, sight lines are not applicable as vehicles enter and exit the site.

3.D Entrance/Exit Compliance with Design Requirements

Entrances and exits were designed to meet all the criteria specified in the City of Portland's Standard Details and Drawings.

4

Section 4: Title, Right, or Interest

4.A Evidence of Title, Right, or Interest

The proposed development is located on properties owned by the Applicant and identified as the following:

- 1 Beanpot Circle – 447 A001001

Attached are copies of the deeds associated with the property as well as a purchase and sales agreement between IDEALS and Northeastern University.

4.B Attachments

Attachment 4A Deed and Purchase and Sale Agreement

Attachment 4A

Deed and Purchase and Sale Agreement

[Execution Copy]

AGREEMENT FOR THE PURCHASE AND SALE OF REAL ESTATE

THIS AGREEMENT is effective as of August 30, 2021, by and between **B&G Foods North America, Inc.**, a Delaware Corporation (successor to **Heritage Acquisition Corp.**, herein "Heritage"**)** having a mailing address of 4 Gatehall Drive, Suite 110, Parsippany, New Jersey 07054 ("Seller") and **The Institute for Digital Engineering And Life Sciences**, a Maine non-profit corporation with an address of 100 Commercial Street, Portland, Maine 04101("Buyer"), WHO AGREE AS FOLLOWS:

WITNESSETH AS FOLLOWS:

1. PURCHASE AND SALE. Seller agrees to sell and Buyer agrees to buy, on the terms and conditions hereinafter set forth, approximately 13 acres of land and buildings generally situated at 1 Bean Pot Circle, Portland, Maine, together with all improvements thereon (except as specified below) and all rights and easements appurtenant thereto, which parcel is more particularly referenced by the City of Portland Assessor's Office as Map 447 Lot A001 and Lot A002 (although there is no separate assessed value or tax bill for Lot A-002) and described in certain deeds to Heritage recorded in the Cumberland County Registry of Deeds in Book 14616, at Page 50 and 14616, at Page 57, together with and including all of Seller's interest in abutting or adjacent tidal flats, intertidal lands, and State of Maine Submerged Lands Lease No. 0637-L-34 (together the "Property"). A survey purporting to show the Property as it existed in February of 1999 is recorded in said Registry in Plan Book 199, Page 159.

2. NO CONTINGENCIES. Prior to execution of the Agreement Buyer has completed such due diligence investigations relating the Property as it determined in is discretion to be desirable and it is expressly understood and acknowledged by Buyer that this Agreement and Buyer's obligations hereunder are not contingent or conditioned upon any further due diligence or other investigations. It is also expressly understood and acknowledged by Buyer that this Agreement and Buyer's obligations hereunder are not contingent or conditioned upon obtaining any zoning changes or any governmental permits or approvals or upon obtaining a commitment for or closing any financing for any portion of the Purchaser Price or for any costs to be incurred by Buyer after the Closing.

3. PURCHASE PRICE. Subject to any adjustments and prorations hereinafter described, Buyer agrees to pay for the Property the sum of [redacted] Dollars and 00/100 ($[redacted]) (the "Purchase Price"), payable as follows:

(a) Deposit. The sum of [redacted] Dollars ($[redacted]) as a deposit (the "Deposit") shall be paid to Seller directly within one (1) business day of Seller's acceptance hereof and held in escrow by Seller, which Deposit shall be credited towards the Purchase Price at the closing. The Deposit shall be non-refundable except in the case of Seller's default hereunder.

(b) Closing. The balance of the Purchase Price, [redacted] Dollars ($[redacted]), as adjusted for pro-rations and any other payments referenced herein, shall be paid to Seller at the closing in immediately available funds by a wire transfer to Seller (in accordance with wiring instructions provided to Buyer in writing within a reasonable time prior to the time of closing).

4. TITLE. Seller shall convey the Property to Buyer at the closing in fee simple with good, marketable and insurable title, free and clear of liens and encumbrances and other matters of record except as disclosed in Buyer's Title Commitment issued by Monument Title Company as agent for CATIC, Commitment No. 031521-01 dated March 16, 2021, a copy of which has been provided to Seller. Seller shall deliver the Property free and clear of any leases or occupancies except as otherwise provided herein.

5. CLOSING. Buyer acknowledges the need for the Seller to continue operations at the Property for a period following the date hereof and that Seller will need an additional period after operations cease to remove equipment and perform its other obligations under Section 7 hereof. The Closing Date shall be set forth in a notice to Buyer from Seller based on its schedule for ceasing operations and completing such obligations, provided however, that the closing shall take place in any event at the offices of Bernstein, Shur, Sawyer and Nelson, 100 Middle Street, Portland, Maine, no later than December 31, 2021 (the "Closing Date") or at such earlier or later date and location as Buyer and Seller shall mutually agree in advance and in writing. At the closing, Seller shall execute and/or deliver to Buyer, against payment of the purchase price: (a) a Quitclaim Deed with Covenant to the Property, in accordance with the Short Form Deeds Act, 33 M.R.S.A. § 761 et seq., (the "Deed"), (b) all keys, access cards, security codes and similar items to the Property in Seller's possession and (c) a Bill of Sale (without warranty) for five (5) large steel bean pots of the size and type historically used for the cooking of baked beans (the "Bean Pots"). Seller further agrees to execute and deliver to or cause to be delivered to Buyer and/or its designees at the closing such documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Buyer's acquisition of the Property, including without limitation a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations), an affidavit regarding underground storage tanks (as required by Maine Law), applicable Maine State REW forms and satisfactory evidence of Seller's existence and authority to convey the Property. At the closing Seller and Buyer shall execute assignment and assumption agreements that transfer to Buyer, and pursuant to which Buyer assumes all obligations arising after the Closing Date under: (i) the State of Maine Submerged Lands Lease No. 0637-L-34, (ii) the Commercial Lease between Seller as Landlord and [redacted] as tenant relating to a portion of the Property, (iii) Maine Department of Environmental Protection Air Emission License A-77-71-M-R (SM) relating to the Property and (iv) Maine Department of Environmental Protection Maine Pollutant Discharge Elimination System Permit and Waste Discharge License ME0001741 W000980-5R-H-R relating to the Property. The documents to be executed and delivered at the closing as described in this Section are sometimes herein called the "Closing Documents."

6. RISK OF LOSS, DAMAGE AND INSURANCE.

(a) All risk of loss to the Property prior to the closing shall be borne by Seller. Seller shall keep the Property insured against fire and other extended coverage risks as currently insured until the closing and shall name Buyer as an additional insured as its interest may appear.

(b) In the event that, prior to the closing, any part of the Property is damaged by fire or other casualty, then Seller and Buyer shall perform their respective obligations under this Agreement and at closing, Seller shall (x) deliver to Buyer at the Closing any insurance proceeds or condemnation awards received by Seller in respect of or allocable to the Property less any amount for the cost repairs performed by Seller prior to Closing; and (y) assign to Buyer all of Seller's interest in and to any insurance proceeds and/or condemnation awards allocable to the Property which have not yet been received by Seller on that date less any amount for the cost repairs performed by Seller prior to Closing; and (z) refrain from accepting or agreeing upon the amount of any payment of any proceeds or awards without Buyer's prior written consent, which consent shall not be unreasonably withheld. Seller agrees that it shall limit any repairs to be paid from insurance proceeds to repairs needed to continue operations at the Property through the scheduled date for ceasing such operations and thereafter shall be limited to securing the damaged area.

7. PRE-CLOSING OBLIGATIONS.

(a) Although Buyer has completed all of its due diligence investigations, it may have reason for its architects, engineers and consultants to enter upon or in any part of the Property for purposes of taking measurements and similar actions needed to prepare plans for work to be done after the closing or to complete applications for permits and approvals related to such work. Seller agrees to reasonably grant permission to any such entry by Buyer's architects, engineers and consultants provided that (i) such entry will be scheduled in advance through Seller's representative and shall be subject to reasonable restrictions to prevent any interference with Seller's operations or the performance of the obligations set forth in this Section 7, (ii) Buyer shall indemnify and hold Seller harmless from and against any property damage or personal injury claim or any mechanics' lien against the Property that arises out of or in connection with such entry by Buyer's architects, engineers and consultants, and (iii) Buyer's architects, engineers and consultants entering the Property shall carry liability insurance in commercially reasonable amounts, naming Seller as an additional insured and certificates of such insurance in form satisfactory to Seller shall be delivered to Seller prior to any such entry.

(b) Buyer has already conducted due diligence of the Property including environmental site assessments (ESAs) prior to the date hereof and accepts the Property in its as-is condition except as specifically set forth herein. In the event that Seller obtains knowledge of any spill or release of hazardous materials on the Property that occurred after the date hereof and prior to the Closing Date it shall promptly notify Buyer and undertake any remedial actions related thereto that are required by applicable law and the Closing Date hereunder shall be extended to the extent reasonably necessary to complete any such remedial actions.

(c) Seller agrees to pay all contractors and other persons engaged by it to perform work on the Property between the date hereof and the Closing as necessary to prevent any mechanics' liens from being recorded against the Property pursuant to 10 M.R.S.A. §3251. If Seller's title to the Property is further encumbered, Seller shall promptly after obtaining knowledge of any such encumbrances take actions necessary to have such encumbrance released prior to closing, and the Closing Date hereunder shall be extended to the extent reasonably necessary to

obtain such release. The foregoing is not a consent or permission to further encumber the title and Seller specifically agrees it shall not voluntarily further encumber the title to the Property.

(d) Prior to closing Seller shall take all actions required by the federal Worker Adjustment and Retraining Notification Act of 1988 and 26 M.R.S.A. §625-B (together, the "Plant Closure Laws") with respect to the closing of Seller's operations at the Property and shall relocate or terminate the employment of all of its employees working at the Property. Seller shall be solely responsible, and Buyer shall have no obligations whatsoever for, any compensation, severance pay or other amounts payable to any current or former employee of Seller as a result to the closing of Seller's operations at the Property, whether under the Plant Closure Laws (or by reason of Seller's breach thereof), collective bargaining agreements or any applicable employee benefit plans (collectively, "Plant Closure Liabilities"). In the event that Buyer receives notice of the commencement of any action by any person who is not a party to this Agreement or an affiliate of a party claiming that Buyer is liable for any Plant Closure Liabilities due to the fact that Buyer is a successor owner of the Property ("Third Party Claims"), Buyer shall promptly notify Seller and Seller shall indemnify Buyer against any losses damages, costs or expenses (including reasonable attorneys' fees) arising from such Third Party Claims. The provisions of this Section 7(d) are solely for the benefit of Buyer, and nothing herein, express or implied, shall confer upon any employee or former employee of Seller or other person any rights or remedies of any nature whatsoever under or by reason of this this Section 7(d) and nothing contained herein shall be construed to establish, amend or modify any benefit plan, program, agreement or arrangement.

(e) Prior to Closing Seller shall remove all of its production equipment (other than the Bean Pots) and other personal property from the Property, including all trash and debris. At the closing Seller shall deliver possession of the Property to Buyer free and clear of all leases and tenancies other than the Lease to [redacted]. In the event that during the process of removing such personal property Seller discovers any plans, specifications or reports relating to the improvements on the Property that might be useful to Buyer in connection with the renovation or maintenance of such improvements, Seller shall deliver such materials to Buyer prior to the Closing.

(f) In the event that some specific portion of the Seller's obligations set forth in this Section 7 has not been completed as of the Closing Date (other than Section 7(d) which is addressed by the indemnification provision therein) and the parties are able to agree on the estimated cost of completing such uncompleted obligations, the parties may enter into an escrow agreement (the "Escrow Agreement") pursuant to which a portion of the Purchase Price equal to such estimated cost will be held in escrow by a mutually acceptable escrow agent as security for such completion after the Closing Date (the "Escrow Funds"). If the Seller and Buyer do not execute any such Escrow Agreement, the provisions set forth in Section 10(a) shall be applicable with respect to any such uncompleted obligations. Any such Escrow Agreement shall include provisions relating to the remedies available to the parties if the uncompleted obligations are not completed as set forth therein and for the payment to Seller of any unused balance of the Escrow Funds.

8. "AS IS" SALE; RELEASE OF CLAIMS.

(a) Except for Seller's representations and warranties set forth in Section 9, Seller makes no express or implied representation or warranty with respect to the Property, and Buyer agrees that except for Seller's representations set forth in Section 9, and Seller's covenants set forth in Section 7, Buyer is not relying on and has not relied on any statements, promises, information or representations made or furnished by Seller or by any real estate broker, agent or any other person representing or purporting to represent Seller but rather is relying solely on its own expertise and on the expertise of its consultants and on the inspections and investigations Buyer and its consultants have conducted.

(b) Buyer hereby acknowledges and agrees that the acceptance of the Deed and the other Closing Documents by Buyer shall be deemed to be full performance and discharge of every agreement and obligation on the part of Seller to be performed under this Agreement except those, if any, which are herein specifically stated to survive delivery of the Deed and the Closing Documents. No agreement or representation or warranty made in this Agreement by Seller will survive the Closing and the delivery of the Deed or Closing Documents, unless expressly provided otherwise, provided that for the avoidance of doubt, Seller is bound to perform its obligations under Section 7 hereof and Buyer's remedies with respect thereto will survive the Closing to the extent provided in Section 10(a).

(c) EXCEPT AS SPECIFICALLY SET FORTH TO THE CONTRARY IN THIS AGREEMENT, INCLUDING, BUT NOT LIMITED TO, SELLER'S OBLIGATIONS UNDER SECTION 7 HEREOF, BUYER AGREES (A) TO TAKE THE PROPERTY "AS IS, WHERE IS, WITH ALL FAULTS" AND (B) THAT NO REPRESENTATIONS OR WARRANTIES ARE MADE OR RESPONSIBILITIES ASSUMED BY SELLER AS TO THE CONDITION OF THE PROPERTY, AS TO THE TERMS OF ANY LEASES OR OTHER DOCUMENTS OR AS TO ANY INCOME, EXPENSE, OPERATION OR ANY OTHER MATTER OR THING AFFECTING OR RELATING TO THE PROPERTY, NOW OR ON THE CLOSING DATE. BUYER AGREES TO ACCEPT THE PROPERTY IN THE CONDITION EXISTING ON THE CLOSING DATE, SUBJECT TO ALL FAULTS OF EVERY KIND AND NATURE WHATSOEVER WHETHER LATENT OR PATENT AND WHETHER NOW OR HEREAFTER EXISTING. BUYER ACKNOWLEDGES THAT AS OF THE CLOSING DATE, BUYER WILL HAVE INSPECTED THE PROPERTY AND OBSERVED ITS PHYSICAL CHARACTERISTICS AND CONDITIONS AND WILL HAVE HAD THE OPPORTUNITY TO CONDUCT SUCH INVESTIGATIONS AND STUDIES ON OR OVER THE PROPERTY AND ADJACENT AREAS AS IT DEEMS NECESSARY AND, EXCEPT FOR THE EXCEPTED CLAIMS (AS DEFINED BELOW), HEREBY WAIVES ANY AND ALL OBJECTIONS TO OR COMPLAINTS REGARDING THE PROPERTY AND ITS CONDITION, INCLUDING, BUT NOT LIMITED TO, FEDERAL, STATE OR COMMON LAW-BASED ACTIONS AND ANY PRIVATE RIGHT OF ACTION UNDER STATE AND FEDERAL LAW TO WHICH THE PROPERTY IS OR MAY BE SUBJECT, INCLUDING, BUT NOT LIMITED TO, CLAIMS RELATING TO PHYSICAL CHARACTERISTICS AND EXISTING CONDITIONS, INCLUDING STRUCTURAL AND GEOLOGICAL CONDITIONS, SUBSURFACE SOIL AND WATER CONDITIONS, AND SOLID AND HAZARDOUS WASTE AND HAZARDOUS MATERIALS (AS DEFINED BELOW) ON, UNDER, ADJACENT TO OR OTHERWISE AFFECTING THE PROPERTY. BUYER

FURTHER ASSUMES THE RISK OF CHANGES IN APPLICABLE LAWS AND REGULATIONS RELATING TO PAST, PRESENT AND FUTURE ENVIRONMENTAL CONDITIONS ON THE PROPERTY AND THE RISK THAT ADVERSE PHYSICAL CHARACTERISTICS AND CONDITIONS, INCLUDING THE PRESENCE OF HAZARDOUS MATERIALS OR OTHER CONTAMINANTS, MAY NOT HAVE BEEN REVEALED BY ITS INVESTIGATION.

(d) Except with respect to the Seller's fraud, the Seller's representations set forth in Section 9, Buyer's remedies for defaults in Seller's obligations under Section 7 as described in Section 10(a), or as otherwise expressly provided in this Agreement, Buyer hereby fully and forever waives, and Seller hereby fully and forever disclaims and shall not be liable or bound in any manner by, any and all warranties, guarantees, promises, statements, representations or information of whatever type or kind with respect to the Property, whether express, implied or otherwise, including warranties of fitness for a particular purpose, tenantability, habitability or use. Buyer agrees that except for any Claims (as defined below) arising out of a breach of any of Seller's representations and warranties in Section 9 or the Closing Documents executed by Seller and any and all Claims for fraud by Seller ("Excepted Claims"), Buyer and anyone claiming by, through or under Buyer hereby waives its right to recover from and fully and irrevocably releases Seller and Seller's employees, officers, directors, trustees, shareholders, members, partners, representatives, agents, servants, attorneys, affiliates, parents, subsidiaries, successors and assigns ("Released Parties") from any and all claims, responsibility and/or liability that it may now have or hereafter acquire against any of the Released Parties for any and all costs, losses, claims, liabilities, damages, expenses, demands, debts, controversies, claims, actions or causes of actions (collectively, "Claims") arising from or related to the condition (including any construction defects, errors, omissions or other conditions, latent or otherwise, and the presence in the soil, air, structures and surface and subsurface waters of materials or substances that have been or may in the future be deemed to be Hazardous Materials or otherwise toxic, hazardous, undesirable or subject to regulation and that may need to be specifically treated, handled and/or removed from the Property under current or future federal, state and local laws, regulations or guidelines or common law), valuation, salability or utility of the Property, condition of title to the Property, compliance with any applicable federal, state or local law, rule or regulations or common law with respect to the Property, or the Property's suitability for any purposes whatsoever, and any information furnished by the Released Parties in connection with this Agreement. Buyer will indemnify Seller with respect to any environmental liabilities associated with the Property that may be discovered or arise post-closing, regardless of when the action(s) leading to such liabilities occurred.

(e) Seller and Buyer have agreed upon the Purchase Price relating to the Property and other provisions of this Agreement in contemplation and consideration of Buyer's agreeing to the provisions of this Section 8**,** which Section shall survive the closing and the delivery of the Deed and the Closing Documents.

9. REPRESENTATIONS AND WARRANTIES OF SELLER. Seller represents and warrants to Buyer that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Seller is duly organized and in good standing under the laws of the State of Delaware, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Seller of its obligations hereunder are within Seller's corporate powers, and have been duly authorized and approved by all necessary actions on behalf of Seller and will not result in a breach of Sellers's articles of incorporation or bylaws, or any injunction, judgment, court order or agreement to which Seller is a party;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and the person who will execute the Deed and the other Closing Documents on behalf of Seller will be duly authorized to do so;

(d) To the best of Seller's knowledge, no consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Seller in connection with the execution and delivery of this Agreement or the performance hereof by Seller, other than (i) approvals by the Maine Department of Environmental Protection relating to the transfers of the Air Emission License and the Pollutant Discharge Elimination System Permit and Waste Discharge License relating to the Property and (ii) approval from the Maine Department of Agriculture, Conservation and Forestry relating to the transfer of the Submerged Lands Lease;

(e) There are no litigation, liens, judgments, violations, or proceedings pending, or to the best of Seller's knowledge, threatened in writing against or relating to the Property nor does Seller know or have reasonable grounds to know of any basis for any such action, or of any governmental investigation relating to the Property, and there is no other litigation pending or to the best of Seller's knowledge, threatened in writing against Seller, which if determined adversely would restrain the consummation of the transaction contemplated by this Agreement or would declare illegal, invalid or non-binding any of the obligations or covenants of Seller hereunder;

(f) Seller is not a "foreign person" within the meaning of §1445 of the Internal Revenue Code; and

(g) To the best of Seller's knowledge, there are no purchase options or rights of first refusal relating to any portion of the Property and there are no contracts or agreements between Seller and third parties relating to the Property (other than the Lease to [redacted]) which will be binding on Buyer after the Closing.

For purposes of this Agreement and any Closing Document executed by Seller the phrases "to the best of Seller's knowledge," or the "knowledge" of Seller, or words of similar import are used, they shall be deemed to refer to the actual knowledge of Bruce Wacha or Tyler Wallace, without any independent investigation. The provisions of this Section 9 shall survive the closing and the delivery of the Deed and the Closing Documents for a period of twelve (12) months.

10. DEFAULT AND REMEDIES.

(a) In the event that Seller defaults in the performance of its obligations under Section 7 hereof, Buyer may send Seller a default notice specifying such default at least five (5) days

prior to the scheduled Closing Date. Seller may respond to any such default notice by agreeing to cure such default in which case the Closing Date will be postponed for a period of time not to exceed thirty (30) days in order for Seller to perform such cure. If Seller fails to cure any default set forth in such notice prior to Closing, or if Seller fails to remove any mechanics' liens as required by Section 7(c) whether or not a default notice with respect thereto was given prior to Closing, Buyer's sole remedy shall be to pursue a claim against Seller for actual damages caused by such default including, without limitation, reasonable attorneys' fees, but excluding incidental or consequential damages, and Buyer's right to pursue such a damage claim for such defaults under Section 7 shall survive the closing and the delivery of the Deed and the Closing Documents for a period of twelve (12) months.

(b) In the event that Seller defaults in the performance of its obligation to convey the Property to Buyer hereunder, Buyer's sole remedy shall be to within sixty (60) days of when the Closing Date was to have occurred, to commence and diligently prosecute an action in the nature of specific performance. If such an action in the nature of specific performance is not so commenced within said time, or is unsuccessful, Seller shall refund the Deposit and upon payment of such refund the parties will be released from their obligations under this Agreement. Under no circumstances will Buyer have available to it any remedy that includes the termination of this Agreement or (except as provided in Section 10(a) above) an action at law or otherwise for damages.

(c) In the event that Buyer defaults in its obligation to close hereunder, Seller shall retain the Deposit, as full and complete liquidated damages in lieu of any other legal or equitable remedy, and this Agreement will terminate and neither party will be under any further obligation hereunder. The parties acknowledge that Seller's damages due from Buyer's default hereunder are difficult or impossible to ascertain and that the amount of the Deposit represents a reasonable estimate by both parties of Seller's damages.

11. OFF MARKET. Seller may not list or offer the Property for sale and shall not seek, accept, solicit or negotiate any third party offers for all or any portion of the Property while this Agreement is in effect. This Section does not limit Seller's right to sell its equipment or other personal property located at the Property to others.

12. BROKERAGE. The parties agree that no broker has been involved in this transaction other than Tony McDonald of The Boulos Company ("Broker") representing Buyer, and each agrees to indemnify the other from and against any damages, costs or expenses (including reasonable attorneys' fees) that the other party may suffer as a result of claims made or suits brought by any other broker, finder or agent in connection with this transaction, the obligated party hereunder to be the party whose conduct gives rise to such claims. This indemnity shall survive the closing and any termination of this Agreement. Buyer shall be responsible for and shall pay directly any commission owing to Broker.

13. ADJUSTMENTS, PRORATIONS AND CLOSING COSTS.

(a) Real estate taxes, assessments, rentals, fuel oil, and utilities shall be prorated as of the date of closing based upon amounts thereof actually paid or received (as the case may be) as of the Closing Date.

(b) The Maine real estate transfer tax shall be paid by Seller and Buyer in accordance with 36 M.R.S.A. § 4641-A.

(c) The recording fee for the deed of conveyance will be paid by Buyer.

(d) A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A unless Seller furnishes to Buyer an affidavit stating, under penalty of perjury, that Seller is a resident of Maine or that the transfer is otherwise exempt from withholding tax.

(e) If the parties enter into an Escrow Agreement as described in Section 7(e), a portion of the purchase price equal to the Escrow Funds will be paid to the escrow agent named therein.

14. MISCELLANEOUS.

(a) Time. Time is of the essence of this Agreement.

(b) Notices. Any notices required or permitted to be given under this Agreement shall be sufficient if in writing and if sent: (i) by first class mail, postage prepaid, registered or certified, return receipt requested; (ii) by hand delivery; (iii) by FedEx, or similar overnight express mail service, prepaid; or (iv) by electronic mail transmission, each to the addresses listed below:

TO SELLER: B&G Foods North America, Inc.
4 Gatehall Drive
Parsippany, NJ 07054
Attention: Mr. Bruce Wacha,
Executive Vice President and Chief Financial Officer
Email: Bruce.Wacha@bgfoods.com

WITH A COPY TO: B&G Foods North America, Inc.
4 Gatehall Drive
Parsippany, NJ 07054
Attention: General Counsel
Email: corporatesecretary@bgfoods.com

AND WITH A COPY TO: James C. Palmer, Esq.
Verrill Dana, LLP
One Portland Square
Portland, ME 04101-4054
Email: jpalmer@verrill-law.com

TO BUYER: Charles E Hewett, Chief Executive Officer
IDEALS
100 Commercial Street
Portland, ME 04101
chuck.hewett@ideals.org

WITH A COPY TO: James Broder, Esq.
Bernstein Shur
100 Middle Street
PO Box 9729
Portland, ME 04104-5029
jbroder@bernsteinshur.com

All such communication shall be deemed made upon the earlier of (3) business days following deposit with the U.S. Mail or the date of receipt as disclosed on the return receipt (if sent by registered or certified mail), or upon delivery (if hand delivered), or upon delivery as indicated on the proof of delivery (if sent via FedEx or similar overnight express mail service), or if sent via email with proof of receipt by the primary addressee, effective upon the day sent if received prior to 3:00 p.m. local time or the next business day if received thereafter. With respect to any of the above-referenced methods of delivery, rejection or other refusal to accept or the inability to deliver because of a change of address of which no notice was given shall be deemed to be receipt of the notice sent. Either party may change its address for purposes of this subparagraph by giving the other party notice of the new address in the manner described herein.

(c) Binding Effect/Assignment. This Agreement shall not become a binding contract until signed by both parties and that fact has been communicated to all parties or their agents. This Agreement will inure to the benefit of and bind the respective heirs, successors, personal representatives and assigns of the parties hereto and may be cancelled, modified or amended only by a writing executed by the parties hereto or their legal representatives. Buyer shall have the right to assign its interest hereunder to an entity formed and controlled by Buyer prior to closing, provided that any such assignment shall not release the assignor from any its obligations or liabilities hereunder.

(d) Construction. This Agreement sets forth the entire agreement between the parties, and there are no other agreements or understandings between them related to the subject matter hereof. Without limiting the forgoing, the Non-Binding Letter of Intent dated February 2, 2021 between Seller and Buyer is superseded hereby and neither party shall have any further rights, obligations or claims thereunder. As used in this Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed by and construed in accordance with the laws of Maine. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof.

(e) Counterparts/Electronic Signatures. This Agreement may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Agreement may be signed electronically and such shall be treated as original signatures.

(f) Attorney's Fees. If any legal action (including without limitation mediation and arbitration) is brought or compelled by either party to enforce any provisions of this Agreement, the prevailing party shall be entitled to recover from the other party its reasonable attorneys' and paralegals' fees and court costs, subject to and limited by the provisions of the Default and Remedies section of this Agreement.

(g) Effective Date. The Effective Date of this Agreement shall be deemed to be the date first set forth above in this Agreement, provided that if no date is filled in, the Effective Date shall be the last date of the signature of either Buyer or Seller.

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IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement under seal as of the dates indicated above.

SELLER:

B&G Foods North America, Inc.

By: Bruce C Wacha
Print Name: Bruce C. Wacha
Title: Executive Vice President of Finance and Chief Financial Officer

Date: August 30, 2021

BUYER:

The Institute for Digital Engineering and Life Sciences (IDEALS)

By:_____
Print Name: Dr. Charles E. Hewett
Title: Executive Director

Date: August 30, 2021

IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement under seal as of the dates indicated above.

SELLER:

B&G Foods North America, Inc.

By:_____
Print Name: Bruce C. Wacha
Title: Executive Vice President of Finance and Chief Financial Officer

Date: August 30, 2021

BUYER:

The Institute for Digital Engineering and Life Sciences (IDEALS)

By:_____
Print Name: Dr. Charles E. Hewett
Title: Executive Director

Date: August 30, 2021

DocuSign Envelope ID: 93BEB8D2-0DE3-4F1B-A064-562E6257362F

EXECUTION VERSION

AGREEMENT FOR THE PURCHASE AND SALE OF REAL ESTATE

THIS AGREEMENT is effective as of October 23, 2023 by and between **NORTHEASTERN UNIVERSITY**, a Massachusetts non-profit corporation with an address of 360 Huntington Avenue, Boston, Massachusetts 02115 ("Buyer"), and **THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCES**, a Maine non-profit corporation with an address of 100 Commercial Street, Portland, Maine 04101 ("Seller").

RECITALS

WHEREAS, in furtherance and fulfillment of that certain Memorandum of Understanding, dated July 27, 2022 by and between Buyer and Seller (the "MOU"), the Seller desires to sell, transfer and convey to Buyer a certain parcel of land, together with the improvements thereon, located on the easterly side of Interstate 295 and the southerly side of Sherwood Street in the City of Portland, County of Cumberland and State of Maine (the "Campus") as more specifically described herein; and

WHEREAS, the MOU and further agreements by and among Buyer, Seller, and David and Barbara Roux (the "Rouxs") envision that Buyer will develop the Campus for the creation of a graduate institute (the "Institute"):

- instructing students in the fields of artificial intelligence, digital science, data visualization, computational medicine, genomics and life sciences and project management, and develop content and pedagogy therefor,
- conducting research in the fields described above, among others, and
- encouraging innovation and entrepreneurialism among new and established companies deploying the above-mentioned skills and technologies,

WHEREAS, the buyer has agreed to develop the Campus as the permanent home of the Institute with other supporting infrastructure to encourage learning, collaboration, innovation and other progress, and

WHEREAS, it is the intent of the Seller and the Rouxs that the Campus will, over time, become a force for education, research, collaboration and entrepreneurialism meaningful to the 21st century economy, innovation and job creation.

WITNESSETH AS FOLLOWS:

1. PURCHASE AND SALE. Seller agrees to sell and Buyer agrees to buy, on the terms and conditions hereinafter set forth, approximately thirteen (13) acres of land and buildings generally situated at 1 Bean Pot Circle, Portland, Maine together with all improvements that may at the time of closing be thereon (except as specified below) and all rights and easements appurtenant thereto, which parcel is more particularly bounded and referenced by the City of Portland Assessor's Office as Map 447-A-001-001 and 447-A-001-002 and as more fully described on **Exhibit A** attached hereto, being the same premises described in a Quitclaim Deed

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with Covenant from B&G Foods North America, Inc. to Seller, dated March 23, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39282, Page 151 together with and including all abutting or adjacent tidal flats, intertidal lands, and related rights in, to and under any submerged lands easements or leases between Seller and/or any predecessor of Seller with the State of Maine (together the "Property"). The following shall also be delivered and conveyed to Buyer at Closing hereunder:

A. Conveyance of tangible personal property, if any via Bill of Sale.

B. Conveyance of intangible personal property, if any, associated with the Property, to the extent owned by Seller, by Bill of Sale and Assignment.

C. Assignment and Assumption of the Maine Yacht Center lease (the "MYC Lease") of a portion of the Property, in form and substance reasonably acceptable to Buyer.

D. Conveyance/Assignment and Assumption of Submerged Land Easement, which requires notice to the Maine State Bureau of Parks and Lands.

E. Assignment and Assumption of the following MDEP Permits if in effect at the time (for which Buyer shall seek MDEP consent):

i. Maine Department of Environmental Protection Air Emission License A-77-71-M-R(SM)

ii. Maine Department of Environmental Protection Maine Pollutant Discharge Elimination System (MDEPDES) Permit #ME0001741

iii. Maine Waste Discharge License (WDL) License #W000980-5R-H-R.

iv. NRPA Permit (*if any, currently in process*)

(collectively, the "MDEP Permits")

F. Assignment and Assumption of the following City of Portland and/or State permits and approvals:

i. Demolition permit

ii. Any site plan approval and/or building or construction permits

iii. MDOT permits including Traffic Movement Permit

iv. any other issued or pending state, municipal or federal permits or permit applications

(collectively, with the MDEP Permits, the "Governmental Permits")

G. Assignment and Assumption of the construction and development contracts and agreements described on **Exhibit B** (the "Development Contracts").

H. Assignment of any and all warranties relating to any completed contracts for construction or demolition of any of the improvements upon the Campus (the "Construction Warranties"), if any.

I. Assignment of any and all studies, reports, engineering, surveys, appraisals, or other such reports or studies, to the extent assignable (collectively, the "Studies and Reports"), and, if and to the extent requested by Buyer, delivery of reliance letters with respect to such Studies and Reports in a form reasonably acceptable to Buyer. Seller agrees to seek consent to such assignments and any required reliance letters from the professionals or vendors providing the Studies and Reports.

2. OFFER AND ACCEPTANCE. The execution of this Agreement by Buyer represents an offer to Seller on the terms and conditions set forth herein. This offer shall be open for acceptance by Seller until 4:00 p.m. Portland, Maine time on October 23, 2023 unless extended by mutual agreement of Buyer and Seller. Seller's acceptance of this offer shall be evidenced by Seller delivering an executed copy of this Agreement to Buyer at the address set forth in Section 14 below on or before the expiration of this offer. If this offer is not accepted by Seller prior to its expiration, this offer shall automatically expire and this Agreement shall be null and void and of no further force and effect.

3. CONSIDERATION. The consideration for the transfer of the Property is in furtherance and fulfillment of the MOU and the performance under such further agreements by and among Buyer and Seller for Buyer's development of the Property as the site of the Institute for the purposes of instructing students, conducting research, and supporting entrepreneurialism in the fields of artificial intelligence, digital science, data visualization, computational medicine, genomics and life sciences and project management, and develop content and pedagogy therefor, and developing the Property to serve as the permanent home of the Institute with other supporting infrastructure. At closing hereunder, however, the parties shall adjust for any pro-rations and any other payments referenced herein. Except as specified in this Agreement or in any other agreement among the parties including the Rouxs, both Buyer and Seller shall bear their own expenses in connection with the performance of their obligations hereunder. Buyer agrees to pay and Seller agrees to accept One Dollar ($1.00) and other valuable consideration as the Purchase Price for the Property.

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[redacted]

4. TITLE. Seller shall convey the Property to Buyer at the closing in fee simple with good, marketable and insurable title, free and clear of liens and encumbrances and other matters of record, except as disclosed in Buyer's Title Insurance Policy # OP 04921177 ME issued by CATIC (the "Title Insurer"), dated March 24, 2022, a copy of which has been provided to Seller (the "Title Policy"). Seller shall deliver the Property free and clear of any leases or occupancies except as otherwise provided herein. Notwithstanding the foregoing, during the period commencing on the date hereof and continuing for a period of thirty (30 days (the "Inspection Period"), Buyer shall have right to review the title and to make any objections to the title in writing to Seller. Upon receipt of Buyer's title objections, Seller shall have a period of up to thirty (30) days to either (i) resolve the title objections to the reasonable satisfaction of Buyer; (ii) or to propose affirmative title insurance coverage addressing any such title objection that the Title Insurer is willing to provide, including an agreement to continue to provide such affirmative coverage to subsequent grantees and mortgagees; or (iii) to refuse to address such title objection, in which case Buyer may elect to terminate this Agreement, or Buyer may elect to close notwithstanding the title objection.

5. CLOSING. The transfer of title and closing hereunder shall take place at the offices of Bernstein, Shur, Sawyer and Nelson, 100 Middle Street, Portland, Maine, no later than ten days prior to Buyer's application for a building permit for the Buyer's initial phase of construction of the Institute is submitted to the City of Portland (the "Closing Date") or at such earlier date and location as Buyer and Seller shall mutually agree in advance and in writing. Buyer shall have the right to request a closing at any time prior to its application for a building permit, provided that Buyer has satisfied the remaining obligations of Buyer under this Agreement, other than such obligations that Seller has agreed to waive in writing. At the closing,

(a) Seller shall execute and/or deliver to Buyer:

i. a Quitclaim Deed with Covenant to the Property, in accordance with the Short Form Deeds Act, 33 M.R.S.A. § 761 et seq., (the "Deed"),

ii. a Quitclaim with Covenant Bill of Sale conveying the personal property to be conveyed to Buyer as set forth in Section 1.A. above;

iii. all keys, access cards, security codes and similar items to the Property in Seller's possession;

iv. the originals of all permits and licenses relating to the Property, if any, in Seller's possession;

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v. such documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Buyer's acquisition and financing of the Property, including without limitation a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations), an affidavit regarding underground storage tanks (as required by Maine Law), a surface/subsurface waste disposal system certificate (if applicable), applicable Maine State REW forms and satisfactory evidence of Seller's existence, authority to convey the Property; and

vi. One or more Assignment and Assumption Agreements signed by Seller to assign to Buyer all of Seller's rights in and to the Maine Yacht Center Lease; the Governmental Permits, the Studies and Reports, the Construction Warranties and the Development Contracts; together with any reliance letters with respect to the Studies and Reports requested by Buyer.

(b) Buyer shall execute and/or deliver to Seller:

i. the purchase price;

ii. evidence that the buyer's Board of Trustees has voted affirmatively to proceed with Phase 1 of the Campus development project (the "Project") and has committed sufficient financial resources to fund Phase 1 of the Project which shall include all work reasonably necessary for the construction of one or more learning, research and collaboration buildings and supporting parking and public infrastructure, construction of a new pier, and renovation of the exterior of the existing historic landmarked Bean Building as shall be further described in the initial Site Plan application (as the same shall be jointly submitted by the parties hereto) as approved by the City of Portland (the contents of which – as approved by the City -- shall be referred to herein as "Phase 1"). Such financial resources may be from various sources including bond financing, Buyer's own resources, pledges and other philanthropic giving and such financial resources as may be available to Buyer over the course of the construction of Phase 1 of the Project as opposed to being fully available at the time of closing;

iii. One or more Assignment and Assumption Agreements signed by Buyer to enable Buyer to assume all of Seller's rights in and to the Maine Yacht Center Lease; the Governmental Permits, the Studies and Reports, the Construction Warranties and the Development Contracts; and

iv. such other documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Seller's disposition of the Property.

Unless this Agreement is extended by mutual agreement of the parties, if the Closing does not occur for any reason by December 31, 2024, then this Agreement shall automatically terminate and be of

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no further force and effect and all obligations of the parties shall cease other than those specifically identified herein as surviving such termination.

6. RISK OF LOSS, DAMAGE AND INSURANCE.

(a) All risk of loss to the Property prior to the closing shall be borne by Seller. Seller shall keep the Property fully insured against fire and other extended coverage risks until the closing and shall name Buyer as an additional insured as Buyer's interest may appear.

(b) In the event that, prior to the closing, the improvements which are part of the Property are destroyed or, in the opinion of Buyer, substantially damaged, Buyer may either (i) terminate this Agreement, or (ii) accept the insurance proceeds payable by reason of such damage or destruction and close this transaction notwithstanding the same. If any part of the Property is damaged by fire or other casualty and Buyer does not elect to terminate this Agreement pursuant to this Section, then Seller and Buyer shall perform their respective obligations under this Agreement and in the event of a closing, Seller shall (x) deliver to Buyer at the Closing any insurance proceeds or condemnation awards received by Seller in respect of or allocable to the Property; and (y) assign to Buyer all of Seller's interest in and to any insurance proceeds and/or condemnation awards allocable to the Property which have not yet been received by Seller on that date; and (z) refrain from accepting or agreeing upon the amount of any payment of any proceeds or awards without Buyer's prior written consent. Notwithstanding the above, Buyer acknowledges that Seller is in the process of abating and demolishing all of the facilities on the site except for the so-called "Cannery" or "Bean Building"

7. INSPECTION/DELIVERY OF DOCUMENTS; AS-IS CONDITION. Reasonably promptly after this Agreement becomes effective, Seller shall deliver to Buyer copies of all of the Studies and Reports in Seller's possession or control to the extent not already provided to Buyer. With reasonable notice which shall be a minimum of three business days, Seller hereby grants Buyer or its agents the right to enter upon or in any part of the Property at all reasonable times and from time to time prior to the closing in order to inspect the Property, conduct surveys, soil tests, engineering and environmental testing and studies and to do such things as are reasonably necessary with respect to its due diligence, acquisition and development of the Property, provided, however, that Buyer's obligations to close hereunder shall not be conditioned upon the results of such due diligence other than as set forth below.

Buyer has commenced its review of the Studies and Reports, including environmental site assessments (ESAs) performed prior to the date hereof and accepts the Property in its as-is condition except as specifically set forth herein. Notwithstanding the foregoing, Seller shall not, after the date hereof, suffer or allow the occurrence of any further event(s) which would create, constitute, or be considered a recognized environmental condition (REC) under any qualified Phase I ESA without prompt and complete remediation or abatement, or else Seller shall be considered in default hereof. Furthermore, if Seller's title to the Property is further encumbered by any matter or means after the date hereof and such further encumbrance is not cleared prior to Closing, Seller shall be in default hereof. The foregoing is not a consent or permission to further encumber the title and Seller specifically agrees it shall not further encumber the title to the Property nor permit any mortgage, lien, claim, or charge to accrue which shall affect Seller's title.

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Further notwithstanding the foregoing, the parties acknowledge that the environmental site assessments conducted by or for Buyer or for which Buyer has been provided were conducted before certain demolition activities on the site that were performed by or for Seller. Buyer shall have the right to conduct further or updated ESAs and to review any remediation activities undertaken by Seller or its agents or contractors since the date of the ESAs conducted by or for Buyer. In the event that such further or updated ESAs reveal any RECs not previously disclosed to Buyer, Buyer shall have the right to terminate this Agreement or to require that further conditions be satisfied by Seller prior to closing.

Except as set forth in this Agreement, the Property will be conveyed "as is" at the time of closing and Seller disclaims all representations and warranties from Seller to Buyer other than any limited representations set forth herein. Buyer will indemnify Seller with respect to any environmental liabilities associated with the Property that may be discovered or arise post-closing, regardless of when the action(s) leading to such liabilities occurred. The foregoing sentence shall survive Closing under this Agreement. Seller will assign any environmental indemnification agreements it obtained from the Seller's grantor to Buyer, if any, with the right of the Buyer to enforce the indemnification obligations contained in any such agreements to the extent permitted therein.

8. CONDITIONS TO BUYER'S OBLIGATIONS TO PERFORM. The Buyer's obligation to perform hereunder and to close on the purchase of the Property are conditional upon the following matters:

(a) Buyer's obligation is conditional upon the Buyer's Board of Trustees approval of the Buyer's acquisition of the Property and the obligations of the Buyer under this Agreement.

(b) Buyer's obligation is conditional upon Buyer's satisfaction with its inspection of the Property during the Inspection Period as more fully set forth in Section 7 of this Agreement.

9. SELLER'S CONTINUATION OF CONSTRUCTION ACTIVITIES PRIOR TO CLOSING. Seller is currently conducting demolition, environmental remediation and site work at the Property. Seller has provided Buyer with copies of all of the plans, specifications, contracts and scope of work being performed by Seller or its agents or contractors at the Property at the time of execution hereof. Seller shall continue to perform such work in accordance with such contracts. To the extent that any such plans, specifications or contracts are modified or supplemented following the execution of this Agreement (the "Construction Modifications"), or to the extent that any additional contracts are to be entered into by Seller prior to the closing (the "New Contracts"), Seller shall endeavor to provide Buyer with notice thereof as soon as practicable, and Buyer shall have the right to comment upon and participate in any discussions regarding the scope and timing of such work; provided, however, that the notice contemplated by this provision shall be deemed satisfied if an agent, employee, or representative of Buyer is present with Seller (whether in person, telephonically, or by email) in conversations, meetings and other communications involving such Construction Modifications or New Contracts. Moreover, notwithstanding the notice provisions set forth in Section 16(b) below, the notice contemplated by this Section 9 may also be made to

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other designated representatives of Buyer involved in the construction activities via telephone in addition to, or in lieu of, any of the other manners of providing notice outlined in Section 9.

10. POSSESSION OF THE PROPERTY. The Property shall be delivered to the Buyer at the time of the closing free and clear of all tenancies or occupancies by any person or entity, unless otherwise agreed herein. The Property shall also be reasonably free and clear of all trash and debris, and free and clear of any and all of Seller's personal property and equipment, except as set forth herein.

11. REPRESENTATIONS AND WARRANTIES OF SELLER. Seller represents and warrants to Buyer that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Seller is duly organized and in good standing under the laws of the State of Maine, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Seller of its obligations hereunder are within the lawful power of Seller, have been duly authorized and approved by all necessary actions on behalf of Seller, and will not conflict with, or result in a breach of any of the terms, covenants and provisions of: (i) Seller's Articles of Incorporation or By-Laws; (ii) any judgment, writ, injunction, regulation, ruling, directive or decree of any court of governmental authority; or (iii) any agreement or instrument to which Seller is a party or by which Seller is bound;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and to bind Seller to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(d) No consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Seller in connection with the execution and delivery of this Agreement or the performance hereof by Seller;

(e) There are no litigation, liens, judgments, violations, or proceedings pending, or to the best of Seller's knowledge, threatened against or relating to the Property nor does Seller know or have reasonable grounds to know of any basis for any such action, or of any governmental investigation relating to the Property;

(f) There is no pending, or to the best of Seller's knowledge, threatened action or proceeding (including, but not limited to, any condemnation or eminent domain action or proceeding) before any court, governmental agency or arbitrator relating to or arising out of Seller's ownership of the Property or any portion thereof, or which may adversely affect Seller's ability to perform its obligations under this Agreement, or which may affect the Property or any portion thereof;

(g) Seller is not a "foreign person" within the meaning of § 1445 of the Internal Revenue Code;

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(h) To the best of Seller's knowledge, no work has been performed or is in progress at, and no materials have been furnished to the Property or any portion thereof which may give rise to mechanic's, materialmen's or other liens against the Property or any portion thereof except as may arise in connection with Seller's further obligations as specifically contemplated by this Agreement; and

(i) All outstanding bills and/or accounts payable concerning the Property are either paid or will be paid prior to or at the time of closing unless otherwise agreed by the parties in writing.

12. REPRESENTATIONS AND WARRANTIES OF BUYER. Buyer represents and warrants to Seller that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Buyer is duly organized and in good standing under the laws of the Commonwealth of Massachusetts, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Buyer of its obligations hereunder are within the lawful power of Buyer, have been duly authorized and approved by all necessary actions on behalf of Buyer, and will not conflict with, or result in a breach of any of the terms, covenants and provisions of: (i) Buyer's Articles of Incorporation or Bylaws; (ii) any judgment, writ, injunction, regulation, ruling, directive or decree of any court of governmental authority; or (iii) any agreement or instrument to which Buyer is a party or by which Buyer is bound;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and to bind Seller to enter into and fully perform the obligations and transactions contemplated by this Agreement; and

(d) No consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Buyer in connection with the execution and delivery of this Agreement or the performance hereof by Buyer.

13. DEFAULT AND REMEDIES. In the event that either Buyer or Seller defaults in the performance of its obligations hereunder, the non-defaulting party may elect to terminate this Agreement by written notice, or seek specific performance of the defaulting party's obligations.

14. BROKERAGE. The parties agree that no broker has been involved in this transaction.

15. ADJUSTMENTS, PRORATIONS AND CLOSING COSTS.

(a) Real estate taxes, assessments, rentals, common area maintenance charges, fuel oil, and utilities shall be prorated as of the date of closing based upon amounts thereof actually paid or received (as the case may be) as of this date.

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(b) The Maine real estate transfer tax (if applicable) shall be paid by Seller and Buyer in accordance with 36 M.R.S.A. § 4641-A.

(c) The recording fee for the deed of conveyance will be paid by Buyer.

(d) A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A unless Seller furnishes to Buyer an affidavit stating, under penalty of perjury, that Seller is a resident of Maine or that the transfer is otherwise exempt from withholding tax.

16. MISCELLANEOUS.

(a) Time. Time is of the essence of this Agreement.

(b) Notices. Any notices required or permitted to be given under this Agreement shall be sufficient if in writing and if sent: (i) by first class mail, postage prepaid, registered or certified, return receipt requested; (ii) by hand delivery; (iii) by FedEx, or similar overnight express mail service, prepaid; or (iv) electronic mail ("e-mail") or by facsimile ("Fax") transmission, each to the addresses and/or Fax numbers listed below:

TO SELLER:
Charles E. Hewett
IDEALS
100 Commercial Street
Portland, ME 04101
chuck.hewett@ideals.org

WITH A COPY TO:
Helen S. Coburn, Esq.
Bernstein Shur
100 Middle Street, PO Box 9729
Portland, ME 04104-5029
hcoburn@bernsteinshur.com

TO BUYER:
Northeastern University
Planning, Real Estate and Facilities
360 Huntington Avenue, 216-201
Boston, MA 02115
Attention: Kathy Spiegelman
Email: k.spiegelman@northeastern.edu

WITH A COPY TO:
Northeastern University
Office of the General Counsel
360 Huntington Avenue, Suite 301

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Boston, MA 02115
Attention: Michael Glover
Email: m.glover@northeastern.edu

All such communication shall be deemed made upon the earlier of (3) business days following deposit with the U.S. Mail or the date of receipt as disclosed on the return receipt (if sent by registered or certified mail), or upon delivery (if hand delivered), or upon delivery as indicated on the proof of delivery (if sent via FedEx or similar overnight express mail service), or if sent via email with proof of receipt by the primary addressee, effective upon the day sent if received prior to 3:00 p.m. local time or the next business day if received thereafter. With respect to any of the above-referenced methods of delivery, rejection or other refusal to accept or the inability to deliver because of a change of address of which no notice was given shall be deemed to be receipt of the notice sent. Either party may change its address for purposes of this subparagraph by giving the other party notice of the new address in the manner described herein.

(c) Binding Effect/Assignment. This Agreement shall not become a binding contract until signed by both parties and that fact has been communicated to all parties or their agents. This Agreement will inure to the benefit of and bind the respective heirs, successors, personal representatives and assigns of the parties hereto and may be cancelled, modified or amended only by a writing executed by the parties hereto or their legal representatives.

(d) Construction. This Agreement and the Exhibits hereto set forth the entire agreement between the parties, and there are no other agreements or understandings between them related to the subject matter hereof. As used in this Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed by and construed in accordance with the laws of Maine. All representations, warranties, covenants and indemnities made by either party herein shall survive the closing. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof. In the event of any dispute under this Agreement; prior to any litigation, the parties hereto shall first submit the matter to mediation and shall undertake good faith efforts to resolve any such dispute. In the event that a dispute hereunder is not resolved by mediation, the parties agree to submit any litigation to enforce this Agreement to the jurisdiction of the United States District Court for the District of Maine.

(e) Counterparts/Electronic Signatures. This Agreement may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Agreement may be signed electronically and such shall be treated as original signatures.

(f) Attorney's Fees. If any legal action (including without limitation mediation and arbitration) is brought or compelled by either party to enforce any provisions of this Agreement, the prevailing party shall be entitled to recover from the other party its reasonable attorneys' and paralegals' fees and court costs, subject to and limited by the provisions of the Default and Remedies section of this Agreement.

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(g) Effective Date. The Effective Date of this Agreement shall be deemed to be the date first set forth above in this Agreement, provided that if no date is filled in, the Effective Date shall be the last date of the signature of either Buyer or Seller.

[*Signature Page Follows*]

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IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement under seal as of the dates indicated above.

SELLER

THE INSTITUTE FOR DIGITAL ENGINEERING AND LIFE SCIENCES

DocuSigned by:
Charles E. Hewett
4BD10668DAF9434...

By: Charles E. Hewett
Its: Executive Director
Date: October 23, 2023

BUYER

NORTHEASTERN UNIVERSITY

DocuSigned by:
Thomas E. Nedell
FF602479C14A4DA...

By: Thomas E. Nedell
Its: Senior Vice President & Treasurer
Date: October 23, 2023

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EXHIBIT A
[*Legal Description*]

A certain parcel of land, together with the improvements thereon, located on the easterly sideline of Interstate 295 and the southerly sideline of Sherwood Street in the City of Portland, County of Cumberland and State of Maine being further described as follows:

Beginning at a 6-inch by 6-inch granite monument found inscribed “ECJ #356” marking the southerly sideline of Sherwood Street westerly sideline of the Canadian National Railroad and further described as the most northeasterly corner of described parcel;

THENCE, S 23-36-55 E, along said Railroad 316.33 feet to a 6-inch by 6-inch granite monument found inscribed "ECJ 356";

THENCE, S 23-36-55 E, along said Railroad, 526.90 feet, to a 4-inch by 4-inch granite monument with a drill hole;

THENCE, S 23-36-55 E, along said Railroad, 745 feet, more or less to the low water mark of the Casco Bay,

THENCE, in a general westerly direction along said low water line about 1,685 feet to a point on the easterly sideline of Interstate 295;

THENCE, N 2-23-50 W, along said sideline, 48 feet, more or less to a point;

THENCE, S 87-30-10 W, along said sideline, 30.00 feet to a point;

THENCE, N 2-23-50 W, along said sideline, 61.46 feet to a drill hole found, said drill hole lying on a tie course of S 73-07-39 W, 878.87 feet from the previous mentioned 4-inch by 4-inch granite monument with a drill hole;

THENCE, N 2-23-50 W, along said sideline, 237.87 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 89-44-34 E, along said sideline, 1.05 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 6-28-53 E, along said sideline, 122.88 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 0-24-30 E, along said sideline, 88.91 feet to a 4-inch by 4-inch granite monument found inscribed "ECJ #509";

THENCE, N 24-48-04 E, along said sideline, 60.29 feet to a 6-inch by 6-inch granite highway monument;

THENCE, N 31-29-16 W, along said sideline, 31.96 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 3-26-49 W, along said sideline, 111.10 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 8-40-57 E, along said sideline, 89.05 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 23-15-05 E, along said sideline, 66.28 feet to a 4-inch by 4-inch granite monument Inscribed "ECJ #509";

THENCE, N 34-47-28 E, along said sideline, 96.68 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 25-25-29 E, along said sideline, 160.02 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 23-37-03 E, along said sideline, 63.03 feet to a 4-inch by 4-inch granite

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monument inscribed "ECJ #509";

THENCE, N 39-23-04 E, along said sideline, 6.72 feet to a 6-inch by 6-inch granite monument found inscribed "ECJ #509";

THENCE, N 55-32-30 W, along said sideline, 11.67 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 34-47-50 E, along said sideline, 117.04 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 34-43-38 E, along said sideline, 15.02 feet to a 5/8 inch re-bar found capped "ECJ #509" marking the southerly sideline of Sherwood Street;

THENCE, S 55-12-08 E, along said Sherwood Street, 288.60 feet to the point of beginning.

The foregoing description was prepared based on the Survey prepared by OEST Associates, Inc. dated February, 1999 and last revised February 26, 1999 recorded in in the Cumberland County Registry of Deeds in Plan Book 199, Page 159.

Alternate Legal Description [recent survey; grant to be without covenant of title]:

All right, title and interest in and to the following described lot or parcel of land, together with the buildings and improvements thereon, located in the City of Portland, County of Cumberland, State of Maine, which description is based on a ALTA/NSPS Land Title Survey prepared by VHB, dated June 30, 2021, last revised February 28, 2022, and Seller makes no representations or warranties as to the accuracy of said property description:

Beginning at a granite bound found at the intersection of the southerly sideline of Sherwood Street and the westerly sideline of land now or formerly of the state of Maine as described in the Cumberland County Registry of Deeds in Book 25500, Page 215, and Book 10924, Page 91 being formerly owned by the St. Lawrence & Atlantic Railroad Company, in part, and the Canadian National Railway Company, in part;

THENCE along the westerly sideline of land of the State of Maine South 23°38’41” East for a distance of 316.33 feet to a granite bound found;

THENCE continuing along land of the State of Maine South 23°34’45” East for a distance of 526.95 feet to a granite bound found;

THENCE continuing along the land of the State of Maine South 23°34’45” East for a distance of 745 feet, more or less to the low water mark of Casco Bay,

THENCE in a generally westerly direction along the low water line about 1,720 feet, more or less, to a point in the easterly sideline of Interstate 295;

THENCE along the easterly sideline of Interstate 295 the following courses and distances:

North 2°23’38” West for a distance of 48 feet, more or less to a point;

South 87°36’22” West for a distance of 30.00 feet to a point;

North 2°23’38 West for a distance of 61.46 feet to a point being located South 73°07’57” West at a distance of 878.66 feet from a granite bound found on the westerly sideline of land now or formerly of the State of Maine;

North 2°23’38 West for a distance of 237.87 feet to a point;

North 89°44’46” East for a distance of 1.05 feet to a rebar found;

North 6°29’05” East for a distance of 122.88 feet to a point;

North 0°24’42: East for a distance of 88.91 feet to a granite bound found;

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North 24°48’16 East for a distance of 60.29 feet to a granite bound found;
North 31°29’04” West for a distance of 31.96 feet to a point;
North 3°26’37” West for a distance of 111.10 feet to a point;
North 8°41’09” East for a distance of 89.05 feet to a point;
North 23°15’17” East for a distance of 66.28 feet to point;
North 34°47’40” East for a distance of 96.68 feet to a granite bound found;
North 25°25’41” East for a distance of 160.02 feet to a point;
North 23°37’15” East for a distance of 63.03 feet to a point;
North 39°23’16” East for a distance of 6.72 feet to a point;
North 55°32’18” West for a distance of 11.67 feet to a point;
North 34°48’02” East for a distance of 117.04 feet to a granite bound found;
North 34°43’50” East for a distance of 15.02 feet to a rebar found at the southerly sideline of Sherwood Street;

THENCE departing from the easterly sideline of Interstate 295 and running along the southerly sideline of Sherwood Street South 55°12’19” East for a distance of 288.59 feet to the point of beginning.

Meaning and intending to convey the same premises described in a Quitclaim Deed with Covenant from B&G Foods North America, Inc. to The Initiative for Digital Engineering and Life Sciences dated March 23, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39282, Page 151.

The above described property shall be conveyed subject to the encumbrances listed as items 1-14 on Exhibit A of the Quitclaim Deed with Covenant from The Pillsbury Company to Heritage Acquisition Corp. dated March 15, 1999 and recorded in the Cumberland County Registry of Deeds in Book 14616, at Page 50 and the rights and easements granted by Heritage Acquisition Corp. to Central Maine Power Company and Verizon New England, Inc. by instrument dated February 7, 2006 and recorded in the Cumberland County Registry of Deeds in Book 24049, Page 189.

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EXHIBIT B
[*Development Contracts*]

1. Design Agreement by and between Bruner/Cott and The Initial for Digital Engineering and Life Sciences ("IDEALS") (*in negotiation; near final form*)

2. Design Agreement by and between CambridgeSeven and IDEALS (*in negotiation; near final form)*

3. Construction Management Agreement, by and between IDEALS and Consigli Construction Co., Inc. dated January 17, 2023

4. Cooperative Agreement by and between the Maine DOT ("MDOT") and IDEALS, dated as of January 18, 2023

5. MDOT Temporary Access Road Rights Agreement by and between MDOT and IDEALS, dated as of March 30, 2023

6. License Agreement with the City of Portland Fire Department by and between the City of Portland and IDEALS dated May 24, 2023

7. License Agreement with the City of Portland Fire Department by and between the City of Portland and IDEALS dated August 2, 2022

8. IDEALS Boiler Purchase Agreement by and between IDEALS and Maine Plywood USA, LLC dated June 19, 2023

9. Consultant Services Agreement, by and between IDEALS and MacRostie Historic Advisors

10. Consultant Services Agreement, by and between IDEALS and Thorton Tomasetti

11. Consultant Services Agreement, by and between IDEALS and Tsoi Kobus Design

12. Consultant Services Agreement by and between IDEALS and Vanasse Hangen Brustlin

13. Consultant Services Agreement, by and between IDEALS and Woodard & Curran

14. Consultant Services Agreement, by and between IDEALS and Power Engineers

15. Consultant Services Agreement, by and between IDEALS and SW Cole Engineering

16. Consultant Services Agreement, by and between IDEALS and Stephen Stimson Associates

5

Section 5: Public or Private Right-of-Way

5.A Public or Private Rights–of–Way

The site is proposed to be accessed as described in Section 3. Private on-site roadways will connect from the end of Sherwood Street to the proposed garage and drop-off areas. No additional public or private rights of way are proposed.

6

Section 6: Schedule

6.A Schedule

The opening year for the Roux Institute is anticipated to be 2027. The proposed uses are anticipated to be fully occupied in 2032.



The Roux Institute at Northeastern University

Transportation Demand Management Plan

PREPARED FOR

Roux Institute at Northeastern University / IDEALS
100 Commercial Street
Portland, ME 04101

PREPARED BY

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South Portland, ME 04106
207.889.3150

NOVEMBER 2023

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1

Introduction

Pursuant to Section 17.3 of the City of Portland Technical Manual, the Roux Institute at Northeastern University's Transportation Demand Management Plan (TDM) provides a cohesive approach to establish a targeted set of strategies aimed at reducing single occupancy vehicle trips to and from the proposed campus in Portland, Maine. The TDM plan describes how the Roux Institute at Northeastern University will provide information and education, enhance alternative transportation infrastrucutre and mobility, and incentivize students, faculty, and staff so that they use more sustainable, multimodal commuting options such as walking, bicycling, transit, carpooling and telecommuting. The Roux Institute at Northeastern University is committed to ongoing annual surveying to monitor the implementation and succcess of the TDM plan.

1.1 Program Summary and Project Status

In 2020, the Roux Institute at Northeastern University was launched to build expertise at the intersection of humans and technology. The campus is currently temporarily operating at 100 Fore Street but will be relocating to the redeveloped B&M Baked Beans facility. In its permanent waterfront location in East Deering, the Roux Institute at Northeastern University will continue to provide educational, research, and collaborative programs in areas including artificial intelligence, computer and data sciences, digital engineering, advanced life sciences, and medicine. The Roux Institute at Northeastern University offers post-graduate degrees and certifications, conducts research, assists start-ups, and partners with private, public and non-profit organizations. The mission of the Roux Institute at Northeastern University is *a vision to enable the creation of a synergistic technology and life science-driven economy and workforce, the Roux Institute at Northeastern University designs, curates, and integrates learning, research, and entrepreneurial solutions in collaboration with industry, academic institutions, and community organizations to catalyze talent development and economic impact throughout Maine*.

In February 2023, the Portland City Council approved the Institutional Overlay Zone for the campus at the old B&M Baked Beans site. The project team is currently embarking on the site plan review and public input process with the City of Portland, which includes the preparation and submission of a MaineDOT Traffic Movement Permit application. Permits are expected by the summer of 2024, when construction will begin, with an opening date in 2027. The campus will continue to grow over time in subsequent years and phases.

1.1.1 Existing Conditions

The Roux Institute at Northeastern University currently leases 84,000 sf of institutional space at 100 Fore Street adjacent to the East End neighborhood and near the waterfront in downtown Portland. In the fall of 2023, there were 665 enrolled students and 175 staff, researchers and faculty. There are currently 16 graduate programs in computer and data science, analytics, cloud software, cybersecurity, life sciences, and project management. To realize its full potential, the Roux Institute at Northeastern University is seeking to relocate its campus and expand in size as described in the following section.

1.1.2 Proposed Development Program

The campus will be anchored by a 238,000 square foot Learning, Research and Collaboration building and the 58,000 square foot Bean Building housing a start-up incubator program. By 2032, the campus plans to accommodate 3,123 graduate students in addition to supporting uses as shown in Table 1. An 8,000 square foot café and a day care center providing care for 50 children will be located on-site primarily for the families of students, staff, and faculty. In addition to its academic offerings, the campus will benefit the community by contributing to local economic growth and providing open space along the waterfront, active transportation accommodations throughout the site, job creation, and innovation space. The site plan is shown in Figure 1.

Table 1 Development Program

Program Component		2027 (Opening)	2032
Day care center		50 Children	50 Children
Academic Café		8,000 sf	8,000 sf
Roux Institute at Northeastern University	Graduate students	1,899 students	3,123 students
	Faculty, Staff, and Researchers[1]	225 staff	300 staff
	Embedded startup[1]	60 staff	100 staff
	JAX and Other Signature Partners[1]	55 staff	64 staff
	Affiliated Users[2]	35 visitors	100 visitors
	Special Events (daily)	150 attendees	150 attendees

1 All staff counts are in full-time equivalents.
2 Affiliated Users is a broad category for occasional visitors such as corporate learners, investors, donors, mentors, and neighbors.

The garage has been designed to accommodate 708 parking spaces. For this phase, 16 of those parking spaces will be used to accommodate parking for 66 bicycles and the remaining 692 parking spaces will be used to accommodate vehicular parking. In addition to the garage spaces, there will be 14 parking spaces provided at grade on the site. All on-site parking will be paid parking, and a parking office will be created to manage permitting and enforcement for the

campus. Parking costs and regulations may vary between categories of users (students, staff, faculty, visitors, etc.). Parking will be shared between uses within the campus only. This development will not rely on any on-street parking. The campus may include on-site car sharing, enabling travel to and from the site using other modes, with the comfort that vehicles are available if necessary. The TDM measures presented in this plan will be critical to maintaining the expected parking demand.

Figure 1 Proposed Site Plan



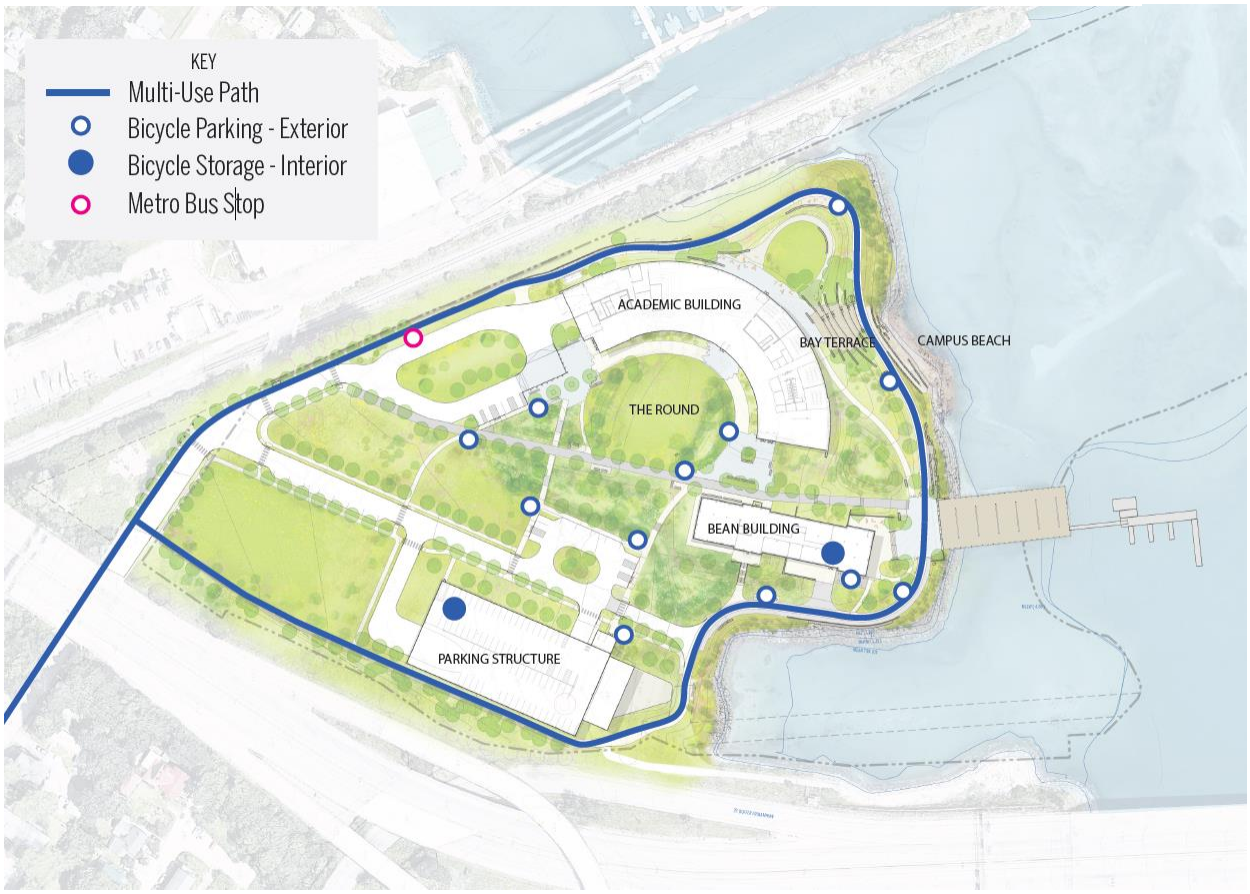
2

Mobility Context

For a TDM plan to be successful in shifting drive alone vehicle trips to transit, carpool, walk, and bicycle trips, it is essential to understand the multimodal transportation system surrounding the site. This section describes the existing transportation network challenges and future opportunities the Roux Institute at Northeastern University faces in redeveloping the site for their permanent campus.

The proposed waterfront site is located in East Deering adjacent to a marina and residential neighborhood comprising of single and multifamily homes as well as a commercial area which includes restaurants, bars, auto mechanics, and offices. I-295 runs along the western edge of the site, however the site will be well connected to the East Deering neighborhood, Back Cove, and the Portland Peninsula on the eastern promenade via vehicle, pedestrian, bicycle, transit and potential water taxi facilities. As shown in Figure 2, there are several promising opportunities to enhance and expand these transportation systems as part of the project to improve transportation mobility in and around the campus.

Figure 2 Campus Transportation Access



2.1 Vehicular Access and Circulation

A single vehicular access point to the site is provided via Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street will continue to serve as vehicular access into and out of the campus in the future. The site is in close proximity to I-295, Route 1, Washington Avenue, and Baxter Boulevard. The traffic signal system along Washington Avenue is a traffic responsive system operating with high efficiency. Intersections of Washington Avenue at Veranda Street, at Presumpscot Street, and at Ocean Avenue are each signalized intersections.

2.2 Walking and the Pedestrian Environment

2.2.1 Existing Conditions

The surrounding East Deering neighborhood provides pedestrian amenities including sidewalks along Washington Avenue and Veranda Street. A sidewalk runs along the west side of Bates Street but narrows and is periodically blocked by utility poles. There is no sidewalk present on the east side of Bates Street. The Back Cove trail (multi-use path) runs along the Back Cove and Tukey's Bridge near the site. The main roadway access to the site is via Sherwood Street which consists of a 30-foot-wide roadway in a 40-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. The pedestrian connectivity to the Portland Peninsula is accessible from the Back Cove Trail across the west side of Tukey's Bridge. The sidewalk connecting from the intersection of Washington Avenue/Veranda Street is narrow and adjacent to vehicular traffic on the ramp to I-295. The sidewalk merges with the Back Cove Trail which adds bicycle and pedestrian demand to a narrow, shared use path over Tukey's Bridge. There is no existing direct connection to this shared use path from the campus.

2.2.2 Future Commitment

The Roux Institute at Northeastern University will improve pedestrian safety and connectivity to the East Deering neighborhood from the campus by providing continuous sidewalks on both sides of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. Once on the site, pedestrian facilities will connect site uses and points along the waterfront. Improvements to pedestrian connections will increase walkability for the site.

2.2.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14-16-foot-wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a 10-foot-wide shared use path under Tukey's Bridge would improve pedestrian access to and from the campus to the Back Cove trail and for pedestrians traveling between East Deering and the Portland Peninsula using the future shared use path bridge. These new shared use paths would provide wider, safer, and more comfortable accommodations for pedestrians and improve connectivity.

2.3 Bicycling Environment and Facilities

2.3.1 Existing Conditions

Bicycle facilities are present in the East Deering neighborhood on Washington Avenue including buffered bike lanes north of Presumpscot Street and faded sharrows along Veranda Street. Bates Street provides a bike lane from Washington Avenue to Baxter Boulevard. The Back Cove trail (multi use path) runs along the Back Cove and Tukey's Bridge near the site. There are currently no bicycle facilities on Sherwood Street. Similar to the discussion above describing the pedestrian access across the shared use path on Tukey's Bridge, bicyclists must also use the narrow path to connect to the Portland Peninsula. Although this shared use path provides access to the Back Cove trail, it does not provide direct access to the campus. There are 8 public U-racks totaling 16 bicycle parking spaces located within the 970 Baxter Boulevard parking lot.

Walkscore.com rates East Deering with a Bikescore of 58/"Bikeable" indicating some bike infrastructure is present. The 15-minute bike shed zone from the campus is illustrated in Figure 3.

Figure 3 15 Minute Bike Shed Zone



2.3.2 Future Commitment

The Roux Institute at Northeastern University is dedicated to creating a safer, complete street along Sherwood Street to accommodate bicyclists into and out of the site by providing bicycle lanes. The campus will provide 166 bicycle parking spaces for students, staff, faculty and visitors. This quantity is more than triple the required amount of bicycle parking per the Portland Technical Manual. Shower and locker facilities will be provided for those commuters who bicycle to campus. The Roux Institute at Northeastern University will explore providing a Bike Fix-it Station for bike commuters and other visitors to the site.

2.3.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future constructed connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14-16 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a 10-foot-wide shared use path under Tukey's Bridge would improve bicycle access from the campus to the Back Cove trail and bicycle connectivity between East Deering and greater Portland.

2.3.4 Other Potential Future Infrastructure

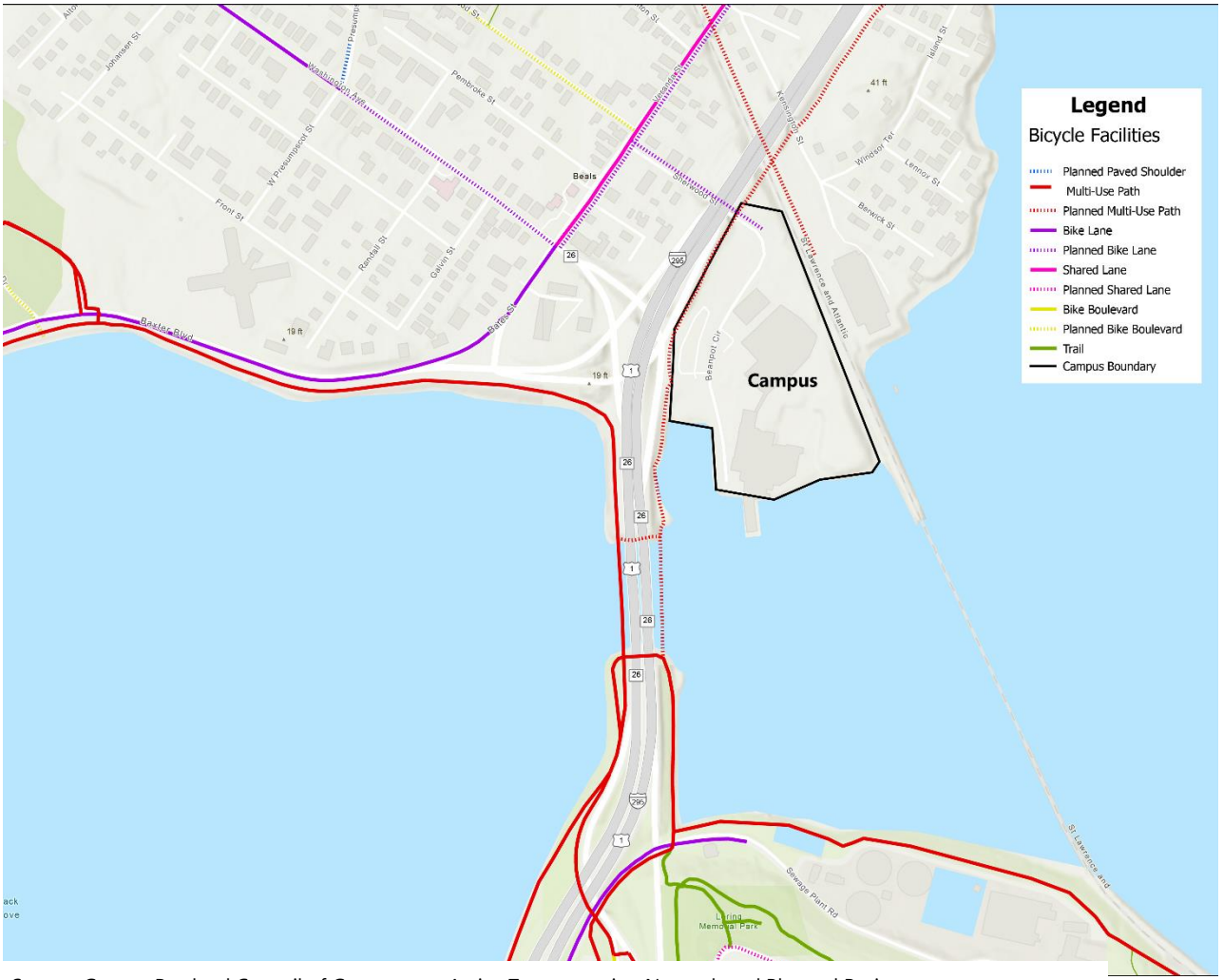
The City of Portland is currently working on the *Baxter Boulevard | Bates Street | Veranda Street Bikeway Project*[1] to implement buffered bicycle lanes on Veranda Street and a two-way bi-directional separated bike lane on Bates Street. Other potential opportunities for multi-use paths in the area include the Berlin Subdivision railroad right-of-way to points north ending at the Yarmouth Park and Ride on Exit 15 of I-295. Additionally, the Martin's Point Shared Use Path study considered a shared use path from Sherwood Street to the recently installed shared use path west of the Martin's Point Bridge starting at Wordsworth Street.

The City of Portland and Tandem Mobility have partnered to provide a bike share system in Portland. There are over 200 bicycles at over 40 stations predominately throughout the Portland peninsula. Pedal bikes and electric bikes are available by the minute and memberships are available on a monthly or yearly basis. There are currently no Portland BIKESHARE locations within the East Deering neighborhood in close proximity to the site, however there are a few on the East End across Tukey's Bridge. There is an opportunity to explore providing a new station on the campus which would expand the BIKESHARE network to the East Deering neighborhood.

Figure 4 presents the existing and potential future bicycle facilities surrounding the campus.

[1] Baxter Boulevard| Bates Street| Veranda Street Bikeway Project https://portland.civilspace.io/en/projects/better-bikeways-initiative

Figure 4 Existing and Potential Future Bicycle Facilities



Source: Greater Portland Council of Government Active Transportation Network and Planned Projects
https://gpcog.maps.arcgis.com/apps/View/index.html?appid=d5d7dbbc69534242b5fd4092c78f26e4

2.4 Public Transit

2.4.1 Existing Conditions

As shown in Figure 5, two bus lines currently stop near the campus: Metro Route 7 and Metro Routes 9A / 9B. Route 7 provides service between Portland and Falmouth with a stop at the Metro Pulse on the Peninsula as well as a stop near the campus at Veranda Street/Sherwood Street approximately a quarter of a mile from the center of the campus. Routes 9A/9B provide circular bus service between downtown Portland and North Deering with service running along Washington Avenue and Congress Street. Route 9A/9B stops on Washington Avenue near the site at Galvin Street and Veranda Street respectively which is under a half mile from the site. Bus transfers can be made at the Pulse and other stops on the Peninsula to reach the rest of Portland and several outlying towns.

Buses run continuously throughout the day, readily accommodating the varied schedules of students and other campus users. Metro BREEZ express bus service to Yarmouth, Freeport, and Brunswick and the Husky Line to Westbrook and Gorham establish a regional footprint for transit service. Ten local and express routes connect the campus to most of the Portland area with no more than one transfer.

The monthly ridership on Metro Route 7 is one of the lowest in the Metro system. In 2021, on an average weekday, there were 2521 boardings on Route 7. Each bus has the capacity of approximately 30 people and the bus runs 13 times per weekday inbound and outbound or a monthly capacity of approximately 7800 boardings, which leaves plenty of capacity on Route 7 to accommodate site related traffic.

In addition to the local Metro system, the Portland Transportation Center (PTC) in Thompson's Point provides regional bus and train service. Concord Coach Lines runs bus service from Portland to Boston, Massachusetts, Logan International Airport, and New York City as well as points north of Portland. The Amtrak Downeaster provides train service between Brunswick and Boston with a stop in Portland. Greyhound provides bus service between East Bayside in Portland and Boston, Massachusetts.

Figure 5 Public Transit Access



2.4.2 Future Opportunities

Metro is contemplating improvements to the transit system throughout Portland. In addition, the Roux Institute at Northeastern University is working with Metro to consider site specific transit accommodation for an on-campus bus stop that would connect the Roux Institute at Northeastern University to other key locations across the City, including housing, additional transportation connections, and partner organizations. The Roux Institute at Northeastern is also working with Metro and MaineDOT to identify park and ride locations where Roux students, faculty and staff can park and use Metro to travel to the site.

2.4.2.1 Transit Together Plan

In January 2023, The Portland Area Comprehensive Transportation System (PACTS) Policy Board approved the Transit Together Plan[2]. As of August 27, 2023, this plan enabled changes to Route 9 to provide more consistent 30-minute headways from 6am to 6pm on weekdays and from about 8am to 6pm on Saturdays. Route 9B will run one hour later in the evening.

In the Spring of 2024, Metro plans to make improvements to Route 7 by extending the route to the Portland Jetport via Congress Street with improved frequency and hours of operation.

[2] Transit Together - https://gpmetro.org/1644/Transit-Together---Route-and-Schedule-Ch

Frequency for Route 7 will improve from 60 to 30 minutes Monday through Saturday and services will be provided until 10pm or 11pm. The Falmouth loops will be eliminated, and Route 7 will use the Shaw's parking lot in Falmouth to turnaround. In conjunction, Route 5 service to the Jetport and Hutchins Drive will be discontinued to improve travel time between Portland and the Maine Mall. In addition, microtransit service will be implemented in east Falmouth. Microtransit riders within the zone will be able to request a ride using a smartphone app or phone call. These changes significantly increase the frequency and daily service to the campus.

2.4.2.2 Other Metro Opportunities

Metro is in the preliminary planning stages of studying how to extend Route 7 service along US Route 1 to Yarmouth. This extension could provide a bus route for campus commuters, with parking at the MaineDOT Exit 15 Park and Ride in Yarmouth.

The Roux Institute at Northeastern University is working with Metro to improve the quality and frequency of transit connections to the campus. Reduction of headways, modification of Route 5 or Route 7 to make a stop at the campus, and construction of a transit stop and turnaround on the campus, are all under consideration to further the convenience of transit for commuting to and from campus. The Roux Institute at Northeastern University will promote and incentivize transit use by subsidizing transit passes for students, staff, and faculty.

2.5 Ride-Hailing

In addition to driving, transit, walking, bicycling, and carpooling, commuters have the option of using ride hailing services such as Uber, Lyft and/or traditional taxis. Although these services result in vehicle trips to and from the campus, they reduce the parking demand and allow for less vehicle ownership and more flexibility with commute mode choices.

2.6 Current Parking Policies

Parking is currently provided to staff, faculty and embedded partners at $50 per month, per spot. There are 176 parking spaces allocated for the Roux Institute at Northeastern University in the on-site garage. Embedded partners and employees who opt out of monthly parking pay $1/hour to park in the garage. Parking for visitors is also provided via a public rate of $5/hour and in adjacent, paid parking lots. Students of the Roux Institute at Northeastern University are not currently charged to park on-site but will be at the future campus.

2.7 Existing TDM Efforts

As part of this TDM plan, the Roux Institute at Northeastern University plans to bolster its current TDM efforts for the permanent campus proposed in East Deering. However, they are currently implementing TDM strategies on the existing campus at 100 Fore Street to help reduce drive alone trips:

- Appointed a transportation coordinator who surveys students, faculty and staff to develop an understanding about mode choice.

- Subsidizing transit passes for faculty, staff and students. Posting transit related information in highly visible areas on site. Providing information on transportation commuting options including transit on the Roux Institute at Northeastern University's website.
- Offering convenient, hybrid course formats that blend online and on-site learning thus reducing the demand for commuting.
- Charging staff, faculty and embedded partners $50 per month per parking space.

3

TDM Coordinator

The Roux Institute at Northeastern University will designate a TDM coordinator to oversee the administration of the TDM plan and the annual surveying and reporting process.

The Roux Institute at Northeastern University plans to follow industry best practice by appointing a campus-wide transportation coordinator. The TDM Coordinator will collect data on the TDM progress to ensure it evolves as the site develops. Once the site is operational, the TDM Coordinator will conduct a transportation survey for students, staff, and faculty to establish a baseline for future drive alone mode share reduction goals. They will also collect and disseminate information (including non-automobile travel options) on-site and organize outreach events and campaigns to encourage TDM participation. The TDM Coordinator will promote alternative transportation choices to educate those commuting to and from the campus and coordinate the implementation of TDM strategies to reduce single occupancy vehicle (SOV) trips. In addition, the TDM Coordinator will work with the City of Portland, Metro, GoMaine, car share, and bike share programs to improve non-SOV mode shares. The responsibilities of the TDM Coordinator include the following:

- Promote alternative transportation choices to students, staff, faculty, and visitors to reduce single occupant vehicles (SOV) trips.
- Coordinate the implementation of TDM strategies with students, staff, and faculty and conduct orientations to educate those commuting to and from the campus regarding their transportation options.
- Monitor bike rack usage and make recommendations as needed to accommodate potential growing demand.
- Coordinate with the City of Portland, Metro, GoMaine, car share and bike share, and other potential partners to improve access to non-SOV modes.
- Conduct annual Transportation Monitoring and activities necessary to measure the effectiveness of the TDM program in achieving the mode share reduction target.
- Administer and review TDM surveys on a yearly basis.

- Complete the standard City of Portland TDM Reporting Form, which will summarize how effective the various strategies have been, mode share data based on the surveys and program success and barriers.
- File annual TDM reports by May 15th of each year with the City of Portland.

The TDM Coordinator will be the primary point of contact for students, staff, and faculty regarding the TDM plan. The TDM Coordinator will develop strategies and incentives for students, staff, faculty, and visitors where applicable. The TDM Coordinator will also collaborate with commuters prior to when they start to inform them of the robust network of alternative mode choices available to them.

4

Baseline TDM Data

Baseline travel demand and supply data for the campus has been quantified for the Traffic Movement Permit (TMP) Application being submitted to MaineDOT as part of the site plan review process. Baseline data includes estimated mode split, future trip generation estimates, and proposed parking supply and future demand estimates. Reviewing survey data and how the existing students, faculty and staff are currently commuting to campus, and how they expect to commute to the proposed campus, provides insight to which alternative modes may have the greatest potential to reduce drive alone trips.

4.1 Modal Split

4.1.1 Roux Institute at Northeastern University Transportation Survey

The Roux Institute at Northeastern University conducted transportation surveys on a quarterly basis throughout 2022 and 2023 which collected responses from students, staff, and faculty at the existing 100 Fore Street campus. The survey asked how the respondents commuted to campus and then how they imagine they will commute to the new campus in East Deering. The results of the survey mode share data are presented in Table 2. It is important to note that the data collected slightly varied throughout the time of year. Additionally, the Roux Institute at Northeastern University is an evolving, growing Institute currently in a temporary location and this data is only representative of a portion of students, staff and faculty. Based on feedback collected from the survey, it is anticipated that transit and bicycle trips will increase, walk trips will decrease, and drive trips will slightly decrease due to the proposed campus location and existing transportation system in East Deering. The Roux Institute at Northeastern University will continue to survey on a quarterly basis and make adjustments as circumstances evolve.

Table 2 Transportation Survey Mode Split Data

	Existing Commute at 100 Fore Street		
	August 2022	April 2022	January 2023
Drive	77%	72%	73%
Transit	4%	3%	4%
Walk	13%	16%	19%
Bike	6%	7%	4%
Other	0%	2%	0%

4.1.2 Traffic Movement Permit Mode Split Data

In addition to the data collected as part of the transportation surveys, expected mode share splits assumed in the Traffic Movement Permit (TMP) by land use are also provided in Table 3. The TMP mode splits are slightly more conservative in terms of analyzing vehicular traffic impact on the study area intersections. As additional bicycle and pedestrian connections are constructed in future years, it is likely that those mode shares will increase.

Table 3 TMP Mode Split

Population	Drive	Transit	Walk/Bike
Students	80%	10%	10%
All Other Populations	90%	5%	5%

Source: TMP indicates mode share assumptions presented in the Traffic Movement Permit

4.2 Trip Generation

As part of the TMP application, a trip generation analysis was conducted based on the 2032 development program presented in Table 1 using Institute of Transportation Engineers (ITE) publication, Trip Generation 11th edition as well as a custom trip generation methodology for the academic use of the site. The following assumptions were made to estimate student trip generation based on data from the campus:

- 43% of student enrollment are present on campus each day.
- 40% are daytime students and 60% are evening students.

Mode shares that were previously presented in Table 3, and applicable on site, internal capture trip rates were applied to the trip generation estimate to determine the external vehicle, pedestrian and walk trips as well as transit trips. The resulting estimated trip generation for the campus is presented in Table 4. The campus is expected to generate 237 morning and 521 evening peak hour vehicle trips, 20 morning and 51 evening peak hour transit trips, and 20 morning and 51 evening peak hour pedestrian and bicycle trips.

Table 4 Trip Generation

	Vehicle Trips	Transit Trips	Ped/Bike Trips
AM Peak Hour			
In	227	20	20
Out	10	0	0
Total	237	20	20
PM Peak Hour			
In	276	30	30
Out	245	21	21
Total	521	51	51

Source: Trip Generation Analysis presented in the Traffic Movement Permit

4.3 Proposed Parking Supply/Demand

A parking analysis was performed to estimate parking demand for the Roux Institute at Northeastern University. It was determined that parking demand peaks during the overlap between day and night users. Based on travel patterns of existing daytime and night students, the future enrollment will result in a peak demand of 561 spaces in the opening year and if the auto mode share stays as high as outlined in the TMP, 881 spaces in 2032.

The Roux Institute at Northeastern University is planning on providing parking on campus in a proposed parking garage designed to accommodate 708 parking spaces. For the first phase 16 of those parking spaces will be used to accommodate parking for 66 bicycles and the remaining 692 parking spaces will be used to accommodate vehicular parking. In addition to the garage spaces, there will be 14 parking spaces provided at grade on site. Since it is not feasible to construct parking garage levels during different phases of development, the parking garage will be constructed in 2027 to accommodate future demand. However, each interim phase will use only the number of parking spaces allocated based on that phase program.

In order to help mitigate the amount of vehicular traffic traveling to the campus, The Roux Institute at Northeastern University is actively exploring opportunities for satellite parking spots at existing park and ride locations within a short commute to the campus via tying into nearby transit routes or a Northeastern University-owned shuttle service.

To ensure parking usage in the structured garage does not exceed the permitted supply for each phase of development, the Roux Institute at Northeastern University will collect annual parking data to determine the number of vehicles parked throughout the day and evening. The TDM coordinator will obtain gate data for in, out, and occupancy counts on an hourly basis during the spring to coincide with the annual survey week. Moving into the future, the TDM coordinator will be working to reduce the automobile mode share to the site so that the garage is able to accommodate campus growth with that parking supply.

5

TDM Mode Split Targets

The TDM plan establishes short-term (3-5 year) and long-term modal split targets.

The TDM mode split target includes goals for reducing vehicle trips and increasing multimodal trips. Based on the future transportation system the campus will be supported by and TDM measures that will be implemented, the short and long-term targets that are proposed as part of this TDM plan are presented in Table 5. The mode share goals are within range of the City's *One Climate Future* document that sets a Key Transportation Milestone that by 2035, 26% of trips in the city will use alternative transportation modes, (up from 12%)[3]. The long-term goals are based on mode splits presented as part of the approved Institutional Development Plan for the Roux Institute at Northeastern University. The Roux Institute at Northeastern University is committed to implementing the TDM strategies presented in the following Section 6 to work towards achieving these mode split targets. The targets will be reviewed and updated based upon the annual TDM reporting process.

Table 5 Drive Mode Split Targets

Population	Mode Split Targets	
	Short-term (3-5 Years)	Long-term
Students	80%	70%
All Other Populations	90%	80%

[3] https://www.oneclimatefuture.org/wp-content/uploads/2021/02/OneClimateFuture_FinalJan2021_Downsized.pdf

6

Mode Split Target Strategies

The TDM plan includes a set of strategies aimed at achieving the TDM goals described above. The strategies are targeted to students, staff, and faculty traveling to and from the campus in East Deering. The Roux Institute at Northeastern University is committed to enhancing the multimodal transportation systems around the campus including providing improved pedestrian and bicycle facilities and transit access/service.

As part of the quarterly transportation survey, the Roux Institute at Northeastern University gathered data on which TDM strategies would more likely encourage students, staff, and faculty to commute differently to the proposed campus. The feedback indicates that Roux Institute at Northeastern University commuters are most likely to shift to a different mode share when showers, lockers and bike storage is available, there is a credit system for sustainable commuting, a bus route is provided from downtown, a park and go is available and bike share is available for commuters. Additional open-ended comments were provided and are also reflected in the TDM strategies presented in this section.

Table 6 below presents the strategies that the Roux Institute at Northeastern University is committed to fulfilling which are grouped into three main categories: Infrastructure/Transit/Mobility Improvements and Contributions; Incentives; and Information/Education/Marketing. These commitments include timelines for implementation. Table 7 provides a list of potential strategies the Roux Institute at Northeastern University is considering implementing in a future phase of the project.

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Investments				
Public Transit Access	Work with Metro to provide a new transit stop on campus. The transit stop will include a shelter and provide real-time bus information as well as a turnaround area on site.	Students/Staff/Faculty/Visitors	Implement	
Public Transit Access	Subsidize the purchase of student and staff/faculty bus passes.	Students/Staff/Faculty	Implement	
Bicycle Access	Secured bicycle parking will be provided via 100 exterior and 66 interior spaces. This equates to over 3 times the City of Portland Land Use Code parking requirements totaling 166 bicycle spaces. This equates to over 3 times the required amount of bicycle parking.	Students/Staff/Faculty/Visitors	Implement	Continue to monitor and provide additional bicycle parking if demand increases.
Bicycle Access	Improve Sherwood Street by providing bicycle lanes.	Students/Staff/Faculty/Visitors	Implement Sherwood Street bicycle lanes.	
Bicycle Access	Provide on-site showers and lockers	Students/Staff/Faculty	Implement	
Pedestrian Access	Improve the pedestrian network by providing new sidewalks along Sherwood Street and a new crosswalk across Sherwood Street at Veranda Street.	Students/Staff/Faculty/Visitors	Implement Sherwood Street improvements.	
Constrained Parking	Parking on-site will be constrained to a parking garage designed to accommodate 708 parking spaces (only 692 to be used for vehicular parking and 16 for 66 bicycle parking spaces) in addition to 14 at-grade parking spaces.	Students/Staff/Faculty	Implement	Ongoing parking management as long-term phasing is completed.
Water Access/Marine Feature	Build a modern pier over the footprint of the current pier, in order to accommodate water shuttles and taxis.	Students/Staff/Faculty/Visitors		Implement
Incentives				
Flexible Work and/or On-line Learning	Provide a hybrid course format that allows online and on-site learning.	Students/Staff/Faculty	Implement	
Flexible Work and/or On-line Learning	Flexible scheduling (ability to start-stop some class hours outside of peak travel periods, e.g.)	Students/Staff/Faculty	Implement	
Parking Pricing	Parking charge for students, staff/faculty (unbundled parking costs - not included with tuition and not provided as a benefit to staff/faculty)	Students/Staff/Faculty	Implement	
Transit Incentives	Pre-tax transit pass purchasing for employees.	Staff/Faculty	Implement	
Preferential Parking	Prioritize parking for carpools.	Students/Staff/Faculty	Implement	
	Carpools will receive reduced price parking.	Students/Staff/Faculty	Implement	
Programmatic Incentives	Join the Emergency Ride Home program through the GOMAINE program.	Students/Staff/Faculty	Implement	
Electric Vehicle Parking	Monitor EV parking demand study and increase the chargers, their power, and number of EV-ready spaces as demand dictates.	Students/Staff/Faculty/Visitors		Monitor usage and provide additional EV charging infrastructure as needed.
Information/Education/Marketing				
Education on Travel Choices	Join GOMAINE. Encourage staff/faculty to join Go Maine & Record “green trips”.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide a website that will present travel choices to campus available to students/staff/faculty with links to resources. Information on bicycling routes, bicycle parking infrastructure, and walking infrastructure will be provided on the website	Students/Staff/Faculty/visitors	Implement	
Education on Travel Choices	The TDM coordinator will send out organizational emails promoting alternative modes/TDM program to staff/faculty and students.	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will facilitate carpools by maintaining a database of interested parties; commuters will be matched with others who live near them or can access a park and ride location along their route. The Roux Institute at Northeastern University will also participate in the Maine DOT/Maine Turnpike Authority GOMAINE, which facilitates carpools across nearby sites and provides participants with rewards for carpooling	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will provide new students, staff, and faculty with orientation packets describing non drive-alone commutes and incentives.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide transit maps and schedules on-campus.	Students/Staff/Faculty/Visitors	Implement	
Education on Travel Choices	Provide a real-time electronic screen displaying transit information – ‘Next Bus’ at bus stop.	Students/Staff/Faculty/Visitors	Implement	

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Future Investments				
Bicycle Access	Consider installing a bike repair station	Students/Staff/Faculty/Visitors	Investigate	Implement
Bicycle Access	Consider providing electric bike charging	Students/Staff/Faculty/Visitors		Investigate through surveys to determine if this would be effective and used.
Portland BIKESHARE	Investigate establishing a new BIKESHARE station on campus. Currently, there are no BIKESHARE stations located in East Deering.	Students/Staff/Faculty/Visitors	Investigate	Implement as demand dictates
Car Share	Explore providing one car share vehicle on campus.	Students/Staff/Faculty		Provide car share parking as future program is developed.

7

Monitoring and Reporting Plan

Program monitoring and reporting are important components of a successful TDM program because they provide a quantitative benchmark of the program's effectiveness in reducing single occupancy vehicle trips and resulting parking demand over time. The monitoring process provides feedback on whether progress toward the TDM targets is being made. The TDM Coordinator will use the information gathered through the monitoring plan to direct the ongoing implementation of the TDM program, allowing for adjustments and the introduction of new strategies.

The TDM Coordinator will be responsible for monitoring the efficacy of the TDM plan and making adjustments to the plan as needed to achieve modal split targets.

An annual survey will be administered to gather data for student, staff, and faculty commuting characteristics. Surveys provide a qualitative understanding of how well TDM program elements are working. This survey will ask respondents how they commuted to campus for the last five days and will provide a comprehensive list of mode share choices. Additional information including vehicle ownership, parking costs, and mode share barriers and incentives will also be collected. Parking utilization count data will be obtained annually to support the monitoring process. The TDM Coordinator will obtain data to quantify the hourly in, out, and number of parked vehicles in the garage. This data will help to establish the resulting parking demand for the enrollment at that time.

Should additional data such as bicycle parking counts or other TDM tracking efforts be needed to support the monitoring effort, additional data will be collected. This might include the following data needs:

- Should bicycle parking utilization counts be needed to support the monitoring process, the number of bicycles parked on campus will be tracked. This data will be reviewed for trends in

bicycle usage over time to determine if bicycle parking is adequate and meets the needs of the bicyclists.

› The TDM Coordinator will work with Metro to track the transit usage of commuters via the pass program implemented. The data for the same time period as outlined above in the surveys will be obtained and reviewed.

The results of monitoring effort will be reported to the City of Portland on an annual basis by May 15th using the standard reporting tools provided by the city.



The Roux Institute at Northeastern University

Transportation Demand Management Plan

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1

Introduction

Pursuant to Section 17.3 of the City of Portland Technical Manual, the Roux Institute at Northeastern University's Transportation Demand Management Plan (TDM) provides a cohesive approach to establish a targeted set of strategies aimed at reducing single occupancy vehicle trips to and from the proposed campus in Portland, Maine. The TDM plan describes how the Roux Institute at Northeastern University will provide information and education, enhance alternative transportation infrastructure and mobility, and incentivize students, faculty, and staff so that they use more sustainable, multimodal commuting options such as walking, bicycling, transit, carpooling and telecommuting. The Roux Institute at Northeastern University is committed to ongoing annual surveying to monitor the implementation and success of the TDM plan.

1.1 Program Summary and Project Status

In 2020, the Roux Institute at Northeastern University was launched to build expertise at the intersection of humans and technology. The campus is currently temporarily operating at 100 Fore Street but will be relocating to the redeveloped B&M Baked Beans facility. In its permanent waterfront location in East Deering, the Roux Institute at Northeastern University will continue to provide educational, research, and collaborative programs in areas including artificial intelligence, computer and data sciences, digital engineering, advanced life sciences, and medicine. The Roux Institute at Northeastern University offers post-graduate degrees and certifications, conducts research, assists start-ups, and partners with private, public and non-profit organizations. The mission of the Roux Institute at Northeastern University is *a vision to enable the creation of a synergistic technology and life science-driven economy and workforce, the Roux Institute at Northeastern University designs, curates, and integrates learning, research, and entrepreneurial solutions in collaboration with industry, academic institutions, and community organizations to catalyze talent development and economic impact throughout Maine*.

In February 2023, the Portland City Council approved the Institutional Overlay Zone for the campus at the old B&M Baked Beans site. The project team is currently embarking on the site plan review and public input process with the City of Portland, which includes the preparation and submission of a MaineDOT Traffic Movement Permit application. Permits are expected by the summer of 2024, when construction will begin, with an opening date in 2027. The campus will continue to grow over time in subsequent years and phases.

1.1.1 Existing Conditions

The Roux Institute at Northeastern University currently leases 84,000 sf of institutional space at 100 Fore Street adjacent to the East End neighborhood and near the waterfront in downtown Portland. In the fall of 2023, there were 665 enrolled students and 175 staff, researchers and faculty. There are currently 16 graduate programs in computer and data science, analytics, cloud software, cybersecurity, life sciences, and project management. To realize its full potential, the Roux Institute at Northeastern University is seeking to relocate its campus and expand in size as described in the following section.

1.1.2 Proposed Development Program

The campus will be anchored by a 238,000 square foot Learning, Research and Collaboration building and the 58,000 square foot Bean Building housing a start-up incubator program. By 2032, the campus plans to accommodate 3,123 graduate students in addition to supporting uses as shown in Table 1. An 8,000 square foot café and a day care center providing care for 50 children will be located on-site primarily for the families of students, staff, and faculty. In addition to its academic offerings, the campus will benefit the community by contributing to local economic growth and providing open space along the waterfront, active transportation accommodations throughout the site, job creation, and innovation space. The site plan is shown in Figure 1.

Table 1 Development Program

Program Component		2027 (Opening)	2032
Day care center		50 Children	50 Children
Academic Café		8,000 sf	8,000 sf
Roux Institute at Northeastern University	Graduate students	1,899 students	3,123 students
	Faculty, Staff, and Researchers[1]	225 staff	300 staff
	Embedded startup[1]	60 staff	100 staff
	JAX and Other Signature Partners[1]	55 staff	64 staff
	Affiliated Users[2]	35 visitors	100 visitors
	Special Events (daily)	150 attendees	150 attendees

1 All staff counts are in full-time equivalents.
2 Affiliated Users is a broad category for occasional visitors such as corporate learners, investors, donors, mentors, and neighbors.

The garage has been designed to accommodate 624 vehicular parking spaces, and parking for 66 bicycles. In addition to the garage spaces, there will be 14 parking spaces provided at grade on the site. All on-site parking will be paid parking, and a parking office will be created to manage permitting and enforcement for the campus. Parking costs and regulations may vary between categories of users (students, staff, faculty, visitors, etc.). Parking will be shared between uses

within the campus only. This development will not rely on any off site on-street parking. The campus may include on-site car sharing, enabling travel to and from the site using other modes, with the comfort that vehicles are available if necessary. The TDM measures presented in this plan will be critical to maintaining the expected parking demand.

Figure 1 Proposed Site Plan



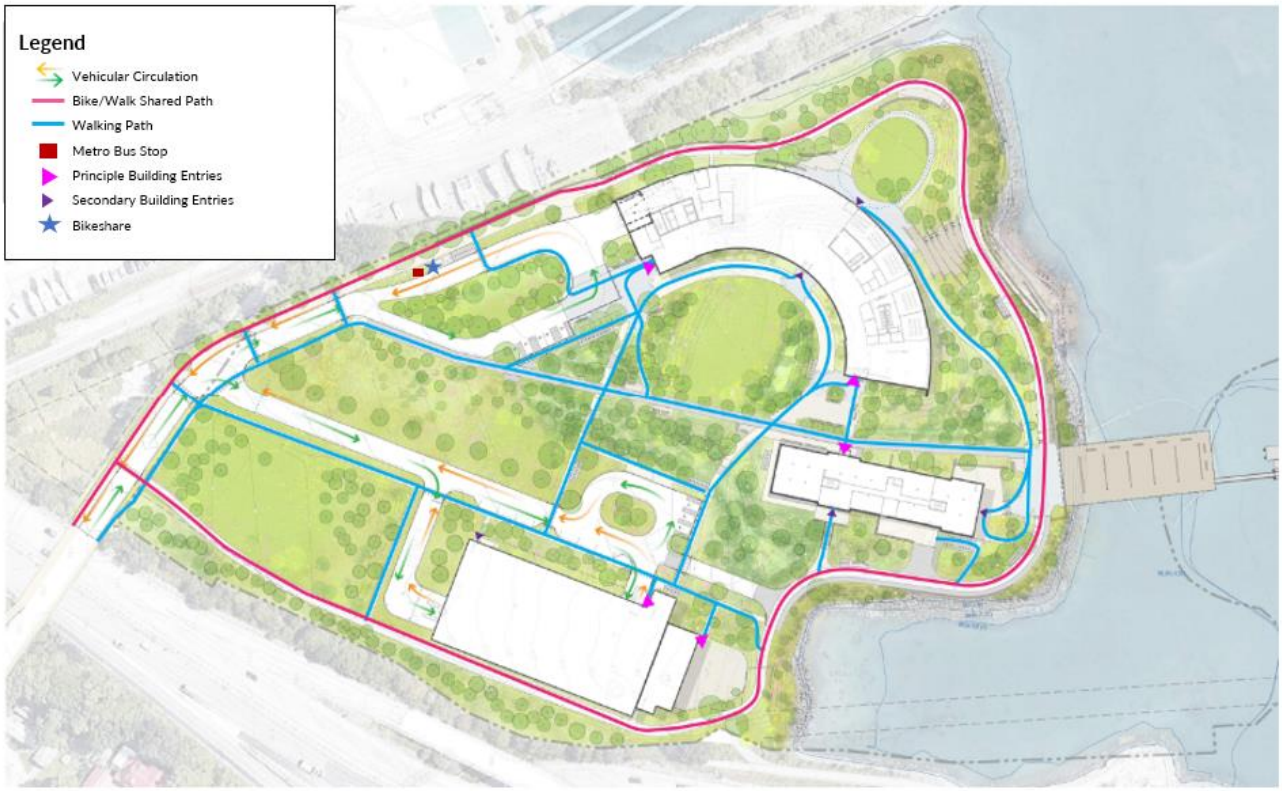
2

Mobility Context

For a TDM plan to be successful in shifting drive alone vehicle trips to transit, carpool, walk, and bicycle trips, it is essential to understand the multimodal transportation system surrounding the site. This section describes the existing transportation network challenges and future opportunities the Roux Institute at Northeastern University faces in redeveloping the site for their permanent campus.

The proposed waterfront site is located in East Deering adjacent to a marina and residential neighborhood comprising of single and multifamily homes as well as a commercial area which includes restaurants, bars, auto mechanics, and offices. I-295 runs along the western edge of the site, however the site will be well connected to the East Deering neighborhood, Back Cove, and the Portland Peninsula on the eastern promenade via vehicle, pedestrian, bicycle, transit and potential water taxi facilities. As shown in Figure 2, there are several promising opportunities to enhance and expand these transportation systems as part of the project to improve transportation mobility in and around the campus.

Figure 2 Campus Transportation Access



2.1 Vehicular Access and Circulation

A single vehicular access point to the site is provided via Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street will continue to serve as vehicular access into and out of the campus in the future. The site is in close proximity to I-295, Route 1, Washington Avenue, and Baxter Boulevard. The traffic signal system along Washington Avenue is a traffic responsive system operating with high efficiency. Intersections of Washington Avenue at Veranda Street, at Presumpscot Street, and at Ocean Avenue are each signalized intersections.

2.2 Walking and the Pedestrian Environment

2.2.1 Existing Conditions

The surrounding East Deering neighborhood provides pedestrian amenities including sidewalks along Washington Avenue and Veranda Street. A sidewalk runs along the west side of Bates Street but narrows and is periodically blocked by utility poles. There is no sidewalk present on the east side of Bates Street. The Back Cove trail (multi-use path) runs along the Back Cove and Tukey's Bridge near the site. The main roadway access to the site is via Sherwood Street which consists of a 30-foot-wide roadway in a 50-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. The pedestrian connectivity to the Portland

Peninsula is accessible from the Back Cove Trail across the west side of Tukey's Bridge. The sidewalk connecting from the intersection of Washington Avenue/Veranda Street is narrow and adjacent to vehicular traffic on the ramp to I-295. The sidewalk merges with the Back Cove Trail which adds bicycle and pedestrian demand to a narrow, shared use path over Tukey's Bridge. There is no existing direct connection to this shared use path from the campus.

2.2.2 Future Commitment

The Roux Institute at Northeastern University will improve pedestrian safety and connectivity to the East Deering neighborhood from the campus by providing continuous sidewalks on both sides of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. Once on the site, pedestrian facilities will connect site uses and points along the waterfront. Improvements to pedestrian connections will increase walkability for the site.

2.2.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a shared use path under Tukey's Bridge would improve pedestrian access to and from the campus to the Back Cove trail and for pedestrians traveling between East Deering and the Portland Peninsula using the future shared use path bridge. These new shared use paths would provide wider, safer, and more comfortable accommodations for pedestrians and improve connectivity.

2.3 Bicycling Environment and Facilities

2.3.1 Existing Conditions

Bicycle facilities are present in the East Deering neighborhood on Washington Avenue including buffered bike lanes north of Presumpscot Street and faded sharrows along Veranda Street. Bates Street provides a bike lane from Washington Avenue to Baxter Boulevard. The Back Cove trail (multi use path) runs along the Back Cove and Tukey's Bridge near the site. There are currently no bicycle facilities on Sherwood Street. Similar to the discussion above describing the pedestrian access across the shared use path on Tukey's Bridge, bicyclists must also use the narrow path or bike to Baxter Boulevard and the Back Cove Trail to connect to the Portland Peninsula. Although this shared use path provides access to the Back Cove trail, it does not provide direct access to the campus. There are 8 public U-racks totaling 16 bicycle parking spaces located within the 970 Baxter Boulevard parking lot.

Walkscore.com rates East Deering with a Bikescore of 58/"Bikeable" indicating some bike infrastructure is present. The 15-minute bike shed zone from the campus is illustrated in Figure 3.

Figure 3 15 Minute Bike Shed Zone



2.3.2 Future Commitment

The Roux Institute at Northeastern University is dedicated to creating a safer, complete street along Sherwood Street to accommodate bicyclists into and out of the site by providing bicycle lanes. The campus will provide 166 bicycle parking spaces for students, staff, faculty and visitors. This quantity is more than triple the required amount of bicycle parking per the Portland Technical Manual. Shower and locker facilities will be provided for those commuters who bicycle to campus. The Roux Institute at Northeastern University will explore providing a Bike Fix-it Station for bike commuters and other visitors to the site.

2.3.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future constructed connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a 10 foot wide shared use path under Tukey's Bridge would improve bicycle access from the campus to the Back Cove trail and bicycle connectivity between East Deering and greater Portland.

2.3.4 Other Potential Future Infrastructure

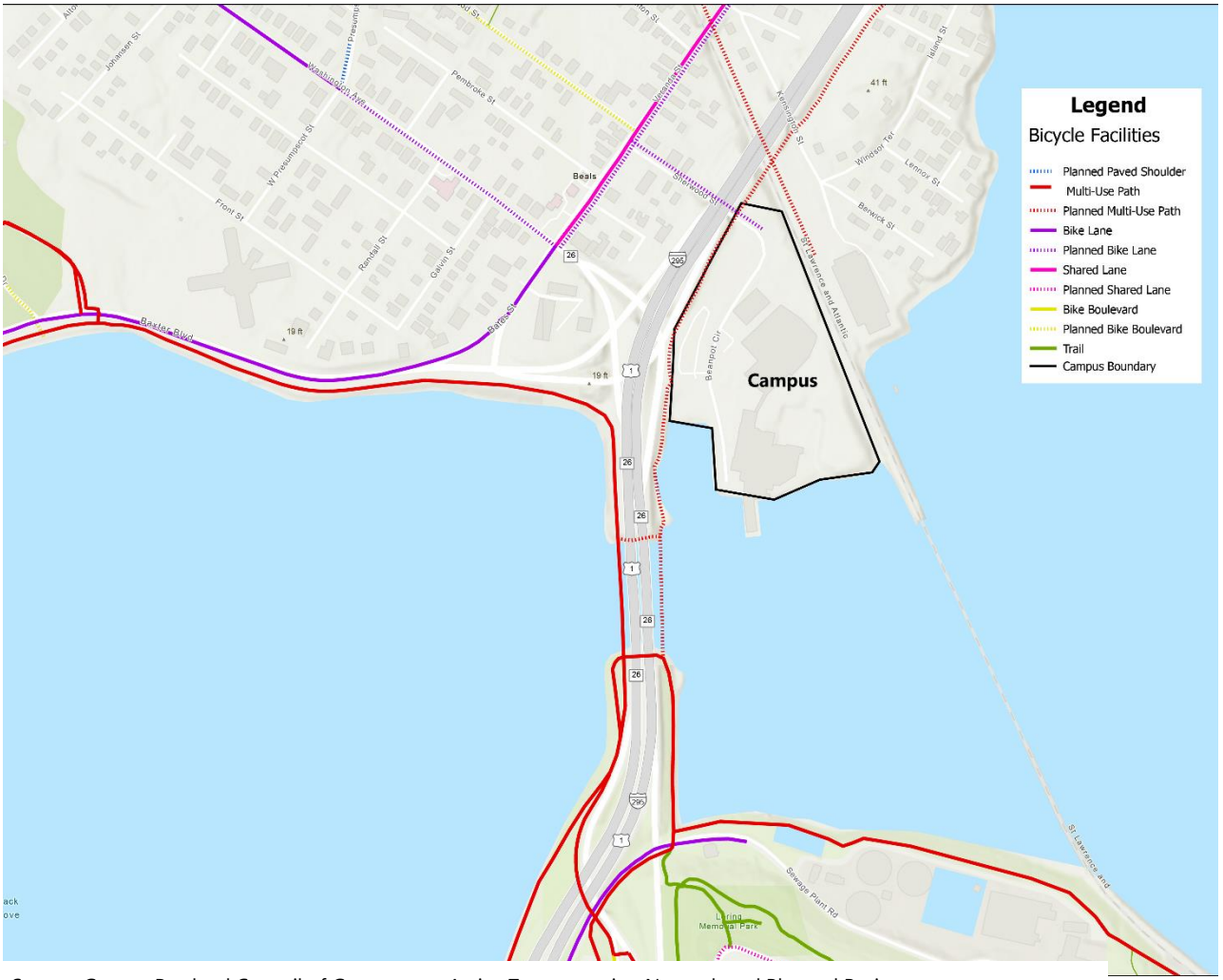
The City of Portland is currently working on the *Baxter Boulevard | Bates Street | Veranda Street Bikeway Project*[1] to implement buffered bicycle lanes on Veranda Street and a two-way bi-directional separated bike lane on Bates Street. Other potential opportunities for multi-use paths in the area include the Berlin Subdivision railroad right-of-way to points north ending at the Yarmouth Park and Ride on Exit 15 of I-295. Additionally, the Martin's Point Shared Use Path study considered a shared use path from Sherwood Street to the recently installed shared use path west of the Martin's Point Bridge starting at Wordsworth Street.

The City of Portland and Tandem Mobility have partnered to provide a bike share system in Portland. There are over 200 bicycles at over 40 stations predominately throughout the Portland peninsula. Pedal bikes and electric bikes are available by the minute and memberships are available on a monthly or yearly basis. There are currently no Portland BIKESHARE locations within the East Deering neighborhood in close proximity to the site, however there are a few on the East End across Tukey's Bridge. There is an opportunity to explore providing a new station on the campus which would expand the BIKESHARE network to the East Deering neighborhood.

Figure 4 presents the existing and potential future bicycle facilities surrounding the campus.

[1] Baxter Boulevard| Bates Street| Veranda Street Bikeway Project https://portland.civilspace.io/en/projects/better-bikeways-initiative

Figure 4 Existing and Potential Future Bicycle Facilities



Source: Greater Portland Council of Government Active Transportation Network and Planned Projects
https://gpcog.maps.arcgis.com/apps/View/index.html?appid=d5d7dbbc69534242b5fd4092c78f26e4

2.4 Public Transit

2.4.1 Existing Conditions

As shown in Figure 5, two bus lines currently stop near the campus: Metro Route 7 and Metro Routes 9A / 9B. Route 7 provides service between Portland and Falmouth with a stop at the Metro Pulse on the Peninsula as well as a stop near the campus at Veranda Street/Sherwood Street approximately a quarter of a mile from the center of the campus. Routes 9A/9B provide circular bus service between downtown Portland and North Deering with service running along Washington Avenue and Congress Street. Route 9A/9B stops on Washington Avenue near the site at Galvin Street and Veranda Street respectively which is under a half mile from the site. Bus transfers can be made at the Pulse and other stops on the Peninsula to reach the rest of Portland and several outlying towns.

Buses run continuously throughout the day, readily accommodating the varied schedules of students and other campus users. Metro BREEZ express bus service to Yarmouth, Freeport, and Brunswick and the Husky Line to Westbrook and Gorham establish a regional footprint for transit service. Ten local and express routes connect the campus to most of the Portland area with no more than one transfer.

During both weekday peak hours Metro Route 7 is expected to operate at 50% or less capacity. The Metro bus policy capacity of 52 passengers per bus was assumed. There are 35 seats per bus and a bus is considered “full” at 150% of the seated capacity. There is one bus per peak hour on this route. In 2023, on an average weekday during the AM and PM hours there were 9 and 22 boardings on Route 7 respectively, which leaves plenty of capacity on Route 7 to accommodate site related traffic.

In addition to the local Metro system, the Portland Transportation Center (PTC) in Thompson’s Point provides regional bus and train service. Concord Coach Lines runs bus service from Portland to Boston, Massachusetts, Logan International Airport, and New York City as well as points north of Portland. The Amtrak Downeaster provides train service between Brunswick and Boston with a stop in Portland. Greyhound provides bus service between East Bayside in Portland and Boston, Massachusetts.

The Roux Institute at Northeastern University is currently subsidizing Metro bus passes at 100% for all students faculty and staff who choose to participate.

Figure 5 Public Transit Access



2.4.2 Future Opportunities

Metro is contemplating improvements to the transit system throughout Portland. In addition, the Roux Institute at Northeastern University is working with Metro to consider site specific transit accommodation for an on-campus bus stop that would connect the Roux Institute at Northeastern University to other key locations across the City, including housing, additional transportation connections, and partner organizations. The Roux Institute at Northeastern is also working with Metro and MaineDOT to identify park and ride locations where Roux students, faculty and staff can park and use Metro to travel to the site.

2.4.2.1 Transit Together Plan

In January 2023, The Portland Area Comprehensive Transportation System (PACTS) Policy Board approved the Transit Together Plan[2]. As of August 27, 2023, this plan enabled changes to Route 9 to provide more consistent 30-minute headways from 6am to 6pm on weekdays and from about 8am to 6pm on Saturdays. Route 9B will run one hour later in the evening.

In the Spring of 2024, Metro plans to make improvements to Route 7 by extending the route to the Portland Jetport via Congress Street with improved frequency and hours of operation.

[2] Transit Together - https://gpmetro.org/1644/Transit-Together---Route-and-Schedule-Ch

Frequency for Route 7 will improve from 60 to 30 minutes Monday through Saturday and services will be provided until 10pm or 11pm. The Falmouth loops will be eliminated, and Route 7 will use the Shaw's parking lot in Falmouth to turnaround. In conjunction, Route 5 service to the Jetport and Hutchins Drive will be discontinued to improve travel time between Portland and the Maine Mall. In addition, microtransit service will be implemented in east Falmouth. Microtransit riders within the zone will be able to request a ride using a smartphone app or phone call. These changes significantly increase the frequency and daily service to the campus.

2.4.2.2 Other Metro Opportunities

Metro is in the preliminary planning stages of studying how to extend Route 7 service along US Route 1 to Yarmouth. This extension could provide a bus route for campus commuters, with parking at the MaineDOT Exit 15 Park and Ride in Yarmouth.

The Roux Institute at Northeastern University is working with Metro to improve the quality and frequency of transit connections to the campus. Reduction of headways, modification of Route 5 or Route 7 to make a stop at the campus, and construction of a transit stop and turnaround on the campus, are all under consideration to further the convenience of transit for commuting to and from campus. The Roux Institute at Northeastern University will continue to promote and incentivize transit use by subsidizing transit passes for students, staff, and faculty.

2.5 Ride-Hailing

In addition to driving, transit, walking, bicycling, and carpooling, commuters have the option of using ride hailing services such as Uber, Lyft and/or traditional taxis. Although these services result in vehicle trips to and from the campus, they reduce the parking demand and allow for less vehicle ownership and more flexibility with commute mode choices.

2.6 Current Parking Policies

Parking is currently provided to staff, faculty and embedded partners at $50 per month, per spot. There are 176 parking spaces allocated for the Roux Institute at Northeastern University in the on-site garage. Embedded partners and employees who opt out of monthly parking pay $1/hour to park in the garage. Parking for visitors is also provided via a public rate of $5/hour and in adjacent, paid parking lots. Students of the Roux Institute at Northeastern University are not currently charged to park on-site but will be at the future campus.

2.7 Existing TDM Efforts

As part of this TDM plan, the Roux Institute at Northeastern University plans to bolster its current TDM efforts for the permanent campus proposed in East Deering. However, they are currently implementing TDM strategies on the existing campus at 100 Fore Street to help reduce drive alone trips:

- Appointed a transportation coordinator who surveys students, faculty and staff to develop an understanding about mode choice.

- Fully subsidizing transit passes 100% for faculty, staff and students. Posting transit related information in highly visible areas on site. Providing information on transportation commuting options including transit on the Roux Institute at Northeastern University's website.
- Offering convenient, hybrid course formats that blend online and on-site learning thus reducing the demand for commuting.
- Charging staff, faculty and embedded partners $50 per month per parking space.

2.8 Future TDM Framework

Although this document specifically addresses the TDM plan for this phase of development, it is part of a larger TDM framework for the site and supports the continued review of mode share and trip impact and the continual development of additional TDM measures as the site is further developed. Specifically, the Transportation Coordinator will conduct traffic monitoring and employee surveys to identify the mode share as development occurs and identify which of the TDM strategies and alternative modes are more successful at the site. This information will be used in future phases of development to identify accurate impacts and needs and develop additional strategies to best continue to move the needle to reduce vehicle trips generated by the site.

This document outlines a transition from an initial opening year mode share to a mode share at full occupancy of this phase of development that will be consistent with the aspirational mode shares identified for the long term buildout of the site in the zone change process. Future phases will continue to build on the success of this TDM plan and reach mode share targets that continue to reduce vehicular trips.

3

TDM Coordinator

The Roux Institute at Northeastern University will designate a TDM coordinator to oversee the administration of the TDM plan and the annual surveying and reporting process.

The Roux Institute at Northeastern University plans to follow industry best practice by appointing a campus-wide transportation coordinator. The TDM Coordinator will collect data on the TDM progress to ensure it evolves as the site develops. Once the site is operational, the TDM Coordinator will conduct a transportation survey for students, staff, and faculty to establish a baseline for future drive alone mode share reduction goals. They will also collect and disseminate information (including non-automobile travel options) on-site and organize outreach events and campaigns to encourage TDM participation. The TDM Coordinator will promote alternative transportation choices to educate those commuting to and from the campus and coordinate the implementation of TDM strategies to reduce single occupancy vehicle (SOV) trips. In addition, the TDM Coordinator will work with the City of Portland, Metro, GoMaine, car share, and bike share programs to improve non-SOV mode shares. The responsibilities of the TDM Coordinator include the following:

- Promote alternative transportation choices to students, staff, faculty, and visitors to reduce single occupant vehicles (SOV) trips.
- Coordinate the implementation of TDM strategies with students, staff, and faculty and conduct orientations to educate those commuting to and from the campus regarding their transportation options.
- Monitor bike rack usage and make recommendations as needed to accommodate potential growing demand.
- Coordinate with the City of Portland, Metro, GoMaine, car share and bike share, and other potential partners to improve access to non-SOV modes.
- Conduct annual Transportation Monitoring and activities necessary to measure the effectiveness of the TDM program in achieving the mode share reduction target.
- Administer and review TDM surveys on a yearly basis.

- Complete the standard City of Portland TDM Reporting Form, which will summarize how effective the various strategies have been, mode share data based on the surveys and program success and barriers.
- File annual TDM reports by May 15th of each year with the City of Portland.

The TDM Coordinator will be the primary point of contact for students, staff, and faculty regarding the TDM plan. The TDM Coordinator will develop strategies and incentives for students, staff, faculty, and visitors where applicable. The TDM Coordinator will also collaborate with commuters prior to when they start to inform them of the robust network of alternative mode choices available to them.

4

Baseline TDM Data

Baseline travel demand and supply data for the campus has been quantified for the Traffic Movement Permit (TMP) Application being submitted to MaineDOT as part of the site plan review process. Baseline data includes estimated mode split, future trip generation estimates, and proposed parking supply and future demand estimates. Reviewing survey data and how the existing students, faculty and staff are currently commuting to campus, and how they expect to commute to the proposed campus, provides insight to which alternative modes may have the greatest potential to reduce drive alone trips.

4.1 Modal Split

4.1.1 Roux Institute at Northeastern University Transportation Survey

The Roux Institute at Northeastern University conducted transportation surveys on a quarterly basis throughout 2022 and 2023 which collected responses from students, staff, and faculty at the existing 100 Fore Street campus. The survey asked how the respondents commuted to campus and then how they imagine they will commute to the new campus in East Deering. The results of the survey mode share data are presented in Table 2. It is important to note that the data collected slightly varied throughout the time of year. Additionally, the Roux Institute at Northeastern University is an evolving, growing Institute currently in a temporary location and this data is only representative of a portion of students, staff and faculty. Based on feedback collected from the survey, it is anticipated that transit and bicycle trips will increase, walk trips will decrease, and drive trips will slightly decrease due to the proposed campus location and existing transportation system in East Deering. The Roux Institute at Northeastern University will continue to survey on a quarterly basis and make adjustments as circumstances evolve.

Table 2 Transportation Survey Mode Split Data

	Existing Commute at 100 Fore Street		
	August 2022	April 2022	January 2023
Drive	77%	72%	73%
Transit	4%	3%	4%
Walk	13%	16%	19%
Bike	6%	7%	4%
Other	0%	2%	0%

From the August 2022 survey, 135 people responded, of which 40% were students, 35% were full-time staff, 13% were full-time faculty, and 12% were other.

4.1.2 Traffic Movement Permit Mode Split Data

In addition to the data collected as part of the transportation surveys, expected mode share splits assumed in the Traffic Movement Permit (TMP) by land use are also provided in Table 3. The TMP mode splits are slightly more conservative in terms of analyzing vehicular traffic impact on the study area intersections. As additional bicycle and pedestrian connections are constructed in future years, it is likely that those mode shares will increase.

Table 3 TMP Mode Split

Population	Drive	Transit	Walk/Bike
Students	80%	10%	10%
All Other Populations	90%	5%	5%

Source: TMP indicates mode share assumptions presented in the Traffic Movement Permit

4.2 Trip Generation

As part of the TMP application, a trip generation analysis was conducted based on the 2032 development program presented in Table 1 using Institute of Transportation Engineers (ITE) publication, Trip Generation 11th edition as well as a custom trip generation methodology for the academic use of the site. The following assumptions were made to estimate student trip generation based on data from the campus:

- 43% of student enrollment are present on campus each day.
- 40% are daytime students and 60% are evening students.

Mode shares that were previously presented in Table 3, and applicable on site, internal capture trip rates were applied to the trip generation estimate to determine the external vehicle, pedestrian and walk trips as well as transit trips. The resulting estimated trip generation for the campus is presented in Table 4. The campus is expected to generate 237 morning and 521 evening peak hour vehicle trips, 20 morning and 51 evening peak hour transit trips, and 20 morning and 51 evening peak hour pedestrian and bicycle trips.

Table 4 Trip Generation

	Vehicle Trips	Transit Trips	Ped/Bike Trips
AM Peak Hour			
In	227	20	20
Out	10	0	0
Total	237	20	20
PM Peak Hour			
In	276	30	30
Out	245	21	21
Total	521	51	51

Source: Trip Generation Analysis presented in the Traffic Movement Permit

4.3 Proposed Parking Supply/Demand

A parking analysis was performed to estimate parking demand for the Roux Institute at Northeastern University. It was determined that parking demand peaks during the overlap between day and night users. Based on travel patterns of existing daytime and night students, the future enrollment will result in a peak demand of 581 spaces in the opening year and if the auto mode share stays as high as outlined in the TMP, demand would increase to 881 spaces in 2032.

The Roux Institute at Northeastern University is planning on providing parking on campus in a proposed parking garage designed to accommodate 610 vehicular parking spaces and 66 bicycle parking spaces. In addition to the garage spaces, there will be 14 parking spaces provided at grade on site. The parking garage will be constructed in 2027 to accommodate the demand for this phase.

In order to help mitigate the amount of vehicular traffic traveling to the campus, The Roux Institute at Northeastern University is actively exploring opportunities for satellite parking spots at existing park and ride locations within a short commute to the campus via tying into nearby transit routes or a Northeastern University-owned shuttle service.

To ensure parking usage in the structured garage does not exceed the permitted supply for each phase of development, the Roux Institute at Northeastern University will collect annual parking data to determine the number of vehicles parked throughout the day and evening. The TDM coordinator will obtain gate data for in, out, and occupancy counts on an hourly basis during the spring to coincide with the annual survey week. Moving into the future, the TDM coordinator will be working to reduce the automobile mode share to the site so that the garage is able to accommodate campus growth with that parking supply.

5

TDM Mode Split Targets

The TDM plan establishes short-term and long-term modal split targets.

The TDM mode split target includes goals for reducing vehicle trips and increasing multimodal trips. Based on the future transportation system the campus will be supported by and TDM measures that will be implemented, the short and long-term targets that are proposed as part of this TDM plan are presented in Table 5. The mode share goals are within range of the City's *One Climate Future* document that sets a Key Transportation Milestone that by 2035, 26% of trips in the city will use alternative transportation modes, (up from 12%)[3]. The long-term goals are based on mode splits presented as part of the approved Institutional Development Plan for the Roux Institute at Northeastern University. The Roux Institute at Northeastern University is committed to implementing the TDM strategies presented in the following Section 6 to work towards achieving these mode split targets. The targets will be reviewed and updated based upon the annual TDM reporting process.

Table 5 Automobile Mode Split Targets

Population	Mode Split Targets	
	Short-term	Long-term
Students	80%	65%
All Other Populations	90%	75%

[3] https://www.oneclimatefuture.org/wp-content/uploads/2021/02/OneClimateFuture_FinalJan2021_Downsized.pdf

6

Mode Split Target Strategies

The TDM plan includes a set of strategies aimed at achieving the TDM goals described above. The strategies are targeted to students, staff, and faculty traveling to and from the campus in East Deering. The Roux Institute at Northeastern University is committed to enhancing the multimodal transportation systems around the campus including providing improved pedestrian and bicycle facilities and transit access/service.

As part of the quarterly transportation survey, the Roux Institute at Northeastern University gathered data on which TDM strategies would more likely encourage students, staff, and faculty to commute differently to the proposed campus. The feedback indicates that Roux Institute at Northeastern University commuters are most likely to shift to a different mode share when showers, lockers and bike storage is available, there is a credit system for sustainable commuting, a bus route is provided from downtown, a park and go is available and bike share is available for commuters. Additional open-ended comments were provided and are also reflected in the TDM strategies presented in this section.

Table 6 below presents the strategies that the Roux Institute at Northeastern University is committed to fulfilling which are grouped into three main categories: Infrastructure/Transit/Mobility Improvements and Contributions; Incentives; and Information/Education/Marketing. These commitments include timelines for implementation.

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Investments				
Public Transit Access	Work with Metro to provide a new transit stop on campus. The transit stop will include a shelter and provide real-time bus information as well as a turnaround area on site.	Students/Staff/Faculty/Visitors	Implement	
Public Transit Access	Subsidize the purchase of student and staff/faculty bus passes.	Students/Staff/Faculty	Implement	
Bicycle Access	Secured bicycle parking will be provided via 100 exterior and 66 interior spaces. This equates to over 3 times the City of Portland Land Use Code parking requirements totaling 166 bicycle spaces.	Students/Staff/Faculty/Visitors	Implement	Continue to monitor and provide additional bicycle parking if demand increases.
Bicycle Access	Improve Sherwood Street by adding a shared use path.	Students/Staff/Faculty/Visitors	Implement Sherwood Street bicycle lanes.	
Bicycle Access	Provide on-site showers and lockers	Students/Staff/Faculty	Implement	
Pedestrian Access	Improve the pedestrian network by providing a new sidewalk and a shared use path along Sherwood Street and a new crosswalk across Sherwood Street at Veranda Street.	Students/Staff/Faculty/Visitors	Implement Sherwood Street improvements.	
Constrained Parking	Parking on-site will be constrained to a parking garage designed to accommodate 624 parking spaces in addition to 14 at-grade parking spaces.	Students/Staff/Faculty	Implement	Ongoing parking management as long-term phasing is completed.
Water Access/Marine Feature	Build a modern pier over the footprint of the current pier, in order to accommodate water shuttles and taxis.	Students/Staff/Faculty/Visitors		Implement
Incentives				
Flexible Work and/or On-line Learning	Provide a hybrid course format that allows online and on-site learning.	Students/Staff/Faculty	Implement	
Flexible Work and/or On-line Learning	Flexible scheduling (ability to start-stop some class hours outside of peak travel periods, e.g.)	Students/Staff/Faculty	Implement	
Parking Pricing	Parking charge for students, staff/faculty (unbundled parking costs - not included with tuition and not provided as a benefit to staff/faculty)	Students/Staff/Faculty	Implement	
Preferential Parking	Prioritize convenient garage parking for carpools.	Students/Staff/Faculty	Implement	
	Carpools will receive reduced price parking.	Students/Staff/Faculty	Implement	
Programmatic Incentives	Join the Emergency Ride Home program through the GOMAINE program.	Students/Staff/Faculty	Implement	
Electric Vehicle Parking	Monitor EV parking demand study and increase the chargers, their power, and number of EV-ready spaces as demand dictates.	Students/Staff/Faculty/Visitors		Monitor usage and provide additional EV charging infrastructure as needed.
Information/Education/Marketing				
Education on Travel Choices	Join GOMAINE. Encourage staff/faculty to join Go Maine & Record “green trips”.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide a website that will present travel choices to campus available to students/staff/faculty with links to resources. Information on bicycling routes, bicycle parking infrastructure, and walking infrastructure will be provided on the website	Students/Staff/Faculty/visitors	Implement	
Education on Travel Choices	The TDM coordinator will send out organizational emails promoting alternative modes/TDM program to staff/faculty and students.	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will facilitate carpools by maintaining a database of interested parties; commuters will be matched with others who live near them or can access a park and ride location along their route. The Roux Institute at Northeastern University will also participate in the Maine DOT/Maine Turnpike Authority GOMAINE, which facilitates carpools across nearby sites and provides participants with rewards for carpooling	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will provide new students, staff, and faculty with orientation packets describing non drive-alone commutes and incentives.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide transit maps and schedules on-campus.	Students/Staff/Faculty/Visitors	Implement	

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Education on Travel Choices	Provide a real-time electronic screen displaying transit information – 'Next Bus' at bus stop.	Students/Staff/Faculty/Visitors	Implement	
Future Investments				
Bicycle Access	Installing a bike repair station	Students/Staff/Faculty/Visitors	Implement	
Bicycle Access	Consider providing electric bike charging	Students/Staff/Faculty/Visitors		Investigate through surveys to determine if this would be effective and used.
Portland BIKESHARE	Establish a new BIKESHARE station on campus. Currently, there are no BIKESHARE stations located in East Deering.	Students/Staff/Faculty/Visitors	Implement	
Car Share	Explore providing one car share vehicle on campus.	Students/Staff/Faculty		Provide car share parking as future program is developed.

7

Monitoring and Reporting Plan

Program monitoring and reporting are important components of a successful TDM program because they provide a quantitative benchmark of the program's effectiveness in reducing single occupancy vehicle trips and resulting parking demand over time. The monitoring process provides feedback on whether progress toward the TDM targets is being made. The TDM Coordinator will use the information gathered through the monitoring plan to direct the ongoing implementation of the TDM program, allowing for adjustments and the introduction of new strategies.

The TDM Coordinator will be responsible for monitoring the efficacy of the TDM plan and making adjustments to the plan as needed to achieve modal split targets.

An annual survey will be administered to gather data for student, staff, and faculty commuting characteristics. Surveys provide a qualitative understanding of how well TDM program elements are working. This survey will ask respondents how they commuted to campus for the last five days and will provide a comprehensive list of mode share choices. Additional information including vehicle ownership, parking costs, and mode share barriers and incentives will also be collected. Parking utilization count data will be obtained annually to support the monitoring process. The TDM Coordinator will obtain data to quantify the hourly in, out, and number of parked vehicles in the garage. This data will help to establish the resulting parking demand for the enrollment at that time.

Should additional data such as bicycle parking counts or other TDM tracking efforts be needed to support the monitoring effort, additional data will be collected. This might include the following data needs:

- Should bicycle parking utilization counts be needed to support the monitoring process, the number of bicycles parked on campus will be tracked. This data will be reviewed for trends in

bicycle usage over time to determine if bicycle parking is adequate and meets the needs of the bicyclists.

› The TDM Coordinator will work with Metro to track the transit usage of commuters via the pass program implemented. The data for the same time period as outlined above in the surveys will be obtained and reviewed.

The results of monitoring effort will be reported to the City of Portland on an annual basis by May 15th using the standard reporting tools provided by the city.



The Roux Institute at Northeastern University

Transportation Demand Management Plan

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1

Introduction

Pursuant to Section 17.3 of the City of Portland Technical Manual, the Roux Institute at Northeastern University's Transportation Demand Management Plan (TDM) provides a cohesive approach to establish a targeted set of strategies aimed at reducing single occupancy vehicle trips to and from the proposed campus in Portland, Maine. The TDM plan describes how the Roux Institute at Northeastern University will provide information and education, enhance alternative transportation infrastructure and mobility, and incentivize students, faculty, and staff so that they use more sustainable, multimodal commuting options such as walking, bicycling, transit, carpooling and telecommuting. The Roux Institute at Northeastern University is committed to ongoing annual surveying to monitor the implementation and success of the TDM plan.

1.1 Program Summary and Project Status

In 2020, the Roux Institute at Northeastern University was launched to build expertise at the intersection of humans and technology. The campus is currently temporarily operating at 100 Fore Street but will be relocating to the redeveloped B&M Baked Beans facility. In its permanent waterfront location in East Deering, the Roux Institute at Northeastern University will continue to provide educational, research, and collaborative programs in areas including artificial intelligence, computer and data sciences, digital engineering, advanced life sciences, and medicine. The Roux Institute at Northeastern University offers post-graduate degrees and certifications, conducts research, assists start-ups, and partners with private, public and non-profit organizations. The mission of the Roux Institute at Northeastern University is *a vision to enable the creation of a synergistic technology and life science-driven economy and workforce, the Roux Institute at Northeastern University designs, curates, and integrates learning, research, and entrepreneurial solutions in collaboration with industry, academic institutions, and community organizations to catalyze talent development and economic impact throughout Maine.*

In February 2023, the Portland City Council approved the Institutional Overlay Zone for the campus at the old B&M Baked Beans site. The project team is currently embarking on the site plan review and public input process with the City of Portland, which includes the preparation and submission of a MaineDOT Traffic Movement Permit application. Permits are expected by the summer of 2024, when construction will begin, with an opening date in 2027. The campus will continue to grow over time in subsequent years and phases.

1.1.1 Existing Conditions

The Roux Institute at Northeastern University currently leases 84,000 sf of institutional space at 100 Fore Street adjacent to the East End neighborhood and near the waterfront in downtown Portland. In the fall of 2023, there were 665 enrolled students and 175 staff, researchers and faculty. There are currently 16 graduate programs in computer and data science, analytics, cloud software, cybersecurity, life sciences, and project management. To realize its full potential, the Roux Institute at Northeastern University is seeking to relocate its campus and expand in size as described in the following section.

1.1.2 Proposed Development Program

The campus will be anchored by a 238,000 square foot Learning, Research and Collaboration building and the 58,000 square foot Bean Building housing a start-up incubator program. By 2032, the campus plans to accommodate 3,123 graduate students in addition to supporting uses as shown in Table 1. An 8,000 square foot café and a day care center providing care for 50 children will be located on-site primarily for the families of students, staff, and faculty. In addition to its academic offerings, the campus will benefit the community by contributing to local economic growth and providing open space along the waterfront, active transportation accommodations throughout the site, job creation, and innovation space. The site plan is shown in Figure 1.

Table 1 Development Program

Program Component		2027 (Opening)	2032
Day care center		50 Children	50 Children
Academic Café		8,000 sf	8,000 sf
Roux Institute at Northeastern University	Graduate students	1,899 students	3,123 students
	Faculty, Staff, and Researchers[1]	225 staff	300 staff
	Embedded startup[1]	60 staff	100 staff
	JAX and Other Signature Partners[1]	55 staff	64 staff
	Affiliated Users[2]	35 visitors	100 visitors
	Special Events (daily)	150 attendees	150 attendees

1 All staff counts are in full-time equivalents.
2 Affiliated Users is a broad category for occasional visitors such as corporate learners, investors, donors, mentors, and neighbors.

The garage has been designed to accommodate 610 vehicular parking spaces, and parking for 66 bicycles. In addition to the garage spaces, there will be 14 parking spaces provided at grade on the site. All on-site parking will be paid parking, and a parking office will be created to manage permitting and enforcement for the campus. Parking costs and regulations may vary between categories of users (students, staff, faculty, visitors, etc.). Parking will be shared between uses

within the campus only. This development will not rely on any off site on-street parking. The campus may include on-site car sharing, enabling travel to and from the site using other modes, with the comfort that vehicles are available if necessary. The TDM measures presented in this plan will be critical to maintaining the parking demand below the parking supply.

The parking garage size of 610 spaces is more consistent with the anticipated demand opening day of Phase 1 (581 spaces). As a result, there is not the same need to reduce capacity as when a larger garage was contemplated.

Figure 1 Proposed Site Plan



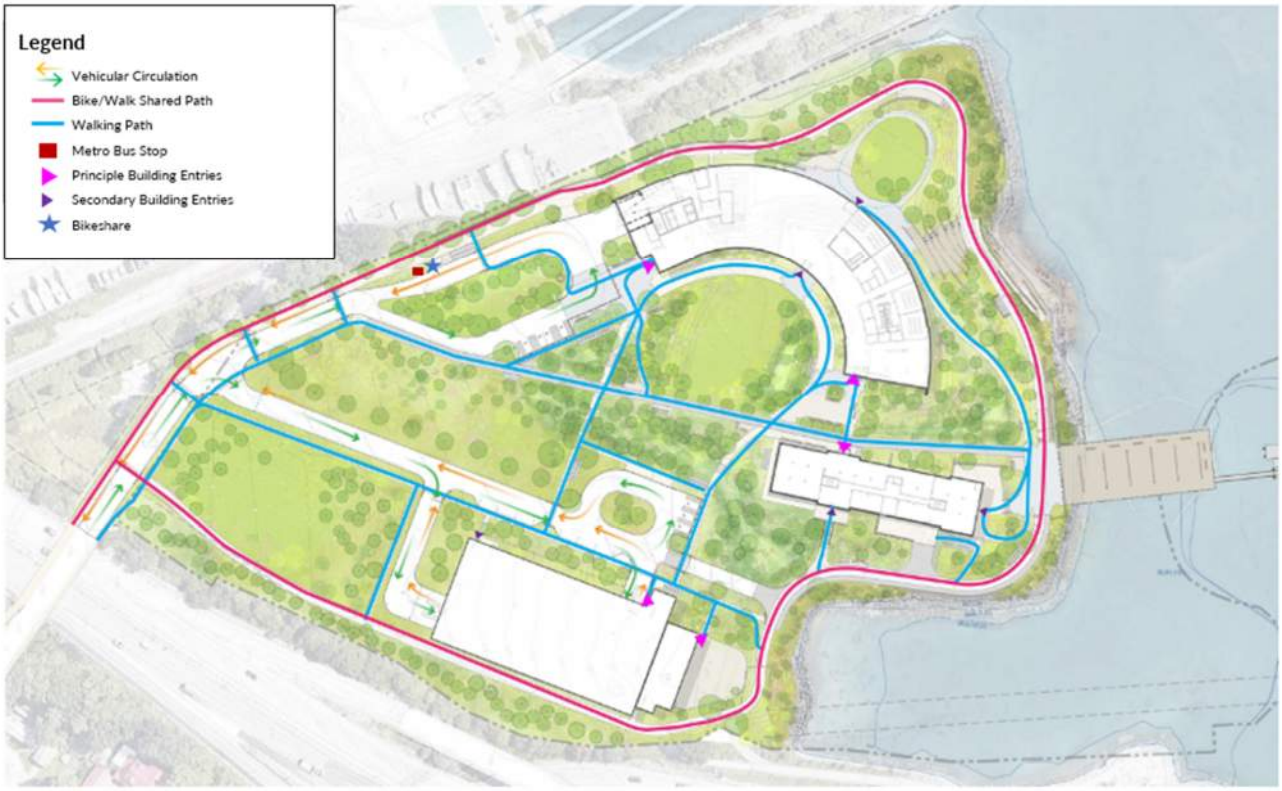
2

Mobility Context

For a TDM plan to be successful in shifting drive alone vehicle trips to transit, carpool, walk, and bicycle trips, it is essential to understand the multimodal transportation system surrounding the site. This section describes the existing transportation network challenges and future opportunities the Roux Institute at Northeastern University faces in redeveloping the site for their permanent campus.

The proposed waterfront site is located in East Deering adjacent to a marina and residential neighborhood comprising of single and multifamily homes as well as a commercial area which includes restaurants, bars, auto mechanics, and offices. I-295 runs along the western edge of the site, however the site will be well connected to the East Deering neighborhood, Back Cove, and the Portland Peninsula on the eastern promenade via vehicle, pedestrian, bicycle, transit and potential water taxi facilities. As shown in Figure 2, there are several promising opportunities to enhance and expand these transportation systems as part of the project to improve transportation mobility in and around the campus.

Figure 2 Campus Transportation Access



2.1 Vehicular Access and Circulation

A single vehicular access point to the site is provided via Sherwood Street at the intersection with Veranda Street through a 40-foot-wide highway underpass. Sherwood Street will continue to serve as vehicular access into and out of the campus in the future. The site is in close proximity to I-295, Route 1, Washington Avenue, and Baxter Boulevard. The traffic signal system along Washington Avenue is a traffic responsive system operating with high efficiency. Intersections of Washington Avenue at Veranda Street, at Presumpscot Street, and at Ocean Avenue are each signalized intersections.

2.2 Walking and the Pedestrian Environment

2.2.1 Existing Conditions

The surrounding East Deering neighborhood provides pedestrian amenities including sidewalks along Washington Avenue and Veranda Street. A sidewalk runs along the west side of Bates Street but narrows and is periodically blocked by utility poles. There is no sidewalk present on the east side of Bates Street. The Back Cove trail (multi-use path) runs along the Back Cove and Tukey's Bridge near the site. The main roadway access to the site is via Sherwood Street which consists of a 30-foot-wide roadway in a 50-foot wide right of way and includes non-continuous sidewalk segments mostly on the north side. The pedestrian connectivity to the Portland

Peninsula is accessible from the Back Cove Trail across the west side of Tukey's Bridge. The sidewalk connecting from the intersection of Washington Avenue/Veranda Street is narrow and adjacent to vehicular traffic on the ramp to I-295. The sidewalk merges with the Back Cove Trail which adds bicycle and pedestrian demand to a narrow, shared use path over Tukey's Bridge. There is no existing direct connection to this shared use path from the campus.

2.2.2 Future Commitment

The Roux Institute at Northeastern University will improve pedestrian safety and connectivity to the East Deering neighborhood from the campus by providing a sidewalk on the south side and a shared use path on the north side of Sherwood Street. A crosswalk will be implemented across Sherwood Street at Veranda Street. Once on the site, pedestrian facilities will connect site uses and points along the waterfront. Improvements to pedestrian connections will increase walkability for the site.

2.2.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a shared use path under Tukey's Bridge would improve pedestrian access to and from the campus to the Back Cove trail and for pedestrians traveling between East Deering and the Portland Peninsula using the future shared use path bridge. These new shared use paths would provide wider, safer, and more comfortable accommodations for pedestrians and improve connectivity.

2.3 Bicycling Environment and Facilities

2.3.1 Existing Conditions

Bicycle facilities are present in the East Deering neighborhood on Washington Avenue including buffered bike lanes north of Presumpscot Street and faded sharrows along Veranda Street. Bates Street provides a bike lane from Washington Avenue to Baxter Boulevard. The Back Cove trail (multi use path) runs along the Back Cove and Tukey's Bridge near the site. There are currently no bicycle facilities on Sherwood Street. Similar to the discussion above describing the pedestrian access across the shared use path on Tukey's Bridge, bicyclists must also use the narrow path or bike to Baxter Boulevard and the Back Cove Trail to connect to the Portland Peninsula. Although this shared use path provides access to the Back Cove trail, it does not provide direct access to the campus. There are 8 public U-racks totaling 16 bicycle parking spaces located within the 970 Baxter Boulevard parking lot.

Walkscore.com rates East Deering with a Bikescore of 58/"Bikeable" indicating some bike infrastructure is present. The 15-minute bike shed zone from the campus is illustrated in Figure 3.

Figure 3 15 Minute Bike Shed Zone



2.3.2 Future Commitment

The Roux Institute at Northeastern University is dedicated to creating a safer, complete street along Sherwood Street to accommodate bicyclists into and out of the site by providing a shared use path on the north side of the street. The campus will provide 166 bicycle parking spaces for students, staff, faculty, and visitors. This quantity is more than triple the required amount of bicycle parking per the Portland Technical Manual. Shower and locker facilities will be provided for those commuters who bicycle to campus. The Roux Institute at Northeastern University will provide a Bike Fix-it Station for bike commuters and other visitors to the site.

2.3.3 Potential Future MaineDOT Infrastructure

The infrastructure described above will be constructed to allow for future constructed connections to potential MaineDOT infrastructure. MaineDOT is contemplating a 14 foot wide shared use path on a new bridge parallel to Tukey's Bridge on the east side that would provide a direct connection from the campus to the Portland Peninsula. In addition, a 10 foot wide shared use path under Tukey's Bridge would improve bicycle access from the campus to the Back Cove trail and bicycle connectivity between East Deering and greater Portland.

2.3.4 Other Potential Future Infrastructure

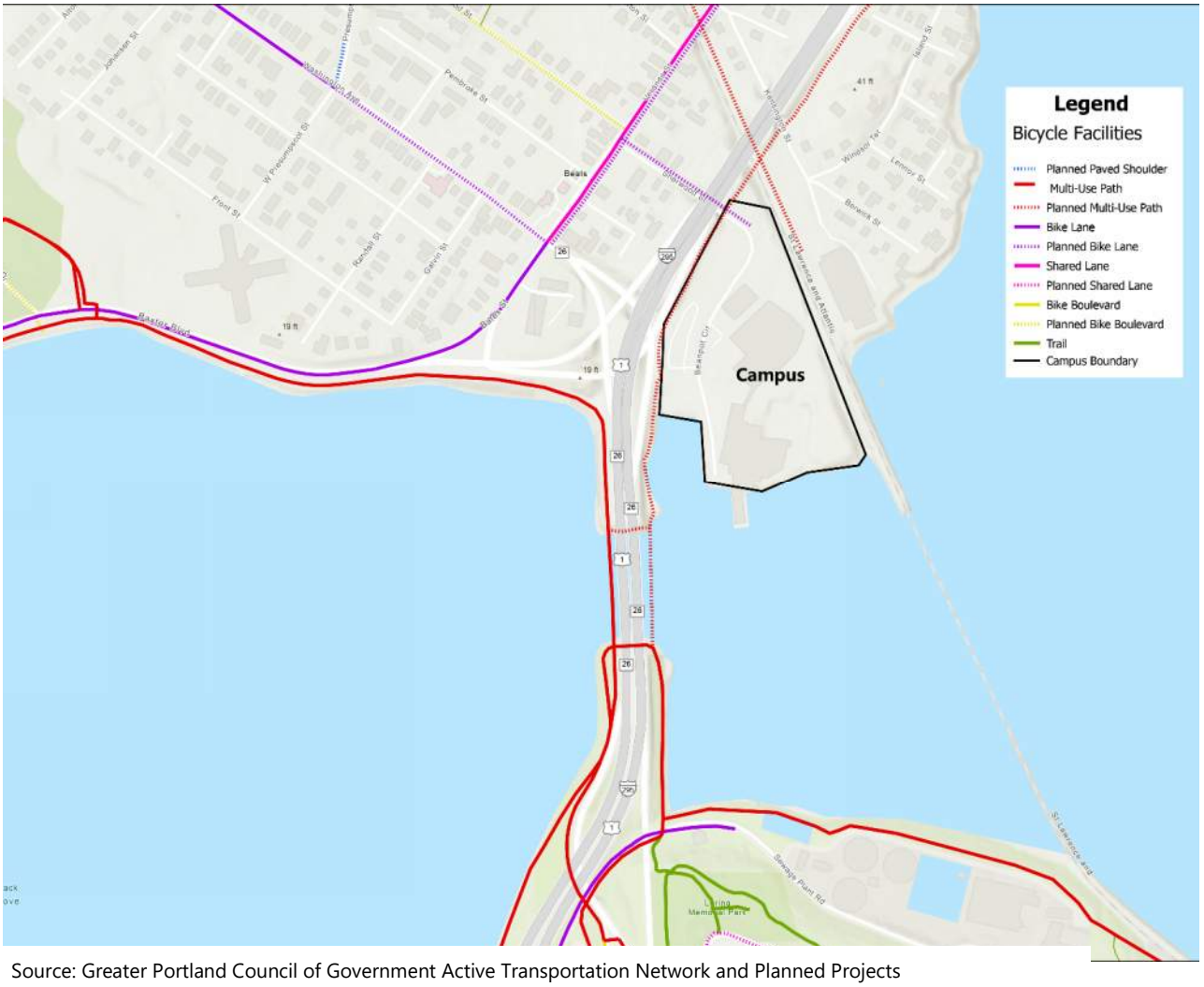
The City of Portland is currently working on the *Baxter Boulevard | Bates Street | Veranda Street Bikeway Project*[1] to implement buffered bicycle lanes on Veranda Street and a two-way bi-directional separated bike lane on Bates Street. Other potential opportunities for multi-use paths in the area include the Berlin Subdivision railroad right-of-way to points north ending at the Yarmouth Park and Ride on Exit 15 of I-295. Additionally, the Martin's Point Shared Use Path study considered a shared use path from Sherwood Street to the recently installed shared use path west of the Martin's Point Bridge starting at Wordsworth Street.

The City of Portland and Tandem Mobility have partnered to provide a bike share system in Portland. There are over 200 bicycles at over 40 stations predominately throughout the Portland peninsula. Pedal bikes and electric bikes are available by the minute and memberships are available on a monthly or yearly basis. There are currently no Portland BIKESHARE locations within the East Deering neighborhood in close proximity to the site, however there are a few on the East End across Tukey's Bridge. The Roux Institute at Northeastern University will provide a new station on the campus which will expand the BIKESHARE network to the East Deering neighborhood.

Figure 4 presents the existing and potential future bicycle facilities surrounding the campus.

[1] Baxter Boulevard| Bates Street| Veranda Street Bikeway Project https://portland.civilspace.io/en/projects/better-bikeways-initiative

Figure 4 Existing and Potential Future Bicycle Facilities



Source: Greater Portland Council of Government Active Transportation Network and Planned Projects
https://gpcog.maps.arcgis.com/apps/View/index.html?appid=d5d7dbbc69534242b5fd4092c78f26e4

2.4 Public Transit

2.4.1 Existing Conditions

As shown in Figure 5, two bus lines currently stop near the campus: Metro Route 7 and Metro Routes 9A / 9B. Route 7 provides service between Portland and Falmouth with a stop at the Metro Pulse on the Peninsula as well as a stop near the campus at Veranda Street/Sherwood Street approximately a quarter of a mile from the center of the campus. Routes 9A/9B provide circular bus service between downtown Portland and North Deering with service running along Washington Avenue and Congress Street. Route 9A/9B stops on Washington Avenue near the site at Galvin Street and Veranda Street respectively which is under a half mile from the site. Bus transfers can be made at the Pulse and other stops on the Peninsula to reach the rest of Portland and several outlying towns.

Buses run continuously throughout the day, readily accommodating the varied schedules of students and other campus users. Metro BREEZ express bus service to Yarmouth, Freeport, and Brunswick and the Husky Line to Westbrook and Gorham establish a regional footprint for transit service. Ten local and express routes connect the campus to most of the Portland area with no more than one transfer.

During both weekday peak hours Metro Route 7 is expected to operate at 50% or less capacity. The Metro bus policy capacity of 52 passengers per bus was assumed. There are 35 seats per bus and a bus is considered “full” at 150% of the seated capacity. There is one bus per peak hour on this route. In 2023, on an average weekday during the AM and PM hours there were 9 and 22 boardings on Route 7 respectively, which leaves plenty of capacity on Route 7 to accommodate site related traffic.

In addition to the local Metro system, the Portland Transportation Center (PTC) in Thompson’s Point provides regional bus and train service. Concord Coach Lines runs bus service from Portland to Boston, Massachusetts, Logan International Airport, and New York City as well as points north of Portland. The Amtrak Downeaster provides train service between Brunswick and Boston with a stop in Portland. Greyhound provides bus service between East Bayside in Portland and Boston, Massachusetts.

The Roux Institute at Northeastern University is currently subsidizing Metro bus passes at 100% for all students faculty and staff.

Figure 5 Public Transit Access



2.4.2 Future Opportunities

Metro is contemplating improvements to the transit system throughout Portland. In addition, the Roux Institute at Northeastern University is working with Metro to consider site specific transit accommodation for an on-campus bus stop that would connect the Roux Institute at Northeastern University to other key locations across the City, including housing, additional transportation connections, and partner organizations. The Roux Institute at Northeastern is also working with Metro and MaineDOT to identify park and ride locations where Roux students, faculty and staff can park and use Metro to travel to the site.

2.4.2.1 Transit Together Plan

In January 2023, The Portland Area Comprehensive Transportation System (PACTS) Policy Board approved the Transit Together Plan[2]. As of August 27, 2023, this plan enabled changes to Route 9 to provide more consistent 30-minute headways from 6am to 6pm on weekdays and from about 8am to 6pm on Saturdays. Route 9B will run one hour later in the evening.

In the Spring of 2024, Metro plans to make improvements to Route 7 by extending the route to the Portland Jetport via Congress Street with improved frequency and hours of operation.

[2] Transit Together - https://gpmetro.org/1644/Transit-Together---Route-and-Schedule-Ch

Frequency for Route 7 will improve from 60 to 30 minutes Monday through Saturday and services will be provided until 10pm or 11pm. The Falmouth loops will be eliminated, and Route 7 will use the Shaw's parking lot in Falmouth to turnaround. In conjunction, Route 5 service to the Jetport and Hutchins Drive will be discontinued to improve travel time between Portland and the Maine Mall. In addition, microtransit service will be implemented in east Falmouth. Microtransit riders within the zone will be able to request a ride using a smartphone app or phone call. These changes significantly increase the frequency and daily service to the campus.

2.4.2.2 Other Metro Opportunities

Metro is in the preliminary planning stages of studying how to extend Route 7 service along US Route 1 to Yarmouth. This extension could provide a bus route for campus commuters, with parking at the MaineDOT Exit 15 Park and Ride in Yarmouth.

The Roux Institute at Northeastern University is working with Metro to improve the quality and frequency of transit connections to the campus. Reduction of headways, modification of Route 5 or Route 7 to make a stop at the campus, and construction of a transit stop and turnaround on the campus, are all under consideration to further the convenience of transit for commuting to and from campus. The Roux Institute at Northeastern University will continue to promote and incentivize transit use by subsidizing transit passes for students, staff, and faculty.

2.5 Ride-Hailing

In addition to driving, transit, walking, bicycling, and carpooling, commuters have the option of using ride hailing services such as Uber, Lyft and/or traditional taxis. Although these services result in vehicle trips to and from the campus, they reduce the parking demand and allow for less vehicle ownership and more flexibility with commute mode choices.

2.6 Current Parking Policies

Parking is currently provided to staff, faculty and embedded partners at $50 per month, per spot. There are 176 parking spaces allocated for the Roux Institute at Northeastern University in the on-site garage. Embedded partners and employees who opt out of monthly parking pay $1/hour to park in the garage. Parking for visitors is also provided via a public rate of $5/hour and in adjacent, paid parking lots. Students of the Roux Institute at Northeastern University are not currently charged to park on-site but will be at the future campus.

2.7 Existing TDM Efforts

As part of this TDM plan, the Roux Institute at Northeastern University plans to bolster its current TDM efforts for the permanent campus proposed in East Deering. However, they are currently implementing TDM strategies on the existing campus at 100 Fore Street to help reduce drive alone trips:

- Appointed a transportation coordinator who surveys students, faculty and staff to develop an understanding about mode choice.

- Fully subsidizing transit passes 100% for faculty, staff and students. Posting transit related information in highly visible areas on site. Providing information on transportation commuting options including transit on the Roux Institute at Northeastern University's website.
- Offering convenient, hybrid course formats that blend online and on-site learning thus reducing the demand for commuting.
- Charging staff and embedded partners $50 per month per parking space.

2.8 Future TDM Framework

Although this document specifically addresses the TDM plan for this phase of development, it is part of a larger TDM framework for the site and supports the continued review of mode share and trip impact and the continual development of additional TDM measures as the site is further developed. Specifically, the Transportation Coordinator will conduct traffic monitoring and employee surveys to identify the mode share as development occurs and identify which of the TDM strategies and alternative modes are more successful at the site. This information will be used in future phases of development to identify accurate impacts and needs and develop additional strategies to best continue to move the needle to reduce vehicle trips generated by the site.

This document outlines a transition from an initial opening year mode share to a mode share at full occupancy of this phase of development that will be consistent with the aspirational mode shares identified for the long term buildout of the site in the zone change process. Future phases will continue to build on the success of this TDM plan and reach mode share targets that continue to reduce vehicular trips.

3

TDM Coordinator

The Roux Institute at Northeastern University will designate a TDM coordinator to oversee the administration of the TDM plan and the annual surveying and reporting process.

The Roux Institute at Northeastern University plans to follow industry best practice by appointing a campus-wide transportation coordinator. The TDM Coordinator will collect data on the TDM progress to ensure it evolves as the site develops. Once the site is operational, the TDM Coordinator will conduct a transportation survey for students, staff, and faculty to establish a baseline for future drive alone mode share reduction goals. They will also collect and disseminate information (including non-automobile travel options) on-site and organize outreach events and campaigns to encourage TDM participation. The TDM Coordinator will promote alternative transportation choices to educate those commuting to and from the campus and coordinate the implementation of TDM strategies to reduce single occupancy vehicle (SOV) trips. In addition, the TDM Coordinator will work with the City of Portland, Metro, GoMaine, car share, and bike share programs to improve non-SOV mode shares. The responsibilities of the TDM Coordinator include the following:

- Promote alternative transportation choices to students, staff, faculty, and visitors to reduce single occupant vehicles (SOV) trips.
- Coordinate the implementation of TDM strategies with students, staff, and faculty and conduct orientations to educate those commuting to and from the campus regarding their transportation options.
- Monitor bike rack usage and make recommendations as needed to accommodate potential growing demand.
- Coordinate with the City of Portland, Metro, GoMaine, car share and bike share, and other potential partners to improve access to non-SOV modes.
- Conduct annual Transportation Monitoring and activities necessary to measure the effectiveness of the TDM program in achieving the mode share reduction target.
- Administer and review TDM surveys on a yearly basis.

- Complete the standard City of Portland TDM Reporting Form, which will summarize how effective the various strategies have been, mode share data based on the surveys and program success and barriers.
- File annual TDM reports by May 15th of each year with the City of Portland.

The TDM Coordinator will be the primary point of contact for students, staff, and faculty regarding the TDM plan. The TDM Coordinator will develop strategies and incentives for students, staff, faculty, and visitors where applicable. The TDM Coordinator will also collaborate with commuters prior to when they start to inform them of the robust network of alternative mode choices available to them.

4

Baseline TDM Data

Baseline travel demand and supply data for the campus has been quantified for the Traffic Movement Permit (TMP) Application being submitted to MaineDOT as part of the site plan review process. Baseline data includes estimated mode split, future trip generation estimates, and proposed parking supply and future demand estimates. Reviewing survey data and how the existing students, faculty and staff are currently commuting to campus, and how they expect to commute to the proposed campus, provides insight to which alternative modes may have the greatest potential to reduce drive alone trips.

4.1 Modal Split

4.1.1 Roux Institute at Northeastern University Transportation Survey

The Roux Institute at Northeastern University conducted transportation surveys on a quarterly basis throughout 2022 and 2023 which collected responses from students, staff, and faculty at the existing 100 Fore Street campus. The survey asked how the respondents commuted to campus and then how they imagine they will commute to the new campus in East Deering. The results of the survey mode share data are presented in Table 2. It is important to note that the data collected slightly varied throughout the time of year. Additionally, the Roux Institute at Northeastern University is an evolving, growing Institute currently in a temporary location and this data is only representative of a portion of students, staff and faculty. Based on feedback collected from the survey, it is anticipated that transit and bicycle trips will increase, walk trips will decrease, and drive trips will slightly decrease due to the proposed campus location and existing transportation system in East Deering. The Roux Institute at Northeastern University will continue to survey on a quarterly basis and make adjustments as circumstances evolve.

Table 2 Transportation Survey Mode Split Data

	Existing Commute at 100 Fore Street		
	August 2022	April 2022	January 2023
Drive	77%	72%	73%
Transit	4%	3%	4%
Walk	13%	16%	19%
Bike	6%	7%	4%
Other	0%	2%	0%

The August 2022 survey had a 19% response rate. Of the 135 people who responded, 40% were students, 35% were full-time staff, 13% were full-time faculty, and 12% were other.

4.1.2 Traffic Movement Permit Mode Split Data

In addition to the data collected as part of the transportation surveys, expected mode share splits assumed in the Traffic Movement Permit (TMP) by land use are also provided in Table 3. The TMP mode splits are slightly more conservative in terms of analyzing vehicular traffic impact on the study area intersections. As additional bicycle and pedestrian connections are constructed in future years, it is likely that those mode shares will increase.

Table 3 TMP Mode Split

Population	Drive	Transit	Walk/Bike
Students	80%	10%	10%
All Other Populations	90%	5%	5%

Source: TMP indicates mode share assumptions presented in the Traffic Movement Permit

4.2 Trip Generation

As part of the TMP application, a trip generation analysis was conducted based on the 2032 development program presented in Table 1 using Institute of Transportation Engineers (ITE) publication, Trip Generation 11th edition as well as a custom trip generation methodology for the academic use of the site. The following assumptions were made to estimate student trip generation based on data from the campus:

- 43% of student enrollment are present on campus each day.
- 40% are daytime students and 60% are evening students.

Mode shares that were previously presented in Table 3, and applicable on site, internal capture trip rates were applied to the trip generation estimate to determine the external vehicle, pedestrian and walk trips as well as transit trips. The resulting estimated trip generation for the campus is presented in Table 4. The campus is expected to generate 237 morning and 521 evening peak hour vehicle trips, 20 morning and 51 evening peak hour transit trips, and 20 morning and 51 evening peak hour pedestrian and bicycle trips.

Table 4 Trip Generation

	Vehicle Trips	Transit Trips	Ped/Bike Trips
AM Peak Hour			
In	227	20	20
Out	10	0	0
Total	237	20	20
PM Peak Hour			
In	276	30	30
Out	245	21	21
Total	521	51	51

Source: Trip Generation Analysis presented in the Traffic Movement Permit

4.3 Proposed Parking Supply/Demand

A parking analysis was performed to estimate parking demand for the Roux Institute at Northeastern University. It was determined that parking demand peaks during the overlap between day and night users. Based on travel patterns of existing daytime and night students, the future enrollment will result in a peak demand of 581 spaces in the opening year and if the auto mode share stays as high as outlined in the TMP, demand would increase to 881 spaces in 2032.

The Roux Institute at Northeastern University is planning on providing parking on campus in a proposed parking garage designed to accommodate 610 vehicular parking spaces and 66 bicycle parking spaces. In addition to the garage spaces, there will be 14 parking spaces provided at grade on site. The parking garage will be constructed in 2027 to accommodate the demand for this phase.

In order to help mitigate the amount of vehicular traffic traveling to the campus, The Roux Institute at Northeastern University is actively exploring opportunities for satellite parking spots at existing park and ride locations within a short commute to the campus via tying into nearby transit routes or a Northeastern University-owned shuttle service.

To ensure parking usage in the structured garage does not exceed the permitted supply for each phase of development, the Roux Institute at Northeastern University will collect annual parking data to determine the number of vehicles parked throughout the day and evening. The TDM coordinator will obtain gate data for in, out, and occupancy counts on an hourly basis during the spring to coincide with the annual survey week. Moving into the future, the TDM coordinator will be working to reduce the automobile mode share to the site so that the garage is able to accommodate campus growth with that parking supply.

5

TDM Mode Split Targets

The TDM plan establishes short-term and long-term modal split targets.

The TDM mode split target includes goals for reducing vehicle trips and increasing multimodal trips. Based on the future transportation system the campus will be supported by and TDM measures that will be implemented, the short and long-term targets that are proposed as part of this TDM plan are presented in Table 5. The mode share goals are within range of the City's *One Climate Future* document that sets a Key Transportation Milestone that by 2035, 26% of trips in the city will use alternative transportation modes, (up from 12%)[3]. The long-term goals are based on mode splits presented as part of the approved Institutional Development Plan for the Roux Institute at Northeastern University. The Roux Institute at Northeastern University is committed to implementing the TDM strategies presented in the following Section 6 to work towards achieving these mode split targets. The targets will be reviewed and updated based upon the annual TDM reporting process.

Table 5 Automobile Mode Split Targets

Population	Mode Split Targets	
	Short-term	Long-term
Students	80%	65%
All Other Populations	90%	75%

[3] https://www.oneclimatefuture.org/wp-content/uploads/2021/02/OneClimateFuture_FinalJan2021_Downsized.pdf

6

Mode Split Target Strategies

The TDM plan includes a set of strategies aimed at achieving the TDM goals described above. The strategies are targeted to students, staff, and faculty traveling to and from the campus in East Deering. The Roux Institute at Northeastern University is committed to enhancing the multimodal transportation systems around the campus including providing improved pedestrian and bicycle facilities and transit access/service.

As part of the quarterly transportation survey, the Roux Institute at Northeastern University gathered data on which TDM strategies would more likely encourage students, staff, and faculty to commute differently to the proposed campus. The feedback indicates that Roux Institute at Northeastern University commuters are most likely to shift to a different mode share when showers, lockers and bike storage is available, there is a credit system for sustainable commuting, a bus route is provided from downtown, a park and go is available and bike share is available for commuters. Additional open-ended comments were provided and are also reflected in the TDM strategies presented in this section.

Table 6 below presents the strategies that the Roux Institute at Northeastern University is committed to fulfilling which are grouped into three main categories: Infrastructure/Transit/Mobility Improvements and Contributions; Incentives; and Information/Education/Marketing. These commitments include timelines for implementation.

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Investments				
Public Transit Access	Work with Metro to provide a new transit stop on campus. The transit stop will include a shelter and provide real-time bus information as well as a turnaround area on site.	Students/Staff/Faculty/Visitors	Implement	
Public Transit Access	Subsidize the purchase of student and staff/faculty bus passes.	Students/Staff/Faculty	Implement at 100%	Implementation level to be evaluated with the City.
Bicycle Access	Secured bicycle parking will be provided via 100 exterior and 66 interior spaces located in the garage. This equates to over 3 times the City of Portland Land Use Code parking requirements totaling 166 bicycle spaces.	Students/Staff/Faculty/Visitors	Implement	Continue to monitor and provide additional bicycle parking if demand increases.
Bicycle Access	Improve Sherwood Street by adding a shared use path.	Students/Staff/Faculty/Visitors	Implement Sherwood Street shared use path.	
Bicycle Access	Provide on-site showers and lockers	Students/Staff/Faculty	Implement	
Pedestrian Access	Improve the pedestrian network by providing a new sidewalk and a shared use path along Sherwood Street and a new crosswalk across Sherwood Street at Veranda Street.	Students/Staff/Faculty/Visitors	Implement Sherwood Street improvements.	
Constrained Parking	Parking on-site will be constrained to a parking garage designed to accommodate 624 parking spaces in addition to 14 at-grade parking spaces.	Students/Staff/Faculty	Implement	Ongoing parking management as long-term phasing is completed.
Water Access/Marine Feature	Build a modern pier over the footprint of the current pier, in order to accommodate water shuttles and taxis.	Students/Staff/Faculty/Visitors		Implement
Incentives				
Flexible Work and/or On-line Learning	Provide a hybrid course format that allows online and on-site learning.	Students/Staff/Faculty	Implement	
Flexible Work and/or On-line Learning	Flexible scheduling (ability to start-stop some class hours outside of peak travel periods, e.g.)	Students/Staff/Faculty	Implement	
Parking Pricing	Parking charge for students, staff/faculty (unbundled parking costs - not included with tuition and not provided as a benefit to staff/faculty)	Students/Staff/Faculty	Implement	
Preferential Parking	Prioritize convenient garage parking for carpools.	Students/Staff/Faculty	Implement	
	Carpools will receive reduced price parking.	Students/Staff/Faculty	Implement	
Programmatic Incentives	Join the Emergency Ride Home program through the GOMAINE program.	Students/Staff/Faculty	Implement	
Electric Vehicle Parking	Monitor EV parking demand study and increase the chargers, their power, and number of EV-ready spaces as demand dictates.	Students/Staff/Faculty/Visitors		Monitor usage and provide additional EV charging infrastructure as needed.
Information/Education/Marketing				
Education on Travel Choices	Join GOMAINE. Encourage staff/faculty to join Go Maine & Record “green trips”.	Students/Staff/Faculty	Implement	
Education on Travel Choices	Provide a website that will present travel choices to campus available to students/staff/faculty with links to resources. Information on bicycling routes, bicycle parking infrastructure, and walking infrastructure will be provided on the website	Students/Staff/Faculty/visitors	Implement	
Education on Travel Choices	The TDM coordinator will send out organizational emails promoting alternative modes/TDM program to staff/faculty and students.	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will facilitate carpools by maintaining a database of interested parties; commuters will be matched with others who live near them or can access a park and ride location along their route. The Roux Institute at Northeastern University will also participate in the Maine DOT/Maine Turnpike Authority GOMAINE, which facilitates carpools across nearby sites and provides participants with rewards for carpooling	Students/Staff/Faculty	Implement	
Education on Travel Choices	The TDM coordinator will provide new students, staff, and faculty with orientation packets describing non drive-alone commutes and incentives.	Students/Staff/Faculty	Implement	

Table 6 TDM Strategies – Commitments			Timeline Years	
Category	**Strategy**	**Targeted User/Group**	**Short-term (0-2 Years)**	**Long-Term (2+ Years)**
Education on Travel Choices	Provide transit maps and schedules on-campus.	Students/Staff/Faculty/Visitors	Implement	
Future Investments				
Bicycle Access	Installing a bike Fix-It station	Students/Staff/Faculty/Visitors	Implement	
Bicycle Access	Consider providing electric bike charging	Students/Staff/Faculty/Visitors		Investigate through surveys to determine if this would be effective and used.
Portland BIKESHARE	Establish a new BIKESHARE station on campus. Currently, there are no BIKESHARE stations located in East Deering.	Students/Staff/Faculty/Visitors	Implement	
Car Share	Explore providing one car share vehicle on campus.	Students/Staff/Faculty		Provide car share parking as future program is developed.

7

Monitoring and Reporting Plan

Program monitoring and reporting are important components of a successful TDM program because they provide a quantitative benchmark of the program's effectiveness in reducing single occupancy vehicle trips and resulting parking demand over time. The monitoring process provides feedback on whether progress toward the TDM targets is being made. The TDM Coordinator will use the information gathered through the monitoring plan to direct the ongoing implementation of the TDM program, allowing for adjustments and the introduction of new strategies.

The TDM Coordinator will be responsible for monitoring the efficacy of the TDM plan and making adjustments to the plan as needed to achieve modal split targets.

An annual survey will be administered to gather data for student, staff, and faculty commuting characteristics. Surveys provide a qualitative understanding of how well TDM program elements are working. This survey will ask respondents how they commuted to campus for the last five days and will provide a comprehensive list of mode share choices. Additional information including vehicle ownership, parking costs, and mode share barriers and incentives will also be collected. Parking utilization count data will be obtained annually to support the monitoring process. The TDM Coordinator will obtain data to quantify the hourly in, out, and number of parked vehicles in the garage. This data will help to establish the resulting parking demand for the enrollment at that time.

Should additional data such as bicycle parking counts or other TDM tracking efforts be needed to support the monitoring effort, additional data will be collected. This might include the following data needs:

- Should bicycle parking utilization counts be needed to support the monitoring process, the number of bicycles parked on campus will be tracked. This data will be reviewed for trends in

bicycle usage over time to determine if bicycle parking is adequate and meets the needs of the bicyclists.

› The TDM Coordinator will work with Metro to track the transit usage of commuters via the pass program implemented. The data for the same time period as outlined above in the surveys will be obtained and reviewed.

The results of monitoring effort will be reported to the City of Portland on an annual basis by May 15th using the standard reporting tools provided by the city.

6. ENVIRONMENTAL QUALITY STANDARDS (14.6.2)

Under pre-development conditions, the Site is approximately 70% impervious with approximately 9 acres of building roofs, parking areas, and loading dock space. At the time of this submission, IDEALS completed a permitted demolition of existing buildings whose footprints have been temporarily stabilized until construction commences as a result of Site Plan approval. Minimal shoreline buffer is present at the Site, with pavement extending right up to the armored embankment along much of the shoreline. Low areas on the Site are only 1-foot above Highest Astronomical Tide.

In recognition of existing vulnerabilities and future sea level rise, resiliency will be key to the campus. The redevelopment will raise interior site grades, soften landscapes to reduce impervious area, and incorporate infrastructure improvements to create a flood resilient landscape. Compliance with the City of Portland's Land Use Code Section 14.6.2 Environmental Quality Standards is described in the following sections.

6.1 Preservation of Significant Natural Features

Immediately adjacent to this highly developed Site are natural resource areas including: an estuarine intertidal emergent marsh located east of the Site near the rail corridor; coastal wetlands for all areas below highest annual tide; tidal waterfowl and wading bird habitat, and blue mussel habitat. A wetland delineation investigation, including a functions & values assessment was conducted by scientists at FB Environmental in June of 2023, and is summarized in the report attached to this section. Portions of the Site are delineated as Special Flood Hazard Areas according to FEMA's Flood Insurance Rate Map (FIRM).

The attached Official Species List identifies the northern long-eared bat (endangered species), roseate tern (endangered species) and monarch butterfly (candidate species) in association with the project area; however, there are no critical habitat areas located within the project area. Based on US Fish & Wildlife information, the northern long-eared bat typically lives in caves during the winter months, and in trees larger than three inches in diameter during the summer, with migration between these two habitats in the spring and the fall. Tree clearing will be conducted between August and May to avoid impacts to long-ear bats. Applicable permitted tree clearing dates for the project will be confirmed with regulatory agencies during final design. It is not anticipated that the proposed development will have a negative impact on the northern long-eared bat, roseate tern, or monarch butterfly.

6.2 Landscape Preservation

Please refer to Section 3.3.7. While the areas adjacent to the Site contain significant natural features as described above, the area within property lines of the campus has been highly developed throughout its history. As such no significant vegetation or natural resources exist on the Site that will be preserved in the landscape design. Rather the focus of the implementation will be on the region's ecology, geology, and habitats.

6.3 Site Landscaping & Buffers

The project landscaping complies with the City of Portland Technical Manual 14.6.2 C with the frequency and size of plantings adjacent to property lines. In addition, a vegetated roof is proposed on the west wing of the Learning, Research, and Collaboration Building. Loading, servicing areas, trash and recycling areas are screened from view of public sidewalks, streets, and adjacent properties. Surface parking lots likewise

comply with the provisions of this section with the use of landscape islands. Please refer to Section 3.3.7 for additional site landscaping information.

6.4 Water Quality, Stormwater Management & Erosion Control

The project must comply with the water quality, stormwater management, and erosion control standards identified by the City of Portland in the Land Use Chapter of the Code of Ordinances, as well as the MaineDEP Chapter 500 Stormwater Standards associated with Site Location of Development Act Permit requirements. The Stormwater Management Plan included with this application demonstrates that the proposed development meets the applicable standards.

For a Site that had previously seen no stormwater quality or quantity treatment or management other than some limited collection systems, the proposed stormwater management system will reduce the impact of stormwater on surrounding resources. The proposed stormwater management system has been designed to adequately capture, convey, and treat stormwater runoff, as demonstrated in the Stormwater Management Report uploaded under separate cover. The project will not result in the flooding of adjacent lots or City property.

Additionally, the project is not located within the watershed of an Urban Impaired Stream and is not anticipated to pose a risk of groundwater contamination during or after construction. Erosion and sediment control measures are described in the attached Stormwater Management Plan and detailed in the drawings.

6.5 Section Attachments

- Wetland Delineation Report
- Official Species List

6.6 Attachments Provided as Separate Files

The following materials referenced by this section of the report have been uploaded under separate cover for review.

- Stormwater Management Report

FB environmental

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Denise Cameron
Project Manager | Senior Principal
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

June 27, 2023

Subject: Roux Institute – Wetland Delineation

Dear Denise,

As requested by Woodard & Curran, FB Environmental Associates (FBE) delineated wetlands and watercourses and conducted a wetland functions and values assessment at a site in Portland, Maine. The site is intended to be the permanent home of the Roux Institute, a graduate education and research facility, under the Initiative for Digital Engineering & Life Sciences (IDEALS). The specific Survey Area consists of a 14-acre parcel situated in Portland's East End at the mouth of Back Cove. The attached map depicts the location of the parcel, formerly known as the B&M property.

Fieldwork was conducted on 6 June 2023, by FBE's Ecological Services Division Lead and Senior Wetland Scientist Kevin Ryan and Wetland Scientist Sarah Large. Wetlands were identified and delineated in accordance with the 1987 US Army Corps of Engineers (USACE) Wetland Delineation Manual[1] using the methods described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0.[2] Copies of completed wetland determination data forms are included with this report. All wetlands and watercourses were classified using the US Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States.[3]

Wetland Delineation Methods

Wetland boundaries are marked in the field using pink flagging emblazoned with the words "WETLAND DELINEATION." Boundaries of wetlands delineated during the field survey are geo-located using a sub-meter accuracy GPS unit (EOS Arrow-100). The collected GPS data are then used to create a wetland delineation map.

In Maine, Wetlands of Special Significance (WoSS) are regulated by the Maine Department of Environmental Protection (DEP) under Chapter 310 of the Maine Natural Resources Protection Act. All coastal wetlands and great ponds (inland bodies of water >10 acres in size) are classified as WoSS. In addition, a freshwater wetland may be considered one of special significance if it: (1) contains a natural community that is critically imperiled or imperiled as defined by the Maine Natural Areas Program; (2) contains significant wildlife habitat; (3) is located within 250 feet of a coastal wetland; (4) is located within 250 feet of a great pond; (5) contains at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation[4], or open water; (6) is inundated with floodwater during a 100-year flood event based on flood insurance

[1] Environmental Laboratory. (1987). Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Vicksburg, MS: US Army Engineer Waterways Experiment Station.
[2] U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
[3] Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 131pp.
[4] Cowardin et al. [1979] defines emergent hydrophyte (i.e., emergent marsh vegetation) as "…rooted herbaceous angiosperms, ferns, and fern allies that grow in wet soil, stand erect during most or all of the growing season, and may be periodically to permanently flooded at the base, but do not tolerate prolonged inundation of the entire plant").

maps; (7) contains peatlands; or (8) is located within 25 feet of a river, stream, or brook. The Survey Area was assessed for WoSS.

Wetland Functions and Values Assessment Methods

FBE conducted the wetland functional assessment pursuant to the approach described by the Army Corps Highway Methodology Workbook Supplement: Wetland Functions and Values (US ACOE, 1995). In this "Descriptive Approach" to function assessment, prior to determining what functions and values are principal and why, evaluators first determine if particular functions and values are present and then if they are "principal". Functions and values are considered "principal" if they are an important physical component of a wetland ecosystem (function only), and/or are considered of special value to society, from a local, regional, and/or national perspective. When making determinations regarding a wetland, evaluators are encouraged to determine whether the wetland has the potential to serve these functions and values.

Functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society and result from both living and non-living components of a specific wetland resource. These include all processes necessary for the self-maintenance of the wetland ecosystem, such as primary productivity and nutrient cycling, among others. Therefore, functions relate to the ecological significance of wetland properties without regard to subjective human values.

Values are benefits that derive from one or more functions and the physical characteristics associated with a wetland. Most wetlands have corresponding societal values. The value of a particular wetland function, or combination of functions, is based on human judgment of the worth, merit, quality, or importance attributed to those functions.

The 13 functions and values associated with a wetland functional assessment are described below:

1. *Groundwater Recharge/Discharge*: The potential for the wetland to serve as a groundwater recharge and/or discharge area. This function refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.
2. *Floodflow Alteration (Storage & Desynchronization)*: The effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events and the gradual release of floodwaters. This function adds to the stability of the wetland ecosystem or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.
3. *Fish and Shellfish Habitat*: The effectiveness of seasonal or permanent watercourses associated with the wetland to provide fish and shellfish habitat.
4. *Sediment/Toxicant/Pathogen Retention*: The ability of the wetland to reduce or prevent degradation of water quality. This function relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands, or upstream erosive wetland areas.
5. *Nutrient Removal/Retention/Transformation*: The ability of the wetland to act as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.
6. *Production Export*: The effectiveness of the wetland to produce food or usable products for man or other living organisms.
7. *Sediment/Shoreline Stabilization*: The effectiveness of the wetland in stabilizing stream banks and shorelines against erosion.
8. *Wildlife Habitat*: The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and wetland edges. Both resident and migrating species are considered.

9. *Recreation*: The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities.
10. *Educational/Scientific Value*: The suitability of the wetland as a site for an "outdoor classroom," or as a location for scientific study or research.
11. *Uniqueness/Heritage*: The effectiveness of the wetland or its associated waterbodies to provide certain unique values, including archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, or its relative importance as a typical wetland class for the geographic location.
12. *Visual Quality/Aesthetics*: The visual and aesthetic quality or usefulness of the wetland.
13. *Endangered Species Habitat*: The suitability of the wetland to support threatened or endangered species.

Site Description

The site is composed of approximately 14-acres of previously developed land bounded by Casco Bay to the south and east, Portland's Back Cove to the west, I-295 to the northwest, and the former Grand Trunk Railway rail grade to the northeast. The site was home to the B&M Baked Beans plant that operated at the site from 1913 to circa 2022. The factory buildings occupy roughly half of the parcel[5], with parking lots accounting for an additional third. The remaining sixth of the property is composed of manicured lawn, trees and shrubs, and a small linear wetland running north-south along the eastern property boundary with the railroad grade.

Soils at the site consist primarily of urban fill. An elevated plateau-like area is present between the factory buildings and the wetland complex/ravine to the east.

Wetlands and Watercourses

FBE identified one contiguous wetland within the Survey Area which contains several wetland classes. Areas immediately adjacent to the site are regularly flooded estuarine intertidal wetlands with a predominantly mud substrate (E2US3N). Areas mapped beyond this wetland type are classified as estuarine subtidal (E1UBL) as the substrate remains inundated at low tide.

The wetland complex at the site is coastal and therefore meets the criteria to be deemed Wetland of Special Significance by DEP.

Wetland A - E2US3N Section

The western end of the shoreline at the site, extending east to the pier, meets the classification of a regularly flooded estuarine intertidal unconsolidated shore wetland with a mud substrate (E2US3N). The area is a mudflat that is bordered by riprap on all sides. The wetland has been altered by the development present on and adjacent to the site. Rockweed (*Ascophyllum nodosum*), a seaweed common to sheltered shores and coves, is present within the wetland attached to riprap and on rocks within the mudflat.

Wetland A – E2US1N Section

East of the pier, the characteristics of Wetland A differ in terms of substrate and meets the classification of a regularly flooded estuarine intertidal unconsolidated shore wetland with a cobble-gravel substrate (E2US1N). The predominantly cobble-gravel substrate of this section of the wetland is strewn with old, weathered bricks and other historic construction debris. The land area immediately east of the pier is bounded by a stone retaining wall; beyond it to the east, the shoreline is lined with rocks of various sizes ranging from pebbles to boulders.

Wetland A – E2EM1N Section

The channelized section of Wetland A on the eastern boundary of the property is an estuarine intertidal emergent marsh system with persistent vegetation (E2EM1N) situated in a ravine that is regularly flooded. This portion of the wetland has a variety of native and nonnative invasive shrubs growing along the banks. Native shrubs observed

[5] The buildings were in the process of being demolished during the course of the field investigation.

in proximity to the wetland included willows (*Salix* sp.), staghorn sumac (*Rhus hirta*), and cherry trees (*Prunus* sp.). Nonnative plants observed include black locust trees (*Robina pseudoacacia*) and cultivated apple trees (*Malus pumila*). Non-native, invasive plants observed consisted of Morrow's honeysuckle (*Lonicera morrowii*), Japanese knotweed (*Fallopia japonica*), and multiflora rosa (*Rosa multiflora*).

At the USACE plot within this section of the wetland, smooth cordgrass (*Spartina alterniflora*) is the dominant vegetation with Carolina sea-lavender (*Limonium carolinianum*) and common glasswort (*Salicornia depressa*) also present. Soil met the criteria for hydric soil indicators A11 – Depleted Below Dark Surface and F3 Depleted Matrix as the soil profile consisted of a dark surface layer of silty clay loam underlain by a depleted clay with prominent redoximorphic concentrations. Observed primary indicators of hydrology consisted of A1 – Surface Water, A2 – High Water Table, A3 – Saturation, and B9 – Water-Stained Leaves. Completed USACE Wetland Determination Data forms are attached to this letter.

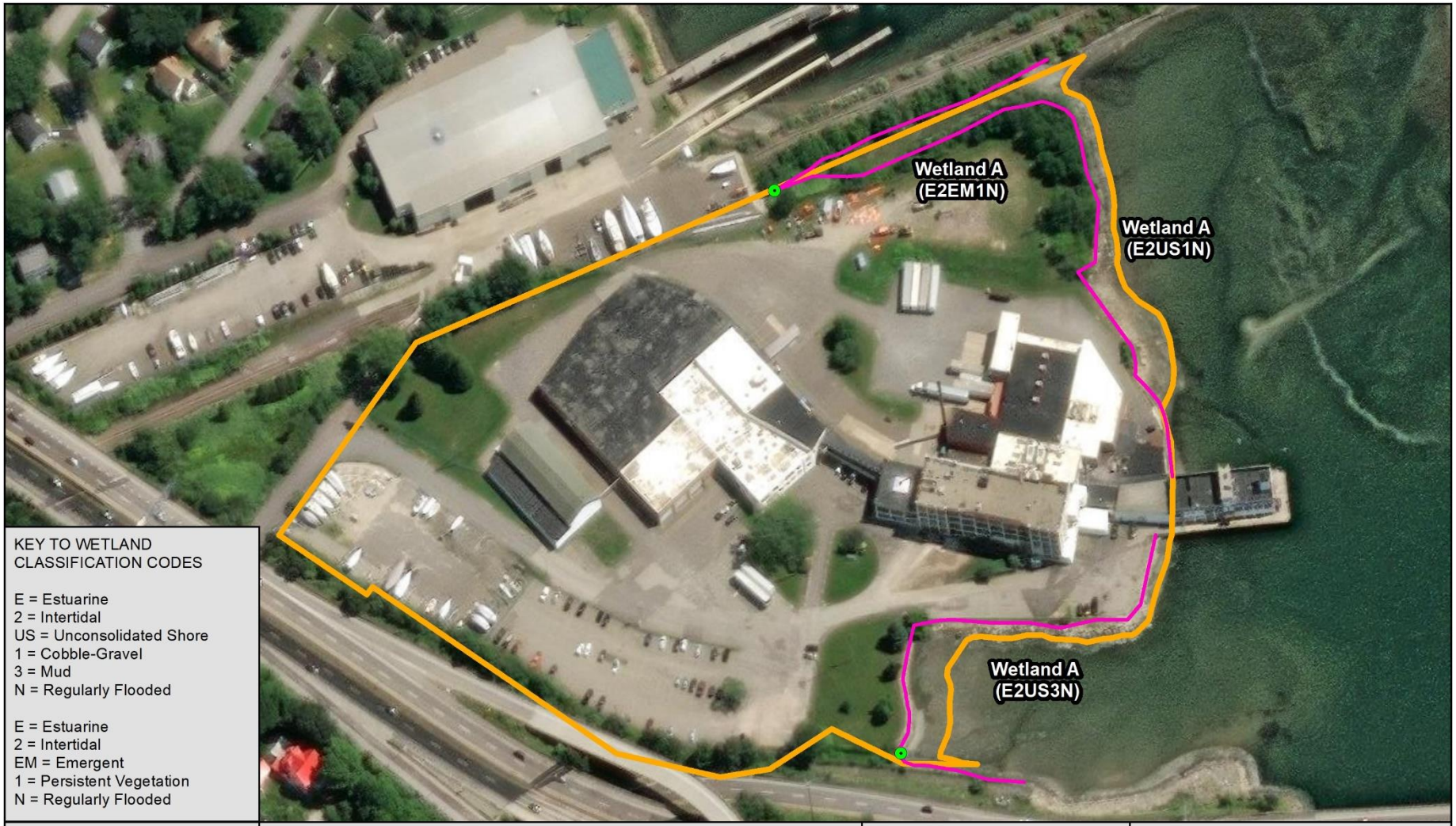
Functions and Values

Principal functions of Wetland A are Fish and Shellfish Habitat, Production Export, Wildlife Habitat, and Uniqueness/Heritage. Other functions and values that the wetland provides consist of Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Sediment/Shoreline Stabilization, Recreation, Educational/Scientific Value, and Visual Quality/Aesthetics. A completed USACE Function and Value Evaluation Form is attached to this letter.

Thank you for the opportunity to assist Woodard & Curran with this project. Please do not hesitate to contact me if you have questions or need additional information.

Regards,

Kevin Ryan
Ecological Services Division Lead
FB Environmental Associates

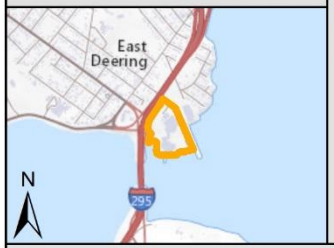


KEY TO WETLAND CLASSIFICATION CODES

E = Estuarine
2 = Intertidal
US = Unconsolidated Shore
1 = Cobble-Gravel
3 = Mud
N = Regularly Flooded

E = Estuarine
2 = Intertidal
EM = Emergent
1 = Persistent Vegetation
N = Regularly Flooded

LOCUS MAP



Survey Area
Wetland Boundary
Culvert

N E S W

FB environmental

0 100 200 Feet

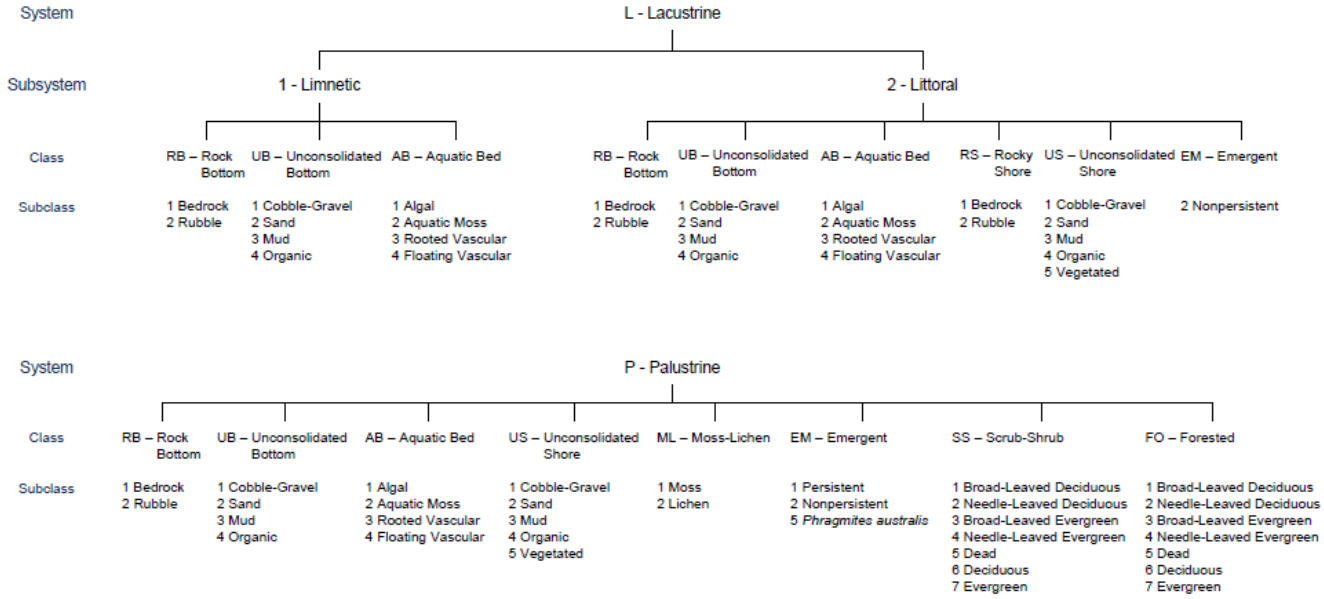
Initiative for Digital Engineering & Life Sciences
Roux Institute
Portland, Maine

Data Sources: Maine Geolibrary, ESRI, FBE
Coordinate System: NAD 1983 UTM Zone 19
Map created by K. Ryan on June 22, 2023

Notes: Wetlands were delineated by Kevin Ryan and Sarah Large in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, v2.0. January 2012. Wetlands were classified using the Classification of Wetlands and Deepwater Habitats of the United States (USFWS, 1979).

Cowardin Wetland Classification System

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

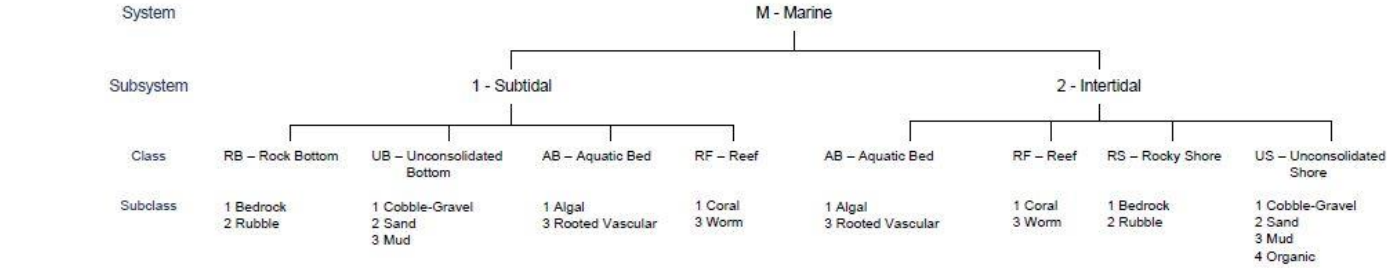


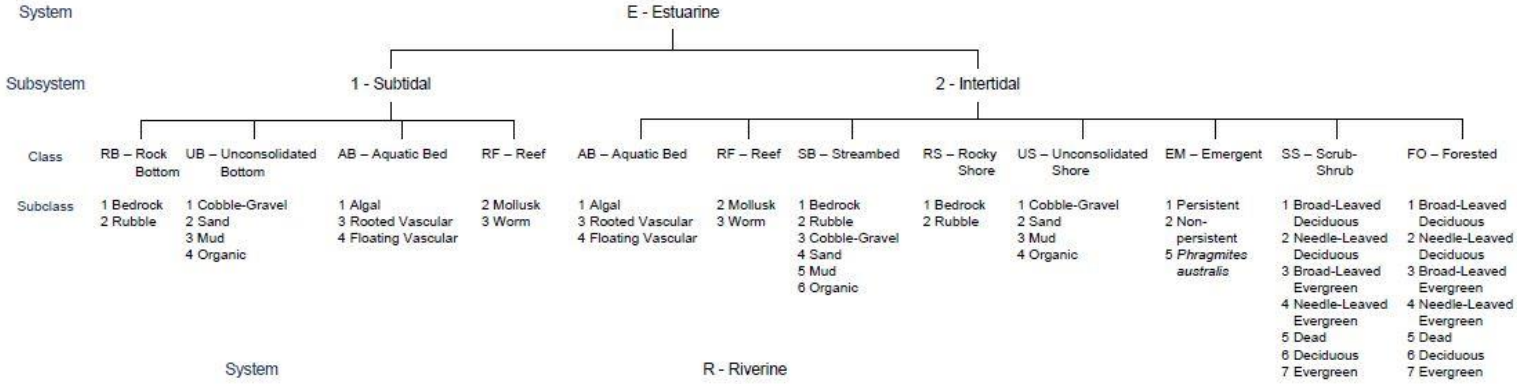
MODIFIERS

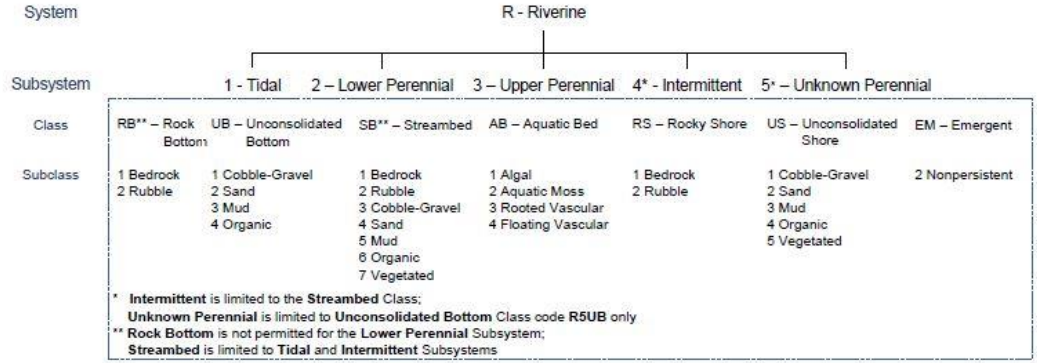
In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	i Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION







Site Photographs



Photo 1. View south from the north end of Wetland A.



Photo 2. View north from the western boundary of Wetland A, towards the developed/manicured area.



Photo 3. The current pier acts as a dividing line between the muddy and cobble-gravel substrate sections of Wetland A.



Photo 4. Wetland A north of the pier has a cobble-gravel substrate strewn with old bricks.



Photo 5. View north of the emergent marsh section of Wetland A.



Photo 6. View south from the emergent marsh section of Wetland A.



Photo 7. Several small culverts drain to the west end of Wetland A.



Photo 8. View north of the emergent portion of Wetland A upon becoming inundated during the field investigation.

Completed Wetland Function-Value Evaluation Form

Wetland Function-Value Evaluation Form

Total area of wetland: n/a Human made?: No Is wetland part of a wildlife corridor?: No or a "habitat island"?: No

Adjacent land use: Industrial facility Distance to nearest roadway or other development: Immedeately adjacent

Dominant wetland systems present: Estuarine Contiguous undeveloped buffer zone present: No

Is the wetland a separate hydraulic system?: No If not, where does the wetland lie in the drainage basin?: Low - coastal

How many tributaries contribute to the wetland?: n/a Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D.: Wetland A

Latitude: 43.64235 Longitude: 70.279119

Prepared by: KR & SL Date: 6 June 2023

Wetland Impact:
Type: _____ Area: _____

Evaluation based on:
Office: Yes Field: Yes

Corps manual wetland delineation completed? Y: x N: _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	3,4,5,9,11		
Fish and Shellfish Habitat	Y	1,3,4	Y	Wetland is a coastal mudflat.
Sediment/Toxicant Retention	Y	1,2,4,7,8,9		
Nutrient Removal	Y	2,4,5,6,7		
Production Export	Y	1,4,6	Y	
Sediment/Shoreline Stabilization	Y	1,3,5,10,11		
Wildlife Habitat	Y	8,16,21	Y	Observed waterfowl and fish using wetland.
Recreation	Y	2,5,12		
Educational/Scientific Value	Y	2,5,14		
Uniqueness/Heritage	Y	1,13,14,17,19,20	Y	
Visual Quality/Aesthetics	Y	2,6,8,11,12		
ES Endangered Species Habitat				Unknown.
Other				

Notes:

* Refer to backup list of numbered considerations.

Completed Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IDEALS - Roux Institute City/County: Portland/Cumberland Sampling Date: 6 June 23

Applicant/Owner: Woodard & Curran State: ME Sampling Point: A-1 (wet)

Investigator(s): Kevin Ryan and Sarah Large Section, Township, Range:

Landform (hillside, terrace, etc.): Coast Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R Lat: Long: Datum:

Soil Map Unit Name: Cut and Fill NWI classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 4
Water Table Present?	Yes X	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Plot becoming inundated by tide at time of data collection.

US Army Corps of Engineers Northcentral and Northeast Region – Version 2.0

VEGETATION – Use scientific names of plants.

Sampling Point: A-1 (wet)

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina alterniflora*	50	Yes	OBL
2. *Limonium carolinianum*	10	No	OBL
3. *Salicornia depressa*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	65 (A)		65 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** __

Remarks: (Include photo numbers here or on a separate sheet.)

US Army Corps of Engineers

Northcentral and Northeast Region – Version 2.0

SOIL Sampling Point: A-1 (wet)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/1	100					Loamy/Clayey	Silty clay loam
4-8	2.5Y 4/1	75	7.5YR 5/6	25	C	M	Loamy/Clayey	Prominent redox concentrations
8-16	2.5Y 4/1	60	7.5YR 5/6	40	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

US Army Corps of Engineers Northcentral and Northeast Region – Version 2.0

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IDEALS - Roux Institute City/County: Portland/Cumberland Sampling Date: 6 June 23

Applicant/Owner: Woodard & Curran State: ME Sampling Point: A-1 (up)

Investigator(s): Kevin Ryan and Sarah Large Section, Township, Range:

Landform (hillside, terrace, etc.): Coast Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R Lat: Long: Datum:

Soil Map Unit Name: Cut and Fill NWI classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes ____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)
Plot is in manucured lawn just west of Wetland A

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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VEGETATION – Use scientific names of plants.

Sampling Point: A-1 (up)

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea abies*	10	Yes	UPL
2. *Thuja occidentalis*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *None*			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Trifolium repens*	30	Yes	FACU
2. *Achillea millefolium*	30	Yes	FACU
3. *Poa sp.*	30	Yes	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	10	x 5 =	50
Column Totals:	80 (A)		310 (B)

Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Plot is on manicured lawn.

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Northcentral and Northeast Region – Version 2.0

SOIL Sampling Point A-1 (up)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5YR 3/2	100					Loamy/Clayey	Sandy Loam
20-22	7.5YR 4/4	100					Loamy/Clayey	Sandy Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

US Army Corps of Engineers Northcentral and Northeast Region – Version 2.0

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

In Reply Refer To:
Project Code: 2023-0113655
Project Name: IDEALS Phase 1

October 30, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The 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 IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the 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/or 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 and/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:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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 Code 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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

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

Project Code: 2023-0113655
Project Name: IDEALS Phase 1
Project Type: Acquisition of Lands
Project Description: Phase 1
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.67886365,-70.25460066402678,14z



Counties: Cumberland County, Maine

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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	Endangered

BIRDS

NAME	STATUS
Roseate Tern *Sterna dougallii dougallii* Population: Northeast U.S. nesting population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Black Guillemot *Cepphus grylle* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10412	Breeds May 15 to Sep 10
Black Scoter *Melanitta nigra* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10413	Breeds elsewhere
Common Eider *Somateria mollissima* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10457	Breeds Jun 1 to Sep 30
Common Loon *gavia immer* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/4464	Breeds Apr 15 to Oct 31
Great Shearwater *Puffinus gravis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/9634	Breeds elsewhere
Long-tailed Duck *Clangula hyemalis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/7238	Breeds elsewhere
Razorbill *Alca torda* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10461	Breeds Jun 15 to Sep 10
Red Phalarope *Phalaropus fulicarius* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10469	Breeds elsewhere

NAME	BREEDING SEASON
Red-breasted Merganser *Mergus serrator* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10693	Breeds elsewhere
Red-throated Loon *Gavia stellata* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/9589	Breeds elsewhere
Ring-billed Gull *Larus delawarensis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10468	Breeds elsewhere
Roseate Tern *Sterna dougallii* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10661	Breeds May 10 to Aug 31
Surf Scoter *Melanitta perspicillata* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10463	Breeds elsewhere
Thick-billed Murre *Uria lomvia* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10700	Breeds Apr 15 to Aug 15
White-winged Scoter *Melanitta fusca* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10462	Breeds elsewhere
Wilson's Storm-petrel *Oceanites oceanicus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10416	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

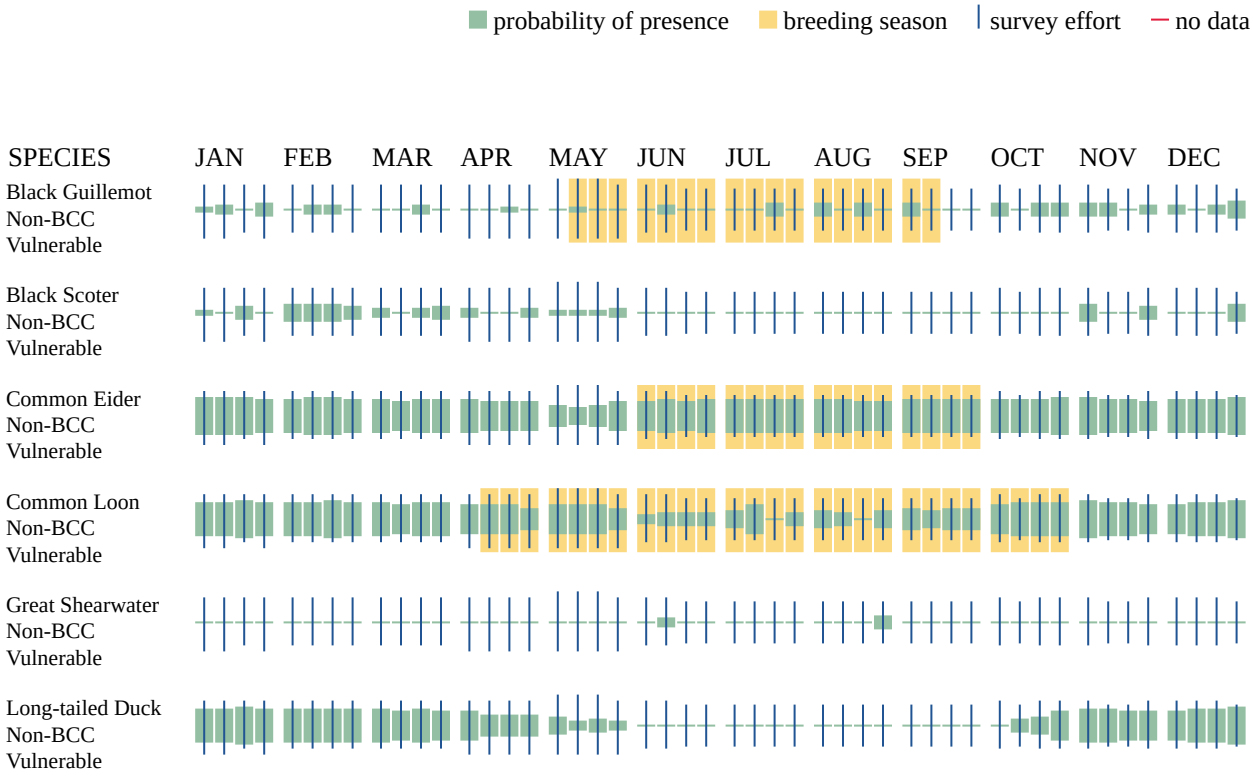
Probability of Presence (■)

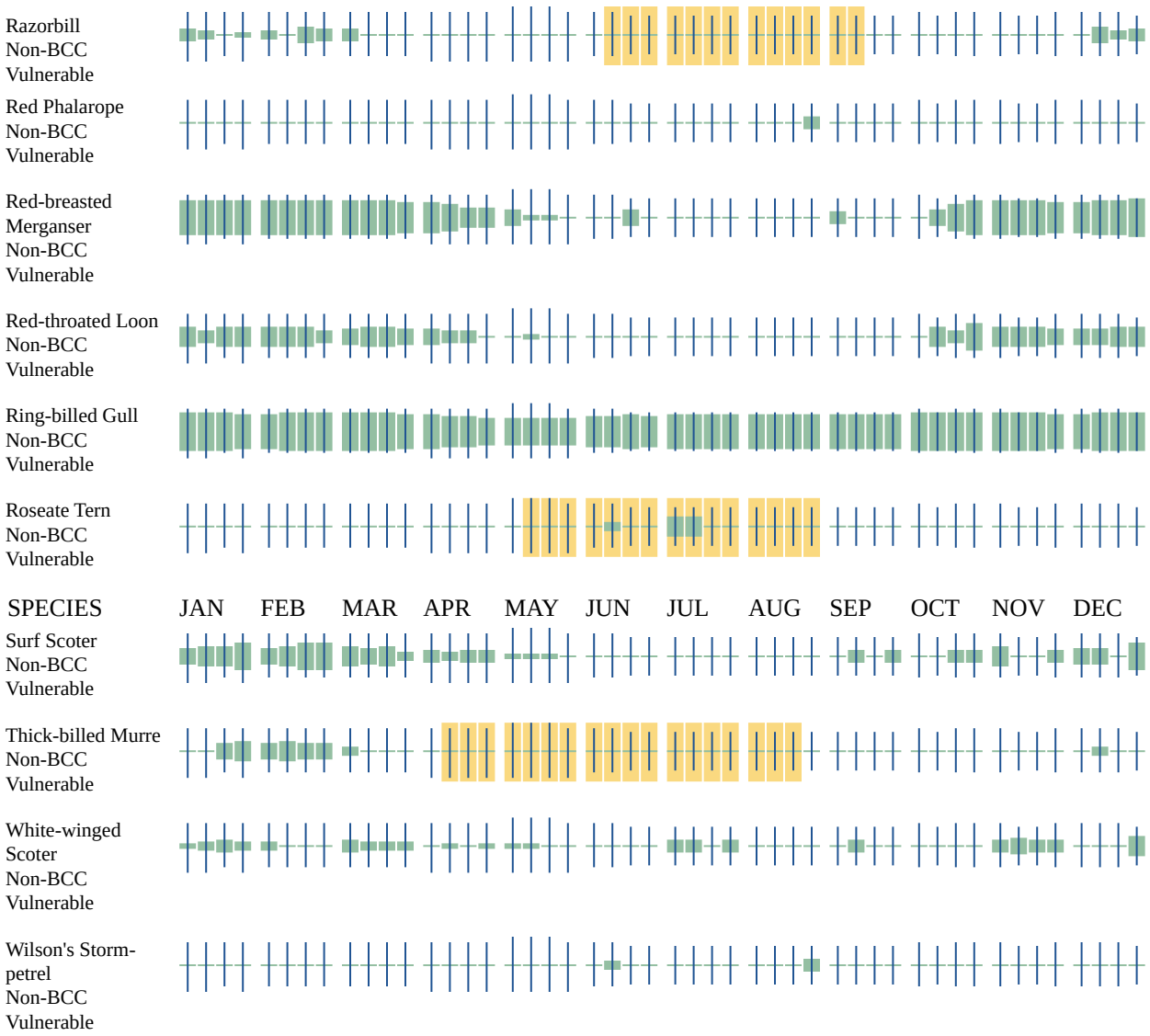
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

ESTUARINE AND MARINE WETLAND

- E2US2P
- E2US3N

ESTUARINE AND MARINE DEEPWATER

- E1UBL

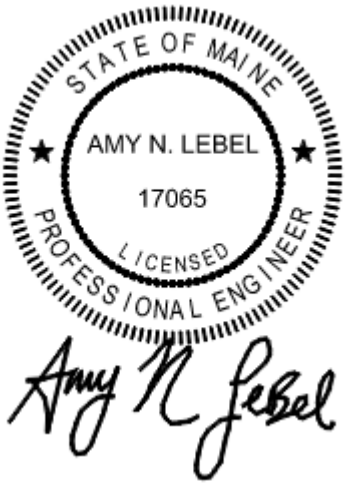
IPAC USER CONTACT INFORMATION

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ROUX INSTITUTE AT NORTHEASTERN UNVERSITY

Stormwater Management Plan

1 Bean Pot Circle
Portland, ME



12 Mountfort Street
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Portland, ME 04101
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woodardcurran.com

Prepared for
Initiative for Digital Engineering and Life Sciences (IDEALS)

October 2023

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APPENDICES

Appendix A: Stormwater Inspection & Maintenance Plan
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1. INTRODUCTION & BACKGROUND

This narrative report is in support of a Major Site Plan Application and Site Location of Development (SLOD) Permit Application on behalf of Northeastern University (Applicant) and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), for development of the Roux Institute at Northeastern University campus located at 1 Bean Pot Circle in Portland, Maine (the Site). This Stormwater Management Plan (SWMP) describes existing site conditions, the proposed development, compliance with applicable stormwater standards, and inspection and maintenance requirements for the proposed stormwater system for Phase 1.

Phase 1 includes construction of a Learning, Research, and Collaboration Building, renovation of the Bean Building to create business incubator space, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements. The proposed Phase 1 project is designed with consideration to future development, with the interior-most and waterfront spaces being developed first to reduce impacts of construction of future phases. Likewise, the stormwater management system has been designed to ensure stormwater standards are met for the development during each phase, with consideration and capacity for full build-out of the Site to minimize future construction impacts.

The project is subject to stormwater management standards through the requirements of both the City of Portland Site Plan and the Maine DEP Site Location of Development permit applications. The following report demonstrates how the development of the Site meets the stormwater standards outlined in Section 5 of the City of Portland's Technical Manual and in the Maine DEP's Chapter 500.

2. EXISTING CONDITIONS

The Site is located within Portland's East Deering neighborhood, at the end of Sherwood Street, adjacent to Maine Yacht Services and near a residential area of single and multi-family homes (three-story apartment buildings) and a commercial node featuring restaurants, bars, automobile mechanics, and offices. While proximate to these areas, the Site is remarkably buffered; I-295 to the west, state-owned vacant parcels to the north, a disused rail corridor and marine business to the east, and Casco Bay to the south collectively surround the property.

The Site includes approximately 13 acres above mean higher high water (MHHW) line as well as an adjacent 11 acres of submerged lands. A survey of the Site was completed by VHB, Inc. (dated June 30, 2021 and July 17, 2023). Approximately 9 acres of land above the mean higher high water line are impervious (paved areas, building roofs, foundations, etc.). The remaining 4 acres of permeable area include lawn and approximately half an acre of vegetated non-lawn area adjacent to the rail corridor abutting the site to the east. No stormwater treatment systems exist on the Site.

The Site was occupied by residences and a lobster cannery prior to 1913, when Burnham & Morrill (B&M) relocated its food manufacturing operations to the Site from Franklin Street. Shortly thereafter, the flagship Cannery Building (Bean Building) was constructed, as well as the adjacent codfish building on the pier. The site was further improved with buildings and parking to support operations. Due to its industrial use, the site is surrounded by security fencing, and the interior and waterfront have historically been inaccessible to the public. Canning operations ceased in 2021.

On May 23, 2023, IDEALS received a demolition permit from the City, and commenced demolition of all existing buildings on the site, retaining only the Bean Building and the Codfish Building. The demolished building areas remain stabilized with perimeter erosion control measures, and for the purposes of evaluating the Site for stormwater permitting, these areas have been considered as impervious existing roof.

Topography of the Site generally slopes from north to south toward Casco Bay. Runoff from the Site drains via sheet flow in a southerly direction to a series of catch basins that ultimately discharge to Casco Bay. The highest elevations are near Sherwood Street, at elevation 28 +/-. The lowest grades are near the loading dock at the B&M Bean Building, at elevation 8.5 +/-. These low areas are only 1-foot above Highest Astronomical Tide.

3. PROPOSED DEVELOPMENT

The proposed development of Phase 1 and reconstruction of Sherwood Street will result in approximately 14.5-acres of disturbance and approximately 7.3-acres of impervious area, for a net decrease in impervious area of approximately 2.6-acres. Proposed work includes:

- Construction of the Learning, Research, and Collaboration Building;
- Renovation of the Bean Building;
- Construction of a parking garage;
- Development of a childcare facility;
- Replacement of the pier;
- Development of a coastal path; and
- Landscaping, utility, and site improvements.

The proposed drainage conveyance system in Phase 1 is comprised of a series of drainage swales, catch basins, area drains, field inlets, trench drains, hydrodynamic separators, outlet control structures, and drainage manholes, which ultimately discharge to Casco Bay via three outfalls. Stormwater treatment for the Site in Phase 1 is provided via bioretention basins and subsurface sand filters. The proposed stormwater management systems are discussed in further detail in the following sections.

Sherwood Street will also be reconstructed as part of this project from the intersection of Veranda Street, underneath the Interstate 295 overpass bridge and into the Site. The design of Sherwood Street from Veranda Street through the existing Interstate 295 overpass is shown on the roadway design drawings by VHB and the design beyond the overpass into the Site is shown on the design drawings by Woodard & Curran. Drainage from Sherwood Street is managed separately from the rest of the Site. Woodard & Curran met with City of Portland Public Works staff to discuss Sherwood Street and will be working with them to resolve how best to connect stormwater infrastructure within the reconstructed street.

The reconstruction of Sherwood Street results in an increase in impervious area of approximately 0.2 acres in the Sherwood Street right-of-way; therefore, Sherwood Street has been included in the stormwater treatment calculations for the Site. Limited space is available for treatment of stormwater in the Sherwood Street right-of-way. Woodard & Curran confirmed with City of Portland Public Works that Sherwood Street redeveloped area may be factored into on-site stormwater treatment calculations.

4. STORMWATER STANDARDS

The project is subject to the MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 Stormwater Standards. The project is not located within the watershed of an Urban Impaired Stream and is therefore not subject to the Urban Impaired Stream Standard. The following sections describe the project's compliance with the applicable stormwater standards.

4.1 Basic Standard (Soil Erosion & Sediment Control)

A variety of erosion and sediment control measures will be utilized during construction, including but not limited to the following:

- Stabilized construction entrances;
- Up-gradient runoff diversion barriers;
- Downgradient sediment barriers;
- Catch basin inlet protection devices;
- Preservation and maintenance of vegetated areas to the maximum extent possible;
- Temporary stabilization of disturbed areas to be exposed for more than seven days;
- Permanent stabilization of final graded areas;
- Controls for fugitive dust, debris, and other materials; and
- Inspection of all measures until the Site is permanently stabilized.

Structural measures will be installed as shown on the design drawings. Details and specifications for these measures are included on the drawings. All measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices", latest edition. All temporary measures will be installed prior to any earth-disturbing activities and will be removed upon permanent stabilization of the Site. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures in an effective operating condition during construction. Permanent erosion control measures will include vegetation and pavement. After construction, the Owner will be responsible for inspecting and maintaining the Site as described in Section 5 of this Report.

4.2 Flooding Standard (Stormwater Quantity)

Runoff from the proposed project will primarily discharge to the adjacent Casco Bay, which is a tidal waterbody, via either sheet flow or the on-site storm drain system. In accordance with Section 4.F(3) of the MaineDEP Chapter 500 Stormwater Standards, a project is eligible for a waiver from the Flooding Standard if it discharges to a coastal wetland or a major river segment. As noted in the description of the proposed development, the only portion of the Site that will not discharge directly to Casco Bay is the drainage from within Sherwood Street. We respectfully request a waiver from the Flooding Standard for the campus development.

4.3 General & Redevelopment Standards (Stormwater Quality)

The proposed project is subject to the redevelopment standards for stormwater quality from both the MaineDEP and the City of Portland. Calculations demonstrating compliance with stormwater quality standards are provided in Appendix B. A figure showing the area of redevelopment is included in Appendix C of this Report.

4.3.1 Maine DEP Redevelopment Standards

Calculations have been prepared in accordance with Section 4.C(2)(d) of the MaineDEP Chapter 500 Stormwater Standards to determine how much treatment is required for the proposed redevelopment project. The project has been evaluated as a "Site" project as it is required to obtain a Site Location of Development Permit. Based on the impact analysis calculations provided in Appendix B of this Report, it has been determined that the proposed project is required to provide treatment for 50% of the total redevelopment area. Figures showing existing and proposed pollutant ranking areas are provided in Appendix C. With the proposed stormwater management system, greater than 50% of the redevelopment area will be captured and treated. Runoff from proposed driveways, parking areas, building roofs, and interior impervious plazas was prioritized for treatment; figures showing redevelopment and treatment areas is provided in Appendix C.

4.3.2 City of Portland Redevelopment Standards

For redevelopment sites, per Section 5 of the City of Portland's Technical Manual, a minimum of 50% of the non-roof redeveloped impervious surface on a site must receive stormwater treatment. The calculations included in Appendix B show that greater than 50% of the non-roof redeveloped impervious surface on the Site will be treated by the proposed stormwater systems.

4.3.3 Proposed Treatment Systems

As previously described, stormwater systems will consist of bioretention basins and subsurface sand filters. The proposed stormwater systems have been designed based on Volume III of the DEP Stormwater BMP Manual; calculations demonstrating compliance with the BMP design requirements are provided in Appendix B and design details are provided on the drawings.

Three bioretention basins are proposed to treat stormwater from interior sidewalks, plaza and landscaped areas. Outlet control structures and emergency spillways are provided to manage runoff beyond the 1-inch water quality storm event.

The subsurface sand filters are comprised of proprietary R-Tank modules over sand filters. The R-Tank system has been designed to detain the water quality volume for the upgradient area. Diversion structures are provided upgradient of proposed subsurface sand filters to manage runoff beyond the 1-inch water quality storm event. We are coordinating with the manufacturer on the proposed subsurface sand filter design; a letter that demonstrates manufacturer review and approval of the design can be provided upon request.

The proposed design includes multiple best management practices to reduce sediment loading upgradient of the stormwater filtration systems, including deep sump catch basins, offline catch basin drainage design, sediment forebay, grass swales, hydrodynamic separators, and pretreatment rows. The sediment pretreatment devices have been sized in accordance with the Maine DEP BMP Manual for non-roof impervious drainage area. Sizing calculations are provided in Appendix B.

5. INSPECTION & MAINTENANCE REQUIREMENTS

General inspection and maintenance of stormwater systems will take place during and after construction. During construction, the Contractor will be responsible for inspecting and maintaining the Site, as described in Section 4.1 of this Report. Upon completion of construction, the property owner will be responsible for implementing the Inspection and Maintenance Plan for the proposed stormwater system, which is provided in Appendix A of this Report. A Stormwater Maintenance Agreement will also be provided and will be signed and recorded following approval.

APPENDIX A: STORMWATER INSPECTION & MAINTENANCE PLAN

STORMWATER INSPECTION & MAINTENANCE PLAN

The Roux Institute at Northeastern University Phase 1

Portland, Maine

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 Owner 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 manufacturer guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached.

INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

Trash, debris, and sediment shall be removed from storm drainage pipes and catch basins as needed on a semi-annual basis. In addition to the inspection and maintenance of stormwater systems, paved areas will be inspected annually each spring. These areas will be kept clean and clear through periodic sweeping and winter plowing as required. Inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

Bioretention Basin

The bioretention basins should be inspected after major storms (one-inch storm or greater in 24 hours) in the first year to be sure they are functioning properly. Thereafter, the basins should be inspected at least once every six months to ensure that they are draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet. If ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity. If ponding exceeds 72 hours, the top several inches of the filter shall be replaced with fresh material.

Debris and sediment buildup shall be removed from the basin as needed but at least annually and shall be disposed of in an acceptable manner. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then mulched or seeded. Fertilization of the bioretention basin should be avoided unless absolutely necessary to establish vegetation. Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Mulch shall be replaced annually or as needed.

Subsurface Sand Filter

The subsurface sand filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified. The sediment pretreatment systems should be cleaned when necessary. The proprietary subsurface detention

component of the sand filter (R-Tank modules) must be inspected and maintained per the manufacturer's guidelines, which are outlined in the attached guidance document.

Sediment Forebay

Debris and sediment buildup shall be removed from sediment forebays as needed but at least annually and shall be disposed of in an acceptable manner.

Grass Swale

Debris, sediment buildup, and woody vegetation shall be removed from the grass swales as needed but at least annually and shall be disposed of in an acceptable manner.

Hydrodynamic Separator

Hydrodynamic separators must be inspected and maintained per the manufacturer's guidelines. Sediment shall be removed at least annually and when sediment volume exceeds the sediment storage capacity of the device.

STORMWATER INSPECTION CHECKLIST

Inspection by: _____ Date: _____

Stormwater Feature	Condition						Comments
Vegetative cover	no bare spots, no evidence of rill erosion		some bare spots, some rill erosion		large bare areas, extensive erosion		
Drainage channels/swales	no erosion, channels clear		some erosion and siltation		major erosion, channels clogged		
Sediment Forebay	no siltation		some siltation		heavily silted in		
Sediment Forebay	inlet/outlet clear		some debris		completely blocked		
Hydrodynamic Separator*	no siltation		some siltation		heavily silted in		
Hydrodynamic Separator*	inlet/outlet clear		some debris		completely blocked		
Subsurface Drainage System	no siltation		some siltation		heavily silted in		
Subsurface Drainage System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Drainage System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Drainage System	inlet/outlet clear		some debris		completely blocked		
Bioretention Basin	no siltation		some siltation		heavily silted in		
Bioretention Basin	side slopes free of erosion		some erosion on side slopes		side slopes heavily eroded		
Bioretention Basin	inlet free of erosion		some erosion at inlet		inlet heavily eroded		
Bioretention Basin	outlet clear		some debris		completely blocked		
Bioretention Basin	healthy/robust plant growth		plants unhealthy		plants dead or overgrown		
Bioretention Basin	drains in less than 24 hours		drains between 24 and 48 hours		ponding exceeds 48 hours		
Subsurface Sand Filter*	no siltation		some siltation		heavily silted in		
Subsurface Sand Filter*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Sand Filter*	inlet/outlet clear		some debris		completely blocked		

**See attached manufacturer's guidelines for system maintenance and inspection.*

Recommended Actions: _____

_____

Actions Completed: _____ Date: _____

STORMWATER MANAGEMENT MAINTENANCE TASKS AND RECOMMENDED SCHEDULE

TASKS	SEDIMENT FOREBAY	HYDRODYNAMIC SEPARATOR	GRASS SWALES	BIORETENTION BASIN	OUTLET CONTROL STRUCTURE	SUBSURFACE SAND FILTER	STORM DRAIN PIPES	SCHEDULE
Inspect for sediment accumulation	X	X	X	X	X	X	X	Spring and Fall
Remove sediment accumulation	X	X	X	X	X	X	X	As needed
Clean debris	X	X	X	X	X	X	X	As needed
Inspect for erosion	X		X	X				As needed
Reestablish vegetation in erosion areas			X	X				Early spring
Replace mulch				X				Annually
Inspect structural elements during wet weather and compare to as-built plans	X	X		X	X	X	X	Annually
Keep records of all inspections and maintenance activities	X	X	X	X	X	X	X	Annually
Replace stone rip-rap	X						X	Every 3 – 5 years as needed
Make adjustments or replacements as determined by wet weather observations	X	X	X	X	X	X	X	As needed
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	X	X	X	X	As needed

R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

ACF ENVIRONMENTAL
LET'S GET IT DONE
2831 Cardwell Road
Richmond, Virginia, 23234
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FAX 804.743.7779
acfenvironmental.com

Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

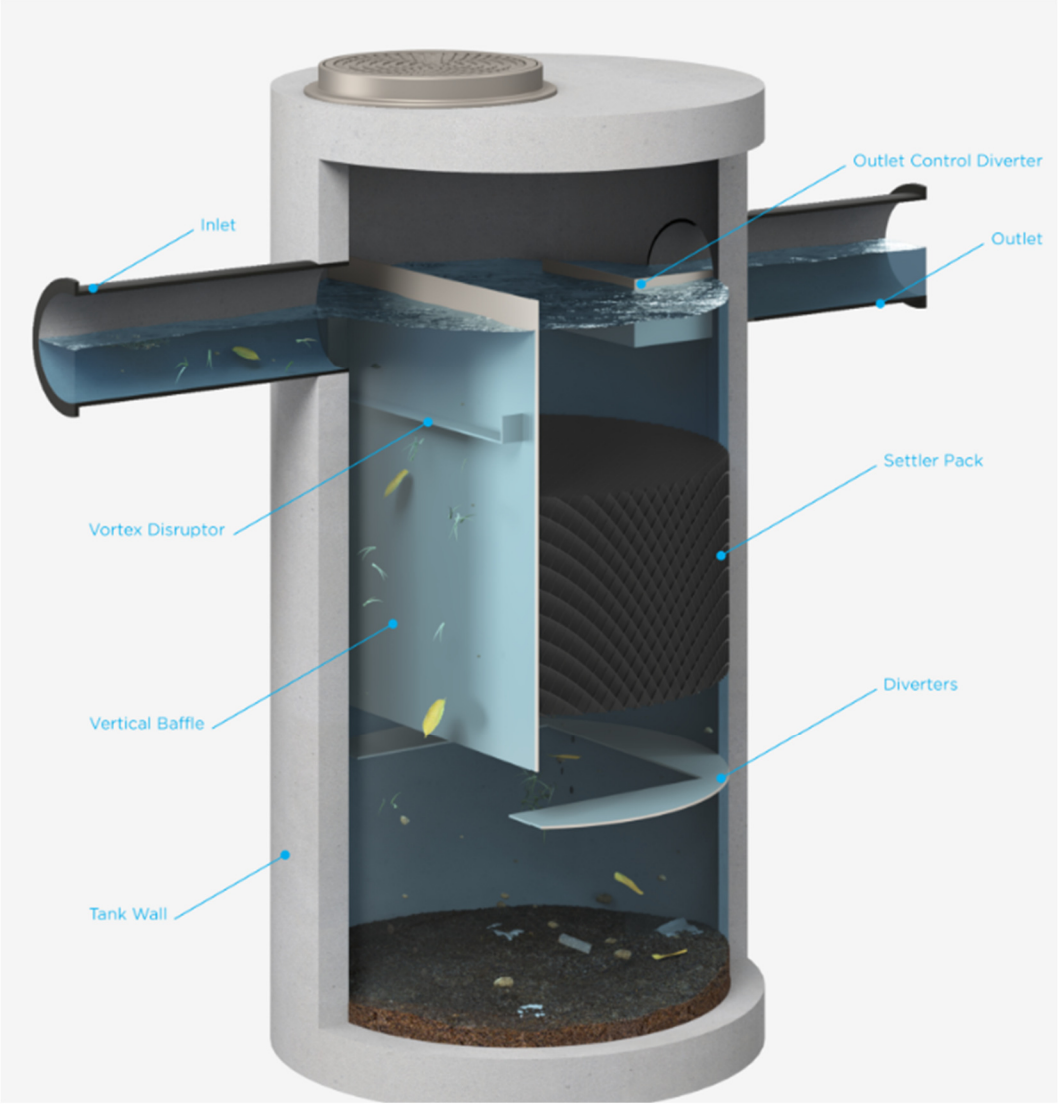
Phone Number:_____

Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

StormTrap®

StormSettler®

StormSettler® Inspection and Maintenance Manual



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EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

StormSettler® Manufacturer's Inspection and Maintenance Manual

The StormSettler treatment device, manufactured by StormTrap, is a hydrodynamic separating device designed to capture and store pollutants from stormwater. StormSettler's maintenance frequency is site dependent and routine inspections are recommended to ensure that the system is functioning as designed. Please contact your authorized StormTrap representative if you have questions regarding the inspection and maintenance of the StormSettler system.

Inspection Scheduling

StormSettler inspections are important to assess the condition of the system internals to ensure peak performance. The frequency of inspections and maintenance is dependent on site specific loading conditions and rainfall frequency. Within the first year of operation, it is recommended that the unit be inspected quarterly to determine the rate of pollutant accumulation in order to develop a more accurate maintenance schedule. Inspections should be performed during dry weather conditions when no flow is entering the system. StormSettler systems are recommended to be inspected whenever the upstream and downstream catch basins and stormwater pipes of the stormwater collection system are inspected or maintained. If checked on an annual basis, the inspection should be conducted before the stormwater season begins to ensure that the system is functioning properly for the upcoming storm season.

Inspection and Maintenance Equipment

The following equipment is recommended to have during inspections:

- StormSettler Inspection and Maintenance Manual and Inspection Checklist
- Flashlight

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FAX 331 318 5347
WEB www.stormtrap.com
EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage
- Pole with skimmer or net (optional for maintenance procedure)
- Vacuum truck or similar trailer mounted equipment (for maintenance procedure)

Inspection Procedure

Inspections should be done such that a sufficient time has lapsed since the most recent rain event to allow for a static water condition and rainfall is not anticipated to occur during the duration of the inspection procedure. StormSettler does not require entry into the system for inspection or maintenance; however, if entering the system is deemed necessary, it is prudent to note that prior to entry into any underground storm sewer or underground structure, appropriate OSHA and local safety regulations and guidelines should be followed.

To begin the inspection process, set up the necessary traffic control signage per local ordinances. Open all manhole covers using appropriate equipment and ensure the manhole covers are in a location that would not prohibit the inspection process. Visually inspect the system at all manhole access opening locations. During the visual inspection, ensure that all components are in working order. An inspection checklist is provided within this guide for ease and reference.

If any components are not in working order, contact your authorized StormTrap representative.

After the components are inspected, visually quantify the accumulation of trash, debris, and hydrocarbons within the system by using a measuring device such as a tape measure, grade stick, dipstick, etc. Measure and record the depth of trash, debris, and hydrocarbon

accumulation from the static water elevation (pipe elevation) to the average elevation of the trash and debris.

If sorbent materials are used for retention of hydrocarbons, the level of discoloration of the sorbent material should also be noted during the inspection process.

For sediment accumulation, utilize either a sludge sampler or a sediment pole to measure and document the amount of sediment accumulation. To determine the amount of sediment in the system with a sludge sampler, follow the manufacturer's instructions. If utilizing a sediment pole or similar device, first insert the pole to the top of the sediment layer and record the depth. Then, insert the pole to the bottom of the system and record the depth. The difference in the two measurements corresponds to the amount of sediment in the system. Alternatively, sediment depth can also be determined by taking a measurement from a known and consistent elevation (manhole frame, pipe invert, vertical baffle top, etc.) to the top of the sediment layer. That distance can then be compared to the measurement between the known elevation to the sump floor. The difference between these two measurements will correspond to the sediment layer depth.

After completion of the inspection process, ensure that manhole covers are replaced and securely seated in the manhole frame and remove traffic control signage.

StormSettler units can also be installed with remote monitoring technology that measures the current capacities within the system and reports the data to any internet capable device. If a remote monitoring device is used, proper maintenance of the device, such as replacement of batteries, cleaning sensor, etc. needs to be completed to ensure functionality of the remote monitoring technology.

If it is determined during the inspection process that the accumulation of trash and debris or sediment is at or near the capacities of the StormSettler device, maintenance should be performed to ensure performance is not impacted for subsequent storm events.

Maintenance Procedure

Maintenance should be done such that a sufficient time has lapsed since the most recent rain event to allow for a static water condition and rainfall is not anticipated to occur during the duration of the maintenance procedure.

To begin the maintenance process, set up the necessary traffic control signage per local ordinances. Open all manhole covers using appropriate equipment and ensure the manhole covers are in a location that would not prohibit the maintenance process.

Visually inspect the system at all manhole access opening locations. During the visual inspection, ensure that all components are undamaged. If any components are not in working order, contact your authorized StormTrap representative.

After the components are inspected, remove all accumulated trash, debris, and hydrocarbons stored on the surface of the water using the vacuum hose or pole with attached skimmer or net.

If sorbent materials are used, the materials may have to be moved to not impact pollutant removal. If significant discoloration of the sorbent material has occurred, simply remove the sorbent materials and replace upon completion of maintenance activities.

To remove sediment, insert the vacuum truck's hose on the inlet side of the vertical baffle into the sump. The system should be completely drained, and all sediment should be removed from the sump. For smaller diameter devices (3' or 4' units), a 6" or smaller vacuum hose diameter may be required for effective cleaning due to maneuverability constraints. If the vacuum truck that is being utilized has a hose diameter greater than 6", a smaller tube can be affixed to the boom hose with duct tape to improve maneuverability within the device.

If excessive sediment or debris buildup occurs within the device, components can be washed with sewer jetting equipment or a spray lance to remove stubborn materials. Particular

attention must be taken when spraying the settler pack. A wide spray nozzle is recommended around the settler pack to ensure there is no damage to the material.

After completion of the maintenance procedure, complete a post maintenance inspection to ensure that all components are in good condition. Ensure that manhole covers are replaced and securely seated in the manhole frame and remove traffic control signage. Dispose of all pollutants removed during maintenance per local, state, and federal guidelines and regulations.

Inspection and Maintenance Documentation

Proof of inspections and maintenance activities is the responsibility of the owner. All inspection and maintenance reports and any relevant data should be kept on site or at a location where they will be accessible in accordance with local requirements. It is a good practice to take time stamped photographs after every inspection and maintenance event to include within logs. It is also good practice to keep records of rainfall events between maintenance events and the weight of material removed, even if no report is required. Some municipalities may require inspection and maintenance reports be forwarded to the proper governmental permitting agency on an annual basis. Refer to your local regulations and ordinances for any additional maintenance requirements and schedules not contained herein. Inspections and maintenance activities should be performed to ensure performance is not impacted and the device performs as designed.

Inspection Items

- StormSettler Maintenance Manual and Inspection Checklist
- Flashlight
- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage

Maintenance Items

- StormSettler Maintenance Manual and Inspection Checklist
- Flashlight
- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage
- Pole with skimmer or net (optional for maintenance procedure)
- Vacuum truck or similar trailer mounted equipment (for maintenance procedure)

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StormTrap

StormSettler Inspection Checklist

Structure ID:		
Location/Address:		
Inspector Name:		Inspector Contact Information:
Date:	Time:	Weather Conditions:
Rain in the Last 48hrs:		If yes, list amount and timing:

*Do not enter underground chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.
*Follow inspection and maintenance instructions provided by system manufacturer.
*Please circle the condition of each inspection item below. 1 being the worst and 5 being the best condition.

Inspection Item	Condition					Comment	Action Needed	
1.) Frames and Covers								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
2.) Inlet Pipe(s)								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
3.) Vortex Disruptor								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
4.) Verticle Baffle								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
5.) Enhanced Settling Pack								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
6.) Flow Modifiers								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No

7.) Outlet Control Diverter								
Excessive accumulation of debris and/or sediment present	1	2	3	4	5		Yes	No
Component(s) structurally sound	1	2	3	4	5		Yes	No
8.) Outlet Pipe								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structurally sound	1	2	3	4	5		Yes	No
9.) Concrete Chamber								
Component(s) structural condition	1	2	3	4	5		Yes	No
10.) Sediment Storage Capacity								
Sediment storage capacity	1	2	3	4	5		Yes	No
Additional Notes:								
Wet Weather Inspection Needed:			Yes		No			
Maintenance Activities Needed:			Yes		No			

Stormwater BMP Maintenance Log

BMP Structure	Inspector	Date	Work Performed	Comments
Pavement Sweeping				
Grass Swales				
Area Drains				
Catch Basins				
Diversion Structures				
Riprap Sediment Forebay				
Hydrodynamic Separators				
Bioretention Basin 1				
Bioretention Basin 2				
Bioretention Basin 3				
Subsurface Sand Filter 1				
Subsurface Sand Filter 2				
Subsurface Sand Filter 3				
Subsurface Sand Filter 4				
Subsurface Sand Filter 5				
Subsurface Sand Filter 6				
Stormwater Outfalls				
Other				
Additional Comments:				

APPENDIX B: STORMWATER QUALITY CALCULATIONS

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 10/27/2023
PROJECT NO.: 233482.00

Redevelopment Treatment Calculations - Per Section 4.C.2.d of the MaineDEP Chapter 500 Rules

Area of Redevelopment (acres) = 14.51

a. Existing Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads/Parking Lot	5	0.00	0.00
Other Roads/Medium Use Parking Lot	4	2.44	9.74
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	6.35	19.04
Other Roofs/Landscaped Area/Paved Walkway	2	4.74	9.48
Non-grass Landscaping/Stormwater	1	0.99	0.99
Forest/Meadow	0	0.00	0.00
			39.25

b. Proposed Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads/Parking Lot	5	1.76	8.78
Other Roads/Medium Use Parking Lot	4	1.13	4.52
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.04	0.12
Other Roofs/Landscaped Area/Paved Walkway	2	10.89	21.78
Non-grass Landscaping/Stormwater	1	0.69	0.69
Forest/Meadow	0	0.00	0.00
			35.89

c. Existing Impact/Total Redevelopment Acres

2.705

d. Proposed Impact/Total Redevelopment Acres

2.474

e. Item D Minus Item C

-0.23

Ranked Impact Change Due to Redevelopment	Percentage of Developed Area that Must be Treated
0.0 or less	0% (Stormwater projects)
	50% (Site projects)
≥ 0.0 to ≤ 1.0	60%
> 1.0 to ≤ 2.0	70%
> 2.0 to ≤ 3.0	80%
> 3.0	Same treatment level as for new development

Stormwater Treatment Summary	*Treatment Percentage*	*Treated Area (SF)*
Required	50.0%	316,023
Provided	50.1%	316,413

WQV Summary	*Subsurface Sand Filter 1*	*Subsurface Sand Filter 2*	*Subsurface Sand Filter 3*	*Subsurface Sand Filter 4*	*Subsurface Sand Filter 5*
Proposed Treated Area (SF)	55,818	39,804	92,040	5,637	42,990
WQV Required (CF)	3,795	2,866	6,561	445	3,552
WQV Provided (CF)	6,501	4,855	11,204	992	5,589

WQV Summary	*Subsurface Sand Filter 6*	*Bioretention Basin 1**	*Bioretention Basin 2*	*Bioretention Basin 3*
Proposed Treated Area (SF)	12,500	19,875	30,310	17,439
WQV Required (CF)	1,042	921	1,208	745
WQV Provided (CF)	1,798	921	1,225	784
**Bioretention Basin 1 volume is fixed by site constraints; proposed treated area is calculated based on the fixed basin volume*				

Redevelopment Treatment Calculations - Per Section 5 of the City of Portland Technical Manual

Area of non-roof, redeveloped impervious surface (acres) = 5.43

Area of non-roof, redeveloped impervious surface treated (acres) = 3.13 58% > 50% required

12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 10/27/2023
PROJECT NO.: 233482.00

Sizing Calculations

Water Quality Volume for Subsurface System 1

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	38697	SF
Pervious Area =	17121	SF
WQV Required =	**3795**	CF
WQV Provided =	**6501**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**2277**	SF
Filter Surface Area Provided=	**2738**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	38697	SF
Total Volume Required =	**49**	CF
Method: Hydrodynamic Separator, Riprap Sediment Forebay and Pretreatment Row		
Total Volume Provided =	**68**	CF

Water Quality Volume for Subsurface System 2

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	30793	SF
Pervious Area =	9011	SF
WQV Required =	**2866**	CF
WQV Provided =	**4855**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**1720**	SF
Filter Surface Area Provided=	**2350**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	5139	SF
Total Volume Required =	**7**	CF
Method: Pretreatment Row		
Total Volume Provided =	**48**	CF

Water Quality Volume for Subsurface System 3

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	69858	SF
Pervious Area =	22182	SF
WQV Required =	**6561**	CF
WQV Provided =	**11204**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**3937**	SF
Filter Surface Area Provided=	**4751**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	69858	SF
Total Volume Required =	**89**	CF
Method: Hydrodynamic Separator and Pretreatment Rows		
Total Volume Provided =	**109**	CF

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12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 10/27/2023
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Water Quality Volume for Subsurface System 4

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	5148	SF
Pervious Area =	489	SF
WQV Required =	**445**	CF
WQV Provided =	**992**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**267**	SF
Filter Surface Area Provided=	**466**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	1673	SF
Total Volume Required =	**2**	CF
Method: Pretreatment Row		
Total Volume Provided =	**8**	CF

Water Quality Volume for Subsurface System 5

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	42382	SF
Pervious Area =	608	SF
WQV Required =	**3552**	CF
WQV Provided =	**5589**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**2131**	SF
Filter Surface Area Provided=	**2595**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	5160	SF
Total Volume Required =	**7**	CF
Method: Pretreatment Row		
Total Volume Provided =	**63**	CF

Water Quality Volume for Subsurface System 6

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	12500	SF
Pervious Area =	0	SF
WQV Required =	**1042**	CF
WQV Provided =	**1798**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**625**	SF
Filter Surface Area Provided=	**879**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	0	SF
Total Volume Required =	**0**	CF
Method: Pretreatment Row		
Total Volume Provided =	**21**	CF

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 10/27/2023
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Bioretention Basin 1 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area* =	5175	SF	
Pervious Area* =	14700	SF	
Sum* =	0.46	ac.	< 1 ac.
WQV Required* =	**921**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	658	CF	
WQV Storage (Soil)* =	263	CF	
WQV Storage (TOTAL) =	**921**	CF	

**Bioretention Basin 1 volume is fixed by site constraints; proposed treated area is calculated based on the fixed basin volume.*

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**803**	SF	
Filter Surface Area Provided =	**1315**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	8535	SF	
Total Volume Required =	11	CF	
Method: Grass Swale			

Bioretention Basin 2 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	3952	SF	
Pervious Area =	26358	SF	
Sum =	0.70	ac.	< 1 ac.
WQV Required =	**1208**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	875	CF	
WQV Storage (Soil)* =	350	CF	
WQV Storage (TOTAL) =	**1225**	CF	

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**1067**	SF	
Filter Surface Area Provided =	**1750**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	3952	SF	
Total Volume Required =	5	CF	
Method: Grass Swale			

Woodard & Curran
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Sizing Calculations (cont.)

Bioretention Basin 3 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	3278	SF	
Pervious Area =	14161	SF	
Sum =	0.40	ac.	< 1 ac.
WQV Required =	**745**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	560	CF	
WQV Storage (Soil)* =	224	CF	
WQV Storage (TOTAL) =	**784**	CF	

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**654**	SF	
Filter Surface Area Provided =	**1120**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	3278	SF	
Total Volume Required =	4	CF	
Method: Grass Swale			

APPENDIX C: FIGURES

MATCHLINE

MATCHLINE

REDEVELOPMENT AREA

LEGEND

- POLLUTANT RANKING 5
- POLLUTANT RANKING 4
- POLLUTANT RANKING 3
- POLLUTANT RANKING 2
- POLLUTANT RANKING 1
- POLLUTANT RANKING 0

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=40'

Drawing Title

EXISTING SITE IMPACT ANALYSIS

FIG. A



IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=40'

Drawing Title

PROPOSED SITE IMPACT ANALYSIS

FIG. B

MATCHLINE

TREATMENT AREA, TYP.

REDEVELOPMENT AREA

REDEVELOPMENT AREA

MATCHLINE

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

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AMY N. LEBEL
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Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=40'

Drawing Title

REDEVELOPMENT FIGURE

FIG. C



IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

TREATMENT AREA LEGEND

STORMWATER TREATMENT SYSTEM	LOCATION	DRAINAGE AREA
SAND FILTER #1	SF1	
SAND FILTER #2	SF2	
SAND FILTER #3	SF3	
SAND FILTER #4	SF4	
SAND FILTER #5	SF5	
SAND FILTER #6	SF6	
BIORETENTION #1	BR1	
BIORETENTION #2	BR2	
BIORETENTION #3	BR3	

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

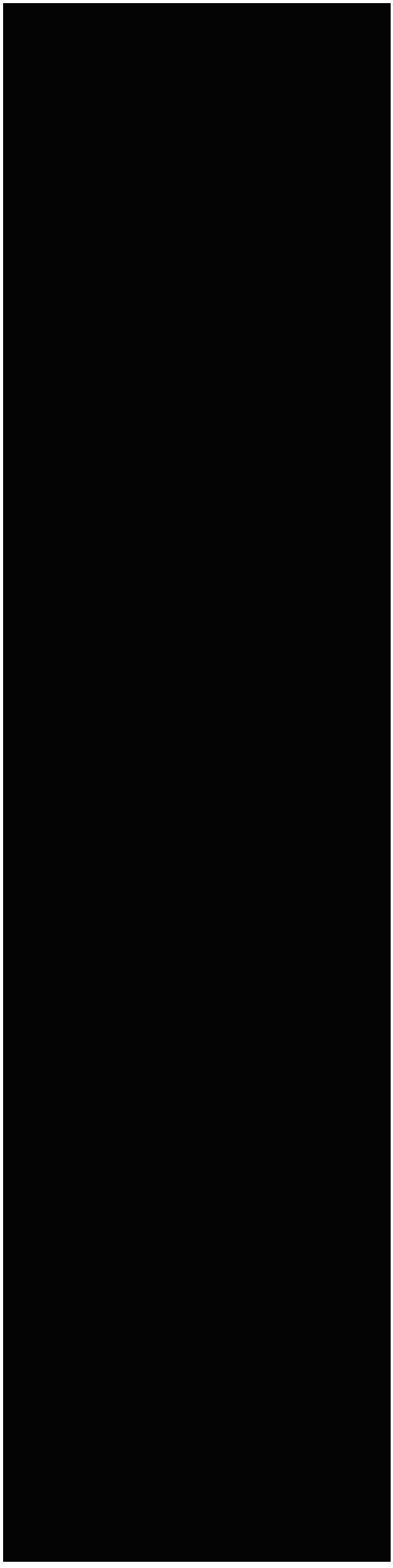
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=40'

Drawing Title

TREATMENT AREA FIGURE

FIG. D



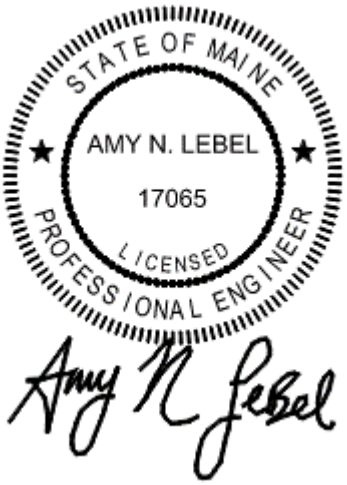
Woodard & Curran

woodardcurran.com

ROUX INSTITUTE AT NORTHEASTERN UNVERSITY

Stormwater Management Plan

1 Bean Pot Circle
Portland, ME



12 Mountfort Street
Floors 5 & 6
Portland, ME 04101
800.426.4262

woodardcurran.com

Prepared for
Initiative for Digital Engineering and Life Sciences (IDEALS)

March 2024

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Appendix B: Stormwater Quality Calculations
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Appendix D: Manufacturer Design Review Letter

1. INTRODUCTION & BACKGROUND

This narrative report is in support of a Major Site Plan Application and Site Location of Development (SLOD) Permit Application on behalf of Northeastern University (Applicant) and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), for development of the Roux Institute at Northeastern University campus located at 1 Bean Pot Circle in Portland, Maine (the Site). This Stormwater Management Plan (SWMP) describes existing site conditions, the proposed development, compliance with applicable stormwater standards, and inspection and maintenance requirements for the proposed stormwater system for Phase 1.

Phase 1 includes construction of a Learning, Research, and Collaboration Building, renovation of the Bean Building to create business incubator space, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements. The proposed Phase 1 project is designed with consideration to future development, with the interior-most and waterfront spaces being developed first to reduce impacts of construction of future phases. Likewise, the stormwater management system has been designed to ensure stormwater standards are met for the development during each phase, with consideration and capacity for full build-out of the Site to minimize future construction impacts.

The project is subject to stormwater management standards through the requirements of both the City of Portland Site Plan and the Maine DEP Site Location of Development permit applications. The following report demonstrates how the development of the Site meets the stormwater standards outlined in Section 5 of the City of Portland's Technical Manual and in the Maine DEP's Chapter 500.

2. EXISTING CONDITIONS

The Site is located within Portland's East Deering neighborhood, at the end of Sherwood Street, adjacent to Maine Yacht Services and near a residential area of single and multi-family homes (three-story apartment buildings) and a commercial node featuring restaurants, bars, automobile mechanics, and offices. While proximate to these areas, the Site is remarkably buffered; I-295 to the west, state-owned vacant parcels to the north, a disused rail corridor and marine business to the east, and Casco Bay to the south collectively surround the property.

The Site includes approximately 13 acres above mean higher high water (MHHW) line as well as an adjacent 11 acres of submerged lands. A survey of the Site was completed by VHB, Inc. (dated June 30, 2021 and July 17, 2023). Approximately 9 acres of land above the mean higher high water line are impervious (paved areas, building roofs, foundations, etc.). The remaining 4 acres of permeable area include lawn and approximately half an acre of vegetated non-lawn area adjacent to the rail corridor abutting the site to the east. No stormwater treatment systems exist on the Site.

The Site was occupied by residences and a lobster cannery prior to 1913, when Burnham & Morrill (B&M) relocated its food manufacturing operations to the Site from Franklin Street. Shortly thereafter, the flagship Cannery Building (Bean Building) was constructed, as well as the adjacent codfish building on the pier. The site was further improved with buildings and parking to support operations. Due to its industrial use, the site is surrounded by security fencing, and the interior and waterfront have historically been inaccessible to the public. Canning operations ceased in 2021.

On May 23, 2023, IDEALS received a demolition permit from the City, and commenced demolition of all existing buildings on the site, retaining only the Bean Building and the Codfish Building. The demolished building areas remain stabilized with perimeter erosion control measures, and for the purposes of evaluating the Site for stormwater permitting, these areas have been considered as impervious existing roof.

Topography of the Site generally slopes from north to south toward Casco Bay. Runoff from the Site drains via sheet flow in a southerly direction to a series of catch basins that ultimately discharge to Casco Bay. The highest elevations are near Sherwood Street, at elevation 28 +/-. The lowest grades are near the loading dock at the B&M Bean Building, at elevation 8.5 +/-. These low areas are only 1-foot above Highest Astronomical Tide.

3. PROPOSED DEVELOPMENT

The proposed development of Phase 1 and reconstruction of Sherwood Street will result in approximately 14.5-acres of disturbance and approximately 7.3-acres of impervious area, for a net decrease in impervious area of approximately 2.6-acres. Proposed work includes:

- Construction of the Learning, Research, and Collaboration Building;
- Renovation of the Bean Building;
- Construction of a parking garage;
- Development of a childcare facility;
- Replacement of the pier;
- Development of a coastal path; and
- Landscaping, utility, and site improvements.

The proposed drainage conveyance system in Phase 1 is comprised of a series of drainage swales, catch basins, area drains, field inlets, trench drains, hydrodynamic separators, outlet control structures, and drainage manholes, which ultimately discharge to Casco Bay via three outfalls. Stormwater treatment for the Site in Phase 1 is provided via bioretention basins and subsurface sand filters. The proposed stormwater management systems are discussed in further detail in the following sections.

Sherwood Street will also be reconstructed as part of this project from the intersection of Veranda Street, underneath the Interstate 295 overpass bridge and into the Site. The design of Sherwood Street from Veranda Street through the existing Interstate 295 overpass is shown on the roadway design drawings by VHB and the design beyond the overpass into the Site is shown on the design drawings by Woodard & Curran. Drainage from Sherwood Street is managed separately from the rest of the Site. Woodard & Curran met with City of Portland Public Works staff to discuss Sherwood Street and will be working with them to resolve how best to connect stormwater infrastructure within the reconstructed street.

The reconstruction of Sherwood Street results in an increase in impervious area of approximately 0.2 acres in the Sherwood Street right-of-way; therefore, Sherwood Street has been included in the stormwater treatment calculations for the Site. Limited space is available for treatment of stormwater in the Sherwood Street right-of-way. Woodard & Curran confirmed with City of Portland Public Works that Sherwood Street redeveloped area may be factored into on-site stormwater treatment calculations.

4. STORMWATER STANDARDS

The project is subject to the MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 Stormwater Standards. The project is not located within the watershed of an Urban Impaired Stream and is therefore not subject to the Urban Impaired Stream Standard. The following sections describe the project's compliance with the applicable stormwater standards.

4.1 Basic Standard (Soil Erosion & Sediment Control)

A variety of erosion and sediment control measures will be utilized during construction, including but not limited to the following:

- Stabilized construction entrances;
- Up-gradient runoff diversion barriers;
- Downgradient sediment barriers;
- Catch basin inlet protection devices;
- Preservation and maintenance of vegetated areas to the maximum extent possible;
- Temporary stabilization of disturbed areas to be exposed for more than seven days;
- Permanent stabilization of final graded areas;
- Controls for fugitive dust, debris, and other materials; and
- Inspection of all measures until the Site is permanently stabilized.

Structural measures will be installed as shown on the design drawings. Details and specifications for these measures are included on the drawings. All measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices", latest edition. All temporary measures will be installed prior to any earth-disturbing activities and will be removed upon permanent stabilization of the Site. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures in an effective operating condition during construction. Permanent erosion control measures will include vegetation and pavement. After construction, the Owner will be responsible for inspecting and maintaining the Site as described in Section 5 of this Report.

4.2 Flooding Standard (Stormwater Quantity)

Runoff from the proposed project will primarily discharge to the adjacent Casco Bay, which is a tidal waterbody, via either sheet flow or the on-site storm drain system. In accordance with Section 4.F(3) of the MaineDEP Chapter 500 Stormwater Standards, a project is eligible for a waiver from the Flooding Standard if it discharges to a coastal wetland or a major river segment. As noted in the description of the proposed development, the only portion of the Site that will not discharge directly to Casco Bay is the drainage from within Sherwood Street. We respectfully request a waiver from the Flooding Standard for the campus development.

4.3 General & Redevelopment Standards (Stormwater Quality)

The proposed project is subject to the redevelopment standards for stormwater quality from both the MaineDEP and the City of Portland. Calculations demonstrating compliance with stormwater quality standards are provided in Appendix B. A figure showing the area of redevelopment is included in Appendix C of this Report.

4.3.1 Maine DEP Redevelopment Standards

Calculations have been prepared in accordance with Section 4.C(2)(d) of the MaineDEP Chapter 500 Stormwater Standards to determine how much treatment is required for the proposed redevelopment project. The project has been evaluated as a "Site" project as it is required to obtain a Site Location of Development Permit. Based on the impact analysis calculations provided in Appendix B of this Report, it has been determined that the proposed project is required to provide treatment for 50% of the total redevelopment area. Figures showing existing and proposed pollutant ranking areas are provided in Appendix C. With the proposed stormwater management system, greater than 50% of the redevelopment area will be captured and treated. Runoff from proposed driveways, parking areas, building roofs, and interior impervious plazas was prioritized for treatment; figures showing redevelopment and treatment areas is provided in Appendix C.

4.3.2 City of Portland Redevelopment Standards

For redevelopment sites, per Section 5 of the City of Portland's Technical Manual, a minimum of 50% of the non-roof redeveloped impervious surface on a site must receive stormwater treatment. The calculations included in Appendix B show that greater than 50% of the non-roof redeveloped impervious surface on the Site will be treated by the proposed stormwater systems.

4.3.3 Proposed Treatment Systems

As previously described, stormwater systems will consist of bioretention basins and subsurface sand filters. The proposed stormwater systems have been designed based on Volume III of the DEP Stormwater BMP Manual; calculations demonstrating compliance with the BMP design requirements are provided in Appendix B and design details are provided on the drawings.

Three bioretention basins are proposed to treat stormwater from interior sidewalks, plaza and landscaped areas. Outlet control structures and emergency spillways are provided to manage runoff beyond the 1-inch water quality storm event.

The subsurface sand filters are comprised of proprietary R-Tank modules over sand filters. The R-Tank system has been designed to detain the water quality volume for the upgradient area. Diversion structures are provided upgradient of proposed subsurface sand filters to manage runoff beyond the 1-inch water quality storm event. A letter that demonstrates manufacturer review and approval of the design is provided as Appendix D.

The proposed design includes multiple best management practices to reduce sediment loading upgradient of the stormwater filtration systems, including deep sump catch basins, offline catch basin drainage design, sediment forebay, grass swales, hydrodynamic separators, and pretreatment rows. The sediment pretreatment devices have been sized in accordance with the Maine DEP BMP Manual for non-roof impervious drainage area. Sizing calculations are provided in Appendix B.

5. INSPECTION & MAINTENANCE REQUIREMENTS

General inspection and maintenance of stormwater systems will take place during and after construction. During construction, the Contractor will be responsible for inspecting and maintaining the Site, as described in Section 4.1 of this Report. Upon completion of construction, the property owner will be responsible for implementing the Inspection and Maintenance Plan for the proposed stormwater system, which is provided in Appendix A of this Report. A Stormwater Maintenance Agreement will also be provided and will be signed and recorded following approval.

APPENDIX A: STORMWATER INSPECTION & MAINTENANCE PLAN

STORMWATER INSPECTION & MAINTENANCE PLAN

The Roux Institute at Northeastern University Phase 1

Portland, Maine

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 Owner 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 "Qualified Post-Construction Stormwater Inspector" with knowledge of stormwater management and erosion and sediment control, including the standards and conditions in the permit, who conducts post-construction stormwater best management practice inspections for compensation and who has received the appropriate training for the same from DEP or otherwise meets DEP requirements to perform said inspections, shall conduct the inspections and perform maintenance of the facilities.

Inspection and maintenance activities will be performed per the attached checklist, schedule, and manufacturer guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached. The owner or operator of the BMP shall take corrective action(s) to address any deficiency as soon as possible after the deficiency is discovered.

INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

Trash, debris, and sediment shall be removed from storm drainage pipes and catch basins as needed on a semi-annual basis. In addition to the inspection and maintenance of stormwater systems, paved areas will be inspected annually each spring. These areas will be kept clean and clear through periodic sweeping and winter plowing as required. Inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

Bioretention Basin

The bioretention basins should be inspected after major storms (one-inch storm or greater in 24 hours) in the first year to be sure they are functioning properly. Thereafter, the basins should be inspected at least once every six months to ensure that they are draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet. If ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity. If ponding exceeds 72 hours, the top several inches of the filter shall be replaced with fresh material.

Debris and sediment buildup shall be removed from the basin as needed but at least annually and shall be disposed of in an acceptable manner. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then mulched or seeded. Fertilization of the bioretention basin should be avoided unless absolutely necessary to establish vegetation. Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Mulch shall be replaced annually or as needed.

Subsurface Sand Filter

The subsurface sand filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified. The sediment pretreatment systems should be cleaned when necessary. The proprietary subsurface detention component of the sand filter (R-Tank modules) must be inspected and maintained per the manufacturer's guidelines, which are outlined in the attached guidance document.

Sediment Forebay

Debris and sediment buildup shall be removed from sediment forebays as needed but at least annually and shall be disposed of in an acceptable manner.

Grass Swale

Debris, sediment buildup, and woody vegetation shall be removed from the grass swales as needed but at least annually and shall be disposed of in an acceptable manner.

Hydrodynamic Separator

Hydrodynamic separators must be inspected and maintained per the manufacturer's guidelines. Sediment shall be removed at least annually and when sediment volume exceeds the sediment storage capacity of the device.

REPORTING

In addition to completing the inspection and maintenance activities described herein, the Qualified Post-Construction Stormwater Inspector shall submit an Annual Report to the City of Portland Department of Public Works in accordance with City of Portland Code of Ordinances Sec. 32-38. The annual report shall include a record of deficiencies and corrective actions taken to address the deficiencies as soon as possible including maintenance, repair, or replacement to return the BMP to function as intended by the approved Stormwater Management Plan.

STORMWATER INSPECTION CHECKLIST

Inspection by: _____ Date: _____

Stormwater Feature	Condition						Comments
Vegetative cover / slopes	no bare spots, no evidence of rill erosion		some bare spots, some rill erosion		large bare areas, extensive erosion		
Drainage channels/swales	no erosion, channels clear		some erosion and siltation		major erosion, channels clogged		
Sediment Forebay	no siltation		some siltation		heavily silted in		
Sediment Forebay	inlet/outlet clear		some debris		completely blocked		
Hydrodynamic Separator*	no siltation		some siltation		heavily silted in		
Hydrodynamic Separator*	inlet/outlet clear		some debris		completely blocked		
Subsurface Drainage System	no siltation		some siltation		heavily silted in		
Subsurface Drainage System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Drainage System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Drainage System	inlet/outlet clear		some debris		completely blocked		
Bioretention Basin	no siltation		some siltation		heavily silted in		
Bioretention Basin	side slopes free of erosion		some erosion on side slopes		side slopes heavily eroded		
Bioretention Basin	inlet free of erosion		some erosion at inlet		inlet heavily eroded		
Bioretention Basin	outlet clear		some debris		completely blocked		
Bioretention Basin	healthy/robust plant growth		plants unhealthy		plants dead or overgrown		
Bioretention Basin	drains in less than 24 hours		drains between 24 and 48 hours		ponding exceeds 48 hours		
Subsurface Sand Filter*	no siltation		some siltation		heavily silted in		
Subsurface Sand Filter*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Sand Filter*	inlet/outlet clear		some debris		completely blocked		

**See attached manufacturer's guidelines for system maintenance and inspection.*

Recommended Actions: _____

_____

Actions Completed: _____ Date: _____

STORMWATER MANAGEMENT MAINTENANCE TASKS AND RECOMMENDED SCHEDULE

TASKS	SEDIMENT FOREBAY	HYDRODYNAMIC SEPARATOR	GRASS CHANNELS/ SWALES	VEGETATIVE COVER/ SLOPES	BIORETENTION BASIN	OUTLET CONTROL STRUCTURE	SUBSURFACE SAND FILTER	STORM DRAIN PIPES	SCHEDULE
Inspect for sediment accumulation	X	X	X	X	X	X	X	X	Spring and Fall
Inspect after heavy rains			X	X					As needed
Remove sediment accumulation	X	X	X		X	X	X	X	As needed
Clean debris	X	X	X	X	X	X	X	X	As needed
Inspect for erosion	X		X	X	X				As needed
Reestablish vegetation in erosion areas			X	X	X				Early spring
Replace mulch					X				Annually
Inspect structural elements during wet weather and compare to as-built plans	X	X			X	X	X	X	Annually
Keep records of all inspections and maintenance activities	X	X	X	X	X	X	X	X	Annually
Replace stone rip-rap	X							X	Every 3 – 5 years as needed
Make adjustments or replacements as determined by wet weather observations	X	X	X	X	X	X	X	X	As needed
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	X	X	X	X	X	As needed

R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

ACF ENVIRONMENTAL
LET'S GET IT DONE
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Richmond, Virginia, 23234
800.448.3636
FAX 804.743.7779
acfenvironmental.com

Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

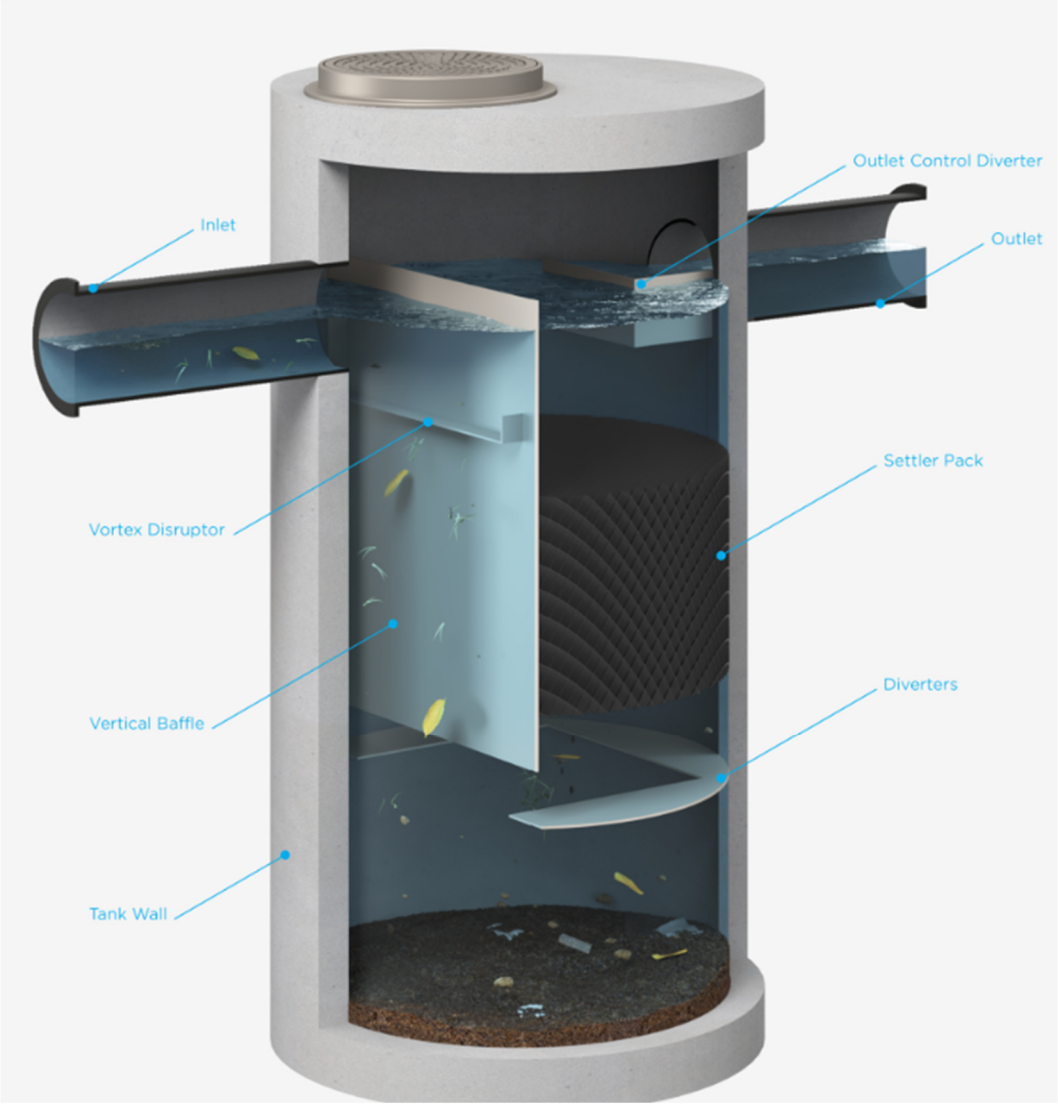
Phone Number:_____

Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

StormTrap®

StormSettler®

StormSettler® Inspection and Maintenance Manual



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WEB www.stormtrap.com
EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

StormSettler® Manufacturer's Inspection and Maintenance Manual

The StormSettler treatment device, manufactured by StormTrap, is a hydrodynamic separating device designed to capture and store pollutants from stormwater. StormSettler's maintenance frequency is site dependent and routine inspections are recommended to ensure that the system is functioning as designed. Please contact your authorized StormTrap representative if you have questions regarding the inspection and maintenance of the StormSettler system.

Inspection Scheduling

StormSettler inspections are important to assess the condition of the system internals to ensure peak performance. The frequency of inspections and maintenance is dependent on site specific loading conditions and rainfall frequency. Within the first year of operation, it is recommended that the unit be inspected quarterly to determine the rate of pollutant accumulation in order to develop a more accurate maintenance schedule. Inspections should be performed during dry weather conditions when no flow is entering the system. StormSettler systems are recommended to be inspected whenever the upstream and downstream catch basins and stormwater pipes of the stormwater collection system are inspected or maintained. If checked on an annual basis, the inspection should be conducted before the stormwater season begins to ensure that the system is functioning properly for the upcoming storm season.

Inspection and Maintenance Equipment

The following equipment is recommended to have during inspections:

- StormSettler Inspection and Maintenance Manual and Inspection Checklist
- Flashlight

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FAX 331 318 5347
WEB www.stormtrap.com
EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage
- Pole with skimmer or net (optional for maintenance procedure)
- Vacuum truck or similar trailer mounted equipment (for maintenance procedure)

Inspection Procedure

Inspections should be done such that a sufficient time has lapsed since the most recent rain event to allow for a static water condition and rainfall is not anticipated to occur during the duration of the inspection procedure. StormSettler does not require entry into the system for inspection or maintenance; however, if entering the system is deemed necessary, it is prudent to note that prior to entry into any underground storm sewer or underground structure, appropriate OSHA and local safety regulations and guidelines should be followed.

To begin the inspection process, set up the necessary traffic control signage per local ordinances. Open all manhole covers using appropriate equipment and ensure the manhole covers are in a location that would not prohibit the inspection process. Visually inspect the system at all manhole access opening locations. During the visual inspection, ensure that all components are in working order. An inspection checklist is provided within this guide for ease and reference.

If any components are not in working order, contact your authorized StormTrap representative.

After the components are inspected, visually quantify the accumulation of trash, debris, and hydrocarbons within the system by using a measuring device such as a tape measure, grade stick, dipstick, etc. Measure and record the depth of trash, debris, and hydrocarbon

accumulation from the static water elevation (pipe elevation) to the average elevation of the trash and debris.

If sorbent materials are used for retention of hydrocarbons, the level of discoloration of the sorbent material should also be noted during the inspection process.

For sediment accumulation, utilize either a sludge sampler or a sediment pole to measure and document the amount of sediment accumulation. To determine the amount of sediment in the system with a sludge sampler, follow the manufacturer's instructions. If utilizing a sediment pole or similar device, first insert the pole to the top of the sediment layer and record the depth. Then, insert the pole to the bottom of the system and record the depth. The difference in the two measurements corresponds to the amount of sediment in the system. Alternatively, sediment depth can also be determined by taking a measurement from a known and consistent elevation (manhole frame, pipe invert, vertical baffle top, etc.) to the top of the sediment layer. That distance can then be compared to the measurement between the known elevation to the sump floor. The difference between these two measurements will correspond to the sediment layer depth.

After completion of the inspection process, ensure that manhole covers are replaced and securely seated in the manhole frame and remove traffic control signage.

StormSettler units can also be installed with remote monitoring technology that measures the current capacities within the system and reports the data to any internet capable device. If a remote monitoring device is used, proper maintenance of the device, such as replacement of batteries, cleaning sensor, etc. needs to be completed to ensure functionality of the remote monitoring technology.

If it is determined during the inspection process that the accumulation of trash and debris or sediment is at or near the capacities of the StormSettler device, maintenance should be performed to ensure performance is not impacted for subsequent storm events.

Maintenance Procedure

Maintenance should be done such that a sufficient time has lapsed since the most recent rain event to allow for a static water condition and rainfall is not anticipated to occur during the duration of the maintenance procedure.

To begin the maintenance process, set up the necessary traffic control signage per local ordinances. Open all manhole covers using appropriate equipment and ensure the manhole covers are in a location that would not prohibit the maintenance process.

Visually inspect the system at all manhole access opening locations. During the visual inspection, ensure that all components are undamaged. If any components are not in working order, contact your authorized StormTrap representative.

After the components are inspected, remove all accumulated trash, debris, and hydrocarbons stored on the surface of the water using the vacuum hose or pole with attached skimmer or net.

If sorbent materials are used, the materials may have to be moved to not impact pollutant removal. If significant discoloration of the sorbent material has occurred, simply remove the sorbent materials and replace upon completion of maintenance activities.

To remove sediment, insert the vacuum truck's hose on the inlet side of the vertical baffle into the sump. The system should be completely drained, and all sediment should be removed from the sump. For smaller diameter devices (3' or 4' units), a 6" or smaller vacuum hose diameter may be required for effective cleaning due to maneuverability constraints. If the vacuum truck that is being utilized has a hose diameter greater than 6", a smaller tube can be affixed to the boom hose with duct tape to improve maneuverability within the device.

If excessive sediment or debris buildup occurs within the device, components can be washed with sewer jetting equipment or a spray lance to remove stubborn materials. Particular

attention must be taken when spraying the settler pack. A wide spray nozzle is recommended around the settler pack to ensure there is no damage to the material.

After completion of the maintenance procedure, complete a post maintenance inspection to ensure that all components are in good condition. Ensure that manhole covers are replaced and securely seated in the manhole frame and remove traffic control signage. Dispose of all pollutants removed during maintenance per local, state, and federal guidelines and regulations.

Inspection and Maintenance Documentation

Proof of inspections and maintenance activities is the responsibility of the owner. All inspection and maintenance reports and any relevant data should be kept on site or at a location where they will be accessible in accordance with local requirements. It is a good practice to take time stamped photographs after every inspection and maintenance event to include within logs. It is also good practice to keep records of rainfall events between maintenance events and the weight of material removed, even if no report is required. Some municipalities may require inspection and maintenance reports be forwarded to the proper governmental permitting agency on an annual basis. Refer to your local regulations and ordinances for any additional maintenance requirements and schedules not contained herein. Inspections and maintenance activities should be performed to ensure performance is not impacted and the device performs as designed.

Inspection Items

- StormSettler Maintenance Manual and Inspection Checklist
- Flashlight
- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage

Maintenance Items

- StormSettler Maintenance Manual and Inspection Checklist
- Flashlight
- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage
- Pole with skimmer or net (optional for maintenance procedure)
- Vacuum truck or similar trailer mounted equipment (for maintenance procedure)

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1287 Windham Parkway
Romeoville, Illinois 60446

StormTrap

StormSettler	StormSettler Inspection Checklist

Structure ID:		
Location/Address:		
Inspector Name:		Inspector Contact Information:
Date:	Time:	Weather Conditions:
Rain in the Last 48hrs:		If yes, list amount and timing:

*Do not enter underground chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.
*Follow inspection and maintenance instructions provided by system manufacturer.
*Please circle the condition of each inspection item below. 1 being the worst and 5 being the best condition.

Inspection Item	Condition					Comment	Action Needed	
1.) Frames and Covers								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
2.) Inlet Pipe(s)								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
3.) Vortex Disruptor								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
4.) Verticle Baffle								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
5.) Enhanced Settling Pack								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No
6.) Flow Modifiers								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structural condition	1	2	3	4	5		Yes	No

7.) Outlet Control Diverter								
Excessive accumulation of debris and/or sediment present	1	2	3	4	5		Yes	No
Component(s) structurally sound	1	2	3	4	5		Yes	No
8.) Outlet Pipe								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structurally sound	1	2	3	4	5		Yes	No
9.) Concrete Chamber								
Component(s) structural condition	1	2	3	4	5		Yes	No
10.) Sediment Storage Capacity								
Sediment storage capacity	1	2	3	4	5		Yes	No
Additional Notes:								
Wet Weather Inspection Needed:			Yes		No			
Maintenance Activities Needed:			Yes		No			

Stormwater BMP Maintenance Log

BMP Structure	Inspector	Date	Work Performed	Comments
Pavement Sweeping				
Vegetated Slopes				
Grass Swales				
Catch Basins/Area Drains				
Diversion Structures				
Riprap Sediment Forebay				
Hydrodynamic Separators				
Bioretention Basin 1				
Bioretention Basin 2				
Bioretention Basin 3				
Subsurface Sand Filter 1				
Subsurface Sand Filter 2				
Subsurface Sand Filter 3				
Subsurface Sand Filter 4				
Subsurface Sand Filter 5				
Subsurface Sand Filter 6				
Outlet Control Structures				
Stormwater Outfalls				
Other				
Additional Comments:				

APPENDIX B: STORMWATER QUALITY CALCULATIONS

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Redevelopment Treatment Calculations - Per Section 4.C.2.d of the MaineDEP Chapter 500 Rules

Area of Redevelopment (acres) = 14.50

a. Existing Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads/Parking Lot	5	0.00	0.00
Other Roads/Medium Use Parking Lot	4	2.44	9.74
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	6.35	19.04
Other Roofs/Landscaped Area/Paved Walkway	2	4.73	9.46
Non-grass Landscaping/Stormwater	1	0.98	0.98
Forest/Meadow	0	0.00	0.00
			39.23

b. Proposed Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads/Parking Lot	5	1.30	6.48
Other Roads/Medium Use Parking Lot	4	0.94	3.77
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.17	0.50
Other Roofs/Landscaped Area/Paved Walkway	2	11.43	22.86
Non-grass Landscaping/Stormwater	1	0.65	0.65
Forest/Meadow	0	0.00	0.00
			34.26

c. Existing Impact/Total Redevelopment Acres

2.706

d. Proposed Impact/Total Redevelopment Acres

2.363

e. Item D Minus Item C

-0.34

Ranked Impact Change Due to Redevelopment	Percentage of Developed Area that Must be Treated
0.0 or less	0% (Stormwater projects)
	50% (Site projects)
≥ 0.0 to ≤ 1.0	60%
> 1.0 to ≤ 2.0	70%
> 2.0 to ≤ 3.0	80%
> 3.0	Same treatment level as for new development

Stormwater Treatment Summary	*Treatment Percentage*	*Treated Area (SF)*
Required	50.0%	315,749
Provided	50.9%	321,423

WQV Summary	*Subsurface Sand Filter 1*	*Subsurface Sand Filter 2*	*Subsurface Sand Filter 3*	*Subsurface Sand Filter 4*	*Subsurface Sand Filter 5*
Proposed Treated Area (SF)	48,800	49,527	86,298	7,107	46,958
WQV Required (CF)	4,067	3,283	6,194	549	3,013
WQV Provided (CF)	6,988	5,447	10,789	1,086	4,718

WQV Summary	*Subsurface Sand Filter 6*	*Bioretention Basin 1**	*Bioretention Basin 2*	*Bioretention Basin 3*
Proposed Treated Area (SF)	12,500	21,684	28,165	20,384
WQV Required (CF)	1,042	1,009	1,118	913
WQV Provided (CF)	1,798	1,009	1,170	917
**Bioretention Basin 1 volume is fixed by site constraints; proposed treated area is calculated based on the fixed basin volume*				

Redevelopment Treatment Calculations - Per Section 5 of the City of Portland Technical Manual

Area of non-roof, redeveloped impervious surface (acres) = 5.12

Area of non-roof, redeveloped impervious surface treated (acres) = 3.06 60% > 50% required

12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Sizing Calculations

Water Quality Volume for Subsurface System 1

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	48800	SF
Pervious Area =	0	SF
WQV Required =	**4067**	CF
WQV Provided =	**6988**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**2440**	SF
Filter Surface Area Provided=	**2993**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	0	SF
Total Volume Required =	**0**	CF
Method: Hydrodynamic Separator, Riprap Sediment Forebay and Pretreatment Row		
Total Volume Provided =	**68**	CF

Water Quality Volume for Subsurface System 2

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	32649	SF
Pervious Area =	16878	SF
WQV Required =	**3283**	CF
WQV Provided =	**5447**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**1970**	SF
Filter Surface Area Provided=	**2621**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	32649	SF
Total Volume Required =	**42**	CF
Method: Pretreatment Row		
Total Volume Provided =	**42**	CF

Water Quality Volume for Subsurface System 3

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	66338	SF
Pervious Area =	19960	SF
WQV Required =	**6194**	CF
WQV Provided =	**10789**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**3716**	SF
Filter Surface Area Provided=	**4640**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	66338	SF
Total Volume Required =	**85**	CF
Method: Hydrodynamic Separator and Pretreatment Rows		
Total Volume Provided =	**109**	CF

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Water Quality Volume for Subsurface System 4

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	6251	SF
Pervious Area =	856	SF
WQV Required =	**549**	CF
WQV Provided =	**1086**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**330**	SF
Filter Surface Area Provided=	**505**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	2241	SF
Total Volume Required =	**3**	CF
Method: Pretreatment Row		
Total Volume Provided =	**8**	CF

Water Quality Volume for Subsurface System 5

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	28964	SF
Pervious Area =	17995	SF
WQV Required =	**3013**	CF
WQV Provided =	**4718**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**1808**	SF
Filter Surface Area Provided=	**2194**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	14891.86	SF
Total Volume Required =	**19**	CF
Method: Pretreatment Row		
Total Volume Provided =	**63**	CF

Water Quality Volume for Subsurface System 6

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	12500	SF
Pervious Area =	0	SF
WQV Required =	**1042**	CF
WQV Provided =	**1798**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**625**	SF
Filter Surface Area Provided=	**879**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	0	SF
Total Volume Required =	**0**	CF
Method: Pretreatment Row		
Total Volume Provided =	**21**	CF

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12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Bioretention Basin 1 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area* =	5726	SF	
Pervious Area* =	15957	SF	
Sum* =	0.50	ac.	< 1 ac.
WQV Required* =	**1009**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	721	CF	
WQV Storage (Soil)* =	288	CF	
WQV Storage (TOTAL) =	**1009**	CF	

**Bioretention Basin 1 volume is fixed by site constraints; proposed treated area is calculated based on the fixed basin volume.*

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**880**	SF	
Filter Surface Area Provided =	**1442**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	8864	SF	
Total Volume Required =	11	CF	
Method: Grass Swale			

Bioretention Basin 2 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	3590	SF	
Pervious Area =	24575	SF	
Sum =	0.65	ac.	< 1 ac.
WQV Required =	**1118**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	836	CF	
WQV Storage (Soil)* =	334	CF	
WQV Storage (TOTAL) =	**1170**	CF	

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**989**	SF	
Filter Surface Area Provided =	**1672**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	3590	SF	
Total Volume Required =	5	CF	
Method: Grass Swale			

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Bioretention Basin 3 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	4672	SF	
Pervious Area =	15712	SF	
Sum =	0.47	ac.	< 1 ac.
WQV Required =	**913**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	655	CF	
WQV Storage (Soil)* =	262	CF	
WQV Storage (TOTAL) =	**917**	CF	

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**798**	SF	
Filter Surface Area Provided =	**1310**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	4672	SF
Total Volume Required =	6	CF
Method: Grass Swale		

APPENDIX C: FIGURES



IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

EXISTING SITE IMPACT ANALYSIS

FIG. A

MATCHLINE

REDEVELOPMENT AREA

MATCHLINE

REDEVELOPMENT AREA

LEGEND

- POLLUTANT RANKING 5
- POLLUTANT RANKING 4
- POLLUTANT RANKING 3
- POLLUTANT RANKING 2
- POLLUTANT RANKING 1
- POLLUTANT RANKING 0

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

PROPOSED SITE IMPACT ANALYSIS

FIG. B

MATCHLINE

REDEVELOPMENT AREA

MATCHLINE

TREATMENT AREA, TYP.

REDEVELOPMENT AREA

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

REDEVELOPMENT FIGURE

FIG. C

MATCHLINE

MATCHLINE

SF1
SF2
SF3
SF4
SF5
SF6
BR1
BR2
BR3

TREATMENT AREA LEGEND

STORMWATER TREATMENT SYSTEM	LOCATION	DRAINAGE AREA
SAND FILTER #1	SF1	
SAND FILTER #2	SF2	
SAND FILTER #3	SF3	
SAND FILTER #4	SF4	
SAND FILTER #5	SF5	
SAND FILTER #6	SF6	
BIORETENTION #1	BR1	
BIORETENTION #2	BR2	
BIORETENTION #3	BR3	

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

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Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'
Drawing Title	TREATMENT AREA FIGURE

FIG. D

APPENDIX D: MANUFACTURER DESIGN REVIEW LETTER

Ferguson Waterworks
94 Pleasant Ave
South Portland, ME 04106

Amy Lebel, PE.
Project Engineer
Woodard & Curran
12 Mountfort Street
Portland, ME 04101

March 25, 2024

SUBJECT: IDEALS Roux Campus – Portland, ME
R-Tank - Plan Review and Construction Oversight Commitment

Dear Amy,

Thank you for forwarding the permit plans for the IDEALS Roux Campus in Portland, ME to Ferguson Waterworks for review of the proposed sand filter systems with R-Tank modules.

Our team has reviewed the "Overall grading & drainage plan" with the latest revision on March 14th 2024, which identifies six R-Tank systems also utilizing sand filters beneath the R-Tank units. The systems consist of the following:

- Sand Filter 1: 659 R-Tank^{HD} Single+Mini modules, 132 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 2: 570 R-Tank^{HD} Single+Mini modules, 82 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 3: 1002 R-Tank^{HD} Single+Mini modules, 212 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 4: 93 R-Tank^{HD} Single+Mini modules, 15 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 5: 467 R-Tank^{HD} Single+Mini modules, 122 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 6: 171 R-Tank^{HD} Single+Mini modules, 40 R-Tank^{HD} Single+Mini Access modules

Per Maine DEP regulations, the systems appear to be sized appropriately to the minimum Sand Filter sizing requirements according to the impervious and pervious area each system is responsible for treating.

Each R-Tank system includes a Treatment Row at each inflow point to accommodate the flow rate for the 1yr 24hr storm event. It is recommended that the Treatment Row sizing is

reviewed to ensure the proper number of R-Tank units has been provided at each inlet location (accounting for 0.02 cfs per module per DEP regulations).

Sand Filters 1, 3 & 4 – R-Tanks are designed with the typical 3" stone base, 2 ft stone sides, and a sectional build-up over the system that meets the min. cover guidance for R-Tank^{HD} systems designed in traffic loaded locations. Min. cover requirement for these systems are 20" total cover (includes 12" on top of the tanks). The cover over the system fits within the allowable cover limits.

Sand Filters 2, 5 & 6 – R-Tanks are designed with the typical 3" stone base, 2 ft sides, and a sectional build-up over the system that meets the min. cover guidance for R-Tank^{HD} systems designed for greenspace areas and non-vehicular traffic locations. Min. cover requirements for pedestrian load rated systems only are 12" total cover (includes 6" stone on top of the tanks). The cover over the system fits within the allowable cover limits.

The tanks are to be wrapped with an N080 Non-woven geotextile fabric and the excavation is to be wrapped with 30 mil pvc liner between two layers of N080 non-woven geotextile. Additional separation fabrics are to be used between each layer transition. See Ferguson layout sheets, or engineer plans, for more specific information as to which fabrics should be placed in between each layer.

An appropriate number of inspection ports have been provided.

Overall, Ferguson takes no exceptions to the current location and application of the R-Tank system for this project.

With regard to the installation, Ferguson will host a preconstruction meeting with the site contractor and will visit the site several times during the installation to ensure the installation is being conducted in accordance with our standard installation procedures and specifications.

Please review and contact me with any questions from your office. We look forward to working with you on this project.

Sincerely,
Brett Keszczyk,
Green Stormwater Infrastructure (GSI) Engineer
Ferguson Waterworks

Cc: Rob Woodman, PE – Director of Engineering & Green Stormwater Infrastructure
Maggie Chase, PE – Green Stormwater Infrastructure Specialist (New England)



woodardcurran.com

Department of Public Works
Mike Murray
Director

Date: December 12, 2023
Re: Wastewater Capacity Authorization
Address: 1 Bean Pot Circle
Applicant: Northeastern University
Planner: Zachary Powell

The City of Portland has been asked to provide a preliminary review of wastewater capacity for the future Roux Institute development.

Woodard & Curran provided the attached schedule of proposed buildings and phase breakout for review. Not listed on the table is the removal of the historical wastewater production of the previous occupant (B&M) which Woodard & Curran documented in a letter at 90,000 GPD.

The Department of Public Works, which includes the Water Resource Division, has reviewed and determined that the downstream sewers from the project site have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

However, as each individual phase undergoes permitting/ planning review, we would ask for a wastewater capacity application specific to that phase of development be submitted for further review.

You are reminded that new connections into the combined sewer system shall be equipped with backflow prevention in accordance with Section 2.6.10 of the City's Technical Manual.

If the City can be of further assistance, please contact me at 207-874-8840 or brad@portlandmaine.gov

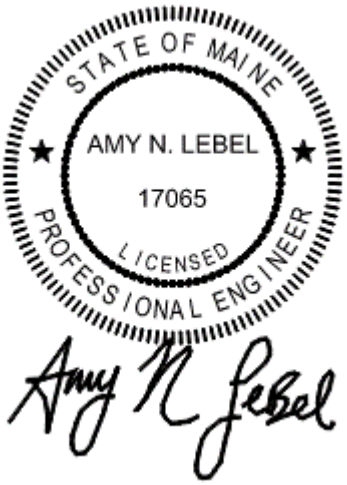
Sincerely,

Bradley A. Roland, P.E.,
Senior Project Engineer

ROUX INSTITUTE AT NORTHEASTERN UNVERSITY

Stormwater Management Plan

1 Bean Pot Circle
Portland, ME



12 Mountfort Street
Floors 5 & 6
Portland, ME 04101
800.426.4262

woodardcurran.com

Prepared for
Initiative for Digital Engineering and Life Sciences (IDEALS)

March 2024

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1. INTRODUCTION & BACKGROUND

This narrative report is in support of a Major Site Plan Application and Site Location of Development (SLOD) Permit Application on behalf of Northeastern University (Applicant) and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), for development of the Roux Institute at Northeastern University campus located at 1 Bean Pot Circle in Portland, Maine (the Site). This Stormwater Management Plan (SWMP) describes existing site conditions, the proposed development, compliance with applicable stormwater standards, and inspection and maintenance requirements for the proposed stormwater system for Phase 1.

Phase 1 includes construction of a Learning, Research, and Collaboration Building, renovation of the Bean Building to create business incubator space, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements. The proposed Phase 1 project is designed with consideration to future development, with the interior-most and waterfront spaces being developed first to reduce impacts of construction of future phases. Likewise, the stormwater management system has been designed to ensure stormwater standards are met for the development during each phase, with consideration and capacity for full build-out of the Site to minimize future construction impacts.

The project is subject to stormwater management standards through the requirements of both the City of Portland Site Plan and the Maine DEP Site Location of Development permit applications. The following report demonstrates how the development of the Site meets the stormwater standards outlined in Section 5 of the City of Portland's Technical Manual and in the Maine DEP's Chapter 500.

2. EXISTING CONDITIONS

The Site is located within Portland's East Deering neighborhood, at the end of Sherwood Street, adjacent to Maine Yacht Services and near a residential area of single and multi-family homes (three-story apartment buildings) and a commercial node featuring restaurants, bars, automobile mechanics, and offices. While proximate to these areas, the Site is remarkably buffered; I-295 to the west, state-owned vacant parcels to the north, a disused rail corridor and marine business to the east, and Casco Bay to the south collectively surround the property.

The Site includes approximately 13 acres above mean higher high water (MHHW) line as well as an adjacent 11 acres of submerged lands. A survey of the Site was completed by VHB, Inc. (dated June 30, 2021 and July 17, 2023). Approximately 9 acres of land above the mean higher high water line are impervious (paved areas, building roofs, foundations, etc.). The remaining 4 acres of permeable area include lawn and approximately half an acre of vegetated non-lawn area adjacent to the rail corridor abutting the site to the east. No stormwater treatment systems exist on the Site.

The Site was occupied by residences and a lobster cannery prior to 1913, when Burnham & Morrill (B&M) relocated its food manufacturing operations to the Site from Franklin Street. Shortly thereafter, the flagship Cannery Building (Bean Building) was constructed, as well as the adjacent codfish building on the pier. The site was further improved with buildings and parking to support operations. Due to its industrial use, the site is surrounded by security fencing, and the interior and waterfront have historically been inaccessible to the public. Canning operations ceased in 2021.

On May 23, 2023, IDEALS received a demolition permit from the City, and commenced demolition of all existing buildings on the site, retaining only the Bean Building and the Codfish Building. The demolished building areas remain stabilized with perimeter erosion control measures, and for the purposes of evaluating the Site for stormwater permitting, these areas have been considered as impervious existing roof.

Topography of the Site generally slopes from north to south toward Casco Bay. Runoff from the Site drains via sheet flow in a southerly direction to a series of catch basins that ultimately discharge to Casco Bay. The highest elevations are near Sherwood Street, at elevation 28 +/-. The lowest grades are near the loading dock at the B&M Bean Building, at elevation 8.5 +/-. These low areas are only 1-foot above Highest Astronomical Tide.

3. PROPOSED DEVELOPMENT

The proposed development of Phase 1 and reconstruction of Sherwood Street will result in approximately 14.5-acres of disturbance and approximately 7.3-acres of impervious area, for a net decrease in impervious area of approximately 2.6-acres. Proposed work includes:

- Construction of the Learning, Research, and Collaboration Building;
- Renovation of the Bean Building;
- Construction of a parking garage;
- Development of a childcare facility;
- Replacement of the pier;
- Development of a coastal path; and
- Landscaping, utility, and site improvements.

The proposed drainage conveyance system in Phase 1 is comprised of a series of drainage swales, catch basins, area drains, field inlets, trench drains, hydrodynamic separators, outlet control structures, and drainage manholes, which ultimately discharge to Casco Bay via three outfalls. Stormwater treatment for the Site in Phase 1 is provided via bioretention basins and subsurface sand filters. The proposed stormwater management systems are discussed in further detail in the following sections.

Sherwood Street will also be reconstructed as part of this project from the intersection of Veranda Street, underneath the Interstate 295 overpass bridge and into the Site. The design of Sherwood Street from Veranda Street through the existing Interstate 295 overpass is shown on the roadway design drawings by VHB and the design beyond the overpass into the Site is shown on the design drawings by Woodard & Curran. Drainage from Sherwood Street is managed separately from the rest of the Site. Woodard & Curran met with City of Portland Public Works staff to discuss Sherwood Street and will be working with them to resolve how best to connect stormwater infrastructure within the reconstructed street.

The reconstruction of Sherwood Street results in an increase in impervious area of approximately 0.2 acres in the Sherwood Street right-of-way; therefore, Sherwood Street has been included in the stormwater treatment calculations for the Site. Limited space is available for treatment of stormwater in the Sherwood Street right-of-way. Woodard & Curran confirmed with City of Portland Public Works that Sherwood Street redeveloped area may be factored into on-site stormwater treatment calculations.

4. STORMWATER STANDARDS

The project is subject to the MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 Stormwater Standards. The project is not located within the watershed of an Urban Impaired Stream and is therefore not subject to the Urban Impaired Stream Standard. The following sections describe the project's compliance with the applicable stormwater standards.

4.1 Basic Standard (Soil Erosion & Sediment Control)

A variety of erosion and sediment control measures will be utilized during construction, including but not limited to the following:

- Stabilized construction entrances;
- Up-gradient runoff diversion barriers;
- Downgradient sediment barriers;
- Catch basin inlet protection devices;
- Preservation and maintenance of vegetated areas to the maximum extent possible;
- Temporary stabilization of disturbed areas to be exposed for more than seven days;
- Permanent stabilization of final graded areas;
- Controls for fugitive dust, debris, and other materials; and
- Inspection of all measures until the Site is permanently stabilized.

Structural measures will be installed as shown on the design drawings. Details and specifications for these measures are included on the drawings. All measures will be implemented in accordance with the "Maine Erosion and Sedimentation Handbook for Construction: Best Management Practices", latest edition. All temporary measures will be installed prior to any earth-disturbing activities and will be removed upon permanent stabilization of the Site. The Contractor will be responsible for implementing and maintaining all erosion and sediment control measures in an effective operating condition during construction. Permanent erosion control measures will include vegetation and pavement. After construction, the Owner will be responsible for inspecting and maintaining the Site as described in Section 5 of this Report.

4.2 Flooding Standard (Stormwater Quantity)

Runoff from the proposed project will primarily discharge to the adjacent Casco Bay, which is a tidal waterbody, via either sheet flow or the on-site storm drain system. In accordance with Section 4.F(3) of the MaineDEP Chapter 500 Stormwater Standards, a project is eligible for a waiver from the Flooding Standard if it discharges to a coastal wetland or a major river segment. As noted in the description of the proposed development, the only portion of the Site that will not discharge directly to Casco Bay is the drainage from within Sherwood Street. We respectfully request a waiver from the Flooding Standard for the campus development.

4.3 General & Redevelopment Standards (Stormwater Quality)

The proposed project is subject to the redevelopment standards for stormwater quality from both the MaineDEP and the City of Portland. Calculations demonstrating compliance with stormwater quality standards are provided in Appendix B. A figure showing the area of redevelopment is included in Appendix C of this Report.

4.3.1 Maine DEP Redevelopment Standards

Calculations have been prepared in accordance with Section 4.C(2)(d) of the MaineDEP Chapter 500 Stormwater Standards to determine how much treatment is required for the proposed redevelopment project. The project has been evaluated as a "Site" project as it is required to obtain a Site Location of Development Permit. Based on the impact analysis calculations provided in Appendix B of this Report, it has been determined that the proposed project is required to provide treatment for 50% of the total redevelopment area. Figures showing existing and proposed pollutant ranking areas are provided in Appendix C. With the proposed stormwater management system, greater than 50% of the redevelopment area will be captured and treated. Runoff from proposed driveways, parking areas, building roofs, and interior impervious plazas was prioritized for treatment; figures showing redevelopment and treatment areas is provided in Appendix C.

4.3.2 City of Portland Redevelopment Standards

For redevelopment sites, per Section 5 of the City of Portland's Technical Manual, a minimum of 50% of the non-roof redeveloped impervious surface on a site must receive stormwater treatment. The calculations included in Appendix B show that greater than 50% of the non-roof redeveloped impervious surface on the Site will be treated by the proposed stormwater systems.

4.3.3 Proposed Treatment Systems

As previously described, stormwater systems will consist of bioretention basins and subsurface sand filters. The proposed stormwater systems have been designed based on Volume III of the DEP Stormwater BMP Manual; calculations demonstrating compliance with the BMP design requirements are provided in Appendix B and design details are provided on the drawings.

Three bioretention basins are proposed to treat stormwater from interior sidewalks, plaza and landscaped areas. Outlet control structures and emergency spillways are provided to manage runoff beyond the 1-inch water quality storm event.

The subsurface sand filters are comprised of proprietary R-Tank modules over sand filters. The R-Tank system has been designed to detain the water quality volume for the upgradient area. Diversion structures are provided upgradient of proposed subsurface sand filters to manage runoff beyond the 1-inch water quality storm event. A letter that demonstrates manufacturer review and approval of the design is provided as Appendix D.

The proposed design includes multiple best management practices to reduce sediment loading upgradient of the stormwater filtration systems, including deep sump catch basins, offline catch basin drainage design, sediment forebay, grass swales, hydrodynamic separators, and pretreatment rows. The sediment pretreatment devices have been sized in accordance with the Maine DEP BMP Manual for non-roof impervious drainage area. Sizing calculations are provided in Appendix B.

5. INSPECTION & MAINTENANCE REQUIREMENTS

General inspection and maintenance of stormwater systems will take place during and after construction. During construction, the Contractor will be responsible for inspecting and maintaining the Site, as described in Section 4.1 of this Report. Upon completion of construction, the property owner will be responsible for implementing the Inspection and Maintenance Plan for the proposed stormwater system, which is provided in Appendix A of this Report. A Stormwater Maintenance Agreement will also be provided and will be signed and recorded following approval.

APPENDIX A: STORMWATER INSPECTION & MAINTENANCE PLAN

STORMWATER INSPECTION & MAINTENANCE PLAN

The Roux Institute at Northeastern University Phase 1

Portland, Maine

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 Owner 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 "Qualified Post-Construction Stormwater Inspector" with knowledge of stormwater management and erosion and sediment control, including the standards and conditions in the permit, who conducts post-construction stormwater best management practice inspections for compensation and who has received the appropriate training for the same from DEP or otherwise meets DEP requirements to perform said inspections, shall conduct the inspections and perform maintenance of the facilities.

Inspection and maintenance activities will be performed per the attached checklist, schedule, and manufacturer guidelines; an example page of the BMP Maintenance Log that shall be kept on-site is also attached. The owner or operator of the BMP shall take corrective action(s) to address any deficiency as soon as possible after the deficiency is discovered.

INSPECTION AND MAINTENANCE OF STORMWATER SYSTEMS

Trash, debris, and sediment shall be removed from storm drainage pipes and catch basins as needed on a semi-annual basis. In addition to the inspection and maintenance of stormwater systems, paved areas will be inspected annually each spring. These areas will be kept clean and clear through periodic sweeping and winter plowing as required. Inspections will also ensure pavement markings are repainted as needed to maintain proper traffic circulation. Paved areas will be plowed and sanded as often as necessary to maintain public safety. Periodic sweeping of pavement will reduce the amount of sediment available to enter the stormwater systems, in turn reducing the need to clean the stormwater systems.

Bioretention Basin

The bioretention basins should be inspected after major storms (one-inch storm or greater in 24 hours) in the first year to be sure they are functioning properly. Thereafter, the basins should be inspected at least once every six months to ensure that they are draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet. If ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity. If ponding exceeds 72 hours, the top several inches of the filter shall be replaced with fresh material.

Debris and sediment buildup shall be removed from the basin as needed but at least annually and shall be disposed of in an acceptable manner. Any bare area or erosion rills shall be repaired with new filter media or sandy loam then mulched or seeded. Fertilization of the bioretention basin should be avoided unless absolutely necessary to establish vegetation. Harvesting and pruning of excessive growth will need to be done occasionally. Weeding to control unwanted or invasive plants may also be necessary. Mulch shall be replaced annually or as needed.

Subsurface Sand Filter

The subsurface sand filter should be inspected after every major storm in the first year to be sure it is functioning properly. Thereafter, the filter should be inspected at least once every six months to ensure that it is draining within 24 to 48 hours following a one-inch storm or greater. If the system drains too fast, an orifice may need to be added on the underdrain outlet or, if already present, may need to be modified. The sediment pretreatment systems should be cleaned when necessary. The proprietary subsurface detention component of the sand filter (R-Tank modules) must be inspected and maintained per the manufacturer's guidelines, which are outlined in the attached guidance document.

Sediment Forebay

Debris and sediment buildup shall be removed from sediment forebays as needed but at least annually and shall be disposed of in an acceptable manner.

Grass Swale

Debris, sediment buildup, and woody vegetation shall be removed from the grass swales as needed but at least annually and shall be disposed of in an acceptable manner.

Hydrodynamic Separator

Hydrodynamic separators must be inspected and maintained per the manufacturer's guidelines. Sediment shall be removed at least annually and when sediment volume exceeds the sediment storage capacity of the device.

REPORTING

In addition to completing the inspection and maintenance activities described herein, the Qualified Post-Construction Stormwater Inspector shall submit an Annual Report to the City of Portland Department of Public Works in accordance with City of Portland Code of Ordinances Sec. 32-38. The annual report shall include a record of deficiencies and corrective actions taken to address the deficiencies as soon as possible including maintenance, repair, or replacement to return the BMP to function as intended by the approved Stormwater Management Plan.

STORMWATER INSPECTION CHECKLIST

Inspection by: _____ Date: _____

Stormwater Feature	Condition						Comments
Vegetative cover / slopes	no bare spots, no evidence of rill erosion		some bare spots, some rill erosion		large bare areas, extensive erosion		
Catch Basins	no trash, debris, sediment buildup		some trash, debris, sediment buildup		significant trash, debris, sediment buildup		
Paved Area	clear of sediment		some sediment buildup		heavy sediment buildup		
Drainage channels/swales	no erosion, channels clear		some erosion and siltation		major erosion, channels clogged		
Sediment Forebay	no siltation		some siltation		heavily silted in		
Sediment Forebay	inlet/outlet clear		some debris		completely blocked		
Hydrodynamic Separator*	no siltation		some siltation		heavily silted in		
Hydrodynamic Separator*	inlet/outlet clear		some debris		completely blocked		
Subsurface Drainage System	no siltation		some siltation		heavily silted in		
Subsurface Drainage System	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Drainage System	outlet free of erosion		some erosion at outlet		outlet heavily eroded		
Subsurface Drainage System	inlet/outlet clear		some debris		completely blocked		
Bioretention Basin	no siltation		some siltation		heavily silted in		
Bioretention Basin	side slopes free of erosion		some erosion on side slopes		side slopes heavily eroded		
Bioretention Basin	inlet free of erosion		some erosion at inlet		inlet heavily eroded		
Bioretention Basin	outlet clear		some debris		completely blocked		
Bioretention Basin	healthy/robust plant growth		plants unhealthy		plants dead or overgrown		
Bioretention Basin	drains in less than 24 hours		drains between 24 and 48 hours		ponding exceeds 48 hours		
Subsurface Sand Filter*	no siltation		some siltation		heavily silted in		
Subsurface Sand Filter*	no clogging/flooding		some clogging/flooding		heavy clogging/flooding		
Subsurface Sand Filter*	inlet/outlet clear		some debris		completely blocked		

**See attached manufacturer's guidelines for system maintenance and inspection.*

Recommended Actions: _____

_____

Actions Completed: _____ Date: _____

STORMWATER MANAGEMENT MAINTENANCE TASKS AND RECOMMENDED SCHEDULE

TASKS	SEDIMENT FOREBAY	HYDRODYNAMIC SEPARATOR	GRASS CHANNELS/ SWALES	VEGETATIVE COVER/ SLOPES	BIORETENTION BASIN	OUTLET CONTROL STRUCTURE	SUBSURFACE SAND FILTER	STORM DRAIN PIPES	SCHEDULE
Inspect for sediment accumulation	X	X	X	X	X	X	X	X	Spring and Fall
Inspect after heavy rains			X	X					As needed
Remove sediment accumulation	X	X	X		X	X	X	X	As needed
Clean debris	X	X	X	X	X	X	X	X	As needed
Inspect for erosion	X		X	X	X				As needed
Reestablish vegetation in erosion areas			X	X	X				Early spring
Replace mulch					X				Annually
Inspect structural elements during wet weather and compare to as-built plans	X	X			X	X	X	X	Annually
Keep records of all inspections and maintenance activities	X	X	X	X	X	X	X	X	Annually
Replace stone rip-rap	X							X	Every 3 – 5 years as needed
Make adjustments or replacements as determined by wet weather observations	X	X	X	X	X	X	X	X	As needed
Have a professional engineer perform emergency inspections upon identification of severe problems	X	X	X	X	X	X	X	X	As needed

R-TANK OPERATION, INSPECTION & MAINTENANCE

Operation

Your ACF R-Tank System has been designed to function in conjunction with the engineered drainage system on your site, the existing municipal infrastructure, and/or the existing soils and geography of the receiving watershed. Unless your site included certain unique and rare features, the operation of your R-Tank System will be driven by naturally occurring systems and will function autonomously. However, upholding a proper schedule of Inspection & Maintenance is critical to ensuring continued functionality and optimum performance of the system.

Inspection

Both the R-Tank and all stormwater pre-treatment features incorporated into your site must be inspected regularly. Inspection frequency for your system must be determined based on the contributing drainage area, but should never exceed one year between inspections (six months during the first year of operation).

Inspections may be required more frequently for pre-treatment systems. You should refer to the manufacturer requirements for the proper inspection schedule.

With the right equipment your inspection and measurements can be accomplished from the surface without physically entering any confined spaces. If your inspection does require confined space entry, you MUST follow all local/regional requirements as well as OSHA standards.

R-Tank Systems may incorporate Inspection Ports, Maintenance Ports, and/or adjoining manholes. Each of these features are easily accessed by removing the lid at the surface. With the cover removed, a visual inspection can be performed to identify sediment deposits within the structure. Using a flashlight, ALL access points should be examined to complete a thorough inspection.

Inspection Ports
Usually located centrally in the R-Tank System, these perforated columns are designed to give the user a base-line sediment depth across the system floor.

Maintenance Ports
Usually located near the inlet and outlet connections, you'll likely find deeper deposits of heavier sediments when compared to the Inspection Ports.

Manholes
Most systems will include at least two manholes - one at the inlet and another at the outlet. There may be more than one location where stormwater enters the system, which would result in additional manholes to inspect.

Bear in mind that these manholes often include a sump below the invert of the pipe connecting to the R-Tank. These sumps are designed to capture sediment before it reaches the R-Tank, and they should be kept clean to ensure they function properly. However, existence of sediment in the sump does NOT necessarily mean sediment has accumulated in the R-Tank.

After inspecting the bottom of the structure, use a mirror on a pole (or some other device) to check for sediment or debris in the pipe connecting to the R-Tank.

If sediment or debris is observed in any of these structures, you should determine the depth of the material. This is typically accomplished with a stadia rod, but you should determine the best way to obtain the measurement.

All observations and measurements should be recorded on an Inspection Log kept on file. We've included a form you can use at the end of this guideline.

Maintenance

The R-Tank System should be back-flushed once sediment accumulation has reached 6" or 15% of the total system height. Use the chart below as a guideline to determine the point at which maintenance is required on your system.

R-Tank Unit	Height	Max Sediment Dept
Mini	9.5"	1.5"
Single	17"	3"
Double	34"	5"
Triple	50"	6"
Quad	67"	6"
Pent	84"	6"

Before any maintenance is performed on your system, be sure to plug the outlet pipe to prevent contamination of the adjacent systems.

To back-flush the R-Tank, water is pumped into the system through the Maintenance Ports as rapidly as possible. Water should be pumped into ALL Maintenance Ports. The turbulent action of the water moving through the R-Tank will suspend sediments which may then be pumped out.

If your system includes an Outlet Structure, this will be the ideal location to pump contaminated water out of the system. However, removal of back-flush water may be accomplished through the Maintenance Ports, as well.

For systems with large footprints that would require extensive volumes of water to properly flush the system, you should consider performing your maintenance within 24 hours of a rain event. Stormwater entering the system will aid in the suspension of sediments and reduce the volume of water required to properly flush the system.

Once removed, sediment-laden water may be captured for disposal or pumped through a Dirtbag™ (if permitted by the locality).

ACF ENVIRONMENTAL
LET'S GET IT DONE
2831 Cardwell Road
Richmond, Virginia, 23234
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acfenvironmental.com

Step-By-Step Inspection & Maintenance Routine

1) **Inspection**
    a. Inspection Port
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
    b. Maintenance Port/s
        i. Remove Cap
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod
        iv. Record results on Maintenance Log
        v. Replace Cap
        vi. Repeat for ALL Maintenance Ports
    c. Adjacent Manholes
        i. Remove Cover
        ii. Use flashlight to detect sediment deposits
        iii. If present, measure sediment depth with stadia rod, accounting for depth of sump (if present)
        iv. Inspect pipes connecting to R-Tank
        v. Record results on Maintenance Log
        vi. Replace Cover
        vii. Repeat for ALL Manholes that connect to the R-Tank

2) **Maintenance**
    a. Plug system outlet to prevent discharge of back-flush water
    b. Determine best location to pump out back-flush water
    c. Remove Cap from Maintenance Port
    d. Pump water as rapidly as possible (without over-topping port) into system until at least 1”
    of water covers system bottom
    e. Replace Cap
    f. Repeat at ALL Maintenance Ports
    g. Pump out back-flush water to complete back-flushing
    h. Vacuum all adjacent structures and any other structures or stormwater pre-treatment systems that require attention
    i. Sediment-laden water may be captured for disposal or pumped through a Dirtbag™.
    j. Replace any remaining Caps or Covers
    k. Record the back-flushing event in your Maintenance Log with any relevant specifics

R-Tank Maintenance Log

Site Name:_____

Location:_____

System Owner:_____

Company Responsible for Maintenance:_____

Contact:_____

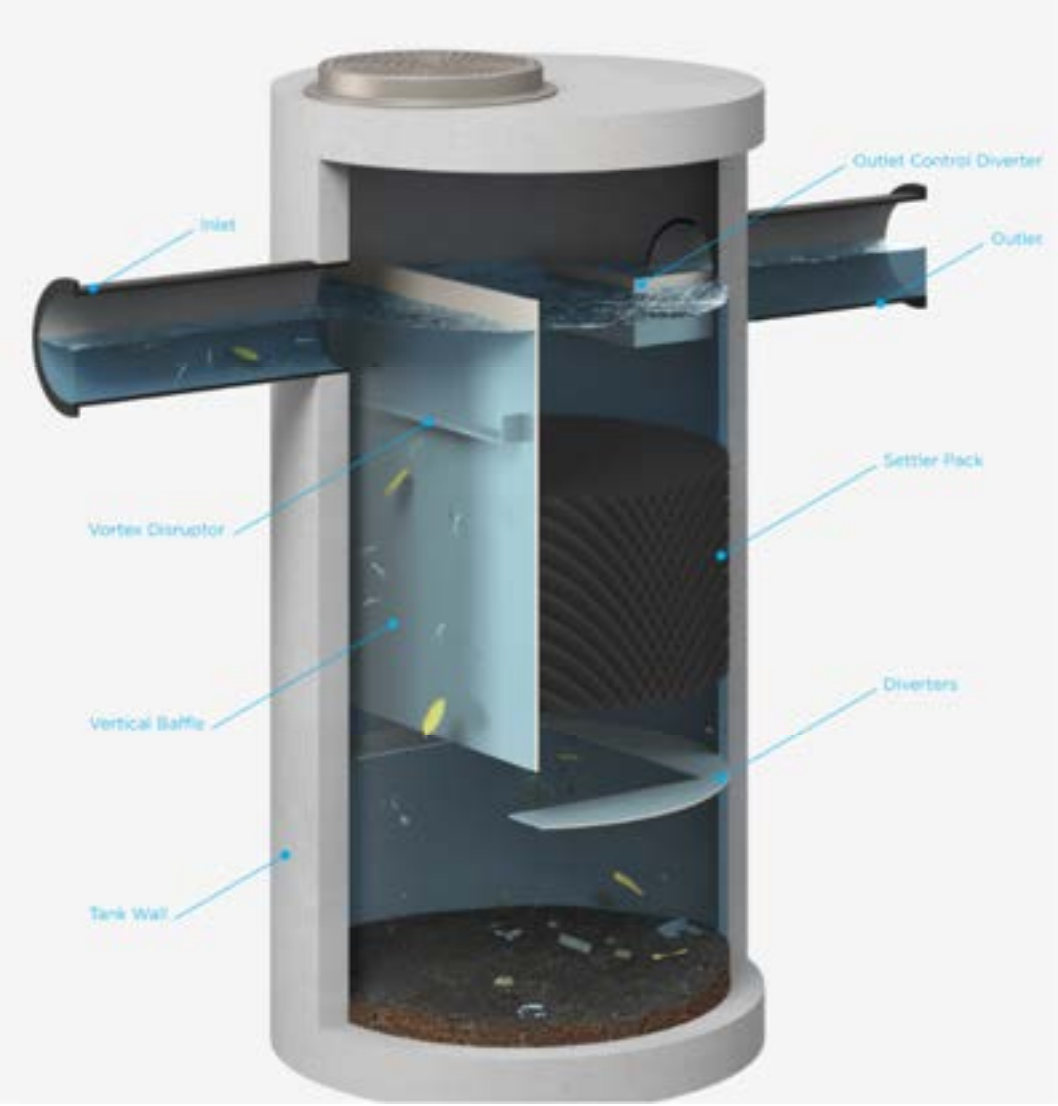
Phone Number:_____

Date	Location	Depth to Bottom	Depth to Sediment	Sediment Depth	Observations/Notes	Initials

StormTrap

StormSettler®

StormSettler® Inspection and Maintenance Manual



PHONE 815 941 4549
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EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

StormSettler® Manufacturer's Inspection and Maintenance Manual

The StormSettler treatment device, manufactured by StormTrap, is a hydrodynamic separating device designed to capture and store pollutants from stormwater. StormSettler's maintenance frequency is site dependent and routine inspections are recommended to ensure that the system is functioning as designed. Please contact your authorized StormTrap representative if you have questions regarding the inspection and maintenance of the StormSettler system.

Inspection Scheduling

StormSettler inspections are important to assess the condition of the system internals to ensure peak performance. The frequency of inspections and maintenance is dependent on site specific loading conditions and rainfall frequency. Within the first year of operation, it is recommended that the unit be inspected quarterly to determine the rate of pollutant accumulation in order to develop a more accurate maintenance schedule. Inspections should be performed during dry weather conditions when no flow is entering the system. StormSettler systems are recommended to be inspected whenever the upstream and downstream catch basins and stormwater pipes of the stormwater collection system are inspected or maintained. If checked on an annual basis, the inspection should be conducted before the stormwater season begins to ensure that the system is functioning properly for the upcoming storm season.

Inspection and Maintenance Equipment

The following equipment is recommended to have during inspections:

- StormSettler Inspection and Maintenance Manual and Inspection Checklist
- Flashlight

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EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage
- Pole with skimmer or net (optional for maintenance procedure)
- Vacuum truck or similar trailer mounted equipment (for maintenance procedure)

Inspection Procedure

Inspections should be done such that a sufficient time has lapsed since the most recent rain event to allow for a static water condition and rainfall is not anticipated to occur during the duration of the inspection procedure. StormSettler does not require entry into the system for inspection or maintenance; however, if entering the system is deemed necessary, it is prudent to note that prior to entry into any underground storm sewer or underground structure, appropriate OSHA and local safety regulations and guidelines should be followed.

To begin the inspection process, set up the necessary traffic control signage per local ordinances. Open all manhole covers using appropriate equipment and ensure the manhole covers are in a location that would not prohibit the inspection process. Visually inspect the system at all manhole access opening locations. During the visual inspection, ensure that all components are in working order. An inspection checklist is provided within this guide for ease and reference.

If any components are not in working order, contact your authorized StormTrap representative.

After the components are inspected, visually quantify the accumulation of trash, debris, and hydrocarbons within the system by using a measuring device such as a tape measure, grade stick, dipstick, etc. Measure and record the depth of trash, debris, and hydrocarbon

accumulation from the static water elevation (pipe elevation) to the average elevation of the trash and debris.

If sorbent materials are used for retention of hydrocarbons, the level of discoloration of the sorbent material should also be noted during the inspection process.

For sediment accumulation, utilize either a sludge sampler or a sediment pole to measure and document the amount of sediment accumulation. To determine the amount of sediment in the system with a sludge sampler, follow the manufacturer's instructions. If utilizing a sediment pole or similar device, first insert the pole to the top of the sediment layer and record the depth. Then, insert the pole to the bottom of the system and record the depth. The difference in the two measurements corresponds to the amount of sediment in the system. Alternatively, sediment depth can also be determined by taking a measurement from a known and consistent elevation (manhole frame, pipe invert, vertical baffle top, etc.) to the top of the sediment layer. That distance can then be compared to the measurement between the known elevation to the sump floor. The difference between these two measurements will correspond to the sediment layer depth.

After completion of the inspection process, ensure that manhole covers are replaced and securely seated in the manhole frame and remove traffic control signage.

StormSettler units can also be installed with remote monitoring technology that measures the current capacities within the system and reports the data to any internet capable device. If a remote monitoring device is used, proper maintenance of the device, such as replacement of batteries, cleaning sensor, etc. needs to be completed to ensure functionality of the remote monitoring technology.

If it is determined during the inspection process that the accumulation of trash and debris or sediment is at or near the capacities of the StormSettler device, maintenance should be performed to ensure performance is not impacted for subsequent storm events.

Maintenance Procedure

Maintenance should be done such that a sufficient time has lapsed since the most recent rain event to allow for a static water condition and rainfall is not anticipated to occur during the duration of the maintenance procedure.

To begin the maintenance process, set up the necessary traffic control signage per local ordinances. Open all manhole covers using appropriate equipment and ensure the manhole covers are in a location that would not prohibit the maintenance process.

Visually inspect the system at all manhole access opening locations. During the visual inspection, ensure that all components are undamaged. If any components are not in working order, contact your authorized StormTrap representative.

After the components are inspected, remove all accumulated trash, debris, and hydrocarbons stored on the surface of the water using the vacuum hose or pole with attached skimmer or net.

If sorbent materials are used, the materials may have to be moved to not impact pollutant removal. If significant discoloration of the sorbent material has occurred, simply remove the sorbent materials and replace upon completion of maintenance activities.

To remove sediment, insert the vacuum truck's hose on the inlet side of the vertical baffle into the sump. The system should be completely drained, and all sediment should be removed from the sump. For smaller diameter devices (3' or 4' units), a 6" or smaller vacuum hose diameter may be required for effective cleaning due to maneuverability constraints. If the vacuum truck that is being utilized has a hose diameter greater than 6", a smaller tube can be affixed to the boom hose with duct tape to improve maneuverability within the device.

If excessive sediment or debris buildup occurs within the device, components can be washed with sewer jetting equipment or a spray lance to remove stubborn materials. Particular

attention must be taken when spraying the settler pack. A wide spray nozzle is recommended around the settler pack to ensure there is no damage to the material.

After completion of the maintenance procedure, complete a post maintenance inspection to ensure that all components are in good condition. Ensure that manhole covers are replaced and securely seated in the manhole frame and remove traffic control signage. Dispose of all pollutants removed during maintenance per local, state, and federal guidelines and regulations.

Inspection and Maintenance Documentation

Proof of inspections and maintenance activities is the responsibility of the owner. All inspection and maintenance reports and any relevant data should be kept on site or at a location where they will be accessible in accordance with local requirements. It is a good practice to take time stamped photographs after every inspection and maintenance event to include within logs. It is also good practice to keep records of rainfall events between maintenance events and the weight of material removed, even if no report is required. Some municipalities may require inspection and maintenance reports be forwarded to the proper governmental permitting agency on an annual basis. Refer to your local regulations and ordinances for any additional maintenance requirements and schedules not contained herein. Inspections and maintenance activities should be performed to ensure performance is not impacted and the device performs as designed.

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FAX 331 318 5347
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EMAIL info@stormtrap.com
1287 Windham Parkway
Romeoville, Illinois 60446

Inspection Items

- StormSettler Maintenance Manual and Inspection Checklist
- Flashlight
- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage

Maintenance Items

- StormSettler Maintenance Manual and Inspection Checklist
- Flashlight
- Manhole hook/lifter or pry bar to lift the manhole cover
- Measuring device(s) of sufficient length to reach the bottom of the device's sump
- Proper personal protective equipment
- Adequate traffic control signage
- Pole with skimmer or net (optional for maintenance procedure)
- Vacuum truck or similar trailer mounted equipment (for maintenance procedure)

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1287 Windham Parkway
Romeoville, Illinois 60446

StormTrap

StormSettler	StormSettler Inspection Checklist

Structure ID:		
Location/Address:		
Inspector Name:		Inspector Contact Information:
Date:	Time:	Weather Conditions:
Rain in the Last 48hrs:		If yes, list amount and timing:

*Do not enter underground chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.
*Follow inspection and maintenance instructions provided by system manufacturer.
*Please circle the condition of each inspection item below. 1 being the worst and 5 being the best condition.

Inspection Item	Condition	Comment	Action Needed	
1.) Frames and Covers				
Accumulation of debris and/or sediment	1 2 3 4 5		Yes	No
Component(s) structural condition	1 2 3 4 5		Yes	No
2.) Inlet Pipe(s)				
Accumulation of debris and/or sediment	1 2 3 4 5		Yes	No
Component(s) structural condition	1 2 3 4 5		Yes	No
3.) Vortex Disruptor				
Accumulation of debris and/or sediment	1 2 3 4 5		Yes	No
Component(s) structural condition	1 2 3 4 5		Yes	No
4.) Verticle Baffle				
Accumulation of debris and/or sediment	1 2 3 4 5		Yes	No
Component(s) structural condition	1 2 3 4 5		Yes	No
5.) Enhanced Settling Pack				
Accumulation of debris and/or sediment	1 2 3 4 5		Yes	No
Component(s) structural condition	1 2 3 4 5		Yes	No
6.) Flow Modifiers				
Accumulation of debris and/or sediment	1 2 3 4 5		Yes	No
Component(s) structural condition	1 2 3 4 5		Yes	No

7.) Outlet Control Diverter								
Excessive accumulation of debris and/or sediment present	1	2	3	4	5		Yes	No
Component(s) structurally sound	1	2	3	4	5		Yes	No
8.) Outlet Pipe								
Accumulation of debris and/or sediment	1	2	3	4	5		Yes	No
Component(s) structurally sound	1	2	3	4	5		Yes	No
9.) Concrete Chamber								
Component(s) structural condition	1	2	3	4	5		Yes	No
10.) Sediment Storage Capacity								
Sediment storage capacity	1	2	3	4	5		Yes	No
Additional Notes:								
Wet Weather Inspection Needed:	Yes	No						
Maintenance Activities Needed:	Yes	No						

Stormwater BMP Maintenance Log

BMP Structure	Inspector	Date	Work Performed	Comments
Pavement Sweeping				
Vegetated Slopes				
Grass Swales				
Catch Basins/Area Drains				
Diversion Structures				
Riprap Sediment Forebay				
Hydrodynamic Separators				
Bioretention Basin 1				
Bioretention Basin 2				
Bioretention Basin 3				
Subsurface Sand Filter 1				
Subsurface Sand Filter 2				
Subsurface Sand Filter 3				
Subsurface Sand Filter 4				
Subsurface Sand Filter 5				
Subsurface Sand Filter 6				
Outlet Control Structures				
Stormwater Outfalls				
Other				
Additional Comments:				

APPENDIX B: STORMWATER QUALITY CALCULATIONS

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Redevelopment Treatment Calculations - Per Section 4.C.2.d of the MaineDEP Chapter 500 Rules

Area of Redevelopment (acres) = 14.50

a. Existing Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads/Parking Lot	5	0.00	0.00
Other Roads/Medium Use Parking Lot	4	2.44	9.74
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	6.35	19.04
Other Roofs/Landscaped Area/Paved Walkway	2	4.73	9.46
Non-grass Landscaping/Stormwater	1	0.98	0.98
Forest/Meadow	0	0.00	0.00
			39.23

b. Proposed Pollutant Impact

Land Use	Pollutant Ranking	Land Area (Ac.)	Impact
High Use Roads/Parking Lot	5	1.30	6.48
Other Roads/Medium Use Parking Lot	4	0.94	3.77
Other Parking Lots/Flat Asphalt Roofs/Industrial Roofs	3	0.17	0.50
Other Roofs/Landscaped Area/Paved Walkway	2	11.43	22.86
Non-grass Landscaping/Stormwater	1	0.65	0.65
Forest/Meadow	0	0.00	0.00
			34.26

c. Existing Impact/Total Redevelopment Acres

2.706

d. Proposed Impact/Total Redevelopment Acres

2.363

e. Item D Minus Item C

-0.34

Ranked Impact Change Due to Redevelopment	Percentage of Developed Area that Must be Treated
0.0 or less	0% (Stormwater projects)
	50% (Site projects)
≥ 0.0 to ≤ 1.0	60%
> 1.0 to ≤ 2.0	70%
> 2.0 to ≤ 3.0	80%
> 3.0	Same treatment level as for new development

Stormwater Treatment Summary	*Treatment Percentage*	*Treated Area (SF)*
Required	50.0%	315,749
Provided	50.9%	321,423

WQV Summary	*Subsurface Sand Filter 1*	*Subsurface Sand Filter 2*	*Subsurface Sand Filter 3*	*Subsurface Sand Filter 4*	*Subsurface Sand Filter 5*
Proposed Treated Area (SF)	48,800	49,527	86,298	7,107	46,958
WQV Required (CF)	4,067	3,283	6,194	549	3,013
WQV Provided (CF)	6,988	5,447	10,789	1,086	4,718

WQV Summary	*Subsurface Sand Filter 6*	*Bioretention Basin 1**	*Bioretention Basin 2*	*Bioretention Basin 3*
Proposed Treated Area (SF)	12,500	21,684	28,165	20,384
WQV Required (CF)	1,042	1,009	1,118	913
WQV Provided (CF)	1,798	1,009	1,170	917
**Bioretention Basin 1 volume is fixed by site constraints; proposed treated area is calculated based on the fixed basin volume*				

Redevelopment Treatment Calculations - Per Section 5 of the City of Portland Technical Manual

Area of non-roof, redeveloped impervious surface (acres) = 5.12

Area of non-roof, redeveloped impervious surface treated (acres) = 3.06 60% > 50% required

12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Sizing Calculations

Water Quality Volume for Subsurface System 1

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	48800	SF
Pervious Area =	0	SF
WQV Required =	**4067**	CF
WQV Provided =	**6988**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**2440**	SF
Filter Surface Area Provided=	**2993**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	0	SF
Total Volume Required =	**0**	CF
Method: Hydrodynamic Separator, Riprap Sediment Forebay and Pretreatment Row		
Total Volume Provided =	**68**	CF

Water Quality Volume for Subsurface System 2

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	32649	SF
Pervious Area =	16878	SF
WQV Required =	**3283**	CF
WQV Provided =	**5447**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**1970**	SF
Filter Surface Area Provided=	**2621**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	32649	SF
Total Volume Required =	**42**	CF
Method: Pretreatment Row		
Total Volume Provided =	**42**	CF

Water Quality Volume for Subsurface System 3

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	66338	SF
Pervious Area =	19960	SF
WQV Required =	**6194**	CF
WQV Provided =	**10789**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**3716**	SF
Filter Surface Area Provided=	**4640**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	66338	SF
Total Volume Required =	**85**	CF
Method: Hydrodynamic Separator and Pretreatment Rows		
Total Volume Provided =	**109**	CF

12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 3/26/2024
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Water Quality Volume for Subsurface System 4

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	6251	SF
Pervious Area =	856	SF
WQV Required =	**549**	CF
WQV Provided =	**1086**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**330**	SF
Filter Surface Area Provided=	**505**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	2241	SF
Total Volume Required =	**3**	CF
Method: Pretreatment Row		
Total Volume Provided =	**8**	CF

Water Quality Volume for Subsurface System 5

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	28964	SF
Pervious Area =	17995	SF
WQV Required =	**3013**	CF
WQV Provided =	**4718**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**1808**	SF
Filter Surface Area Provided=	**2194**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	14891.86	SF
Total Volume Required =	**19**	CF
Method: Pretreatment Row		
Total Volume Provided =	**63**	CF

Water Quality Volume for Subsurface System 6

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	12500	SF
Pervious Area =	0	SF
WQV Required =	**1042**	CF
WQV Provided =	**1798**	CF

Surface Area = (5%*Impervious Area) + (2%*Pervious Area)

Filter Surface Area Required=	**625**	SF
Filter Surface Area Provided=	**879**	SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	0	SF
Total Volume Required =	**0**	CF
Method: Pretreatment Row		
Total Volume Provided =	**21**	CF

Woodard & Curran
12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 5/17/2024
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Bioretention Basin 1 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area* =	6648	SF		
Pervious Area* =	18527	SF		
Sum* =	0.58	ac.	< 1 ac.	
WQV Required* =	**1172**	CF		
WQV Depth =	6	in	</=6"	
Soil Filter Void Space =	40	%		
WQV Storage (Ponding) =	893	CF		
WQV Storage (Soil)* =	288	CF		
WQV Storage (TOTAL) =	**1181**	CF		

**Bioretention Basin 1 volume is fixed by site constraints; proposed treated area is calculated based on the fixed basin volume.*

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**1021**	SF		
Filter Surface Area Provided =	**1442**	SF	<2,000 SF	

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	8864	SF		
Total Volume Required =	11	CF		
Method: Grass Filter Strip Edge	200	LF x min 5' width x 1" depth		83 CF

Bioretention Basin 2 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	3590	SF		
Pervious Area =	24575	SF		
Sum =	0.65	ac.	< 1 ac.	
WQV Required =	**1118**	CF		
WQV Depth =	6	in	</=6"	
Soil Filter Void Space =	40	%		
WQV Storage (Ponding) =	924	CF		
WQV Storage (Soil)* =	334	CF		
WQV Storage (TOTAL) =	**1258**	CF		

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**989**	SF		
Filter Surface Area Provided =	**1672**	SF	<2,000 SF	

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	3590	SF		
Total Volume Required =	5	CF		
Method: Grass Swale	80	LF x min 5' width x 6" depth		200 CF

12 MOUNTFORT STREET
PORTLAND, MAINE 04101

CLIENT: IDEALS
PROJECT: Phase 1 Development
CALCS BY: AL/LS
DATE: 5/17/2024
PROJECT NO.: 233482.00

Sizing Calculations (cont.)

Bioretention Basin 3 - Per Ch. 7.2 Vol. III MaineDEP Stormwater BMP Manual

WQV = (1" * Impervious Area) + (0.4" * Pervious Area)

Impervious Area =	4672	SF	
Pervious Area =	15712	SF	
Sum =	0.47	ac.	< 1 ac.
WQV Required =	**913**	CF	
WQV Depth =	6	in	</=6"
Soil Filter Void Space =	40	%	
WQV Storage (Ponding) =	924	CF	
WQV Storage (Soil)* =	262	CF	
WQV Storage (TOTAL) =	**1186**	CF	

Surface Area = (7%*Impervious Area) + (3%*Pervious Area)

Filter Surface Area Required (Total)=	**798**	SF	
Filter Surface Area Provided =	**1310**	SF	<2,000 SF

Sediment Pre-treatment = (55.6 CF/Acre) * (acres of non-roof impervious)

Non-Roof Impervious Area (total) =	4672	SF			
Total Volume Required =	6	CF			
Method: Grass Swale x 2	90	LF x min 5' width x 6" depth		225	CF
	80	LF x min 5' width x 6" depth		200	CF

APPENDIX C: FIGURES

MATCHLINE

MATCHLINE

REDEVELOPMENT AREA

LEGEND

- POLLUTANT RANKING 5
- POLLUTANT RANKING 4
- POLLUTANT RANKING 3
- POLLUTANT RANKING 2
- POLLUTANT RANKING 1
- POLLUTANT RANKING 0

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

EXISTING SITE IMPACT ANALYSIS

FIG. A

MATCHLINE

REDEVELOPMENT AREA

MATCHLINE

REDEVELOPMENT AREA

LEGEND

- POLLUTANT RANKING 5
- POLLUTANT RANKING 4
- POLLUTANT RANKING 3
- POLLUTANT RANKING 2
- POLLUTANT RANKING 1
- POLLUTANT RANKING 0

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

PROPOSED SITE IMPACT ANALYSIS

FIG. B

MATCHLINE

REDEVELOPMENT AREA

MATCHLINE

TREATMENT AREA, TYP.

REDEVELOPMENT AREA

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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Number	Revision	Date

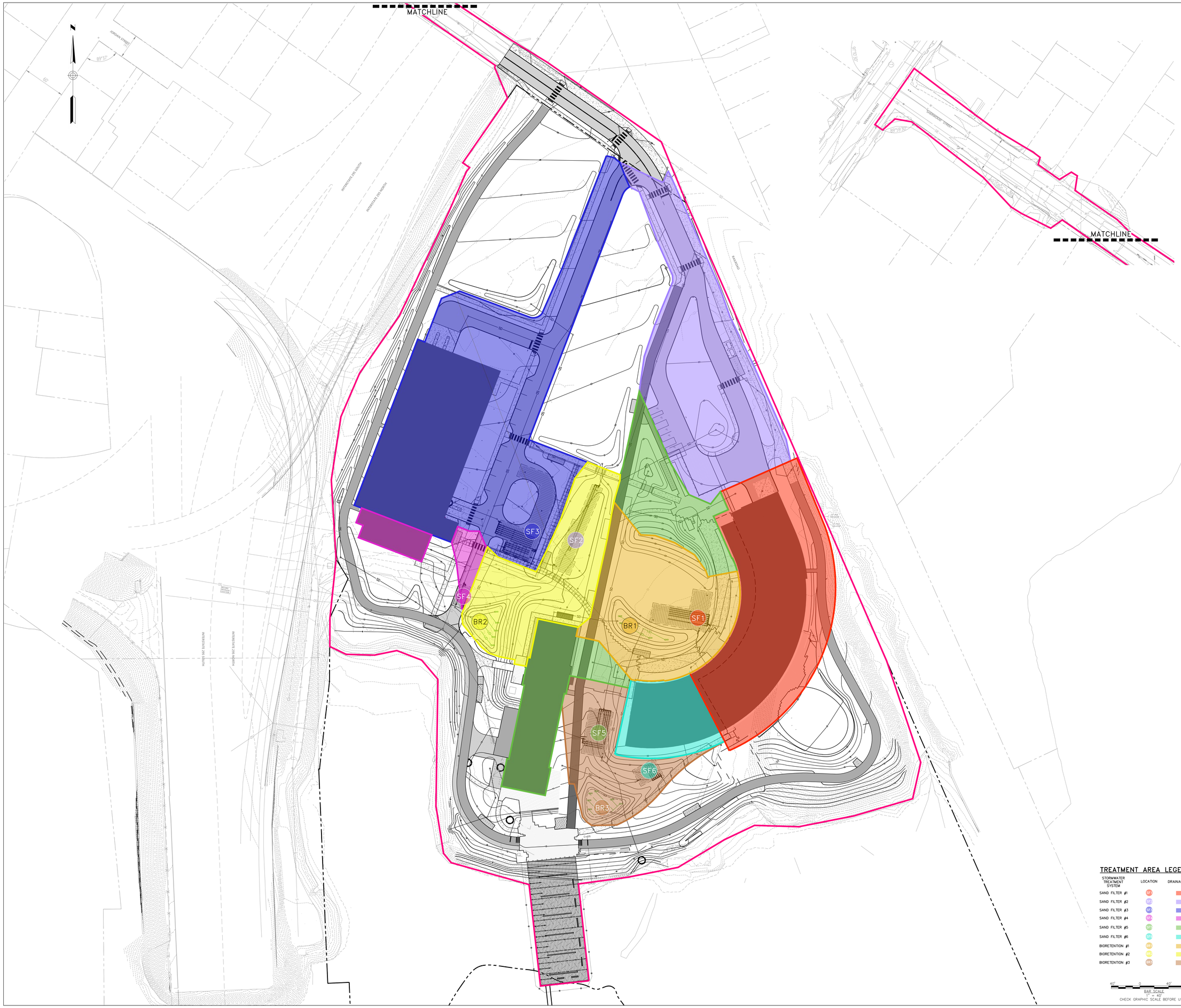
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

REDEVELOPMENT FIGURE

FIG. C



IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

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Number	Revision	Date

Stamp

Job #	2202
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Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=40'

Drawing Title

TREATMENT AREA FIGURE

FIG. D

APPENDIX D: MANUFACTURER DESIGN REVIEW LETTER

Ferguson Waterworks
94 Pleasant Ave
South Portland, ME 04106

Amy Lebel, PE.
Project Engineer
Woodard & Curran
12 Mountfort Street
Portland, ME 04101

March 25, 2024

SUBJECT: IDEALS Roux Campus – Portland, ME
R-Tank - Plan Review and Construction Oversight Commitment

Dear Amy,

Thank you for forwarding the permit plans for the IDEALS Roux Campus in Portland, ME to Ferguson Waterworks for review of the proposed sand filter systems with R-Tank modules.

Our team has reviewed the "Overall grading & drainage plan" with the latest revision on March 14th 2024, which identifies six R-Tank systems also utilizing sand filters beneath the R-Tank units. The systems consist of the following:

- Sand Filter 1: 659 R-Tank^{HD} Single+Mini modules, 132 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 2: 570 R-Tank^{HD} Single+Mini modules, 82 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 3: 1002 R-Tank^{HD} Single+Mini modules, 212 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 4: 93 R-Tank^{HD} Single+Mini modules, 15 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 5: 467 R-Tank^{HD} Single+Mini modules, 122 R-Tank^{HD} Single+Mini Access modules
- Sand Filter 6: 171 R-Tank^{HD} Single+Mini modules, 40 R-Tank^{HD} Single+Mini Access modules

Per Maine DEP regulations, the systems appear to be sized appropriately to the minimum Sand Filter sizing requirements according to the impervious and pervious area each system is responsible for treating.

Each R-Tank system includes a Treatment Row at each inflow point to accommodate the flow rate for the 1yr 24hr storm event. It is recommended that the Treatment Row sizing is

reviewed to ensure the proper number of R-Tank units has been provided at each inlet location (accounting for 0.02 cfs per module per DEP regulations).

Sand Filters 1, 3 & 4 – R-Tanks are designed with the typical 3" stone base, 2 ft stone sides, and a sectional build-up over the system that meets the min. cover guidance for R-Tank^{HD} systems designed in traffic loaded locations. Min. cover requirement for these systems are 20" total cover (includes 12" on top of the tanks). The cover over the system fits within the allowable cover limits.

Sand Filters 2, 5 & 6 – R-Tanks are designed with the typical 3" stone base, 2 ft sides, and a sectional build-up over the system that meets the min. cover guidance for R-Tank^{HD} systems designed for greenspace areas and non-vehicular traffic locations. Min. cover requirements for pedestrian load rated systems only are 12" total cover (includes 6" stone on top of the tanks). The cover over the system fits within the allowable cover limits.

The tanks are to be wrapped with an N080 Non-woven geotextile fabric and the excavation is to be wrapped with 30 mil pvc liner between two layers of N080 non-woven geotextile. Additional separation fabrics are to be used between each layer transition. See Ferguson layout sheets, or engineer plans, for more specific information as to which fabrics should be placed in between each layer.

An appropriate number of inspection ports have been provided.

Overall, Ferguson takes no exceptions to the current location and application of the R-Tank system for this project.

With regard to the installation, Ferguson will host a preconstruction meeting with the site contractor and will visit the site several times during the installation to ensure the installation is being conducted in accordance with our standard installation procedures and specifications.

Please review and contact me with any questions from your office. We look forward to working with you on this project.

Sincerely,
Brett Keszczyk,
Green Stormwater Infrastructure (GSI) Engineer
Ferguson Waterworks

Cc: Rob Woodman, PE – Director of Engineering & Green Stormwater Infrastructure
Maggie Chase, PE – Green Stormwater Infrastructure Specialist (New England)

[redacted]



woodardcurran.com

ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY

Site Location of Development

1 Bean Pot Circle
Portland, ME

Prepared for
Initiative for Digital Engineering and Life Sciences (IDEALS)
November 2023

12 Mountfort Street
Floors 5 & 6
Portland, ME 04101
800.426.4262

woodardcurran.com

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1. DEVELOPMENT DESCRIPTION

This narrative report is in support of a Site Location of Development (SLOD) Permit Application on behalf of Northeastern University (Applicant) and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), for development of the Roux Institute at Northeastern University campus located at 1 Bean Pot Circle in Portland, Maine (the Site). A letter authorizing IDEALS and Woodard & Curran to act as the agent on behalf of the Applicant is attached to this Section. It is our understanding that the MaineDEP has determined that the City of Portland has delegated review authority over this project.

1.1 OBJECTIVES & DETAILS

The proposed development is the first of multiple phases of the Roux Institute at Northeastern University Campus. As noted in the Site Plan Application, the Applicant developed a long-range plan for the institution, known as an Institutional Development Plan (IDP), as part of the Institutional Overlay Zone (IOZ) designation process for the campus. The City of Portland Planning Board approved the Roux Campus IDP on November 22, 2022, and the Portland City Council subsequently and unanimously approved the zoning map and text amendments to establish the IOZ regulatory framework and change the underlying zone to B-5 Mixed-Use Business on February 6, 2023.

Phase 1 includes construction of a Learning, Research, and Collaboration Building, renovation of the Bean Building to create business incubator space, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements. Meaningful public open space will be established in this first phase to ensure public access to this signature waterfront amenity. The area of disturbance for development of Phase 1 and reconstruction of Sherwood Street is approximately 14.5-acres and will include approximately 7.3-acres of impervious area. It should be noted that roof areas were considered fully impervious (as any rooftop landscaping systems do not infiltrate into the ground), and significant areas of landscaping and green roof are proposed.

The proposed Phase 1 project is designed with consideration to future development, with the interior-most and waterfront spaces being developed first to reduce impacts of construction of future phases. Likewise, the site utilities are designed with consideration and capacity for full build-out of the Site to minimize future construction impacts and enable utility access to occupied buildings during construction of future phases.

In addition to the SLOD permit, the proposed work requires the following permits:

- City of Portland Major Site Plan;
- City of Portland Historic Preservation Application for Certificate of Appropriateness;
- City of Portland Flood Hazard Development Permit;
- Portland Harbor Commissioners Marine Construction Permit;
- Maine DOT Traffic Movement Permit (TMP);

- Maine DEP NRPA Individual Permit;
- Army Corps of Engineers General Permit; and
- FAA Notice of Proposed Construction.

1.2 EXISTING FACILITIES

The Site is located within Portland's East Deering neighborhood, at the end of Sherwood Street, adjacent to Maine Yacht Services and near a residential area of single and multi-family homes (three-story apartment buildings) and a commercial node featuring restaurants, bars, automobile mechanics, and offices. While proximate to these areas, the Site is remarkably buffered; I-295 to the west, state-owned vacant parcels to the north, a disused rail corridor and marine business to the east, and Casco Bay to the south collectively surround the property.

The Site includes approximately 13 acres above mean higher high water (MHHW) line as well as an adjacent 11 acres of submerged lands. A survey of the Site was completed by VHB, Inc. (dated June 30, 2021 and July 17, 2023). Approximately 9 acres of land above the mean higher high water line are impervious (paved areas, building roofs, foundations, etc.). The remaining 4 acres of permeable area include lawn and approximately half an acre of vegetated non-lawn area adjacent to the rail corridor abutting the site to the east. No stormwater treatment systems exist on the Site.

The Site was occupied by residences and a lobster cannery prior to 1913, when Burnham & Morrill (B&M) relocated its food manufacturing operations to the Site from Franklin Street. Shortly thereafter, the flagship cannery building (Bean Building) was constructed, as well as the adjacent codfish building on the pier. The site was further improved with buildings and parking to support operations. Due to its industrial use, the site is surrounded by security fencing, and the interior and waterfront have historically been inaccessible to the public. Canning operations ceased in 2021.

On May 23, 2023, IDEALS received a demolition permit from the City, and commenced demolition of all existing buildings on the site, retaining only the Bean Building and the Codfish Building.

1.3 TOPOGRAPHIC MAP

A USGS topographic map showing the approximate location of the proposed development is attached to this Section for your reference. The proposed development is located within the Portland West Quadrangle.

1.4 CONSTRUCTION PLAN

The proposed development will be constructed in phases. Construction of Phase 1 is anticipated to begin in Spring 2024. Erosion and sediment control measures will be installed prior to any ground disturbing activities, as described in Section 14 of this Report. The Contractor will be required to provide a construction management plan for the project, subject to the review and approval of the City and Engineer.

The Site will be managed during construction to minimize impacts to the adjacent land uses. Maintaining access to adjacent properties and public facilities will be a priority. Traffic impacts to adjacent roadways, including Sherwood Street and Veranda Street, will be minimized during construction to the greatest extent possible. Traffic controls will consist of temporary signage and barriers where necessary to manage vehicle, pedestrian, and bicycle traffic and direct it safely around the construction area. Work affecting traffic circulation such as underground utility work and grading activities will be conducted during periods of low traffic to reduce potential impacts.

Below is the anticipated sequence of construction activities for major aspects of the development:

- Installation of erosion and sediment control measures and traffic control measures;
- Demolition and site preparation activities;
- Construction of utilities, stormwater management system, and roadway;
- Construction of buildings;
- Installation of landscaping and final surface materials; and
- Removal of erosion and sediment control measures.

1.5 DRAWINGS

Design drawings showing the proposed development are uploaded separately to ProjectDox.

1.6 LIST OF ATTACHMENTS

The following documents are attached to this Section:

- Agent Letter;
- Topographic Map; and
- Design Drawings (uploaded separately to ProjectDox).

Northeastern

October 25, 2023

Sam Reiche
Chief Operating Officer and Head of Real Estate
Initiative for Digital Engineering and Life Sciences (IDEALS)
100 Commercial Street, Suite 40
Portland, Maine 04101

Dear Sam:

Northeastern University is preparing plans for the first phase of development at the Roux Institute, located at 1 Bean Pot Circle in Portland Maine. Northeastern University is authorizing the Initiative for Digital Engineering and Life Sciences (IDEALS) and Woodard & Curran, Inc., to assist in the preparation of land-use permit applications for this project. IDEALS and Woodard & Curran are authorized as our agent to represent Northeastern University in addressing questions on the plans and applications for this project.

Sincerely,

Thomas E. Nedell,
Senior Vice President for Finance and Treasurer

Office of the Senior Vice President Finance

177 Huntington Ave.
360 Huntington Ave.
Boston, MA 02115

617.373.2240
fax 617.373.4728

finance.northeastern.edu



Woodard & Curran	Client Info: IDEALS ROUX INSTITUTE PHASE 1 1 BEAN POT CIRCLE PORTLAND, ME 04103	Job No: 0233482.00 Date: SEPT 2023 Scale: 1" = 24,000' Des by: JM Drn by: JM Chk by: AL	Drawing Title SITE LOCATION MAP	Drawing Number 0233482.00 Location Map

2. TITLE, RIGHT, OR INTEREST

2.1 RIGHT, TITLE & INTEREST

The Project will occur on parcels of land identified by the City as Map 447 Lot A001 and Lot A002 and owned by IDEALS. IDEALS is in the process of transferring ownership of the parcel to Northeastern University, as documented by the Purchase and Sale Agreement attached to this Section. Conveyance of the property to Northeastern University will occur subsequent to site plan approval and prior to application for a building permit. A copy of the City parcel maps is also attached for reference.

2.2 EASEMENTS & OTHER BURDENS

Existing easement's locations and descriptions are reflected on the survey drawings, uploaded under separate cover.

2.3 LIST OF ATTACHMENTS

- Purchase and Sale Agreement; and
- City Parcel Maps.

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EXECUTION VERSION

AGREEMENT FOR THE PURCHASE AND SALE OF REAL ESTATE

THIS AGREEMENT is effective as of October 23, 2023 by and between **NORTHEASTERN UNIVERSITY**, a Massachusetts non-profit corporation with an address of 360 Huntington Avenue, Boston, Massachusetts 02115 ("Buyer"), and **THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCES**, a Maine non-profit corporation with an address of 100 Commercial Street, Portland, Maine 04101 ("Seller").

RECITALS

WHEREAS, in furtherance and fulfillment of that certain Memorandum of Understanding, dated July 27, 2022 by and between Buyer and Seller (the "MOU"), the Seller desires to sell, transfer and convey to Buyer a certain parcel of land, together with the improvements thereon, located on the easterly side of Interstate 295 and the southerly side of Sherwood Street in the City of Portland, County of Cumberland and State of Maine (the "Campus") as more specifically described herein; and

WHEREAS, the MOU and further agreements by and among Buyer, Seller, and David and Barbara Roux (the "Rouxs") envision that Buyer will develop the Campus for the creation of a graduate institute (the "Institute"):

- instructing students in the fields of artificial intelligence, digital science, data visualization, computational medicine, genomics and life sciences and project management, and develop content and pedagogy therefor,
- conducting research in the fields described above, among others, and
- encouraging innovation and entrepreneurialism among new and established companies deploying the above-mentioned skills and technologies,

WHEREAS, the buyer has agreed to develop the Campus as the permanent home of the Institute with other supporting infrastructure to encourage learning, collaboration, innovation and other progress, and

WHEREAS, it is the intent of the Seller and the Rouxs that the Campus will, over time, become a force for education, research, collaboration and entrepreneurialism meaningful to the 21st century economy, innovation and job creation.

WITNESSETH AS FOLLOWS:

1. PURCHASE AND SALE. Seller agrees to sell and Buyer agrees to buy, on the terms and conditions hereinafter set forth, approximately thirteen (13) acres of land and buildings generally situated at 1 Bean Pot Circle, Portland, Maine together with all improvements that may at the time of closing be thereon (except as specified below) and all rights and easements appurtenant thereto, which parcel is more particularly bounded and referenced by the City of Portland Assessor's Office as Map 447-A-001-001 and 447-A-001-002 and as more fully described on **Exhibit A** attached hereto, being the same premises described in a Quitclaim Deed

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with Covenant from B&G Foods North America, Inc. to Seller, dated March 23, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39282, Page 151 together with and including all abutting or adjacent tidal flats, intertidal lands, and related rights in, to and under any submerged lands easements or leases between Seller and/or any predecessor of Seller with the State of Maine (together the "Property"). The following shall also be delivered and conveyed to Buyer at Closing hereunder:

A. Conveyance of tangible personal property, if any via Bill of Sale.

B. Conveyance of intangible personal property, if any, associated with the Property, to the extent owned by Seller, by Bill of Sale and Assignment.

C. Assignment and Assumption of the Maine Yacht Center lease (the "MYC Lease") of a portion of the Property, in form and substance reasonably acceptable to Buyer.

D. Conveyance/Assignment and Assumption of Submerged Land Easement, which requires notice to the Maine State Bureau of Parks and Lands.

E. Assignment and Assumption of the following MDEP Permits if in effect at the time (for which Buyer shall seek MDEP consent):

i. Maine Department of Environmental Protection Air Emission License A-77-71-M-R(SM)

ii. Maine Department of Environmental Protection Maine Pollutant Discharge Elimination System (MDEPDES) Permit #ME0001741

iii. Maine Waste Discharge License (WDL) License #W000980-5R-H-R.

iv. NRPA Permit (*if any, currently in process*)

(collectively, the "MDEP Permits")

F. Assignment and Assumption of the following City of Portland and/or State permits and approvals:

i. Demolition permit

ii. Any site plan approval and/or building or construction permits

iii. MDOT permits including Traffic Movement Permit

iv. any other issued or pending state, municipal or federal permits or permit applications

(collectively, with the MDEP Permits, the "Governmental Permits")

G. Assignment and Assumption of the construction and development contracts and agreements described on **Exhibit B** (the "Development Contracts").

H. Assignment of any and all warranties relating to any completed contracts for construction or demolition of any of the improvements upon the Campus (the "Construction Warranties"), if any.

I. Assignment of any and all studies, reports, engineering, surveys, appraisals, or other such reports or studies, to the extent assignable (collectively, the "Studies and Reports"), and, if and to the extent requested by Buyer, delivery of reliance letters with respect to such Studies and Reports in a form reasonably acceptable to Buyer. Seller agrees to seek consent to such assignments and any required reliance letters from the professionals or vendors providing the Studies and Reports.

2. OFFER AND ACCEPTANCE. The execution of this Agreement by Buyer represents an offer to Seller on the terms and conditions set forth herein. This offer shall be open for acceptance by Seller until 4:00 p.m. Portland, Maine time on October 23, 2023 unless extended by mutual agreement of Buyer and Seller. Seller's acceptance of this offer shall be evidenced by Seller delivering an executed copy of this Agreement to Buyer at the address set forth in Section 14 below on or before the expiration of this offer. If this offer is not accepted by Seller prior to its expiration, this offer shall automatically expire and this Agreement shall be null and void and of no further force and effect.

3. CONSIDERATION. The consideration for the transfer of the Property is in furtherance and fulfillment of the MOU and the performance under such further agreements by and among Buyer and Seller for Buyer's development of the Property as the site of the Institute for the purposes of instructing students, conducting research, and supporting entrepreneurialism in the fields of artificial intelligence, digital science, data visualization, computational medicine, genomics and life sciences and project management, and develop content and pedagogy therefor, and developing the Property to serve as the permanent home of the Institute with other supporting infrastructure. At closing hereunder, however, the parties shall adjust for any pro-rations and any other payments referenced herein. Except as specified in this Agreement or in any other agreement among the parties including the Rouxs, both Buyer and Seller shall bear their own expenses in connection with the performance of their obligations hereunder. Buyer agrees to pay and Seller agrees to accept One Dollar ($1.00) and other valuable consideration as the Purchase Price for the Property.

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[redacted]

4. TITLE. Seller shall convey the Property to Buyer at the closing in fee simple with good, marketable and insurable title, free and clear of liens and encumbrances and other matters of record, except as disclosed in Buyer's Title Insurance Policy # OP 04921177 ME issued by CATIC (the "Title Insurer"), dated March 24, 2022, a copy of which has been provided to Seller (the "Title Policy"). Seller shall deliver the Property free and clear of any leases or occupancies except as otherwise provided herein. Notwithstanding the foregoing, during the period commencing on the date hereof and continuing for a period of thirty (30 days (the "Inspection Period"), Buyer shall have right to review the title and to make any objections to the title in writing to Seller. Upon receipt of Buyer's title objections, Seller shall have a period of up to thirty (30) days to either (i) resolve the title objections to the reasonable satisfaction of Buyer; (ii) or to propose affirmative title insurance coverage addressing any such title objection that the Title Insurer is willing to provide, including an agreement to continue to provide such affirmative coverage to subsequent grantees and mortgagees; or (iii) to refuse to address such title objection, in which case Buyer may elect to terminate this Agreement, or Buyer may elect to close notwithstanding the title objection.

5. CLOSING. The transfer of title and closing hereunder shall take place at the offices of Bernstein, Shur, Sawyer and Nelson, 100 Middle Street, Portland, Maine, no later than ten days prior to Buyer's application for a building permit for the Buyer's initial phase of construction of the Institute is submitted to the City of Portland (the "Closing Date") or at such earlier date and location as Buyer and Seller shall mutually agree in advance and in writing. Buyer shall have the right to request a closing at any time prior to its application for a building permit, provided that Buyer has satisfied the remaining obligations of Buyer under this Agreement, other than such obligations that Seller has agreed to waive in writing. At the closing,

(a) Seller shall execute and/or deliver to Buyer:

i. a Quitclaim Deed with Covenant to the Property, in accordance with the Short Form Deeds Act, 33 M.R.S.A. § 761 et seq., (the "Deed"),

ii. a Quitclaim with Covenant Bill of Sale conveying the personal property to be conveyed to Buyer as set forth in Section 1.A. above;

iii. all keys, access cards, security codes and similar items to the Property in Seller's possession;

iv. the originals of all permits and licenses relating to the Property, if any, in Seller's possession;

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v. such documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Buyer's acquisition and financing of the Property, including without limitation a Certificate of Non-Foreign Status (as required by Internal Revenue Service regulations), an affidavit regarding underground storage tanks (as required by Maine Law), a surface/subsurface waste disposal system certificate (if applicable), applicable Maine State REW forms and satisfactory evidence of Seller's existence, authority to convey the Property; and

vi. One or more Assignment and Assumption Agreements signed by Seller to assign to Buyer all of Seller's rights in and to the Maine Yacht Center Lease; the Governmental Permits, the Studies and Reports, the Construction Warranties and the Development Contracts; together with any reliance letters with respect to the Studies and Reports requested by Buyer.

(b) Buyer shall execute and/or deliver to Seller:

i. the purchase price;

ii. evidence that the buyer's Board of Trustees has voted affirmatively to proceed with Phase 1 of the Campus development project (the "Project") and has committed sufficient financial resources to fund Phase 1 of the Project which shall include all work reasonably necessary for the construction of one or more learning, research and collaboration buildings and supporting parking and public infrastructure, construction of a new pier, and renovation of the exterior of the existing historic landmarked Bean Building as shall be further described in the initial Site Plan application (as the same shall be jointly submitted by the parties hereto) as approved by the City of Portland (the contents of which – as approved by the City -- shall be referred to herein as "Phase 1"). Such financial resources may be from various sources including bond financing, Buyer's own resources, pledges and other philanthropic giving and such financial resources as may be available to Buyer over the course of the construction of Phase 1 of the Project as opposed to being fully available at the time of closing;

iii. One or more Assignment and Assumption Agreements signed by Buyer to enable Buyer to assume all of Seller's rights in and to the Maine Yacht Center Lease; the Governmental Permits, the Studies and Reports, the Construction Warranties and the Development Contracts; and

iv. such other documents, affidavits and certificates as are otherwise required by this Agreement, required by law and/or reasonably necessary for Seller's disposition of the Property.

Unless this Agreement is extended by mutual agreement of the parties, if the Closing does not occur for any reason by December 31, 2024, then this Agreement shall automatically terminate and be of

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no further force and effect and all obligations of the parties shall cease other than those specifically identified herein as surviving such termination.

6. RISK OF LOSS, DAMAGE AND INSURANCE.

(a) All risk of loss to the Property prior to the closing shall be borne by Seller. Seller shall keep the Property fully insured against fire and other extended coverage risks until the closing and shall name Buyer as an additional insured as Buyer's interest may appear.

(b) In the event that, prior to the closing, the improvements which are part of the Property are destroyed or, in the opinion of Buyer, substantially damaged, Buyer may either (i) terminate this Agreement, or (ii) accept the insurance proceeds payable by reason of such damage or destruction and close this transaction notwithstanding the same. If any part of the Property is damaged by fire or other casualty and Buyer does not elect to terminate this Agreement pursuant to this Section, then Seller and Buyer shall perform their respective obligations under this Agreement and in the event of a closing, Seller shall (x) deliver to Buyer at the Closing any insurance proceeds or condemnation awards received by Seller in respect of or allocable to the Property; and (y) assign to Buyer all of Seller's interest in and to any insurance proceeds and/or condemnation awards allocable to the Property which have not yet been received by Seller on that date; and (z) refrain from accepting or agreeing upon the amount of any payment of any proceeds or awards without Buyer's prior written consent. Notwithstanding the above, Buyer acknowledges that Seller is in the process of abating and demolishing all of the facilities on the site except for the so-called "Cannery" or "Bean Building"

7. INSPECTION/DELIVERY OF DOCUMENTS; AS-IS CONDITION. Reasonably promptly after this Agreement becomes effective, Seller shall deliver to Buyer copies of all of the Studies and Reports in Seller's possession or control to the extent not already provided to Buyer. With reasonable notice which shall be a minimum of three business days, Seller hereby grants Buyer or its agents the right to enter upon or in any part of the Property at all reasonable times and from time to time prior to the closing in order to inspect the Property, conduct surveys, soil tests, engineering and environmental testing and studies and to do such things as are reasonably necessary with respect to its due diligence, acquisition and development of the Property, provided, however, that Buyer's obligations to close hereunder shall not be conditioned upon the results of such due diligence other than as set forth below.

Buyer has commenced its review of the Studies and Reports, including environmental site assessments (ESAs) performed prior to the date hereof and accepts the Property in its as-is condition except as specifically set forth herein. Notwithstanding the foregoing, Seller shall not, after the date hereof, suffer or allow the occurrence of any further event(s) which would create, constitute, or be considered a recognized environmental condition (REC) under any qualified Phase I ESA without prompt and complete remediation or abatement, or else Seller shall be considered in default hereof. Furthermore, if Seller's title to the Property is further encumbered by any matter or means after the date hereof and such further encumbrance is not cleared prior to Closing, Seller shall be in default hereof. The foregoing is not a consent or permission to further encumber the title and Seller specifically agrees it shall not further encumber the title to the Property nor permit any mortgage, lien, claim, or charge to accrue which shall affect Seller's title.

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Further notwithstanding the foregoing, the parties acknowledge that the environmental site assessments conducted by or for Buyer or for which Buyer has been provided were conducted before certain demolition activities on the site that were performed by or for Seller. Buyer shall have the right to conduct further or updated ESAs and to review any remediation activities undertaken by Seller or its agents or contractors since the date of the ESAs conducted by or for Buyer. In the event that such further or updated ESAs reveal any RECs not previously disclosed to Buyer, Buyer shall have the right to terminate this Agreement or to require that further conditions be satisfied by Seller prior to closing.

Except as set forth in this Agreement, the Property will be conveyed "as is" at the time of closing and Seller disclaims all representations and warranties from Seller to Buyer other than any limited representations set forth herein. Buyer will indemnify Seller with respect to any environmental liabilities associated with the Property that may be discovered or arise post-closing, regardless of when the action(s) leading to such liabilities occurred. The foregoing sentence shall survive Closing under this Agreement. Seller will assign any environmental indemnification agreements it obtained from the Seller's grantor to Buyer, if any, with the right of the Buyer to enforce the indemnification obligations contained in any such agreements to the extent permitted therein.

8. CONDITIONS TO BUYER'S OBLIGATIONS TO PERFORM. The Buyer's obligation to perform hereunder and to close on the purchase of the Property are conditional upon the following matters:

(a) Buyer's obligation is conditional upon the Buyer's Board of Trustees approval of the Buyer's acquisition of the Property and the obligations of the Buyer under this Agreement.

(b) Buyer's obligation is conditional upon Buyer's satisfaction with its inspection of the Property during the Inspection Period as more fully set forth in Section 7 of this Agreement.

9. SELLER'S CONTINUATION OF CONSTRUCTION ACTIVITIES PRIOR TO CLOSING. Seller is currently conducting demolition, environmental remediation and site work at the Property. Seller has provided Buyer with copies of all of the plans, specifications, contracts and scope of work being performed by Seller or its agents or contractors at the Property at the time of execution hereof. Seller shall continue to perform such work in accordance with such contracts. To the extent that any such plans, specifications or contracts are modified or supplemented following the execution of this Agreement (the "Construction Modifications"), or to the extent that any additional contracts are to be entered into by Seller prior to the closing (the "New Contracts"), Seller shall endeavor to provide Buyer with notice thereof as soon as practicable, and Buyer shall have the right to comment upon and participate in any discussions regarding the scope and timing of such work; provided, however, that the notice contemplated by this provision shall be deemed satisfied if an agent, employee, or representative of Buyer is present with Seller (whether in person, telephonically, or by email) in conversations, meetings and other communications involving such Construction Modifications or New Contracts. Moreover, notwithstanding the notice provisions set forth in Section 16(b) below, the notice contemplated by this Section 9 may also be made to

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other designated representatives of Buyer involved in the construction activities via telephone in addition to, or in lieu of, any of the other manners of providing notice outlined in Section 9.

10. POSSESSION OF THE PROPERTY. The Property shall be delivered to the Buyer at the time of the closing free and clear of all tenancies or occupancies by any person or entity, unless otherwise agreed herein. The Property shall also be reasonably free and clear of all trash and debris, and free and clear of any and all of Seller's personal property and equipment, except as set forth herein.

11. REPRESENTATIONS AND WARRANTIES OF SELLER. Seller represents and warrants to Buyer that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Seller is duly organized and in good standing under the laws of the State of Maine, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Seller of its obligations hereunder are within the lawful power of Seller, have been duly authorized and approved by all necessary actions on behalf of Seller, and will not conflict with, or result in a breach of any of the terms, covenants and provisions of: (i) Seller's Articles of Incorporation or By-Laws; (ii) any judgment, writ, injunction, regulation, ruling, directive or decree of any court of governmental authority; or (iii) any agreement or instrument to which Seller is a party or by which Seller is bound;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and to bind Seller to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(d) No consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Seller in connection with the execution and delivery of this Agreement or the performance hereof by Seller;

(e) There are no litigation, liens, judgments, violations, or proceedings pending, or to the best of Seller's knowledge, threatened against or relating to the Property nor does Seller know or have reasonable grounds to know of any basis for any such action, or of any governmental investigation relating to the Property;

(f) There is no pending, or to the best of Seller's knowledge, threatened action or proceeding (including, but not limited to, any condemnation or eminent domain action or proceeding) before any court, governmental agency or arbitrator relating to or arising out of Seller's ownership of the Property or any portion thereof, or which may adversely affect Seller's ability to perform its obligations under this Agreement, or which may affect the Property or any portion thereof;

(g) Seller is not a "foreign person" within the meaning of § 1445 of the Internal Revenue Code;

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(h) To the best of Seller's knowledge, no work has been performed or is in progress at, and no materials have been furnished to the Property or any portion thereof which may give rise to mechanic's, materialmen's or other liens against the Property or any portion thereof except as may arise in connection with Seller's further obligations as specifically contemplated by this Agreement; and

(i) All outstanding bills and/or accounts payable concerning the Property are either paid or will be paid prior to or at the time of closing unless otherwise agreed by the parties in writing.

12. REPRESENTATIONS AND WARRANTIES OF BUYER. Buyer represents and warrants to Seller that the following are true as of the date of this Agreement and will be true as of the closing:

(a) Buyer is duly organized and in good standing under the laws of the Commonwealth of Massachusetts, with full capacity, power and authority to enter into and fully perform the obligations and transactions contemplated by this Agreement;

(b) The execution and delivery of this Agreement and the performance by Buyer of its obligations hereunder are within the lawful power of Buyer, have been duly authorized and approved by all necessary actions on behalf of Buyer, and will not conflict with, or result in a breach of any of the terms, covenants and provisions of: (i) Buyer's Articles of Incorporation or Bylaws; (ii) any judgment, writ, injunction, regulation, ruling, directive or decree of any court of governmental authority; or (iii) any agreement or instrument to which Buyer is a party or by which Buyer is bound;

(c) The person executing this Agreement on behalf of Seller is duly authorized to do so and to bind Seller to enter into and fully perform the obligations and transactions contemplated by this Agreement; and

(d) No consent, approval, order or authorization of any court or other governmental entity is required to be obtained by Buyer in connection with the execution and delivery of this Agreement or the performance hereof by Buyer.

13. DEFAULT AND REMEDIES. In the event that either Buyer or Seller defaults in the performance of its obligations hereunder, the non-defaulting party may elect to terminate this Agreement by written notice, or seek specific performance of the defaulting party's obligations.

14. BROKERAGE. The parties agree that no broker has been involved in this transaction.

15. ADJUSTMENTS, PRORATIONS AND CLOSING COSTS.

(a) Real estate taxes, assessments, rentals, common area maintenance charges, fuel oil, and utilities shall be prorated as of the date of closing based upon amounts thereof actually paid or received (as the case may be) as of this date.

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(b) The Maine real estate transfer tax (if applicable) shall be paid by Seller and Buyer in accordance with 36 M.R.S.A. § 4641-A.

(c) The recording fee for the deed of conveyance will be paid by Buyer.

(d) A portion of the purchase price shall be withheld at the closing by Buyer if required by 36 M.R.S.A. § 5250-A unless Seller furnishes to Buyer an affidavit stating, under penalty of perjury, that Seller is a resident of Maine or that the transfer is otherwise exempt from withholding tax.

16. MISCELLANEOUS.

(a) Time. Time is of the essence of this Agreement.

(b) Notices. Any notices required or permitted to be given under this Agreement shall be sufficient if in writing and if sent: (i) by first class mail, postage prepaid, registered or certified, return receipt requested; (ii) by hand delivery; (iii) by FedEx, or similar overnight express mail service, prepaid; or (iv) electronic mail ("e-mail") or by facsimile ("Fax") transmission, each to the addresses and/or Fax numbers listed below:

TO SELLER:
Charles E. Hewett
IDEALS
100 Commercial Street
Portland, ME 04101
chuck.hewett@ideals.org

WITH A COPY TO:
Helen S. Coburn, Esq.
Bernstein Shur
100 Middle Street, PO Box 9729
Portland, ME 04104-5029
hcoburn@bernsteinshur.com

TO BUYER:
Northeastern University
Planning, Real Estate and Facilities
360 Huntington Avenue, 216-201
Boston, MA 02115
Attention: Kathy Spiegelman
Email: k.spiegelman@northeastern.edu

WITH A COPY TO:
Northeastern University
Office of the General Counsel
360 Huntington Avenue, Suite 301

DocuSign Envelope ID: 93BEB8D2-0DE3-4F1B-A064-562E6257362F

Boston, MA 02115
Attention: Michael Glover
Email: m.glover@northeastern.edu

All such communication shall be deemed made upon the earlier of (3) business days following deposit with the U.S. Mail or the date of receipt as disclosed on the return receipt (if sent by registered or certified mail), or upon delivery (if hand delivered), or upon delivery as indicated on the proof of delivery (if sent via FedEx or similar overnight express mail service), or if sent via email with proof of receipt by the primary addressee, effective upon the day sent if received prior to 3:00 p.m. local time or the next business day if received thereafter. With respect to any of the above-referenced methods of delivery, rejection or other refusal to accept or the inability to deliver because of a change of address of which no notice was given shall be deemed to be receipt of the notice sent. Either party may change its address for purposes of this subparagraph by giving the other party notice of the new address in the manner described herein.

(c) Binding Effect/Assignment. This Agreement shall not become a binding contract until signed by both parties and that fact has been communicated to all parties or their agents. This Agreement will inure to the benefit of and bind the respective heirs, successors, personal representatives and assigns of the parties hereto and may be cancelled, modified or amended only by a writing executed by the parties hereto or their legal representatives.

(d) Construction. This Agreement and the Exhibits hereto set forth the entire agreement between the parties, and there are no other agreements or understandings between them related to the subject matter hereof. As used in this Agreement, the singular number shall include the plural, the plural the singular, and the use of one gender shall be deemed applicable to all genders. This Agreement shall be governed by and construed in accordance with the laws of Maine. All representations, warranties, covenants and indemnities made by either party herein shall survive the closing. If any provision of this Agreement is determined to be invalid or unenforceable, it shall not affect the validity or enforcement of the remaining provisions hereof. In the event of any dispute under this Agreement; prior to any litigation, the parties hereto shall first submit the matter to mediation and shall undertake good faith efforts to resolve any such dispute. In the event that a dispute hereunder is not resolved by mediation, the parties agree to submit any litigation to enforce this Agreement to the jurisdiction of the United States District Court for the District of Maine.

(e) Counterparts/Electronic Signatures. This Agreement may be simultaneously executed in any number of counterparts, each of which when so executed and delivered shall be an original, but such counterparts shall constitute one and the same instrument. This Agreement may be signed electronically and such shall be treated as original signatures.

(f) Attorney's Fees. If any legal action (including without limitation mediation and arbitration) is brought or compelled by either party to enforce any provisions of this Agreement, the prevailing party shall be entitled to recover from the other party its reasonable attorneys' and paralegals' fees and court costs, subject to and limited by the provisions of the Default and Remedies section of this Agreement.

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(g) Effective Date. The Effective Date of this Agreement shall be deemed to be the date first set forth above in this Agreement, provided that if no date is filled in, the Effective Date shall be the last date of the signature of either Buyer or Seller.

[*Signature Page Follows*]

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IN WITNESS WHEREOF, Seller and Buyer have executed this Agreement under seal as of the dates indicated above.

SELLER

THE INSTITUTE FOR DIGITAL ENGINEERING AND LIFE SCIENCES

DocuSigned by:
Charles E. Hewett
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By: Charles E. Hewett
Its: Executive Director
Date: October 23, 2023

BUYER

NORTHEASTERN UNIVERSITY

DocuSigned by:
Thomas E. Nedell
FF682479C14A4DA...

By: Thomas E. Nedell
Its: Senior Vice President & Treasurer
Date: October 23, 2023

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EXHIBIT A
[*Legal Description*]

A certain parcel of land, together with the improvements thereon, located on the easterly sideline of Interstate 295 and the southerly sideline of Sherwood Street in the City of Portland, County of Cumberland and State of Maine being further described as follows:

Beginning at a 6-inch by 6-inch granite monument found inscribed “ECJ #356” marking the southerly sideline of Sherwood Street westerly sideline of the Canadian National Railroad and further described as the most northeasterly corner of described parcel;

THENCE, S 23-36-55 E, along said Railroad 316.33 feet to a 6-inch by 6-inch granite monument found inscribed "ECJ 356";

THENCE, S 23-36-55 E, along said Railroad, 526.90 feet, to a 4-inch by 4-inch granite monument with a drill hole;

THENCE, S 23-36-55 E, along said Railroad, 745 feet, more or less to the low water mark of the Casco Bay,

THENCE, in a general westerly direction along said low water line about 1,685 feet to a point on the easterly sideline of Interstate 295;

THENCE, N 2-23-50 W, along said sideline, 48 feet, more or less to a point;

THENCE, S 87-30-10 W, along said sideline, 30.00 feet to a point;

THENCE, N 2-23-50 W, along said sideline, 61.46 feet to a drill hole found, said drill hole lying on a tie course of S 73-07-39 W, 878.87 feet from the previous mentioned 4-inch by 4-inch granite monument with a drill hole;

THENCE, N 2-23-50 W, along said sideline, 237.87 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 89-44-34 E, along said sideline, 1.05 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 6-28-53 E, along said sideline, 122.88 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 0-24-30 E, along said sideline, 88.91 feet to a 4-inch by 4-inch granite monument found inscribed "ECJ #509";

THENCE, N 24-48-04 E, along said sideline, 60.29 feet to a 6-inch by 6-inch granite highway monument;

THENCE, N 31-29-16 W, along said sideline, 31.96 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 3-26-49 W, along said sideline, 111.10 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 8-40-57 E, along said sideline, 89.05 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 23-15-05 E, along said sideline, 66.28 feet to a 4-inch by 4-inch granite monument Inscribed "ECJ #509";

THENCE, N 34-47-28 E, along said sideline, 96.68 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 25-25-29 E, along said sideline, 160.02 feet to a 5/8 inch re-bar found capped "ECJ #509";

THENCE, N 23-37-03 E, along said sideline, 63.03 feet to a 4-inch by 4-inch granite

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monument inscribed "ECJ #509";

THENCE, N 39-23-04 E, along said sideline, 6.72 feet to a 6-inch by 6-inch granite monument found inscribed "ECJ #509";

THENCE, N 55-32-30 W, along said sideline, 11.67 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 34-47-50 E, along said sideline, 117.04 feet to a 4-inch by 4-inch granite monument inscribed "ECJ #509";

THENCE, N 34-43-38 E, along said sideline, 15.02 feet to a 5/8 inch re-bar found capped "ECJ #509" marking the southerly sideline of Sherwood Street;

THENCE, S 55-12-08 E, along said Sherwood Street, 288.60 feet to the point of beginning.

The foregoing description was prepared based on the Survey prepared by OEST Associates, Inc. dated February, 1999 and last revised February 26, 1999 recorded in in the Cumberland County Registry of Deeds in Plan Book 199, Page 159.

Alternate Legal Description [recent survey; grant to be without covenant of title]:

All right, title and interest in and to the following described lot or parcel of land, together with the buildings and improvements thereon, located in the City of Portland, County of Cumberland, State of Maine, which description is based on a ALTA/NSPS Land Title Survey prepared by VHB, dated June 30, 2021, last revised February 28, 2022, and Seller makes no representations or warranties as to the accuracy of said property description:

Beginning at a granite bound found at the intersection of the southerly sideline of Sherwood Street and the westerly sideline of land now or formerly of the state of Maine as described in the Cumberland County Registry of Deeds in Book 25500, Page 215, and Book 10924, Page 91 being formerly owned by the St. Lawrence & Atlantic Railroad Company, in part, and the Canadian National Railway Company, in part;

THENCE along the westerly sideline of land of the State of Maine South 23°38’41” East for a distance of 316.33 feet to a granite bound found;

THENCE continuing along land of the State of Maine South 23°34’45” East for a distance of 526.95 feet to a granite bound found;

THENCE continuing along the land of the State of Maine South 23°34’45” East for a distance of 745 feet, more or less to the low water mark of Casco Bay,

THENCE in a generally westerly direction along the low water line about 1,720 feet, more or less, to a point in the easterly sideline of Interstate 295;

THENCE along the easterly sideline of Interstate 295 the following courses and distances:

North 2°23’38” West for a distance of 48 feet, more or less to a point;

South 87°36’22” West for a distance of 30.00 feet to a point;

North 2°23’38 West for a distance of 61.46 feet to a point being located South 73°07’57” West at a distance of 878.66 feet from a granite bound found on the westerly sideline of land now or formerly of the State of Maine;

North 2°23’38 West for a distance of 237.87 feet to a point;

North 89°44’46” East for a distance of 1.05 feet to a rebar found;

North 6°29’05” East for a distance of 122.88 feet to a point;

North 0°24’42: East for a distance of 88.91 feet to a granite bound found;

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North 24°48’16 East for a distance of 60.29 feet to a granite bound found;
North 31°29’04” West for a distance of 31.96 feet to a point;
North 3°26’37” West for a distance of 111.10 feet to a point;
North 8°41’09” East for a distance of 89.05 feet to a point;
North 23°15’17” East for a distance of 66.28 feet to point;
North 34°47’40” East for a distance of 96.68 feet to a granite bound found;
North 25°25’41” East for a distance of 160.02 feet to a point;
North 23°37’15” East for a distance of 63.03 feet to a point;
North 39°23’16” East for a distance of 6.72 feet to a point;
North 55°32’18” West for a distance of 11.67 feet to a point;
North 34°48’02” East for a distance of 117.04 feet to a granite bound found;
North 34°43’50” East for a distance of 15.02 feet to a rebar found at the southerly sideline of Sherwood Street;

THENCE departing from the easterly sideline of Interstate 295 and running along the southerly sideline of Sherwood Street South 55°12’19” East for a distance of 288.59 feet to the point of beginning.

Meaning and intending to convey the same premises described in a Quitclaim Deed with Covenant from B&G Foods North America, Inc. to The Initiative for Digital Engineering and Life Sciences dated March 23, 2022 and recorded in the Cumberland County Registry of Deeds in Book 39282, Page 151.

The above described property shall be conveyed subject to the encumbrances listed as items 1-14 on Exhibit A of the Quitclaim Deed with Covenant from The Pillsbury Company to Heritage Acquisition Corp. dated March 15, 1999 and recorded in the Cumberland County Registry of Deeds in Book 14616, at Page 50 and the rights and easements granted by Heritage Acquisition Corp. to Central Maine Power Company and Verizon New England, Inc. by instrument dated February 7, 2006 and recorded in the Cumberland County Registry of Deeds in Book 24049, Page 189.

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EXHIBIT B
[*Development Contracts*]

1. Design Agreement by and between Bruner/Cott and The Initial for Digital Engineering and Life Sciences ("IDEALS") (*in negotiation; near final form*)

2. Design Agreement by and between CambridgeSeven and IDEALS (*in negotiation; near final form)*

3. Construction Management Agreement, by and between IDEALS and Consigli Construction Co., Inc. dated January 17, 2023

4. Cooperative Agreement by and between the Maine DOT ("MDOT") and IDEALS, dated as of January 18, 2023

5. MDOT Temporary Access Road Rights Agreement by and between MDOT and IDEALS, dated as of March 30, 2023

6. License Agreement with the City of Portland Fire Department by and between the City of Portland and IDEALS dated May 24, 2023

7. License Agreement with the City of Portland Fire Department by and between the City of Portland and IDEALS dated August 2, 2022

8. IDEALS Boiler Purchase Agreement by and between IDEALS and Maine Plywood USA, LLC dated June 19, 2023

9. Consultant Services Agreement, by and between IDEALS and MacRostie Historic Advisors

10. Consultant Services Agreement, by and between IDEALS and Thorton Tomasetti

11. Consultant Services Agreement, by and between IDEALS and Tsoi Kobus Design

12. Consultant Services Agreement by and between IDEALS and Vanasse Hangen Brustlin

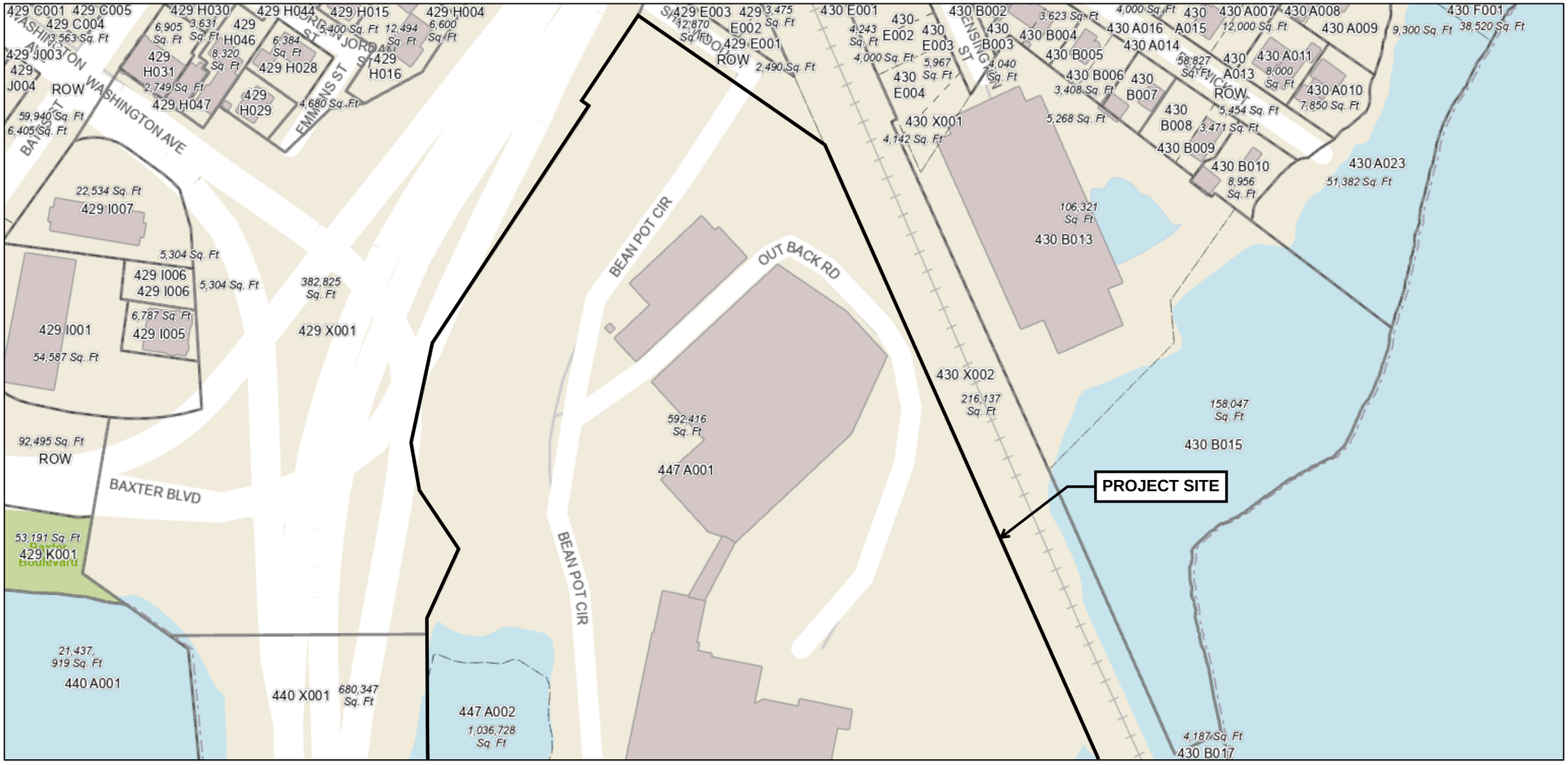
13. Consultant Services Agreement, by and between IDEALS and Woodard & Curran

14. Consultant Services Agreement, by and between IDEALS and Power Engineers

15. Consultant Services Agreement, by and between IDEALS and SW Cole Engineering

16. Consultant Services Agreement, by and between IDEALS and Stephen Stimson Associates

ArcGIS Web Map



8/10/2023, 11:07:21 AM

parcels

Tax

Conveyance

1:1,514

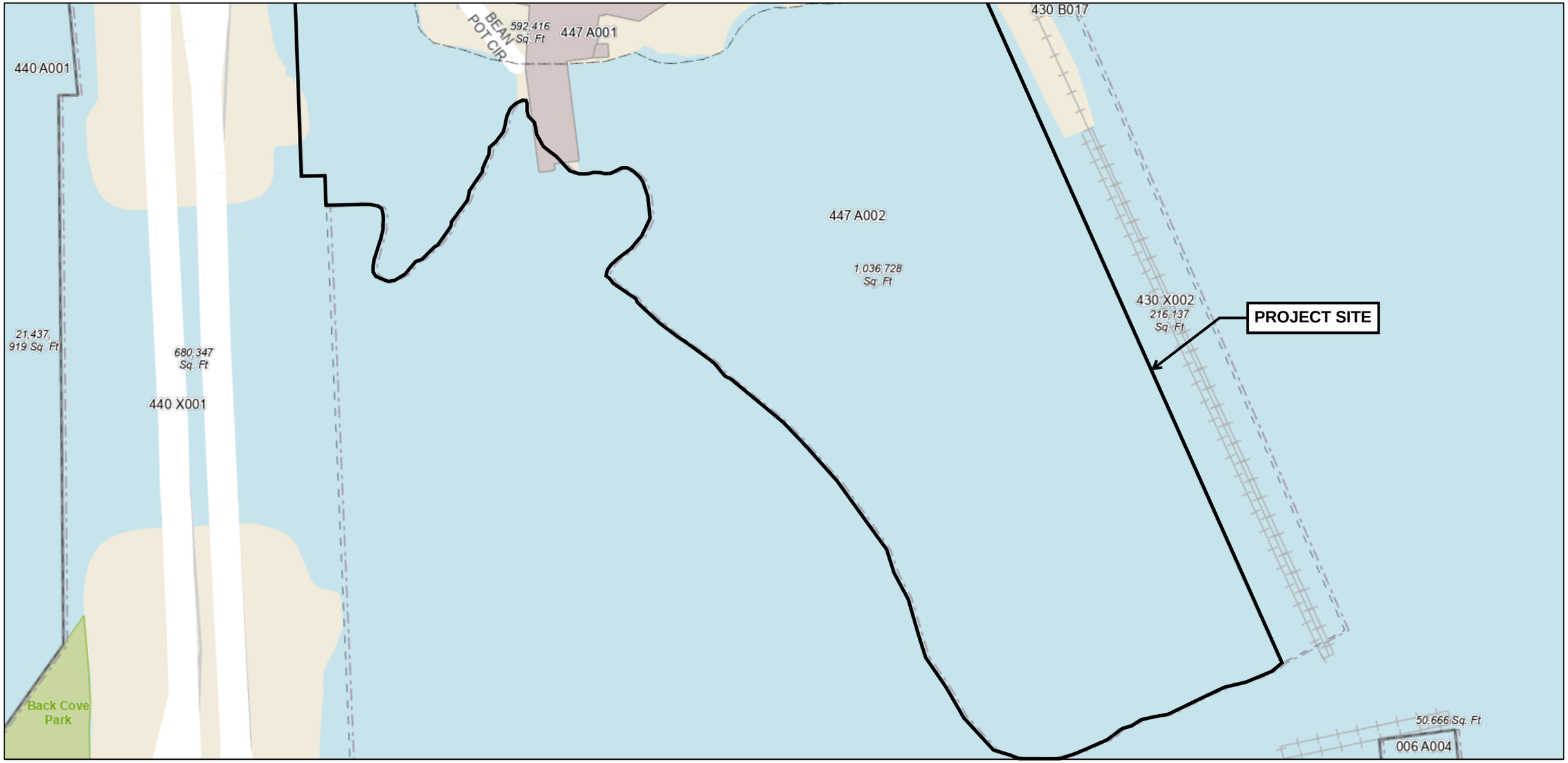
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0 0.03 0.06 0.11 km

City of Portland, DPS

Web AppBuilder for ArcGIS
City of Portland, Maine

ArcGIS Web Map



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parcels

Tax

Conveyance

1:1,514

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0 0.03 0.06 0.11 km

City of Portland, DPS

Web AppBuilder for ArcGIS
City of Portland, Maine

3. FINANCIAL CAPACITY

A copy of a letter verifying the Applicant's financial capacity to undertake the project is attached to this Section.

3.1 LIST OF ATTACHMENTS

- Financial Capacity Letter.

Northeastern

October 25, 2023

Ms. Denise Cameron
Woodard and Curran
12 Mountfort Street
Portland, ME. 04101

Dear Ms. Cameron:

Northeastern University expects phase 1 of the Roux Campus project to cost approximately $470 million dollars.

To fund the project, the University will use a mix of philanthropic resources (the majority of which are already pledged) and debt.

Thank you.

Sincerely,

Thomas Nedell
Senior Vice President for Finance and Treasurer

Office of the Senior Vice President Finance

177 Huntington Ave.
360 Huntington Ave.
Boston, MA 02115

617.373.2240
fax 617.373.4728

finance.northeastern.edu

4. TECHNICAL ABILITY

The project team includes the following partners completing various engineering, landscape architecture, and architectural components of the project. The project team is also supported by a number of other professional firms providing support with survey, structural design, geotechnical design, mechanical/electrical/plumbing design, and other disciplines. Copies of resumes and information on other members of the project team can be provided upon request.

Woodard & Curran (W&C), a Portland-based firm, has provided engineering services to the public and private sector for over 40 years, including permitting, civil/site engineering, stormwater, and construction management services. W&C has completed projects for colleges, universities, and healthcare institutions that build strong, sustainable infrastructure and environmental programs serving both their business needs and the communities that make them so vibrant. With extensive experience in design and permitting for site development projects, W&C has completed many projects within the City of Portland.

Stephen Stimson Associates, STIMSON is a landscape architecture firm based in Cambridge and Princeton, Massachusetts and is comprised of an urban and rural landscape architecture studio, a working farm, and a plant nursery. STIMSON is a female, minority led partnership between Lauren and Stephen Stimson with 30 staff and 5 principals. The studio was conceived in 1992 by Stephen Stimson, who was born on a 10th generation dairy farm in New England. A devotion to craft, and a simple, agrarian-minded approach to design is the mainstay of the firm's work.

Cambridge Seven Associates (C7), is an architecture firm based in Cambridge, Massachusetts, with a staff of 60 people, including registered architects, planners, LEED Accredited Professionals, exhibit, and graphic designers. Since 1962, they have provided clients with provocative yet sensitive designs by recognizing and acting upon the unique opportunities inherent in every project. C7 has received dozens of awards, including the prestigious National AIA Firm Award, and is internationally acclaimed for its innovative work in architecture, urban design, transportation, planning, graphic design, exhibition and interiors.

Bruner/Cott Architects, is a 35-person historic preservation architecture firm located in Boston, Massachusetts. Their leadership team brings a broad, integrated perspective to design, giving depth to each of their practice areas. Bruner/Cott's work has been recognized for award-winning design from preservation to adaptive reuse and new construction, with a focus on educational and cultural institutions. Bruner/Cott partners with private developers for residential and commercial buildings. Bruner/Cott is known for creativity in inventing new solutions to complex programs and as design leaders for historic renewal and contemporary design in the context of urban revitalization and institutional re-invention.

5. NOISE

HVAC and primary mechanical equipment will be located and screened to mitigate noise impacts. Noise associated with the proposed development will not exceed regulated levels and is not anticipated to negatively impact surrounding development in its urban setting. Noise and vibration associated with the proposed development will not exceed regulated levels.

Notwithstanding the existing buffers to the Site, there will be noise impacts as a result of construction activities. Construction activities will be limited to the hours permitted by the City. For those noise events that are above the regular background level, advance notifications will be provided using email and webpage communication mechanisms. The City of Portland Noise Ordinance will be followed.

6. VISUAL QUALITY & SCENIC CHARACTER

As further described in the City of Portland Site Plan Application for the proposed development, the architecture and landscaping have been designed to be consistent with the scenic character of the surrounding area. A Certificate of Appropriateness will also be obtained from the City of Portland Historic Preservation Board. It is not anticipated that the proposed development will result in any negative visual impacts.

7. WILDLIFE & FISHERIES

Immediately adjacent to this highly developed site are natural resource areas including: an estuarine intertidal emergent marsh located east of the site near the rail corridor; coastal wetlands for all areas below highest annual tide; tidal waterfowl and wading bird habitat, and blue mussel habitat. A wetland delineation investigation, including a functions & values assessment, was conducted by scientists at FB Environmental in June of 2023, and is summarized in the report attached to this section.

The attached Official Species List identifies the northern long-eared bat (endangered species), roseate tern (endangered species) and monarch butterfly (candidate species) in association with the project area; however, there are no critical habitat areas located within the project area. Based on US Fish & Wildlife information, the northern long-eared bat typically lives in caves during the winter months, and in trees larger than three inches in diameter during the summer, with migration between these two habitats in the spring and the fall. Tree clearing will be conducted between August and May to avoid impacts to long-ear bats. Applicable permitted tree clearing dates for the project will be confirmed with regulatory agencies during final design.

A letter was sent to the Maine Department of Inland Fisheries and Wildlife (MDIFW) requesting information regarding any known threatened or endangered species or critical habitat relative to the project area; a copy of the review request letter is attached to this Section. It is not anticipated that the proposed development will have a negative impact on the northern long-eared bat, roseate tern, or monarch butterfly.

7.1 LIST OF ATTACHMENTS

- Wetland Delineation Report;
- Official Species List; and
- MDIFW Environmental Review Request Letter.

FB environmental

97A Exchange Street
Suite 305
Portland, ME 04101

207-221-6699
www.fbenvironmental.com

Denise Cameron
Project Manager | Senior Principal
Woodard & Curran
41 Hutchins Drive
Portland, ME 04102

June 27, 2023

Subject: Roux Institute – Wetland Delineation

Dear Denise,

As requested by Woodard & Curran, FB Environmental Associates (FBE) delineated wetlands and watercourses and conducted a wetland functions and values assessment at a site in Portland, Maine. The site is intended to be the permanent home of the Roux Institute, a graduate education and research facility, under the Initiative for Digital Engineering & Life Sciences (IDEALS). The specific Survey Area consists of a 14-acre parcel situated in Portland's East End at the mouth of Back Cove. The attached map depicts the location of the parcel, formerly known as the B&M property.

Fieldwork was conducted on 6 June 2023, by FBE's Ecological Services Division Lead and Senior Wetland Scientist Kevin Ryan and Wetland Scientist Sarah Large. Wetlands were identified and delineated in accordance with the 1987 US Army Corps of Engineers (USACE) Wetland Delineation Manual[1] using the methods described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0.[2] Copies of completed wetland determination data forms are included with this report. All wetlands and watercourses were classified using the US Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States.[3]

Wetland Delineation Methods

Wetland boundaries are marked in the field using pink flagging emblazoned with the words "WETLAND DELINEATION." Boundaries of wetlands delineated during the field survey are geo-located using a sub-meter accuracy GPS unit (EOS Arrow-100). The collected GPS data are then used to create a wetland delineation map.

In Maine, Wetlands of Special Significance (WoSS) are regulated by the Maine Department of Environmental Protection (DEP) under Chapter 310 of the Maine Natural Resources Protection Act. All coastal wetlands and great ponds (inland bodies of water >10 acres in size) are classified as WoSS. In addition, a freshwater wetland may be considered one of special significance if it: (1) contains a natural community that is critically imperiled or imperiled as defined by the Maine Natural Areas Program; (2) contains significant wildlife habitat; (3) is located within 250 feet of a coastal wetland; (4) is located within 250 feet of a great pond; (5) contains at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation[4], or open water; (6) is inundated with floodwater during a 100-year flood event based on flood insurance

[1] Environmental Laboratory. (1987). Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Vicksburg, MS: US Army Engineer Waterways Experiment Station.
[2] U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
[3] Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 131pp.
[4] Cowardin et al. [1979] defines emergent hydrophyte (i.e., emergent marsh vegetation) as "…rooted herbaceous angiosperms, ferns, and fern allies that grow in wet soil, stand erect during most or all of the growing season, and may be periodically to permanently flooded at the base, but do not tolerate prolonged inundation of the entire plant").

maps; (7) contains peatlands; or (8) is located within 25 feet of a river, stream, or brook. The Survey Area was assessed for WoSS.

Wetland Functions and Values Assessment Methods

FBE conducted the wetland functional assessment pursuant to the approach described by the Army Corps Highway Methodology Workbook Supplement: Wetland Functions and Values (US ACOE, 1995). In this "Descriptive Approach" to function assessment, prior to determining what functions and values are principal and why, evaluators first determine if particular functions and values are present and then if they are "principal". Functions and values are considered "principal" if they are an important physical component of a wetland ecosystem (function only), and/or are considered of special value to society, from a local, regional, and/or national perspective. When making determinations regarding a wetland, evaluators are encouraged to determine whether the wetland has the potential to serve these functions and values.

Functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society and result from both living and non-living components of a specific wetland resource. These include all processes necessary for the self-maintenance of the wetland ecosystem, such as primary productivity and nutrient cycling, among others. Therefore, functions relate to the ecological significance of wetland properties without regard to subjective human values.

Values are benefits that derive from one or more functions and the physical characteristics associated with a wetland. Most wetlands have corresponding societal values. The value of a particular wetland function, or combination of functions, is based on human judgment of the worth, merit, quality, or importance attributed to those functions.

The 13 functions and values associated with a wetland functional assessment are described below:

1. *Groundwater Recharge/Discharge*: The potential for the wetland to serve as a groundwater recharge and/or discharge area. This function refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.
2. *Floodflow Alteration (Storage & Desynchronization)*: The effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events and the gradual release of floodwaters. This function adds to the stability of the wetland ecosystem or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.
3. *Fish and Shellfish Habitat*: The effectiveness of seasonal or permanent watercourses associated with the wetland to provide fish and shellfish habitat.
4. *Sediment/Toxicant/Pathogen Retention*: The ability of the wetland to reduce or prevent degradation of water quality. This function relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands, or upstream erosive wetland areas.
5. *Nutrient Removal/Retention/Transformation*: The ability of the wetland to act as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.
6. *Production Export*: The effectiveness of the wetland to produce food or usable products for man or other living organisms.
7. *Sediment/Shoreline Stabilization*: The effectiveness of the wetland in stabilizing stream banks and shorelines against erosion.
8. *Wildlife Habitat*: The effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and wetland edges. Both resident and migrating species are considered.

9. *Recreation*: The suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities.
10. *Educational/Scientific Value*: The suitability of the wetland as a site for an "outdoor classroom," or as a location for scientific study or research.
11. *Uniqueness/Heritage*: The effectiveness of the wetland or its associated waterbodies to provide certain unique values, including archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, or its relative importance as a typical wetland class for the geographic location.
12. *Visual Quality/Aesthetics*: The visual and aesthetic quality or usefulness of the wetland.
13. *Endangered Species Habitat*: The suitability of the wetland to support threatened or endangered species.

Site Description

The site is composed of approximately 14-acres of previously developed land bounded by Casco Bay to the south and east, Portland's Back Cove to the west, I-295 to the northwest, and the former Grand Trunk Railway rail grade to the northeast. The site was home to the B&M Baked Beans plant that operated at the site from 1913 to circa 2022. The factory buildings occupy roughly half of the parcel[5], with parking lots accounting for an additional third. The remaining sixth of the property is composed of manicured lawn, trees and shrubs, and a small linear wetland running north-south along the eastern property boundary with the railroad grade.

Soils at the site consist primarily of urban fill. An elevated plateau-like area is present between the factory buildings and the wetland complex/ravine to the east.

Wetlands and Watercourses

FBE identified one contiguous wetland within the Survey Area which contains several wetland classes. Areas immediately adjacent to the site are regularly flooded estuarine intertidal wetlands with a predominantly mud substrate (E2US3N). Areas mapped beyond this wetland type are classified as estuarine subtidal (E1UBL) as the substrate remains inundated at low tide.

The wetland complex at the site is coastal and therefore meets the criteria to be deemed Wetland of Special Significance by DEP.

Wetland A - E2US3N Section

The western end of the shoreline at the site, extending east to the pier, meets the classification of a regularly flooded estuarine intertidal unconsolidated shore wetland with a mud substrate (E2US3N). The area is a mudflat that is bordered by riprap on all sides. The wetland has been altered by the development present on and adjacent to the site. Rockweed (*Ascophyllum nodosum*), a seaweed common to sheltered shores and coves, is present within the wetland attached to riprap and on rocks within the mudflat.

Wetland A – E2US1N Section

East of the pier, the characteristics of Wetland A differ in terms of substrate and meets the classification of a regularly flooded estuarine intertidal unconsolidated shore wetland with a cobble-gravel substrate (E2US1N). The predominantly cobble-gravel substrate of this section of the wetland is strewn with old, weathered bricks and other historic construction debris. The land area immediately east of the pier is bounded by a stone retaining wall; beyond it to the east, the shoreline is lined with rocks of various sizes ranging from pebbles to boulders.

Wetland A – E2EM1N Section

The channelized section of Wetland A on the eastern boundary of the property is an estuarine intertidal emergent marsh system with persistent vegetation (E2EM1N) situated in a ravine that is regularly flooded. This portion of the wetland has a variety of native and nonnative invasive shrubs growing along the banks. Native shrubs observed

[5] The buildings were in the process of being demolished during the course of the field investigation.

in proximity to the wetland included willows (*Salix* sp.), staghorn sumac (*Rhus hirta*), and cherry trees (*Prunus* sp.). Nonnative plants observed include black locust trees (*Robina pseudoacacia*) and cultivated apple trees (*Malus pumila*). Non-native, invasive plants observed consisted of Morrow's honeysuckle (*Lonicera morrowii*), Japanese knotweed (*Fallopia japonica*), and multiflora rosa (*Rosa multiflora*).

At the USACE plot within this section of the wetland, smooth cordgrass (*Spartina alterniflora*) is the dominant vegetation with Carolina sea-lavender (*Limonium carolinianum*) and common glasswort (*Salicornia depressa*) also present. Soil met the criteria for hydric soil indicators A11 – Depleted Below Dark Surface and F3 Depleted Matrix as the soil profile consisted of a dark surface layer of silty clay loam underlain by a depleted clay with prominent redoximorphic concentrations. Observed primary indicators of hydrology consisted of A1 – Surface Water, A2 – High Water Table, A3 – Saturation, and B9 – Water-Stained Leaves. Completed USACE Wetland Determination Data forms are attached to this letter.

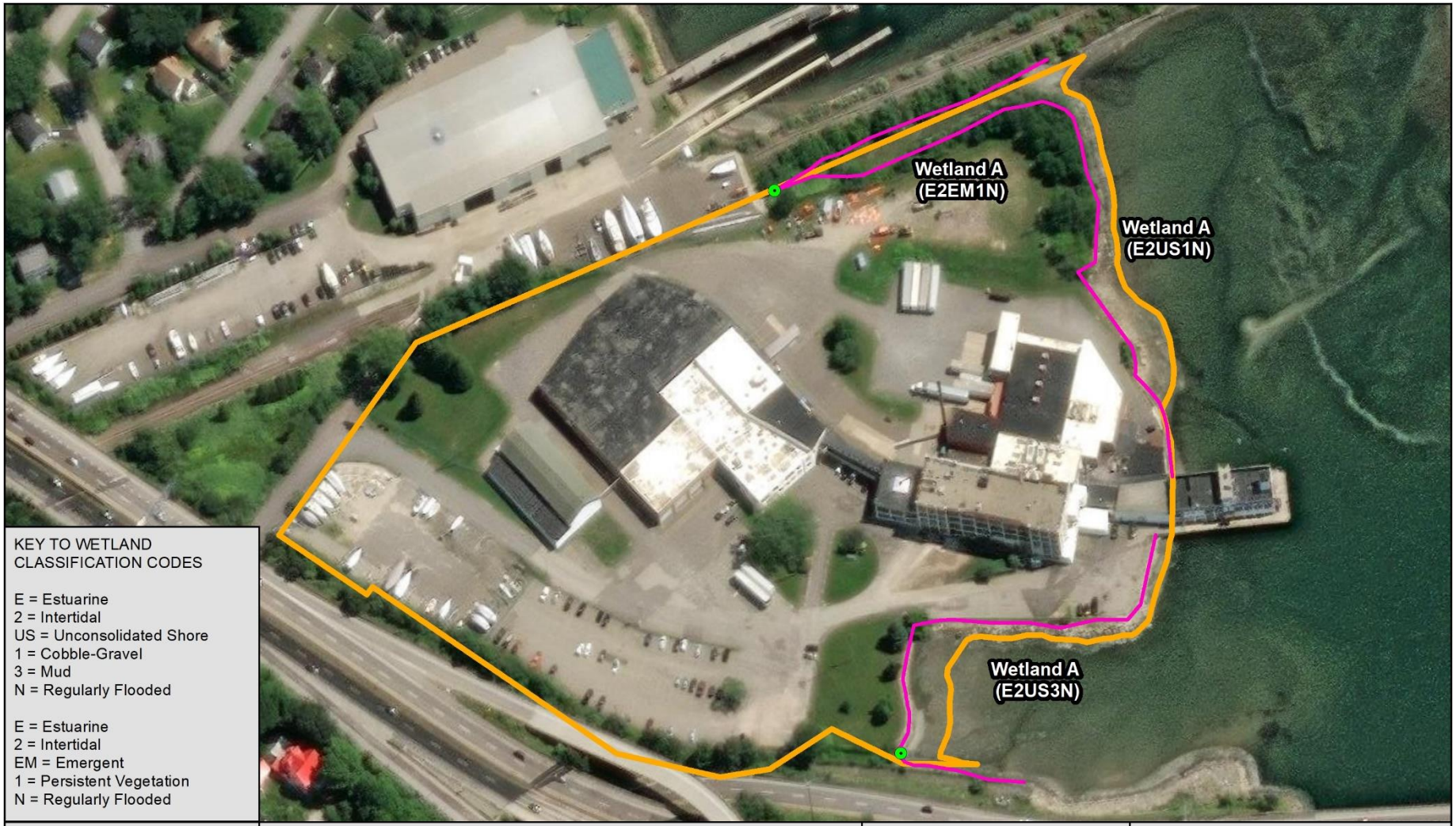
Functions and Values

Principal functions of Wetland A are Fish and Shellfish Habitat, Production Export, Wildlife Habitat, and Uniqueness/Heritage. Other functions and values that the wetland provides consist of Floodflow Alteration, Sediment/Toxicant Retention, Nutrient Removal, Sediment/Shoreline Stabilization, Recreation, Educational/Scientific Value, and Visual Quality/Aesthetics. A completed USACE Function and Value Evaluation Form is attached to this letter.

Thank you for the opportunity to assist Woodard & Curran with this project. Please do not hesitate to contact me if you have questions or need additional information.

Regards,

Kevin Ryan
Ecological Services Division Lead
FB Environmental Associates

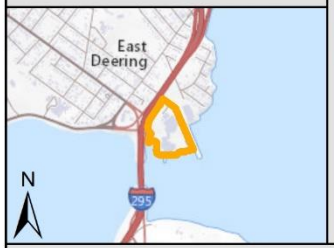


KEY TO WETLAND CLASSIFICATION CODES

E = Estuarine
2 = Intertidal
US = Unconsolidated Shore
1 = Cobble-Gravel
3 = Mud
N = Regularly Flooded

E = Estuarine
2 = Intertidal
EM = Emergent
1 = Persistent Vegetation
N = Regularly Flooded

LOCUS MAP



Survey Area
Wetland Boundary
Culvert

N E S W

FB environmental

0 100 200 Feet

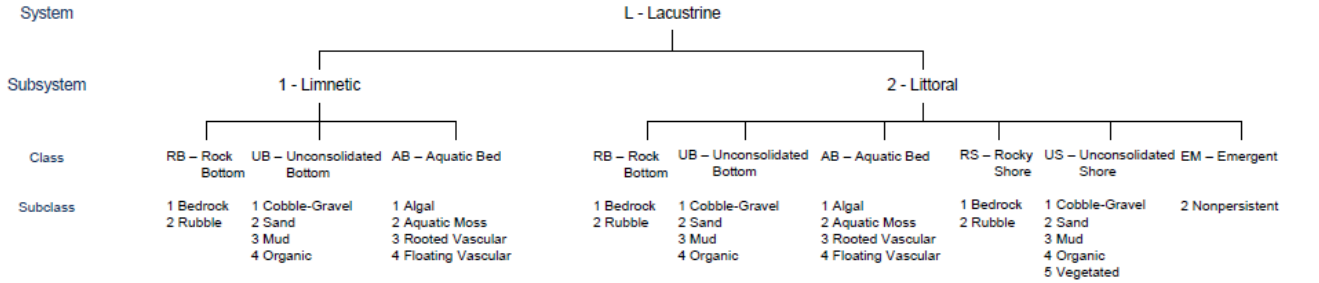
Initiative for Digital Engineering & Life Sciences
Roux Institute
Portland, Maine

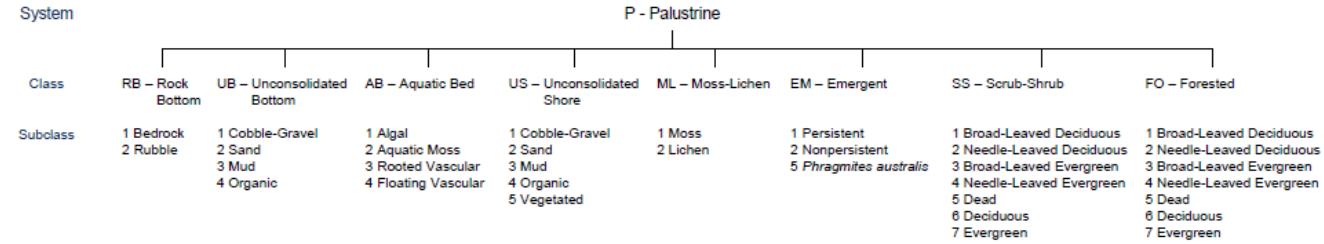
Data Sources: Maine Geolibrary, ESRI, FBE
Coordinate System: NAD 1983 UTM Zone 19
Map created by K. Ryan on June 22, 2023

Notes: Wetlands were delineated by Kevin Ryan and Sarah Large in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, v2.0. January 2012. Wetlands were classified using the Classification of Wetlands and Deepwater Habitats of the United States (USFWS, 1979).

Cowardin Wetland Classification System

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION



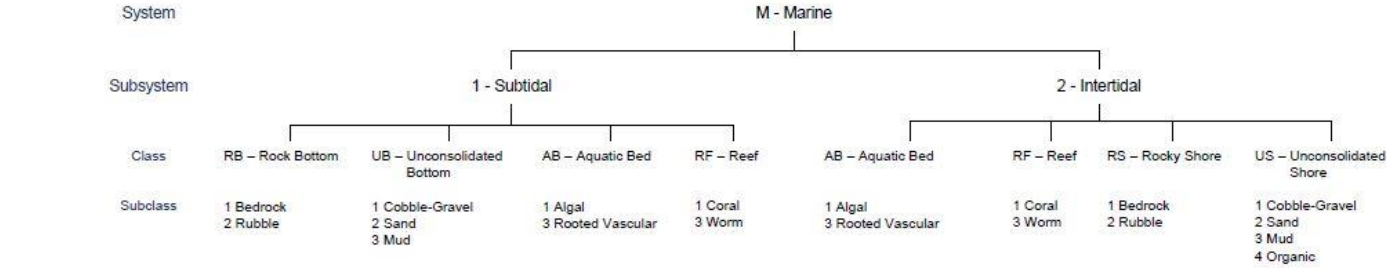


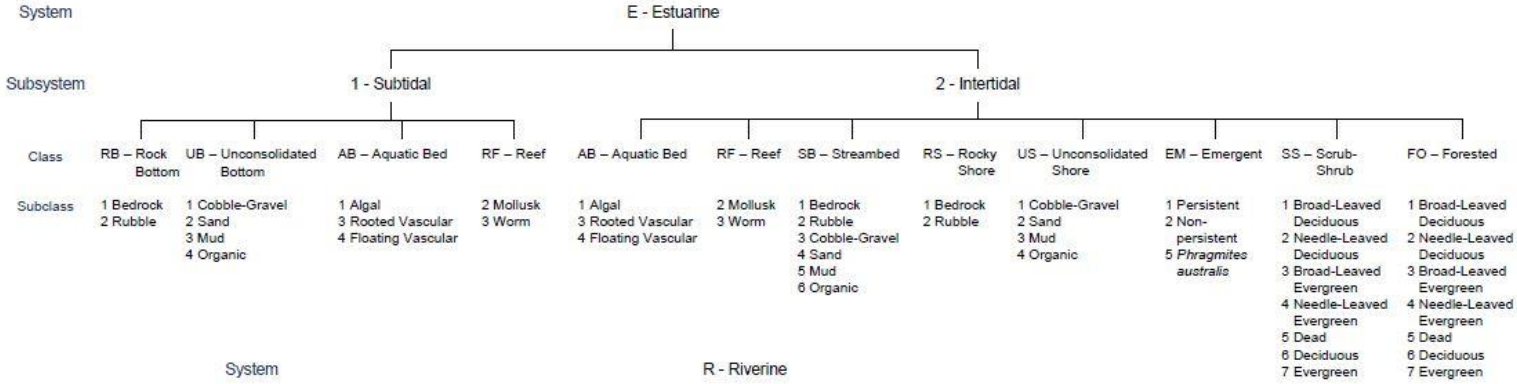
MODIFIERS

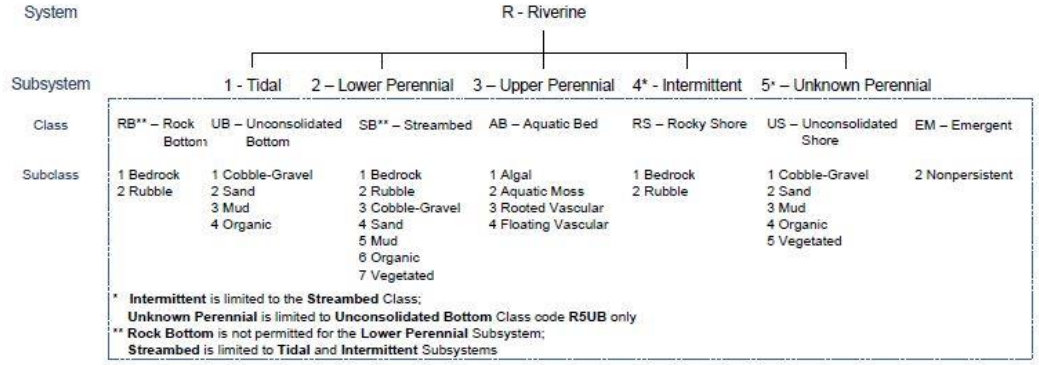
In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

Water Regime			Special Modifiers	Water Chemistry			Soil
Nontidal	**Saltwater Tidal**	**Freshwater Tidal**		**Coastal Halinity**	**Inland Salinity**	**pH Modifiers for all Fresh Water**	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Tidal	b Beaver	1 Hyperhaline	7 Hypersaline	a Acid	g Organic
B Saturated	M Irregularly Exposed	R Seasonally Flooded-Tidal	d Partly Drained/Ditched	2 Euhaline	8 Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	T Semipermanently Flooded-Tidal	f Farmed	3 Mixohaline (Brackish)	9 Mixosaline	i Alkaline	
E Seasonally Flooded/ Saturated	P Irregularly Flooded	V Permanently Flooded-Tidal	h Diked/Impounded	4 Polyhaline	0 Fresh		
F Semipermanently Flooded			r Artificial	5 Mesohaline			
G Intermittently Exposed			s Spoil	6 Oligohaline			
H Permanently Flooded			x Excavated	0 Fresh			
J Intermittently Flooded							
K Artificially Flooded							

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION







Site Photographs



Photo 1. View south from the north end of Wetland A.



Photo 2. View north from the western boundary of Wetland A, towards the developed/manicured area.



Photo 3. The current pier acts as a dividing line between the muddy and cobble-gravel substrate sections of Wetland A.



Photo 4. Wetland A north of the pier has a cobble-gravel substrate strewn with old bricks.



Photo 5. View north of the emergent marsh section of Wetland A.



Photo 6. View south from the emergent marsh section of Wetland A.



Photo 7. Several small culverts drain to the west end of Wetland A.



Photo 8. View north of the emergent portion of Wetland A upon becoming inundated during the field investigation.

Completed Wetland Function-Value Evaluation Form

Wetland Function-Value Evaluation Form

Total area of wetland: n/a Human made?: No Is wetland part of a wildlife corridor?: No or a "habitat island"?: No

Adjacent land use: Industrial facility Distance to nearest roadway or other development: Immedeately adjacent

Dominant wetland systems present: Estuarine Contiguous undeveloped buffer zone present: No

Is the wetland a separate hydraulic system?: No If not, where does the wetland lie in the drainage basin?: Low - coastal

How many tributaries contribute to the wetland?: n/a Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D.: Wetland A

Latitude: 43.64235 Longitude: 70.279119

Prepared by: KR & SL Date: 6 June 2023

Wetland Impact:
Type: _____ Area: _____

Evaluation based on:
Office: Yes Field: Yes

Corps manual wetland delineation completed? Y: x N: _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	3,4,5,9,11		
Fish and Shellfish Habitat	Y	1,3,4	Y	Wetland is a coastal mudflat.
Sediment/Toxicant Retention	Y	1,2,4,7,8,9		
Nutrient Removal	Y	2,4,5,6,7		
Production Export	Y	1,4,6	Y	
Sediment/Shoreline Stabilization	Y	1,3,5,10,11		
Wildlife Habitat	Y	8,16,21	Y	Observed waterfowl and fish using wetland.
Recreation	Y	2,5,12		
Educational/Scientific Value	Y	2,5,14		
Uniqueness/Heritage	Y	1,13,14,17,19,20	Y	
Visual Quality/Aesthetics	Y	2,6,8,11,12		
ES Endangered Species Habitat				Unknown.
Other				

Notes:

* Refer to backup list of numbered considerations.

Completed Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IDEALS - Roux Institute City/County: Portland/Cumberland Sampling Date: 6 June 23

Applicant/Owner: Woodard & Curran State: ME Sampling Point: A-1 (wet)

Investigator(s): Kevin Ryan and Sarah Large Section, Township, Range:

Landform (hillside, terrace, etc.): Coast Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R Lat: Long: Datum:

Soil Map Unit Name: Cut and Fill NWI classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 4
Water Table Present?	Yes X	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Plot becoming inundated by tide at time of data collection.

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VEGETATION – Use scientific names of plants.

Sampling Point: A-1 (wet)

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina alterniflora*	50	Yes	OBL
2. *Limonium carolinianum*	10	No	OBL
3. *Salicornia depressa*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	65 (A)		65 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

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Northcentral and Northeast Region – Version 2.0

SOIL Sampling Point A-1 (wet)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/1	100					Loamy/Clayey	Silty clay loam
4-8	2.5Y 4/1	75	7.5YR 5/6	25	C	M	Loamy/Clayey	Prominent redox concentrations
8-16	2.5Y 4/1	60	7.5YR 5/6	40	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

US Army Corps of Engineers Northcentral and Northeast Region – Version 2.0

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: IDEALS - Roux Institute City/County: Portland/Cumberland Sampling Date: 6 June 23

Applicant/Owner: Woodard & Curran State: ME Sampling Point: A-1 (up)

Investigator(s): Kevin Ryan and Sarah Large Section, Township, Range:

Landform (hillside, terrace, etc.): Coast Local relief (concave, convex, none): Concave Slope %: 1

Subregion (LRR or MLRA): LRR R Lat: Long: Datum:

Soil Map Unit Name: Cut and Fill NWI classification: Not mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes ____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)
Plot is in manucured lawn just west of Wetland A

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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VEGETATION – Use scientific names of plants.

Sampling Point: A-1 (up)

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea abies*	10	Yes	UPL
2. *Thuja occidentalis*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *None*			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Trifolium repens*	30	Yes	FACU
2. *Achillea millefolium*	30	Yes	FACU
3. *Poa sp.*	30	Yes	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	10	x 5 =	50
Column Totals:	80 (A)		310 (B)

Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Plot is on manicured lawn.

US Army Corps of Engineers

Northcentral and Northeast Region – Version 2.0

SOIL Sampling Point A-1 (up)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5YR 3/2	100					Loamy/Clayey	Sandy Loam
20-22	7.5YR 4/4	100					Loamy/Clayey	Sandy Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

US Army Corps of Engineers Northcentral and Northeast Region – Version 2.0

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

In Reply Refer To:
Project Code: 2023-0113655
Project Name: IDEALS Phase 1

October 30, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The 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 IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the 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/or 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 and/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:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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 Code 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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

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

Project Code: 2023-0113655
Project Name: IDEALS Phase 1
Project Type: Acquisition of Lands
Project Description: Phase 1
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.67886365,-70.25460066402678,14z



Counties: Cumberland County, Maine

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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	Endangered

BIRDS

NAME	STATUS
Roseate Tern *Sterna dougallii dougallii* Population: Northeast U.S. nesting population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Black Guillemot *Cepphus grylle* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10412	Breeds May 15 to Sep 10
Black Scoter *Melanitta nigra* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10413	Breeds elsewhere
Common Eider *Somateria mollissima* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10457	Breeds Jun 1 to Sep 30
Common Loon *gavia immer* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/4464	Breeds Apr 15 to Oct 31
Great Shearwater *Puffinus gravis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/9634	Breeds elsewhere
Long-tailed Duck *Clangula hyemalis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/7238	Breeds elsewhere
Razorbill *Alca torda* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10461	Breeds Jun 15 to Sep 10
Red Phalarope *Phalaropus fulicarius* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10469	Breeds elsewhere

NAME	BREEDING SEASON
Red-breasted Merganser *Mergus serrator* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10693	Breeds elsewhere
Red-throated Loon *Gavia stellata* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/9589	Breeds elsewhere
Ring-billed Gull *Larus delawarensis* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10468	Breeds elsewhere
Roseate Tern *Sterna dougallii* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10661	Breeds May 10 to Aug 31
Surf Scoter *Melanitta perspicillata* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10463	Breeds elsewhere
Thick-billed Murre *Uria lomvia* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10700	Breeds Apr 15 to Aug 15
White-winged Scoter *Melanitta fusca* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10462	Breeds elsewhere
Wilson's Storm-petrel *Oceanites oceanicus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/10416	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

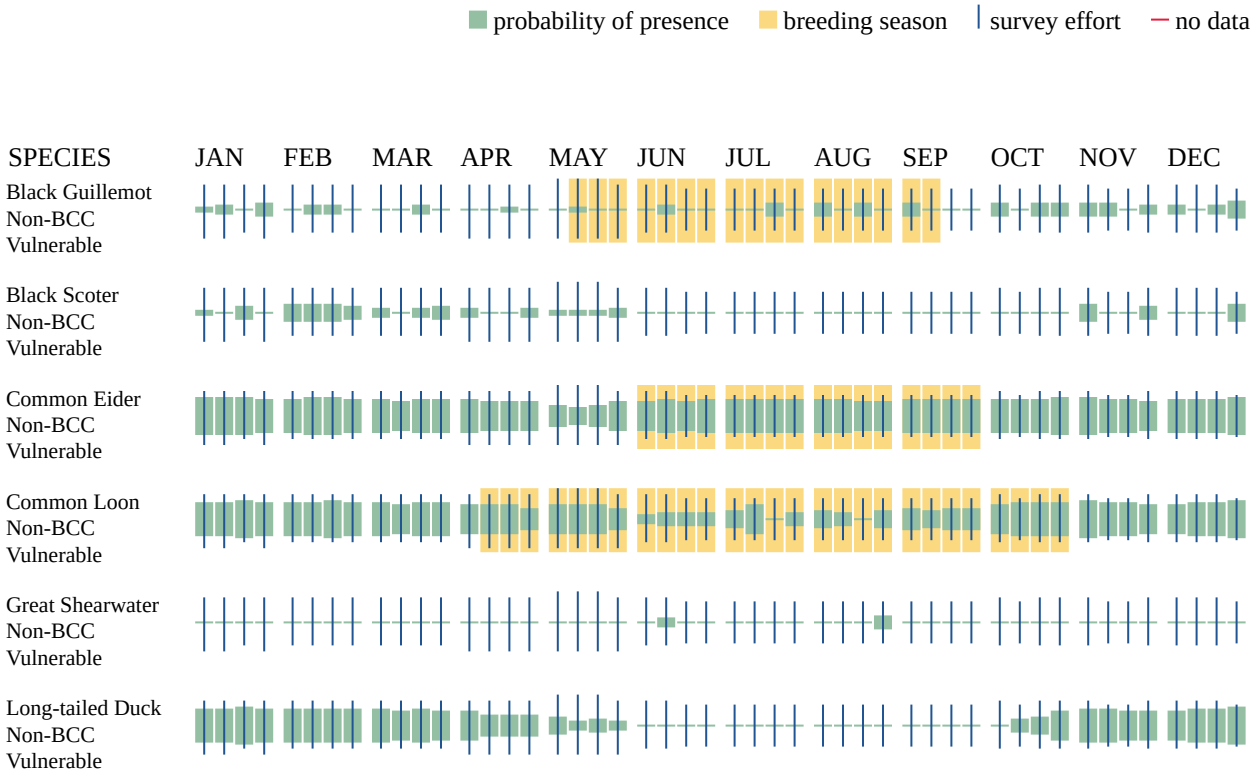
Probability of Presence (■)

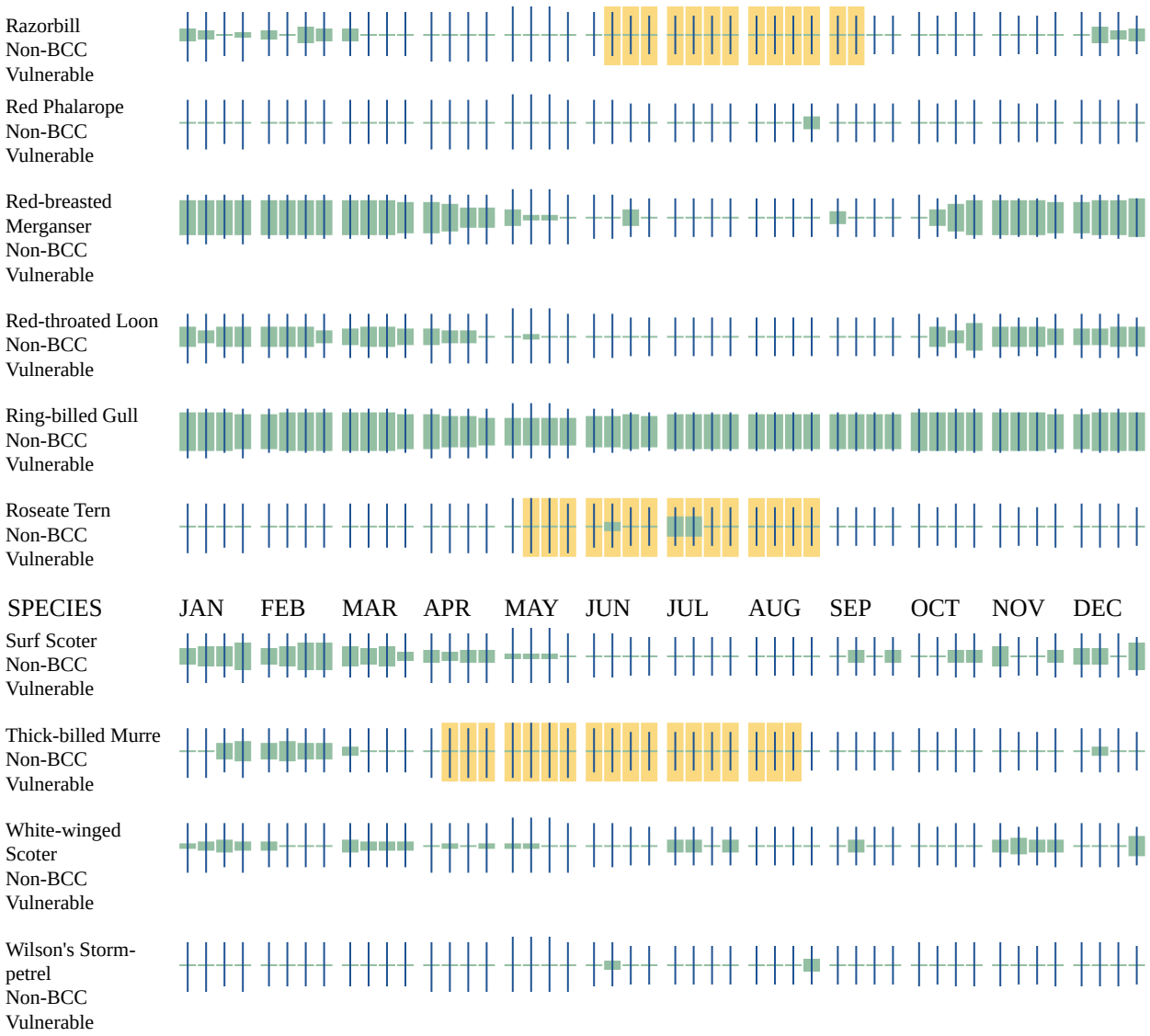
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

ESTUARINE AND MARINE WETLAND

- E2US2P
- E2US3N

ESTUARINE AND MARINE DEEPWATER

- E1UBL

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Julianna Monts
Address: 41 Hutchins Drive
City: Portland
State: ME
Zip: 01402
Email jmonts@woodardcurran.com
Phone: 9175753387

12 Mountfort Street
Portland, Maine 04101
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

November 2023

Maine Department of Inland Fisheries and Wildlife
41 State House Station
Augusta, ME 04333

RE: The Roux Institute at Northeastern University Phase 1 – Environmental Review Request

To Whom It May Concern:

Northeastern University and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), propose to develop a mixed-use post-graduate campus at 1 Bean Pot Circle in Portland, Maine. The project site was formerly owned by Burnham & Morrill (B&M) and previously developed for industrial food manufacturing operations. The site is primarily impervious and comprised of buildings, parking, and driveways, with vegetation along the site perimeter and waterfront. To enable future phases of development, abatement and demolition of existing industrial buildings has commenced. The proposed work for Phase 1 includes the construction of the Learning, Research, and Collaboration Building, renovation of the Bean Building, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements.

The proposed work will require a Maine Department of Environmental Protection Site Location of Development Permit, which requires coordination with the Maine Department of Inland Fisheries and Wildlife. On behalf of Northeastern University and IDEALS, we are requesting a review of the project area for any known threatened or endangered species or critical habitat. A Site Location Map and Overall Site Plan have been attached for your reference.

We appreciate your review of this project. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at 207-558-3841 or alebel@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN

Amy N LeBel

Amy LeBel, P.E.
Project Engineer

Enclosures: Site Location Map
Overall Site Plan

8. HISTORIC SITES

The proposed development will not adversely affect any historic sites, historic structures or archaeological sites. The Site was occupied by residences and a lobster cannery prior to 1913, when Burnham & Morrill (B&M) relocated its food manufacturing operations to the Site from Franklin Street. Shortly thereafter, the flagship Cannery Building (Bean Building) was constructed, as well as the adjacent codfish building on the pier. The site was further improved with buildings and parking to support operations. Canning operations ceased in 2021.

In 2022, IDEALS submitted a nomination to the City's Historic Preservation Board to designate the Bean Building as a local landmark. The five-story 1913 Bean Building was designated as a landmark by the City Council on October 17, 2022. During the Historic Preservation process, it was determined that the existing Codfish Building and pier were unsalvageable and will be demolished. This development Application proposes construction of a new pier in its place.

On May 23, 2023, IDEALS received a demolition permit from the City and commenced demolition of all existing buildings on the Site, retaining only the Bean Building and the Codfish Building.

An application will be submitted to the City of Portland Historic Preservation Board for improvements to the Cannery Building and interpretive elements on the new pier to honor the former Codfish Building.

The demolition of the Codfish Building and construction of the pier will require a Natural Resources Protection Act (NRPA) permit from the Maine Department of Environmental Protection. We will be coordinating with Maine Historic Preservation Commission (MHPC) in connection with the NRPA permit and will provide the City with relevant findings by MHPC regarding historic sites, structures or archaeological sites.

9. UNUSUAL NATURAL AREAS

The Site has been previously developed and there are no known unusual natural areas. A letter was sent to the Maine Natural Areas Program (MNAP) requesting a review of the Site relative to rare and exemplary botanical features; a copy of the review request letter is attached to this Section.

9.1 LIST OF ATTACHMENTS

- MNAP Site Review Request Letter.

12 Mountfort Street
Portland, Maine 04101
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

November 2023

Maine Natural Areas Program
177 State House Station
Augusta, ME 04333-0177

RE: The Roux Institute at Northeastern University Phase 1 – Site Review Request

To Whom It May Concern:

Northeastern University and their agent, Initiative for Digital Engineering and Life Sciences (IDEALS), propose to develop a mixed-use post-graduate campus at 1 Bean Pot Circle in Portland, Maine. The project site was formerly owned by Burnham & Morrill (B&M) and previously developed for industrial food manufacturing operations. The site is primarily impervious and comprised of buildings, parking, and driveways, with vegetation along the site perimeter and waterfront. To enable future phases of development, abatement and demolition of existing industrial buildings has commenced. The proposed work for Phase 1 includes the construction of the Learning, Research, and Collaboration Building, renovation of the Bean Building, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements.

The proposed work will require a Maine Department of Environmental Protection Site Location of Development Permit, which requires coordination with the Maine Natural Areas Program. On behalf of Northeastern University and IDEALS, we are requesting information on rare and exemplary botanical features in the project area. A site location map has been attached for your reference.

We appreciate your review of this project. If you have any questions regarding this information or the proposed project, please do not hesitate to contact me at 207-558-3841 or alebel@woodardcurran.com. Thank you for your assistance.

Sincerely,

WOODARD & CURRAN

Amy N LeBel

Amy LeBel, P.E.
Project Engineer

Enclosure: Site Location Map

10. BUFFERS

The Site has been previously developed. There are no existing or proposed buffer strips. However, Interstate I-295 borders the project to the west and will act as a buffer to the Site. Existing buffers of plantings at property lines will be maintained or replaced where appropriate.

11. SOILS

Copies of the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey are attached to this Section for your reference. Environmental assessments of the Site have been conducted and a soil management plan has been developed for the Site.

11.1 LIST OF ATTACHMENTS

- United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey.



Map Scale: 1:2,840 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 19, Aug 30, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuB	Lamoine silt loam, 3 to 8 percent slopes	0.9	4.5%
Cu	Cut and fill land	15.9	77.8%
W	Water	3.6	17.7%
Totals for Area of Interest		**20.4**	**100.0%**

12. STORMWATER MANAGEMENT

The Stormwater Management Plan describes the proposed stormwater management measures for the project, as shown on the design drawings uploaded to ProjectDox. A USGS map and a soils map are attached to Section 1 and Section 11 of this Report, respectively.

For a site that had previously seen no stormwater quality or quantity treatment or management other than some limited collection systems, the proposed stormwater management system will reduce the impact of stormwater on surrounding resources. The proposed stormwater management system has been designed to adequately capture, convey, and treat stormwater runoff, as demonstrated in the Stormwater Management Report uploaded under separate cover.

12.1 LIST OF ATTACHMENTS

- Stormwater Management Plan (Bound Separately).

13. URBAN IMPAIRED STREAM

The proposed development is not located within the watershed of an Urban Impaired Stream; the Urban Impaired Stream Standard does not apply.

14. BASIC STANDARD

The proposed development is adjacent to Casco Bay; there are no other known protected resources associated with the Site. As shown in the soil survey attached to Section 11 of this Report, the Site is comprised primarily of urban fill. The Soil Erosion and Sediment Control Plan and compliance with the Basic Standard is described in the Stormwater Management provided as part of Section 12 of this Report.

During construction, the Contractor will be responsible for conducting inspections in accordance with the attached *Stormwater Erosion & Sediment Control Inspection Report Form* (or equivalent). Inspections shall be performed at least once a week, as well as before and after storm events. A person with knowledge of stormwater management and erosion and sediment control, including the standards and conditions of the permit approvals, shall conduct the inspections and perform maintenance of the facilities. If maintenance or modifications are necessary, implementation will be completed within seven days and prior to any rainfall event. After construction, the Owner will be responsible for inspecting and maintaining the Site's stormwater system.

14.1 LIST OF ATTACHMENTS

- Erosion & Sediment Control Inspection Report Form.

EROSION & SEDIMENT 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 Action Taken:

Attachments (if any):

Signature:

Name Title Date

15. GROUNDWATER

The proposed development is not located within a Significant Sand and Gravel Aquifer; as previously noted, the Site is comprised primarily of urban fill. The proposed development will not infiltrate or extract groundwater. It is not anticipated that the proposed development will result in any impacts to groundwater.

16. WATER SUPPLY

The proposed development will be provided with both fire protection water service and domestic water service as shown on the drawings via a private water system that will connect to the public water main on Sherwood Street. Woodard & Curran is working directly with the Portland Water District to determine the appropriate design for this work. The ability to serve documentation for Phase 1 will be provided upon receipt.

17. WASTEWATER DISPOSAL

The proposed development will be provided with sanitary sewer service as shown in the drawings. The private sanitary sewer system will flow via gravity to the public sewer along the I-295 corridor, similar to existing conditions. The proposed development will include kitchens and parking garages; grease traps and oil/water separators will be provided as shown in the drawings. A Wastewater Capacity Application has been submitted to Public Works, and a copy of the City's determination of ability to serve will be provided upon receipt.

18. SOLID WASTE

18.1 SOLID WASTE

Adequate provisions for recycling and solid waste disposal have been made. All solid waste materials and recyclables generated by the proposed development will be transported and disposed of or recycled in accordance with applicable laws and regulations. Solid waste will be managed in full accordance with all applicable laws and regulations.

18.2 CONSTRUCTION & DEMOLITION DEBRIS

The proposed development will generate construction waste and demolition debris (CDD). The Contractor will be responsible for properly disposing of the CDD. The Contractor will be responsible for handling, managing, and disposing of all waste generated by construction in accordance with the Maine Solid Waste Management Regulations and all other applicable local, state, and federal regulations.

18.3 SPECIAL & HAZARDOUS WASTE

Environmental assessments of the Site have been conducted and a soil management plan has been developed for the Site. Hazardous building materials of the existing structures will be appropriately managed during the remaining demolition and upcoming renovation activities.

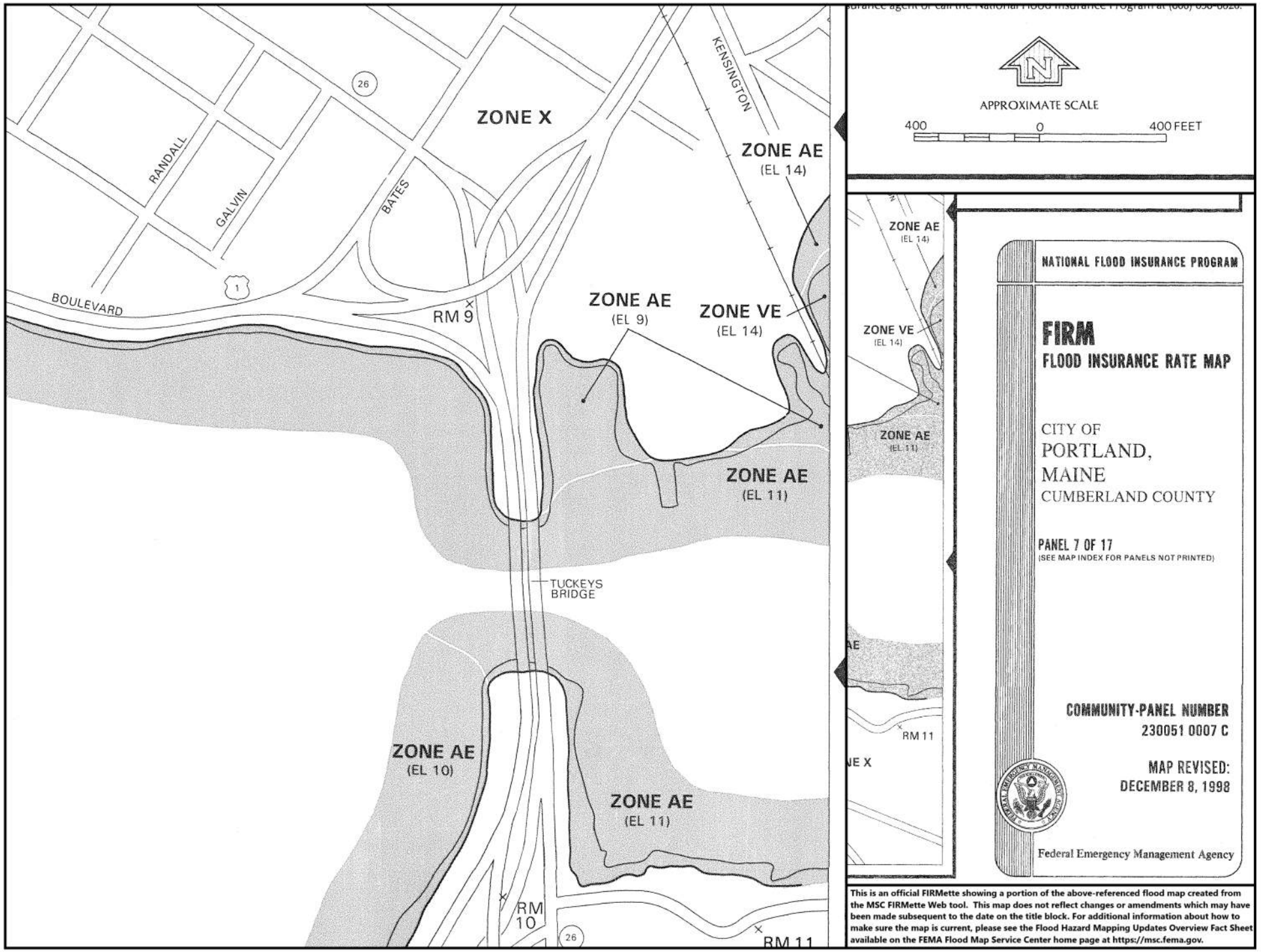
The Learning, Research, and Collaboration Building contains lab spaces which will use controlled, code-compliant quantities of hazardous materials for research purposes. The strategy related to the storage and use of hazardous materials within the building consists of compartmentalization into multiple control areas per the building code and laboratory units per NFPA 45. Chemical quantities throughout will be maintained below Maximum Allowable Quantities allowed for this construction type and use group. Centralized storage and waste rooms are included in the base building design for tenant storage of flammable and combustible liquids as well as other hazardous chemicals (corrosives, toxics, etc.) to facilitate shipping/receiving. The rooms are compliant with the requirements of quantity, separation, mechanical ventilation, explosion control, fire protection and secondary containment. Laboratory areas will be used for educational, research, and development purposes involving the storage and use of hazardous chemicals and are compliant with the following sections: quantity, container size, separation, mechanical ventilation, fire protection, floor openings and egress.

19. FLOODING

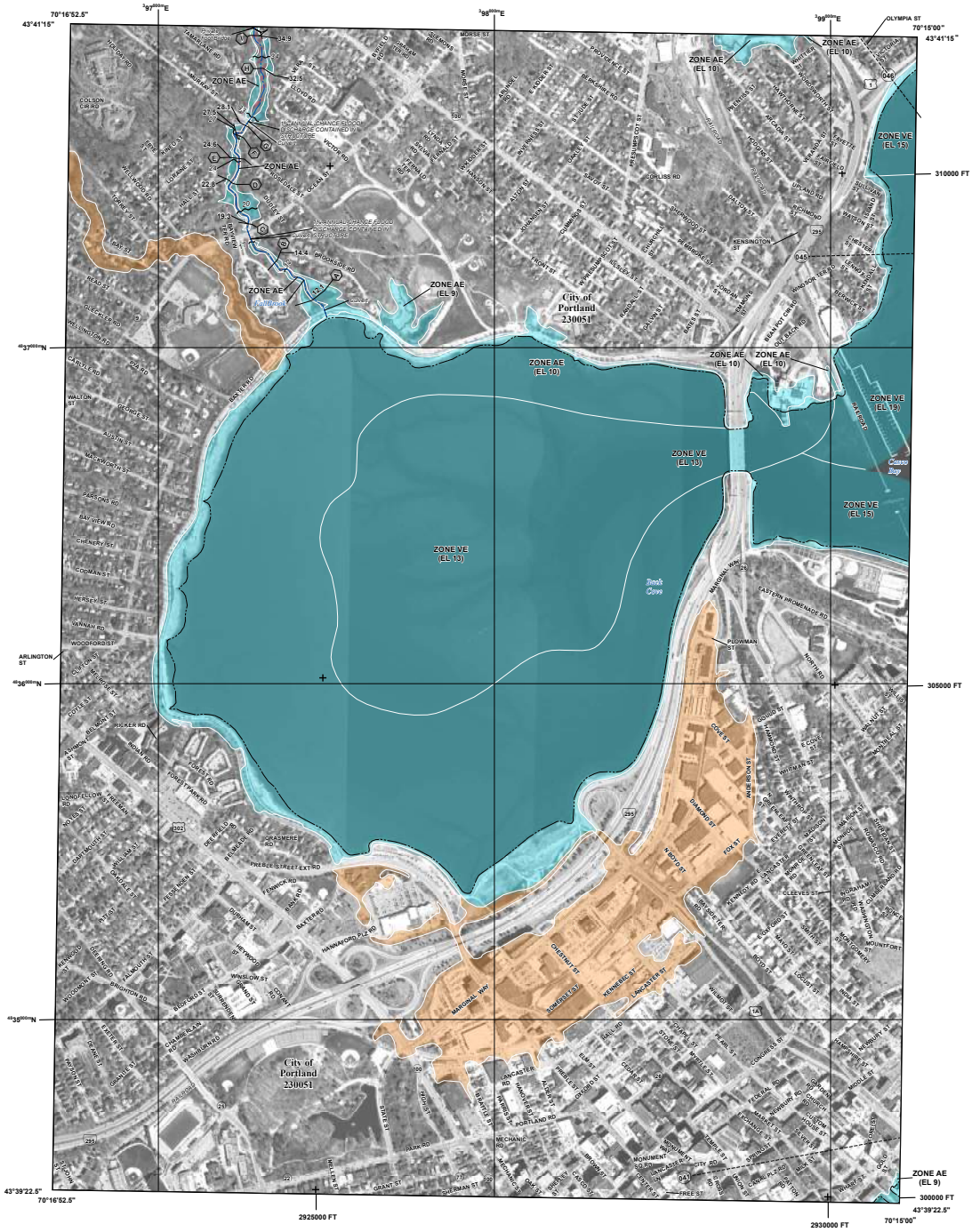
Portions of the Site are delineated as Special Flood Hazard Areas according to FEMA's Flood Insurance Rate Map (FIRM), attached to this Section. An application for a Flood Hazard Development Permit is being submitted to the City of Portland. The proposed development will not cause or increase flooding or cause an unreasonable flood hazard to any adjacent structures. The flood zones are located along the southern portions of the proposed development, as shown on the Design Drawings.

19.1 LIST OF ATTACHMENTS

- FEMA Flood Insurance Rate Map.



This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at https://msc.fema.gov.



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM provided in digital format by State of Maine, Maine office of GIS (MeGIS). This information was derived from MeGIS, dated 2012.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and FDTs may reflect stream channel distances that differ from what is shown on the map.

SCALE

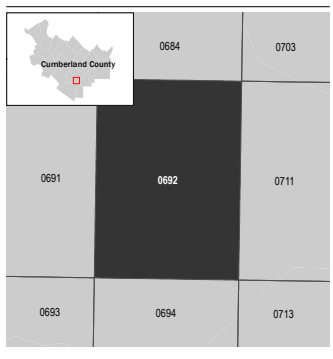
Map Projection:
NAD 1983 UTM Zone 19N;
Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

CUMBERLAND COUNTY, MAINE

All Jurisdictions

PANEL 0692 OF 0837

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
PORTLAND, CITY OF	230051	0692	F

REVISED PRELIMINARY 4/14/2017

VERSION NUMBER 2.3.2.1

MAP NUMBER 23005C0692F

EFFECTIVE DATE

20. BLASTING

S.W. Cole Engineering, Inc., the geotechnical engineer for the project, has confirmed that based on investigations completed to date, no blasting is anticipated for this project.

21. AIR EMISSIONS

No significant air emissions are anticipated for the project. Permitting for emergency generators will be completed prior to issuance of building permits.

22. ODORS

The proposed development will not involve any processes that emit significant odors; this Section is not applicable.

23. WATER VAPOR

The proposed development will not use water for any processes that would emit water vapor; this Section is not applicable.

24. SUNLIGHT

The proposed development will not block access to sunlight for any structures utilizing solar energy; this Section is not applicable.

25. NOTICES

The City of Portland has Delegated Review Authority for this application; as such, it is our understanding that the public notice requirements associated with MaineDEP Site Law do not apply.



woodardcurran.com

ENVIRONMENTAL MEDIA MANAGEMENT PLAN REV 1

The Roux Institute at Northeastern University
Portland, Maine

12 Mountfort Street
Portland, ME 04101
800.426.4262

woodardcurran.com

0233482.00
Initiative for Digital Engineering and Life Sciences (IDEALS)
April 24, 2024

Woodard & Curran

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APPENDICES

Appendix A: Example Maine DEP Non-Hazardous Waste Transporter Manifest

1. INTRODUCTION

Woodard & Curran has prepared this Environmental Media Management Plan (EMMP) for the Initiative for Digital Engineering and Life Sciences (IDEALS) to facilitate proper soil management and disposal procedures during redevelopment activities at the Roux Institute property located at 1 Bean Pot Circle in Portland, Maine (the "Site"; see **Figure 1**). The Site currently consists of the former Burnham & Morrill (B&M) factory, which operated from 1913 through 2021.

1.1 Purpose

This EMMP has been prepared for the Roux Institute at Northeastern University's Learning Research & Collaboration Building, parking garage, childcare facility, and Bean Building.

This plan has been prepared for use during activities that have the potential to disturb soil such as utility and subsurface structure installation/relocation work, foundation installation, grading, paving, and landscaping. Soil management procedures include site controls and measures to reduce exposure to soil during these activities, as well as to facilitate the proper handling, storage, characterization, transport, and offsite reuse or disposal of excess soil that may be generated during construction. This EMMP also addresses groundwater that may incidentally be encountered and/or require management or disposal during construction.

1.2 Site History

The Site consists of two contiguous parcels totaling 23.5 acres situated on the shoreline of Casco Bay in Portland, Cumberland County, Maine. Of the 23.5 acres, 13 acres are situated above the high tide line and the remainder is intertidal land of Casco Bay. The elevation of the Site is approximately 20 feet above sea level, and topography slopes downward from the north to the south, toward Casco Bay.

The Site is identified by the City of Portland Assessor's Online Database as Parcel IDs 447-A-001 and 447-A-002 (see **Figure 1**) and is currently owned IDEALS. In general, Parcel ID 447-A-001 consists of the land above the high tide line and Parcel ID 447-A-002 consists of intertidal land. **Figure 2** details the area of the Site above the high tide line.

Based on historical Sanborn Fire Insurance Maps and previous environmental reports, the Site was occupied by residences prior to 1913. In 1913, B&M moved to the Site from its original location on Franklin Street in Portland, and the four-story B&M Cannery Building was constructed on the Site, as well as the Codfish Building located on the pier at the southern end of the facility. Additional buildings were constructed within the next several years. In the 1920s, B&M began experimenting with brick-oven baked beans to offset declines in other product lines (e.g., canned fish, meat, and vegetables), and in the 1920s and 1930s, began selling brick-oven baked beans in cans. B&M continued to bake its beans in the traditional manner, in open pots inside brick ovens, through 2021.

Beginning in March 2023, redevelopment enabling work was completed at the Site. This included building material abatement work, removal of waste materials, discontinuation of select utilities, and the demolition of all buildings except the Cannery Building and the Codfish Building. This enabling work was completed in August 2023.

1.3 Previous Subsurface Investigations and Remedial Activities

A summary of previous subsurface investigations and remedial activities conducted at the Site is presented below.

1.3.1 UST Removal Site Assessment – 1995

On November 27, 1995, a 1,000-gallon gasoline underground storage tank (UST) was discovered during excavation for a new electrical service to the facility (see **Figure 2**). The UST had not been registered with the Maine Department of Environmental Protection (DEP). The age of the tank was unknown; however, it appeared that the UST had been abandoned and out of service for over 20 years before being discovered. Upon discovery, numerous holes ranging in size from pin-hole size to 0.25 inches in diameter were observed in the north end and bottom of the UST. The tank and piping were noted to be in poor condition. Low permeability silt and clay was observed at the base of the UST excavation which resulted in water collection in the disturbed areas. Groundwater was not initially encountered in the excavation; however, groundwater had equilibrated to between four and five feet below ground surface (bgs) within four to eight hours of the open excavation.

Soil samples were collected and analyzed for volatile organic compounds (VOCs) using a photoionization detector (PID). Although the concentrations of VOCs at the Site were below the cleanup goals set by the Maine DEP and therefore did not require further investigation or remedial action, the facility owner chose to pursue limited corrective action based on the presence of elevated concentrations of VOCs in the former UST excavation. The final excavation was 12 feet by 14 feet in area and approximately 8.5 feet bgs, and approximately 50 tons of oil-impacted soil were removed from the former UST excavation and taken to Commercial Recycling in Scarborough, Maine for asphalt batching. Confirmation soil samples were collected from the north and south ends of the final excavation and were analyzed for total gasoline-range organic (GRO) compounds. Laboratory results did not identify GRO compounds above method detection limits (1 part per million [ppm]). Consultant Dames & Moore recommended no further action associated with the removed UST (Dames & Moore, 1996).

1.3.2 Subsurface Site Investigation – 2021

In 2021, Woodard & Curran conducted a subsurface investigation at the Site on behalf of IDEALS to evaluate the current condition of environmental media at the Site. The investigation included soil and groundwater sampling, and sample locations are shown on **Figure 2**. As summarized below, no evidence of a significant point source release of oil and/or hazardous materials was identified in soil or groundwater samples collected from the Site.

<u>Soil</u>

Soil results were compared to the current (November 15, 2023) Maine DEP residential, commercial worker, park user, and construction worker risk-based Remedial Action Guidelines (RAGs) to evaluate whether soil conditions at the Site had been significantly impacted and to evaluate potential direct contact human health risk that could be experienced during or after redevelopment. In addition, results were reviewed relative to example receiving facility acceptance requirements to assist with potential redevelopment planning.

VOCs, semivolatile organic compounds (SVOCs), and extractable petroleum hydrocarbons (EPH) were detected in several soil samples; however, concentrations were well below the current RAGs. Several metals

were also detected below the applicable RAGs with the exception of arsenic. For arsenic, the residential RAG of 9.3 milligrams per kilogram (mg/kg) was exceeded in soil samples B-21-07 (0-5') and B-21-09 (0-5') with concentrations of 9.73 mg/kg and 10.1 mg/kg, respectively. Sample B-21-09 (0-5') was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead because the total lead concentration was over 100 mg/kg, and leachable lead was not detected above the laboratory reporting limit of 0.5 mg/L. Based on the soil results, no evidence of a significant point source release of oil and/or hazardous materials to soil was identified at the Site.

In addition to the analyses listed above (VOCs, SVOCs, EPH, and metals), three soil samples were also analyzed for typical acceptance criteria of nearby soil receiving facilities, including polychlorinated biphenyls (PCBs), pesticides, herbicides, corrosivity (pH), reactive cyanide, reactive sulfide, and ignitability, to provide an initial assessment of potential disposal or reuse options. PCBs, pesticides, and herbicides were not detected in these samples.

Groundwater

Groundwater results were compared to the current Maine DEP risk-based RAGs to evaluate whether groundwater conditions at the Site have been significantly impacted and to evaluate the potential for risk that may be associated with contact with potentially contaminated groundwater during future redevelopment activities.

As shown in **Table 1**, dissolved arsenic and dissolved barium were the only detected analytes in groundwater; VOCs, SVOCs, EPH, and the remaining metals were not detected above laboratory reporting limits. Detected concentrations of arsenic and barium were well below the applicable construction worker RAGs. Based on these groundwater results, no evidence of a significant point source release of oil and/or hazardous materials to groundwater was identified at the Site and significant health risk to construction workers that may be experienced during potential future redevelopment activities was not anticipated.

Table 1: Detected Groundwater Analytical Results

Compound	MW-03	MW-06	MW-08	MW-09	MW-10	MW-16	Construction Worker RAG[1]
Dissolved Metals (µg/L)							
Arsenic	< 0.5	**24.16**	**0.68**	< 5	**35.76**	**1.81**	5,800
Barium	**20**	**26**	**53**	**56**	**39**	**27**	100,000

[1] RAG: Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Maine DEP, Bureau of Remediation and Waste Management (revised November 15, 2023).
Bold = analyte was detected in the given sample.
Shading = detected concentration exceeds Commercial Worker RAG. No concentrations exceeded the respective RAGs.
< = not detected at indicated reporting limit.

1.3.3 Subsurface Site Investigation – 2022

In June 2022, Woodard & Curran conducted a soil subsurface investigation at the Site on behalf of IDEALS in conjunction with a geotechnical investigation conducted by S.W. Cole Engineering, Inc. The purpose of this activity was to gather additional information from the area of planned future building construction and characterize excess soil that may be generated during future construction activities. Sample locations are

shown on **Figure 2**. As summarized below, no evidence of a significant point source release of oil and/or hazardous materials was identified in soil samples collected from this area of investigation at the Site.

Soil results were compared to the current Maine DEP residential, commercial worker, park user, and construction worker risk-based RAGs to evaluate whether soil conditions at the Site had been significantly impacted and to evaluate potential direct contact human health risk that could be experienced during or after redevelopment. In addition, results were reviewed relative to example receiving facility acceptance requirements to assist with potential redevelopment planning.

VOCs, SVOCs, EPH, volatile petroleum hydrocarbons (VPH), pesticides, and PCBs were detected in soil samples; however, concentrations were well below the current RAGs. Several metals were also detected below the applicable RAGs with the exception of arsenic and lead. For arsenic, the residential RAG of 9.3 mg/kg was exceeded in soil samples B-22-5 (0.5-2'), B-22-6 (0-6'), and B-22-16 (3-9') with concentrations of 12.1, 13.2, and 21.2 mg/kg, respectively. For lead, the residential RAG (200 mg/kg), park user RAG (420 mg/kg), construction worker RAG (460 mg/kg), and commercial worker RAG (440 mg/kg) were exceeded in soil sample B-22-10 (22-25') with a concentration of 577 mg/kg. This sample was analyzed for TCLP lead, and leachable lead was not detected above the laboratory reporting limit of 0.5 mg/L.

Though lead concentrations were higher at depth in sample location B-22-10, information gathered during Woodard & Curran's February 22, 2022, Phase I Environmental Site Assessment (Woodard & Curran, 2022) indicated that this area consists of filled land and it is likely the lead results from this sample are related to the fill materials and not a release of oil and/or hazardous materials.

In addition, overall Site conditions related to lead are not expected to pose a risk to Site construction workers, as average concentrations across the Site for lead are below the applicable construction worker RAG. However, recommended approaches for risk management during excavation activities are conservatively included in this EMMP.

In addition to the detected analytes listed above (VOCs, SVOCs, EPH, VPH, pesticides, PCBs, and metals), soil samples were also analyzed for typical acceptance criteria of nearby soil receiving facilities, including herbicides, hexavalent chromium, corrosivity (pH), reactive cyanide, reactive sulfide, and ignitability, to provide an additional assessment of potential disposal or reuse options. Herbicides were not detected in these samples and the remaining waste characterization results were within a range that is typically acceptable to Maine-based commercial soil receiving facilities (e.g., Waste Management's Crossroads Landfill).

1.3.4 Limited Soil Sampling During Demolition – 2023

In June of 2023, an area of dark, presumably stained soil was observed below a former building (the Maintenance Barn) during demolition (see **Figure 2**). Two samples were collected from this material on June 28, 2023, and analyzed for total RCRA 8 metals and EPH. Though concentrations of metals and EPH were identified, all detected concentrations were below the most stringent RAGs. Therefore, no additional requirements were identified relative to the management of this soil.

1.3.5 Subsurface Site Investigation – 2024

In February 2024, Woodard & Curran conducted a soil subsurface investigation at the Site on behalf of IDEALS to characterize soil in areas expected to generate excess material during construction, as well as to

increase the spatial distribution of soil data throughout the Site. Sample locations are shown on **Figure 2**. A total of ten soil samples, consisting of eight fill and two native samples, were analyzed for typical soil receiving facility acceptance criteria. As summarized below, no evidence of a significant point source release of oil and/or hazardous materials was identified in soil samples collected from this area of investigation at the Site.

Soil results were compared to the current Maine DEP residential, commercial worker, park user, and construction worker risk-based RAGs to evaluate whether soil conditions at the Site had been significantly impacted and to evaluate potential direct contact human health risk that could be experienced during or after redevelopment. In addition, results were reviewed relative to example receiving facility acceptance requirements to assist with potential redevelopment planning.

SVOCs, EPH, VPH, pesticides, and PCBs were detected in soil samples; however, concentrations were well below the current RAGs. Several metals were also detected below the applicable RAGs with the exception of arsenic. For arsenic, the residential RAG of 9.3 mg/kg was exceeded in all samples (with the exception of B-24-06 (0-2')), with concentrations ranging from 10.3 to 28.9 mg/kg.

In addition to the detected analytes listed above (SVOCs, EPH, VPH, pesticides, PCBs, and metals), soil samples were also analyzed for typical acceptance criteria of Maine-based soil receiving facilities, including VOCs, herbicides, corrosivity (pH), reactive cyanide, reactive sulfide, and ignitability, to provide an additional assessment of potential disposal or reuse options. Herbicides were not detected in these samples and the remaining waste characterization results were within a range that is typically acceptable to Maine-based licensed soil receiving facilities.

1.4 Summary of Expected Site Conditions

Consistent with the findings of the sampling and analyses conducted by Woodard & Curran, conditions that may be reasonably anticipated during redevelopment are as follows:

- The Site and surrounding area are connected to public water supply and sewer services.
- Subsurface conditions at the Site generally consist of fill material composed of varying amounts of sand, silt, clay, and gravel with occasional concrete, brick, shells, and plastic. Native material consisting of glaciomarine clay was observed below the fill.
- As shown in **Table 2**, which presents the maximum and average detected analyte concentrations in at the Site, soil that may be encountered during redevelopment may contain low-level VOCs, SVOCs, EPH, VPH, pesticides, PCBs, and metals. All detected constituent concentrations are below the available risk-based human health standards except for arsenic and lead, which exceeded the Maine DEP residential RAGs at certain locations. However, average concentrations for these analytes across the investigated area at the Site are below the most conservative Maine DEP residential RAGs.
- **Table 2** also presents a comparison of Site soil data to Maine DEP's screening levels for beneficial use of soil as documented in Maine Solid Waste Rules Chapter 418. Based on this comparison, it is likely that certain soil that may be generated as excess during construction at the Site may meet the requirements for beneficial use in other offsite construction projects following applicable permitting. Alternatively, following necessary characterization, profiling, and approval, excess soil

that may be generated during redevelopment at the Site may be acceptable for disposal at a Maine DEP licensed receiving facility, such as a commercial landfill.

- No petroleum saturated soil was observed during the investigations and no evidence of a significant point source release of oil and/or hazardous materials was identified in soil or groundwater samples collected from the Site. A lens of suspected petroleum product was observed during the installation of one soil boring completed in 2022 (B-22-14); however, subsequent analysis of soil represented by this sample indicated that concentrations of petroleum did not exceed the Maine DEP construction worker or residential RAGs. In addition, an area of dark, presumably stained soil was observed below a former building (the Maintenance Barn) during demolition. Two samples were collected from this material and analyzed for total RCRA 8 metals and EPH. Though concentrations of metals and EPH were identified, the detected concentrations were below the most stringent RAGs. Therefore, no additional requirements were identified relative to the management of this soil.
- No soil classified as hazardous waste is known to be present at the Site.
- Depth to groundwater ranged from 4.9 feet bgs to 20.5 feet bgs; however, groundwater levels may be tidally influenced and fluctuate in response to nearby tidal water levels.
- Historical records reviewed during a previous environmental assessment (Woodard & Curran, 2022) indicated the locations of former USTs on the Site. No active USTs are known at the Site and the location of any closed or abandoned USTs that may potentially exist at the Site are unknown. The locations of documented former USTs are shown on **Figure 2**; however, the historical records may not be comprehensive and additional USTs may have been used at the Site and may be found during redevelopment.

2. RESPONSIBILITIES

The Owner of the Site is responsible for adopting and implementing this EMMP and ensuring that the EMMP is adhered to during construction. This responsibility may be contractually transferred to the Construction Manager or other designated responsible party as appropriate for the project. The Owner or designated responsible party is responsible for notifying the Environmental Professional at the start of work and in the event of unanticipated conditions, as described in Section 4.4.

Specific requirements to be fulfilled by the Owner or designated responsible party include the following:

1. Maintain recordkeeping of the soil excavation, monitoring, onsite management, onsite reuse, and offsite reuse and disposal activities performed during any soil disturbing activity.
2. Document environmental investigations conducted in conjunction with the work, including sampling results, and make this information available to designated employees and applicable contractors that will be conducting work in the area where the EMMP will be implemented.
3. Ensure that work conducted for the Site that has the potential to disturb existing soil and/or generate excess soil is monitored and conducted in accordance with this EMMP.
4. Assist the earthwork contractor with the recommended soil management activities (described herein); and
5. Provide training and risk communication to workers as needed, as described in Sections 3.2 and 3.3.

The following contact information is provided for use during the implementation of this EMMP:

Owner

Sam Reiche
IDEALS
100 Commercial Street
Portland, ME 04101
207.939.6308 (c)
sam.reiche@ideals.org

Construction Manager

Consigli Construction Company
Project Manager To be determined

Environmental Professional

Jedd S. Steinglass
Project Manager
Woodard & Curran
12 Mountfort St
Portland, ME 04101
207.558.3732 (o)
207.756.2319 (c)
jsteinglass@woodardcurran.com

Earthwork Contractor

To be determined

3. GENERAL HEALTH & SAFETY RECOMMENDATIONS

This section has been prepared to provide general health and safety information and recommend the minimum health and safety related procedures for construction at the Site. This information is focused to assist persons not otherwise required to prepare their own health and safety plan (e.g., visitors) while engaged in activities at the Site.

Please note that the information presented in this section is not appropriate for use by any personnel that are required to prepare a Health and Safety Plan (HASP) to comply with any applicable Federal, State, local, or other health and/or safety requirements and safe construction practices.

3.1 Personal Protective Equipment

Modified Level D personal protective equipment (PPE), as described below in **Table 3**, is suggested for initial entry onto the Site and for general construction and site work activities. Work gloves are recommended when directly handling Site soil (e.g., during foundation and utility installation work) and additional PPE is recommended when handing grossly contaminated[1] media as described in **Table 3**.

Table 3: Recommended PPE Summary

Activity	Recommended PPE
General construction and site work	Modified Level D: Long-sleeved shirts and long pants Composite or steel toed boots with socks Hard hats Safety glasses Reflective safety/traffic vest
Tasks where personnel will be directly handling soil (e.g., foundation and utility installation work)	Modified Level D as described above with the addition of: Work Gloves
Handling of grossly contaminated soil, water, and other media[1]	Modified Level D as described above with the addition of (one or more as applicable for the specific work task): Disposable nitrile or chemical resistant gloves Tyvek® or equivalent coveralls Disposable rubber boot covers Rubber waders or boots

No Level C work activities are anticipated; however, conditions should be continuously monitored by appropriately trained personnel to ensure that conditions requiring Level C or higher protection are not present.

[1] Indicators of gross contamination may include the presence of free petroleum product and/or persistent odors associated with petroleum, chlorinated solvents, or unknown materials within the work zone. These conditions are not anticipated but may nevertheless be found during redevelopment.

3.2 Training Requirements

Based on known concentrations of contaminants as determined through the previously described environmental investigations conducted at the Site, a comparison of average analytical results to Maine DEP RAGs, and the activities and personnel that are anticipated to be onsite during construction and redevelopment (i.e., construction personnel and brief visits by non-construction personnel), no specialized training or certification is required. However, as a conservative measure, basic project-specific hazard training and/or risk communication is recommended for Site workers who may contact soil (e.g., earthwork contractors, underground utility installers, landscapers). Recommended practices are summarized below in Section 3.3. In addition, qualified personnel should continuously monitor Site conditions to identify potential unanticipated conditions that may warrant specialized training.

3.3 Hazard Communication

Injury and/or illness may result when personnel come in direct contact with hazardous materials, or breathe hazardous dusts, fumes, mists, vapors, or gases. It is recommended that workers abide by their own written Hazard Communication Program requirements.

Example hazards and mitigation techniques that are considered best practices and may be applicable are summarized below:

- Inhalation of soil containing contaminants is possible if excessive dust is not controlled during work activities. Dust control measures detailed in Section 4.3.1 should be followed throughout the work activities.
- Ingestion of contaminant-containing soil may result if good personal hygiene practices are not followed. Personnel should wash hands thoroughly after completion of work, before breaks, and before eating or drinking. Smoking and chewing gum or tobacco should be discouraged or prohibited due to the potential for hand-to-mouth transfer of soil. Additionally, as described in Section 3.1, personnel should wear work gloves when directly handling soil.
- The tracking of contaminant-containing soil originating at the Site to offsite locations should be avoided. For example, work boots and clothing should be changed out for street clothes prior to leaving the Site and/or before coming into contact with non-construction personnel.
- Eye exposure to contaminant-containing particles or dusts may occur when a worker does not wear safety glasses and/or when unwashed hands contact the eyes. Safety glasses and/or handwashing as noted above is recommended to reduce this potential hazard.

4. ENVIRONMENTAL MEDIA MANAGEMENT PLAN

4.1 Overview

All soil at the Site that is disturbed during work activities (e.g., general site construction, work in the public way, utility and other subsurface structure maintenance/repair/installation/relocation work, grading, paving, landscaping, and foundation installation) must be properly managed.

Provisions for the management and onsite reuse of soil that may generally be encountered or disturbed during work activities are provided within this EMMP. In addition, though environmental conditions at the Site do not warrant the performance of active soil remediation, this EMMP may be used to guide the management of excavated soil that may need to be transported offsite for permitted reuse, or disposal based on the design and/or volumetric constraints of the work. Finally, if dewatering is necessary to facilitate the work, recommended practices to complete these activities are also described in this EMMP.

Please note that though no specific investigation was completed outside the limits of the Site during Woodard & Curran's investigations, the procedures outlined in this document are sufficiently conservative such that work in the public way, if applicable, may also be managed in accordance with this EMMP. Alternatively, material originating from the public way may be transferred to the City of Portland, following their approval, for proper management and disposal.

The general soil and groundwater management process for the project is as follows:

1. **Initiation of Work Activities**: Includes pre-construction considerations in Section 4.2.
2. **Construction Soil Management Controls**: Construction practices that limit migration and transport of site soil are described in Section 4.3 and include dust control measures, track-out controls, stockpile management, and erosion control.
3. **Soil Excavation Monitoring**: Environmental conditions have been evaluated based on existing data. However, olfactory and visual observations are necessary throughout the project to identify potential unanticipated conditions as described in Section 4.4.
4. **Waste Characterization**: Excavated soil designated for offsite disposal or reuse shall be adequately characterized by laboratory analyses prior to offsite transport as described in Section 4.5.2.
5. **Onsite Soil Reuse**: Based on existing data, soil that originated at the Site may be reused onsite, provided that it is managed in accordance with Section 4.6.1.
6. **Offsite Reuse or Disposal**: Results of the waste characterization will be used to determine how excess soil may be reused or disposed offsite and to obtain permits and/or receiving facility acceptance approval. Potential reuse and disposal options are described in Sections 4.6.2 through 4.6.4.
7. **Dewatering/Groundwater Management**: If groundwater is encountered during excavation activities and dewatering is necessary, groundwater shall be managed in accordance with Section 4.7.

4.2 Initiation of Work Activities

4.2.1 Potential Permits Required for Soil Excavation

Prior to conducting subsurface activities, DIG SAFE must be notified and a DIG SAFE permit number acquired. In addition, the Owner and/or its representative(s) will be responsible for obtaining all permits (e.g., building, sewer connection, water, gas) and approvals from the appropriate Federal, State, or local regulatory authorities needed for activities associated with the project.

4.2.2 Site Access Control

Access to the Site shall be adequately restricted to prevent non-construction personnel from contacting existing soil during the performance of construction and redevelopment work. These controls may include temporary or permanent perimeter fencing, signage, or a combination of similar measures.

4.2.3 Temporary Facilities/Utilities

Water supply for dust suppression and decontamination will be provided by the contractor in coordination with the Portland Water District, as needed. Possible water supply options include connecting to existing distributed service, a temporary water service connection to the water main, or to a fire hydrant located near the Site.

4.3 Construction Soil Management Controls

4.3.1 Dust Control

Any area of soil at the Site that is disturbed or otherwise affected during construction and redevelopment work shall be consistently maintained to minimize the creation and dispersion of dust. These areas may include but are not necessarily limited to active excavation areas, foundation voids, haul roads, active soil stockpiles and loading areas, entrances and exits to the Site, and adjacent public roadways. Dust shall be controlled from activities including but not limited to excavation, soil loading, and vehicle traffic.

Dust suppression shall be conducted through regular sweeping and sprinkling of water, as necessary, and/or with an appropriate commercial grade dust suppressant. Several applications of water and/or other dust suppressants may be required each day to effectively manage dust. Any excess water generated during dust control activities shall be managed in accordance with Section 4.7.

4.3.2 Track-out Controls

To prevent the tracking of soil from the Site into the public roadways, a stabilized construction entrance, tire wash area, and/or similar provisions must be established and the tires of vehicles exiting the Site shall be free of soil and dust that could be tracked into the street or otherwise mobilized. All truck tires and equipment will be inspected and cleaned as necessary prior to leaving the Site. In addition, regular street sweeping shall be conducted to clean the roadways adjacent to the Site where fugitive soil or dust may become located.

4.3.3 Stockpile Management

Stockpiles of non-native materials (e.g., fill) shall be handled in a manner that minimizes human contact and prevents the uncontrolled migration of soil away from the Site for the duration of the project. To meet these performance objectives, the following controls shall be used:

1. Stockpiled soil shall be segregated based on the methods selected for reuse or disposal (see Section 4.6) and surrounded by a physical barrier or a combination of barriers, such as temporary or permanent perimeter fencing and/or signage, to prohibit access by unauthorized persons. The barriers shall be maintained so that they effectively prohibit such access for the duration of the work. Perimeter fencing that surrounds the entire area of work at the Site is acceptable as long as the remaining stockpile management procedures are fulfilled;
2. Dust suppression measures shall be employed to prevent the wind-borne entrainment and migration of soil particles from stockpiled soil during the active working or loading of this material. These measures may include periodic sprinkling of water, application of an appropriate commercial grade dust suppressant, or covering with impervious tarps, geotextile fabric, or similar materials; and
3. Erosion control measures shall be employed to prevent the offsite runoff of stockpiled soil. Erosion control measures may include straw roll/wattle, silt fence, plastic membrane, the covering of storm drain catch basins, or other suitable means, provided that offsite soil runoff is effectively prevented for the duration of time that the stockpile is present.

The measures described above shall be used to manage stockpiled Site soil during the performance of construction work. However, any generated stockpile of Site soil that is not being actively worked for a period of 14 days or more shall be completely covered with impervious tarps or similar polyethylene sheeting that is properly secured and designed for such a purpose. Covers shall be maintained throughout the period of onsite storage. Alternatively, stockpiled soil may be loaded into covered DOT-approved shipping containers.

The stockpile management requirements of this section do not apply to imported materials that are to be used at the Site during construction, or stockpiles of native material. However, general construction best management practices and applicable site development permit requirements shall still apply to these materials.

4.3.4 Erosion Control

Erosion control measures shall be employed, as needed, to prevent the offsite runoff of soil from the Site and stockpiles. Standard construction erosion control measures shall be consistent with site development conditions of approval as presented by the City of Portland and may include staked hay bales, plastic membrane, the covering of storm drain catch basins, or other suitable means, provided that offsite soil runoff is effectively prevented.

4.4 Soil Excavation Monitoring

During excavation activities for the Site, the Owner, Construction Manager, Environmental Professional, or an assigned qualified party shall be present to monitor subsurface soil conditions and brief construction

crews on soil handling and safety issues. The Environmental Professional shall be called in to assist in soil classifications and handling decisions if soils are encountered that differ from the anticipated conditions.

Site personnel shall examine excavated materials continuously for visual and/or olfactory evidence of petroleum or other impacts. Such evidence may include, but is not limited to, the following:

- observation of discoloration or staining;
- distinct solid waste layers (i.e., evidence of landfilling);
- presence of free petroleum product; and/or
- olfactory evidence including, but not limited to, odors associated with petroleum, chlorinated solvents, or unknown materials.

An interpretation of analytical results generated during Woodard & Curran's subsurface investigation relative to the Maine DEP RAGs indicates that soil disturbed during construction can be managed during redevelopment and reused onsite as described in Section 4.6.1, following health and safety recommendations described in Section 3. **However**, **if conditions different than those anticipated at the initiation of construction activities are encountered during excavation (e.g., significant staining, odor, solid waste, or free petroleum product) work shall stop. Site personnel shall then notify the Environmental Professional to assist in planning further excavation, monitoring, and documentation as required.**

Relevant contact information for the Environmental Professional is presented in Section 2.

4.5 Soil Characterization

Site conditions that may be anticipated during construction are summarized in Sections 1.3 and 1.4. However, this information shall be supplemented by olfactory and visual observations documented throughout the project to identify potential unanticipated conditions. Petroleum residues can also be identified through field screening in accordance with the Maine DEP Standard Operating Procedure (SOP) TS004, which incorporates the use of a field PID, oleophilic dye test, and/or water shake test for free product as appropriate. Field screening will be completed by the Environmental Professional if conditions different than those anticipated at the initiation of construction activities are encountered during excavation (e.g., significant staining, odor, waste, or free petroleum product).

Soil categories are described in Section 4.5.1. Waste characterization procedures are described in Section 4.5.2 for soil that will be transported for offsite reuse or disposal.

4.5.1 Soil Categories

Based on results of the previous environmental investigations, the following soil groups are applicable for all construction work at the Site:

Group 1 Soils. Group 1 soils are clean, naturally deposited, uncontaminated soils as demonstrated by analytical testing results (i.e., contaminants of concern not detected above laboratory reporting limits and metals below background concentrations). Group 1 soils shall also have no visible or olfactory evidence of contamination (e.g., coal, ash, cinders, debris, and/or dark brown or black color). If field screening occurs, Group 1 soils shall exhibit no field PID results of greater than background or the presence of petroleum by other field applicable screening methods as described

in Maine DEP SOP TS004. Based on the findings of investigations completed at the Site, naturally deposited marine clay that may be encountered during construction is considered to meet the definition of Group 1. Additional characterization sampling (see Section 4.5.2) is required to delineate additional native material that is proposed for management as Group 1 soil at the Site if other types of native material is to be transported offsite for reuse or disposal.

Group 2 Soils. Group 2 soils have detectable concentrations of contaminants of concern and/or metal concentrations above background; exhibit visible and/or olfactory evidence of contamination; and/or field screening readings of background or greater on a PID or detected petroleum based on other field screening methods as described in Maine DEP SOP TS004. Visual evidence of contamination may include coal, ash, cinders, debris, and/or dark brown or black color. Group 2 soils may have a petroleum or tar odor. Based on the results of the previous investigations, fill material throughout the Site has been characterized as Group 2.

Group 2 soils may be reused at the Site in accordance with the requirements of Section 4.6.1. Group 2 soils that cannot be reused at the Site may be reused offsite in accordance with Section 4.6.2 or properly disposed of in accordance with Section 4.6.3.

Group 3 Soils. If soils from the Site are found to fall into the category of a Hazardous Waste on the basis of toxicity characteristic leaching procedure (TCLP) or other laboratory testing, those soils are characterized as Group 3 soils. Group 3 soils are typically not reused onsite except in certain circumstances to be determined by the Environmental Professional. For offsite disposal, unless Group 3 soil is properly treated in accordance with all state and federal requirements to eliminate the hazardous characteristic, it must be properly disposed of as hazardous waste (Section 4.6.4). Based on the results of the previous investigations, Group 3 soils are not anticipated at the Site.

Construction debris (unpainted concrete, fully cured asphalt, brick, and other inert materials that are free of soil and visible contamination) are not subject to the requirements of this EMMP and may be disposed or recycled in accordance with Maine DEP Chapter 400.

4.5.2 Waste Characterization

4.5.2.1 Previously Completed Waste Characterization

Three waste characterization soil samples of fill materials were collected by Woodard & Curran during the 2021 subsurface investigation, 17 were collected in 2022, and 8 were collected in 2024. Analytical results are available upon request from the Environmental Professional.

This data may be suitable to receive approval from a properly permitted receiving facility to dispose of up to 14,000 tons[1] of soil from the Site. Facility acceptance and approval coordination for this soil will be conducted by the Owner or Construction Manager or designated representative, with assistance from the Environmental Professional. **Documentation of facility acceptance must be provided for review and approval by the Environmental Professional prior to any offsite transport of soil.**

[1] Amount based on disposal facility sample frequency requirement of 1 sample per 500 tons for projects generating greater than 2,000 tons of soil.

4.5.2.2 Supplemental Waste Characterization

If the selected disposal facility requires further sampling and laboratory analysis prior to the removal of soil from the Site, if more than 14,000 tons of non-hazardous soil must be moved offsite, and/or if conditions that are inconsistent with those documented during the previous investigations are observed[1], supplemental waste characterization sampling shall be completed and/or documented by the Environmental Professional. Associated activities will include soil sampling, laboratory analysis, data review, and facility acceptance and approval coordination. Waste characterization samples may be obtained in situ through test pitting or may be collected from existing stockpiles or containers so long as the samples provide an accurate and unbiased representation of the soil waste stream.

Supplemental waste characterization analytical requirements and sampling frequency will be specified by the selected offsite disposal or reuse facility. Typical waste characterization analytical sampling parameters consist of EPH, VPH, VOCs, PCBs, RCRA 8 metals, hexavalent chromium, pesticides, herbicides, ignitability, and reactive cyanide and sulfide. However, this list must be verified by the selected disposal facility prior to analysis to ensure that it meets specific disposal facility acceptance criteria.

4.6 Soil Reuse and Disposal

In general, and as previously described, it is anticipated that existing soil located throughout the Site will be disturbed during construction and redevelopment activities. At a minimum, all Site soil that is disturbed during the performance of construction or redevelopment work shall be handled and stored in a manner that minimizes human contact and prevents the uncontrolled migration of soil away from the Site for the duration of the project.

4.6.1 Onsite Reuse

Consistent with known conditions (i.e., detectable concentrations of contaminants of concern below the applicable construction worker and commercial worker RAGs) and the intended use of the Site as a non-residential education institution and parking garage, it is anticipated that any existing Site soil that is disturbed or otherwise affected during construction and redevelopment work may be reused at the Site in accordance with earthwork specifications.

In the area of the proposed Childcare Play Area (see Figure 2) one of the following measures should be implemented to minimize direct contract with reused and existing Site soil:

- A high visibility demarcation layer (e.g., orange snow fencing, orange TenCate Mirafi® 140NLO) overlain by 6 inches or greater of clean soil then at least 6 inches of loam or topsoil and landscaping; or
- 24 inches or greater of clean soil stabilized through landscaping (no underlaying demarcation layer required if 24 inches of clean materials are used); or
- Hardscaping such as asphalt or concrete pavement or pavers, which may or may not be overlain by artificial turf or similar surfaces. If hardscaping is used, no clean soil cover is necessary

[1] e.g., significant staining, odor, solid waste, or free petroleum product

between the reused or existing Site soil and the base of the hardscaping, unless otherwise required by the landscape design.

Imported materials from appropriate sources (e.g., loam and topsoil from landscaping companies or virgin sources) do not require characterization or approval prior to use below landscaping.

Example soil reuse applications include backfill and grading materials. However, the soil excavation monitoring procedures described in Section 4.4 must be completed throughout the performance of construction and redevelopment activities to verify that onsite soil reuse is appropriate.

If conditions different than those anticipated are encountered (e.g., significant staining, odor, solid waste, or free petroleum product) work shall stop. Site personnel shall then notify the Environmental Professional to assist in planning further excavation, monitoring, and documentation as required.

4.6.2 Offsite Reuse

Group 1 soil may be reused off site as fill in non-residential construction projects without the need for additional Maine DEP permitting. Documentation of proposed non-residential use application shall be provided to the Environmental Professional prior to offsite shipment.

Group 2 soil that has been properly characterized may be beneficially reused at a facility that maintains an appropriate permit issued in accordance with Maine DEP Chapter 418. Proof of facility acceptance and approval, as well as the proposed shipment documentation, shall be retained for project documentation by the Owner and provided to the Environmental Professional for approval prior to any offsite transport of soil.

Group 3 soil categorized as Hazardous Waste cannot be reused offsite and, unless properly treated in accordance with all state and federal requirements to eliminate the hazardous characteristic, must be disposed offsite as hazardous waste (see Section 4.6.4).

The acceptability of each proposed offsite reuse application for Group 2 soil must be in accordance with the license and allowable criteria of the selected facility as verified and approved by the Environmental Professional prior to the removal of any soil from the Site.

4.6.3 Offsite Disposal

Group 1 and/or Group 2 soil from the Site that is designated for offsite disposal at a Maine DEP-permitted receiving facility must be profiled and accepted at the selected facility prior to shipment. Proof of facility acceptance and approval, as well as the proposed shipment documentation, shall be retained for project documentation by the Construction Manager and provided to the Environmental Professional for approval prior to any offsite transport of soil.

Subject to current appropriate permitting, potential offsite disposal facilities for Group 1 and Group 2 soil include, but are not necessarily limited to:

- Waste Management Crossroads Landfill, Norridgewock, ME
- Waste Management Turnkey Landfill, Rochester, NH

- Casella Juniper Ridge Landfill, Old Town, ME

4.6.4 Offsite Disposal of Hazardous Waste

Soil that meets any of the criteria for a characteristic hazardous waste as defined in 40 CFR 261 (i.e., Group 3) is not anticipated at the Site. However, if hazardous waste is identified, notice shall be provided immediately to the Environmental Professional. Group 3 soils are typically not reused onsite except in certain circumstances to be determined by the Environmental Professional. If properly treated in accordance with all state and federal requirements to eliminate the hazardous characteristic, it is possible that Group 3 soil may be disposed at a properly permitted non-hazardous receiving facility. Otherwise, this material must be transported offsite by a licensed hazardous waste transporter, shipped under a uniform hazardous waste manifest, and disposed of as a hazardous waste. Appropriate receiving facility profiling, acceptance, and approval by the Environmental Professional in consultation with the Maine DEP is required prior to the removal of any hazardous waste from the Site.

4.6.5 Offsite Soil Transport and Documentation

All Group 2 soil that is transported offsite must be shipped by a Maine DEP licensed Non-Hazardous Waste Transporter. A Maine DEP licensed Non-Hazardous Waste Transporter is not required for the offsite transport of Group 1 soil; however, all soil removed from the Site whether for offsite reuse or disposal must be shipped under a Maine DEP Nonhazardous Waste Transporter Manifest or a similar shipping document that identifies the source location and description of the material, volume and/or weight, shipment date, and receiving location. Following offsite transportation, clear copies of delivery tickets, acceptance tickets, weight slips, Bill of Lading forms, and/or manifests shall be provided for project documentation. An example copy of a Maine DEP Non-Hazardous Waste Transporter Manifest is included for reference in **Appendix A**.

4.6.6 Verification / Confirmatory Soil Sampling

It is not anticipated that verification and/or confirmatory sampling will be required at this time. However, if conditions are different than those anticipated (e.g., levels of contamination observed during work activities or waste characterization sampling are greater than expected) additional sampling may be warranted. The decision to conduct verification/confirmatory sampling, and the rationale, methodology, and data quality objectives will be established by the Environmental Professional.

4.7 Dewatering / Groundwater Management

Groundwater may be encountered during construction activities. The condition of groundwater shall be monitored during dewatering activities. Impacted groundwater may be identified by a petroleum or solvent odor, presence of a petroleum sheen, or field screening of soil wetted by groundwater. If dewatering is necessary to facilitate construction, the water will be pumped from the excavation and either:

1. Discharged to the ground surface within the immediate work area, provided that appropriate best management practices are implemented (e.g., erosion and sedimentation controls, engineered infiltration basin) to prevent the offsite migration of the generated materials.
2. Reinjected into the ground by sumps excavated onsite with the location documented by the Environmental Professional.

3. Discharged to the municipal sewer system in accordance with all local, State, and Federal requirements. In this instance, the water may need to be containerized (e.g., fractionation tank), tested, and pretreated, if necessary, prior to disposal to meet the requirements of the Portland Water District. A Dewatering Plan and Application must be submitted and approved prior to discharging water from a construction site to City of Portland infrastructure. Typical analytical requirements are listed below:
    - pH and conductivity
    - total metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc)
    - total cyanide
    - EPH and VPH
4. Managed onsite in appropriate containers (e.g., fractionation tank) for subsequent waste characterization and offsite disposal. Waste characterization must be conducted in accordance with the selected disposal facility's acceptance requirements.

Water generated from dewatering of wet soil shall also be managed as described above. Groundwater that is encountered during construction activities but is not removed from the excavation either by pumping or excavation of wet soil does not need to be managed as part of this EMMP.

If the presence of petroleum or other unexpected conditions are encountered in association with groundwater, the dewatering activities shall stop. Site personnel shall then notify the Environmental Professional to assist in planning further dewatered groundwater management.

4.8 Decontamination Procedures

As a general practice, tools and equipment that contact Group 2 or Group 3 soil will be decontaminated prior to taking them offsite. This requirement will be applicable to all tools, heavy machinery, and excavating and hauling equipment used during Site construction activities and handling of Group 2 or Group 3 soil. Decontamination shall include removal of visible soil and dust with a dry broom/brush and subsequent inspection. If the dry brush technique is not sufficient to remove visible signs of soil and dust, wet decontamination consisting of washing down equipment with high-pressure water hoses, brushes, and/or steam must be performed. In addition, all tools and equipment that contact groundwater at the Site shall be decontaminated such that free liquids, dirt, and silt are removed prior to taking them offsite.

All water generated during decontamination activities shall be managed in accordance with Section 4.7.

4.9 Recordkeeping and Reporting

Records shall be kept of all soil excavation and handling activities. Recordkeeping requirements are ultimately the responsibility of the Owner, but in practice may be fulfilled by the Construction Manager and/or Earthwork Contractor. These records shall include but not be limited to the following:

1. A list of the contractors and any subcontractors conducting soil excavation, onsite management and reuse, and offsite transport and reuse/disposal work;
2. Copies of HASP(s) used;

3. Copies of shipping records for all soil that is transported offsite;
4. Copies of existing conditions and as-built site plans showing the general locations where Group 1, Group 2, and Group 3 soil have been reused (as applicable), and the location and extent of any pavement, concrete, landscaping, demarcation layers, and permanent building foundations;
5. Copies of analytical results for samples collected for waste characterization (Section 4.5.2), confirmation sampling (Section 4.6.5), and/or groundwater discharge (Section 4.7); and
6. Copies of plans showing locations where groundwater was reinjected into sumps, if used, after dewatering.

If additional or unexpected contamination is discovered, soil characterization and/or verification soil sampling records will be retained, and copies provided to the Environmental Professional.

5. REFERENCES

City of Portland, 2016. Public Work Department Rules and Regulations for the Use of the Sewer System. October 22, 2016.

Dames & Moore, 1996. Maine UST Removal Site Assessment Summary, Burnham & Morrill (B&M); January 25.

Woodard & Curran, 2022. Phase I Environmental Site Assessment, 1 Bean Pot Circle, Portland, Maine; February 22.

TABLES

Table 1: Detected Groundwater Analytical Results (embedded)

Table 2: Summary of Detected Soil Analytical Results

Table 3: Recommended PPE Summary (embedded)

Table 2: Summary of Detected Soil Analytical Results

	Number of Samples	No. of Non-Detects	Maximum Detected Concentration	Average Concentration[1]	Soil Remedial Action Guidelines (mg/kg)[2]				ME DEP Chapter 418 Appendix A[3]
					Residential RAGs	Commercial Worker RAGs	Park User RAGs	Construction Worker RAGs	
Metals (mg/kg)									
Arsenic	42	0	28.9	9.47	9.3	41	26	54	7.9
Barium	37	0	234	60.9	21000	100000	61000	20000	10000
Cadmium	37	26	1.28	0.75	9.8	140	28	42	22
Chromium	37	0	53.2	23.1	100000	100000	100000	27000	10000
Lead	42	3	577	42.1	200	440	420	460	200
Mercury	37	33	1.65	0.50	3.1	3.1	3.1	3.1	27
Volatile Organic Compounds (mg/kg)									
1,2,4-Trimethylbenzene	42	41	3.3	3.30	180	220	200	220	--
1,3,5-Trimethylbenzene	42	41	1.1	1.1	160	180	170	180	--
4-Isopropyltoluene	42	41	0.41	0.41	--	--	--	--	--
Isopropylbenzene	42	41	0.2	0.2	260	270	270	270	--
n-Butylbenzene	42	41	0.61	0.61	5400	80000	15000	34000	--
N-Propylbenzene	42	41	0.33	0.3	260	260	260	260	84
sec-Butylbenzene	42	41	0.33	0.33	11000	100000	30000	34000	--
Naphthalene	42	40	3.8	1.9	29	120	150	130	0.078
1,1,1-Trichloroethane	42	40	0.082	0.07	640	640	640	640	128
Acetone	42	41	0.059	0.1	96000	100000	100000	100000	47
Benzene	42	41	0.041	0.04	17	75	230	240	0.029
Ethylbenzene	42	41	0.38	0.4	86	380	400	470	0.22
Methyl ethyl ketone	42	40	0.012	0.01	20000	28000	25000	11000	5460
o-Xylene	42	41	0.49	0.5	260	260	260	260	2.5
Tetrachloroethene	42	41	0.13	0.13	120	160	150	84	0.76
Toluene	42	41	0.22	0.2	750	810	790	820	10
Xylene (Total)	42	41	1.3	1.30	260	260	260	260	2.5
m,p-Xylene	42	41	0.82	0.8	260	260	260	260	2.5

Table 2: Summary of Detected Soil Analytical Results

	Number of Samples	No. of Non-Detects	Maximum Detected Concentration	Average Concentration[1]	Soil Remedial Action Guidelines (mg/kg)[2]				ME DEP Chapter 418 Appendix A[3]
					Residential RAGs	Commercial Worker RAGs	Park User RAGs	Construction Worker RAGs	
Semivolatile Organic Compounds (mg/kg)									
Naphthalene	42	23	1.5	0.24	29	120	150	130	0.078
1-Methylnaphthalene	37	21	5.6	0.52	240	990	680	6000	--
2-Methylnaphthalene	42	24	10	0.81	330	4100	930	960	2.7
Acenaphthene	42	30	1.3	0.21	4900	62000	14000	48000	78
Acenaphthylene	42	27	1	0.2	4900	45000	14000	48000	74
Anthracene	42	21	2.6	0.33	25000	100000	70000	100000	825
Benz(a)anthracene	42	14	5.7	0.61	16	280	45	1700	13
Benzo(a)pyrene	42	15	6.4	0.75	1.6	29	4.5	9.9	1.3
Benzo(b)fluoranthene	42	11	6.2	0.75	16	290	45	1700	13
Benzo(g,h,i)perylene	42	18	3.2	0.52	2500	23000	7000	72000	2090
Benzo(k)fluoranthene	42	22	3.3	0.50	160	2900	450	17000	134
Carbazole	37	36	1.4	1.4	270	110	750	6700	317
Chrysene	42	13	5.6	0.76	1600	29000	4500	100000	1340
Dibenz(a,h)anthracene	42	27	0.53	0.13	1.6	29	4.5	170	1.3
Dibenzofuran	37	36	0.65	0.65	110	1600	300	1400	85
Fluoranthene	42	12	14	1.5	3300	41000	9300	24000	2790
Fluorene	42	27	1.1	0.20	3300	41000	9300	96000	75
Indeno(1,2,3-cd)pyrene	42	19	3.7	0.56	16	290	45	1700	13
Phenanthrene	42	14	11	1.2	2500	23000	7000	72000	83
Pyrene	42	12	11	1.3	2500	31000	7000	72000	2090

Table 2: Summary of Detected Soil Analytical Results

	Number of Samples	No. of Non-Detects	Maximum Detected Concentration	Average Concentration[1]	Soil Remedial Action Guidelines (mg/kg)[2]				ME DEP Chapter 418 Appendix A[3]
					Residential RAGs	Commercial Worker RAGs	Park User RAGs	Construction Worker RAGs	
Extractable Petroleum Hydrocarbons (mg/kg)									
C11-C22 Aromatics	42	12	730	88.4	2600	33000	7300	74000	230
C19-C36 Aliphatics	42	23	750	98.73	100000	100000	100000	1200000	10000
C9-C18 Aliphatics	42	33	379	63.40	2500	14000	17000	4800	1350
Volatile Petroleum Hydrocarbons (mg/kg)									
C9-C10 Aromatics	27	26	145	145.0	660	3500	4700	2600	37.5
C9-C12 Aliphatics	27	25	221	113.46	2500	14000	17000	2300	1350
Pesticides (mg/kg)									
4,4'-DDD	30	21	0.124	0.028	31	130	88	130	26
4,4'-DDE	30	20	1	0.12	27	130	79	100	23
4,4'-DDT	30	18	2.59	0.25	26	120	73	160	22
Dieldrin	30	29	0.014	0.014	0.46	2	1.3	12	0.4
Gamma-Chlordane	30	29	0.002	0.002	--	--	--	--	--
Polychlorinated biphenyls (PCBs) (mg/kg)									
Total PCBs	30	28	0.125	0.12	3.1	13	9.6	74	2.7
Aroclor-1254	30	29	0.125	0.13	--	--	--	--	--
Aroclor-1260	30	29	0.117	0.12	--	--	--	--	--

-- No standard available

1. 1/2 of the applicable laboratory reporting limit was used to calculate the average where non-detect data occurred.

2. RAG: Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, MEDEP, Bureau of Remediation and Waste Management (revised November 15, 2023).

3. Maine Solid Waste Management Rules: Chapter 418 Beneficial Use of Solid Wastes, Appendix A: Screening Levels for Beneficial Use (revised July 8, 2018).

FIGURES

Figure 1: Site Location

Figure 2: Site Layout and Soil and Groundwater Sampling Locations



Site Location

Roux Campus
Portland, Maine

Figure 1

Legend

Site

0 0.25 0.5 1 Miles

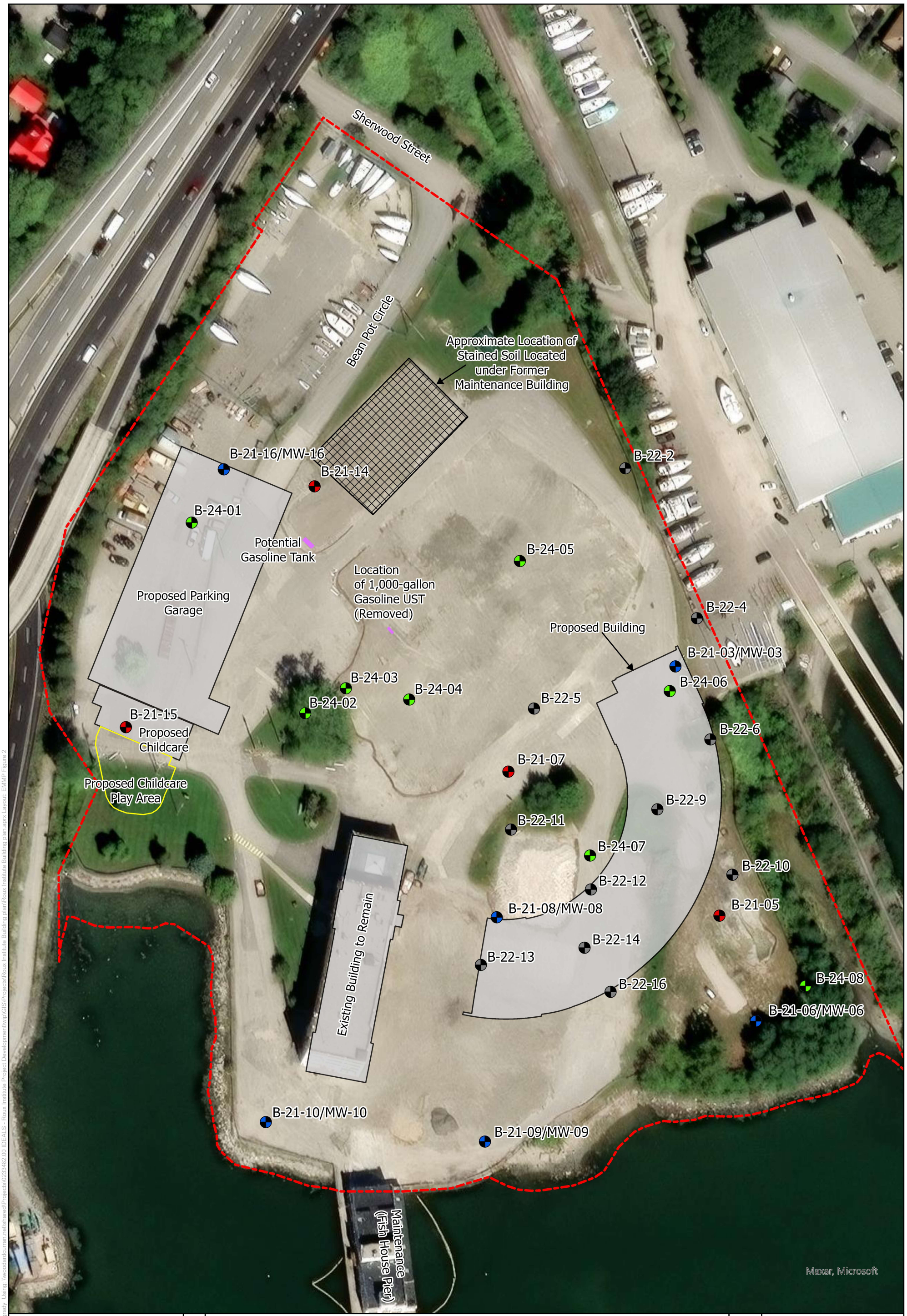
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Woodard & Curran

Project #: 0233482.00
Map Created: March 2024

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Site Layout and Soil and Groundwater Sampling Locations
1 Bean Pot Circle
Portland, Maine
Figure 2

Legend

- 2024 Soil Boring Location
- 2022 Soil Boring Location
- 2021 Soil Boring Location
- 2021 Soil Boring/Monitoring Well Location
- Site (Parcel ID 447-A-001)

0 30 60 120 Feet

N

Woodard & Curran

Project #: 0233482.00
Map Created: April 2024

Figure Exported: 4/24/2024 By: sogrady Using: \\woodardcurran.net\shared\Projects\0233482.00 IDEALS - Roux Institute Project Development\wip\GIS\Projects\Roux Institute Building plan\Roux Institute Building plan.aprx Layout: EMMP Figure 2

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:**

APPENDIX A: EXAMPLE MAINE DEP NON-HAZARDOUS WASTE TRANSPORTER MANIFEST

CATEGORY

A

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NONHAZARDOUS WASTE TRANSPORTER
MANIFEST

NONHAZARDOUS WASTE TRANSPORTER
DECAL NUMBER

GENERATOR (SOURCE)

NAME _____

ADDRESS _____

TOWN _____ PHONE _____

WASTE TYPE

(X) SPECIAL WASTE (specify) _____

( ) SCRAP TIRES

( ) CONSTRUCTION/DEMOLITION DEBRIS

TRANSPORTER

NAME _____

ADDRESS _____

TOWN _____ PHONE _____

QUANTITY LOADED _____

DATE LOADED _____

DRIVER'S NAME _____

By signing this manifest form I certify that the information contained herein is true, correct, and accurate to the best of my ability.

DRIVER'S SIGNATURE _____

DATE SIGNED _____

DISPOSAL FACILITY OR SITE

CODE | | | | | | | | | | | |

NAME _____

LOCATION _____

PHONE _____

QUANTITY RECEIVED _____

DATE RECEIVED _____

OPERATOR'S NAME _____

OPERATOR'S SIGNATURE _____

DATE SIGNED _____

See Instructions on the back of this form

OTHER INFORMATION:

9/94

Woodard & Curran

woodardcurran.com

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Roux LRC, Bean Building, Site & Future Development Charter

	Commitment	Applicability	Strategies
Code mandated items			
Energy	Design the building to achieve the energy requirements of IECC 2021 (ASHRAE 90.1-2019).	All buildings	Meet code applicable at time of permitting.
Responsible Materials	Specify, at a minimum, PFAS free carpet, rugs, and fabrics to align with the State of Maine's PFAS ban.	All buildings	Utilize PFAS free carpets.
Occupant Experience	Provide mechanical or mixed mode ventilation to all residential units.	All buildings	Provide ERVs or other energy efficient ventilation systems to each regularly occupied space.
	Commitment	**Applicability**	**Strategies**
Energy			
	Eliminate on-site fossil fuels in building HVAC and Food service.	All buildings	All electric mechanical systems utilizing efficient equipment such as ASHPs and energy recovery ventilators.
		All buildings	Eliminate the combustion of fossil fuels on-site except for emergency backup power and non-permanently installed equipment.
		All buildings	All electric domestic hot water.
	Provide infrastructure for future PV installation.	All buildings	Identify location for future PV equipment in building. Provide conduit from roof to central electrical room.
	Design the building to be 30% better than ASHRAE 90.1-2019 and 15% of roof area dedicated for PV.	The LRC	Utilize geothermal HVAC system and on/off site PV to achieve aggressive energy targets for project.
Embodied Carbon			
	Reuse existing historic building.	Bean Building	Efficient engineering to optimize material selection.
	Advocate for Environmental Product Declarations (EPDs) for all concrete used on the project.	All buildings	Design and construction team to work with suppliers and request EPDs are generated. Availability of EPDs will be included in procurement decisions.
	Perform a whole building life cycle analysis (LCA) to study carbon conservation measures.	All Buildings	Quantify the embodied carbon of project by completing an LCA.
	Reduce the embodied carbon of structural materials in the building by 15% from a typical design. Demonstrate a reduction of at least 10% for building embodied carbon.	The LRC	Utilize Mass Timber for a portion of building .
		The LRC	Utilize interior materials with lower than average carbon footprint.
Responsible Materials			
	Source wood products from Maine forests and/or sustainably managed forests or salvaged/reclaimed wood suppliers.	All buildings	Wood products sourced from sustainable managed forests will be prioritized. Wood sourcing considerations will be included in procurement decisions.
		All buildings	Utilize Maine products to the maximum extent possible. Wood sourcing considerations will be included in procurement decisions.
	Advocate for the removal of PFAS chemicals in other targeted product categories.	Bean Building	Team to identify targeted categories. PFAS content will be included in procurement decisions.
	In coordination with the contractor, identify key materials to procure from the state of Maine.	All buildings	Team to identify targeted categories. Sourcing availability content will be included in procurement decisions.
	Divert at least 50% of no-hazardous construction and demolition waste from the landfill.	All buildings	Source separate construction and demolition waste.
		All buildings	Include requirements in contract with waste hauler.
		Site areas	Identify opportunities for reuse/salvage of existing materials.
	Target Red List free finishes in targeted spaces.	The LRC	Classrooms and offices will target red list free flooring, ceilings, and furniture.
	Use best practices for bird friendly design.	The LRC	Include bird safe glass and design measures to reduce bird strike hazards.

Water			
	Reduce indoor water use from 25% from a code baseline building.	All buildings	Select high efficiency, low flow plumbing fixtures for all spaces with lower then code flow rates.
		Public spaces	Maximize the use of urinals while providing gender inclusive restrooms.
	Maximize the use of native and drought tolerant landscape plants.	Associated Site areas	Landscaping to be primarily drought tolerant native woody, perennial, or meadow mix plants requiring minimal irrigation after establishment and during severe/extended drought events.
	Stormwater Management in accordance with Maine Department of Environmental Protection Best Management Practices Manual and City of Portland Technical Manual.	Site Areas	Incorporate Low Impact Development Design Strategies and Stormwater Quality Treatment Systems.
	Prohibit the use of all synthetic pesticides and fertilizers for the operation and maintenance of landscape and agriculture through Integrated pest management (IPM)conducted as part of an overall Plant Health Care Program for the Roux site.	Site Areas	Consideration will be given, during the initial site design, to plants that require fewer chemical inputs for both establishment and long-term maintenance needs. This includes anticipated needs that will likely arise as the landscape itself evolves and matures.
Occupant Experience & Equity			
	Optimize natural daylight and mitigate glare.	All buildings	Provide shades or curtains at all regularly occupied spaces which face east, west, or south.
	Incorporate biophilic design principles.	All buildings	Use of natural materials.
		The LRC & Bean Buildings	Create cultural and ecological connections to place - art and signage.
	Use the building to educate building and site users.	The LRC & Bean Buildings	Incorporate signage that tells about sustainability features of building.
	Provide amenities to support public access.	All buildings	Provide drinking fountains and/or bottle fillers.
		All buildings	Provide publicly accessible restrooms adjacent to public spaces.
		Site Areas	Provide bike/pedestrian paths.
		Site Areas	Provide benches.
		Site Areas	Provide site wayfinding.
	Provide Gender inclusive restrooms.	All buildings	Provide gender inclusive restrooms in public areas.
	Provide lactation rooms.	The LRC & Bean Buildings	Provide a designated lactation room with a locking door, sink, changing table, comfortable seating, lighting control and electrical outlets.
Transportation			
	Conduct study of EV charging needs. Provide required EV capacity to meet anticipated demand.	Campus	Work with city to determine appropriate approach to EV charging strategy and identify percentage of day one EV charging stations and future infrastructure requirements.
		Site Areas	Provide EV charging to meet demand identified in coordination with PV requirements approved by city.
		Site Areas	Annually evaluate the EV charging capacity needs by the campus.
	Integrate quality/ secure bicycle storage into the site design and provide shower facilities.	Residential buildings	Provide at least one bike storage space per four units.
		The LRC & Bean Buildings	Provide secure bicycle storage.
		Bean Building	Provide shower facilities for bike commuters.
		Site Areas	Provide Portland Bike Share stations.
		Site Areas	Provide quality and dispersed bike parking for site users near each building.
	In collaboration with the surrounding community, work to improve multi-modal transportation to the Roux Site.	Community	Maximize non single occupancy vehicle transportation to the site, by charging for parking, working with Metro and/or shuttle services to efficiently connect the site to key city locations, encourage bike and pedestrian access, and enabling water taxi service.

Resilience			
	Incorporate near-term future-projected climate change data (2050s) in design of mechanical, electrical, and plumbing systems and/or components on a regular replacement cycle. Incorporate long-term future-projected climate change data (2100+) in the design of the building and infrastructure, including flood resistant materials below the 2100 sea level rise design flood elevation and elevate critical infrastructure above this elevation.	All New buildings	All critical building infrastructure shall be located above the design flood elevation (DFE) of 22.5ft NAVD88.
		All buildings	Review the extreme heat projections with MEP consultant for consideration of future cooling degree days. Allow additional cooling and heating capacity. Utilize weather shift model anticipating conditions in year 2050 for calculations.
	Prepare emergency action plan and provide appropriate level of backup power to support life safety. Incorporate campus-wide emergency preparedness planning to enhance overall resilience of the campus/site community.	The LRC & Bean Buildings	Provide emergency generator with capacity to support essential operations such as research requirements in addition to life safety for 48 hours.
		Student Housing	Developer to provide emergency generator with capacity to support operations including food service and life safety for 48 hours.
		All buildings	Provide campus wide emergency preparedness plan and coordinate with local jurisdictions.
		All other	Provide emergency generator.

7. PUBLIC INFRASTRUCTURE AND SAFETY STANDARDS (14.6.3)

Compliance with the City of Portland's Land Use Code Section 14.6.3 Public Infrastructure and Safety Standards is described in the following sections.

7.1 Public Safety and Fire Prevention

Provisions for public safety have been incorporated into the design of site visibility, access, and security. Adequate emergency vehicle access is provided via Sherwood Street and internal driveways. The consulting team has met with Portland Fire Department and Police Department during development of the design drawings and will continue to coordinate site design in consideration of public safety and emergency access.

7.1.1 Portland Fire Department Site Review Checklist

The items in the Portland Fire Department Site Review Checklist are addressed as follows:

- Name, address, and telephone number of applicant:
  - Northeastern University, c/o Catherine Walsh
    - 360 Huntington Ave 216-201, Boston, MA 02115
    - (617) 594-6092
- Name, address, telephone number of agent:
  - IDEALS, c/o Sam Reiche
    - 100 Commercial Street, Suite 400, Portland, ME 04101
    - (207) 939-6308
- Name, address, telephone number of architect:
  - The Learning, Research & Collaboration Building
    - Cambridge Seven Associates, c/o Patti Intrieri
    - 1050 Massachusetts Avenue, Cambridge, MA 02138
    - (617) 797-2603
  - The Bean Building
    - Bruner/Cott & Associates, c/o Greg Russell
    - 225 Friend St, Suite 701, Boston, MA 02114
    - (781) 354-2411
- Proposed uses of any structures [NFPA and IBC classification]:

  The proposed uses for Phase 1 are consistent with the IOZ regulatory framework, and include development of a Post Secondary School, with associated laboratory, research, office space, and café'; restoration of the historic Bean Building to allow for creation of business incubator space; parking structure and childcare facility. All buildings will be designed in accordance with the following codes:

- Upcoming Maine Uniform Building and Energy Code (MUBEC) Section 4 which is an amended version of the 2021 International Building Code (IBC).
- City of Portland Building Code, as adopted by City of Portland Code of Ordinances Chapter 6, Article II.
- Life Safety: 2018 Edition of NFPA 101, Life Safety Code (LSC) as adopted and amended by the Rules of the State Fire Marshal and City of Portland Code of Ordinances Chapter 10 Article I.
- Fire: 2018 Edition of NFPA 1, Fire Code as adopted by the Rules of the State Fire Marshal and the City of Portland Code of Ordinances Chapter 10 Article II.
- Electrical: 2020 NFPA 70, National Electric Code.
- Elevator: Maine Elevator & Tramway Rules & Laws, an amended version of the ASME A.17.1, Safety Code Fore Elevators and Escalators.
- Energy Code: 2021 International Energy Conservation Code (IECC), including City of Portland Stretch Energy Code requirements.
- Mechanical: 2021 International Mechanical Code (IMC).
- Plumbing: Maine State Plumbing Code (MSPC) based on 2021 Uniform Plumbing Code/
- Accessibility Regulations: 2017 ICC A117.1, Accessible and Usable Buildings and Facilities and the 2010 ADA Standards for Accessible Design.
- Other Various National Fire Protection Association (NFPA) codes and standards as referenced by the codes listed above.

  Life Safety Plans and IBC Classification details will be provided prior to submission of a building permit.

- Learning, Research, and Collaboration Building has the following occupancies:
  - Group B/Business
  - Group A-2/Assembly
  - Group A-3/Assembly
  - Group S-1/Storage

- Bean Building has the following occupancies:
  - Group B/Business
  - Group A-3/Assembly
  - Group S-1/Storage

- Parking Garage has the following occupancies.
  - Group S-2/Storage

- Childcare has the following occupancies:
  - Group E/Daycare or Group I-4/Daycare

- Square footage of all structures [total and per story]:

- The square footage of all structures is provided on the architectural plans.

- Elevations of all structures:
  - The elevations of all structures are provided on the architectural plans.
- Proposed fire protection of all structures:
  - All structures shall be sprinkled.
- Hydrant locations:
  - Hydrant locations are shown on the Utility Plan.
- Water main size and location:
  - Watermain locations and sizes are shown on the Utility Plan.
- Access to all structures:
  - Emergency access to structures and waterfront are reflected in Section 5, **Figure 5-2**.
- A code summary shall be included referencing NFPA 1 and all fire department technical standards:
  - The buildings will be compliant with requirements of NFPA 101: Uniform Fire Code. Automatic sprinkler systems and fire alarms will be provided as required by Use and Occupancy types.

7.2 Availability and Adequate Capacity of Public Utilities

The proposed development will be serviced by public water, sewer, and electric utilities. B&M's facilities required utility infrastructure sized appropriately for industrial use. Fortunately, this sizing translates well to redevelopment of the Site by Northeastern University. Locations of proposed utility services are shown on the Utility Plan included in the Design Drawings.

7.2.1 Water

Domestic and fire protection services are provided by Portland Water District's (PWD) infrastructure at Sherwood Street. The public water mains nearest to the Site are 8-inch and 12-inch, consisting of ductile iron and cast iron. The Site is and will continue to be serviced by a combined domestic / fire protection loop.

The proposed development will be provided with both fire protection water service and domestic water service as shown on the drawings via a private water system that will connect to the public water main on Sherwood Street. Woodard & Curran is working directly with the Portland Water District to determine the appropriate design for this work. The ability to serve documentation for Phase 1 will be provided upon receipt.

7.2.2 Sewer

Wastewater will continue to discharge to a gravity public sewer along the I-295 corridor. Downstream of the service connection, public sewer transitions from 15-inch to 48-inch reinforced concrete gravity line conveying combined storm and sanitary sewer from the East Deering neighborhood west of I-295. The 48-

inch combined sewer transitions to a 3-barrel (two 18-inch and one 30-inch) siphon along Tukey's bridge and discharges through a pumping station prior to treatment at the East End Wastewater Treatment Facility.

Wastewater is conveyed across a portion of the Site near Sherwood Street and I-295 from properties to the northeast (Lennox, Berwick, and Kensington Streets) via an easement benefiting PWD. This easement will remain in place unless otherwise approved by PWD.

The proposed development will be provided with sanitary sewer service as shown in the drawings. The private sanitary sewer system will flow via gravity to the public sewer along the I-295 corridor, similar to existing conditions. The proposed development will include kitchens and parking garages; grease traps and oil/water separators will be provided as shown in the drawings. A Wastewater Capacity Application has been submitted to Public Works, and a copy of the City's determination of ability to serve will be provided upon receipt.

7.2.3 Gas

No natural gas use is proposed for the campus. Unitil currently provides natural gas service to the Site via a 6-inch diameter service. The existing gas service will be selectively demolished and decommissioned consistent with Unitil's standards.

7.2.4 Electric and Telecommunications

Central Maine Power provides electric power via an overhead 12.47kV 3-phase distribution system to the Site. The facility has two main secondary metered services. Fiber-optic internet is located along Veranda Street and Sherwood Street. The proposed development will utilize underground electric and telecommunication services. Proposed electrical and telecommunications infrastructure is shown on the Utility Plan. Energy-saving technologies will be incorporated into building and campus design to reduce electricity consumption and advance sustainability goals. The design of the electric service is being coordinated with Central Maine Power (CMP). Final electric layouts will be provided to CMP for their review and an ability to serve determination will be provided upon receipt.

7.2.5 Solid Waste

Adequate provisions for recycling and solid waste disposal have been made. All solid waste materials and recyclables generated by the proposed development will be transported and disposed of or recycled in accordance with applicable laws and regulations. Solid waste will be managed in full accordance with all applicable laws and regulations.

7.2.6 Construction & Demolition Debris

The proposed development will generate construction waste and demolition debris (CDD). The Contractor will be responsible for properly disposing of the CDD. The Contractor will be responsible for handling, managing, and disposing of all waste generated by construction in accordance with the Maine Solid Waste Management Regulations and all other applicable local, state, and federal regulations.

7.2.7 Special & Hazardous Waste

Environmental assessments of the Site have been conducted and a soil management plan has been developed for the Site. Hazardous building materials of the existing structures will be appropriately managed during the remaining demolition and upcoming renovation activities.

The Learning, Research, and Collaboration Building contains lab spaces which will use controlled, code-compliant quantities of hazardous materials for research purposes. The strategy related to the storage and use of hazardous materials within the building consists of compartmentalization into multiple control areas per the building code and laboratory units per NFPA 45. Chemical quantities throughout will be maintained below Maximum Allowable Quantities allowed for this construction type and use group. Centralized storage and waste rooms are included in the base building design for tenant storage of flammable and combustible liquids as well as other hazardous chemicals (corrosives, toxics, etc.) to facilitate shipping/receiving. The rooms are compliant with the requirements of quantity, separation, mechanical ventilation, explosion control, fire protection and secondary containment. Laboratory areas will be used for educational, research, and development purposes involving the storage and use of hazardous chemicals and are compliant with the following sections: quantity, container size, separation, mechanical ventilation, fire protection, floor openings and egress.

7.3 Section Attachments

- PWD Ability to Serve Request Letter
- Wastewater Capacity Application

12 Mountfort Street
Portland, Maine 04101
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

November 2023

MEANS Group
Portland Water District
225 Douglass Street
Portland, ME 04104

Re: The Roux Institute at Northeastern University Ph. 1 - Request for Evidence of Ability to Serve

To Whom It May Concern:

On behalf of Northeastern University and their agent, the Initiative for Digital Engineering and Life Sciences (IDEALS), Woodard & Curran is submitting this request for initial confirmation of ability to serve for use in permitting for Phase 1 of development at 1 Bean Pot Circle in Portland, Maine. The proposed work includes the construction of the Learning, Research, and Collaboration Building, renovation of the Bean Building, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements. Woodard & Curran will continue to work with Portland Water District for final approval.

Upon completion, this phase of the proposed site development is anticipated to require 36,700 gallons of water per day. This estimate is based on the preliminary design of the buildings. The table below summarizes B&M historic water demand and demand estimates for future phasing.

Utility*	B&M Historic Demand Reference	Phase 1 (0-5yrs)	Phase 2 (0-5yrs)	Phase 3 (10-20yrs)	Phase 4 (20+ yrs)
Water (gpd)	153,000	36,700	86,700	127,400	190,800

**Based upon preliminary load demand calculations provided by ARUP dated July 19, 2023*

The attached utility plan shows the proposed water utility locations. The existing water main in Sherwood Street is 12" and is fed from both the north and west. The campus will be served by a private water main, connected at the easternmost existing 12"x12" service tee. The private water service will extend to the Learning, Research, and Collaboration Building, Bean Building, childcare facility, pier, and parking garage for Phase 1. Future phases may extend off this service or be fed directly from Sherwood Street. A meter pit will be provided on-site near the Sherwood Street property boundary, with a Reduced Pressure Zone (RPZ) valve assembly located in nearby landscape after the meter pit. The RPZ will require an enclosure (such as a 40" wide x 144" deep x 90" tall Safe-T-Cover). The meter and RPZ can also be in an above ground structure/building.

We are submitting a Major Site Plan Application to the City of Portland Planning Department for approval and will appreciate documentation regarding the City's ability to provide water service for the proposed development. Please let us know if any additional information is required to evaluate the service capacity for the site or if you have any questions on our proposed layout. We appreciate your assistance. Please do not hesitate to contact me at 207-558-3841 or alebel@woodardcurran.com.

Sincerely,

WOODARD & CURRAN

Amy LeBel, P.E.
Project Engineer

Enclosure: Utility Plan

12 Mountfort Street
Portland, Maine 04101
www.woodardcurran.com

T 800.426.4262
T 207.774.2112
F 207.774.6635

November 2023

ATTN: Bradley Roland, P.E.
Department of Public Works
212 Canco Road
Portland, ME 04103

Re: The Roux Institute at Northeastern University Ph. 1 – Request for Evidence of Ability to Serve

Dear Mr. Roland:

On behalf of Northeastern University and their agent, the Initiative for Digital Engineering and Life Sciences (IDEALS), Woodard & Curran is submitting this request for initial confirmation of ability to serve for use in permitting for Phase 1 of development at 1 Bean Pot Circle in Portland, Maine. The proposed work includes the construction of the Learning, Research, and Collaboration Building, renovation of the Bean Building, construction of a parking garage, development of a childcare facility, replacement of the pier, development of a coastal path, and other site improvements. Woodard & Curran will continue to work with the Department of Public Works for final approval.

Upon completion, the proposed Phase 1 is anticipated to discharge 33,400 gallons of wastewater per day. This estimate is based on the preliminary design of the buildings. We do not anticipate changes that would result in significant increases but will notify the City if design development results in any major changes. The table below summarizes B&M historic wastewater demand and demand estimates for future phasing.

Utility*	B&M Historic Demand Reference	Phase 1 (0-5yrs)	Phase 2 (0-5yrs)	Phase 3 (10-20yrs)	Phase 4 (20+ yrs)
Wastewater (gpd)	90,000	33,400	78,800	115,800	173,400

**Based upon preliminary load demand calculations provided by ARUP dated July 19, 2023.*

Please refer to the enclosed Utility Plan for the location and size of proposed utility service connections. All connections proposed as part of this project will connect to the City's sewer via private site services similar to existing conditions. A grease trap is proposed external to the Learning, Research, and Collaboration Building to manage flow from the anticipated kitchen space. Oil/water separators are proposed for internal components of the parking garage as well as the loading dock area of the Learning, Research, and Collaboration Building. All wastewater will exit the site via a gravity sewer connection previously installed along the I-295 corridor.

We are submitting a Major Site Plan Application to the City of Portland Planning Department for approval and will appreciate documentation regarding the City's ability to collect wastewater from the proposed development. 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 207-558-3841 or alebel@woodardcurran.com.

Sincerely,

WOODARD & CURRAN

Amy LeBel, P.E.
Project Engineer

Enclosures: Utility Plan
Wastewater Application
Demand Calculations
Locus Plan

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
55 Portland Street,
Portland, Maine 04101-2991

Bradley Roland, P.E.
Water Resources Division
Department of Public Works
55 Portland Street
Portland, ME 04103

Date: **November 2023**

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

Site Address: **1 Bean Pot Circle**

Chart Block Lot Number: **447 A001 & A002**

Proposed Use: **Mixed Use Development**
Previous Use: **Industrial**
Existing Sanitary Flows: **0** GPD
Existing Process Flows: **0** GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Proposed on-site sewer main

Site Category		
	Commercial *(see part 4 below)*	X
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)*	X

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

2. Please, Submit Contact Information.

City Planner's Name: **TBD** Phone: _____
Owner/Developer Name: **Initiative for Digital Engineering and Life Sciences, c/o Sam Reiche**
Owner/Developer Address: **100 Commercial Street, Suite 400, Portland, ME 04101**
Phone: **(207) 939-6308** Fax: **N/A** E-mail: **sam.reiche@ideals.org**
Engineering Consultant Name: **Woodard & Curran**
Engineering Consultant Address: **12 Mountfort Street, Portland, ME 04101**
Phone: **(207) 558-3841** Fax: **N/A** E-mail: **alebel@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: **33,400 GPD**
Peaking Factor/ Peak Times: _____
Specify the source of design guidelines: *(i.e.* "*Handbook of Subsurface Wastewater Disposal in Maine,*" "*Plumbers and Pipe Fitters Calculation Manual,*" *Portland Water District Records, Other (specify)*
ASPE Plumbing Engineering Design Handbook, Volume 2, Table 8-7: Typical Wastewater flows from Commercial Sources Waste Water
State of Maine 10-144 CMR 241 Table 4C: Design Flows for Other Facilities

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values:
Size of External Grease Interceptor:
Retention Time:
Peaking Factor/ Peak Times:

Complete grease trap needs are TBD and are anticipated to be located within building restaurant spaces. As final design layout progresses, more information can be provided.

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

5. Please, Submit Industrial Process Wastewater Flow Calculations **N/A**

Estimated Industrial Process Wastewater Flows Generated: _____ GPD
Do you currently hold Federal or State discharge permits? Yes ____ No ____
Is the process wastewater termed categorical under CFR 40? Yes ____ No ____
OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*
Peaking Factor/Peak Process Times: _____

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

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

8. SITE DESIGN STANDARDS (14.6.4)

Compliance with the City of Portland's Land Use Code Section 14.6.4 Site Design Standards is described in the following sections.

8.1 Massing, ventilation, and wind impact

The allowable building heights on the campus are informed by the historic location and prominence of the Bean Building, the desire to create substantial public open space while meeting all programmatic goals for the Roux Institute at Northeastern University, resilient building design, and potential shadow and other impacts to neighboring properties. As discussed in Section 3.3, the proposed buildings meet the massing and height requirements specified in the IOZ Regulatory Framework.

8.2 Shadows

As described in Section 3.3, heights and massing of buildings have been designed to minimize shadow impacts to neighbors and avoid negative impacts to existing public open spaces. Shadow study drawings have been provided for reference.

8.3 Snow and ice loading

Buildings have been designed to prevent snow and ice from accumulating and falling onto abutting properties and publicly accessible areas and pathways.

8.4 View corridors

The project is not located in the limits of the *Downtown Vision View Corridor Protection Plan*; therefore, this standard does not apply.

8.5 Historic Resources

A more extensive description of Site history and the preservation of the Bean Building may be found in the Landmark Designation Report for the Burnham & Morrill Company Cannery by Heritage Consulting and Essex Preservation Consulting, dated June 2022.

Due to the designation of the Bean Building as a Historic Landmark, exterior renovation of the building requires review by the Historic Preservation Board. We will work with the Planning Department on the required historic preservation review concurrent with the Site Plan process. Bruner/Cott Architects, a historic preservation architecture firm, is leading the design of the Bean Building restoration in coordination with the Historic Preservation Board. Narratives regarding the restoration and rehabilitation of this historic resource are attached to this Section.

8.6 Exterior Lighting

Proposed exterior lighting is shown on the drawings. A lighting schedule, cut sheets, and photometric plan are provided as referenced in Section 3.

8.7 Noise and Vibration

Refer to Section 3.3.7

8.8 Signage and Wayfinding

Sign permit applications will be submitted under separate cover. The size, scale, proportions, design, materials, placement, quantity and source and intensity of illumination shall be designed to complement and enhance the architectural attributes of the proposed buildings. The primary vehicular and pedestrian entrance is from Sherwood Street. Consideration has been put into wayfinding to facilitate bike, pedestrian, and mass transit.

The campus signage creates a strong sense of arrival and welcome while reinforcing the identity of the Roux Institute at Northeastern University, in the context of the campus landscape, and to provide clear and concise vehicular wayfinding to the buildings' drop-off areas and service entrances, parking, and the childcare center, with flexibility for additional/modified messaging for future development. The sign program also provides for pedestrian orientation and wayfinding at key locations and decision points, along with directional signs to manage bike and walking circulation along paths and trails.

The design intent is for the sign structures to reflect and reinforce the campus's sense of place and identity through their forms, materials, colors, and finishes, utilizing aluminum construction with durable painted and natural finishes, installed with reinforced concrete footings. Granite is utilized as a base element in the gateway, and internal and external illumination is provided as needed for key wayfinding elements such as the vehicular directional sign, gateway, parking wayfinding, and pedestrian orientation kiosks. In this way, the materials of the signs are consistent with the site and building materials.

8.9 Heat and Glare

Refer to Section 3.3.3

8.10 Section Attachments

- Historic Preservation of the Bean Building

Roux Institute Bean Building Restoration and Rehabilitation
Bruner/Cott Architects
11/13/2023

Project Site

The "Bean Building" occupies the site of the former Burnham & Morrill Baked Bean production factory and cannery at 1 Beanpot Circle, Portland Maine. The cannery is located on a peninsula bounded to the west and north by I-295 and to the east and south by the waters of the Casco Bay. The site abuts the Berlin Subdivision of the Grand Trunk Railroad, now owned by the State of Maine, to the northeast. The site originally incorporated a railroad spur that allowed the cannery to receive dried beans from Canada.

The existing Project Site includes the concrete and brick masonry cannery (the "Bean Building"), an asphalt parking lot, and a pier in Casco Bay supporting the "Codfish Building." The Bean Building has four stories containing approximately 51,000 square feet of occupiable space. The west elevation that faces I-295 is especially visible from the highway bridge and B&M company signage and Christmas lighting have made it an informal landmark to people leaving and entering Portland from the north.

Architecture and Historic Designation

The main building of the B&M Baked Bean factory complex, designed by Burnham & Higgins in 1913, is an early example of the "daylight factory" building typology. Daylight factories were a particular architectural style in the early twentieth century consisting of a concrete structural framework and large windows that allowed for air and natural light above brick spandrel panels. This style of building suited the operation of production lines better than previous mill construction, because its reinforced concrete frame allowed for large interior spaces, could carry extreme live loads, and freed the perimeter walls to be filled with glass to allow natural light to penetrate deep into the production spaces. The internal concrete structure consisted of an innovative four-way reinforcement system, with rebar placed orthogonally to the typical column grid as well as at two diagonal directions rotated at 45 degrees from the grid.

The rectangular Bean Building is characterized by its concrete frame exposed on the exterior. The façade is composed of large windows and brick spandrel panels and substantial concrete sills within the structural framework. The base and cornice are decorated with minor projections of cut brick patterns on concrete surfaces. A 2-story portion of the building at the north façade, which originally held offices for the production facility, is topped by a large skylight. In addition to its 2-story/4-story volume, the building is notable for its horizontal concrete banding at each floor level, with the beams expressed as they run continuously around the building's perimeter. At the cornice, there is brick parapet infill above the roof and decorative brick detailing at the tops of the concrete columns. Dimensionally, the column bay spacing in the building is typically 18'-0", but there are three bays at either end of the 4-story volume with 12'-0" spacing on the exterior even though the interior column spacing remains at 18'-0."

The Bean Building has received certification for historic preservation by the city of Portland, Maine.

Work to date with Historic Planning Board

Bruner/Cott Architects and IDEALS met on site with Evan Schueckler and Robert Wiener from the City of Portland on September 7 to initiate and establish an on-going working relationship with the City of Portland. The purpose of the meeting was to introduce the Roux campus project to the City of Portland Historic Preservation Staff via a site walk around all sides of the Bean Building and a subsequent PowerPoint presentation and discussion of design strategies for the Bean Building.

Historic Preservation staff agreed with BCA's overall approach of replicating the historic window sizes and muntin patterns where the current window, sill, and brick infill pattern exist. They also agreed with BCA's overall approach of locating decidedly new interventions where there is no longer built fabric. BCA and IDEALS will review comments from City of Portland staff and present updated designs at a future workshop with the board.

Planned Project

The former industrial site will be repurposed as a high-tech hub for learning, research, and collaboration as part of the Roux Institute of Northeastern University. The "Bean Building" of the original B&M site will be saved and renovated into an innovation space for the development of new businesses and technologies. A new 230,000 sf academic building, designed by Cambridge Seven Associates, will be situated at the northeast corner of the site. Its west façade will face the Bean Building across a tree-lined pedestrian promenade and shared plaza. The existing pier and Codfish Building will be demolished and replaced by a new pier, raised above the historic flood level, on the existing footprint.

Proposed Exterior Scope of Work

The exterior rehabilitation of the Bean Building is planned to include the following scope:

- Replace existing roofing
- Install new rooftop mechanical units and screen enclosure
- Repair existing exterior brick
- Repair and repaint existing exterior concrete frame
- Replace all windows and doors with new energy-efficient windows and doors with profiles to closely match the original 1913 design.
- Install new floor-to-header glazing in areas of the framework where the original construction has been lost
- Install new doors and glazing at the plaza on the south façade facing the new pier
- Remove the concrete steps at the west façade doorway to correspond to new site circulation
- Existing west façade entry door to be replaced with profiles to match existing
- New entry doors installed on east façade and north facade

Later industrial additions to the Bean Building have been demolished. The original concrete and brick exterior will be restored where it remains intact. Areas of reconstruction and construction of a new design will take place in damaged areas depending upon the significance of their placement and the extent of past alteration. Their design will help tell the story of the building's unique history.

Roof

The existing roof will be recovered with new weather-resistant roofing. A rooftop mechanical screen will be installed at the 4-story portion of the building to house the new mechanical units. The existing seasonal tree lighting display will be rebuilt with a permanent installation. The 2-story building roof has a later addition wooden structure above the original structural slab. This will be demolished back to the original concrete structure. New roofing will be installed, and the existing skylight will be restored or rebuilt to match its historic design that incorporated vertical windows.

Exterior Walls

The existing exterior concrete and brickwork has been surveyed and is found to be significantly damaged, especially on the east façade. The west façade facing Tukey's Bridge is largely intact, with the north and south facades in varying condition. Restoration work will focus on the north, east, and south facades; the east façade will receive the most consideration for rebuilding severely damaged areas to receive glazing assemblies that do not replicate the original, lost fenestration. Generally, where the original sills and spandrels survive, they will be repaired.

Windows and Doors

All existing windows and doors will be replaced by new energy efficient glazing in compliance with Portland's new energy code (IEEC 2021). Where appropriately preserved openings exist, the existing windows will be replaced with new windows to match the historic pane sizes and profiles of mullions and sash elements. Where openings have been inappropriately modified or damaged over time, new floor to header modern glazing may be installed.

West façade entry

The existing west façade entry will be repaired or replaced and deemphasized as a primary entryway.

New East façade entry

A new entry will be constructed on the east façade facing the proposed Academic Building.

South façade Pier Plaza

New doors and glazing will be installed at the lower level of the south façade to face the proposed public plaza and the new pier.

Pier & Interpretive Work

The existing Codfish Building and pier have been surveyed and found to be in unsalvageable condition as determined by the PHPB and City Council when the Bean Building received its landmark designation. They are to be demolished and replaced by a new raised pier on the footprint of the original. IDEALS, Northeastern, and the design team will work with PHPB to develop an interpretive approach for historic content connected to the new pier.

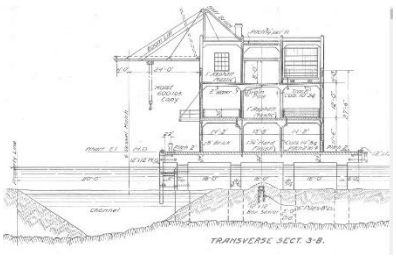
The overarching theme of the Burnham & Morrill complex interpretive installations will be the innovative development of factory-based food preservation, packaging, and mass distribution that originated in Portland and brought about an advanced architecture, called the Daylight Factory in 1913 for the main cannery building and the smaller building for handling seafood on the associated pier. The interpretive elements will include salvaged artifacts to highlight the connection between freight rail and sea-going vessels at the site in the landscape, and an explanation of what historically occupied the area of the new pier. These will occupy several different locations in the vicinity of the Bean Building, the plaza at the south end of the building, and on the pier itself.

The following elements relate specifically to interpretation of the original Codfish Pier:

- An orientation marker showing the appearance of the original pier and its building can terminate the promenade when it reaches the pier.
- Visitors to the new pier will see light posts placed to indicate the location of the original Codfish building.
- Artifacts associated with the pier's connection to sea-going vessels mark the transition from land to water.
- Metal strips enumerating the codfish operation follow column lines of the original structure.

As design develops further, PHPB will be able to see detailed proposals for integrating historic artifacts and explanatory materials into specific locations.









Historic photo circa 1920s



Historic photo circa 1940s



Existing conditions- west façade



Existing conditions- south façade



Existing conditions- east façade



Existing conditions- north façade



Existing conditions- north facade



Existing pier and Codfish Building

9. COMPREHENSIVE PLAN

The proposed development is consistent with the City's Comprehensive Plan and the goals of the Institutional Overlay Zone unanimously approved by the Portland City Council in February 2023. The proposed campus includes adaptive re-use of the B&M Bean Building, facilitates public interaction with the waterfront, creates a new walkable core of diverse settings, and bolsters economic opportunity in East Deering, the City of Portland, and beyond.

9.1 Consistency with Portland's Plan 2030

Portland's Plan 2030 focuses primarily on eight aspects of Portland's identity and performance: environment, waterfront, transportation, housing, recreation and open spaces, facilities, historic resources, and economy (see **Figure 9-1**). This first phase of the campus development advances several goals outlined in *Portland's Plan 2030*, as summarized by the following excerpts from the plan.

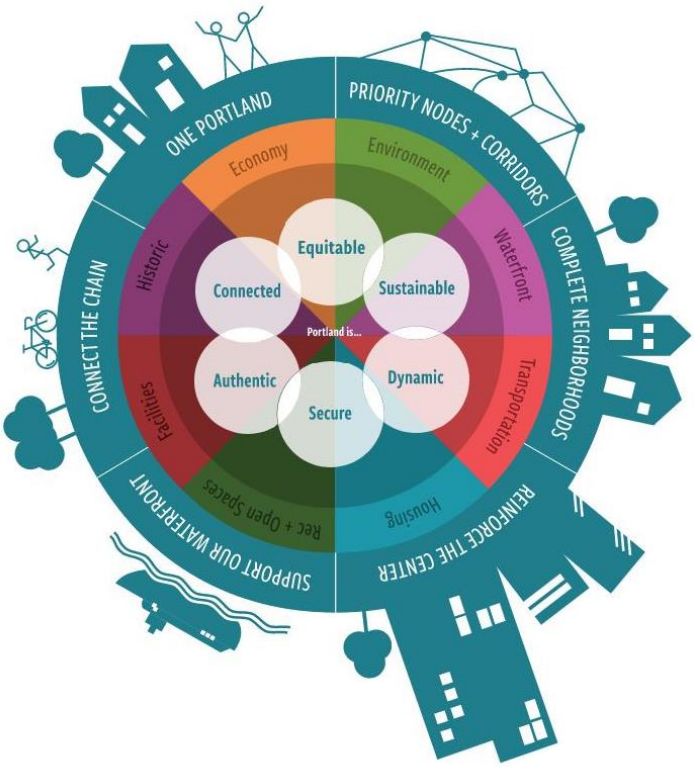


Figure 9-1: Structure of *Portland's Plan 2030*

Environment

"Adopt sustainable land use and transportation policies that support connectivity, walkable neighborhoods, and multi-modal transportation."

"Plan for the mitigation and redevelopment of brownfields to support productive uses and a healthier environment for residents."

Transportation

"Promote multi-modal accessibility, enabling residents and visitors of all ages and abilities to participate fully in the social and economic life of the community."

Recreation & Open Space

"Encourage physical and visual access to Portland's waterfront – Casco Bay, Back Cove, and the Stroudwater, Presumpscot, and Fore Rivers – as a "blueway" network and an extension of public space for local and regional recreation and transportation needs."

Historic Resources

"Stabilize and enhance historic areas of the city by ensuring quality investment in existing structures and compatible infill development."

"Ensure an appropriate balance of continuity and change as Portland grows and evolves."

Economy

"Support job creation and business growth through public initiatives and private, institutional, and regional partnerships."

"Develop programs that support industries with high-growth / high-value potential such as life sciences, food production, information technology, and marine-related industries."

"Modify ordinances and make strategic investments to better promote business development and job creation in priority areas."

"Ensure that the growth of Portland's educational, medical, and cultural institutions is integrated into Portland's urban fabric through the use of high-quality design, management of impacts, community partnerships, and innovative planning."

9.2 Consistency with One Climate Future

In 2020, the Cities of Portland and South Portland both adopted a collaborative sustainability and resilience plan: One Climate Future. The plan addresses many challenges, priorities, and strategies for responsible climate stewardship and mitigation of climate-related public health threats. It includes great specificity and is summarized by six general action items. The following are One Climate Future's "six big moves" and discussion of their relevance to Northeastern University's Portland Campus.

1. Build better buildings.

A new campus of higher education, research, and development deserves thoughtful design; it represents an opportunity to implement best practices for energy efficiency, healthy communities, human comfort, and interaction with the surrounding environment. As described in Section 3.3.7 the new buildings on campus will be created with sustainability and resilience top-of-mind. A sustainability charter has been

developed to guide this first phase of work and future campus development. A copy of the sustainability charter is uploaded under separate cover to the Documents folder.

2. Connect people to places, to opportunity.

Northeastern University provides opportunity through graduate education, research, and collaboration. The campus also provides new public open space and connections to the waterfront. As described in Section 5, Northeastern University supports public transportation networks so that the campus is accessible to all.

3. Power everything* with clean renewable electricity.

Electrification allows for appliances, buildings, and systems to support the shift to renewable energy in our power grid, without cementing a need for fossil fuels moving forward. Northeastern University's commitment to sustainability is further described in the charter uploaded under separate cover to the Documents folder.

4. Grow a circular economy.

Fostering technology knowledge and life-science research in Portland will diversify its economy and help prepare for the future. Northeastern University will strengthen the region through education, research, and collaboration with corporate and community partners; fueling progress through innovation.

5. Nourish ecosystems, which nourish us.

The redevelopment will soften landscapes to reduce impervious areas on-site. In addition, stormwater management systems and low-impact-development methodologies will be implemented as part of this first phase of work, resulting in improved water quality discharging into Casco Bay.

6. Build collaborative capacity to create this future.

The Northeastern University will develop technology and life science talent and position Mainers, new Mainers, and international students for financially stable and personally rewarding careers. The campus will connect budding talent with existing corporate and community partners, and thus create opportunity for fresh thinking and an innovative future.

Construction Management Plan (CMP) for The Roux Institute at Northeastern University
Developed by: Consigli Construction Company
Developed: May 10, 2023 Updated: September 14, 2023

A. Construction Management Principles

All aspects of this Construction Management Plan are designed and intended to mitigate or minimize construction related impacts to public ways (The Streets of Sherwood and Veranda), surrounding neighborhood(s), and ongoing operations of the Maine Yacht Center and other abutters. Consigli Construction will work collaboratively with IDEALS, project consultants, subcontractors, and The City of Portland to ensure the most efficient and least disruptive construction project possible. This goal will be attained through detailed and consistent planning, coordination, execution and seamless communication with all parties and stakeholders.

B. Development and Review of Construction Management Plan

Consigli Construction will refine and update the Construction Management Plan throughout the course of the project as conditions change and to optimize the logistical and safety related measures being employed in the interest of public safety. The overriding goal is to eliminate or minimize adverse impacts to the construction site, surrounding areas and public ways by protecting the public, residents, construction personnel and property, while simultaneously ensuring pedestrian, Northeastern University, Maine Yacht Center, and other abutter activities can continue unabated and in a safe manner. Please refer to the attached Site Logistics Plans.

C. Performance Guarantees, Inspection Fees, Preconstruction Meeting, & Permits

Prior to scheduling a preconstruction meeting and the issuance of city required permits, IDEALS and Consigli Construction shall meet all general requirements and enforcement of Portland's Land Use Code.

Other permits, as applicable include:

Street Opening & Street Occupancy Permit: Construction activity in a public right-of-way (Sherwood Street) is controlled by Portland's 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. Though still under design, the majority of new to existing utility connections to the project are anticipated to be on Sherwood Street. Temporary lane closures are anticipated during utility tie-in work. All temporary directional

signage and traffic control to be utilized during this work. It is also anticipated that sidewalk occupancy will be required for construction purposes on Sherwood Street. All required signage to be provided. The public bus stop located on Veranda Street is anticipated to be maintained through construction.

Blasting: Blasting is not required nor anticipated for this project. Mechanical means of removal of rock is anticipated in lieu of blasting.

Building Code: The project will employ the best practices, as applicable, of Chapter 33 Safeguards During Construction, from the International Building Code.

D. Construction Administration and Communication

IDEALS and Consigli Construction will implement a continuous communication strategy and program through preconstruction and the construction phases of the project, that will include neighborhood forums. 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. IDEALS and Consigli Construction will work closely with the University, adjacent abutters, businesses, and will keep all parties regularly informed, as far in advance as possible, of scheduled work, particularly work anticipated to cause significant noise, vibrations, or dust. Consigli Construction will also prominently display appropriate signage indicating construction entrances and exits, pedestrian access around the site, and signage directing visitors to the construction field office. Site signage also includes Consigli Construction's 24 hours/day contact information. All temporary signage will be modified appropriately as conditions may change and will be removed at the conclusion of the project.

E. Construction Schedule

Construction is anticipated to commence in the summer of 2024 and be substantially complete by the summer of 2027 allowing student occupancy of the education building for the fall semester 2027. A detailed construction schedule is attached.

Work hours to follow City of Portland Sections 17-18, Construction Activities for Building Permit, and Section 25-129, Noise, dust, and debris. Work hours will generally be restricted to 7:00am – 7:00pm, Monday through Friday. In the event of Saturday or Sunday work, hours to be limited to 8:00am – 4:00pm. Any further off-hour work will be coordinated directly with the City.

Material deliveries will comply with normal work hours. This project is considering utilizing "just in time" delivery techniques with the intent that materials delivered to the site are promptly installed/put in place. Temporary storage locations will be off site.

F. Security & Public Safety

As depicted in the Site Logistics Plan, the entire project site will be enclosed by chain link construction fencing. Primary construction site accesses to be swinging gate entrances at the end of Sherwood Street with an emergency exit into the Maine Yacht Center. Gates will be secured during non-working hours and equipped with "Knox" boxes as required by the city.

Project work activities will be conducted in accordance with Consigli Construction and OSHA regulations and will further comply with all City of Portland and/or State of Maine safety related regulations. A comprehensive Fire Safety/Fire Dept Access and Fire Safety Plan (NFPA 241) will be developed in conjunction with a 3rd party consultant (Code Red), reviewed with the City of Portland prior to implementation as well as a project incident response process to be followed in the event of emergencies.

G. Construction Permitting and Traffic Control Plans

Construction Activity in Public Streets: To minimize impacts, disruption, and provide safe and efficient passage, Consigli Construction will implement best practices traffic control in compliance with all City of Portland requirements during the duration of the project. This includes signage, measures to mitigate idling construction related delivery traffic, construction service vehicles, traffic flaggers, temporary traffic flow modifications, signage & barriers at temporary partial street closings, and any other measures required to control work taking place in public ways. In instances where utility connection excavations may need to be left open overnight, measures including barriers, traffic/pedestrian signage, and other mandated requirements will be implemented.

Sewer and Stormwater: Sewer and stormwater water system connections (in addition to water and electrical connection) will be required. Most tie-in connections to existing services are anticipated to occur on Sherwood Street.

Traffic Control Plans: Construction activities that impact the existing public street system will be controlled to protect the safety of the construction workers, pedestrians, and the travelling public. In addition to utility connections, temporary lane closures of Sherwood Street are anticipated during the period of construction of street and utility improvements. Traffic control measures are described above and will be further articulated and elaborated upon for specific relevant activities and as part of street opening or street occupancy/sidewalk occupancy permitting.

H. Site Management and Controls

Consigli Construction will implement and manage a continuous program of containing soils onsite, public street cleaning and onsite dust control. Program to comply with City of Portland requirements and will include a tire wash at the construction exit, water trucks and water cannons (during demolition) to control dust, street sweeping equipment and other measures as required.

Trash dumpsters will be utilized onsite for regular removal of all construction related trash & debris. The site and building areas under construction will be kept orderly and as clean as possible throughout the construction period.

Noise and vibration will be maintained at minimal levels and measured.

Snow plowing and surface treatment of the project site within the limits of construction will be the responsibility of Consigli Construction.

I. Erosion Control and Preservation of Trees

Prior to commencement of construction activities, erosion and sedimentation controls as contained in the approved erosion and sedimentation control plan shall be installed. These controls are currently in place and shall be inspected regularly and maintained on a consistent basis.

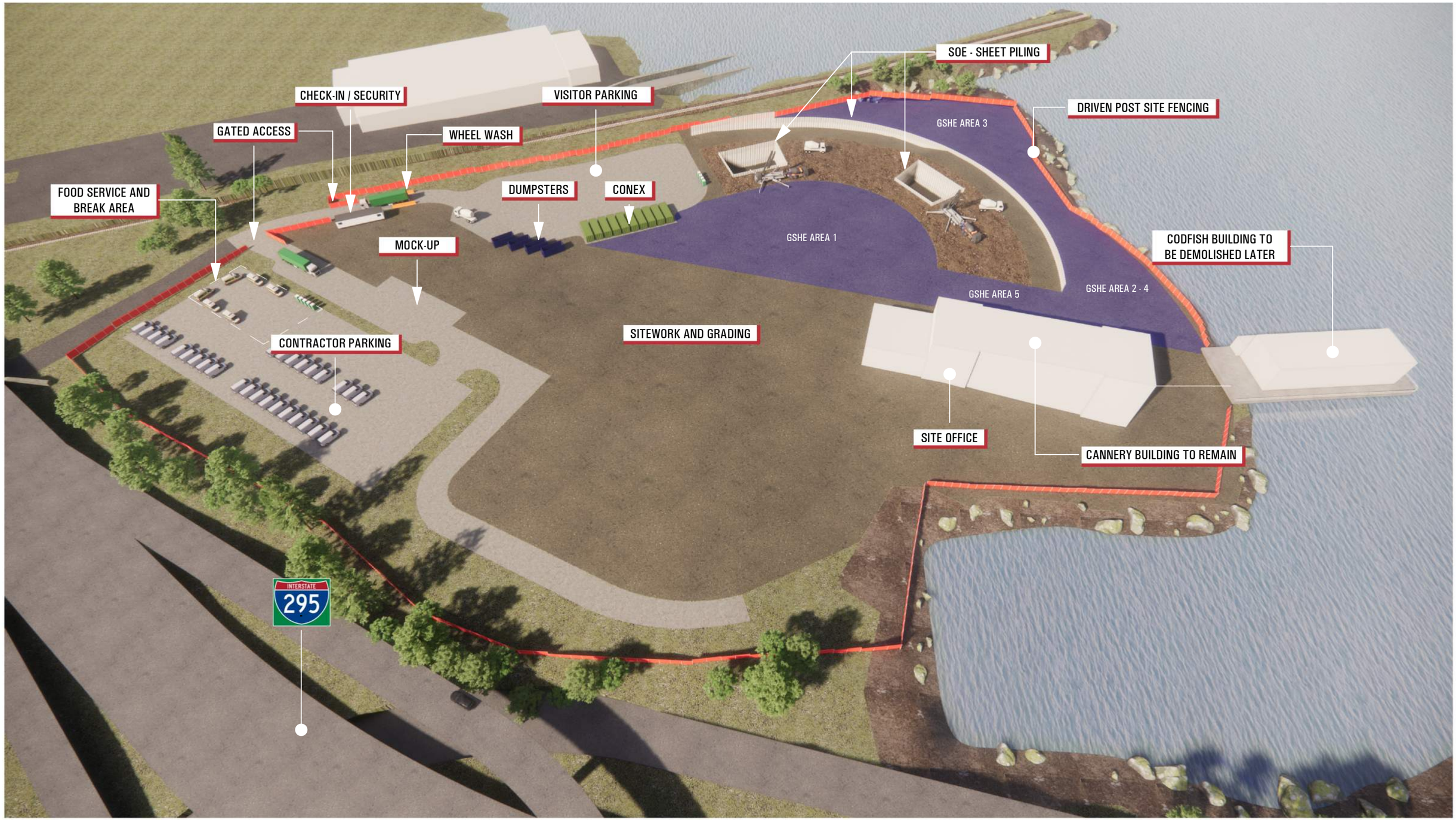
All tree and other landscaping preservations measures shall be as depicted in the landscaping design documents. Any onsite material storage will be away from any existing to remain landscaping plantings.

J. Construction Staging Area

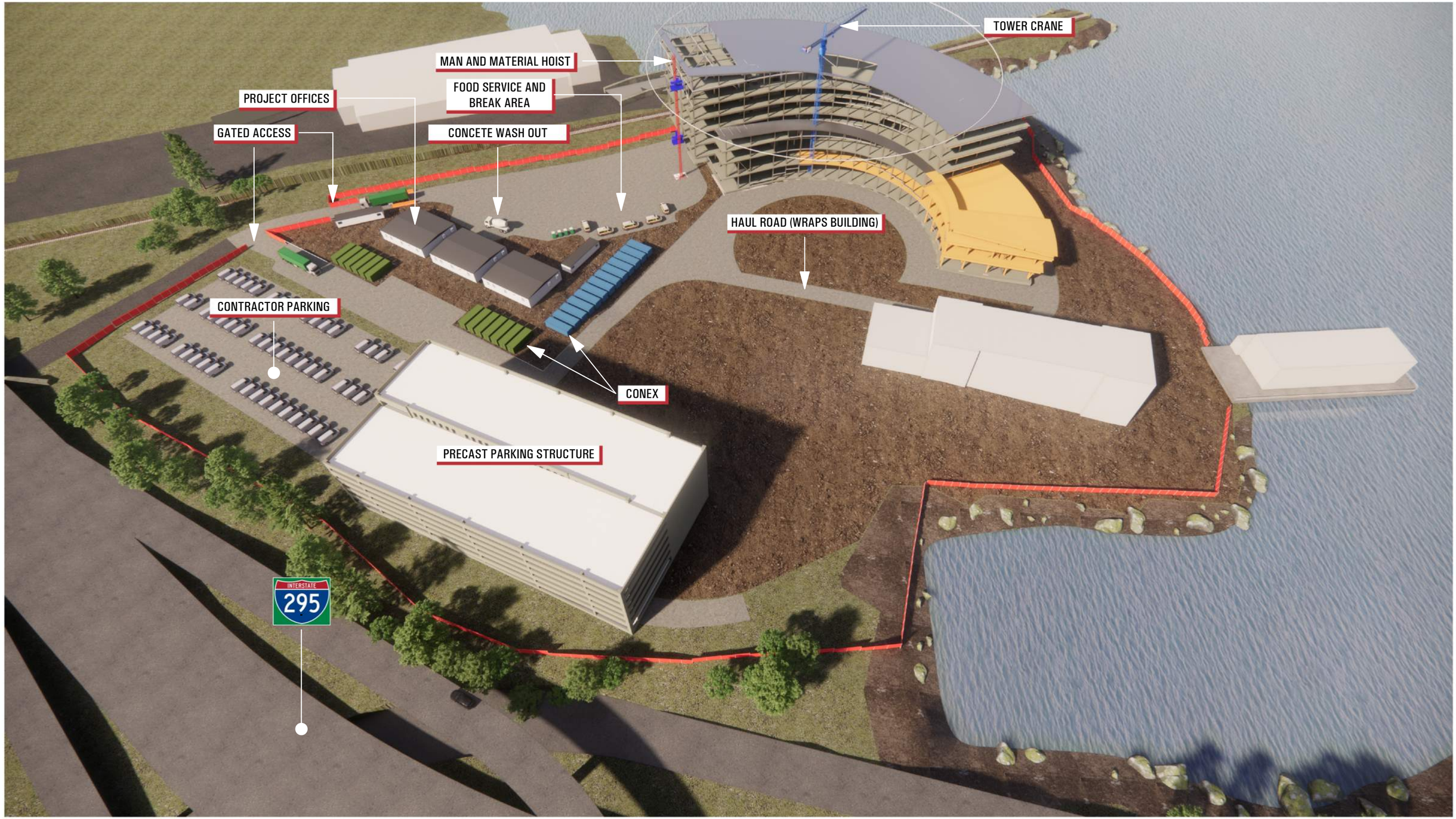
Refer to Site Logistics Plan for anticipated locations of temporary site office and storage trailers and material staging and storage areas. Dumpster locations to be dependent on optimal locations based on activities. Truck wheel washing stations to be located at entry/exit points to the site.

Deliveries: Material deliveries will be carefully planned to not encumber the site or adjacent public way with material delivery vehicles. All efforts will be made to avoid queueing of delivery vehicles on public ways. In the instance of consistent deliveries of large quantities construction product, offsite remote marshalling area will be utilized for trucking. Truck deliveries will enter the site at the Sherwood Street construction gate.

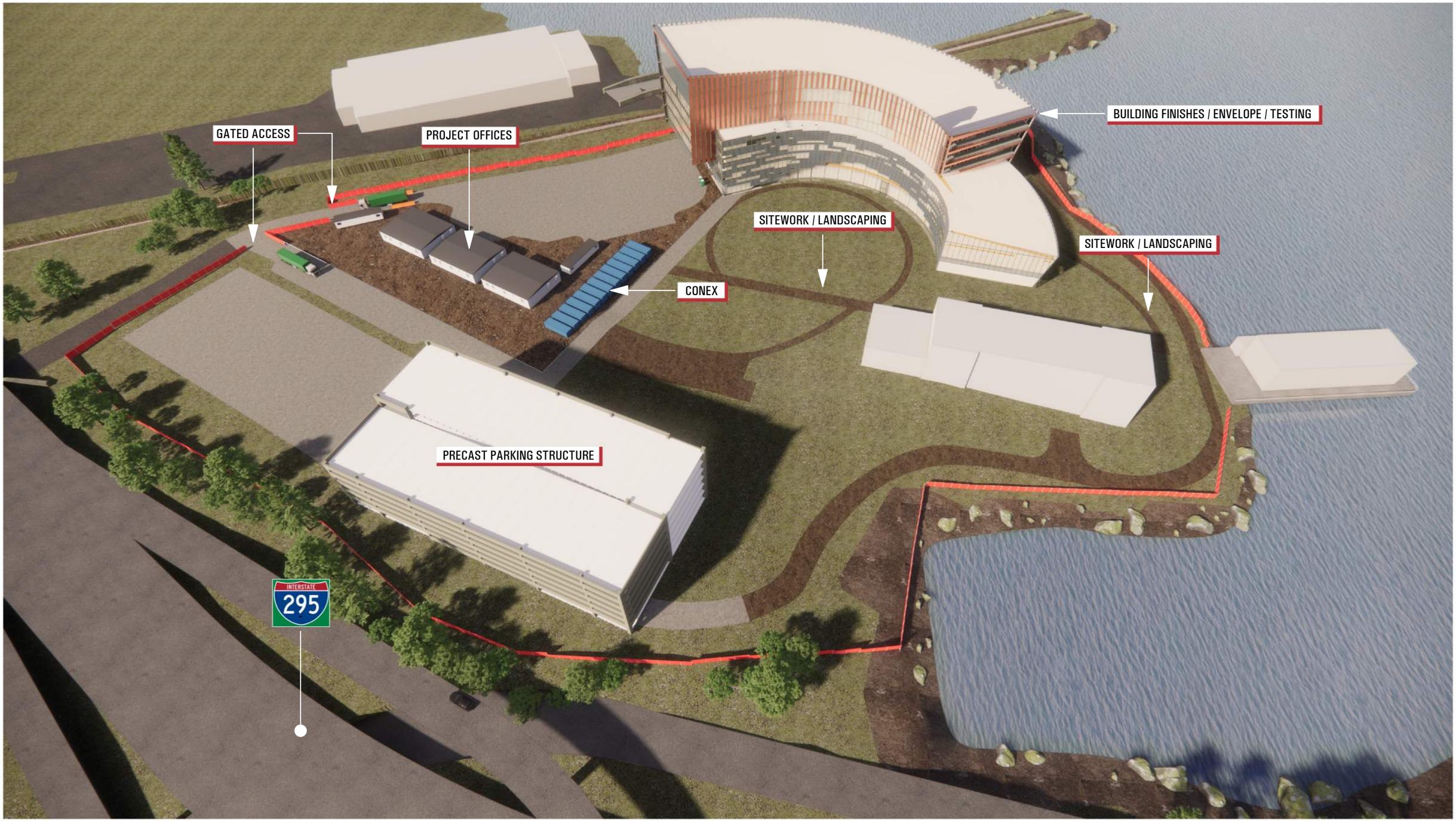
SITEWORK / FOUNDATION



STRUCTURE / FIT-UP



FINISHES / SITEWORK / COMMISSIONING



CONSIGLI
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Construction Management Plan (CMP) for The Roux Institute at Northeastern University
Developed by: Consigli Construction Company
Developed: May 10, 2023 Updated: January 25, 2024

A. Construction Management Principles

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Temporary lane closures are anticipated during utility tie-in work. All temporary directional

signage and traffic control to be utilized during this work. It is also anticipated that sidewalk occupancy will be required for construction purposes on Sherwood Street. All required signage to be provided. The public bus stop located on Veranda Street is anticipated to be maintained through construction.

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Material deliveries will comply with normal work hours. This project is considering utilizing "just in time" delivery techniques with the intent that materials delivered to the site are promptly installed/put in place. Temporary storage locations will be off site.

F. Security & Public Safety

As depicted in the Site Logistics Plan, the entire project site will be enclosed by chain link construction fencing. Primary construction site accesses to be swinging gate entrances at the end of Sherwood Street with an emergency exit into the Maine Yacht Center. Gates will be secured during non-working hours and equipped with "Knox" boxes as required by the city.

Project work activities will be conducted in accordance with Consigli Construction and OSHA regulations and will further comply with all City of Portland and/or State of Maine safety related regulations. A comprehensive Fire Safety/Fire Dept Access and Fire Safety Plan (NFPA 241) will be developed in conjunction with a 3rd party consultant (Code Red), reviewed with the City of Portland prior to implementation as well as a project incident response process to be followed in the event of emergencies.

G. Construction Permitting and Traffic Control Plans

Construction Activity in Public Streets: To minimize impacts, disruption, and provide safe and efficient passage, Consigli Construction will implement best practices traffic control in compliance with all City of Portland requirements during the duration of the project. This includes signage, measures to mitigate idling construction related delivery traffic, construction service vehicles, traffic flaggers, temporary traffic flow modifications, signage & barriers at temporary partial street closings, and any other measures required to control work taking place in public ways. In instances where utility connection excavations may need to be left open overnight, measures including barriers, traffic/pedestrian signage, and other mandated requirements will be implemented.
Sewer and Stormwater: Sewer and stormwater water system connections (in addition to water and electrical connection) will be required. Most tie-in connections to existing services are anticipated to occur on Sherwood Street.

Traffic Control Plans: Construction activities that impact the existing public street system will be controlled to protect the safety of the construction workers, pedestrians, and the travelling public. In addition to utility connections, temporary lane closures of Sherwood Street are anticipated during the period of construction of street and utility improvements. Traffic control measures are described above and will be further articulated and elaborated upon for specific relevant activities and as part of street opening or street occupancy/sidewalk occupancy permitting. Deliverys to the project site will be completed between 7am and 5pm. Temporay off-site storage locations will be developed in the future as subcontractors come aboard the project.

H. Site Management and Controls

Consigli Construction will implement and manage a continuous program of containing soils onsite, public street cleaning and onsite dust control. Program to comply with City of Portland requirements and will include a tire wash at the construction exit, water trucks and water cannons (during demolition) to control dust, street sweeping equipment and other measures as required.

Trash dumpsters will be utilized onsite for regular removal of all construction related trash & debris. The site and building areas under construction will be kept orderly and as clean as possible throughout the construction period.

Noise and vibration will be maintained at minimal levels and measured.

Snow plowing and surface treatment of the project site within the limits of construction will be the responsibility of Consigli Construction.

I. Erosion Control and Preservation of Trees

Prior to commencement of construction activities, erosion and sedimentation controls as contained in the approved erosion and sedimentation control plan shall be installed. These controls are currently in place and shall be inspected regularly and maintained on a consistent basis. All temporary erosion and sedimentation controls will be removed at the completion of construction.

All tree and other landscaping preservations measures shall be as depicted in the landscaping design documents. Any onsite material storage will be away from any existing to remain landscaping plantings.

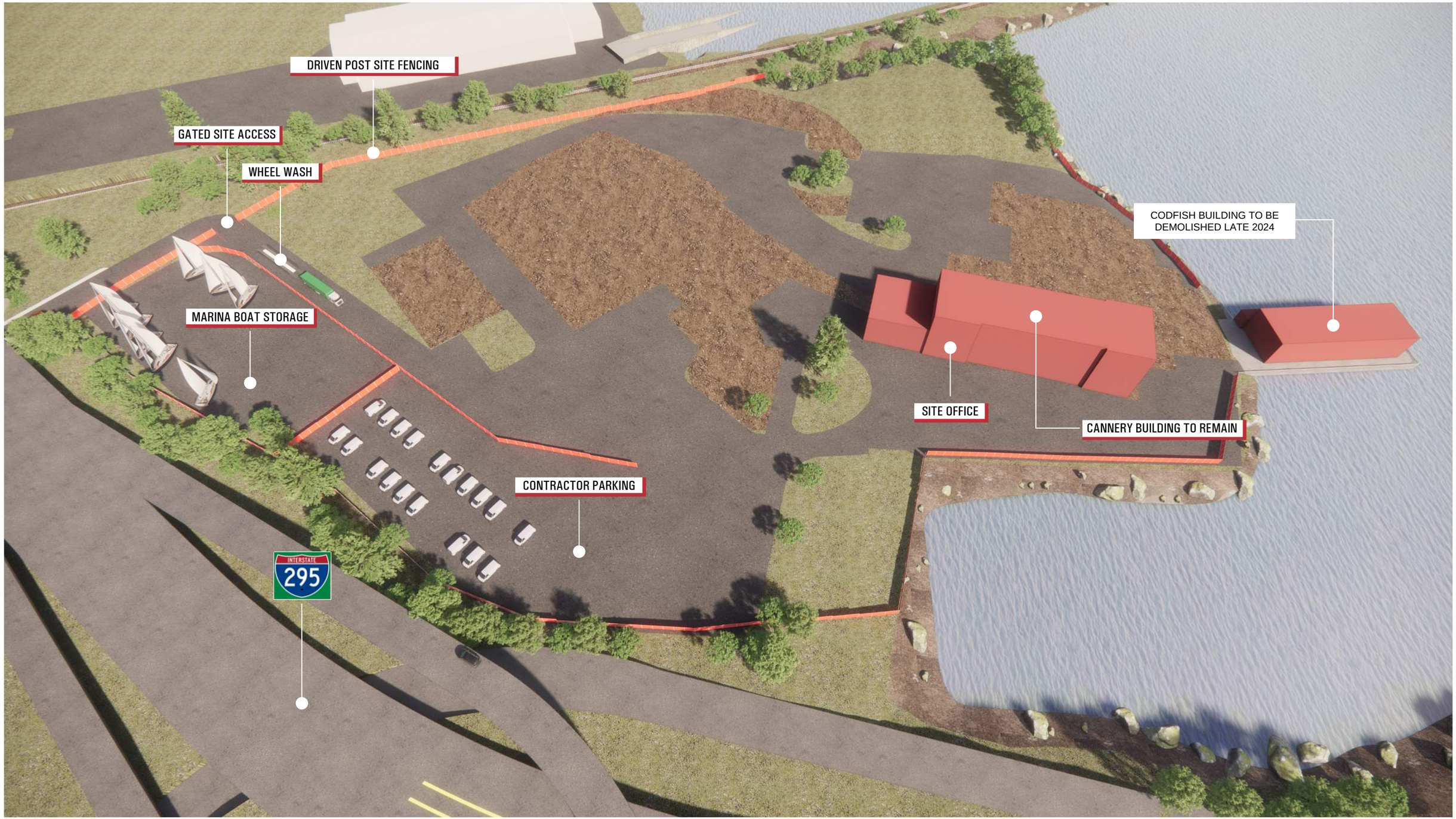
J. Construction Staging Area

Refer to Site Logistics Plan for anticipated locations of temporary site office and storage trailers and material staging and storage areas. Dumpster locations to be dependent on optimal locations based on activities. Truck wheel washing stations to be located at entry/exit points to the site.

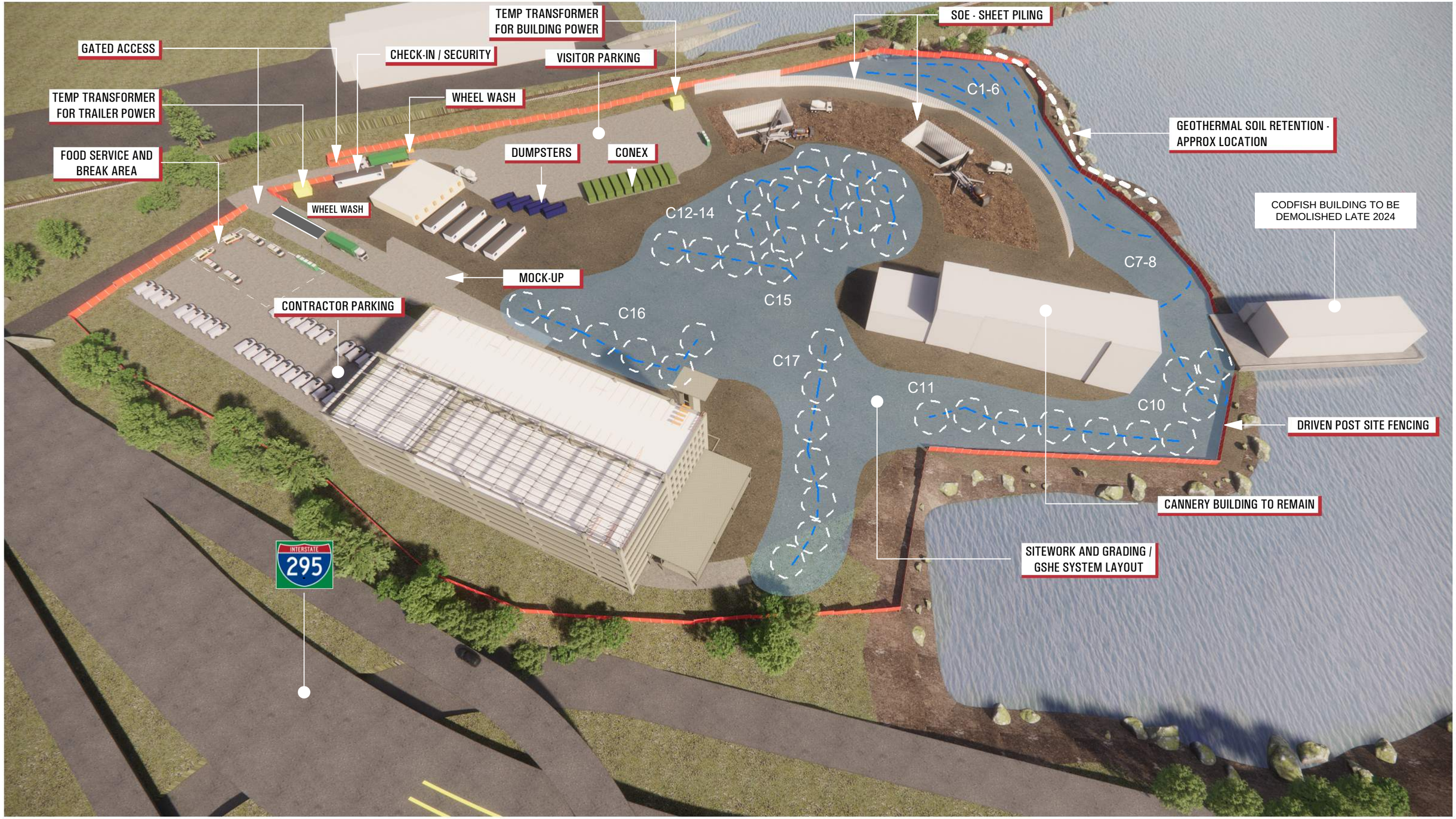
Deliveries: Material deliveries will be carefully planned to not encumber the site or adjacent public way with material delivery vehicles. All efforts will be made to avoid queueing of delivery vehicles on public ways. In the instance of consistent deliveries of large quantities construction product, offsite remote marshalling area will be utilized for trucking. Truck deliveries will enter the site at the Sherwood Street construction gate.

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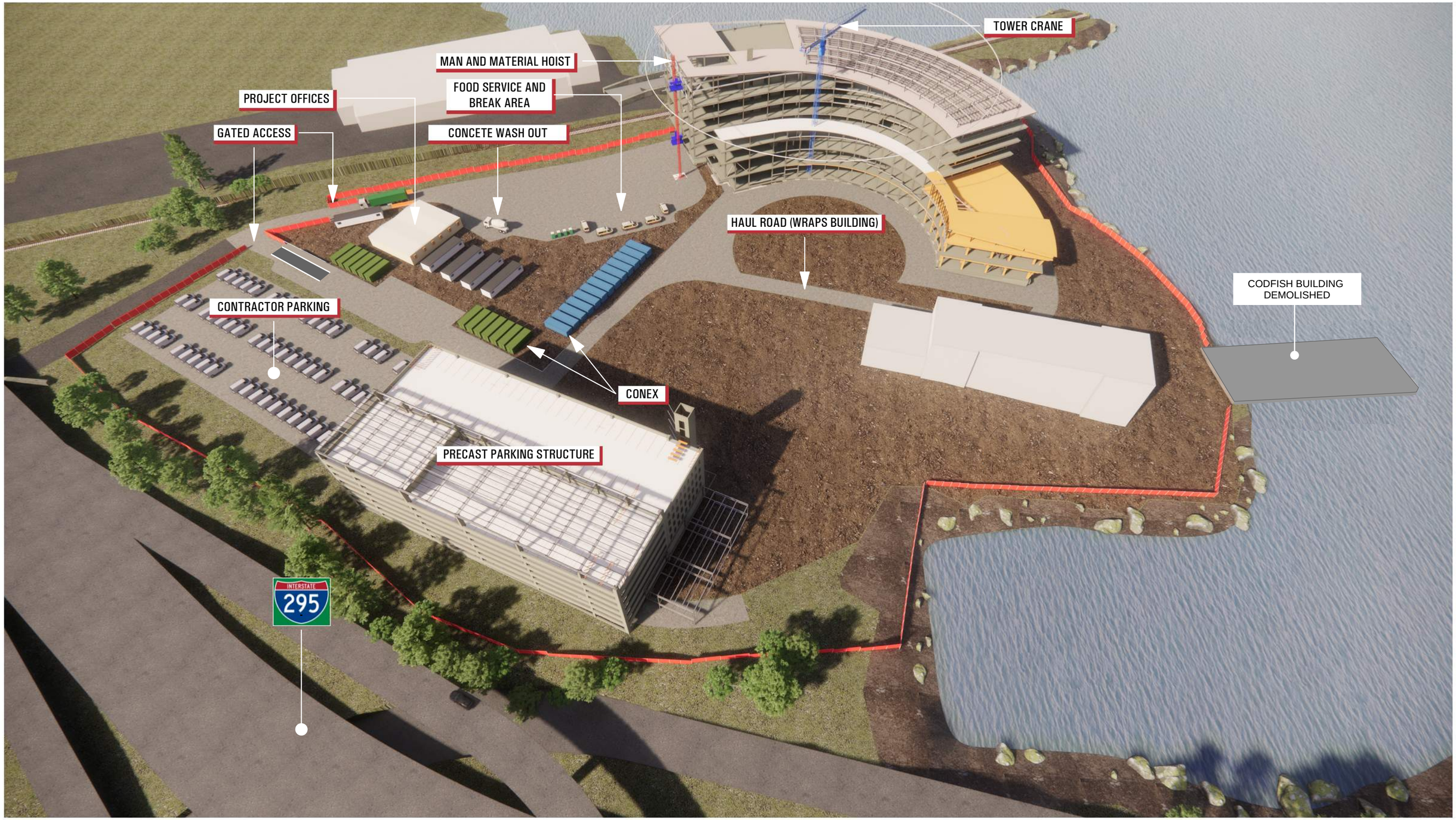
POST-DEMO



SITEWORK / FOUNDATION

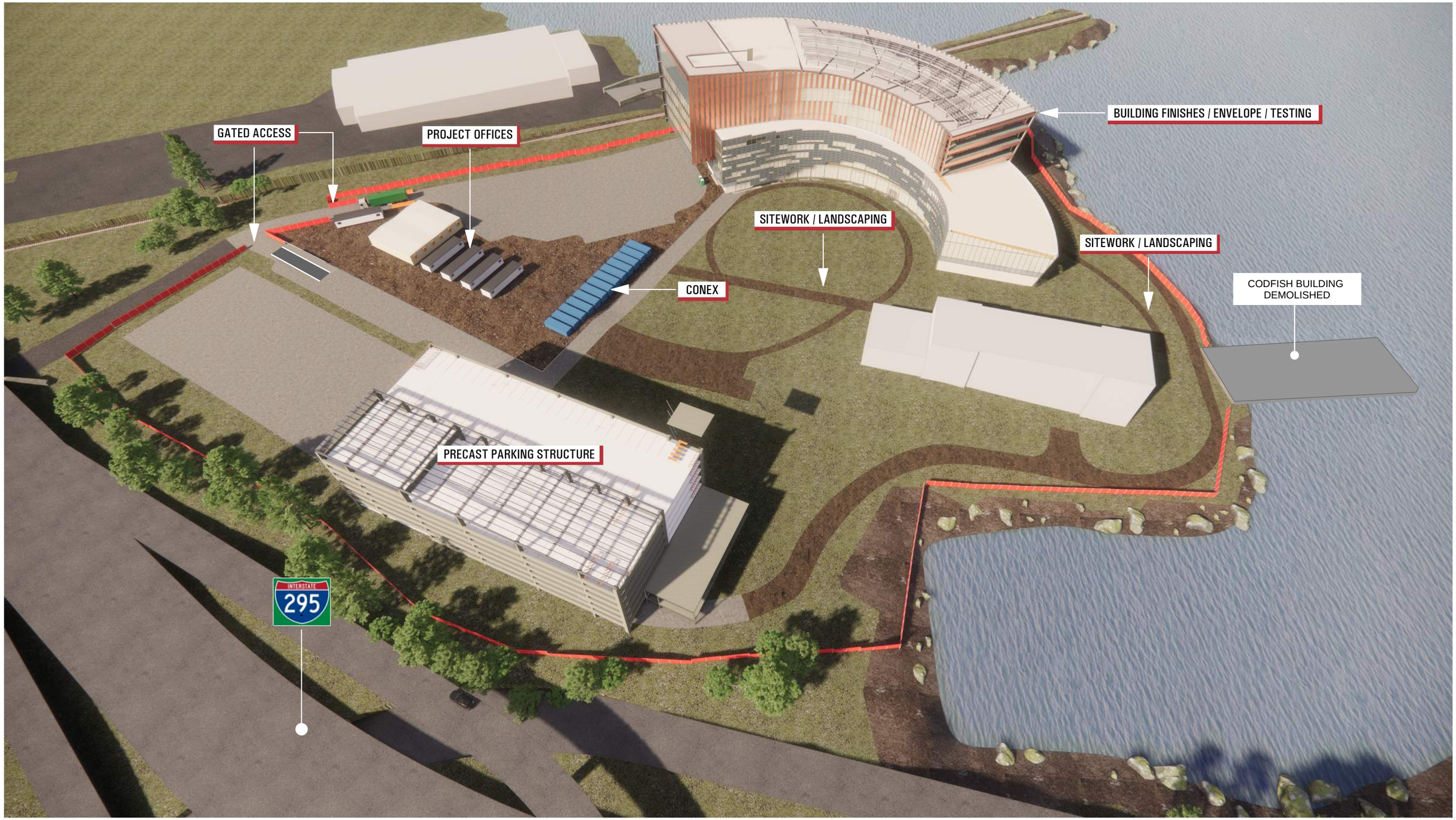


STRUCTURE / FIT-UP



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FINISHES / SITEWORK / COMMISSIONING



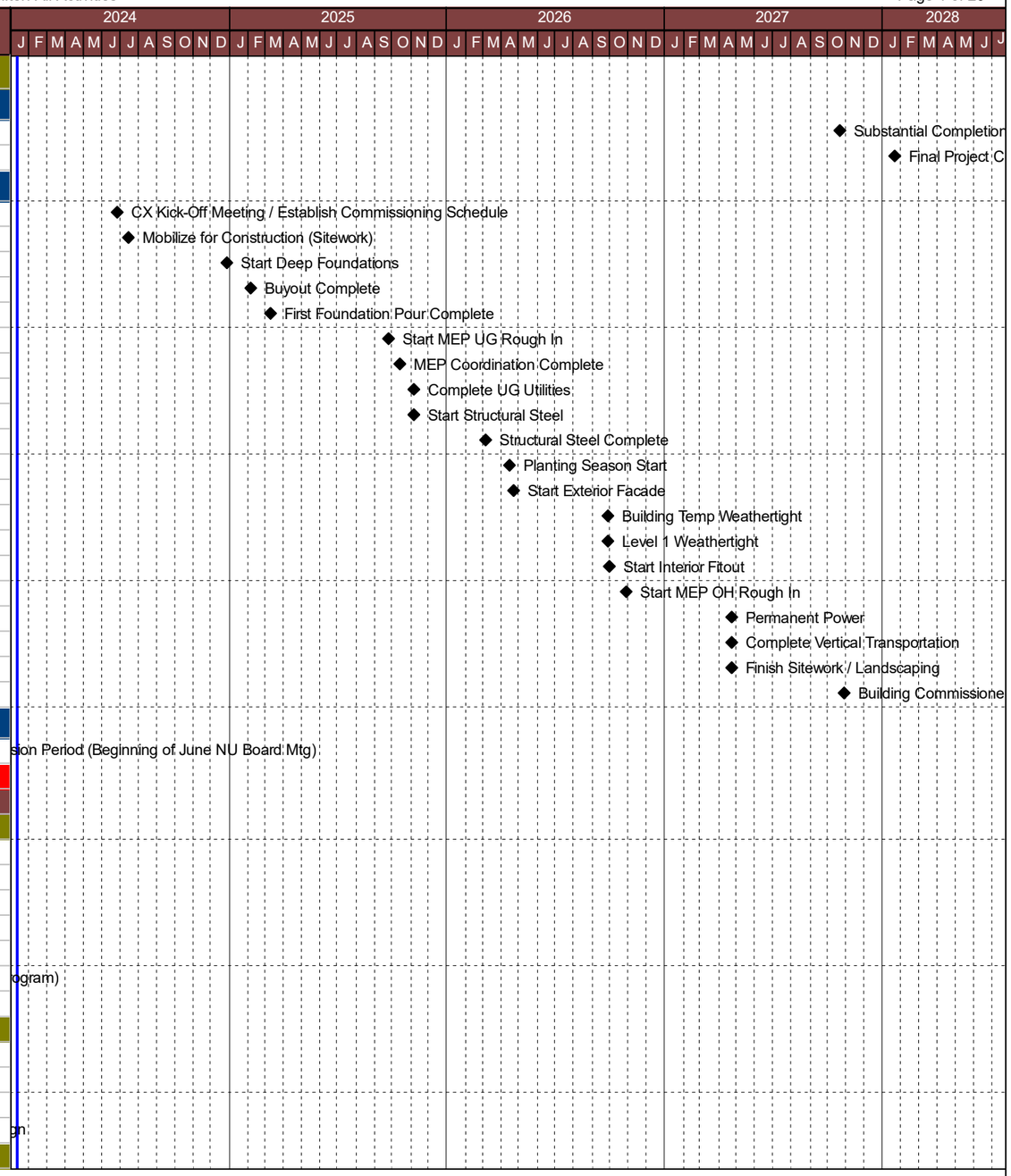
TRUCKING DELIVERY ROUTE (7AM - 5PM)



TRUCKING DELIVERY ROUTE (7AM - 5PM)



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
IDEALS - Roux Institute at Northeastern					
Contract Milestones					
A7910	Substantial Completion	0	0		22-Oct-27*
A8170	Final Project Completion	0	0		21-Jan-28
Project Milestones					
A8220	CX Kick-Off Meeting / Establish Commissioning Schedule	0	0	26-Jun-24	
A7900	Mobilize for Construction (Sitework)	0	0		16-Jul-24
A8310	Start Deep Foundations	0	0	27-Dec-24	
A8240	Buyout Complete	0	0		05-Feb-25
A7920	First Foundation Pour Complete	0	0		11-Mar-25
A8190	Start MEP UG Rough In	0	0	25-Sep-25	
A8210	MEP Coordination Complete	0	0		14-Oct-25
A8260	Complete UG Utilities	0	0		06-Nov-25
A8200	Start Structural Steel	0	0	07-Nov-25	
A7930	Structural Steel Complete	0	0		06-Mar-26
A7960	Planting Season Start	0	0	15-Apr-26*	
A8230	Start Exterior Facade	0	0	23-Apr-26	
A7940	Building Temp Weathertight	0	0		28-Sep-26
A7950	Level 1 Weathertight	0	0		28-Sep-26
A8270	Start Interior Fitout	0	0	29-Sep-26	
A8250	Start MEP OH Rough In	0	0	28-Oct-26	
A8100	Permanent Power	0	0		22-Apr-27
A8290	Complete Vertical Transportation	0	0		22-Apr-27
A8300	Finish Sitework / Landscaping	0	0		22-Apr-27
A8280	Building Commissioned	0	0		29-Oct-27
Preconstruction					
A00616	Leadership Decision Period (Beginning of June NU Board Mtg)	110	0	10-Jan-23 A	12-Jun-23 A
Design					
Roux Institute & Site					
Space Programming Phase					
A00303	Initiation/Data Gathering	10	0	06-Sep-21 A	17-Sep-21 A
A00304	Benchmarking	10	0	20-Sep-21 A	01-Oct-21 A
A00305	Modular Space Standards	15	0	20-Sep-21 A	08-Oct-21 A
A00306	"Straw" Program	8	0	11-Oct-21 A	20-Oct-21 A
A00314	Preparation of Final Detailed Space Program	57	0	25-Nov-21 A	11-Feb-22 A
A00318	Complete Programming Deliverables (Publish Final Space Program)	0	0	11-Feb-22 A	
A00319	RI/NU Review and Approval	10	0	14-Feb-22 A	28-Feb-22 A
Concept Development					
A00488	Conceptual Design	75	0	28-Feb-22 A	10-Jun-22 A
A00492	Complete Conceptual Design Deliverables	0	0	23-May-22 A	
A00493	Cost Estimating by CM	10	0	23-May-22 A	06-Jun-22 A
A00491	IDEALS Review and Approval of Conceptual Design	10	0	23-May-22 A	06-Jun-22 A
Schematic Design					



Start Date 06-Sep-21
Finish Date 21-Jan-28
Data Date 12-Jan-24
Run Date 17-Jan-24 14:39
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Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

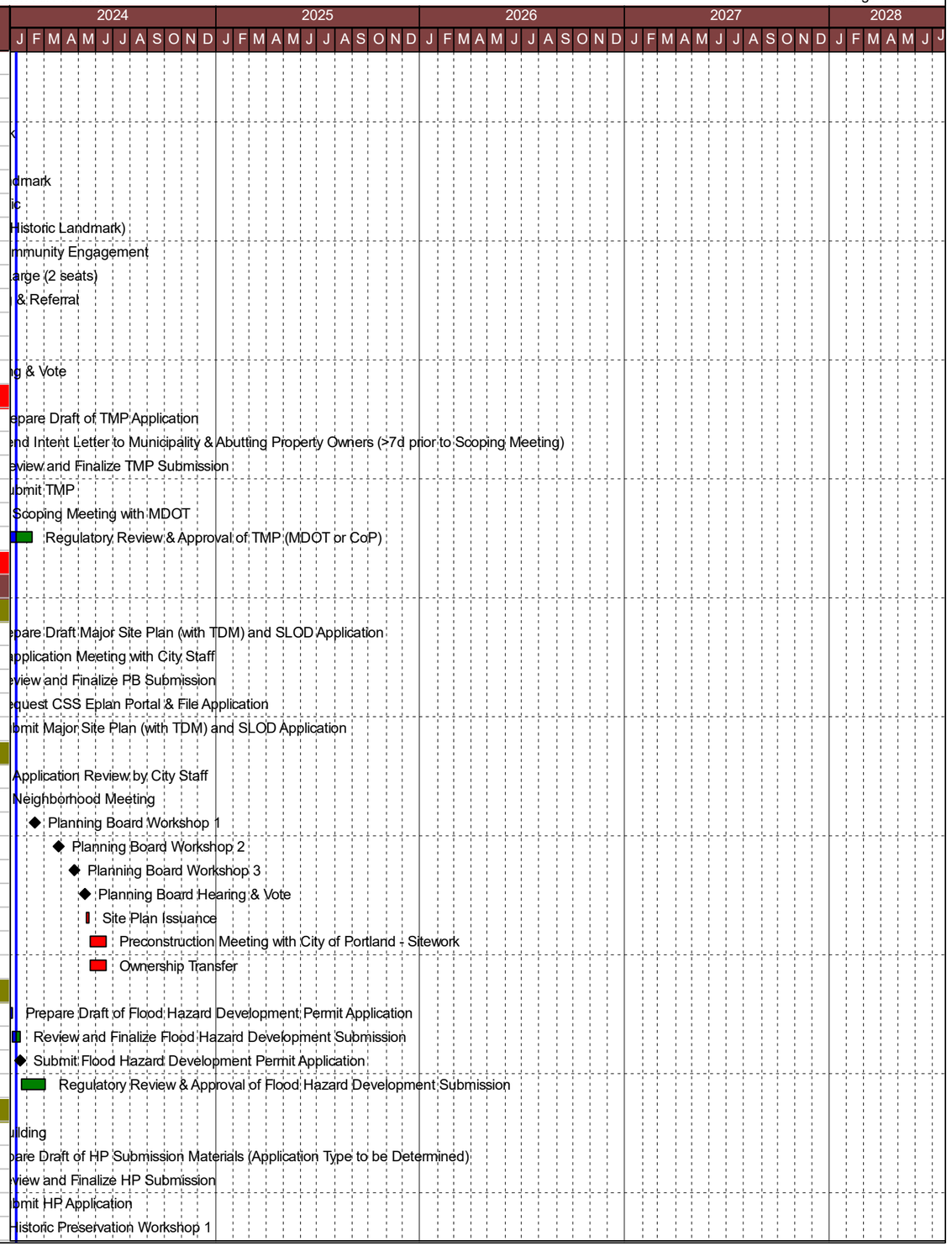
Consigli Construction Co., Inc.
IDEALS - Roux Institute at Northeastern
Project Schedule - Updated 12-Jan-24

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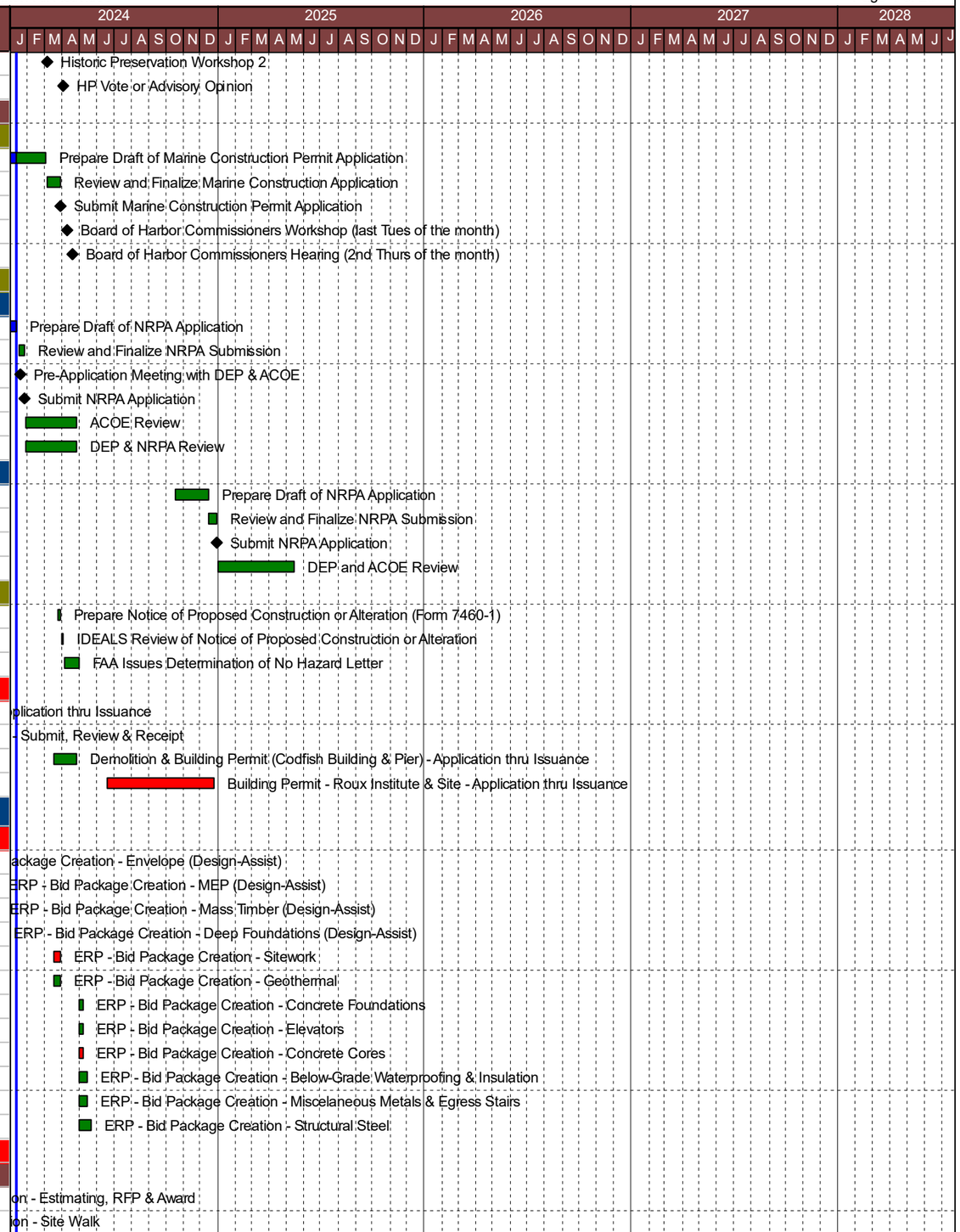
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A00324	Schematic Design	80	0	20-Jun-22 A	07-Oct-22 A
A00337	Cost Estimating by CM	40	0	26-Sep-22 A	18-Nov-22 A
A00338	Review and Adjustments	25	0	21-Nov-22 A	23-Dec-22 A
A00621	Complete Revised Schematic Design (230k GSF)	40	0	23-Jan-23 A	07-Apr-23 A
A00679	Cost Estimating Revised Schematic Design (230k GSF)	20	0	10-Apr-23 A	05-May-23 A
Design Development					
A00340	Design Development	91	0	13-Jun-23 A	20-Oct-23 A
A00371	Subcontractor DD Pricing	5	0	23-Oct-23 A	22-Nov-23 A
A00361	Issue 100% DD Estimating Package (CCC & Fennessy)	30	0	23-Oct-23 A	05-Dec-23 A
A00573	Owner Comments	0	0		03-Nov-23 A
A00563	DD Estimate Check & Approval	0	0		13-Nov-23 A
A00391	Reconciliation - DD Estimate	12	0	06-Dec-23 A	21-Dec-23 A
A00401	VE - DD Estimate	16	3	22-Dec-23 A	17-Jan-24
A00411	DD Design Finalization	5	5	18-Jan-24	24-Jan-24
A00381	DD Estimate Review & Approval	5	5	25-Jan-24	31-Jan-24
Site Plan Deliverables					
A00634	Site Plan Deliverable - Architecture	40	0	10-Apr-23 A	07-Nov-23 A
A00669	Site Plan Deliverable - Landscape	40	0	10-Apr-23 A	07-Nov-23 A
A00670	Site Plan Deliverable - Utilities	40	0	10-Apr-23 A	07-Nov-23 A
Sitework Design Deliverables					
A9230	Design Finalization - Sitework	89	44	23-Oct-23 A	15-Mar-24
Geothermal Design Deliverables					
A2030	Submit Test Well OAL	5	0	30-May-23 A	20-Jun-23 A
A2050	Owner Approve OAL	5	0	21-Jun-23 A	27-Jun-23 A
A2040	Procure Test Well Materials	20	0	28-Jun-23 A	29-Aug-23 A
A1780	Test Well Installation & Testing	46	0	30-Aug-23 A	03-Oct-23 A
A2060	Design Finalization - Geothermal	47	44	04-Oct-23 A	15-Mar-24
Construction Documents					
A00392	50% Constructions Documents / Permit Set	63	63	01-Feb-24	01-May-24
A00382	Construction Documents	105	105	01-Feb-24	01-Jul-24
A00402	Review & Approve 50% CDs / Permit Set	10	10	02-May-24	15-May-24
A00510	IDEALS Review & Approval of Construction Documents	19	19	02-Jul-24	29-Jul-24
Owner Procurement					
A8330	Owner Procure Envelope Commissioning Agent	14	0	13-Jun-23 A	06-Nov-23 A
A8340	Owner Procure MEP Commissioning Agent	14	0	13-Jun-23 A	30-Nov-23 A
Entitlements					
IOZ Change					
Prepare IOZ Application Materials (IDP and Regulatory Framework)					
A00250	Prepare Text Amendment Application to Add Institute Name	60	0	16-Sep-21 A	10-Dec-21 A
A00251	Prepare Text and Map Amendment Application	60	0	16-Sep-21 A	10-Dec-21 A
A00466	Submit Draft IOZ Application to IDEALS	1	0	08-Dec-21 A	13-Dec-21 A
A00418	IDEALS Review of Draft IOZ Submission	38	0	09-Dec-21 A	31-Jan-22 A
A00419	Address Comments from IDEALS and Finalize IOZ Submission	10	0	01-Feb-22 A	14-Feb-22 A
A00420	Request CSS Eplan Portal & File Application	5	0	15-Feb-22 A	21-Feb-22 A
A00469	Submit IOZ Application to City	0	0	21-Feb-22 A	
A00463	Application Review by City Staff	30	0	22-Feb-22 A	04-Apr-22 A
A00512	Submit Revised IOZ Application to City	0	0	02-Aug-22 A	
IOZ Public & Regulatory Meetings, Presentations, and Response to Comments					
A00255	IOZ Neighborhood Meeting 1 (Prior to submission of application)	1	0	18-Nov-21 A	18-Nov-21 A



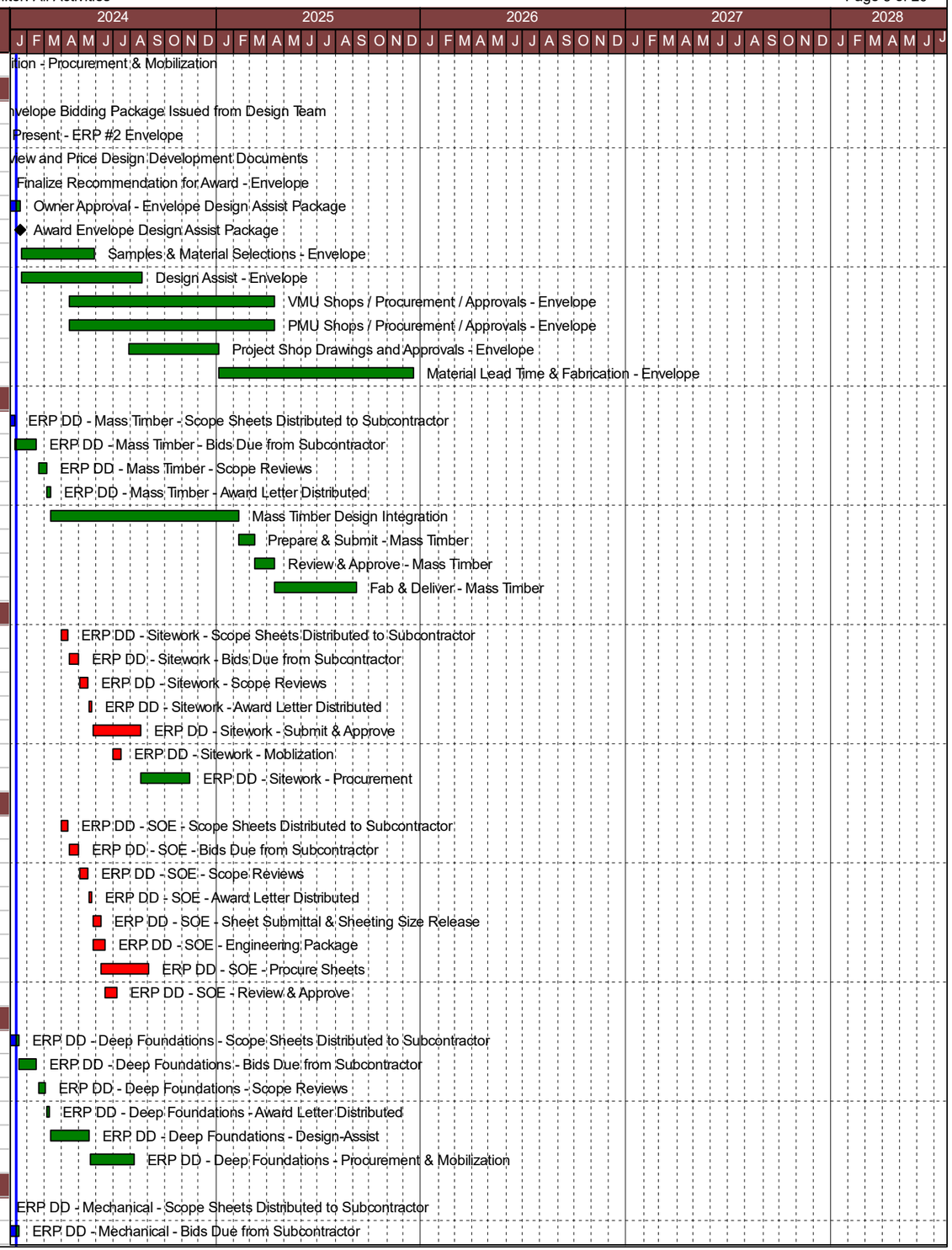
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A00254	Scoping/Preapplication Meeting with City Staff	1	0	01-Dec-21 A	03-Dec-21 A
A00256	IOZ Neighborhood Meeting 2 (Post submission)	0	0	04-Apr-22 A	
A00483	Pre Application Meeting with DEP and ACOE	0	0	05-Apr-22 A	
A00422	Historic Preservation Workshop 2 - Landmark	0	0	08-Aug-22 A	
A00424	IOZ Planning Board Workshop 2	0	0	09-Aug-22 A	
A00423	Historic Preservation Public Hearing - Landmark	0	0	07-Sep-22 A	
A00258	IOZ Planning Board Workshop 3 - Traffic	0	0	11-Oct-22 A	
A00519	City Council Approval of Designation (Historic Landmark)	0	0	19-Oct-22 A	
A00259	IOZ Planning Board Workshop 4 - Community Engagement	0	0	25-Oct-22 A	
A00580	November Election - District 3 & At-Large (2 seats)	0	0	08-Nov-22 A	
A00260	IOZ Planning Board Public Hearing & Referral	0	0	22-Nov-22 A	
A00261	City Council Workshop 1	0	0	09-Jan-23 A	
A00262	City Council First Reading	0	0	18-Jan-23 A	
A00502	City Council Second Reading & Vote	0	0	06-Feb-23 A	
Traffic Movement Permit (TMP)					
A00504	Prepare Draft of TMP Application	58	0	21-Apr-23 A	15-Nov-23 A
A00523	Send Intent Letter to Municipality & Abutting Property Owners (>7d prior to Scoping Meeting)	0	0		15-Nov-23 A
A00505	Review and Finalize TMP Submission	10	0	15-Nov-23 A	16-Nov-23 A
A00508	Submit TMP	0	0		17-Nov-23 A
A00522	Scoping Meeting with MDOT	0	0		13-Dec-23 A
A00509	Regulatory Review & Approval of TMP (MDOT or CoP)	39	20	14-Dec-23 A	09-Feb-24
Phase 1 Site Plan - Permits & Approvals					
City of Portland Permitting					
Site Plan - Prepare & Submit (W&C activity)					
A00269	Prepare Draft Major Site Plan (with TDM) and SLOD Application	40	0	21-Apr-23 A	07-Nov-23 A
A00272	Preapplication Meeting with City Staff	0	0		25-Oct-23 A
A00426	Review and Finalize PB Submission	10	0	08-Nov-23 A	13-Nov-23 A
A00427	Request CSS Eplan Portal & File Application	5	0	08-Nov-23 A	13-Nov-23 A
A00474	Submit Major Site Plan (with TDM) and SLOD Application	0	0		13-Nov-23 A
Application Review / PB Workshops / Approval					
A00465	Application Review by City Staff	50	0	14-Nov-23 A	13-Dec-23 A
A00273	Neighborhood Meeting	0	0		13-Dec-23 A
A00274	Planning Board Workshop 1	0	0		13-Feb-24
A00275	Planning Board Workshop 2	0	0		26-Mar-24
A00276	Planning Board Workshop 3	0	0		23-Apr-24
A00277	Planning Board Hearing & Vote	0	0		14-May-24
A00297	Site Plan Issuance	5	5	15-May-24	21-May-24
A00307	Preconstruction Meeting with City of Portland - Sitework	20	20	22-May-24	19-Jun-24
A00317	Ownership Transfer	20	20	22-May-24	19-Jun-24
Flood Hazard Development Permit					
A00279	Prepare Draft of Flood Hazard Development Permit Application	39	0	24-Apr-23 A	04-Jan-24 A
A00431	Review and Finalize Flood Hazard Development Submission	10	5	05-Jan-24 A	19-Jan-24
A00476	Submit Flood Hazard Development Permit Application	0	0		19-Jan-24
A00432	Regulatory Review & Approval of Flood Hazard Development Submission	30	30	22-Jan-24	04-Mar-24
Historic Preservation (incl. Section 106 Review)					
A00614	HP Landmark Designation of Bean Building	0	0	19-Oct-22 A	
A00436	Prepare Draft of HP Submission Materials (Application Type to be Determined)	39	0	24-Apr-23 A	27-Oct-23 A
A00438	Review and Finalize HP Submission	10	0	30-Oct-23 A	10-Nov-23 A
A00478	Submit HP Application	0	0		13-Nov-23 A
A00284	Historic Preservation Workshop 1	0	0		06-Dec-23 A



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A00285	Historic Preservation Workshop 2	0	0		06-Mar-24*
A00287	HP Vote or Advisory Opinion	0	0		03-Apr-24*
State & Federal Permitting					
Board of Harbor Commissioners Marine Construction Permit					
A00288	Prepare Draft of Marine Construction Permit Application	39	35	24-Apr-23 A	04-Mar-24
A00440	Review and Finalize Marine Construction Application	19	19	05-Mar-24	29-Mar-24
A00480	Submit Marine Construction Permit Application	0	0		29-Mar-24
A00441	Board of Harbor Commissioners Workshop (last Tues of the month)	0	0		09-Apr-24*
A00442	Board of Harbor Commissioners Hearing (2nd Thurs of the month)	0	0		19-Apr-24*
Natural Resources Permits					
Phase 1 (Shoreline Work & Pier/Codfish Bldg)					
A00555	Prepare Draft of NRPA Application	39	1	24-Apr-23 A	12-Jan-24
A00558	Review and Finalize NRPA Submission	9	9	16-Jan-24	26-Jan-24
A00569	Pre-Application Meeting with DEP & ACOE	0	0		18-Jan-24*
A00559	Submit NRPA Application	0	0		26-Jan-24
A00560	ACOE Review	63	63	29-Jan-24	26-Apr-24
A00570	DEP & NRPA Review	63	63	29-Jan-24	26-Apr-24
Phase 2 (Bike/Pedestrian Path @ Tukey's Bridge)					
A00293	Prepare Draft of NRPA Application	40	40	18-Oct-24	16-Dec-24
A00445	Review and Finalize NRPA Submission	10	10	17-Dec-24	31-Dec-24
A00482	Submit NRPA Application	0	0		31-Dec-24
A00446	DEP and ACOE Review	94	94	02-Jan-25	16-May-25
Federal Aviation Administration					
A00295	Prepare Notice of Proposed Construction or Alteration (Form 7460-1)	5	5	25-Mar-24	29-Mar-24
A00447	IDEALS Review of Notice of Proposed Construction or Alteration	4	4	01-Apr-24	04-Apr-24
A00448	FAA Issues Determination of No Hazard Letter	19	19	05-Apr-24	02-May-24
Building Permits					
A00620	Abatement Notification - Application thru Issuance	10	0	01-Feb-23 A	14-Feb-23 A
A00635	Demolition Permit - Submit, Review & Receipt	20	0	19-Apr-23 A	23-May-23 A
A00528	Demolition & Building Permit (Codfish Building & Pier) - Application thru Issuance	29	29	18-Mar-24	26-Apr-24
A00600	Building Permit - Roux Institute & Site - Application thru Issuance	130	130	20-Jun-24	26-Dec-24
Early Procurement					
ERP - Bid Package Creation					
A00617	ERP - Bid Package Creation - Envelope (Design-Assist)	15	0	11-Jul-23 A	31-Jul-23 A
A00626	ERP - Bid Package Creation - MEP (Design-Assist)	20	0	23-Oct-23 A	06-Dec-23 A
A00638	ERP - Bid Package Creation - Mass Timber (Design-Assist)	20	0	23-Oct-23 A	08-Dec-23 A
A00618	ERP - Bid Package Creation - Deep Foundations (Design-Assist)	10	0	23-Oct-23 A	15-Dec-23 A
A00664	ERP - Bid Package Creation - Sitework	10	10	18-Mar-24	29-Mar-24
A00636	ERP - Bid Package Creation - Geothermal	10	10	18-Mar-24	29-Mar-24
A00633	ERP - Bid Package Creation - Concrete Foundations	5	5	02-May-24	08-May-24
A00668	ERP - Bid Package Creation - Elevators	5	5	02-May-24	08-May-24
A00643	ERP - Bid Package Creation - Concrete Cores	5	5	02-May-24	08-May-24
A00728	ERP - Bid Package Creation - Below-Grade Waterproofing & Insulation	10	10	02-May-24	15-May-24
A00738	ERP - Bid Package Creation - Miscelaneous Metals & Egress Stairs	10	10	02-May-24	15-May-24
A00667	ERP - Bid Package Creation - Structural Steel	15	15	02-May-24	22-May-24
Early Release Packages - Issuance & Buyout					
ERP - Abatement & Demolition					
A00644	ERP - Abatement & Demolition - Estimating, RFP & Award	50	0	14-Nov-22 A	31-Jan-23 A
A00684	ERP - Abatement & Demolition - Site Walk	1	0	01-Feb-23 A	01-Feb-23 A



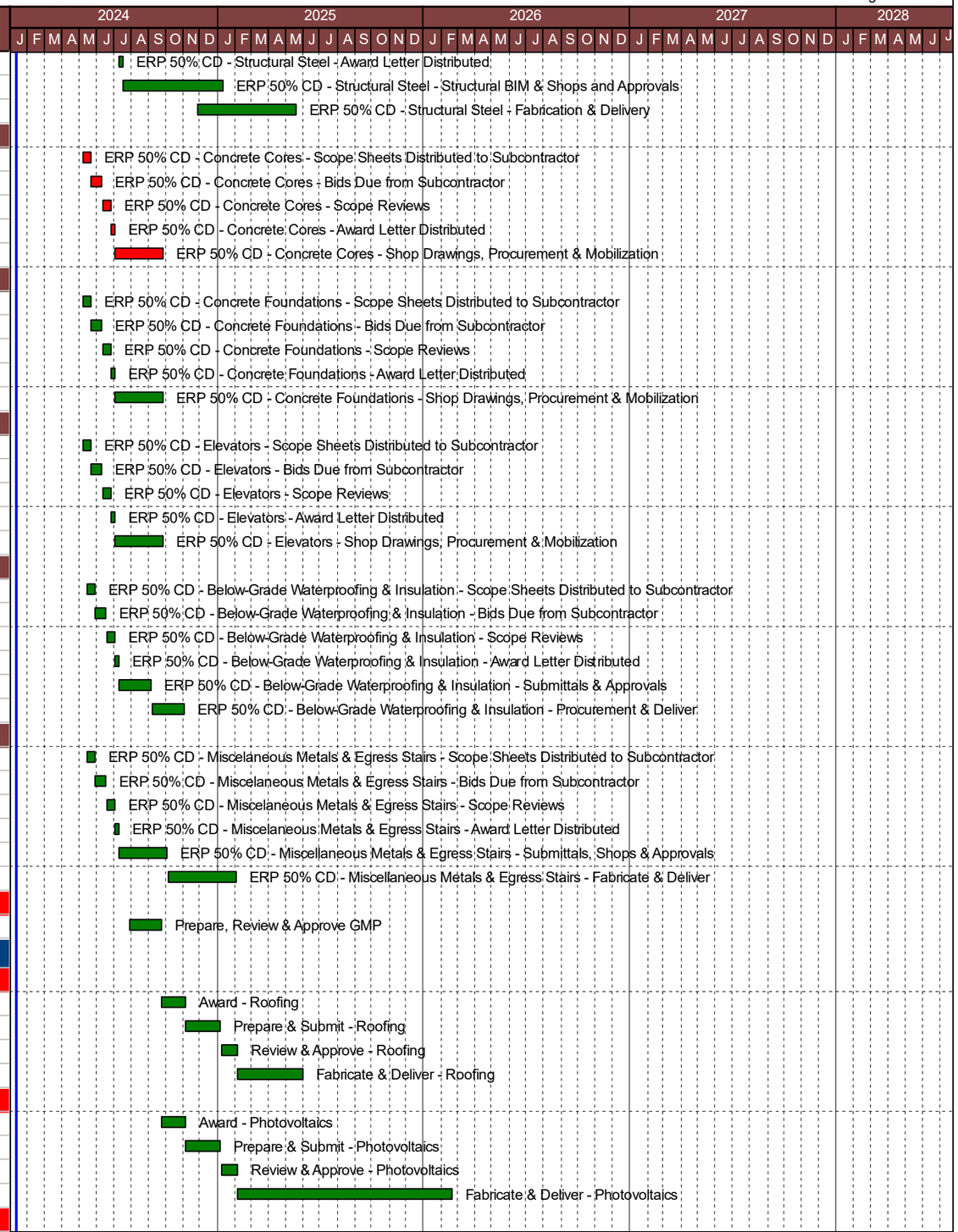
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A00642	ERP - Abatement & Demolition - Procurement & Mobilization	12	0	02-Feb-23 A	17-Feb-23 A
ERP - Envelope					
A1660	ERP #2 - Envelope Bidding Package Issued from Design Team	0	0		31-Jul-23 A
A1670	Price & Present - ERP #2 Envelope	49	0	31-Jul-23 A	18-Sep-23 A
A1900	Review and Price Design Development Documents	14	0	19-Sep-23 A	02-Nov-23 A
A2070	Finalize Recommendation for Award - Envelope	13	0	03-Nov-23 A	20-Dec-23 A
A1680	Owner Approval - Envelope Design Assist Package	19	5	21-Dec-23 A	19-Jan-24
A1690	Award Envelope Design Assist Package	0	0		19-Jan-24
A1710	Samples & Material Selections - Envelope	90	90	22-Jan-24	29-May-24
A1700	Design Assist - Envelope	150	150	22-Jan-24	22-Aug-24
A1720	VMU Shops / Procurement / Approvals - Envelope	250	250	16-Apr-24	14-Apr-25
A1730	PMU Shops / Procurement / Approvals - Envelope	250	250	16-Apr-24	14-Apr-25
A1740	Project Shop Drawings and Approvals - Envelope	110	110	29-Jul-24	06-Jan-25
A1750	Material Lead Time & Fabrication - Envelope	240	240	07-Jan-25	19-Dec-25
ERP DD - Design Assist - Mass Timber					
A8350	ERP DD - Mass Timber - Scope Sheets Distributed to Subcontractor	20	0	11-Dec-23 A	09-Jan-24 A
A8360	ERP DD - Mass Timber - Bids Due from Subcontractor	27	25	10-Jan-24 A	16-Feb-24
A8370	ERP DD - Mass Timber - Scope Reviews	11	11	20-Feb-24	05-Mar-24
A8380	ERP DD - Mass Timber - Award Letter Distributed	5	5	06-Mar-24	12-Mar-24
A1620	Mass Timber Design Integration	229	229	13-Mar-24	10-Feb-25
A1420	Prepare & Submit - Mass Timber	20	20	11-Feb-25	11-Mar-25
A1430	Review & Approve - Mass Timber	25	25	12-Mar-25	15-Apr-25
A1440	Fab & Deliver - Mass Timber	100	100	16-Apr-25	08-Sep-25
ERP DD - Sitework					
A00705	ERP DD - Sitework - Scope Sheets Distributed to Subcontractor	10	10	01-Apr-24	12-Apr-24
A00715	ERP DD - Sitework - Bids Due from Subcontractor	13	13	16-Apr-24	02-May-24
A00725	ERP DD - Sitework - Scope Reviews	11	11	03-May-24	17-May-24
A00625	ERP DD - Sitework - Award Letter Distributed	5	5	20-May-24	24-May-24
A00645	ERP DD - Sitework - Submit & Approve	60	60	28-May-24	20-Aug-24
A00653	ERP DD - Sitework - Moblization	10	10	02-Jul-24	16-Jul-24
A00623	ERP DD - Sitework - Procurement	60	60	21-Aug-24	15-Nov-24
ERP DD - SOE					
A8390	ERP DD - SOE - Scope Sheets Distributed to Subcontractor	10	10	01-Apr-24	12-Apr-24
A8400	ERP DD - SOE - Bids Due from Subcontractor	13	13	16-Apr-24	02-May-24
A8410	ERP DD - SOE - Scope Reviews	11	11	03-May-24	17-May-24
A8420	ERP DD - SOE - Award Letter Distributed	5	5	20-May-24	24-May-24
A00655	ERP DD - SOE - Sheet Submittal & Sheeting Size Release	10	10	28-May-24	10-Jun-24
A00685	ERP DD - SOE - Engineering Package	15	15	28-May-24	17-Jun-24
A00665	ERP DD - SOE - Procure Sheets	60	60	11-Jun-24	04-Sep-24
A00695	ERP DD - SOE - Review & Approve	15	15	18-Jun-24	09-Jul-24
ERP DD - Deep Foundations					
A8430	ERP DD - Deep Foundations - Scope Sheets Distributed to Subcontractor	19	2	18-Dec-23 A	16-Jan-24
A8440	ERP DD - Deep Foundations - Bids Due from Subcontractor	23	23	17-Jan-24	16-Feb-24
A8450	ERP DD - Deep Foundations - Scope Reviews	10	10	20-Feb-24	04-Mar-24
A8460	ERP DD - Deep Foundations - Award Letter Distributed	5	5	05-Mar-24	11-Mar-24
A00628	ERP DD - Deep Foundations - Design-Assist	50	50	12-Mar-24	21-May-24
A00629	ERP DD - Deep Foundations - Procurement & Mobilization	55	55	22-May-24	08-Aug-24
ERP DD - Mechanical					
A8510	ERP DD - Mechanical - Scope Sheets Distributed to Subcontractor	10	0	07-Dec-23 A	20-Dec-23 A
A8520	ERP DD - Mechanical - Bids Due from Subcontractor	17	3	21-Dec-23 A	17-Jan-24



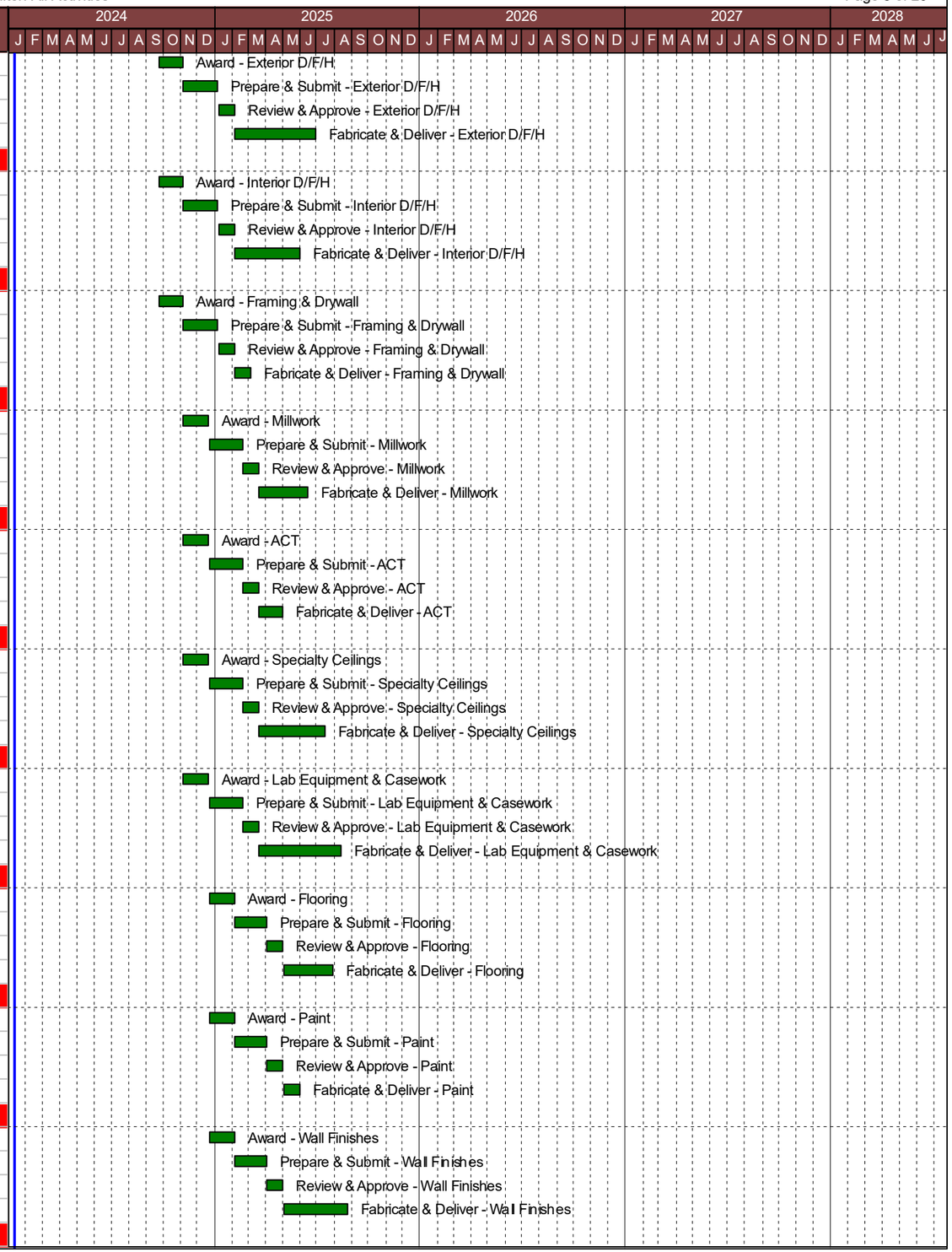
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A8530	ERP DD - Mechanical - Scope Reviews	5	5	18-Jan-24	24-Jan-24
A8940	ERP DD - Mechanical - Interviews	3	3	25-Jan-24	29-Jan-24
A8540	ERP DD - Mechanical - Award Letter Distributed	5	5	01-Feb-24	07-Feb-24
A00657	ERP DD - Mechanical - Early Coordination	80	80	08-Feb-24	03-Jun-24
A00661	ERP DD - Mechanical - Release Long-Lead Equipment	450	450	04-Jun-24	23-Mar-26
A00671	ERP DD - Mechanical - Basic Material Procurement	60	60	15-Oct-25	12-Jan-26
ERP DD - Sheet Metal					
A8970	ERP DD - Sheet Metal - Scope Sheets Distributed to Subcontractor	10	0	07-Dec-23 A	20-Dec-23 A
A8980	ERP DD - Sheet Metal - Bids Due from Subcontractor	17	3	21-Dec-23 A	17-Jan-24
A8990	ERP DD - Sheet Metal - Scope Reviews	20	20	18-Jan-24	14-Feb-24
A9010	ERP DD - Sheet Metal - Interviews	2	2	15-Feb-24	16-Feb-24
A8960	ERP DD - Sheet Metal - Award Letter Distributed	5	5	20-Feb-24	26-Feb-24
A8930	ERP DD - Sheet Metal - Early Coordination	80	80	27-Feb-24	19-Jun-24
A8950	ERP DD - Sheet Metal - Basic Material Procurement	60	60	15-Oct-25	12-Jan-26
ERP DD - Electrical					
A8830	ERP DD - Electrical - Scope Sheets Distributed to Subcontractor	10	0	07-Dec-23 A	20-Dec-23 A
A8840	ERP DD - Electrical - Bids Due from Subcontractor	17	3	21-Dec-23 A	17-Jan-24
A8850	ERP DD - Electrical - Scope Reviews	10	10	18-Jan-24	31-Jan-24
A9200	ERP DD - Electrical - Interviews	2	2	01-Feb-24	02-Feb-24
A8820	ERP DD - Electrical - Award Letter Distributed	5	5	05-Feb-24	09-Feb-24
A8790	ERP DD - Electrical - Early Coordination	80	80	12-Feb-24	05-Jun-24
A8800	ERP DD - Electrical - Release Long-Lead Equipment	550	550	06-Jun-24	17-Aug-26
A8810	ERP DD - Electrical - Basic Material Procurement	60	60	15-Oct-25	12-Jan-26
ERP DD - Plumbing					
A8900	ERP DD - Plumbing - Scope Sheets Distributed to Subcontractor	10	0	07-Dec-23 A	20-Dec-23 A
A8910	ERP DD - Plumbing - Bids Due from Subcontractor	17	3	21-Dec-23 A	17-Jan-24
A8920	ERP DD - Plumbing - Scope Reviews	5	5	18-Jan-24	24-Jan-24
A9210	ERP DD - Plumbing - Interviews	3	3	25-Jan-24	29-Jan-24
A8890	ERP DD - Plumbing - Award Letter Distributed	5	5	01-Feb-24	07-Feb-24
A8860	ERP DD - Plumbing - Early Coordination	80	80	08-Feb-24	03-Jun-24
A8880	ERP DD - Plumbing - Basic Material Procurement	60	60	15-Oct-25	12-Jan-26
ERP DD - Fire Protection					
A9040	ERP DD - Fire Protection - Scope Sheets Distributed to Subcontractor	10	0	07-Dec-23 A	20-Dec-23 A
A9050	ERP DD - Fire Protection - Bids Due from Subcontractor	17	3	21-Dec-23 A	17-Jan-24
A9060	ERP DD - Fire Protection - Scope Reviews	24	24	18-Jan-24	21-Feb-24
A9220	ERP DD - Fire Protection - Interviews	2	2	22-Feb-24	23-Feb-24
A9030	ERP DD - Fire Protection - Award Letter Distributed	5	5	26-Feb-24	01-Mar-24
A9000	ERP DD - Fire Protection - Early Coordination	80	80	04-Mar-24	25-Jun-24
A9020	ERP DD - Fire Protection - Basic Material Procurement	60	60	15-Oct-25	12-Jan-26
ERP DD - Geothermal					
A8470	ERP DD - Geothermal - Scope Sheets Distributed to Subcontractor	10	10	01-Apr-24	12-Apr-24
A8480	ERP DD - Geothermal - Bids Due from Subcontractor	13	13	16-Apr-24	02-May-24
A8490	ERP DD - Geothermal - Scope Reviews	11	11	03-May-24	17-May-24
A8500	ERP DD - Geothermal - Award Letter Distributed	5	5	20-May-24	24-May-24
A1800	ERP DD - Geothermal - Shop Drawings & Approvals	22	22	28-May-24	26-Jun-24
A1810	ERP DD - Geothermal - Fabrication & Delivery (Assumes 1 1/4" U-tubes & sched. 80 casing)	53	53	27-Jun-24	11-Sep-24
ERP 50% CD - Structural Steel					
A8550	ERP 50% CD - Structural Steel - Scope Sheets Distributed to Subcontractor	10	10	23-May-24	06-Jun-24
A8560	ERP 50% CD - Structural Steel - Bids Due from Subcontractor	13	13	07-Jun-24	25-Jun-24
A8570	ERP 50% CD - Structural Steel - Scope Reviews	11	11	26-Jun-24	11-Jul-24



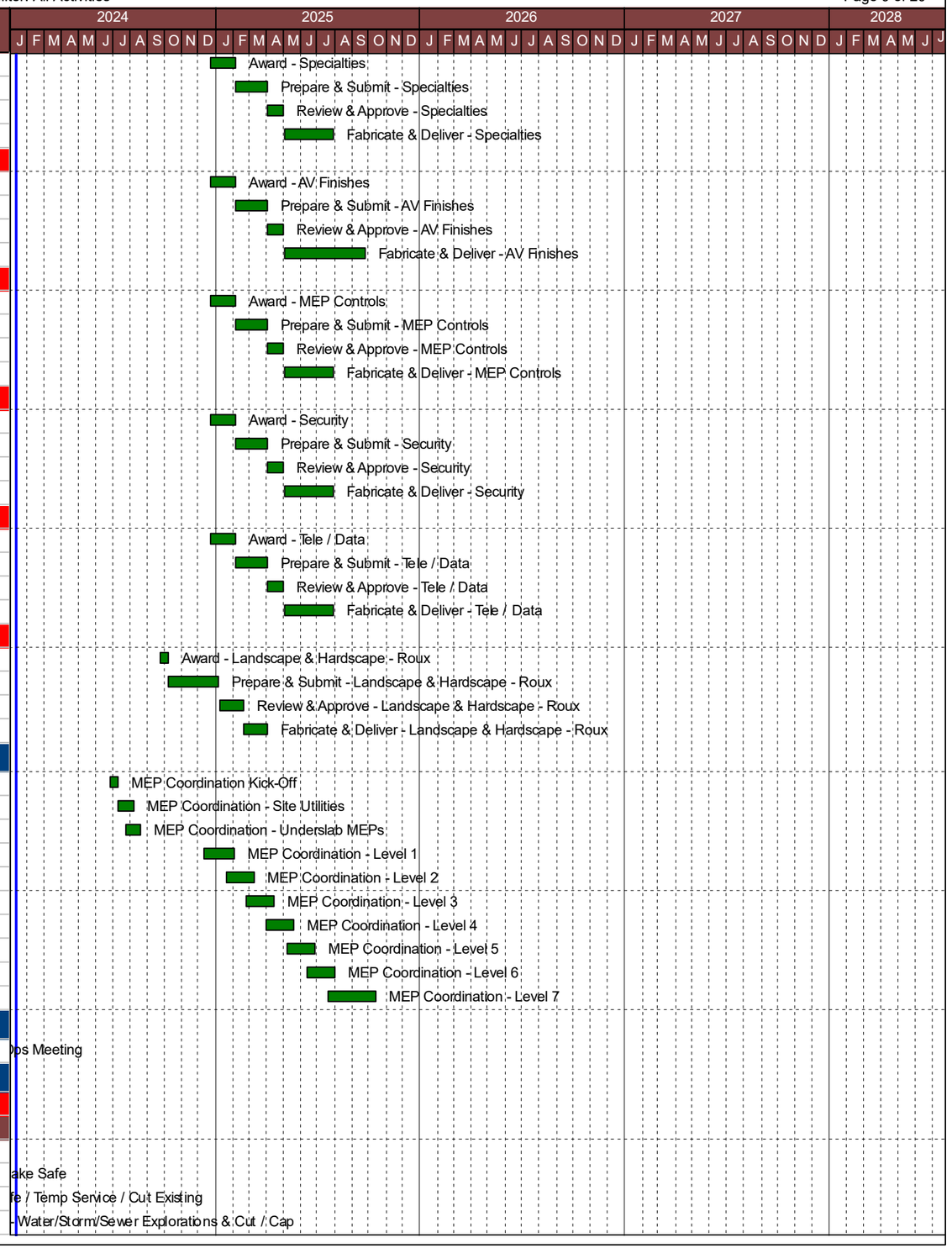
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A8580	ERP 50% CD - Structural Steel - Award Letter Distributed	5	5	12-Jul-24	18-Jul-24
A00630	ERP 50% CD - Structural Steel - Structural BIM & Shops and Approvals	120	120	19-Jul-24	10-Jan-25
A00654	ERP 50% CD - Structural Steel - Fabrication & Delivery	120	120	27-Nov-24	21-May-25
ERP 50% CD - Concrete Cores					
A8590	ERP 50% CD - Concrete Cores - Scope Sheets Distributed to Subcontractor	10	10	09-May-24	22-May-24
A8600	ERP 50% CD - Concrete Cores - Bids Due from Subcontractor	13	13	23-May-24	11-Jun-24
A8610	ERP 50% CD - Concrete Cores - Scope Reviews	11	11	12-Jun-24	26-Jun-24
A8620	ERP 50% CD - Concrete Cores - Award Letter Distributed	5	5	27-Jun-24	03-Jul-24
A1770	ERP 50% CD - Concrete Cores - Shop Drawings, Procurement & Mobilization	60	60	05-Jul-24	27-Sep-24
ERP 50% CD - Concrete Foundations					
A8630	ERP 50% CD - Concrete Foundations - Scope Sheets Distributed to Subcontractor	10	10	09-May-24	22-May-24
A8640	ERP 50% CD - Concrete Foundations - Bids Due from Subcontractor	13	13	23-May-24	11-Jun-24
A8650	ERP 50% CD - Concrete Foundations - Scope Reviews	11	11	12-Jun-24	26-Jun-24
A8660	ERP 50% CD - Concrete Foundations - Award Letter Distributed	5	5	27-Jun-24	03-Jul-24
A00662	ERP 50% CD - Concrete Foundations - Shop Drawings, Procurement & Mobilization	60	60	05-Jul-24	27-Sep-24
ERP 50% CD - Elevators					
A8670	ERP 50% CD - Elevators - Scope Sheets Distributed to Subcontractor	10	10	09-May-24	22-May-24
A8680	ERP 50% CD - Elevators - Bids Due from Subcontractor	13	13	23-May-24	11-Jun-24
A8690	ERP 50% CD - Elevators - Scope Reviews	11	11	12-Jun-24	26-Jun-24
A8700	ERP 50% CD - Elevators - Award Letter Distributed	5	5	27-Jun-24	03-Jul-24
A00676	ERP 50% CD - Elevators - Shop Drawings, Procurement & Mobilization	60	60	05-Jul-24	27-Sep-24
ERP 50% CD - Below-Grade Waterproofing & Insulation					
A8710	ERP 50% CD - Below-Grade Waterproofing & Insulation - Scope Sheets Distributed to Subcont	10	10	16-May-24	30-May-24
A8720	ERP 50% CD - Below-Grade Waterproofing & Insulation - Bids Due from Subcontractor	13	13	31-May-24	18-Jun-24
A8730	ERP 50% CD - Below-Grade Waterproofing & Insulation - Scope Reviews	11	11	19-Jun-24	03-Jul-24
A8740	ERP 50% CD - Below-Grade Waterproofing & Insulation - Award Letter Distributed	5	5	05-Jul-24	11-Jul-24
A3180	ERP 50% CD - Below-Grade Waterproofing & Insulation - Submittals & Approvals	40	40	12-Jul-24	06-Sep-24
A3190	ERP 50% CD - Below-Grade Waterproofing & Insulation - Procurement & Deliver	40	40	09-Sep-24	04-Nov-24
ERP 50% CD - Miscelaneous Metals & Egress Stairs					
A8750	ERP 50% CD - Miscelaneous Metals & Egress Stairs - Scope Sheets Distributed to Subcontrac	10	10	16-May-24	30-May-24
A8760	ERP 50% CD - Miscelaneous Metals & Egress Stairs - Bids Due from Subcontractor	13	13	31-May-24	18-Jun-24
A8770	ERP 50% CD - Miscelaneous Metals & Egress Stairs - Scope Reviews	11	11	19-Jun-24	03-Jul-24
A8780	ERP 50% CD - Miscelaneous Metals & Egress Stairs - Award Letter Distributed	5	5	05-Jul-24	11-Jul-24
A3210	ERP 50% CD - Miscellaneous Metals & Egress Stairs - Submittals, Shops & Approvals	60	60	12-Jul-24	04-Oct-24
A3220	ERP 50% CD - Miscellaneous Metals & Egress Stairs - Fabricate & Deliver	80	80	07-Oct-24	03-Feb-25
GMP - 100% CDs (placeholder for discussion)					
A00678	Prepare, Review & Approve GMP	40	40	30-Jul-24	24-Sep-24
GMP Procurement					
Roofing					
A3120	Award - Roofing	30	30	25-Sep-24	06-Nov-24
A2970	Prepare & Submit - Roofing	40	40	07-Nov-24	07-Jan-25
A2980	Review & Approve - Roofing	20	20	08-Jan-25	05-Feb-25
A2990	Fabricate & Deliver - Roofing	80	80	06-Feb-25	02-Jun-25
Photovoltaics					
A3160	Award - Photovoltaics	30	30	25-Sep-24	06-Nov-24
A3090	Prepare & Submit - Photovoltaics	40	40	07-Nov-24	07-Jan-25
A3100	Review & Approve - Photovoltaics	20	20	08-Jan-25	05-Feb-25
A3110	Fabricate & Deliver - Photovoltaics	260	260	06-Feb-25	20-Feb-26
Exterior D/F/H					



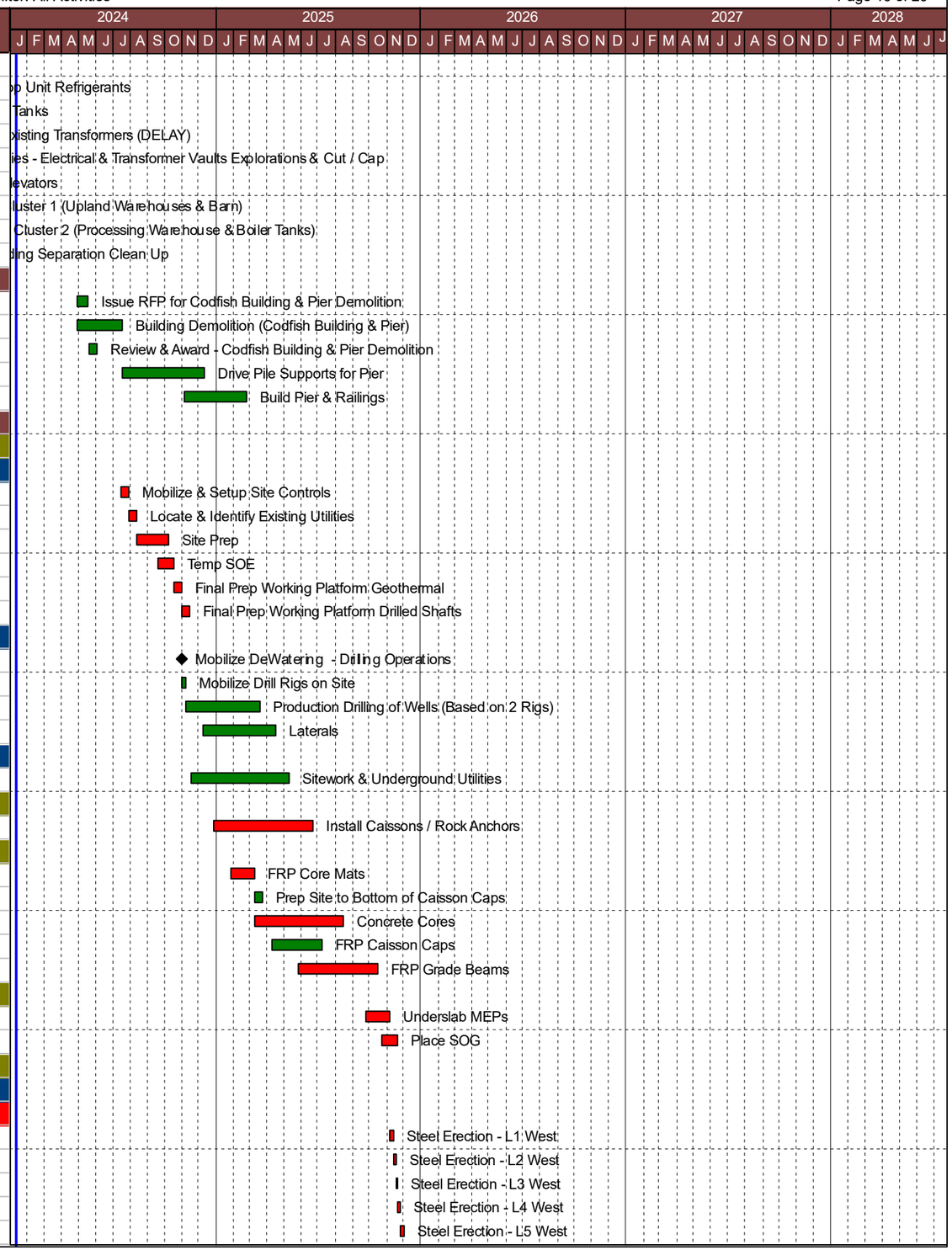
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A2390	Award - Exterior D/F/H	30	30	25-Sep-24	06-Nov-24
A2400	Prepare & Submit - Exterior D/F/H	40	40	07-Nov-24	07-Jan-25
A2410	Review & Approve - Exterior D/F/H	20	20	08-Jan-25	05-Feb-25
A2420	Fabricate & Deliver - Exterior D/F/H	100	100	06-Feb-25	30-Jun-25
Interior D/F/H					
A2430	Award - Interior D/F/H	30	30	25-Sep-24	06-Nov-24
A2440	Prepare & Submit - Interior D/F/H	40	40	07-Nov-24	07-Jan-25
A2450	Review & Approve - Interior D/F/H	20	20	08-Jan-25	05-Feb-25
A2460	Fabricate & Deliver - Interior D/F/H	80	80	06-Feb-25	02-Jun-25
Framing & Drywall					
A2470	Award - Framing & Drywall	30	30	25-Sep-24	06-Nov-24
A2480	Prepare & Submit - Framing & Drywall	40	40	07-Nov-24	07-Jan-25
A2490	Review & Approve - Framing & Drywall	20	20	08-Jan-25	05-Feb-25
A2500	Fabricate & Deliver - Framing & Drywall	20	20	06-Feb-25	06-Mar-25
Millwork					
A2510	Award - Millwork	30	30	07-Nov-24	20-Dec-24
A2520	Prepare & Submit - Millwork	40	40	23-Dec-24	20-Feb-25
A2530	Review & Approve - Millwork	20	20	21-Feb-25	20-Mar-25
A2540	Fabricate & Deliver - Millwork	60	60	21-Mar-25	16-Jun-25
ACT					
A3130	Award - ACT	30	30	07-Nov-24	20-Dec-24
A3000	Prepare & Submit - ACT	40	40	23-Dec-24	20-Feb-25
A3010	Review & Approve - ACT	20	20	21-Feb-25	20-Mar-25
A3020	Fabricate & Deliver - ACT	30	30	21-Mar-25	02-May-25
Specialty Ceilings					
A3140	Award - Specialty Ceilings	30	30	07-Nov-24	20-Dec-24
A3030	Prepare & Submit - Specialty Ceilings	40	40	23-Dec-24	20-Feb-25
A3040	Review & Approve - Specialty Ceilings	20	20	21-Feb-25	20-Mar-25
A3050	Fabricate & Deliver - Specialty Ceilings	80	80	21-Mar-25	15-Jul-25
Lab Equipment & Casework					
A3150	Award - Lab Equipment & Casework	30	30	07-Nov-24	20-Dec-24
A3060	Prepare & Submit - Lab Equipment & Casework	40	40	23-Dec-24	20-Feb-25
A3070	Review & Approve - Lab Equipment & Casework	20	20	21-Feb-25	20-Mar-25
A3080	Fabricate & Deliver - Lab Equipment & Casework	100	100	21-Mar-25	12-Aug-25
Flooring					
A2550	Award - Flooring	30	30	23-Dec-24	05-Feb-25
A2560	Prepare & Submit - Flooring	40	40	06-Feb-25	03-Apr-25
A2570	Review & Approve - Flooring	20	20	04-Apr-25	02-May-25
A2580	Fabricate & Deliver - Flooring	60	60	05-May-25	29-Jul-25
Paint					
A2590	Award - Paint	30	30	23-Dec-24	05-Feb-25
A2600	Prepare & Submit - Paint	40	40	06-Feb-25	03-Apr-25
A2610	Review & Approve - Paint	20	20	04-Apr-25	02-May-25
A2620	Fabricate & Deliver - Paint	20	20	05-May-25	02-Jun-25
Wall Finishes					
A2630	Award - Wall Finishes	30	30	23-Dec-24	05-Feb-25
A2640	Prepare & Submit - Wall Finishes	40	40	06-Feb-25	03-Apr-25
A2650	Review & Approve - Wall Finishes	20	20	04-Apr-25	02-May-25
A2660	Fabricate & Deliver - Wall Finishes	80	80	05-May-25	26-Aug-25
Specialties					



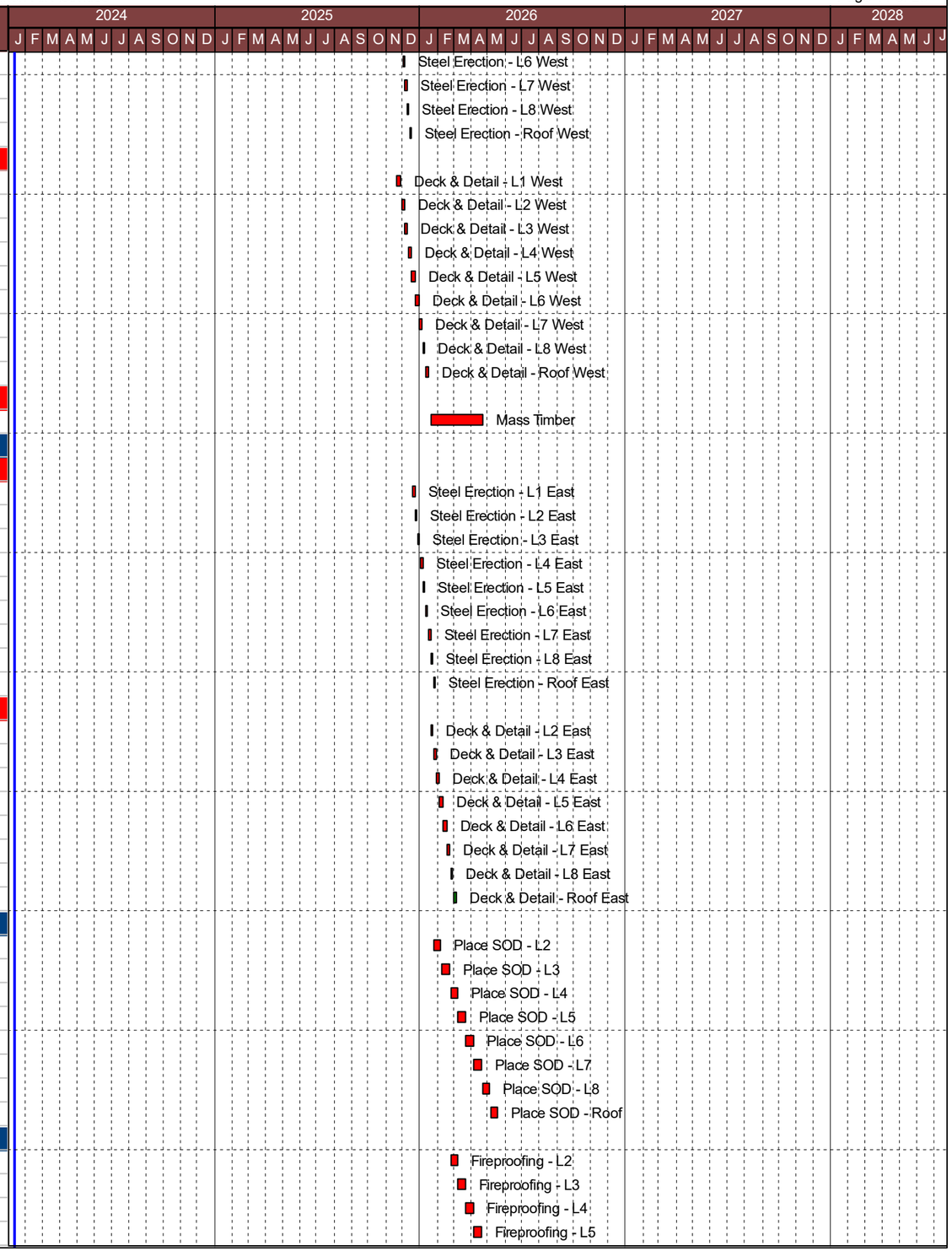
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A2670	Award - Specialties	30	30	23-Dec-24	05-Feb-25
A2680	Prepare & Submit - Specialties	40	40	06-Feb-25	03-Apr-25
A2690	Review & Approve - Specialties	20	20	04-Apr-25	02-May-25
A2700	Fabricate & Deliver - Specialties	60	60	05-May-25	29-Jul-25
AV Finishes					
A2710	Award - AV Finishes	30	30	23-Dec-24	05-Feb-25
A2720	Prepare & Submit - AV Finishes	40	40	06-Feb-25	03-Apr-25
A2730	Review & Approve - AV Finishes	20	20	04-Apr-25	02-May-25
A2740	Fabricate & Deliver - AV Finishes	100	100	05-May-25	24-Sep-25
MEP Controls					
A9080	Award - MEP Controls	30	30	23-Dec-24	05-Feb-25
A9090	Prepare & Submit - MEP Controls	40	40	06-Feb-25	03-Apr-25
A9100	Review & Approve - MEP Controls	20	20	04-Apr-25	02-May-25
A9110	Fabricate & Deliver - MEP Controls	60	60	05-May-25	29-Jul-25
Security					
A9120	Award - Security	30	30	23-Dec-24	05-Feb-25
A9130	Prepare & Submit - Security	40	40	06-Feb-25	03-Apr-25
A9140	Review & Approve - Security	20	20	04-Apr-25	02-May-25
A9150	Fabricate & Deliver - Security	60	60	05-May-25	29-Jul-25
Tele / Data					
A9160	Award - Tele / Data	30	30	23-Dec-24	05-Feb-25
A9170	Prepare & Submit - Tele / Data	40	40	06-Feb-25	03-Apr-25
A9180	Review & Approve - Tele / Data	20	20	04-Apr-25	02-May-25
A9190	Fabricate & Deliver - Tele / Data	60	60	05-May-25	29-Jul-25
Landscape & Hardscape					
A1860	Award - Landscape & Hardscape - Roux	10	10	25-Sep-24	08-Oct-24
A1870	Prepare & Submit - Landscape & Hardscape - Roux	60	60	09-Oct-24	07-Jan-25
A1880	Review & Approve - Landscape & Hardscape - Roux	30	30	08-Jan-25	20-Feb-25
A1890	Fabricate & Deliver - Landscape & Hardscape - Roux	30	30	21-Feb-25	03-Apr-25
MEP Coordination					
A2870	MEP Coordination Kick-Off	10	10	26-Jun-24	10-Jul-24
A2750	MEP Coordination - Site Utilities	20	20	11-Jul-24	07-Aug-24
A2760	MEP Coordination - Underslab MEPs	20	20	25-Jul-24	21-Aug-24
A2770	MEP Coordination - Level 1	35	35	12-Dec-24	03-Feb-25
A2780	MEP Coordination - Level 2	35	35	21-Jan-25	11-Mar-25
A2790	MEP Coordination - Level 3	35	35	26-Feb-25	15-Apr-25
A2800	MEP Coordination - Level 4	35	35	02-Apr-25	21-May-25
A2810	MEP Coordination - Level 5	35	35	08-May-25	26-Jun-25
A2820	MEP Coordination - Level 6	35	35	13-Jun-25	01-Aug-25
A2830	MEP Coordination - Level 7	60	60	21-Jul-25	14-Oct-25
Pre-Ops Meetings					
A1000	Demo & Abatement - Pre-Ops Meeting	0	0		15-Feb-23 A
Construction					
Roux Institute Building & Site					
Demo & Abatement					
A00619	Abatement	40	0	01-Mar-23 A	07-Apr-23 A
A00531	Plumbing Cut / Cap / Make Safe	15	0	06-Mar-23 A	23-Mar-23 A
A00521	Electrical Make Safe / Temp Service / Cut Existing	55	0	06-Mar-23 A	19-May-23 A
A00541	Underground Utilities - Water/Storm/Sewer Explorations & Cut / Cap	15	0	22-Mar-23 A	14-Apr-23 A



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A00561	Boiler Demo	5	0	10-Apr-23 A	26-Apr-23 A
A00581	Decommission Rooftop Unit Refrigerants	2	0	13-Apr-23 A	14-Apr-23 A
A00591	Decommission Fuel Tanks	3	0	01-May-23 A	03-May-23 A
A00681	CMP Disconnect Existing Transformers (DELAY)	1	0	15-May-23 A	15-May-23 A
A00551	Underground Utilities - Electrical & Transformer Vaults Explorations & Cut / Cap	2	0	16-May-23 A	23-May-23 A
A00571	Decommission Elevators	3	0	05-Jun-23 A	05-Jun-23 A
A00601	Demolition - Cluster 1 (Upland Warehouses & Barn)	24	0	05-Jun-23 A	07-Jul-23 A
A00611	Demolition - Cluster 2 (Processing Warehouse & Boiler Tanks)	15	0	10-Jul-23 A	28-Jul-23 A
A00641	Bean Building Separation Clean Up	15	0	31-Jul-23 A	18-Aug-23 A
Pier & Codfish					
A00608	Issue RFP for Codfish Building & Pier Demolition	15	15	29-Apr-24	17-May-24
A00598	Building Demolition (Codfish Building & Pier)	57	57	29-Apr-24	18-Jul-24
A00748	Review & Award - Codfish Building & Pier Demolition	10	10	20-May-24	03-Jun-24
A00758	Drive Pile Supports for Pier	100	100	19-Jul-24	11-Dec-24
A00768	Build Pier & Railings	75	75	05-Nov-24	25-Feb-25
New Building Construction					
Enabling & Sitework					
Mobilization / Site Setup					
A2890	Mobilize & Setup Site Controls	10	10	17-Jul-24	30-Jul-24
A2900	Locate & Identify Existing Utilities	10	10	31-Jul-24	13-Aug-24
A2930	Site Prep	40	40	14-Aug-24	09-Oct-24
A2910	Temp SOE	20	20	19-Sep-24	17-Oct-24
A2920	Final Prep Working Platform Geothermal	10	10	18-Oct-24	31-Oct-24
A2940	Final Prep Working Platform Drilled Shafts	10	10	01-Nov-24	15-Nov-24
Geothermal					
A6370	Mobilize DeWatering - Drilling Operations	0	0	01-Nov-24	
A6380	Mobilize Drill Rigs on Site	5	5	01-Nov-24	07-Nov-24
A6390	Production Drilling of Wells (Based on 2 Rigs)	90	90	08-Nov-24	21-Mar-25
A6400	Laterals	90	90	10-Dec-24	18-Apr-25
Utilities					
A00651	Sitework & Underground Utilities	120	120	18-Nov-24	12-May-25
Deep Foundations					
A00648	Install Caissons / Rock Anchors	122	122	27-Dec-24	23-Jun-25
Foundations					
A00718	FRP Core Mats	30	30	28-Jan-25	11-Mar-25
A00698	Prep Site to Bottom of Caisson Caps	10	10	12-Mar-25	25-Mar-25
A00708	Concrete Cores	110	110	12-Mar-25	15-Aug-25
A00658	FRP Caisson Caps	60	60	11-Apr-25	08-Jul-25
A00688	FRP Grade Beams	100	100	27-May-25	16-Oct-25
SOG & Underslab MEPs					
A2950	Underslab MEPs	30	30	25-Sep-25	06-Nov-25
A2960	Place SOG	20	20	24-Oct-25	21-Nov-25
Superstructure					
West					
Steel Erection					
A6410	Steel Erection - L1 West	3	3	07-Nov-25	12-Nov-25
A6420	Steel Erection - L2 West	3	3	13-Nov-25	17-Nov-25
A6430	Steel Erection - L3 West	3	3	18-Nov-25	20-Nov-25
A6440	Steel Erection - L4 West	3	3	21-Nov-25	25-Nov-25
A6450	Steel Erection - L5 West	3	3	26-Nov-25	01-Dec-25



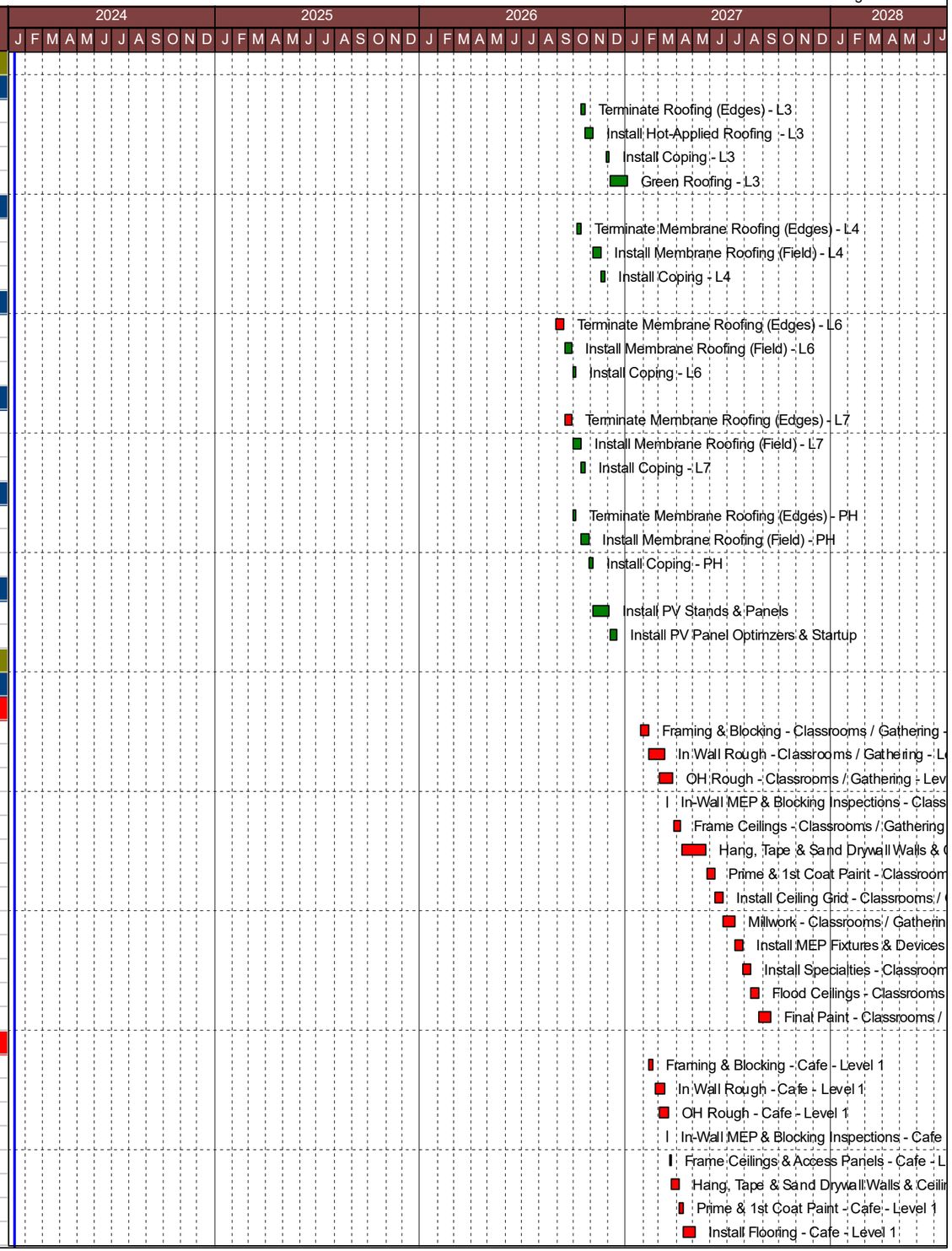
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A6460	Steel Erection - L6 West	3	3	02-Dec-25	04-Dec-25
A6470	Steel Erection - L7 West	3	3	05-Dec-25	09-Dec-25
A6480	Steel Erection - L8 West	3	3	10-Dec-25	12-Dec-25
A6490	Steel Erection - Roof West	3	3	15-Dec-25	17-Dec-25
Steel Deck & Detail					
A6500	Deck & Detail - L1 West	5	5	21-Nov-25	28-Nov-25
A6510	Deck & Detail - L2 West	4	4	01-Dec-25	04-Dec-25
A6520	Deck & Detail - L3 West	4	4	05-Dec-25	10-Dec-25
A6530	Deck & Detail - L4 West	4	4	11-Dec-25	16-Dec-25
A6540	Deck & Detail - L5 West	4	4	17-Dec-25	22-Dec-25
A6550	Deck & Detail - L6 West	4	4	23-Dec-25	29-Dec-25
A6560	Deck & Detail - L7 West	4	4	30-Dec-25	05-Jan-26
A6570	Deck & Detail - L8 West	4	4	06-Jan-26	09-Jan-26
A6580	Deck & Detail - Roof West	5	5	12-Jan-26	16-Jan-26
Mass Timber					
A3320	Mass Timber	65	65	20-Jan-26	22-Apr-26
East					
Steel Erection					
A6780	Steel Erection - L1 East	3	3	18-Dec-25	22-Dec-25
A6790	Steel Erection - L2 East	3	3	23-Dec-25	26-Dec-25
A6800	Steel Erection - L3 East	3	3	29-Dec-25	31-Dec-25
A6810	Steel Erection - L4 East	3	3	02-Jan-26	06-Jan-26
A6820	Steel Erection - L5 East	3	3	07-Jan-26	09-Jan-26
A6830	Steel Erection - L6 East	3	3	12-Jan-26	14-Jan-26
A6840	Steel Erection - L7 East	3	3	15-Jan-26	20-Jan-26
A6850	Steel Erection - L8 East	3	3	21-Jan-26	23-Jan-26
A6860	Steel Erection - Roof East	3	3	26-Jan-26	28-Jan-26
Steel Deck & Detail					
A6880	Deck & Detail - L2 East	4	4	20-Jan-26	23-Jan-26
A6890	Deck & Detail - L3 East	4	4	26-Jan-26	29-Jan-26
A6900	Deck & Detail - L4 East	4	4	30-Jan-26	04-Feb-26
A6910	Deck & Detail - L5 East	4	4	05-Feb-26	10-Feb-26
A6920	Deck & Detail - L6 East	4	4	11-Feb-26	17-Feb-26
A6930	Deck & Detail - L7 East	4	4	18-Feb-26	23-Feb-26
A6940	Deck & Detail - L8 East	4	4	24-Feb-26	27-Feb-26
A6950	Deck & Detail - Roof East	5	5	02-Mar-26	06-Mar-26
Slabs on Deck					
A6970	Place SOD - L2	10	10	26-Jan-26	06-Feb-26
A6980	Place SOD - L3	10	10	09-Feb-26	23-Feb-26
A6990	Place SOD - L4	10	10	24-Feb-26	09-Mar-26
A7000	Place SOD - L5	10	10	10-Mar-26	23-Mar-26
A7010	Place SOD - L6	10	10	24-Mar-26	06-Apr-26
A7020	Place SOD - L7	10	10	07-Apr-26	21-Apr-26
A7030	Place SOD - L8	10	10	22-Apr-26	05-May-26
A7040	Place SOD - Roof	10	10	06-May-26	19-May-26
Fireproofing					
A7060	Fireproofing - L2	10	10	24-Feb-26	09-Mar-26
A7070	Fireproofing - L3	10	10	10-Mar-26	23-Mar-26
A7080	Fireproofing - L4	10	10	24-Mar-26	06-Apr-26
A7090	Fireproofing - L5	10	10	07-Apr-26	21-Apr-26



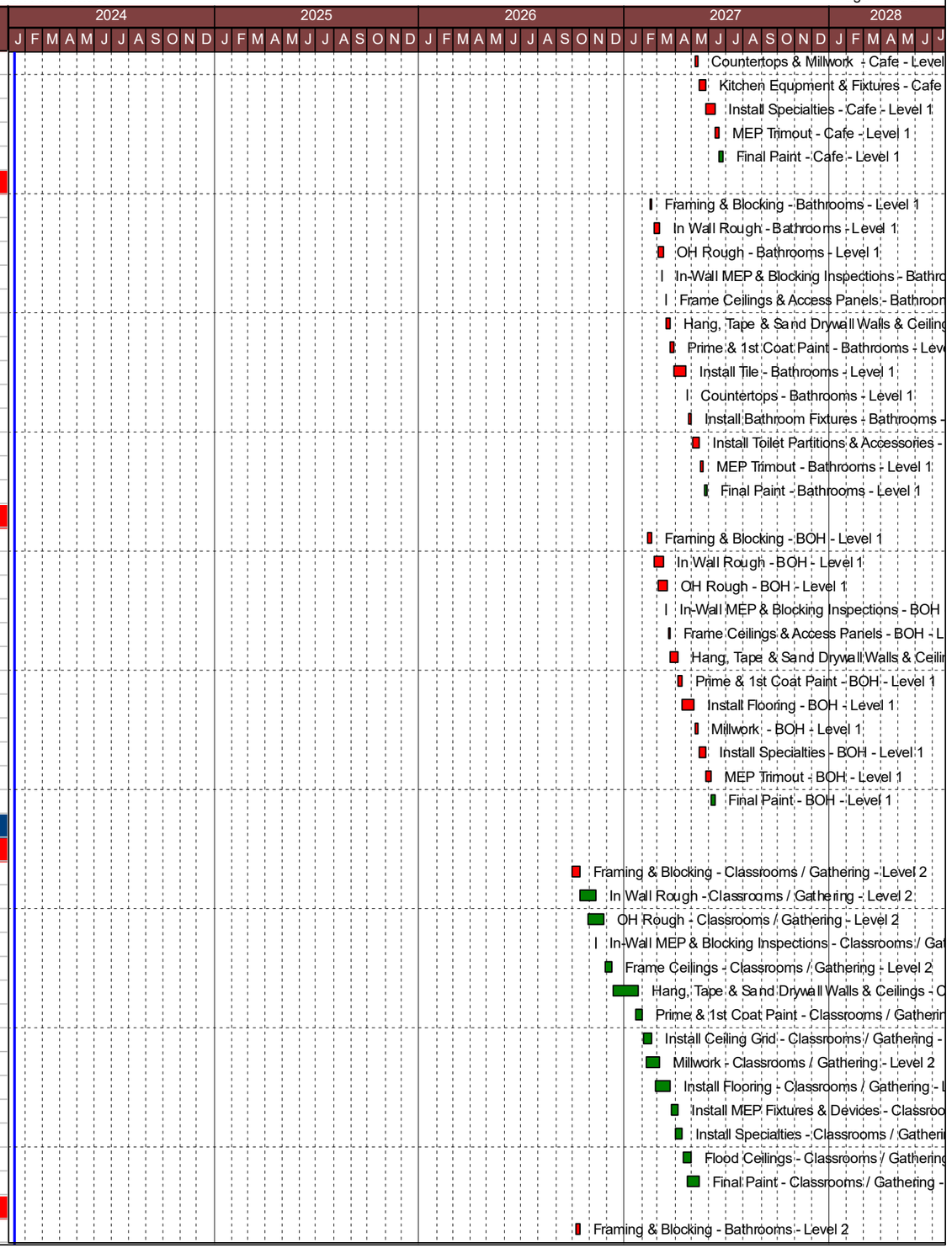
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A7100	Fireproofing - L6	10	10	22-Apr-26	05-May-26
A7110	Fireproofing - L7	10	10	06-May-26	19-May-26
A7120	Fireproofing - L8	10	10	20-May-26	03-Jun-26
A7130	Fireproofing - Roof	10	10	04-Jun-26	17-Jun-26
Facade					
Level 1					
A7140	Layout & Install Embeds - L1	8	8	07-Jan-26	16-Jan-26
A7150	Set Halfen Anchors - L1	15	15	10-Jul-26	30-Jul-26
A7160	Install Unitized CW - L1	10	10	15-Sep-26	28-Sep-26
A7170	Install Cassette Toggle System - L1	20	20	29-Sep-26	27-Oct-26
Level 2					
A7180	Layout & Install Embeds - L2	8	8	20-Jan-26	29-Jan-26
A7190	Set Halfen Anchors - L2	15	15	09-Feb-26	02-Mar-26
A7200	Install Unitized CW - L2	10	10	23-Apr-26	06-May-26
A7210	Install Cassette Toggle System - L2	10	10	07-May-26	20-May-26
A7220	Perimter Firesafing - L2	5	5	21-May-26	28-May-26
Level 3					
A7230	Layout & Install Embeds - L3	8	8	30-Jan-26	10-Feb-26
A7240	Set Halfen Anchors - L3	15	15	03-Mar-26	23-Mar-26
A7250	Install Unitized CW - L3	20	20	07-May-26	04-Jun-26
A7260	Install Cassette Toggle System - L3	10	10	05-Jun-26	18-Jun-26
A7270	Perimter Firesafing - L3	5	5	19-Jun-26	25-Jun-26
Level 4					
A7280	Layout & Install Embeds - L4	8	8	11-Feb-26	23-Feb-26
A7290	Set Halfen Anchors - L4	15	15	24-Mar-26	13-Apr-26
A7300	Install Unitized CW - L4	20	20	05-Jun-26	02-Jul-26
A7310	Install Cassette Toggle System - L4	5	5	06-Jul-26	10-Jul-26
A7320	Perimter Firesafing - L4	5	5	13-Jul-26	17-Jul-26
Level 5					
A7330	Layout & Install Embeds - L5	8	8	24-Feb-26	05-Mar-26
A7340	Set Halfen Anchors - L5	15	15	14-Apr-26	05-May-26
A7350	Install Unitized CW - L5	20	20	06-Jul-26	31-Jul-26
A7360	Install Cassette Toggle System - L5	5	5	03-Aug-26	07-Aug-26
A7370	Perimter Firesafing - L5	5	5	10-Aug-26	14-Aug-26
Level 6					
A7380	Layout & Install Embeds - L6	8	8	06-Mar-26	17-Mar-26
A7390	Set Halfen Anchors - L6	15	15	06-May-26	27-May-26
A7400	Install Unitized CW - L6	10	10	03-Aug-26	14-Aug-26
A7410	Install Cassette Toggle System - L6	5	5	17-Aug-26	21-Aug-26
A7420	Perimter Firesafing - L6	5	5	24-Aug-26	28-Aug-26
Level 7					
A7430	Layout & Install Embeds - L7	8	8	18-Mar-26	27-Mar-26
A7440	Set Halfen Anchors - L7	15	15	28-May-26	17-Jun-26
A7450	Install Unitized CW - L7	10	10	17-Aug-26	28-Aug-26
A7460	Perimter Firesafing - L7	5	5	31-Aug-26	04-Sep-26
Penthouse					
A7470	Layout & Install weld plates - PH	8	8	30-Mar-26	08-Apr-26
A7480	Set Halfen Anchors - PH	15	15	18-Jun-26	09-Jul-26
A7490	Install Unitized CW - PH	10	10	31-Aug-26	14-Sep-26
A7500	Install Vertical Rainscreen System - PH	10	10	15-Sep-26	28-Sep-26



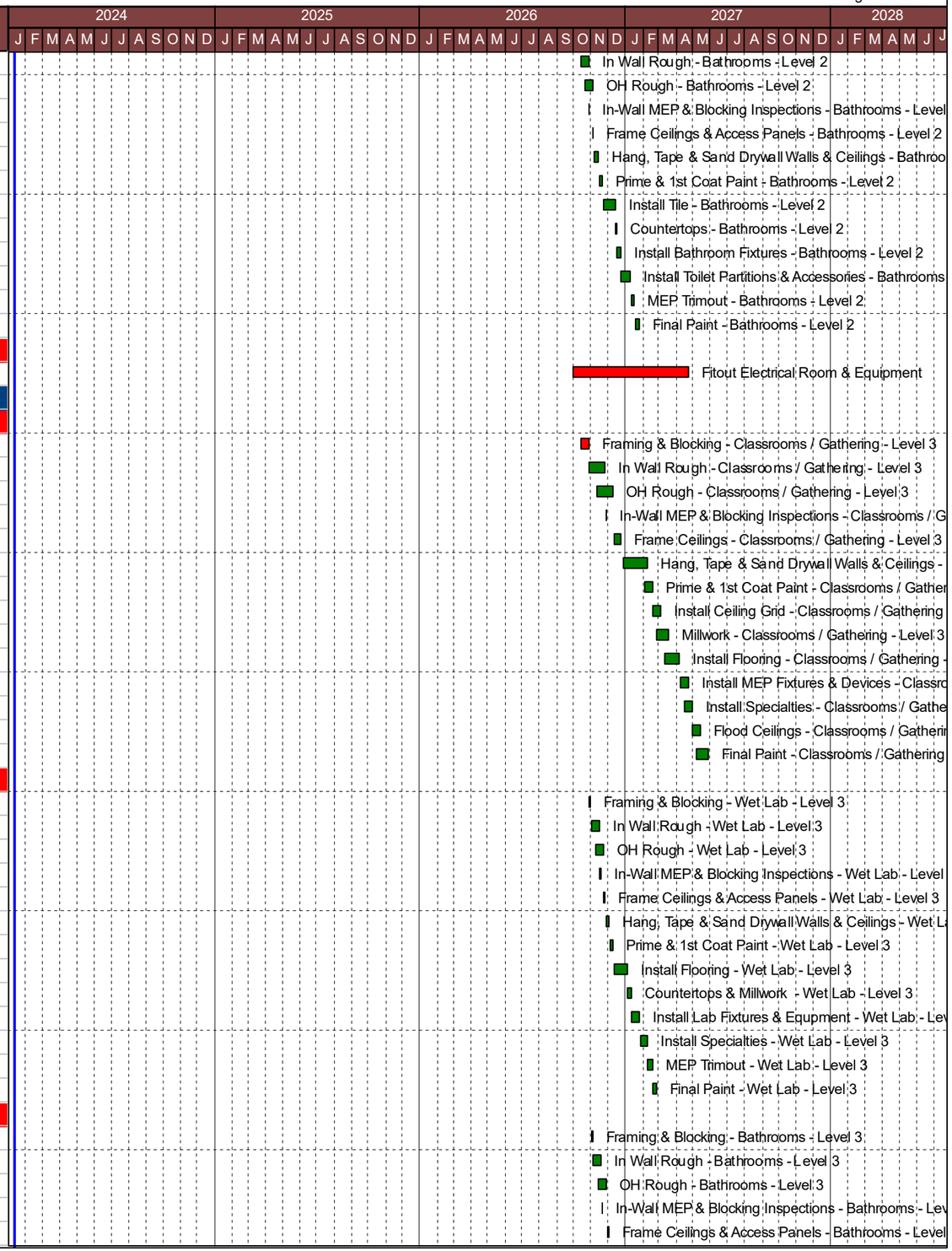
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
Roof					
Level 3					
A7520	Terminate Roofing (Edges) - L3	5	5	14-Oct-26	20-Oct-26
A7510	Install Hot-Applied Roofing - L3	10	10	21-Oct-26	03-Nov-26
A7530	Install Coping - L3	5	5	27-Nov-26	03-Dec-26
A7540	Green Roofing - L3	20	20	04-Dec-26	04-Jan-27
Level 4					
A7560	Terminate Membrane Roofing (Edges) - L4	5	5	06-Oct-26	13-Oct-26
A7550	Install Membrane Roofing (Field) - L4	10	10	04-Nov-26	18-Nov-26
A7570	Install Coping - L4	5	5	19-Nov-26	25-Nov-26
Level 6					
A7620	Terminate Membrane Roofing (Edges) - L6	10	10	31-Aug-26	14-Sep-26
A7610	Install Membrane Roofing (Field) - L6	10	10	15-Sep-26	28-Sep-26
A7630	Install Coping - L6	5	5	29-Sep-26	05-Oct-26
Level 7					
A7670	Terminate Membrane Roofing (Edges) - L7	10	10	15-Sep-26	28-Sep-26
A7660	Install Membrane Roofing (Field) - L7	10	10	29-Sep-26	13-Oct-26
A7680	Install Coping - L7	5	5	14-Oct-26	20-Oct-26
Penthouse					
A7720	Terminate Membrane Roofing (Edges) - PH	5	5	29-Sep-26	05-Oct-26
A7710	Install Membrane Roofing (Field) - PH	10	10	14-Oct-26	27-Oct-26
A7730	Install Coping - PH	5	5	28-Oct-26	03-Nov-26
PV					
A7740	Install PV Stands & Panels	20	20	04-Nov-26	03-Dec-26
A7750	Install PV Panel Optimzers & Startup	10	10	04-Dec-26	17-Dec-26
Interior Fitout					
Level 1					
Classrooms / Gathering					
A4540	Framing & Blocking - Classrooms / Gathering - Level 1	10	10	29-Jan-27	11-Feb-27
A4550	In Wall Rough - Classrooms / Gathering - Level 1	20	20	12-Feb-27	12-Mar-27
A4570	OH Rough - Classrooms / Gathering - Level 1	20	20	01-Mar-27	26-Mar-27
A4560	In-Wall MEP & Blocking Inspections - Classrooms / Gathering - Level 1	1	1	15-Mar-27	15-Mar-27
A4580	Frame Ceilings - Classrooms / Gathering - Level 1	10	10	29-Mar-27	09-Apr-27
A4590	Hang, Tape & Sand Drywall Walls & Ceilings - Classrooms / Gathering - Level 1	30	30	12-Apr-27	24-May-27
A4600	Prime & 1st Coat Paint - Classrooms / Gathering - Level 1	10	10	25-May-27	08-Jun-27
A4610	Install Ceiling Grid - Classrooms / Gathering - Level 1	10	10	09-Jun-27	22-Jun-27
A4620	Millwork - Classrooms / Gathering - Level 1	15	15	23-Jun-27	14-Jul-27
A4630	Install MEP Fixtures & Devices - Classrooms / Gathering - Level 1	10	10	15-Jul-27	28-Jul-27
A4640	Install Specialties - Classrooms / Gathering - Level 1	10	10	29-Jul-27	11-Aug-27
A4650	Flood Ceilings - Classrooms / Gathering - Level 1	10	10	12-Aug-27	25-Aug-27
A4660	Final Paint - Classrooms / Gathering - Level 1	15	15	26-Aug-27	16-Sep-27
Cafe					
A5950	Framing & Blocking - Cafe - Level 1	5	5	12-Feb-27	19-Feb-27
A5960	In Wall Rough - Cafe - Level 1	15	15	22-Feb-27	12-Mar-27
A5980	OH Rough - Cafe - Level 1	15	15	01-Mar-27	19-Mar-27
A5970	In-Wall MEP & Blocking Inspections - Cafe - Level 1	1	1	15-Mar-27	15-Mar-27
A5990	Frame Ceilings & Access Panels - Cafe - Level 1	2	2	22-Mar-27	23-Mar-27
A6000	Hang, Tape & Sand Drywall Walls & Ceilings - Cafe - Level 1	10	10	24-Mar-27	06-Apr-27
A6010	Prime & 1st Coat Paint - Cafe - Level 1	5	5	07-Apr-27	13-Apr-27
A6020	Install Flooring - Cafe - Level 1	15	15	14-Apr-27	05-May-27



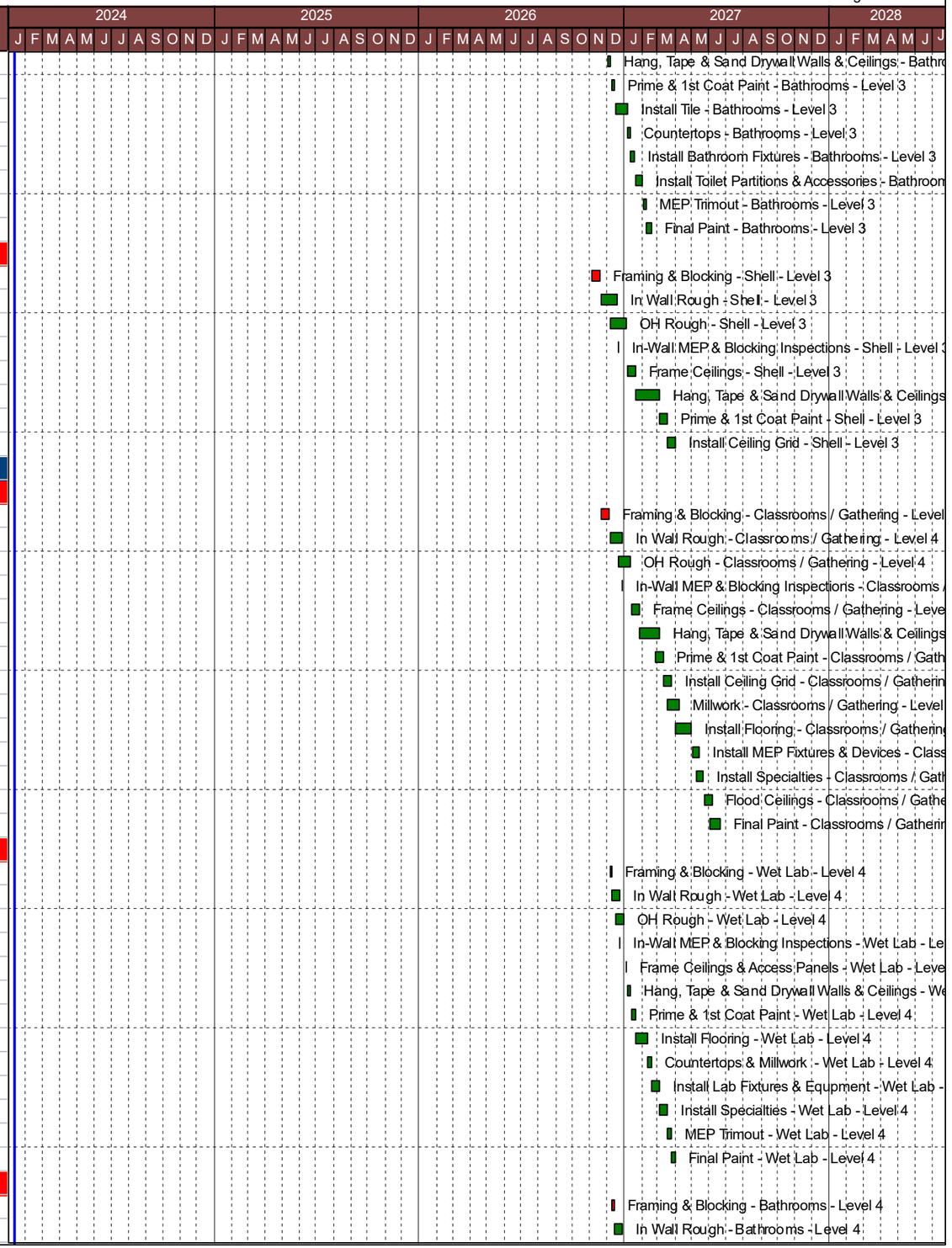
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A6030	Countertops & Millwork - Cafe - Level 1	5	5	06-May-27	12-May-27
A6040	Kitchen Equpment & Fixtures - Cafe - Level 1	10	10	13-May-27	26-May-27
A6050	Install Specialties - Cafe - Level 1	10	10	27-May-27	10-Jun-27
A6060	MEP Trimout - Cafe - Level 1	5	5	11-Jun-27	17-Jun-27
A6070	Final Paint - Cafe - Level 1	5	5	18-Jun-27	24-Jun-27
Bathrooms					
A3500	Framing & Blocking - Bathrooms - Level 1	3	3	17-Feb-27	19-Feb-27
A3510	In Wall Rough - Bathrooms - Level 1	10	10	22-Feb-27	05-Mar-27
A3520	OH Rough - Bathrooms - Level 1	10	10	01-Mar-27	12-Mar-27
A3650	In-Wall MEP & Blocking Inspections - Bathrooms - Level 1	1	1	08-Mar-27	08-Mar-27
A3640	Frame Ceilings & Access Panels - Bathrooms - Level 1	2	2	15-Mar-27	16-Mar-27
A3530	Hang, Tape & Sand Drywall Walls & Ceilings - Bathrooms - Level 1	5	5	17-Mar-27	23-Mar-27
A3550	Prime & 1st Coat Paint - Bathrooms - Level 1	5	5	24-Mar-27	30-Mar-27
A3560	Install Tile - Bathrooms - Level 1	15	15	31-Mar-27	21-Apr-27
A3880	Countertops - Bathrooms - Level 1	2	2	22-Apr-27	23-Apr-27
A3870	Install Bathroom Fixtures - Bathrooms - Level 1	5	5	26-Apr-27	30-Apr-27
A3570	Install Toilet Partitions & Accessories - Bathrooms - Level 1	10	10	03-May-27	14-May-27
A3580	MEP Trimout - Bathrooms - Level 1	5	5	17-May-27	21-May-27
A3590	Final Paint - Bathrooms - Level 1	5	5	24-May-27	28-May-27
Back of House					
A7760	Framing & Blocking - BOH - Level 1	5	5	12-Feb-27	19-Feb-27
A7770	In Wall Rough - BOH - Level 1	15	15	22-Feb-27	12-Mar-27
A7790	OH Rough - BOH - Level 1	15	15	01-Mar-27	19-Mar-27
A7780	In-Wall MEP & Blocking Inspections - BOH - Level 1	1	1	15-Mar-27	15-Mar-27
A7800	Frame Ceilings & Access Panels - BOH - Level 1	2	2	22-Mar-27	23-Mar-27
A7810	Hang, Tape & Sand Drywall Walls & Ceilings - BOH - Level 1	10	10	24-Mar-27	06-Apr-27
A7820	Prime & 1st Coat Paint - BOH - Level 1	5	5	07-Apr-27	13-Apr-27
A7830	Install Flooring - BOH - Level 1	15	15	14-Apr-27	05-May-27
A7840	Millwork - BOH - Level 1	5	5	06-May-27	12-May-27
A7860	Install Specialties - BOH - Level 1	10	10	13-May-27	26-May-27
A7870	MEP Trimout - BOH - Level 1	5	5	27-May-27	03-Jun-27
A7880	Final Paint - BOH - Level 1	5	5	04-Jun-27	10-Jun-27
Level 2					
Classrooms / Gathering					
A4670	Framing & Blocking - Classrooms / Gathering - Level 2	10	10	29-Sep-26	13-Oct-26
A4680	In Wall Rough - Classrooms / Gathering - Level 2	20	20	14-Oct-26	10-Nov-26
A4700	OH Rough - Classrooms / Gathering - Level 2	20	20	28-Oct-26	25-Nov-26
A4690	In-Wall MEP & Blocking Inspections - Classrooms / Gathering - Level 2	1	1	12-Nov-26	12-Nov-26
A4710	Frame Ceilings - Classrooms / Gathering - Level 2	10	10	27-Nov-26	10-Dec-26
A4720	Hang, Tape & Sand Drywall Walls & Ceilings - Classrooms / Gathering - Level 2	30	30	11-Dec-26	26-Jan-27
A4730	Prime & 1st Coat Paint - Classrooms / Gathering - Level 2	10	10	20-Jan-27	02-Feb-27
A4740	Install Ceiling Grid - Classrooms / Gathering - Level 2	10	10	03-Feb-27	17-Feb-27
A4750	Millwork - Classrooms / Gathering - Level 2	15	15	10-Feb-27	03-Mar-27
A4940	Install Flooring - Classrooms / Gathering - Level 2	20	20	25-Feb-27	24-Mar-27
A4760	Install MEP Fixtures & Devices - Classrooms / Gathering - Level 2	10	10	25-Mar-27	07-Apr-27
A4770	Install Specialties - Classrooms / Gathering - Level 2	10	10	01-Apr-27	14-Apr-27
A4780	Flood Ceilings - Classrooms / Gathering - Level 2	10	10	15-Apr-27	29-Apr-27
A4790	Final Paint - Classrooms / Gathering - Level 2	15	15	23-Apr-27	13-May-27
Bathrooms					
A3890	Framing & Blocking - Bathrooms - Level 2	3	3	08-Oct-26	13-Oct-26



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A3900	In Wall Rough - Bathrooms - Level 2	10	10	14-Oct-26	27-Oct-26
A3920	OH Rough - Bathrooms - Level 2	10	10	21-Oct-26	03-Nov-26
A3910	In-Wall MEP & Blocking Inspections - Bathrooms - Level 2	1	1	28-Oct-26	28-Oct-26
A3930	Frame Ceilings & Access Panels - Bathrooms - Level 2	2	2	04-Nov-26	05-Nov-26
A3940	Hang, Tape & Sand Drywall Walls & Ceilings - Bathrooms - Level 2	5	5	06-Nov-26	13-Nov-26
A3950	Prime & 1st Coat Paint - Bathrooms - Level 2	5	5	16-Nov-26	20-Nov-26
A3960	Install Tile - Bathrooms - Level 2	15	15	23-Nov-26	14-Dec-26
A3970	Countertops - Bathrooms - Level 2	2	2	15-Dec-26	16-Dec-26
A3980	Install Bathroom Fixtures - Bathrooms - Level 2	5	5	17-Dec-26	23-Dec-26
A3990	Install Toilet Partitions & Accessories - Bathrooms - Level 2	10	10	24-Dec-26	08-Jan-27
A4000	MEP Trimout - Bathrooms - Level 2	5	5	11-Jan-27	15-Jan-27
A4010	Final Paint - Bathrooms - Level 2	5	5	19-Jan-27	25-Jan-27
Electrical Room					
A8090	Fitout Electrical Room & Equipment	140	140	29-Sep-26	22-Apr-27
Level 3					
Classrooms / Gathering					
A4800	Framing & Blocking - Classrooms / Gathering - Level 3	10	10	14-Oct-26	27-Oct-26
A4810	In Wall Rough - Classrooms / Gathering - Level 3	20	20	28-Oct-26	25-Nov-26
A4830	OH Rough - Classrooms / Gathering - Level 3	20	20	12-Nov-26	10-Dec-26
A4820	In-Wall MEP & Blocking Inspections - Classrooms / Gathering - Level 3	1	1	27-Nov-26	27-Nov-26
A4840	Frame Ceilings - Classrooms / Gathering - Level 3	10	10	11-Dec-26	24-Dec-26
A4850	Hang, Tape & Sand Drywall Walls & Ceilings - Classrooms / Gathering - Level 3	30	30	28-Dec-26	09-Feb-27
A4860	Prime & 1st Coat Paint - Classrooms / Gathering - Level 3	10	10	03-Feb-27	17-Feb-27
A4870	Install Ceiling Grid - Classrooms / Gathering - Level 3	10	10	18-Feb-27	03-Mar-27
A4880	Millwork - Classrooms / Gathering - Level 3	15	15	25-Feb-27	17-Mar-27
A4930	Install Flooring - Classrooms / Gathering - Level 3	20	20	11-Mar-27	07-Apr-27
A4890	Install MEP Fixtures & Devices - Classrooms / Gathering - Level 3	10	10	08-Apr-27	22-Apr-27
A4900	Install Specialties - Classrooms / Gathering - Level 3	10	10	15-Apr-27	29-Apr-27
A4910	Flood Ceilings - Classrooms / Gathering - Level 3	10	10	30-Apr-27	13-May-27
A4920	Final Paint - Classrooms / Gathering - Level 3	15	15	07-May-27	27-May-27
Wet Lab					
A5690	Framing & Blocking - Wet Lab - Level 3	3	3	28-Oct-26	30-Oct-26
A5700	In Wall Rough - Wet Lab - Level 3	10	10	02-Nov-26	16-Nov-26
A5720	OH Rough - Wet Lab - Level 3	10	10	09-Nov-26	23-Nov-26
A5710	In-Wall MEP & Blocking Inspections - Wet Lab - Level 3	1	1	17-Nov-26	17-Nov-26
A5730	Frame Ceilings & Access Panels - Wet Lab - Level 3	2	2	24-Nov-26	25-Nov-26
A5740	Hang, Tape & Sand Drywall Walls & Ceilings - Wet Lab - Level 3	5	5	27-Nov-26	03-Dec-26
A5750	Prime & 1st Coat Paint - Wet Lab - Level 3	5	5	04-Dec-26	10-Dec-26
A5760	Install Flooring - Wet Lab - Level 3	15	15	11-Dec-26	04-Jan-27
A5770	Countertops & Millwork - Wet Lab - Level 3	5	5	05-Jan-27	11-Jan-27
A5780	Install Lab Fixtures & Equpment - Wet Lab - Level 3	10	10	12-Jan-27	26-Jan-27
A5790	Install Specialties - Wet Lab - Level 3	10	10	27-Jan-27	09-Feb-27
A5800	MEP Trimout - Wet Lab - Level 3	5	5	10-Feb-27	17-Feb-27
A5810	Final Paint - Wet Lab - Level 3	5	5	18-Feb-27	24-Feb-27
Bathrooms					
A4020	Framing & Blocking - Bathrooms - Level 3	3	3	02-Nov-26	04-Nov-26
A4030	In Wall Rough - Bathrooms - Level 3	10	10	05-Nov-26	19-Nov-26
A4050	OH Rough - Bathrooms - Level 3	10	10	13-Nov-26	27-Nov-26
A4040	In-Wall MEP & Blocking Inspections - Bathrooms - Level 3	1	1	20-Nov-26	20-Nov-26
A4060	Frame Ceilings & Access Panels - Bathrooms - Level 3	2	2	30-Nov-26	01-Dec-26



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A4070	Hang, Tape & Sand Drywall Walls & Ceilings - Bathrooms - Level 3	5	5	02-Dec-26	08-Dec-26
A4080	Prime & 1st Coat Paint - Bathrooms - Level 3	5	5	09-Dec-26	15-Dec-26
A4090	Install Tile - Bathrooms - Level 3	15	15	16-Dec-26	07-Jan-27
A4100	Countertops - Bathrooms - Level 3	2	2	08-Jan-27	11-Jan-27
A4110	Install Bathroom Fixtures - Bathrooms - Level 3	5	5	12-Jan-27	19-Jan-27
A4120	Install Toilet Partitions & Accessories - Bathrooms - Level 3	10	10	20-Jan-27	02-Feb-27
A4130	MEP Trimout - Bathrooms - Level 3	5	5	03-Feb-27	09-Feb-27
A4140	Final Paint - Bathrooms - Level 3	5	5	10-Feb-27	17-Feb-27
Shell					
A5370	Framing & Blocking - Shell - Level 3	10	10	05-Nov-26	19-Nov-26
A5380	In Wall Rough - Shell - Level 3	20	20	20-Nov-26	18-Dec-26
A5400	OH Rough - Shell - Level 3	20	20	07-Dec-26	05-Jan-27
A5390	In-Wall MEP & Blocking Inspections - Shell - Level 3	1	1	21-Dec-26	21-Dec-26
A5410	Frame Ceilings - Shell - Level 3	10	10	06-Jan-27	20-Jan-27
A5420	Hang, Tape & Sand Drywall Walls & Ceilings - Shell - Level 3	30	30	21-Jan-27	04-Mar-27
A5430	Prime & 1st Coat Paint - Shell - Level 3	10	10	05-Mar-27	18-Mar-27
A5440	Install Ceiling Grid - Shell - Level 3	10	10	19-Mar-27	01-Apr-27
Level 4					
Classrooms / Gathering					
A4950	Framing & Blocking - Classrooms / Gathering - Level 4	10	10	20-Nov-26	04-Dec-26
A4960	In Wall Rough - Classrooms / Gathering - Level 4	15	15	07-Dec-26	28-Dec-26
A4980	OH Rough - Classrooms / Gathering - Level 4	15	15	21-Dec-26	12-Jan-27
A4970	In-Wall MEP & Blocking Inspections - Classrooms / Gathering - Level 4	1	1	29-Dec-26	29-Dec-26
A4990	Frame Ceilings - Classrooms / Gathering - Level 4	10	10	13-Jan-27	27-Jan-27
A5000	Hang, Tape & Sand Drywall Walls & Ceilings - Classrooms / Gathering - Level 4	25	25	28-Jan-27	04-Mar-27
A5010	Prime & 1st Coat Paint - Classrooms / Gathering - Level 4	10	10	26-Feb-27	11-Mar-27
A5020	Install Ceiling Grid - Classrooms / Gathering - Level 4	10	10	12-Mar-27	25-Mar-27
A5030	Millwork - Classrooms / Gathering - Level 4	15	15	19-Mar-27	08-Apr-27
A5040	Install Flooring - Classrooms / Gathering - Level 4	20	20	02-Apr-27	30-Apr-27
A5050	Install MEP Fixtures & Devices - Classrooms / Gathering - Level 4	10	10	03-May-27	14-May-27
A5060	Install Specialties - Classrooms / Gathering - Level 4	10	10	10-May-27	21-May-27
A5070	Flood Ceilings - Classrooms / Gathering - Level 4	10	10	24-May-27	07-Jun-27
A5080	Final Paint - Classrooms / Gathering - Level 4	15	15	01-Jun-27	21-Jun-27
Wet Lab					
A5820	Framing & Blocking - Wet Lab - Level 4	3	3	07-Dec-26	09-Dec-26
A5830	In Wall Rough - Wet Lab - Level 4	10	10	10-Dec-26	23-Dec-26
A5850	OH Rough - Wet Lab - Level 4	10	10	17-Dec-26	31-Dec-26
A5840	In-Wall MEP & Blocking Inspections - Wet Lab - Level 4	1	1	24-Dec-26	24-Dec-26
A5860	Frame Ceilings & Access Panels - Wet Lab - Level 4	2	2	04-Jan-27	05-Jan-27
A5870	Hang, Tape & Sand Drywall Walls & Ceilings - Wet Lab - Level 4	5	5	06-Jan-27	12-Jan-27
A5880	Prime & 1st Coat Paint - Wet Lab - Level 4	5	5	13-Jan-27	20-Jan-27
A5890	Install Flooring - Wet Lab - Level 4	15	15	21-Jan-27	10-Feb-27
A5900	Countertops & Millwork - Wet Lab - Level 4	5	5	11-Feb-27	18-Feb-27
A5910	Install Lab Fixtures & Equpment - Wet Lab - Level 4	10	10	19-Feb-27	04-Mar-27
A5920	Install Specialties - Wet Lab - Level 4	10	10	05-Mar-27	18-Mar-27
A5930	MEP Trimout - Wet Lab - Level 4	5	5	19-Mar-27	25-Mar-27
A5940	Final Paint - Wet Lab - Level 4	5	5	26-Mar-27	01-Apr-27
Bathrooms					
A4150	Framing & Blocking - Bathrooms - Level 4	3	3	10-Dec-26	14-Dec-26
A4160	In Wall Rough - Bathrooms - Level 4	10	10	15-Dec-26	29-Dec-26



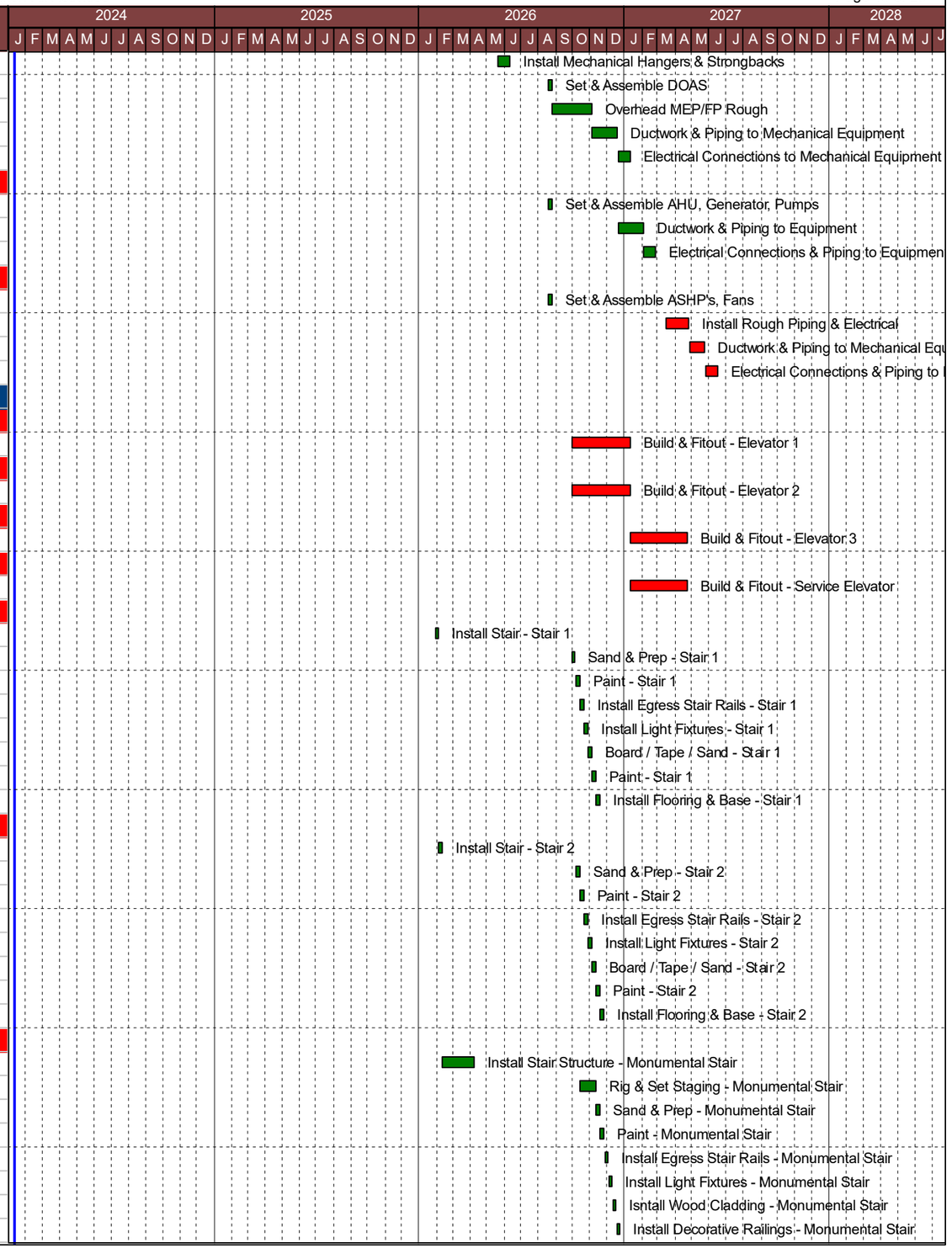
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A4180	OH Rough - Bathrooms - Level 4	10	10	22-Dec-26	06-Jan-27
A4170	In-Wall MEP & Blocking Inspections - Bathrooms - Level 4	1	1	30-Dec-26	30-Dec-26
A4190	Frame Ceilings & Access Panels - Bathrooms - Level 4	2	2	07-Jan-27	08-Jan-27
A4200	Hang, Tape & Sand Drywall Walls & Ceilings - Bathrooms - Level 4	5	5	11-Jan-27	15-Jan-27
A4210	Prime & 1st Coat Paint - Bathrooms - Level 4	5	5	19-Jan-27	25-Jan-27
A4220	Install Tile - Bathrooms - Level 4	15	15	26-Jan-27	16-Feb-27
A4230	Countertops - Bathrooms - Level 4	2	2	17-Feb-27	18-Feb-27
A4240	Install Bathroom Fixtures - Bathrooms - Level 4	5	5	19-Feb-27	25-Feb-27
A4250	Install Toilet Partitions & Accessories - Bathrooms - Level 4	10	10	26-Feb-27	11-Mar-27
A4260	MEP Trimout - Bathrooms - Level 4	5	5	12-Mar-27	18-Mar-27
A4270	Final Paint - Bathrooms - Level 4	5	5	19-Mar-27	25-Mar-27
Shell					
A5450	Framing & Blocking - Shell - Level 4	10	10	15-Dec-26	29-Dec-26
A5460	In Wall Rough - Shell - Level 4	20	20	30-Dec-26	28-Jan-27
A5480	OH Rough - Shell - Level 4	20	20	14-Jan-27	11-Feb-27
A5470	In-Wall MEP & Blocking Inspections - Shell - Level 4	1	1	29-Jan-27	29-Jan-27
A5490	Frame Ceilings - Shell - Level 4	10	10	12-Feb-27	26-Feb-27
A5500	Hang, Tape & Sand Drywall Walls & Ceilings - Shell - Level 4	30	30	01-Mar-27	09-Apr-27
A5510	Prime & 1st Coat Paint - Shell - Level 4	10	10	12-Apr-27	26-Apr-27
A5520	Install Ceiling Grid - Shell - Level 4	10	10	27-Apr-27	10-May-27
Level 5					
Classrooms / Gathering					
A5090	Framing & Blocking - Classrooms / Gathering - Level 5	10	10	30-Dec-26	13-Jan-27
A5100	In Wall Rough - Classrooms / Gathering - Level 5	15	15	14-Jan-27	04-Feb-27
A5120	OH Rough - Classrooms / Gathering - Level 5	15	15	29-Jan-27	19-Feb-27
A5110	In-Wall MEP & Blocking Inspections - Classrooms / Gathering - Level 5	1	1	05-Feb-27	05-Feb-27
A5130	Frame Ceilings - Classrooms / Gathering - Level 5	10	10	12-Feb-27	26-Feb-27
A5140	Hang, Tape & Sand Drywall Walls & Ceilings - Classrooms / Gathering - Level 5	25	25	22-Feb-27	26-Mar-27
A5150	Prime & 1st Coat Paint - Classrooms / Gathering - Level 5	10	10	22-Mar-27	02-Apr-27
A5160	Install Ceiling Grid - Classrooms / Gathering - Level 5	10	10	05-Apr-27	16-Apr-27
A5170	Millwork - Classrooms / Gathering - Level 5	15	15	12-Apr-27	03-May-27
A5180	Install Flooring - Classrooms / Gathering - Level 5	20	20	20-Apr-27	17-May-27
A5190	Install MEP Fixtures & Devices - Classrooms / Gathering - Level 5	10	10	11-May-27	24-May-27
A5200	Install Specialties - Classrooms / Gathering - Level 5	10	10	18-May-27	01-Jun-27
A5210	Flood Ceilings - Classrooms / Gathering - Level 5	10	10	25-May-27	08-Jun-27
A5220	Final Paint - Classrooms / Gathering - Level 5	15	15	02-Jun-27	22-Jun-27
Shell					
A5530	Framing & Blocking - Shell - Level 5	10	10	30-Dec-26	13-Jan-27
A5540	In Wall Rough - Shell - Level 5	20	20	14-Jan-27	11-Feb-27
A5560	OH Rough - Shell - Level 5	20	20	29-Jan-27	26-Feb-27
A5550	In-Wall MEP & Blocking Inspections - Shell - Level 5	1	1	12-Feb-27	12-Feb-27
A5570	Frame Ceilings - Shell - Level 5	10	10	01-Mar-27	12-Mar-27
A5580	Hang, Tape & Sand Drywall Walls & Ceilings - Shell - Level 5	30	30	15-Mar-27	26-Apr-27
A5590	Prime & 1st Coat Paint - Shell - Level 5	10	10	27-Apr-27	10-May-27
A5600	Install Ceiling Grid - Shell - Level 5	10	10	11-May-27	24-May-27
Bathrooms					
A4280	Framing & Blocking - Bathrooms - Level 5	3	3	11-Jan-27	13-Jan-27
A4290	In Wall Rough - Bathrooms - Level 5	10	10	14-Jan-27	28-Jan-27
A4310	OH Rough - Bathrooms - Level 5	10	10	22-Jan-27	04-Feb-27
A4300	In-Wall MEP & Blocking Inspections - Bathrooms - Level 5	1	1	29-Jan-27	29-Jan-27



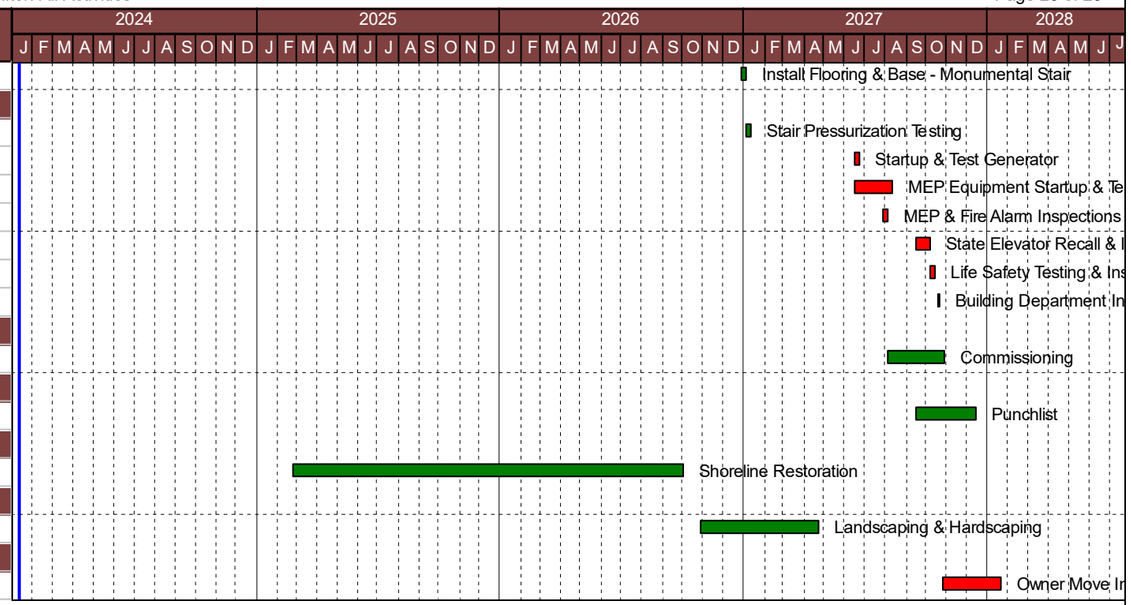
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A4320	Frame Ceilings & Access Panels - Bathrooms - Level 5	2	2	05-Feb-27	08-Feb-27
A4330	Hang, Tape & Sand Drywall Walls & Ceilings - Bathrooms - Level 5	5	5	09-Feb-27	16-Feb-27
A4340	Prime & 1st Coat Paint - Bathrooms - Level 5	5	5	17-Feb-27	23-Feb-27
A4350	Install Tile - Bathrooms - Level 5	15	15	24-Feb-27	16-Mar-27
A4360	Countertops - Bathrooms - Level 5	2	2	17-Mar-27	18-Mar-27
A4370	Install Bathroom Fixtures - Bathrooms - Level 5	5	5	19-Mar-27	25-Mar-27
A4380	Install Toilet Partitions & Accessories - Bathrooms - Level 5	10	10	26-Mar-27	08-Apr-27
A4390	MEP Trimout - Bathrooms - Level 5	5	5	09-Apr-27	15-Apr-27
A4400	Final Paint - Bathrooms - Level 5	5	5	16-Apr-27	23-Apr-27
Level 6					
Classrooms / Gathering					
A5230	Framing & Blocking - Classrooms / Gathering - Level 6	10	10	14-Jan-27	28-Jan-27
A5240	In Wall Rough - Classrooms / Gathering - Level 6	15	15	29-Jan-27	19-Feb-27
A5260	OH Rough - Classrooms / Gathering - Level 6	15	15	12-Feb-27	05-Mar-27
A5250	In-Wall MEP & Blocking Inspections - Classrooms / Gathering - Level 6	1	1	22-Feb-27	22-Feb-27
A5270	Frame Ceilings - Classrooms / Gathering - Level 6	10	10	01-Mar-27	12-Mar-27
A5280	Hang, Tape & Sand Drywall Walls & Ceilings - Classrooms / Gathering - Level 6	25	25	08-Mar-27	09-Apr-27
A5290	Prime & 1st Coat Paint - Classrooms / Gathering - Level 6	10	10	05-Apr-27	16-Apr-27
A5300	Install Ceiling Grid - Classrooms / Gathering - Level 6	10	10	12-Apr-27	26-Apr-27
A5310	Millwork - Classrooms / Gathering - Level 6	15	15	20-Apr-27	10-May-27
A5320	Install Flooring - Classrooms / Gathering - Level 6	20	20	04-May-27	01-Jun-27
A5330	Install MEP Fixtures & Devices - Classrooms / Gathering - Level 6	10	10	25-May-27	08-Jun-27
A5340	Install Specialties - Classrooms / Gathering - Level 6	10	10	02-Jun-27	15-Jun-27
A5350	Flood Ceilings - Classrooms / Gathering - Level 6	10	10	09-Jun-27	22-Jun-27
A5360	Final Paint - Classrooms / Gathering - Level 6	15	15	16-Jun-27	07-Jul-27
Shell					
A5610	Framing & Blocking - Shell - Level 6	10	10	14-Jan-27	28-Jan-27
A5620	In Wall Rough - Shell - Level 6	20	20	29-Jan-27	26-Feb-27
A5640	OH Rough - Shell - Level 6	20	20	12-Feb-27	12-Mar-27
A5630	In-Wall MEP & Blocking Inspections - Shell - Level 6	1	1	01-Mar-27	01-Mar-27
A5650	Frame Ceilings - Shell - Level 6	10	10	15-Mar-27	26-Mar-27
A5660	Hang, Tape & Sand Drywall Walls & Ceilings - Shell - Level 6	30	30	29-Mar-27	10-May-27
A5670	Prime & 1st Coat Paint - Shell - Level 6	10	10	11-May-27	24-May-27
A5680	Install Ceiling Grid - Shell - Level 6	10	10	25-May-27	08-Jun-27
Bathrooms					
A4410	Framing & Blocking - Bathrooms - Level 6	3	3	26-Jan-27	28-Jan-27
A4420	In Wall Rough - Bathrooms - Level 6	10	10	29-Jan-27	11-Feb-27
A4440	OH Rough - Bathrooms - Level 6	10	10	05-Feb-27	19-Feb-27
A4430	In-Wall MEP & Blocking Inspections - Bathrooms - Level 6	1	1	12-Feb-27	12-Feb-27
A4450	Frame Ceilings & Access Panels - Bathrooms - Level 6	2	2	22-Feb-27	23-Feb-27
A4460	Hang, Tape & Sand Drywall Walls & Ceilings - Bathrooms - Level 6	5	5	24-Feb-27	02-Mar-27
A4470	Prime & 1st Coat Paint - Bathrooms - Level 6	5	5	03-Mar-27	09-Mar-27
A4480	Install Tile - Bathrooms - Level 6	15	15	10-Mar-27	30-Mar-27
A4490	Countertops - Bathrooms - Level 6	2	2	31-Mar-27	01-Apr-27
A4500	Install Bathroom Fixtures - Bathrooms - Level 6	5	5	02-Apr-27	08-Apr-27
A4510	Install Toilet Partitions & Accessories - Bathrooms - Level 6	10	10	09-Apr-27	23-Apr-27
A4520	MEP Trimout - Bathrooms - Level 6	5	5	26-Apr-27	30-Apr-27
A4530	Final Paint - Bathrooms - Level 6	5	5	03-May-27	07-May-27
Level 7 / Penthouse					
Mechanical					



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A7970	Install Mechanical Hangers & Strongbacks	15	15	20-May-26	10-Jun-26
A7980	Set & Assemble DOAS	5	5	18-Aug-26	24-Aug-26
A7990	Overhead MEP/FP Rough	50	50	25-Aug-26	04-Nov-26
A8000	Ductwork & Piping to Mechanical Equipment	30	30	05-Nov-26	18-Dec-26
A8010	Electrical Connections to Mechanical Equipment	15	15	21-Dec-26	12-Jan-27
Mechanical Well					
A8020	Set & Assemble AHU, Generator, Pumps	5	5	18-Aug-26	24-Aug-26
A8030	Ductwork & Piping to Equipment	30	30	21-Dec-26	03-Feb-27
A8040	Electrical Connections & Piping to Equipment	15	15	04-Feb-27	25-Feb-27
ASHP Well					
A8050	Set & Assemble ASHP's, Fans	5	5	18-Aug-26	24-Aug-26
A8060	Install Rough Piping & Electrical	30	30	15-Mar-27	26-Apr-27
A8070	Ductwork & Piping to Mechanical Equipment	20	20	27-Apr-27	24-May-27
A8080	Electrical Connections & Piping to Equipment	15	15	25-May-27	15-Jun-27
Vertical Transportation					
Elevator 1					
A6080	Build & Fitout - Elevator 1	70	70	29-Sep-26	11-Jan-27
Elevator 2					
A6090	Build & Fitout - Elevator 2	70	70	29-Sep-26	11-Jan-27
Elevator 3					
A6100	Build & Fitout - Elevator 3	70	70	12-Jan-27	22-Apr-27
Service Elevator					
A6110	Build & Fitout - Service Elevator	70	70	12-Jan-27	22-Apr-27
Stair 1					
A6120	Install Stair - Stair 1	5	5	29-Jan-26	04-Feb-26
A6130	Sand & Prep - Stair 1	5	5	29-Sep-26	05-Oct-26
A6140	Paint - Stair 1	5	5	06-Oct-26	13-Oct-26
A6150	Install Egress Stair Rails - Stair 1	5	5	14-Oct-26	20-Oct-26
A6160	Install Light Fixtures - Stair 1	5	5	21-Oct-26	27-Oct-26
A6170	Board / Tape / Sand - Stair 1	5	5	28-Oct-26	03-Nov-26
A6180	Paint - Stair 1	5	5	04-Nov-26	10-Nov-26
A6190	Install Flooring & Base - Stair 1	5	5	12-Nov-26	18-Nov-26
Stair 2					
A6200	Install Stair - Stair 2	5	5	05-Feb-26	11-Feb-26
A6210	Sand & Prep - Stair 2	5	5	06-Oct-26	13-Oct-26
A6220	Paint - Stair 2	5	5	14-Oct-26	20-Oct-26
A6230	Install Egress Stair Rails - Stair 2	5	5	21-Oct-26	27-Oct-26
A6240	Install Light Fixtures - Stair 2	5	5	28-Oct-26	03-Nov-26
A6250	Board / Tape / Sand - Stair 2	5	5	04-Nov-26	10-Nov-26
A6260	Paint - Stair 2	5	5	12-Nov-26	18-Nov-26
A6270	Install Flooring & Base - Stair 2	5	5	19-Nov-26	25-Nov-26
Monumental Stairs					
A6280	Install Stair Structure - Monumental Stair	40	40	12-Feb-26	09-Apr-26
A6360	Rig & Set Staging - Monumental Stair	20	20	14-Oct-26	10-Nov-26
A6290	Sand & Prep - Monumental Stair	5	5	12-Nov-26	18-Nov-26
A6300	Paint - Monumental Stair	5	5	19-Nov-26	25-Nov-26
A6310	Install Egress Stair Rails - Monumental Stair	5	5	27-Nov-26	03-Dec-26
A6320	Install Light Fixtures - Monumental Stair	5	5	04-Dec-26	10-Dec-26
A6330	Isntall Wood Cladding - Monumental Stair	5	5	11-Dec-26	17-Dec-26
A6340	Install Decorative Railings - Monumental Stair	5	5	18-Dec-26	24-Dec-26



Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish
A6350	Install Flooring & Base - Monumental Stair	5	5	28-Dec-26	04-Jan-27
Testing & Inspections					
A8140	Stair Pressurization Testing	5	5	05-Jan-27	11-Jan-27
A8160	Startup & Test Generator	5	5	16-Jun-27	22-Jun-27
A8320	MEP Equipment Startup & Testing	40	40	16-Jun-27	11-Aug-27
A8120	MEP & Fire Alarm Inspections	5	5	29-Jul-27	04-Aug-27
A8110	State Elevator Recall & Inspections	15	15	17-Sep-27	07-Oct-27
A8130	Life Safety Testing & Inspections	5	5	08-Oct-27	15-Oct-27
A8150	Building Department Inspections	5	5	18-Oct-27	22-Oct-27
Commissioning					
A7890	Commissioning	60	60	05-Aug-27	29-Oct-27
Punchlist					
A00652	Punchlist	60	60	17-Sep-27	14-Dec-27
Shoreline Restoration					
A8870	Shoreline Restoration	402	402	26-Feb-25	01-Oct-26
Landscaping & Site Finishes					
A8180	Landscaping & Hardscaping	120	120	28-Oct-26	22-Apr-27
Owner Move In					
A9070	Owner Move In	60	60	25-Oct-27	21-Jan-28



The Roux Institute
Northeastern University

Community Advisory Group (CAG)
The Roux Institute at Northeastern University
OCTOBER 30, 2023

Participants

CAG participants:
Tiffanie Bentley, Interim President, SMCC
Sarah Boltz, Teacher, Presumpscot Elementary School
Eamonn Dundon, Director of Advocacy, Portland Regional Chamber of Commerce
Jason Judd, Executive Director, Educate Maine
Cherie Juniwiecz, East Deering resident
Cheryl Leeman, East Deering Neighborhood Association
Sara Nadeau, Parent, Presumpscot Elementary School
Bill Needelman, Waterfront Coordinator, City of Portland, Maine
Jack Phillips, Executive Director, Portland Parks Conservancy
Angie Taylor, Principal, Presumpscot Elementary School
Mike Tremblay, Director of Transit Development, Greater Portland Metro
Steve Von Vogt, East Deering Neighborhood for Responsible Development

Northeastern University participants and guest speakers:
Margaret Angell, Head of Partnerships & Strategic Initiatives, The Roux Institute
Alicia Jalbert, Manager of Community Partnerships, The Roux Institute
Joe Regan, Director, City & Community Engagement, Northeastern University
Sam Reiche, Head of Operations & Real Estate, IDEALS
John Tobin, Vice President, City & Community Engagement, Northeastern University
Chris Mallett, Chief Administrative Officer, Roux Institute and Senior Vice Chancellor
Chrystina Russell, Managing Director, Strategic Initiatives, The Roux Institute
Mary Costigan, Attorney at Bernstein Shur Sawyer & Nelson
Timothy Mansfield, AIA, Principal Architect.

Meeting Recap & Notes

Margaret Angell began the meeting with welcome remarks and noted that three CAG members were not available to attend the first meeting.

- Emma Bond, Portland Bike/Ped Advocacy Committee
- Adilah Mohammed, The Third Place
- Aaron Townsend, Deputy Superintendent, Portland Public School

A moment of silence/reflection was held for those impacted by the Lewiston shootings. This was followed by a quick round of introductions where participants introduced themselves, the organization/community they represented, and what they hoped to achieve/learn from the meeting.

Margaret thanked those who helped her and the Roux team plan and organize this inaugural CAG meeting. Participants were welcome to offer comments feedback or ask further questions at any point during the meeting.

There were three key topics of discussion. It was acknowledged that not everyone in the room had the same level of knowledge or engagement with the Roux Institute, so to start, it was essential to provide an overview of Northeastern University's work and mission in the Portland area. This would be followed by an overview of the development plan for the new campus. Finally, the meeting's third topic is to discuss the CAG's role and the group's draft charter.

Overview of the Roux Institute

Presented by Margaret Angell and Alicia Jalbert

Margaret Angell delivered an overview of the Roux Institute, which was established in 2020 as a campus within Northeastern University's global network. The Roux Institute's primary purpose is to act as an "opportunity engine" within Maine through graduate education in high-growth fields (including generous scholarships for master's degrees and certificates), research, and entrepreneurship programs. Her presentation underscored the significant growth in the student population, the number of start-up companies launched in the Roux programs, and the expansion of business and industry partnerships at the Roux over the past three years. Margaret emphasized that Northeastern's pedagogy revolves around experiential education, illustrating this approach with an example of Roux students collaborating with L.L. Bean employees to address a retail analytics challenge faced by the company. She discussed the expected growth of the Institute, and after concluding her presentation, Margaret welcomed questions from the CAG, although none were posed at that moment.

Alicia Jalbert then continued the presentation by providing an overview of the Roux Institute's Community Partnerships. She detailed the University's commitment to leveraging its unique strengths across various core disciplines and assets to foster community partnerships aligned with Maine's 10-year Economic Plan. Alicia highlighted several examples of organizations that collaborate with Northeastern, including Educate Maine, Jobs for Maine Graduates, Knox County Health Clinic, Maine Math and Science Alliance, Portland Community Squash, Portland Public Schools, and The Third Place. Over the past year, the University has engaged with approximately 200 K-12 students, primarily from local and regional schools. Alicia spotlighted the Girls Who Code Camp as an illustration of the Roux's efforts to engage young students and inspire future careers in STEM (Science, Technology, Engineering, and Mathematics). She also informed the CAG about the Maine Black Professionals Network, which regularly hosts quarterly gatherings at the Roux Institute. These gatherings serve as opportunities for networking and learning about the various options available, such as graduate programming, partnership opportunities, residencies, and more.

Overview of the campus development plan and status update

Presentation by Tim Mansfield, and Sam Reiche

Tim Mansfield gave an overview of the proposed development at the former B&M site in East Deering, the site for the Roux permanent campus. This presentation included detailed renderings of Phase 1 of the site plan. Tim started his presentation by noting that the campus encompasses approximately 13 acres on a peninsula, with about 82% of the land covered by tarmac and buildings at purchase. The overarching objective is to revamp the area, restoring it to a more natural state with open spaces. The ongoing Bean Building restoration project includes the removal of old warehouse structures and rebuilding in the same footprint, focusing on creating a conservation exhibit. Additionally, plans for the waterfront area involve enhancing the pier and floating dock to expand waterfront activities.

The Bean Building's primary purpose will be supporting entrepreneurs, accelerators, and young companies, fostering collaboration with the academic building. This collaborative approach aligns with the broader educational ethos, emphasizing hands-on experience and practical learning. The academic building will be designed linearly to maximize the impact of its location, creating a keen sense of arrival on the peninsula. Lastly, a coastal pathway and bike path traverse the campus, enhancing accessibility and connectivity.
The Learning, Research & Collaboration Building (LRC (Learning, Research & Collaboration)) is designed to offer impressive views and connections while embracing the interior of the campus. It is situated right in the heart of the campus, referred to as "the round." The site's layout includes the main pedestrian pathway, offering access to the waterfront on the west side and a parking structure with childcare facilities on the north side. The campus will use stone, granite, brick, copper, and other materials that have traditionally defined the city. Special attention will be given to the granite detailing, inspired by the unique Bailey Island Bridge, one of only two such bridges in the world, crafted from Maine granite. The Bean Building is undergoing restoration and reintegration, focusing on blending the old and the new seamlessly.

The campus's landscaping is being meticulously designed by the talented landscape architect, Steven Stimpson, who understands the region's natural elements, including indigenous species that reflect the coastal environment. Sustainability is a core focus, with the West Wing planned to be a fully mass-timbered building. Mass timber involves using engineered, renewable wood, such as cross-laminated timber (CLT), for structural components like columns, beams, and decking, making it a sustainable choice for the future.
The pier's reconstruction in its existing footprint will incorporate elements that pay homage to the codfish building's history. The pier is envisioned as a flexible community gathering space, accommodating activities like kayaking and potential water taxis, reinvigorating engagement with the waterfront. The campus's new bike and footpath will encircle the entire area, bringing people back to the water's edge providing a healthy and scenic way to explore the peninsula.

Sam Reiche then provided a quick update on the permitting progress for the site. Over the past two years, and even more, we have been dedicated to zoning, which was successfully completed in February 2023. This zoning approval empowers us to proceed with the following stages. Presently, we are primarily focused on our site plan, which is nearly finalized. Sam informed the CAG that he and the Roux team have recently held a neighborhood forum with a presentation quite similar to this one, ensuring that the neighborhood and community stays informed about our progress. The aim is to maintain transparency and keep people well-informed. In the coming weeks, they plan to submit the site plan application to the city, and a formal neighborhood meeting, an essential part of the process, will follow this. During this neighborhood meeting, we anticipate more detailed questions, ideas, and discussions. This process will eventually lead to the "plan workshops," which could be a single session or several. These workshops are akin to what the University went through during the zoning process. This comprehensive public engagement aims to align everyone's expectations and incorporates aspects like historic preservation, environmental considerations, and traffic patterns.

It is crucial to note that the CAG meeting is separate from the site plan process. Still, it is something the Roux engaged in collaboratively with the city and the community. There are two ways for the CAG members to stay up to date. First, IDEALS and Roux host Neighborhood Forums at least every quarter (in 2023 it has been every two months). These forums allows us to maintain close communication with the community on campus development activities, share our progress, and hear ideas and feedback. Second, CAG members can sign up on the website to receive notifications for all Roux-related community meetings. The website

https://www.rouxcampusportland.org/roux-campus is the primary platform for announcements and information dissemination. Sam and his team share recordings of the Neighborhood Forum meetings and provide updates on construction activities and actively work to keep the community and the city well-informed. Furthermore, Sam and the Roux team hold numerous informal meetings, allowing us to discuss our plans and construction activities with interested neighbors and community members. CAG members are encouraged to sign up for regular updates, and the website is the central hub for detailed information.

Following the campus development presentation, which served as a grounding introduction to the Roux Institute at Northeastern University, Margaret opened the floor for questions, comments, or thoughts from CAG members.

Cherie Juniwiecz raised concerns and mentioned having a couple of questions. The first question pertains to the building's glass usage and a request for clarification on whether the glass was bird safe. The second question concerns the parking garage's size and its potential impact on the lighting for neighboring areas. In response, Tim Mansfield confirmed that the glass would be bird-safe and referred to a recent project he completed for Bowdoin College that used similar material. He acknowledges the importance of addressing the lighting concerns as part of the ongoing process. He emphasized the University's commitment to avoiding any adverse impact on the neighboring areas and ensuring safety.

Bill Needelman expressed curiosity about the pier's elevation and the criteria behind the elevation choice. Bill highlighted the importance of considering future sea-level rise and shared his interest in the decision-making process. In response, Tim and Sam elaborated on the site's elevation study and elevation adjustment to accommodate resilience. They mention the elevation target of 22.5 and the ongoing analysis considering factors like sea-level rise.

The conversation then shifts to transportation, with Eamonn Dundon inquiring about the discussion and commitments related to transitioning commuters to alternative modes of transportation. Tim and Sam underscored the overarching goal of reducing single-vehicle use, and ongoing discussions and planning for transportation.

The last part of the discussion pertained to zoning, with Mary Costigan explaining the process's origin and its collaborative nature involving the city and community. Mary mentioned that the B&M site was originally industrial-zoned and that zoning codes are instrumental in determining property use. To address this zoning designation, the city of Portland employs an "Institution Overlay Zone" (IOZ), an additional layer of zoning that requires more public involvement. This concept initially began with Maine Medical Center to assist institutions in planning ahead. Within the IOZ framework, institutional development plans must look 20 years into the future, while the current presentation only represents Phase One of the project.

Discussion of role of CAG and draft charter for the group

In the final segment of the agenda, Margaret Angell touched upon the Charter for the CAG. She highlighted how the CAG will play a significant role in fulfilling the Roux's commitment to public engagement within the Institutional Development Plan. This commitment entails two key aspects: neighborhood forums, which are quarterly (recently every two months) and are open to everyone, accessible via Zoom,with posted recordings. We encourage those working and living in the vicinity to spread the word and join these sessions. The meetings cover updates on both the Roux Institute's endeavors and the development process. The second component of our commitment involves the group assembled here, the CAG, comprising

representatives from various organizations. Margaret noted that they are actively seeking individuals from two entities, the Portland Housing Authority (covering Washington Gardens and Front St. development) and a sustainability representative, to be appointed. Recommendations for these roles are welcome.
The spirit of this commitment revolves around open dialogues and maximizing the institution's impact on the community. Margaret explained that the CAG will serve as a platform for open discussions and engagement with community members from different stakeholder groups, including exploring collaborations with fellow institutions. Suggestions for agenda items, ideas, or even proposals for presentations on specific topics are encouraged. The CAG's purpose will be to facilitate conversations and exchange ideas with relevant guests invited to meetings on specific subjects. Once we determine a suitable schedule, we will share dates for future meetings and make every effort to include a wide array of perspectives and voices, ensuring this is a meaningful and inclusive platform for community engagement.

Margaret also commented that the university remains open to edits and feedback for the Charter, emphasizing that the commitment embodies two fundamental principles: open dialogue and maximizing the university's impact on the Portland community. This encompasses various aspects, such as enhancing connections with schools and collaborating with the city's parks. CAG members are welcome to share their suggestions for agenda items and articulate how their work aligns with the university's mission. When we hold meetings on specific topics like K-12 engagement or parks, we will thoughtfully invite relevant guests to enrich our discussions.

Margaret encouraged any questions or comments at this stage. While dates for upcoming meetings are not yet set, we want to ensure they accommodate your schedules. We are considering Monday nights but can adapt the time if earlier starts are preferred. Concerning engaging parents from diverse linguistic backgrounds, we are looking into leveraging Northeastern University students to bridge language barriers, especially in the East Deering community, which is notably diverse. A query was raised about the top five languages spoken in Portland Public schools. The space at the Washington Garden Community Center has served as a meeting location, and Angie Taylor, Principal of Presumpscot school offered the school premises for a future meeting.

Furthermore, Chris Mallet suggested that the work of this group could inspire Northeastern teams to explore and act on ideas generated here and remarked if CAG members wish to use the Roux's current space, please reach out.

Next Steps & Looking Forward

- Margaret will share materials and set a date for the next meeting.
- In two months, an email will be dispatched to collect agenda items from the CAG.
- Your active engagement is essential, and we look forward to fruitful discussions and collaborations in the future.

THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCES (IDEALS) and
THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
PROPOSED SITE PLAN FOR THE ROUX INSTITUTE CAMPUS

NEIGHBORHOOD MEETING
DECEMBER 13, 2023

The Neighborhood Meeting was held at the Washington Gardens Community Center, beginning at 5:00 pm and lasting approximately an hour and a quarter. Forty-six members of the public were in attendance, divided almost evenly between in person and online, as well as 20 representatives of IDEALS, Northeastern University, and their consultant team.

The public comments and questions are summarized below. The comment period followed a presentation by IDEALS and Northeastern regarding the proposed site plan and the latest updates from the Roux Institute. Major areas of interest included transportation, parking, alternative means of transport and future growth planned for the site.

- Is there an update on the future of the rail line?
- Will there be charging stations for e-bikes?
- What is the plan for Sherwood Street? Does it involve the removal of parking?
- Have you considered traffic cutting through Payson Park in your traffic study?
- What is the current and anticipated traffic volume?
- What types of energy systems will power the campus – will it be renewable?
- Will there be retail space?
- Commenter was concerned about traffic volumes and asked what happens if traffic is terrible.
- Who will pay for the required traffic improvements?
- What is the impact of the City's modifications to Veranda and Bates Street?
- Will there be snow removal from the bike lanes?
- Have you considered the Presumpscot Street shortcut?
- How are you projecting the campus to grown and how will that effect traffic?
- Have you considered sea level rise and resiliency?
- How were you able to demolish buildings before the site plan is approved?
- Why is the childcare facility located next to the garage with exhaust from vehicles?
- Where do you expect walkers on campus will be coming from? Will they drive there or walk there?
- How many parking spaces are you planning for and will you charge for parking?

- Suggestion: Please hire people to shovel the bus stops.
- Are there plans for a hotel in this site plan?
- Will the garage meet all of the future parking needs of the campus?
- Concern regarding affordable housing which is already scarce and the impact the project will have.
- What does the growth would look like in the next 5 years?

Adjourn 6:13

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

Neighborhood Meeting Sign-In Sheet

Wednesday, December 13, 2023

Washington Gardens Community Center - 66 Pembroke Street, Portland, ME 04103

IDEALS: Roux Campus 1 Bean Pot Circle, Portland, ME

Members of the Public in Attendance:

Name:	Email:
Bonnie McGarvey	bamcgarvey7711@yahoo.com
Gloria Page	GLORIA.J.PAGE@YAHOO.COM
Steve Von Vogt	HANNAHVONVOGT@gmail.com
BARRY SHEFF	BSHEFF@WOODARDCURRAN.COM
Linda Davis	ldavis6820@gmail.com
Patrick Thornton	patrickdthornton@gmail
Ed Cunningham	cunninghamed57@gmail.com
Ben Carling	gbencarling@gmail.com
JAN WENSMAN	22 Galvin St

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Roux Campus

Neighborhood Meeting Sign-In Sheet

Wednesday, December 13, 2023

Washington Gardens Community Center - 66 Pembroke Street, Portland, ME 04103

IDEALS: Roux Campus 1 Bean Pot Circle, Portland, ME

Members of the Public in Attendance:

Name:	Email:
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Pixie LaVallee	
Steve Bugden	sbugden363e@gmail.com (correct email address)
Charles Collins	Charcoll51@gmail.com
Jennifer Tingle	jennifer.tingle3@gmail.com
Katherine Caldwell	
Jeralyn Logue	JeralynLg@gmail.com
Sam Cady	Samcady@hotmail.com
Peter Steckler	
James Pratt	jrpratt@hotmail.com
Tessa Anable	tessaanable@gmail.com
Marc LaMontagne	

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Neighborhood Meeting Sign-In Sheet

Wednesday, December 13, 2023

Washington Gardens Community Center - 66 Pembroke Street, Portland, ME 04103

IDEALS: Roux Campus 1 Bean Pot Circle, Portland, ME

Members of the Public in Attendance:

Name:	Email:
[illegible]	
Colin Campbell	campbell13c2@gmail.com
Cheryl [illegible]	

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

Neighborhood Meeting Sign-In Sheet

Wednesday, December 13, 2023

Washington Gardens Community Center - 66 Pembroke Street, Portland, ME 04103

IDEALS: Roux Campus 1 Bean Pot Circle, Portland, ME

Developer and Consultant Team in Attendance:

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Margaret Angell	mbangell207@gmail.com
Curtis K. Ham	curtis_k_ham@gmail.com

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Roux Campus

Neighborhood Meeting Sign-In Sheet

Wednesday, December 13, 2023

Washington Gardens Community Center - 66 Pembroke Street, Portland, ME 04103

IDEALS: Roux Campus 1 Bean Pot Circle, Portland, ME

Developer and Consultant Team in Attendance:

Name:	Email:
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Elizabeth Swain	elizabeth.swain@powereng.com

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

Neighborhood Meeting Sign-In Sheet

Wednesday, December 13, 2023

Washington Gardens Community Center - 66 Pembroke Street, Portland, ME 04103

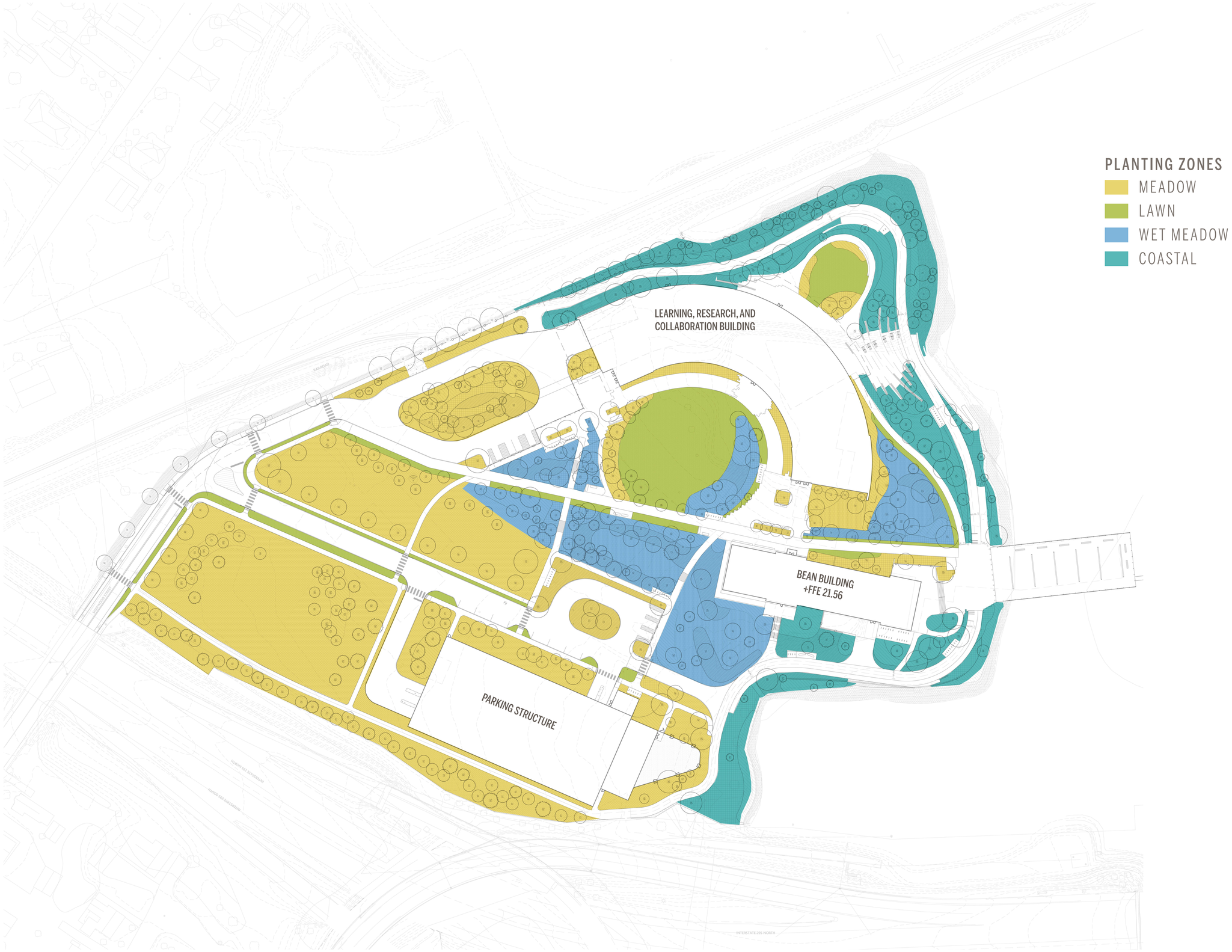
IDEALS: Roux Campus 1 Bean Pot Circle, Portland, ME

Developer and Consultant Team in Attendance:

Name:	Email:
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On-line attendees
Roux Institute at Northeastern University Neighborhood Meeting
13-Dec-23

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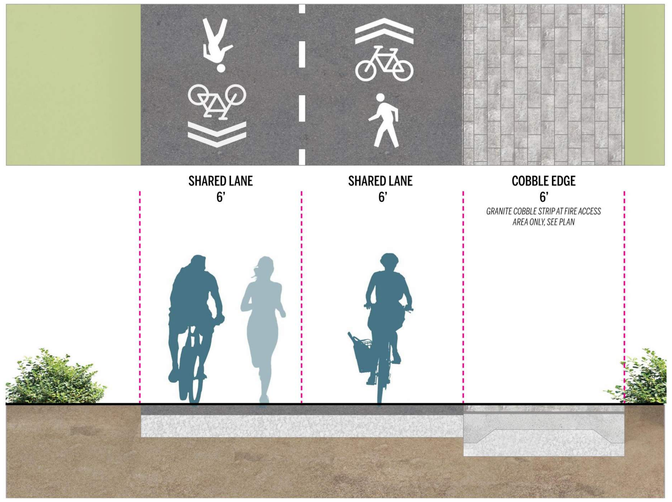
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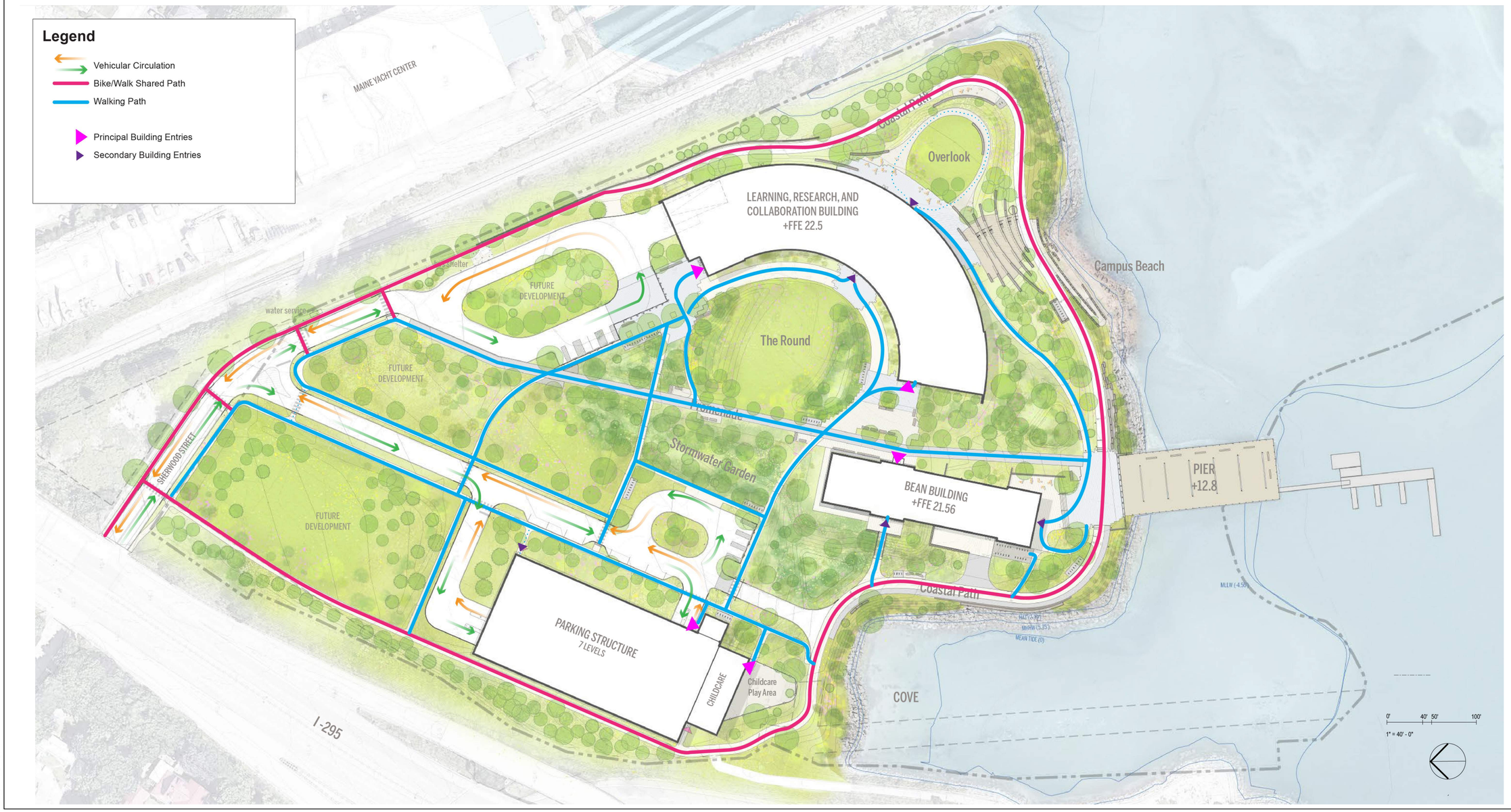
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PLANTING ZONE PLAN

Figure 3-14



BIKE PATH | TWO LANE SECTION



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Scale	

Drawing Title
Site Circulation Plan

Figure 3-17

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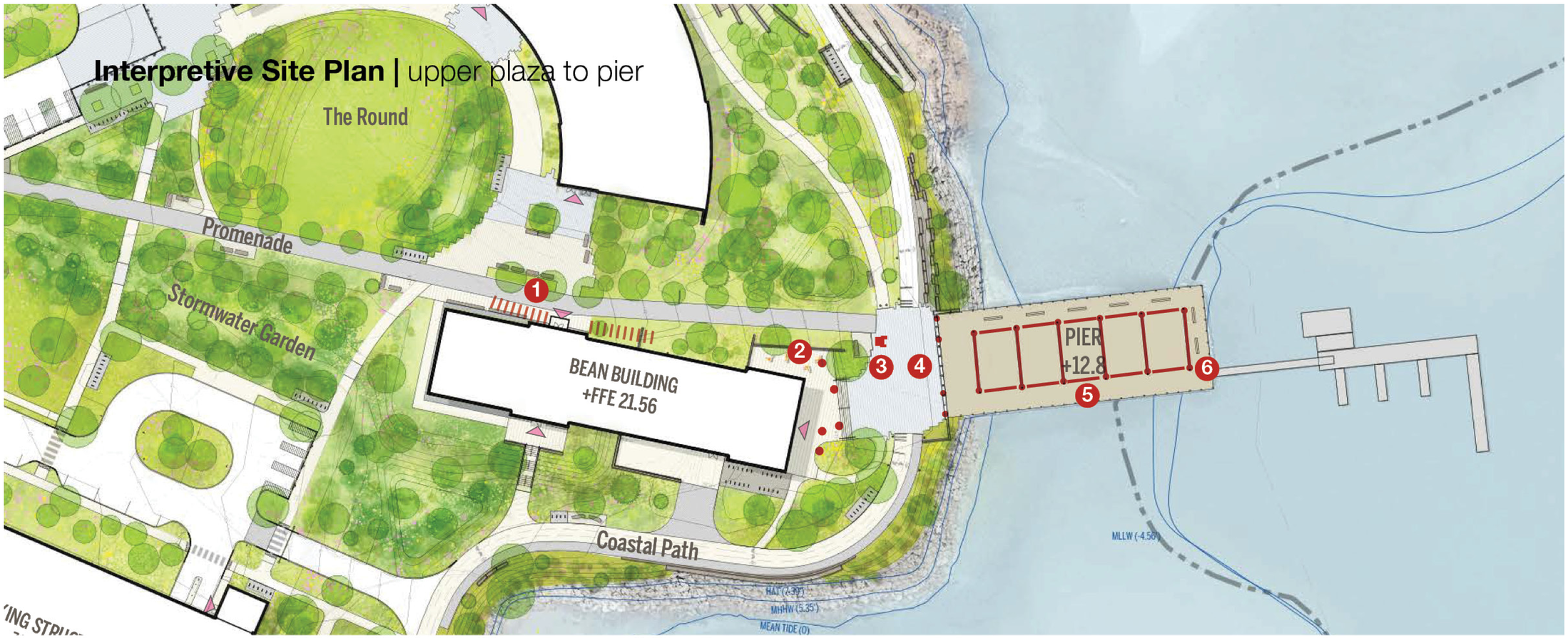
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Project THE ROUX INSTITUTE
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Drawing Title

AREAS OF PUBLIC OPEN SPACE PLAN

Figure 3-18

Interpretive Site Plan | upper plaza to pier



1. Railroad Track & Cart Stop
2. Bean Pots & Retort Baskets
3. Granite Interpretive Post
4. Mooring Bollards & Cleats
5. Pier Decking Inlay
6. Pier Light Poles

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Drawing Title
Codfish Building Interpretive Elements

Figure 3-24

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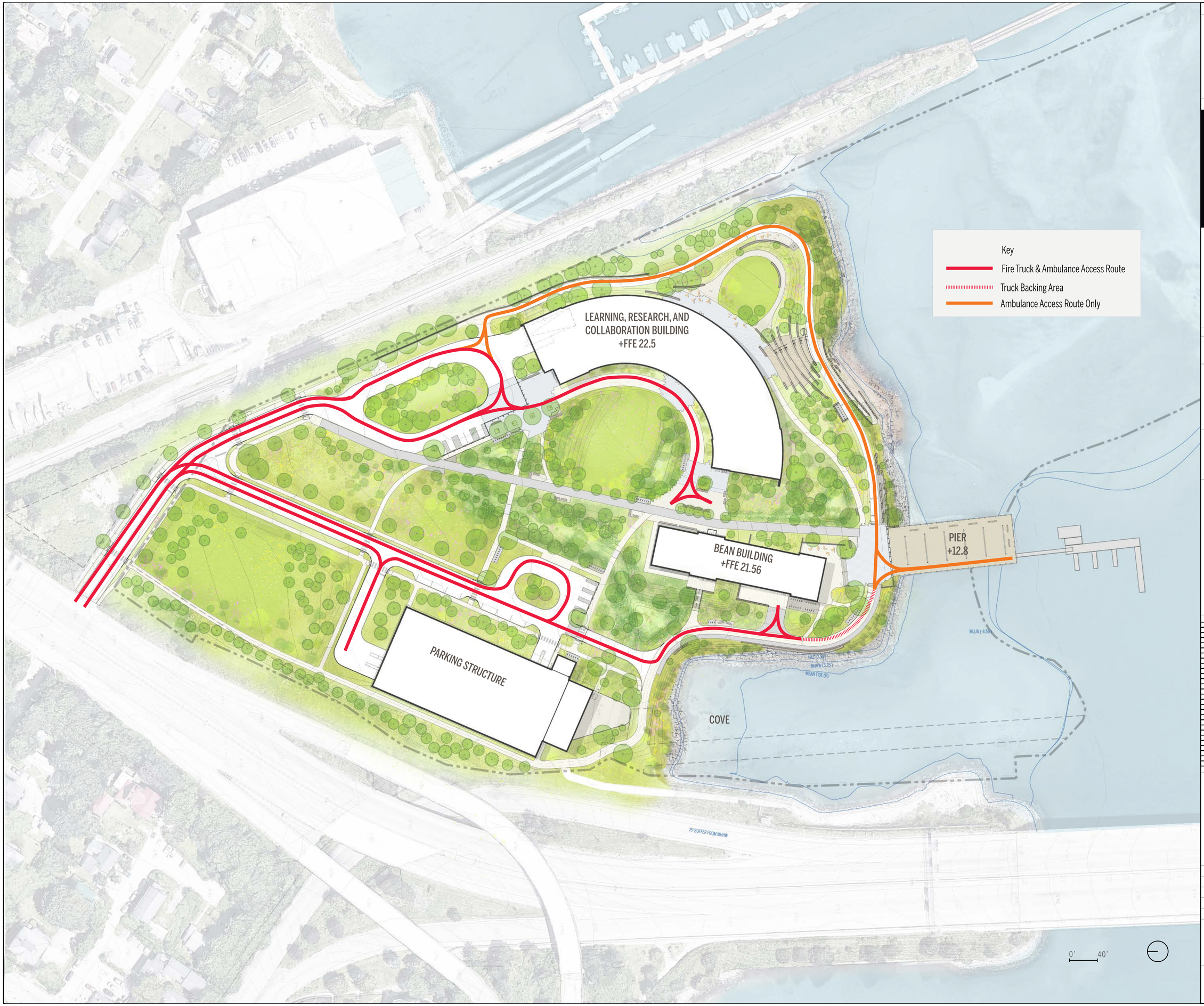
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Drawing Title

BIKE AMENITIES AND CIRCULATION

Figure 5-1



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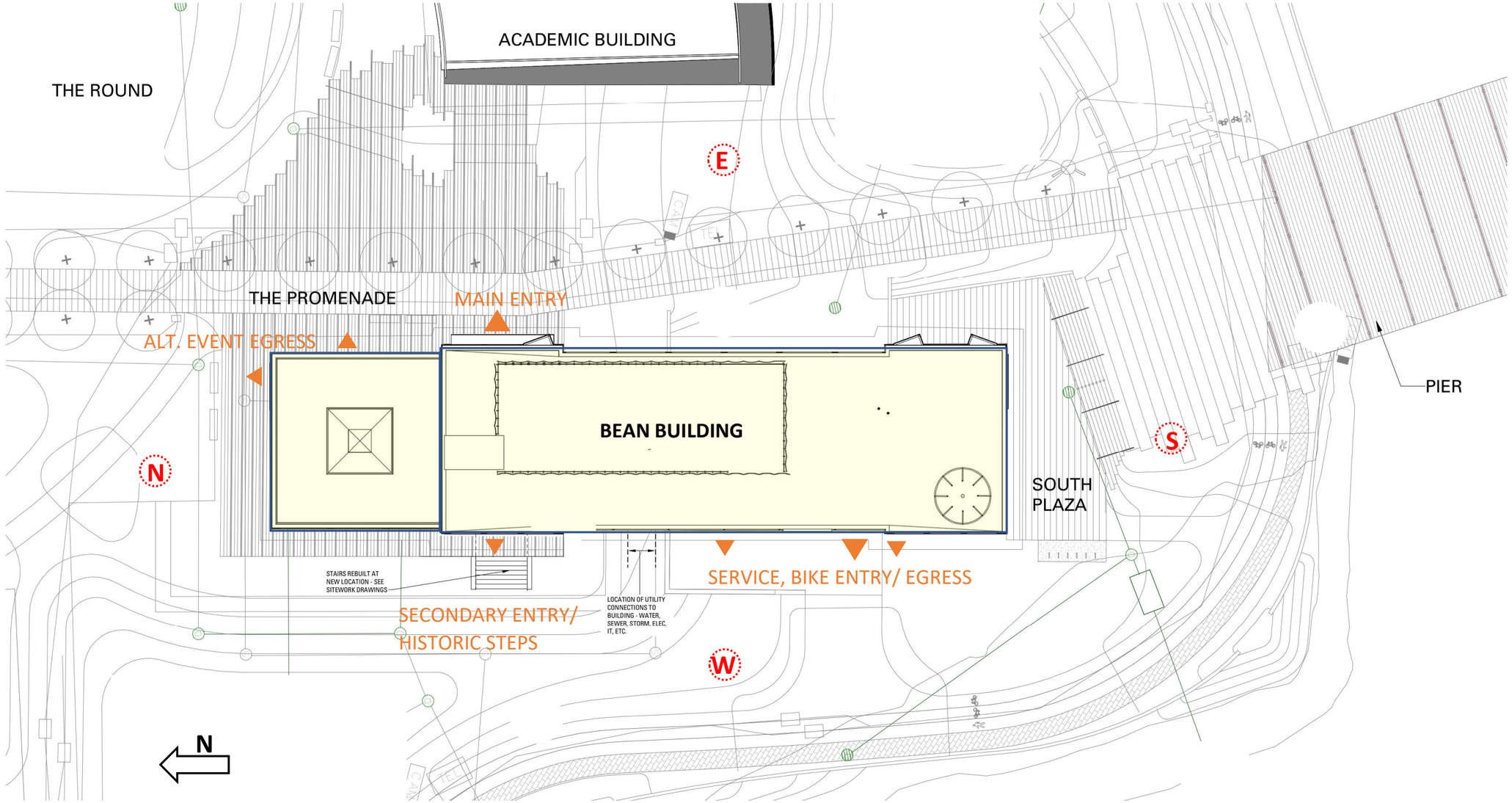
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Project	THE ROUX INSTITUTE		
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Date			
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Drawing Title

EMERGENCY ACCESS ROUTES

Figure 5-2

ARCHITECTURAL SITE PLAN



Roux Institute | Bean Building

Bruner/Cott
ARCHITECTS



BOLA BIKE RACKS: 95 TOTAL

MAINE YACHT CENTER
Coastal Path
2
Overlook
LEARNING, RESEARCH, AND COLLABORATION BUILDING +FFE 22.5
bus shelter
FUTURE DEVELOPMENT
water service
14
The Round
8
Campus Beach
FUTURE DEVELOPMENT
Promenade
7
SHERWOOD STREET
Stormwater Garden
8
8
BEAN BUILDING +FFE 21.56
PIER +12.8
22
8
FUTURE DEVELOPMENT
4
Coastal Path
6
PARKING STRUCTURE
CHILDCARE
Childcare Play Area
COVE
MLLW (-4.58)
MLW (-3.92')
MHHW (3.35')
MEAN TIDE (0)
I-295
75' BUFFER FROM MHHW
0'
40'

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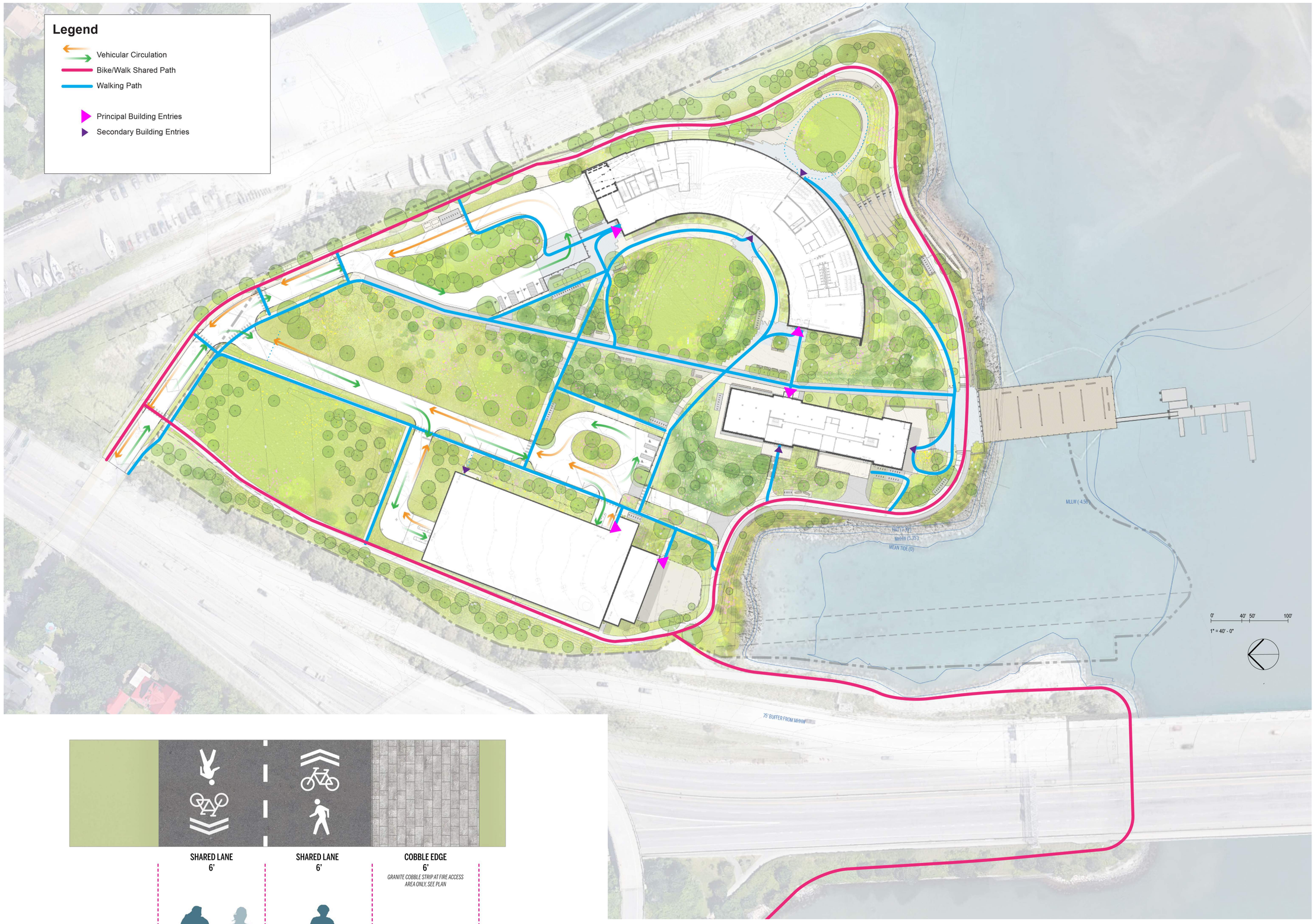
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EXTERIOR BICYCLE PARKING

Figure 5-4

Legend

- Vehicular Circulation
- Bike/Walk Shared Path
- Walking Path
- Principal Building Entries
- Secondary Building Entries



BIKE PATH | TWO LANE SECTION

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Drawing Title

Site Circulation Plan

Figure 3-17

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Drawing Title

AREAS OF PUBLIC OPEN SPACE PLAN

Figure 3-18

Key

- Multi-Use Path
- Bicycle Parking - Exterior
- Bicycle Storage - Interior
- Metro Bus Stop
- Bikeshare

LEARNING, RESEARCH, AND COLLABORATION BUILDING

The Round

Campus Beach

BEAN BUILDING +FFE 21.56

PARKING STRUCTURE

MLLW (-4.58)

MHW (3.39')

MHHW (3.35')

MEAN TIDE (0)

75' BUFFER FROM MHHW

0' 40'

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Date			
Scale	1" = 40'		

Drawing Title

BIKE AMENITIES AND CIRCULATION

Figure 5-1

Memorandum

To: Chuck Hewett
Sam Reiche

Date: October 31, 2023

Project #: 58570.00

From: Jennifer Conley, PE, PTOE

Re: The Roux Institute at Northeastern University EV Charging Station Demand Analysis

The Roux Institute at Northeastern University is providing the following Electric Vehicle (EV) study as specified in the City of Portland Technical Manual Section 1, Subsection 1.14 (Electric Vehicle Infrastructure). The Technical Manual states that

> *In the case of new structured and surface parking of greater than 100 spaces, the review authority may establish the EV parking requirements on the basis of an EV parking demand study. Such study shall be prepared by a qualified professional using industry best practice, and account for future growth in EV demand.*

The Roux Institute at Northeastern University's proposed garage exceeds this threshold since it has been designed to accommodate 708 spaces. The garage is designed to meet the campus' long-term needs and will not be used to full capacity in its first years. For this phase, 16 of those parking spaces will be used to accommodate parking for 66 bicycles and the remaining 692 parking spaces will be used to accommodate vehicular parking. In addition to the garage spaces, there will be 14 parking spaces provided at grade on site.

As a result, this study finds that 24 EV charging spaces are needed to meet the projected EV charging demand in 2027. An additional 38 EV-ready spaces should be prepared to support demand into 2032. The Roux Institute at Northeastern University is committed to annually monitor EV charging use during the TDM monitoring and reporting process and increase the number of EV charging spaces as needed to meet future demand.

Existing EV Ownership Data

The U.S Department of Energy provides an EV Infrastructure Projection Tool that presents recent local EV information for Portland and South Portland. By the end of 2021, there were 475,600 light-duty vehicles on the road in Portland and South Portland and 4,500 (or 0.9%) of those were plug-in electric vehicles[1].

As presented in the *Maine Won't Wait* Climate Plan - 2022 Progress Report, there were 8,594 EVs (including Battery Electric Vehicles/BEVs and Plug in Hybrid Vehicles/PHEVs) registered in the State of Maine[2] in 2022. This represents 1% of the total registered vehicles in the state of Maine in 2022[3].

[1] https://afdc.energy.gov/evi-pro-lite
[2] https://www.maine.gov/climateplan/sites/maine.gov.climateplan/files/inline-files/MWW_Climate%20Plan%20Update%20December%202022_digital.pdf
[3] https://www.maine.gov/sos/bmv/stats/Reg%2022.pdf

Projected Roux Institute at Northeastern University EV Charging Demand

The share of EVs is expected to grow in line with national trends. By interpolating between years shown in Table 1[4], an EV share of 9% is expected at opening day in 2027. Additional EV-ready spaces will be needed to accommodate a projected increase to 15% of vehicles by 2032[5].

Table 1 National EV Projections

	2020[1]	2025[1]	2030[2]
Total EV population (millions)	1.8	7.1	na
EV share of new light duty vehicle sales	2.3%	11%	na
EV share of US light duty vehicle population	1%	3%	15%

Source: [1] Charging Up America: Assessing the Growing Need for U.S. Charging Infrastructure Through 2030 Gordon Bauer, Chih-Wei Hsu, Mike Nicholas, and Nic Lutsey, July 2021 https://theicct.org/sites/default/files/publications/charging-up-america-jul2021.pdf
[2] Building the electric-vehicle charging infrastructure America needs https://www.mckinsey.com/industries/public-sector/our-insights/building-the-electric-vehicle-charging-infrastructure-america-needs

A parking analysis was conducted to understand how many vehicles would be on campus during each part of the day in 2027 and 2032. Although people arrive and depart throughout the day, the campus population can be broadly divided into day and night users. Charging infrastructure should be sized to meet the needs of both groups, which can be considered non-overlapping. Table 2 presents the assumptions used to estimate the total number of projected EVs on campus in 2027. The parking analysis demonstrates an anticipated overlap between the daytime and evening parking demand resulting in the peak parking demand at 4PM. Based on expected population and assumptions shown in Table 2, there will be an estimated 538 vehicles parked on campus throughout the daytime period and 513 vehicles parked on campus throughout the evening period when the campus opens.

[4] https://theicct.org/sites/default/files/publications/charging-up-america-jul2021.pdf
[5] https://www.mckinsey.com/industries/public-sector/our-insights/building-the-electric-vehicle-charging-infrastructure-america-needs

Table 2 2027 Parking Demand Data

	Graduate Students	Affiliated Users	Special Events	Embedded Start ups	Staff/Faculty/ Research	Signature Partners	Total
Total	**1,899**	**35**	**150**	**60**	**225**	**55**	**2,424**
% Auto Mode Share	80%	90%	90%	90%	90%	90%	
% On Site Daily	43%	100%	100%	84%	84%	84%	
% Internal Capture Rate	0%	0%	0%	10%	10%	10%	
% Daytime Users[1]	40%	100%	33%	100%	80%	100%	
% Evening Users[2]	60%	0%	67%	0%	20%	0%	
Daytime Vehicles on Campus	261	32	45	41	122	37	538
Evening Vehicles on Campus	392	0	90	0	31	0	513

Source: The Roux Institute at Northeastern University
1 Daytime users on Campus from 8AM – 4PM
2 Evening users on Campus from 4PM – 11PM

A level 2 EV charger provides approximately 25 miles of range per hour of charging while a DC Fast charging provides approximately 100-200 miles per 30 minutes of charging[6]. Given that most students and staff/faculty live within 50 miles of the campus (currently 87% of students are within 50 miles), the Roux Institute at Northeastern University plans to place time limits on Level 2 chargers. Due to the nature of the distribution of daytime and evening classes, daytime students and staff/faculty are expected to be on campus between the hours of 8AM and 6PM and evening students and staff/faculty are expected to be on campus between the hours of 4PM and 11PM. In addition, events will take place throughout the daytime and evening periods. To be conservative, it is assumed that each EV charging space will turn over every three hours. As shown in Table 3, this would allow for each EV charging space to be used 2 times during both the daytime and evening periods each day. The Roux Institute at Northeastern University plans to install signage that indicates 3-hour charging limits with idle fees applied after this time. Table 3 demonstrates how 24 EV charging stations would meet the demands of the Roux Institute at Northeastern University based on the distribution of parking demand during the daytime and evening periods.

[6] https://afdc.energy.gov/fuels/electricity_infrastructure.html

Table 3 2027 EV Parking Demand Data

	Daytime Period	Evening Period
Time Period	8AM – 4PM[1]	4PM-11PM
# of Hours	8[1]	7
# of Hours to charge each EV	2	2
# of Charging Periods[2]	2	2
Vehicles on Campus	538	513
% EV Vehicles on Campus	9%	9%
#EVs on Campus	48	46
# of EV Charging Spaces Needed	24	23

Source: The Roux Institute at Northeastern University

[1] Assuming only 8AM – 4PM for number of hours since daytime period overlaps with the evening period to not double count 4PM-6PM. However, a portion of daytime students are still parked until 6PM.

[2] Assumes only two charging periods in each time frame in the event that turnover is not as vigorously enforced. Actual capacity will be three charging periods per time frame.

EV Parking Management and Future Monitoring

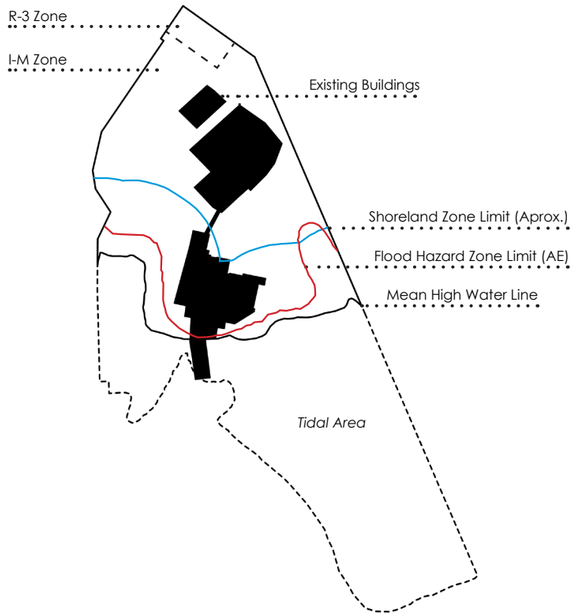
To promote turnover, time limits will be enforced and chargers will be connected to the internet so that drivers can check availability in real-time. To manage the shared use of the EV charging spaces, a reservation system will be investigated. This could allow drivers to reserve charging time in advance or allow drivers to place a brief hold on an available space (e.g., 15 minutes to walk to the garage and move their car to the charger). Other management systems could include a valet system and/or a mobile app.

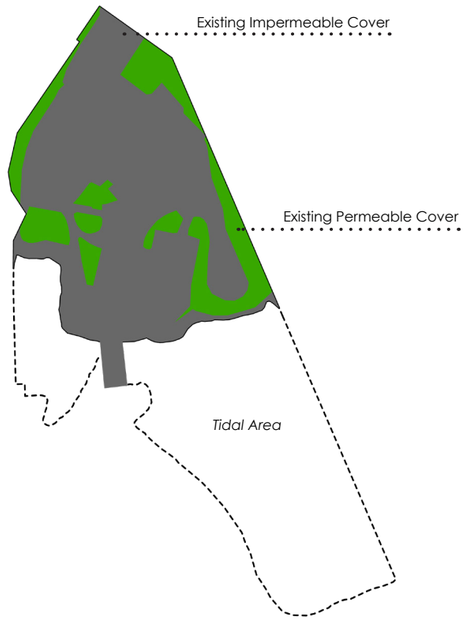
As part of the TDM monitoring and reporting process, the Roux Institute at Northeastern University plans to track charging session data to assess the existing and projected needs for EV charging on campus. The Roux Institute at Northeastern University will also collect data on EV ownership during the permit process.

At opening year, this study finds that 24 EV chargers will satisfy demand for charging on campus. Consistent with this analysis, the calculation was repeated for 2032 with higher enrollment and greater EV adoption, finding that 62 EV chargers will meet demand at that time. Therefore, the Roux Institute at Northeastern University proposes to open the garage with 24 EV chargers and have an additional 38 EV-ready.

Site Context









Under current conditions, the site is inaccessible to the public.

Zoning
The site is currently zoned B-5 Mixed-Use Business with an Institutional Overlay Zone. Parcels adjacent to the site include I-L (Low-Impact Industrial) at the Maine Yacht Center to the east and R-3 (Residential) across the railroad tracks to the north. Parcels west of I-295 are generally zoned R-5 (Residential) and B-2 (Mixed-Use Business).

Existing Buildings & Parking
City property assessment records indicate existing buildings were previously used for manufacturing and warehousing. The site has 272 striped parking spaces and additional unstriped trailer parking areas. The reported general building use and total floor area is provided in the table below.

Size of Existing Buildings (Food & Seafood Processing, Packing, and Distribution Land Use Classification)	Total Floor Area (SF)
Main Production (Bean) Building	63,255
Warehouse, Annex and Fuel Storage Building	49,897
Maintenance (Fish House) Building	16,728
Storage, Labeling and Packing Building	80,180
Finished Product Warehouse Storage Building	9,572

Relationship to Water
The parcel includes approximately 13+ acres above mean high water line (the site) as well as an adjacent 11 acres of submerged lands. The site has 1,000 linear feet of waterfront, within associated Flood Hazard and Shoreland Zones.

The City of Portland designates a shoreland zone within 250 feet of tidal water bodies. Within the shoreland zone, a minimum setback of 25 feet from the normal high-water level is required for structures, roads, and driveways.

Portions of the site are delineated as Special Flood Hazard Areas according to FEMA's Flood Insurance Rate Map (FIRM). The current and effective FIRMs for Cumberland County, based upon FEMA's 1986 publication, indicate portions of the site are within the AE Zone, representing 1% annual chance of flooding. Base flood elevations range from 9 to 11 feet.

Impervious Areas
The majority of the site is developed land, with limited areas of natural vegetation. Approximately 10 acres of land above the mean high-water line are impervious (paved areas, building roofs, etc.). The remaining 2.5 acres of permeable area include lawn and approximately half an acre of vegetated, early successional non-lawn area adjacent to the rail corridor abutting the site to the east.

Not only is the site largely covered in pavement and building structures, it is also inaccessible to the public. Fencing prevents access to the waterfront and the interior of the site. This security was necessary for industrial use. However, new development can "soften" site edges and provide improved access to the waterfront.

Geotechnical & Environmental Investigations
IDEALS conducted preliminary soil investigations of the site. The results of these investigations inform the design of structures. Beneath a surficial layer of pavement or topsoil, the test borings encountered a soil profile generally consisting of fill and uncontrolled fill, overlying glaciomarine clays or bay mud, overlying marine sands, overlying glacial till, and overlying refusal surfaces (probable bedrock).

IDEALS also conducted environmental site assessments, including review of available documentation (such as current permits, record drawings, historic photos, and maps) and site investigations involving soil and groundwater sampling, as well as survey for and sampling of building materials. The environmental site assessments indicated no evidence of oil or hazardous material releases that would require remediation. Environmental conditions including fill soil that may be encountered during earthwork or generated as excess material will be properly managed within the context of the construction project. IDEALS identified hazardous building materials including PCB-contaminated caulking and asbestos containing materials (ACM) consistent with what would reasonably be anticipated given building ages, which will be remediated during the demolition and development process.

Phasing

Before shifts in transportation and distribution networks, the site offered a competitive location for food processing and manufacturing in the 20th century. Now, the site's many compelling attributes enable the pursuit of science, education, and entrepreneurship for the 21st century and beyond. The Roux Institute Campus is envisioned as a hub for collaboration, innovation, and inspiration that contributes to the education of Roux Institute students, stimulates Maine's economy, and enriches the lives of Portlanders through the resources it offers.

While the proposed vision represents an ambitious undertaking, the entire endeavor is based on simple tenets of placemaking: provide a mix of uses, allow for creativity and entrepreneurship, and encourage recreation. This vision takes time to grow and develop. Understanding that institutional uses have phased planning horizons, this IDP considers near, medium, and long-term growth plans. The resulting phasing of the development is represented in the figure to the right.

Fortunately, the nature of the Roux Institute at Northeastern University lends itself well to phasing strategies. Corporate partnerships are a core part of the institute's educational strategy, meaning that office and laboratory partners will sit comfortably within the primary academic building during its first years, before extending outward in the longer term. As the site develops, more and more students, faculty, and employees will be drawn to live and work on site. Like any new campus, as the population of students, residents, and employees grow, so will demand for limited retail and restaurants. In addition, the expanding program needs of the campus may be supported by such uses as on site daycare, bike commuter facilities, maintenance facilities, and security offices.

The proposed vision offers a realistic framework for flexible growth. As the Roux Institute Campus evolves, and the world changes, new opportunities and needs may present themselves. Neighborhood feedback will also inform future growth. A core presence of educational, research, incubator, and partner space will provide the Roux Institute Campus with a strong start, around which additional community needs and services can thrive over time.

Anticipated Phasing (Cumulative Totals)

Building Program	Near-Term (2027–2032)	Medium-Term (2032–2037)	Long-Term (2037–2047)
Academic & Research	Students: 1900–3,100 245,000 sf.	Students: 3,100–3,800 245,000 sf.	Students: 3,800–5,100 390,000 sf.
Office/Lab Partners	Included in the LRC Building	Included in the LRC Building	200,000 sf.
Incubator & Accelerator	58,000 sf.	58,000 sf.	58,000 sf.
Residential	NA	175–425 Units 150,000–350,000 sf.	525–650 Units 450,000–550,000 sf.
Hotel	NA	90,000 sf.	90,000 sf.
Retail (e.g. Daycare, Café/Restaurant, Market, Kayak, etc.)	7,500 sf.	15,000 sf.	25,000 sf.
Totals	**310,500 sf.**	**558,000–758,000 sf.**	**1.213–1.313 million sf.**

**values are gross square footages*

Near-Term Illustrative Site Plan



At the completion of each phase, the Roux Institute Campus will be a model of comprehensive design. At least three acres of permanent, significant public space will be established early in the development of the campus to ensure public benefit. Interim features such as surface parking lots or construction staging areas will be designed to not detract from the pedestrian experience through planting, lighting, wayfinding, graphics, artwork, or fencing. Other interim areas of the site will be appropriately landscaped or accommodate gathering on lawns and hardscape spaces. Interim features such as parking lots may also be programmed with markets, festivals, or cultural events. Lighting and layout of these spaces will be considered to facilitate flexibility so that they can accommodate a variety of campus events.

Development Plan

Near-Term



Mid-Term



Long-Term



- Pedestrian
- Bike/Pedestrian
- Water Taxi
- Potential Shared Use Path Connection
- Vehicular
- Primary Entrance
- Possible Off-Ramp

Development Plans are conceptual and intended to illustrate how design guidelines and principals could potentially be implemented at this site.

Design Guidelines

Waterfront
- The waterfront will be publicly accessible to provide a variety of open spaces throughout all phases of development that foster social interaction.
- New principal buildings on the waterfront shall include a publicly accessible entrance to interior public space (if provided) from the waterfront side and upland side of the building along an anticipated desire line. Said interior public space, (if provided), may be closed to the public during special events, outside normal operation hours, and when necessary for security or public safety purposes.

Cohesive campus
- The overall composition and experience of the campus will be considered for cohesive identity from approaches along I-295 and views from the East Deering neighborhood.

Historic preservation
- Buildings, site development, circulation, and open space will respect the B&M Cannery Building, a designated historic landmark.

Connectivity
- Prioritize the bicycle and pedestrian circulation network on campus while providing connectivity for auto, public transit, service, and emergency vehicles at each development phase.
- Surface parking lots shall be located to the maximum extent practicable toward the rear or side of a building not occupied by a principal entry to a building facing a street, public right-of-way, major pedestrian access routes, open spaces, and/or the waterfront.

Open space
- Open space will be publicly accessible to provide multiple functions for recreation, social gathering and buffers that integrate within the overall composition and experience of the campus at each development phase.

Sustainable practice
- Buildings and site development will incorporate sustainable technologies in building design, orientation, energy production and sensitivity to natural resources at each development phase.

Resilience
- Buildings and site development will incorporate resilience strategies to account for flooding, severe weather events and integration of publicly accessible spaces at each development phase.

Building design
- Building facade materials will be of high quality, durable to the marine climate and contribute to an attractive public realm. The first 35 feet of building height shall complement the pedestrian character in materiality, transparency, and detailing.
- Rooftop appurtenances will be incorporated, screened, and set back from roof edges to reduce visual impact from the surrounding neighborhood.

Building entrances
- Building entrances will include prominent facades and be oriented toward, located adjacent to, or accessible from rights-of-way, major pedestrian access routes, or open spaces.

Mitigation of impacts
- Buildings and site development will endeavor to minimize potential negative impacts related to shadows, wind, noise, heat, glare, lighting, contaminants, and the environment.

Visualizing the Guidelines: Potential Long-Term Layout & Circulation



Benjamin Dudley <bfdiii@maine.rr.com>
to planningboard@portlandmaine.gov

May 29, 2024, 4:50:12 PM (6 days ago)

Chair Mazer and Members of the Portland Planning Board:

Let me first thank you for the time and consideration you have given the zone change and site plan application for a permanent campus for the Roux Institute at Northeastern University.

During six of my eight years in the Maine Legislature (1998 to 2004), I was privileged to represent the neighborhood in question. At that time, the prospect of a center for academic and entrepreneurial excellence, anchored by one of New England's finest universities on a waterfront site offering public access and amenities, was beyond imagining. Now, at your next meeting, your approval of the site plan permit will put the Roux Institute at Northeastern University on track to building a signature campus so it can fulfill this inspiring potential. Entrepreneurs and academics, tech experts and scientists will work side by side with graduate students and professionals on innovations that benefit us all. As the host city, Portland will gain exciting new economic activity, creating opportunities for workers at all levels. This is sustainable development at its finest.

I've also been heartened to see the level of community engagement and the responsiveness to neighborhood concerns. I believe we will all benefit from the roadway (and pathway!) improvements for which this project has been a catalyst. And what better place from which to promote multi-modal transportation than a university campus?

Through Portland's comprehensive planning and visioning processes over many years, we have been readying ourselves for this kind of opportunity, and now it's on our doorstep and I urge you to unanimously approve this application on June 11.

Thank you,

Benjamin Dudley
9 Ponce Street

Elyse Doyle <e.doyle@energydome.com>
to planningboard@portlandmaine.gov

May 31, 2024, 3:41:34 PM (4 days ago)

Dear Planning Board Members,

My name is Elyse Doyle. I am a young professional living in Portland, Maine and I am writing to express my support for the Roux Institute's proposed plan to build a campus in Portland at the former B&M property.

I am a Maine native, born in Gray and a proud alumna from the University of Maine (Orono) where I received my bachelor's and master's degrees in economics. I've worked with the Maine Economic Development Foundation and had internships supporting Maine's wind power development. I am now a senior project manager for a long-duration energy technology company, Energy Dome.

Giving back to Maine and supporting its educational, technological and economic development have always been important to me. This is why I began teaching graduate-level project management courses part time at the Roux Institute's current campus, located in the WEX building. Within just a year, I have seen MANY incredible students, staff and professionals undertaking important research and applying the best practices learned in class to improve their careers. It is an honor to teach Maine people and see the tangible value it creates for Maine. The applied programs offered through the Roux Institute are changing the lives of Mainers across the entire state. The Roux Institute is the only Northeastern campus that offers "hybrid" courses (in-person and online) so individuals in rural areas of Maine can also take advantage of this excellent opportunity to change their careers and lives.

I have attended local public hearing meetings and read the project's Institutional Development Plan. The developers of this project are aware of the community's concerns including traffic, campus size and overall congestion. For example, the plan notes that based on the site location, the project can build taller buildings with a smaller footprint, enabling public open spaces and waterfront access for the community to enjoy. They are also working with the Portland METRO bus system to offer public transportation access to the new site. It is evident they are pursuing this project with the input of the community. I have seen first had the positive impact this Institute has for Maine; it will be one of the greatest projects this state has seen in a while.

Thank you,

Elyse Doyle

Sarah Maloney <sarahmaloney01@gmail.com> Jun 3, 2024, 11:29:35 AM (yesterday)
to planningboard@portlandmaine.gov

Chairman Mazer and members of the Planning Board –

I am a Portland resident and parent of a Roux Institute student. Let me share my reasons for supporting this new development.

Portland's sustainable economic future relies on more than what tourism and hospitality can offer. As local manufacturing continues to decrease across the state and in southern Maine, Roux Institute offers an opportunity for the Portland community with local entrepreneurs, aspiring students and companies from Maine and elsewhere to invest in our local economy. Just as examples, both my son and my partner's son left Maine to live out west, trying to figure out their futures. Both were lured back to Portland to attend the Roux Institute; my partner's son graduates next week and is gainfully employed as a computer software engineer with a Maine company, and my son, in his first year of data analytics, is interning with a Roux partner company opening an office here in Portland. These are only two examples of enriching and educating young people's lives and providing real incentives to stay here for the excellent employment opportunities.

All of this requires a permanent campus, and that is where you come in. The drawings for the new campus show it to be a vibrant addition to Portland’s waterfront, combining the new with the old in a way that honors tradition but sets its sights on the future. Not only will the campus provide a rich community experience for its students, the footprint of the new Roux Institute will bring a beautiful, sustainable and usable piece of property to the Portland waterfront. When I think of what might otherwise have occupied that site, I am so grateful for what we can now look forward to, including all the public access. Thank you for the work you have put in and however you have helped shape this project. I believe it’s more than worthy of your support, and hope you grant it so work can commence on bringing this vision fully to life.

With appreciation,

Sarah Maloney, LCSW

Christina Consigli <consiglic@gmail.com> Jun 4, 2024, 6:30:55 PM (16 hours ago)

to planningboard@portlandmaine.gov, Ben Clifford

Dear Planning Board,

We are writing to express our support for the Roux Institute Project at 1 Beanpot Circle. Although we have only been in Portland for 4 years, we are lucky to call this city our home and plan to live in the East End neighborhood for many years to come. We are excited to see the upcoming development throughout the city and are in full support of the new Roux Institute campus. This expansion will bring new opportunities to the people of Maine and create avenues for new careers that don't currently exist. We have a young family and are hopeful that our kids will have the ability to participate in STEM learning opportunities locally.

Although change can be difficult, and doesn't come without challenges – such as traffic – we think it is well worth the positive impacts the Roux Institute expansion will bring to Portland. It is clear a lot of thought and care has been put into the planning process and that Northeastern has a wealth of experience with this type of development. A graduate school campus is an excellent fit for the neighborhood and better than an alternative development or a vacant industrial building.

We appreciate your time and effort during this process and supporting public comment!

Christina Consigli & Benjamin Clifford

Christina

Todd Zukowski <tzukowski@hotmail.com> 11:42 AM (3 hours ago)

to planningboard@portlandmaine.gov

Board Members,

As the project at the former B&M Bean Factory nears its development phase, I have a few thoughts on the traffic flow through the area. I should start by saying that when I heard the Roux Institute was going to relocate to this site, I was quite please. Upon learning of the scope of the project- it appears that there is a lot more that will be going on this site than the Roux Institute, I became a bit concerned over the potential for increased traffic and congestion. As I am sure you are aware, the Veranda Street, Sherwood Street and Washington Avenue area is already difficult to navigate, especially during the morning and evening hours.

About two years ago, the Washington Avenue / Bates Street intersection was re-engineered. There used to be room for three lanes at the end of Bates Street- One land to turn left onto Washington Avenue, one to go straight onto Veranda Street and one to turn right onto Washington Avenue. This allowed to traffic heading from Veranda Street to 295 S to be able to advance much easier. Now that there are only two lanes (the sidewalk on the corner of Bates and Washington Ave was greatly increased) traffic headed from Veranda to 295 S often cannot advance during one light cycle during peak traffic hours. The same can be said for the other end of Veranda Street at the new light. If there were right turn only lanes at these two lights traffic flow was be improved.

Also has there been any consideration to make Sherwood Street from Veranda to Presumpscot Street a one-way street? This street is very narrow, and cars cannot pass easily- especially in the Winter. I think a one-way from Veranda to Presumpscot may alleviate traffic on Veranda Street. Many people use Sherwood as a short cut to avoid the Presumpscot Washington Avenue intersection. Just a thought.

Todd Zukowski

Richard Anderson <RANDERSON19@maine.rr.com> Jun 5, 2024, 4:38:37 PM (16 hours ago)

to planningboard@portlandmaine.gov

To Brandon Mazer, Chair, and members of the Planning Board:

My name is Richard Anderson. I reside at 75 State Street, and prior to that I lived in the Kensington Street neighborhood. I may be one of the few people left who remember the old disposal chute coming out of one of the upper windows of the B&M building going straight into Casco Bay. We've come a long way since then. Back Coe is no longer a cesspool, the waters of Cassco Bay are clean and the public has reclaimed the waterfront.

I'm very pleased the waterfront at the Roux Institute will have public access. I've worked to expand public access my entire career, as Executive Director of Maine Audubon, Commissioner of the Department of Conservation and co-author of the Land for Maine's Future legislation. Public access is most valuable when it is near where people live. That's why Portland's network of trails is so important, and this new campus will expand and connect to those trails.

When I first lived in Portland almost 60 years ago, we didn't have much traffic, but we also didn't have much economic prosperity.

It feels like time to approve this new campus for the Roux Institute and let workers get busy building it. I want to see this old site brought into the 21st century and positioned for the 22nd century. What an opportunity for Portland. I hope you will give it your enthusiastic approval.

Thank you for considering my input.

Richard B. Anderson
75 State Street

THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
PHASE 1
PORTLAND, MAINE

LAND-USE PERMIT SET

OCTOBER 27, 2023

NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

DRAWING INDEX	
SHEET TITLE	SHEET DESCRIPTION
G-000	COVER
G-001	GENERAL NOTES, LEGEND & ABBREVIATIONS
C-001	DEMOLITION PLAN – 1
C-002	DEMOLITION PLAN – 2
C-101	SITE LAYOUT PLAN – 1
C-102	SITE LAYOUT PLAN – 2
C-201	SITE UTILITY PLAN – 1
C-202	SITE UTILITY PLAN – 2
C-301	GRADING & DRAINAGE PLAN – 1
C-302	GRADING & DRAINAGE PLAN – 2
C-303	PLAN INSETS
C-304	LAYOUT, STRUCTURE & PIPE TABLES
D-401	CIVIL DETAILS – 1
D-402	CIVIL DETAILS – 2
D-403	CIVIL DETAILS – 3
D-404	CIVIL DETAILS – 4
D-405	CIVIL DETAILS – 5
D-406	CIVIL DETAILS – 6
D-407	CIVIL DETAILS – 7
E-001	ELECTRICAL LEGEND
E-010	ONE LINE DIAGRAMS
E-101	ELECTRICAL SITE PLAN
E-200	ELECTRICAL DETAILS



SITE LOCATION MAP

SOURCE: USGS TOPO QUADRANGLE

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	AS NOTED

Drawing Title
COVER

G-000

CIVIL GENERAL NOTES

1. SITE AND TOPOGRAPHIC DATA PROVIDED BY ON THE GROUND SURVEY PERFORMED BY VHB, 500 SOUTHBOROUGH DRIVE, SUITE 105B, SOUTH PORTLAND, MAINE 04106 (207).889.3150. PLAN ENTITLED "EXISTING CONDITIONS SURVEY, RECORD OWNER: THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFT SCIENCE, 1 BEAN POT CIRCLE, CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE" DATED: 9/15/2023
2. VERTICAL DATUM IS REFERENCED TO CITY DATUM WITH ONE FOOT CONTOUR INTERVALS. CITY DATUM IS +0.02 FT NGVD 1929. HORIZONTAL DATUM IS REFERENCED TO STATE PLANE NAD 1983 (FEET), MAINE WEST ZONE.
3. 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.
4. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
5. 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.
6. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN ADVANCE IN WRITING BY CITY AND/OR LAND OWNER.
7. 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, PORTLAND WATER DISTRICT 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.
8. 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.
9. LAND OUTSIDE THE PROPOSED LIMIT OF WORK SHALL NOT BE DISTURBED BY THE CONTRACTOR. ANY LAND OUTSIDE LIMIT OF WORK DISTURBED BY CONTRACTOR SHALL BE RESTORED BY CONTRACTOR AT NO EXPENSE TO OWNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.
12. 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.
13. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
14. 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.
15. WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE CITY OF PORTLAND AND STATE REQUIREMENTS.
16. ALL CURB DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND SPECIFICATIONS. COST IS INCIDENTAL TO CONTRACT.
17. ALL FULL DEPTH PAVEMENT REPLACEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS.
18. 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 PLAN 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.
19. 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.
20. ALL WORK IN THE PUBLIC R.O.W. SHALL BE COMPLETED IN ACCORDANCE WITH THE CITY'S TECHNICAL MANUAL ARTICLES VI, VII, AND IX OF CHAPTER 25–STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES OF THE CITY OF PORTLAND CODE OF ORDINANCES.
21. 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.
22. ALL WATER DISTRIBUTION CONSTRUCTION IN THE PUBLIC WAY SHALL BE COMPLETED IN ACCORDANCE WITH PORTLAND WATER DISTRICT STANDARDS.
23. 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.
24. IF IMPORTED FILL MATERIAL IS REQUIRED, IT SHALL BE CERTIFIED IN WRITING BY CONTRACTOR 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.
25. 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.
26. ALL MATERIAL SHALL BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.
27. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION.
28. 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.
29. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
30. 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. 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. A DRAFT OF THE NOTICE WILL BE PROVIDED TO THE OWNER AND THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO SUBMISSION.
31. THE UTILITY LOCATIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION BY THE CONTRACTOR. CONTACT THE ENGINEER AND OWNER IMMEDIATELY UPON DISCOVERING ANY CONFLICTS WITH EXISTING AND PROPOSED UTILITY LOCATIONS. NOT ALL EXISTING UTILITIES ARE SHOWN ON PLANS.
32. CONTRACTOR SHALL CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
33. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
34. CONTRACTOR SHALL SEQUENCE THE WORK SO AS TO MAINTAIN UTILITY SERVICES FOR EXISTING OPERATIONS ON AND ADJACENT TO THE SITE. CONTRACTOR SHALL PROVIDE A PLAN FOR TEMPORARY UTILITY SERVICES OR AS REQUIRED. THE PLAN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO OWNER. ENGINEER AND UTILITY FOR ACCEPTANCE A MINIMUM OF 14 DAYS PRIOR TO START OF UTILITY WORK.
35. EXISTING FACILITIES (I.E. SIGNS, POLES, LIGHT POSTS, ETC.) SHALL BE REMOVED AND PROTECTED DURING CONSTRUCTION. OWNER RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF CITY AT CONTRACTOR'S EXPENSE.
36. A COMPLETE SET OF "RECORD" DRAWINGS THAT REFLECT ANY AND ALL MODIFICATIONS TO THE SANITARY SEWER SYSTEM, WATER DISTRIBUTION SYSTEM, STORM SEWER SYSTEM AND ANY OTHER UTILITY INSTALLATIONS OR ALTERATIONS WITHIN THE PROJECT LIMITS SHALL BE SUBMITTED TO THE CITY OF PORTLAND. THESE DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL (ACAD) AND HARD COPY FORMAT AS DEFINED IN THE SPECIFICATIONS PRIOR TO PAYMENT OF FINAL RETAINAGE.
37. ALL UTILITY SERVICES AND MAINS ARE APPROXIMATE AS SHOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING SERVICES AND MAINS AND RELOCATE AS REQUIRED TO COMPLETE WORK. CONTRACTOR SHALL COORDINATE WORK WITH THE CITY OF PORTLAND, PORTLAND WATER DISTRICT, UNITIL, CMP, AND ANY OTHER UTILITY OWNERS AND PROPERTY OWNERS.
38. WORK IS PROPOSED IN CLOSE PROXIMITY TO EXISTING UTILITIES. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
39. CAPPED PIPE STUB LOCATIONS SHALL BE MARKED WITH EMBEDDED STAKE AND A MINIMUM OF THREE TIES SHALL BE RECORDED. EMBEDDED STAKE SHALL BE 2X4 WITH PK NAIL DRIVEN IN TOP, LENGTH AS REQUIRED TO SPAN FROM TOP OF PIPE TO 6" BELOW GRADE. LOCATION AND ELEVATION OF PIPE STUB SHALL BE PROVIDED. WARNING TAPE AND WIRE SHALL BE INSTALLED OVER PIPE STUBS IN ACCORDANCE WITH SPECIFICATIONS.
40. ALL SIGNAGE SHALL CONFORM WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
41. ACTIVITIES THAT HAVE THE POTENTIAL TO DISTURB SOIL SUCH AS UTILITY AND SUBSURFACE STRUCTURE INSTALLATION/RELOCATION WORK, FOUNDATION INSTALLATION, GRADING, PAVING, AND LANDSCAPING SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SOIL MANAGEMENT PLAN. APPLICABLE SOIL MANAGEMENT PROCEDURES INCLUDE SITE CONTROLS AND CONSTRUCTION MEASURES TO REDUCE EXPOSURE TO SOIL DURING CONSTRUCTION, AS WELL AS TO FACILITATE THE PROPER HANDLING, STORAGE, CHARACTERIZATION, TRANSPORT, ONSITE REUSE, AND/OR OFFSITE REUSE, OR DISPOSAL, OF EXCESS SOIL THAT MAY BE GENERATED DURING CONSTRUCTION.
42. ALL NEW BURIED WATER PIPE SHALL HAVE A MINIMUM 5 FEET COVER UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER. BURIED PIPE WITH LESS THAN 4 FEET OF COVER SHALL HAVE A MINIMUM OF 4 INCHES OF RIGID INSULATION WITH AN R-VALUE OF R-20 INSTALL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
43. WHERE NEW WATER MAINS OF APPURTENANCES ARE TO BE CONNECTED TO EXISTING PIPE, CONTRACTOR SHALL CUT AND REMOVE THE EXISTING PIPE AS NECESSARY TO INSTALL THE NEW WORK. TEST PIT LOCATIONS WHERE NEW MAINS CONNECT TO EXISTING MAINS TO VERIFY PIPE DIAMETER AND MATERIAL TYPE.
44. SOLID SLEEVES ARE SHOWN ON THE DRAWINGS FOR ALL CONNECTIONS TO EXISTING WATER MAIN. IF OUTER DIAMETER OF EXISTING WATER MAIN IS FOUND TO BE GREATER THAN THE MAXIMUM OUTER DIAMETER COMPATIBLE WITH SOLID SLEEVES, CONTRACTOR SHALL INSTALL A COUPLING TO COMPLETE CONNECTION WITH EXISTING WATER MAIN.
45. BACKFLOW PREVENTERS SHALL BE PROVIDED AT ALL BUILDING SANITARY SEWER SERVICE OUTLETS.

CIVIL LEGEND

EXISTING		PROPOSED
	CONTOUR (1' INTERVAL)	
	CONTOUR (INDEX)	
S	SANITARY SEWER	S
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
W	WATER LINE	W
E	UNDERGROUND ELECTRIC	
	UNDERGROUND TELECOMMUNICATIONS	
G	GAS LINE	
OE	OVERHEAD ELECTRIC	OE
	PROPERTY LINE	
	EDGE OF VEGETATION	
X X	FENCE	
	RETAINING WALL	
	GRANITE CURB	
	FLUSH CURB	
	SLOPE GRANITE CURB	
	TIPDOWN	
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL	
T T T T T	GUARDRAIL	
	RAILROAD TRACKS	
	ROOF OVERHANG	
	SEDIMENT BARRIER	
LW	LIMIT OF WORK	LW
	SIDEWALK	
	BITUMINOUS PAVEMENT	
	CONCRETE	
	BUILDING FOOTPRINT	

CIVIL LEGEND

EXISTING		PROPOSED
S	SANITARY SEWER MANHOLE	S
CO	CLEAN OUT	CO
D	DRAINAGE MANHOLE	D
	CATCH BASIN	
	AREA DRAIN	
E	ELECTRICAL MANHOLE	E
T	TELECOMMUNICATIONS MANHOLE	T
TELE BOX	TELEPHONE STAND BOX	
GM	GAS METER BOX	
	GAS VENT	
	GAS GATE	
	TRANSFORMER	
	UTILITY POLE	
	UTILITY POLE WITH GUY	
	LIGHTPOST	
	WATER GATE VALVE	
	CURB STOP	
	REDUCER	
	SOLID SLEEVE	
	WATER SHUT OFF VALVE	
	HYDRANT	
W	WATER METER BOX	W
	PROPERTY MONUMENT	
MB	MAIL BOX	
	STREET AND MISCELLANEOUS SIGNS	
FP	FLAGPOLE	
XXX.XX	SPOT ELEVATION	XXX.XX
	TREE/SHRUB	
	BOLLARD	
	SECURITY CAMERA	CAM
	BLUE LIGHT INTERCOM	TEL

CIVIL 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		

SHEETS C-001, C-101, C-201, C-301



SHEETS C-002, C-102, C-202, C-302

OVERALL & INDEX SITE PLAN
SCALE: 1"=80'

BAR SCALE
1" = 80'
CHECK GRAPHIC SCALE BEFORE USING

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Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

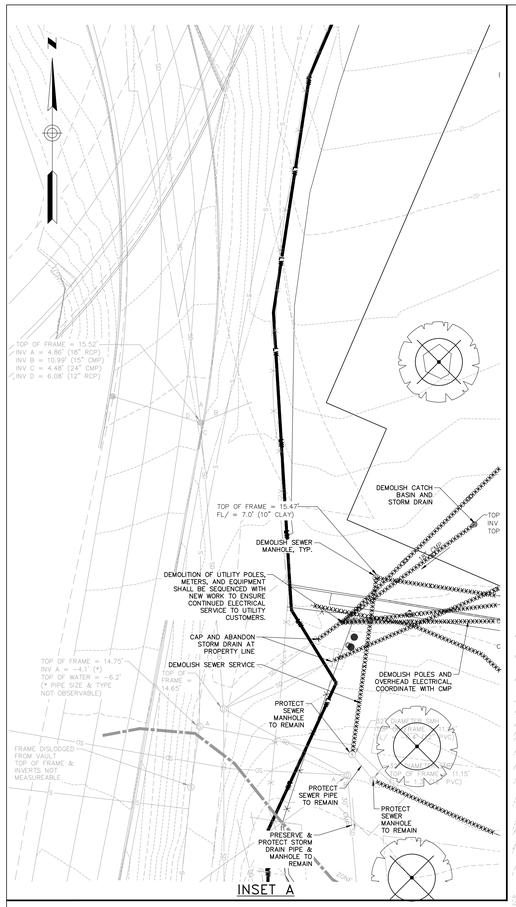
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=80'

Drawing Title
GENERAL NOTES, LEGEND & ABBREVIATIONS

LAND-USE PERMIT SET

G-001



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. FOR ANY UTILITY PIPES OF STRUCTURES FOUND THAT ARE NOT ON THE EXISTING PLAN OR ARE IN LOCATIONS THAT VARY FROM WHAT IS SHOWN, CONTRACTOR SHALL PROVIDE RECORD LOCATIONS.
6. LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS ARE APPROXIMATE, AND NOT ALL UTILITY PIPING IS SHOWN. CONTRACTOR SHALL WORK WITH OWNER AND ENGINEER PRIOR TO STARTING ANY EXCAVATION TO DEVELOP AN INVESTIGATION PLAN TO DETERMINE LOCATIONS OF EXISTING FUEL LINES, DOMESTIC AND FIRE WATER LINES, ELECTRICAL DUCT BANKS, SITE SEWER LINES, AND THE PORTLAND WATER DISTRICT SANITARY SEWER FORCEMAIN IN THE VICINITY OF THE WORK AREA.
7. 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.
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.
10. ALL SITE FEATURES OUTSIDE LIMIT OF WORK AND NOT DESIGNATED FOR DEMOLITION SHALL BE PROTECTED.
11. WORK SHALL REMAIN WITHIN THE DEFINED LIMITS OF WORK. DEMOLITION WORK WILL NOT IMPACT PRIOR PHASES OF WORK ON THE SITE UNLESS OTHERWISE NOTED ON THESE PLANS.
12. CONTRACTOR SHALL REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES DAMAGED DURING DEMOLITION WORK. THE CONTRACTOR SHALL PROCEED WITH CAUTION WITHIN THE PROPOSED WORK AREA TO PREVENT ANY INTERRUPTION TO EXISTING UTILITY SERVICE UNLESS OTHERWISE COORDINATED WITH THE OWNER.
13. CONTRACTOR SHALL REMOVE AND REUSE EXISTING FENCING ON THE SITE AS IS POSSIBLE. PRIOR TO START OF WORK, CONTRACTOR SHALL REVIEW ALL FENCING WITH OWNER AND ENGINEER TO CONFIRM DEMOLITION OR REUSE. SEE EXHIBIT INCLUDED IN THE SPECIFICATIONS FOR FURTHER INFORMATION ON THE EXISTING FENCING.
14. FOR ALL ELECTRICAL DEMOLITION IDENTIFIED ON THESE PLANS, THE CONTRACTOR SHALL ALSO REVIEW WITH THE PROJECT ELECTRICAL DRAWINGS, AND COORDINATE WITH CENTRAL MAINE POWER AS REQUIRED.
15. TREES WITHIN THE LIMITS OF WORK THAT ARE NOT DESIGNATED AS BEING PROTECTED SHALL BE DEMOLISHED. CONTRACTOR SHALL COMPLY WITH SECTION 4.3 AND CHAPTER 4 FIGURE IV OF THE CITY OF PORTLAND TECHNICAL MANUAL FOR LANDSCAPE PRESERVATION.
16. ALL PERIMETER AND SECURITY FENCING ON THE PROJECT PARCEL SHALL BE DEMOLISHED UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL VERIFY PROPERTY LIMITS PRIOR TO FENCE DEMOLITION.
17. DEMOLITION OF UTILITY POLES, METERS, AND EQUIPMENT SHALL BE SEQUENCED WITH NEW WORK TO ENSURE CONTINUED ELECTRICAL SERVICE TO UTILITY CUSTOMERS.
18. DEMOLISH ALL PAVEMENT, CURB, SIDEWALK AND GUARDRAIL WITHIN THE LIMIT OF WORK UNLESS OTHERWISE INDICATED.

SHEET LEGEND

- XXXXXXXXXXXXXXXXX · UTILITY LINE DEMOLITION
- CATCH BASIN INLET PROTECTION
- SEDIMENT BARRIER
- STRUCTURE DEMOLITION
- TREE DEMOLITION

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Architects and Planners
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Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

Drawing Title
DEMOLITION PLAN - 1

C-001

MATCHLINE SEE SHEET C-001

MATCHLINE SEE SHEET C-001

DEMOLITION OF OVERHEAD SERVICE WITH TRANSFORMERS SHALL BE SEQUENCED WITH NEW WORK TO ENSURE CONTINUED SERVICE TO CUSTOMERS

DEMOLISH HYDRANT

LIMITS OF PREVIOUSLY DEMOLISHED BUILDING; REMNANT FOUNDATION MAY REMAIN

SALVAGE RAILS

DEMOLISH HYDRANT

DEMOLISH CONCRETE PAD

TOP OF FRAME = 17.82' COVER NOT REMOVABLE AT TIME OF SURVEY

APPROXIMATE LOCATION OF ELECTRICAL POLE TO BE DEMOLISHED

TOP OF FRAME = 14.93'
TOP OF PIPE = 11.3' (6" CAST?)
TOP OF SILT = 10.9'±
OTHER FEATURES NOT VISIBLE

TOP OF FRAME = 15.00' COVER NOT REMOVABLE AT TIME OF SURVEY

DEMOLISH HYDRANT

DEMOLISH WATER SERVICE

APPROXIMATE LOCATION OF UTILITY METER TO BE DEMOLISHED

DEMOLISH FLAG POLE & ASSOCIATED LIGHT FIXTURES & CONDUIT

APPROXIMATE LOCATION OF ELECTRICAL POLE TO BE DEMOLISHED

TOP OF FULL OF WATER FEATURES NOT VISIBLE

DEMOLISH SIGN

APPROXIMATE LOCATION OF OVERHEAD TELECOM UTILITIES TO BE DEMOLISHED

DEMOLISH GAS SERVICE

DEMOLISH HYDRANT

DEMOLISH TREE, TYP.

DEMOLISH CONCRETE PAD

MATCHLINE SEE INSET A

DEMOLISH CONCRETE WALL

TOP OF FRAME = 11.21' FL/ = 2.5' (12" PVC)

DEMOLISH TREE, TYP.

DEMOLISH STAIR

DEMOLISH STACK FOUNDATION

FORMER BRICK STACK

DEMOLISH RETAINING WALL

PRESERVE & PROTECT BUILDING TO REMAIN

DEMOLISH CONCRETE PAD

DEMOLISH CHAINLINK FENCE

10" PVC
INV = 0.8'
CONNECTION COULD NOT BE DETERMINED AT THE TIME OF SURVEY

12" PVC
INV = 1.5'

TOP OF FRAME = 8.84'
INV A = 3.3' (12" PVC)
INV B = 5.0' (12" PVC)
INV C = 2.8 (12" PVC)

TOP OF FRAME = 9.3'
INV A = 4.4' (12" PVC)
INV B = 4.8' (6" PVC)
INV C = 4.7 (6" PVC)
INV D = 4.8' (6" PVC)

TOP OF FRAME = 8.7'
FL/ = 3.2' (12" PVC)

TOP OF FRAME = 9.30'
FL/ = 5.7' (6" PVC)

DEMOLISH TRANSFORMER

LIMITS OF PREVIOUSLY DEMOLISHED BUILDING; REMNANT FOUNDATION MAY REMAIN

TOP OF FRAME = 9.55'
INV A = 6.4' (6" PVC)
INV B = 6.4' (6" PVC)
SUMP = 3.4'

TOP OF FRAME = 9.12'
INV = 5.7'
(12" PVC)

TOP OF FRAME = 9.63'
INV A = 4.1' (10" PVC)
INV B = 4.1' (10" PVC)
INV C = 3.8' (12" PVC)

TOP OF FRAME = 10.34' INACCESSIBLE AT TIME OF SURVEY

PERIMETER BARRIER, TYP.

APPROXIMATE FLOOD ZONE LINE BY ELEVATION (EL. 9)

APPROXIMATE FEMA FLOOD ZONE LINE

TOP OF FRAME = 8.25'
INV A = 3.2' (8" PVC)
INV B = 3.4' (12" PVC)
INV C = 3.0 (8" PVC)

DEMOLISH BUILDING FOUNDATION

CONCRETE WHARF

MATCHLINE SEE INSET B

INSET B

DEMOLISH BUILDING FOUNDATION

CONCRETE WHARF

DEMOLISH BUILDING & PIER

NOTES:
1. REFER TO SHEET C-001 FOR GENERAL DEMOLITION NOTES AND DEMOLITION LEGEND.

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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STATE OF MAINE
AMY N. LEBEL
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LICENSED
PROFESSIONAL ENGINEER

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Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

Drawing Title

DEMOLITION PLAN - 2

C-002

NOTES:
1. SEE LANDSCAPE PLANS FOR SITE SURFACE MATERIAL ASSOCIATED WITH LANDSCAPED AREAS, PATIOS, AND NON-BITUMINOUS WALKWAYS & ROADWAYS, PLANTING PLANS AND SITE FURNISHINGS.
2. UTILITY AND DRAINAGE STRUCTURES NOT SHOWN FOR CLARITY, SEE GRADING AND DRAINAGE AND UTILITY PLAN FOR MORE INFORMATION.
3. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN
CONCRETE SIDEWALK, TYP.
PEDESTRIAN RAMP, TYP.
BIKE LANE STRIPING PER CITY OF PORTLAND TECHNICAL MANUAL
DOUBLE YELLOW CENTERLINE STRIPE, TYP.
FLUSH GRANITE CURB, TYP.
CROSSWALK, TYP.
VERTICAL GRANITE CURB, TYP.
PWD SEWER EASEMENT
STOP SIGN, TYP.
STOP BAR, TYP.
LIMIT OF WORK
PROPERTY BOUNDARY, TYP.
4" LOAM & SEED, TYP.
SIDEWALK RAMP DETECTABLE WARNING, TYP.
STOP SIGN, TYP.
STOP BAR, TYP.
CONCRETE PAD, TYP.
CONCRETE SIDEWALK, TYP.
PWD SEWER EASEMENT
BITUMINOUS PAVEMENT, TYP.
TIPDOWN, TYP.
FLUSH GRANITE CURB, TYP.
STOP BAR, TYP.
STOP SIGN, TYP.
VEHICULAR PRECAST CONCRETE PAVERS, TYP. SEE LANDSCAPE PLANS
TREE, TYP. SEE LANDSCAPE PLANS
DO NOT ENTER SIGN, TYP.
5'X8' STANDARD PAD-MOUNTED BUS SHELTER (2) MIN 2'-8" OPENING FOR EACH
ONE WAY AND ROUNDABOUT SIGN, TYP.
TIMBER GUARDRAIL, TYP. SEE LANDSCAPE PLANS
4" LOAM & SEED, TYP.
ARCHITECTURAL CONCRETE RETAINING WALL, SEE STRUCTURAL PLANS
VEHICULAR ASPHALT PAVING, TYP. SEE LANDSCAPE PLANS
ACCESSIBLE PARKING SPACE, TYP.
ONE WAY SIGN, TYP.
4" LOAM & SEED, TYP.
CURB STOP, TYP.
ACCESSIBLE PARKING SPACE SIGN (MUTCD R7-8), TYP. AT MARKED ACCESSIBLE SPACES
MOUNTABLE GRANITE CURB, TYP.
BIKE RACK, TYP. SEE LANDSCAPE PLANS
PARKING GARAGE
MATCHLINE SEE INSET A, SHT. C-303
MATCHLINE SEE SHEET C-102
MATCHLINE SEE SHEET C-102
PARK
PARK
WALK
WALK

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

Drawing Title
SITE LAYOUT PLAN - 1

C-101

MATCHLINE SEE SHEET C-101

MATCHLINE SEE SHEET C-101

PARKING GARAGE

DAY CARE CENTER

DO NOT ENTER SIGN, TYP.

ONE WAY AND ROUNDABOUT SIGN, TYP.

ONE WAY SIGN, TYP.

PEDESTRIAN RAMP, TYP.

CROSSWALK, TYP.

AUTHORIZED VEHICLES ONLY SIGN, TYP.

ACCESSIBLE PARKING SPACE, TYP.

SIDEWALK RAMP DETECTABLE WARNING, TYP.

VEHICULAR GATE WITH KNOX LOCKBOX, TYP.

CURB STOP, TYP.

ACCESSIBLE PARKING SPACE SIGN (MUTCD R7-8), TYP. AT MARKED ACCESSIBLE SPACES

FLUSH GRANITE CURB, TYP.

PEDESTRIAN GATE, TYP.

FENCE, TYP.

PWD SEWER EASEMENT

VERTICAL GRANITE CURB, TYP.

BITUMINOUS PAVEMENT, TYP.

CONCRETE SIDEWALK, TYP.

TIPDOWN, TYP.

BENCH, TYP. SEE LANDSCAPE PLANS

TREE, TYP. SEE LANDSCAPE PLANS

BIKE RACK, TYP. SEE LANDSCAPE PLANS

STAIR, TYP. SEE LANDSCAPE PLANS

VEHICULAR GRANITE PAVERS, TYP. SEE LANDSCAPE PLANS

BOLLARD, TYP. SEE LANDSCAPE PLANS

GRANITE COBBLESTONE PAVERS, TYP. SEE LANDSCAPE PLANS

VEHICULAR CONCRETE PAVEMENT, TYP. SEE LANDSCAPE PLANS

4" LOAM & SEED, TYP.

VEHICULAR GRANITE PAVERS, TYP. SEE LANDSCAPE PLANS

MOUNTABLE GRANITE CURB, TYP.

RAMP TO LOADING DOCK

LEARNING RESEARCH & COLLABORATION BUILDING

BEAN BUILDING

SEE LANDSCAPE PLANS FOR ROOF LANDSCAPING

ROOF OVERHANG

VEHICULAR PRECAST CONCRETE PAVERS, TYP. SEE LANDSCAPE PLANS

VEHICULAR ASPHALT PAVING, TYP. SEE LANDSCAPE PLANS

TIMBER GUARDRAIL, TYP., SEE LANDSCAPE PLANS

ARCHITECTURAL CONCRETE RETAINING WALL, TYP.

ROOF OVERHANG, TYP.

PROPERTY BOUNDARY, TYP.

LIMIT OF WORK, TYP.

SEE LANDSCAPE PLAN FOR MORE DETAIL ON SURFACE MATERIALS

APPROXIMATE FLOOD ZONE LINE BY ELEVATION (EL. 9)

APPROXIMATE FEMA FLOOD ZONE LINE

STONE RETAINING WALL, TYP. SEE LANDSCAPE PLANS

ARCHITECTURAL CONCRETE RETAINING WALL, TYP. SEE LANDSCAPE PLANS

STONE RETAINING WALL, TYP. SEE LANDSCAPE PLANS

MATCHLINE SEE INSET A, SHT. C-303

MATCHLINE SEE INSET B, SHT. C-303

EXISTING PIERS

ZONE AE (EL. 9)

INTERTIDAL ZONE

MEAN TIDE (0)

MHW (8.30')

MHW (7.39')

MLW (0.30')

MLW (0)

NOTES:
1. REFER TO SHEET C-101 FOR GENERAL SITE LAYOUT PLAN NOTES.
2. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Scale	1"=20'

Drawing Title

SITE LAYOUT PLAN - 2

C-102



20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Scale	1"=20'

Drawing Title
SITE UTILITY PLAN - 1

C-201

MATCHLINE SEE SHEET C-201

MATCHLINE SEE SHEET C-201

PARKING GARAGE

DAY CARE CENTER

6" FIRE PROTECTION SERVICE
2" DOMESTIC WATER SERVICE
6" SANITARY INV OUT=16.00
6" SANITARY INV OUT=9.33
6" FIRE PROTECTION SERVICE
2" DOMESTIC WATER SERVICE
OIL/WATER SEPARATOR VENT OUTLET
CAP FOR FUTURE CONNECTION 12" PVC INV=10.11
END CAP
BELOW-GRADE STORMWATER TREATMENT
SURFACE STORMWATER TREATMENT SYSTEM
ADJUST STRUCTURE RIM TO GRADE
SECURITY CAMERA AND BLUE LIGHT INTERCOM, TYP.
MATCH EXISTING INVERT, CONNECT NEW PIPE TO EXISTING STRUCTURE 12" PVC INV IN= 1.3 PROVIDE BACKFLOW PREVENTER
PWD SEWER EASEMENT
MATCHLINE SEE INSET A, SHT C-303
UNDERGROUND ELECTRICAL, TYP., SEE ELECTRICAL PLANS
4" DOMESTIC WATER SERVICE
6" FIRE PROTECTION SERVICE
6" SANITARY INV OUT=5.7
BEAN BUILDING
HYDRANT ASSEMBLY, TYP.
3" BLOW-OFF VALVE AND THRUST BLOCK
MATCHLINE SEE INSET B, SHT. C-303
ELECTRIC HAND HOLE, TYP., SEE ELECTRICAL PLANS
OIL/WATER SEPARATOR VENT OUTLET
4'x6' GREASE INTERCEPTOR
8'x14' SUBSURFACE EMERGENCY FUEL TANK
ELECTRIC VAULT, TYP., SEE ELECTRICAL PLANS
6" SANITARY INV OUT = 17.83
6" SANITARY INV OUT = 17.69
8" SANITARY INV OUT=14.97
6" DOMESTIC WATER SERVICE
8" FIRE PROTECTION SERVICE
8" FIRE PROTECTION SERVICE
END CAP
LEARNING RESEARCH & COLLABORATION BUILDING
8" SANITARY INV OUT=13.66 (2)
SECURITY CAMERA, TYP.
APPROXIMATE FLOOD ZONE LINE BY ELEVATION (EL. 9)
APPROXIMATE FEMA FLOOD ZONE LINE
EXISTING PIERS
INTERTIDAL ZONE
MEAN TIDE (0)
MHW (7.39')
MLW (0.50')
MHW (7.39')
MEAN TIDE (0)

NOTE:
1. REFER TO SHEET C-304 FOR SANITARY SEWER PIPE AND STRUCTURE TABLES.

BAR SCALE
1" = 20'
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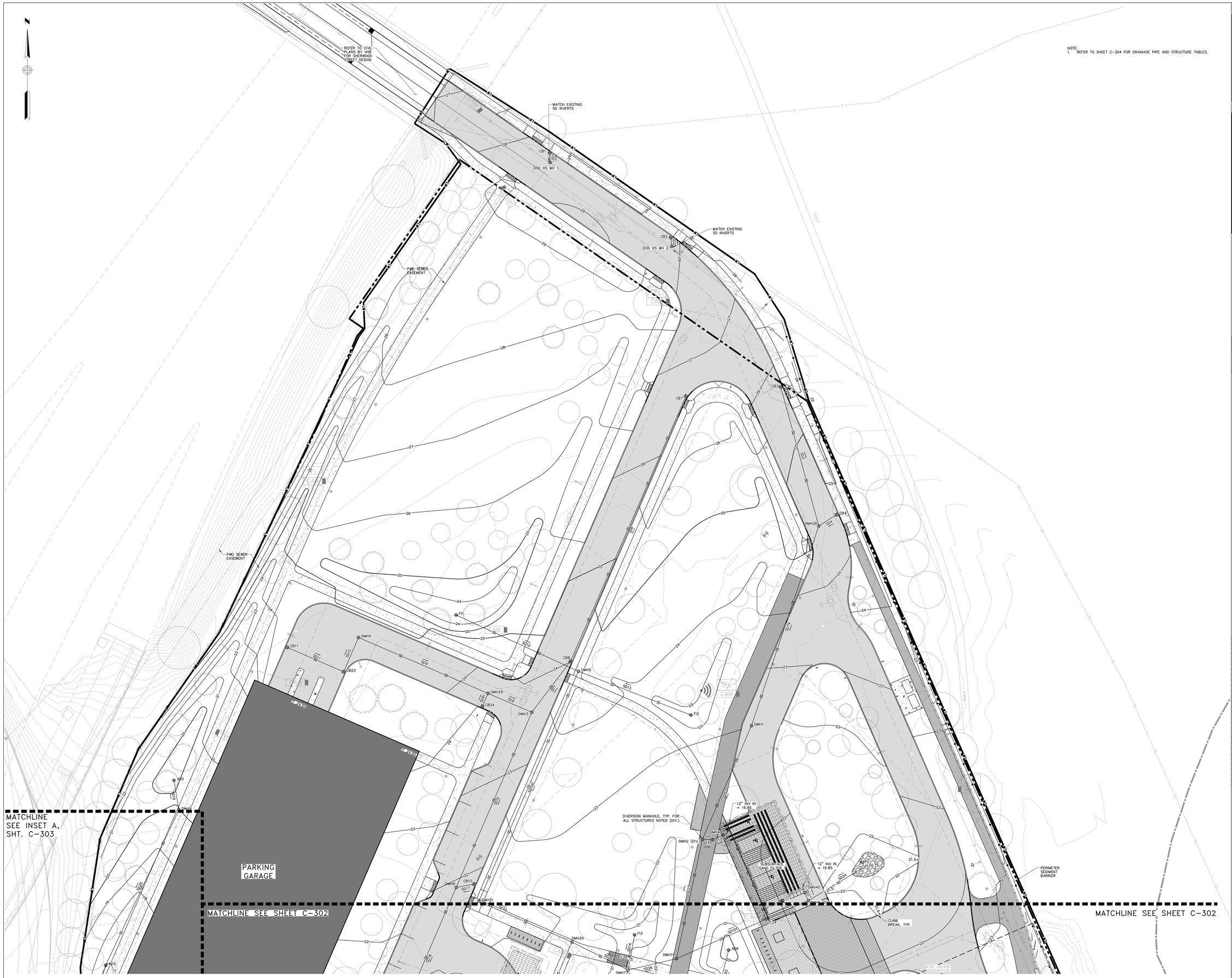
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Job #	2202
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Scale	1"=20'

Drawing Title

SITE UTILITY PLAN - 2

C-202


REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN
MATCH EXISTING SD INVERTS
CB1
DOG HS MH 1
MATCH EXISTING SD INVERTS
CB2
DOG HS MH 2
PWD SEWER EASEMENT
PWD SEWER EASEMENT
MATCHLINE SEE INSET A, SHT. C-303
PARKING GARAGE
MATCHLINE SEE SHEET C-302
MATCHLINE SEE SHEET C-302
DIVERSION MANHOLE, TYP. FOR ALL STRUCTURES NOTED (DIV.)
DMH2 (DIV.)
12" INV IN = 16.85
SUBSURFACE SAND FILTER
12" INV IN = 16.85
PERIMETER SEDIMENT BARRIER
CURB BREAK, TYP.
4'x8' GREASE INTERCEPTOR
CB3
CB4
CB7
CB8
CB10
CB11
CB23
CB24
DMH1
DMH2
DMH3
DMH4
DMH5
DMH7
DMH8
DMH11
DMH20
DMH21
DMH28
DMH29
DMH44
DMH45
FI2
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FI5
AB2
AB3
AB6
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MATCHLINE SEE SHEET C-301

MATCHLINE SEE SHEET C-301

PARKING GARAGE

12" ROOF DRAIN INV OUT= 16.00

8" ROOF DRAIN INV OUT=15.00

DAY CARE CENTER FFE=16.00

SUBSURFACE SAND FILTER 3

SUBSURFACE SAND FILTER 2

SUBSURFACE SAND FILTER 1

12" INV IN = 15.45

12" INV IN = 13.15

12" INV OUT = 9.15

12" INV IN = 12.15

18" INV OUT = 11.45

12" INV OUT = 11.15

12" INV IN = 15.00

12" INV IN = 15.00

12" INV OUT = 12.85

12" INV IN = 16.85

BIORETENTION BASIN 2

BIORETENTION BASIN 1

OVERFLOW SPILLWAY ELEV = 14.80

OVERFLOW SPILLWAY ELEV = 21.25

+21.50

+26.50

12" ROOF DRAIN INV OUT=18.50

LEARNING RESEARCH & COLLABORATION BUILDING

12" ROOF DRAIN INV OUT=18.50

10" ROOF DRAIN INV OUT=15.00

4" FOUNDATION DRAIN CONNECTION

4" FOUNDATION DRAIN CONNECTION

8" ROOF DRAIN INV OUT= 15.00

BEAN BUILDING

TROUGH DRAIN SEE LANDSCAPE PLANS

TROUGH DRAIN SEE LANDSCAPE PLANS

SEE LANDSCAPE PLAN FOR MORE DETAIL ON SURFACE CONDITIONS

SEE LANDSCAPE PLAN FOR MORE DETAIL ON SURFACE CONDITIONS

SEE LANDSCAPE PLAN FOR DETAILS OF COASTAL IMPROVEMENTS

APPROXIMATE FLOOD ZONE LINE BY ELEVATION (EL. 9)

APPROXIMATE FEMA FLOOD ZONE LINE

12" INV IN = 14.20

12" INV OUT = 10.20

12" INV IN = 13.80

12" INV OUT = 9.80

10" HDPE INV = 7.40

OUTFALL 1 WITH INLINE BACKFLOW PREVENTION VALVE (TIDEFLEX OR EQUAL) 30" HDPE INV OUT=8.40

OUTFALL 2 WITH INLINE BACKFLOW PREVENTION VALVE (TIDEFLEX OR EQUAL) 12" HDPE INV OUT=6.80

OUTFALL 3 WITH INLINE BACKFLOW PREVENTION VALVE (TIDEFLEX OR EQUAL) 24" HDPE INV OUT=8.40

PERIMETER SEDIMENT BARRIER

PWD SEWER EASEMENT

EXISTING PIERS

MEAN TIDE (0)

INTERTIDAL ZONE

MATCHLINE SEE INSET A, SHT. C-303

MATCHLINE SEE INSET B, SHT. C-303

NOTE:
1. REFER TO SHEET C-304 FOR DRAINAGE PIPE AND STRUCTURE TABLES.

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

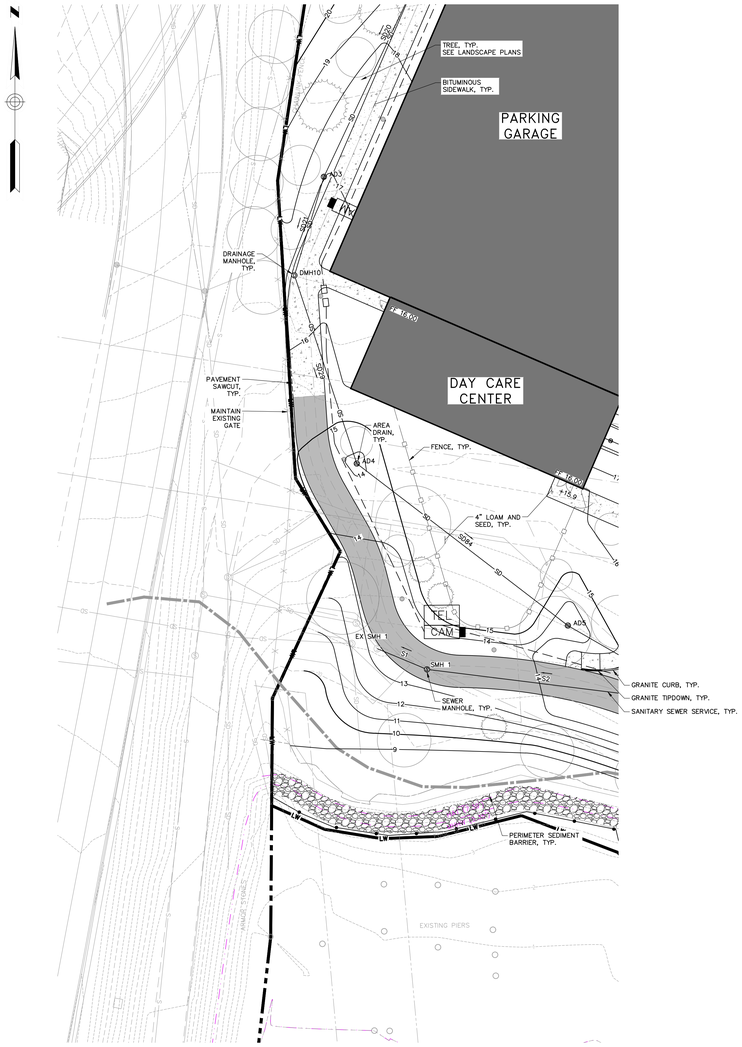
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

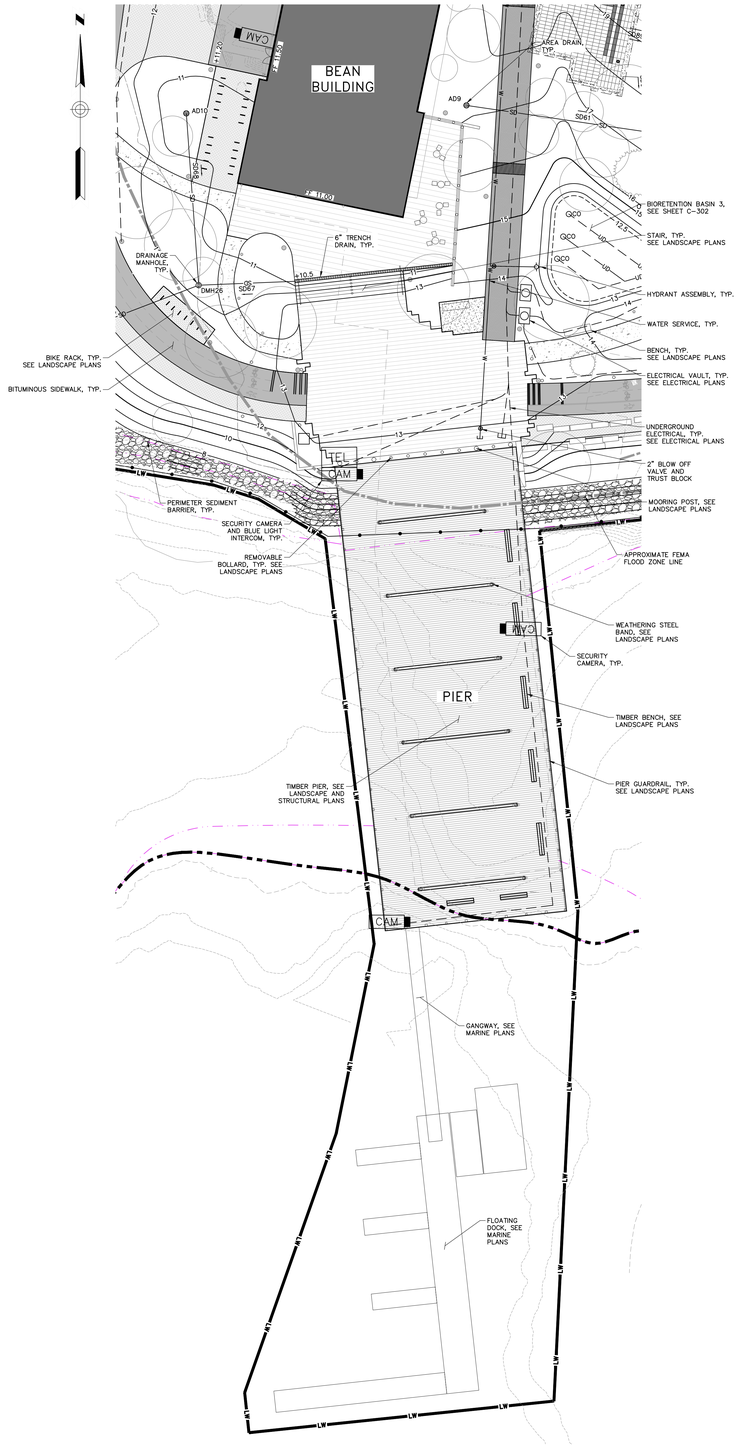
Drawing Title

GRADING & DRAINAGE PLAN - 2

C-302



INSET A



INSET B

NOTE:
1. REFER TO SHEET C-304 FOR SANITARY SEWER AND STORMWATER DRAINAGE STRUCTURE AND PIPE TABLES.

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
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LAND-USE PERMIT SET

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Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	1"=20'

Drawing Title
PLAN INSETS

C-303

LAYOUT DATA – SHEET C–101 & C–102

LINE LAYOUT DATA						
Line #	Length	Direction	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	37.23	S23° 23' 22.07"W	308428.31	2929642.18	308394.14	308394.14
L2	108.87	N23° 38' 38.32"W	308328.65	2929718.85	308428.38	308428.38
L3	2.61	N3° 31' 51.46"E	308302.91	2929722.80	308305.52	308305.52
L4	6.11	N66° 26' 01.46"E	308266.27	2929693.26	308268.71	308268.71
L5	81.96	S23° 38' 40.60"E	308354.24	2929627.49	308279.16	308279.16
L6	124.86	S23° 38' 38.32"E	308449.04	2929692.35	308334.66	308334.66
L7	119.85	S23° 38' 40.60"E	308644.91	2929622.42	308535.12	308535.12
L8	179.23	S55° 17' 21.81"E	308836.64	2929401.25	308734.58	308734.58
L9	1.47	S66° 38' 16.59"E	308166.05	2929389.55	308165.47	308165.47
L10	25.43	S23° 23' 55.71"W	308215.69	2929389.22	308192.35	308192.35
L11	1.47	N66° 36' 04.29"W	308225.52	2929416.87	308226.11	308226.11
L12	25.43	N23° 24' 16.45"E	308175.88	2929417.18	308199.22	308199.22
L13	45.37	N66° 26' 01.46"E	308210.02	2929664.37	308228.16	308228.16
L14	65.46	S23° 34' 05.14"E	308270.02	2929638.19	308210.02	308210.02
L15	18.03	N66° 21' 19.40"E	308262.79	2929621.68	308270.02	308270.02
L16	73.00	S23° 38' 40.60"E	308329.67	2929592.40	308262.79	308262.79
L17	13.00	S66° 21' 19.40"W	308334.88	2929604.31	308329.67	308329.67
L18	27.12	S23° 38' 40.60"E	308366.31	2929596.01	308341.47	308341.47
L19	32.29	S12° 15' 38.07"W	308397.86	2929602.87	308366.31	308366.31
L20	116.20	S23° 23' 22.07"W	308504.52	2929649.00	308397.86	308397.86
L21	100.71	S23° 38' 40.60"E	308616.73	2929608.56	308524.47	308524.47
L22	377.86	N23° 23' 55.71"E	308269.84	2929412.65	308616.63	308616.63
L23	6.47	N66° 36' 04.29"W	308247.55	2929426.40	308250.12	308250.12
L24	87.95	N23° 24' 16.45"E	308108.97	2929414.37	308189.69	308189.69
L25	0.50	S23° 24' 32.18"W	308128.10	2929371.44	308127.65	308127.65
L26	47.00	N66° 35' 27.82"W	308109.43	2929414.57	308128.10	308128.10
L27	13.01	S23° 24' 16.45"W	308140.04	2929376.61	308128.10	308128.10
L28	3.67	S66° 38' 16.59"E	308148.08	2929370.63	308146.62	308146.62
L29	87.98	N23° 27' 50.30"E	308062.17	2929322.46	308142.88	308142.88
L30	48.29	N66° 36' 04.30"W	308162.54	2929340.94	308181.72	308181.72
L31	6.12	N23° 23' 55.70"E	308150.35	2929341.11	308155.97	308155.97
L32	83.92	N23° 27' 50.30"E	308073.37	2929307.70	308150.35	308150.35
L33	29.39	S23° 23' 55.70"W	308432.89	2929331.57	308405.92	308405.92
L34	85.17	N66° 36' 04.29"W	308406.88	2929429.46	308440.70	308440.70
L35	16.41	N23° 23' 55.71"E	308372.09	2929430.75	308387.16	308387.16
L36	8.59	N68° 23' 55.71"E	308366.27	2929420.02	308369.43	308369.43
L37	61.88	N23° 23' 55.71"E	308306.82	2929392.70	308363.60	308363.60
L38	8.58	N21° 37' 22.26"W	308295.01	2929395.80	308302.99	308302.99
L39	10.68	N23° 23' 55.71"E	308281.38	2929391.50	308291.18	308291.18
L40	8.59	N68° 23' 55.71"E	308275.56	2929380.77	308278.72	308278.72
L41	61.86	N23° 23' 55.71"E	308216.12	2929353.45	308272.90	308272.90
L42	8.59	N21° 36' 04.29"W	308204.32	2929356.55	308212.30	308212.30
L43	32.50	S66° 36' 04.30"E	308205.59	2929306.94	308192.68	308192.68
L44	48.39	S23° 23' 55.70"W	308467.80	2929298.74	308423.39	308423.39
L45	124.17	N66° 36' 04.29"W	308428.91	2929438.99	308478.22	308478.22
L46	252.85	S23° 23' 55.71"W	308668.77	2929559.13	308436.71	308436.71
L47	199.78	S55° 17' 21.81"E	308813.01	2929386.20	308699.25	308699.25

CURVE LAYOUT DATA										
Curve #	Length	Radius	Delta	Chord Direction	Chord Length	START NORTHING	START EASTING	END NORTHING	END EASTING
C1	41.77	18.00	132.97	S89° 52' 22"W	33.01	308428.38	2929675.19	308428.31	2929642.18
C2	23.71	50.00	27.17	N10° 03' 23"W	23.49	308305.52	2929722.96	308328.65	2929718.85
C3	43.91	40.00	62.90	N34° 58' 56"E	41.74	308268.71	2929698.86	308302.91	2929722.80
C4	39.24	25.00	89.92	S68° 36' 20"E	35.33	308279.16	2929660.36	308266.27	2929693.26
C5	41.04	50.00	47.03	S0° 07' 39"E	39.90	308394.14	2929627.40	308354.24	2929627.49
C6	56.59	169.47	19.13	N14° 51' 22"W	56.33	308218.49	2929773.30	308272.93	2929758.86
C8	64.07	200.00	18.35	S14° 28' 00"E	63.80	308334.66	2929742.42	308272.89	2929758.36
C9	17.07	48.00	20.38	S33° 50' 03"E	16.98	308463.15	2929682.89	308449.04	2929692.35
C10	29.28	30.00	55.93	S16° 03' 39"E	28.13	308490.18	2929675.11	308463.15	2929682.89
C11	45.91	74.00	35.55	S5° 52' 15"E	45.18	308535.12	2929670.49	308490.18	2929675.11
C12	117.64	213.00	31.64	S39° 28' 01"E	116.15	308734.58	2929548.59	308644.91	2929622.42
C13	31.40	20.00	89.96	N68° 23' 00"E	28.27	308165.47	2929390.90	308175.88	2929417.18
C14	31.43	20.00	90.04	S21° 37' 10"E	28.29	308192.35	2929379.12	308166.05	2929389.55
C15	31.42	20.00	90.00	S68° 23' 56"W	28.28	308226.11	2929415.52	308215.69	2929389.22
C16	31.42	20.00	90.01	N21° 35' 54"W	28.29	308199.22	2929427.28	308225.52	2929416.87
C17	17.59	207.97	4.85	S21° 09' 39"E	17.58	308216.26	2929732.89	308199.86	2929739.24
C18	33.10	20.00	94.83	S66° 09' 08"E	29.45	308228.16	2929705.95	308216.26	2929732.89
C19	7.85	5.00	90.00	S21° 21' 19"W	7.07	308341.47	2929606.88	308334.88	2929604.31
C20	20.52	25.00	47.03	S0° 07' 39"E	19.95	308524.47	2929648.95	308504.52	2929649.00
C21	58.01	25.00	132.96	N89° 52' 38"E	45.85	308616.63	2929562.71	308616.73	2929608.56
C22	23.56	15.00	90.00	N21° 36' 04"W	21.21	308250.12	2929420.46	308269.84	2929412.65
C23	69.12	44.00	90.01	N21° 35' 54"W	62.23	308189.69	2929449.31	308247.55	2929426.40
C24	7.86	5.00	90.04	S21° 37' 00"E	7.07	308146.62	2929374.00	308140.04	2929376.61
C25	15.69	10.00	89.90	N68° 24' 47"E	14.13	308142.88	2929357.49	308148.08	2929370.63
C26	47.84	40.00	68.53	N10° 47' 59"W	45.04	308017.93	2929330.90	308062.17	2929322.46
C27	7.85	5.00	90.00	N21° 36' 04"W	7.07	308155.97	2929343.54	308162.54	2929340.94
C28	53.43	40.50	75.58	N61° 15' 19"E	49.64	308049.50	2929264.18	308073.37	2929307.70
C29	23.56	15.00	90.00	S68° 23' 56"W	21.21	308440.70	2929351.30	308432.89	2929331.57
C30	23.56	15.00	90.00	N21° 36' 04"W	21.21	308387.16	2929437.27	308406.88	2929429.46
C31	3.93	5.00	45.00	N45° 53' 56"E	3.83	308369.43	2929428.00	308372.09	2929430.75
C32	3.93	5.00	45.00	N45° 53' 56"E	3.83	308363.60	2929417.27	308366.27	2929420.02
C33	3.93	5.00	45.02	N0° 53' 17"E	3.83	308302.99	2929392.64	308306.82	2929392.70
C34	3.93	5.00	45.02	N0° 53' 17"E	3.83	308291.18	2929395.74	308295.01	2929395.80
C35	3.93	5.00	45.00	N45° 53' 56"E	3.83	308278.72	2929388.75	308281.38	2929391.50
C36	3.93	5.00	45.00	N45° 53' 56"E	3.83	308272.90	2929378.02	308275.56	2929380.77
C37	3.93	5.00	45.00	N0° 53' 56"E	3.83	308212.30	2929353.39	308216.12	2929353.45
C38	3.93	5.00	45.00	N0° 53' 56"E	3.83	308200.49	2929356.49	308204.32	2929356.55
C39	23.56	15.00	90.00	N68° 23' 56"E	21.21	308192.68	2929336.77	308200.49	2929356.49
C40	31.42	20.00	90.00	S68° 23' 56"W	28.28	308478.22	2929325.03	308467.80	2929298.74
C41	23.56	15.00	90.00	S68° 23' 56"W	21.21	308436.71	2929458.71	308428.91	2929438.99
C42	34.33	25.00	78.69	S15° 56' 43"E	31.70	308699.25	2929550.42	308668.77	2929559.13

STRUCTURE & PIPE DATA – SHEET C–201 & C–202

STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
4'x8' GREASE INTERCEPTOR	4'	22.25	17.13/6"PVC/LRC SAN OUTLET 5	17.10/6"PVC/SMH 14
EX SMH 1	4'	13.13	1.30/10"PVC/SMH 1	
OW SEP. 1	4'	20.05	15.48/6"PVC/GARAGE SAN OUTLET	15.14/6"PVC/SMH 4
OW SEP. 2	4'	22.30	17.51/6"PVC/LRC SAN OUTLET 1	17.17/6"PVC/SMH 14
SMH 1	4'	13.33	1.60/10"PVC/SMH 2	1.50/10"PVC/EX SMH 1
SMH 2	4'	14.65	3.55/8"PVC/SMH 12 3.55/10"PVC/SMH 3	3.45/10"PVC/SMH 1
SMH 3	4'	18.80	8.00/10"PVC/SMH 4 8.00/6"PVC/CHILD CARE SAN OUTLET 8.00/8"PVC/SMH 5	7.90/10"PVC/SMH 2
SMH 4	4'	19.90	15.05/6"PVC/OW SEP. 1 9.78/10"PVC/STUB	9.68/10"PVC/SMH 3
SMH 5	4'	21.10	11.02/8"PVC/SMH 6	10.92/8"PVC/SMH 3
SMH 6	4'	21.50	12.18/8"PVC/SMH 7	12.08/8"PVC/SMH 5
SMH 7	4'	22.40	13.60/8"PVC/LRC SAN OUTLET 4 13.54/6"PVC/CO1 13.36/8"PVC/SMH 9	13.26/8"PVC/SMH 6
SMH 9	4'	22.40	14.88/8"PVC/LRC SAN OUTLET 2 14.88/6"PVC/SMH 10	14.78/8"PVC/SMH 7
SMH 10	4'	22.20	15.85/6"PVC/SMH 11	15.75/6"PVC/SMH 9
SMH 11	4'	22.20	16.57/6"PVC/SMH 14	16.47/6"PVC/SMH 10
SMH 12	4'	13.90	5.25/6"PVC/BEAN SAN OUTLET	5.15/8"PVC/SMH 2
SMH 14	4'	22.75	17.00/6"PVC/4'x8' GREASE INTERCEPTOR 17.06/6"PVC/OW SEP. 2	16.96/6"PVC/SMH 11

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
S1	10" PVC	16'	0.0125
S2	10" PVC	85'	0.0218
S3	8" PVC	133'	0.0120
S4	6" PVC	43'	0.0105
S5	10" PVC	87'	0.0500
S6	6" PVC	8'	0.0125
S7	6" PVC	55'	0.0242
S8	10" PVC	37'	0.0454
S9	6" PVC	6'	0.0150
S10	6" PVC	43'	0.0121
S11	10" PVC	28'	0.0118
S12	8" PVC	172'	0.0170
S13	8" PVC	88'	0.0120
S14	8" PVC	90'	0.0120
S15	8" PVC	3'	0.0200
S16	6" PVC	5'	0.0200
S17	6" PVC	1'	0.0200
S18	8" PVC	136'	0.0104
S19	8" PVC	7'	0.0129
S20	6" PVC	78'	0.0112
S21	6" PVC	57'	0.0109
S22	6" PVC	22'	0.0177
S25	6" PVC	20'	0.0350
S26	6" PVC	7'	0.0157
S27	6" PVC	12'	0.0150

STRUCTURE & PIPE DATA – SHEET C–301 & C–302

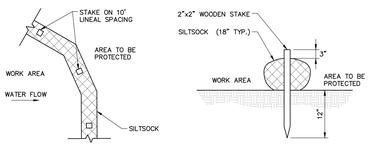
STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
AD1	4'	20.75		17.25/12"HDPE/DMH6 (DIV.)
AD2	4'	19.60		15.60/12"HDPE/DMH9
CB1	4'	28.36		24.86/12"HDPE/DOG HS MH 1
CB2	4'	28.06		24.40/12"HDPE/DOG HS MH 2
CB3	4'	25.80		21.50/12"HDPE/DMH28
CB4	4'	24.35		20.00/12"HDPE/DMH28
CB7	4'	26.75		21.75/12"HDPE/CB8
CB8	4'	24.00	17.60/12"HDPE/CB7	17.50/12"HDPE/DMH3
CB10	4'	22.85		17.50/12"HDPE/DMH8
CB11	4'	24.00		20.20/12"HDPE/CB23
CB23	4'	24.00	20.00/12"HDPE/CB11	19.90/12"HDPE/DMH4
CB24	4'	23.70		19.12/12"HDPE/DMH29
DMH1	4'	22.60	18.70/12"HDPE/DMH28	18.60/12"HDPE/DMH2 (DIV.)
DMH2 (DIV.)	4'	22.65	18.10/12"HDPE/DMH1	17.04/12"HDPE/HDS1 16.95/12"HDPE/DMH11
DMH3	4'	22.78	17.24/12"HDPE/CB8 18.70/12"HDPE/DMH29	17.14/18"HDPE/DMH8
DMH4	4'	24.40	19.70/12"HDPE/CB23	19.60/12"HDPE/DMH29
DMH5	4'	24.60	19.20/12"HDPE/FI1 18.00/12"HDPE/FI2	15.00/18"HDPE/DMH21
DMH6 (DIV.)	4'	20.91	17.03/12"HDPE/AD1	16.93/12"HDPE/DMH45 16.93/12"HDPE/OCS4
DMH8	4'	21.90	17.35/12"HDPE/CB10 16.50/18"HDPE/DMH3	16.40/18"HDPE/DMH30
DMH9	4'	20.00	15.50/12"HDPE/AD2	15.40/12"HDPE/AD3
DMH28	4'	24.45	19.90/12"HDPE/CB4 19.90/12"HDPE/CB3	19.80/12"HDPE/DMH1
DMH29	4'	23.75	19.00/12"HDPE/DMH4 18.90/12"HDPE/CB24	19.00/12"HDPE/DMH3
DMH45	4'	20.78	16.90/12"HDPE/DMH6 (DIV.)	16.85/12"HDPE/SSSF1 INLET 2
DMH46	4'	22.50	16.85/12"HDPE/HDS1	16.85/12"HDPE/SSSF1 INLET 1
DOG HS MH 1	4'	28.42	24.76/12"HDPE/CB1	
DOG HS MH 2	4'	28.18	24.30/12"HDPE/CB2	
FI1	2'	23.50		19.65/12"HDPE/DMH5
FI2	2'	22.50		18.50/12"HDPE/DMH5
HDS1	4'	22.58	17.00/12"HDPE/DMH2 (DIV.)	16.90/12"HDPE/DMH46

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
SD1	12" HDPE	3'	0.0333
SD2	12" HDPE	2'	0.0500
SD3	12" HDPE	94'	0.0170
SD4	12" HDPE	10'	0.0100
SD5	12" HDPE	80'	0.0062
SD6	12" HDPE	193'	0.0215
SD7	12" HDPE	40'	0.0065
SD8	12" HDPE	29'	0.0103
SD9	12" HDPE	92'	0.0065
SD10	12" HDPE	22'	0.0091
SD11	12" HDPE	38'	0.0053
SD12	12" HDPE	89'	0.0051
SD13	12" HDPE	79'	0.0063
SD16	18" HDPE	126'	0.0051
SD17	12" HDPE	8'	0.0187
SD19	12" HDPE	16'	0.0062
SD20	12" HDPE	113'	0.0212
SD22	12" HDPE	79'	0.0108
SD24	12" HDPE	43'	0.0051
SD27	12" HDPE	2'	0.0150
SD45	12" HDPE	3'	0.0100
SD79	12" HDPE	140'	0.0079
SD81	12" HDPE	6'	0.0367
SD100	18" HDPE	167'	0.0168
SD105	12" HDPE	4'	0.0125

STRUCTURE TABLE			
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
AD3	4'	17.00	13.00/12"HDPE/DMH9	12.90/12"HDPE/DMH10
AD4	4'	13.90	9.90/12"HDPE/DMH10	9.80/12"HDPE/AD5
AD5	4'	13.50	9.30/12"HDPE/AD4	9.20/12"HDPE/DMH17
AD6	4'	19.80		16.20/12"HDPE/DMH43
AD7	4'	20.50	16.92/12"HDPE/DMH19 16.92/10"HDPE/FI4	16.82/12"HDPE/DMH43
AD8	4'	21.25		17.25/12"HDPE/DMH37
AD9	4'	17.20		13.50/10"HDPE/DMH39
AD10	4'	10.64		7.54/10"HDPE/DMH26
CB12	4'	20.50		16.10/12"HDPE/DMH30
CB13	4'	19.25		15.75/12"HDPE/DMH32 (DIV.)
CB14	4'	15.75		12.25/12"HDPE/SSSF4 INLET 2
CB21	4'	19.50		15.85/12"HDPE/DMH32 (DIV.)
DMH7	5'	21.10	14.00/12"HDPE/DMH15 (DIV.) 15.85/12"HDPE/FI3 12.15/18"HDPE/DMH11	12.05/18"HDPE/DMH20
DMH10	4'	16.50	12.52/12"HDPE/AD3	12.42/12"HDPE/AD4
DMH11	4'	22.50	12.40/12"HDPE/OCS4 16.10/12"HDPE/DMH2 (DIV.)	12.30/18"HDPE/DMH7
DMH12 (DIV.)	5'	20.03	15.70/12"HDPE/GARAGE ROOF DRAIN 15.63/18"HDPE/DMH30	15.53/12"HDPE/HDS2 15.03/18"HDPE/DMH16
DMH13	4'	19.23	10.28/24"HDPE/DMH14 15.35/12"HDPE/DMH32 (DIV.)	10.18/24"HDPE/DMH25
DMH14	4'	19.50	10.68/24"HDPE/DMH31 12.65/12"HDPE/OCS1	10.58/24"HDPE/DMH13
DMH15 (DIV.)	4'	20.00	15.25/12"HDPE/DMH43	15.15/12"HDPE/DMH7 15.15/12"HDPE/SSSF2 INLET 1
DMH16	4'	19.06	13.15/12"HDPE/DMH33 (DIV.) 14.66/18"HDPE/DMH12 (DIV.)	13.05/18"HDPE/DMH25
DMH17	4'	14.70	8.94/12"HDPE/OCS7 8.94/12"HDPE/AD5	8.84/18"HDPE/DMH18
DMH18	5'	14.30	8.65/18"HDPE/DMH17 9.20/24"HDPE/DMH35	8.55/30"HDPE/
DMH19	4'	22.35	18.40/12"HDPE/LRC ROOF DRAIN 3	18.30/12"HDPE/AD7
DMH20	4'	21.70	11.75/18"HDPE/DMH21 11.75/18"HDPE/DMH7	11.65/24"HDPE/DMH31
DMH21	4'	22.05	12.20/18"HDPE/DMH5	12.10/18"HDPE/DMH20
DMH22	4'	22.40	18.44/12"HDPE/LRC ROOF DRAIN 1	18.34/12"HDPE/DMH36
DMH23	4'	20.40	14.90/10"HDPE/LRC ROOF DRAIN 2	14.80/12"HDPE/DMH24 (DIV.)
DMH24 (DIV.)	4'	18.00	14.00/12"HDPE/DMH23	13.90/12"HDPE/DMH51 13.90/12"HDPE/DMH40
DMH25	4'	19.50	10.12/24"HDPE/DMH13 12.80/18"HDPE/DMH16	10.02/24"HDPE/DMH34
DMH26	4'	11.80	7.20/10"HDPE/TRENCH DRAIN 3 7.20/10"HDPE/AD10	7.10/12"HDPE/
DMH27	4'	18.66	14.77/12"HDPE/BEAN BLDG ROOF DRAIN 2	14.77/12"HDPE/DMH50
DMH30	4'	20.50	15.91/18"HDPE/DMH8 16.00/12"HDPE/CB12	15.81/18"HDPE/DMH12 (DIV.)
DMH31	5'	20.51	10.90/24"HDPE/DMH20 11.35/18"HDPE/OCS6 10.98/12"HDPE/OCS5	10.80/24"HDPE/DMH14
DMH32 (DIV.)	4'	19.90	15.55/12"HDPE/CB13 15.65/12"HDPE/CB21	15.65/12"HDPE/DMH13 15.55/12"HDPE/DMH47
DMH33 (DIV.)	4'	18.45	13.65/8"HDPE/CHILD CARE ROOF DRAIN	13.25/12"HDPE/DMH16 13.25/12"HDPE/SSSF4 INLET 1
DMH34	4'	15.50	9.62/24"HDPE/DMH25	9.52/24"HDPE/DMH35
DMH35	4'	15.50	9.40/24"HDPE/DMH34 10.40/12"HDPE/OCS2	9.30/24"HDPE/DMH18
DMH36	4'	21.73	17.85/12"HDPE/DMH22	17.75/12"HDPE/DMH37
DMH37	4'	22.10	17.35/12"HDPE/DMH36 16.95/12"HDPE/AD8	16.85/12"HDPE/DMH41 (DIV.)
DMH39	4'	16.86	9.88/18"HDPE/OCS8 13.15/10"HDPE/AD9	9.78/24"HDPE/OCS9
DMH40	5'	17.67	9.00/24"HDPE/OCS9 8.90/12"HDPE/OCS3 11.50/12"HDPE/DMH24 (DIV.)	8.80/24"HDPE/
DMH41 (DIV.)	4'	18.22	14.33/12"HDPE/DMH37	14.33/12"HDPE/OCS8 14.23/12"HDPE/DMH52
DMH42	1'	17.33	15.45/12"HDPE/HDS2	15.35/12"HDPE/SSSF3 INLET 2
DMH43	4'	22.80	15.90/12"HDPE/AD7 15.90/12"HDPE/AD6	15.80/12"HDPE/DMH15 (DIV.)
DMH44	4'	19.58	15.70/12"HDPE/BEAN BLDG ROOF DRAIN 1	15.05/12"HDPE/SSSF2 INLET 2
DMH47	4'	19.38	15.50/12"HDPE/DMH32 (DIV.)	15.50/12"HDPE/SSSF3 INLET 1
DMH50	4'	19.30	14.35/12"HDPE/DMH27	14.25/12"HDPE/SSSF5 INLET 2
DMH51	4'	17.68	13.80/12"HDPE/DMH24 (DIV.)	13.70/12"HDPE/SSSF6 INLET 1
DMH52	4'	21.40	14.35/12"HDPE/DMH41 (DIV.)	14.25/12"HDPE/SSSF5 INLET 1
FI3	2'	20.00		16.00/12"HDPE/DMH7
FI4	2'	22.00		18.33/10"HDPE/AD7
HDS2	4'	19.85	15.49/12"HDPE/DMH12 (DIV.)	15.49/12"HDPE/DMH42

STRUCTURE TABLE					
NAME	STRUCT. WIDTH	STRUCT. LENGTH	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
OCS1	4'	4'	19.50	16.34/6"HDPE/	15.00/12"HDPE/DMH14
OCS2	4'	4'	14.50	11.34/6"HDPE/	10.50/12"HDPE/DMH35
OCS3	4'	4'	13.00	9.84/6"HDPE/	9.00/12"HDPE/DMH40
OCS4	4'	4'	22.25	12.80/12"HDPE/SSSF1 OUTLET 16.60/12"HDPE/DMH6 (DIV.)	12.70/12"HDPE/DMH11
OCS5	4'	4'	20.40	11.06/12"HDPE/SSSF2 OUTLET	11.06/12"HDPE/DMH31
OCS6	4'	4'	19.60	11.41/18"HDPE/SSSF3 OUTLET	11.41/18"HDPE/DMH31
OCS7	4'	4'	16.70	9.08/12"HDPE/SSSF4 OUTLET	9.08/12"HDPE/DMH17
OCS8	4'	4'	19.20	13.00/12"HDPE/DMH41 (DIV.) 10.17/12"HDPE/SSSF5 OUTLET 10.65/4"HDPE/CO2	10.07/18"HDPE/DMH39
				9.65/24"HDPE/DMH39	

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
PIPE 2	12" HDPE	3'	0.0167
SD14	12" HDPE	21'	0.0071
SD15	24" HDPE	17'	0.0071
SD18	18" HDPE	100'	0.0049
SD21	12" HDPE	34'	0.0112
SD23	12" HDPE	27'	0.0122
SD25	12" HDPE	4'	0.0125
SD26	18" HDPE	29'	0.0052
SD28	12" HDPE	8'	0.0125
SD29	12" HDPE	70'	0.0360
SD30	12" HDPE	45'	0.0058
SD31	12" HDPE	55'	0.0055
SD32	12" HDPE	2'	0.0200
SD33	12" HDPE	14'	0.0143
SD34	12" HDPE	10'	0.0300
SD35	24" HDPE	55'	0.0055
SD36	18" HDPE	38'	0.0079
SD37	12" HDPE	17'	0.0676
SD38	10" HDPE	83'	0.0170
SD39	12" HDPE	106'	0.0130
SD40	12" HDPE	7'	0.0143
SD41	12" HDPE	3'	0.0500
SD42	18" HDPE	65'	0.0054
SD43	12" HDPE	61'	0.0090
SD44	12" HDPE	3'	0.0167
SD46	12" HDPE	8'	0.0100
SD47	12" HDPE	44'	0.0045
SD48	12" HDPE	138'	0.0170
SD49	24" HDPE	144'	0.0052
SD50	18" HDPE	9'	0.0067
SD51	24" HDPE	7'	0.0086
SD52	12" HDPE	10'	0.0100
SD53	12" HDPE	6'	0.0167
SD54	18" HDPE	31'	0.0061
SD55	12" HDPE	3'	0.0167
SD56	30" HDPE	24'	0.0063
SD57	8" HDPE	60'	0.0225
SD58	12" HDPE	7'	0.0086
SD59	12" HDPE	97'	0.0051
SD60	12" HDPE	50'	0.0060
SD61	10" HDPE	66'	0.0053
SD62	10" HDPE	7'	0.0143
SD63	12" HDPE	55'	0.0145
SD64	12" HDPE	19'	0.0053
SD65	24" HDPE	76'	0.0053
SD66	24" HDPE	73'	0.0055
SD69	12" HDPE	58'	0.0052
SD70	24" HDPE	14'	0.0086
SD71	4" HDPE	7'	0.0171
SD72	4" HDPE	93'	0.0104
SD73	4" HDPE	1'	0.0700
SD74	18" HDPE	13'	0.0192
SD75	12" HDPE	57'	0.0421
SD76	12" HDPE	9'	0.0111
SD77	24" HDPE	18'	0.0056
SD78	12" HDPE	57'	0.0161
SD82	18" HDPE	26'	0.0069
SD83	6" HDPE	1'	0.0100
SD84	12" HDPE	95'	0.0053
SD85	12" HDPE	9'	0.0078
SD86	12" HDPE	71'	0.0056
SD88	12" HDPE	12'	0.2100
SD89	12" HDPE	1'	0.0300
SD90	4" HDPE	4'	0.0125
SD91	18" HDPE	34'	0.0056
SD93	12" HDPE	57'	0.0053
SD94	24" HDPE	21'	0.0062
SD95	12" HDPE	2'	0.0500
SD96	12" HDPE	25'	0.0080
SD97	24" HDPE	30'	0.0067
SD98	12" HDPE	11'	0.0091
SD99	18" HDPE	34'	0.0109
SD100	18" HDPE	167'	0.0168
SD101	12" HDPE	63'	0.0048
SD102	6" HDPE	2'	0.0250
SD103	6" HDPE	0'	???
SD104	12" HDPE	57'	0.0053



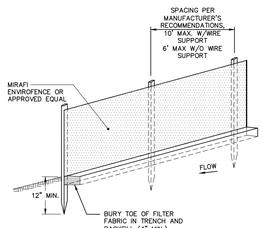
PLAN VIEW SECTION

NOTE:

1. WHEN STAKING IS NOT POSSIBLE, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT BARRIER TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.

SEDIMENT BARRIER – SILT SOCK

N.T.S.



NOTES:

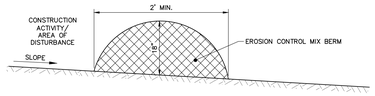
- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

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.

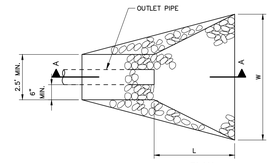


NOTES:

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.

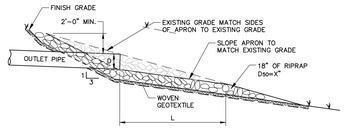
SEDIMENT BARRIER – EROSION CONTROL MIX BERM

N.T.S.



PLAN

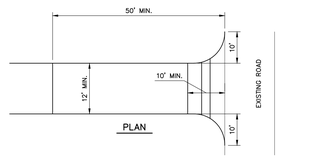
PIPE DIA. (D, IN.)	LENGTH (L, FT.)	WIDTH (W, FT.)	D50 (X, IN.)
18"	6'	4.5'	6"
24"	8'	6'	6"
30"	10'	7.5'	12"



SECTION A–A

RIPRAP INLET/OUTLET PROTECTION

N.T.S.



PLAN

PROFILE

NOTES:

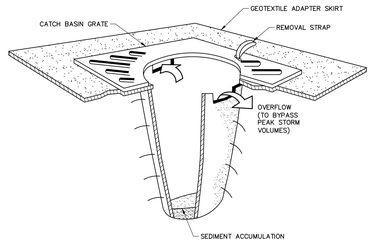
- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
- WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.

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.



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.

EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION CONTROL

CONTRACTOR SHALL PREPARE AND SUBMIT A SOIL EROSION AND WATER POLLUTION CONTROL PLAN TO ENGINEER.

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
SEDIMENT 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 7 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 7 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.

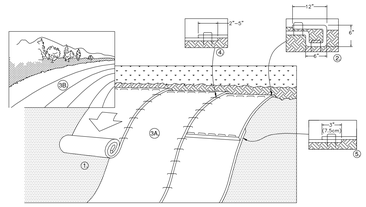
PERMANENT EROSION CONTROL:

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.



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 THAN 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.

EROSION AND SEDIMENT 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 SEDIMENT BARRIER LIKE SILT SOCK, SILT FENCE, AND EROSION CONTROL MIX BERMS, CATCHBASIN TEMPORARY INLET PROTECT AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE PERMANENT VEGETATION OR PAVING.

GENERAL

A. THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT.

B. 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://MAINE.GOV/DEP/BLWQ/DOCSTANDARDS/ESCBMPS/

C. 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.

D. 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.

E. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.

F. CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN–ON TO DISTURBED AREAS. SEDIMENT BARRIER AND ANY OTHER RELEVANT EROSION CONTROL MEASURES SHALL BE MOVED AND/OR ADDED TO, TO ACCOUNT FOR CHANGES IN DISTURBED AREA DUE TO CONSTRUCTION STAGING..

G. 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 PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.

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, 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 SPECIFICATION: IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND AUGUST 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEEDED WITH AROOSTOCK WINTER RYE OR MULCHED AT SPECIFIED RATES. SEE WINTER SEEDING AND MULCHING SPECIFICATIONS FOR STABILIZATION AFTER NOVEMBER 1:

i. APPLY TOPSOIL TO A DEPTH OF 6 INCHES, IN COMPACTED AREAS TILL 2–3" OF COMPOST INTO UPPER 8" OF DISTURBED SOIL AND THEN APPLY 6 INCHES OF TOPSOIL.
ii. APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 33 LBS PER 1000 SQUARE FEET AND GRANULAR, COMMERCIAL–GRADE FERTILIZER 10–10–10 AT A RATE OF 18 LBS PER 1000 SQUARE FEET.
iii. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES. APPLY HAY OR STRAW MULCH AT A RATE OF 2.5 BALES PER 1000 SQUARE FEET AND ANCHOR AS NECESSARY.

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. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1 OR AS OTHERWISE NOTED. 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.

L. 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 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.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
REGISTERED PROFESSIONAL ENGINEER
Amy N Lebel

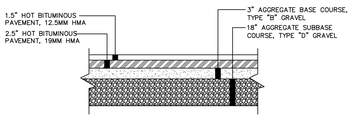
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Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	AS NOTED

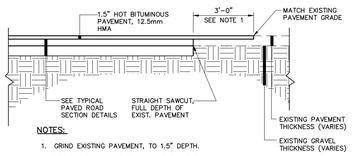
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CIVIL DETAILS - 1

D-401



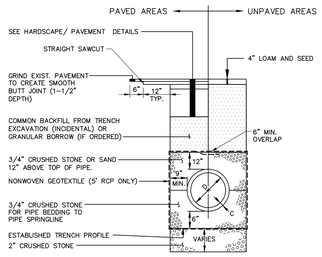
BITUMINOUS PAVEMENT SECTION
N.T.S.



NOTES:

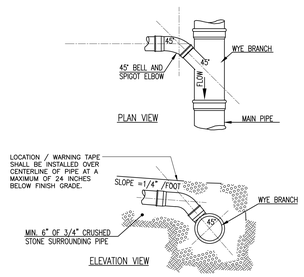
1. GRIND EXISTING PAVEMENT, TO 1.5" DEPTH.
2. PROVIDE BITUMINOUS TACK COAT ON VERTICAL AND HORIZONTAL SURFACES PRIOR TO PAVING.
3. DETAIL APPLICABLE TO PAVEMENT BUTT JOINTS AT ROADWAY WORK LIMITS. REFER TO PIPE INSTALLATION DTL. OR PAVED ROAD SECTION DTLS. FOR TRENCH REPAIR REQUIREMENTS.

PAVEMENT BUTT JOINT DETAIL
N.T.S.

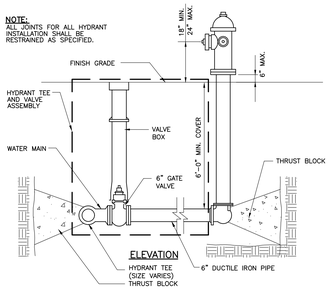


NOTES:
DEPTH & TYPE OF PAVEMENT & AGGREGATE COURSES SHALL BE PER PLANS.
SEE CIVIL & LANDSCAPING PAVEMENT DETAILS.

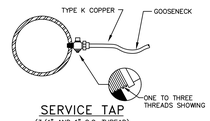
TYPICAL STORMDRAIN/ SEWER PIPE TRENCH INSTALLATION
N.T.S.



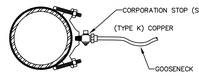
TYPICAL LATERAL WYE CONNECTION DETAILS
N.T.S.



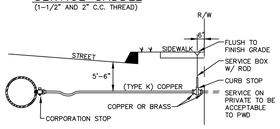
TYPICAL HYDRANT ASSEMBLY DETAIL
N.T.S.



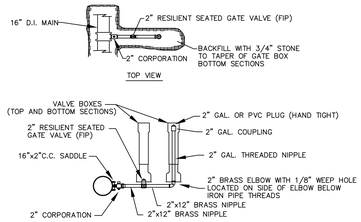
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



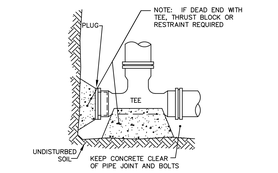
SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



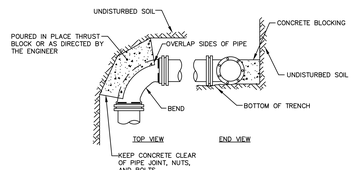
TYPICAL SERVICE CONNECTION
N.T.S.



SIDE-ARM BLOW-OFF 4" & LARGER MAINS
N.T.S.

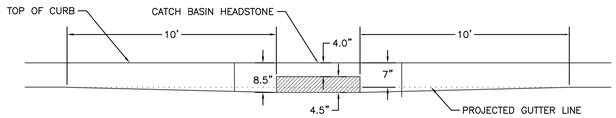


STANDARD TEE BLOCKING
N.T.S.



STANDARD BEND BLOCKING
N.T.S.

NOTE:
DISH 10' EITHER SIDE OF HEADSTONE FOR CATCH BASIN AT LOW POINT



TYPICAL PAVEMENT GRADING FOR CATCH BASIN INLETS (IN CITY RIGHT-OF-WAY)
N.T.S.

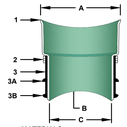
CORRUGATED HDPE/PP BELL GRAVITY APPLICATIONS

A. BELL END ACCEPTS CORRUGATED HDPE/PP DUAL WALL PIPE--ADS/HANCOR INC. SPECIFICATIONS IN 4", 6", 8", 10", 12", 15", 18", 21", 24", AND 30" SIZES.

B. CURVATURE VARIES WITH MAINLINE DIAMETERS.

C. SPIGOT END PVC SDR 35, ASTM D3034 DIAMETERS: 4", 6", 8", 10", 12", 15", 18", 21", 24" AND 30"

PART	PART NAME
1	HUB ADAPTOR
2	SECURING CLAMP*
3	RUBBER SLEEVE(AVAILABLE IN NITRILE AND EPDM BY SPECIAL ORDER)
3A	UPPER SEGMENT**
3B	LOWER SEGMENT**
4	(NOT SHOWN) ADS/HANCOR INC. SUPPLIES VALLEY GASKET



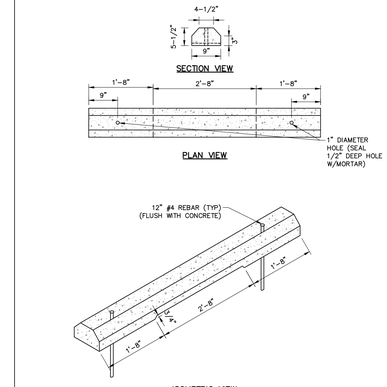
MATERIALS
PVC SDR 26 ASTM D3034
BAND SS #301
SCREW SS #305
HOUSING SS #301
ASTM F477

* OPTIONAL: #316 STAINLESS STEEL BAND, SCREW AND HOUSING
** DISTANCE BETWEEN 4A AND 4B WILL VARY BY PRODUCT TYPE
*** WILL NOT APPEAR ON RUBBER SLEEVES FOR CONCRETE OR CLAY PIPE

INSERTA TEE SIZE	HOLE DIAMETER
4" (100 mm)	4 ⅜" (114 mm)
6" (150 mm)	6 ½" (165 mm)
8" (200 mm)	8 ¾" (222 mm)
10" (250 mm)	10 ⅞" (276 mm)
12" (300 mm)	12 ⅞" (327 mm)
15" (375 mm)	15 ⁹⁄₁₆" (402 mm)
18" (450 mm)	19 ¾" (503 mm)
21" (525 mm)	22 ¾" (573 mm)
24" (600 mm)	25 ¾" (643 mm)
30" (750 mm)	32 ⁹⁄₃₂" (826 mm)

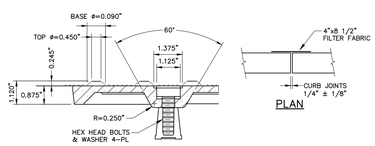
NOTE: RECOMMENDED METHOD OF CUTTING HOLE IS WITH HOLE SAW FOR PVC AND OTHER PLASTICS, AND DIAMOND BIT FOR CONCRETES, CLAY, FRP AND D.I. (SEE INSTALLATION INSTRUCTIONS. HOLE SAWS ARE AVAILABLE FOR PURCHASE OR RENT.)

INSERTA TEE DETAIL
N.T.S.

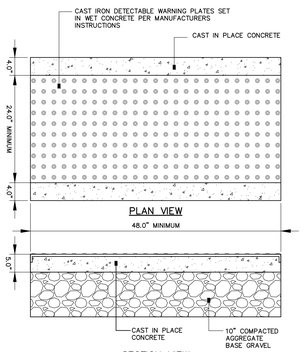


NOTE:
1. CONCRETE SHALL BE 4,000 PSI.

WHEEL STOP
N.T.S.



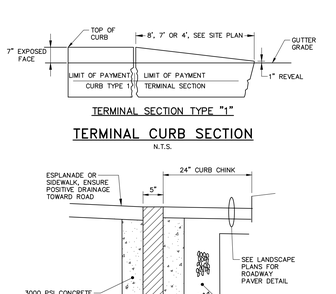
BOLT DETAIL



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 EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE PLATE WIDTH AND CONCRETE SHALL EXTEND THE WIDTH OF THE CURB RAMP, LANDING, OR BLENDING TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



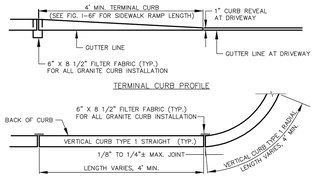
TERMINAL SECTION TYPE "1"

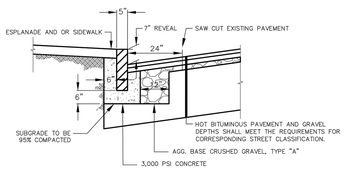
TERMINAL CURB SECTION
N.T.S.

NOTES:
1. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
2. WOODEN SHIMS MAY BE USED TO SET CURB.

TYPICAL FLUSH CURB INSTALLATION (IN CITY RIGHT-OF-WAY)
N.T.S.

NOTE: AGGREGATE TYPES PER MDOT SECTION 304.02

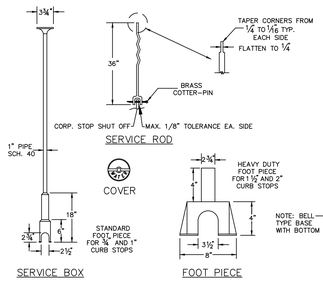




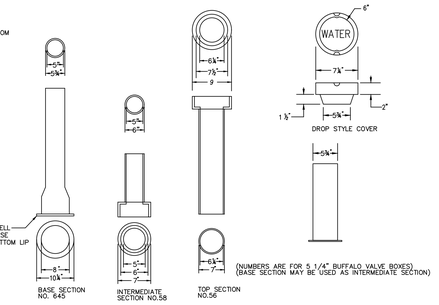
NOTES:
1. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
2. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
3. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
4. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB (IN CITY RIGHT-OF-WAY)
N.T.S.

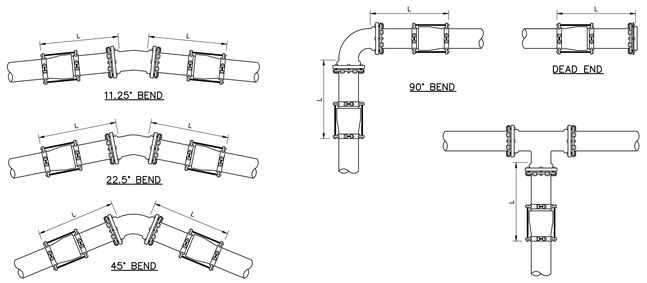
VALVE WITH VALVE BOX
N.T.S.



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.

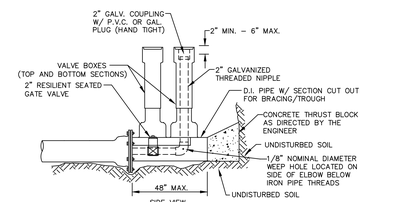


DIAMETER	REQUIRED LENGTH OF RESTRAINED JOINT PIPE ON BOTH SIDES OF FITTING — HORIZONTAL BEND				REQUIRED LENGTH OF RESTRAINED JOINT PIPE
	11.25°	22.5°	45°	TEE/90°	DEAD END
6"	2'	4'	9'	21'	51'
8"	3'	6'	11'	27'	67'
10"	4'	7'	14'	32'	81'
12"	4'	8'	16'	38'	96'
16"	5'	10'	20'	48'	123'

ASSUMED PARAMETERS:	
LAYING CONDITION	TYPE 5
SOIL DESIGNATION	SILT 1
DEPTH COVER	5 FT
DESIGN PRESSURE	200 PSI
SAFETY FACTOR	1.5

NOTES:
1. RESTRAINED JOINTS SHALL BE MECHANICAL JOINT OR PUSH-ON RESTRAINED JOINT AS SPECIFIED IN SECTION 33 14 11.01.

THRUST RESTRAINT DETAIL
N.T.S.



STANDARD 2" BLOW OFF
N.T.S.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

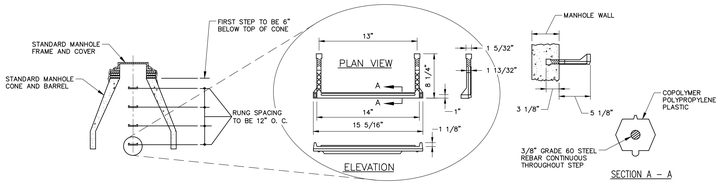
Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 2

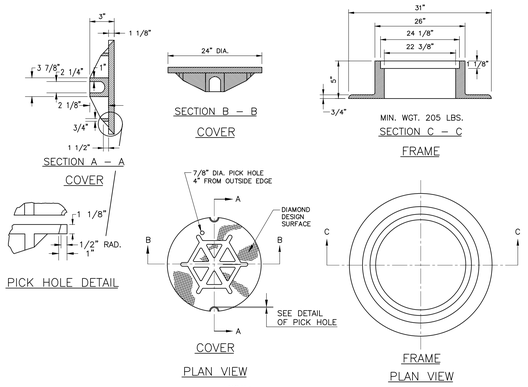
D-402

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.



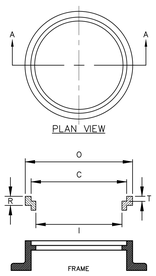
PLASTIC MANHOLE STEPS
N.T.S.



NOTE:

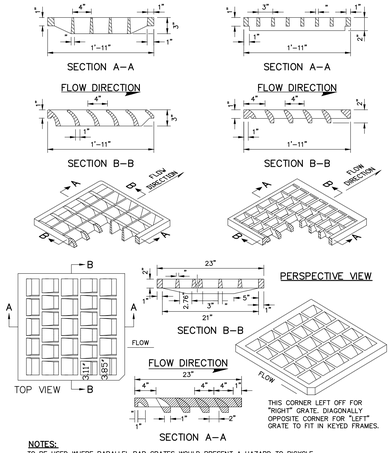
FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

TYPE "A" CAST IRON MANHOLE COVER AND FRAME
N.T.S.



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

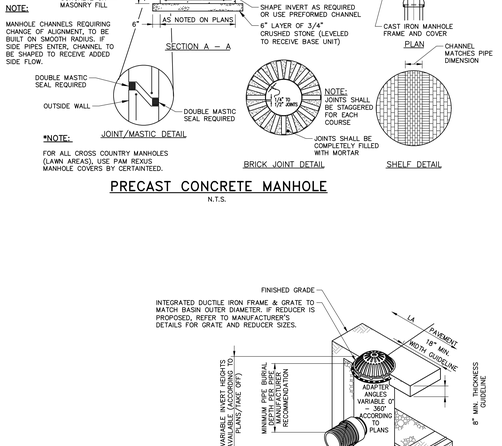
MANHOLE RISER RING
N.T.S.



NOTES:

TO BE USED WHERE PARALLEL BAR GRATES WOULD PRESENT A HAZARD TO BICYCLE TRAFFIC. FOR USE ON CATCH BASIN TYPES: A1–C, A2–C, A5–C, B1–C, B2–C, B5–C, F3–C, F4–C, F5–C, F6–C.

"CASCADE-TYPE" GRATES
N.T.S.



NOTE:

MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.

*NOTE:

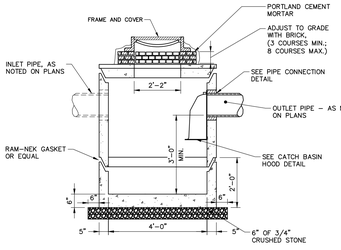
FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

PRECAST CONCRETE MANHOLE
N.T.S.

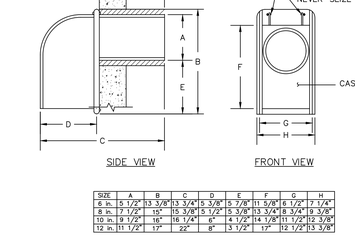
NOTES:

1. INSTALL BASIN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. PRODUCT SHALL BE NYLOPLAST DRAIN BASIN MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS (ADS) OR APPROVED EQUAL.
3. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
4. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
5. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTORATIONS.
6. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
7. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.

FIELD INLET
N.T.S.



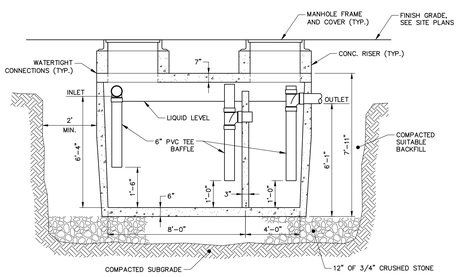
PRECAST CONCRETE CATCH BASIN
N.T.S.



SIZE	A	B	C	D	E	F	G	H
6 in.	5 1/2"	13 3/8"	13 3/4"	5 3/8"	5 7/8"	11 5/8"	6 1/2"	7 1/4"
8 in.	7 1/2"	15"	15 3/8"	5 1/2"	5 3/8"	13 3/4"	8 3/4"	9 3/8"
10 in.	9 1/2"	16"	16 1/4"	6"	4 1/2"	14 1/8"	11 1/2"	12 3/8"
12 in.	11 1/2"	17"	22"	8"	3 1/2"	17"	12 1/2"	13 3/8"

NOTE: PROVIDE IN CATCH BASINS IN PAVED AREAS ONLY.

CATCH BASIN HOOD
N.T.S.



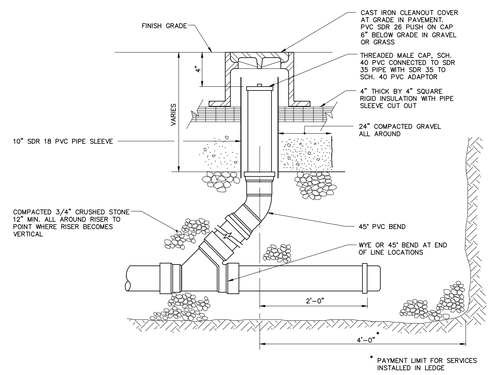
CONCRETE SPECIFICATIONS

1. 5,000 PSI AT 28 DAYS
2. 4% – 6% ENTRAINED AIR
3. TANK PENETRATIONS ARE INTEGRALLY CAST
4. ALL JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT
5. H-20 LOADING

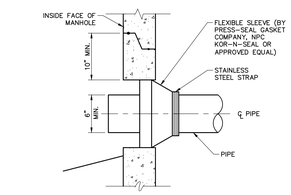
GREASE TRAP INFORMATION

1. TANKS SHOULD BE PUMPED AS NEEDED
2. ACCESS COVERS SHOULD HAVE RISERS TO BRING COVER ACCESS TO GRADE.

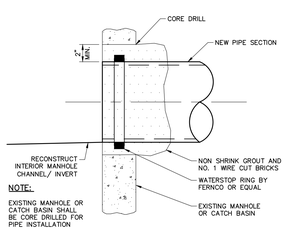
EXTERNAL GREASE TRAP DETAIL
N.T.S.



CLEANOUT DETAIL
N.T.S.



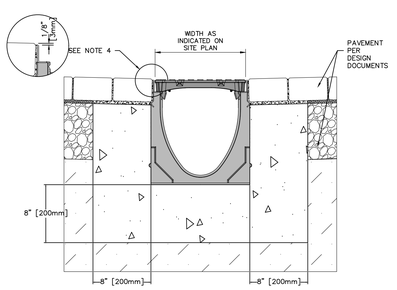
NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL
N.T.S.



NOTE:

EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION

NEW PIPE TO EXISTING STRUCTURE
N.T.S.



NOTES:

1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

TRENCH DRAIN
N.T.S.

SPECIFICATION CLAUSE

K200 KLASSIKDRAIN 'DRAINLOK' LOAD CLASS C

GENERAL

THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS

CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH: 14,000 PSI
FLEXURAL STRENGTH: 4,000 PSI
TENSILE STRENGTH: 1,500 PSI
WATER ABSORPTION: 0.07%
FROST PROOF: YES
DILUTE ACID AND ALKALI RESISTANT: YES
B117 SALT SPRAY TEST COMPLIANT: YES

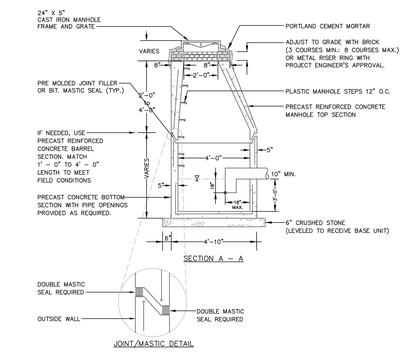
THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING "DRAINLOK" BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

NOTES:

- FOR USE IN PARTIALLY OR TOTALLY ENCLOSED PARKING GARAGES, AUTOMOTIVE REPAIR FACILITIES OR ANY OTHER PROPOSED STRUCTURE WHERE DEEMED APPROPRIATE BY THE CITY ENGINEER.
- DISCHARGE SHALL BE TO SANITARY SEWER.
- A VENT PIPE MAY BE REQUIRED THAT HAS A VERTICAL OUTLET OFF TO THE SIDE OF THE STRUCTURE.
- AN OIL ABSORBENT BOOM IS REQUIRED TO BE PLACED WITHIN THE MANHOLE ON THE WATER SURFACE AND REPLACED AT A MINIMUM ANNUALLY.



OIL / GRIT SEPARATOR
N.T.S.

IDEALS
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Roux Campus

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The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

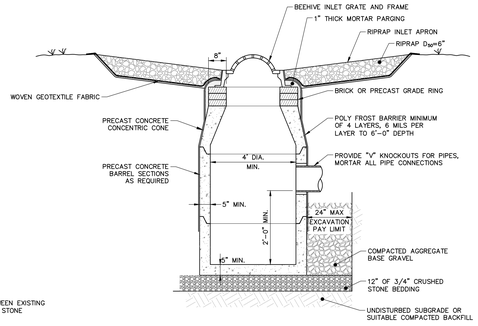
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
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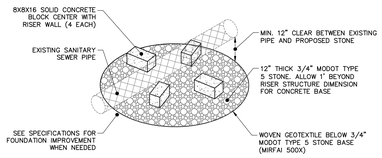
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CIVIL DETAILS - 3

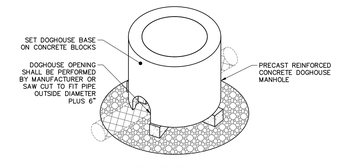
D-403



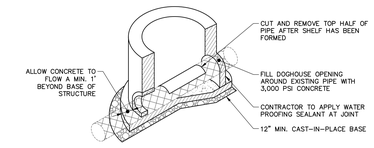
AREA DRAIN IN RIPRAP
N.T.S.



BASE ISOMETRIC VIEW



RISER ISOMETRIC VIEW

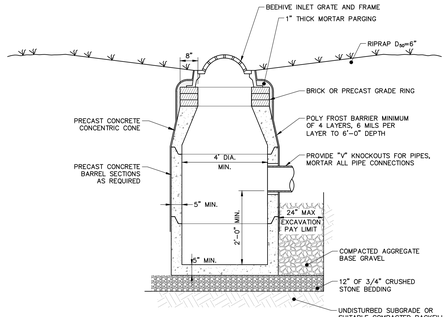


FOUNDATION SECTION VIEW

NOTES:

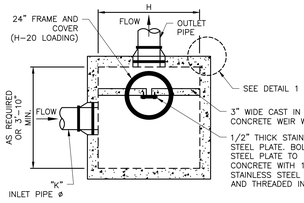
1. ASSEMBLED DOGHOUSE MANHOLE SHALL BE IN ACCORDANCE WITH ALL REQUIREMENTS OF PRECAST MANHOLE DETAIL ON THIS SHEET.

DOGHOUSE MANHOLE
NOT TO SCALE



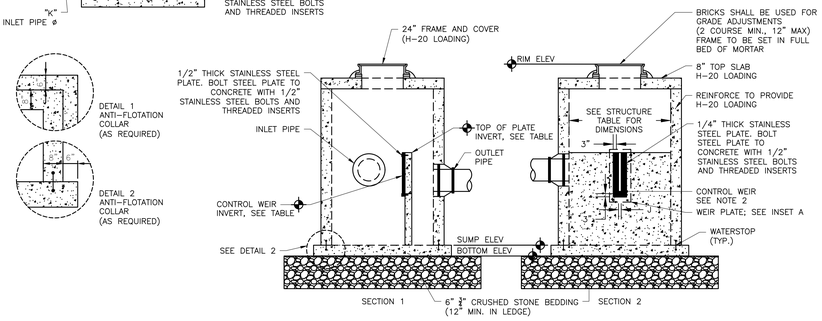
AREA DRAIN IN VEGETATION
N.T.S.

OUTLET CONTROL STRUCTURE – DIMENSIONS/ ELEVATIONS		
LOCATION	TOP OF PLATE B (ELEV.)	CONTROL WEIR C (ELEV.)
OCS1	19.34	17.34
OCS2	14.34	12.34
OCS3	12.84	10.84
OCS4	15.80	13.80
OCS5	14.06	12.06
OCS6	14.41	12.41
OCS7	12.08	10.08
OCS8	13.17	11.17
OCS9	12.60	10.60

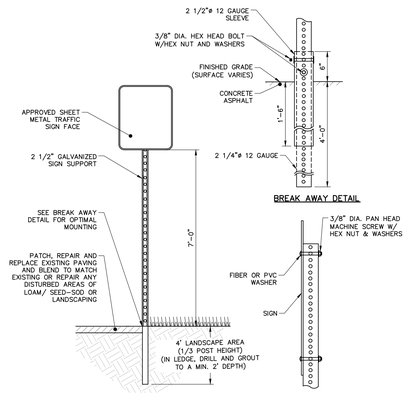


NOTES:

1) ALL CEMENT CONCRETE TO BE 4000 PSI (MIN).
2) CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY THE REGULATIONS AND IN ACCORDANCE WITH THE APPROVED DRAINAGE CALCULATIONS. STAINLESS STEEL PLATE SHALL BE USED FOR CONTROL WEIRS LESS THAN 2 INCHES WIDE.
3) ALL STAINLESS STEEL SHALL BE GRADE 316.
4) MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION.



OUTLET CONTROL STRUCTURE
N.T.S.

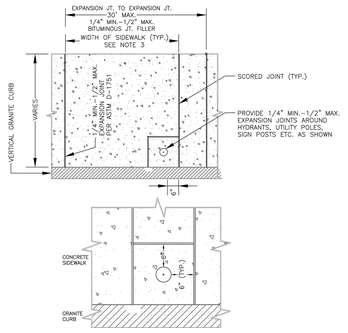


BREAK AWAY DETAIL

NOTES:

1. ALL HARDWARE SHALL BE STAINLESS STEEL.

TRAFFIC SIGN POST
N.T.S.

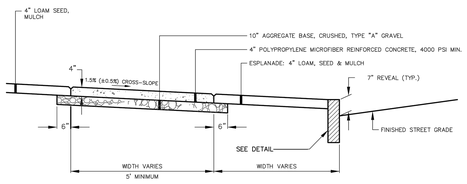


CONCRETE SIDEWALK JOINT NOTES:

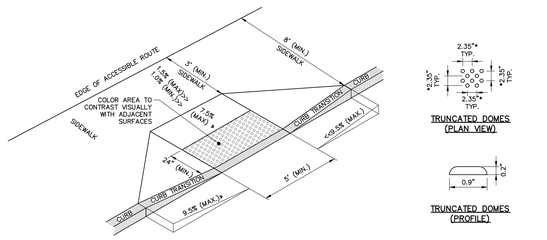
1. EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
2. SLABS SHALL BE PLACED ALTERNATELY IN LENGTHS, NOT TO EXCEED 30 LINEAR FEET OR AS DIRECTED AND SHALL BE SEPARATED BY AN EXPANSION JOINT OF PREFORMED EXPANSION FILLER 1/4" MIN.-1/2" MAX. IN THICKNESS AND SHALL EXTEND THE FULL LENGTH/DEPTH OF THE CONCRETE.
3. THE SIDEWALK SURFACE SHALL BE SCORED INTO BLOCK UNITS. THE DEPTH OF SCORING SHALL BE AT LEAST ONE QUARTER OF THICKNESS OF THE SLABS (1" TYP.). SCORED JOINTS MUST BE COMPLETED AS PART OF THE FINISHING PROCESS. SAW CUTTING OF JOINTS IS NOT ALLOWED. SCORED JOINTS SHALL BE PLACED AT THE FOLLOWING LOCATIONS:
   A. IN LOCATIONS TO ENSURE BLOCK UNITS DO NOT EXCEED 36 SQUARE FEET.
   B. AT THE SPACING THAT MATCHES ADJACENT TIP DOWN CURB
   C. EXTENSION OF EXPANSION JOINTS LOCATED AT HYDRANTS & UTILITY POLES.
4. ALL OUTSIDE EDGES OF THE SLAB AND ALL JOINTS SHALL BE ROUNDED WITH A 1/4" RADIUS EDGING TOOL.
5. CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.

SIDEWALK EXPANSION JOINT (IN CITY RIGHT-OF-WAY)
N.T.S.

NOTE
CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDEOK SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.



REINFORCED CONCRETE SIDEWALK (IN CITY RIGHT-OF-WAY)
N.T.S.



TRUCTURED DOMES (PLAN VIEW)

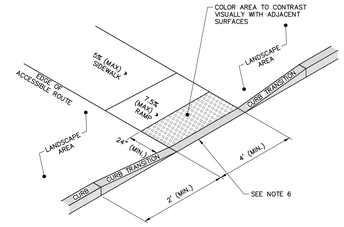
TRUCTURED DOMES (PROFILE)

*DIMENSIONS ARE CENTER TO CENTER

NOTES:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN.)
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
6. ADJACENT SURFACES AT TRANSITIONS SHALL BE FLUSH WITH CURB RAMPS.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY OR OTHERWISE INDICATED.
10. DETECTABLE WARNING SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. TRUNCATED DOMES AND ALL RELATED INSTALLED SURFACES TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ALL DETECTABLE WARNING SURFACE INSTALLATIONS SHALL BE AT A MINIMUM AT LEAST AS NON SKID AS THE SURROUNDING PEDESTRIAN SURFACES.
12. FOR ALLOWABLE SLOPE OF ACCESSIBLE ROUTE ON EXISTING SITE, SEE SECTION 405 OF THE ADA STANDARD FOR ACCESSIBLE DESIGN.

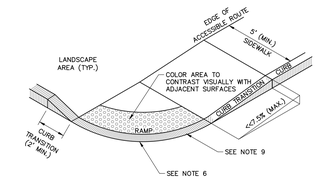
ACCESSIBLE CURB RAMP (ACR) – TYPE 'A'
N.T.S.



NOTE:

1. ACCESSIBLE CURB RAMP NOTES PROVIDED UNDER "ACCESSIBLE CURB RAMP – TYPE 'A' DETAIL ON THIS SHEET ARE APPLICABLE.

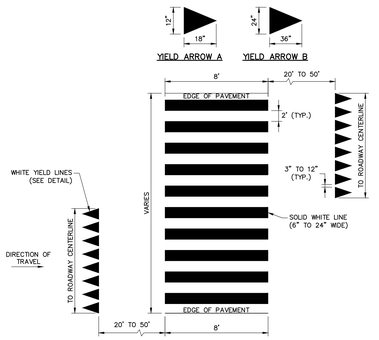
ACCESSIBLE CURB RAMP (ACR) – TYPE 'D'
N.T.S.



NOTE:

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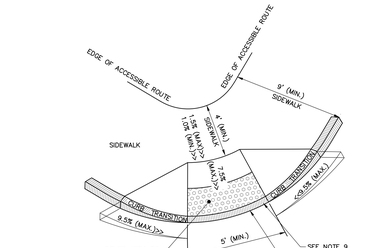
ACCESSIBLE CURB RAMP (ACR) – TYPE 'E'
N.T.S.



NOTE:

1. YIELD ARROW A SHALL BE USED FOR TRAVEL LANES UNDER TWELVE (12) FEET. YIELD ARROW B SHALL BE USED FOR TRAVEL LANES TWELVE (12) FEET OR GREATER

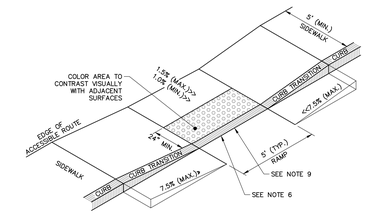
CROSSWALK PAVEMENT MARKINGS
N.T.S.



NOTE:

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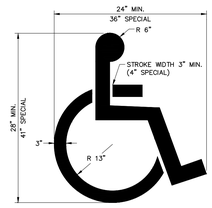
ACCESSIBLE CURB RAMP (ACR) – TYPE 'F'
N.T.S.



NOTE:

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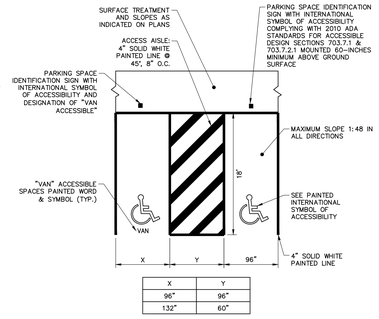
ACCESSIBLE CURB RAMP (ACR) – TYPE 'H'
N.T.S.



NOTES:

1. SYMBOL SHALL BE PAINTED WHITE IN COMPLIANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SECTION 3B.19, SECTION 3B.20 AND FIGURE 3B-22.
2. A BLUE RECTANGULAR (MIN. 36" X 36") BACKGROUND AND WHITE BORDER ARE OPTIONAL IN ACCORDANCE WITH MUTCD SECTION 3B.19 AND FIGURE 3B-22.
3. SYMBOL FINISH SHALL BE NON-GLARE IN ACCORDANCE WITH ADA STANDARDS FOR ACCESSIBLE DESIGN SECTION 703.7.1.

PAINTED INTERNATIONAL SYMBOL OF ACCESSIBILITY
N.T.S.



X	Y
96"	96"
132"	60"

ACCESSIBLE PARKING STALL LAYOUT
N.T.S.

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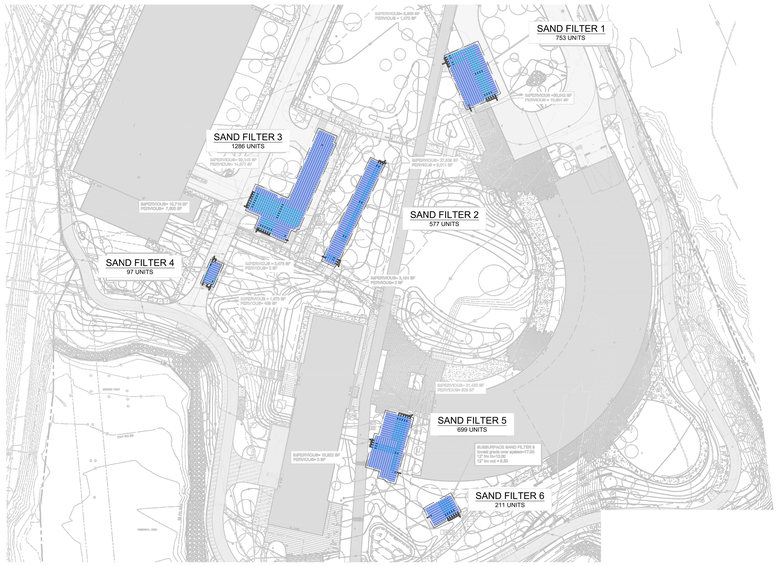
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER
Amy N. Lebel

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
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Scale	AS NOTED

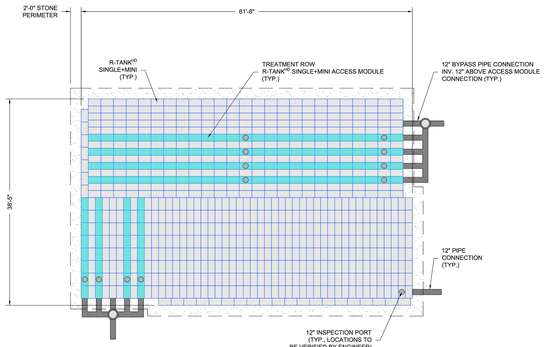
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CIVIL DETAILS - 4

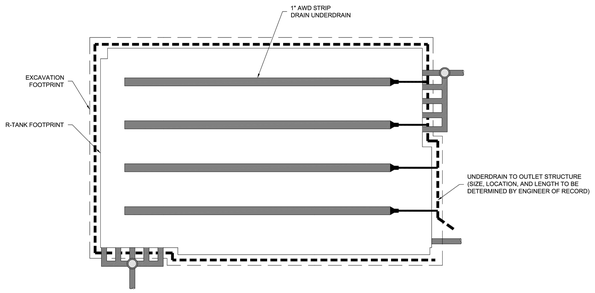
D-404



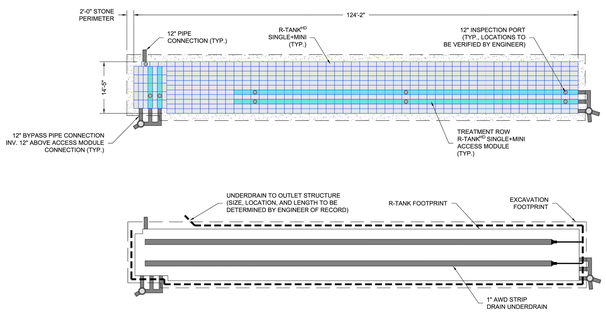
SUBSURFACE STORMWATER TREATMENT INDEX

N.T.S.

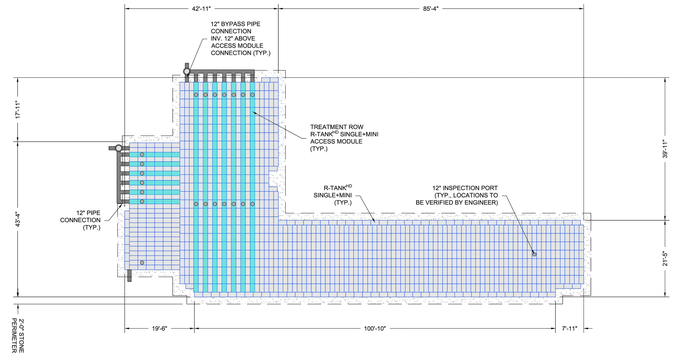


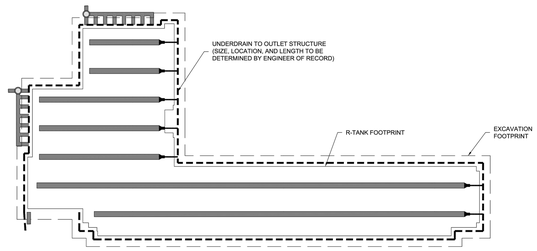


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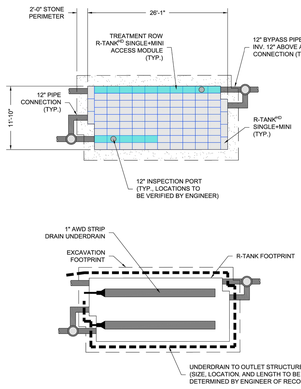


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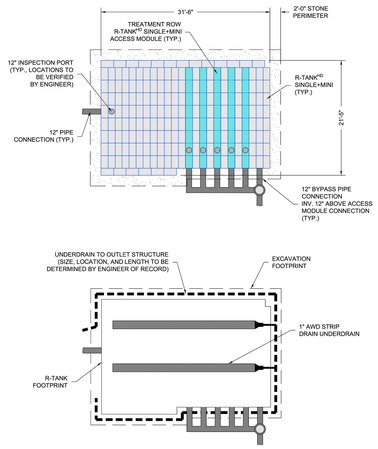




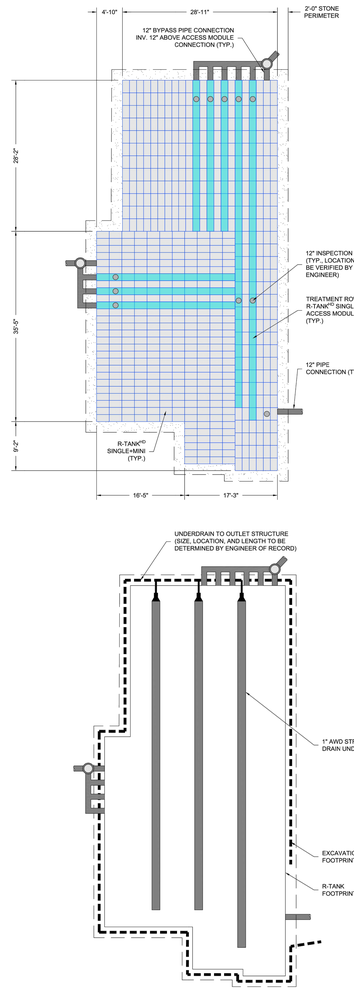
SAND FILTER 3



SAND FILTER 4



SAND FILTER 6



SAND FILTER 5

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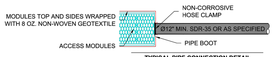
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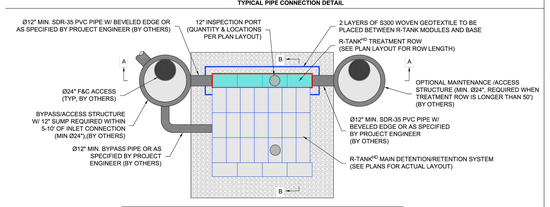
CIVIL DETAILS - 5

D-405

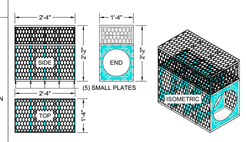


TYPICAL PIPE CONNECTION DETAIL

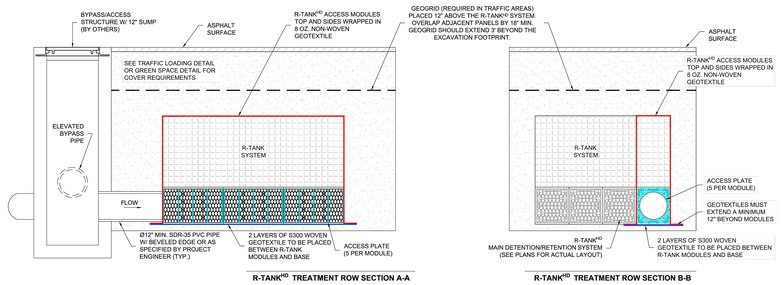
NOTE:
IF PIPE CONNECTING TO TREATMENT ROW IS LARGER THAN Ø12" SDR-35, IT SHALL BE ABUTTED FLUSH TO END PLATE AND SEALED WITH A PIPE BOOT.



R-TANK^HD TREATMENT ROW WITH PRECAST INLET/ACCESS STRUCTURE

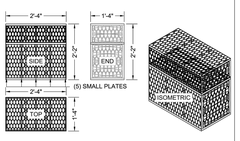


SINGLE + MINI R-TANK^HD - ACCESS MODULE DETAIL
(FOR MODULE DATA, SEE STANDARD MODULE DETAIL)



R-TANK^HD TREATMENT ROW SECTION A-A

R-TANK^HD TREATMENT ROW SECTION B-B

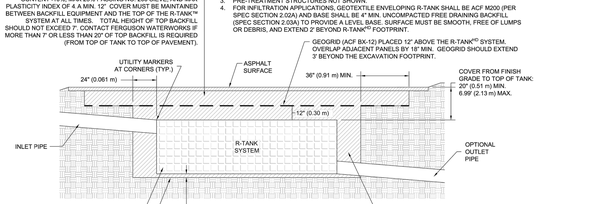


MODULE DATA

GEOMETRY:	**LOAD RATING:**
LENGTH = 28.15 IN. (715 MM)	33.4 PSI, (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS20/HS25 - SEE SPEC FOR
HEIGHT = 25.98 IN. (660 MM)	COVER REQUIREMENTS
TANK VOLUME = 6.67 CF	**MATERIAL:**
STORAGE VOLUME = 6.33 CF	100% RECYCLED POLYPROPYLENE
VOID INTERNAL VOLUME: 95%	**SMALL PLATES REQUIRED:**
VOID SURFACE AREA: 90%	5/SEGMENT, 10/MODULE

SINGLE + MINI R-TANK^HD - MODULE DETAIL

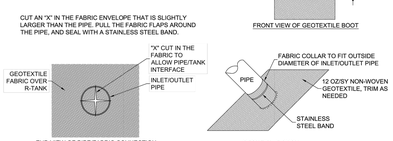
TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE =1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.05C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT=10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4 A MIN. 12". COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).



R-TANK^HD & HS-20 LOADS - SECTION VIEW

NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^HD MODULE SHEET.
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^HD FOOTPRINT.

NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24"
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.



FRONT VIEW OF GEOTEXTILE BOOT

CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE, PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.

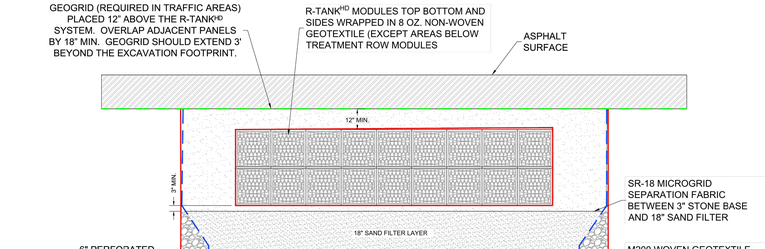
END VIEW OF PIPE/FABRIC CONNECTION

GEOTEXTILE BOOT

AFTER TANK WRAP IS SECURED TO PIPE, SLIDE BOOT AGAINST R-TANK AND SECURE WITH SECOND STAINLESS STEEL BAND, THEN ATTACH BOOT FLAP TO TANK ENVELOPE FABRIC WITH DUCT TAPE OR OTHER ADHESIVE.



R-TANK TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL



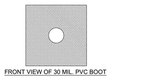
R-TANK QUANTITIES

SYSTEM DESIGNATION	FILTER 1	FILTER 2	FILTER 3	FILTER 4	FILTER 5	FILTER 6
R-TANK^HD MODULE TYPE	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI
TRAFFIC LOAD	HS-20	NON-TRAFFIC	HS-20	HS-20	NON-TRAFFIC	NON-TRAFFIC
# OF SINGLE+MINI R-TANKS	621	485	1075	82	877	171
# OF SINGLE+MINI R-TANK ACCESS MODULES	132	92	211	15	122	40
TOTAL SYSTEM STORAGE	4,501 CF	4,859 CF	11,204 CF	992 CF	5,599 CF	1,794 CF
R-TANK STORAGE VOLUME	4,788 CF	3,654 CF	8,144 CF	614 CF	4,427 CF	1,336 CF
STONE STORAGE VOLUME (40% VOID RATIO)	1,732 CF	1,201 CF	3,060 CF	378 CF	1,182 CF	462 CF
STONE BED FOOTPRINT	2,738 SF	2,265 SF	4,751 SF	469 SF	2,595 SF	879 SF
BACKFILL QUANTITY	473 CY	380 CY	826 CY	88 CY	404 CY	143 CY
N060 NON-WOVEN GEOTEXTILE TANK WRAP	648 SY	531 SY	1,118 SY	87 SY	606 SY	195 SY
N060 NON-WOVEN GEOTEXTILE EXCAVATION WRAP	1,760 SY	1,652 SY	3,086 SY	391 SY	1,677 SY	636 SY
30 MIL PVC LINER	530 SY	528 SY	938 SY	136 SY	507 SY	206 SY
8 OZ. NON-WOVEN GEOTEXTILE TREAT. ROW WRAP	230 SY	199 SY	367 SY	21 SY	213 SY	72 SY
S300 WOVEN GEOTEXTILE TREAT. ROW BASE FABRIC	113 SY	79 SY	180 SY	13 SY	104 SY	34 SY
ACF BX-12 GEOGRID	437 SY	0 SY	763 SY	66 SY	0 SY	0 SY
12" INSPECTION PORTS	13	9	22	2	11	6
GEOTEXTILE PIPE BOOTS (12")	33	21	45	15	33	21
30 MIL. PVC PIPE BOOTS (12")	11	7	15	5	11	7
STORMING CPS (12")	2	2	2	2	2	1
NOTE: STONE QUANTITY INCLUDES 12" OF COVER AND 3" OF BASE						
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 15% WASTE FACTOR.						
SEE SHEETS 3 - 14 FOR DETAILS AND ADDITIONAL INFORMATION						

SAND FILTER ELEVATIONS

SYSTEM DESIGNATION	FILTER 1	FILTER 2	FILTER 3	FILTER 4	FILTER 5	FILTER 6
CRUSHED STONE BELOW LINER	13.52	11.67	12.12	8.82	10.87	10.47
7" STONE UNDERDRAIN LAYER	14.02	12.17	12.62	9.32	11.37	10.97
1" AWD STRIP DRAIN	14.27	12.42	12.87	9.57	11.62	11.22
GRAVEL TRANSITION LAYER	14.60	12.75	13.20	9.90	11.95	11.55
18" SAND FILTER LAYER BASE	15.10	13.25	13.70	10.40	12.45	12.05
BASE STONE UNDER TANKS	16.60	14.75	15.20	11.90	13.95	13.55
TANK INV.	16.85	15.00	15.45	12.15	14.20	13.88
TOP OF TANK	19.02	17.17	17.62	14.32	16.37	15.97
GEOGRID / TOP OF STONE	20.02	17.67	18.62	15.32	16.87	16.97
MIN. ALLOW. FINAL GRADE	20.69	18.17	19.29	15.99	17.37	17.64
MAX. ALLOW. FINAL GRADE	26.01	24.18	24.61	21.31	23.36	22.96



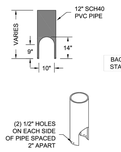


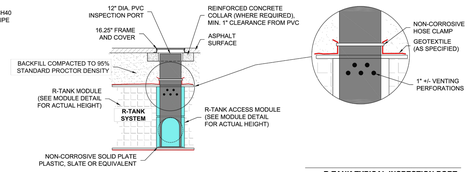
FRONT VIEW OF 30 MIL. PVC BOOT



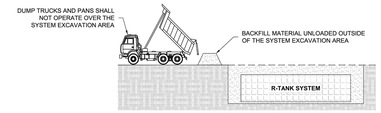
R-TANK TYPICAL EXCAVATION INLET/OUTLET W/ 30 MIL PVC PIPE BOOT DETAIL

NOTES
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^FC, R-TANK^FD, R-TANK^FT AND R-TANK^TC MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.



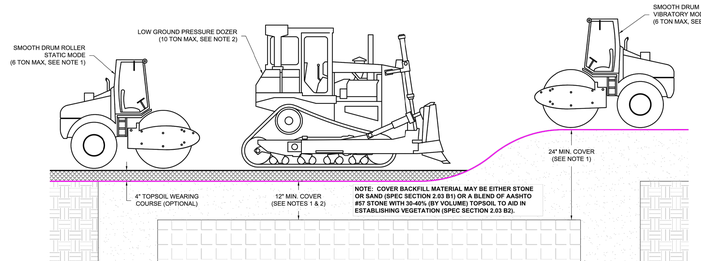


R-TANK TYPICAL INSPECTION PORT



DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) 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. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
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 DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
4. 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). **SPEC SECTION 3.05 B**
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.



CONSTRUCTION EQUIPMENT COVER DETAIL - GREEN SPACE

R-TANK SPECIFICATION

PART 1 - GENERAL
1.01 RELATED DOCUMENTS
A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK INCLUDED
A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
B. Provide and install R-TanLD; R-TankHD; R-TankSD; or R-TankLID system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.
D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL
A. All materials shall be manufactured in ISO certified facilities.
B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS
A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
B. Submit manufacturer's product data, including compressive strength and unit weight.
C. Submit manufacturer's installation instructions.
D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
F. Submit required experience and personnel requirements as specified in Section 1.03.
G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials shall be on smooth surfaces, free from dirt, mud and debris.
B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE:
A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS
A. Coordinate installation of the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
B. Protect adjacent work from damage during R-Tank system installation.
C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS
2.01 R-TANK UNITS
A. R-Tank - Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).
B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank^FC VALUE	R-Tank^FD VALUE	R-Tank^FT VALUE
Void Area	Volume available for water storage	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	40%	56%	40%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	35.0 psi	33.4 psi	42.8 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	23.4 psi	24.4 psi
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	0"	12"
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	0"	12"
Maximum Cover	Maximum allowable cover depth	5 feet	< 5 feet	< 10 feet
Unit Weight	Weight of plastic per cubic foot of tank	3.85 lbs / cf	3.85 lbs / cf	4.25 lbs / cf
Rib Thickness	Thickness of load bearing members	0.18 inches	0.18 inches	0.18 inches
Service Temperature	Temperature range for use	-10 ~ 120° F	-10 ~ 120° F	-10 ~ 120° F

C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 GEOSYNTHETICS
A. Geotextile: A geotextile envelope is required to prevent backfill material from entering the R-Tank modules
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N060 or equivalent).
2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
B. Geogrid: Is not always required for R-TanLID applications, and is often not required for non-traffic load applications.

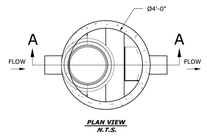
2.03 BACKFILL & COVER MATERIALS
A. Backfill Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, any and sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications backfill material shall be free draining.
B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications - Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
a. For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14" or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.
C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS
A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

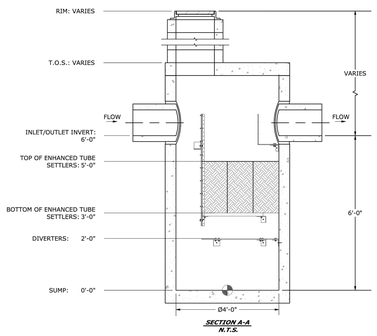
PART 3 - EXECUTION
3.01 ASSEMBLY OF R-TANK UNITS
A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION
A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 PREPARATION OF BASE
A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within ¼" (+/- ½") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.
B. Outline the footprint of the



PLAN VIEW
N.T.S.



SECTION A-A
N.T.S.

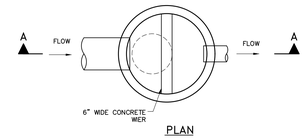
GENERAL NOTES:

1. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C478.
2. CONTRACTOR TO INSTALL THE STRUCTURE IN ACCORDANCE WITH ASTM C1821.
3. CONTRACTOR TO PROVIDE ALL LABOR AND EQUIPMENT REQUIRED TO OFFLOAD AND INSTALL UNIT.
4. CONTRACTOR TO PROVIDE AND INSTALL ALL PIPES, FRAMES, COVERS, HATCHES, AND RISERS UNLESS SPECIFIED OTHERWISE.
5. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS.

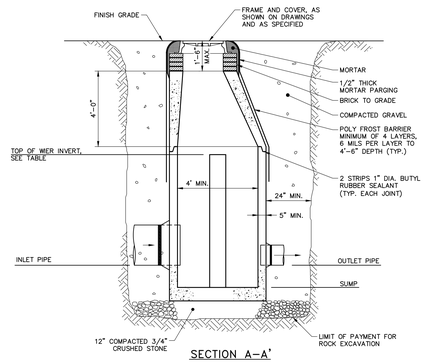
NOTE: PROVIDE STORMSETTLER BY STORMTRAP OR APPROVED EQUAL.

HYDRODYNAMIC SEPARATOR

N.T.S.



PLAN



SECTION A–A'

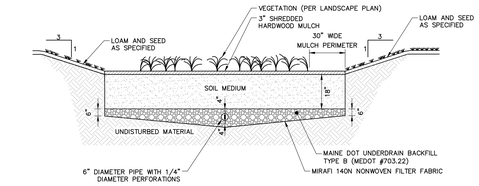
NOTE:
1. SEE STRUCTURE TABLE FOR DIMENSIONS.

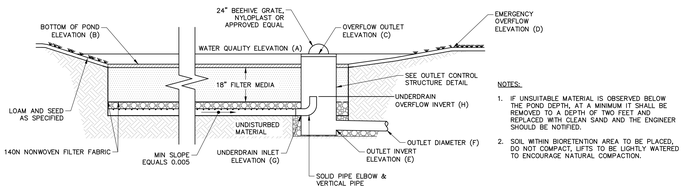
DIVERSION MANHOLE DETAIL

N.T.S.

DIVERSION STRUCTURE DIMENSIONS/ ELEVATIONS	
LOCATION	TOP OF WEIR B (ELEV)
DMH2 (DIV.)	17.50
DMH6 (DIV.)	17.90
DMH12 (DIV.)	16.90
DMH15 (DIV.)	16.20
DMH24 (DIV.)	14.50
DMH32 (DIV.)	16.20
DMH33 (DIV.)	13.60
DMH37 (DIV.)	15.70

BIORETENTION BASIN DIMENSIONS/ ELEVATION (FEET)								
LOCATION	A (ELEV)	B (ELEV)	C (ELEV)	D (ELEV)	E (ELEV)	F (ELEV)	G (ELEV)	H (ELEV)
BIORETENTION BASIN 1	19.50	19.00	19.50	21.25	15.00	1.00	16.34	17.84
BIORETENTION BASIN 2	14.50	14.00	14.50	14.80	10.50	1.00	11.34	12.84
BIORETENTION BASIN 3	13.00	12.50	13.00	13.80	9.00	1.00	9.84	11.34





NOTES:

1. IF UNSUITABLE MATERIAL IS OBSERVED BELOW THE POND DEPTH, AT A MINIMUM IT SHALL BE REMOVED TO A DEPTH OF TWO FEET AND REPLACED WITH CLEAN SAND AND THE ENGINEER SHOULD BE NOTIFIED.
2. SOIL WITHIN BIORETENTION AREA TO BE PLACED, DO NOT COMPACT, LIFTS TO BE LIGHTLY WATERED TO ENCOURAGE NATURAL COMPACTION.

BIORETENTION BASIN

N.T.S.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 OCTOBER 2023
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 7

D-407

THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
PHASE 1
PORTLAND, MAINE

LAND-USE PERMIT SET

MARCH 27, 2024

NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

DRAWING INDEX	
SHEET TITLE	SHEET DESCRIPTION
G-000	COVER
G-001	GENERAL NOTES, LEGEND & ABBREVIATIONS
C-001	DEMOLITION PLAN – 1
C-002	DEMOLITION PLAN – 2
C-100	OVERALL SITE LAYOUT PLAN
C-101	SITE LAYOUT PLAN – 1
C-102	SITE LAYOUT PLAN – 2
C-201	SITE UTILITY PLAN – 1
C-202	SITE UTILITY PLAN – 2
C-301	GRADING & DRAINAGE PLAN – 1
C-302	GRADING & DRAINAGE PLAN – 2
C-303	PLAN INSETS
C-304	LAYOUT, STRUCTURE & PIPE TABLES
D-401	CIVIL DETAILS – 1
D-402	CIVIL DETAILS – 2
D-403	CIVIL DETAILS – 3
D-404	CIVIL DETAILS – 4
D-405	CIVIL DETAILS – 5
D-406	CIVIL DETAILS – 6
D-407	CIVIL DETAILS – 7



SITE LOCATION MAP

SOURCE: USGS TOPO QUADRANGLE

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Drawing Title
COVER

G-000

CIVIL GENERAL NOTES

1. SITE AND TOPOGRAPHIC DATA PROVIDED BY ON THE GROUND SURVEY PERFORMED BY VHB, 500 SOUTHBOROUGH DRIVE, SUITE 105B, SOUTH PORTLAND, MAINE 04106 (207).889.3150. PLAN ENTITLED "EXISTING CONDITIONS SURVEY, RECORD OWNER: THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFT SCIENCE, 1 BEAN POT CIRCLE, CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE" DATED: 9/15/2023
2. VERTICAL DATUM IS REFERENCED TO CITY DATUM WITH ONE FOOT CONTOUR INTERVALS. CITY DATUM IS +0.02 FT NGVD 1929. HORIZONTAL DATUM IS REFERENCED TO STATE PLANE NAD 1983 (FEET), MAINE WEST ZONE.
3. 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.
4. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
5. 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.
6. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN ADVANCE IN WRITING BY CITY AND/OR LAND OWNER.
7. 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, PORTLAND WATER DISTRICT 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.
8. 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.
9. LAND OUTSIDE THE PROPOSED LIMIT OF WORK SHALL NOT BE DISTURBED BY THE CONTRACTOR. ANY LAND OUTSIDE LIMIT OF WORK DISTURBED BY CONTRACTOR SHALL BE RESTORED BY CONTRACTOR AT NO EXPENSE TO OWNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.
12. 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.
13. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
14. 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.
15. WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE CITY OF PORTLAND AND STATE REQUIREMENTS.
16. ALL CURB DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND SPECIFICATIONS. COST IS INCIDENTAL TO CONTRACT.
17. ALL FULL DEPTH PAVEMENT REPLACEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS.
18. 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 PLAN 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.
19. 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.
20. ALL WORK IN THE PUBLIC R.O.W. SHALL BE COMPLETED IN ACCORDANCE WITH THE CITY'S TECHNICAL MANUAL ARTICLES VI, VII, AND IX OF CHAPTER 25-STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES OF THE CITY OF PORTLAND CODE OF ORDINANCES.
21. 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.
22. ALL WATER DISTRIBUTION CONSTRUCTION IN THE PUBLIC WAY SHALL BE COMPLETED IN ACCORDANCE WITH PORTLAND WATER DISTRICT STANDARDS.
23. 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.
24. IF IMPORTED FILL MATERIAL IS REQUIRED, IT SHALL BE CERTIFIED IN WRITING BY CONTRACTOR 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.
25. 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.
26. ALL MATERIAL SHALL BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.
27. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION.
28. 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.
29. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
30. 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. 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. A DRAFT OF THE NOTICE WILL BE PROVIDED TO THE OWNER AND THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO SUBMISSION.
31. THE UTILITY LOCATIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION BY THE CONTRACTOR. CONTACT THE ENGINEER AND OWNER IMMEDIATELY UPON DISCOVERING ANY CONFLICTS WITH EXISTING AND PROPOSED UTILITY LOCATIONS. NOT ALL EXISTING UTILITIES ARE SHOWN ON PLANS.
32. CONTRACTOR SHALL CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
33. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
34. CONTRACTOR SHALL SEQUENCE THE WORK SO AS TO MAINTAIN UTILITY SERVICES FOR EXISTING OPERATIONS ON AND ADJACENT TO THE SITE. CONTRACTOR SHALL PROVIDE A PLAN FOR TEMPORARY UTILITY SERVICES OR AS REQUIRED. THE PLAN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO OWNER, ENGINEER AND UTILITY FOR ACCEPTANCE A MINIMUM OF 14 DAYS PRIOR TO START OF UTILITY WORK.
35. EXISTING FACILITIES (I.E. SIGNS, POLES, LIGHT POSTS, ETC.) SHALL BE REMOVED AND PROTECTED DURING CONSTRUCTION. OWNER RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF CITY AT CONTRACTOR'S EXPENSE.
36. A COMPLETE SET OF "RECORD" DRAWINGS THAT REFLECT ANY AND ALL MODIFICATIONS TO THE SANITARY SEWER SYSTEM, WATER DISTRIBUTION SYSTEM, STORM SEWER SYSTEM AND ANY OTHER UTILITY INSTALLATIONS OR ALTERATIONS WITHIN THE PROJECT LIMITS SHALL BE SUBMITTED TO THE CITY OF PORTLAND. THESE DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL (ACAD) AND HARD COPY FORMAT AS DEFINED IN THE SPECIFICATIONS PRIOR TO PAYMENT OF FINAL RETAINAGE.
37. ALL UTILITY SERVICES AND MAINS ARE APPROXIMATE AS SHOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING SERVICES AND MAINS AND RELOCATE AS REQUIRED TO COMPLETE WORK. CONTRACTOR SHALL COORDINATE WORK WITH THE CITY OF PORTLAND, PORTLAND WATER DISTRICT, UNITIL, CMP, AND ANY OTHER UTILITY OWNERS AND PROPERTY OWNERS.
38. WORK IS PROPOSED IN CLOSE PROXIMITY TO EXISTING UTILITIES. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
39. CAPPED PIPE STUB LOCATIONS SHALL BE MARKED WITH EMBEDDED STAKE AND A MINIMUM OF THREE TIES SHALL BE RECORDED. EMBEDDED STAKE SHALL BE 2X4 WITH PK NAIL DRIVEN IN TOP, LENGTH AS REQUIRED TO SPAN FROM TOP OF PIPE TO 6" BELOW GRADE. LOCATION AND ELEVATION OF PIPE STUB SHALL BE PROVIDED. WARNING TAPE AND WIRE SHALL BE INSTALLED OVER PIPE STUBS IN ACCORDANCE WITH SPECIFICATIONS.
40. ALL SIGNAGE SHALL CONFORM WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
41. ACTIVITIES THAT HAVE THE POTENTIAL TO DISTURB SOIL SUCH AS UTILITY AND SUBSURFACE STRUCTURE INSTALLATION/RELOCATION WORK, FOUNDATION INSTALLATION, GRADING, PAVING, AND LANDSCAPING SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SOIL MANAGEMENT PLAN. APPLICABLE SOIL MANAGEMENT PROCEDURES INCLUDE SITE CONTROLS AND CONSTRUCTION MEASURES TO REDUCE EXPOSURE TO SOIL DURING CONSTRUCTION, AS WELL AS TO FACILITATE THE PROPER HANDLING, STORAGE, CHARACTERIZATION, TRANSPORT, ONSITE REUSE, AND/OR OFFSITE REUSE, OR DISPOSAL, OF EXCESS SOIL THAT MAY BE GENERATED DURING CONSTRUCTION.
42. ALL NEW BURIED WATER PIPE SHALL HAVE A MINIMUM 5 FEET COVER UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER. BURIED PIPE WITH LESS THAN 4 FEET OF COVER SHALL HAVE A MINIMUM OF 4 INCHES OF RIGID INSULATION WITH AN R-VALUE OF R-20 INSTALL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
43. WHERE NEW WATER MAINS OF APPURTENANCES ARE TO BE CONNECTED TO EXISTING PIPE, CONTRACTOR SHALL CUT AND REMOVE THE EXISTING PIPE AS NECESSARY TO INSTALL THE NEW WORK. TEST PIT LOCATIONS WHERE NEW MAINS CONNECT TO EXISTING MAINS TO VERIFY PIPE DIAMETER AND MATERIAL TYPE.
44. SOLID SLEEVES ARE SHOWN ON THE DRAWINGS FOR ALL CONNECTIONS TO EXISTING WATER MAIN. IF OUTER DIAMETER OF EXISTING WATER MAIN IS FOUND TO BE GREATER THAN THE MAXIMUM OUTER DIAMETER COMPATIBLE WITH SOLID SLEEVES, CONTRACTOR SHALL INSTALL A COUPLING TO COMPLETE CONNECTION WITH EXISTING WATER MAIN.
45. BACKFLOW PREVENTERS SHALL BE PROVIDED AT ALL BUILDING SANITARY SEWER SERVICE OUTLETS.
46. A DEWATERING PLAN SHALL BE SUBMITTED TO THE CITY OF PORTLAND WATER RESOURCE COMPLIANCE COORDINATOR PRIOR TO ANY EXCAVATION WORK AND DEWATERING ACTIVITIES IN ACCORDANCE WITH CITY OF PORTLAND RULES AND REGULATIONS FOR USE OF THE SEWER SYSTEM CHAPTER 8..

CIVIL LEGEND

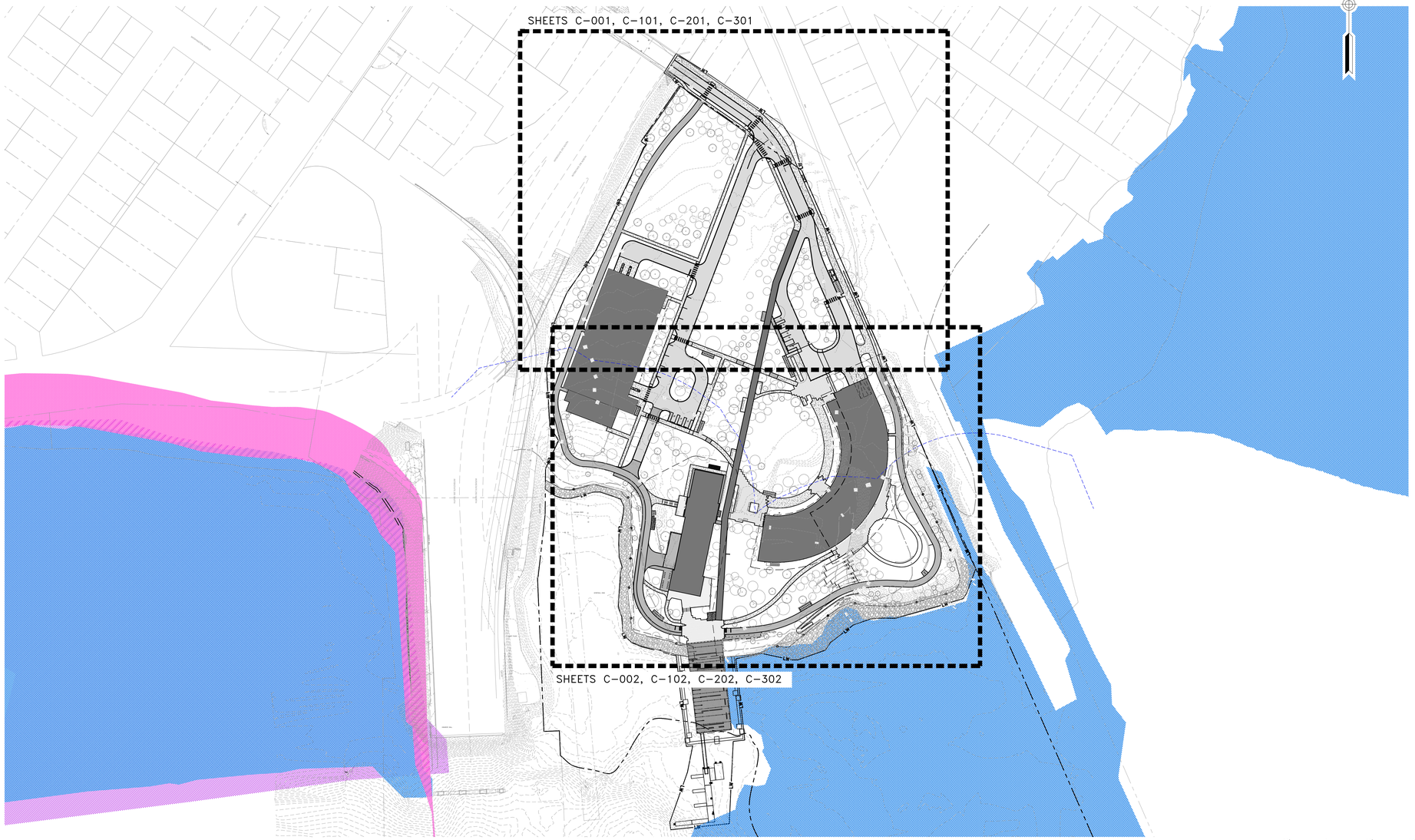
EXISTING		PROPOSED
	CONTOUR (1' INTERVAL)	
	CONTOUR (INDEX)	
S	SANITARY SEWER	S
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
W	WATER LINE	W
E	UNDERGROUND ELECTRIC	
	UNDERGROUND TELECOMMUNICATIONS	
G	GAS LINE	
OE	OVERHEAD ELECTRIC	OE
	PROPERTY LINE	
	EDGE OF VEGETATION	
X X	FENCE	
	RETAINING WALL	
	GRANITE CURB	
	FLUSH CURB	
	SLOPE GRANITE CURB	
	TIPDOWN	
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL	
T T T T T	GUARDRAIL	T T T T T
	RAILROAD TRACKS	
	ROOF OVERHANG	
	SEDIMENT BARRIER	
	LIMIT OF WORK	LW
	250' SHORELAND ZONE BOUNDARY	
	SIDEWALK	
	BITUMINOUS PAVEMENT	
	CONCRETE	
	BUILDING FOOTPRINT	
	BLUE MUSSEL HABITAT	
	SOFTSHELL CLAM HABITAT	
	TIDAL WATERFOWL & WADING BIRD HABITAT	
	MAINE SHOREBIRD AREAS	

CIVIL LEGEND

EXISTING		PROPOSED
S	SANITARY SEWER MANHOLE	S
CO	CLEAN OUT	CO
D	DRAINAGE MANHOLE	D
	CATCH BASIN	
	AREA DRAIN	
E	ELECTRICAL MANHOLE	E
T	TELECOMMUNICATIONS MANHOLE	T
TELE BOX	TELEPHONE STAND BOX	
GM	GAS METER BOX	
	GAS VENT	
	GAS GATE	
	TRANSFORMER	
	UTILITY POLE	
	UTILITY POLE WITH GUY	
	LIGHTPOST	
	WATER GATE VALVE	
	CURB STOP	
	REDUCER	
	SOLID SLEEVE	
	WATER SHUT OFF VALVE	
	HYDRANT	
W	WATER METER BOX	W
	PROPERTY MONUMENT	
MB	MAIL BOX	
	STREET AND MISCELLANEOUS SIGNS	
FP	FLAGPOLE	
XXX.XX	SPOT ELEVATION	XXX.XX
	TREE/SHRUB	
	BOLLARD	
	SECURITY CAMERA	CAM
	BLUE LIGHT INTERCOM	TEL

CIVIL 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		



OVERALL & INDEX SITE PLAN
SCALE: 1"=80'

80' 0 80' 160'
BAR SCALE
1" = 80'
CHECK GRAPHIC SCALE BEFORE USING

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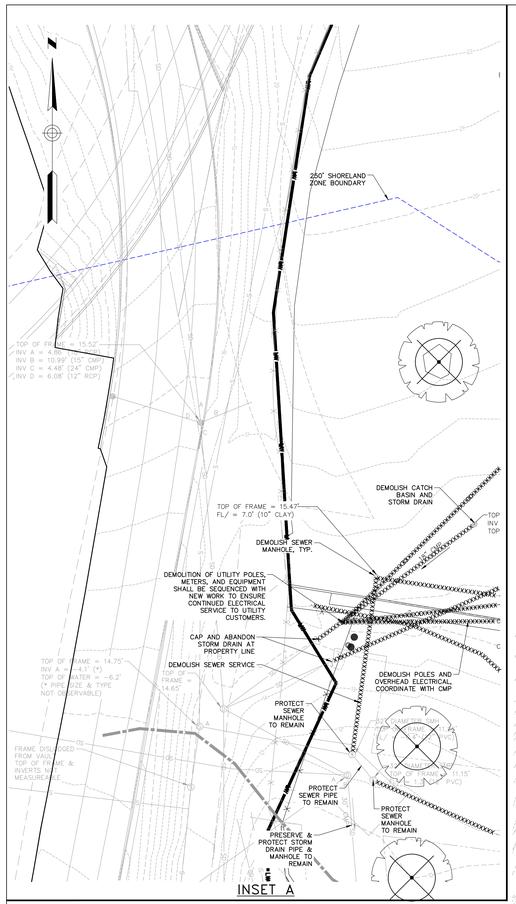
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

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Date	27 MARCH 2024
Scale	1"=80'

Drawing Title
GENERAL NOTES, LEGEND & ABBREVIATIONS

G-001



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. FOR ANY UTILITY PIPES OF STRUCTURES FOUND THAT ARE NOT ON THE EXISTING PLAN OR ARE IN LOCATIONS THAT VARY FROM WHAT IS SHOWN, CONTRACTOR SHALL PROVIDE RECORD LOCATIONS.
6. LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS ARE APPROXIMATE, AND NOT ALL UTILITY PIPING IS SHOWN. CONTRACTOR SHALL WORK WITH OWNER AND ENGINEER PRIOR TO STARTING ANY EXCAVATION TO DEVELOP AN INVESTIGATION PLAN TO DETERMINE LOCATIONS OF EXISTING FUEL LINES, DOMESTIC AND FIRE WATER LINES, ELECTRICAL DUCT BANKS, SITE SEWER LINES, AND THE PORTLAND WATER DISTRICT SANITARY SEWER FORCEMAIN IN THE VICINITY OF THE WORK AREA.
7. 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.
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.
10. ALL SITE FEATURES OUTSIDE LIMIT OF WORK AND NOT DESIGNATED FOR DEMOLITION SHALL BE PROTECTED.
11. WORK SHALL REMAIN WITHIN THE DEFINED LIMITS OF WORK. DEMOLITION WORK WILL NOT IMPACT PRIOR PHASES OF WORK ON THE SITE UNLESS OTHERWISE NOTED ON THESE PLANS.
12. CONTRACTOR SHALL REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES DAMAGED DURING DEMOLITION WORK. THE CONTRACTOR SHALL PROCEED WITH CAUTION WITHIN THE PROPOSED WORK AREA TO PREVENT ANY INTERRUPTION TO EXISTING UTILITY SERVICE UNLESS OTHERWISE COORDINATED WITH THE OWNER.
13. CONTRACTOR SHALL REMOVE AND REUSE EXISTING FENCING ON THE SITE AS IS POSSIBLE. PRIOR TO START OF WORK, CONTRACTOR SHALL REVIEW ALL FENCING WITH OWNER AND ENGINEER TO CONFIRM DEMOLITION OR REUSE. SEE EXHIBIT INCLUDED IN THE SPECIFICATIONS FOR FURTHER INFORMATION ON THE EXISTING FENCING.
14. FOR ALL ELECTRICAL DEMOLITION IDENTIFIED ON THESE PLANS, THE CONTRACTOR SHALL ALSO REVIEW WITH THE PROJECT ELECTRICAL DRAWINGS, AND COORDINATE WITH CENTRAL MAINE POWER AS REQUIRED.
15. TREES WITHIN THE LIMITS OF WORK THAT ARE NOT DESIGNATED AS BEING PROTECTED SHALL BE DEMOLISHED. CONTRACTOR SHALL COMPLY WITH SECTION 4.3 AND CHAPTER 4 FIGURE IV OF THE CITY OF PORTLAND TECHNICAL MANUAL FOR LANDSCAPE PRESERVATION.
16. ALL PERIMETER AND SECURITY FENCING ON THE PROJECT PARCEL SHALL BE DEMOLISHED UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL VERIFY PROPERTY LIMITS PRIOR TO FENCE DEMOLITION.
17. DEMOLITION OF UTILITY POLES, METERS, AND EQUIPMENT SHALL BE SEQUENCED WITH NEW WORK TO ENSURE CONTINUED ELECTRICAL SERVICE TO UTILITY CUSTOMERS.
18. DEMOLISH ALL PAVEMENT, CURB, SIDEWALK AND GUARDRAIL WITHIN THE LIMIT OF WORK UNLESS OTHERWISE INDICATED.

SHEET LEGEND

- XXXXXXXXXXXXXXXXX · UTILITY LINE DEMOLITION
- CATCH BASIN INLET PROTECTION
- SEDIMENT BARRIER
- STRUCTURE DEMOLITION
- TREE DEMOLITION

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Drawing Title
DEMOLITION PLAN - 1

C-001

MATCHLINE SEE SHEET C-001

MATCHLINE SEE SHEET C-001

DEMOLITION OF OVERHEAD SERVICE WITH TRANSFORMERS SHALL BE SEQUENCED WITH NEW WORK TO ENSURE CONTINUED SERVICE TO CUSTOMERS

DEMOLISH HYDRANT

LIMITS OF PREVIOUSLY DEMOLISHED BUILDING; REMNANT FOUNDATION MAY REMAIN

SALVAGE RAILS

DEMOLISH HYDRANT

DEMOLISH CONCRETE PAD

TOP OF FRAME = 17.82'
COVER NOT REMOVABLE AT TIME OF SURVEY

APPROXIMATE LOCATION OF ELECTRICAL POLE TO BE DEMOLISHED

TOP OF FRAME = 14.93'
TOP OF PIPE = 11.3' (6" CAST?)
TOP OF SILT = 10.9'±
OTHER FEATURES NOT VISIBLE

TOP OF FRAME = 15.00'
COVER NOT REMOVABLE AT TIME OF SURVEY

DEMOLISH HYDRANT

DEMOLISH WATER SERVICE

APPROXIMATE LOCATION OF UTILITY METER TO BE DEMOLISHED

DEMOLISH FLAG POLE & ASSOCIATED LIGHT FIXTURES & CONDUIT

APPROXIMATE LOCATION OF ELECTRICAL POLE TO BE DEMOLISHED

TOP OF FRAME = 17.60'
FULL OF WATER
FEATURES NOT VISIBLE

APPROXIMATE LOCATION OF OVERHEAD TELECOM UTILITIES TO BE DEMOLISHED

DEMOLISH SIGN

DEMOLISH GAS SERVICE

DEMOLISH HYDRANT

DEMOLISH TREE, TYP.

DEMOLISH CONCRETE PAD

250' SHORELAND ZONE BOUNDARY

MATCHLINE SEE INSET A

DEMOLISH CONCRETE WALL

DEMOLISH TREE, TYP.

DEMOLISH STAIR

DEMOLISH STACK FOUNDATION

FORMER BRICK STACK

DEMOLISH RETAINING WALL

PRESERVE & PROTECT BUILDING TO REMAIN

DEMOLISH CONCRETE PAD

DEMOLISH CHAINLINK FENCE

DEMOLISH TRANSFORMER

10" PVC
INV = 0.8'
CONNECTION COULD NOT BE DETERMINED AT THE TIME OF SURVEY

12" PVC
INV = 1.5'

TOP OF FRAME = 8.71'
FL/ = 3.2' (12" PVC)

TOP OF FRAME = 8.84'
INV A = 3.3' (12" PVC)
INV B = 5.0' (12" PVC)
INV C = 2.8 (12" PVC)

HISTORIC LANDMARK DESIGNATION BOUNDARY

TOP OF FRAME = 9.3'
INV A = 4.4' (12" PVC)
INV B = 4.8' (6" PVC)
INV C = 4.7 (8" PVC)
INV D = 4.8' (6" PVC)

TOP OF FRAME = 9.30'
FL/ = 5.7' (6" PVC)

LIMITS OF PREVIOUSLY DEMOLISHED BUILDING; REMNANT FOUNDATION MAY REMAIN

TOP OF FRAME = 9.55'
INV A = 6.4' (6" PVC)
INV B = 6.4' (6" PVC)
SUMP = 3.4'

TOP OF FRAME = 9.12'
INV = 5.7'
(12" PVC)

TOP OF FRAME = 9.63'
INV A = 4.1' (10" PVC)
INV B = 4.1' (10" PVC)
INV C = 3.5' (12" PVC)

TOP OF FRAME = 10.34'
INACCESSIBLE AT TIME OF SURVEY

DEMOLISH BUILDING FOUNDATION

APPROXIMATE FEMA FLOOD ZONE LINE

PERIMETER BARRIER, TYP.

TOP OF FRAME = 8.25'
INV A = 3.2' (6" PVC)
INV B = 3.4' (12" PVC)
INV C = 3.0' (6" PVC)

MATCHLINE SEE INSET B

DEMOLISH BUILDING FOUNDATION

DEMOLISH BUILDING & PIER

INSET B

NOTES:
1. REFER TO SHEET C-001 FOR GENERAL DEMOLITION NOTES AND DEMOLITION LEGEND.

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Drawing Title

DEMOLITION PLAN - 2

C-002

SEE SHEET C-101

PARKING GARAGE

DAY CARE CENTER

BEAN BUILDING

LEARNING RESEARCH & COLLABORATION BUILDING

SEE INSET A
SHEET C-303

SEE SHEET C-102

MATCHLINE – SEE INSET

MATCHLINE

PIER

SEE INSET B
SHEET C-303

INSET

NOTES:
1. REFER TO SHEET C-101 FOR GENERAL SITE LAYOUT PLAN NOTES.
2. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.
3. REFER TO SHEET C-101 AND C-102 FOR DIMENSIONS.

40' 0 40' 80'
BAR SCALE
1" = 40'
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Drawing Title
OVERALL SITE LAYOUT PLAN

C-100

NOTES:
1. SEE LANDSCAPE PLANS FOR SITE SURFACE MATERIAL ASSOCIATED WITH LANDSCAPED AREAS, PATIOS, AND NON-BITUMINOUS WALKWAYS & ROADWAYS, PLANTING PLANS AND SITE FURNISHINGS.
2. UTILITY AND DRAINAGE STRUCTURES NOT SHOWN FOR CLARITY, SEE GRADING AND DRAINAGE AND UTILITY PLAN FOR MORE INFORMATION.
3. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN
CONCRETE SIDEWALK, TYP.
PEDESTRIAN RAMP, TYP.
DOUBLE YELLOW CENTERLINE STRIPE, TYP.
FLUSH GRANITE CURB, TYP.
CROSSWALK, TYP.
VERTICAL GRANITE CURB, TYP.
PWD SEWER EASEMENT
STOP SIGN, TYP.
STOP BAR, TYP.
LIMIT OF WORK
PROPERTY BOUNDARY, TYP.
4" LOAM & SEED, TYP.
SIDEWALK RAMP DETECTABLE WARNING, TYP.
STOP SIGN, TYP.
STOP BAR, TYP.
CONCRETE PAD, TYP.
VEHICULAR ASPHALT PAVEMENT, TYP SEE LANDSCAPE PLANS.
ONE WAY AND ROUNDABOUT SIGN, TYP.
TREE, TYP. SEE LANDSCAPE PLANS
DO NOT ENTER SIGN, TYP.
VEHICULAR PRECAST CONCRETE PAVERS, TYP. SEE LANDSCAPE PLANS
VEHICULAR ASPHALT PAVEMENT, TYP SEE LANDSCAPE PLANS.
PWD SEWER EASEMENT
CONCRETE SIDEWALK, TYP.
TIPDOWN, TYP.
FLUSH GRANITE CURB, TYP.
STOP BAR, TYP.
STOP SIGN, TYP.
5'X8' STANDARD PAD-MOUNTED BUS SHELTER (2) MIN 2'-8" OPENING FOR EACH
CITY BIKE SHARE RACK, TYP., SEE LANDSCAPE PLANS
TIMBER GUARDRAIL, TYP. SEE LANDSCAPE PLANS
4" LOAM & SEED, TYP.
ARCHITECTURAL CONCRETE RETAINING WALL, SEE STRUCTURAL PLANS
CONCRETE SIDEWALK, TYP
ACCESSIBLE PARKING SPACE, TYP.
ONE WAY SIGN, TYP.
PARKING GARAGE
PARKING FACADE WALL, TYP.
4" LOAM & SEED, TYP.
CURB STOP, TYP.
ACCESSIBLE PARKING SPACE SIGN (MUTCD R7-8), TYP. AT MARKED ACCESSIBLE SPACES
CURB BREAK, TYP.
4" TIPDOWN, TYP.
MOUNTABLE GRANITE CURB, TYP.
BIKE RACK, TYP. SEE LANDSCAPE PLANS
250' SHORELAND ZONE BOUNDARY
MATCHLINE SEE INSET A, SHT. C-303
MATCHLINE SEE SHEET C-102
MATCHLINE SEE SHEET C-102

BAR SCALE
1" = 20'
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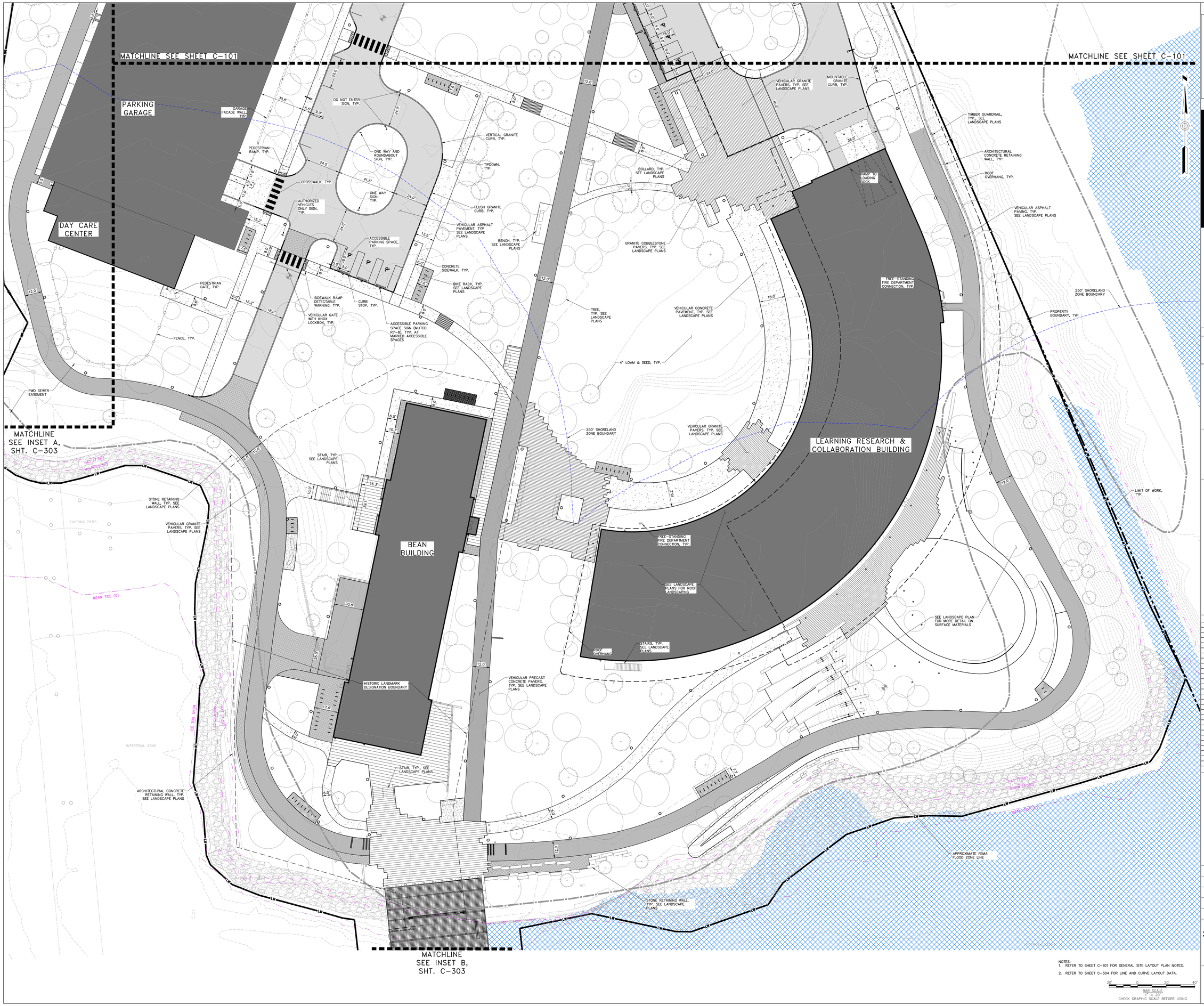
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Drawing Title
SITE LAYOUT PLAN - 1

C-101



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Scale	1"=20'

Drawing Title

SITE LAYOUT PLAN - 2

C-102

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN

12" INSERTION VALVE, TYP. FINAL LOCATION TO BE DETERMINED BY TEST PIT, COORDINATE WORK WITH PWD

OVERHEAD ELECTRICAL, TYP., SEE ELECTRICAL PLANS

UTILITY POLE, TYP. SEE ELECTRICAL PLANS

PROVIDE NEW HYDRANT ASSEMBLY FROM EXISTING GATE VALVE, COORDINATE WORK WITH PWD

RAISE EXISTING MANHOLE FRAME AND COVER TO GRADE

APPROXIMATE LOCATION OF STORM DRAIN FROM SURVEY

APPROXIMATE LOCATION OF STORM DRAIN FROM CITY SHERWOOD STREET RECORD DRAWINGS; TEST PITS TO BE CONDUCTED TO LOCATE STORM DRAIN AND WATER MAIN IN SHERWOOD STREET PRIOR TO CONSTRUCTION

CONNECT TO EXISTING WATER MAIN WITH 12" SOLID SLEEVE, COORDINATE WITH PWD

12" GATE VALVE WITH FOSTER ADAPTOR

PWD SEWER EASEMENT

ELECTRIC VAULT, TYP., SEE ELECTRICAL PLANS

UNDERGROUND ELECTRICAL, TYP., SEE ELECTRICAL PLANS

CONNECT TO EXISTING WATER MAIN WITH 12" SOLID SLEEVE, COORDINATE WITH PWD

12" GATE VALVE & BOX

12"X12" DI TEE WITH PLUGGED

THRUST BLOCK, TYP.

6'X8' WATER METER PIT

PAD-MOUNTED RPZ WITH ENCLOSURE

12" GATE VALVE & BOX

LIGHT POLE, TYP., SEE ELECTRICAL PLANS

SECURITY CAMERA AND BLUE LIGHT INTERCOM, TYP.

PWD SEWER EASEMENT

SECURITY CAMERA, TYP.

PRIVATE HYDRANT ASSEMBLY, TYP.

INTERSTATE 295 SOUTH

INTERSTATE 295 NORTH

SHERWOOD STREET

RAILROAD

PARKING GARAGE

MATCHLINE SEE INSET A, SHT. C-303

MATCHLINE SEE SHEET C-202

MATCHLINE SEE SHEET C-202

250' SHORELAND ZONE BOUNDARY

BAR SCALE
1" = 20'
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Scale	1"=20'

Drawing Title
SITE UTILITY PLAN - 1

C-201

MATCHLINE SEE SHEET C-201

MATCHLINE SEE SHEET C-201

PARKING GARAGE

DAY CARE CENTER

6" FIRE PROTECTION SERVICE
2" DOMESTIC WATER SERVICE
4" SANITARY INV OUT =16.00
6" SANITARY FLOOR DRAINS INV OUT =16.00
OIL/WATER SEP VENT TO ROOF
6" FIRE PROTECTION SERVICE
2" DOMESTIC WATER SERVICE
6" SANITARY INV OUT=9.33

CAP FOR FUTURE CONNECTION 12" PVC INV=10.11
END CAP
OW SEP 310
BELOW-GRADE STORMWATER TREATMENT
SMH 8
END CAP
ADJUST STRUCTURE FRAME & COVER TO GRADE, COORDINATE WITH PWD
SECURITY CAMERA AND BLUE LIGHT INTERCOM, TYP.
EX SMH 6
MATCH EXISTING INVERT, CONNECT NEW PIPE TO EXISTING STRUCTURE 12" PVC INV IN= 1.3 PROVIDE BACKFLOW PREVENTER
PWD SEWER EASEMENT
MATCHLINE SEE INSET A, SHT C-303
SURFACE STORMWATER TREATMENT SYSTEM
UNDERGROUND ELECTRICAL, TYP. - SEE ELECTRICAL PLANS
SECURITY CAMERA, TYP.
BELOW-GRADE STORMWATER TREATMENT
ELECTRIC HAND HOLE, TYP., SEE ELECTRICAL PLANS
SURFACE STORMWATER TREATMENT SYSTEM
FIRE DEPARTMENT HOSE BIB CONNECTION, TYP.
ELECTRIC VAULT, TYP., SEE ELECTRICAL PLANS
6" DOMESTIC WATER SERVICE
8" FIRE PROTECTION SERVICE
8" FIRE PROTECTION SERVICE
END CAP
8" SANITARY INV OUT=14.03
FREE-STANDING FIRE DEPARTMENT CONNECTIONS, TYP.
FIRE DEPARTMENT HOSE BIB CONNECTION, TYP.
250' SHORELAND ZONE BOUNDARY
LEARNING RESEARCH & COLLABORATION BUILDING
4" DOMESTIC WATER SERVICE
6" FIRE PROTECTION SERVICE
6" SANITARY INV OUT=5.70
BEAN BUILDING
BELOW-GRADE STORMWATER TREATMENT
8" SANITARY INV OUT=13.66 (2)
FREE-STANDING FIRE DEPARTMENT CONNECTIONS, TYP.
FIRE DEPARTMENT HOSE BIB CONNECTION, TYP.
FIRE DEPARTMENT HOSE BIB CONNECTION, TYP.
HISTORIC LANDMARK DESIGNATION BOUNDARY
SURFACE STORMWATER TREATMENT SYSTEM
BELOW-GRADE STORMWATER TREATMENT
PRIVATE HYDRANT ASSEMBLY, TYP.
3" BLOW-OFF VALVE AND THRUST BLOCK
APPROXIMATE FEMA FLOOD ZONE LINE
MATCHLINE SEE INSET B, SHT. C-303
EXISTING PIERS
INTERTIDAL ZONE
MEAN TIDE (0)
MHW 10.90'
MLW -0.00'

NOTE:
1. REFER TO SHEET C-304 FOR SANITARY SEWER PIPE AND STRUCTURE TABLES.

BAR SCALE
1" = 20'
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Drawing Title
SITE UTILITY PLAN - 2

C-202

NOTE:
1. REFER TO SHEET C-304 FOR DRAINAGE PIPE AND STRUCTURE TABLES.

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN

MATCH EXISTING SD INVERTS

APPROXIMATE LOCATION OF STORM DRAIN FROM SURVEY

APPROXIMATE LOCATION OF STORM DRAIN FROM CITY SHERWOOD STREET RECORD DRAWINGS; TEST PITS TO BE CONDUCTED TO LOCATE STORM DRAIN AND WATER MAIN IN SHERWOOD STREET PRIOR TO CONSTRUCTION

PWD SEWER EASEMENT

STABILIZED CONSTRUCTION ENTRANCE, TYP.

TURF REINFORCEMENT MATTING, TYP.

CURB BREAK, TYP.

PARKING GARAGE

MATCHLINE SEE INSET A, SHT. C-303

MATCHLINE SEE SHEET C-302

250' SHORELAND ZONE BOUNDARY

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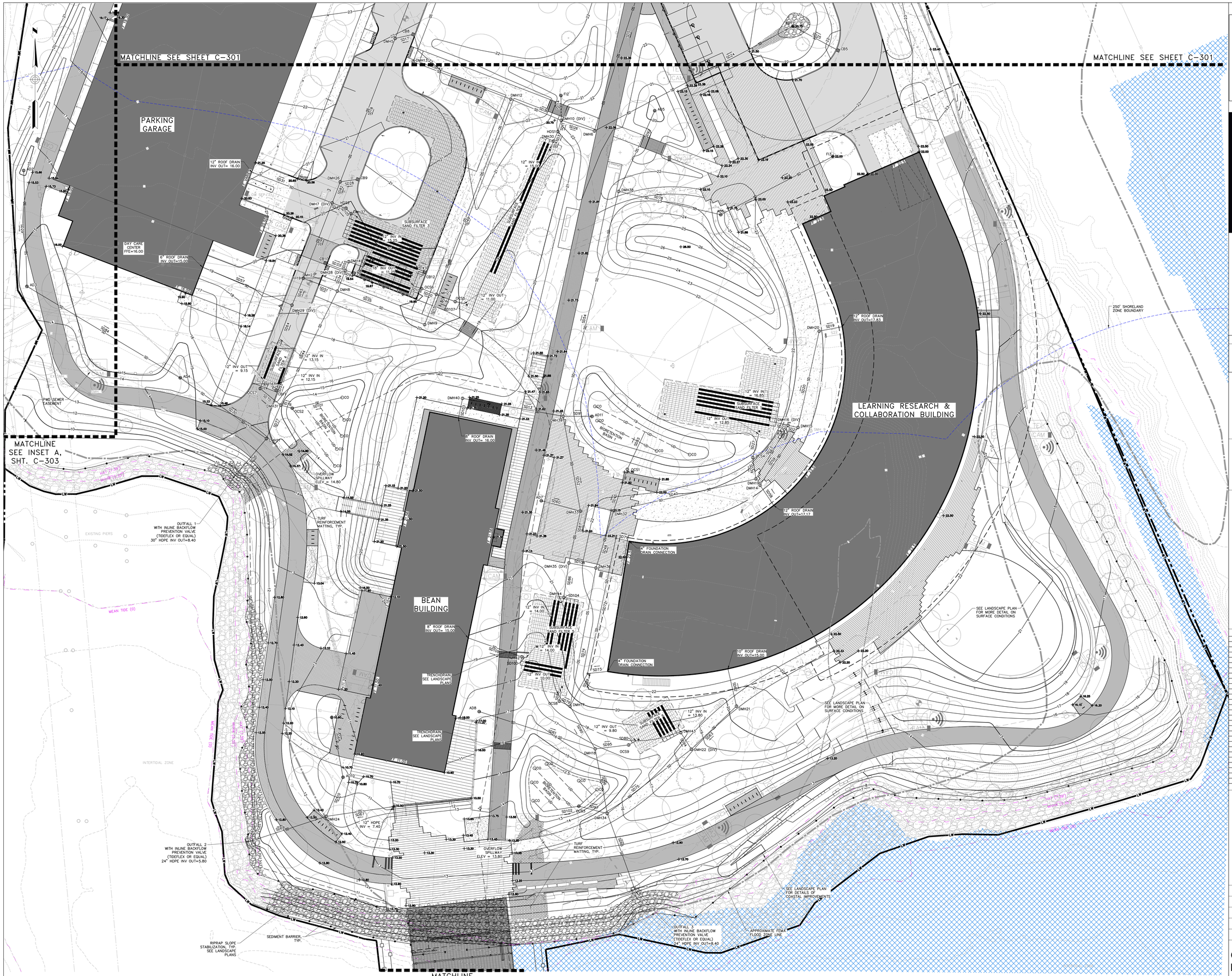
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Drawing Title
GRADING & DRAINAGE PLAN - 1

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

C-301



NOTE:
1. REFER TO SHEET C-304 FOR DRAINAGE PIPE AND STRUCTURE TABLES.

BAR SCALE
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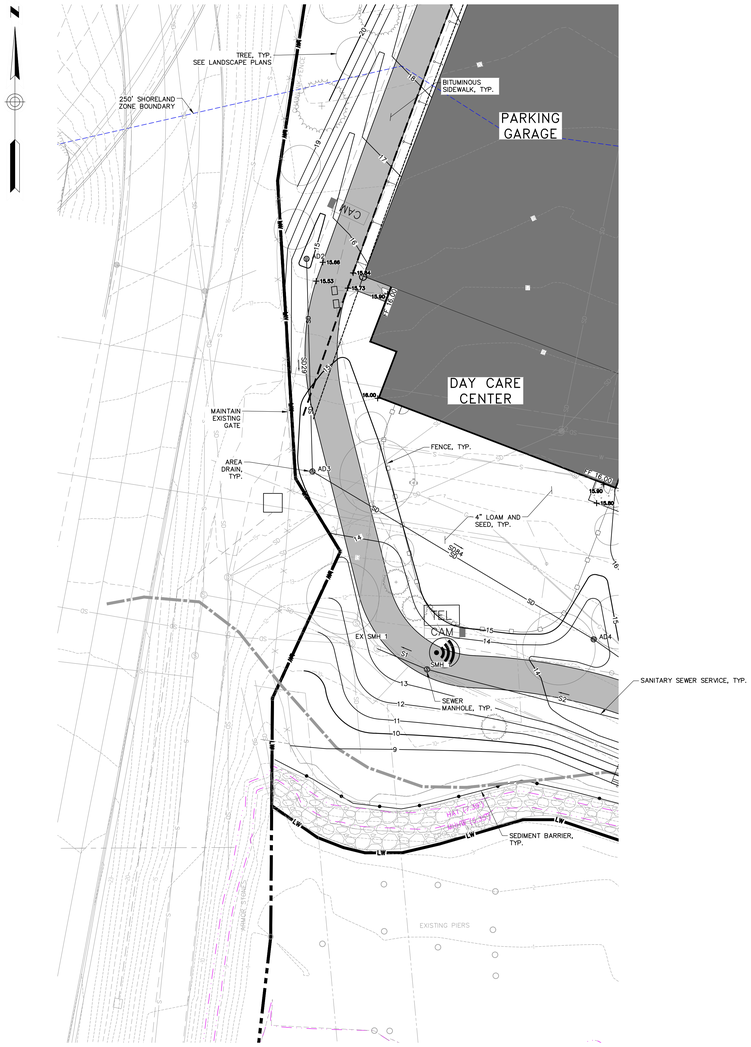
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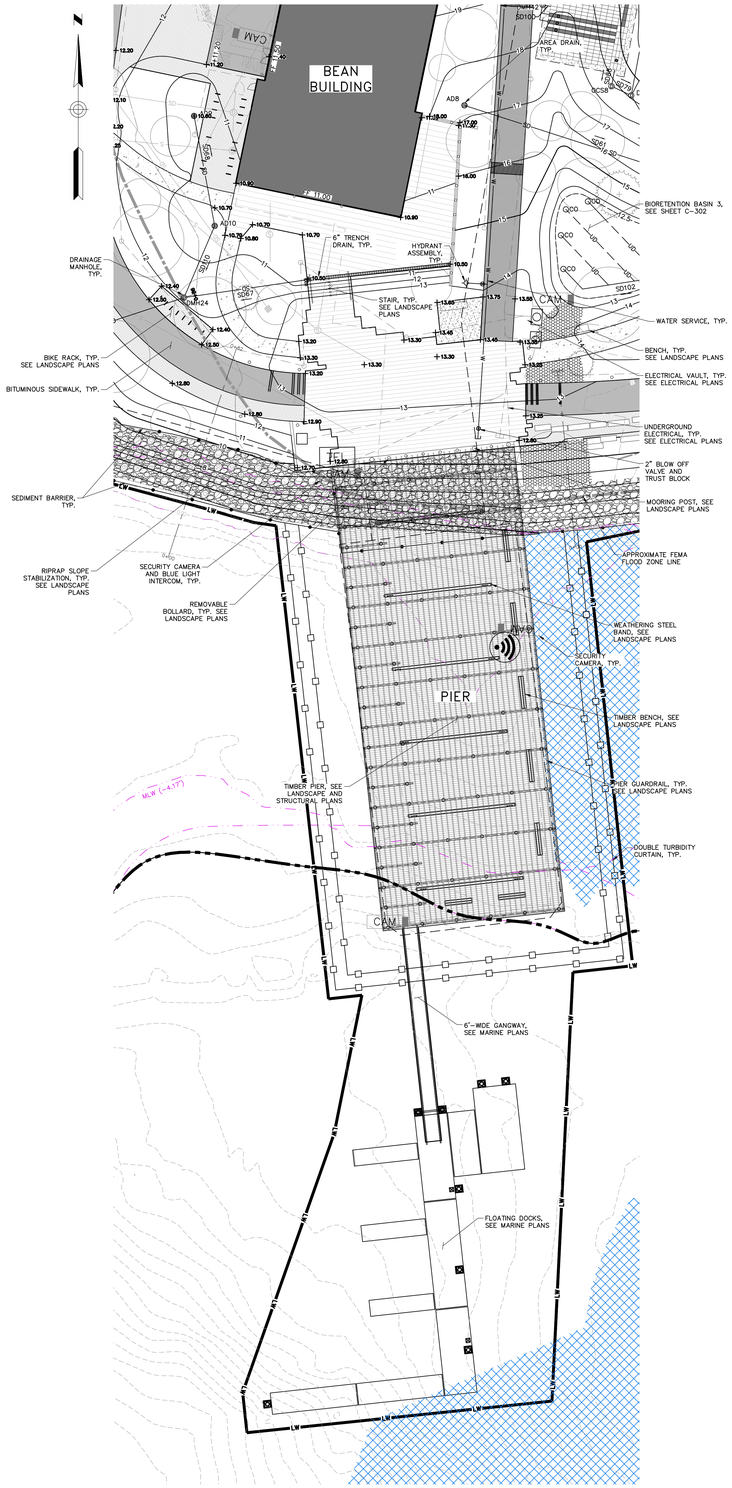
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GRADING & DRAINAGE PLAN - 2

C-302



INSET A



INSET B

NOTE:
1. REFER TO SHEET C-304 FOR SANITARY SEWER AND STORMWATER DRAINAGE STRUCTURE AND PIPE TABLES.

20' 0 20' 40'
BAR SCALE
1" = 20'
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PLAN INSETS

C-303

LAYOUT DATA – SHEET C–101 & C–102

LINE LAYOUT DATA

Line #	Length	Direction	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	174.77	S55° 17' 24.15"E	308812.37	2929385.74	308712.85	308712.85
L2	218.20	N20° 56' 49.09"E	308443.91	2929460.25	308647.68	308647.68
L3	124.33	S69° 03' 10.91"E	308479.71	2929324.76	308435.26	308435.26
L4	47.49	N20° 56' 49.07"E	308423.83	2929281.96	308468.18	308468.18
L5	28.49	S20° 56' 49.07"W	308435.78	2929330.43	308409.17	308409.17
L6	88.33	N69° 03' 10.91"W	308412.85	2929432.30	308444.43	308444.43
L7	8.59	N65° 56' 49.09"E	308373.65	2929425.29	308377.15	308377.15
L8	61.88	N20° 56' 49.09"E	308313.09	2929400.54	308370.87	308370.87
L9	8.58	N24° 04' 28.89"W	308301.43	2929404.14	308309.26	308309.26
L10	10.68	N20° 56' 49.09"E	308287.62	2929400.43	308297.60	308297.60
L11	8.59	N65° 56' 49.09"E	308281.35	2929389.95	308284.85	308284.85
L12	61.86	N20° 56' 49.09"E	308220.80	2929365.21	308278.57	308278.57
L13	8.59	N24° 03' 10.91"W	308209.13	2929368.81	308216.97	308216.97
L14	31.33	S69° 03' 10.93"E	308207.86	2929320.28	308196.66	308196.66
L15	47.13	N69° 03' 10.93"W	308166.73	2929355.00	308183.58	308183.58
L16	102.18	N21° 00' 43.67"E	308057.39	2929318.37	308152.77	308152.77
L17	106.15	N21° 00' 43.67"E	308046.92	2929333.63	308146.01	308146.01
L18	3.67	S69° 05' 23.22"E	308151.77	2929384.60	308150.45	308150.45
L19	13.01	S20° 57' 09.82"W	308144.00	2929390.91	308131.84	308131.84
L20	47.00	N69° 02' 34.45"W	308115.03	2929430.15	308131.85	308131.85
L21	87.95	N20° 57' 09.82"E	308114.57	2929429.97	308196.70	308196.70
L22	6.47	N69° 03' 10.91"W	308253.53	2929436.06	308255.84	308255.84
L23	1.47	N69° 03' 10.91"W	308231.12	2929427.48	308231.64	308231.64
L24	25.43	S20° 56' 49.09"W	308220.11	2929400.28	308196.36	308196.36
L25	1.47	S69° 05' 23.22"E	308170.53	2929402.73	308170.01	308170.01
L26	25.43	N20° 57' 09.82"E	308181.54	2929429.92	308205.29	308205.29
L27	379.58	N20° 56' 49.09"E	308275.22	2929421.37	308629.71	308629.71
L28	117.51	S23° 38' 40.60"E	308630.63	2929595.93	308522.98	308522.98
L29	113.66	S20° 56' 49.09"W	308504.01	2929643.50	308397.86	308397.86
L30	32.29	S12° 15' 38.07"W	308397.86	2929602.87	308366.31	308366.31
L31	27.12	S23° 38' 40.60"E	308366.31	2929596.01	308341.47	308341.47
L32	13.00	S66° 21' 19.40"W	308334.88	2929604.31	308329.67	308329.67
L33	73.00	S23° 38' 40.60"E	308329.67	2929592.40	308262.79	308262.79
L34	18.03	N66° 21' 19.40"E	308262.79	2929621.68	308270.02	308270.02
L35	65.46	S23° 34' 05.14"E	308270.02	2929638.19	308210.02	308210.02
L36	44.67	S66° 26' 01.46"W	308227.88	2929705.31	308210.02	308210.02
L37	19.14	N23° 14' 49.30"W	308199.86	2929739.24	308217.45	308217.45
L38	20.33	N23° 14' 49.30"W	308215.42	2929774.45	308234.10	308234.10
L39	20.77	N14° 52' 37.73"W	308261.69	2929756.90	308281.77	308281.77
L40	85.59	N23° 38' 38.32"W	308353.92	2929726.35	308432.32	308432.32
L41	129.79	N23° 38' 38.50"W	308524.97	2929668.38	308643.86	308643.86
L42	174.77	S55° 17' 24.15"E	308832.10	2929399.41	308732.58	308732.58
L43	85.25	S20° 56' 49.09"W	308484.44	2929651.53	308404.82	308404.82
L44	75.22	S23° 38' 40.60"E	308354.50	2929627.38	308285.59	308285.59
L45	4.03	S23° 38' 40.60"E	308282.85	2929658.75	308279.16	308279.16
L46	9.89	N66° 26' 01.46"E	308266.27	2929693.26	308270.22	308270.22
L47	72.15	N23° 38' 38.32"W	308344.30	2929704.37	308410.39	308410.39
L48	47.89	N8° 20' 11.80"W	308435.99	2929668.09	308483.37	308483.37

CURVE LAYOUT DATA

Curve #	Length	Radius	Delta	Chord Direction	Chord Length	START NORTHING	START EASTING	END NORTHING	END EASTING
C1	20.75	188.00	6.32	S52° 07' 44"W	20.73	308712.85	2929529.41	308700.12	2929545.78
C2	38.75	25.00	88.82	S4° 33' 31"W	34.99	308700.12	2929545.78	308665.25	2929548.56
C3	20.46	62.00	18.90	N30° 23' 55"W	20.36	308647.68	2929538.26	308665.25	2929548.56
C4	23.56	15.00	90.00	N65° 56' 49"E	21.21	308435.26	2929440.88	308443.91	2929460.25
C5	31.42	20.00	90.00	N65° 56' 49"E	28.28	308468.18	2929298.94	308479.71	2929324.76
C6	23.56	15.00	90.00	S65° 56' 49"W	21.21	308444.43	2929349.81	308435.78	2929330.43
C7	23.56	15.00	90.00	N24° 03' 10"W	21.21	308393.48	2929440.95	308412.85	2929432.30
C8	3.93	5.00	45.00	N43° 26' 50"E	3.83	308377.15	2929433.13	308379.93	2929435.76
C9	3.93	5.00	45.00	N43° 26' 49"E	3.83	308370.87	2929422.66	308373.65	2929425.29
C10	3.93	5.00	45.02	N1° 33' 50"W	3.83	308309.26	2929400.64	308313.09	2929400.54
C11	3.93	5.00	45.02	N1° 33' 50"W	3.83	308297.60	2929404.24	308301.43	2929404.14
C12	3.93	5.00	45.00	N43° 26' 49"E	3.83	308284.85	2929397.79	308287.62	2929400.43
C13	3.93	5.00	45.00	N43° 26' 49"E	3.83	308278.57	2929387.32	308281.35	2929389.95
C14	3.93	5.00	45.00	N1° 33' 11"W	3.83	308216.97	2929365.31	308220.80	2929365.21
C15	3.93	5.00	45.00	N1° 33' 11"W	3.83	308205.31	2929368.91	308209.13	2929368.81
C16	23.56	15.00	90.00	N65° 56' 49"E	21.21	308196.66	2929349.54	308205.31	2929368.91
C17	7.85	5.00	90.00	N24° 03' 11"W	7.07	308160.28	2929357.88	308166.73	2929355.00
C18	38.73	25.00	88.77	N65° 23' 51"E	34.97	308042.83	2929286.57	308057.39	2929318.37
C19	27.02	25.00	61.93	S9° 57' 15"E	25.73	308038.88	2929330.54	308013.54	2929334.99
C20	15.69	10.00	89.90	N65° 57' 40"E	14.13	308146.01	2929371.69	308151.77	2929384.60
C21	7.86	5.00	90.03	S24° 03' 48"E	7.07	308150.45	2929388.03	308144.00	2929390.91
C22	69.12	44.00	90.01	N24° 03' 01"W	62.23	308196.70	2929461.42	308253.53	2929436.06
C23	23.56	15.00	90.00	N24° 03' 11"W	21.21	308255.84	2929430.02	308275.22	2929421.37
C24	31.42	20.00	90.00	S65° 56' 49"W	28.28	308231.64	2929426.11	308220.11	2929400.28
C25	31.43	20.00	90.04	S24° 04' 17"E	28.29	308196.36	2929391.19	308170.53	2929402.73
C26	31.40	20.00	89.96	N65° 55' 53"E	28.27	308170.01	2929404.10	308181.54	2929429.92
C27	31.42	20.00	90.01	N24° 03' 01"W	28.29	308205.29	2929439.01	308231.12	2929427.48
C28	49.63	21.00	135.41	N88° 39' 04"E	38.86	308629.71	2929557.08	308630.63	2929595.93
C29	19.46	25.00	44.59	S1° 20' 56"E	18.97	308522.98	2929643.06	308504.01	2929643.50
C30	7.85	5.00	90.00	S21° 21' 19"W	7.07	308341.47	2929606.88	308334.88	2929604.31
C31	31.53	20.00	90.32	N68° 24' 24"W	28.36	308217.45	2929731.68	308227.88	2929705.31
C32	29.22	200.00	8.37	N19° 03' 44"W	29.19	308234.10	2929766.43	308261.69	2929756.90
C33	76.51	500.00	8.77	N19° 15' 38"W	76.43	308281.77	2929751.56	308353.92	2929726.35
C34	81.39	250.00	18.65	N14° 19' 01"W	81.03	308432.32	2929692.03	308510.84	2929671.99
C35	14.65	45.00	18.65	N14° 19' 01"W	14.59	308510.84	2929671.99	308524.97	2929668.38
C36	116.51	212.00	31.49	S39° 32' 45"W	115.05	308732.58	2929543.08	308643.86	2929616.33
C37	13.15	5.00	150.72	N83° 41' 41"W	9.68	308483.37	2929661.15	308484.44	2929651.53
C38	38.91	50.00	44.59	S1° 20' 56"E	37.94	308404.82	2929621.06	308366.90	2929621.95
C39	39.24	25.00	89.92	S68° 36' 20"E	35.33	308279.16	2929660.36	308266.27	2929693.26
C40	44.67	30.00	85.31	N23° 46' 36"E	40.66	308270.22	2929702.32	308307.43	2929718.71
C41	39.58	476.00	4.76	N21° 15' 44"W	39.56	308307.43	2929718.71	308344.30	2929704.37
C42	26.72	100.00	15.31	S15° 59' 25"E	26.64	308435.99	2929668.09	308410.39	2929675.43

STRUCTURE & PIPE DATA – SHEET C–201 & C–202

STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
EX SMH 1	4'	13.13	1.30/10"PVC/SMH 1	
OW SEP. 1	4'	20.05	15.48/6"PVC/GARAGE SAN OUTLET	15.38/6"PVC/SMH 4
SMH 1	4'	13.32	1.60/10"PVC/SMH 2	1.50/10"PVC/EX SMH 1
SMH 2	4'	15.00	3.55/8"PVC/SMH 10 3.55/10"PVC/SMH 3	3.45/10"PVC/SMH 1
SMH 3	4'	12.59	8.00/10"PVC/SMH 4 9.06/8"PVC/SMH 8	7.90/10"PVC/SMH 2
SMH 4	4'	19.92	15.29/6"PVC/OW SEP. 1 9.78/10"PVC/STUB 15.36/6"PVC/OW SEP	9.68/10"PVC/SMH 3
SMH 5	4'	21.25	11.02/8"PVC/SMH 6	10.92/8"PVC/SMH 8
SMH 6	4'	22.00	12.18/8"PVC/SMH 7	12.08/8"PVC/SMH 5
SMH 7	4'	36.09	13.18/8"PVC/LRC SAN OUTLET 1 13.18/8"PVC/C02 13.18/8"PVC/SMH 9	13.08/8"PVC/SMH 6
SMH 8	4'	19.10	9.54/8"PVC/SMH 5	9.44/8"PVC/SMH 3
SMH 9	4'	17.50	13.98/8"PVC/C01	13.88/8"PVC/SMH 7
SMH 10	4'	13.90	5.25/6"PVC/BEAN SAN OUTLET	5.15/8"PVC/SMH 2

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
S1	10" PVC	16'	0.0125
S2	10" PVC	99'	0.0187
S3	8" PVC	114'	0.0140
S4	6" PVC	43'	0.0105
S5	10" PVC	82'	0.0530
S6	6" PVC	46'	0.0109
S7	6" PVC	54'	0.0254
S8	10" PVC	64'	0.0262
S9	6" PVC	5'	0.0180
S10	6" PVC	47'	0.0111
S11	10" PVC	20'	0.0165
S12	8" PVC	128'	0.0108
S13	8" PVC	92'	0.0115
S14	8" PVC	89'	0.0101
S15	8" PVC	8'	0.0600
S16	8" PVC	5'	0.0920
S17	6" PVC	6'	0.0033
S18	6" PVC	2'	0.0200
S19	8" PVC	40'	0.0095
S20	8" PVC	60'	0.0117
S21	8" PVC	61'	0.0134
S22	8" PVC	10'	0.0070

STRUCTURE & PIPE DATA – SHEET C–301 & C–302

STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
AD1	4'	20.75	17.25/12"HDPE/CB5	17.15/12"HDPE/DMH6
CB1*	4'	28.01		24.40/12"HDPE/DOG HS MH 1
CB2*	4'	28.00		24.40/12"HDPE/DOG HS MH 1
CB3*	4'	26.29		22.00/12"HDPE/DOG HS MH2
CB4	4'	24.45		20.00/12"HDPE/DMH1
CB5	4'	21.40		17.60/12"HDPE/AD1
CB6	4'	26.25		22.25/12"HDPE/CB7
CB7	4'	24.08	17.61/12"HDPE/CB6	17.51/12"HDPE/DMH2
CB8	4'	21.89		17.50/12"HDPE/DMH5
CB13	4'	23.80		19.90/12"HDPE/DMH3
CB14	4'	23.83		19.12/12"HDPE/DMH25
DMH1	4'	22.71	18.70/12"HDPE/CB4	18.60/12"HDPE/DMH6
DMH2	4'	23.71	17.33/12"HDPE/CB7 18.60/12"HDPE/DMH25	17.23/18"HDPE/DMH5
DMH3	4'	24.12	19.70/12"HDPE/CB13	19.60/12"HDPE/DMH25
DMH4	4'	24.40	19.20/12"HDPE/FI1	19.10/18"HDPE/DMH13
DMH5	4'	21.95	17.35/12"HDPE/CB8 16.60/18"HDPE/DMH2	16.50/18"HDPE/DMH26
DMH25	4'	23.99	19.00/12"HDPE/DMH3 18.90/12"HDPE/CB14	18.80/12"HDPE/DMH2
DOG HS MH 1*	4'	28.18	24.30/12"HDPE/CB1 24.30/12"HDPE/CB2	
DOG HS MH2*	4'	25.68	21.79/12"HDPE/CB3	
FI1	2'	23.50		19.65/12"HDPE/DMH4

*TEST PITS TO BE CONDUCTED ON SHERWOOD STREET TO CONFIRM LOCATION AND INVERTS OF EXISTING STORM DRAIN. PROPOSED STRUCTURE LOCATIONS AND INVERTS TO BE CONFIRMED BY ENGINEER PRIOR TO CONSTRUCTION.

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
SD1	12" HDPE	12'	0.0083
SD2	12" HDPE	7'	0.0143
SD3	12" HDPE	17'	0.0124
SD4	12" HDPE	155'	0.0084
SD5	12" HDPE	171'	0.0129
SD6	12" HDPE	152'	0.0305
SD7	12" HDPE	36'	0.0050
SD8	12" HDPE	29'	0.0069
SD9	12" HDPE	92'	0.0065
SD10	12" HDPE	19'	0.0105
SD12	12" HDPE	69'	0.0065
SD16	18" HDPE	126'	0.0050
SD17	12" HDPE	9'	0.0167
SD24	12" HDPE	149'	0.0050
SD25	12" HDPE	31'	0.0113
SD81	12" HDPE	7'	0.0314
SD99	18" HDPE	164'	0.0159

STRUCTURE TABLE				
NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
AD2	4'	14.50		11.00/12"HDPE/AD3
AD3	4'	14.00	10.50/12"HDPE/AD2	10.40/12"HDPE/AD4
AD4	4'	13.50	9.80/12"HDPE/AD3	9.70/12"HDPE/DMH11
AD5	4'	19.80		16.15/12"HDPE/DMH38
AD6	4'	20.50	16.50/10"HDPE/FI3	16.33/12"HDPE/DMH38
AD7	4'	21.25		17.25/12"HDPE/DMH33
AD8	4'	17.30		13.50/10"HDPE/DMH18
AD9	4'	10.60		6.60/18"HDPE/AD10
AD10	4'	10.60	6.40/18"HDPE/AD9	6.30/24"HDPE/DMH24
AD11	4'	17.08		15.20/12"HDPE/DMH39
CB9	4'	20.32		16.10/12"HDPE/DMH26
CB10	4'	19.25		15.75/12"HDPE/DMH28 (DIV)
CB11	4'	15.82		12.32/12"HDPE/SSSF4 INLET 2
CB12	4'	19.78		15.40/12"HDPE/SSSF3 INLET 4
DMH6	5'	22.10	16.40/12"HDPE/AD1 16.40/12"HDPE/DMH1	16.30/18"HDPE/DMH10 (DIV)
DMH7 (DIV)	5'	20.10	15.70/12"HDPE/GARAGE ROOF DRAIN 15.70/18"HDPE/DMH26	15.60/12"HDPE/HDS2 15.60/18"HDPE/DMH23
DMH8	5'	19.23	12.91/24"HDPE/DMH23 10.22/24"HDPE/DMH9 15.35/12"HDPE/DMH28 (DIV)	10.12/24"HDPE/DMH31
DMH9	4'	19.50	10.63/24"HDPE/DMH27	10.53/24"HDPE/DMH8
DMH10 (DIV)	4'	21.80	15.80/12"HDPE/FI2 16.10/18"HDPE/DMH6	15.50/18"HDPE/DMH12 15.50/12"HDPE/HDS1
DMH11	5'	14.75	9.35/12"HDPE/AD4 8.66/24"HDPE/DMH31	8.55/30"HDPE/
DMH12	4'	22.32	16.05/18"HDPE/DMH13 15.15/18"HDPE/DMH10 (DIV)	11.65/24"HDPE/DMH27
DMH13	4'	21.90	16.50/18"HDPE/DMH4	16.40/18"HDPE/DMH12
DMH14	4'	22.35	17.05/12"HDPE/LRC ROOF DRAIN 1	16.95/12"HDPE/DMH15
DMH15	4'	20.90	16.60/12"HDPE/DMH20 16.60/12"HDPE/DMH14	16.50/18"HDPE/DMH16 (DIV)
DMH16 (DIV)	4'	20.80	16.40/18"HDPE/DMH15	16.30/12"HDPE/SSSF1 INLET 1 16.30/12"HDPE/DMH19
DMH17	4'	14.61	9.70/24"HDPE/DMH36 10.60/4"HDPE/C02 9.70/12"HDPE/OCS8	9.60/24"HDPE/DMH18
DMH18	4'	15.71	12.00/10"HDPE/AD8 9.40/12"HDPE/OCS9 9.40/24"HDPE/DMH17	9.30/24"HDPE/DMH34
DMH19	4'	22.25	11.90/12"HDPE/OCS4 15.70/12"HDPE/DMH16 (DIV)	11.80/12"HDPE/DMH32
DMH20	4'	22.40	17.75/12"HDPE/LRC ROOF DRAIN 3	17.65/12"HDPE/DMH15
DMH21	4'	20.40	14.80/10"HDPE/LRC ROOF DRAIN 2	14.70/12"HDPE/DMH22 (DIV)
DMH22 (DIV)	4'	18.50	14.50/12"HDPE/DMH21	14.20/12"HDPE/DMH43 14.20/12"HDPE/DMH34
DMH23	4'	19.06	13.22/12"HDPE/DMH29 (DIV) 14.66/18"HDPE/DMH7 (DIV)	13.12/24"HDPE/DMH8
DMH24	4'	12.19	7.20/12"HDPE/TRENCH DRAIN 6.17/24"HDPE/AD10	6.07/24"HDPE/
DMH26	4'	20.38	15.95/18"HDPE/DMH5 16.00/12"HDPE/CB9	15.85/18"HDPE/DMH7 (DIV)
DMH27	5'	20.23	10.90/24"HDPE/DMH12 10.98/18"HDPE/OCS6 10.82/12"HDPE/OCS5	10.72/24"HDPE/DMH9
DMH28 (DIV)	4'	19.40	15.52/12"HDPE/CB10 15.52/12"HDPE/CB15	15.42/12"HDPE/DMH8 15.42/12"HDPE/DMH41
DMH29 (DIV)	4'	17.18	13.40/6"HDPE/CHILD CARE ROOF DRAIN	13.30/12"HDPE/DMH23 13.30/12"HDPE/SSSF4 INLET 1
DMH30	5'	20.62	15.30/12"HDPE/HDS1	15.05/18"HDPE/SSSF2 INLET 1 15.05/12"HDPE/SSSF2 INLET 2
DMH31	5'	15.50	8.86/24"HDPE/OCS7 10.40/12"HDPE/OCS2 9.70/24"HDPE/DMH8	8.76/24"HDPE/DMH11
DMH32	4'	21.73	11.30/12"HDPE/DMH19 14.70/12"HDPE/OCS1	11.20/18"HDPE/DMH36
DMH33	4'	21.70	14.60/12"HDPE/DMH39 17.00/12"HDPE/AD7	14.50/12"HDPE/DMH35 (DIV)
DMH34	5'	17.78	9.00/24"HDPE/DMH18 8.90/12"HDPE/OCS3 11.50/12"HDPE/DMH22 (DIV)	8.80/24"HDPE/
DMH35 (DIV)	4'	21.40	14.33/12"HDPE/DMH33	14.23/12"HDPE/DMH36 14.23/12"HDPE/DMH44
DMH36	4'	22.30	13.90/12"HDPE/DMH35 (DIV) 10.80/18"HDPE/DMH32	10.70/24"HDPE/DMH17
DMH37	4'	19.78	15.40/12"HDPE/HDS2	15.30/12"HDPE/SSSF3 INLET 2 15.30/12"HDPE/SSSF3 INLET 3
DMH38	4'	22.20	15.87/12"HDPE/AD6 15.87/12"HDPE/AD5	15.77/12"HDPE/DMH39
DMH40	4'	21.30	15.85/8"HDPE/BEAN BLDG ROOF DRAIN 1	15.75/12"HDPE/DMH39
DMH41	4'	19.90	15.39/12"HDPE/DMH28 (DIV)	15.29/12"HDPE/SSSF3 INLET 1
DMH42	4'	17.89	14.35/8"HDPE/BEAN BLDG ROOF DRAIN 2	14.05/8"HDPE/SSSF5 INLET 2 14.05/8"HDPE/SSSF5 INLET 3
DMH43	4'	18.00	14.00/12"HDPE/DMH22 (DIV)	13.90/12"HDPE/SSSF6 INLET 1 13.90/12"HDPE/SSSF6 INLET 2
DMH44	4'	18.03	14.15/12"HDPE/DMH35 (DIV)	14.05/12"HDPE/SSSF5 INLET 1
FI2	2'	20.00		16.00/12"HDPE/DMH10 (DIV)
FI3	2'	22.00		18.00/10"HDPE/AD6
HDS1	5'	21.10	15.40/12"HDPE/DMH10 (DIV)	15.40/12"HDPE/DMH30
HDS2	4'	19.95	15.55/12"HDPE/DMH7 (DIV)	15.45/12"HDPE/DMH37
OCS1	4'	19.50	15.10/6"HDPE/	15.00/12"HDPE/DMH32
OCS2	4'	14.50	11.34/6"HDPE/	10.50/12"HDPE/DMH31
OCS3	4'	13.00	9.84/6"HDPE/	9.00/12"HDPE/DMH34
OCS4	4'	21.60	12.06/12"HDPE/SSSF1 OUTLET 1	11.96/12"HDPE/DMH19
OCS5	4'	20.40	10.97/12"HDPE/SSSF2 OUTLET	10.87/12"HDPE/DMH27
OCS6	4'	14.38	11.15/18"HDPE/SSSF3 OUTLET	11.05/18"HDPE/DMH27
OCS7	4'	15.82	9.08/12"HDPE/SSSF4 OUTLET	8.98/24"HDPE/DMH31
OCS8	4'	12.62	9.90/12"HDPE/SSSF5 OUTLET	9.80/12"HDPE/DMH17
OCS9	4'	17.60	9.70/12"HDPE/SSSF6 OUTLET	9.60/12"HDPE/DMH18

PIPE TABLE			
PIPE NAME	SIZE	LENGTH	SLOPE
SD11	12" HDPE	3'	0.0333
SD13	12" HDPE	66'	0.0114
SD14	12" HDPE	14'	0.0143
SD15	24" HDPE	18'	0.0050
SD18	18" HDPE	101'	0.0054
SD19	12" HDPE	14'	0.0057
SD20	12" HDPE	63'	0.0167
SD21	18" HDPE	3'	0.0333
SD22	12" HDPE	4'	0.0250
SD23	12" HDPE	39'	0.0154
SD26	18" HDPE	19'	0.0105
SD27	12" HDPE	12'	0.0117
SD28	12" HDPE	8'	0.0125
SD29	12" HDPE	75'	0.0067
SD30	12" HDPE	68'	0.0051
SD31	12" HDPE	54'	0.0056
SD32	12" HDPE	6'	0.0083
SD33	12" HDPE	11'	0.0209
SD34	12" HDPE	11'	0.0064
SD35	24" HDPE	59'	0.0053
SD36	18" HDPE	33'	0.0106
SD37	12" HDPE	2'	0.0500
SD38	10" HDPE	83'	0.0181
SD39	12" HDPE	11'	0.0055
SD40	12" HDPE	96'	0.0052
SD41	18" HDPE	3'	0.0167
SD42	18" HDPE	67'	0.0052
SD43	12" HDPE	3'	0.0167
SD44	24" HDPE	82'	0.0051
SD45	12" HDPE	26'	0.0115
SD46	12" HDPE	9'	0.0056
SD47	12" HDPE	1'	0.1500
SD48	18" HDPE	37'	0.0108
SD49	24" HDPE	138'	0.0054
SD50	18" HDPE	6'	0.0117
SD51	24" HDPE	20'	0.0105
SD52	12" HDPE	62'	0.0048
SD53	12" HDPE	1'	0.1000
SD54	12" HDPE	154'	0.0050
SD55	12" HDPE	2'	0.0150
SD56	30" HDPE	30'	0.0043
SD57	6" HDPE	62'	0.0258
SD58	12" HDPE	15'	0.0080
SD59	12" HDPE	43'	0.0081
SD60	12" HDPE	24'	0.0104
SD61	10" HDPE	79'	0.0190
SD62	10" HDPE	24'	0.0083
SD63	12" HDPE	39'	0.0051
SD64	12" HDPE	28'	0.0054
SD65	12" HDPE	16'	0.0050
SD66	24" HDPE	54'	0.0069
SD67	12" HDPE	43'	0.0047
SD68	18" HDPE	38'	0.0053
SD69	24" HDPE	54'	0.0050
SD70	24" HDPE	14'	0.0086
SD71	4" HDPE	7'	0.0171
SD72	4" HDPE	91'	0.0107
SD73	4" HDPE	12'	0.0058
SD74	24" HDPE	92'	0.0109
SD75	12" HDPE	68'	0.0397
SD76	12" HDPE	4'	0.0250
SD77	24" HDPE	20'	0.0050
SD78	12" HDPE	68'	0.0068
SD79	12" HDPE	4'	0.0250
SD80	12" HDPE	1'	0.1000
SD82	18" HDPE	11'	0.0136
SD83	6" HDPE	26'	0.0054
SD84	12" HDPE	118'	0.0051
SD85	12" HDPE	4'	0.0175
SD86	12" HDPE	20'	0.0040
SD87	12" HDPE	32'	0.0053
SD88	12" HDPE	2'	0.0500
SD89	4" HDPE	21'	0.0048
SD90	24" HDPE	30'	0.0067
SD91	12" HDPE	16'	0.0125
SD92	12" HDPE	56'	0.0050
SD93	12" HDPE	2'	0.0150
SD94	12" HDPE	9'	0.0222
SD95	12" HDPE	19'	0.0105
SD96	24" HDPE	40'	0.0075
SD97	12" HDPE	15'	0.0067
SD98	18" HDPE	51'	0.0184
SD99	18" HDPE	164'	0.0159
SD100	8" HDPE	1'	0.0500
SD101	6" HDPE	33'	0.0058
SD102	6" HDPE	22'	0.0091
SD103	8" HDPE	10'	0.0150
SD104	12" HDPE	3'	0.0167
SD105	12" HDPE	1'	0.0500
SD106	18" HDPE	2'	0.0500
SD107	12" HDPE	2'	0.0150
SD108	12" HDPE	15'	0.0220
SD109	8" HDPE	36'	0.0181
SD110	24" HDPE	25'	0.0052

IDEALS
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Roux Campus

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LAND-USE PERMIT SET

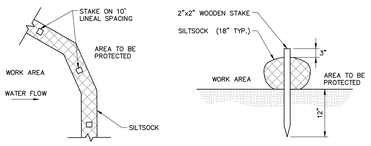
NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY



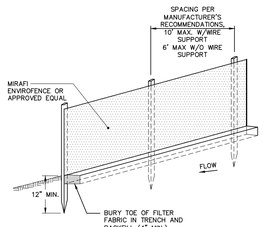
PLAN VIEW SECTION

NOTE:

1. WHEN STAKING IS NOT POSSIBLE, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT BARRIER TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.

SEDIMENT BARRIER – SILT SOCK

N.T.S.



NOTES:

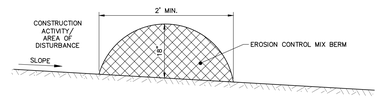
- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

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.

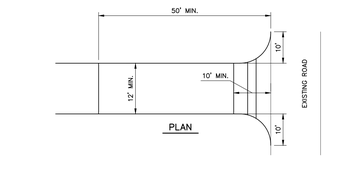


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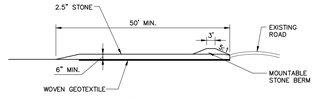
1. EROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF THE PROJECT SITE. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL 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.

SEDIMENT BARRIER – EROSION CONTROL MIX BERM

N.T.S.



PLAN



PROFILE

NOTES:

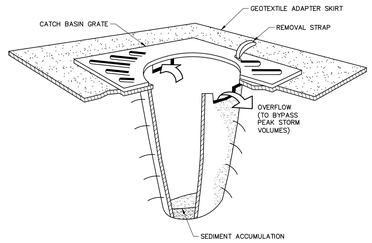
- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
- WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.

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.



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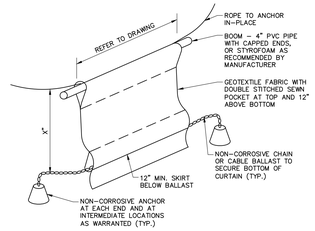
CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).

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.

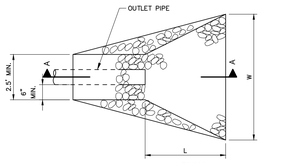
TEMPORARY INLET PROTECTION

N.T.S.



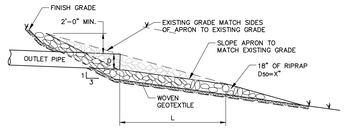
TURBIDITY CURTAIN

N.T.S.



PLAN

PIPE DIA. (D, IN.)	LENGTH (L, FT.)	WIDTH (W, FT.)	D50 (X, IN.)
18"	6'	4.5'	6"
24"	8'	6'	6"
30"	10'	7.5'	12"



SECTION A–A

RIPRAP INLET/OUTLET PROTECTION

N.T.S.

EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION CONTROL

CONTRACTOR SHALL PREPARE AND SUBMIT A SOIL EROSION AND WATER POLLUTION CONTROL PLAN TO ENGINEER.

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
SEDIMENT 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 7 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 7 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.

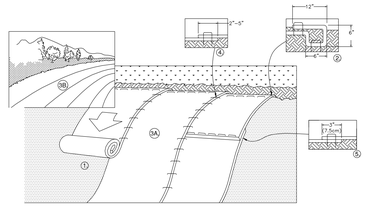
PERMANENT EROSION CONTROL:

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.

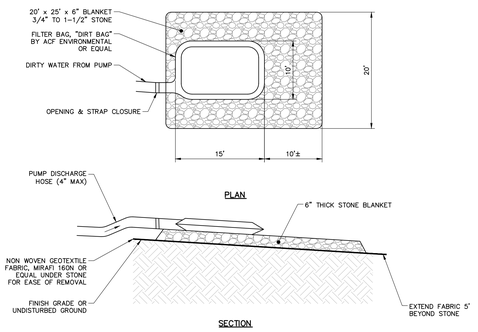
INSPECTED ITEM	LOOK FOR
MULCHED SURFACES	THIN MULCH OR INADEQUATE APPLICATION. WIND MOVEMENT.
SEEDED SURFACES	POOR SEED GERMINATION, LOSS OF MULCH. DEVELOPMENT OF RIVULETS.
SEDIMENT BARRIER	SEDIMENT BUILD–UP TO ONE HALF THE HEIGHT OF THE BARRIER, UNDERMINING OF THE BARRIER. SUPPORTING STAKES LOOSE, TOPPLED, 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.



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 THAN 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.



DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE

N.T.S.

NOTES:

1. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
2. DISCHARGE NOT PERMITTED WITHIN 100' OF A NATURAL RESOURCE.
3. DOWNGRADIENT RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, I.E. FOREST FLOOR OR COARSE GRAVEL/STONE.
4. NEVER DISCHARGE TO AREAS THAT ARE BARE OR NEWLY VEGETATED.
5. DIRT BAG MATERIAL BASED ON PARTICLE SIZE IN DIRTY WATER, I.E., FOR COARSE PARTICLES A WOVEN MATERIAL; FOR SILTS/CLAYS A NON–WOVEN MATERIAL.
6. DO NOT OVER PRESSURIZE DIRT BAG OR USE BEYOND CAPACITY.
7. CHANNELS DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA NEED TO BE STABLE. IF FLOW VELOCITIES CAUSE EROSION WITHIN THE CHANNEL THEN A DITCH LINING SHOULD BE USED.
8. BUCKETED WATER SHOULD BE DISCHARGED IN A STABLE MANNER TO THE SEDIMENT REMOVAL AREA. A SPLASH PAD OF RIPRAP UNDERLAIN WITH GEOTEXTILE MAY BE NECESSARY TO PREVENT SCOURING OF SOIL.
9. DEWATERING IN PERIODS OF INTENSE, HEAVY RAIN, WHEN THE INFILTRATIVE CAPACITY OF THE SOIL IS EXCEEDED, SHOULD BE AVOIDED.
10. INSTALL DIVERSION DITCHES OR BERMS TO MINIMIZE THE AMOUNT OF CLEAN STORMWATER RUNOFF ALLOWED INTO THE EXCAVATED AREA.
11. DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE DEWATERING FACILITY SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW THAT MAY COMPROMISE THE BUFFER AREA. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
12. EROSION CONTROL BARRIERS ARE REQUIRED AROUND DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE.

EROSION AND SEDIMENT 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 SEDIMENT BARRIER LIKE SILT SOCK, SILT FENCE, AND EROSION CONTROL MIX BERMS, CATCHBASIN TEMPORARY INLET PROTECT AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE PERMANENT VEGETATION OR PAVING.

GENERAL

A. THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT.

B. 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://MAINE.GOV/DEP/BLWQ/DOCSTANDARDS/ESCBMPS/

C. 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.

D. 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.

E. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.

F. CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN–ON TO DISTURBED AREAS. SEDIMENT BARRIER AND ANY OTHER RELEVANT EROSION CONTROL MEASURES SHALL BE MOVED AND/OR ADDED TO, TO ACCOUNT FOR CHANGES IN DISTURBED AREA DUE TO CONSTRUCTION STAGING..

G. 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 PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.

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 SPECIFICATION: IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND AUGUST 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEEDED WITH AROOSTOCK WINTER RYE OR MULCHED AT SPECIFIED RATES. SEE WINTER SEEDING AND MULCHING SPECIFICATIONS FOR STABILIZATION AFTER NOVEMBER 1.
i. APPLY TOPSOIL TO A DEPTH OF 6 INCHES, IN COMPACTED AREAS TILL 2–3" OF COMPOST INTO UPPER 8" OF DISTURBED SOIL AND THEN APPLY 6 INCHES OF TOPSOIL.
ii. APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 33 LBS PER 1000 SQUARE FEET AND GRANULAR, COMMERCIAL–GRADE FERTILIZER 10–10–10 AT A RATE OF 18 LBS PER 1000 SQUARE FEET.
iii. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES. APPLY HAY OR STRAW MULCH AT A RATE OF 2.5 BALES PER 1000 SQUARE FEET AND ANCHOR AS NECESSARY.

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. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1 OR AS OTHERWISE NOTED. 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.

L. 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 15. 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.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

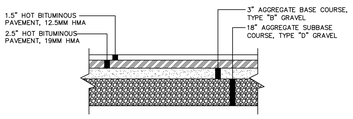
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

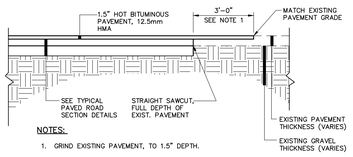
Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 MARCH 2024
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 1

D-401

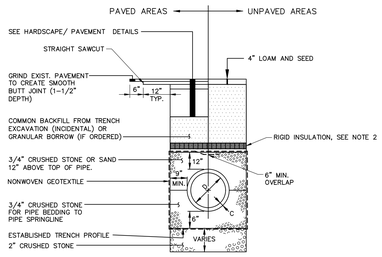


BITUMINOUS PAVEMENT SECTION
N.T.S.



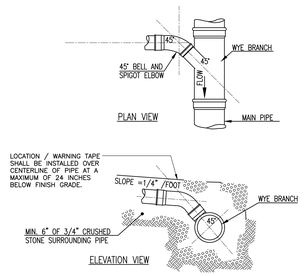
NOTES:
1. GRIND EXISTING PAVEMENT, TO 1.5" DEPTH.
2. PROVIDE BITUMINOUS TACK COAT ON VERTICAL AND HORIZONTAL SURFACES PRIOR TO PAVING.
3. DETAIL APPLICABLE TO PAVEMENT BUTT JOINTS AT ROADWAY WORK LIMITS. REFER TO PIPE INSTALLATION DTL. OR PAVED ROAD SECTION DTLS. FOR TRENCH REPAIR REQUIREMENTS.

PAVEMENT BUTT JOINT DETAIL
N.T.S.

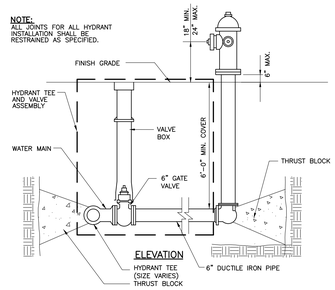


NOTES:
1. DEPTH AND TYPE OF PAVEMENT AND AGGREGATE COURSES SHALL BE PER PLANS. SEE CIVIL & LANDSCAPING PAVEMENT DETAILS.
2. PROVIDE RIGID INSULATION WHERE COVER OVER PIPE IS LESS THAN 4 FEET. THE THICKNESS OF THE RIGID INSULATION SHALL BE SUFFICIENT TO PROVIDE AN EQUIVALENT OF 4'-0" OF SOIL ABOVE THE PIPE. ONE INCH OF RIGID INSULATION SHALL BE EQUIVALENT TO ONE FOOT OF SOIL. INSULATION SHALL EXTEND A MINIMUM 9' FROM OUTSIDE EDGE OF PIPE. BUT SHALL NOT EXCEED TRENCH WIDTH.
3. STORM DRAIN IN THE SHERWOOD STREET RIGHT-OF-WAY SHALL MEET THE MATERIAL SPECIFICATIONS IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.

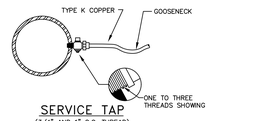
TYPICAL STORMDRAIN/ SEWER PIPE TRENCH INSTALLATION
N.T.S.



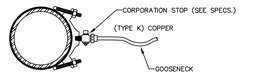
TYPICAL LATERAL WYE CONNECTION DETAILS
N.T.S.



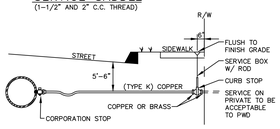
TYPICAL HYDRANT ASSEMBLY DETAIL
N.T.S.



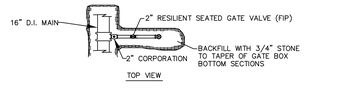
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



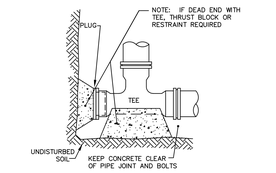
SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



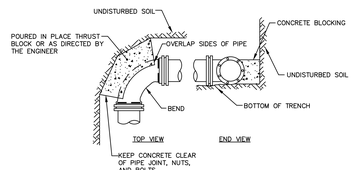
TYPICAL SERVICE CONNECTION
N.T.S.



SIDE-ARM BLOW-OFF 4" & LARGER MAINS
N.T.S.

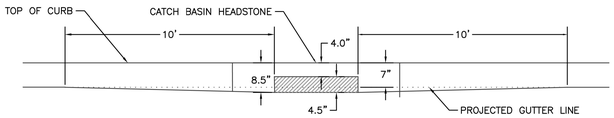


STANDARD TEE BLOCKING
N.T.S.



STANDARD BEND BLOCKING
N.T.S.

NOTE:
DISH 10' EITHER SIDE OF HEADSTONE FOR CATCH BASIN AT LOW POINT



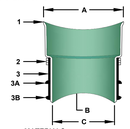
TYPICAL PAVEMENT GRADING FOR CATCH BASIN INLETS (IN CITY RIGHT-OF-WAY)
N.T.S.

CORRUGATED HDPE/PP BELL GRAVITY APPLICATIONS

A. BELL END ACCEPTS CORRUGATED HDPE/PP DUAL WALL PIPE--ADS/HANCOR INC. SPECIFICATIONS IN 4", 6", 8", 10", 12", 15", 18", 21", 24", AND 30" SIZES.

B. CURVATURE VARIES WITH MAINLINE DIAMETERS.

C. SPIGOT END PVC SDR 35, ASTM D3034 DIAMETERS: 4", 6", 8", 10", 12", 15", 18", 21", 24" AND 30"



PART	PART NAME
1	HUB ADAPTOR
2	SECURING CLAMP*
3	RUBBER SLEEVE(AVAILABLE IN NITRILE AND EPDM BY SPECIAL ORDER)
3A	UPPER SEGMENT**
3B	LOWER SEGMENT***
4	(NOT SHOWN) ADS/HANCOR INC. SUPPLIES VALLEY GASKET

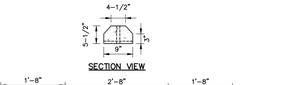
MATERIALS
PVC SDR 26 ASTM D3034
BAND SS #301
SCREW SS #305
HOUSING SS #301
ASTM F477

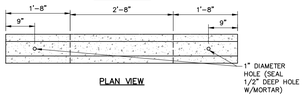
* OPTIONAL: #316 STAINLESS STEEL BAND, SCREW AND HOUSING
** DISTANCE BETWEEN 4A AND 4B WILL VARY BY PRODUCT TYPE
*** WILL NOT APPEAR ON RUBBER SLEEVES FOR CONCRETE OR CLAY PIPE

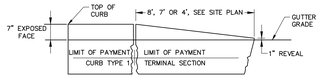
INSERTA TEE SIZE	HOLE DIAMETER
4" (100 mm)	4 ⅞" (114 mm)
6" (150 mm)	6 ½" (165 mm)
8" (200 mm)	8 ¾" (222 mm)
10" (250 mm)	10 ⅞" (276 mm)
12" (300 mm)	12 ⅞" (327 mm)
15" (375 mm)	15 ⅞"(402 mm)
18" (450 mm)	19 ⅜" (503 mm)
21" (525 mm)	22 ⅜" (573 mm)
24" (600 mm)	25 ⅜" (643 mm)
30" (750 mm)	32 ½" (826 mm)

NOTE: RECOMMENDED METHOD OF CUTTING HOLE IS WITH HOLE SAW FOR PVC AND OTHER PLASTICS, AND DIAMOND BIT FOR CONCRETES, CLAY, FRP AND D.I. (SEE INSTALLATION INSTRUCTIONS. HOLE SAWS ARE AVAILABLE FOR PURCHASE OR RENT.)

INSERTA TEE DETAIL
N.T.S.

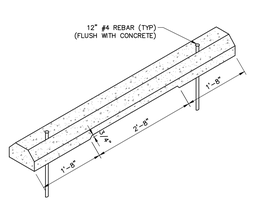






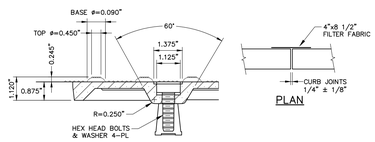
TERMINAL SECTION TYPE "1"

TERMINAL CURB SECTION
N.T.S.

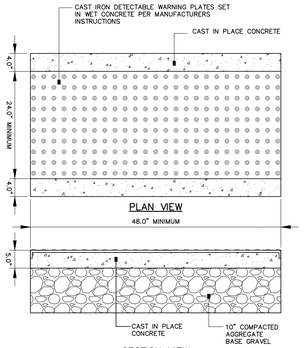


NOTE:
1. CONCRETE SHALL BE 4,000 PSI.

WHEEL STOP
N.T.S.

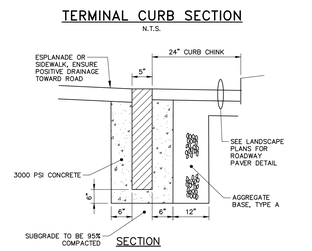


BOLT DETAIL



SIDEWALK RAMP DETECTABLE WARNING
N.T.S.

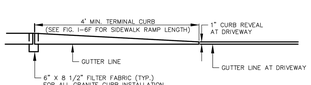
NOTES:
1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MAINE D.O.T. CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE PLATE WIDTH AND CONCRETE SHALL EXTEND THE WIDTH OF THE CURB RAMP, LANDING, OR BLENDING TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



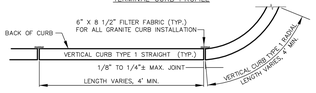
NOTES:
1. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
2. WOODEN SHIMS MAY BE USED TO SET CURB.

TYPICAL FLUSH CURB INSTALLATION (IN CITY RIGHT-OF-WAY)
N.T.S.

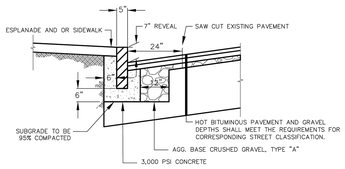
NOTE: AGGREGATE TYPES PER MDOT SECTION 304.02



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW

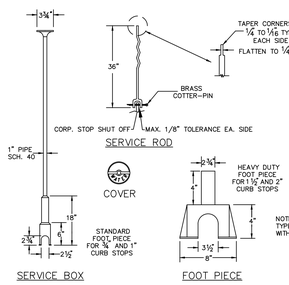


VERTICAL GRANITE CURB CROSS SECTION

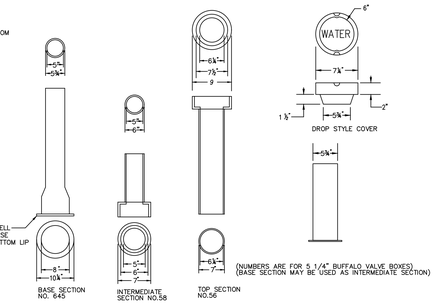
NOTES:
1. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
2. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
3. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
4. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB (IN CITY RIGHT-OF-WAY)
N.T.S.

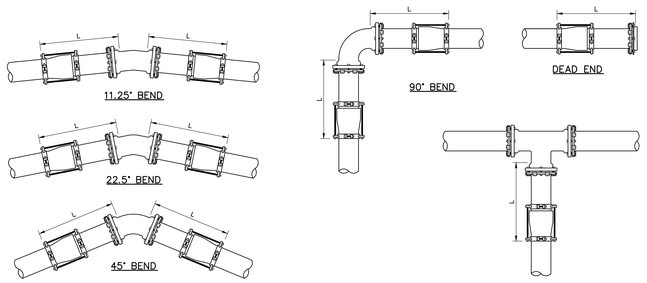
VALVE WITH VALVE BOX
N.T.S.



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.

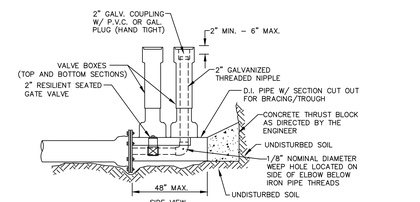


DIAMETER	REQUIRED LENGTH OF RESTRAINED JOINT PIPE ON BOTH SIDES OF FITTING — HORIZONTAL BEND				REQUIRED LENGTH OF RESTRAINED JOINT PIPE
	11.25°	22.5°	45°	TEE/90°	DEAD END
6"	2'	4'	9'	21'	51'
8"	3'	6'	11'	27'	67'
10"	4'	7'	14'	32'	81'
12"	4'	8'	16'	38'	96'
16"	5'	10'	20'	48'	123'

ASSUMED PARAMETERS:	
LAYING CONDITION	TYPE 5
SOIL DESIGNATION	SILT 1
DEPTH COVER	5 FT
DESIGN PRESSURE	200 PSI
SAFETY FACTOR	1.5

NOTES:
1. RESTRAINED JOINTS SHALL BE MECHANICAL JOINT OR PUSH-ON RESTRAINED JOINT AS SPECIFIED IN SECTION 33 14 11.01.

THRUST RESTRAINT DETAIL
N.T.S.



STANDARD 2" BLOW OFF
N.T.S.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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LAND-USE PERMIT SET

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Number	Revision	Date

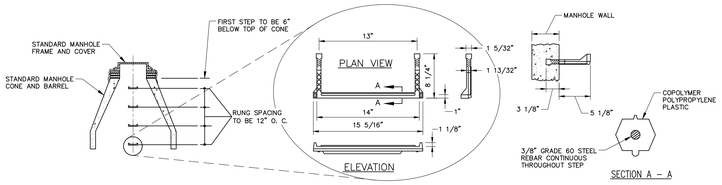
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 MARCH 2024
Scale	AS NOTED

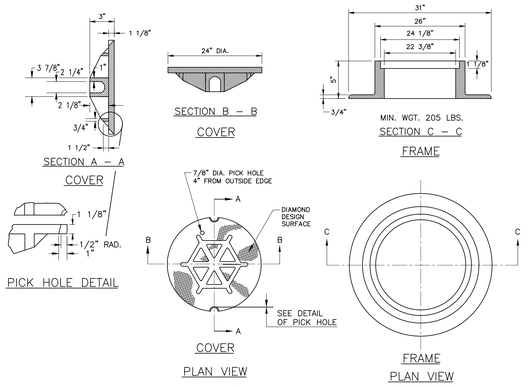
Drawing Title
CIVIL DETAILS - 2

D-402



PLASTIC MANHOLE STEPS

N.T.S.



NOTE:

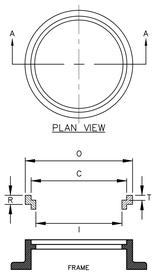
FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

TYPE "A" CAST IRON MANHOLE COVER AND FRAME

N.T.S.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

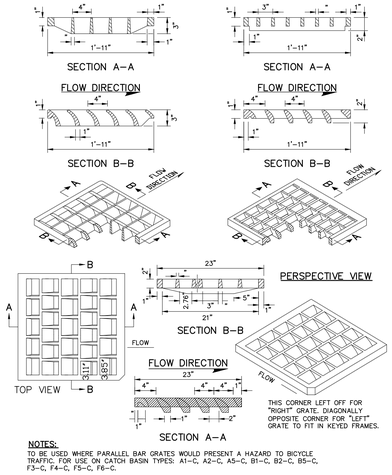
1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C–478.
3. ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR 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.



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.

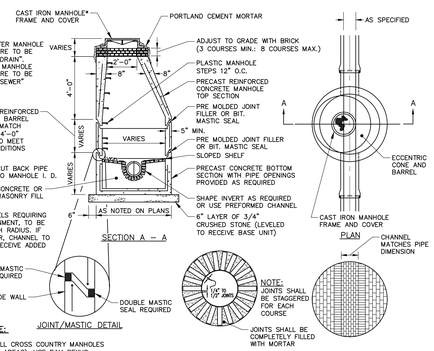


NOTES:

TO BE USED WHERE PARALLEL BAR GRATES WOULD PRESENT A HAZARD TO BICYCLE TRAFFIC. FOR USE ON CATCH BASIN TYPES: A1–C, A2–C, A5–C, B1–C, B2–C, B5–C, F3–C, F4–C, F5–C, F6–C.

"CASCADE–TYPE" GRATES

N.T.S.



NOTE:

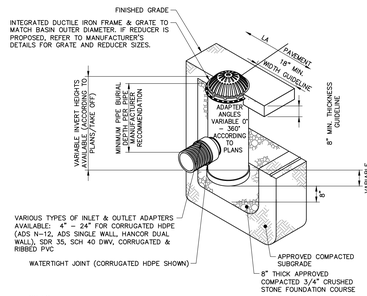
MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.

*NOTE:

FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

PRECAST CONCRETE MANHOLE

N.T.S.

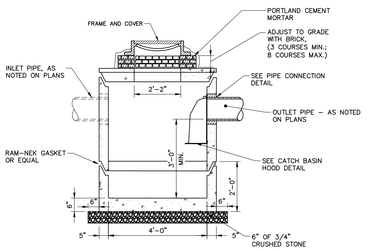


NOTES:

1. INSTALL BASIN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. PRODUCT SHALL BE NYLOPLAST DRAIN BASIN MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS (ADS) OR APPROVED EQUAL.
3. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70–50–05.
4. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70–50–05.
5. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTORATIONS.
6. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
7. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.

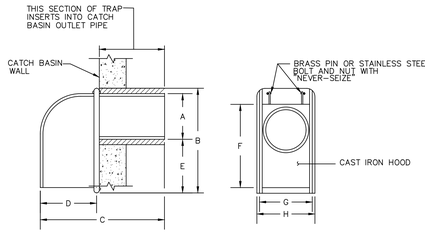
FIELD INLET

N.T.S.



PRECAST CONCRETE CATCH BASIN

N.T.S.

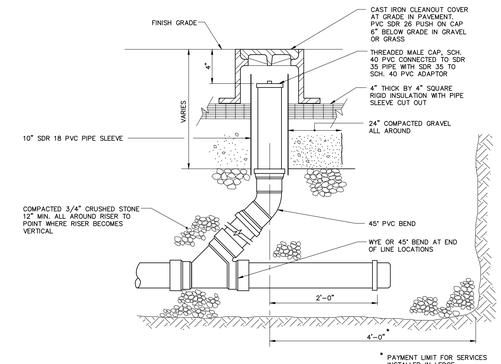


SIZE	A	B	C	D	E	F	G	H
6 in.	5 1/2"	13 3/8"	13 3/4"	5 3/8"	5 7/8"	11 5/8"	6 1/2"	7 1/4"
8 in.	7 1/2"	15"	15 3/8"	5 1/2"	5 3/8"	13 3/4"	8 3/4"	9 3/8"
10 in.	9 1/2"	16"	16 1/4"	6"	4 1/2"	14 7/8"	11 1/2"	12 3/8"
12 in.	11 1/2"	17"	22"	8"	3 1/2"	17"	12 1/2"	13 3/8"

NOTE: PROVIDE IN CATCH BASINS IN PAVED AREAS ONLY.

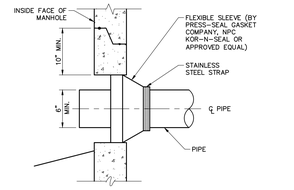
CATCH BASIN HOOD

N.T.S.



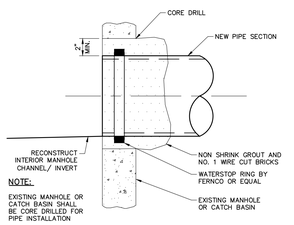
CLEANOUT DETAIL

N.T.S.



NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL

N.T.S.

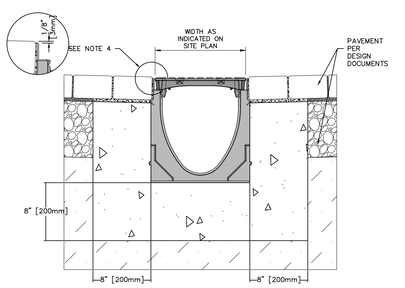


NOTE:

EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION

NEW PIPE TO EXISTING STRUCTURE

N.T.S.



NOTES:

1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K200 KLASSIKDRAIN 'DRAINLOK' LOAD CLASS C

GENERAL

THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS

CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST–IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH: 14,000 PSI
FLEXURAL STRENGTH: 4,000 PSI
TENSILE STRENGTH: 1,500 PSI
WATER ABSORPTION: 0.07% FROST PROOF YES
DILUTE ACID AND ALKALI RESISTANT YES
B117 SALT SPRAY TEST COMPLIANT YES

THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH AND A BUILT–IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

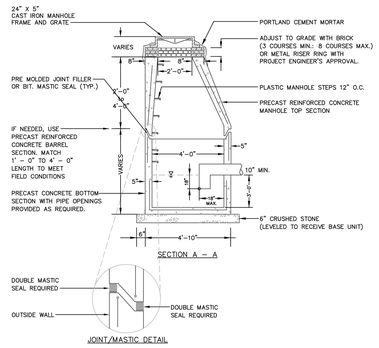
CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'DRAINLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

TRENCH DRAIN

N.T.S.

NOTES:

- FOR USE IN PARTIALLY OR TOTALLY ENCLOSED PARKING GARAGES, AUTOMOTIVE REPAIR FACILITIES OR ANY OTHER PROPOSED STRUCTURE WHERE DEEMED APPROPRIATE BY THE CITY ENGINEER.
- DISCHARGE SHALL BE TO SANITARY SEWER.
- A VENT PIPE MAY BE REQUIRED THAT HAS A VERTICAL OUTLET OFF TO THE SIDE OF THE STRUCTURE.
- AN OIL ABSORBENT BOOM IS REQUIRED TO BE PLACED WITHIN THE MANHOLE ON THE WATER SURFACE AND REPLACED AT A MINIMUM ANNUALLY.



OIL / GRIT SEPARATOR

N.T.S.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

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Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

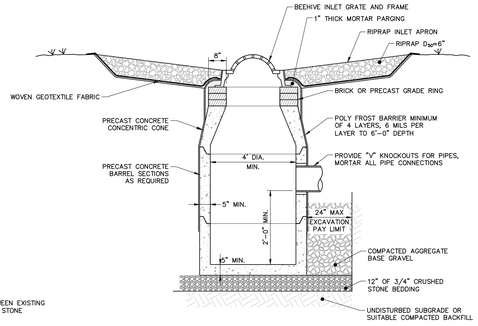
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Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 MARCH 2024
Scale	AS NOTED

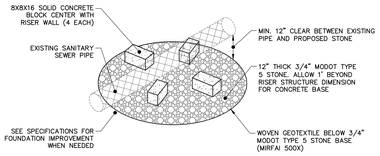
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CIVIL DETAILS - 3

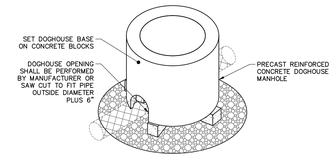
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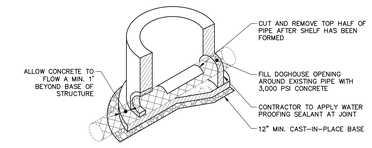
AREA DRAIN IN RIPRAP
N.T.S.



BASE ISOMETRIC VIEW



RISER ISOMETRIC VIEW

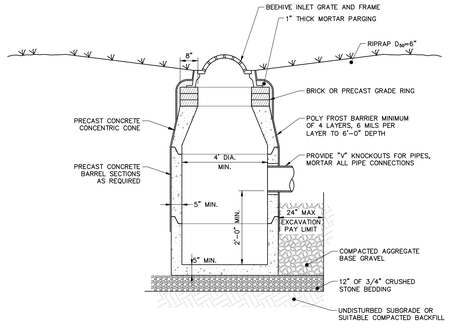


FOUNDATION SECTION VIEW

NOTES:

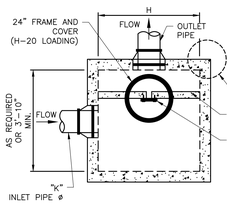
1. ASSEMBLED DOGHOUSE MANHOLE SHALL BE IN ACCORDANCE WITH ALL REQUIREMENTS OF PRECAST MANHOLE DETAIL ON THIS SHEET.

DOGHOUSE MANHOLE
NOT TO SCALE



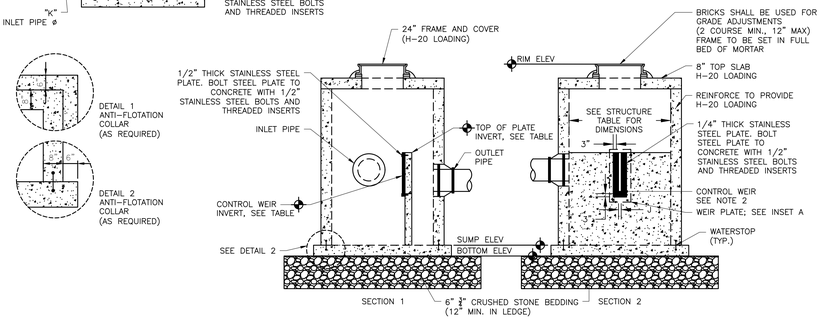
AREA DRAIN IN VEGETATION
N.T.S.

OUTLET CONTROL STRUCTURE – DIMENSIONS/ ELEVATIONS		
LOCATION	TOP OF PLATE B (ELEV.)	CONTROL WEIR C (ELEV.)
OCS1	19.34	17.34
OCS2	14.34	12.34
OCS3	12.84	10.84
OCS4	15.80	13.80
OCS5	14.06	12.06
OCS6	14.41	12.41
OCS7	12.08	10.08
OCS8	13.17	11.17
OCS9	12.60	10.60

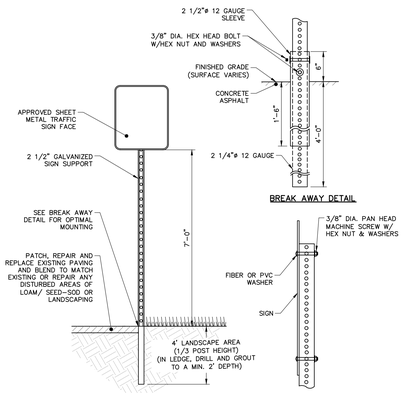


NOTES:

1) ALL CEMENT CONCRETE TO BE 4000 PSI (MIN).
2) CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY THE REGULATIONS AND IN ACCORDANCE WITH THE APPROVED DRAINAGE CALCULATIONS. STAINLESS STEEL PLATE SHALL BE USED FOR CONTROL WEIRS LESS THAN 2 INCHES WIDE.
3) ALL STAINLESS STEEL SHALL BE GRADE 316.
4) MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION.



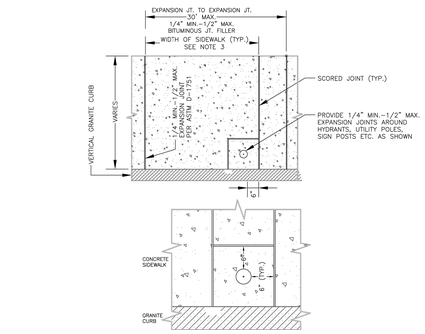
OUTLET CONTROL STRUCTURE
N.T.S.



NOTES:

1. ALL HARDWARE SHALL BE STAINLESS STEEL.

TRAFFIC SIGN POST
N.T.S.

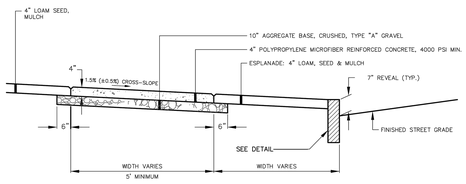


CONCRETE SIDEWALK JOINT NOTES:

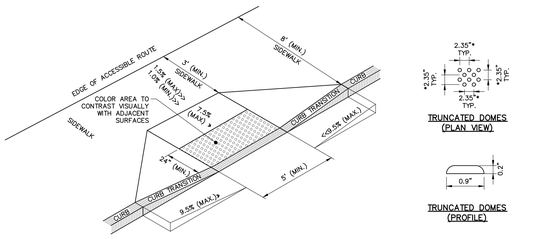
1. EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
2. SLABS SHALL BE PLACED ALTERNATELY IN LENGTHS, NOT TO EXCEED 30 LINEAR FEET OR AS DIRECTED AND SHALL BE SEPARATED BY AN EXPANSION JOINT OF PREFORMED EXPANSION FILLER 1/4" MIN.–1/2" MAX. IN THICKNESS AND SHALL EXTEND THE FULL LENGTH/DEPTH OF THE CONCRETE.
3. THE SIDEWALK SURFACE SHALL BE SCORED INTO BLOCK UNITS. THE DEPTH OF SCORING SHALL BE AT LEAST ONE QUARTER OF THICKNESS OF THE SLABS (1" TYP.). SCORED JOINTS MUST BE COMPLETED AS PART OF THE FINISHING PROCESS. SAW CUTTING OF JOINTS IS NOT ALLOWED. SCORED JOINTS SHALL BE PLACED AT THE FOLLOWING LOCATIONS:
   A. IN LOCATIONS TO ENSURE BLOCK UNITS DO NOT EXCEED 36 SQUARE FEET.
   B) AT THE SPACING THAT MATCHES ADJACENT TIP DOWN CURB
   C. EXTENSION OF EXPANSION JOINTS LOCATED AT HYDRANTS & UTILITY POLES.
4. ALL OUTSIDE EDGES OF THE SLAB AND ALL JOINTS SHALL BE ROUNDED WITH A 1/4" RADIUS EDGING TOOL.
5. CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.

SIDEWALK EXPANSION JOINT (IN CITY RIGHT-OF-WAY)
N.T.S.

NOTE
CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDEOX SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.



REINFORCED CONCRETE SIDEWALK (IN CITY RIGHT-OF-WAY)
N.T.S.

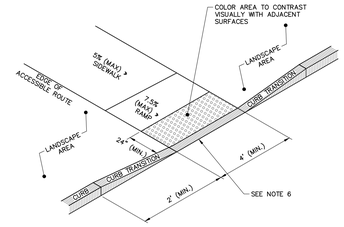


*DIMENSIONS ARE CENTER TO CENTER

NOTES:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN.)
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
6. ADJACENT SURFACES AT TRANSITIONS SHALL BE FLUSH WITH CURB RAMPS.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY OR OTHERWISE INDICATED.
10. DETECTABLE WARNING SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. TRUNCATED DOMES AND ALL RELATED INSTALLED SURFACES TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ALL DETECTABLE WARNING SURFACE INSTALLATIONS SHALL BE AT A MINIMUM AT LEAST AS NON SKID AS THE SURROUNDING PEDESTRIAN SURFACES.
12. FOR ALLOWABLE SLOPE OF ACCESSIBLE ROUTE ON EXISTING SITE, SEE SECTION 405 OF THE ADA STANDARD FOR ACCESSIBLE DESIGN.

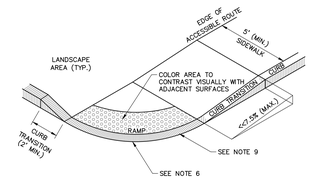
ACCESSIBLE CURB RAMP (ACR) – TYPE 'A'
N.T.S.



NOTE:

1. ACCESSIBLE CURB RAMP NOTES PROVIDED UNDER "ACCESSIBLE CURB RAMP – TYPE 'A' DETAIL ON THIS SHEET ARE APPLICABLE.

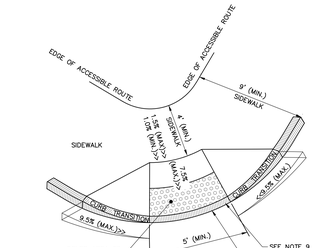
ACCESSIBLE CURB RAMP (ACR) – TYPE 'D'
N.T.S.



NOTE:

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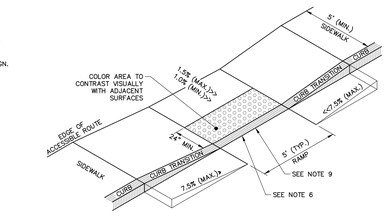
ACCESSIBLE CURB RAMP (ACR) – TYPE 'E'
N.T.S.



NOTE:

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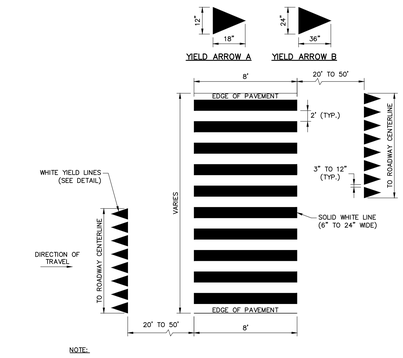
ACCESSIBLE CURB RAMP (ACR) – TYPE 'F'
N.T.S.



NOTE:

1. ACCESSIBLE CURB RAMP NOTES PROVIDED UNDER "ACCESSIBLE CURB RAMP – TYPE 'A' DETAIL ON THIS SHEET ARE APPLICABLE.

ACCESSIBLE CURB RAMP (ACR) – TYPE 'H'
N.T.S.



NOTE:

1. YIELD ARROW A SHALL BE USED FOR TRAVEL LANES UNDER TWELVE (12) FEET. YIELD ARROW B SHALL BE USED FOR TRAVEL LANES TWELVE (12) FEET OR GREATER

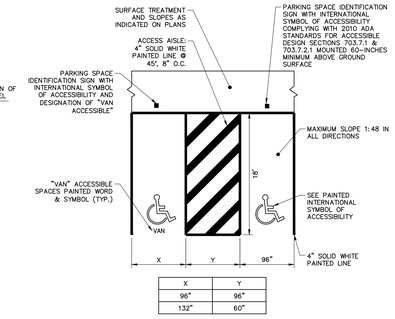
CROSSWALK PAVEMENT MARKINGS
N.T.S.



NOTES:

1. SYMBOL SHALL BE PAINTED WHITE IN COMPLIANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SECTION 3B.19, SECTION 3B.20 AND FIGURE 3B-22.
2. A BLUE RECTANGULAR (MIN. 36" X 36") BACKGROUND AND WHITE BORDER ARE OPTIONAL IN ACCORDANCE WITH MUTCD SECTION 3B.19 AND FIGURE 3B-22.
3. SYMBOL FINISH SHALL BE NON-GLARE IN ACCORDANCE WITH ADA STANDARDS FOR ACCESSIBLE DESIGN SECTION 703.7.1.

PAINTED INTERNATIONAL SYMBOL OF ACCESSIBILITY
N.T.S.



X	Y
96"	96"
132"	60"

ACCESSIBLE PARKING STALL LAYOUT
N.T.S.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

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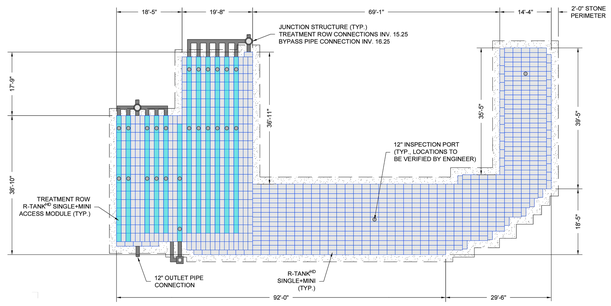
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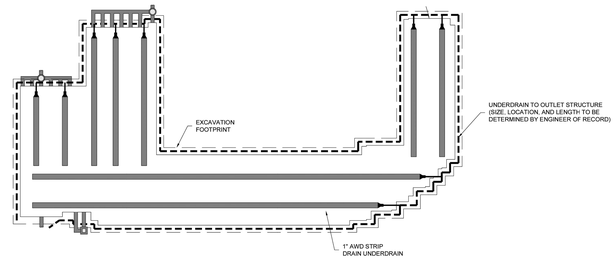
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 MARCH 2024
Scale	AS NOTED

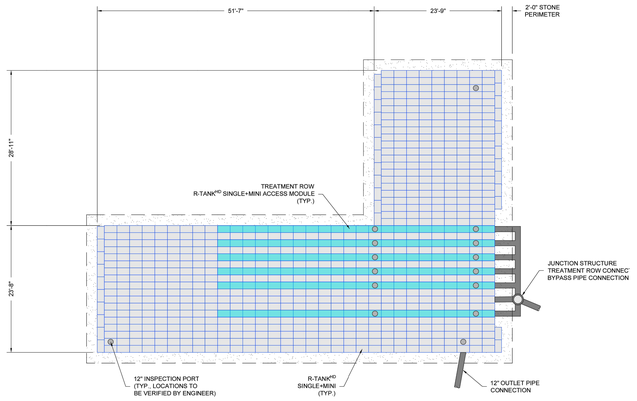
Drawing Title
CIVIL DETAILS - 4

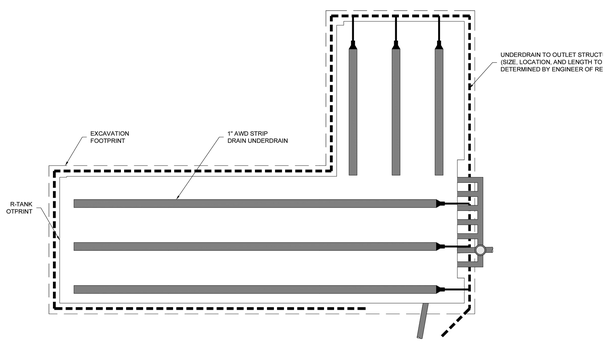
D-404



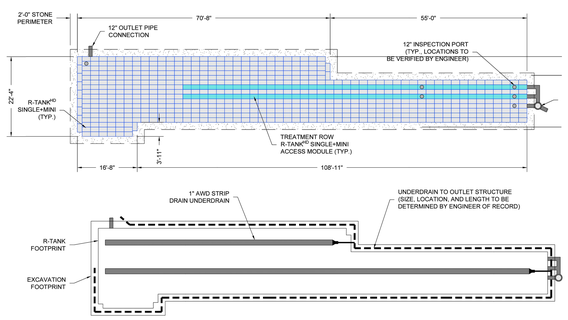


SAND FILTER 3

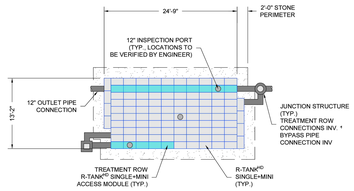


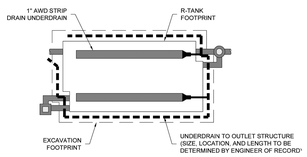


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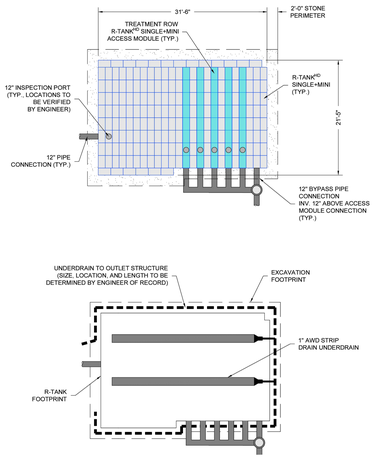


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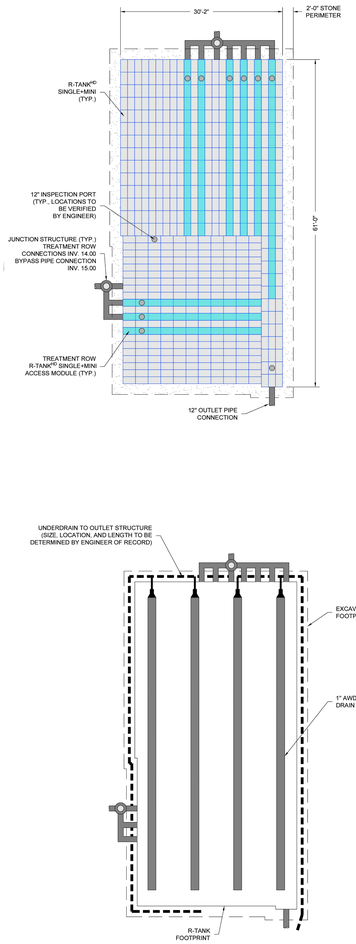




SAND FILTER 4



SAND FILTER 6



SAND FILTER 5

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Number	Revision	Date

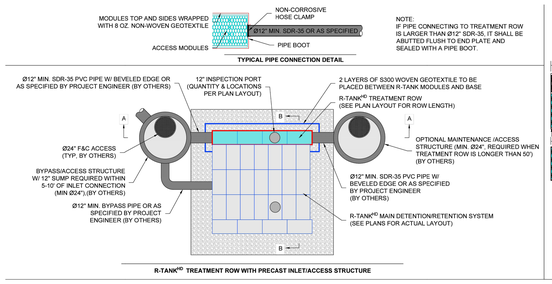
STATE OF MAINE
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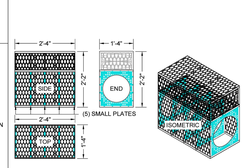
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CIVIL DETAILS - 5

D-405

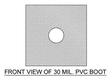


TYPICAL PIPE CONNECTION DETAIL

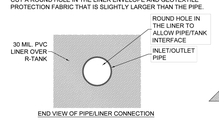
R-TANK^HD TREATMENT ROW WITH PRECAST INLET/ACCESS STRUCTURE



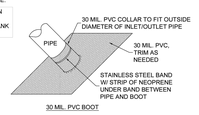
SINGLE + MINI R-TANK^HD - ACCESS MODULE DETAIL
(FOR MODULE DATA, SEE STANDARD MODULE DETAIL)



FRONT VIEW OF 30 MIL. PVC BOOT

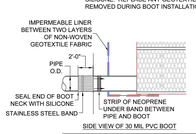


END VIEW OF PIPE/LINER CONNECTION



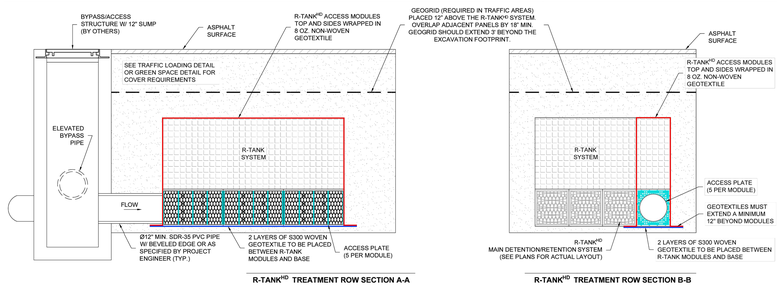
30 MIL. PVC BOOT

AFTER LINER IS CUT AND PIPE INSTALLED, SLIDE BOOT AGAINST LINER AND SECURE WITH STAINLESS STEEL BAND, THEN BOND BOOT TO LINER AND SEAL END OF BOOT WITH SILICONE. REPLACE ANY GEOTEXTILE PROTECTION FABRIC REMOVED DURING BOOT INSTALLATION PROCESS.



SIDE VIEW OF 30 MIL PVC BOOT | SIDE VIEW OF PIPE/LINER CONNECTION

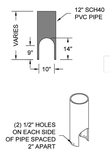
R-TANK TYPICAL EXCAVATION INLET/OUTLET W/ 30 MIL PVC PIPE BOOT DETAIL

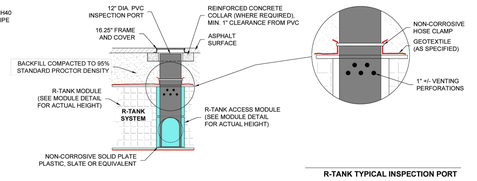


R-TANK^HD TREATMENT ROW SECTION A-A

R-TANK^HD TREATMENT ROW SECTION B-B

NOTES
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^HD, R-TANK^HD, R-TANK^HD AND R-TANK^HD MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.





R-TANK TYPICAL INSPECTION PORT



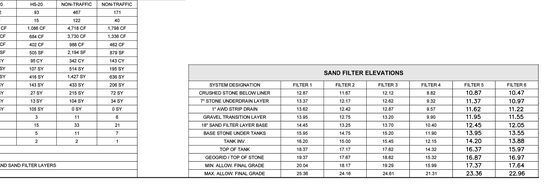
MODULE DATA

GEOMETRY:	**LOAD RATING:**
LENGTH = 28.15 IN. (715 MM)	33.4 PSI. (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS20/HS25 - SEE SPEC FOR
HEIGHT = 25.98 IN. (660 MM)	COVER REQUIREMENTS
TANK VOLUME = 6.67 CF	**MATERIAL:**
STORAGE VOLUME = 6.33 CF	100% RECYCLED POLYPROPYLENE
VOID INTERNAL VOLUME: 95%	**SMALL PLATES REQUIRED:**
VOID SURFACE AREA: 90%	5/SEGMENT, 10/MODULE

SINGLE + MINI R-TANK^HD - MODULE DETAIL

TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B). STONE =1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C). STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT=10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4 A MIN. 12". COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^HD MODULE SHEET.
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^HD FOOTPRINT.



LOAD RATING: 33.4 PSI (MODULE ONLY)

R-TANK^HD UNITS

SUBGRADE / EXCAVATION LINE: COMPACT PER SPEC SECTION 3.02 D. A BEARING CAPACITY OF 2,000 PSF MUST BE ACHIEVED PRIOR TO INSTALLING R-TANK^HD

BASE: 3" (0.08 m) MIN. FREE DRAINING BACKFILL (SPEC SECTION 2.03B) COMPACTED TO 95% STANDARD PROCTOR DENSITY IS REQUIRED TO PROVIDE A LEVEL BASE SURFACE. MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^HD FOOTPRINT. A BEARING CAPACITY OF 2,000 PSF MUST BE ACHIEVED PRIOR TO INSTALLING R-TANK^HD. NATIVE SOILS MAY BE ACCEPTABLE IF DETERMINED TO BE STABLE BY OWNER'S ENGINEER.

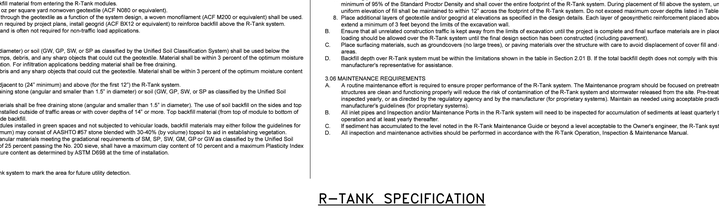
SIDE BACKFILL: FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE =1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). MUST BE FREE FROM LUMPS, DEBRIS AND OTHER SHARP OBJECTS. SPREAD EVENLY TO PREVENT R-TANK^HD MOVEMENT. COMPACT SIDE BACKFILL WITH POWERED MECHANICAL COMPACTOR IN 12" LIFTS (PER SPEC SECTION 3.05 A2).

R-TANK^HD & HS-20 LOADS - SECTION VIEW



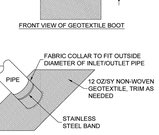
DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) 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. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
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 DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
4. 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). **SPEC SECTION 3.05 B**
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.



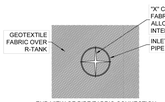
CONSTRUCTION EQUIPMENT COVER DETAIL - GREEN SPACE

NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24"
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.



FRONT VIEW OF GEOTEXTILE BOOT

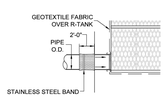
CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.



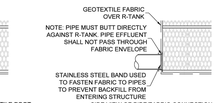
END VIEW OF PIPE/FABRIC CONNECTION

GEOTEXTILE BOOT

AFTER TANK WRAP IS SECURED TO PIPE, SLIDE BOOT AGAINST R-TANK AND SECURE WITH SECOND STAINLESS STEEL BAND, THEN ATTACH BOOT FLAP TO TANK ENVELOPE FABRIC WITH DUCT TAPE OR OTHER ADHESIVE.

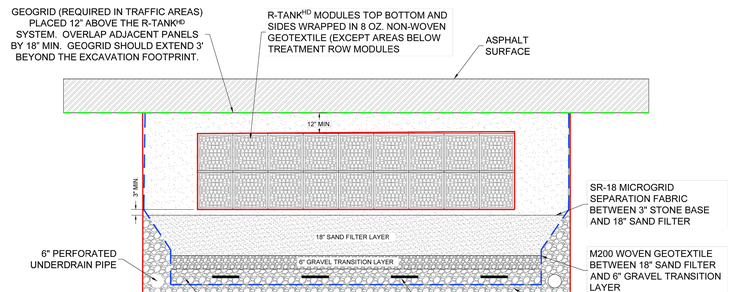


SIDE VIEW OF GEOTEXTILE BOOT



SIDE VIEW OF PIPE/FABRIC CONNECTION

R-TANK TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL



R-TANK QUANTITIES

SYSTEM DESIGNATION	FILTER 1	FILTER 2	FILTER 3	FILTER 4	FILTER 5	FILTER 6
R-TANK^HD MODULE TYPE	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI	SINGLE+MINI
TRAFFIC LOAD	HS-20	NON-TRAFFIC	HS-20	HS-20	NON-TRAFFIC	NON-TRAFFIC
# OF SINGLE+MINI R-TANKS	659	570	1002	93	467	171
# OF SINGLE+MINI R-TANK ACCESS MODULES	132	82	212	15	122	40
TOTAL SYSTEM STORAGE	8,568 CF	5,447 CF	10,789 CF	1,096 CF	4,718 CF	1,798 CF
R-TANK STORAGE VOLUME	5,009 CF	4,129 CF	7,668 CF	664 CF	3,730 CF	1,336 CF
STONE STORAGE VOLUME (40% VOID RATIO)	1,979 CF	1,318 CF	3,101 CF	402 CF	988 CF	462 CF
STONE BED FOOTPRINT	2,993 SF	2,821 SF	4,640 SF	555 SF	2,194 SF	879 SF
TOTAL BACKFILL QUANTITY	525 CY	421 CY	817 CY	95 CY	340 CY	143 CY
9080 NON-WOVEN GEOTEXTILE TANK WRAP	694 SY	595 SY	1,078 SY	107 SY	514 SY	195 SY
9080 NON-WOVEN GEOTEXTILE EXCAVATION WRAP	1,981 SY	1,818 SY	3,117 SY	418 SY	1,427 SY	638 SY
30 MIL. PVC LINER	608 SY	510?	986 SY	143 SY	433 SY	206 SY
8 OZ. NON-WOVEN GEOTEXTILE TREAT. ROW WRAP	228 SY	140 SY	378 SY	27 SY	215 SY	72 SY
5300 WOVEN GEOTEXTILE TREAT. ROW BASE FABRIC	113 SY	70 SY	181 SY	13 SY	104 SY	34 SY
ACF BX-12 GEOGRID	491 SY	0 SY	789 SY	108 SY	0 SY	0 SY
12" INSPECTION PORTS	15	9	26	3	11	6
GEOTEXTILE PIPE BOOTS (12")	24	21	48	15	33	21
30 MIL. PVC PIPE BOOTS (12")	8	7	16	5	11	7
STORMING CPS (12")	2	2	4	2	2	1
NOTE: STONE QUANTITY INCLUDES 12" OF COVER AND 7' OF BASE.						
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 15% WASTE FACTOR.						
NOTE: TOTAL BACKFILL QUANTITY INCLUDES ALL AGGREGATE & SAND REQUIRED FOR R-TANK SYSTEM AND SAND FILTER LAYERS						
SEE SHEETS 3 - 14 FOR DETAILS AND ADDITIONAL INFORMATION						

SAND FILTER ELEVATIONS

SYSTEM DESIGNATION	FILTER 1	FILTER 2	FILTER 3	FILTER 4	FILTER 5	FILTER 6
CRUSHED STONE BELOW LINER	12.87	11.67	12.12	8.82	10.87	10.47
7" STONE UNDERDRAIN LAYER	13.37	12.17	12.62	9.32	11.37	10.97
1" AWD STRIP DRAIN	13.62	12.42	12.87	9.57	11.62	11.22
GRAVEL TRANSITION LAYER	13.83	12.75	13.20	9.90	11.95	11.55
18" SAND FILTER LAYER BASE	14.45	13.25	13.70	10.40	12.45	12.05
BASE STONE UNDER TANKS	15.95	14.75	15.20	11.90	13.95	13.55
TANK INV.	16.20	15.00	15.45	12.15	14.20	13.88
TOP OF TANK	18.37	17.17	17.62	14.32	16.37	15.97
GEOGRID / TOP OF STONE	18.37	17.67	18.62	15.32	16.87	16.97
MIN. ALLOW. FINAL GRADE	20.04	18.17	19.29	15.99	17.37	17.64
MAX. ALLOW. FINAL GRADE	25.38	24.18	24.61	21.31	23.36	22.96

R-TANK SPECIFICATION

PART 1 - GENERAL
1.01 RELATED DOCUMENTS
A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK INCLUDED
A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
B. Provide and install R-TanksLD; R-TankHD; R-TankSD; or R-TankLID system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
C. Provide and construct the cover of the R-Tank system including: stone backfill, structural fill cover, and pavement section as specified.
D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL
A. All materials shall be manufactured in ISO certified facilities.
B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS
A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
B. Submit manufacturer's product data, including compressive strength and unit weight.
C. Submit manufacturer's installation instructions.
D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
F. Submit required experience and personnel requirements as specified in Section 1.03.
G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials shall be on smooth surfaces, free from dirt, mud and debris.
B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE.
A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS
A. Coordinate installation of the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
B. Protect adjacent work from damage during R-Tank system installation.
C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS
2.01 R-TANK UNITS
A. R-Tank - Injection molded plastic tank plate panels to form a 95% void modular structure of predesigned height (custom for each project).
B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank^HD VALUE	R-Tank^HD VALUE	R-Tank^HD VALUE	R-Tank^HD VALUE
Void Area	Volume available for water storage	95%	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%	90%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	35.0 psi	33.4 psi	42.8 psi	134.2 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	22.4 psi	24.4 psi	N/A
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	42"	12"	12" (STONE BACKFILL)
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	48"	12"	12" (STONE BACKFILL)
Maximum Cover	Maximum allowable cover depth	7 feet	< 7 feet	< 10 feet	3 feet
Unit Height	Height of plastic per unit in feet (if any)	2.62 feet	3.94 feet	3.96 feet	4.33 feet
Dig Thickness	Thickness of load bearing sidewalls	0.16 inches	0.18 inches	0.19 inches	N/A
Service Temperature	Temperature range for use	-40 – 120° F	-40 – 120° F	-40 – 120° F	-40 – 120° F

C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636, (F): 804-743-7779 www.ferguson.com

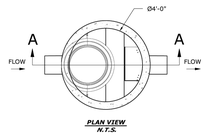
2.02 GEOSYNTHETICS
A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N060 or equivalent).
2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
B. Geogrid. For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is not always required for R-Tank HD installations, and is often not required for non-traffic load applications.

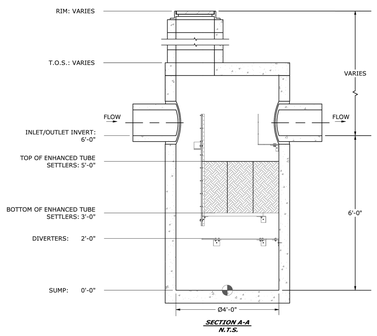
2.03 BACKFILL & COVER MATERIALS
A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications - Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14' or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.
C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS
A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION
3.01 ASSEMBLY OF R-TANK UNITS
A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION
A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide





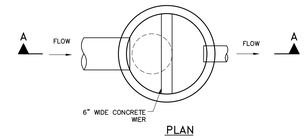
GENERAL NOTES:

1. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C478.
2. CONTRACTOR TO INSTALL THE STRUCTURE IN ACCORDANCE WITH ASTM C1821.
3. CONTRACTOR TO PROVIDE ALL LABOR AND EQUIPMENT REQUIRED TO OFFLOAD AND INSTALL UNIT.
4. CONTRACTOR TO PROVIDE AND INSTALL ALL PIPES, FRAMES, COVERS, HATCHES, AND RISERS UNLESS SPECIFIED OTHERWISE.
5. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS.

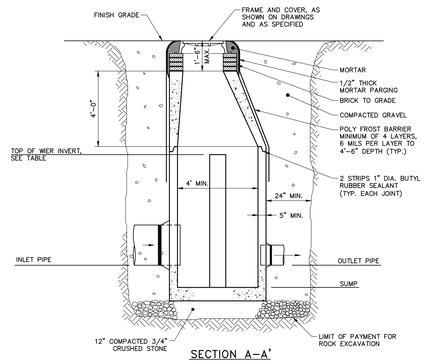
NOTE: PROVIDE STORMSETTLER BY STORMTRAP OR APPROVED EQUAL.

HYDRODYNAMIC SEPARATOR

N.T.S.



PLAN



SECTION A–A'

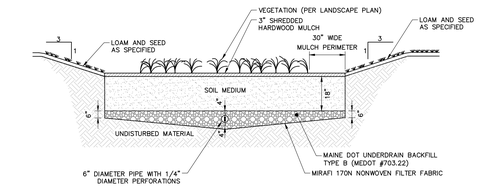
NOTE:
1. SEE STRUCTURE TABLE FOR DIMENSIONS.

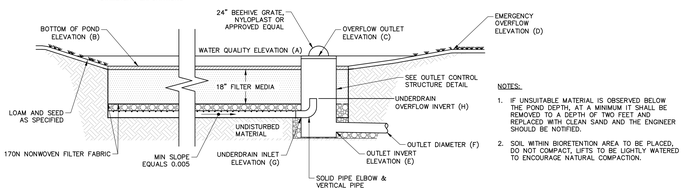
DIVERSION MANHOLE DETAIL

N.T.S.

DIVERSION STRUCTURE DIMENSIONS/ ELEVATIONS	
LOCATION	TOP OF WEIR B (ELEV)
DMH2 (DIV.)	17.50
DMH6 (DIV.)	17.90
DMH12 (DIV.)	16.90
DMH15 (DIV.)	16.20
DMH24 (DIV.)	14.50
DMH32 (DIV.)	16.20
DMH33 (DIV.)	13.60
DMH37 (DIV.)	15.70

BIORETENTION BASIN DIMENSIONS/ ELEVATION (FEET)								
LOCATION	A (ELEV)	B (ELEV)	C (ELEV)	D (ELEV)	E (ELEV)	F (ELEV)	G (ELEV)	H (ELEV)
BIORETENTION BASIN 1	19.50	19.00	19.50	21.25	15.00	1.00	16.34	17.84
BIORETENTION BASIN 2	14.50	14.00	14.50	14.80	10.50	1.00	11.34	12.84
BIORETENTION BASIN 3	13.00	12.50	13.00	13.80	9.00	1.00	9.84	11.34





NOTES:

1. IF UNSUITABLE MATERIAL IS OBSERVED BELOW THE POND DEPTH, AT A MINIMUM IT SHALL BE REMOVED TO A DEPTH OF TWO FEET AND REPLACED WITH CLEAN SAND AND THE ENGINEER SHOULD BE NOTIFIED.
2. SOIL WITHIN BIORETENTION AREA TO BE PLACED, DO NOT COMPACT, LIFTS TO BE LIGHTLY WATERED TO ENCOURAGE NATURAL COMPACTION.

BIORETENTION BASIN

N.T.S.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	27 MARCH 2024
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 7

D-407

THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
PHASE 1
PORTLAND, MAINE

LAND USE PERMIT SET

MAY 17, 2024

NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

DRAWING INDEX	
SHEET TITLE	SHEET DESCRIPTION
G-000	COVER
G-001	GENERAL NOTES, LEGEND & ABBREVIATIONS
C-001	DEMOLITION PLAN – 1
C-002	DEMOLITION PLAN – 2
C-100	OVERALL SITE LAYOUT PLAN
C-101	SITE LAYOUT PLAN – 1
C-102	SITE LAYOUT PLAN – 2
C-201	SITE UTILITY PLAN – 1
C-202	SITE UTILITY PLAN – 2
C-301	GRADING & DRAINAGE PLAN – 1
C-302	GRADING & DRAINAGE PLAN – 2
C-303	PLAN INSETS
C-304	LAYOUT, STRUCTURE & PIPE TABLES
D-401	CIVIL DETAILS – 1
D-402	CIVIL DETAILS – 2
D-403	CIVIL DETAILS – 3
D-404	CIVIL DETAILS – 4
D-405	CIVIL DETAILS – 5
D-406	CIVIL DETAILS – 6
D-407	CIVIL DETAILS – 7



SITE LOCATION MAP

SOURCE: USGS TOPO QUADRANGLE

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	AS NOTED

Drawing Title
COVER

G-000

CIVIL GENERAL NOTES

1. SITE AND TOPOGRAPHIC DATA PROVIDED BY ON THE GROUND SURVEY PERFORMED BY VHB, 500 SOUTHBOROUGH DRIVE, SUITE 105B, SOUTH PORTLAND, MAINE 04106 (207).889.3150. PLAN ENTITLED "EXISTING CONDITIONS SURVEY, RECORD OWNER: THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFT SCIENCE, 1 BEAN POT CIRCLE, CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE" DATED: 9/15/2023
2. VERTICAL DATUM IS REFERENCED TO CITY DATUM WITH ONE FOOT CONTOUR INTERVALS. CITY DATUM IS +0.02 FT NGVD 1929. HORIZONTAL DATUM IS REFERENCED TO STATE PLANE NAD 1983 (FEET), MAINE WEST ZONE.
3. 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.
4. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
5. 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.
6. DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN ADVANCE IN WRITING BY CITY AND/OR LAND OWNER.
7. 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, PORTLAND WATER DISTRICT 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.
8. 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.
9. LAND OUTSIDE THE PROPOSED LIMIT OF WORK SHALL NOT BE DISTURBED BY THE CONTRACTOR. ANY LAND OUTSIDE LIMIT OF WORK DISTURBED BY CONTRACTOR SHALL BE RESTORED BY CONTRACTOR AT NO EXPENSE TO OWNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.
12. 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.
13. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
14. 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.
15. WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE CITY OF PORTLAND AND STATE REQUIREMENTS.
16. ALL CURB DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND SPECIFICATIONS. COST IS INCIDENTAL TO CONTRACT.
17. ALL FULL DEPTH PAVEMENT REPLACEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTLAND TECHNICAL STANDARDS.
18. 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 PLAN 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.
19. 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.
20. ALL WORK IN THE PUBLIC R.O.W. SHALL BE COMPLETED IN ACCORDANCE WITH THE CITY'S TECHNICAL MANUAL ARTICLES VI, VII, AND IX OF CHAPTER 25-STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES OF THE CITY OF PORTLAND CODE OF ORDINANCES.
21. 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.
22. ALL WATER DISTRIBUTION CONSTRUCTION IN THE PUBLIC WAY SHALL BE COMPLETED IN ACCORDANCE WITH PORTLAND WATER DISTRICT STANDARDS.
23. 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.
24. IF IMPORTED FILL MATERIAL IS REQUIRED, IT SHALL BE CERTIFIED IN WRITING BY CONTRACTOR 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.
25. 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.
26. ALL MATERIAL SHALL BE FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.
27. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION.
28. 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.
29. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
30. 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. 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. A DRAFT OF THE NOTICE WILL BE PROVIDED TO THE OWNER AND THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO SUBMISSION.
31. THE UTILITY LOCATIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION BY THE CONTRACTOR. CONTACT THE ENGINEER AND OWNER IMMEDIATELY UPON DISCOVERING ANY CONFLICTS WITH EXISTING AND PROPOSED UTILITY LOCATIONS. NOT ALL EXISTING UTILITIES ARE SHOWN ON PLANS.
32. CONTRACTOR SHALL CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
33. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
34. CONTRACTOR SHALL SEQUENCE THE WORK SO AS TO MAINTAIN UTILITY SERVICES FOR EXISTING OPERATIONS ON AND ADJACENT TO THE SITE. CONTRACTOR SHALL PROVIDE A PLAN FOR TEMPORARY UTILITY SERVICES OR AS REQUIRED. THE PLAN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER AND SUBMITTED TO OWNER, ENGINEER AND UTILITY FOR ACCEPTANCE A MINIMUM OF 14 DAYS PRIOR TO START OF UTILITY WORK.
35. EXISTING FACILITIES (I.E. SIGNS, POLES, LIGHT POSTS, ETC.) SHALL BE REMOVED AND PROTECTED DURING CONSTRUCTION. OWNER RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF CITY AT CONTRACTOR'S EXPENSE.
36. A COMPLETE SET OF "RECORD" DRAWINGS THAT REFLECT ANY AND ALL MODIFICATIONS TO THE SANITARY SEWER SYSTEM, WATER DISTRIBUTION SYSTEM, STORM SEWER SYSTEM AND ANY OTHER UTILITY INSTALLATIONS OR ALTERATIONS WITHIN THE PROJECT LIMITS SHALL BE SUBMITTED TO THE CITY OF PORTLAND. THESE DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL (ACAD) AND HARD COPY FORMAT AS DEFINED IN THE SPECIFICATIONS PRIOR TO PAYMENT OF FINAL RETAINAGE.
37. ALL UTILITY SERVICES AND MAINS ARE APPROXIMATE AS SHOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING SERVICES AND MAINS AND RELOCATE AS REQUIRED TO COMPLETE WORK. CONTRACTOR SHALL COORDINATE WORK WITH THE CITY OF PORTLAND, PORTLAND WATER DISTRICT, UNITIL, CMP, AND ANY OTHER UTILITY OWNERS AND PROPERTY OWNERS.
38. WORK IS PROPOSED IN CLOSE PROXIMITY TO EXISTING UTILITIES. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
39. CAPPED PIPE STUB LOCATIONS SHALL BE MARKED WITH EMBEDDED STAKE AND A MINIMUM OF THREE TIES SHALL BE RECORDED. EMBEDDED STAKE SHALL BE 2X4 WITH PK NAIL DRIVEN IN TOP. LENGTH AS REQUIRED TO SPAN FROM TOP OF PIPE TO 6" BELOW GRADE. LOCATION AND ELEVATION OF PIPE STUB SHALL BE PROVIDED. WARNING TAPE AND WIRE SHALL BE INSTALLED OVER PIPE STUBS IN ACCORDANCE WITH SPECIFICATIONS.
40. ALL SIGNAGE SHALL CONFORM WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
41. ACTIVITIES THAT HAVE THE POTENTIAL TO DISTURB SOIL SUCH AS UTILITY AND SUBSURFACE STRUCTURE INSTALLATION/RELOCATION WORK, FOUNDATION INSTALLATION, GRADING, PAVING, AND LANDSCAPING SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECT SOIL MANAGEMENT PLAN. APPLICABLE SOIL MANAGEMENT PROCEDURES INCLUDE SITE CONTROLS AND CONSTRUCTION MEASURES TO REDUCE EXPOSURE TO SOIL DURING CONSTRUCTION, AS WELL AS TO FACILITATE THE PROPER HANDLING, STORAGE, CHARACTERIZATION, TRANSPORT, ONSITE REUSE, AND/OR OFFSITE REUSE, OR DISPOSAL, OF EXCESS SOIL THAT MAY BE GENERATED DURING CONSTRUCTION.
42. ALL NEW BURIED WATER PIPE SHALL HAVE A MINIMUM 5 FEET COVER UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER. BURIED PIPE WITH LESS THAN 4 FEET OF COVER SHALL HAVE A MINIMUM OF 4 INCHES OF RIGID INSULATION WITH AN R-VALUE OF R-20 INSTALL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
43. WHERE NEW WATER MAINS OF APPURTENANCES ARE TO BE CONNECTED TO EXISTING PIPE, CONTRACTOR SHALL CUT AND REMOVE THE EXISTING PIPE AS NECESSARY TO INSTALL THE NEW WORK. TEST PIT LOCATIONS WHERE NEW MAINS CONNECT TO EXISTING MAINS TO VERIFY PIPE DIAMETER AND MATERIAL TYPE.
44. SOLID SLEEVES ARE SHOWN ON THE DRAWINGS FOR ALL CONNECTIONS TO EXISTING WATER MAIN. IF OUTER DIAMETER OF EXISTING WATER MAIN IS FOUND TO BE GREATER THAN THE MAXIMUM OUTER DIAMETER COMPATIBLE WITH SOLID SLEEVES, CONTRACTOR SHALL INSTALL A COUPLING TO COMPLETE CONNECTION WITH EXISTING WATER MAIN.
45. BACKFLOW PREVENTERS SHALL BE PROVIDED AT ALL BUILDING SANITARY SEWER SERVICE OUTLETS.
46. A DEWATERING PLAN SHALL BE SUBMITTED TO THE CITY OF PORTLAND WATER RESOURCE COMPLIANCE COORDINATOR PRIOR TO ANY EXCAVATION WORK AND DEWATERING ACTIVITIES IN ACCORDANCE WITH CITY OF PORTLAND RULES AND REGULATIONS FOR USE OF THE SEWER SYSTEM CHAPTER 8.
47. ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH ARMY CORPS OF ENGINEERS PNC PERMIT, INCLUSIVE OF THE SECTION 106 MEMORANDUM OF AGREEMENT (MOA).

CIVIL LEGEND

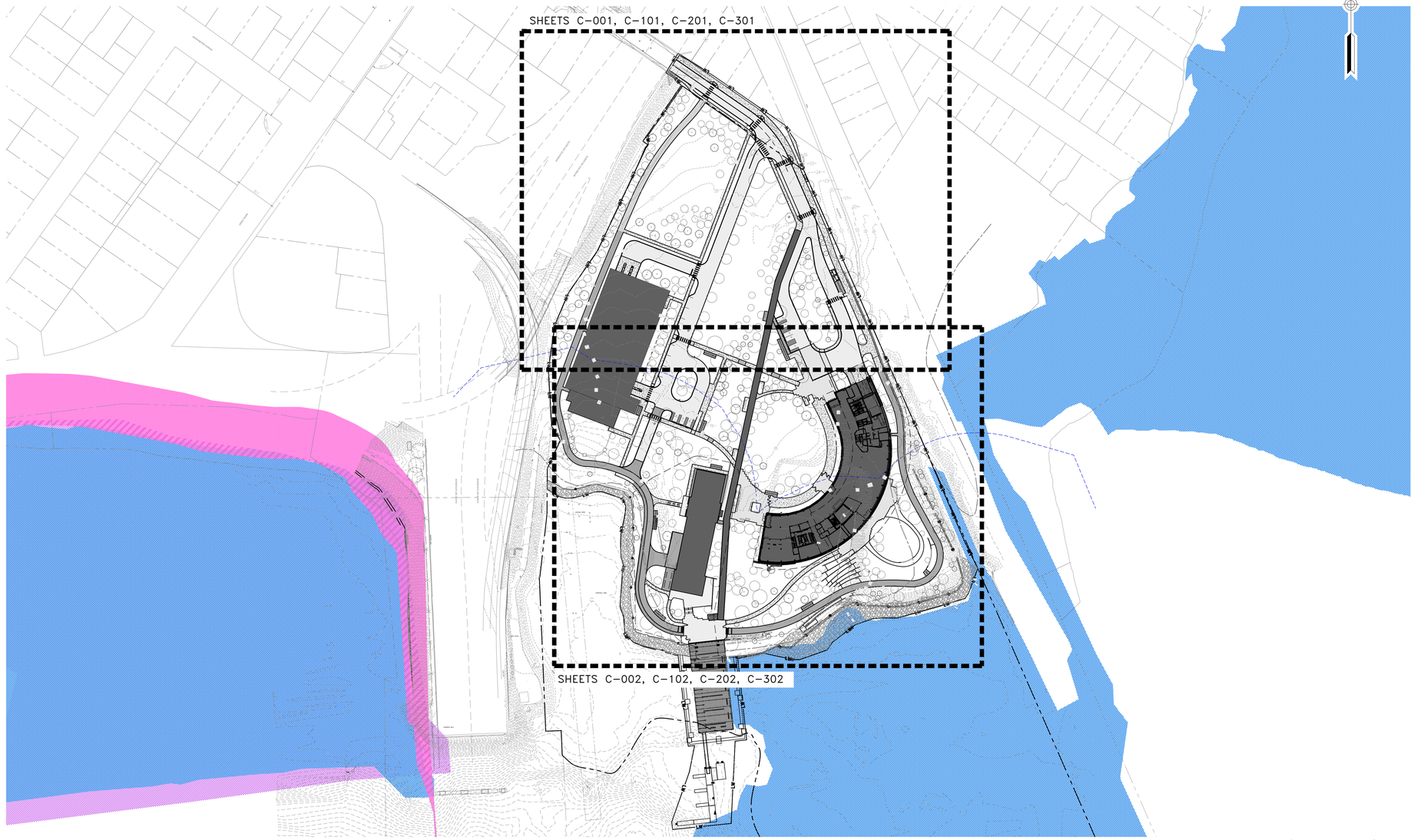
EXISTING		PROPOSED
	CONTOUR (1' INTERVAL)	
	CONTOUR (INDEX)	
S	SANITARY SEWER	S
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
W	WATER LINE	W
E	UNDERGROUND ELECTRIC	
	UNDERGROUND TELECOMMUNICATIONS	
G	GAS LINE	
OE	OVERHEAD ELECTRIC	OE
	PROPERTY LINE	
	EDGE OF VEGETATION	
X X	FENCE	
	RETAINING WALL	
	GRANITE CURB	
	FLUSH CURB	
	SLOPE GRANITE CURB	
	TIPDOWN	
	EDGE OF PAVEMENT	
	EDGE OF GRAVEL	
T T T T T	GUARDRAIL	
	RAILROAD TRACKS	
	ROOF OVERHANG	
	SEDIMENT BARRIER	
	LIMIT OF WORK	LW
	250' SHORELAND ZONE BOUNDARY	
	SIDEWALK	
	BITUMINOUS PAVEMENT	
	CONCRETE	
	BUILDING FOOTPRINT	
	BLUE MUSSEL HABITAT	
	SOFTSHELL CLAM HABITAT	
	TIDAL WATERFOWL & WADING BIRD HABITAT	
	MAINE SHOREBIRD AREAS	

CIVIL LEGEND

EXISTING		PROPOSED
S	SANITARY SEWER MANHOLE	S
CO	CLEAN OUT	CO
D	DRAINAGE MANHOLE	D
	CATCH BASIN	
	AREA DRAIN	
E	ELECTRICAL MANHOLE	E
T	TELECOMMUNICATIONS MANHOLE	T
TELE BOX	TELEPHONE STAND BOX	
GM	GAS METER BOX	
GV	GAS VENT	
GG	GAS GATE	
TF	TRANSFORMER	
	UTILITY POLE	
	UTILITY POLE WITH GUY	
	LIGHTPOST	
WV	WATER GATE VALVE	
	CURB STOP	
	REDUCER	
	SOLID SLEEVE	
	WATER SHUT OFF VALVE	
	HYDRANT	
WM	WATER METER BOX	W
	PROPERTY MONUMENT	
MB	MAIL BOX	
	STREET AND MISCELLANEOUS SIGNS	
FP	FLAGPOLE	
XXX.XX	SPOT ELEVATION	XXX.XX
	TREE/SHRUB	
	BOLLARD	
	SECURITY CAMERA	CAM
	BLUE LIGHT INTERCOM	TEL
	TEST PIT	TP

CIVIL 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	ROP	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		



OVERALL & INDEX SITE PLAN
SCALE: 1"=80'

80' 0 80' 160'
BAR SCALE
1" = 80'
CHECK GRAPHIC SCALE BEFORE USING

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Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

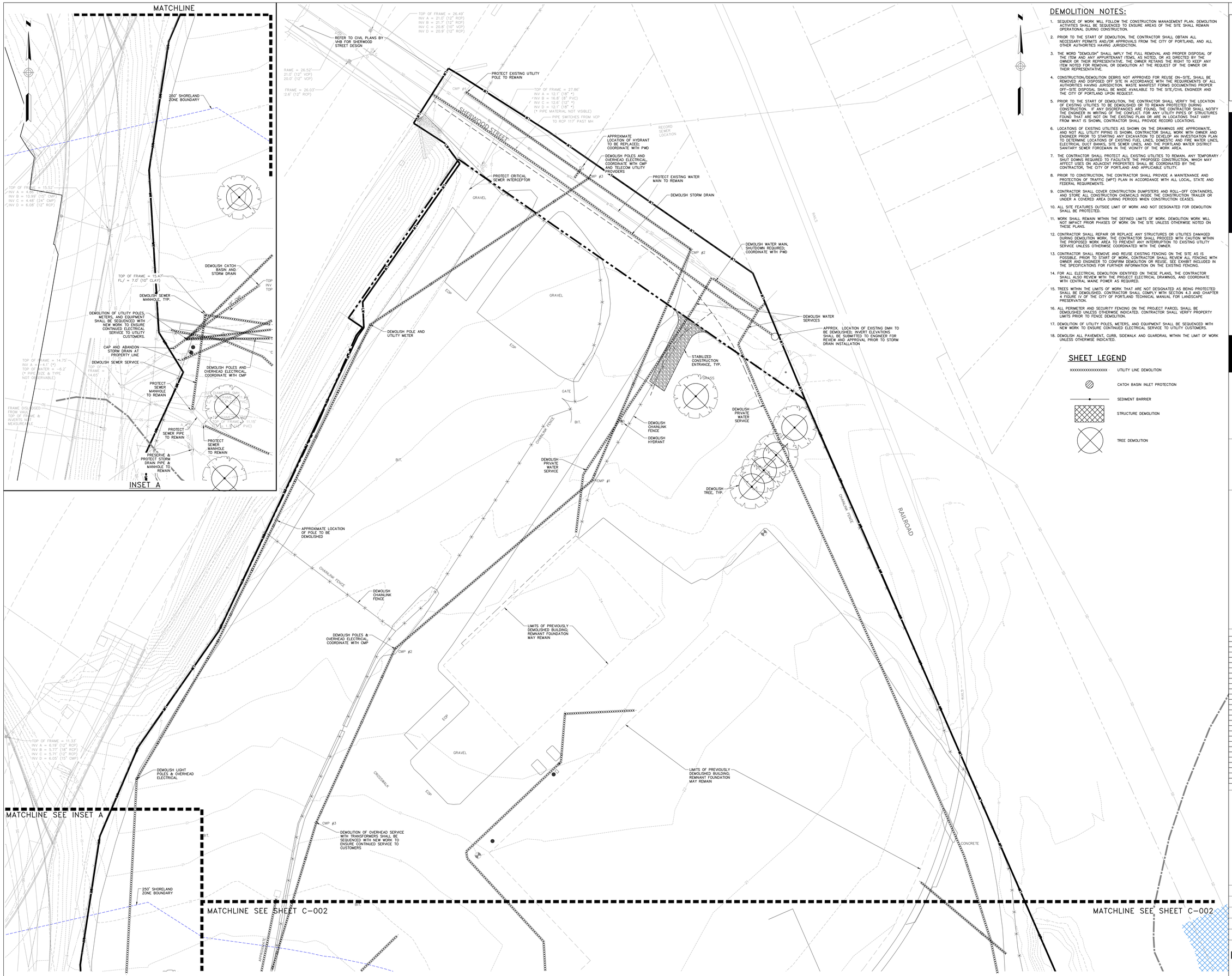
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=80'

Drawing Title
GENERAL NOTES, LEGEND & ABBREVIATIONS

G-001



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. FOR ANY UTILITY PIPES OF STRUCTURES FOUND THAT ARE NOT ON THE EXISTING PLAN OR ARE IN LOCATIONS THAT VARY FROM WHAT IS SHOWN, CONTRACTOR SHALL PROVIDE RECORD LOCATIONS.
6. LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS ARE APPROXIMATE, AND NOT ALL UTILITY PIPING IS SHOWN. CONTRACTOR SHALL WORK WITH OWNER AND ENGINEER PRIOR TO STARTING ANY EXCAVATION TO DEVELOP AN INVESTIGATION PLAN TO DETERMINE LOCATIONS OF EXISTING FUEL LINES, DOMESTIC AND FIRE WATER LINES, ELECTRICAL DUCT BANKS, SITE SEWER LINES, AND THE PORTLAND WATER DISTRICT SANITARY SEWER FORCEMAIN IN THE VICINITY OF THE WORK AREA.
7. 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.
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.
10. ALL SITE FEATURES OUTSIDE LIMIT OF WORK AND NOT DESIGNATED FOR DEMOLITION SHALL BE PROTECTED.
11. WORK SHALL REMAIN WITHIN THE DEFINED LIMITS OF WORK. DEMOLITION WORK WILL NOT IMPACT PRIOR PHASES OF WORK ON THE SITE UNLESS OTHERWISE NOTED ON THESE PLANS.
12. CONTRACTOR SHALL REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES DAMAGED DURING DEMOLITION WORK. THE CONTRACTOR SHALL PROCEED WITH CAUTION WITHIN THE PROPOSED WORK AREA TO PREVENT ANY INTERRUPTION TO EXISTING UTILITY SERVICE UNLESS OTHERWISE COORDINATED WITH THE OWNER.
13. CONTRACTOR SHALL REMOVE AND REUSE EXISTING FENCING ON THE SITE AS IS POSSIBLE. PRIOR TO START OF WORK, CONTRACTOR SHALL REVIEW ALL FENCING WITH OWNER AND ENGINEER TO CONFIRM DEMOLITION OR REUSE. SEE EXHIBIT INCLUDED IN THE SPECIFICATIONS FOR FURTHER INFORMATION ON THE EXISTING FENCING.
14. FOR ALL ELECTRICAL DEMOLITION IDENTIFIED ON THESE PLANS, THE CONTRACTOR SHALL ALSO REVIEW WITH THE PROJECT ELECTRICAL DRAWINGS, AND COORDINATE WITH CENTRAL MAINE POWER AS REQUIRED.
15. TREES WITHIN THE LIMITS OF WORK THAT ARE NOT DESIGNATED AS BEING PROTECTED SHALL BE DEMOLISHED. CONTRACTOR SHALL COMPLY WITH SECTION 4.3 AND CHAPTER 4 FIGURE IV OF THE CITY OF PORTLAND TECHNICAL MANUAL FOR LANDSCAPE PRESERVATION.
16. ALL PERIMETER AND SECURITY FENCING ON THE PROJECT PARCEL SHALL BE DEMOLISHED UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL VERIFY PROPERTY LIMITS PRIOR TO FENCE DEMOLITION.
17. DEMOLITION OF UTILITY POLES, METERS, AND EQUIPMENT SHALL BE SEQUENCED WITH NEW WORK TO ENSURE CONTINUED ELECTRICAL SERVICE TO UTILITY CUSTOMERS.
18. DEMOLISH ALL PAVEMENT, CURB, SIDEWALK AND GUARDRAIL WITHIN THE LIMIT OF WORK UNLESS OTHERWISE INDICATED.

SHEET LEGEND

- XXXXXXXXXXXXXXXXX — UTILITY LINE DEMOLITION
- CATCH BASIN INLET PROTECTION
- SEDIMENT BARRIER
- STRUCTURE DEMOLITION
- TREE DEMOLITION

BAR SCALE
1" = 20'
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LICENSED
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Drawn By	BCM
Designed By	ANL
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Drawing Title
DEMOLITION PLAN - 1

C-001

MATCHLINE SEE SHEET C-001

MATCHLINE SEE SHEET C-001

DEMOLITION OF OVERHEAD SERVICE WITH TRANSFORMERS SHALL BE SEQUENCED WITH NEW WORK TO ENSURE CONTINUED SERVICE TO CUSTOMERS

DEMOLISH HYDRANT

LIMITS OF PREVIOUSLY DEMOLISHED BUILDING; REMNANT FOUNDATION MAY REMAIN

SALVAGE RAILS

DEMOLISH HYDRANT

DEMOLISH CONCRETE PAD

TOP OF FRAME = 17.82'
COVER NOT REMOVABLE AT TIME OF SURVEY

APPROXIMATE LOCATION OF ELECTRICAL POLE TO BE DEMOLISHED

TOP OF FRAME = 14.93'
TOP OF PIPE = 11.3' (6" CAST?)
TOP OF SILT = 10.9'±
OTHER FEATURES NOT VISIBLE

TOP OF FRAME = 15.00'
COVER NOT REMOVABLE AT TIME OF SURVEY

DEMOLISH HYDRANT

DEMOLISH WATER SERVICE

APPROXIMATE LOCATION OF UTILITY METER TO BE DEMOLISHED

DEMOLISH FLAG POLE & ASSOCIATED LIGHT FIXTURES & CONDUIT

APPROXIMATE LOCATION OF ELECTRICAL POLE TO BE DEMOLISHED

TOP OF FRAME = 17.60'
FULL OF WATER
FEATURES NOT VISIBLE

APPROXIMATE LOCATION OF OVERHEAD TELECOM UTILITIES TO BE DEMOLISHED

DEMOLISH SIGN

DEMOLISH GAS SERVICE

DEMOLISH HYDRANT

DEMOLISH TREE, TYP.

DEMOLISH CONCRETE PAD

250' SHORELAND ZONE BOUNDARY

MATCHLINE SEE INSET A

DEMOLISH CONCRETE WALL

DEMOLISH TREE, TYP.

DEMOLISH STAIR

DEMOLISH STACK FOUNDATION

FORMER BRICK STACK

DEMOLISH RETAINING WALL

PRESERVE & PROTECT BUILDING TO REMAIN

DEMOLISH CONCRETE PAD

DEMOLISH TRANSFORMER

DEMOLISH CHAINLINK FENCE

10" PVC
INV. = 0.8'
CONNECTION COULD NOT BE DETERMINED AT THE TIME OF SURVEY

12" PVC
INV = 1.5'

TOP OF FRAME = 8.84'
INV A = 3.3' (12" PVC)
INV B = 5.0' (12" PVC)
INV C = 2.8 (12" PVC)

HISTORIC LANDMARK DESIGNATION BOUNDARY

TOP OF FRAME = 9.3'
INV A = 4.4' (12" PVC)
INV B = 4.8' (6" PVC)
INV C = 4.7' (8" PVC)
INV D = 4.8' (6" PVC)

TOP OF FRAME = 8.71'
FL/ = 3.2' (12" PVC)

TOP OF FRAME = 9.30'
FL/ = 5.7' (6" PVC)

LIMITS OF PREVIOUSLY DEMOLISHED BUILDING; REMNANT FOUNDATION MAY REMAIN

TOP OF FRAME = 9.55'
INV A = 6.4' (6" PVC)
INV B = 6.4' (6" PVC)
SUMP = 3.4'

TOP OF FRAME = 9.12'
INV. = 5.7'
(12" PVC)

TOP OF FRAME = 9.63'
INV A = 4.1' (10" PVC)
INV B = 4.1' (10" PVC)
INV C = 3.9' (12" PVC)

TOP OF FRAME = 10.34'
INACCESSIBLE AT TIME OF SURVEY

DEMOLISH BUILDING FOUNDATION

TOP OF FRAME = 8.25'
INV A = 3.2' (8" PVC)
INV B = 3.4' (12" PVC)
INV C = 3.0' (6" PVC)

PROVIDE DOUBLE ROW OF SEDIMENT BARRIER ADJACENT TO NATURAL RESOURCE

APPROXIMATE FEMA FLOOD ZONE LINE

PERIMETER BARRIER, TYP.

MATCHLINE SEE INSET B

DEMOLISH BUILDING FOUNDATION

CONCRETE WHARF

MATCHLINE

DEMOLISH BUILDING & PIER

INSET B

NOTES:
1. REFER TO SHEET C-001 FOR GENERAL DEMOLITION NOTES AND DEMOLITION LEGEND.

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

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Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

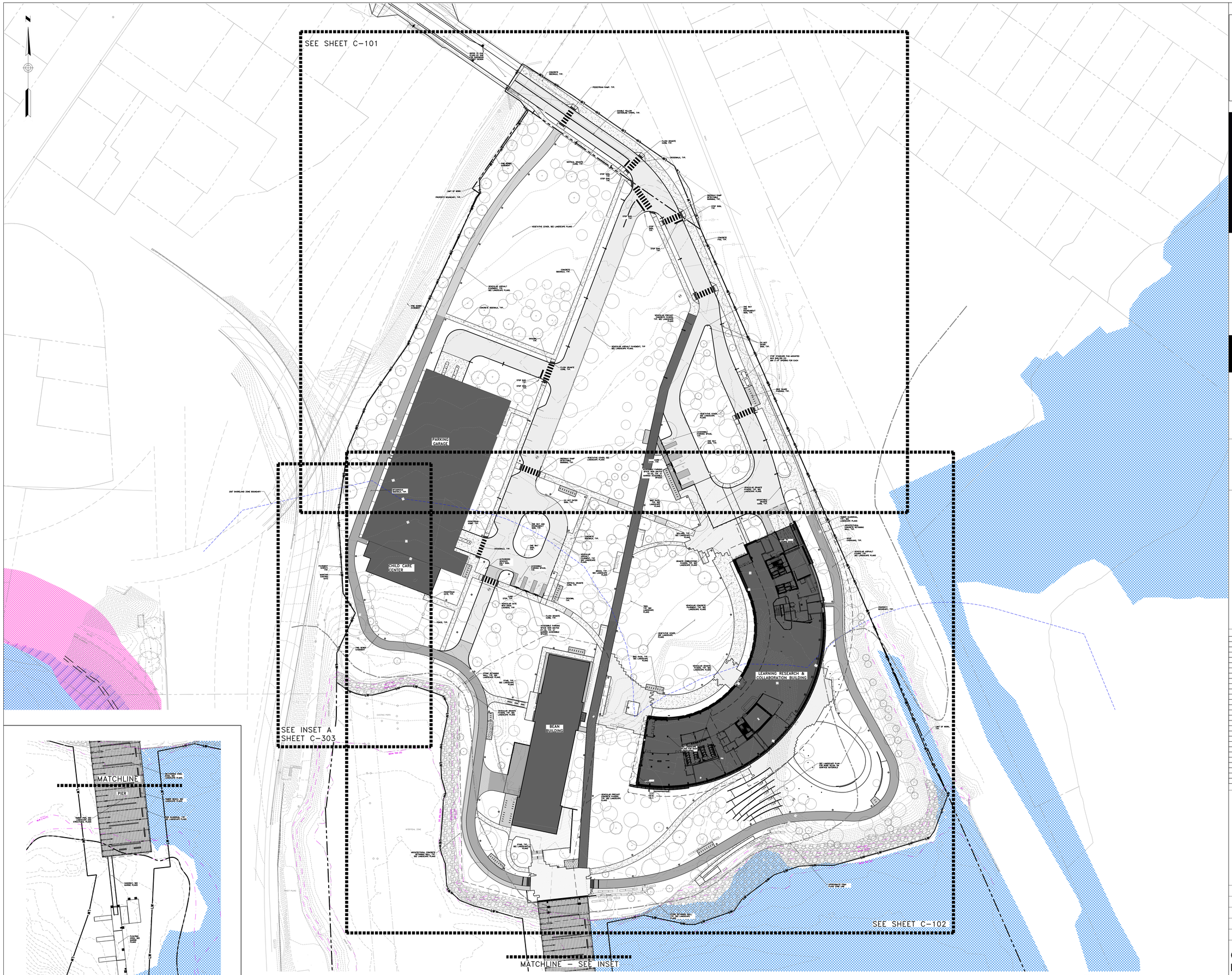
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17065
LICENSED PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=20'

Drawing Title
DEMOLITION PLAN - 2

C-002



NOTES:
1. REFER TO SHEET C-101 FOR GENERAL SITE LAYOUT PLAN NOTES.
2. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.
3. REFER TO SHEET C-101 AND C-102 FOR DIMENSIONS.

BAR SCALE
1" = 40'
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Designed By	ANL
Checked	DLC
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Scale	1"=40'

Drawing Title
OVERALL SITE LAYOUT PLAN

C-100

NOTES:
1. SEE LANDSCAPE PLANS FOR SITE SURFACE MATERIAL ASSOCIATED WITH LANDSCAPED AREAS, PATIOS, AND NON-BITUMINOUS WALKWAYS & ROADWAYS, PLANTING PLANS AND SITE FURNISHINGS.
2. UTILITY AND DRAINAGE STRUCTURES NOT SHOWN FOR CLARITY, SEE GRADING AND DRAINAGE AND UTILITY PLAN FOR MORE INFORMATION.
3. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.
4. REFER TO SHEET SG.01 SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR CAMPUS SIGNAGE.

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN
CONCRETE SIDEWALK, TYP.
PEDESTRIAN RAMP, TYP.
DOUBLE YELLOW CENTERLINE STRIPE, TYP.
FLUSH GRANITE CURB, TYP.
CROSSWALK, TYP.
VERTICAL GRANITE CURB, TYP.
PWD SEWER EASEMENT
STOP SIGN, TYP.
STOP BAR, TYP.
LIMIT OF WORK
PROPERTY BOUNDARY, TYP.
SIDEWALK RAMP DETECTABLE WARNING, TYP.
STOP SIGN, TYP.
STOP BAR, TYP.
CONCRETE PAD, TYP.
VEGETATIVE COVER, SEE LANDSCAPE PLANS
VEHICULAR ASPHALT PAVEMENT, TYP SEE LANDSCAPE PLANS.
ONE WAY AND ROUNDABOUT SIGN, TYP.
DO NOT ENTER SIGN, TYP.
TREE, TYP. SEE LANDSCAPE PLANS.
VEHICULAR PRECAST CONCRETE PAVERS, TYP. SEE LANDSCAPE PLANS
PWD SEWER EASEMENT
CONCRETE SIDEWALK, TYP.
TIPDOWN, TYP.
FLUSH GRANITE CURB, TYP.
STOP BAR, TYP.
STOP SIGN, TYP.
5'X8' STANDARD PAD-MOUNTED BUS SHELTER (2) MIN 2'-8" OPENING FOR EACH
CITY BIKE SHARE RACK, TYP., SEE LANDSCAPE PLANS
TIMBER GUARDRAIL, TYP. SEE LANDSCAPE PLANS
VEGETATIVE COVER, SEE LANDSCAPE PLANS
ARCHITECTURAL CONCRETE RETAINING WALL, SEE STRUCTURAL PLANS
CONCRETE SIDEWALK, TYP
ACCESSIBLE PARKING SPACE, TYP.
ONE WAY SIGN, TYP.
PARKING GARAGE
PARKING FACADE WALL, TYP.
VEGETATIVE COVER, SEE LANDSCAPE PLANS
CURB STOP, TYP.
ACCESSIBLE PARKING SPACE SIGN (MUTCD R7-8), TYP. AT MARKED ACCESSIBLE SPACES
CURB BREAK, TYP.
4" TIPDOWN, TYP.
MOUNTABLE GRANITE CURB, TYP.
BIKE RACK, TYP. SEE LANDSCAPE PLANS
MATCHLINE SEE INSET A, SHT. C-303
MATCHLINE SEE SHEET C-102
MATCHLINE SEE SHEET C-102
250' SHORELAND ZONE BOUNDARY

BAR SCALE
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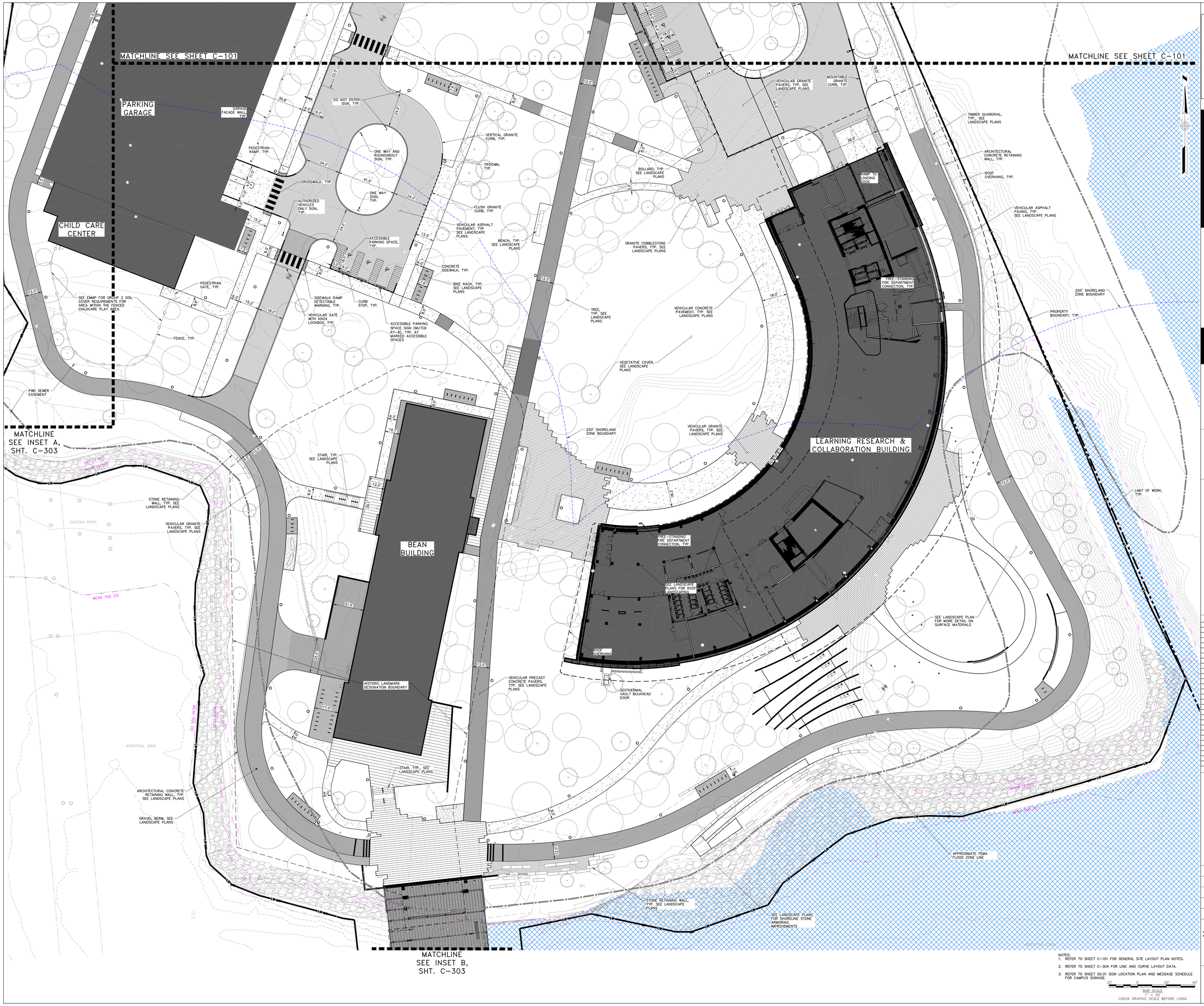
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Drawing Title
SITE LAYOUT PLAN - 1

C-101



NOTES:
1. REFER TO SHEET C-101 FOR GENERAL SITE LAYOUT PLAN NOTES.
2. REFER TO SHEET C-304 FOR LINE AND CURVE LAYOUT DATA.
3. REFER TO SHEET SG.01 SIGN LOCATION PLAN AND MESSAGE SCHEDULE FOR CAMPUS SIGNAGE.

BAR SCALE
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Drawing Title
SITE LAYOUT PLAN - 2

C-102

NOTE:
1. REFER TO ELECTRICAL SHEET C-101 AND C-102 FOR ELECTRICAL VAULT AND HANDHOLE IDENTIFICATION TAGS.
2. REFER TO TELECOM SITE PLANS FOR CAMPUS SECURITY CAMERA, WIFI AND BLUELIGHT DEVICE LOCATIONS.

REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN

12" INSERTION VALVE, FINAL LOCATION TO BE DETERMINED BY TEST PIT, COORDINATE WORK WITH PWD

OVERHEAD ELECTRICAL, TYP., SEE ELECTRICAL PLANS

UTILITY POLE, TYP. SEE ELECTRICAL PLANS

SHERWOOD STREET

6" CLDI SOLID SLEEVE
6" CLDI PIPE
HYDRANT ASSEMBLY
COORDINATE WORK WITH PWD

RAISE EXISTING MANHOLE FRAME AND COVER TO GRADE

PROTECT CRITICAL SEWER INTERCEPTOR

PWD SEWER EASEMENT

ELECTRIC VAULT, TYP., SEE ELECTRICAL PLANS

UNDERGROUND ELECTRICAL, TYP., SEE ELECTRICAL PLANS

PROVIDE RESTRAINT JOINT GASKETS ON ALL SLIP JOINTS ON WATER SERVICE

TEMPORARY 12" CLDI WATER SERVICE WITH TWO (2) 12" CLDI 45° BENDS FROM PROPOSED SHERWOOD STREET MAIN TO EXISTING WATER SERVICE ON-SITE; TEMPORARY SERVICE MAY BE ABANDONED IN PLACE

12" CLDI SOLID SLEEVE

APPROXIMATE LOCATION OF STORM DRAIN FROM SURVEY

APPROXIMATE LOCATION OF STORM DRAIN FROM CITY SHERWOOD STREET RECORD DRAWINGS; TEST PITS TO BE CONDUCTED TO LOCATE STORM DRAIN AND WATER MAIN IN SHERWOOD STREET PRIOR TO CONSTRUCTION

CONNECT TO EXISTING WATER MAIN WITH 12" CLDI SOLID SLEEVE, SHUTDOWN REQUIRED, COORDINATE WITH PWD

12"X12" MJ CLDI TEE

PROVIDE THREADED ROD BETWEEN TEES

12" GATE VALVE & BOX WITH FOSTER ADAPTOR

12" GATE VALVE & BOX WITH FOSTER ADAPTOR TO TEE (2)

CONNECT TO EXISTING WATER MAIN WITH 12" CLDI SOLID SLEEVE, SHUTDOWN REQUIRED, COORDINATE WITH PWD

12" CLDI 11.25° BEND

12" GATE VALVE & BOX

12"X12" MJ CLDI TEE WITH PLUGGED END

WATER METER VAULT, SEE DETAIL

12" CLDI 45° BEND

12" CLDI SOLID SLEEVE

RPZ BACKFLOW PREVENTER WITH HEATED ENCLOSURE, SEE DETAIL

12" CLDI SOLID SLEEVE

12" GATE VALVE & BOX

12" CLDI 45° BENDS (2)

TEMPORARY 12" 45° CLDI BEND TO BE REPLACED WITH 12" CLDI 90° BEND FOR FINAL CONFIGURATION

LIGHT POLE, TYP. SEE ELECTRICAL PLANS

INTERSTATE 295 SOUTH

INTERSTATE 295 NORTH

RAILROAD

12" CLDI 45° BENDS (2)

HYDRANT ASSEMBLY

PWD SEWER EASEMENT

PARKING GARAGE

MATCHLINE SEE INSET A, SHT. C-303

MATCHLINE SEE SHEET C-202

MATCHLINE SEE SHEET C-202

250' SHORELAND ZONE BOUNDARY

BAR SCALE
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Scale	1"=20'

Drawing Title
SITE UTILITY PLAN - 1

C-201

MATCHLINE SEE SHEET C-201

MATCHLINE SEE SHEET C-201

PARKING GARAGE

DAY CARE CENTER

BEAN BUILDING

LEARNING RESEARCH & COLLABORATION BUILDING

2" COPPER DOMESTIC WATER SERVICE, INV. = 17.67

12" POST INDICATOR VALVE

12" CLDI FIRE PROTECTION SERVICE, INV. = 16.67

2" CURB STOP & BOX

CAP FOR FUTURE CONNECTION 12" PVC INV=11.06

STANDARD 2" BLOW-OFF

2" CORPORATION STOP

12"X12" MJ CLDI TEE

2" COPPER DOMESTIC WATER SERVICE, INV. = 11.00

6" POST INDICATOR VALVE

6" CLDI FIRE PROTECTION SERVICE, INV. = 11.00

FREE-STANDING FIRE DEPARTMENT CONNECTION

6" CLDI 45° BEND (2)

4" PVC SANITARY INV OUT =12.50

6" PVC SANITARY INV OUT=13.00

2" CORPORATION STOP

2" CURB STOP & BOX

BELOW-GRADE STORMWATER TREATMENT

12"X12" MJ CLDI TEE

12"X6" CLDI REDUCER

CLEANOUT, TYP.

ADJUST STRUCTURE FRAME & COVER TO GRADE, COORDINATE WITH PWD

EX SMH

MATCH EXISTING INVERT, CONNECT NEW PIPE TO EXISTING STRUCTURE 12" PVC INV IN= 1.3 PROVIDE BACKFLOW PREVENTER

PWD SEWER EASEMENT

MATCHLINE SEE INSET A, SHT C-303

SMH 8

6"X6" MJ CLDI TEE

STANDARD 2" BLOW-OFF

12" CLDI 11.25° BEND

12" CLDI 45° BEND

12" GATE VALVE & BOX (2)

12"X12" DI TEE

6" GATE VALVE & BOX

12"X6" CLDI REDUCER

SURFACE STORMWATER TREATMENT SYSTEM

SMH 5

SURFACE STORMWATER TREATMENT SYSTEM

UNDERGROUND ELECTRICAL, TYP., SEE ELECTRICAL PLANS

HYDRANT ASSEMBLY

4" GATE VALVE & BOX

4" CLDI DOMESTIC WATER SERVICE

6" CLDI FIRE PROTECTION SERVICE

6" POST INDICATOR VALVE

6" PVC SANITARY INV OUT=5.70

SMH 10

12" CLDI 11.25° BEND

4" CLDI

6" CLDI

12"X4" MJ CLDI TEE

12"X6" MJ CLDI TEE

HISTORIC LANDMARK DESIGNATION BOUNDARY

HYDRANT ASSEMBLY

6" GATE VALVE & BOX

6" MJ CAP WITH 2" TAP

2" CORPORATION STOP

GEOTHERMAL VAULT, SEE GEOTHERMAL PLANS

SURFACE STORMWATER TREATMENT SYSTEM

GEOTHERMAL PIPING, TYP., SEE GEOTHERMAL PLANS

GEOTHERMAL WELL, TYP., SEE GEOTHERMAL PLANS

2" CURB STOP AND BOX, CONNECT TO 2" COPPER PIER WATER SERVICE, SEE P1.00

MATCHLINE SEE INSET B, SHT. C-303

ELECTRIC HAND-HOLE, TYP., SEE ELECTRICAL PLANS

BELOW-GRADE STORMWATER TREATMENT

12" CLDI 22.5° BEND

HYDRANT ASSEMBLY

8" POST INDICATOR VALVE

8" CLDI FIRE PROTECTION SERVICE

6" CLDI DOMESTIC WATER SERVICE

TEST PUMP HEADER

FREE-STANDING FIRE DEPARTMENT CONNECTION

8" PVC SANITARY INV OUT=14.03

8" PVC SANITARY INV OUT=13.66 (2)

FREE-STANDING FIRE DEPARTMENT CONNECTIONS, TYP.

12" GATE VALVE & BOX (3)

12"X12" MJ CLDI TEE

ELECTRIC VAULT, TYP., SEE ELECTRICAL PLANS

12"X8" MJ CLDI TEE

12"X6" MJ CLDI TEE

8" CLDI 6" CLDI

250' SHORELAND ZONE BOUNDARY

12" CLDI CAP

6" GATE VALVE & BOX

APPROXIMATE FEMA FLOOD ZONE LINE

EXISTING PIERS

MEAN TIDE (0)

INTERTIDAL ZONE

NOTE:
1. REFER TO SHEET C-304 FOR SANITARY SEWER PIPE AND STRUCTURE TABLES.
2. REFER TO ELECTRICAL SHEET C-101 AND C-102 FOR ELECTRICAL VAULT AND HANDHOLE IDENTIFICATION TAGS.
3. REFER TO TELECOM SITE PLANS FOR CAMPUS SECURITY CAMERA, WIFI AND BLUELIGHT DEVICE LOCATIONS.

20' 0 20' 40'
BAR SCALE
1" = 20'
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17065
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PROFESSIONAL ENGINEER

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Scale	1"=20'

Drawing Title
SITE UTILITY PLAN - 2

C-202


REFER TO CIVIL PLANS BY VHB FOR SHERWOOD STREET DESIGN
EX DMH
COORDINATE STORM DRAIN INSTALLATION WITH VHB PLANS
PWD SEWER EASEMENT
APPROXIMATE LOCATION OF STORM DRAIN FROM SURVEY
APPROXIMATE LOCATION OF STORM DRAIN FROM CITY SHERWOOD STREET RECORD DRAWINGS; TEST PITS TO BE CONDUCTED TO LOCATE STORM DRAIN AND WATER MAIN IN SHERWOOD STREET PRIOR TO CONSTRUCTION
FIELD-LOCATE EXISTING DRAINAGE MANHOLE AND SUBMIT PIPE INVERTS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION OF DRAINAGE INFRASTRUCTURE IN SHERWOOD STREET
STABILIZED CONSTRUCTION ENTRANCE, TYP.
PWD SEWER EASEMENT
PARKING GARAGE
250' SHORELAND ZONE BOUNDARY
CURB BREAK, TYP. SEE DETAIL
MATCHLINE SEE INSET A, SHT. C-303
MATCHLINE SEE SHEET C-302
MATCHLINE SEE SHEET C-302
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DMH6
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NOTE:
1. REFER TO SHEET C-304 FOR DRAINAGE PIPE AND STRUCTURE TABLES.
2. DRAIN CONNECTION LOCATIONS AND INVERTS SHOWN. SEE STRUCTURAL, ARCHITECTURAL, AND PLUMBING PLANS FOR ADDITIONAL DETAILS.
3. FOUNDATION DRAIN LOCATIONS AND INVERTS SHOWN. FOUNDATION DRAINS TO BE LOCATED AROUND PERIMETER GRADE BEAMS OF LEARNING RESEARCH & COLLABORATION BUILDING AND PARKING GARAGE/DAYCARE CENTER BUILDING. SEE STRUCTURAL DRAWINGS FOR GRADE BEAM LOCATIONS. SEE GEOTECHNICAL REPORT FOR FOUNDATION DRAIN REQUIREMENTS.

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

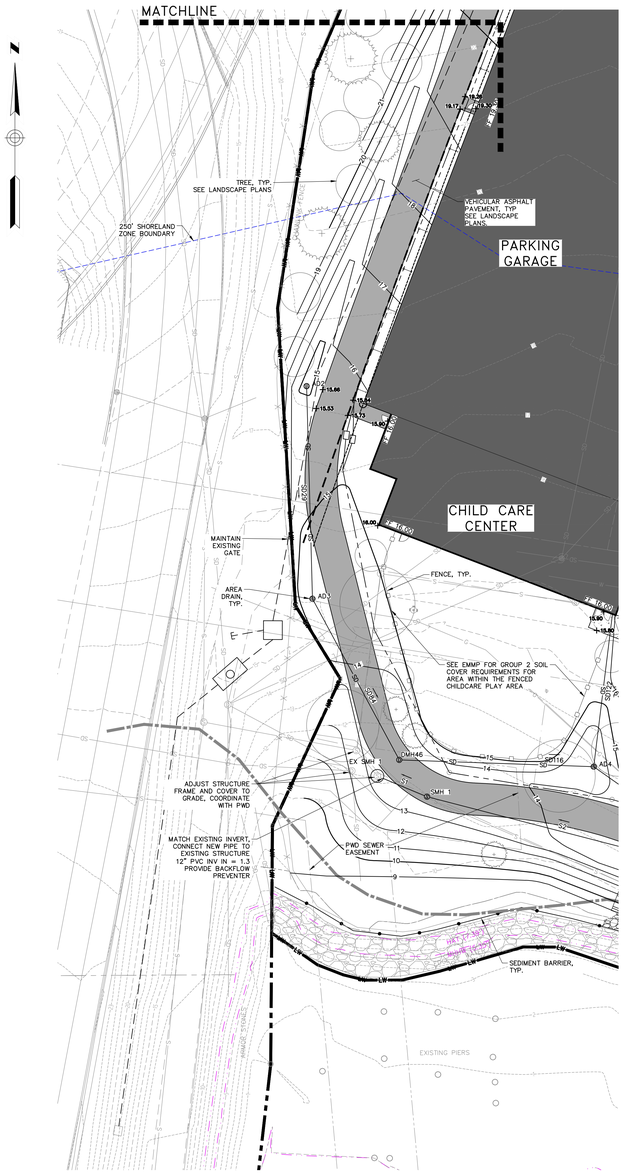
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

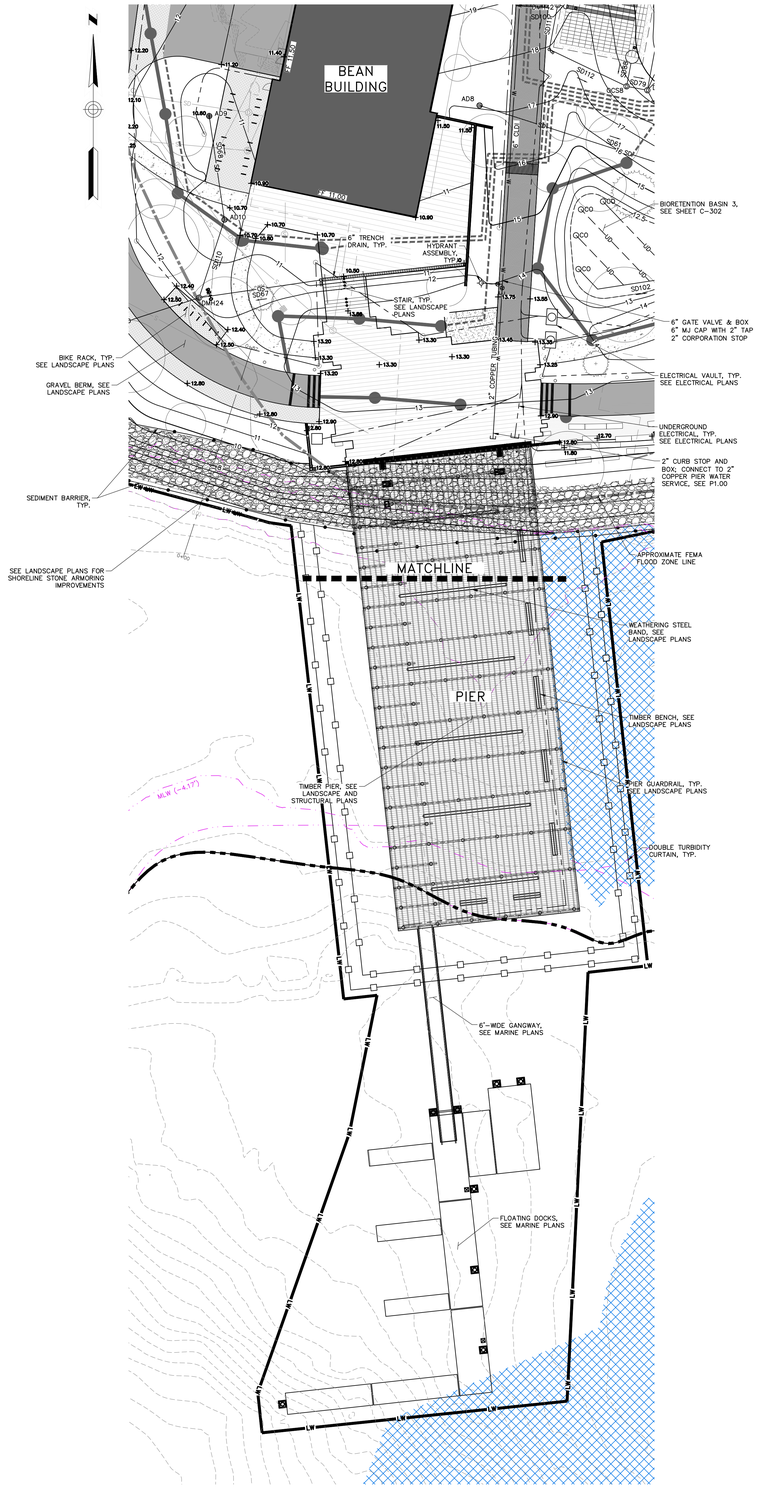
Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=20'

Drawing Title
GRADING & DRAINAGE PLAN - 2

C-302



INSET A



INSET B

NOTE:
1. REFER TO SHEET C-304 FOR SANITARY SEWER AND STORMWATER DRAINAGE STRUCTURE AND PIPE TABLES.

20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

IDEALS
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Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

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Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	1"=20'

Drawing Title
PLAN INSETS

C-303

LAYOUT DATA – SHEET C-101 & C-102

LINE LAYOUT DATA

Line #	Length	Direction	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	174.77	S55° 17' 24.15"E	308812.37	2929385.74	308712.85	308712.85
L2	218.20	N20° 56' 49.09"E	308443.91	2929460.25	308647.68	308647.68
L3	124.33	S69° 03' 10.91"E	308479.71	2929324.76	308435.26	308435.26
L4	47.49	N20° 56' 49.07"E	308423.83	2929281.96	308468.18	308468.18
L5	28.49	S20° 56' 49.07"W	308435.78	2929330.43	308409.17	308409.17
L6	88.33	N69° 03' 10.91"W	308412.85	2929432.30	308444.43	308444.43
L7	8.59	N65° 56' 49.09"E	308373.65	2929425.29	308377.15	308377.15
L8	61.88	N20° 56' 49.09"E	308313.09	2929400.54	308370.87	308370.87
L9	8.58	N24° 04' 28.89"W	308301.43	2929404.14	308309.26	308309.26
L10	10.68	N20° 56' 49.09"E	308287.62	2929400.43	308297.60	308297.60
L11	8.59	N65° 56' 49.09"E	308281.35	2929389.95	308284.85	308284.85
L12	61.86	N20° 56' 49.09"E	308220.80	2929365.21	308278.57	308278.57
L13	8.59	N24° 03' 10.91"W	308209.13	2929368.81	308216.97	308216.97
L14	31.33	S69° 03' 10.93"E	308207.86	2929320.28	308196.66	308196.66
L15	47.13	N69° 03' 10.93"W	308166.73	2929355.00	308183.58	308183.58
L16	102.18	N21° 00' 43.67"E	308057.39	2929318.37	308152.77	308152.77
L17	106.15	N21° 00' 43.67"E	308046.92	2929333.63	308146.01	308146.01
L18	3.67	S69° 05' 23.22"E	308151.77	2929384.60	308150.45	308150.45
L20	47.00	N69° 02' 34.45"W	308115.03	2929430.15	308131.85	308131.85
L23	1.47	N69° 03' 10.91"W	308231.12	2929427.48	308231.64	308231.64
L24	25.43	S20° 56' 49.09"W	308220.11	2929400.28	308196.36	308196.36
L25	1.47	S69° 05' 23.22"E	308170.53	2929402.73	308170.01	308170.01
L26	25.43	N20° 57' 09.82"E	308181.54	2929429.92	308205.29	308205.29
L34	18.03	N66° 21' 19.40"E	308262.79	2929621.68	308270.02	308270.02
L35	65.46	S23° 34' 05.14"E	308270.02	2929638.19	308210.02	308210.02
L36	44.67	S66° 26' 01.46"W	308227.88	2929705.31	308210.02	308210.02
L37	19.14	N23° 14' 49.30"W	308199.86	2929739.24	308217.45	308217.45
L38	20.33	N23° 14' 49.30"W	308215.42	2929774.45	308234.10	308234.10
L39	20.77	N14° 52' 37.73"W	308261.69	2929756.90	308281.77	308281.77
L40	85.59	N23° 38' 38.32"W	308353.92	2929726.35	308432.32	308432.32
L41	129.79	N23° 38' 38.50"W	308524.97	2929668.38	308643.86	308643.86
L42	174.77	S55° 17' 24.15"E	308832.10	2929399.41	308732.58	308732.58
L43	85.25	S20° 56' 49.09"W	308484.44	2929651.53	308404.82	308404.82
L46	9.89	N66° 26' 01.46"E	308266.27	2929693.26	308270.22	308270.22
L47	72.15	N23° 38' 38.32"W	308344.30	2929704.37	308410.39	308410.39
L48	47.89	N8° 20' 11.80"W	308435.99	2929668.09	308483.37	308483.37

CURVE LAYOUT DATA

Curve #	Length	Radius	Delta	Chord Direction	Chord Length	START NORTHING	START EASTING	END NORTHING	END EASTING
C1	20.75	188.00	6.32	S52° 07' 44"W	20.73	308712.85	2929529.41	308700.12	2929545.78
C2	38.75	25.00	88.82	S4° 33' 31"W	34.99	308700.12	2929545.78	308665.25	2929548.56
C3	20.46	62.00	18.90	N30° 23' 55"W	20.36	308647.68	2929538.26	308665.25	2929548.56
C4	23.56	15.00	90.00	N65° 56' 49"E	21.21	308435.26	2929440.88	308443.91	2929460.25
C5	31.42	20.00	90.00	N65° 56' 49"E	28.28	308468.18	2929298.94	308479.71	2929324.76
C6	23.56	15.00	90.00	S65° 56' 49"W	21.21	308444.43	2929349.81	308435.78	2929330.43
C7	23.56	15.00	90.00	N24° 03' 10"W	21.21	308393.48	2929440.95	308412.85	2929432.30
C8	3.93	5.00	45.00	N43° 26' 50"E	3.83	308377.15	2929433.13	308379.93	2929435.76
C9	3.93	5.00	45.00	N43° 26' 49"E	3.83	308370.87	2929422.66	308373.65	2929425.29
C10	3.93	5.00	45.02	N1° 33' 50"W	3.83	308309.26	2929400.64	308313.09	2929400.54
C11	3.93	5.00	45.02	N1° 33' 50"W	3.83	308297.60	2929404.24	308301.43	2929404.14
C12	3.93	5.00	45.00	N43° 26' 49"E	3.83	308284.85	2929397.79	308287.62	2929400.43
C13	3.93	5.00	45.00	N43° 26' 49"E	3.83	308278.57	2929387.32	308281.35	2929389.95
C14	3.93	5.00	45.00	N1° 33' 11"W	3.83	308216.97	2929365.31	308220.80	2929365.21
C15	3.93	5.00	45.00	N1° 33' 11"W	3.83	308205.31	2929368.91	308209.13	2929368.81
C16	23.56	15.00	90.00	N65° 56' 49"E	21.21	308196.66	2929349.54	308205.31	2929368.91
C17	7.85	5.00	90.00	N24° 03' 11"W	7.07	308160.28	2929357.88	308166.73	2929355.00
C18	38.73	25.00	88.77	N65° 23' 51"E	34.97	308042.83	2929286.57	308057.39	2929318.37
C19	27.02	25.00	61.93	S9° 57' 15"E	25.73	308038.88	2929330.54	308013.54	2929334.99
C20	15.69	10.00	89.90	N65° 57' 40"E	14.13	308146.01	2929371.69	308151.77	2929384.60
C24	31.42	20.00	90.00	S65° 56' 49"W	28.28	308231.64	2929426.11	308220.11	2929400.28
C25	31.43	20.00	90.04	S24° 04' 17"E	28.29	308196.36	2929391.19	308170.53	2929402.73
C26	31.40	20.00	89.96	N65° 55' 53"E	28.27	308170.01	2929404.10	308181.54	2929429.92
C27	31.42	20.00	90.01	N24° 03' 01"W	28.29	308205.29	2929439.01	308231.12	2929427.48
C31	31.53	20.00	90.32	N68° 24' 24"W	28.36	308217.45	2929731.68	308227.88	2929705.31
C32	29.22	200.00	8.37	N19° 03' 44"W	29.19	308234.10	2929766.43	308261.69	2929756.90
C33	76.51	500.00	8.77	N19° 15' 38"W	76.43	308281.77	2929751.56	308353.92	2929726.35
C34	81.39	250.00	18.65	N14° 19' 01"W	81.03	308432.32	2929692.03	308510.84	2929671.99
C35	14.65	45.00	18.65	N14° 19' 01"W	14.59	308510.84	2929671.99	308524.97	2929668.38
C36	116.51	212.00	31.49	S39° 32' 45"W	115.05	308732.58	2929543.08	308643.86	2929616.33
C37	13.15	5.00	150.72	N83° 41' 41"W	9.68	308483.37	2929661.15	308484.44	2929651.53
C38	38.91	50.00	44.59	S1° 20' 56"E	37.94	308404.82	2929621.06	308366.90	2929621.95
C40	44.67	30.00	85.31	N23° 46' 36"E	40.66	308270.22	2929702.32	308307.43	2929718.71
C41	39.58	476.00	4.76	N21° 15' 44"W	39.56	308307.43	2929718.71	308344.30	2929704.37
C42	26.72	100.00	15.31	S15° 59' 25"E	26.64	308435.99	2929668.09	308410.39	2929675.43

STRUCTURE & PIPE DATA – SHEET C-201 & C-202

NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
EX SMH 1	4'	13.13	1.30/10"PVC/SMH 1	
SMH 1	4'	13.32	1.60/10"PVC/SMH 2	1.50/10"PVC/EX SMH 1
SMH 2	4'	15.00	3.55/8"PVC/SMH 10 3.55/10"PVC/SMH 3	3.45/10"PVC/SMH 1
SMH 3	4'	13.47	9.78/10"PVC/STUB 9.80/6"PVC/CO3 8.00/8"PVC/SMH 8	7.90/10"PVC/SMH 2
SMH 5	4'	14.54	10.18/8"PVC/SMH 6	10.08/8"PVC/SMH 8
SMH 6	4'	22.00	11.39/8"PVC/SMH 7	11.29/8"PVC/SMH 5
SMH 7	4'	16.70	13.18/8"PVC/LRC SAN OUTLET 1 13.18/8"PVC/CO2 12.49/8"PVC/SMH 9	12.39/8"PVC/SMH 6
SMH 8	4'	19.10	8.83/8"PVC/SMH 5	8.73/8"PVC/SMH 3
SMH 9	4'	17.50	13.22/8"PVC/CO1	13.12/8"PVC/SMH 7
SMH 10	4'	13.90	5.25/6"PVC/BEAN SAN OUTLET	5.15/8"PVC/SMH 2

PIPE NAME	SIZE	LENGTH	SLOPE
S1	10" PVC	16'	0.0125
S2	10" PVC	99'	0.0187
S3	8" PVC	114'	0.0140
S4	6" PVC	43'	0.0105
S5	10" PVC	82'	0.0530
S6	4" PVC	49'	0.0108
S7	6" PVC	49'	0.0108
S8	6" PVC	6'	0.4450
S9	4" PVC	8'	0.2700
S11	10" PVC	119'	0.0108
S12	8" PVC	117'	0.0107
S13	8" PVC	102'	0.0109
S14	8" PVC	92'	0.0109
S15	8" PVC	6'	0.0800
S16	8" PVC	2'	0.2000
S17	8" PVC	5'	0.0160
S19	8" PVC	41'	0.0178
S20	8" PVC	56'	0.0114
S21	8" PVC	60'	0.0113
S22	8" PVC	8'	0.0162

STRUCTURE & PIPE DATA – SHEET C-301 & C-302

NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
AD1	4'	20.75	17.25/12"HDPE/CB5	17.15/12"HDPE/DMH6
CB2*	4'	28.00		24.40/12"HDPE/DMH47
CB3*	4'	26.29		22.00/12"HDPE/DMH48
CB4*	4'	24.45		20.00/12"HDPE/DMH1
CB5	4'	21.40		17.60/12"HDPE/AD1
CB6	4'	26.25		22.25/12"HDPE/CB7
CB7	4'	24.08	17.61/12"HDPE/CB6	17.51/12"HDPE/DMH2
CB8	4'	21.89		17.50/12"HDPE/DMH5
CB13	4'	23.80		19.90/12"HDPE/DMH3
CB14	4'	23.83		19.12/12"HDPE/DMH25
DMH1	4'	22.71	18.70/12"HDPE/CB4	18.60/12"HDPE/DMH6
DMH2	4'	23.71	17.33/12"HDPE/CB7 18.60/12"HDPE/DMH25	17.23/18"HDPE/DMH5
DMH3	4'	24.12	19.70/12"HDPE/CB13	19.60/12"HDPE/DMH25
DMH4	4'	24.40	19.20/12"HDPE/FI1	19.10/18"HDPE/DMH13
DMH5	5'	21.95	17.35/12"HDPE/CB8 16.60/18"HDPE/DMH2	16.50/18"HDPE/DMH26
DMH25	4'	23.99	19.00/12"HDPE/DMH3 18.90/12"HDPE/CB14	18.80/12"HDPE/DMH2
DMH47*	4'	28.28	17.85/24"HDPE/EX DMH 24.30/12"HDPE/CB2	17.75/24"HDPE/DMH48
DMH48*	4'	25.68	16.70/24"HDPE/DMH47 21.79/12"HDPE/CB3	MATCH EX. PIPE INV. OUT
EX. DMH	4'	26.33	SEE SHERWOOD ST. PLANS	20.80/24"HDPE/DMH47
FI1	2'	23.50		19.65/12"HDPE/DMH4

*TEST PITS TO BE CONDUCTED ON SHERWOOD STREET TO CONFIRM LOCATION AND INVERTS OF EXISTING STORM DRAIN. PROPOSED STRUCTURE LOCATIONS AND INVERTS TO BE CONFIRMED BY ENGINEER PRIOR TO CONSTRUCTION.

PIPE NAME	SIZE	LENGTH	SLOPE
SD1	12" HDPE	12'	0.0083
SD2	24" HDPE	244'	0.0121
SD3	12" HDPE	16'	0.0131
SD4	12" HDPE	155'	0.0084
SD5	12" HDPE	171'	0.0129
SD6	12" HDPE	152'	0.0305
SD7	12" HDPE	36'	0.0050
SD8	12" HDPE	29'	0.0069
SD9	12" HDPE	92'	0.0065
SD10	12" HDPE	19'	0.0105
SD12	12" HDPE	69'	0.0065
SD16	18" HDPE	125'	0.0050
SD17	12" HDPE	8'	0.0187
SD24	12" HDPE	141'	0.0053
SD25	12" HDPE	30'	0.0117
SD81	12" HDPE	7'	0.0314
SD99	18" HDPE	164'	0.0159
SD117	24" HDPE	84'	0.0125

NAME	DIA.	RIM	INV IN/SIZE/FROM	INV OUT/SIZE/TO
AD2	4'	14.50		11.00/12"HDPE/AD3
AD3	4'	14.50	10.50/12"HDPE/AD2	10.40/12"HDPE/DMH46
AD4	4'	13.50	9.34/12"HDPE/DMH46 9.30/6"HDPE/	9.24/12"HDPE/DMH11
AD5	4'	19.80		16.25/12"HDPE/DMH38
AD6	4'	20.50	16.50/10"HDPE/FI3	16.33/12"HDPE/DMH38
AD7	4'	21.25		17.25/12"HDPE/DMH33
AD8	4'	17.30		13.50/10"HDPE/DMH18
AD9	4'	10.60		6.60/18"HDPE/AD10
AD10	4'	10.60	6.40/18"HDPE/AD9	6.30/24"HDPE/DMH24
AD11	4'	19.50		15.20/12"HDPE/DMH39
CB9	4'	20.32		16.10/12"HDPE/DMH26
CB10	4'	19.25		15.75/12"HDPE/DMH28 (DIV)
CB11 (DIV)	5'	15.82		12.28/12"HDPE/SSSF4 INLET 2 12.10/12"HDPE/DMH31
CB12	4'	19.78		14.90/12"HDPE/SSSF3 INLET 4 16.45/12"HDPE/OCS6
CB15	4'	19.50		15.55/12"HDPE/DMH28 (DIV)
DMH6	5'	22.10	16.40/12"HDPE/AD1 16.40/12"HDPE/DMH1	16.30/18"HDPE/DMH10 (DIV)
DMH7	5'	20.88	16.55/12"HDPE/GARAGE ROOF DRAIN 15.70/18"HDPE/DMH26	15.60/12"HDPE/HDS2 16.45/18"HDPE/DMH23
DMH8	5'	19.23	12.91/24"HDPE/DMH23 10.22/24"HDPE/DMH9 15.35/12"HDPE/DMH28 (DIV)	10.12/24"HDPE/DMH31
DMH9	4'	19.50	10.63/24"HDPE/DMH27	10.53/24"HDPE/DMH8
DMH10 (DIV)	4'	21.80	15.80/12"HDPE/FI2 16.10/18"HDPE/DMH6	15.50/18"HDPE/DMH12 15.50/12"HDPE/HDS1
DMH11	5'	14.75	8.88/12"HDPE/AD4 8.66/24"HDPE/DMH31	8.55/30"HDPE/
DMH12	4'	22.32	16.05/18"HDPE/DMH13 15.15/18"HDPE/DMH10 (DIV)	11.65/24"HDPE/DMH27
DMH13	4'	21.90	16.50/18"HDPE/DMH4	16.40/18"HDPE/DMH12
DMH14	4'	20.93	17.05/12"HDPE/LRC ROOF DRAIN 1	16.95/12"HDPE/DMH15
DMH15	4'	20.90	16.60/12"HDPE/DMH20 16.60/12"HDPE/DMH14	16.50/18"HDPE/DMH16
DMH16	4'	22.05	16.40/18"HDPE/DMH15	16.04/12"HDPE/DMH45 16.80/12"HDPE/DMH19
DMH17	4'	19.10	9.70/24"HDPE/DMH36 13.85/6"HDPE/CO2 9.70/12"HDPE/OCS8 15.72/6"HDPE/	9.60/24"HDPE/DMH18
DMH18	4'	17.05	12.00/10"HDPE/AD8 9.38/12"HDPE/OCS9 9.40/24"HDPE/DMH17 13.85/4"HDPE/	9.28/24"HDPE/DMH34
DMH19	4'	19.58	11.10/12"HDPE/OCS4 15.70/12"HDPE/DMH16	11.00/12"HDPE/DMH32
DMH20	4'	22.40	17.75/12"HDPE/LRC ROOF DRAIN 3	17.65/12"HDPE/DMH15
DMH21	4'	18.58	14.80/10"HDPE/LRC ROOF DRAIN 2	14.70/12"HDPE/DMH22
DMH22	4'	18.50	14.50/12"HDPE/DMH21	14.20/12"HDPE/DMH43 14.55/12"HDPE/DMH34
DMH23	4'	19.06	13.22/12"HDPE/DMH29 14.66/18"HDPE/DMH7	13.12/24"HDPE/DMH8
DMH24	5'	12.19	7.20/12"HDPE/TRENCH DRAIN 6.17/24"HDPE/AD10	6.07/24"HDPE/
DMH26	4'	20.35	15.95/18"HDPE/DMH5 16.00/12"HDPE/CB9	15.85/18"HDPE/DMH7
DMH27	5'	20.23	10.90/24"HDPE/DMH12 10.82/12"HDPE/OCS6 10.82/12"HDPE/OCS5	10.72/24"HDPE/DMH9
DMH28 (DIV)	5'	19.40	15.52/12"HDPE/CB10 15.52/12"HDPE/CB15	15.42/12"HDPE/DMH8 15.42/12"HDPE/DMH41
DMH29	4'	17.43	12.63/6"HDPE/CHILD CARE ROOF DRAIN	13.55/12"HDPE/DMH23 12.53/12"HDPE/DMH49
DMH30	5'	20.68	15.30/12"HDPE/HDS1	14.90/18"HDPE/SSSF2 INLET 1 14.90/12"HDPE/SSSF2 INLET 2
DMH31	5'	15.88	8.86/12"HDPE/OCS7 10.40/12"HDPE/OCS2 9.70/24"HDPE/DMH8 12.00/12"HDPE/CB11 (DIV)	8.76/24"HDPE/DMH11
DMH32	4'	21.73	10.55/12"HDPE/DMH19 14.70/12"HDPE/OCS1	10.45/18"HDPE/DMH36
DMH33	4'	21.70	14.60/12"HDPE/DMH39 17.00/12"HDPE/AD7	14.50/12"HDPE/DMH35 (DIV)
DMH34	5'	15.60	9.00/24"HDPE/DMH18 8.90/12"HDPE/OCS3 11.50/12"HDPE/DMH22	8.80/24"HDPE/
DMH35 (DIV)	4'	21.40	14.33/12"HDPE/DMH33	15.15/12"HDPE/DMH36 14.23/12"HDPE/DMH44
DMH36	4'	22.30	13.90/12"HDPE/DMH35 (DIV) 10.25/18"HDPE/DMH32	10.15/24"HDPE/DMH17
DMH37	4'	19.78	15.40/12"HDPE/HDS2	14.95/12"HDPE/SSSF3 INLET 2 14.95/12"HDPE/SSSF3 INLET 3
DMH38	4'	19.75	15.87/12"HDPE/AD6 15.87/12"HDPE/AD5	15.77/12"HDPE/DMH39
DMH39	4'	18.92	15.04/12"HDPE/DMH38 15.04/12"HDPE/DMH40 15.04/12"HDPE/AD11	14.94/12"HDPE/DMH33
DMH40	4'	21.30	15.85/8"HDPE/BEAN BLDG ROOF DRAIN 1	15.75/12"HDPE/DMH39
DMH41	2'X2'	19.27	15.30/12"HDPE/DMH28 (DIV)	14.95/12"HDPE/SSSF3 INLET1
DMH42	2'X2'	18.78	14.10/8"HDPE/BEAN BLDG ROOF DRAIN 2	13.55/12"HDPE/SSSF5 INLET 2 13.55/12"HDPE/SSSF5 INLET 3 15.15/12"HDPE/CO4
DMH43	2'X2'	18.00	14.00/12"HDPE/DMH22	12.90/12"HDPE/SSSF6 INLET 1 12.90/12"HDPE/SSSF6 INLET 2
DMH44	2'X2'	21.10	14.15/12"HDPE/DMH35 (DIV)	13.55/12"HDPE/SSSF5 INLET 1 13.55/12"HDPE/SSSF5 INLET 4
DMH45	2'X2'	20.18	15.96/12"HDPE/DMH16	15.00/12"HDPE/SSSF1 INLET 1
DMH49	2'X2'	16.02	12.38/12"HDPE/DMH29	12.28/12"HDPE/SSSF4 INLET 1
FI2	2'	20.00		16.00/12"HDPE/DMH10 (DIV)
FI3	2'	22.00		18.00/10"HDPE/AD6
HDS1	5'	21.10	15.40/12"HDPE/DMH10 (DIV)	15.40/12"HDPE/DMH30
HDS2	4'	19.95	15.50/12"HDPE/DMH7	15.50/12"HDPE/DMH37
OCS1	4'X4'	21.40	15.50/6"HDPE/	15.00/12"HDPE/DMH32
OCS2	4'X4'	14.50	11.10/6"HDPE/	10.50/12"HDPE/DMH31
OCS3	4'X4'	13.00	9.60/6"HDPE/	9.00/12"HDPE/DMH34
OCS4	4'X4'	21.60	11.25/12"HDPE/SSSF1 OUTLET 1	11.15/12"HDPE/DMH19
OCS5	4'X4'	20.40	10.97/12"HDPE/SSSF2 OUTLET	10.87/12"HDPE/DMH27
OCS6	4'X4'	18.94	10.95/12"HDPE/SSSF3 OUTLET 16.22/12"HDPE/CB12	10.85/12"HDPE/DMH27
OCS7	4'X4'	15.82	9.03/12"HDPE/SSSF4 OUTLET	8.93/12"HDPE/DMH31
OCS8	4'X4'	18.80	9.90/12"HDPE/SSSF5 OUTLET 14.39/12"HDPE/CO4	9.80/12"HDPE/DMH17
OCS9	4'X4'	12.42	9.58/12"HDPE/SSSF6 OUTLET	9.48/12"HDPE/DMH18

PIPE NAME	SIZE	LENGTH	SLOPE
SD11	12" HDPE	3'	0.0333
SD13	12" HDPE	66'	0.0108
SD14	12" HDPE	14'	0.0143
SD15	24" HDPE	18'	0.0050
SD18	18" HDPE	98'	0.0056
SD19	12" HDPE	7'	0.0243
SD20	12" HDPE	73'	0.0144
SD21	18" HDPE	3'	0.0333
SD22	12" HDPE	5'	0.0160
SD23	12" HDPE	36'	0.0306
SD26	18" HDPE	19'	0.0105
SD27	12" HDPE	12'	0.0067
SD28	12" HDPE	7'	0.0143
SD29	12" HDPE	75'	0.0067
SD30	12" HDPE	68'	0.0053
SD31	12" HDPE	54'	0.0083
SD32	12" HDPE	6'	0.0167
SD33	12" HDPE	10'	0.0230
SD34	12" HDPE	10'	0.0070
SD35	24" HDPE	59'	0.0053
SD36	18" HDPE	33'	0.0106
SD37	12" HDPE	4'	0.0250
SD38	10" HDPE	83'	0.0181
SD39	12" HDPE	7'	0.0071
SD40	12" HDPE	96'	0.0047
SD41	18" HDPE	1'	0.1000
SD42	18" HDPE	67'	0.0052
SD43	12" HDPE	5'	0.0200
SD44	24" HDPE	82'	0.0051
SD45	12" HDPE	26'	0.0115
SD46	12" HDPE	9'	0.0056
SD47	12" HDPE	1'	0.1000
SD48	18" HDPE	37'	0.0054
SD49	24" HDPE	138'	0.0054
SD50	12" HDPE	6'	0.0050
SD51	24" HDPE	20'	0.0105
SD52	12" HDPE	67'	0.0051
SD53	12" HDPE	3'	0.0100
SD54	12" HDPE	143'	0.0051
SD55	12" HDPE	4'	0.0300
SD56	30" HDPE	30'	0.0043
SD57	6" HDPE	62'	0.0156
SD58	12" HDPE	14'	0.0450
SD59	12" HDPE	36'	0.0097
SD60	12" HDPE	24'	0.0104
SD61	10" HDPE	79'	0.0190
SD62	10" HDPE	24'	0.0083
SD63	12" HDPE	29'	0.0069
SD64	12" HDPE	26'	0.0058
SD65	12" HDPE	11'	0.0300
SD66	24" HDPE	54'	0.0069
SD67	12" HDPE	43'	0.0047
SD68	18" HDPE	35'	0.0057
SD69	24" HDPE	53'	0.0051
SD70	12" HDPE	14'	0.0050
SD71	6" HDPE	5'	0.0180
SD72	6" HDPE	73'	0.0130
SD73	6" HDPE	9'	0.1156
SD74	24" HDPE	90'	0.0050
SD75	12" HDPE	68'	0.0449
SD76	12" HDPE	4'	0.0250
SD77	24" HDPE	20'	0.0050
SD78	12" HDPE	68'	0.0068
SD79	12" HDPE	4'	0.0250
SD80	12" HDPE	3'	0.0067
SD82	18" HDPE	11'	0.0136
SD83	6" HDPE	26'	0.0192
SD84	12" HDPE	64'	0.0094
SD85	12" HDPE	7'	0.0057
SD86	12" HDPE	21'	0.0038
SD87	12" HDPE	32'	0.0053
SD88	12" HDPE	7'	0.0071
SD89	6" HDPE	29'	0.0176
SD90	24" HDPE	31'	0.0065
SD91	12" HDPE	15'	0.0107
SD92	12" HDPE	63'	0.0060
SD93	12" HDPE	2'	0.0150
SD94	12" HDPE	10'	0.0200
SD95	12" HDPE	22'	0.0045
SD96	24" HDPE	40'	0.0070
SD97	12" HDPE	15'	0.0067
SD98	18" HDPE	51'	0.0351
SD99	18" HDPE	164'	0.0159
SD100	12" HDPE	1'	0.1300
SD101	6" HDPE	33'	0.0130
SD102	6" HDPE	22'	0.0200
SD103	8" HDPE	10'	0.0150
SD104	12" HDPE	2'	0.0650
SD105	12" HDPE	2'	0.0500
SD106	12" HDPE	2'	0.0250
SD107	12" HDPE	3'	0.0100
SD108	12" HDPE	15'	0.0833
SD109	8" HDPE	37'	0.0378
SD110	24" HDPE	26'	0.0050
SD111	12" HDPE	14'	0.0321
SD112	12" HDPE	28'	0.0111
SD113	12" HDPE	5'	0.0400
SD114	12" HDPE	1'	0.0800
SD115	12" HDPE	8'	0.0288
SD116	12" HDPE	68'	0.0053
SD118	6" HDPE	23'	0.0339
SD119	4" HDPE	48'	0.0323
SD120	12" HDPE	6'	0.0167
SD121	12" HDPE	3'	0.0100
SD122	6" HDPE	55'	0.0055

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

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Woodard & Curran

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Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

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Job # 2202

Project THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY

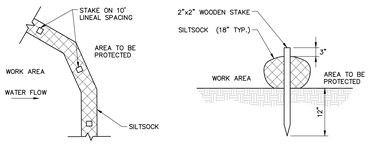
Drawn By BCM Designed By ANL Checked DLC

Date 26 MARCH 2024

Scale AS NOTED

Drawing Title
LAYOUT, STRUCTURE & PIPE TABLES

C-304



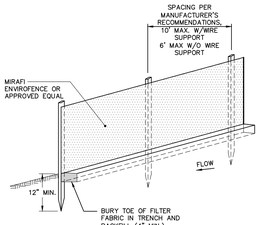
PLAN VIEW SECTION

NOTE:

1. WHEN STAKING IS NOT POSSIBLE, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT BARRIER TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.

SEDIMENT BARRIER – SILT SOCK

N.T.S.



NOTES:

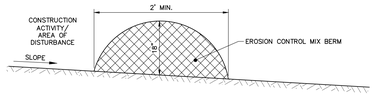
- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

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.

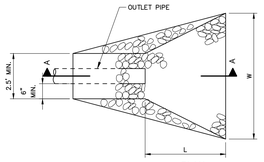


NOTES:

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.

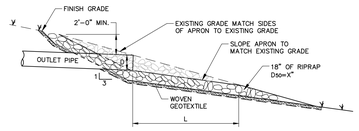
SEDIMENT BARRIER – EROSION CONTROL MIX BERM

N.T.S.



PLAN

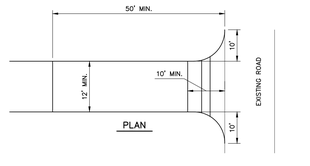
PIPE DIA. (D, IN.)	LENGTH (L, FT.)	WIDTH (W, FT.)	D50 (X, IN.)
18"	6'	4.5'	6"
24"	8'	6'	6"
30"	10'	7.5'	12"



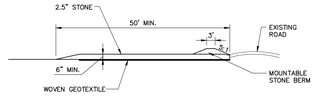
SECTION A–A

RIPRAP INLET/OUTLET PROTECTION

N.T.S.



PLAN



PROFILE

NOTES:

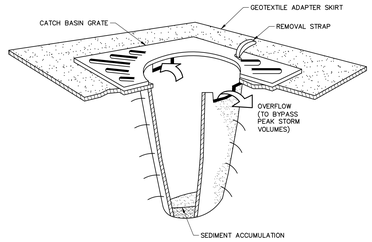
- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
- WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.

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.



NOTES:

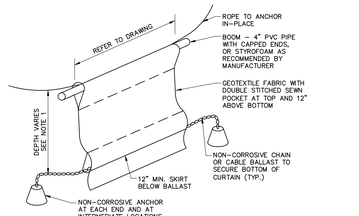
CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).

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.



NOTE:

1. FABRIC DEPTH WILL VARY BASED ON LOCATION. CONTRACTOR SHALL PROVIDE ADEQUATE DEPTH TO CONTAIN SEDIMENT AND MITIGATE OFF–SITE SEDIMENT MIGRATION.

TURBIDITY CURTAIN

N.T.S.

EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION CONTROL

CONTRACTOR SHALL PREPARE AND SUBMIT A SOIL EROSION AND WATER POLLUTION CONTROL PLAN TO ENGINEER. ANY TEMPORARY SEEDED VEGETATION, MULCH MATERIALS, OR EROSION CONTROL BLANKETS MUST BE REMOVED PRIOR TO INSTALLATION OF PERMANENT MEADOW SEED.

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
SEDIMENT 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 7 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 7 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.

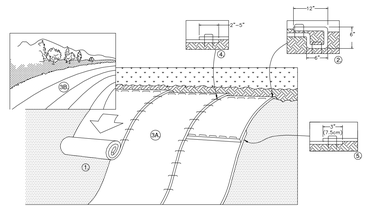
PERMANENT EROSION CONTROL:

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	JUNE 1 TO AUG. 15	ON FINAL GRADE AREAS, WITH 7 POINTS OF GRADE PREPARATION, PREPARE SOIL PER SOIL SPECIFICATIONS AND DRAWINGS, FOLLOWED BY SEED AND RECP ON SLOPES GREATER THAN 3:1 SLOPE. REFER TO SECTION 329222 NATIVE MEADOW SEEDING SPECIFICATIONS FOR ANY AND ALL SITE PREPARATION, SEEDING AND SEEDING ESTABLISHMENT REQUIREMENTS.
DORMANT SEEDING	NOV. 15 TO DEC. 15	ON FINAL GRADE AREAS, WITH PREPARED TOPSOIL. APPLY SEED, AND FOLLOW WITH AN APPLICATION OF RECP. REFER TO SECTION 329222 NATIVE MEADOW SEEDING SPECIFICATIONS FOR ANY AND ALL SITE PREPARATION, SEEDING AND SEEDING ESTABLISHMENT REQUIREMENTS.
OUT OF SEEDING SEASON	AUG. 16 – NOV. 14 DEC. 16 – MAY 31	REFER TO SECTION 329222 NATIVE MEADOW SEEDING SPECIFICATIONS FOR ANY AND ALL SITE PREPARATION, SEEDING AND SEEDING ESTABLISHMENT REQUIREMENTS.
GROUND COVER, TREES, SHRUBS	APRIL 15 TO NOV. 1	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.

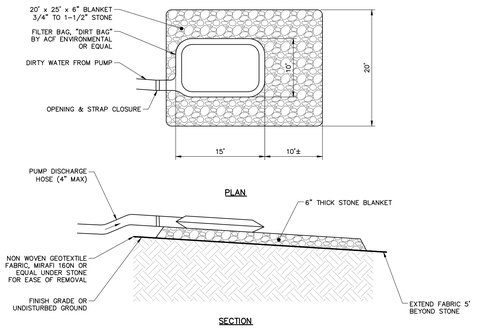
INSPECTED ITEM	LOOK FOR
MULCHED SURFACES	THIN MULCH OR INADEQUATE APPLICATION. WIND MOVEMENT.
SEEDED SURFACES	POOR SEED GERMINATION, LOSS OF MULCH, DEVELOPMENT OF RIVULETS. REFER TO SECTION 329222 NATIVE MEADOW SEEDING FOR SEEDING ESTABLISHMENT REQUIREMENTS.
SEDIMENT BARRIER	SEDIMENT BUILD–UP TO ONE 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.



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), 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 THAN 3:1, OR ANYWHERE WHERE 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 TO ALL AREAS OF PERMANENT SEEDING THAT HAVE NOT BEEN PERMANENTLY STABILIZED.
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. FOR TEMPORARY SEEDING, 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. FOR MAINTENANCE OF THE TEMPORARY SEEDING REFER TO SECTION 312500 EROSION AND SEDIMENTATION CONTROLS.
7. FOR PERMANENT SEEDING, UNTIL SEEDED SPECIES ARE ESTABLISHED, INSPECT PERIODICALLY AND AFTER EACH RAINSTORM TO CHECK FOR EROSION. IMMEDIATELY REPAIR, RESEED PERMANENT MEADOW SEED AS SPECIFIED IN THE DRAWINGS AND SECTION 329222, AND REPLACE MATTING UNTIL VEGETATION IS FIRMLY ESTABLISHED. FOR ANY AND ALL REQUIREMENTS FOR ESTABLISHMENT OF PERMANENT SEED, REFER TO SECTION 329222 NATIVE MEADOW SEEDING.

ROLLED EROSION CONTROL MATTING

N.T.S.



PLAN

SECTION

NOTES:

1. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
2. DISCHARGE NOT PERMITTED WITHIN 100' OF A NATURAL RESOURCE.
3. DOWNGRADIENT RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, I.E. FOREST FLOOR OR COARSE GRAVEL/STONE.
4. NEVER DISCHARGE TO AREAS THAT ARE BARE OR NEWLY VEGETATED.
5. DIRT BAG MATERIAL BASED ON PARTICLE SIZE IN DIRTY WATER, I.E., FOR COARSE PARTICLES A WOVEN MATERIAL; FOR SILTS/CLAYS A NON–WOVEN MATERIAL.
6. DO NOT OVER PRESSURIZE DIRT BAG OR USE BEYOND CAPACITY.
7. CHANNELS DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA NEED TO BE STABLE. IF FLOW VELOCITIES CAUSE EROSION WITHIN THE CHANNEL THEN A DITCH LINING SHOULD BE USED.
8. BUCKETED WATER SHOULD BE DISCHARGED IN A STABLE MANNER TO THE SEDIMENT REMOVAL AREA. A SPLASH PAD OF RIPRAP UNDERLAIN WITH GEOTEXTILE MAY BE NECESSARY TO PREVENT SCOURING OF SOIL.
9. DEWATERING IN PERIODS OF INTENSE, HEAVY RAIN, WHEN THE INFILTRATIVE CAPACITY OF THE SOIL IS EXCEEDED, SHOULD BE AVOIDED.
10. INSTALL DIVERSION DITCHES OR BERMS TO MINIMIZE THE AMOUNT OF CLEAN STORMWATER RUNOFF ALLOWED INTO THE EXCAVATED AREA.
11. DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE DEWATERING FACILITY SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW THAT MAY COMPROMISE THE BUFFER AREA. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
12. EROSION CONTROL BARRIERS ARE REQUIRED AROUND DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE.

DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE

N.T.S.

EROSION AND SEDIMENT 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 SEDIMENT BARRIER LIKE SILT SOCK, SILT FENCE, AND EROSION CONTROL MIX BERMS, CATCH BASIN TEMPORARY INLET PROTECT AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE PERMANENT VEGETATION OR PAVING.

GENERAL

A. THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT.

B. 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://MAINE.GOV/DEP/BLWQ/DOCSTANDARDS/ESCBMPS/

C. 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.

D. 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.

E. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.

F. CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN–ON TO DISTURBED AREAS. SEDIMENT BARRIER AND ANY OTHER RELEVANT EROSION CONTROL MEASURES SHALL BE MOVED AND/OR ADDED TO, TO ACCOUNT FOR CHANGES IN DISTURBED AREA DUE TO CONSTRUCTION STAGING..

G. 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 SEEDED SPECIES, FREE FROM SIZABLE THIN OR BARE SPOTS AND PERNICIOUS WEEDS.
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 PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.

H. FOR ANY AND ALL SEEDING REQUIREMENTS, REFER TO SECTION 329222 NATIVE MEADOW SEEDING SPECIFICATIONS.

I. PROTECT ALL TEMPORARY SEEDED AREAS WITH MULCH OR RECP IN AREAS OF SHEET OR CONCENTRATED FLOWS. MULCH ALL TEMPORARY SEEDED AREAS SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. MULCH SHALL NOT BE USED WITH PERMANENT SEEDING, BUT RECP MAY BE USED. 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.

J. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1 OR AS OTHERWISE NOTED, EROSION CONTROL BLANKET SHALL BE EAST COAST EROSION CONTROL EC–47 400 GRAM CORR MAT OR APPROVED EQUAL. EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

K. 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 15. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 1 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 BMP'S 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.

⚠ NON STORMWATER DISCHARGES

A. PER MAINEDEP CHAPTER 500, THE FOLLOWING NON–STORMWATER DISCHARGES ARE ALLOWED AND STEPS SHOULD BE TAKEN TO ENSURE IMPLEMENTATION OF APPROPRIATE POLLUTION PREFENTION MEASURES FOR THE NON–STORMWATER COMPONENTS OF THE DISCHARGE.

1. DISCHARGES FROM FIREFIGHTING ACTIVITY;
2. FIRE HYDRANT FLUSHINGS;
3. VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
4. DUST CONTROL RUNOFF IN ACCORDANCE WITH MAINEDEP CHAPTER 500 REQUIREMENTS;
5. ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
6. PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
7. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
8. UNCONTAMINATED GROUNDWATER OR SPRING WATER;
9. FOUNDATION OR FOOTER DRAIN–WATER WHERE FLOWS ARE NOT CONTAMINATED;
10. UNCONTAMINATED EXCAVATION DEWATERING IN ACCORDANCE WITH MAINEDEP CHAPTER 500 REQUIREMENTS;
11. POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND LANDSCAPE IRRIGATION.

B. PER MAINEDEP CHAPTER 500 THE FOLLOWING NON–STORMWATER DISCHARGES ARE NOT ALLOWED.

1. WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
2. FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
3. SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
4. TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

IDEALS Initiative for Digital Engineering and Life Sciences Roux Campus

LVX VERITAS VIRTVS

The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

STATE OF MAINE · AMY N. LEBEL · 17065 · LICENSED PROFESSIONAL ENGINEER

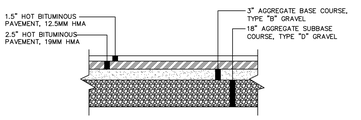
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Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	AS NOTED

Drawing Title

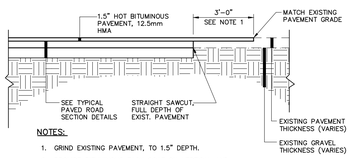
CIVIL DETAILS - 1

D-401



BITUMINOUS PAVEMENT SECTION (IN CITY RIGHT-OF-WAY)

N.T.S.

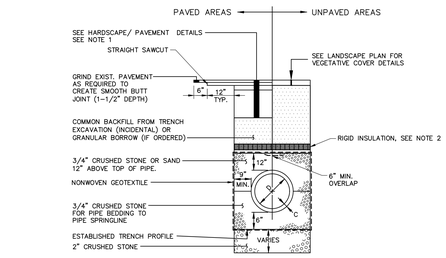


NOTES:

1. GRIND EXISTING PAVEMENT, TO 1.5" 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.

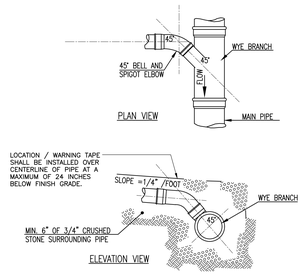


NOTES:

1. DEPTH AND TYPE OF PAVEMENT AND AGGREGATE COURSES SHALL BE PER PLANS. SEE CIVIL & LANDSCAPING PAVEMENT DETAILS.
2. PROVIDE RIGID INSULATION WHERE COVER OVER PIPE IS LESS THAN 4 FEET. THE THICKNESS OF THE RIGID INSULATION SHALL BE SUFFICIENT TO PROVIDE AN EQUIVALENT OF 4'-0" OF SOIL ABOVE THE PIPE. ONE INCH OF RIGID INSULATION SHALL BE EQUIVALENT TO ONE FOOT OF SOIL. INSULATION SHALL EXTEND A MINIMUM 9' FROM OUTSIDE EDGE OF PIPE. BUT SHALL NOT EXCEED TRENCH WIDTH.
3. STORM DRAIN IN THE SHERWOOD STREET RIGHT-OF-WAY SHALL MEET THE MATERIAL SPECIFICATIONS IN SECTION 2 OF THE CITY OF PORTLAND TECHNICAL MANUAL.

TYPICAL STORMDRAIN/ SEWER PIPE TRENCH

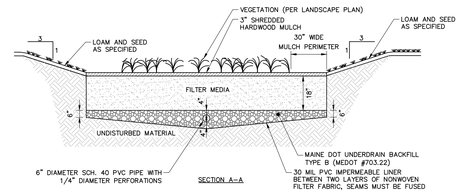
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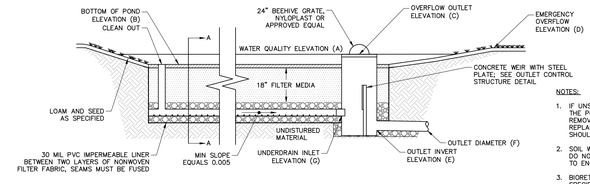


TYPICAL LATERAL WYE CONNECTION DETAILS

N.T.S.

BIORETENTION BASIN DIMENSIONS/ ELEVATION (FEET)							
LOCATION	A (ELEV)	B (ELEV)	C (ELEV)	D (ELEV)	E (ELEV)	F (DIA. FEET)	G (ELEV)
BIORETENTION BASIN 1	19.50	19.00	19.50	21.62	15.00	1.00	16.00
BIORETENTION BASIN 2	14.50	14.00	14.50	14.80	10.50	1.00	11.10
BIORETENTION BASIN 3	13.00	12.50	13.00	13.80	9.00	1.00	9.60





NOTES:

1. IF UNSUITABLE MATERIAL IS OBSERVED BELOW THE POND DEPTH, AT A MINIMUM IT SHALL BE REMOVED TO A DEPTH OF TWO FEET AND REPLACED WITH CLEAN SAND AND THE ENGINEER SHOULD BE NOTIFIED.
2. SOIL WITHIN BIORETENTION AREA TO BE PLACED, DO NOT COMPACT, LIFTS TO BE LIGHTLY WATERED TO ENCOURAGE NATURAL COMPACTION.
3. BIORETENTION BASIN MATERIALS PER SPECIFICATIONS.

BIORETENTION BASIN

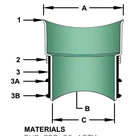
N.T.S.

CORRUGATED HDPE/PP BELL GRAVITY APPLICATIONS

A. BELL END ACCEPTS CORRUGATED HDPE/PP DUAL WALL PIPE--ADS/HANCOR INC. SPECIFICATIONS IN 4", 6", 8", 10", 12", 15", 18", 21", 24", AND 30" SIZES.

B. CURVATURE VARIES WITH MAINLINE DIAMETERS.

C. SPIGOT END PVC SDR 35, ASTM D3034 DIAMETERS: 4", 6", 8", 10", 12", 15", 18", 21", 24" AND 30"



PART	PART NAME
1	HUB ADAPTOR
2	SECURING CLAMP*
3	RUBBER SLEEVE (AVAILABLE IN NITRILE AND EPDM BY SPECIAL ORDER)
3A	UPPER SEGMENT**
3B	LOWER SEGMENT***
4	(NOT SHOWN) ADS/HANCOR INC. SUPPLIES VALLEY GASKET

MATERIALS
PVC SDR 26 ASTM D3034
BAND SS #301
SCREW SS #305
HOUSING SS #301
ASTM F477

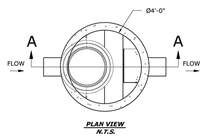
* OPTIONAL: #316 STAINLESS STEEL BAND, SCREW AND HOUSING
** DISTANCE BETWEEN 4A AND 4B WILL VARY BY PRODUCT TYPE
*** WILL NOT APPEAR ON RUBBER SLEEVES FOR CONCRETE OR CLAY PIPE

INSERTA TEE SIZE	HOLE DIAMETER
4" (100 mm)	4 ½" (114 mm)
6" (150 mm)	6 ½" (165 mm)
8" (200 mm)	8 ¾" (222 mm)
10" (250 mm)	10 ⅞" (276 mm)
12" (300 mm)	12 ⅞" (327 mm)
15" (375 mm)	15 1⅞" (402 mm)
18" (450 mm)	19 ⅜" (503 mm)
21" (525 mm)	22 ⅜" (573 mm)
24" (600 mm)	25 ⅜" (643 mm)
30" (750 mm)	32 1⅝" (826 mm)

NOTE: RECOMMENDED METHOD OF CUTTING HOLE IS WITH HOLE SAW FOR PVC AND OTHER PLASTICS, AND DIAMOND BIT FOR CONCRETES, CLAY, FRP AND D.I. (SEE INSTALLATION INSTRUCTIONS. HOLE SAWS ARE AVAILABLE FOR PURCHASE OR RENT.)

INSERTA TEE DETAIL

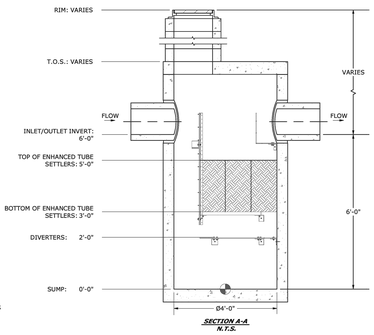
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PLAN VIEW
N.T.S.

GENERAL NOTES:

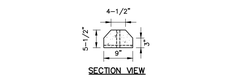
1. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C478.
2. CONTRACTOR TO INSTALL THE STRUCTURE IN ACCORDANCE WITH ASTM C1821.
3. CONTRACTOR TO PROVIDE ALL LABOR AND EQUIPMENT REQUIRED TO OFFLOAD AND INSTALL UNIT.
4. CONTRACTOR TO PROVIDE AND INSTALL ALL PIPES, FRAMES, COVERS, HATCHES, AND RISERS UNLESS SPECIFIED OTHERWISE.
5. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS.



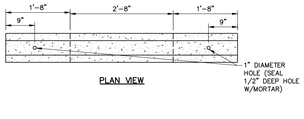
NOTE: PROVIDE STORMSETTLER BY STORMTRAP OR APPROVED EQUAL.

HYDRODYNAMIC SEPARATOR

N.T.S.



SECTION VIEW



PLAN VIEW

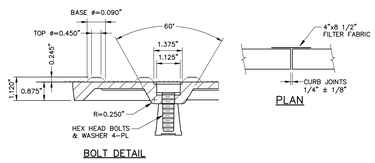
ISOMETRIC VIEW

NOTE:

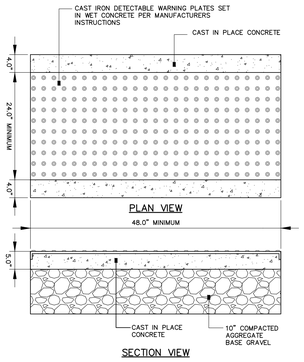
1. CONCRETE SHALL BE 4,000 PSI.

WHEEL STOP

N.T.S.



BOLT DETAIL



SECTION VIEW

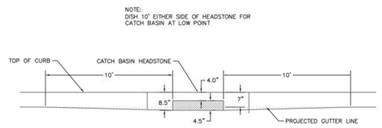
SIDEWALK RAMP DETECTABLE WARNING

N.T.S.

NOTES:

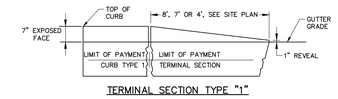
1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MAINE D.O.T. CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BROOKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE PLATE WIDTH AND CONCRETE SHALL EXTEND THE WIDTH OF THE CURB RAMP, LANDING, OR BLENDING TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.

NOTE:
DISH 10' EITHER SIDE OF HEADSTONE FOR CATCH BASIN AT LOW POINT



TYPICAL PAVEMENT GRADING FOR CATCH BASIN INLETS (IN CITY RIGHT-OF-WAY)

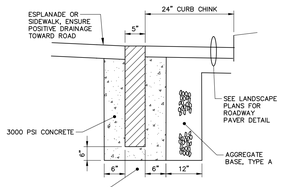
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TERMINAL SECTION TYPE "1"

TERMINAL CURB SECTION

N.T.S.



SECTION

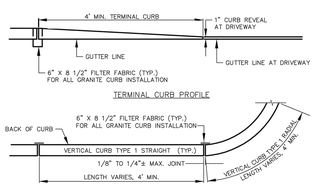
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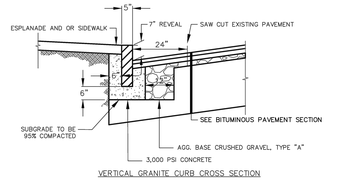
1. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
2. WOODEN SHIMS MAY BE USED TO SET CURB.

TYPICAL FLUSH CURB INSTALLATION (IN CITY RIGHT-OF-WAY)

N.T.S.

NOTE: AGGREGATE TYPES PER MDOT SECTION 304.02





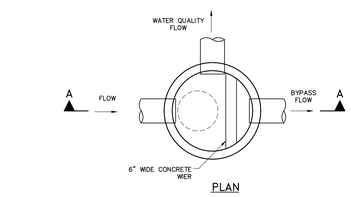
VERTICAL GRANITE CURB CROSS SECTION

NOTES:

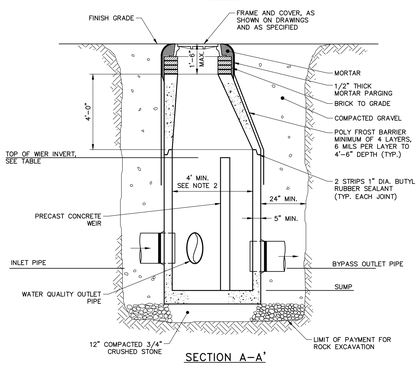
1. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
2. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10-INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
3. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
4. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB (IN CITY RIGHT-OF-WAY)

N.T.S.



PLAN



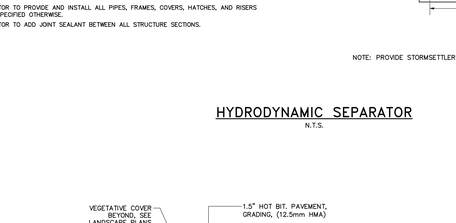
SECTION A-A'

DIVERSION STRUCTURE DIMENSIONS/ ELEVATIONS	
LOCATION	TOP OF WEIR B (ELEV)
DMH10 (DIV.)	16.65
DMH28 (DIV.)	16.45
CB11 (DIV.)	13.55

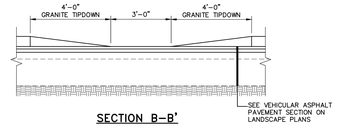
NOTE:
1. SEE STRUCTURE TABLE FOR DIMENSIONS.
2. CATCH BASINS SHALL BE SIZED SUCH THAT WATER DRAINING THROUGH THE GRATE DRAINS TO WATER QUALITY INVERT AND NOT BYPASS.

DIVERSION MANHOLE DETAIL

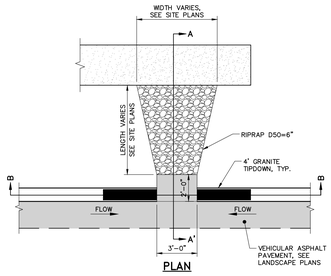
N.T.S.



SECTION A-A'



SECTION B-B'



PLAN

CURB BREAK DETAIL

N.T.S.

IDEALS Initiative for Digital Engineering and Life Sciences Roux Campus

The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

Stamp

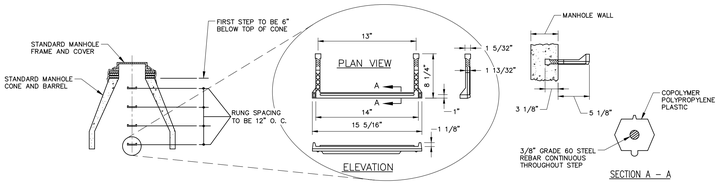
Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 2

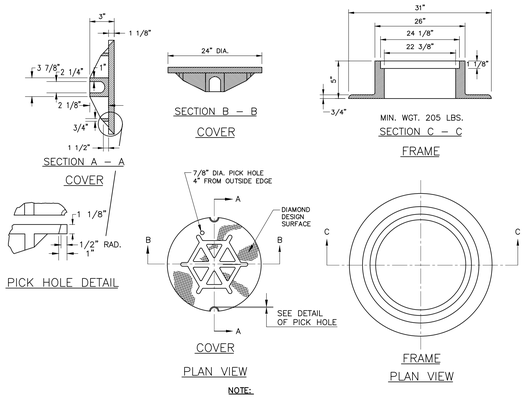
D-402

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 WITHIN CITY RIGHT-OF-WAY 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.



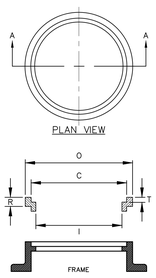
PLASTIC MANHOLE STEPS
N.T.S.



NOTE:

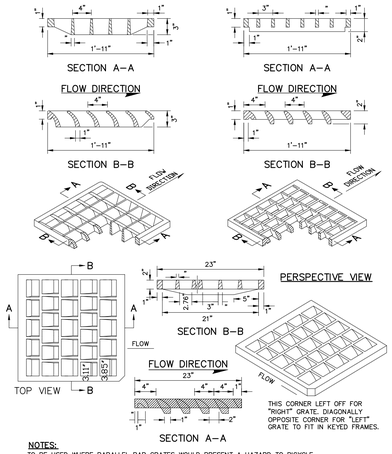
FOR ALL CROSS COUNTRY MANHOLES (LAWN AREAS), USE PAM REXUS MANHOLE COVERS BY CERTAINTEED.

TYPE "A" CAST IRON MANHOLE COVER AND FRAME
N.T.S.



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

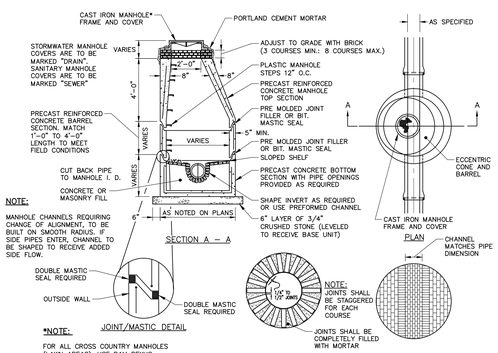
MANHOLE RISER RING
N.T.S.



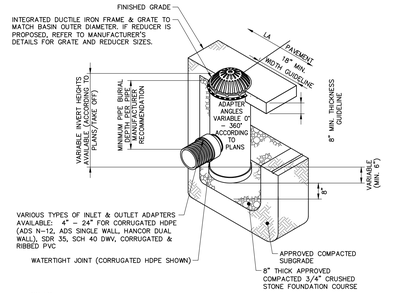
NOTES:

TO BE USED WHERE PARALLEL BAR GRATES WOULD PRESENT A HAZARD TO BICYCLE TRAFFIC. FOR USE ON CATCH BASIN TYPES: A1-C, A2-C, A5-C, B1-C, B2-C, B5-C, F3-C, F4-C, F5-C, F6-C.

"CASCADE-TYPE" GRATES
N.T.S.



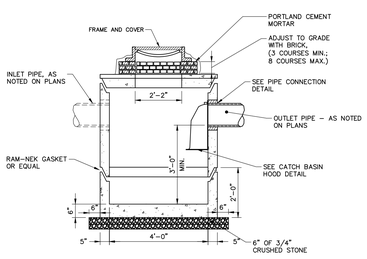
PRECAST CONCRETE MANHOLE
N.T.S.



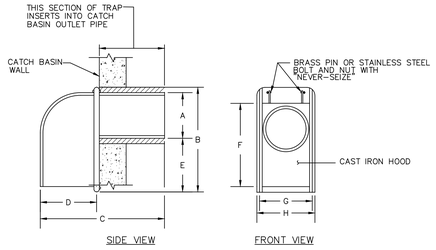
NOTES:

1. INSTALL BASIN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. PRODUCT SHALL BE NYLOPLAST DRAIN BASIN MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS (ADS) OR APPROVED EQUAL.
3. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
4. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
5. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTORATIONS.
6. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
7. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.

FIELD INLET
N.T.S.

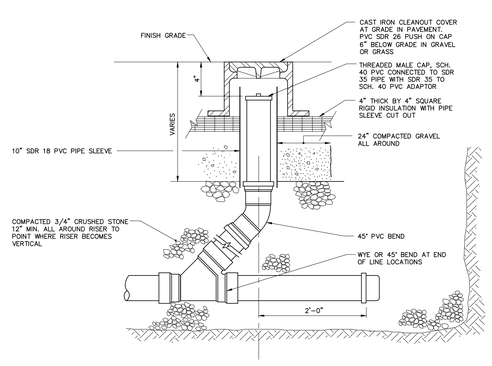


PRECAST CONCRETE CATCH BASIN
N.T.S.

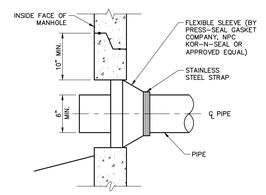


SIZE	A	B	C	D	E	F	G	H
6 in.	5 1/2"	13 3/8"	13 3/4"	5 3/8"	5 7/8"	11 5/8"	6 1/2"	7 1/4"
8 in.	7 1/2"	15"	15 3/8"	5 1/2"	5 3/8"	13 3/4"	8 3/4"	9 3/8"
10 in.	9 1/2"	16"	16 1/4"	6"	4 1/2"	14 1/8"	11 1/2"	12 3/8"
12 in.	11 1/2"	17"	22"	6"	3 1/2"	17"	12 1/2"	13 3/8"

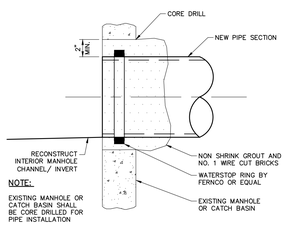
CATCH BASIN HOOD
N.T.S.



CLEANOUT
N.T.S.



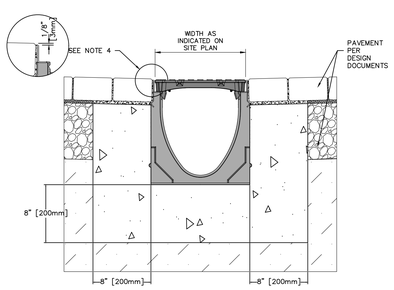
NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL
N.T.S.



NOTE:

EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION

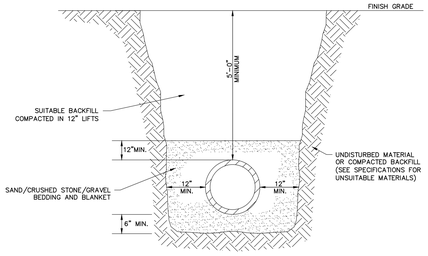
NEW PIPE TO EXISTING STRUCTURE
N.T.S.



NOTES:

1. TRENCH DRAIN SHALL BE K200 KLASSKDRAIN "DRAINLOK" LOAD CLASS C OR APPROVED EQUAL. PROVIDE SHOP DRAWING FOR ENGINEER APPROVAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. PROVIDE EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT TO PROTECT CHANNEL AND CONCRETE SURROUND.
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS.

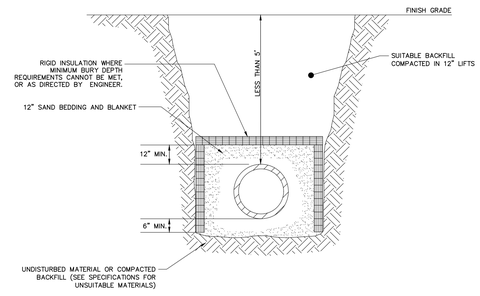
TRENCH DRAIN
N.T.S.



NOTES:

1. IN AREAS WHERE THE WATER MAIN TRENCH IS IN OR SUSCEPTIBLE TO TIDAL INFLUENSE (MADE LAND, GROUT, ETC.) THE PIPE BEDDING MATERIAL SHALL BE 1/1" MINUS CRUSHED STONE WRAPPED WITH GEOTEXTILE FABRIC AND COVERED WITH 2" THICK RIGID INSULATION.

TYPICAL WATER TRENCH
N.T.S.



TYPICAL WATER TRENCH WITH PIPE INSULATION
N.T.S.

IDEALS Initiative for Digital Engineering and Life Sciences Roux Campus

The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER

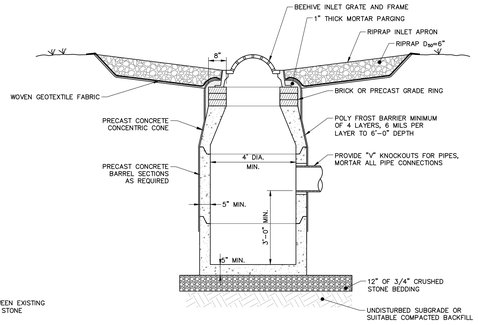
Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	AS NOTED

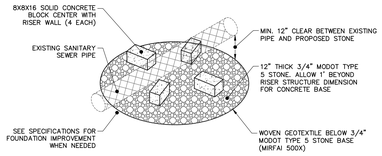
Drawing Title

CIVIL DETAILS - 3

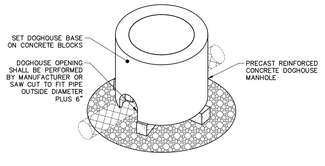
D-403



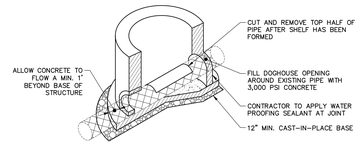
AREA DRAIN IN RIPRAP
N.T.S.



BASE ISOMETRIC VIEW



RISER ISOMETRIC VIEW

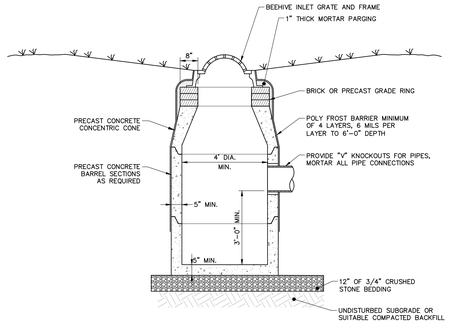


FOUNDATION SECTION VIEW

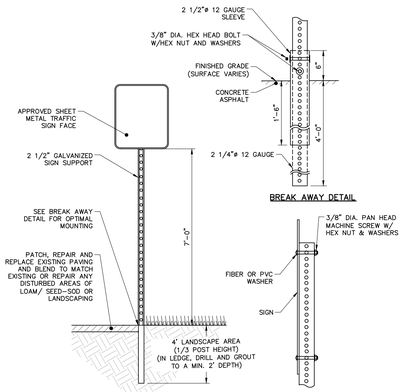
NOTES:

1. ASSEMBLED DOGHOUSE MANHOLE SHALL BE IN ACCORDANCE WITH ALL REQUIREMENTS OF PRECAST MANHOLE DETAIL ON D-403.

DOGHOUSE MANHOLE
NOT TO SCALE



AREA DRAIN IN VEGETATION
N.T.S.

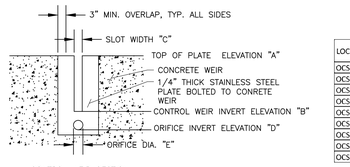


BREAK AWAY DETAIL

NOTES:

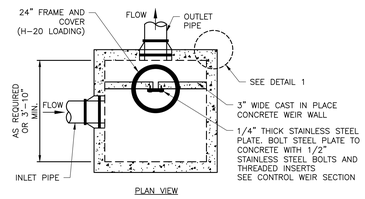
1. ALL HARDWARE SHALL BE STAINLESS STEEL.

TRAFFIC SIGN POST
N.T.S.



CONTROL WEIR SECTION

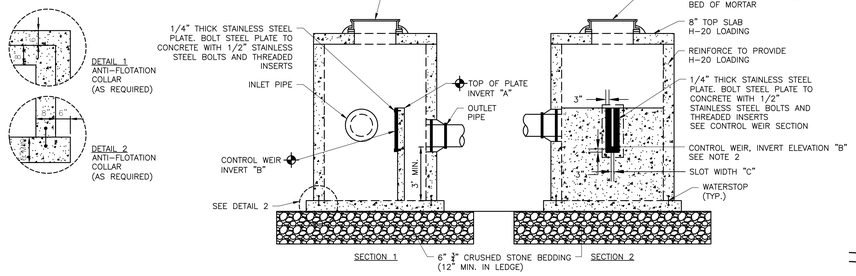
LOCATION	TOP OF PLATE A (ELEV.)	CONTROL WEIR INVERT B (ELEV.)	CONTROL WEIR SLOT WIDTH C (IN.)	ORIFICE INVERT D (ELEV.)	ORIFICE DIAMETER E (IN.)	GRATE/COVER TYPE
OCS1	18.8	17.5	1/8	N/A	N/A	TYPE 'A' CAST IRON COVER
OCS2	13.2	12.6	1/8	N/A	N/A	BEEHIVE GRATE
OCS3	12	11.1	1/8	N/A	N/A	BEEHIVE GRATE
OCS4	15	11.25	1/4	N/A	N/A	TYPE 'A' CAST IRON COVER
OCS5	16	10.9	1/8	N/A	N/A	TYPE 'A' CAST IRON COVER
OCS6	15.3	10.9	1/8	N/A	N/A	TYPE 'A' CAST IRON COVER
OCS7	12.5	11.5	1/8	9	0.7	TYPE 'A' CAST IRON COVER
OCS8	13.6	10.8	1/4	9.9	1	TYPE 'A' CAST IRON COVER
OCS9	12.9	11	1/4	9.5	0.8	TYPE 'A' CAST IRON COVER



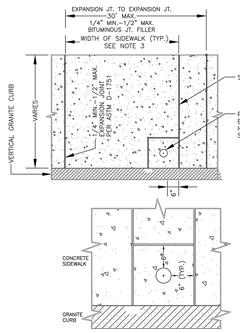
PLAN VIEW

NOTES:

1) ALL CEMENT CONCRETE TO BE 4000 PSI (MIN).
2) CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY THE REGULATIONS AND IN ACCORDANCE WITH THE APPROVED DRAINAGE CALCULATIONS. STAINLESS STEEL PLATE SHALL BE USED FOR CONTROL WEIRS LESS THAN 2 INCHES WIDE.
3) ALL STAINLESS STEEL SHALL BE GRADE 316.
4) SEE STRUCTURE TABLE FOR RIMS AND INVERTS.



OUTLET CONTROL STRUCTURE
N.T.S.

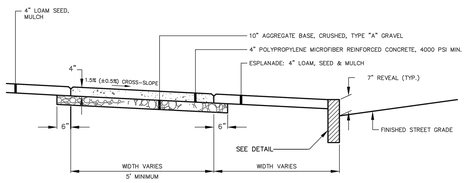


CONCRETE SIDEWALK JOINT NOTES:

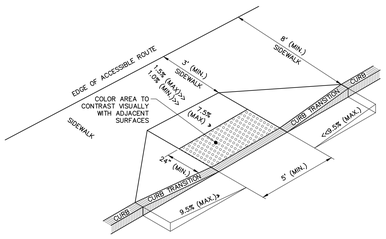
1. EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
2. SLABS SHALL BE PLACED ALTERNATELY IN LENGTHS, NOT TO EXCEED 30 LINEAR FEET OR AS DIRECTED AND SHALL BE SEPARATED BY AN EXPANSION JOINT OF PREFORMED EXPANSION FILLER 1/4" MIN.-1/2" MAX. IN THICKNESS AND SHALL EXTEND THE FULL LENGTH/DEPTH OF THE CONCRETE.
3. THE SIDEWALK SURFACE SHALL BE SCORED INTO BLOCK UNITS. THE DEPTH OF SCORING SHALL BE AT LEAST ONE QUARTER OF THICKNESS OF THE SLABS (1" TYP.). SCORED JOINTS MUST BE COMPLETED AS PART OF THE FINISHING PROCESS. SAW CUTTING OF JOINTS IS NOT ALLOWED. SCORED JOINTS SHALL BE PLACED AT THE FOLLOWING LOCATIONS:
   A. IN LOCATIONS TO ENSURE BLOCK UNITS DO NOT EXCEED 36 SQUARE FEET.
   B. AT THE SPACING THAT MATCHES ADJACENT TIP DOWN CURB
   C. EXTENSION OF EXPANSION JOINTS LOCATED AT HYDRANTS & UTILITY POLES.
4. ALL OUTSIDE EDGES OF THE SLAB AND ALL JOINTS SHALL BE ROUNDED WITH A 1/4" RADIUS EDGING TOOL.
5. CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.

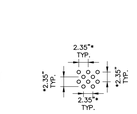
SIDEWALK EXPANSION JOINT (IN CITY RIGHT-OF-WAY)
N.T.S.

NOTE
CONCRETE SIDEWALKS TO BE TREATED WITH CONSOLIDECK SALTGUARD WB OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION.

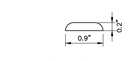


REINFORCED CONCRETE SIDEWALK (IN CITY RIGHT-OF-WAY)
N.T.S.





TRUNCATED DOMES (PLAN VIEW)



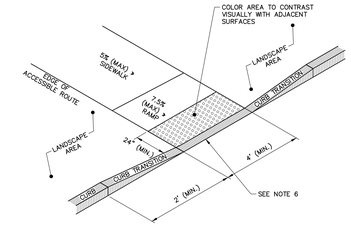
TRUNCATED DOMES (PROFILE)

*DIMENSIONS ARE CENTER TO CENTER

NOTES:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN.)
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
6. ADJACENT SURFACES AT TRANSITIONS SHALL BE FLUSH WITH CURB RAMPS.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY OR OTHERWISE INDICATED.
10. DETECTABLE WARNING SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. TRUNCATED DOMES AND ALL RELATED INSTALLED SURFACES TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ALL DETECTABLE WARNING SURFACE INSTALLATIONS SHALL BE AT A MINIMUM AT LEAST AS NON SKID AS THE SURROUNDING PEDESTRIAN SURFACES.
12. FOR ALLOWABLE SLOPE OF ACCESSIBLE ROUTE ON EXISTING SITE, SEE SECTION 405 OF THE ADA STANDARD FOR ACCESSIBLE DESIGN.

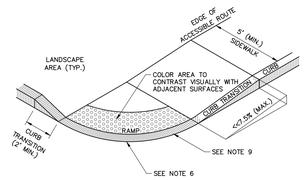
ACCESSIBLE CURB RAMP (ACR) – TYPE 'A'
N.T.S.



NOTE:

1. ACCESSIBLE CURB RAMP NOTES PROVIDED UNDER "ACCESSIBLE CURB RAMP – TYPE 'A' DETAIL ON THIS SHEET ARE APPLICABLE.

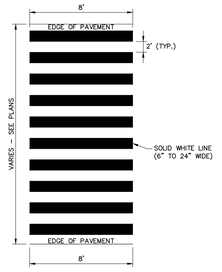
ACCESSIBLE CURB RAMP (ACR) – TYPE 'D'
N.T.S.



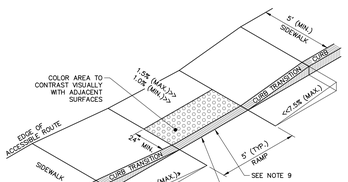
NOTE:

1. ACCESSIBLE CURB RAMP NOTES PROVIDED UNDER "ACCESSIBLE CURB RAMP – TYPE 'A' DETAIL ON THIS SHEET ARE APPLICABLE.

ACCESSIBLE CURB RAMP (ACR) – TYPE 'E'
N.T.S.



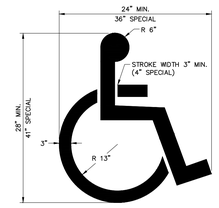
CROSSWALK PAVEMENT MARKINGS
N.T.S.



NOTE:

1. ACCESSIBLE CURB RAMP NOTES PROVIDED UNDER "ACCESSIBLE CURB RAMP – TYPE 'A' DETAIL ON THIS SHEET ARE APPLICABLE.

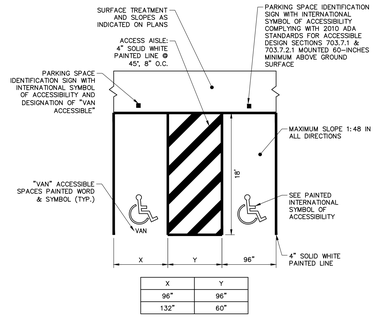
ACCESSIBLE CURB RAMP (ACR) – TYPE 'H'
N.T.S.



NOTES:

1. SYMBOL SHALL BE PAINTED WHITE IN COMPLIANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SECTION 3B.19, SECTION 3B.20 AND FIGURE 3B-22.
2. A BLUE RECTANGULAR (MIN. 36" X 36") BACKGROUND AND WHITE BORDER ARE OPTIONAL IN ACCORDANCE WITH MUTCD SECTION 3B.19 AND FIGURE 3B-22.
3. SYMBOL FINISH SHALL BE NON-GLARE IN ACCORDANCE WITH ADA STANDARDS FOR ACCESSIBLE DESIGN SECTION 703.7.1.

PAINTED INTERNATIONAL SYMBOL OF ACCESSIBILITY
N.T.S.



X	Y
96"	96"
132"	60"

ACCESSIBLE PARKING STALL LAYOUT
N.T.S.

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Roux Campus

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The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

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NOT FOR CONSTRUCTION

Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

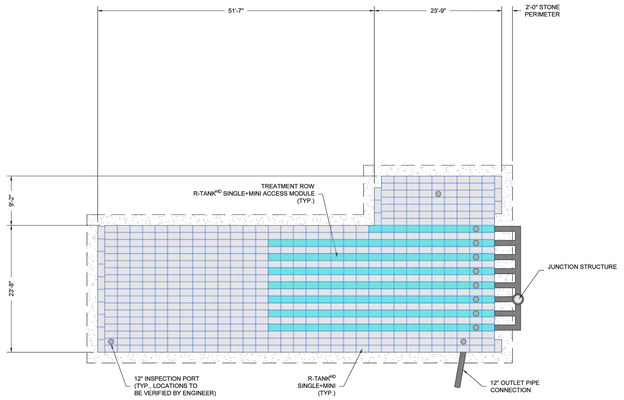
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

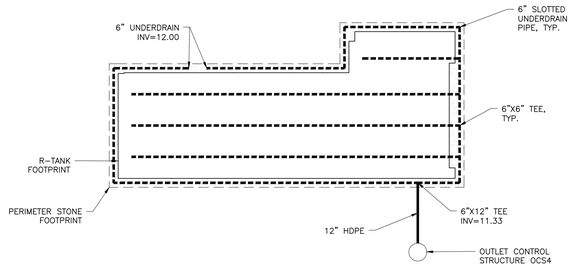
Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 4

D-404



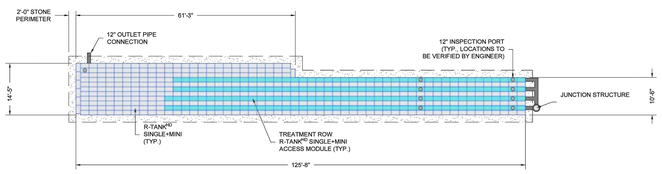
R-TANK MODULE LAYOUT



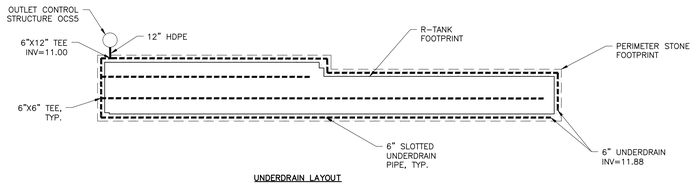
UNDERDRAIN LAYOUT

SAND FILTER 1

N.T.S.



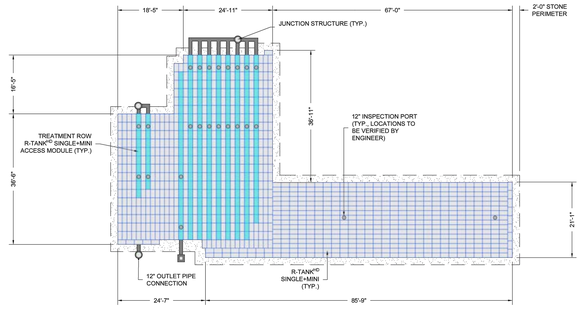
R-TANK MODULE LAYOUT



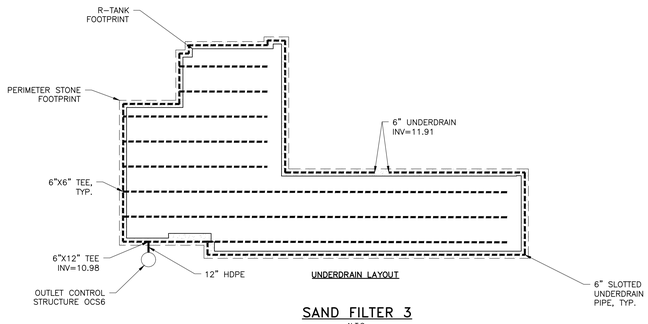
UNDERDRAIN LAYOUT

SAND FILTER 2

N.T.S.



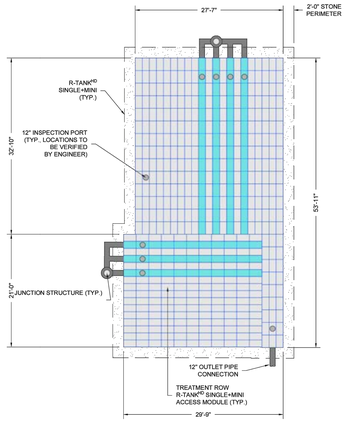
R-TANK MODULE LAYOUT



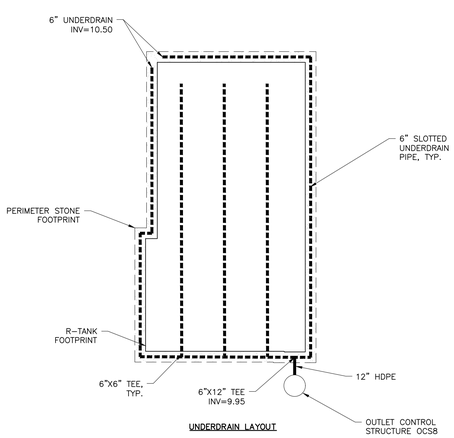
UNDERDRAIN LAYOUT

SAND FILTER 3

N.T.S.



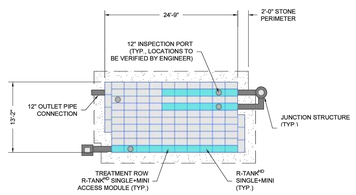
R-TANK MODULE LAYOUT



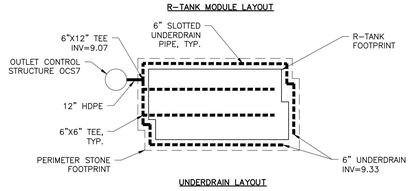
UNDERDRAIN LAYOUT

SAND FILTER 5

N.T.S.



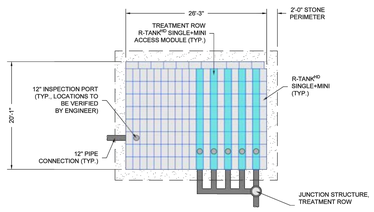
R-TANK MODULE LAYOUT



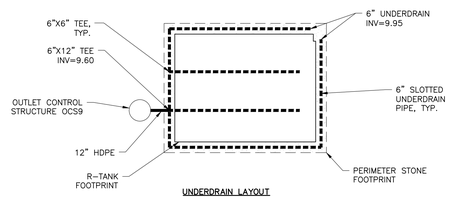
UNDERDRAIN LAYOUT

SAND FILTER 4

N.T.S.



R-TANK MODULE LAYOUT



UNDERDRAIN LAYOUT

SAND FILTER 6

N.T.S.

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Number	Revision	Date
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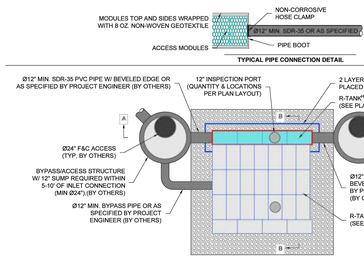
STATE OF MAINE
AMY N. LEBEL
17065
LICENSED
PROFESSIONAL ENGINEER
Amy N. Lebel

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
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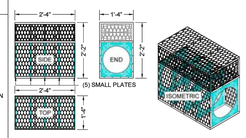
Drawing Title
CIVIL DETAILS - 5

D-405

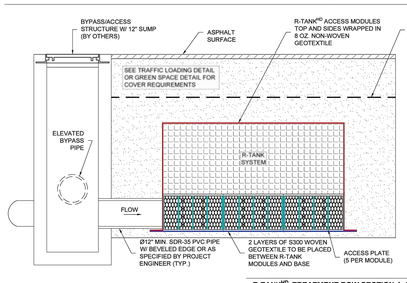


TYPICAL PIPE CONNECTION DETAIL

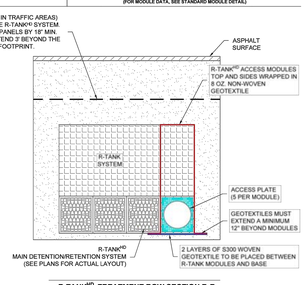
R-TANK^HD TREATMENT ROW WITH PRECAST INLET/ACCESS STRUCTURE



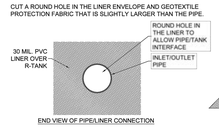
SINGLE + MINI R-TANK^HD - ACCESS MODULE DETAIL
(FOR MODULE DATA, SEE STANDARD MODULE DETAIL)

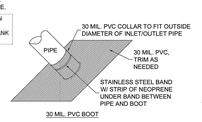


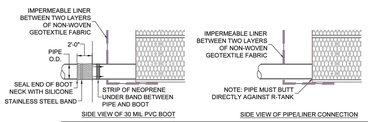
R-TANK^HD TREATMENT ROW SECTION A-A



R-TANK^HD TREATMENT ROW SECTION B-B

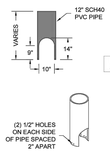


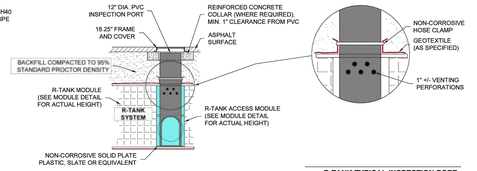




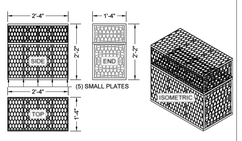
R-TANK TYPICAL EXCAVATION INLET/OUTLET W/ 30 MIL PVC PIPE BOOT DETAIL

NOTES
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^FC, R-TANK^FD, R-TANK^VO AND R-TANK^ID MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.





R-TANK TYPICAL INSPECTION PORT

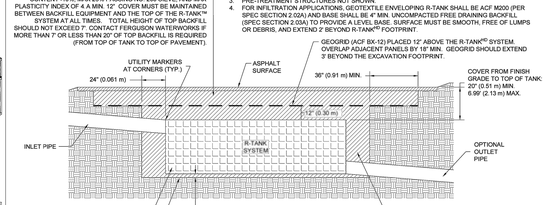


MODULE DATA

GEOMETRY:	**LOAD RATING:**
LENGTH = 28.15 IN. (715 MM)	33.4 PSI, (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS20/HS25 - SEE SPEC FOR
HEIGHT = 25.98 IN. (660 MM)	COVER REQUIREMENTS
TANK VOLUME = 6.67 CF	**MATERIAL:**
STORAGE VOLUME = 6.33 CF	100% RECYCLED POLYPROPYLENE
VOID INTERNAL VOLUME: 95%	**SMALL PLATES REQUIRED:**
VOID SURFACE AREA: 90%	5/SEGMENT, 10/MODULE

SINGLE + MINI R-TANK^HD - MODULE DETAIL

TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B). STONE =1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C). STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT=10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4 A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

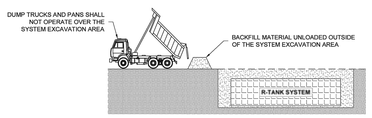


NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^HD MODULE SHEET.
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^HD FOOTPRINT.

R-TANK^HD & HS-20 LOADS - SECTION VIEW

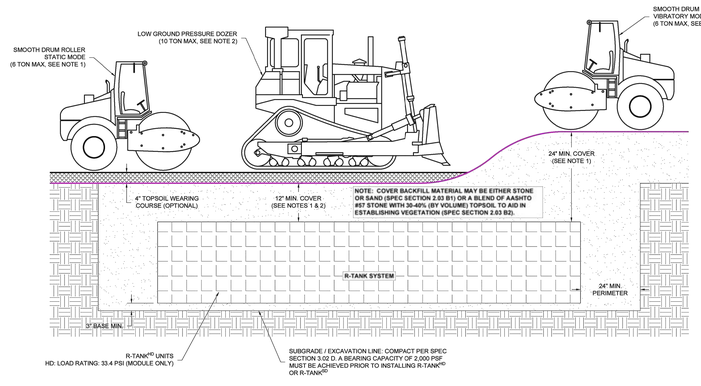
BASE: 3" (0.08 m) MIN. FREE DRAINING BACKFILL (SPEC SECTION 2.03B) COMPACTED TO 95% STANDARD PROCTOR DENSITY IS REQUIRED TO PROVIDE A LEVEL BASE SURFACE. MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^HD FOOTPRINT. A BEARING CAPACITY OF 2,000 PSF MUST BE ACHIEVED PRIOR TO INSTALLING R-TANK^HD. NATIVE SOILS MAY BE ACCEPTABLE IF DETERMINED TO BE STABLE BY OWNER'S ENGINEER.

SIDE BACKFILL: FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE =1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). MUST BE FREE FROM LUMPS, DEBRIS AND OTHER SHARP OBJECTS. SPREAD EVENLY TO PREVENT R-TANK^HD MOVEMENT. COMPACT SIDE BACKFILL WITH POWERED MECHANICAL COMPACTOR IN 12" LIFTS (PER SPEC SECTION 3.05 A2).



DUMP TRUCK DETAIL (SEE NOTE 3)

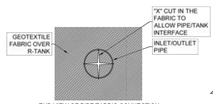
NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
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 DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
4. 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). **SPEC SECTION 3.05 B**
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.

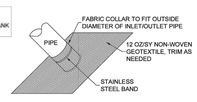


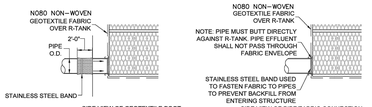
CONSTRUCTION EQUIPMENT COVER DETAIL - GREEN SPACE

NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 18" | 24"
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

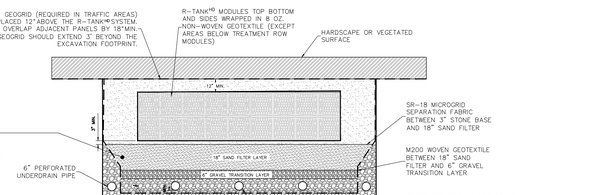
CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.







R-TANK TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL



NOTE:
1. SAND FILTER MEDIA SHALL MEET SPECIFICATIONS FOR MEDOT AGGREGATE #703.01, WITH BETWEEN 8–10% FINES PASSING THE #200 SIEVE; MATERIAL SHALL BE INSTALLED IN TWO LIFTS AND COMPACTED TO 92% PROCTOR AND INFILTRATION TESTED; INFILTRATION RATES SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION OF OVERLYING MATERIALS

R–TANK SPECIFICATION

PART 1 - GENERAL
1.01 RELATED DOCUMENTS
A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK-INCLUDED
A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety of construction workers and adjacent structures. Excavations shall be in accordance with the owner's and OSHA requirements.
B. Supply and install R-Tank(LD/ R-TankHD/, R-TankSD/, or R-TankLVD/ system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
C. Provide and construct the cover of the R-Tank system including, stone backfill, structural fill cover, and pavement section as specified.
D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL
A. All materials shall be manufactured in ISO certified facilities.
B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
C. Installation Personnel shall be trained by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS
A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
B. Submit manufacturer's product data, including compressive strength and unit weight.
C. Submit manufacturer's installation instructions.
D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
F. Submit required experience and personnel requirements as specified in Section 1.03.
G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Protect R-Tank system from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.
B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE.
A. Prior to the start of installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS
A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
B. Protect adjacent work from damage during R-Tank system installation.
C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS
2.01 R-TANK UNITS
A. R-Tank: Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).
B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank^FC 185x30	R-Tank^FD 185x30	R-Tank^VO 185x30	R-Tank^ID 185x30
Void Ratio	Volume available for water storage	95%	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%	90%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	30.0 psi	33.4 psi	40.6 psi	134.0 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	22.4 psi	29.6 psi	N/A
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	12"	12"	12" (STONE BACKFILL)
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	24"	18"	12" (STONE BACKFILL)
Unit Weight	Weight of plastic per cubic foot of tank	3.03 lbs / cf	3.03 lbs / cf	3.88 lbs / cf	6.3 lbs / cf
Fill Thickness	Thickness of load bearing backfill	0.35 inches	0.35 inches	0.50 inches	N/A
Tank Dimensions	As manufactured design for use	14' – 10" x	14' – 10" x	14' – 10" x	14' – 10" x

C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 GEOSYNTHETICS
A. Geotextile: Nonwoven needle punched fabric as required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
2. Infiltration Application: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
B. Geogrid: For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is not required for R-TankLID/ installations, and is often not required for non-traffic load applications. **REFER TO R–TANK QUANTITIES TABLE ON 2–406 FOR SYSTEMS REQUIRING GEOGRID.**

2.03 BACKFILL & COVER MATERIALS
A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system for bedding materials. Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications: Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
a. For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14" or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.
C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS
A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

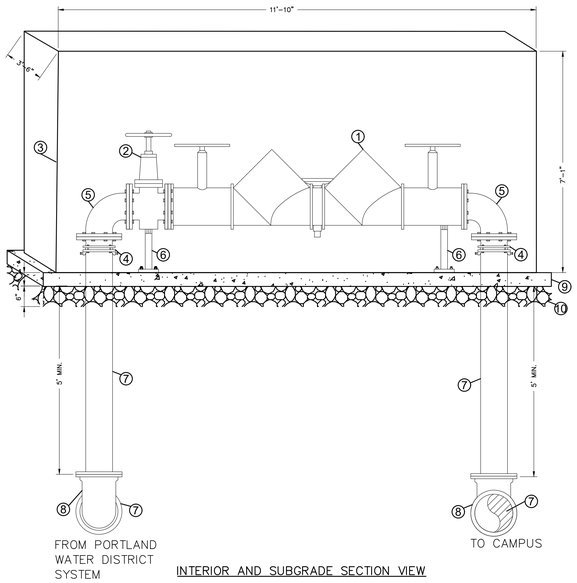
PART 3 - EXECUTION
3.01 ASSEMBLY OF R-TANK UNITS
A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION
A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank module footprint in each direction to allow adequate space for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 PREPARATION OF BASE
A. Place a thin layer (1" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within ½" (+/- ½") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.
B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 2' perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 INSTALLATION OF THE R-TANKS
A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer. Use tape, special adhesives, sandbags or other means to secure overlaps. As geotextiles can be damaged by extreme heat, smoking is not permissible onsear the geotextile, and tools using a flame to tack the overlaps, such as propane torches, are prohibited.
B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A).
C. Install R-Tank modules by placing side by side in accordance with the design drawings. Add no lateral connections are required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank systems. The modules are to be oriented as per the design drawing with required depth as shown on plans.
1. Ensure that the R-Tank modules are placed side by side with no gaps between the modules around the perimeter of the system. This will typically require that the two ends of the tank area will have a row of tanks placed perpendicular to all other tanks. If this is not shown in the construction drawings, it is a simple field adjustment that will have minimal effect on the overall system footprint. Refer to R-Tank Installation Guide for more details.
2. For LID installations, there is no perpendicular end row required.
D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.
E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against the R-Tank system.
F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.
G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with 'U' bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

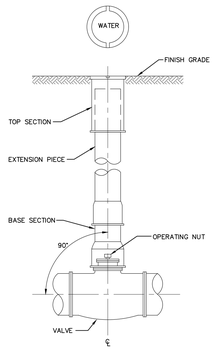
3.05 BACKFILLING OF THE R-TANK UNITS
A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used



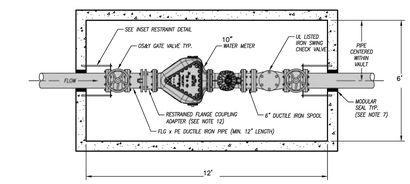
INTERIOR AND SUBGRADE SECTION VIEW

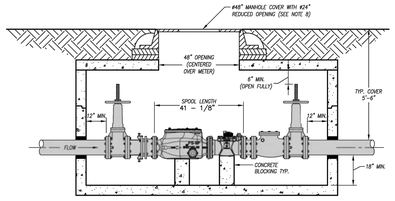
RPZ BACKFLOW PREVENTER WITH HEATED ENCLOSURE
N.T.S.

ITEM	DESCRIPTION	QTY
1	10" RPZ BACKFLOW PREVENTER (WATTS LF909M1-NRS OR EQUAL)	1
2	12" OS&Y GATE VALVE	1
3	SINGLE SECTIONAL HEATED ALUMINUM ENCLOSURE (HUBBELL HB10E OR EQUAL)	1
4	12" FLANGE COUPLING ADAPTOR	2
5	12" FLANGED 90° BEND	2
6	PIPE SUPPORTS	2
7	12" CLDI PIPE	4
8	12" MJ CLDI 90 DEG BEND	2
9	4" THICK CONCRETE PAD (EXTENDS 4.5" ON EACH SIDE) WITH REINFORCING STEEL RODS SPACED ONE FOOT	1
10	6" THICK GRAVEL BASE LAYER	1



VALVE WITH VALVE BOX
N.T.S.

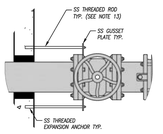




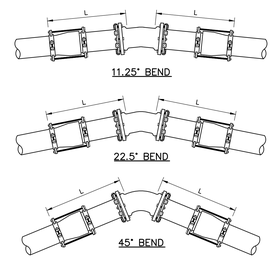
WATER METER VAULT
N.T.S.

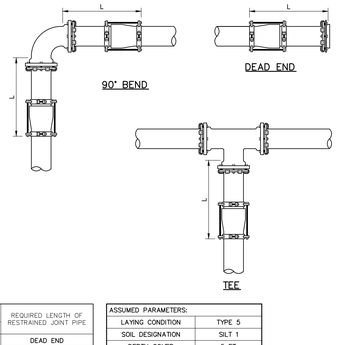
NOTES:

1. THE VAULT SHALL BE MADE OF PRECAST CONCRETE. CONTRACTOR SHALL SUBMIT SHOP DRAWING TO ENGINEER AND PWD FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
2. DUCTILE IRON PIPE SHALL BE USED THROUGHOUT VAULT. ALL PIPE JOINTS BETWEEN THE SERVICE VALVE AND THE METER VAULT SHALL BE RESTRAINED PER SPECIFICATION SECTION 33 14 11.01 PART 2.05.
3. VICTAULIC COUPLINGS ARE NOT APPROVED WITHIN METER VAULTS. DUCTILE IRON PIPE JOINTS WITHIN VAULT SHALL BE FLANGED.
4. ALL SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (LINK-SEAL OR SIMILAR). OPENINGS TO BE WATER TIGHT.
5. ENTRY COVER FOR PAVED SURFACES SHALL BE EAST JORDAN IRON WORKS MODEL V7048-2 OR EQUAL. THE COVER SHALL BE CAST IRON OR STEEL AND SHALL BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
6. WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER VAULT.
7. METER VAULT AND COVER SHALL BE AASHTO HS-20 RATED.
8. RESTRAINED FLANGE COUPLING ADAPTER SHALL BE FORD MODEL RFAD UNLESS OTHERWISE APPROVED BY PWD.
9. PIPING IN AND OUT OF VAULT SHALL BE MECHANICALLY RESTRAINED TO INTERIOR VAULT WALL (TYP. OF 4 EACH WALL). SEE RESTRAINT DETAIL.
10. ONLY GATE VALVES SHALL BE USED. GATE VALVES SHALL BE OPEN RIGHT.
11. PIPE SUPPORTS SHOULD NOT BE WITHIN 6" OF FLANGES TO PREVENT INTERFERENCE WITH BOLT PATTERNS.
12. ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
13. PWD WILL SUPPLY THE WATER METER. ALL OTHER PIPE, EQUIPMENT, AND FITTINGS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.
14. METER LAYING LENGTH SHOULD BE CONFIRMED WITH PWD PRIOR TO SETTING PIPE. PWD REQUIRES THAT A FLANGED METER SPOOL PIECE BE INSTALLED PRIOR TO METER SET TO ENSURE PROPER SPACING. THE METER SPOOL WILL BE PROVIDED BY PWD AND CAN BE PICKED UP AT PWD CUSTOMER SERVICE, 225 DOUGLASS STREET, PORTLAND, DURING NORMAL BUSINESS HOURS.



RESTRAINT DETAIL





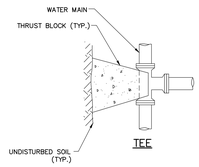
DIAMETER	REQUIRED LENGTH OF RESTRAINED JOINT PIPE ON BOTH SIDES OF FITTING				REQUIRED LENGTH OF RESTRAINED JOINT PIPE
	HORIZONTAL BEND				
	11.25°	22.5°	45°	TEE/90°	DEAD END
6"	2'	4'	9'	21'	51'
8"	3'	6'	11'	27'	67'
10"	4'	7'	14'	32'	81'
12"	4'	8'	16'	38'	96'
16"	5'	10'	20'	48'	123'

ASSUMED PARAMETERS:	
LAYING CONDITION	TYPE 5
SOIL DESIGNATION	SILT 1
DEPTH COVER	5 FT
DESIGN PRESSURE	200 PSI
SAFETY FACTOR	1.5

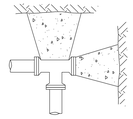
NOTES:

1. RESTRAINED JOINTS SHALL BE MECHANICAL JOINT OR PUSH-ON RESTRAINED JOINT AS SPECIFIED IN SECTION 33 14 11.01.

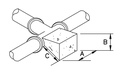
THRUST RESTRAINT DETAIL
N.T.S.



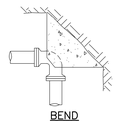
TEE



TEE (PLUGGED)



TEE

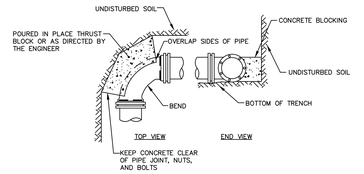


BEND

NOMINAL PIPE SIZE (INCHES)	MAXIMUM PIPE OD (INCHES)	REQUIRED BEARING AREA (SQ FT)					
		90 DEG	60 DEG	45 DEG	30 DEG	22.30 DEG	11.25 DEG
3	3.96	2.0	1.4	1.1	0.7	0.5	0.3
4	4.80	2.9	2.0	1.6	1.1	0.8	0.4
6	6.90	6	4	3	2.2	1.6	0.8
8	9.05	10	7	6	4	3	1.4
10	11.10	15	11	8	6	4	2.1
12	13.20	22	15	12	8	6	3
14	15.30	29	21	16	11	8	4
16	17.40	38	27	20	14	10	5
18	19.50	48	34	26	17	13	7
20	21.60	58	41	32	21	16	8
24	25.80	83	59	45	30	23	12
30	32.00	128	90	69	47	35	18
36	38.30	183	130	99	67	51	25

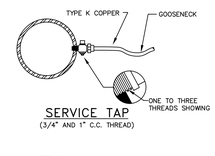
NOTES:
1. MAXIMUM TEST PRESSURE = 1.5x150 PSI
2. MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
3. BEARING AREA = AxB
4. C SHALL BE GREATER THAN A/2 AND B/2
5. WRAP FITTINGS WITH POLYETHYLENE PRIOR TO CONSTRUCTING THRUST BLOCKS. NO JOINTS SHALL BE COVERED WITH CONCRETE.

THRUST BLOCKS FOR HORIZONTAL BENDS AND LOWER VERTICAL BENDS
N.T.S.

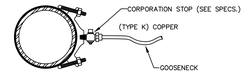


STANDARD BEND BLOCKING
N.T.S.

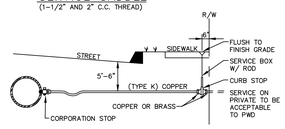
STANDARD TEE BLOCKING
N.T.S.



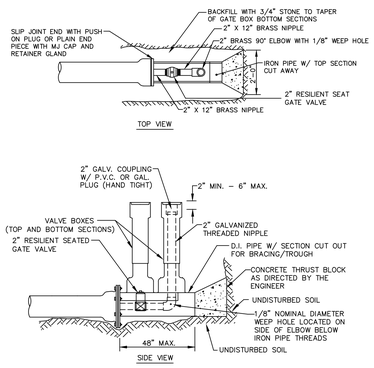
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



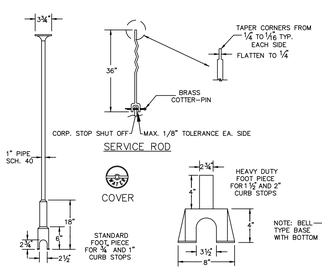
SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



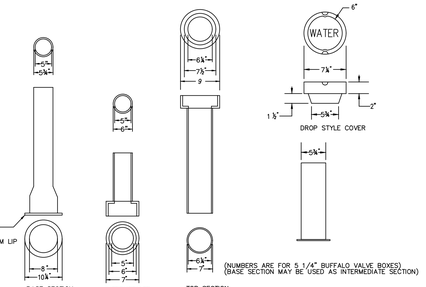
TYPICAL SERVICE CONNECTION
N.T.S.



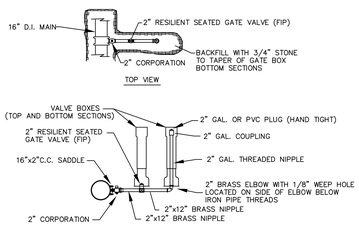
STANDARD 2" BLOW OFF
N.T.S.



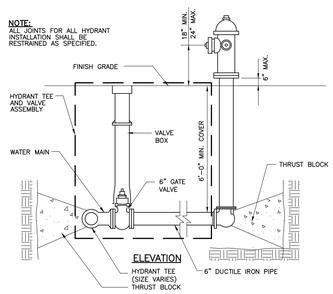
NOTE : ANY EXTENSION OF SERVICE BOX REQUIRES:
1) 1" FEMALE IRON PIPE COUPLING
2) 1" THREADED PIPE
(THIS IS TO BE A NON-WELDED, TWO PIECE ARRANGEMENT. SLIP ON ADAPTERS ARE NOT PERMISSIBLE.)



VALVE BOX & COVER
N.T.S.



SIDE-ARM BLOW-OFF 4" & LARGER MAINS
N.T.S.



HYDRANT ASSEMBLY
N.T.S.

IDEALS Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Woodard & Curran

LAND-USE PERMIT SET

NOT FOR CONSTRUCTION

Number	Revision	Date
1	RESPONSE TO CITY COMMENTS	5/17/2024

STATE OF MAINE
AMY N. LEBEL
17065
LICENSED PROFESSIONAL ENGINEER

Stamp

Job #	2202
Project	THE ROUX INSTITUTE AT NORTHEASTERN UNIVERSITY
Drawn By	BCM
Designed By	ANL
Checked	DLC
Date	26 MARCH 2024
Scale	AS NOTED

Drawing Title
CIVIL DETAILS - 7

D-407



PHASE 1 SITE PLAN

NORTHEASTERN IDEALS Portland, ME

0' 40'

STIMSON



PHASE 1 SITE PLAN

NORTHEASTERN IDEALS Portland, ME

STIMSON



PATHWAY AT PROPERTY LINE PLAN
1"=20'

MATERIALS LEGEND

PAVEMENT

P1	ASPHALT PAVING - VEHICULAR	1 L6.00
P2	CONCRETE PAVEMENT-PEDESTRIAN	2 L6.00
P3	CONCRETE PAVEMENT-VEHICULAR	3 L6.00
P4	GRANITE PAVERS 01 - VEHICULAR	5 L6.00
P5	GRANITE PAVERS 02-VEHICULAR	5 L6.00
P6	PRECAST CONCRETE PAVERS - VEHICULAR	7 L6.00
P7	PRECAST CONCRETE PAVERS - PEDESTRIAN	7 L6.00
P8	GRANITE PAVERS 01- PEDESTRIAN	6 L6.00
P9	GRANITE COBBLESTONE PAVERS - PERMEABLE	8 L6.00
P10	GRANITE COBBLESTONE PAVERS- VEHICULAR	7 L6.00
P11	DECOMPOSED GRANITE PAVEMENT	13 L6.00

CURBS AND EDGES

C1	GRANITE CURB - 6" RAISED	9 L6.00
C2	GRANITE CURB - FLUSH	11 L6.00
C3	GRANITE CURB - TRANSITION	15 L6.00
C4	GRANITE CURB - MOUNTABLE	12 L6.00
E1	STEEL EDGING	14 L6.00
E2	RECLAIMED RAIL TRACK	
TD	TRENCH DRAIN	3 L6.02
SI	STEEL CURB INLET (QUANTITY: 5)	21 L6.00
RR	SHORELINE PROTECTION, SEE MARINE ENGINEER DRAWINGS	

WALLS AND STAIRS

W1	ARCHITECTURAL CONCRETE RETAINING WALL	1 L6.01
W2	CONCRETE RETAINING WALL WITH STONE VENEER	2 L6.01
W3	CONCRETE FOUNDATION WALL AT WOOD DECK	16 L6.00
W4	BOARD FORMED CONCRETE RETAINING WALL	1 L6.01
W5	MONOLITHIC STONE RETAINING WALL ON DENSE GRADED CRUSHED STONE BASE	19 L6.00
S1	MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION	17 L6.00

SITE FURNISHINGS

WB	MONOLITHIC GRANITE BENCH WITH WOOD INSET	1 L6.02
WW	WOOD BENCH AT CONCRETE RETAINING WALL	20 L6.00
CB	PRE-CAST CONCRETE BRIDGE - PEDESTRIAN	2 L6.02
WD	WOOD DECK AT TERRACED LANDSCAPE	16 L6.00
HR	STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING	18 L6.00
CR	STAINLESS STEEL CURB RAIL	2 L6.02
TG	VEHICULAR TIMBER GUARDRAIL	3 L6.01
DW	DETECTABLE WARNING STRIP AT ADA CURB RAMP	15 L6.00
VG	VEHICULAR GATE (QUANTITY: 1)	7 L6.01
BR	BIKE RACK (QUANTITY: 95)	5 L6.01
B	REMOVABLE BOLLARD (QUANTITY: 17)	4 L6.01
F	WOODEN SLAT FENCE AT PLAYGROUND	3 L6.03

MATERIALS NOTES:

1. MAKE TRANSITIONS BETWEEN CHANGES IN PAVING SMOOTH AND GRADUAL WITH NO SHARP OR ABRUPT CHANGES UNLESS OTHERWISE SHOWN.
2. REFER TO LANDSCAPE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	27 OCTOBER 2023		
Scale	1" = 20'		

Drawing Title

Materials Plan

L3.00

MATERIALS LEGEND

PAVEMENT

P1	ASPHALT PAVING - VEHICULAR	1 / 16.00
P2	CONCRETE PAVEMENT-PEDESTRIAN	2 / 16.00
P3	CONCRETE PAVEMENT-VEHICULAR	3 / 16.00
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CURBS AND EDGES

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WALLS AND STAIRS

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LAND-USE PERMIT SET

Number	Revision	Date

STEPHEN C. STIMSON No. 3916 — LICENSED LANDSCAPE ARCHITECT — STATE OF MAINE

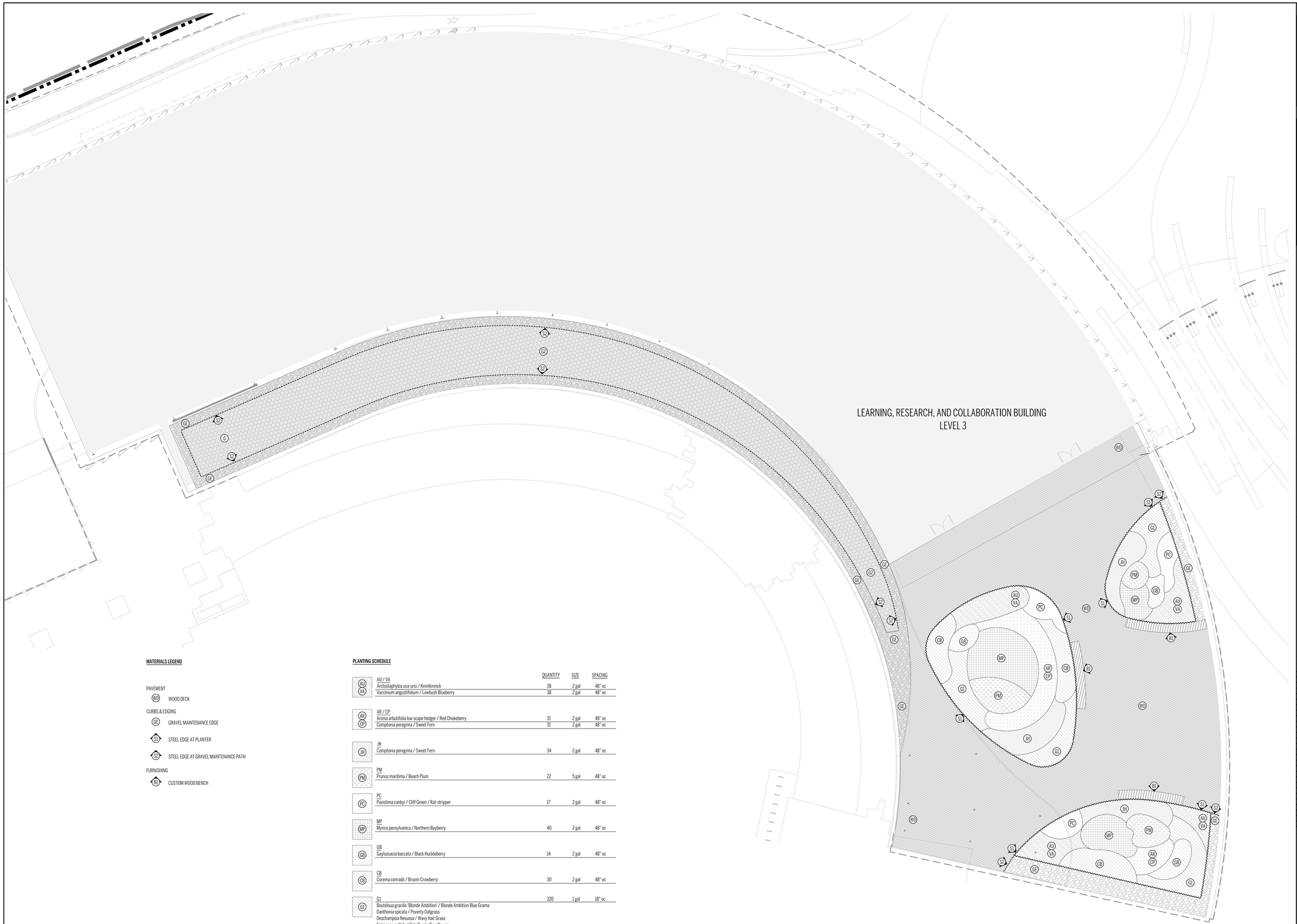
Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	27 OCTOBER 2023		
Scale	1" = 20'		

Drawing Title

Materials Plan

L3.01



MATERIALS LEGEND

PAVEMENT

WD — WOOD DECK

CURBS & EDGING

GE — GRAVEL MAINTENANCE EDGE

S1 — STEEL EDGE AT PLANTER

S2 — STEEL EDGE AT GRAVEL MAINTENANCE PATH

FURNISHING

B1 — CUSTOM WOOD BENCH

PLANTING SCHEDULE

		QUANTITY	SIZE	SPACING
AU / VA	AU / VA			
AU, VA	Arctostaphylos uva-ursi / Kinnikinnick	38	2 gal	48" oc
	Vaccinium angustifolium / Lowbush Blueberry	38	2 gal	48" oc
AR / CP	AR / CP			
AR, CP	Aronia arbutifolia low scape hedger / Red Chokeberry	31	2 gal	48" oc
	Comptonia peregrina / Sweet Fern	31	2 gal	48" oc
JH	JH			
JH	Comptonia peregrina / Sweet Fern	34	2 gal	48" oc
PM	PM			
PM	Prunus maritima / Beach Plum	22	5 gal	48" oc
PC	PC			
PC	Paxistima canbyi / Cliff Green / Rat-stripper	17	2 gal	48" oc
MP	MP			
MP	Myrica pensylvanica / Northern Bayberry	40	2 gal	48" oc
GB	GB			
GB	Gaylussacia baccata / Black Huckleberry	14	2 gal	48" oc
CB	CB			
CB	Corema conradii / Broom Crowberry	30	2 gal	48" oc
G1	G1	320	1 gal	18" oc
G1	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama			
	Danthonia spicata / Poverty Oatgrass			
	Deschampsia flexuosa / Wavy Hair Grass			
	Echinacea pallida / Pale Purple Coneflower			
	Festuca rubra / Red Fescue			
	Ionactis linariifolia / Flaxleaf Aster			
	Juncus trifidus / Highland Rush			
	Schizachyrium scoparium / Little Bluestem			
	Sibbaldiopsis tridentata / Three-leaved Cinquefoil			
	Solidago caesia / Wreath Goldenrod			
	Symphyotrichum novae-angliae / New England Aster			
G2	G2	3,628 SF	LiveRoof Maxx (8" soil depth)	
	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama			
	Danthonia spicata / Poverty Oatgrass			
	Deschampsia flexuosa / Wavy Hair Grass			
	Echinacea pallida / Pale Purple Coneflower			
	Festuca rubra / Red Fescue			
	Ionactis linariifolia / Flaxleaf Aster			
	Juncus trifidus / Highland Rush			
	Schizachyrium scoparium / Little Bluestem			
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Scale	1" = 10'

Drawing Title
Roof Plan

L3.10

PARKING STRUCTURE

MATCH INSET PLAN
MATCH L4.00

MATCH L4.01
MATCH L4.00

LEARNING, RESEARCH, AND
COLLABORATION BUILDING

BEAN
BUILDING

5,838 sf
M1

764 sf
M1

606 sf
M1

3,767 sf
M2

2,402 sf
M2

4,904 sf
M2

4,528 sf
M1

521 sf
M1

992 sf
M1

992 sf
M1

1,495 sf
M2

504 sf
M1

MATCH L4.01
MATCH L4.00

MATCH INSET PLAN
MATCH L4.00

PATHWAY AT PROPERTY LINE PLAN
1"=20'

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Drawing Title
Planting Plan

L4.00



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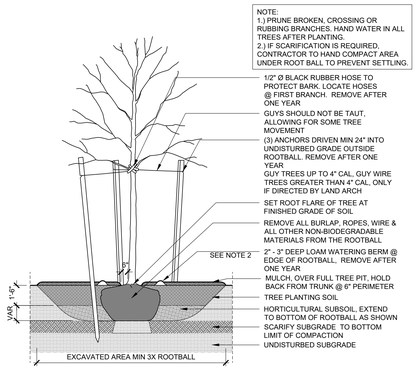
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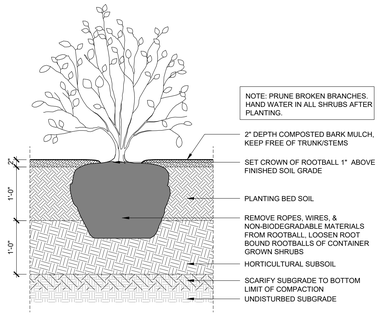
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Planting Plan

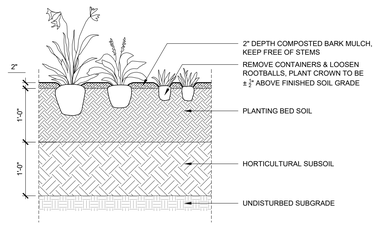
L4.01



3 **TREE PLANTING**
1/4" = 1'-0"



2 **SHRUB PLANTING**
1" = 1'-0"



1 **PERENNIAL AND GROUNDCOVER PLANTING**
1" = 1'-0"

MEADOW SITE PREPARATION AND SEEDING NOTES

1) Materials Delivery, Storage, and Handling:
   a) General:
      i) Deliver materials only after preparation for on-site seeding of the meadow seeding area and adjacent areas has been completed and accepted.
      ii) Prohibit materials only after preparation for on-site seeding of the meadow seeding area and adjacent areas has been completed and accepted.
      iii) Prohibit storage of any equipment or materials on the areas to be seeded once the final mowing prior to seeding has occurred.
   b) Seed:
      i) Seed shall be stored at temperatures between 40- and 60-degrees F and with a relative humidity of between 25-60%.
      ii) Protect seed from drying out, becoming moist or wet, overheating, and /or from contamination during delivery. Seed that has become wet or moldy shall not be accepted.
      iii) Transport temperature shall not exceed 105 F at any time. If transit from cold storage to sowing is greater than 10 days, seed must be kept under storage temperatures and relative humidity described above.

2) Installation Seasons:
   a) Work only within seasonal limitations for proper seeding. These are optimal times for rapid establishment of optimal ground cover, and suppression of weeds.
   b) Permanent meadow seeding should be sown between *July 1 – Aug. 15, Nov. 15 – Dec. 15*
   c) If sowing is being done between August 1 and August 31, use 25% more seed per unit area and expect more weed management.
   d) If seeding occurs between October 1 and January 31st, it must be done when there is no snow on the ground.

3) Site Preparation Acceptance:
   a) Prior to seeding, the site must be inspected by the Landscape Architect, Meadow Specialist, and Meadow Installer to ensure that weed control is acceptable, seed bed is in the appropriate condition for seeding, and the site has been correctly delineated.
   b) If it is determined that conditions are not acceptable for seeding, the unacceptable areas should be mitigated and re-inspected by the Landscape Architect and Meadow Consultant prior to seeding.

4) Seeding and Meadow Acceptance:
   a) If the site preparation process starts and seeding does not occur within proper seeding windows, the Owner shall sow and manage a cover crop to protect and stabilize meadow areas until the next occurring seeding window.
   b) The Landscape Architect and Meadow Consultant must inspect site prior to seed installation and provide site preparation acceptance.
   c) Seeding shall consist of soil preparation, seeding, weeding, and otherwise providing all labor and materials necessary to secure the establishment of acceptable vegetative layer.
   d) After seeding, the site must be inspected by the Landscape Architect and the Meadow Consultant to ensure that seeding has been completed as per construction drawings.
   e) Meadow acceptance occurs a minimum of 120 days from completion of final meadow seeding phase and between May and September
   f) Meadow acceptance shall be an acceptable stand of meadow which is defined to mean a uniform coverage with well established, close stands of plants that meet the following criteria: a minimum of 8 thriving desirable plants per square foot (excluding nurse crop), no bare or dead spots over 36" maximum in any dimension, no more than 10% of the meadow is bare, and free from disease, and detrimental insect infestation.
   g) Begin management practice immediately after seeding is complete for a given area.

5) Meadow Seed:
   a) See Plant Lists in the Drawings for Meadow Seed Mixes
   b) Provide fresh, new crop seed that is 98% Pure Live Seed (for tested species) or better. In no case shall weed seed content exceed 1% by weight. All seeds shall comply with Federal and State seed laws. Seed shall not be coated with herbicides and/or fungicides.
   c) Seed mixes shall be delivered in individual bags labeled by mix and then by seed size within each mix.
   d) Small Seed: 25,000 seeds per/oz or less. Individual seeds can be picked up by hand.
   e) Very Fine Seed: 25,000+ seeds/oz. Individual seeds are too small to be picked up by hand.
   f) Grain: Cover crop grain seed and large wildflower seed (⅛-¼" in size)
   g) Fluffy Seed: Seed with fluffy, feathery seed coat

6) Seed Mix Suppliers:
   a) Ernst Conservation Seeds, Inc., 8884 Mercer Pike, Meadville PA 16335, Tel: 800-873-3321, http://www.ernstseed.com/.
   b) Prairie Moon Nursery, 32115 Prairie Lane, Winona, MN 55987. Tel: (886)417-8156, www.prairiemoon.com
   c) Roundstone Native Seed Company, 9764 Raider Hollow Rd, Upton, KY 42784, Tel: (270) 531-3034, https://roundstoneseed.com
   d) Equal approved by the Architect and Meadow Consultant.

7) Cover Crops
   a) Cover Crop shall be installed in areas disturbed during construction for soil stabilization prior to permanent meadow seed: May 1 – Oct. 1
   b) Cover crops should only be sown in areas with new soil that will not need Erosion Control Fabric, or to protect and stabilize soils outside of the seeding window.

8) Seeding Materials and Equipment:
   a) Use flake pine shavings as a seed mix broadcasting agent.
   b) Do not use fertilizer.
   c) Mechanized equipment for finished grading shall be skid-steer (full-size or mini) or tractor with Harley Rake/Power Rake attachment.
   d) Hand seeding techniques shall be used to sow meadow seed in all areas.
   e) Hydroseeding is not allowed.
   f) No mulch shall be used in seeded meadow areas.

9) Site Preparation: GENERAL
   a) Pre-installation examination and sequencing are required: Before beginning any establishment phase (site preparation, seeding, planting), the Contractor shall examine previous work, related work, and conditions under which this work is to be performed and notify the Landscape Architect in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Contractor accepts substrates, previous work, and conditions.
   b) The Contractor shall not commence work associated with the installation of meadows until all work in the work areas is complete and accepted by the Landscape Architect.
   c) The following shall be completed prior to the commencement of seeding:
      i) Fine gradings and the removal of all debris and weeds.
      ii) Utilities have been installed and accepted.
      iii) All trees, shrubs, and perennials have been planted.
      iv) Permanent and temporary irrigation for trees, shrubs, and perennials located within or adjacent to meadow seeding areas has been installed and accepted.
      v) Stormwater management areas, swales, and drainage areas shall remain dry during seeding and meadow establishment. The contractor and owner shall coordinate site drainage during meadow establishment so to bypass seeded areas from stormwater surge.
   d) Prior to seeding, stake areas with pin flags that identify seed type for each area.
   e) Do not proceed with seeding until the extent and distribution of seeding/planting zones has been accepted by the Landscape Architect.
   f) Meadow seed mix installation should not occur until any vegetation management procedures, such as weed control or other vegetation removals, in meadow areas have been completed and accepted.
   g) The Landscape Architect and Meadow Consultant must inspect site prior to seed installation and provide site preparation acceptance.
   h) A properly compacted seedbed should not allow a shoe to sink more than ½" when walking on the seedbed.
   i) Meadow areas shall have at least one full growing season of weed control prior to seeding and must be inspected by the Meadow Consultant prior to seeding.
   j) Cover crops should only be sown in areas with new soil that will not need Erosion Control Fabric, or to protect and stabilize soils outside of the seeding window.

10) Site Preparation for Dormant Seeding shall occur in the following sequence:
   a) Early May: Site Visit #1 -Site visit with the Contractor and Meadow Consultant to finalize the spray plan (timing and products) and to delineate all meadow extents where soil disturbance will not occur. Once meadow has been delineated all mowing within this area should cease.
   b) Mid-June: Spray #1 - Broadcast spray area with Glyphosate, and other products as specified in Early May visit. At least two weeks without mowing should have occurred prior to the first spray.
   c) Mid-July: Mow #1 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from the date of the first spray prior to mowing.
   d) Early August: Site Visit #2 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   e) Late August: Spray #2 - Broadcast spray area with Glyphosate, and other products as specified in early August visit.
   f) Mid-September: Mow #2 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from date of spray prior to mowing.
   g) Early October: -Site Visit #3 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   h) Late October: Spray #3 - Broadcast spray area with Glyphosate, and other products as specified in early October visit.

11) Site Preparation for Summer Seeding shall occur in the following sequence:
   a) Early August: Site Visit #1 - Site visit with contractor and meadow expert to finalize spray plan (timing and products) and to delineate all meadow extents where soil disturbance will not occur. Once meadow has been delineated all mowing within this area should cease.
   b) Late August: Spray #1 - Broadcast spray area with Glyphosate, and other products as specified in early August visit.
   c) Mid-September: Mow #1 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from date of spray prior to mowing.
   d) Early October: Site Visit #2 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   e) Late October: Spray #2 - Broadcast spray area with Glyphosate, and other products as specified in early October visit.
   f) Early May (the following year): Site Visit #3 -Site visit with contractor and meadow expert to finalize spray plan (timing and products).
   g) Mid-June: Spray #3 - Broadcast spray area with Glyphosate, and other products as specified in early May visit. At least two weeks should without mowing should have occurred prior to the first spray.
   h) Early-July: Mow #2 - Mow any areas where growth is higher than 6" to a height of 4".

12) Permanent Meadow Mix Seeding Installation shall occur in the following sequence:
   a) Install meadow seed mix during the timeline established by this document.
   b) Seeding shall consist of soil preparation, seeding, weeding, and otherwise providing all labor and materials necessary to secure the establishment of acceptable vegetative layer.
   c) Prior to seeding and planting verify meadow area is prepared and ready for vegetation installation and that water is available for seed mixing.
   d) Scarify soil to depth of approximately ½" using appropriate equipment. Repeat as needed to create a seedbed with approximately 50% of the soil exposed. No tilling should be performed, as this will increase weed presence due to the release of dormant weed seeds below the soil surface.
   e) Segregate the seeds according to mix and then by seed size. For the hand broadcast method, "Fluffy," "Small," and "Grain" seed can be combined (henceforth referred to collectively as "Large" seed). "Very Fine" seed (seed which cannot be picked up individually by hand) must always remain separate.
   f) Bulk up "Large" seed by mixing with an inert bulking material such as sawdust, sand, or flake pine shavings. Seed and bulking material can be mixed on tarps spread on the ground. Slightly dampening the bulking material will help the seed to be evenly distributed throughout the bulked material. Use enough bulking material to allow seed to be evenly distributed over the entire project area.
   g) Seeding must happen within 24 hours of mixing seed with wet material.
   h) Only seed that can be installed in a single workday should be mixed at any given time.
   i) Hand sow large seed that has been bulked up with wet inert material. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
   j) Run over area with dethatcher or power rake to lightly cover large seed no to exceed ¼" depth. Use a hand rake if the area is not accessible with machinery.
   k) Bulk up the "Very fine" seed in the manner described above and broadcast evenly over the prepared surface. Do not incorporate into the soil as these species need light to germinate and will not do so if buried in the soil.
   l) Any stabilization fabrics shall only be placed after permanent seed has been sown and accepted.
   m) Begin management practice immediately after seeding is complete for a given area.

13) Management procedures and activities during meadow establishment shall observe the following guidelines:
   a) In the first growing season seeded vegetation should not be allowed to exceed 12" in height.
   b) As vegetation approaches 12" in the meadow, mow or cut all growth to approximately 4-6" height (approximately once per month during the growing season).
   c) Use flail or rotary-style equipment that will chop dead growth.
   d) Sickle bar type mowers that cut at the base of vegetation and drop plant material intact should not be used as the intact cut plant material can inhibit seedling development.
   e) In locations inaccessible to a mower (wet areas, steep slopes, etc.), string trim vegetation to the specified height.
   f) Areas with live plants should not be mown. Areas should be weeded by hand or with small mechanical equipment where appropriate. Work in these areas to be completed by meadow installer.
   g) Do not irrigate seeded meadow areas unless required for planted vegetation, in which case irrigation should be directed at planted vegetation and not on seeded areas, to the extent possible.
   h) Mow entire meadow one time to height of 4" in March/early April with a flail mower. Do not mow lower than 4". String trim areas inaccessible to a mower.
   i) Spot treat weeds as required (min. 1 spray, max. 3 sprays).
   j) Maintenance contractors shall not blow leaves or other debris in the direction of seeded meadows or within seeded meadows.
   k) Conduct a minimum of two (2) annual meadow checks by a meadow expert.

14) If a meadow is damaged, remove damaged materials if necessary. Restore areas to original grades and reestablish meadow as originally installed following the establishment train time frames.
   a) Request Landscape Architect approval prior to beginning repairs.
   b) If a meadow exhibits unsatisfactory growth, perform soil testing for chemical properties, compaction, and infiltration rates.
   c) Adhere to Landscape Architect's recommended remediation.
   d) Remediation may include additional weed control or re-seeding.

15) Reseeding shall be performed at the request of the Landscape Architect.
   a) Reseeding shall be required if meadow establishment/performance is poor, dead spots are apparent, or other unsuitable conditions are present.
   b) Work shall be performed according to the installation calendar above. Work outside this window is not permitted.
   c) Cut or trim vegetation to maximum of 2" prior to reseeding. Remove cut vegetation from the meadow.
   d) When reseeding, follow the seeding process outlined above.
   e) When reseeding areas where erosion control is in place, apply seed mixture starting at the top of the slope and over the extent of erosion control material to be reseeded. Hand rake to move seed through the erosion control matting towards soil contact.t. Hands sow sand/seed mixture down into the areas between the cut vegetation.

16) Warranty and Management
   a) Begin management practice immediately after seeding is complete for a given area.
   b) Meadow acceptance occurs a minimum of 120 days from completion of final meadow seeding phase and between May and September
   c) The Contractor shall warranty and maintain the meadow for two years following meadow acceptance.

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	CONT	SIZE	QTY	REMARKS
AB	Abies balsamea / Balsam Fir	B & B	5'-6" H	3	
AC	Acer saccharinum / Silver Maple	B & B	2"-2.5" Cal	3	
AR	Acer rubrum / Red Maple	B & B	2"-2.5" Cal	3	
AS	Acer saccharum 'Green Mountain' / Sugar Maple	B & B	2"-2.5" Cal	11	
AF	Acer x freemanii 'Jeffersred' / Autumn Blaze® Freeman Maple	B & B	2"-2.5" Cal	41	
AA	Amelanchier arborea 'Autumn Brilliance' / Autumn Brilliance Downy Serviceberry	B & B	3'-4" H	41	
BA	Betula alleghaniensis / Yellow Birch	B & B	1.5"-2" Cal	24	
BP1	Betula papyrifera / Paper Birch	B & B	1.5"-2" Cal	22	
BP	Betula papyrifera / Paper Birch	B & B	1.5"-2" Cal	10	
BG	Betula populifolia / Gray Birch	B & B	6 - 8' H	4	
CD	Calocedrus decurrens / Incense Cedar	B & B	5'-6" H	5	
CO	Carya ovata / Shagbark Hickory	B & B	2"-2.5" Cal	3	
CC	Cercis canadensis / Eastern Redbud	B & B	3'-4" H	10	
CT	Chamaecyparis thyoides / Atlantic White Cypress	B & B	5'-6" H	4	
CV	Crataegus viridis 'Winter King' / Winter King Hawthorn	B & B	5'-6" H	15	
GK	Gymnocladus dioica / Kentucky Coffeetree	B & B	2"-2.5" Cal	3	
JC	Juglans cinerea / Butternut	B & B	2"-2.5" Cal	6	
LL	Larix laricina / Tamarack	B & B	8'-10" H	13	
LL2	Larix laricina / Tamarack	B & B	5'-6" H	3	
MV	Magnolia virginiana / Sweetbay Magnolia	B & B	4'-5" H	4	
MS	Malus sargentii / Sargent Crabapple	B & B	4'-5" H	2	
NS	Nyssa sylvatica / Tupelo	B & B	1.5"-2" Cal	21	
PG	Picea glauca / White Spruce	B & B	6'-7" H	12	
PR	Pinus rigida / Pitch Pine	B & B	3'-4" H	30	
PS	Pinus strobus / White Pine	B & B	6'-7" H	21	
PT	Populus tremuloides / Quaking Aspen	B & B	1.5"-2" Cal	38	
QA	Quercus alba / White Oak	B & B	1.5"-2" Cal	17	
QB	Quercus bicolor / Swamp White Oak	B & B	2"-2.5" Cal	4	
QC	Quercus coccinea / Scarlet Oak	B & B	2"-2.5" Cal	5	
QI	Quercus ilicifolia / Scrub Oak	B & B	2"-2.5" Cal	3	
QM	Quercus macrocarpa / Burr Oak	B & B	2"-2.5" Cal	1	
QR	Quercus rubra / Red Oak	B & B	2"-2.5" Cal	22	
SS	Sassafras albidum / Sassafras	5 Gal.	1"-1.5" Cal	7	
TO	Thuja occidentalis / American Arborvitae	B & B	6-7' H	9	
TG	Thuja standishii x plicata 'Green Giant' / Green Giant Arborvitae	B & B	5'-6" H	12	
TA	Tilia americana / American Linden	B & B	1.5"-2" Cal	2	

SHRUBS		AVG SIZE	SPACING	QTY	AREA
SH	Shrub (See SHRUBS below for ground plane species list)	2 GAL	48" OC	3,325	51,081 SF

PERENNIALS		AVG SIZE	SPACING	QTY	AREA
P	Perennials - container (See PERENNIALS below for ground plane species list)	1 QT	30" OC	4,396	26,256 SF
MP	Perennials - plug (See PERENNIALS below for ground plane species list)	2" Plug	18" o.c.	45,753	89,360 SF

LAWN		AREA
L	Lawn sod	41,368 SF

SEEDED AREAS		SIZE	SPACING	AREA	REMARKS
M3	Perimeter Meadow	SEED		17,307 sf	
M1	Upland Meadow	SEED		93,555 sf	
M2	Wet Meadow	SEED		18,214 sf	

NOTE: Tree caliper sizes listed are intended to depict the average size of all trees installed. Exact installed sizes may vary.

SPECIES LIST (GROUND PLANE)

SHRUBS

SHRUB PALETTE
Arctostaphylos uva-ursi / Kinnikinnick
Aronia arbutifolia / Red Chokeberry
Aronia arbutifolia low scape hedger / Red Chokeberry
Celphanthus occidentalis / Buttonbush
Clethra alnifolia / Mountain Sweet Pepperbush
Clethra alnifolia 'Hummingbird' / Hummingbird Summersweet
Comptonia peregrina / Sweet Fern
Fothergilla gardenii / Dwarf Fothergilla
Gaylussacia baccata / Black Huckleberry
Ilex glabra 'Shamrock' / Shamrock Inkberry Holly
Ilex verticillata / Winterberry
Ilex verticillata 'Red Sprite' / Red Sprite Winterberry
Juniperus horizontalis / Creeping Juniper
Kalmia angustifolia / Sheep Laurel
Myrica gale / Sweetgale
Perennial Plugs / Perennial Plugs
Perennial Plugs / Perennial Plugs
Prunus maritima / Beach Plum
Rhododendron viscosum / Swamp Azalea
Spiraea alba / Meadowsweet
Vaccinium corymbosum / Highbush Blueberry
Viburnum dentatum / Viburnum
Viburnum dentatum 'Christom' / Blue Muffin® Arrowwood Viburnum
Viburnum trilobum 'Compactum' / Compact American Cranberrybus
Viburnum x 'Burkwoodii' / Burkwood Viburnum

PERENNIALS

PERENNIALS
Achillea millefolium / Common Yarrow
Actaea racemosa / Black Snakeroot
Adiantum pedatum / Northern Maidenhair Fern
Ammophila breviligulata / American Beachgrass
Andropogon virginicus / Broomsedge Bluestem
Carex pensylvanica / Pennsylvania Sedge
Carex stricta / Tussock Sedge
Danthonia spicata / Poverty Oatgrass
Dennstaedtia punctilobula / Hay-scented Fern
Doellingeria umbellata / Flat-topped Aster
Echinacea purpurea / Coneflower
Elymus virginicus / Virginia Wild Rye
Festuca rubra / Red Fescue 305
Gaultheria procumbens / Wintergreen
Helenium autumnale / Sneezeweed
Iris versicolor / Blue Flag
Juncus greenei / Greene's Rush
Maianthemum canadense / Canada Mayflower
Osmundastrum cinnamomeum / Cinnamon Fern
Panicum virgatum / Switch Grass
Panicum virgatum 'Cape Breeze' / Cape Breeze Switch Grass
Penstemon hirsutus / Hairy Beardtongue
Polystichum acrostichoides / Christmas Fern
Schizachyrium scoparium / Little Bluestem
Solidago bicolor / White Goldenrod
Symphyotrichum ericoides / Heath Aster
Symphyotrichum novae-angliae / New England Aster
Symphyotrichum novi-belgii / New York Aster

IDEALS
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Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

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LAND-USE PERMIT SET

Number	Revision	Date

STEPHEN C. STIMSON No. 3916 REGISTERED LANDSCAPE ARCHITECT STATE OF MAINE

Stamp

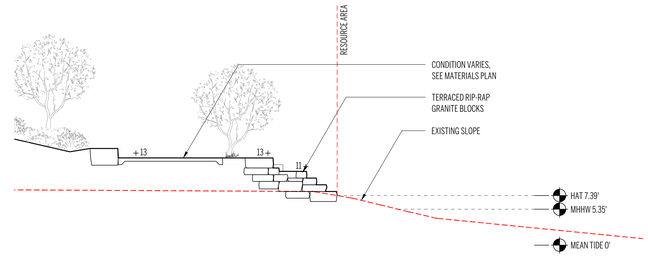
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	27 OCTOBER 2023
Scale	as noted

Drawing Title
Plant Schedules and Planting Details

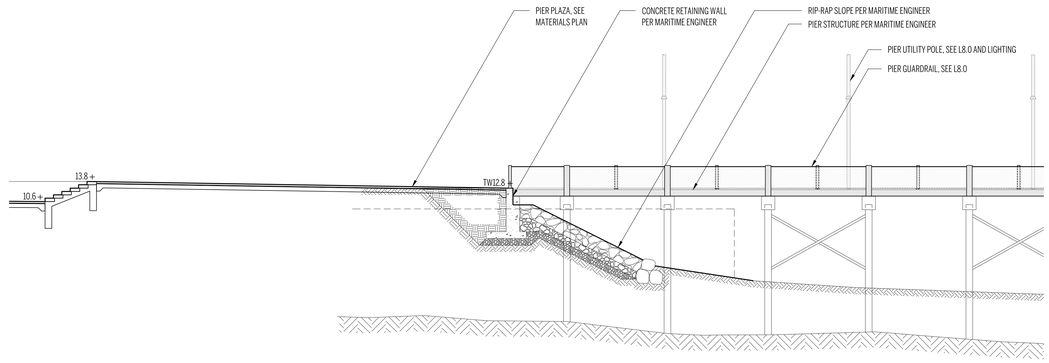
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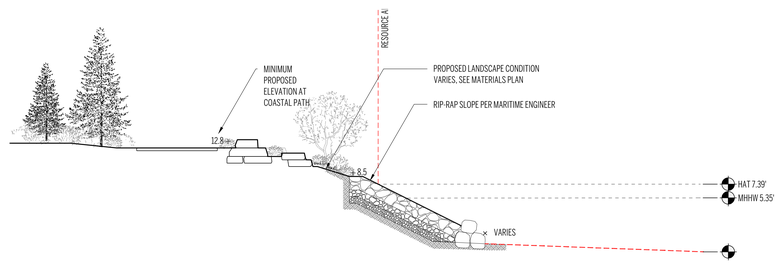
KEY PLAN
1"=100'



3 SECTION AT TERRACED RIP-RAP
1/8" = 1'-0"



2 SECTION AT PIER INTERFACE
1/8" = 1'-0"



1 TYPICAL SECTION AT SHORLINE
1/8" = 1'-0"

0 5' 10' 20' N

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Number	Revision	Date

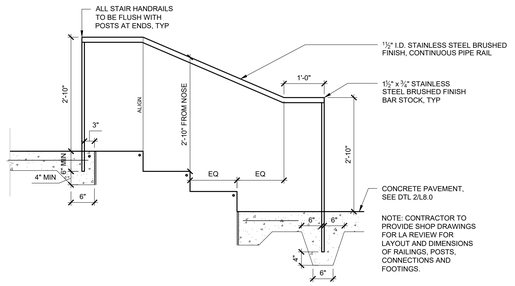
LICENSED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

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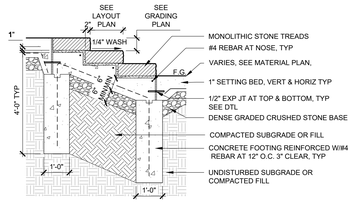
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	27 OCTOBER 2023
Scale	AS NOTED

Drawing Title
--- Site Sections

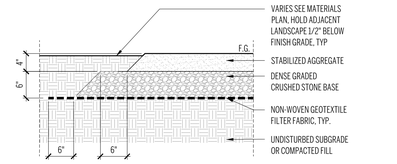
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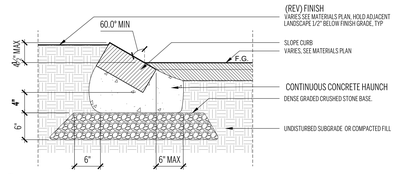
18 STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING
3/4" = 1'-0"



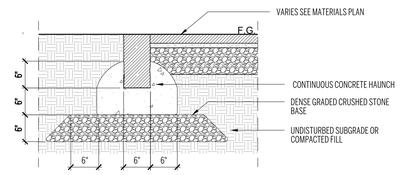
17 MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION
1/2" = 1'-0"



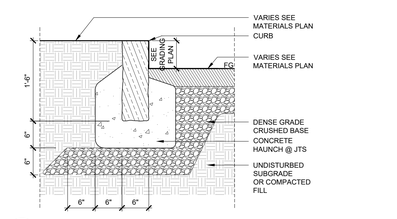
13 DECOMPOSED GRANITE PAVING
1" = 1'-0"



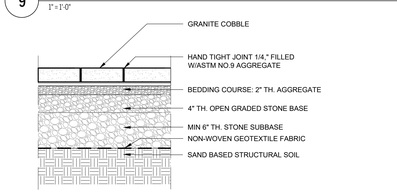
12 GRANITE CURB - MOUNTABLE
1" = 1'-0"



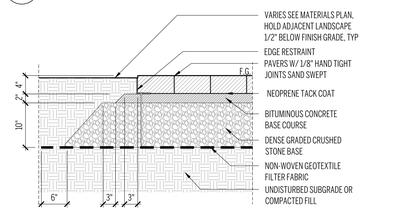
11 GRANITE CURB - FLUSH
1" = 1'-0"



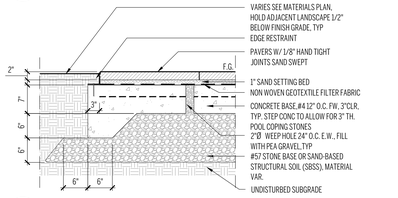
9 GRANITE CURB
1" = 1'-0"



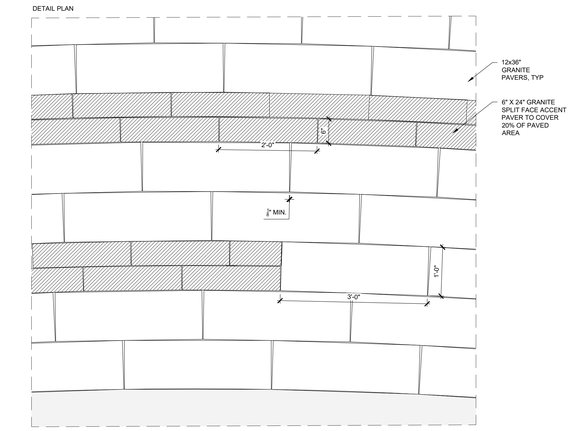
8 GRANITE COBBLE AT TREE PITS
1" = 1'-0"

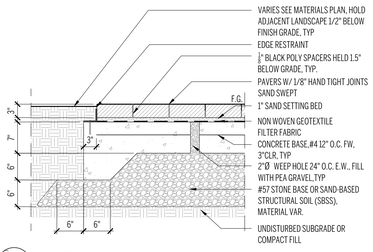


7 PRECAST CONCRETE PAVERS/COBBLESTONE
1" = 1'-0"

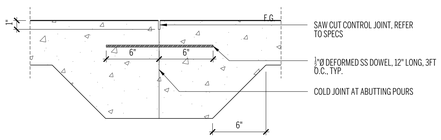


6 GRANITE PAVERS - PEDESTRIAN
1" = 1'-0"

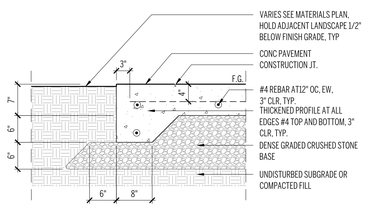




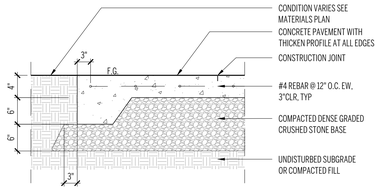
5 GRANITE PAVERS - VEHICULAR
1" = 1'-0"



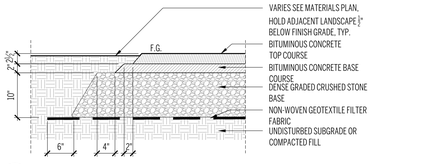
4 CONCRETE CONSTRUCTION JOINT
2" = 1'-0"



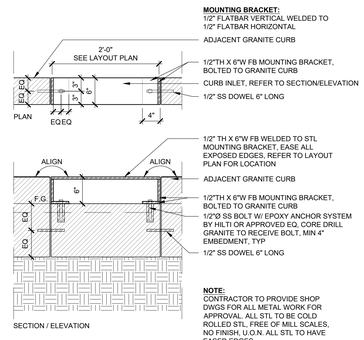
3 CONCRETE PAVEMENT - VEHICULAR
1" = 1'-0"



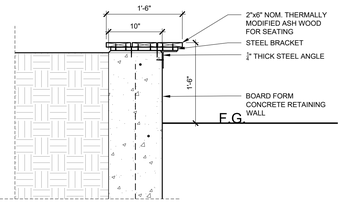
2 CONCRETE PAVEMENT - PEDESTRIAN
1" = 1'-0"



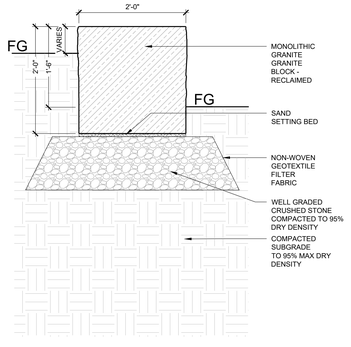
1 ASPHALT PAVING - VEHICULAR
1" = 1'-0"



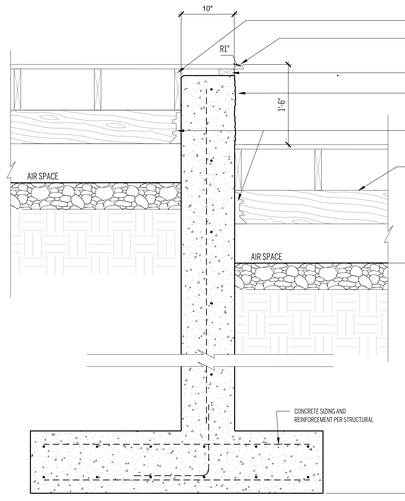
21 STEEL CURB INLET
1" = 1'-0"



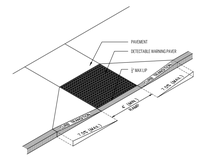
20 CONCRETE RETAINING WALL WITH WOOD CAP
NTS



19 MONOLITHIC STONE WALL ON DENSE GRADED CRUSHED STONE BASE
1" = 1'-0"

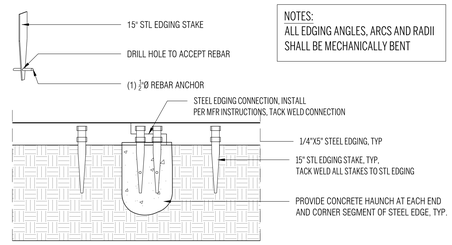


16 WOOD DECK AT TERRACED LANDSCAPE
NTS



1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% min).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. TYPICAL SIDEWALK SECTION FOR RAMP SECTION CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE SET FLUSH.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.

15 ADA RAMP
NTS



NOTES:
ALL EDGING ANGLES, ARCS AND RADII SHALL BE MECHANICALLY BENT

14 STEEL EDGING
1" = 1'-0"

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LAND-USE PERMIT SET

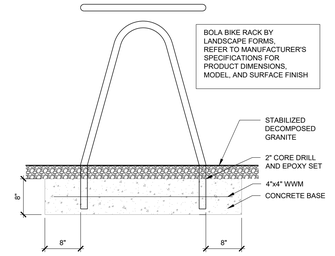
Number	Revision	Date

PROFESSIONAL LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE
Stamp

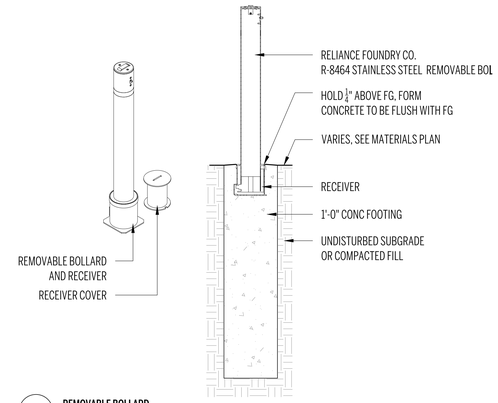
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	27 OCTOBER 2023
Scale	AS NOTED

Drawing Title
--- Site Details

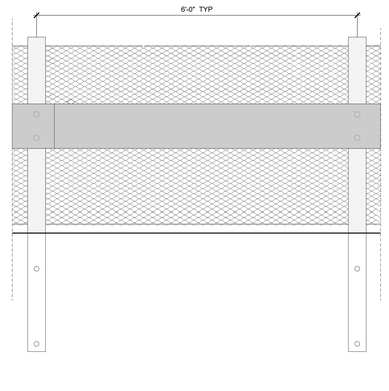
L6.00



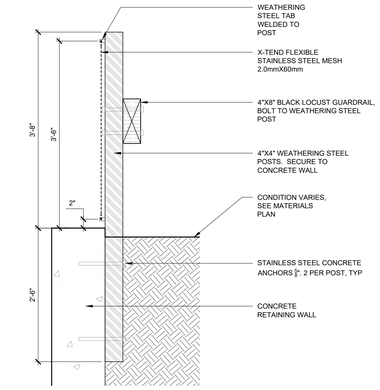
5 **BIKE RACK**
1" = 1'-0"



4 **REMOVABLE BOLLARD**
1" = 1'-0"

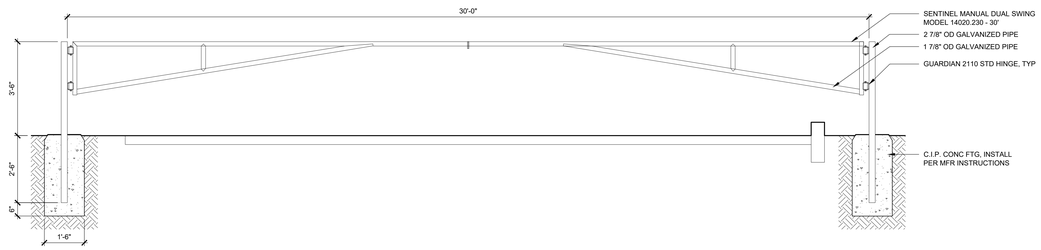


ELEVATION

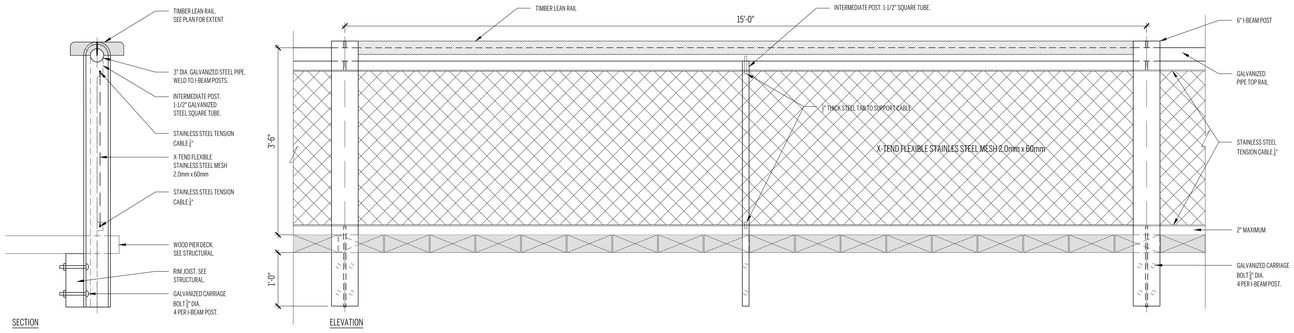


SECTION

3 **TIMBER GUARDRAIL**
1" = 1'-0"



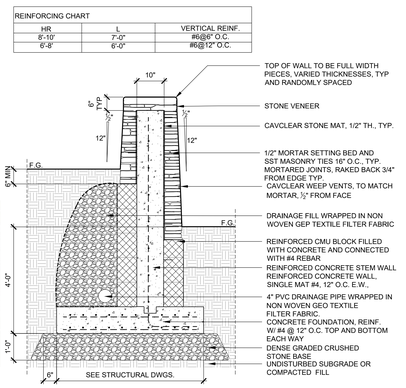
7 **VEHICULAR GATE**
1/2" = 1'-0"



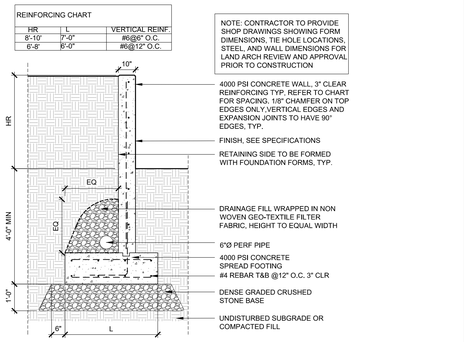
6 **PIER GUARDRAIL**
1" = 1'-0"



GRANITE VENEER MASONRY PRECEDENT



2 **CONCRETE RETAINING WALL WITH STONE VENEER**
1/2" = 1'-0"



1 **ARCHITECTURAL CONCRETE RETAINING WALL**
NTS

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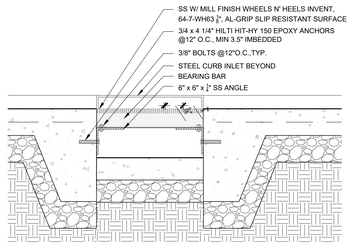
LAND-USE PERMIT SET

Number	Revision	Date

PROFESSIONAL LANDSCAPE ARCHITECT
STEPHEN C STIMSON
No. 3916
STATE OF MAINE
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS Checked STIMSON
Date	27 OCTOBER 2023
Scale	AS NOTED
Drawing Title	--- Site Details

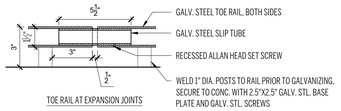
L6.01



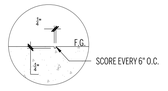
METAL GRATE BRIDGE PRECEDENT



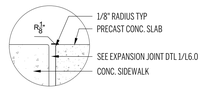
3 **METAL GRATE BRIDGE - PEDESTRIAN**
1" = 1'-0"



TOE RAIL AT EXPANSION JOINTS

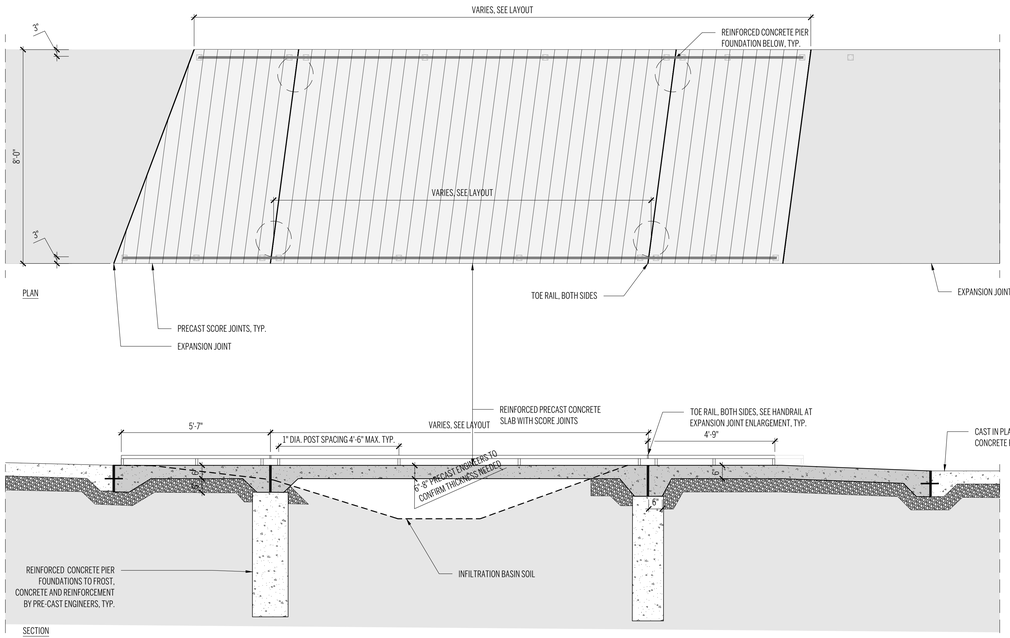


PRECAST SCORE JOINT



EXPANSION JOINT

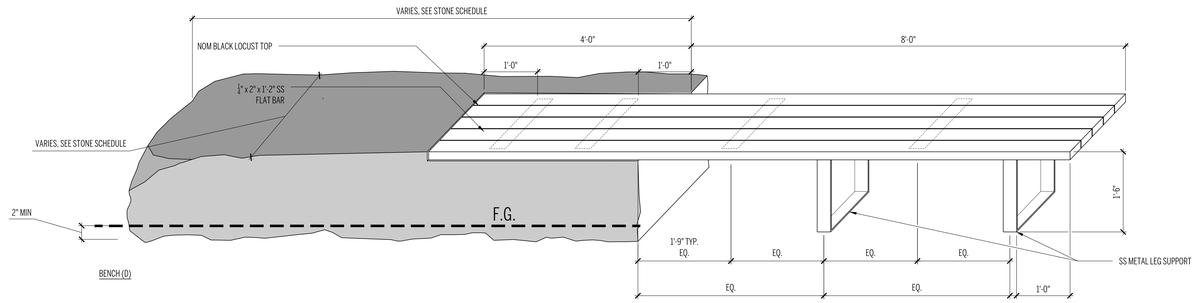
SECTION: HANDRAIL AT EXPANSION JOINTS TYP.
SCALE: 3"=1'-0"



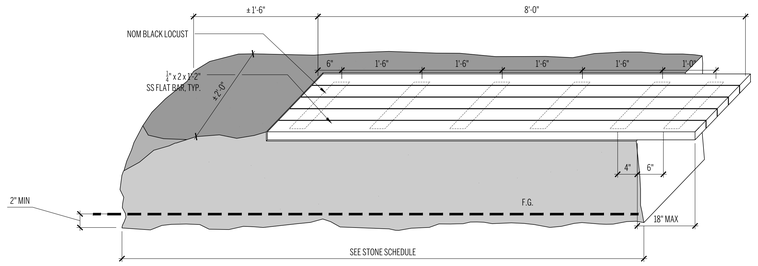
PLAN

SECTION

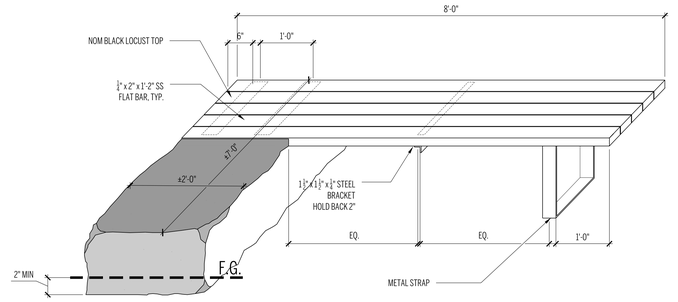
2 **CAST CONCRETE BRIDGE - PEDESTRIAN**
1/2" = 1'-0"



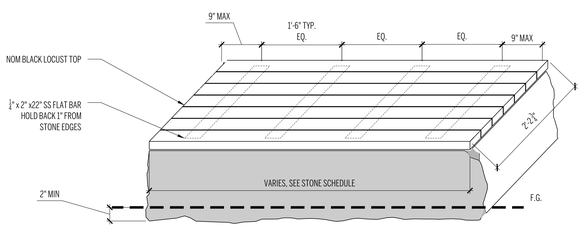
BENCH (D)



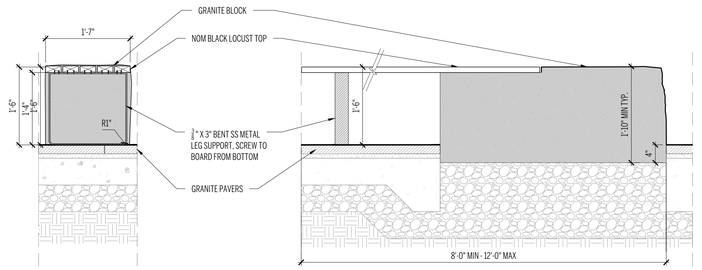
BENCH (C)

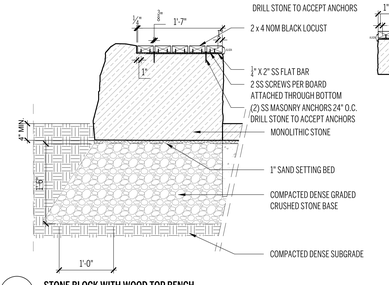


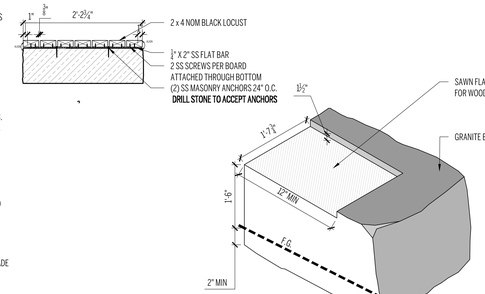
BENCH (B)



BENCH (A)







1 **STONE BLOCK WITH WOOD TOP BENCH**
1" = 1'-0"

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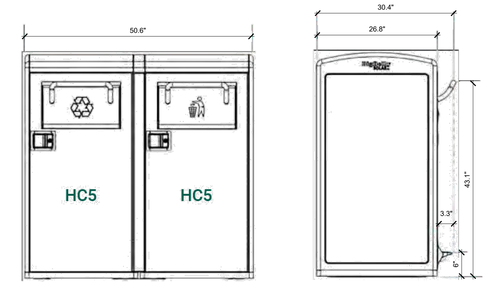
STEPHEN C. STIMSON No. 3916 LICENSED LANDSCAPE ARCHITECT STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS Checked STIMSON
Date	27 OCTOBER 2023
Scale	AS NOTED

Drawing Title
--- Site Details

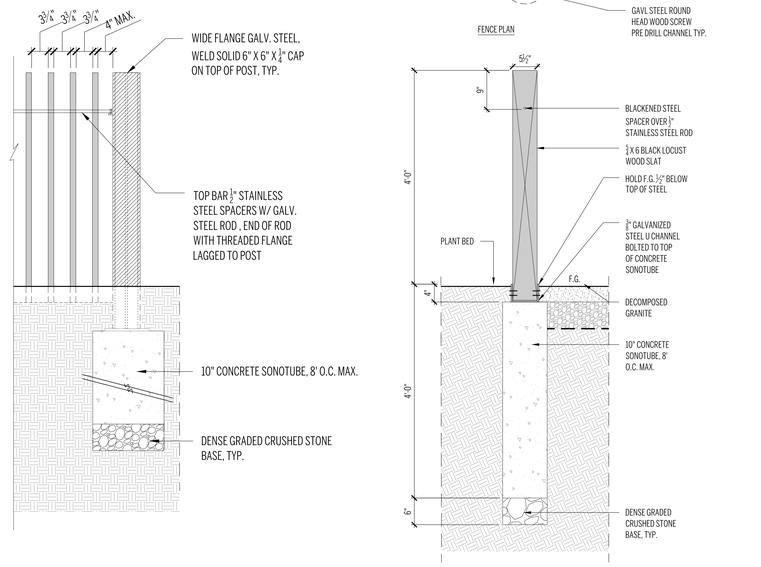
L6.02



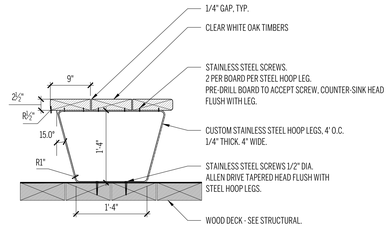
HC5/HC5 Double Station
Approximately 540 lbs (245 kg)

CleanCUBE BY ECUBE.
-120L CAPACITY, SOLAR POWERED
-FOOT PEDAL OPERATED. SEE SPECS

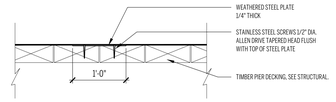
9 **CLEAN CUBE TRASH COMPACTER (WR)**
1" = 1'-0"



3 **WOODEN SLAT FENCE AT PLAYGROUND**
1" = 1'-0"



2 **RECLAIMED LUMBER BENCH AT PIER**
1" = 1'-0"



1 **WEATHERING STEEL BAND AT PIER DECK**
1" = 1'-0"

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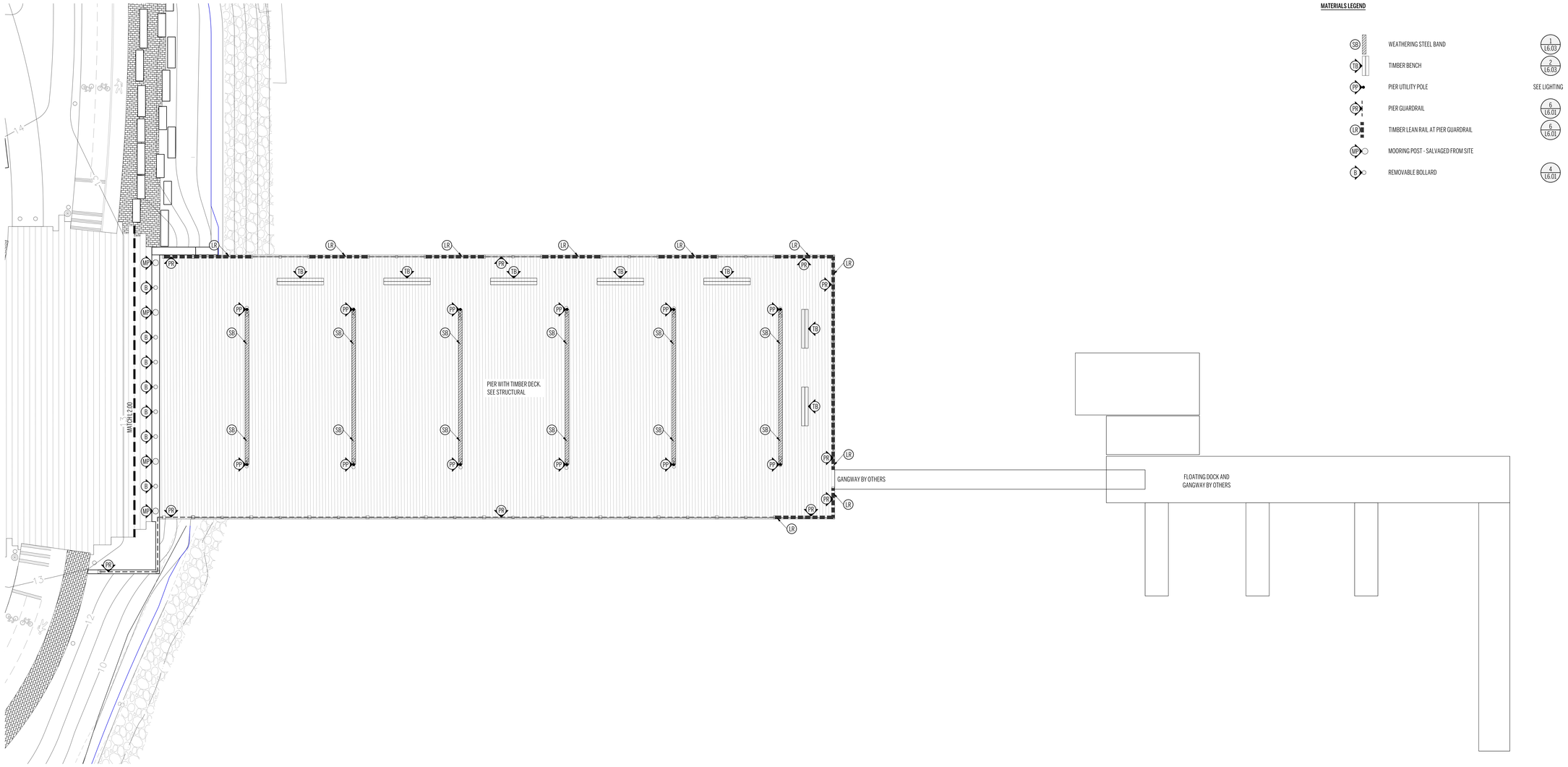
REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
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Scale	AS NOTED

Drawing Title
--- Site Details

L6.03



MATERIALS LEGEND

SB	WEATHERING STEEL BAND	1 / L6.01
TB	TIMBER BENCH	2 / L6.01
PP	PIER UTILITY POLE	SEE LIGHTING
PR	PIER GUARDRAIL	6 / L6.01
LR	TIMBER LEAN RAIL AT PIER GUARDRAIL	6 / L6.01
MP	MOORING POST - SALVAGED FROM SITE	
B	REMOVABLE BOLLARD	4 / L6.01

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Stamp

Job #	2202
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Drawn By	ZH SK JC MS
Checked	STIMSON
Date	27 OCTOBER 2023
Scale	1" = 10'

Drawing Title
Pier Plan

L8.00

EXISTING EDGE OF TREE CANOPY.
BLACK LOCUST, POPLAR, AND OTHER SPECIES.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING TREES.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING EDGE OF TREE CANOPY. MIXED EVERGREEN AND DECIDUOUS SPECIES.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING EVERGREEN TREE.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING SILVER MAPLE.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING DECIDUOUS AND EVERGREEN TREES.
LOCATIONS APPROXIMATE.
TO BE REMOVED.

EXISTING DECIDUOUS TREE.
LOCATION APPROXIMATE.
TO BE REMOVED.

NOTE:

EXISTING TREE LOCATIONS PER SITE SURVEY AND GOOGLE EARTH AERIAL IMAGERY

BEAN BUILDING

RAILROAD

INTERSTATE 295 NORTH

INTERSTATE 295 SOUTH

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REGISTERED LANDSCAPE ARCHITECT
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No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 40'

Drawing Title
Existing Trees

L1.00

PARKING STRUCTURE

BEAN BUILDING

LEARNING, RESEARCH, AND COLLABORATION BUILDING

MATCH L.2.01
MATCH L.2.00

LIMIT OF WORK

8 QTY 9

8 QTY 6

MATCH L.2.00
MATCH L.8.00

NOTE: CONTRACTOR TO REMOVE CONSTRUCTION FILL DEBRIS FROM BEACH, INCLUDING BRICK, TILE, GRANITE BLOCK, AND OTHER MATERIALS IDENTIFIED BY OWNER AND DESIGN TEAM

PATHWAY AT PROPERTY LINE PLAN
1"=20'

MATERIALS LEGEND

PAVEMENT

P1	ASPHALT PAVING - VEHICULAR	1 L6.00
P2	CONCRETE PAVEMENT-PEDESTRIAN	2 L6.00
P3	CONCRETE PAVEMENT-VEHICULAR	3 L6.00
P4	GRANITE PAVERS 01- VEHICULAR	5 L6.00
P5	GRANITE PAVERS 02-VEHICULAR	5 L6.00
P6	PRECAST CONCRETE PAVERS - VEHICULAR	7 L6.00
P7	PRECAST CONCRETE PAVERS - PEDESTRIAN	7 L6.00
P8	GRANITE PAVERS 01- PEDESTRIAN	6 L6.00
P9	GRANITE COBBLESTONE PAVERS - PERMEABLE	8 L6.00
P10	GRANITE COBBLESTONE PAVERS- VEHICULAR	7 L6.00
P11	DECOMPOSED GRANITE PAVEMENT	13 L6.00

CURBS AND EDGES

C1	GRANITE CURB - 6" RAISED	9 L6.00
C2	GRANITE CURB - FLUSH	11 L6.00
C3	GRANITE CURB - TRANSITION	15 L6.00
C4	GRANITE CURB - MOUNTABLE	12 L6.00
E1	STEEL EDGING	14 L6.00
E2	RECLAIMED RAIL TRACK	
TD	TRENCH DRAIN	3 L6.02
SI	STEEL CURB INLET (QUANTITY: 5)	21 L6.00
RR	SHORELINE PROTECTION, SEE MARINE ENGINEER DRAWINGS	

WALLS AND STAIRS

W1	ARCHITECTURAL CONCRETE RETAINING WALL	1 L6.01
W2	CONCRETE RETAINING WALL WITH STONE VENEER	2 L6.01
W3	CONCRETE FOUNDATION WALL AT WOOD DECK	16 L6.00
W4	BOARD FORMED CONCRETE RETAINING WALL	1 L6.01
W5	MONOLITHIC STONE RETAINING WALL ON DENSE GRADED CRUSHED STONE BASE	19 L6.00
S1	MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION	17 L6.00

SITE FURNISHINGS

WB	MONOLITHIC GRANITE BENCH WITH WOOD INSET	1 L6.02
WW	WOOD BENCH AT CONCRETE RETAINING WALL	20 L6.00
CB	PRE-CAST CONCRETE BRIDGE - PEDESTRIAN	2 L6.02
WD	WOOD DECK AT TERRACED LANDSCAPE	16 L6.00
HR	STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING	18 L6.00
CR	STAINLESS STEEL CURB RAIL	2 L6.02
TG	VEHICULAR TIMBER GUARDRAIL	3 L6.01
DW	DETECTABLE WARNING STRIP AT ADA CURB RAMP	15 L6.00
VG	VEHICULAR GATE (QUANTITY: 1)	7 L6.01
BR	BIKE RACK (QUANTITY: 95)	5 L6.01
B	REMOVABLE BOLLARD (QUANTITY: 17)	4 L6.01
F	WOODEN SLAT FENCE AT PLAYGROUND	3 L6.03

MATERIALS NOTES:

1. MAKE TRANSITIONS BETWEEN CHANGES IN PAVING SMOOTH AND GRADUAL WITH NO SHARP OR ABRUPT CHANGES UNLESS OTHERWISE SHOWN.
2. REFER TO LANDSCAPE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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LAND-USE PERMIT SET

Number	Revision	Date

STEPHEN C. STIMSON No. 3916 REGISTERED LANDSCAPE ARCHITECT STATE OF MAINE

Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	22 MARCH 2024		
Scale	1" = 20'		

Drawing Title

Materials Plan

L3.00

MATERIALS LEGEND

PAVEMENT

P1	ASPHALT PAVING - VEHICULAR	1 / L6.00
P2	CONCRETE PAVEMENT-PEDESTRIAN	2 / L6.00
P3	CONCRETE PAVEMENT-VEHICULAR	3 / L6.00
P4	GRANITE PAVERS 01 - VEHICULAR	5 / L6.00
P5	GRANITE PAVERS 02-VEHICULAR	5 / L6.00
P6	PRECAST CONCRETE PAVERS - VEHICULAR	7 / L6.00
P7	PRECAST CONCRETE PAVERS - PEDESTRIAN	7 / L6.00
P8	GRANITE PAVERS 01- PEDESTRIAN	6 / L6.00
P9	GRANITE COBBLESTONE PAVERS - PERMEABLE	8 / L6.00
P10	GRANITE COBBLESTONE PAVERS- VEHICULAR	7 / L6.00
P11	DECOMPOSED GRANITE PAVEMENT	13 / L6.00

CURBS AND EDGES

C1	GRANITE CURB - 6" RAISED	9 / L6.00
C2	GRANITE CURB - FLUSH	11 / L6.00
C3	GRANITE CURB - TRANSITION	15 / L6.00
C4	GRANITE CURB - MOUNTABLE	12 / L6.00
E1	STEEL EDGING	14 / L6.00
E2	RECLAIMED RAIL TRACK	
TD	TRENCH DRAIN	3 / L6.02
SI	STEEL CURB INLET (QUANTITY: 5)	21 / L6.00
RR	SHORELINE PROTECTION, SEE MARINE ENGINEER DRAWINGS	

WALLS AND STAIRS

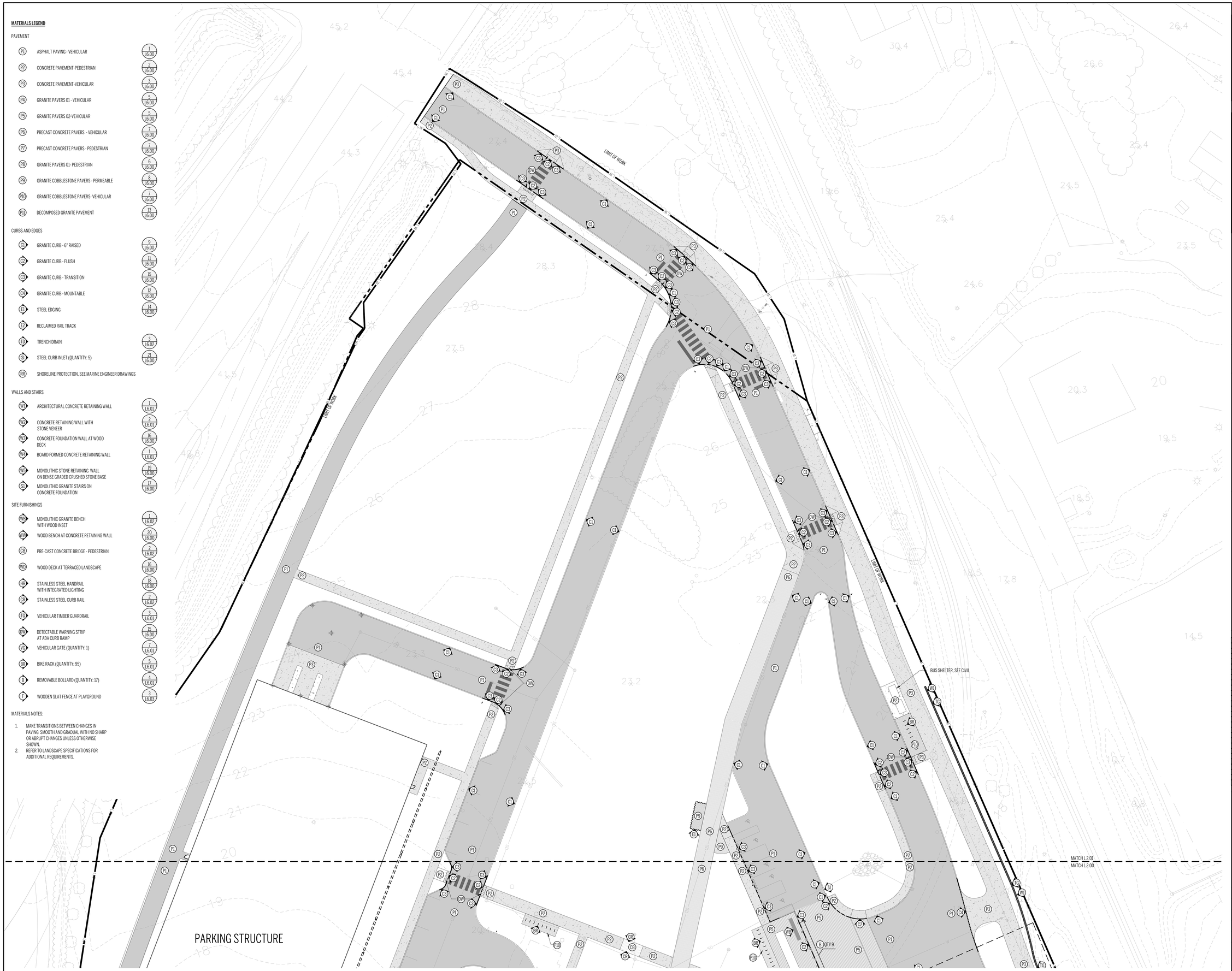
W1	ARCHITECTURAL CONCRETE RETAINING WALL	1 / L6.01
W2	CONCRETE RETAINING WALL WITH STONE VENEER	2 / L6.01
W3	CONCRETE FOUNDATION WALL AT WOOD DECK	16 / L6.00
W4	BOARD FORMED CONCRETE RETAINING WALL	1 / L6.01
W5	MONOLITHIC STONE RETAINING WALL ON DENSE GRADED CRUSHED STONE BASE	19 / L6.00
S1	MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION	17 / L6.00

SITE FURNISHINGS

WB	MONOLITHIC GRANITE BENCH WITH WOOD INSET	1 / L6.02
WW	WOOD BENCH AT CONCRETE RETAINING WALL	20 / L6.00
CB	PRE-CAST CONCRETE BRIDGE - PEDESTRIAN	2 / L6.02
WD	WOOD DECK AT TERRACED LANDSCAPE	16 / L6.00
HR	STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING	18 / L6.00
CR	STAINLESS STEEL CURB RAIL	2 / L6.02
TG	VEHICULAR TIMBER GUARDRAIL	3 / L6.01
DW	DETECTABLE WARNING STRIP AT ADA CURB RAMP	15 / L6.00
VG	VEHICULAR GATE (QUANTITY: 1)	7 / L6.01
BR	BIKE RACK (QUANTITY: 95)	5 / L6.01
B	REMOVABLE BOLLARD (QUANTITY: 17)	4 / L6.01
F	WOODEN SLAT FENCE AT PLAYGROUND	3 / L6.03

MATERIALS NOTES:

1. MAKE TRANSITIONS BETWEEN CHANGES IN PAVING SMOOTH AND GRADUAL WITH NO SHARP OR ABRUPT CHANGES UNLESS OTHERWISE SHOWN.
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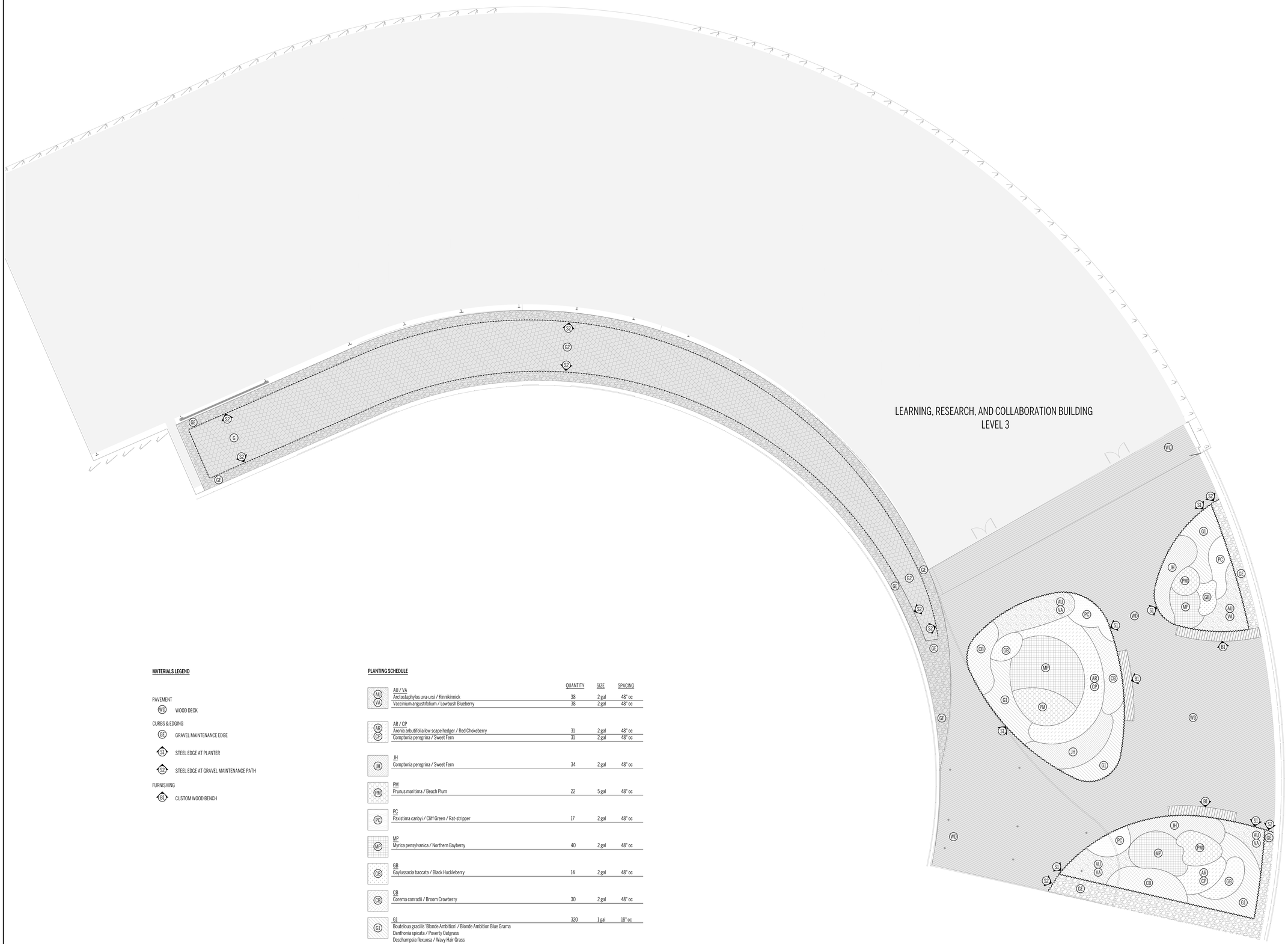
LICENSED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	22 MARCH 2024		
Scale	1" = 20'		

Drawing Title
Materials Plan

L3.01



MATERIALS LEGEND

PAVEMENT

WD WOOD DECK

CURBS & EDGING

GE GRAVEL MAINTENANCE EDGE

S1 STEEL EDGE AT PLANTER

S2 STEEL EDGE AT GRAVEL MAINTENANCE PATH

FURNISHING

B1 CUSTOM WOOD BENCH

PLANTING SCHEDULE

		QUANTITY	SIZE	SPACING
AU / VA				
AU	Arctostaphylos uva-ursi / Kinnikinnick	38	2 gal	48" oc
VA	Vaccinium angustifolium / Lowbush Blueberry	38	2 gal	48" oc
AR / CP				
AR	Aronia arbutifolia low scape hedger / Red Chokeberry	31	2 gal	48" oc
CP	Comptonia peregrina / Sweet Fern	31	2 gal	48" oc
JH				
JH	Comptonia peregrina / Sweet Fern	34	2 gal	48" oc
PM				
PM	Prunus maritima / Beach Plum	22	5 gal	48" oc
PC				
PC	Paxistima canbyi / Cliff Green / Rat-stripper	17	2 gal	48" oc
MP				
MP	Myrica pensylvanica / Northern Bayberry	40	2 gal	48" oc
GB				
GB	Gaylussacia baccata / Black Huckleberry	14	2 gal	48" oc
CB				
CB	Corema conradii / Broom Crowberry	30	2 gal	48" oc
G1		320	1 gal	18" oc
G1	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama Danthonia spicata / Poverty Oatgrass Deschampsia flexuosa / Wavy Hair Grass Echinacea pallida / Pale Purple Coneflower Festuca rubra / Red Fescue Ionactis linariifolia / Flaxleaf Aster Juncus trifidus / Highland Rush Schizachyrium scoparium / Little Bluestem Sibbaldiopsis tridentata / Three-leaved Cinquefoil Solidago caesia / Wreath Goldenrod Symphyotrichum novae-angliae / New England Aster			
G2		3,628 SF	LiveRoof Maxx (8" soil depth)	
G2	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama Danthonia spicata / Poverty Oatgrass Deschampsia flexuosa / Wavy Hair Grass Echinacea pallida / Pale Purple Coneflower Festuca rubra / Red Fescue Ionactis linariifolia / Flaxleaf Aster Juncus trifidus / Highland Rush Schizachyrium scoparium / Little Bluestem Sibbaldiopsis tridentata / Three-leaved Cinquefoil Solidago caesia / Wreath Goldenrod Symphyotrichum novae-angliae / New England Aster			

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 10'

Drawing Title
Roof Plan

L3.10

PARKING STRUCTURE

MATCH INSET PLAN
MATCH L4.00

MATCH L4.01
MATCH L4.00

LEARNING, RESEARCH, AND COLLABORATION BUILDING

BEAN BUILDING

5,212 sf M1

811 sf M1

4,444 sf M1

771 sf M1

3,744 sf M2

7,837 sf M2

2,557 sf M2

4,904 sf M2

4,619 sf M1

556 sf M1

992 sf M1

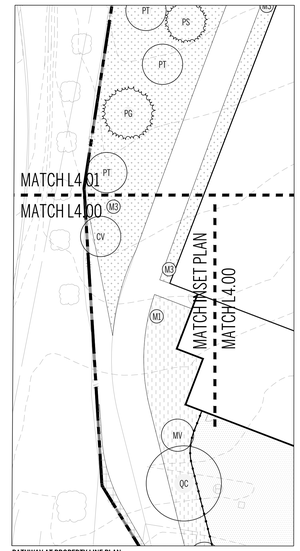
2,413 sf M2

526 sf M1

REFER TO L4.02 FOR NATIVE STATUS OF PROPOSED PLANT SPECIES WITHIN THIS AREA

REFER TO L4.02 FOR NATIVE STATUS OF PROPOSED PLANT SPECIES WITHIN THIS AREA

REFER TO L4.02 FOR NATIVE STATUS OF PROPOSED PLANT SPECIES WITHIN THIS AREA



PATHWAY AT PROPERTY LINE PLAN
1"=20'

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LAND-USE PERMIT SET

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Job #	2202
Project	THE ROUX INSTITUTE
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Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 20'

Drawing Title
Planting Plan

L4.00



IDEALS
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LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS Checked STIMSON
Date	22 MARCH 2024
Scale	1" = 20'

Drawing Title
Planting Plan

L4.01

MEADOW SITE PREPARATION AND SEEDING NOTES

1) Materials Delivery, Storage, and Handling:
   a) General:
      i) Deliver materials only after preparation for on-site seeding of the meadow seeding area and adjacent areas has been completed and accepted.
      ii) Prohibit materials only after preparation for on-site seeding of the meadow seeding area and adjacent areas has been completed and accepted.
      iii) Prohibit storage of any equipment or materials on the areas to be seeded once the final mowing prior to seeding has occurred.
   b) Seed:
      i) Seed shall be stored at temperatures between 40- and 60-degrees F and with a relative humidity of between 25-60%.
      ii) Protect seed from drying out, becoming moist or wet, overheating, and /or from contamination during delivery. Seed that has become wet or moldy shall not be accepted.
      iii) Transport temperature shall not exceed 105 F at any time. If transit from cold storage to sowing is greater than 10 days, seed must be kept under storage temperatures and relative humidity described above.

2) Installation Seasons:
   a) Work only within seasonal limitations for proper seeding. These are optimal times for rapid establishment of optimal ground cover, and suppression of weeds.
   b) Permanent meadow seeding should be sown between *July 1 – Aug. 15, Nov. 15 – Dec. 15*
   c) If sowing is being done between August 1 and August 31, use 25% more seed per unit area and expect more weed management.
   d) If seeding occurs between October 1 and January 31st, it must be done when there is no snow on the ground.

3) Site Preparation Acceptance:
   a) Prior to seeding, the site must be inspected by the Landscape Architect, Meadow Specialist, and Meadow Installer to ensure that weed control is acceptable, seed bed is in the appropriate condition for seeding, and the site has been correctly delineated.
   b) If it is determined that conditions are not acceptable for seeding, the unacceptable areas should be mitigated and re-inspected by the Landscape Architect and Meadow Consultant prior to seeding.

4) Seeding and Meadow Acceptance:
   a) If the site preparation process starts and seeding does not occur within proper seeding windows, the Owner shall sow and manage a cover crop to protect and stabilize meadow areas until the next occurring seeding window.
   b) The Landscape Architect and Meadow Consultant must inspect site prior to seed installation and provide site preparation acceptance.
   c) Seeding shall consist of soil preparation, seeding, weeding, and otherwise providing all labor and materials necessary to secure the establishment of acceptable vegetative layer.
   d) After seeding, the site must be inspected by the Landscape Architect and the Meadow Consultant to ensure that seeding has been completed as per construction drawings.
   e) Meadow acceptance occurs a minimum of 120 days from completion of final meadow seeding phase and between May and September
   f) Meadow acceptance shall be an acceptable stand of meadow which is defined to mean a uniform coverage well established, close stands of plants that meet the following criteria: a minimum of 8 thriving desirable plants per square foot (excluding nurse crop), no bare or dead spots over 36" maximum in any dimension, no more than 10% of the meadow is bare, and free from disease, and detrimental insect infestation.
   g) Begin management practice immediately after seeding is complete for a given area.

5) Meadow Seed:
   a) See Plant Lists in the Drawings for Meadow Seed Mixes
   b) Provide fresh, new crop seed that is 98% Pure Live Seed (for tested species) or better. In no case shall weed seed content exceed 1% by weight. All seeds shall comply with Federal and State seed laws. Seed shall not be coated with herbicides and/or fungicides.
   c) Seed mixes shall be delivered in individual bags labeled by mix and then by seed size within each mix.
   d) Small Seed: 25,000 seeds per/oz or less. Individual seeds can be picked up by hand.
   e) Very Fine Seed: 25,000+ seeds/oz. Individual seeds are too small to be picked up by hand.
   f) Grain: Cover crop grain seed and large wildflower seed (¼-¼" in size)
   g) Fluffy Seed: Seed with fluffy, feathery seed coat

6) Seed Mix Suppliers:
   a) Ernst Conservation Seeds, Inc., 8884 Mercer Pike, Meadville PA 16335, Tel: 800-873-3321, http://www.ernstseed.com/.
   b) Prairie Moon Nursery, 32115 Prairie Lane, Winona, MN 55987. Tel: (8866)417-8156, www.prairiemoon.com
   c) Roundstone Native Seed Company, 9764 Raider Hollow Rd, Upton, KY 42784, Tel: (270) 531-3034, https://roundstoneseed.com
   d) Equal approved by the Architect and Meadow Consultant.

7) Cover Crops
   a) Cover Crop shall be installed in areas disturbed during construction for soil stabilization prior to permanent meadow seed: May 1 – Oct. 1
   b) Cover crops should only be sown in areas with new soil that will not need Erosion Control Fabric, or to protect and stabilize soils outside of the seeding window.

8) Seeding Materials and Equipment:
   a) Use flake drop awnings as a seed mix broadcasting agent.
   b) Do not use fertilizer.
   c) Mechanized equipment for finished grading shall be skid-steer (full-size or mini) or tractor with Harley Rake/Power Rake attachment.
   d) Hand seeding techniques shall be used to sow meadow seed in all areas.
   e) Hydroseeding is not allowed.
   f) No mulch shall be used in seeded meadow areas.

9) Site Preparation: GENERAL
   a) Pre-installation examination and sequencing are required: Before beginning any establishment phase (site preparation, seeding, planting), the Contractor shall examine previous work, related work, and conditions under which this work is to be performed and notify the Landscape Architect in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Contractor accepts substrates, previous work, and conditions.
   b) The Contractor shall not commence work associated with the installation of meadows until all work in the work areas is complete and accepted by the Landscape Architect.
   c) The following shall be completed prior to the commencement of seeding:
      i) Fine gradings and the removal of all debris and weeds.
      ii) Utilities have been installed and accepted.
      iii) All trees, shrubs, and perennials have been planted.
      iv) Permanent and temporary irrigation for trees, shrubs, and perennials located within or adjacent to meadow seeding areas has been installed and accepted.
      v) Stormwater management areas, swales, and drainage areas shall remain dry during seeding and meadow establishment. The contractor and owner shall coordinate site drainage during meadow establishment so to bypass seeded areas from stormwater surge.
   d) Prior to seeding, stake areas with pin flags that identify seed type for each area.
   e) Do not proceed with seeding until the extent and distribution of seeding/planting zones has been accepted by the Landscape Architect.
   f) Meadow seed mix installation should not occur until any vegetation management procedures, such as weed control or other vegetation removals, in meadow areas have been completed and accepted.
   g) The Landscape Architect and Meadow Consultant must inspect site prior to seed installation and provide site preparation acceptance.
   h) A properly compacted seedbed should not allow a shoe to sink more than ½" when walking on the seedbed.
   i) Meadow areas shall have at least one full growing season of weed control prior to seeding and must be inspected by the Meadow Consultant prior to seeding.
   j) Cover crops should only be sown in areas with new soil that will not need Erosion Control Fabric, or to protect and stabilize soils outside of the seeding window.

10) Site Preparation for Dormant Seeding shall occur in the following sequence:
   a) Early May: Site Visit #1 -Site visit with the Contractor and Meadow Consultant to finalize the spray plan (timing and products) and to delineate all meadow extents where soil disturbance will not occur. Once meadow has been delineated all mowing within this area should cease.
   b) Mid-June: Spray #1 - Broadcast spray area with Glyphosate, and other products as specified in Early May visit. At least two weeks without mowing should have occurred prior to the first spray.
   c) Mid-July: Mow #1 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from the date of the first spray prior to mowing.
   d) Early August: Site Visit #2 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   e) Late August: Spray #2 - Broadcast spray area with Glyphosate, and other products as specified in early August visit.
   f) Mid-September: Mow #2 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from date of spray prior to mowing.
   g) Early October: -Site Visit #3 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   h) Late October: Spray #3 - Broadcast spray area with Glyphosate, and other products as specified in early October visit.

11) Site Preparation for Summer Seeding shall occur in the following sequence:
   a) Early August: Site Visit #1 - Site visit with contractor and meadow expert to finalize spray plan (timing and products) and to delineate all meadow extents where soil disturbance will not occur. Once meadow has been delineated all mowing within this area should cease.
   b) Late August: Spray #1 - Broadcast spray area with Glyphosate, and other products as specified in early August visit.
   c) Mid-September: Mow #1 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from date of spray prior to mowing.
   d) Early October: Site Visit #2 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   e) Late October: Spray #2 - Broadcast spray area with Glyphosate, and other products as specified in early October visit.
   f) Early May (the following year): Site Visit #3 -Site visit with contractor and meadow expert to finalize spray plan (timing and products).
   g) Mid-June: Spray #3 - Broadcast spray area with Glyphosate, and other products as specified in early May visit. At least two weeks should without mowing should have occurred prior to the first spray.
   h) Early-July: Mow #2 - Mow any areas where growth is higher than 6" to a height of 4".

12) Permanent Meadow Mix Seeding Installation shall occur in the following sequence:
   a) Install meadow seed mix during the timeline established by this document.
   b) Seeding shall consist of soil preparation, seeding, weeding, and otherwise providing all labor and materials necessary to secure the establishment of acceptable vegetative layer.
   c) Prior to seeding and planting verify meadow area is prepared and ready for vegetation installation and that water is available for seed mixing.
   d) Scarify soil to depth of approximately ¼" using appropriate equipment. Repeat as needed to create a seedbed with approximately 50% of the soil exposed. No tilling should be performed, as this will increase weed presence due to the release of dormant weed seeds below the soil surface.
   e) Segregate the seeds according to mix and then by seed size. For the hand broadcast method, "Fluffy," "Small," and "Grain" seed can be combined (henceforth referred to collectively as "Large" seed). "Very Fine" seed (seed which cannot be picked up individually by hand) must always remain separate.
   f) Bulk up "Large" seed by mixing with an inert bulking material such as sawdust, sand, or flake pine shavings. Seed and bulking material can be mixed on tarps spread on the ground. Slightly dampening the bulking material will help the seed to be evenly distributed throughout the bulked material. Use enough bulking material to allow seed to be evenly distributed over the entire project area.
   g) Seeding must happen within 24 hours of mixing seed with wet material.
   h) Only seed that can be installed in a single workday should be mixed at any given time.
   i) Hand sow large seed that has been bulked up with wet inert material. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
   j) Run over area with dethatcher or power rake to lightly cover large seed no to exceed ¾" depth. Use a hand rake if the area is not accessible with machinery.
   k) Bulk up the "Very fine" seed in the manner described above and broadcast evenly over the prepared surface. Do not incorporate into the soil as these species need light to germinate and will not do so if buried in the soil,
   l) Any stabilization fabrics shall only be placed after permanent seed has been sown and accepted.
   m) Begin management practice immediately after seeding is complete for a given area.

13) Management procedures and activities during meadow establishment shall observe the following guidelines:
   a) In the first growing season seeded vegetation should not be allowed to exceed 12" in height.
   b) As vegetation approaches 12" in the meadow, mow or cut all growth to approximately 4-6" height (approximately once per month during the growing season).
   c) Use flail or rotary-style equipment that will chop dead growth.
   d) Sickle bar type mowers that cut at the base of vegetation and drop plant material intact should not be used as the intact cut plant material can inhibit seedling development.
   e) In locations inaccessible to a mower (wet areas, steep slopes, etc.), string trim vegetation to the specified height.
   f) Areas with live plants should not be mown. Areas should be weeded by hand or with small mechanical equipment where appropriate. Work in these areas to be completed by meadow installer.
   g) Do not irrigate seeded meadow areas unless required for planted vegetation, in which case irrigation should be directed at planted vegetation and not on seeded areas, to the extent possible.
   h) Mow entire meadow one time to height of 4" in March/early April with a flail mower. Do not mow lower than 4". String trim areas inaccessible to a mower.
   i) Spot treat weeds as required (min. 1 spray, max. 3 sprays).
   j) Maintenance contractors shall not blow leaves or other debris in the direction of seeded meadows or within seeded meadows.
   k) Conduct a minimum of two (2) annual meadow checks by a meadow expert.

14) If a meadow is damaged, remove damaged materials if necessary. Restore areas to original grades and reestablish meadow as originally installed following the establishment train time frames.
   a) Request Landscape Architect approval prior to beginning repairs.
   b) If a meadow exhibits unsatisfactory growth, perform soil testing for chemical properties, compaction, and infiltration rates.
   c) Adhere to Landscape Architect's recommended remediation.
   d) Remediation may include additional weed control or re-seeding.

15) Reseeding shall be performed at the request of the Landscape Architect.
   a) Reseeding shall be required if meadow establishment/performance is poor, dead spots are apparent, or other unsuitable conditions are present.
   b) Work shall be performed according to the installation calendar above. Work outside this window is not permitted.
   c) Cut or trim vegetation to maximum of 2" prior to reseeding. Remove cut vegetation from the meadow.
   d) When reseeding, follow the seeding process outlined above.
   e) When reseeding areas where erosion control is in place, apply seed mixture starting at the top of the slope and over the extent of erosion control material to be reseeded. Hand rake to move seed through the erosion control matting towards soil contact.t. Hands sow sand/seed mixture down into the areas between the cut vegetation.

16) Warranty and Management
   a) Begin management practice immediately after seeding is complete for a given area.
   b) Meadow acceptance occurs a minimum of 120 days from completion of final meadow seeding phase and between May and September
   c) The Contractor shall warranty and maintain the meadow for two years following meadow acceptance.

Seed Mix Specifications

Project: ROUX INSTITUTE
Mix: M1 - Upland Meadow
Area in acres = 2.1
Area in sq ft = 93,555
Total seeds per sq ft = 200
% graminoids = 60%

Results (excluding nurse crop)
26 lbs. of seed/acre
55 Total lbs. this mix
40 Total spp.
12 Number of graminoids
28 Number of forbs

Botanical Name	Common Name	Qty	Seeding Notes	Substitutions/Comments
Grasses, Sedges and Rushes				
Andropogon ternarius	Splitbeard Broomsedge	3.30 oz		
Bouteloua gracilis	Blue Grama Grass	14.03 oz		
Carex brevior	Plains Oval Sedge	11.61 oz		
Carex molesta	Field Oval Sedge	22.45 oz		
Carex normalis	Spreading Oval Sedge	4.49 oz		
Carex projecta	Loose-headed Oval Sedge	1.81 oz		
Carex vulpinoidea	Fox Sedge	11.23 oz		
Elymus virginicus	Virginia Rye	26.73 oz		
Eragrostis spectabilis	Purple Lovegrass	1.20 oz		
Juncus tenuis	Path Rush	0.19 oz		
Schizachyrium scoparium	Little Bluestem	374.22 oz		
Tridens flavus	Purpletop	59.50 oz		
Forbs				
Allium cernuum	Nodding Pink Onion	9.85 oz		
Anaphalis margaritacea	Pearly Everlasting	1.03 oz		
Asclepias tuberosa	Butterfly Weed	17.41 oz		
Aster laevis (Symphiotrichum)	Smooth Aster	10.89 oz		
Aster umbellatus (Doellingeria umbellata)	Flat-topped Aster	3.35 oz		
Blephilia hirsuta	Hairy Wood Mint	0.94 oz		
Chamaecrista fasciculata (Cassia)	Partridge Pea	83.16 oz		
Coreopsis lanceolata	Tickseed	11.23 oz		
Coreopsis tinctoria	Plains Coreopsis	2.55 oz		
Echinacea pallida	Pale Purple Coneflower	71.97 oz		
Echinacea purpurea	Purple Coneflower	22.68 oz		
Eryngium yuccifolium	Rattlesnake Master	29.94 oz		
Eupatorium coelestinum (Conoclinium)	Mistflower	1.07 oz		
Gnaphalium obtusifolium	Sweet Everlasting	0.30 oz		
Lespedeza capitata	Round-headed Bush Clover	9.36 oz		
Lobelia spicata	Spike Lobelia	0.25 oz		
Mondarda citriodora	Lemon Mint	2.99 oz		
Mondarda punctata	Horsemint	4.16 oz		
Penstemon digitalis	White Beardtongue	5.76 oz		
Pycnanthemum tenuifolium	Slender Mountain Mint	1.98 oz		
Pycnanthemum virginianum	Mountain Mint	1.02 oz		
Rudbeckia hirta	Black Eyed Susan	2.44 oz		
Solidago juncea	Early Goldenrod	2.25 oz		
Solidago nemoralis	Gray Goldenrod	2.00 oz		
Solidago rigida (Oligoneuron)	Stiff Goldenrod	1.83 oz		
Tradescantia ohiensis	Ohio Spiderwort	9.36 oz		
Verbena hastata	Blue Vervain	1.61 oz		
Zizia aurea	Golden Alexander	34.02 oz		

Nurse Crop
Spring Seeding: Spring Oats (Avena sativa): 20 lb/ac
Early Spring to Later Summer Seeding: Grain Rye (Secale cereale): 30 lb/acre
Fall Seeding: Winter wheat (Triticum aestivum): 10lb/acre

Project: ROUX INSTITUTE
Mix: M2 - Lowland Meadow
Area in acres = 0.4
Area in sq ft = 18,214
Total seeds per sq ft = 200
% graminoids = 60%

Results (excluding nurse crop)
14 lbs. of seed/acre
6 Total lbs. this mix
30 Total spp.
13 Number of graminoids
17 Number of forbs

Botanical Name	Common Name	Qty	Seeding Notes	Substitutions/Comments
Grasses, Sedges and Rushes				
Carex annectens xanthocarpa	Small Yellow Fox Sedge	1.21 oz		
Carex bebbii	Bebbs Oval Sedge	3.21 oz		
Carex normalis	Spreading Oval Sedge	0.87 oz		
Carex projecta	Loose-headed Oval Sedge	1.76 oz		
Carex vulpinoidea	Fox Sedge	4.37 oz		
Eleocharis obtusa	Blunt Spike Rush	0.66 oz		
Elymus virginicus	Virginia Rye	15.61 oz		
Juncus canadensis	Canada Rush	0.44 oz		
Juncus effusus	Common Rush	0.33 oz		
Juncus tenuis	Path Rush	0.06 oz		
Scirpus atrovirens	Dark-Green Bulrush	0.24 oz		
Scirpus cyperinus	Wool Grass	0.06 oz		
Tridens flavus	Purpletop	11.56 oz		
Forbs				
Asclepias incarnata	Swamp Milkweed	9.11 oz		
Aster lateriflorus (Symphiotrichum)	Calico Aster	0.29 oz		
Aster novae-angliae (Symphiotrichum)	New England Aster	2.21 oz		
Aster novi-belgii (Symphiotrichum)	New York Aster	1.91 oz		
Chamaecrista fasciculata (Cassia)	Partridge Pea	16.19 oz		
Coreopsis lanceolata	Tickseed	1.46 oz		
Coreopsis tinctoria	Plains Coreopsis	0.33 oz		
Eupatorium coelestinum (Conoclinium)	Mistflower	0.33 oz		
Liatris spicata	Blazing Star	6.62 oz		
Lobelia cardinalis	Cardinal Flower	0.44 oz		
Lycopus americanus	Water Horehound	0.56 oz		
Mondarda punctata	Horsemint	0.81 oz		
Penstemon digitalis	White Beardtongue	1.12 oz		
Pycnanthemum muticum	Big Leaf Mountain Mint	0.33 oz		
Pycnanthemum virginianum	Mountain Mint	0.79 oz		
Verbena hastata	Blue Vervain	0.78 oz		
Zizia aurea	Golden Alexander	6.62 oz		

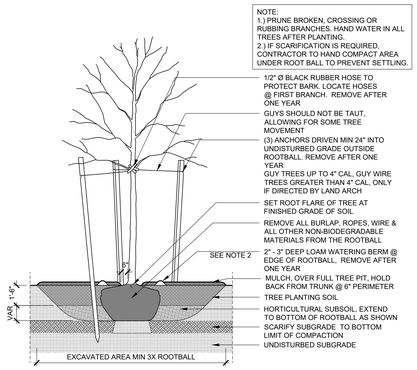
Nurse Crop
Spring Seeding: Spring Oats (Avena sativa): 20 lb/ac
Early Spring to Later Summer Seeding: Grain Rye (Secale cereale): 30 lb/acre
Fall Seeding: Winter wheat (Triticum aestivum): 10lb/acre

Project: ROUX INSTITUTE
Mix: M3 - Perimeter Meadow
Area in acres = 0.4
Area in sq ft = 17,307
Total seeds per sq ft = 200
% graminoids = 100%

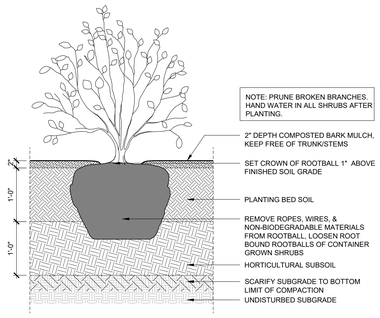
Results (excluding nurse crop)
31 lbs. of seed/acre
12 Total lbs. this mix
13 Total spp.
13 Number of graminoids
0 Number of forbs

Botanical Name	Common Name	Qty	Seeding Notes	Substitutions/Comments
Grasses, Sedges and Rushes				
Andropogon ternarius	Splitbeard Broomsedge	1.02 oz		
Bouteloua curtipendula	Sideoats Grama	28.80 oz		
Bouteloua gracilis	Blue Grama Grass	4.33 oz		
Carex brevior	Plains Oval Sedge	3.58 oz		
Carex molesta	Field Oval Sedge	6.92 oz		
Carex normalis	Spreading Oval Sedge	1.38 oz		
Carex projecta	Loose-headed Oval Sedge	0.56 oz		
Carex vulpinoidea	Fox Sedge	3.46 oz		
Elymus virginicus	Virginia Rye	8.24 oz		
Eragrostis spectabilis	Purple Lovegrass	0.37 oz		
Juncus tenuis	Path Rush	0.06 oz		
Schizachyrium scoparium	Little Bluestem	115.38 oz		
Tridens flavus	Purpletop	18.35 oz		

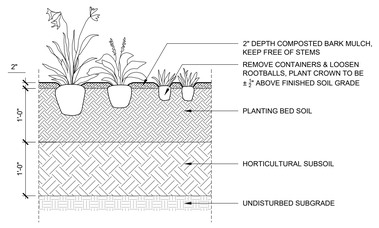
Nurse Crop
Spring Seeding: Spring Oats (Avena sativa): 20 lb/ac
Early Spring to Later Summer Seeding: Grain Rye (Secale cereale): 30 lb/acre
Fall Seeding: Winter wheat (Triticum aestivum): 10lb/acre



3 TREE PLANTING
1/4" = 1'-0"



2 SHRUB PLANTING
1" = 1'-0"



1 PERENNIAL AND GROUNDCOVER PLANTING
1" = 1'-0"

NATIVITY LEGEND

- NATIVE TO CUMBERLAND COUNTY, MAINE
- NATIVE TO MAINE (not including Cumberland County)
- NATIVE TO NEW ENGLAND (not including Maine)
- NATIVE TO NORTH AMERICA (not including Maine or other New England states)
- EXOTIC / NOT NATURALLY OCCURRING IN NORTH AMERICA
- CULTIVAR

NATIVITY NOTES
1. Nativity to Maine and New England per Native Plant Trust Go Botany, adapted from BONAP, https://gobotany.nativeplanttrust.org/.
2. Nativity to North America per BONAP, https://bonap.net/tdc

Species are intended as placeholders in lieu of Acer. Final species selection will be determined per pending collaboration with City Arborist.

PLANT SCHEDULE

TREES		BOTANICAL / COMMON NAME	CONT	SIZE	QTY	REMARKS
AB	●	Abies balsamea / Balsam Fir	B & B	5'-6" H	3	
AA	● ●	Amelanchier arborea 'Autumn Brilliance' / Autumn Brilliance Downy Serviceberry	B & B	3'-4" H	43	
BA	●	Betula alleghaniensis / Yellow Birch	B & B	1.5"-2" Cal	24	
BP1	●	Betula papyrifera / Paper Birch	B & B	1.5"-2" Cal	22	
BP	●	Betula papyrifera / Paper Birch	B & B	1.5"-2" Cal	10	
BG	●	Betula populifolia / Gray Birch	B & B	6' - 8' H	4	
CD	●	Calocedrus decurrens / Incense Cedar	B & B	5'-6" H	5	
CO	●	Carya ovata / Shagbark Hickory	B & B	2"-2.5" Cal	3	
CC	●	Cercis canadensis / Eastern Redbud	B & B	3'-4" H	10	
CT	●	Chamaecyparis thyoides / Atlantic White Cypress	B & B	5'-6" H	4	
CV	● ●	Crataegus viridis 'Winter King' / Winter King Hawthorn	B & B	5'-6" H	15	
GK	●	Gymnocladus dioica / Kentucky Coffeetree	B & B	2"-2.5" Cal	4	
JC	●	Juglans cinerea / Butternut	B & B	2"-2.5" Cal	6	
LL	●	Larix laricina / Tamarack	B & B	8'-10" H	13	
LL2	●	Larix laricina / Tamarack	B & B	5'-6" H	3	
MV	●	Magnolia virginiana / Sweetbay Magnolia	B & B	4'-5" H	4	
MS	●	Malus sargentii / Sargent Crabapple	B & B	4'-5" H	2	
NS	●	Nyssa sylvatica / Tupelo	B & B	1.5"-2" Cal	21	
PG	●	Picea glauca / White Spruce	B & B	6' - 7' H	12	
PR	●	Pinus rigida / Pitch Pine	B & B	3'-4" H	31	
PS	●	Pinus strobus / White Pine	B & B	6' - 7' H	21	
PA	●	Platanus x acerifolia / London Plane Tree	B & B	3"-3.5" Cal	38	
PT	●	Populus tremuloides / Quaking Aspen	B & B	1.5"-2" Cal	38	
QA	●	Quercus alba / White Oak	B & B	1.5"-2" Cal	19	
QB	●	Quercus bicolor / Swamp White Oak	B & B	2"-2.5" Cal	26	
QC	●	Quercus coccinea / Scarlet Oak	B & B	1"-2.5" Cal	3	
QI	●	Quercus ilicifolia / Scrub Oak	B & B	2"-2.5" Cal	3	
QM	●	Quercus macrocarpa / Burr Oak	B & B	2"-2.5" Cal	1	
QR	●	Quercus rubra / Red Oak	B & B	2"-2.5" Cal	19	
SS	●	Sassafras albidum / Sassafras	5 Gal.	1"-1.5" Cal	7	
TO	●	Thuja occidentalis / American Arborvitae	B & B	6'-7' H	9	
TG	●	Thuja standishii x plicata 'Green Giant' / Green Giant Arborvitae	B & B	5'-6" H	12	
TA	●	Tilia americana / American Linden	B & B	1.5"-2" Cal	2	

SHRUBS			AVG SIZE	SPACING	QTY	AREA
SH		Shrub (See SHRUBS below for ground plane species list)	2 GAL	48" OC	3,300	50,913 SF

PERENNIALS			AVG SIZE	SPACING	QTY	AREA
P		Perennials - container (See PERENNIALS below for ground plane species list)	1 QT	30" OC	4,648	27,800 SF
MP		Perennials - plug (See PERENNIALS below for ground plane species list)	2" Plug	18" o.c.	48,753	89,360 SF

LAWN			AREA			
L		Lawn sod	41,120 SF			

SEEDED AREAS			SIZE	SPACING	AREA	REMARKS
M3		Perimeter Meadow (See Seed Mix Specifications for species list)	SEED		20,799 sf	
M1		Upland Meadow (See Seed Mix Specifications for species list)	SEED		90,829 sf	
M2		Lowland Meadow (See Seed Mix Specifications for species list)	SEED		21,455 sf	

NOTE: Tree caliper sizes listed are intended to depict the average size of all trees installed. Exact installed sizes may vary.

SPECIES LIST (GROUND PLANE)

SHRUBS
SHRUB PALETTE
- Arctostaphylos uva-ursi / Kinnikinnick
- Aronia arbutifolia / Red Chokeberry
- Aronia arbutifolia low scape hedger / Red Chokeberry
- Celphanthus occidentalis / Buttonbush
- Clethra alnifolia / Mountain Sweet Pepperbush
- Clethra alnifolia 'Hummingbird' / Hummingbird Summersweet
- Comptonia peregrina / Sweet Fern
- Fothergilla gardenii / Dwarf Fothergilla
- Gaylussacia baccata / Black Huckleberry
- Ilex glabra 'Shamrock' / Shamrock Inkberry Holly
- Ilex verticillata / Winterberry
- Ilex verticillata 'Red Sprite' / Red Sprite Winterberry
- Juniperus horizontalis / Creeping Juniper
- Kalmia angustifolia / Sheep Laurel
- Myrica gale / Sweetgale
- Prunus maritima / Beach Plum
- Rhododendron viscosum / Swamp Azalea
- Spiraea alba / Meadowsweet
- Vaccinium corymbosum / Highbush Blueberry
- Viburnum dentatum / Viburnum
- Viburnum dentatum 'Christom' / Blue Muffin® Arrowwood Viburnum
- Viburnum trilobum 'Compactum' / Compact American Cranberrybush
- Viburnum x 'Burkwoodii' / Burkwood Viburnum

PERENNIALS
PERENNIALS
- Achillea millefolium / Common Yarrow
- Actaea racemosa / Black Snakeroot
- Adiantum pedatum / Northern Maidenhair Fern
- Ammophila breviligulata / American Beachgrass
- Andropogon virginicus / Broomsedge Bluestem
- Carex pensylvanica / Pennsylvania Sedge
- Carex stricta / Tussock Sedge
- Danthonia spicata / Poverty Oatgrass
- Dennstaedtia punctilobula / Hay-scented Fern
- Doellingeria umbellata / Flat-topped Aster
- Echinacea purpurea / Coneflower
- Elymus virginicus / Virginia Wild Rye
- Festuca rubra / Red Fescue 305
- Gaultheria procumbens / Wintergreen
- Helenium autumnale / Sneezeweed
- Iris versicolor / Blue Flag
- Juncus greenei / Greene's Rush
- Maianthemum canadense / Canada Mayflower
- Osmundastrum cinnamomeum / Cinnamon Fern
- Panicum virgatum / Switch Grass
- Panicum virgatum 'Cape Breeze' / Cape Breeze Switch Grass
- Penstemon hirsutus / Hairy Beardtongue
- Polystichum acrostichoides / Christmas Fern
- Schizachyrium scoparium / Little Bluestem
- Solidago bicolor / White Goldenrod
- Symphyotrichum ericoides / Heath Aster
- Symphyotrichum novae-angliae / New England Aster
- Symphyotrichum novi-belgii / New York Aster

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

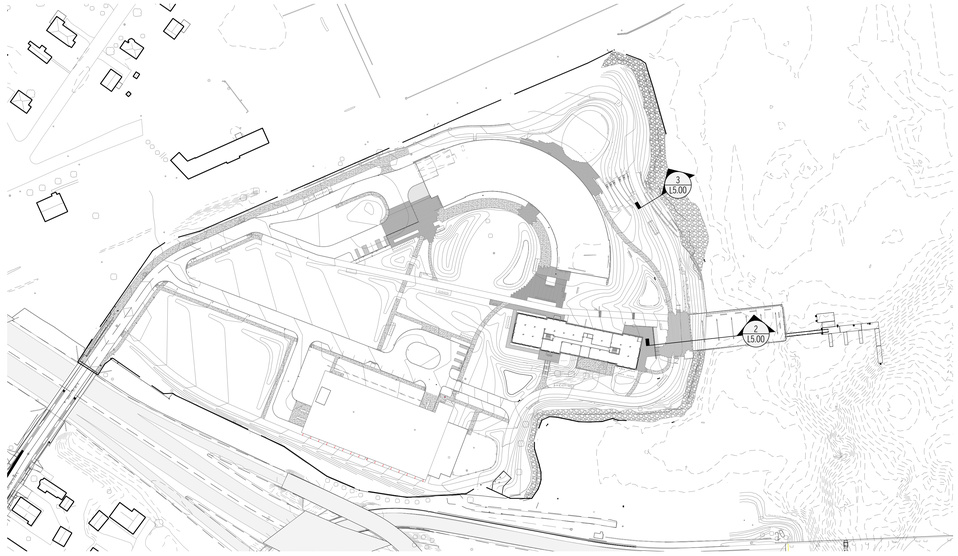
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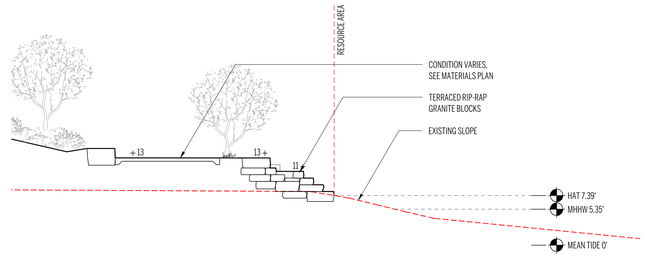
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Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS Checked STIMSON
Date	22 MARCH 2024
Scale	as noted

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Plant Schedules and Planting Details

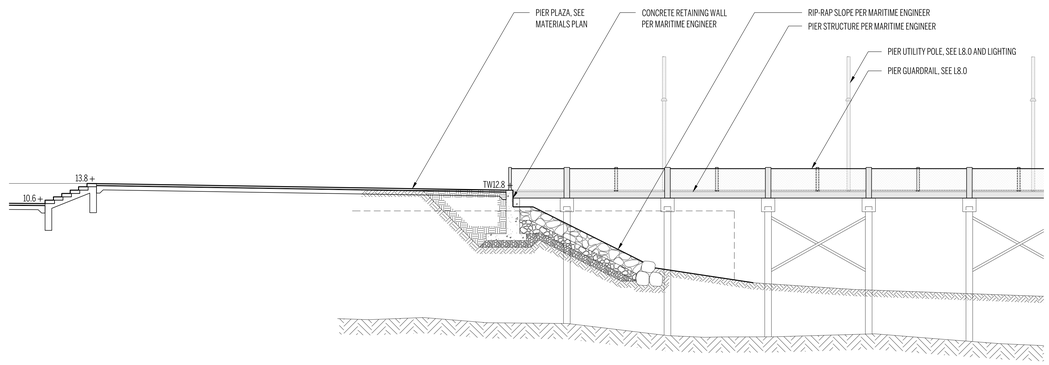
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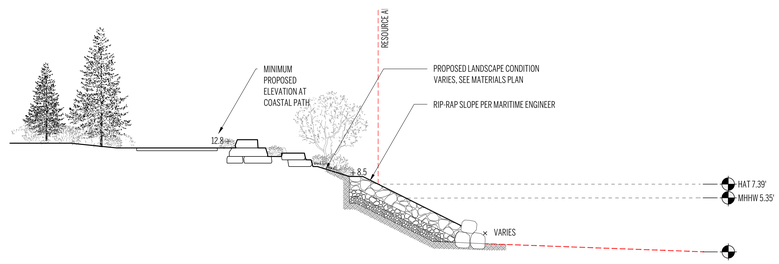
KEY PLAN
1"=100'



3 SECTION AT TERRACED RIP-RAP
1/8" = 1'-0"



2 SECTION AT PIER INTERFACE
1/8" = 1'-0"



1 TYPICAL SECTION AT SHORLINE
1/8" = 1'-0"

0 5' 10' 20' N

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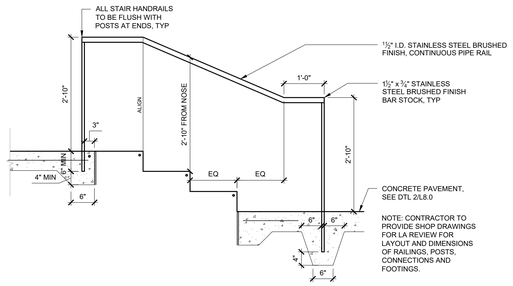
LICENSED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

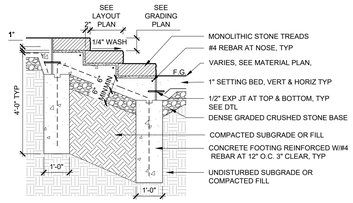
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Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	AS NOTED

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--- Site Sections

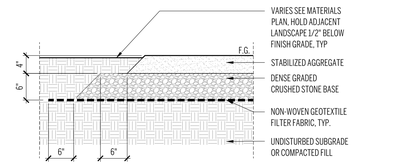
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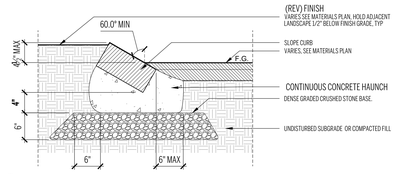
18 **STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING**
3/4" = 1'-0"



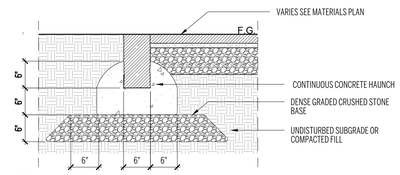
17 **MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION**
1/2" = 1'-0"



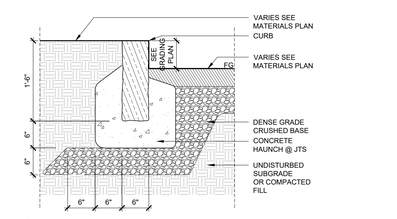
13 **DECOMPOSED GRANITE PAVING**
1" = 1'-0"



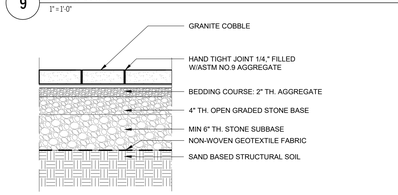
12 **GRANITE CURB - MOUNTABLE**
1" = 1'-0"



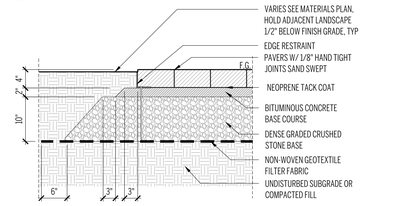
11 **GRANITE CURB - FLUSH**
1" = 1'-0"



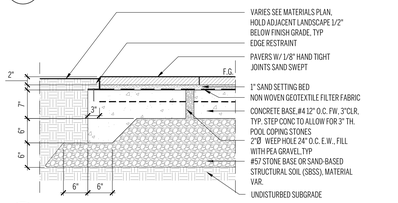
9 **GRANITE CURB**
1" = 1'-0"



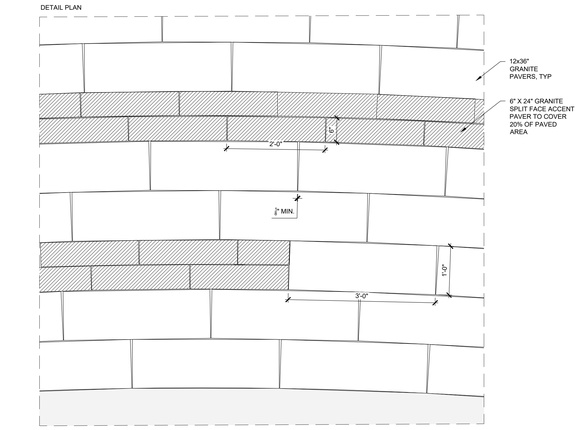
8 **GRANITE COBBLE AT TREE PITS**
1" = 1'-0"

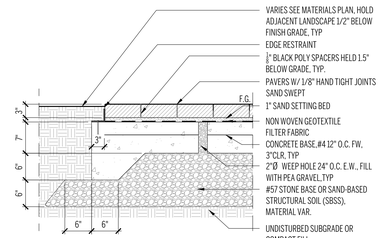


7 **PRECAST CONCRETE PAVERS/COBBLESTONE**
1" = 1'-0"

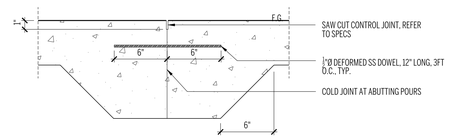


6 **GRANITE PAVERS - PEDESTRIAN**
1" = 1'-0"

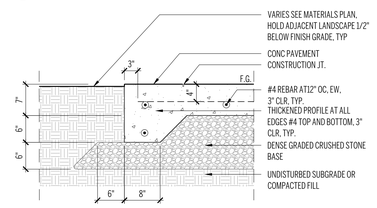




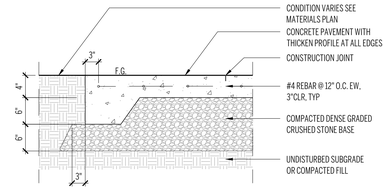
5 **GRANITE PAVERS - VEHICULAR**
1" = 1'-0"



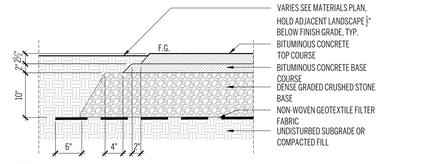
4 **CONCRETE CONSTRUCTION JOINT**
2" = 1'-0"



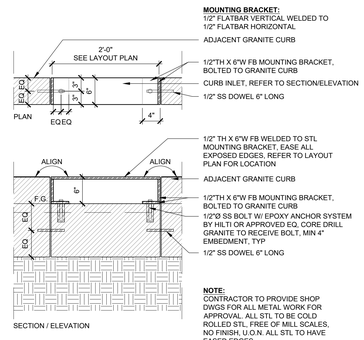
3 **CONCRETE PAVEMENT - VEHICULAR**
1" = 1'-0"



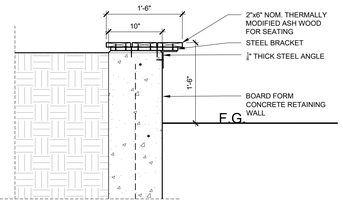
2 **CONCRETE PAVEMENT - PEDESTRIAN**
1" = 1'-0"



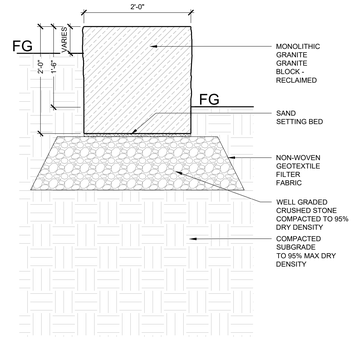
1 **ASPHALT PAVING - VEHICULAR**
1" = 1'-0"



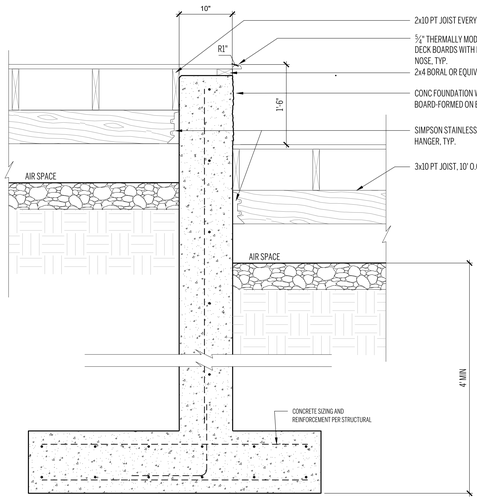
21 **STEEL CURB INLET**
1" = 1'-0"



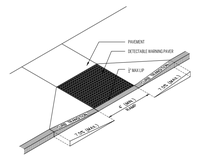
20 **CONCRETE RETAINING WALL WITH WOOD CAP**
NTS



19 **MONOLITHIC STONE WALL ON DENSE GRADED CRUSHED STONE BASE**
1" = 1'-0"

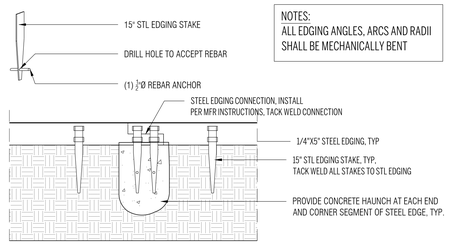


16 **WOOD DECK AT TERRACED LANDSCAPE**
NTS



1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% min).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. TYPICAL SIDEWALK SECTION FOR RAMP SECTION CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE SET FLUSH.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.

15 **ADA RAMP**
NTS



NOTES:
ALL EDGING ANGLES, ARCS AND RADII SHALL BE MECHANICALLY BENT

14 **STEEL EDGING**
1" = 1'-0"

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LAND-USE PERMIT SET

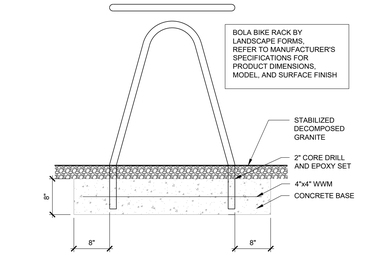
Number	Revision	Date

REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE
Stamp

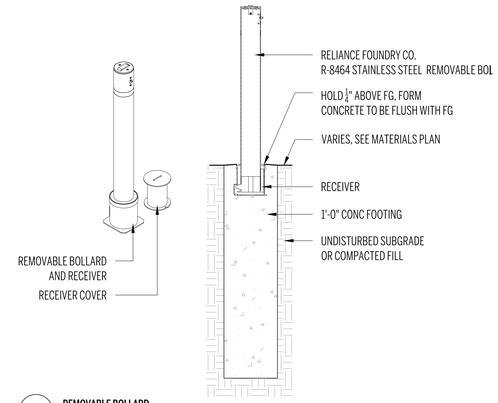
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	AS NOTED

Drawing Title
--- Site Details

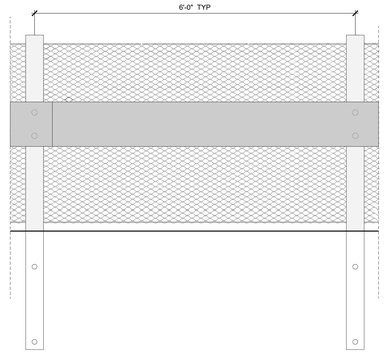
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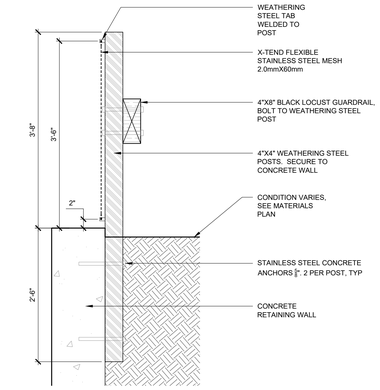
5 **BIKE RACK**
1" = 1'-0"



4 **REMOVABLE BOLLARD**
1" = 1'-0"

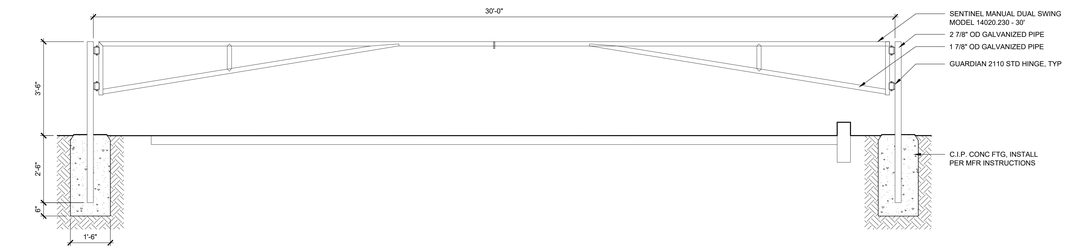


ELEVATION

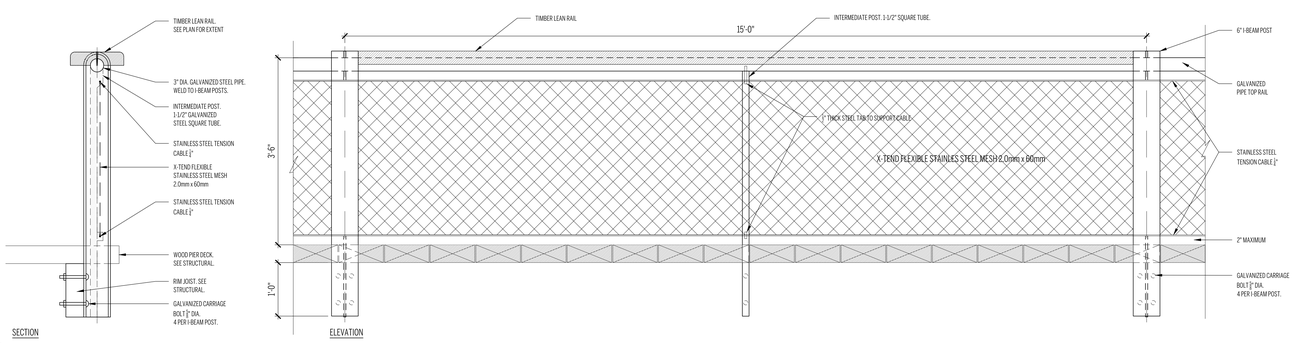


SECTION

3 **TIMBER GUARDRAIL**
1" = 1'-0"

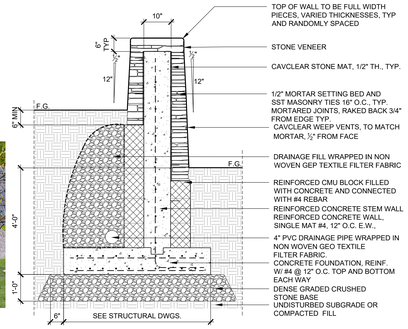


7 **VEHICULAR GATE**
1/2" = 1'-0"



6 **PIER GUARDRAIL**
1" = 1'-0"

REINFORCING CHART		
HR	L	VERTICAL REINF.
8'-10"	7'-0"	#6@6" O.C.
6'-8"	6'-0"	#6@12" O.C.



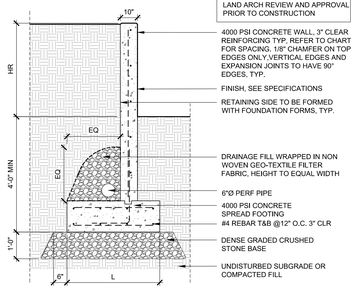


GRANITE VENEER MASONRY PRECEDENT

2 **CONCRETE RETAINING WALL WITH STONE VENEER**
1/2" = 1'-0"

REINFORCING CHART		
HR	L	VERTICAL REINF.
8'-10"	7'-0"	#6@6" O.C.
6'-8"	6'-0"	#6@12" O.C.

NOTE: CONTRACTOR TO PROVIDE SHOP DRAWINGS SHOWING FORM DIMENSIONS, TIE HOLE LOCATIONS, STEEL, AND WALL DIMENSIONS FOR LAND ARCH REVIEW AND APPROVAL PRIOR TO CONSTRUCTION



1 **ARCHITECTURAL CONCRETE RETAINING WALL**
NTS

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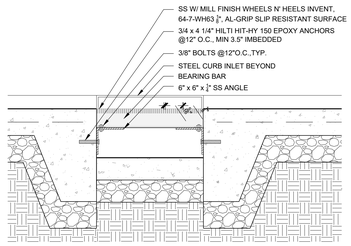
LAND-USE PERMIT SET

Number	Revision	Date

LICENSED LANDSCAPE ARCHITECT STEPHEN C STIMSON No. 3916 STATE OF MAINE
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	AS NOTED
Drawing Title	--- Site Details

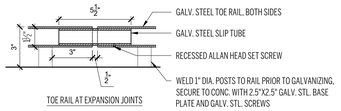
L6.01



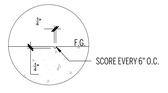
METAL GRATE BRIDGE PRECEDENT



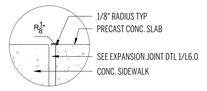
3 **METAL GRATE BRIDGE - PEDESTRIAN**
1" = 1'-0"



TOE RAIL AT EXPANSION JOINTS

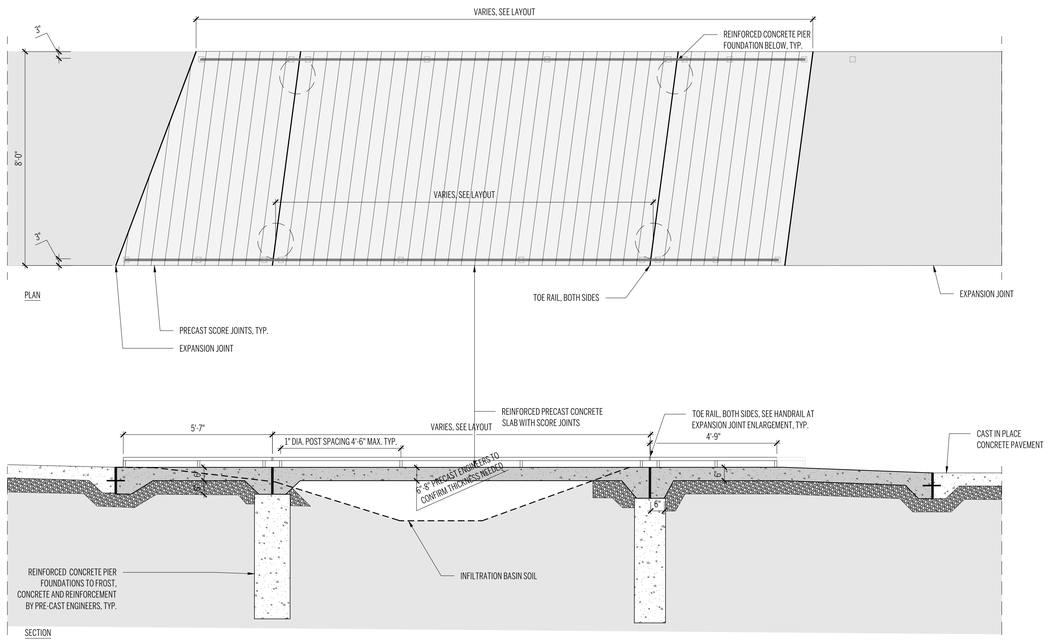


PRECAST SCORE JOINT

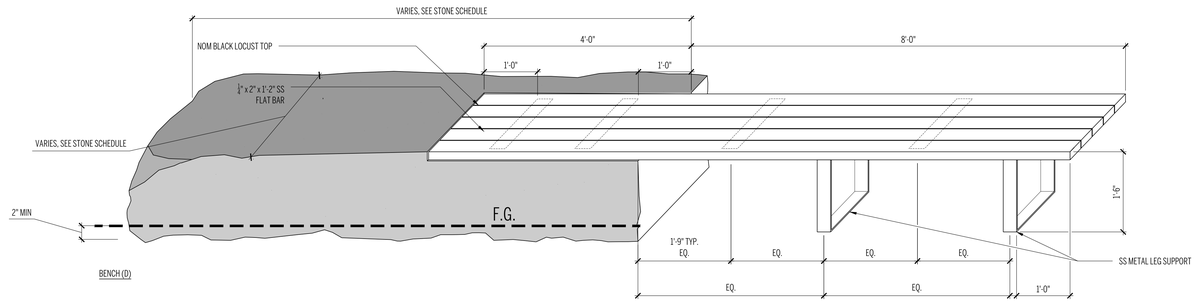


EXPANSION JOINT

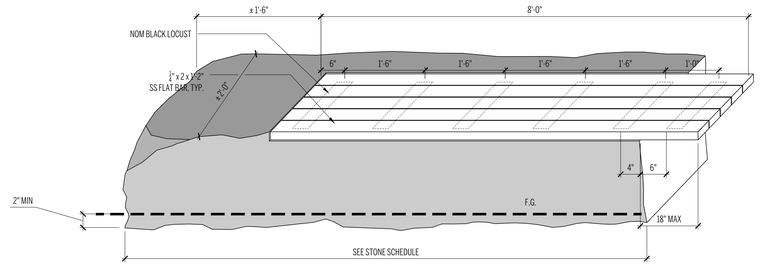
SECTION: HANDRAIL AT EXPANSION JOINTS TYP.
SCALE: 3"=1'-0"



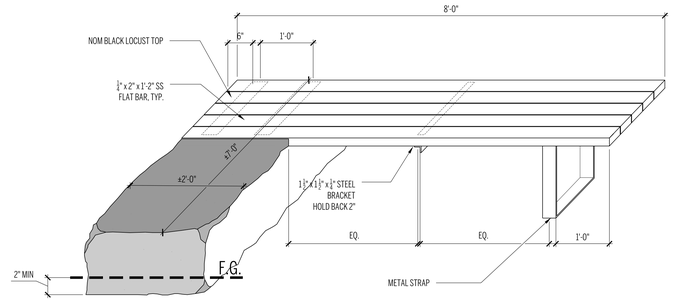
2 **CAST CONCRETE BRIDGE - PEDESTRIAN**
1/2" = 1'-0"



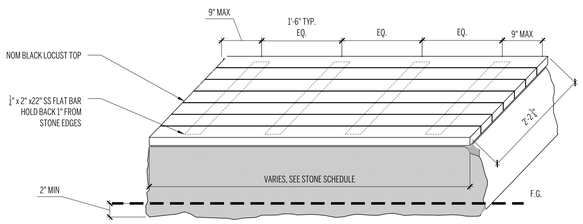
BENCH (D)



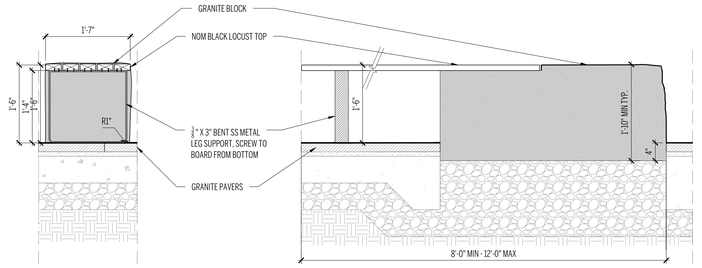
BENCH (C)

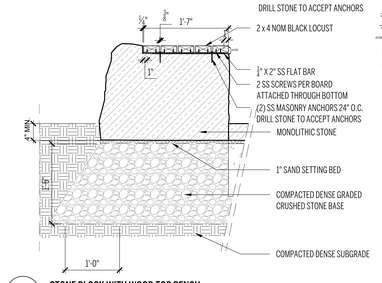


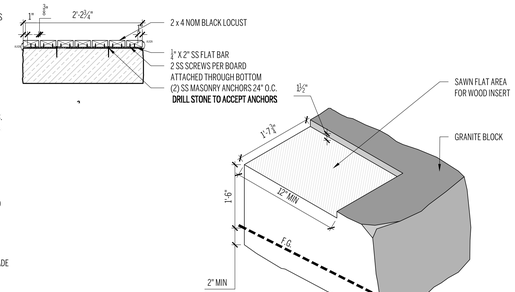
BENCH (B)



BENCH (A)







1 **STONE BLOCK WITH WOOD TOP BENCH**
1" = 1'-0"

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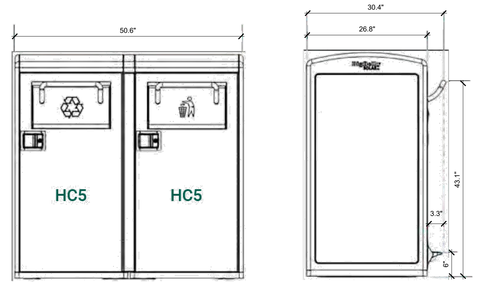
STEPHEN C. STIMSON No. 3916 — REGISTERED LANDSCAPE ARCHITECT — STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS Checked STIMSON
Date	22 MARCH 2024
Scale	AS NOTED

Drawing Title
--- Site Details

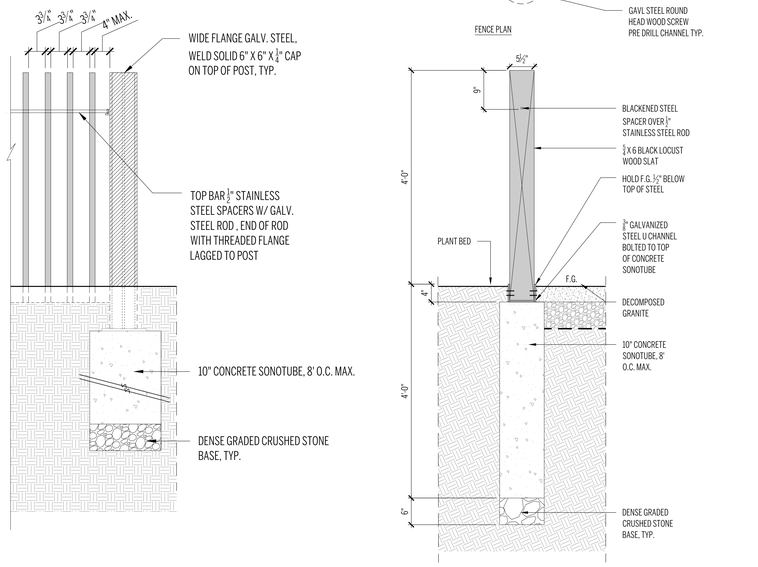
L6.02



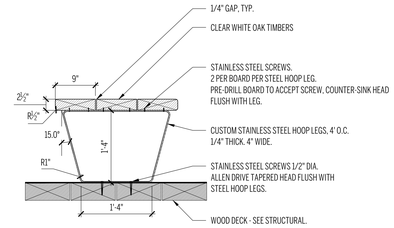
HC5/HC5 Double Station
Approximately 540 lbs (245 kg)

CleanCUBE BY ECUBE.
-120L CAPACITY, SOLAR POWERED
-FOOT PEDAL OPERATED. SEE SPECS

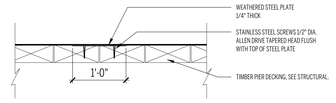
9 **CLEAN CUBE TRASH COMPACTER (WR)**
1" = 1'-0"



3 **WOODEN SLAT FENCE AT PLAYGROUND**
1" = 1'-0"



2 **RECLAIMED LUMBER BENCH AT PIER**
1" = 1'-0"



1 **WEATHERING STEEL BAND AT PIER DECK**
1" = 1'-0"

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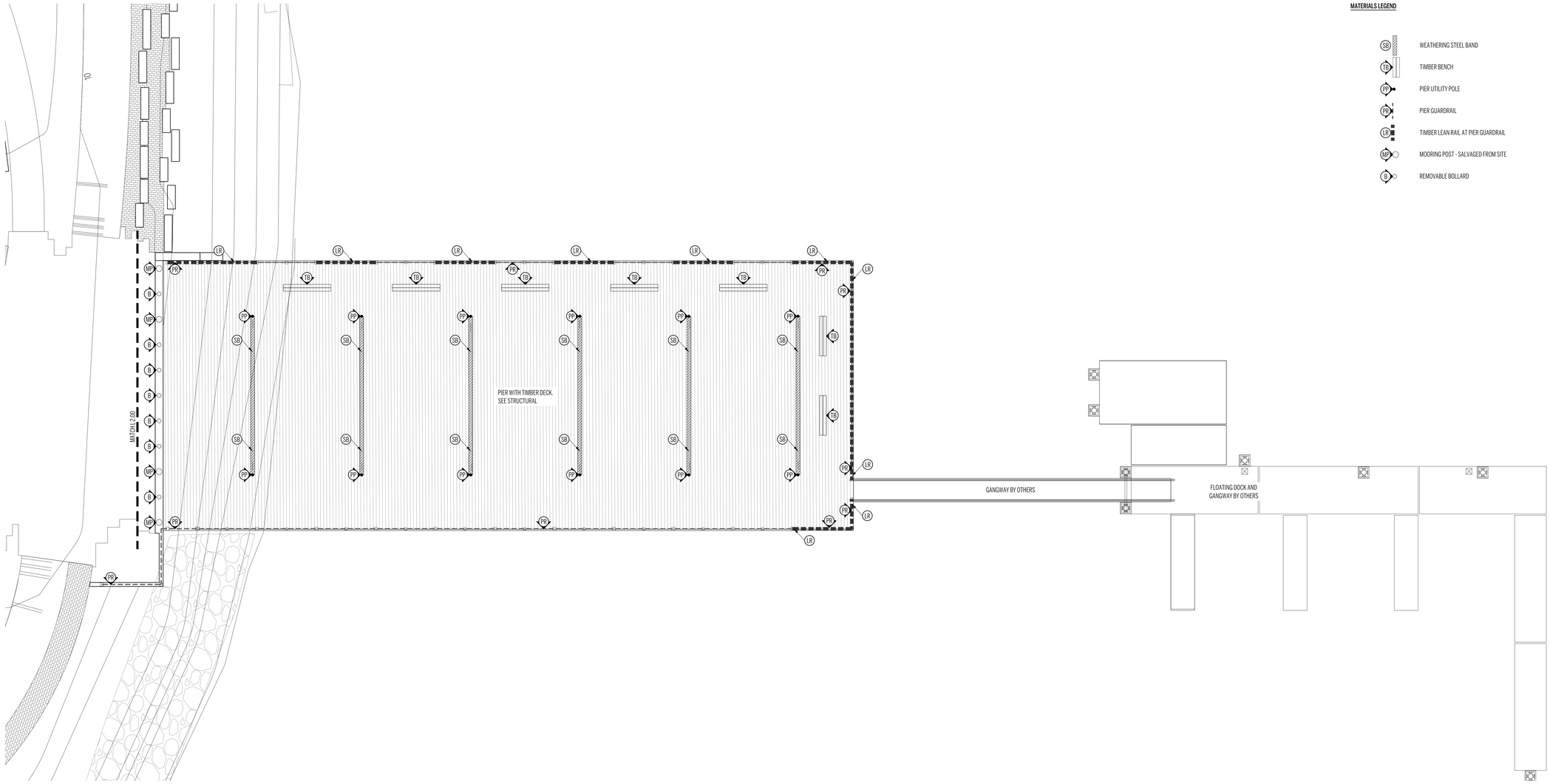
REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
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Drawing Title
--- Site Details

L6.03



MATERIALS LEGEND

SB	WEATHERING STEEL BAND	1 / L6.03
TB	TIMBER BENCH	2 / L6.03
PP	PIER UTILITY POLE	SEE LIGHTING
PR	PIER GUARDRAIL	6 / L6.01
LR	TIMBER LEAN RAIL AT PIER GUARDRAIL	6 / L6.01
MP	MOORING POST - SALVAGED FROM SITE	
B	REMOVABLE BOLLARD	4 / L6.01

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REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
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Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 10'

Drawing Title
Pier Plan

L8.00

EXISTING EDGE OF TREE CANOPY.
BLACK LOCUST, POPLAR, AND OTHER SPECIES.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING TREES.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING EDGE OF TREE CANOPY. MIXED EVERGREEN AND DECIDUOUS SPECIES.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING EVERGREEN TREE.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING SILVER MAPLE.
LOCATION APPROXIMATE.
TO BE REMOVED.

EXISTING DECIDUOUS AND EVERGREEN TREES.
LOCATIONS APPROXIMATE.
TO BE REMOVED.

EXISTING DECIDUOUS TREE.
LOCATION APPROXIMATE.
TO BE REMOVED.

NOTE:

EXISTING TREE LOCATIONS PER SITE SURVEY AND GOOGLE EARTH AERIAL IMAGERY

BEAN BUILDING

RAILROAD

INTERSTATE 295 NORTH

INTERSTATE 295 SOUTH

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REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 40'

Drawing Title

Existing Trees

L1.00

PARKING STRUCTURE

BEAN BUILDING

LEARNING, RESEARCH, AND COLLABORATION BUILDING

MATCH L.2.01
MATCH L.2.00

MATCH L.2.00
MATCH L.8.00

LIMIT OF WORK

8 QTY 9

8 QTY 6

NOTE: CONTRACTOR TO REMOVE CONSTRUCTION FILL DEBRIS FROM BEACH, INCLUDING BRICK, TILE, GRANITE BLOCK, AND OTHER MATERIALS IDENTIFIED BY OWNER AND DESIGN TEAM

PATHWAY AT PROPERTY LINE PLAN
1"=20'

MATERIALS LEGEND

PAVEMENT

P1	ASPHALT PAVING - VEHICULAR	1 L6.00
P2	CONCRETE PAVEMENT-PEDESTRIAN	2 L6.00
P3	CONCRETE PAVEMENT-VEHICULAR	3 L6.00
P4	GRANITE PAVERS 01 - VEHICULAR	5 L6.00
P5	GRANITE PAVERS 02-VEHICULAR	5 L6.00
P6	PRECAST CONCRETE PAVERS - VEHICULAR	7 L6.00
P7	PRECAST CONCRETE PAVERS - PEDESTRIAN	7 L6.00
P8	GRANITE PAVERS 01- PEDESTRIAN	6 L6.00
P9	GRANITE COBBLESTONE PAVERS - PERMEABLE	8 L6.00
P10	GRANITE COBBLESTONE PAVERS- VEHICULAR	7 L6.00
P11	DECOMPOSED GRANITE PAVEMENT	13 L6.00

CURBS AND EDGES

C1	GRANITE CURB - 6" RAISED	9 L6.00
C2	GRANITE CURB - FLUSH	11 L6.00
C3	GRANITE CURB - TRANSITION	15 L6.00
C4	GRANITE CURB - MOUNTABLE	12 L6.00
E1	STEEL EDGING	14 L6.00
E2	RECLAIMED RAIL TRACK	
TD	TRENCH DRAIN	3 L6.02
SI	STEEL CURB INLET (QUANTITY: 5)	21 L6.00
RR	SHORELINE PROTECTION, SEE MARINE ENGINEER DRAWINGS	

WALLS AND STAIRS

W1	ARCHITECTURAL CONCRETE RETAINING WALL	1 L6.01
W2	CONCRETE RETAINING WALL WITH STONE VENEER	2 L6.01
W3	CONCRETE FOUNDATION WALL AT WOOD DECK	16 L6.00
W4	BOARD FORMED CONCRETE RETAINING WALL	1 L6.01
W5	MONOLITHIC STONE RETAINING WALL ON DENSE GRADED CRUSHED STONE BASE	19 L6.00
S1	MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION	17 L6.00

SITE FURNISHINGS

WB	MONOLITHIC GRANITE BENCH WITH WOOD INSET	1 L6.02
WW	WOOD BENCH AT CONCRETE RETAINING WALL	20 L6.00
CB	PRE-CAST CONCRETE BRIDGE - PEDESTRIAN	2 L6.02
WD	WOOD DECK AT TERRACED LANDSCAPE	16 L6.00
HR	STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING	18 L6.00
CR	STAINLESS STEEL CURB RAIL	2 L6.02
TG	VEHICULAR TIMBER GUARDRAIL	3 L6.01
DW	DETECTABLE WARNING STRIP AT ADA CURB RAMP	15 L6.00
VG	VEHICULAR GATE (QUANTITY: 1)	7 L6.01
BR	BIKE RACK (QUANTITY: 95)	5 L6.01
B	REMOVABLE BOLLARD (QUANTITY: 17)	4 L6.01
F	WOODEN SLAT FENCE AT PLAYGROUND	3 L6.03

MATERIALS NOTES:

1. MAKE TRANSITIONS BETWEEN CHANGES IN PAVING SMOOTH AND GRADUAL WITH NO SHARP OR ABRUPT CHANGES UNLESS OTHERWISE SHOWN.
2. REFER TO LANDSCAPE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

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LAND-USE PERMIT SET

Number	Revision	Date

STEPHEN C. STIMSON No. 3916 REGISTERED LANDSCAPE ARCHITECT STATE OF MAINE

Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	22 MARCH 2024		
Scale	1" = 20'		

Drawing Title

Materials Plan

L3.00

MATERIALS LEGEND

PAVEMENT

P1	ASPHALT PAVING - VEHICULAR	1 / L6.00
P2	CONCRETE PAVEMENT-PEDESTRIAN	2 / L6.00
P3	CONCRETE PAVEMENT-VEHICULAR	3 / L6.00
P4	GRANITE PAVERS 01 - VEHICULAR	5 / L6.00
P5	GRANITE PAVERS 02-VEHICULAR	5 / L6.00
P6	PRECAST CONCRETE PAVERS - VEHICULAR	7 / L6.00
P7	PRECAST CONCRETE PAVERS - PEDESTRIAN	7 / L6.00
P8	GRANITE PAVERS 01- PEDESTRIAN	6 / L6.00
P9	GRANITE COBBLESTONE PAVERS - PERMEABLE	8 / L6.00
P10	GRANITE COBBLESTONE PAVERS- VEHICULAR	7 / L6.00
P11	DECOMPOSED GRANITE PAVEMENT	13 / L6.00

CURBS AND EDGES

C1	GRANITE CURB - 6" RAISED	9 / L6.00
C2	GRANITE CURB - FLUSH	11 / L6.00
C3	GRANITE CURB - TRANSITION	15 / L6.00
C4	GRANITE CURB - MOUNTABLE	12 / L6.00
E1	STEEL EDGING	14 / L6.00
E2	RECLAIMED RAIL TRACK	
TD	TRENCH DRAIN	3 / L6.02
SI	STEEL CURB INLET (QUANTITY: 5)	21 / L6.00
RR	SHORELINE PROTECTION, SEE MARINE ENGINEER DRAWINGS	

WALLS AND STAIRS

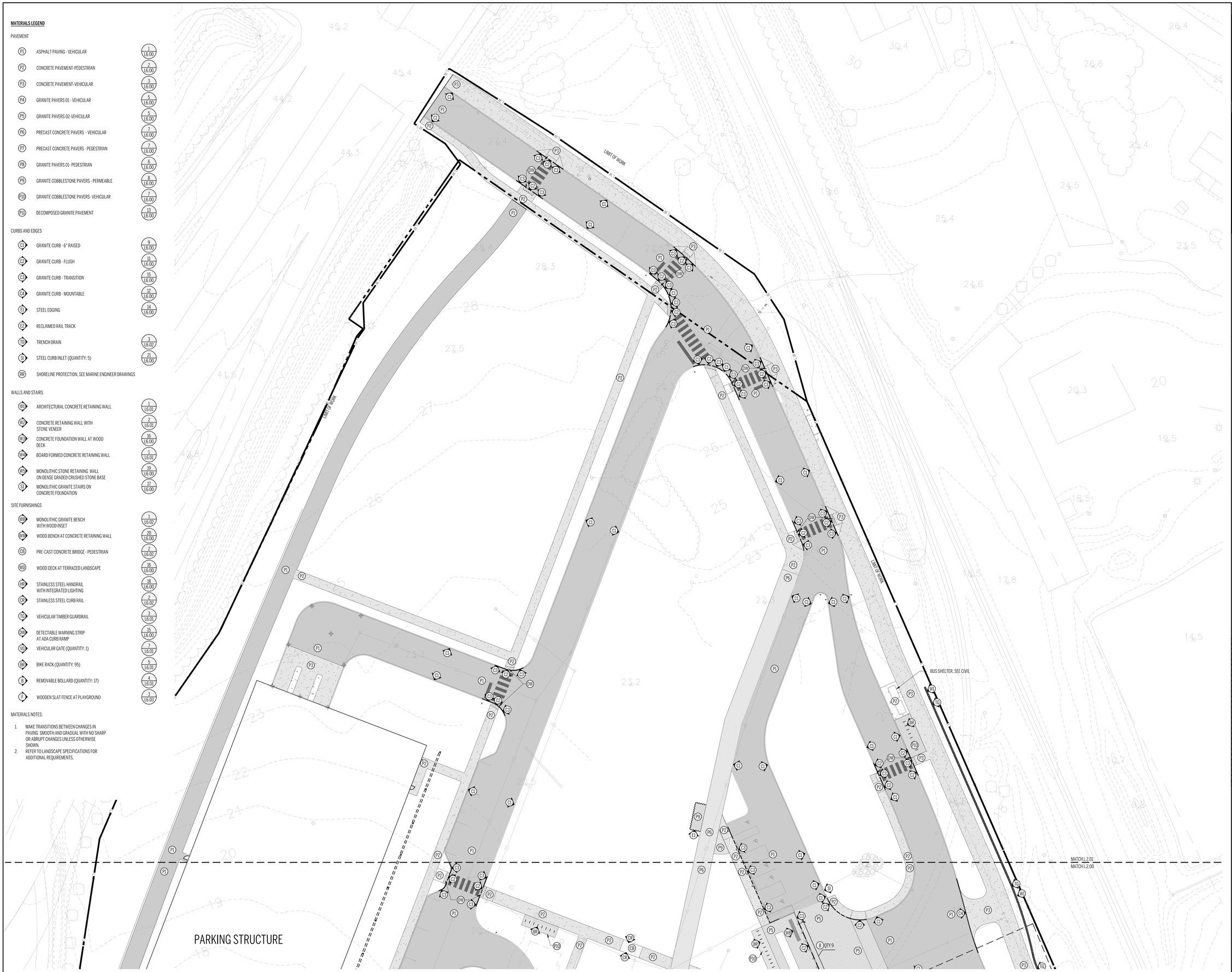
W1	ARCHITECTURAL CONCRETE RETAINING WALL	1 / L6.01
W2	CONCRETE RETAINING WALL WITH STONE VENEER	2 / L6.01
W3	CONCRETE FOUNDATION WALL AT WOOD DECK	16 / L6.00
W4	BOARD FORMED CONCRETE RETAINING WALL	1 / L6.01
W5	MONOLITHIC STONE RETAINING WALL ON DENSE GRADED CRUSHED STONE BASE	19 / L6.00
S1	MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION	17 / L6.00

SITE FURNISHINGS

WB	MONOLITHIC GRANITE BENCH WITH WOOD INSET	1 / L6.02
WW	WOOD BENCH AT CONCRETE RETAINING WALL	20 / L6.00
CB	PRE-CAST CONCRETE BRIDGE - PEDESTRIAN	2 / L6.02
WD	WOOD DECK AT TERRACED LANDSCAPE	16 / L6.00
HR	STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING	18 / L6.00
CR	STAINLESS STEEL CURB RAIL	2 / L6.02
TG	VEHICULAR TIMBER GUARDRAIL	3 / L6.01
DW	DETECTABLE WARNING STRIP AT ADA CURB RAMP	15 / L6.00
VG	VEHICULAR GATE (QUANTITY: 1)	7 / L6.01
BR	BIKE RACK (QUANTITY: 95)	5 / L6.01
B	REMOVABLE BOLLARD (QUANTITY: 17)	4 / L6.01
F	WOODEN SLAT FENCE AT PLAYGROUND	3 / L6.03

MATERIALS NOTES:

1. MAKE TRANSITIONS BETWEEN CHANGES IN PAVING SMOOTH AND GRADUAL WITH NO SHARP OR ABRUPT CHANGES UNLESS OTHERWISE SHOWN.
2. REFER TO LANDSCAPE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



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STEPHEN C. STIMSON No. 3916 — LICENSED LANDSCAPE ARCHITECT — STATE OF MAINE

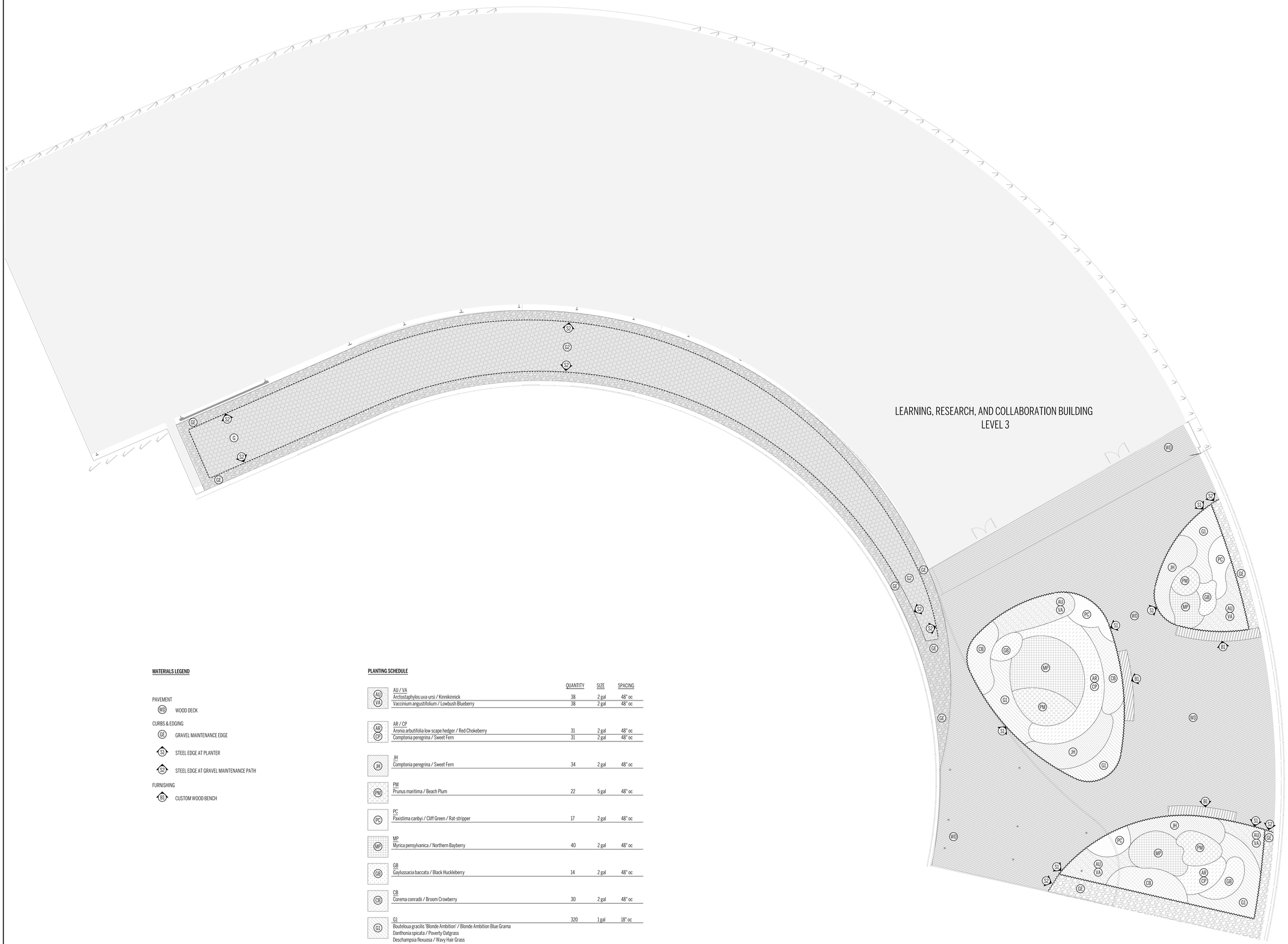
Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	22 MARCH 2024		
Scale	1" = 20'		

Drawing Title

Materials Plan

L3.01



MATERIALS LEGEND

PAVEMENT

WD WOOD DECK

CURBS & EDGING

GE GRAVEL MAINTENANCE EDGE

S1 STEEL EDGE AT PLANTER

S2 STEEL EDGE AT GRAVEL MAINTENANCE PATH

FURNISHING

B1 CUSTOM WOOD BENCH

PLANTING SCHEDULE

		QUANTITY	SIZE	SPACING
AU / VA				
AU	Arctostaphylos uva-ursi / Kinnikinnick	38	2 gal	48" oc
VA	Vaccinium angustifolium / Lowbush Blueberry	38	2 gal	48" oc
AR / CP				
AR	Aronia arbutifolia low scape hedger / Red Chokeberry	31	2 gal	48" oc
CP	Comptonia peregrina / Sweet Fern	31	2 gal	48" oc
JH				
JH	Comptonia peregrina / Sweet Fern	34	2 gal	48" oc
PM				
PM	Prunus maritima / Beach Plum	22	5 gal	48" oc
PC				
PC	Paxistima canbyi / Cliff Green / Rat-stripper	17	2 gal	48" oc
MP				
MP	Myrica pensylvanica / Northern Bayberry	40	2 gal	48" oc
GB				
GB	Gaylussacia baccata / Black Huckleberry	14	2 gal	48" oc
CB				
CB	Corema conradii / Broom Crowberry	30	2 gal	48" oc
G1		320	1 gal	18" oc
G1	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama Danthonia spicata / Poverty Oatgrass Deschampsia flexuosa / Wavy Hair Grass Echinacea pallida / Pale Purple Coneflower Festuca rubra / Red Fescue Ionactis linariifolia / Flaxleaf Aster Juncus trifidus / Highland Rush Schizachyrium scoparium / Little Bluestem Sibbaldiopsis tridentata / Three-leaved Cinquefoil Solidago caesia / Wreath Goldenrod Symphyotrichum novae-angliae / New England Aster			
G2		3,628 SF	LiveRoof Maxx (8" soil depth)	
G2	Bouteloua gracilis 'Blonde Ambition' / Blonde Ambition Blue Grama Danthonia spicata / Poverty Oatgrass Deschampsia flexuosa / Wavy Hair Grass Echinacea pallida / Pale Purple Coneflower Festuca rubra / Red Fescue Ionactis linariifolia / Flaxleaf Aster Juncus trifidus / Highland Rush Schizachyrium scoparium / Little Bluestem Sibbaldiopsis tridentata / Three-leaved Cinquefoil Solidago caesia / Wreath Goldenrod Symphyotrichum novae-angliae / New England Aster			

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 10'

Drawing Title
Roof Plan

L3.10

PARKING STRUCTURE

MATCH INSET PLAN
MATCH L4.00

MATCH L4.01
MATCH L4.00

LEARNING, RESEARCH, AND COLLABORATION BUILDING

BEAN BUILDING

5,212 sf M1

811 sf M1

4,444 sf M1

771 sf M1

3,744 sf M2

7,837 sf M2

2,557 sf M2

4,904 sf M2

4,619 sf M1

556 sf M1

992 sf M1

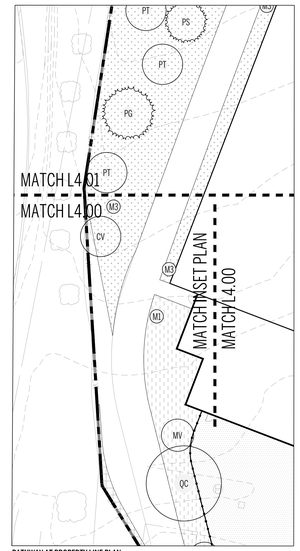
2,413 sf M2

526 sf M1

REFER TO L4.02 FOR NATIVE STATUS OF PROPOSED PLANT SPECIES WITHIN THIS AREA

REFER TO L4.02 FOR NATIVE STATUS OF PROPOSED PLANT SPECIES WITHIN THIS AREA

REFER TO L4.02 FOR NATIVE STATUS OF PROPOSED PLANT SPECIES WITHIN THIS AREA



PATHWAY AT PROPERTY LINE PLAN
1"=20'

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Job #	2202
Project	THE ROUX INSTITUTE
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Date	22 MARCH 2024
Scale	1" = 20'

Drawing Title
Planting Plan

L4.00



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LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 20'

Drawing Title
Planting Plan

L4.01

MEADOW SITE PREPARATION AND SEEDING NOTES

1) Materials Delivery, Storage, and Handling:
   a) General:
      i) Deliver materials only after preparation for on-site seeding of the meadow seeding area and adjacent areas has been completed and accepted.
      ii) Prohibit materials only after preparation for on-site seeding of the meadow seeding area and adjacent areas has been completed and accepted.
      iii) Prohibit storage of any equipment or materials on the areas to be seeded once the final mowing prior to seeding has occurred.
   b) Seed:
      i) Seed shall be stored at temperatures between 40- and 60-degrees F and with a relative humidity of between 25-60%.
      ii) Protect seed from drying out, becoming moist or wet, overheating, and /or from contamination during delivery. Seed that has become wet or moldy shall not be accepted.
      iii) Transport temperature shall not exceed 105 F at any time. If transit from cold storage to sowing is greater than 10 days, seed must be kept under storage temperatures and relative humidity described above.

2) Installation Seasons:
   a) Work only within seasonal limitations for proper seeding. These are optimal times for rapid establishment of optimal ground cover, and suppression of weeds.
   b) Permanent meadow seeding should be sown between *July 1 – Aug. 15, Nov. 15 – Dec. 15*
   c) If sowing is being done between August 1 and August 31, use 25% more seed per unit area and expect more weed management.
   d) If seeding occurs between October 1 and January 31st, it must be done when there is no snow on the ground.

3) Site Preparation Acceptance:
   a) Prior to seeding, the site must be inspected by the Landscape Architect, Meadow Specialist, and Meadow Installer to ensure that weed control is acceptable, seed bed is in the appropriate condition for seeding, and the site has been correctly delineated.
   b) If it is determined that conditions are not acceptable for seeding, the unacceptable areas should be mitigated and re-inspected by the Landscape Architect and Meadow Consultant prior to seeding.

4) Seeding and Meadow Acceptance:
   a) If the site preparation process starts and seeding does not occur within proper seeding windows, the Owner shall sow and manage a cover crop to protect and stabilize meadow areas until the next occurring seeding window.
   b) The Landscape Architect and Meadow Consultant must inspect site prior to seed installation and provide site preparation acceptance.
   c) Seeding shall consist of soil preparation, seeding, weeding, and otherwise providing all labor and materials necessary to secure the establishment of acceptable vegetative layer.
   d) After seeding, the site must be inspected by the Landscape Architect and the Meadow Consultant to ensure that seeding has been completed as per construction drawings.
   e) Meadow acceptance occurs a minimum of 120 days from completion of final meadow seeding phase and between May and September
   f) Meadow acceptance shall be an acceptable stand of meadow which is defined to mean a uniform coverage well established, close stands of plants that meet the following criteria: a minimum of 8 thriving desirable plants per square foot (excluding nurse crop), no bare or dead spots over 36" maximum in any dimension, no more than 10% of the meadow is bare, and free from disease, and detrimental insect infestation.
   g) Begin management practice immediately after seeding is complete for a given area.

5) Meadow Seed:
   a) See Plant Lists in the Drawings for Meadow Seed Mixes
   b) Provide fresh, new crop seed that is 98% Pure Live Seed (for tested species) or better. In no case shall weed seed content exceed 1% by weight. All seeds shall comply with Federal and State seed laws. Seed shall not be coated with herbicides and/or fungicides.
   c) Seed mixes shall be delivered in individual bags labeled by mix and then by seed size within each mix.
   d) Small Seed: 25,000 seeds per/oz or less. Individual seeds can be picked up by hand.
   e) Very Fine Seed: 25,000+ seeds/oz. Individual seeds are too small to be picked up by hand.
   f) Grain: Cover crop grain seed and large wildflower seed (¼-¼" in size)
   g) Fluffy Seed: Seed with fluffy, feathery seed coat

6) Seed Mix Suppliers:
   a) Ernst Conservation Seeds, Inc., 8884 Mercer Pike, Meadville PA 16335, Tel: 800-873-3321, http://www.ernstseed.com/.
   b) Prairie Moon Nursery, 32115 Prairie Lane, Winona, MN 55987. Tel: (8866)417-8156, www.prairiemoon.com
   c) Roundstone Native Seed Company, 9764 Raider Hollow Rd, Upton, KY 42784, Tel: (270) 531-3034, https://roundstoneseed.com
   d) Equal approved by the Architect and Meadow Consultant.

7) Cover Crops
   a) Cover Crop shall be installed in areas disturbed during construction for soil stabilization prior to permanent meadow seed: May 1 – Oct. 1
   b) Cover crops should only be sown in areas with new soil that will not need Erosion Control Fabric, or to protect and stabilize soils outside of the seeding window.

8) Seeding Materials and Equipment:
   a) Use flake straw mulchings as a seed mix broadcasting agent.
   b) Do not use fertilizer.
   c) Mechanized equipment for finished grading shall be skid-steer (full-size or mini) or tractor with Harley Rake/Power Rake attachment.
   d) Hand seeding techniques shall be used to sow meadow seed in all areas.
   e) Hydroseeding is not allowed.
   f) No mulch shall be used in seeded meadow areas.

9) Site Preparation: GENERAL
   a) Pre-installation examination and sequencing are required: Before beginning any establishment phase (site preparation, seeding, planting), the Contractor shall examine previous work, related work, and conditions under which this work is to be performed and notify the Landscape Architect in writing of all deficiencies and conditions detrimental to the proper completion of this work. Beginning work means Contractor accepts substrates, previous work, and conditions.
   b) The Contractor shall not commence work associated with the installation of meadows until all work in the work areas is complete and accepted by the Landscape Architect.
   c) The following shall be completed prior to the commencement of seeding:
      i) Fine gradings and the removal of all debris and weeds.
      ii) Utilities have been installed and accepted.
      iii) All trees, shrubs, and perennials have been planted.
      iv) Permanent and temporary irrigation for trees, shrubs, and perennials located within or adjacent to meadow seeding areas has been installed and accepted.
      v) Stormwater management areas, swales, and drainage areas shall remain dry during seeding and meadow establishment. The contractor and owner shall coordinate site drainage during meadow establishment so to bypass seeded areas from stormwater surge.
   d) Prior to seeding, stake areas with pin flags that identify seed type for each area.
   e) Do not proceed with seeding until the extent and distribution of seeding/planting zones has been accepted by the Landscape Architect.
   f) Meadow seed mix installation should not occur until any vegetation management procedures, such as weed control or other vegetation removals, in meadow areas have been completed and accepted.
   g) The Landscape Architect and Meadow Consultant must inspect site prior to seed installation and provide site preparation acceptance.
   h) A properly compacted seedbed should not allow a shoe to sink more than ½" when walking on the seedbed.
   i) Meadow areas shall have at least one full growing season of weed control prior to seeding and must be inspected by the Meadow Consultant prior to seeding.
   j) Cover crops should only be sown in areas with new soil that will not need Erosion Control Fabric, or to protect and stabilize soils outside of the seeding window.

10) Site Preparation for Dormant Seeding shall occur in the following sequence:
   a) Early May: Site Visit #1 -Site visit with the Contractor and Meadow Consultant to finalize the spray plan (timing and products) and to delineate all meadow extents where soil disturbance will not occur. Once meadow has been delineated all mowing within this area should cease.
   b) Mid-June: Spray #1 - Broadcast spray area with Glyphosate, and other products as specified in Early May visit. At least two weeks without mowing should have occurred prior to the first spray.
   c) Mid-July: Mow #1 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from the date of the first spray prior to mowing.
   d) Early August: Site Visit #2 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   e) Late August: Spray #2 - Broadcast spray area with Glyphosate, and other products as specified in early August visit.
   f) Mid-September: Mow #2 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from date of spray prior to mowing.
   g) Early October: -Site Visit #3 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   h) Late October: Spray #3 - Broadcast spray area with Glyphosate, and other products as specified in early October visit.

11) Site Preparation for Summer Seeding shall occur in the following sequence:
   a) Early August: Site Visit #1 - Site visit with contractor and meadow expert to finalize spray plan (timing and products) and to delineate all meadow extents where soil disturbance will not occur. Once meadow has been delineated all mowing within this area should cease.
   b) Late August: Spray #1 - Broadcast spray area with Glyphosate, and other products as specified in early August visit.
   c) Mid-September: Mow #1 - Mow any areas where growth is higher than 6" to a height of 4". Wait at least 3 weeks from date of spray prior to mowing.
   d) Early October: Site Visit #2 -Site visit with Contractor and Meadow Specialist to finalize spray plan (timing and products).
   e) Late October: Spray #2 - Broadcast spray area with Glyphosate, and other products as specified in early October visit.
   f) Early May (the following year): Site Visit #3 -Site visit with contractor and meadow expert to finalize spray plan (timing and products).
   g) Mid-June: Spray #3 - Broadcast spray area with Glyphosate, and other products as specified in early May visit. At least two weeks should without mowing should have occurred prior to the first spray.
   h) Early-July: Mow #2 - Mow any areas where growth is higher than 6" to a height of 4".

12) Permanent Meadow Mix Seeding Installation shall occur in the following sequence:
   a) Install meadow seed mix during the timeline established by this document.
   b) Seeding shall consist of soil preparation, seeding, weeding, and otherwise providing all labor and materials necessary to secure the establishment of acceptable vegetative layer.
   c) Prior to seeding and planting verify meadow area is prepared and ready for vegetation installation and that water is available for seed mixing.
   d) Scarify soil to depth of approximately ½" using appropriate equipment. Repeat as needed to create a seedbed with approximately 50% of the soil exposed. No tilling should be performed, as this will increase weed presence due to the release of dormant weed seeds below the soil surface.
   e) Segregate the seeds according to mix and then by seed size. For the hand broadcast method, "Fluffy," "Small," and "Grain" seed can be combined (henceforth referred to collectively as "Large" seed). "Very Fine" seed (seed which cannot be picked up individually by hand) must always remain separate.
   f) Bulk up "Large" seed by mixing with an inert bulking material such as sawdust, sand, or flake pine shavings. Seed and bulking material can be mixed on tarps spread on the ground. Slightly dampening the bulking material will help the seed to be evenly distributed throughout the bulked material. Use enough bulking material to allow seed to be evenly distributed over the entire project area.
   g) Seeding must happen within 24 hours of mixing seed with wet material.
   h) Only seed that can be installed in a single workday should be mixed at any given time.
   i) Hand sow large seed that has been bulked up with wet inert material. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
   j) Run over area with dethatcher or power rake to lightly cover large seed no to exceed ¾" depth. Use a hand rake if the area is not accessible with machinery.
   k) Bulk up the "Very fine" seed in the manner described above and broadcast evenly over the prepared surface. Do not incorporate into the soil as these species need light to germinate and will not do so if buried in the soil,
   l) Any stabilization fabrics shall only be placed after permanent seed has been sown and accepted.
   m) Begin management practice immediately after seeding is complete for a given area.

13) Management procedures and activities during meadow establishment shall observe the following guidelines:
   a) In the first growing season seeded vegetation should not be allowed to exceed 12" in height.
   b) As vegetation approaches 12" in the meadow, mow or cut all growth to approximately 4-6" height (approximately once per month during the growing season).
   c) Use flail or rotary-style equipment that will chop dead growth.
   d) Sickle bar type mowers that cut at the base of vegetation and drop plant material intact should not be used as the intact cut plant material can inhibit seedling development.
   e) In locations inaccessible to a mower (wet areas, steep slopes, etc.), string trim vegetation to the specified height.
   f) Areas with live plants should not be mown. Areas should be weeded by hand or with small mechanical equipment where appropriate. Work in these areas to be completed by meadow installer.
   g) Do not irrigate seeded meadow areas unless required for planted vegetation, in which case irrigation should be directed at planted vegetation and not on seeded areas, to the extent possible.
   h) Mow entire meadow one time to height of 4" in March/early April with a flail mower. Do not mow lower than 4". String trim areas inaccessible to a mower.
   i) Spot treat weeds as required (min. 1 spray, max. 3 sprays).
   j) Maintenance contractors shall not blow leaves or other debris in the direction of seeded meadows or within seeded meadows.
   k) Conduct a minimum of two (2) annual meadow checks by a meadow expert.

14) If a meadow is damaged, remove damaged materials if necessary. Restore areas to original grades and reestablish meadow as originally installed following the establishment train time frames.
   a) Request Landscape Architect approval prior to beginning repairs.
   b) If a meadow exhibits unsatisfactory growth, perform soil testing for chemical properties, compaction, and infiltration rates.
   c) Adhere to Landscape Architect's recommended remediation.
   d) Remediation may include additional weed control or re-seeding.

15) Reseeding shall be performed at the request of the Landscape Architect.
   a) Reseeding shall be required if meadow establishment/performance is poor, dead spots are apparent, or other unsuitable conditions are present.
   b) Work shall be performed according to the installation calendar above. Work outside this window is not permitted.
   c) Cut or trim vegetation to maximum of 2" prior to reseeding. Remove cut vegetation from the meadow.
   d) When reseeding, follow the seeding process outlined above.
   e) When reseeding areas where erosion control is in place, apply seed mixture starting at the top of the slope and over the extent of erosion control material to be reseeded. Hand rake to move seed through the erosion control matting towards soil contact.t. Hands sow sand/seed mixture down into the areas between the cut vegetation.

16) Warranty and Management
   a) Begin management practice immediately after seeding is complete for a given area.
   b) Meadow acceptance occurs a minimum of 120 days from completion of final meadow seeding phase and between May and September
   c) The Contractor shall warranty and maintain the meadow for two years following meadow acceptance.

Seed Mix Specifications

Project: ROUX INSTITUTE
Mix: M1 - Upland Meadow
Area in acres = 2.1
Area in sq ft = 93,555
Total seeds per sq ft = 200
% graminoids = 60%

Results (excluding nurse crop)
26 lbs. of seed/acre
55 Total lbs. this mix
40 Total spp.
12 Number of graminoids
28 Number of forbs

Botanical Name	Common Name	Qty	Seeding Notes	Substitutions/Comments
Grasses, Sedges and Rushes				
Andropogon ternarius	Splitbeard Broomsedge	3.30 oz		
Bouteloua gracilis	Blue Grama Grass	14.03 oz		
Carex brevior	Plains Oval Sedge	11.61 oz		
Carex molesta	Field Oval Sedge	22.45 oz		
Carex normalis	Spreading Oval Sedge	4.49 oz		
Carex projecta	Loose-headed Oval Sedge	1.81 oz		
Carex vulpinoidea	Fox Sedge	11.23 oz		
Elymus virginicus	Virginia Rye	26.73 oz		
Eragrostis spectabilis	Purple Lovegrass	1.20 oz		
Juncus tenuis	Path Rush	0.19 oz		
Schizachyrium scoparium	Little Bluestem	374.22 oz		
Tridens flavus	Purpletop	59.50 oz		
Forbs				
Allium cernuum	Nodding Pink Onion	9.85 oz		
Anaphalis margaritacea	Pearly Everlasting	1.03 oz		
Asclepias tuberosa	Butterfly Weed	17.41 oz		
Aster laevis (Symphiotrichum)	Smooth Aster	10.89 oz		
Aster umbellatus (Doellingeria umbellata)	Flat-topped Aster	3.35 oz		
Blephilia hirsuta	Hairy Wood Mint	0.94 oz		
Chamaecrista fasciculata (Cassia)	Partridge Pea	83.16 oz		
Coreopsis lanceolata	Tickseed	11.23 oz		
Coreopsis tinctoria	Plains Coreopsis	2.55 oz		
Echinacea pallida	Pale Purple Coneflower	71.97 oz		
Echinacea purpurea	Purple Coneflower	22.68 oz		
Eryngium yuccifolium	Rattlesnake Master	29.94 oz		
Eupatorium coelestinum (Conoclinium)	Mistflower	1.07 oz		
Gnaphalium obtusifolium	Sweet Everlasting	0.30 oz		
Lespedeza capitata	Round-headed Bush Clover	9.36 oz		
Lobelia spicata	Spike Lobelia	0.25 oz		
Monolarda citriodora	Lemon Mint	2.99 oz		
Monolarda punctata	Horsemint	4.16 oz		
Penstemon digitalis	White Beardtongue	5.76 oz		
Pycnanthemum tenuifolium	Slender Mountain Mint	1.98 oz		
Pycnanthemum virginianum	Mountain Mint	1.02 oz		
Rudbeckia hirta	Black Eyed Susan	2.44 oz		
Solidago juncea	Early Goldenrod	2.25 oz		
Solidago nemoralis	Gray Goldenrod	2.00 oz		
Solidago rigida (Oligoneuron)	Stiff Goldenrod	1.83 oz		
Tradescantia ohiensis	Ohio Spiderwort	9.36 oz		
Verbena hastata	Blue Vervain	1.61 oz		
Zizia aurea	Golden Alexander	34.02 oz		

Nurse Crop
Spring Seeding: Spring Oats (Avena sativa): 20 lb/ac
Early Spring to Later Summer Seeding: Grain Rye (Secale cereale): 30 lb/acre
Fall Seeding: Winter wheat (Triticum aestivum): 10lb/acre

Project: ROUX INSTITUTE
Mix: M2 - Lowland Meadow
Area in acres = 0.4
Area in sq ft = 18,214
Total seeds per sq ft = 200
% graminoids = 60%

Results (excluding nurse crop)
14 lbs. of seed/acre
6 Total lbs. this mix
30 Total spp.
13 Number of graminoids
17 Number of forbs

Botanical Name	Common Name	Qty	Seeding Notes	Substitutions/Comments
Grasses, Sedges and Rushes				
Carex annectens xanthocarpa	Small Yellow Fox Sedge	1.21 oz		
Carex bebbii	Bebbs Oval Sedge	3.21 oz		
Carex normalis	Spreading Oval Sedge	0.87 oz		
Carex projecta	Loose-headed Oval Sedge	1.76 oz		
Carex vulpinoidea	Fox Sedge	4.37 oz		
Eleocharis obtusa	Blunt Spike Rush	0.66 oz		
Elymus virginicus	Virginia Rye	15.61 oz		
Juncus canadensis	Canada Rush	0.44 oz		
Juncus effusus	Common Rush	0.33 oz		
Juncus tenuis	Path Rush	0.06 oz		
Scirpus atrovirens	Dark-Green Bulrush	0.24 oz		
Scirpus cyperinus	Wool Grass	0.06 oz		
Tridens flavus	Purpletop	11.56 oz		
Forbs				
Asclepias incarnata	Swamp Milkweed	9.11 oz		
Aster lateriflorus (Symphiotrichum)	Calico Aster	0.29 oz		
Aster novae-angliae (Symphiotrichum)	New England Aster	2.21 oz		
Aster novi-belgii (Symphiotrichum)	New York Aster	1.91 oz		
Chamaecrista fasciculata (Cassia)	Partridge Pea	16.19 oz		
Coreopsis lanceolata	Tickseed	1.46 oz		
Coreopsis tinctoria	Plains Coreopsis	0.33 oz		
Eupatorium coelestinum (Conoclinium)	Mistflower	0.33 oz		
Liatris spicata	Blazing Star	6.62 oz		
Lobelia cardinalis	Cardinal Flower	0.44 oz		
Lycopus americanus	Water Horehound	0.56 oz		
Monolarda punctata	Horsemint	0.81 oz		
Penstemon digitalis	White Beardtongue	1.12 oz		
Pycnanthemum muticum	Big Leaf Mountain Mint	0.33 oz		
Pycnanthemum virginianum	Mountain Mint	0.79 oz		
Verbena hastata	Blue Vervain	0.78 oz		
Zizia aurea	Golden Alexander	6.62 oz		

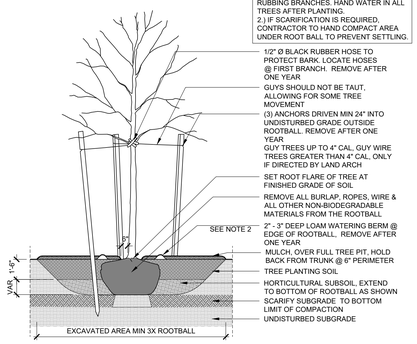
Nurse Crop
Spring Seeding: Spring Oats (Avena sativa): 20 lb/ac
Early Spring to Later Summer Seeding: Grain Rye (Secale cereale): 30 lb/acre
Fall Seeding: Winter wheat (Triticum aestivum): 10lb/acre

Project: ROUX INSTITUTE
Mix: M3 - Perimeter Meadow
Area in acres = 0.4
Area in sq ft = 17,307
Total seeds per sq ft = 200
% graminoids = 100%

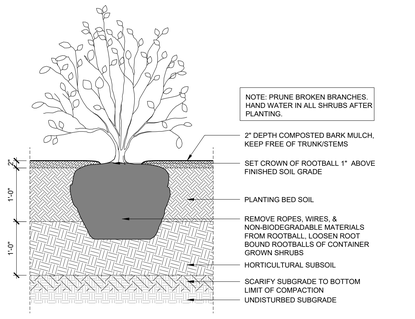
Results (excluding nurse crop)
31 lbs. of seed/acre
12 Total lbs. this mix
13 Total spp.
13 Number of graminoids
0 Number of forbs

Botanical Name	Common Name	Qty	Seeding Notes	Substitutions/Comments
Grasses, Sedges and Rushes				
Andropogon ternarius	Splitbeard Broomsedge	1.02 oz		
Bouteloua curtipendula	Sideoats Grama	28.80 oz		
Bouteloua gracilis	Blue Grama Grass	4.33 oz		
Carex brevior	Plains Oval Sedge	3.58 oz		
Carex molesta	Field Oval Sedge	6.92 oz		
Carex normalis	Spreading Oval Sedge	1.38 oz		
Carex projecta	Loose-headed Oval Sedge	0.56 oz		
Carex vulpinoidea	Fox Sedge	3.46 oz		
Elymus virginicus	Virginia Rye	8.24 oz		
Eragrostis spectabilis	Purple Lovegrass	0.37 oz		
Juncus tenuis	Path Rush	0.06 oz		
Schizachyrium scoparium	Little Bluestem	115.38 oz		
Tridens flavus	Purpletop	18.35 oz		

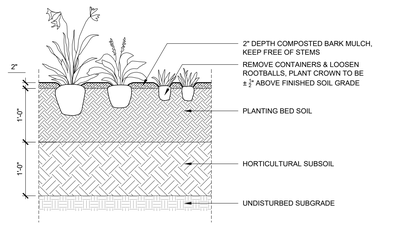
Nurse Crop
Spring Seeding: Spring Oats (Avena sativa): 20 lb/ac
Early Spring to Later Summer Seeding: Grain Rye (Secale cereale): 30 lb/acre
Fall Seeding: Winter wheat (Triticum aestivum): 10lb/acre



3 TREE PLANTING
1/4" = 1'-0"



2 SHRUB PLANTING
1" = 1'-0"



1 PERENNIAL AND GROUNDCOVER PLANTING
1" = 1'-0"

NATIVITY LEGEND

- NATIVE TO CUMBERLAND COUNTY, MAINE
- NATIVE TO MAINE (not including Cumberland County)
- NATIVE TO NEW ENGLAND (not including Maine)
- NATIVE TO NORTH AMERICA (not including Maine or other New England states)
- EXOTIC / NOT NATURALLY OCCURRING IN NORTH AMERICA
- CULTIVAR

NATIVITY NOTES
1. Nativity to Maine and New England per Native Plant Trust Go Botany, adapted from BONAP, https://gobotany.nativeplanttrust.org/.
2. Nativity to North America per BONAP, https://bonap.net/tdc

Species are intended as placeholders in lieu of Acer. Final species selection will be determined per pending collaboration with City Arborist.

PLANT SCHEDULE

TREES		BOTANICAL / COMMON NAME	CONT	SIZE	QTY	REMARKS
AB	●	Abies balsamea / Balsam Fir	B & B	5'-6" H	3	
AA	● ●	Amelanchier arborea 'Autumn Brilliance' / Autumn Brilliance Downy Serviceberry	B & B	3'-4" H	43	
BA	●	Betula alleghaniensis / Yellow Birch	B & B	1.5"-2" Cal	24	
BP1	●	Betula papyrifera / Paper Birch	B & B	1.5"-2" Cal	22	
BP	●	Betula papyrifera / Paper Birch	B & B	1.5"-2" Cal	10	
BG	●	Betula populifolia / Gray Birch	B & B	6' - 8' H	4	
CD	●	Calocedrus decurrens / Incense Cedar	B & B	5'-6" H	5	
CO	●	Carya ovata / Shagbark Hickory	B & B	2"-2.5" Cal	3	
CC	●	Cercis canadensis / Eastern Redbud	B & B	3'-4' H	10	
CT	●	Chamaecyparis thyoides / Atlantic White Cypress	B & B	5'-6' H	4	
CV	● ●	Crataegus viridis 'Winter King' / Winter King Hawthorn	B & B	5'-6' H	15	
GK	●	Gymnocladus dioica / Kentucky Coffeetree	B & B	2"-2.5" Cal	4	
JC	●	Juglans cinerea / Butternut	B & B	2"-2.5" Cal	6	
LL	●	Larix laricina / Tamarack	B & B	8'-10' H	13	
LL2	●	Larix laricina / Tamarack	B & B	5'-6' H	3	
MV	●	Magnolia virginiana / Sweetbay Magnolia	B & B	4'-5' H	4	
MS	●	Malus sargentii / Sargent Crabapple	B & B	4'-5' H	2	
NS	●	Nyssa sylvatica / Tupelo	B & B	1.5"-2" Cal	21	
PG	●	Picea glauca / White Spruce	B & B	6' - 7' H	12	
PR	●	Pinus rigida / Pitch Pine	B & B	3'-4' H	31	
PS	●	Pinus strobus / White Pine	B & B	6' - 7' H	21	
PA	●	Platanus x acerifolia / London Plane Tree	B & B	3"-3.5" Cal	38	
PT	●	Populus tremuloides / Quaking Aspen	B & B	1.5"-2" Cal	38	
QA	●	Quercus alba / White Oak	B & B	1.5"-2" Cal	19	
QB	●	Quercus bicolor / Swamp White Oak	B & B	2"-2.5" Cal	26	
QC	●	Quercus coccinea / Scarlet Oak	B & B	1"-2.5" Cal	3	
QI	●	Quercus ilicifolia / Scrub Oak	B & B	2"-2.5" Cal	3	
QM	●	Quercus macrocarpa / Burr Oak	B & B	2"-2.5" Cal	1	
QR	●	Quercus rubra / Red Oak	B & B	2"-2.5" Cal	19	
SS	●	Sassafras albidum / Sassafras	5 Gal.	1"-1.5" Cal	7	
TO	●	Thuja occidentalis / American Arborvitae	B & B	6'-7' H	9	
TG	●	Thuja standishii x plicata 'Green Giant' / Green Giant Arborvitae	B & B	5'-6' H	12	
TA	●	Tilia americana / American Linden	B & B	1.5"-2" Cal	2	

SHRUBS			AVG SIZE	SPACING	QTY	AREA
SH		Shrub (See SHRUBS below for ground plane species list)	2 GAL	48" OC	3,300	50,913 SF

PERENNIALS			AVG SIZE	SPACING	QTY	AREA
P		Perennials - container (See PERENNIALS below for ground plane species list)	1 QT	30" OC	4,648	27,800 SF
MP		Perennials - plug (See PERENNIALS below for ground plane species list)	2" Plug	18" o.c.	48,753	89,360 SF

LAWN			AREA			
L		Lawn sod	41,120 SF			

SEEDED AREAS			SIZE	SPACING	AREA	REMARKS
M3		Perimeter Meadow (See Seed Mix Specifications for species list)	SEED		20,799 sf	
M1		Upland Meadow (See Seed Mix Specifications for species list)	SEED		90,829 sf	
M2		Lowland Meadow (See Seed Mix Specifications for species list)	SEED		21,455 sf	

NOTE: Tree caliper sizes listed are intended to depict the average size of all trees installed. Exact installed sizes may vary.

SPECIES LIST (GROUND PLANE)

SHRUBS

SHRUB PALETTE
- Arctostaphylos uva-ursi / Kinnikinnick
- Aronia arbutifolia / Red Chokeberry
- Aronia arbutifolia low scape hedger / Red Chokeberry
- Celphanthus occidentalis / Buttonbush
- Chaitra alnifolia / Mountain Sweet Pepperbush
- Clethra alnifolia 'Hummingbird' / Hummingbird Summersweet
- Comptonia peregrina / Sweet Fern
- Fothergilla gardenii / Dwarf Fothergilla
- Gaylussacia baccata / Black Huckleberry
- Ilex glabra 'Shamrock' / Shamrock Inkberry Holly
- Ilex verticillata / Winterberry
- Ilex verticillata 'Red Sprite' / Red Sprite Winterberry
- Juniperus horizontalis / Creeping Juniper
- Kalmia angustifolia / Sheep Laurel
- Myrica gale / Sweetgale
- Prunus maritima / Beach Plum
- Rhododendron viscosum / Swamp Azalea
- Spiraea alba / Meadowsweet
- Vaccinium corymbosum / Highbush Blueberry
- Viburnum dentatum / Viburnum
- Viburnum dentatum 'Christom' / Blue Muffin® Arrowwood Viburnum
- Viburnum trilobum 'Compactum' / Compact American Cranberrybush
- Viburnum x 'Burkwoodii' / Burkwood Viburnum

PERENNIALS

PERENNIALS
- Achillea millefolium / Common Yarrow
- Actaea racemosa / Black Snakeroot
- Adiantum pedatum / Northern Maidenhair Fern
- Ammophila breviligulata / American Beachgrass
- Andropogon virginicus / Broomsedge Bluestem
- Carex pensylvanica / Pennsylvania Sedge
- Carex stricta / Tussock Sedge
- Danthonia spicata / Poverty Oatgrass
- Dennstaedtia punctilobula / Hay-scented Fern
- Doellingeria umbellata / Flat-topped Aster
- Echinacea purpurea / Coneflower
- Elymus virginicus / Virginia Wild Rye
- Festuca rubra / Red Fescue 305
- Gaultheria procumbens / Wintergreen
- Helenium autumnale / Sneezeweed
- Iris versicolor / Blue Flag
- Juncus greenei / Greene's Rush
- Maianthemum canadense / Canada Mayflower
- Osmundastrum cinnamomeum / Cinnamon Fern
- Panicum virgatum / Switch Grass
- Panicum virgatum 'Cape Breeze' / Cape Breeze Switch Grass
- Penstemon hirsutus / Hairy Beardtongue
- Polystichum acrostichoides / Christmas Fern
- Schizachyrium scoparium / Little Bluestem
- Solidago bicolor / White Goldenrod
- Symphyotrichum ericoides / Heath Aster
- Symphyotrichum novae-angliae / New England Aster
- Symphyotrichum novi-belgii / New York Aster

IDEALS
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LAND-USE PERMIT SET

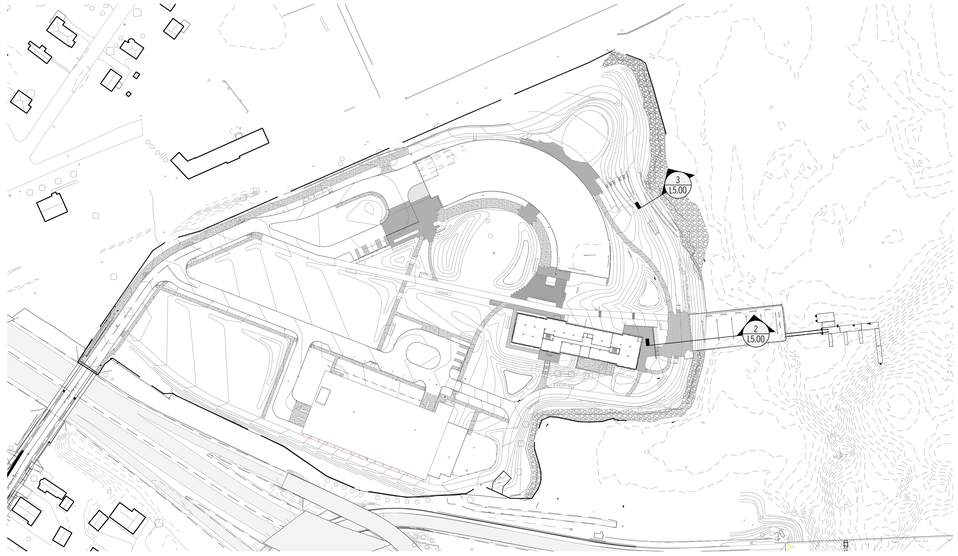
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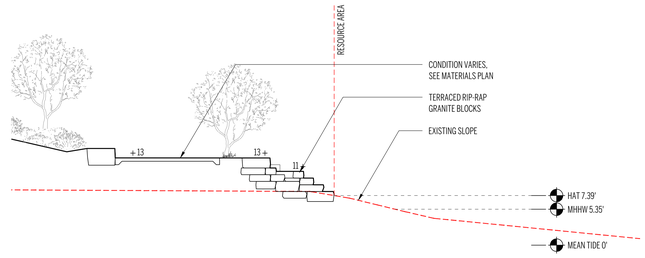
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Project	THE ROUX INSTITUTE		
Drawn By	ZH SK JC MS	Checked	STIMSON
Date	22 MARCH 2024		
Scale	as noted		

Drawing Title
Plant Schedules and Planting Details

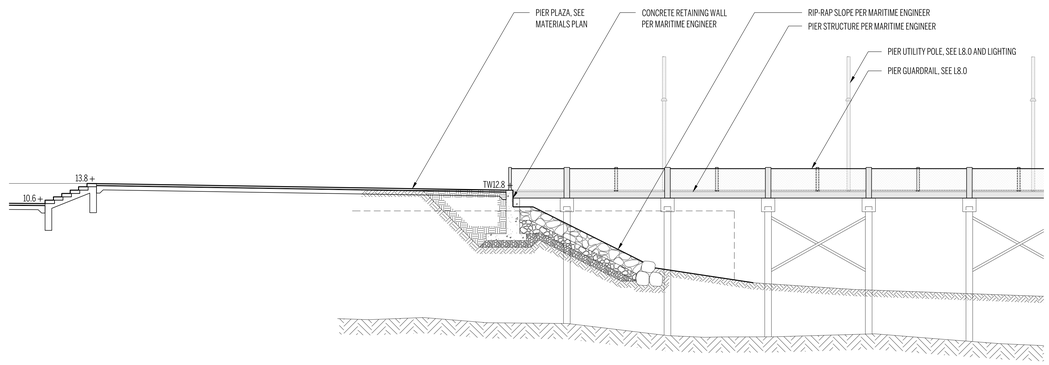
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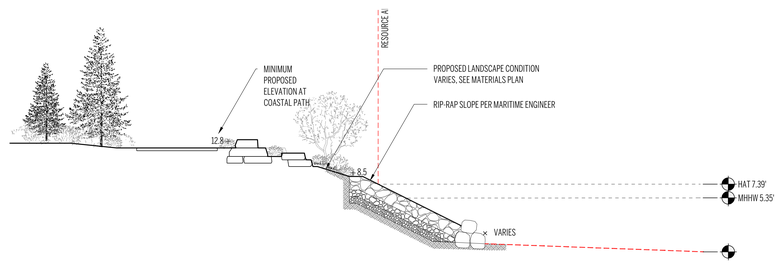
KEY PLAN
1"=100'



3 SECTION AT TERRACED RIP-RAP
1/8" = 1'-0"



2 SECTION AT PIER INTERFACE
1/8" = 1'-0"



1 TYPICAL SECTION AT SHORLINE
1/8" = 1'-0"

0 5' 10' 20' N

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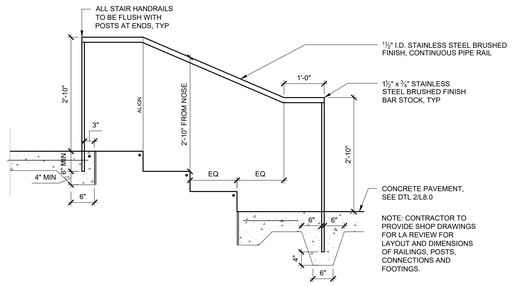
LICENSED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

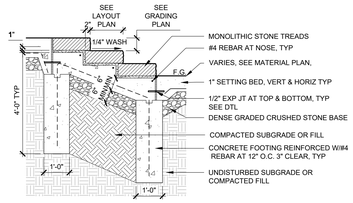
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Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	AS NOTED

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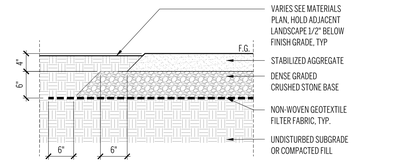
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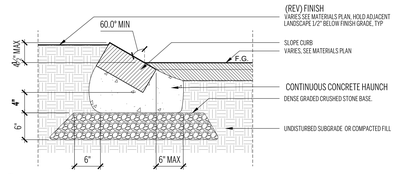
18 STAINLESS STEEL HANDRAIL WITH INTEGRATED LIGHTING
3/4" = 1'-0"



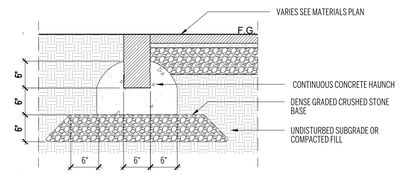
17 MONOLITHIC GRANITE STAIRS ON CONCRETE FOUNDATION
1/2" = 1'-0"



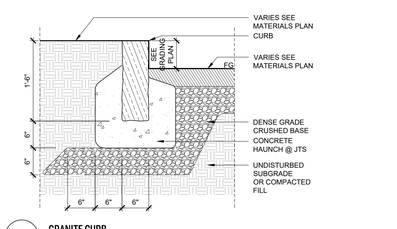
13 DECOMPOSED GRANITE PAVING
1" = 1'-0"



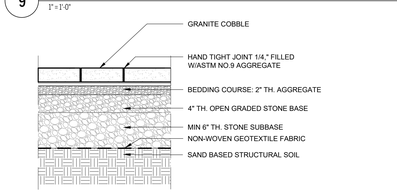
12 GRANITE CURB - MOUNTABLE
1" = 1'-0"



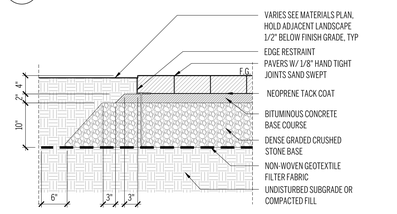
11 GRANITE CURB - FLUSH
1" = 1'-0"



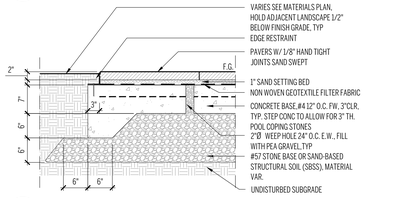
9 GRANITE CURB
1" = 1'-0"



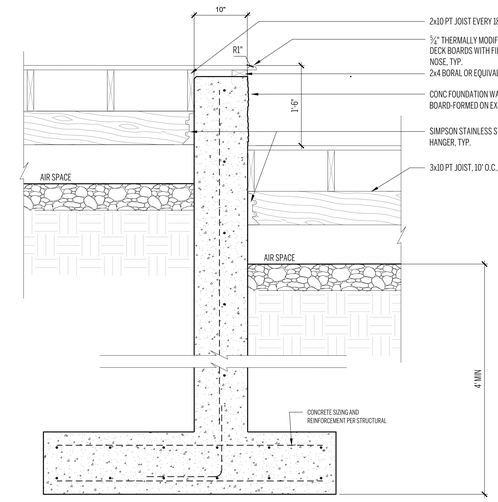
8 GRANITE COBBLE AT TREE PITS
1" = 1'-0"



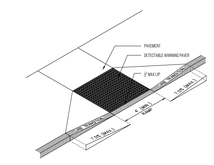
7 PRECAST CONCRETE PAVERS/COBBLESTONE
1" = 1'-0"



6 GRANITE PAVERS - PEDESTRIAN
1" = 1'-0"

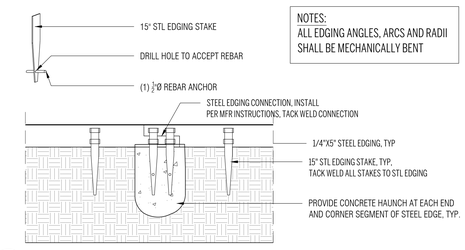


16 WOOD DECK AT TERRACED LANDSCAPE
NTS



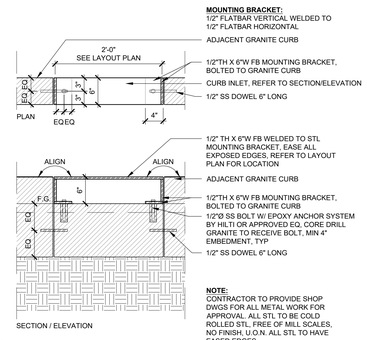
1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% min).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB, AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. TYPICAL SIDEWALK SECTION FOR RAMP SECTION CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING AT RAMP WHERE IT ABUTS ROADWAY, EXCEPT WHERE VERTICAL CURBING IS INDICATED ON THE DRAWINGS TO BE SET FLUSH.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.

15 ADA RAMP
NTS

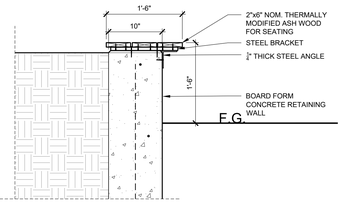


NOTES:
ALL EDGING ANGLES, ARCS AND RADII SHALL BE MECHANICALLY BENT

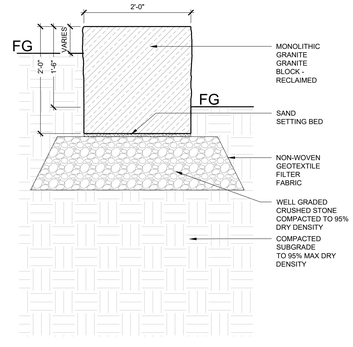
14 STEEL EDGING
1" = 1'-0"



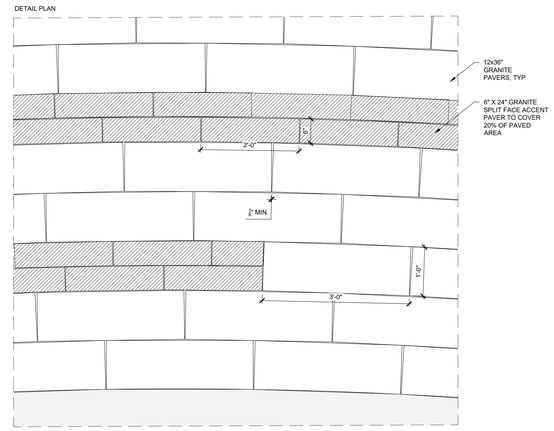
21 STEEL CURB INLET
1" = 1'-0"

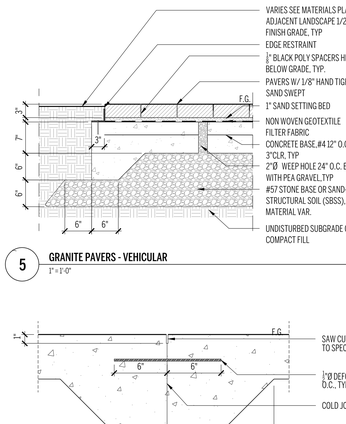


20 CONCRETE RETAINING WALL WITH WOOD CAP
NTS



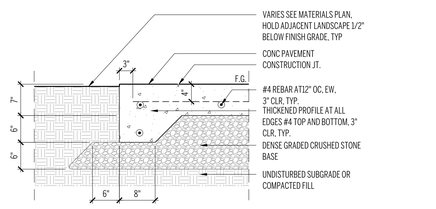
19 MONOLITHIC STONE WALL ON DENSE GRADED CRUSHED STONE BASE
1" = 1'-0"



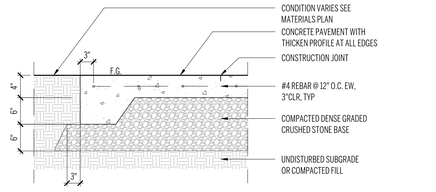


5 GRANITE PAVERS - VEHICULAR
1" = 1'-0"

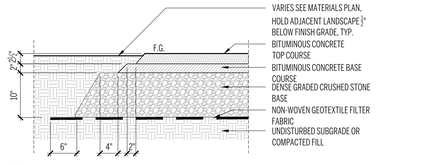
4 CONCRETE CONSTRUCTION JOINT
2" = 1'-0"



3 CONCRETE PAVEMENT - VEHICULAR
1" = 1'-0"



2 CONCRETE PAVEMENT - PEDESTRIAN
1" = 1'-0"



1 ASPHALT PAVING - VEHICULAR
1" = 1'-0"

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LAND-USE PERMIT SET

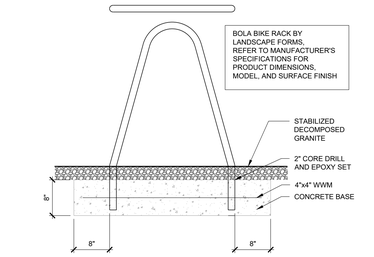
Number	Revision	Date

REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. JIMSON
No. 3916
STATE OF MAINE
Stamp

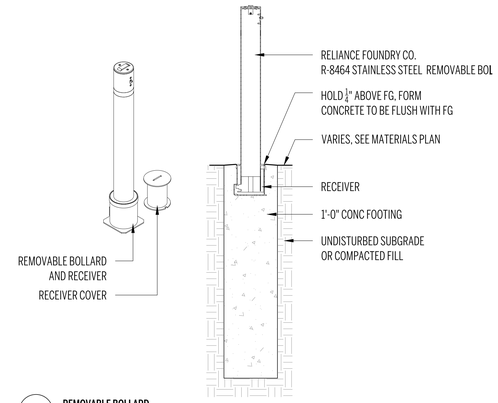
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	AS NOTED

Drawing Title
--- Site Details

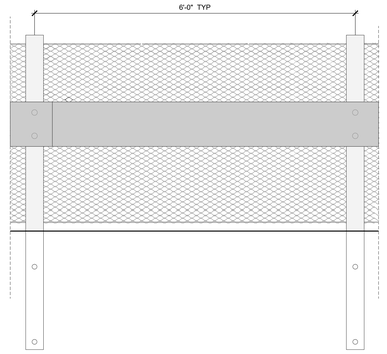
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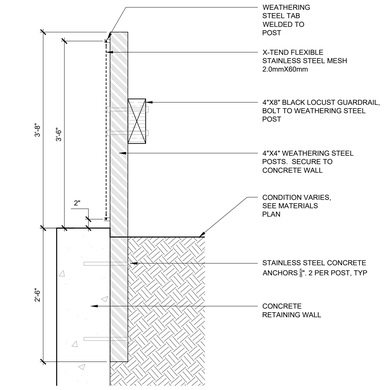
5 **BIKE RACK**
1" = 1'-0"



4 **REMOVABLE BOLLARD**
1" = 1'-0"

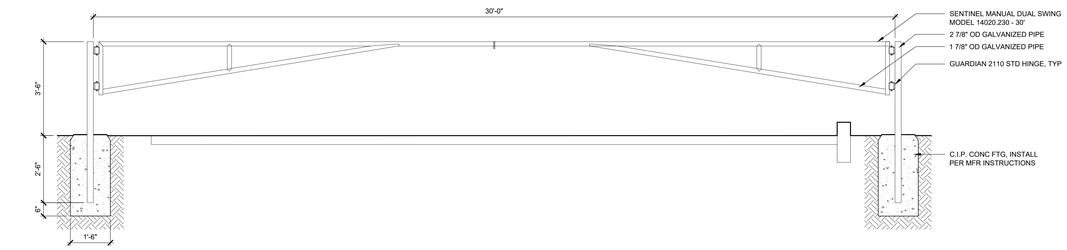


ELEVATION

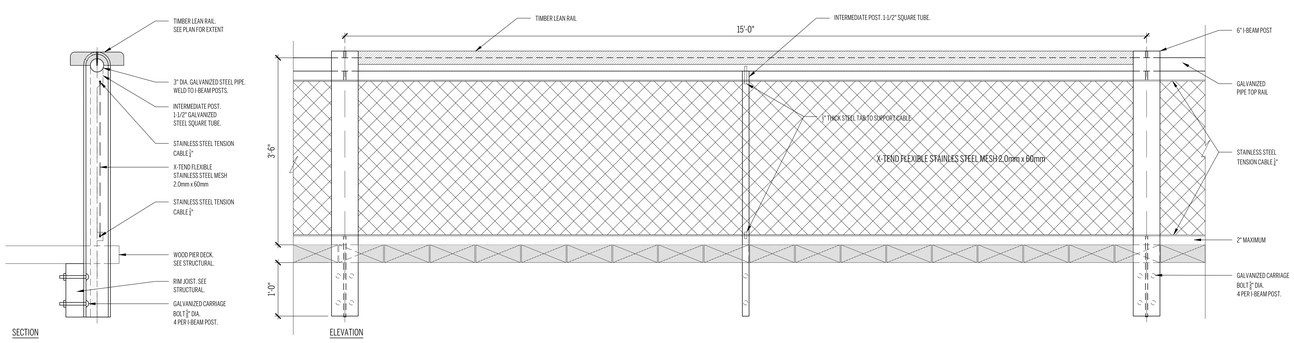


SECTION

3 **TIMBER GUARDRAIL**
1" = 1'-0"



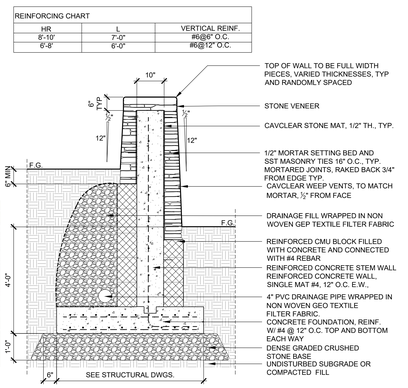
7 **VEHICULAR GATE**
1/2" = 1'-0"



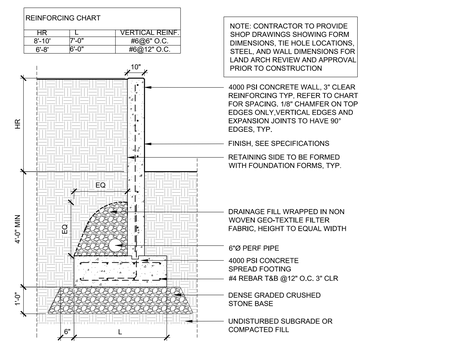
6 **PIER GUARDRAIL**
1" = 1'-0"



GRANITE VENEER MASONRY PRECEDENT



2 **CONCRETE RETAINING WALL WITH STONE VENEER**
1/2" = 1'-0"



1 **ARCHITECTURAL CONCRETE RETAINING WALL**
NTS

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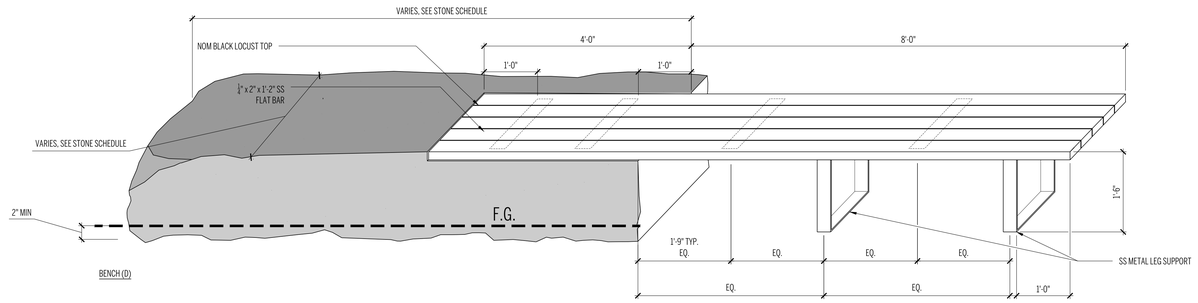
Number	Revision	Date

STEPHEN C. STIMSON No. 3916 STATE OF MAINE REGISTERED LANDSCAPE ARCHITECT

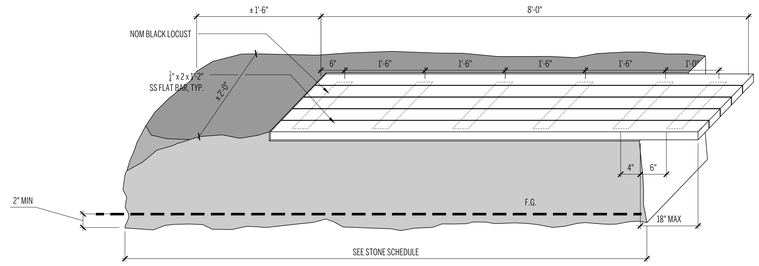
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS Checked STIMSON
Date	22 MARCH 2024
Scale	AS NOTED
Drawing Title	--- Site Details

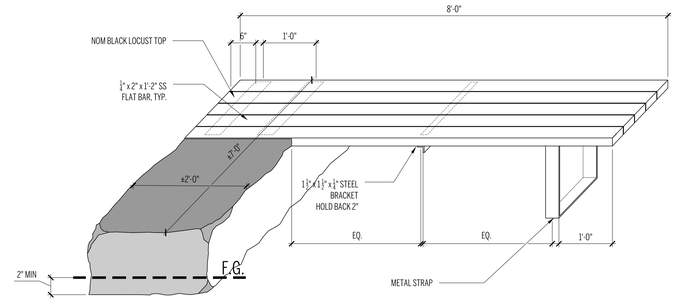
L6.01



BENCH (D)



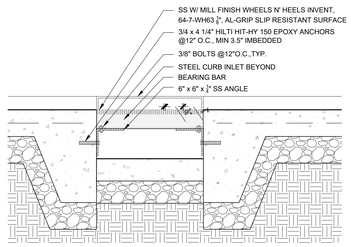
BENCH (C)



BENCH (B)

BENCH (A)

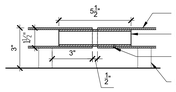
1 **STONE BLOCK WITH WOOD TOP BENCH**
1" = 1'-0"



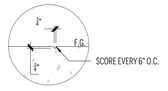
METAL GRATE BRIDGE PRECEDENT



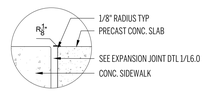
3 **METAL GRATE BRIDGE - PEDESTRIAN**
1" = 1'-0"



TOE RAIL AT EXPANSION JOINTS

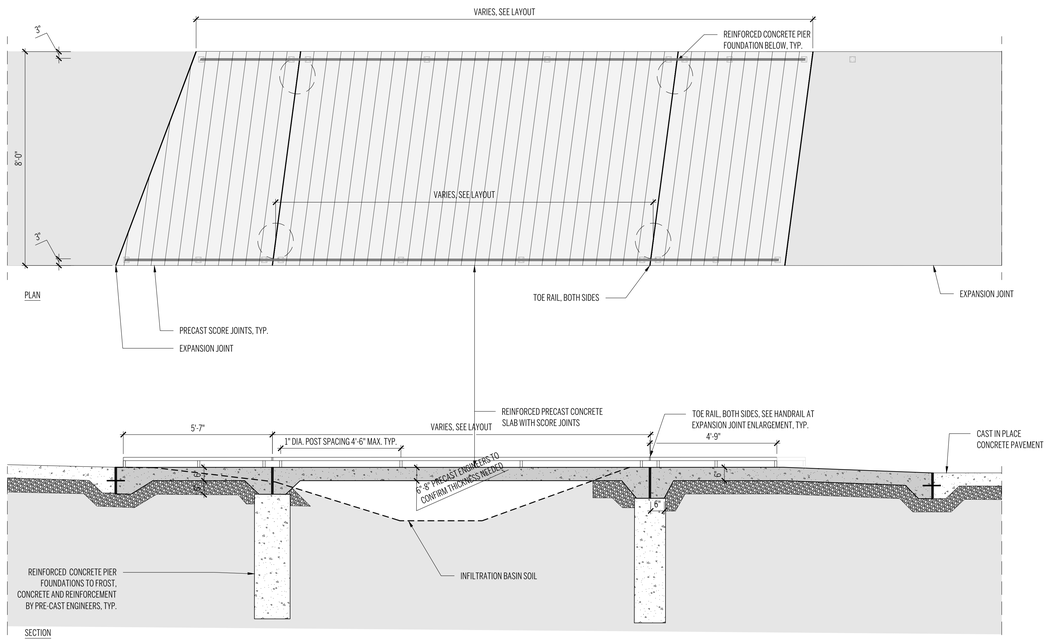


PRECAST SCORE JOINT



EXPANSION JOINT

SECTION: HANDRAIL AT EXPANSION JOINTS TYP.
SCALE: 3"=1'-0"



SECTION

2 **CAST CONCRETE BRIDGE - PEDESTRIAN**
1/2" = 1'-0"

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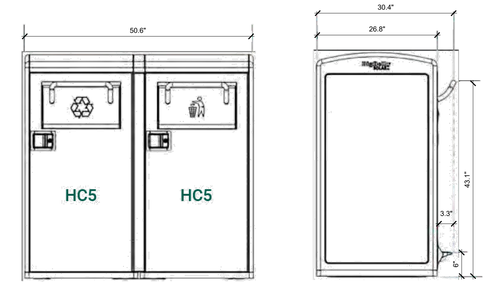
LICENSED LANDSCAPE ARCHITECT STEPHEN C. STIMSON No. 3916 STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
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Scale	AS NOTED

Drawing Title
--- Site Details

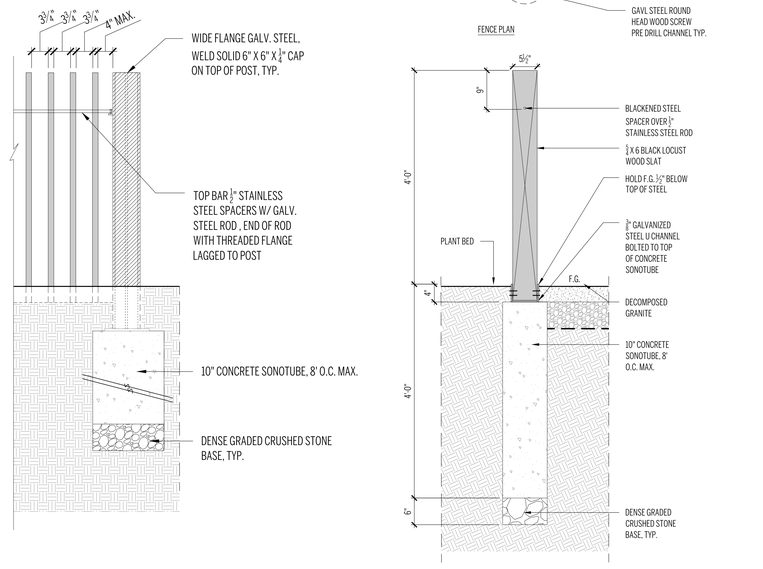
L6.02



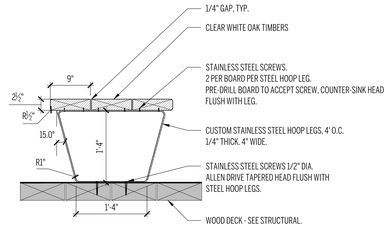
HC5/HC5 Double Station
Approximately 540 lbs (245 kg)

CleanCUBE BY ECUBE.
-120L CAPACITY, SOLAR POWERED
-FOOT PEDAL OPERATED. SEE SPECS

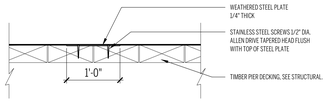
9 **CLEAN CUBE TRASH COMPACTER (WR)**
1" = 1'-0"



3 **WOODEN SLAT FENCE AT PLAYGROUND**
1" = 1'-0"



2 **RECLAIMED LUMBER BENCH AT PIER**
1" = 1'-0"



1 **WEATHERING STEEL BAND AT PIER DECK**
1" = 1'-0"

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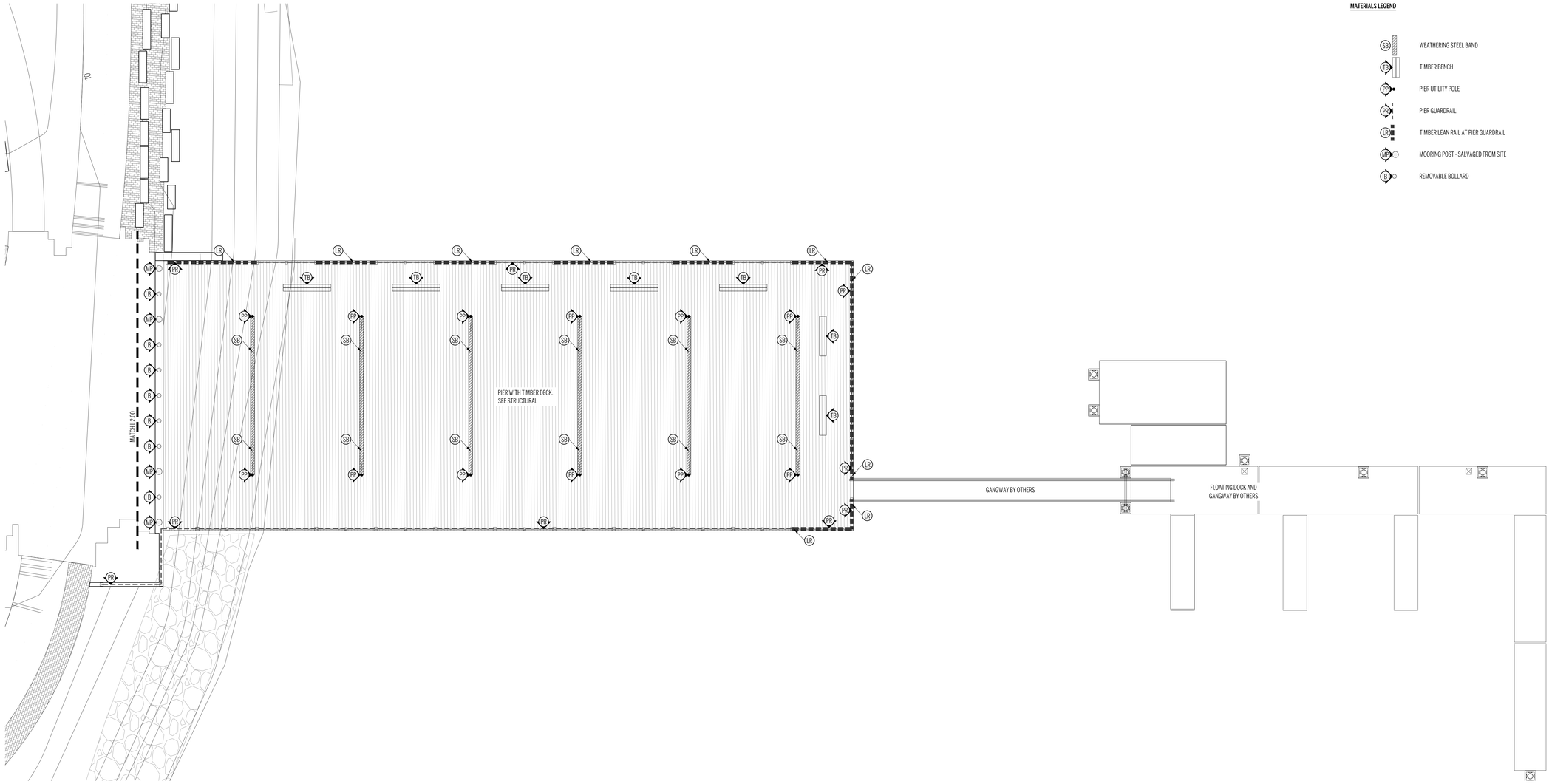
REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

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Job #	2202
Project	THE ROUX INSTITUTE
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Scale	AS NOTED

Drawing Title
--- Site Details

L6.03



MATERIALS LEGEND

SB	WEATHERING STEEL BAND	1 / L6.03
TB	TIMBER BENCH	2 / L6.03
PP	PIER UTILITY POLE	SEE LIGHTING
PR	PIER GUARDRAIL	6 / L6.01
LR	TIMBER LEAN RAIL AT PIER GUARDRAIL	6 / L6.01
MP	MOORING POST - SALVAGED FROM SITE	
B	REMOVABLE BOLLARD	4 / L6.01

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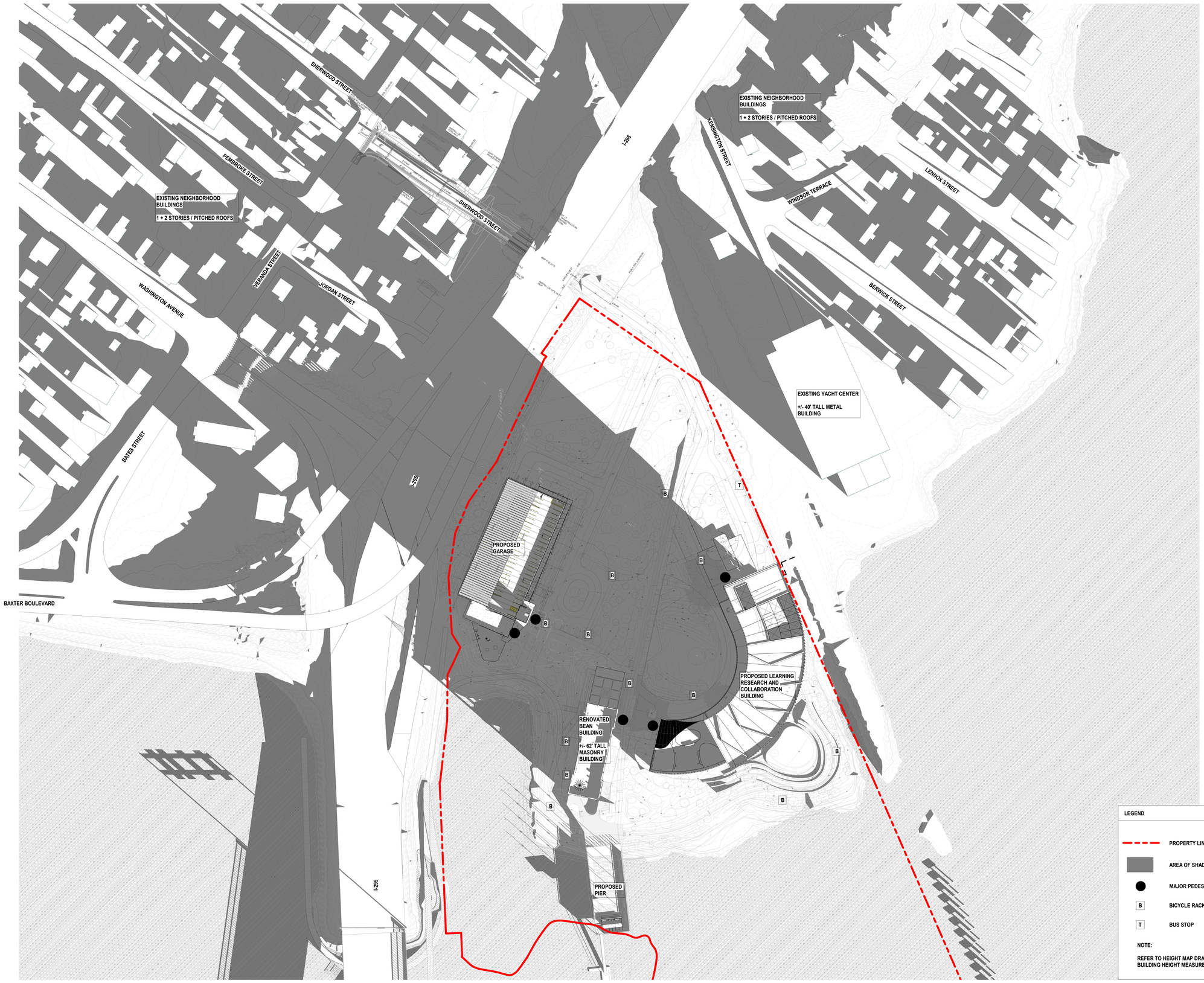
REGISTERED LANDSCAPE ARCHITECT
STEPHEN C. STIMSON
No. 3916
STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	ZH SK JC MS
Checked	STIMSON
Date	22 MARCH 2024
Scale	1" = 10'

Drawing Title
Pier Plan

L8.00



1 SHADOW STUDY - DECEMBER 21st - 9am
1/64" = 1'-0"

10/27/2023 3:12:45 PM

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Job #	2202
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Drawn By	JB Checked CM
Date	27 OCTOBER 2023
Scale	As indicated

Drawing Title
SHADOW STUDY - DECEMBER 21 - 9AM

AS60.01



1 SHADOW STUDY - DECEMBER 21st - Noon
1/64" = 1'-0"

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SHADOW STUDY - DECEMBER 21 - NOON

AS60.02

LAND-USE PERMIT SET

10/27/2023 3:13:54 PM



1 SHADOW STUDY - DECEMBER 21st - 3pm
1/64" = 1'-0"

10/27/2023 3:15:16 PM

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Scale	As indicated

Drawing Title
SHADOW STUDY - DECEMBER 21 - 3PM

AS60.03



1 SHADOW STUDY - MARCH 21st - 9am
1/64" = 1'-0"

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Date	27 OCTOBER 2023
Scale	As indicated

Drawing Title
SHADOW STUDY - MARCH 21 - 9AM

AS60.04

10/27/2023 3:16:33 PM



1 SHADOW STUDY - MARCH 21st - Noon
1/64" = 1'-0"

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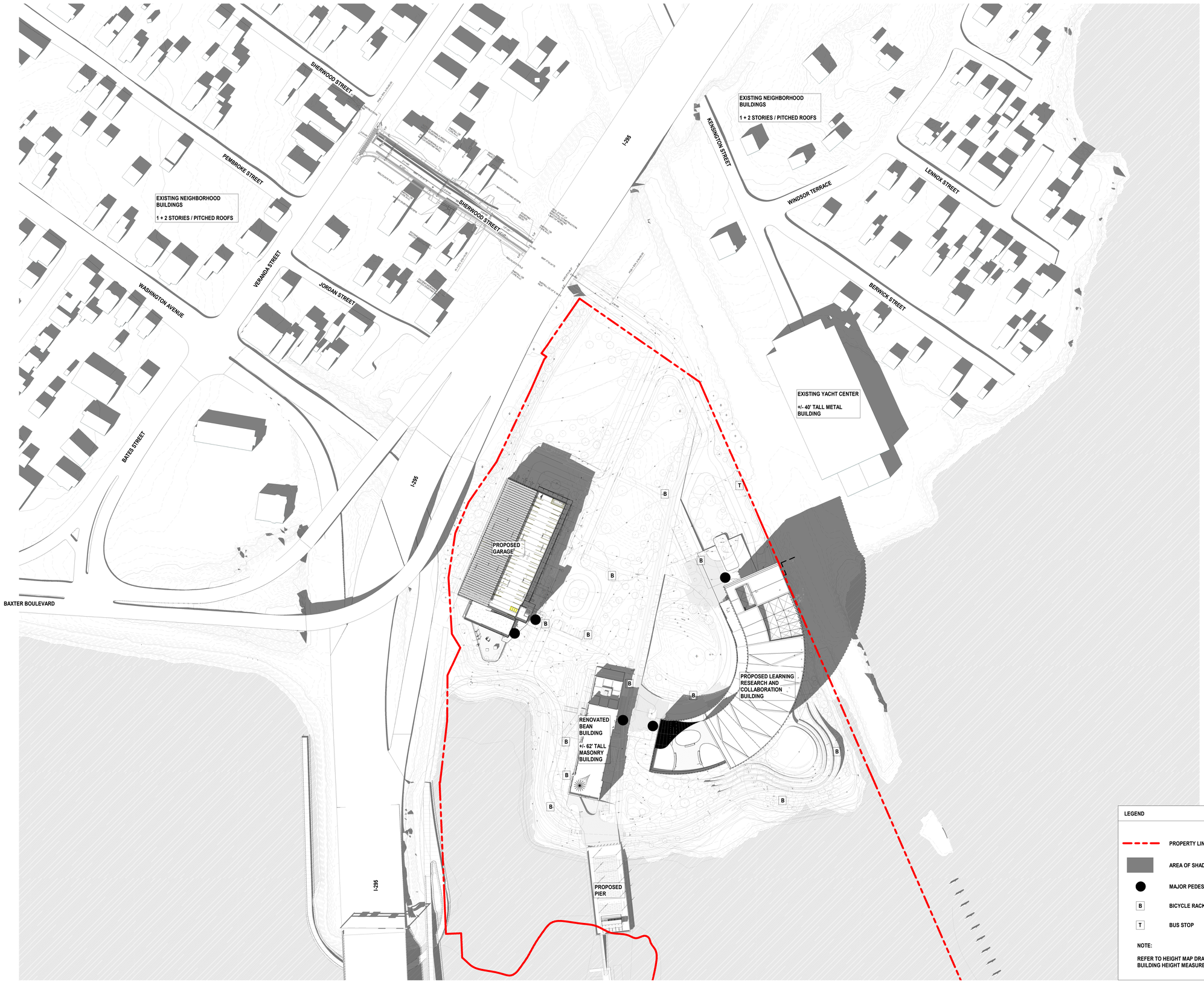
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Scale	As indicated

Drawing Title
SHADOW STUDY - MARCH 21 - NOON

AS60.05

10/27/2023 3:17:43 PM



1 SHADOW STUDY - MARCH 21st - 3pm
1/64" = 1'-0"

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Scale	As indicated

Drawing Title
SHADOW STUDY - MARCH 21 - 3PM

AS60.06

10/27/2023 3:18:53 PM



1 SHADOW STUDY - JUNE 21st - 9am
1/64" = 1'-0"

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Scale	As indicated

Drawing Title
SHADOW STUDY - JUNE 21 - 9AM

AS60.07

10/27/2023 3:20:00 PM



1 SHADOW STUDY - JUNE 21st - Noon
1/64" = 1'-0"

10/27/2023 3:21:09 PM

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Scale	As indicated

Drawing Title
SHADOW STUDY - JUNE 21 - NOON

AS60.08



1 SHADOW STUDY - JUNE 21st - 3pm
1/64" = 1'-0"

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Date	27 OCTOBER 2023
Scale	As indicated

Drawing Title
SHADOW STUDY - JUNE 21 - 3PM

AS60.09

10/27/2023 3:22:17 PM



1 SHADOW STUDY - AUGUST 21st - 9am
1/64" = 1'-0"

10/27/2023 3:23:25 PM

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Scale	As indicated

Drawing Title
SHADOW STUDY - AUGUST 21 - 9AM

AS60.10



1 SHADOW STUDY - AUGUST 21st - Noon
1/64" = 1'-0"

10/27/2023 3:24:34 PM

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Date	27 OCTOBER 2023
Scale	As indicated

Drawing Title
SHADOW STUDY - AUGUST 21 - NOON

AS60.11



1 SHADOW STUDY - AUGUST 21st - 3pm
1/64" = 1'-0"

10/27/2023 3:25:44 PM

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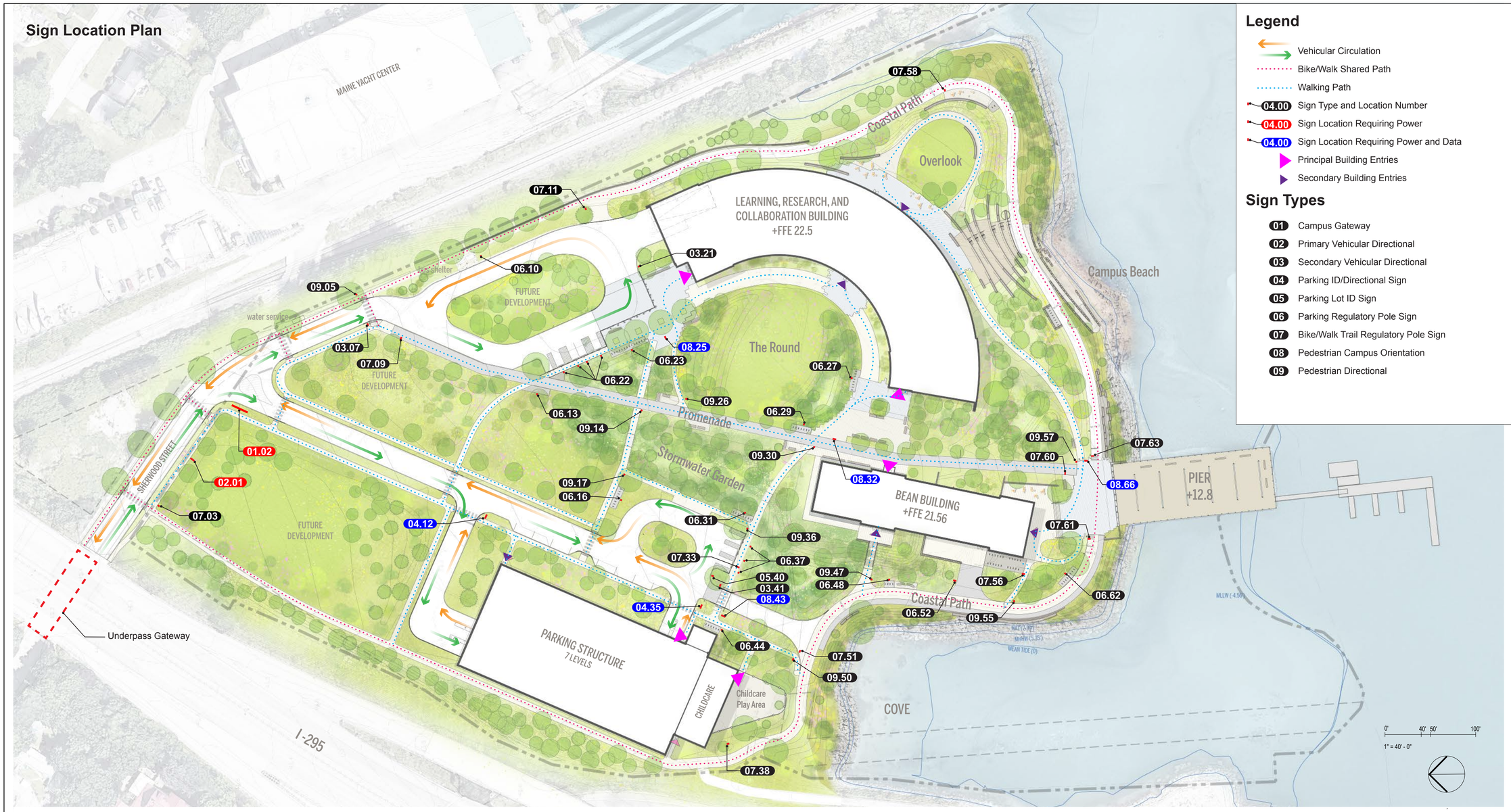
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Drawing Title
SHADOW STUDY - AUGUST 21 - 3PM

AS60.12

Sign Location Plan



Legend

- Vehicular Circulation
- Bike/Walk Shared Path
- Walking Path
- 04.00 Sign Type and Location Number
- 04.00 Sign Location Requiring Power
- 04.00 Sign Location Requiring Power and Data
- Principal Building Entries
- Secondary Building Entries

Sign Types

- 01 Campus Gateway
- 02 Primary Vehicular Directional
- 03 Secondary Vehicular Directional
- 04 Parking ID/Directional Sign
- 05 Parking Lot ID Sign
- 06 Parking Regulatory Pole Sign
- 07 Bike/Walk Trail Regulatory Pole Sign
- 08 Pedestrian Campus Orientation
- 09 Pedestrian Directional

Sign Message Schedule

Sign Type	Loc. No.	Quantity	Sign Legend	Notes
02	01	1	[Side A] (Up Arrow) Academic Building Drop-Off Receiving (Right Arrow) Garage (P Symbol) Bean Building Drop-Off Receiving Childcare Center [Side B] (Up Arrow) Campus Exit Veranda St. to Rte. 295 (Left Arrow) Garage Bean Building Childcare Center	Double Sided
01	02	1	(NU Logo) The Roux Institute at Northeastern Univeristy (Address)	Double Sided
07	03	1	[Side A] (Right Arrow) (Bike Symbol) Coastal Bike Trail [Side B] (Left Arrow) (Bike Symbol) Coastal Bike Trail	
09	05	1	[Side A] (Up Arrow)(Bike Symbol) Coastal Bike Trail [Side B] (Walk Bike Symbol) The Roux Institute Casco Bay Pier	Double Sided
03	07	1	(Up Arrow) Academic Building Drop-Off Receiving [Side B] Campus Exit Veranda St. to Rte. 295	Single Sided
07	09	1	[Side A] (Walk Bike Symbol) Walk Your Bike [Side B] (Up Arrow) (Bike Symbol) Coastal Bike Trail	Double Sided

Sign Type	Loc. No.	Quantity	Sign Legend	Notes
06	10	1	(Greater Portland Metro Bus graphics, TBD)	Single Sided Tall Pole Condition
07	11	1	[Side A] (Up Arrow) (Bike Symbol) Coastal Bike Trail [Side B] (Up Arrow) (Bike Symbol) Coastal Bike Trail	Double Sided
04	12	1	[Side A] (Right Arrow) (P Symbol) Visitor Parking (Up Arrow) Childcare Center Bean Building Drop-Off Receiving [Side B] (Left Arrow) (P Symbol) Visitor Parking (Up Arrow) Campus Exit Veranda St. to Rte. 295	Double Sided
06	13	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
09	14	1	[Side A] (Up Arrow) Academic Building (Left Arrow) Coastal Bike Trail (Right Arrow) Bean Building Casco Bay Pier [Side B] (Up Arrow)(P Symbol) Garage (Right Arrow) Coastal Bike Trail (Left Arrow) Bean Building Casco Bay Pier	Double Sided
06	16	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
09	17	1	[Side A] (Up Arrow) Academic Building (Right Arrow) Bean Building Casco Bay Pier [Side B] (Up Arrow)(P Symbol) Garage Childcare Center Bean Building	Double Sided

Sign Type	Loc. No.	Quantity	Sign Legend	Notes
03	21	1	(Right Arrow) Academic Building Receiving	Single Sided
06	22	4	(Wheelchair Symbol) Academic Building Accessible Parking Only	Single Sided
06	23	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
08	25	1	[Side A] (Campus Orientation Map) [Side B] (Poster Graphics or Community Bulletins)	Double Sided
09	26	1	[Side A] Up Arrow) Academic Building (Right Arrow) Bean Building Casco Bay Pier (Left Arrow) Coastal Bike Trail [Side B] (Up Right Arrow) Garage (P Symbol) Child Care Center (Right Arrow) Coastal Bike Trail (Left Arrow) Bean Building Casco Bay Pier	Double Sided
06	27	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
06	29	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
09	30	1	[Side A] Up Arrow) Academic Building (Right Arrow) Casco Bay Pier (Left Arrow) Coastal Bike Trail [Side B] (Up Right Arrow) Garage (P Symbol) Child Care Center (Right Arrow) Coastal Bike Trail (Left Arrow) Casco Bay Pier	Double Sided
06	31	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
08	32	1	[Side A] (Campus Orientation Map) [Side B] (Poster Graphics or Community Bulletins)	Double Sided

Sign Type	Loc. No.	Quantity	Sign Legend	Notes
07	33	1	[Side A] (Walk Bike Symbol) Walk Your Bike [Side B] (Up Arrow) Childcare Center	Double Sided
04	35	1	[Side A] (Right Arrow) (P Symbol) Visitor Parking Childcare Center Drop-Off	Single Sided
09	36	1	[Side A] (Left Arrow) Academic Building (Up Arrow) Bean Building [Side B] (Up Arrow) Garage (P Symbol) Child Care Center	Double Sided
06	37	3	(Wheelchair Symbol) Bean Building Accessible Parking Only	Single Sided
07	38	1	[Side A] (Up Arrow) (Bike Symbol) Coastal Bike Trail [Side B] (Up Arrow) (Bike Symbol) Coastal Bike Trail	Double Sided
05	40	1	(P symbol) Bean Building Short-Term Parking	Single Sided
03	41	1	(Up Arrow) Bean Building Receiving Service Vehicles Only	Single Sided
08	43	1	[Side A] (Campus Orientation Map) [Side B] (Poster Graphics or Community Bulletins)	Double Sided
06	44	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
09	47	1	(Right Arrow) (Wheelchair Symbol) Bike Parking (Bike Symbol) Bean Building Casco Bay Pier (Accessible Path Map)	Single Sided
06	48	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided

Sign Type	Loc. No.	Quantity	Sign Legend	Notes
09	50	1	[Side A] (Up Arrow) Garage (P Symbol) Bike Parking (Bike Symbol) [Side B] (Up Arrow) Coastal Bike Trail	Double Sided
07	51	1	[Side A] (Walk Bike Symbol) Walk Your Bike (Rule) (Up Arrow) Bike Parking [Side B] (Bike Symbol) Coastal Bike Trail	Double Sided
06	52	1	Bean Bulding Receiving	Single Sided
09	55	1	(Right Arrow) (Wheelchair Symbol) Bean Building Casco Bay Pier (Accessible Path Map)	Single Sided
07	56	1	[Side A] (Bike Symbol) Bike Parking [Side B] (Bike Symbol) Bike Parking	Double Sided
09	57	1	[Side A] (Up Arrow) Bean Building Academic Building Garage (Parking Symbol) (Left Arrow) Bike Parking (Bike Symbol) [Side B] (Left Arrow) Campus Beach (Right Arrow) Bike Parking (Bike Symbol)	Double Sided
07	58	1	[Side A] (Up Arrow) (Bike Symbol) Coastal Bike Trail [Side B] (Up Arrow) (Bike Symbol) Coastal Bike Trail	Double Sided
07	60	1	[Side A] (Walk Bike Symbol) Walk Your Bike (Rule) (Left Arrow) (Bike Sybol) Bike Parking [Side B] (Right Arrow) (Bike Symbol) Bike Parking	Double Sided

Sign Type	Loc. No.	Quantity	Sign Legend	Notes
07	61	1	[Side A] (Walk Bike Symbol) Walk Your Bike (Rule) (Up Arrow) Bike Parking [Side B] (Bike Symbol) Coastal Bike Trail	Double Sided
06	62	1	(Bike Parking Symbol) (Regulartory Text to be Determined)	Single Sided
07	63	1	[Side A] (Walk Bike Symbol) Walk Your Bike (Rule) (Up Arrow) Campus Beach [Side B] (Bike Symbol) Bike Parking	Double Sided
10	65	1	(Graphics interpreting the history of the Pier, to be determined)	Single Sided
08	66	1	[Side A] (Campus Orientation Map) [Side B] (Poster Graphics or Community Bulletins)	Double Sided
10	67	1	(Graphics interpreting the history of the Pier, to be determined)	Single Sided

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

Roll Barresi & Associates, Inc.
Signage and Graphics
48 Dunster Street
Cambridge, MA 02138
617 868-5430

LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	AJB Checked SP
Date	27 OCTOBER 2023
Scale	1" = 40' - 0"

Drawing Title

Sign Location Plan and Message Schedule

SG.01

8/22/2023 2:59:29 PM

Word-marks

The Roux Institute
at Northeastern University

Monogram & Word-mark mono (Formal)

The Roux Institute
at Northeastern University

Monogram & Word-mark (Formal)

The Roux Institute
at Northeastern University

Monogram & Word-mark (Formal)

LVX VERITAS VIRTVS
The Roux Institute
at Northeastern University

Monogram & Notched Word-mark mono (Formal)

LVX VERITAS VIRTVS
The Roux Institute

"N" with notched word-mark & motto

The Roux Institute

Roux Institute Word-mark

The Roux

Possible "shorthand" for the campus sub-brand?

Typeface

FF Real Head Pro

Primary Typeface

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

FF Real Head Pro - Semilight

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

FF Real Head Pro - Book

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

FF Real Head Pro - Medium

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

FF Real Head Pro - Demibold

Colors and Materials

Red
PMS 186C

Warm Gray Metallic
to match Architecture

Granite to match
Site Benches

White
Mathews White

Charcoal Gray
Metallic

Timber to match
Architecture

Black
PMS Black C

Brushed or
Non-Directaional
SST

Gold Metallic
PMS 871C

Brushed or
Non-Directaional
Aluminum

Architecture and Landscape Design



A sweeping view of the LRC



The Mass Timber West Wing



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LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202		
Project	THE ROUX INSTITUTE		
Drawn By	AJB	Checked	SP
Date	27 OCTOBER 2023		
Scale	Not To Scale		

Drawing Title

Graphic Standards

SG.02

8/22/2023 2:59:23 PM

Site Wayfinding System Sign Types

Sign Structures

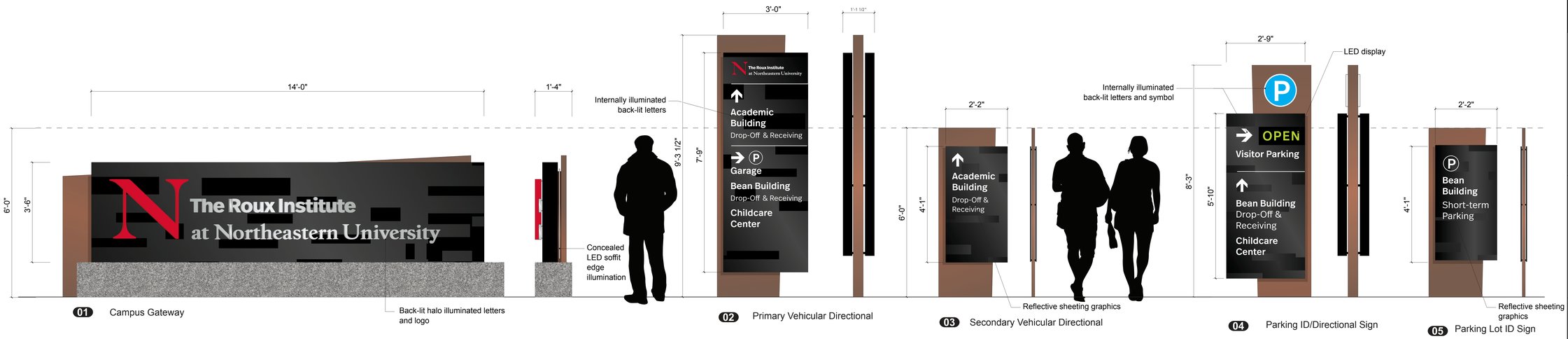
The sign system is comprised of fabricated aluminum panel contruction with durable automotive paint finishes and installed with reinforced concrete footings. Sign Type 01 also incorporates a granit base, to match the granite used in site furnishings.

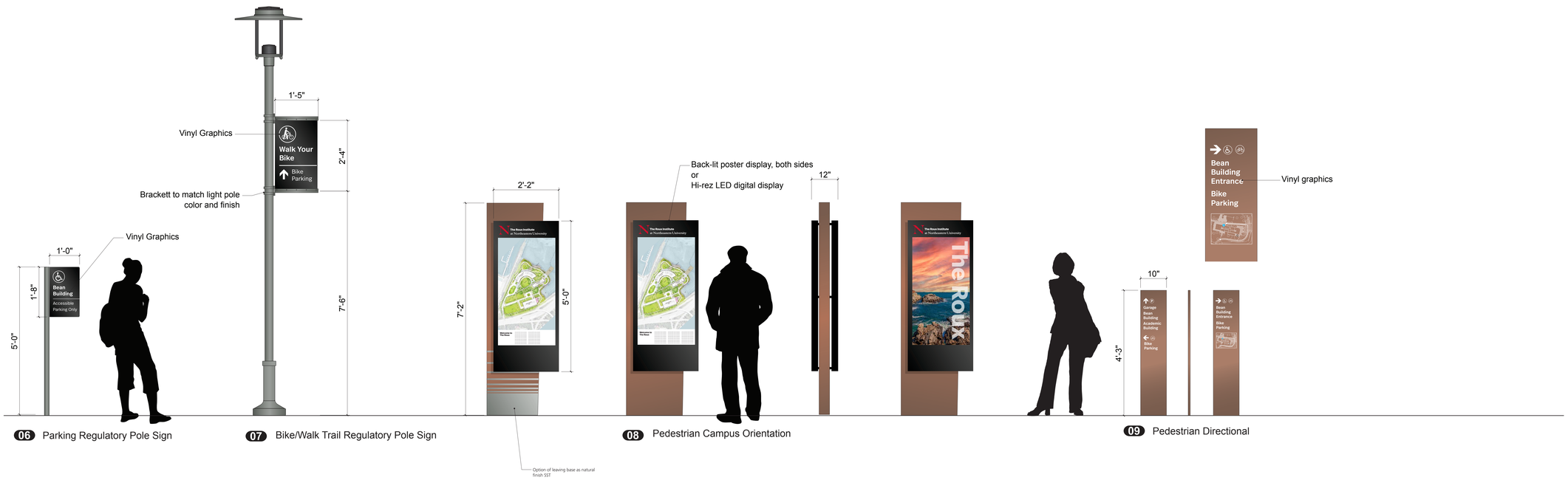
The system is designed to be dissassembled to accomodate change over time and maintenance.

Graphics

Sign Types 01, 02 and 04 have internally illuminated back-lit lettering and graphics wtih augmented edge illumination as noted. Sign Type 08 incorporates a conventional backlit poster display case for the map and information graphics. LED digital displays in place of backlit displays may be explored for ease of update.

All other sign types inorporate reflective or opaque vinyl lettering and graphics.





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LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	AJB Checked SB
Date	27 OCTOBER 2023
Scale	3/4" = 1' - 0"

Drawing Title

Site Wayfinding System Sign Types

SG.03

8/22/2023 2:59:23 PM

Underpass Gateway



Northeastern Campus Mural Program



Tommy's Park, Portland, ME



Lafayette College Gateway



Existing Conditions



Northeastern Red Painted Girders



Northeastern Red Painted Girders
with Underpass Mural with Lighting

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LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	AJB Checked SP
Date	27 OCTOBER 2023
Scale	Not To Scale

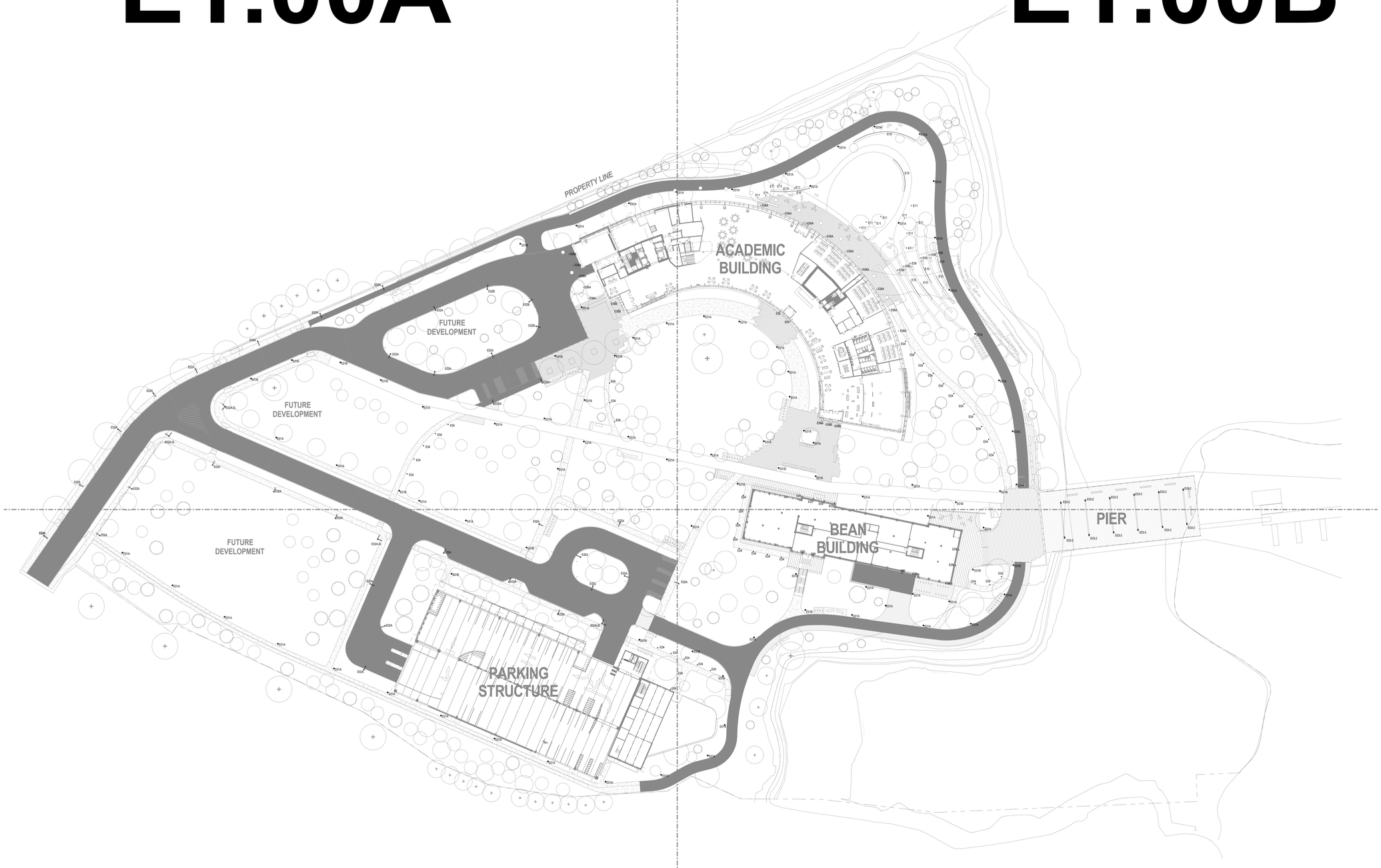
Drawing Title
UNDERPASS GATEWAY

SG.04

8/22/2023 2:59:29 PM

E1.00A

E1.00B



E1.00D

E1.00C

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SITE PLAN SUBMISSION

Number	Revision	Date

COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45455
REGISTERED PROFESSIONAL ENGINEER

10.27.2023

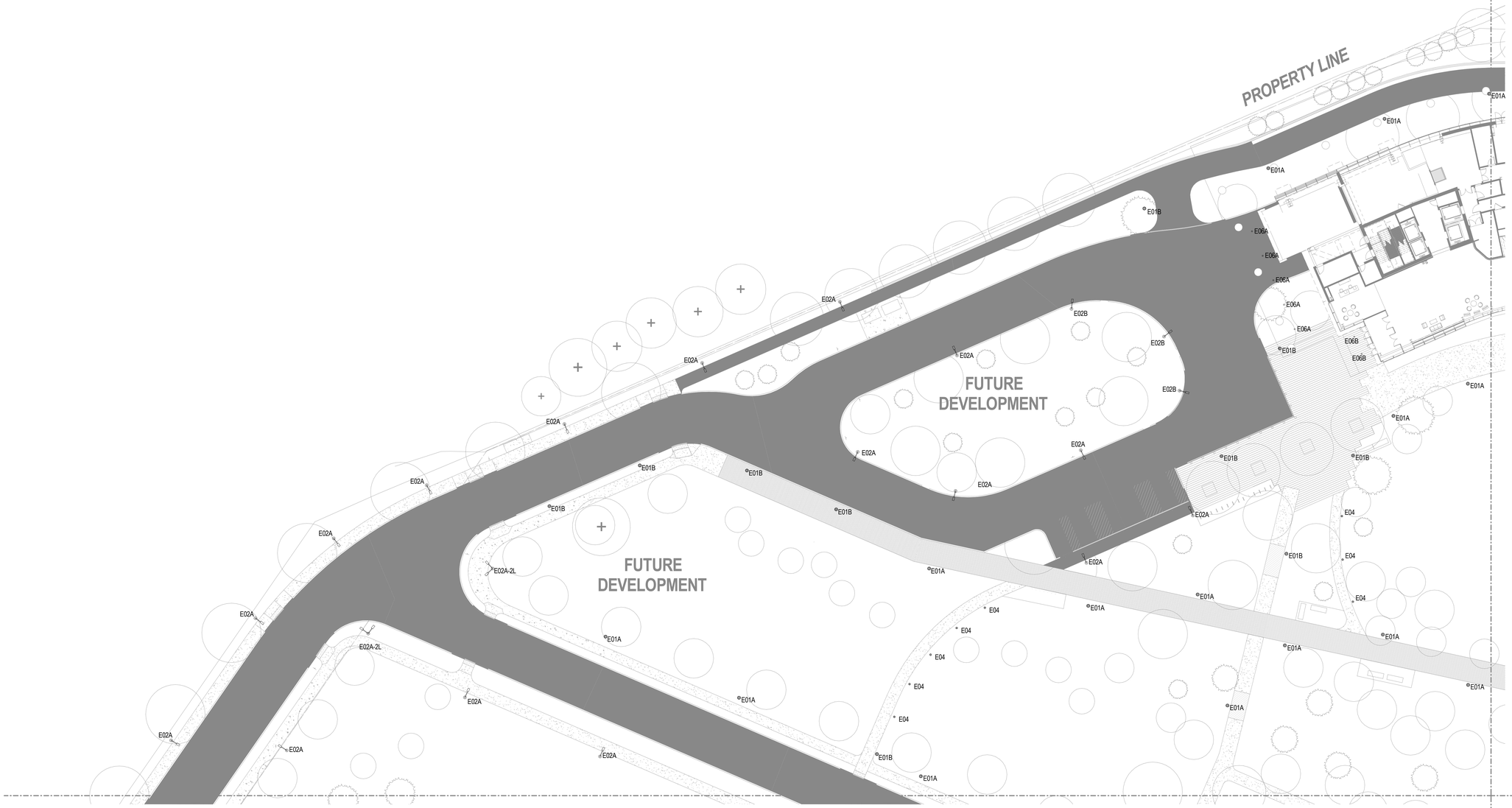
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	27 OCTOBER 2023
Scale	1" = 40'-0"

Drawing Title
SITE LIGHTING KEY PLAN

E1.00

10/27/2023 2:20:42 PM



1 SITE LIGHTING PLAN - PART A
1" = 20'-0"

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Number	Revision	Date

Stamp
10.27.2023

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART A

E1.00A

10/27/2023 2:21:16 PM



1 SITE LIGHTING PLAN - PART B
1" = 20'-0"

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SITE PLAN SUBMISSION

Number	Revision	Date

COMMONWEALTH OF MASSACHUSETTS
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10.27.2023

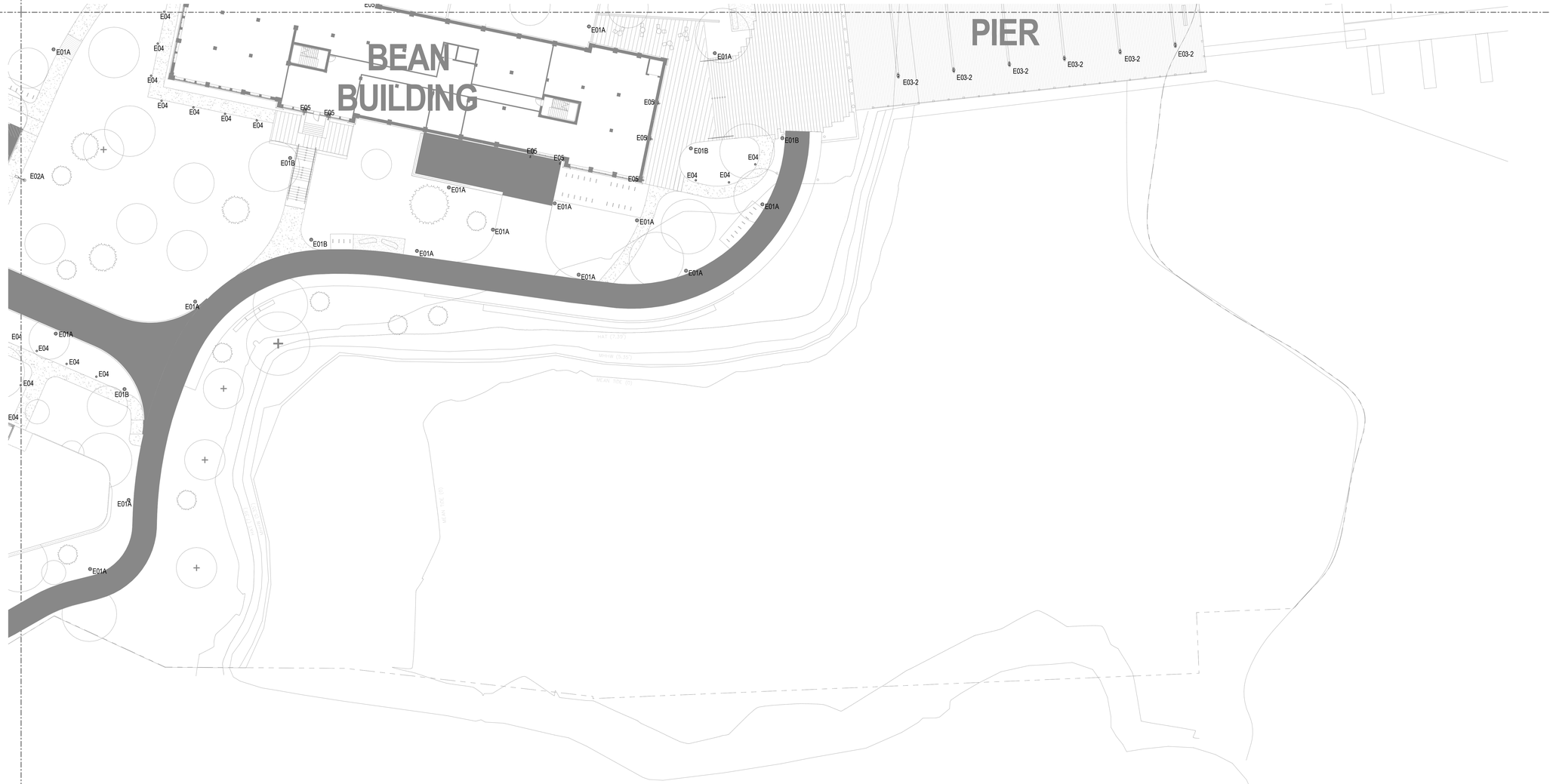
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART B

E1.00B

10/27/2023 2:21:18 PM



1 SITE LIGHTING PLAN - PART C
1" = 20'-0"

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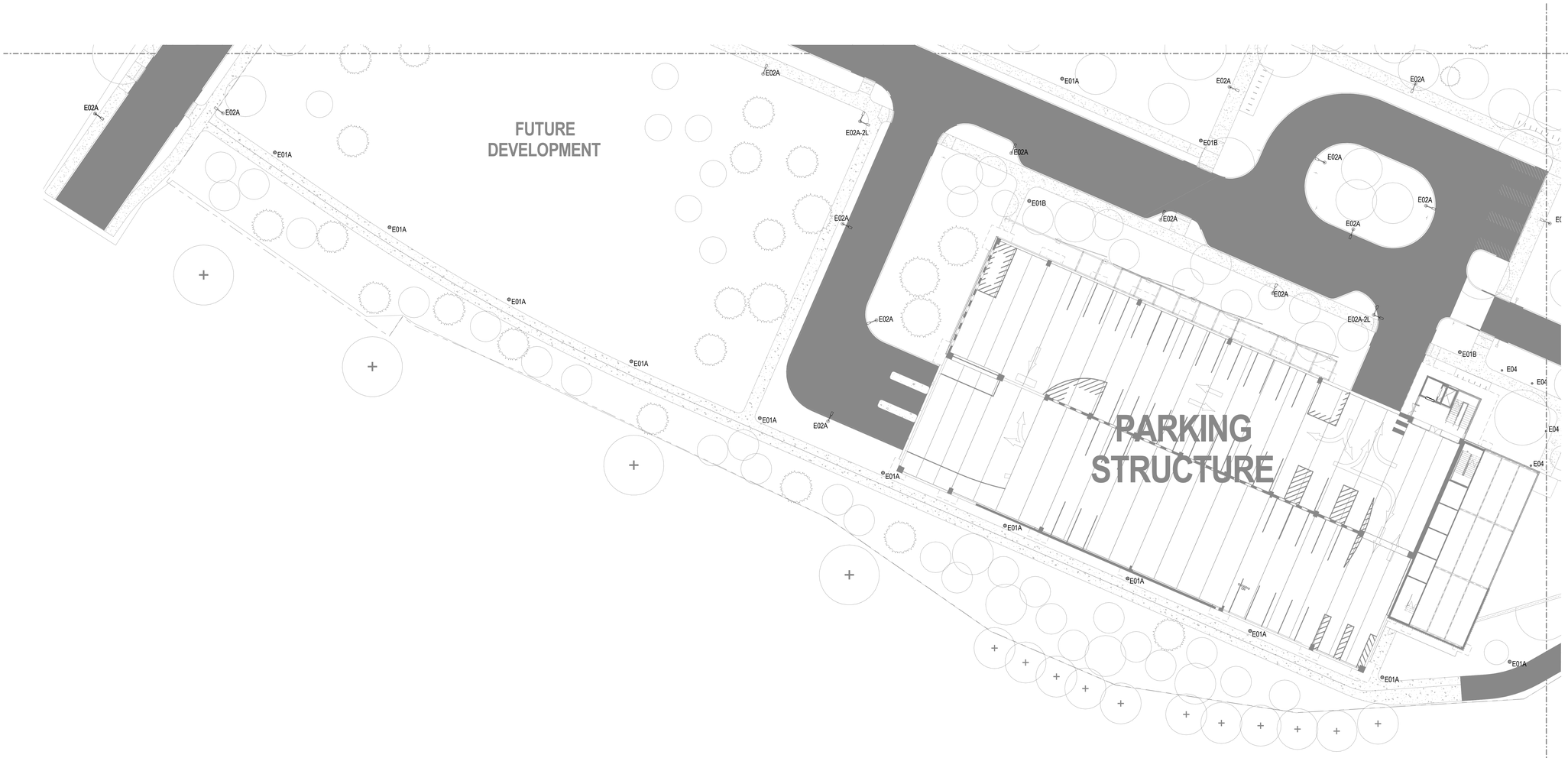
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART C

E1.00C

10/27/2023 2:21:20 PM



1 SITE LIGHTING PLAN - PART D
1" = 20'-0"

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SITE PLAN SUBMISSION

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Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

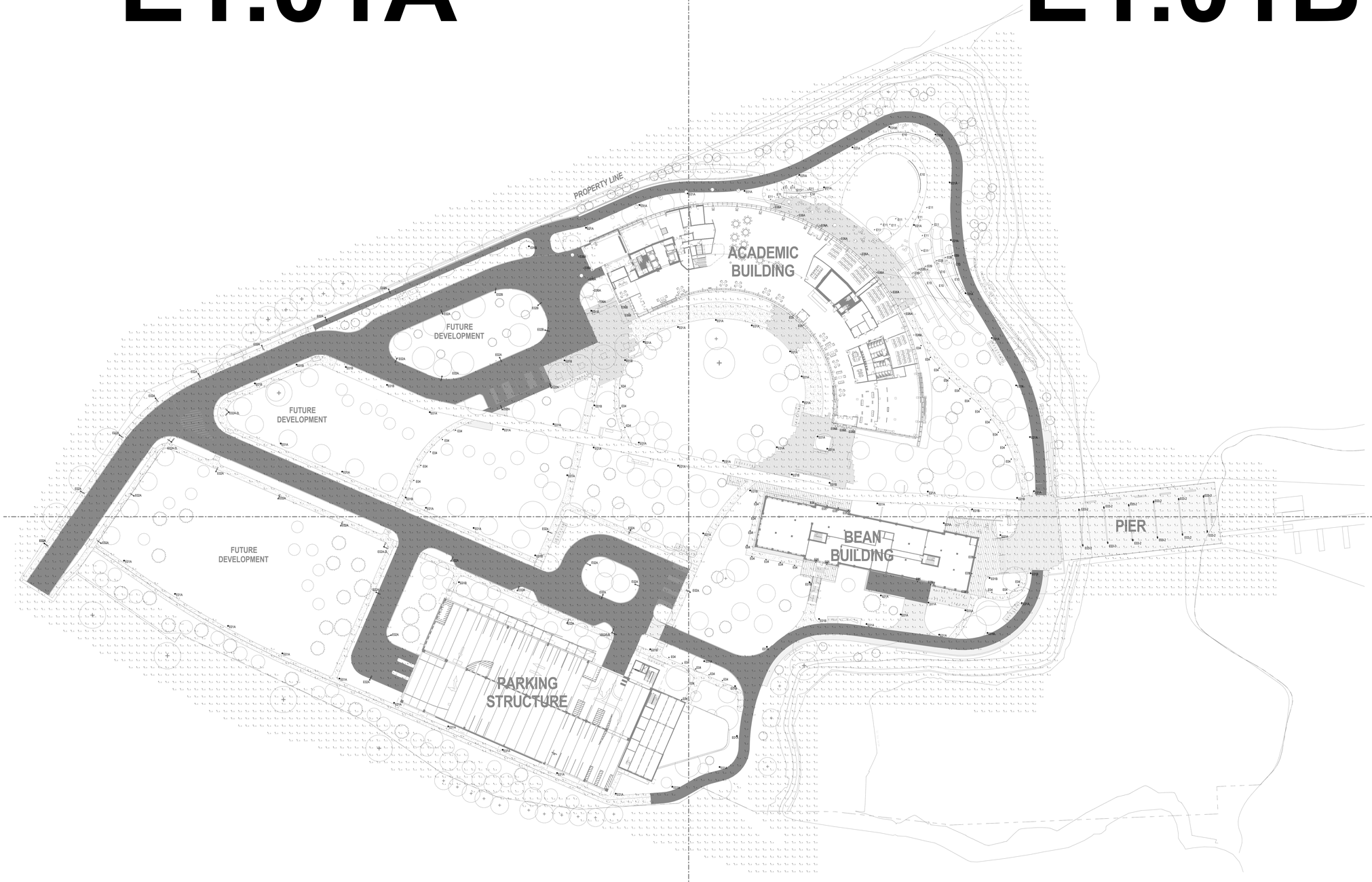
Drawing Title
SITE LIGHTING PLAN - PART D

E1.00D

10/27/2023 2:21:21 PM

E1.01A

E1.01B



E1.01D

E1.01C

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JULIAN ASTBURY
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10.27.2023

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 40'-0"

Drawing Title

SITE LIGHTING PHOTOMETRIC KEY PLAN

E1.01

10/27/2023 2:21:13 PM

The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Site Lighting
• Uniformity: 20:1
• Illumination levels: Min 0.2 (fc), Max 5.0 (fc), Ave 1.25 (fc)
• No fixture shall exceed 20,000 lumens (± 3%).
- Path lighting: 1,500 lumens Maximum Lumens allowed will apply to E04.
- Residential/ Commercial Pole at 20' : 15,000 lumens Maximum Lumens allowed will apply to E01 Series, E02 Series, and E03.
- Building Entrance: 3,500 lumens Maximum Lumens allowed will apply to E05 and E06 Series.
• Light Trespass: The maximum illumination level at a property line shall not exceed 0.1fc at the waterline (sensitive use) or 1.0fc next to industrial and/or non-sensitive uses. All adjacent properties are considered non-sensitive (interstate, rail right-of-way).
• Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0. Please note that the E04 is Night Sky friendly with minimum uplight component and U1 rating. The E10 linear tape light fixtures are installed aimed at the ground and integrated into an architectural detail, to eliminate the possibility of uplight.
• Fixture Height:
- Building Mounted/ Entrances: below the roof eave and not to exceed 20 feet, whichever is lower. As only exceptions, E06B will be mounted under the lowest point of the building canopy, at 32ft.
- All the light poles and bollards respect the height provision (Light sources on Poles at or below 20ft - Bollards at or below 3.5')

12.5. ARCHITECTURAL AND SPECIALTY LIGHTING AND UPLIGHTING
For accent lighting of the Landscape, E11 fixture will be installed upward and aimed on the trees.
E11 does not exceed 4,000 mean lumens per accent feature, is fully shielded from view off-site, and uses a narrow cone of light for the purpose of confining the light to the object.

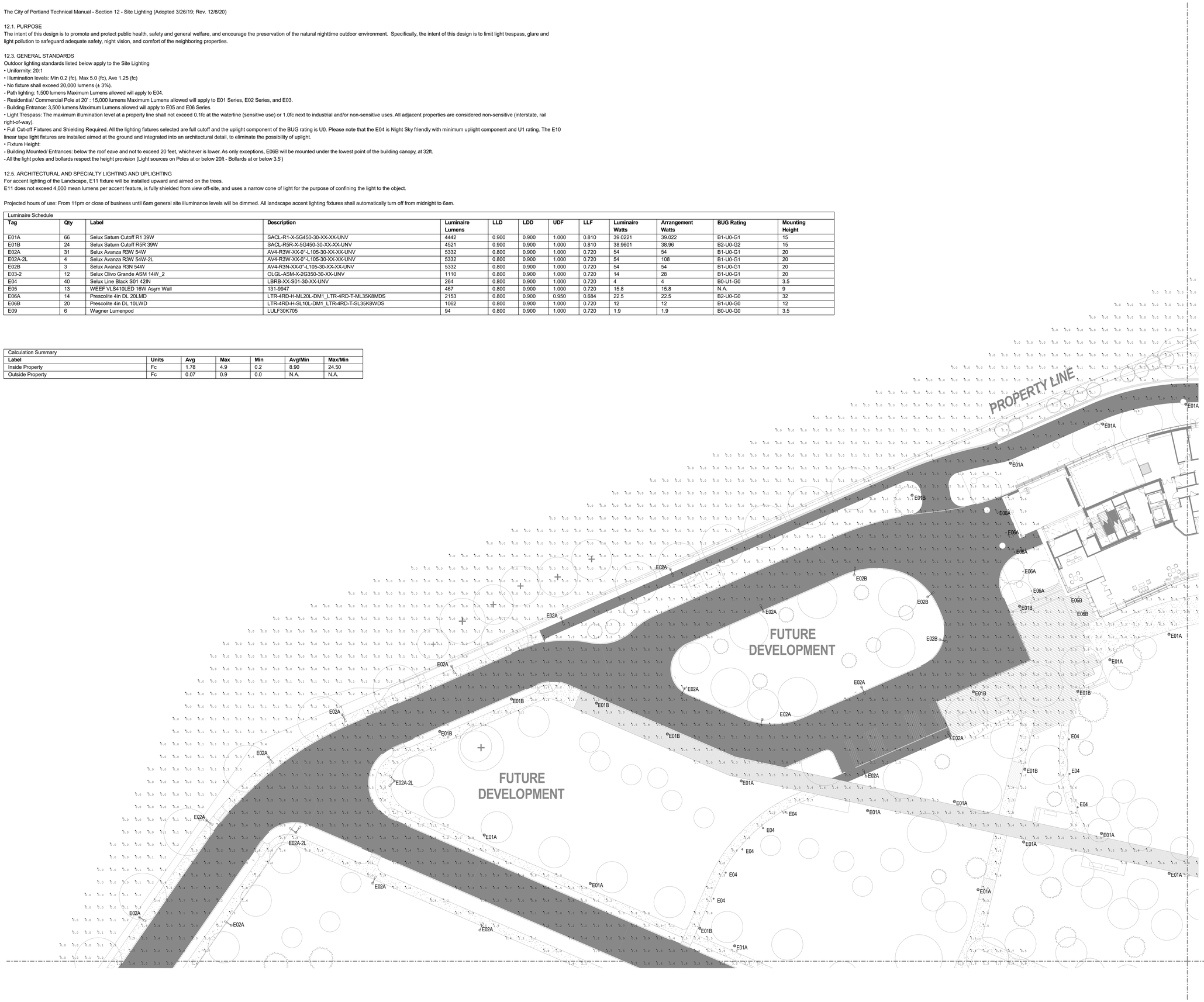
Projected hours of use: From 11pm or close of business until 6am general site illuminance levels will be dimmed. All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.

Luminaire Schedule

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	Arrangement Watts	BUG Rating	Mounting Height
E01A	66	Selux Saturn Cutoff R1 39W	SACL-R1-X-5G450-30-XX-XX-UNV	4442	0.900	0.900	1.000	0.810	39.0221	39.022	B1-U0-G1	15
E01B	24	Selux Saturn Cutoff R5R 39W	SACL-R5R-X-5G450-30-XX-XX-UNV	4521	0.900	0.900	1.000	0.810	38.9601	38.96	B2-U0-G2	15
E02A	31	Selux Avanza R3W 54W	AV4-R3W-XX-0°-L105-30-XX-XX-UNV	5332	0.800	0.900	1.000	0.720	54	54	B1-U0-G1	20
E02A-2L	4	Selux Avanza R3W 54W-2L	AV4-R3W-XX-0°-L105-30-XX-XX-UNV	5332	0.800	0.900	1.000	0.720	54	108	B1-U0-G1	20
E02B	3	Selux Avanza R3N 54W	AV4-R3N-XX-0°-L105-30-XX-XX-UNV	5332	0.800	0.900	1.000	0.720	54	54	B1-U0-G1	20
E03-2	12	Selux Olivo Grande ASM 14W_2	OLGL-ASM-X-2G350-30-XX-UNV	1110	0.800	0.900	1.000	0.720	14	28	B1-U0-G1	20
E04	40	Selux Line Black S01 42IN	LBRB-XX-S01-30-XX-UNV	264	0.800	0.900	1.000	0.720	4	4	B0-U1-G0	3.5
E05	13	WEEF VLS410LED 16W Asym Wall	131-9947	467	0.800	0.900	1.000	0.720	15.8	15.8	N.A.	9
E06A	14	Prescolite 4in DL 20LMD	LTR-4RD-H-ML20L-DM1_LTR-4RD-T-ML35K8MDS	2153	0.800	0.900	0.950	0.684	22.5	22.5	B2-U0-G0	32
E06B	20	Prescolite 4in DL 10LWD	LTR-4RD-H-SL10L-DM1_LTR-4RD-T-SL35K8WDS	1062	0.800	0.900	1.000	0.720	12	12	B1-U0-G0	12
E09	6	Wagner Lumenpod	LULF30K705	94	0.800	0.900	1.000	0.720	1.9	1.9	B0-U0-G0	3.5

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Inside Property	Fc	1.78	4.9	0.2	8.90	24.50
Outside Property	Fc	0.07	0.9	0.0	N.A.	N.A.



1 SITE LIGHTING PHOTOMETRIC PLAN - PART A
1" = 20'-0"

IDEALS
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SITE PLAN SUBMISSION

Number	Revision	Date

COMMONWEALTH OF MASSACHUSETTS
JULIAN ASTBURY
ELECTRICAL
No. 45458
REGISTERED PROFESSIONAL ENGINEER
10.27.2023
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	As indicated

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART A

E1.01A

10/27/2023 2:21:31 PM



1 SITE LIGHTING PHOTOMETRIC PLAN - PART B
1" = 20'-0"

IDEALS
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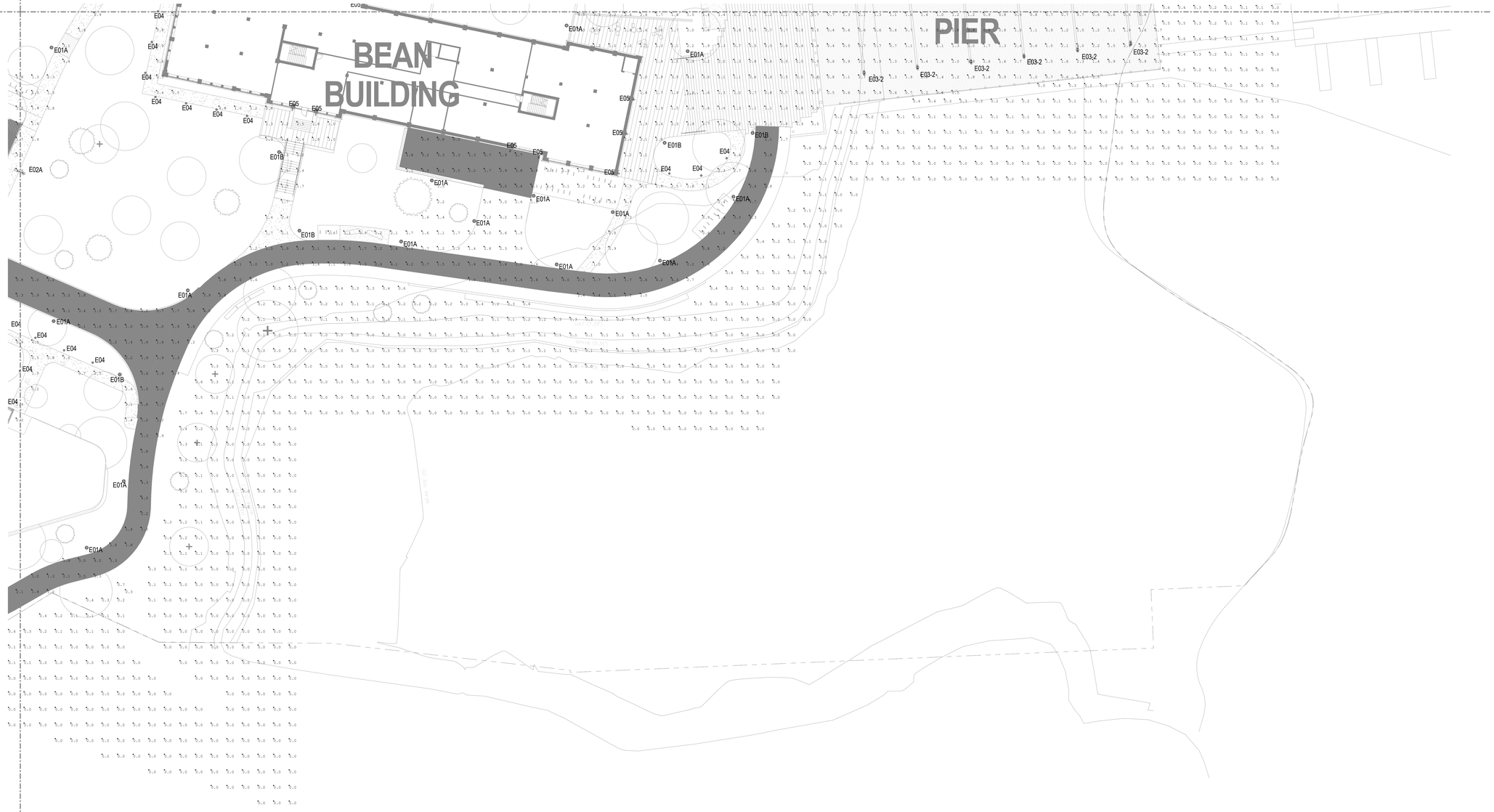
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART B

E1.01B

10/27/2023 2:21:28 PM



1 SITE LIGHTING PHOTOMETRIC PLAN - PART C
1" = 20'-0"

IDEALS
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SITE PLAN SUBMISSION

Number	Revision	Date

COMMONWEALTH OF MASSACHUSETTS
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10.27.2023

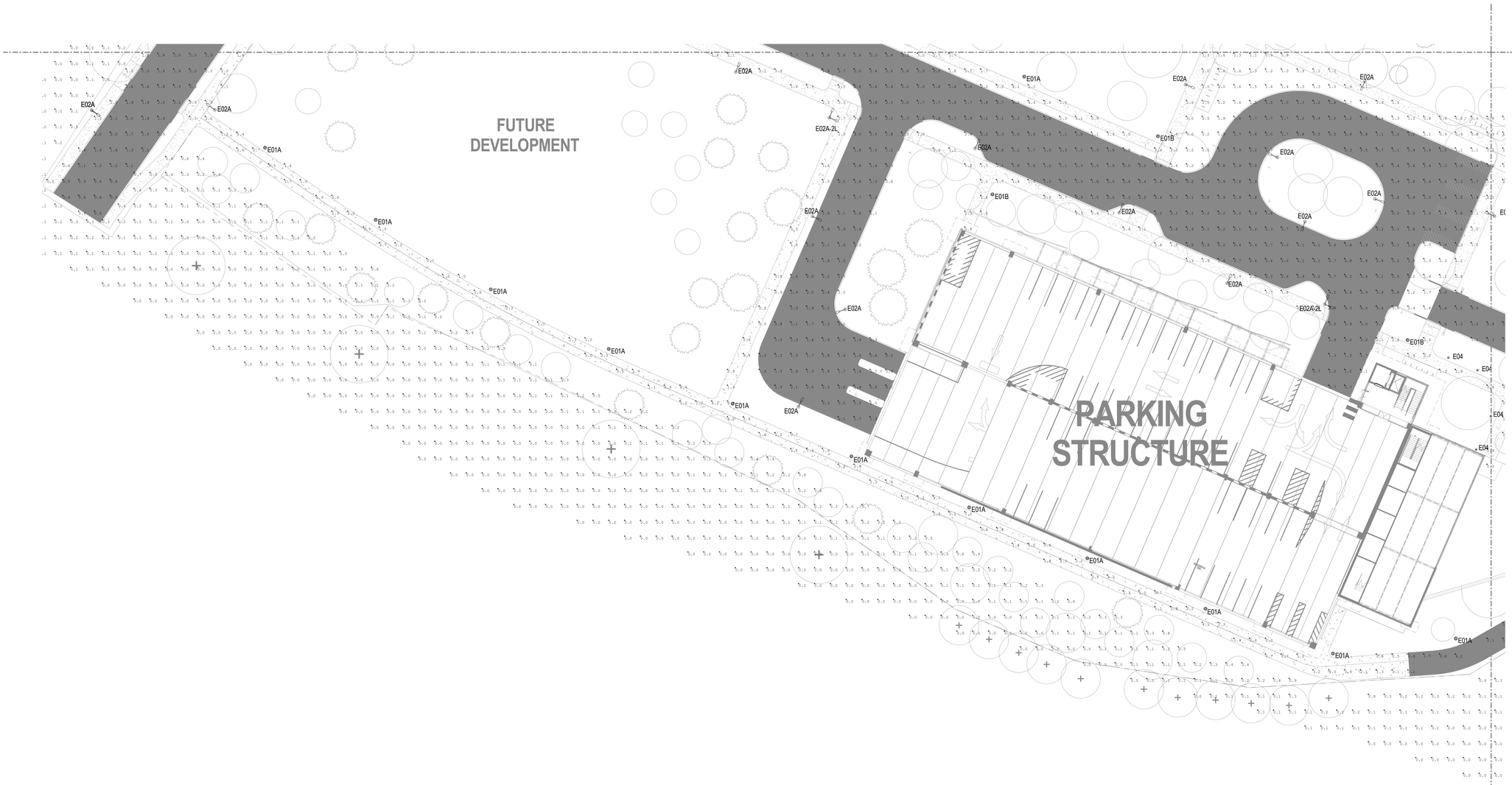
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART C

E1.01C

10/27/2023 2:21:25 PM



1 SITE LIGHTING PHOTOMETRIC PLAN - PART D
1" = 20'-0"

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COMMONWEALTH OF MASSACHUSETTS
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10.27.2023

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	27 OCTOBER 2023
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART D

E1.01D

10/27/2023 2:21:23 PM

Date: _____ Customer: _____
Project: _____
Type: _____ Qty: _____

selux

Saturn Cutoff LED



Order Code: _____ _____ _____ _____ _____ _____ _____ _____

Pole Order Code: Series Height Finish Options

SACL	Series	SACL Saturn Cutoff LED							
	Optics	R1 Type I	R2 Type II	R3 Type III	R3W Type III (White)	R4 Type IV	R5R Type V (Round)	R5S Type V (Square)	R5Q Type V (Rectangular)
	Mounting	1 Single	1A Single Arm Mount	2 Double	W Wall Mount				
	Light Engine	5G450 3500-4000lm	5G700 5200-6000lm	5G905 7000-7500lm					*Based on R1 distribution in 3000K CCT
	CCT	27' 2700K	30' 3000K	40 4000K					*IDA Approved For other CCT, please consult factory.
	Power Cord Length	08 8 ft	10 10 ft	12 12 ft	14 14ft	16 16 ft	18 18 ft	XX XX ft	For mounting per the pole manufacturer's mounting use the pole height. A
	Finish	WH White	BK Black	BL Semi-Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color		
	Voltage	UNV 120V- 277V	120 120V	240 240V	277 277V	347* 347V	480* 480V		*Equipped with step down transformer
	Options	DM* Dimming (0-10V)	HS* House Side Shield (360°)	HLS0.5* Motion Sensor Switching Low Output 50%	HLS01* Motion Sensor Switching Low Output 10%	DS Pendulight Finish	PCT* Photocell Twist-Lock	MS* Motion Sensor Fixture with Optional Photocell (See page 2 for order code)	*Type I, II, III, and IV only. Certified for +1.4ft only. Cannot be combined with DM. *120V, 208V or 277V only. *HLS or MS only. Cannot be combined.

Product Modifications
Please list modification requirements for review by factory:

Approvals

Date:

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E01 SERIES

Date: _____ Customer: _____
Project: _____
Type: _____ Qty: _____

selux

Avanza 450



Order Code: _____ _____ _____ _____ _____ _____ _____ _____

Pole Order Code: Series Height Finish Options

	Series	AV4 Avanza 450							
	Optics	R3W Type III Distribution White	R3N Type III Distribution Narrow	R5 Type V Distribution					
	Mounting	5A* Single Pole Adapter	S1 Single Shoe Arm Mount	S2 Double Shoe Arm Mount	L1 Single Long Arm Mount	L2 Double Long Arm Mount (360°)	L4* Quad Long Arm Mount	SW Short Arm Wall Mount	*Not available with P. *Not available with P.
	Tilt of Mounting	0°	5°						
	Light Engine	L700 5641-5,866lm	L105 7445-7,910lm						
	CCT	27' 2700K	30 3000K	35* 3500K	40 4000K	50* 5000K			*Consult factory. *IDA approved with 2700K and 3000K CCT.
	Power Cord Length	12 12 ft	15 15 ft	18 18 ft	20 20 ft	25 25 ft	XX* XX ft		*Add length of arm and height of pole to determine power cord length.
	Finish	WH White	BK Black	BL Semi-Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color		
	Voltage	UNV 120-277V	120* 120V	208 208V	240* 240V	277 277V	347* 347V	480* 480V	*Specify for PL option. *Equipped with step down transformer.
	Options	DM Dimming (0-10V)	HLS0.5* Motion Sensor Switching Low Output 50%	HLS01* Motion Sensor Switching Low Output 10%	TLR* Twist Lock Receptacle with Optional Photocell	TLRP* Twist Lock Receptacle 3-Pin with Photocell	MS* Motion Sensor with Optional Photocell (See page 2 for order code)		*120V, 240V, 277V only. *HLS or MS only. Cannot be combined. *5-PIN or NEMA 7440 twist-lock receptacle (for PL applications requirements). Consult factory. *Not available with DM option. *1,000 light engine only.

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E02 SERIES

Date: _____ Customer: _____
Project: _____
Type: _____ Qty: _____

selux

Olivio Media LED
Sisterna 2 Arm Mount



Order Code: #1 OLML _____ _____ _____ _____ _____ _____ _____
#2 OLML _____ _____ _____ _____ _____ _____ _____
#3 OLML _____ _____ _____ _____ _____ _____ _____
#4 OLML _____ _____ _____ _____ _____ _____ _____
Fixture # Series Optics Mounting Light Engine CCT Finish Voltage Options

Pole Order Code: Series Height Finish RN Round Pairs Options *Make to stack on page 4 for Round locations

OLML	Series	OLML Olivio Media LED							
	Optics	S09 Spot, 9°	S20 Spot, 20°	F40 Flood medium, 40°	F80 Flood wide, 78°	ASM Asymmetric (not SLV or SL option)			
	Mounting	5Ba Specify # Arm Locations (up to a max of 4 luminaires per pole)							
	Light Engine	20350 1,900-2,100lm	20525 2,100-2,350lm	20700 2,350-2,550lm	20105 2,550-2,750lm				*Based on P80 distribution and 3000K CCT.
	CCT	27' 2700K	30' 3000K	35* 3500K	40 4000K	50* 5000K			*Dark Sky approved with 20 option only. *Consult Factory
	Finish	WH White	BK Black	BL Semi-Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color		
	Voltage	UNV 120-277V	120 120V	208 208V	240 240V	277 277V			
	Options	DS* Dark Sky (0-10v Option	DM Dimming (0-10V	SLH Spread Lens Horizontal (Fixed)	SLV Spread Lens Vertical (Fixed)	PC Photocell (consult factory)	HLS01* 10 LO Switching Low Output 10%	HX* Hexagonal Honeycomb (consult factory)	CF Cobra Filter (consult factory)

Product Modifications
Please list modification requirements for review by factory:

Approvals

Date:

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E03

Date: _____ Customer: _____
Project: _____
Type: _____ Qty: _____

selux

Line Round Bollard



Order Code: LRB _____ _____ _____ _____ _____ _____ _____

LRB	Series	LRB Line Round Bollard							
	Nominal Overall Height	3 3'	3.5 3.5'	4 4'					*For other heights consult factory.
	Light Engine	501 Single 1 Cat 4W/350lm	503 Single 3 Cat 12W/990lm	D01 Double 1 Cat (back to back 180°) 8W/660lm	D03 Double 3 Cat (back to back 180°) 24W/1,980lm				* Based on 3000K CCT.
	CCT	27* 2700K	30 3000K	35* 3500K	40 4000K	50* 5000K			* Consult factory for lead time.
	Finish	WH White	BK Black	BL Semi-Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color		
	Voltage	UNV 120-277V	120 120V	240 240V	277 277V	347* 347V	480* 480V		* Equipped with step down transformer. Wattage increases nominal 10%.
	Options	DM Dimming (0-10V)	REC* Single Receptacle with weatherproof cover	REC2* Double Receptacle with weatherproof padlockable in-use cover	REC3* Triple Receptacle with weatherproof padlockable in-use cover	REC4* Quad Receptacle with weatherproof padlockable in-use cover			* Not available with 3' height. See page 3 for details.

Product Modifications
Please list modification requirements for review by factory:

Approvals

Date:

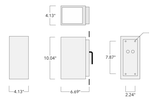
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E04

VLS410 LED
Surface Mounted Wall Luminaires
1/6

we-ef





Description
IP66, Class I, M37. Marine-grade, die-cast aluminum alloy. SCE superior corrosion protection including PCS hardware. Silicone GDSB Controlled Compression Gasket. Safety glass lens. Two cable entries. CAD-optimized optics for superior illumination and glare control. Integral driver. DLC® One LED Concept. Factory-installed LED circuit board. 0-10V Dimming comes standard with luminaire. Specify product with 7 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately. Example: XXX-XXXX-9004 (Black) + XXX-XXXX (Accessory 1)

Specifications may change without prior notice, verify latest at time of order. All rights reserved.

WE-EF LIGHTING USA LLC
See Support Hotline: +1 972 783 0949 | 410 D Keystone Drive | Warrendale PA 15086 U.S.A. | Tel +1 724 742 9330 | info.usa@we-ef.com | www.we-ef.com | 23-08-2023 18:18
Technical modifications and errors excepted

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E05

prescolite

LTR-4RD
LITEISTRY 4" ROUND DOWNLIGHT

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

LITEISTRY



SERVICE PROGRAMS
STOCK QS

FEATURES
- 4" architectural LED downlight delivering 600 – 4000 lm
- Five beam distributions from 0.3 to 1.2 Spacing Criteria
- Quiet reflector appearance with superior 90° optical cutoff
- 2700K – 5000K, 80+ and 90+ CRI options
- Available for New Construction (non-IC), IC and Chicago Plenum applications
- Variety of dimming protocol options including 0–10V, DALI, DMX, and Lutron EcoSystem
- NX Lighting Controls wired and wireless controls capability available

IP66 IK10 IP69K
*Select models

CONTROL TECHNOLOGY
NX LIGHTING CONTROLS

SPECIFICATIONS

CONSTRUCTION
- Standard Non-IC: Chicago Plenum and IC options
- Painted black durable steel platform with pre-installed bar hangers
- Pre-wired junction box with snap-on covers for easy access
- Snap-in connection from driver compartment allows easy installation
- Light Engine connections use plenum rated (CMP) cable

OPTICS
- Visually pleasing 50° cutoff to source and source image
- The light distribution is free of distracting hot spots, scallops, pixelation and the perimeter has a smooth gradation
- Optical grade silicone lens integral to light engine
- High purity spun aluminum reflector, self-flanged
- Flush Mount flange option with mud-in ring available
- Large selection of anodized finishes and colors
- Painted cones and flange options available

ELECTRICAL
- Chip-on-board LED with 2 SDCM
- Multiple CCTs, 80+ or 90+ CRI
- Long LED life: L90 at >55,000 hours (TM-21)
- Universal voltage 120V–277V driver, 347V optional
- UL Class 2, inherent short circuit and overload protection
- Flicker free 0-10V dimming with 1% or <1% performance
- DALI, DMX, and Lutron EcoSystem options
- Integral and remote emergency controller and battery pack options available
- NX or Lutron Vive control options available
- Refer to additional spec sheets for information on SpectraSync™, Tunable White or Dim-to-Warm solutions

INSTALLATION
- Accommodates ceiling thickness up to 2" (See DIMENSIONS section for details)
- Universal adjustable mounting brackets also accept 0.57" EMT conduit or 1.5" or 0.75" lathing channel (by others) or Prescolite accessory bar hangers (B24 or B6)
- Light Engine/Driver fully serviceable from above or below the ceiling

CERTIFICATIONS
- cCSAus certified to UL 1598
- Suitable for wet locations, covered ceiling. EMI EMR: Suitable for damp locations.
- ENERGY STAR® certified models available (For list and additional information, visit http://www.energystar.gov).
- This product qualifies as a "designated country construction material" per FAR 52.225-11 Buy America/Construction Materials under Trade Agreements effective 6/6/2020.

WARRANTY
- 5 year warranty

KEY DATA	
Lumen Range	600-4000
Wattage Range	8-52
Efficacy Range (LPW)	90-99*
Reported Life (Hours)	L90 / >55,000
Input Current (mA)	65-433 (120V)

*Based on Spectrum 3W, 80 CRI

currentlighting.com/prescolite

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E06 SERIES

ECOSENSE®

RISE®

OVERVIEW • SPECIFICATIONS • ORDERING

INTERIOR • EXTERIOR | **FO80 SINGLE ROUND**

DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE FO80 SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE, DELIVERING UP TO 1170 LUMENS, THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AIMABILITY USING ONLY ONE TWIST.

FEATURES :
- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 1170 LUMENS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (100 V-277 V)
- 4 CCTs 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED



FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
FO80	W - Single Round	LO - Low Output MO - Medium Output HO - High Output	22 - 2200K 25 - 2500K 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K 50 - 5000K 65 - 6500K 90 - Green 94 - Green BL - Blue AM - Amber *2200K and 2500K not available in 40', 60° and 90° and 90+	8 - 80 9 - 90* X - For RO, GR, BL, AM *90 CRI not available in 2200K, 2500K, 6500K, and 65000	05 - Laser Spot (5°) 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 40 - Flood (40°) 60 - Medium Flood (60°) 70 - Wide Flood (70°) 90 - Very Wide Flood (90°) E2 - Elliptical 2 (50°x65°) E3 - Elliptical 3 (50°x75°) E4 - Elliptical 4 (40°x90°)	K - Black Z - Bronze S - Silver W - White C - Custom *Provide RAL #	X - No Accessory H - Half Snoot F - Full Snoot Will ship as if Full Snoot was/has	A - 19" Flying Leads - Internal Cable IG Bottom Exit, 1/2" NPT, UL/cUL Listed B* - 10' External Cable Side Exit, Surface Mount, UL Listed C* - 10' External Cable Side Exit, Surface Mount, UL Listed D* - 10' External Cable Bottom Exit, Surface Mount - 1/2" NPT, UL Listed *Will ship as if in Full Snoot/Hat

EXAMPLE: FO80-W-LO-22-8-05-S-X-A

*SEE PHOTOMETRY CHART FOR LUMEN DATA

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
	4	Low Output	309	429	76	107	21,991	705
	7.5	Medium Output	531	761	71	101	37,824	1,251
	11.5	High Output	744	1,120	65	99	53,048	1,874

ALL LUMEN DATA IS FROM 4000K BOOK FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX	80+, 90+				
COLOR CONSISTENCY	3-STEP MACADAM ELLIPSE				
LUMEN DEPRECIATION	WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
	LOW	>60,500*	>60,500*	>60,500*	>60,500*
		>109,000**	>109,000**	>109,000**	>109,000**
	MEDIUM	>60,500*	>60,500*	>60,500*	>60,500*
		>109,000**	>109,000**	>109,000**	>109,000**
	HIGH	>60,500*	>36,300*	>60,500*	>33,200*
		>181,000**		>169,800**	

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR
** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/ies for the most updated information.

E07

Date: _____ Customer: _____
Project: _____
Type: _____ Qty: _____

selux

Line Black Round Column



Order Code: LBRC _____ _____ _____ _____ _____ _____ _____

LBRC	Series	LBRC Line Black Round Column							
	Height	10 10'	12 12'	14 14'	16 16'	18 18'			* Overall height includes the light engine. Consult factory for final fixture dimensions.
	Optics	AS Asymmetric	AM Asymmetric Medium	AW Asymmetric Wide					
	Light Engine	S03 Single 3 Cat 12W/740lm	S06 Single 6 Cat 24W/1,479lm	S12 Single 12 Cat 48W/2,970lm	D03 Double 3 cat (staggered 180°) 24W/1,480lm	D06 Double 6 cat (staggered 180°) 48W/2,958lm	D12 Double 12 cat (staggered 180°) 96W/5,940lm		* For mixing of optics/light engines, please consult factory. * Consult factory for lead time. * Based on 3000K CCT and AM optics.
	CCT	27* 2700K	30* 3000K	35* 3500K	40 4000K	50* 5000K			* Consult factory for lead time. * Based on 3000K CCT and AM optics.
	Finish	WH White	BK Black	BL Semi Matte Black	BZ Bronze	SV Silver	SP Specify Premium Color		
	Voltage	UNV 120-277V	120 120V	240 240V	277 277V	347* 347V	480* 480V		* Equipped with step down transformer. Wattage increase nominal 10%.
	Options	REC* SPD2 Receptacle with weatherproof cover	REC2* SPD2 Receptacle with weatherproof padlockable in-use cover	REC3* USB & Duplex Receptacle with weatherproof cover	REC4* USB & Duplex Receptacle with weatherproof padlockable in-use cover	DM* Dimming, 0-10V	TLR* Twist Lock Receptacle 7-Pin with Shorting Cap	TLRP* Twist Lock Receptacle 3-Pin with Photocell	* See page 3 for details. * DALI, DMX, RF, or WC only – cannot be combined. * Not available on 50' or 10'. available with Single Light Engine (S) 18' and Double Light Engine (D) 18'.
		MS** Motion Sensor Fixture Only (# Luminaires) (see page 5 for order code)	BC Base Cover (Required for non-buried base)	BBXX Base Cover Custom Finish (see page 4)	CF Comfort Dimming (Shields LEDs)				* Equipped with step down transformer. Wattage increase nominal 10%.

Product Modifications
Please list modification requirements for review by factory:

Approvals

Date:

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E08



LUMENPOD® 16 — Another Luminaria® Component for Life Safety and Light

PROJECT NAME: _____
REP AGENCY: _____
APPROX. LINEAR FT: _____
SERVICE OPTIONS: ☐ Field Measure ☐ Job Site Support ☐ System Installation

SCAN OR CODE for electrical information, downloads and instructions

PART NUMBER BUILDER

LULF40K700	LULF			
EXAMPLE	FIXTURE TYPE	COLOR TEMP	OPTIC	DRIVE CURRENT
* Indicates stock, other options may require additional lead time.	LULF - Luminaria® 16	*27K 2700 K *30K 3000 K *40K 4000 K *50K 5000 K	BLU Blue GRN Green RED Red AMB Amber	*15 15° beam *25 25° beam *45 45° beam *90 90° beam

*5 2.218 lb 500 mA
*7 1.754 lb 350 mA
Extended life (50,000 hr) version requires 350 mA

ELECTRICAL SPECIFICATIONS

24VDC	ETL LISTED WET, IK10, IP67, CE	0-10V INPUT	-40°F TO +120°F
INPUT VOLTAGE	CERTIFICATIONS	DIMMING	OPERATING TEMP
CLASS 2 REQUIRED	5 YEARS	UP TO 1% LM/W LED	80+
DRIVER	WARRANTY	EFFICIENCY	CRI

Intertek
All electrical connections to be made by a qualified electrician in accordance with all national, state and local electrical codes.

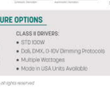
8" | 0" | WIRE LENGTH

CONSTRUCTION

This Lumenpod's threaded stainless steel body despises heat directly into the mounting material. A machined in-solder position is it nearly flush with any diameter host rod, as well as flat or severe stock.



PHOTOMETRICS



Adjustments: Photometrics can be fine tuned on fabricated systems by rotating the fixture around the rail diameter. A 25° angle provides superb illumination results in most applications. IES reports to view or download are available by scanning the QR code or visiting our website.

LUMENGEAR™ LED DRIVER & NEMA ENCLOSURE OPTIONS

Wagner offers multiple ETL listed options for both 24VDC power supplies and NEMA enclosures. Quantities and types will be configured based on your specifications and design. Additional specifications options are available by request. Not all options apply to all products, please verify compatibility with the factory.

CLASS II DRIVERS:
- STD 100W
- Dali, DMX, 0-10V Dimming Protocols
- Multiple Wattages
- Made in USA Units Available

NEMA ENCLOSURES:
4X - Polycarbonate, Painted Steel or Stainless Steel

LUMENPOST™:
Integrated 100W, 0-10V DIM

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WAGNER 888-243-6914 // ridiwagner.com
Wagner Companies Ltd.
5300 West Brown Deer Road // Milwaukee, WI 53224, USA.

E09

WALA STATIC WHITE
Flexible Fixtures - Q-CAP

Declare.

- Flexible micro-fixture with 9" wide bend radius
- Fully encapsulated flexible linear LED fixture
- Perfect for interior and exterior applications
- Optional seamless connection eliminates light gap

1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/ OUTPUT	8 CONNECTOR WIRE IN	9 CONNECTOR WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACT OPTIONS
WALA-SW											

Sample Part Number: WALA-SW-WSC-DRY-30-4.0-END/FL-P1-BW-BW-NA-NF-E

1 PRODUCT: WALA-SW
2 MOUNTING: PPD-C Pre-Drilled Custom Length; PPD-F Pre-Drilled 1" from Ends; PPLD-C PVC Low Profile Channel Custom Length; PPLD-F PVC Low Profile Channel 1" from Ends; WSC* White Snap Clip
*PPD mounting clip recommended for seamless applications.
3 RATED: DRY IP20; WET IP67
4 CCT: 24 2400K; 27 2700K; 30 3000K; 35 3500K; 40 4000K
5 WATTAGE: 1.0 (100-132); 2.0 (198-242); 4.0 (220-277)
6 LENS: END/FL Encapsulation in Clear Silicone; DIF Diffused Encapsulation
7 WIRE INPUT/OUTPUT: S1 Single 1 Input only - Exit Feed; S2 Single 2 Input only - Exit Feed; SB Single 2 Input only - Seamless Feed; P1 Pass Through 1 Input/Output - Exit Feed; P2 Pass Through 2 Input/Output - Exit Feed; P3 Pass Through 3 Input/Output - Seamless Feed
8 CONNECTOR/WIRE IN: BW Bare Wire (Standard 24"); Blank None; CONN-F Connector-F; CONN-M Connector-M
Connectors/Wire In not needed to specify product. Typical available in 48". Standard length is 24". Max length is 96". Connectors/Wire In are not available on 1" pre-cut lengths or NW (seamless) options.
9 CONNECTOR/WIRE OUT: BW Bare Wire (Standard 24"); Blank None; CONN-F Connector-F; CONN-M Connector-M
Connectors/Wire Out not needed to specify product. Typical available in 48". Standard length is 24". Max length is 96". Connectors/Wire Out are not available on 1" pre-cut lengths or NW (seamless) options.
10 END CAPS: Single = CL Clear, WH White; Pass Through = N/A Not Applicable
11 LENGTH (IN): Fixture length min 12", max 196". Consult factory for lengths under 12". Available in 1" increments.
12 EXACT OPTIMAL: O Optimal Illumination (+zero Deviation Length); Typical Optimal Illumination is ± 1/8" of nominal. Available in 1" increments. Consult factory for lengths under 12". Available in 1" increments.

Field modifications are not covered under Q-Tran warranty | 5 year warranty | Side Bend | Date subject to change, all data has +/- 5% tolerance | PPS-FT and PPS-LP-FT is to be cut at Q-Tran to requested length | Not field cuttable

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Specification subject to change. Rev 09.09.20

E10

ECOSENSE®

RISE®

OVERVIEW • SPECIFICATIONS • ORDERING

INTERIOR • EXTERIOR | **FO80 SINGLE ROUND**

DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE FO80 SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE, DELIVERING UP TO 1170 LUMENS, THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AIMABILITY USING ONLY ONE TWIST.

FEATURES :
- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 1170 LUMENS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (100 V-277 V)
- 4 CCTs 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED



FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
FO80	W - Single Round	LO - Low Output MO - Medium Output HO - High Output	22 - 2200K 25 - 2500K 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K 50 - 5000K 65 - 6500K 90 - Green 94 - Green BL - Blue AM - Amber *2200K and 2500K not available in 40', 60° and 90° and 90+	8 - 80 9 - 90* X - For RO, GR, BL, AM *90 CRI not available in 2200K, 2500K, 6500K, and 65000	05 - Laser Spot (5°) 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 40 - Flood (40°) 60 - Medium Flood (60°) 70 - Wide Flood (70°) 90 - Very Wide Flood (90°) E2 - Elliptical 2 (50°x65°) E3 - Elliptical 3 (50°x75°) E4 - Elliptical 4 (40°x90°)	K - Black Z - Bronze S - Silver W - White C - Custom *Provide RAL #	X - No Accessory H - Half Snoot F - Full Snoot Will ship as if Full Snoot was/has	A - 19" Flying Leads - Internal Cable IG Bottom Exit, 1/2" NPT, UL/cUL Listed B* - 10' External Cable Side Exit, Surface Mount, UL Listed C* - 10' External Cable Side Exit, Surface Mount, UL Listed D* - 10' External Cable Bottom Exit, Surface Mount - 1/2" NPT, UL Listed *Will ship as if in Full Snoot/Hat

EXAMPLE: FO80-W-LO-22-8-05-S-X-A

*SEE PHOTOMETRY CHART FOR LUMEN DATA

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
	4	Low Output	309	429	76	107	21,991	705
	7.5	Medium Output	531	761	71	101	37,824	1,251
	11.5	High Output	744	1,120	65	99	53,048	1,874

ALL LUMEN DATA IS FROM 4000K BOOK FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX	80+, 90+				
COLOR CONSISTENCY	3-STEP MACADAM ELLIPSE				
LUMEN DEPRECIATION	WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
	LOW	>60,500*	>60,500*	>60,500*	>60,500*
		>109,000**	>109,000**	>109,000**	>109,000**
	MEDIUM	>60,500*	>60,500*	>60,500*	>60,500*
		>109,000**	>109,000**	>109,000**	>109,000**
	HIGH	>60,500*	>36,300*	>60,500*	>33,200*
		>181,000**		>169,800**	

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR
** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/ies for the most updated information.

E11



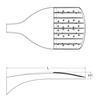
D-Series Size 0
LED Area Luminaire

Catalog Number
Notes
Type

d-series

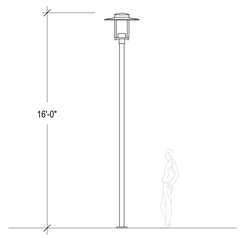
Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.45" (18.9 cm)
Weight:	23 lbs (10.4 kg)

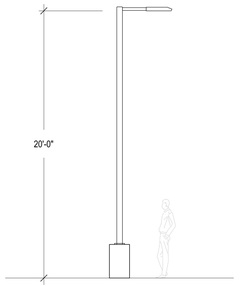


Introduction
The modern styling of the D-Series features a straight aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

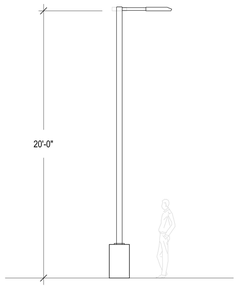
The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number



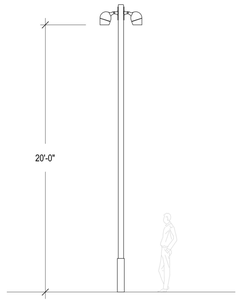
E01 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



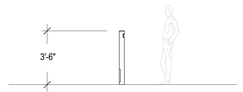
E02 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



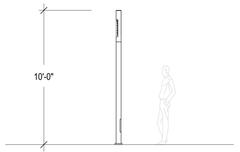
E02A-2L POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



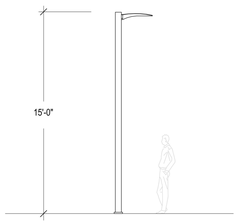
E03-2 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



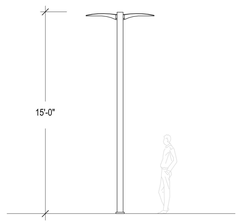
E04 BOLLARD LUMINAIRE
SCALE: 1/4" = 1'-0"



E08 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



P01 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



P01A-2 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"

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Number	Revision	Date

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JULIAN ANTHONY WEISBURY
No. 39455
REGISTERED PROFESSIONAL ENGINEER

10.27.2023

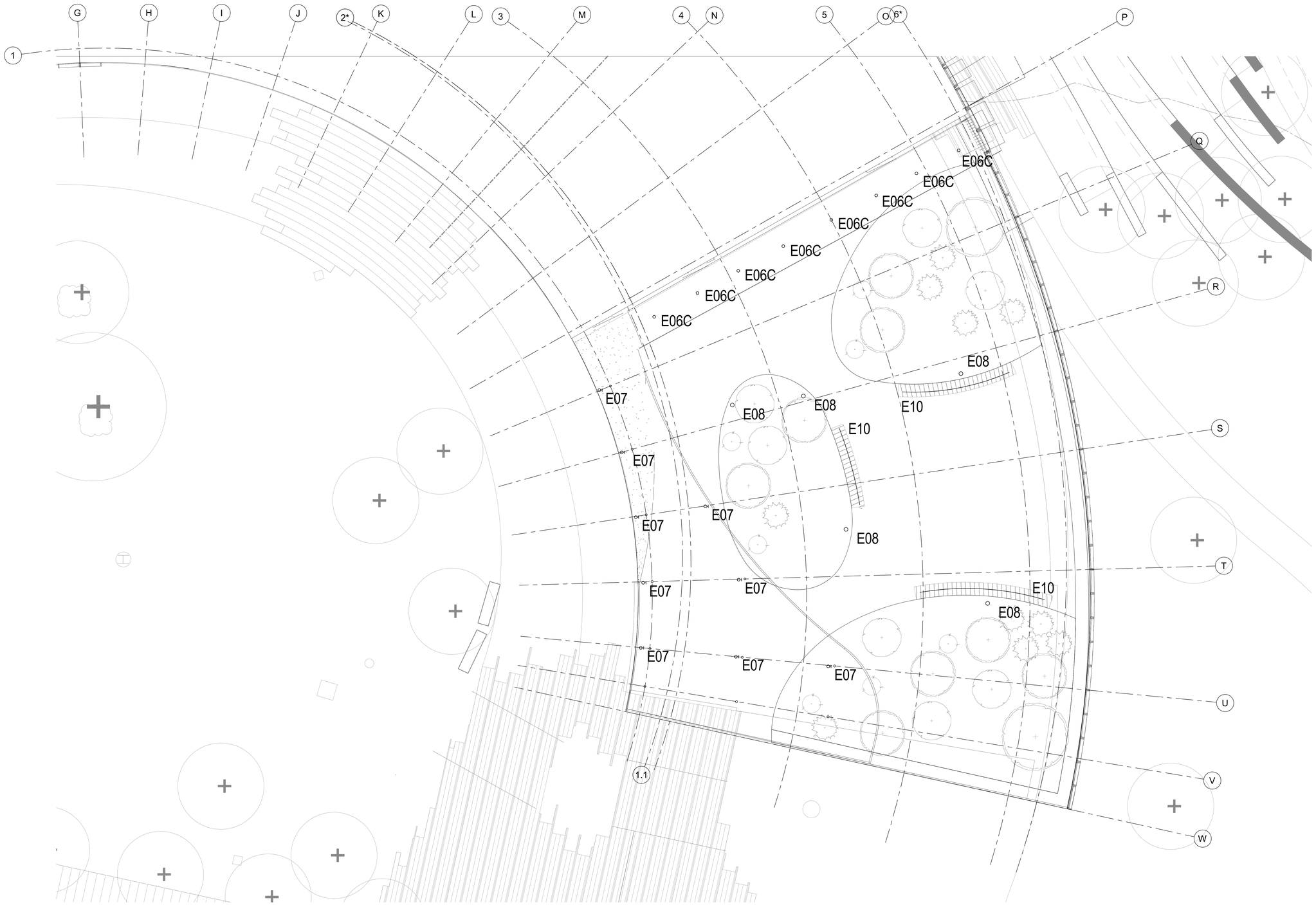
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Job #	2202
Project	THE ROUX INSTITUTE
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Date	27 OCTOBER 2023
Scale	1/4" = 1'-0"

Drawing Title
SITE LIGHTING SCHEDULES AND DETAILS SHEET 2

E1.03

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1 SITE LIGHTING - LEVEL 3 TERRACE
1/8" = 1'-0"

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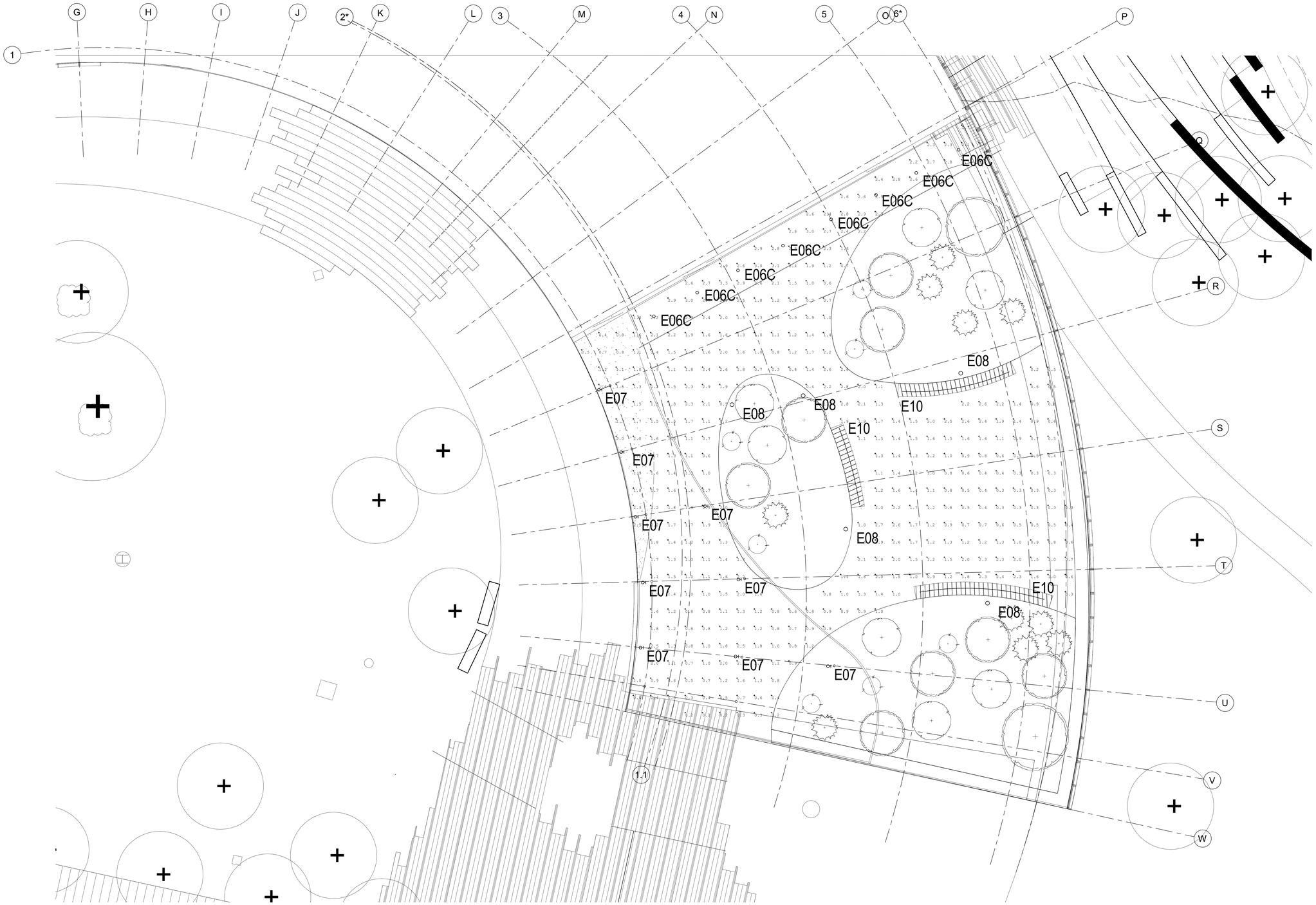
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Project	THE ROUX INSTITUTE
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Drawing Title
SITE LIGHTING - LEVEL 3 TERRACE

E1.04

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The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Level 3 Terrace Lighting
• Uniformity: 20:1
• Illumination levels: Min 0.2 (fc), Max 5.0 (fc), Ave 1.25 (fc)
• No fixture shall exceed 20,000 lumens (± 3%).
- Path lighting: 1,500 lumens Maximum Lumens allowed will apply to E08.
- Building Entrance: 3,500 lumens Maximum Lumens allowed will apply to E06C
• Light Trespass: The maximum illumination level at a property line shall not exceed 0.1 (fc)
• Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.
Please note that the E08 is Night Sky friendly with minimum uplight component and U1 rating. The E10
linear tape light fixtures are installed aimed at the ground and integrated into an architectural detail, to eliminate the possibility of uplight. E07 is installed below the trellis structure aimed down.
• Fixture Height:
- All the light poles and bollards respect the height provision (Light sources on Poles at or below 20ft)

Projected hours of use: From 11pm or close of business until 6am general site illuminance levels will be dimmed. All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.

Luminaire Schedule
Scene: Flood Light Scheme

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	Arrangement Watts	BUG Rating	Mounting Height
E06C	8	Prescolite LTR	LTR-4RD-H-SL06L-DMTW_LTR-4RD-T-SL2230TD9XWS	571	0.800	0.900	1.000	0.720	10	10	B1-U0-G0	11.454
E07	9	Ecosense WF 11W	F080-1R-HO-30-9-90-X-X-X	708	0.900	0.800	1.000	0.720	11.5	11.5	B1-U1-G0	9, 11, 12, 13.6
E08	5	Linea Black Selux S06 Asymmetric Wide 24W	LRBC-XX-AW-S06-30-XX-UNV	1479	0.900	0.950	1.000	0.855	24	24	B0-U1-G1	10
E10	1	Q-tran Wala 1W-ft	WALA-SW-WSC-DRY-30-SO-ENC-TL_1	39	0.800	0.900	1.000	0.720	1.01	1.01	B0-U1-G0	2

Calculation Summary
Scene: Flood Light Scheme

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Floor_Planar	Fc	1.46	3.3	0.2	7.30	16.50

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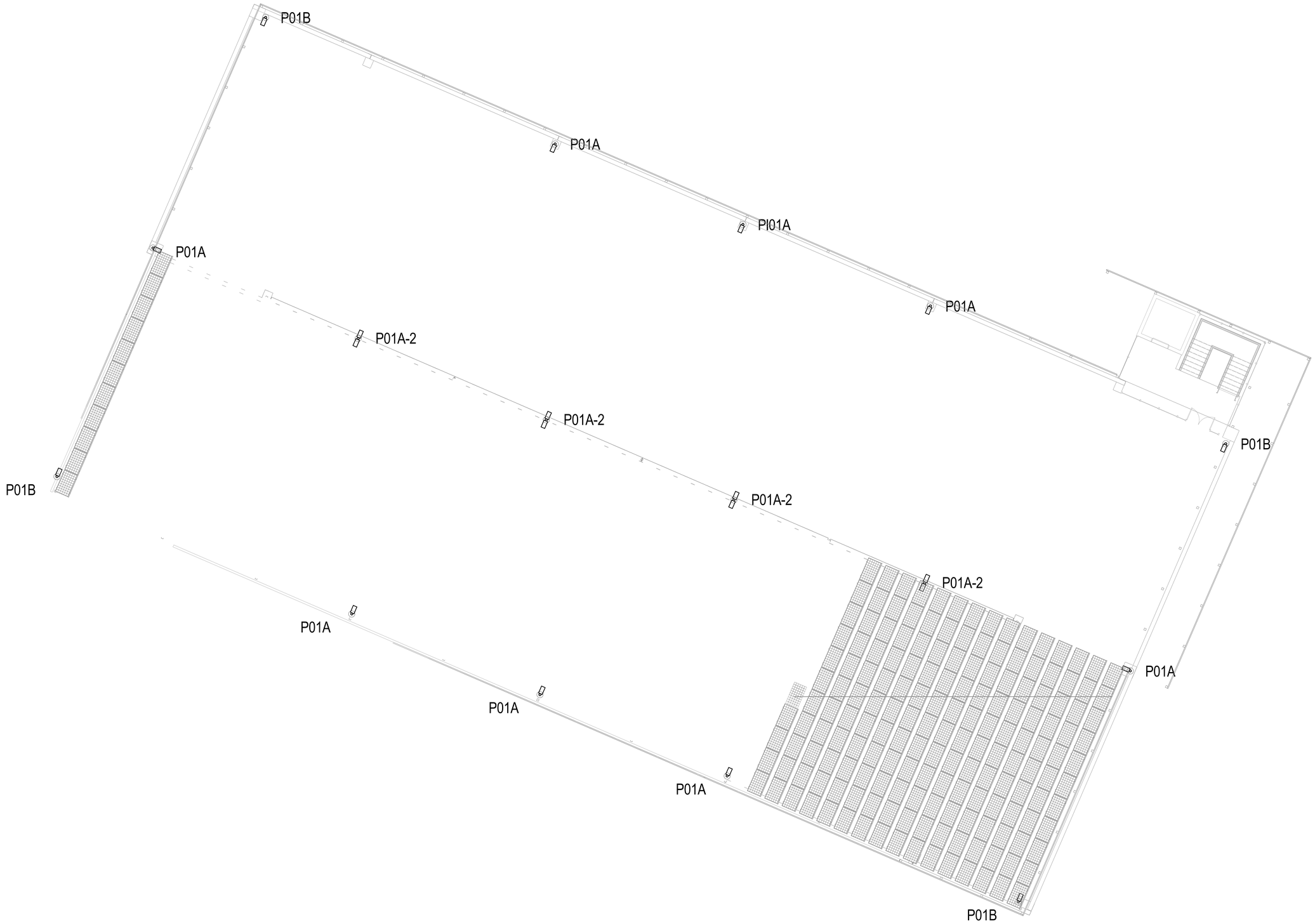
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Scale	1/8"=1'-0"

Drawing Title
SITE LIGHTING - LEVEL 3 TERRACE PHOTOMETRIC PLAN

E1.05

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1 SITE LIGHTING - PARKING GARAGE TOP LEVEL
1/8" = 1'-0"

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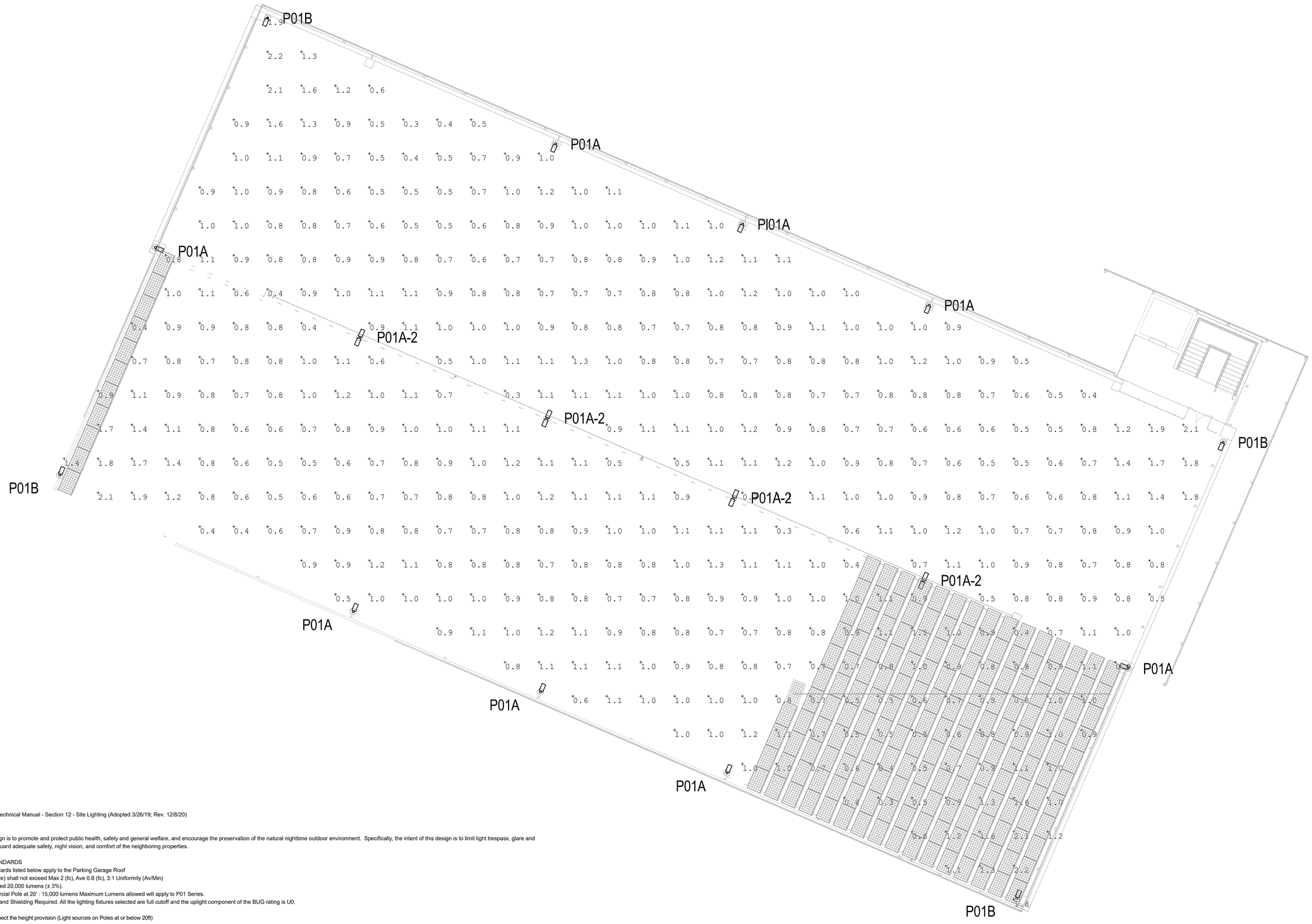
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JULIAN ASTBURY ELECTRICAL No. 10459 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
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Drawing Title
SITE LIGHTING - PARKING GARAGE TOP LEVEL

E1.06

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The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Parking Garage Roof
• Parking Lot (Structure) shall not exceed Max 2 (fc), Ave 0.8 (fc), 3:1 Uniformity (Av/Min)
• No fixture shall exceed 20,000 lumens (± 3%).
- Residential/ Commercial Pole at 20' : 15,000 lumens Maximum Lumens allowed will apply to P01 Series.
• Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.
• Fixture Height:
- All the light poles respect the height provision (Light sources on Poles at or below 20ft)

Projected hours of use: From 11pm or close of business until 6am general site illuminance levels will be dimmed. All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.

Luminaire Schedule

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	Arrangement Watts	BUG Rating	Mounting Height
P01A	8	D-Series Size 0 BLC4 EGS	DSX0 LED P1 30K 80CRI BLC4 EGS-F	1610	0.900	0.900	1.000	0.810	33.21	33.21	B0-U0-G1	75
P01A-2	4	D-Series BLC4 EGS DH	DSX0 LED P1 30K 80CRI BLC4 EGS-F	1610	0.900	0.900	1.000	0.810	33.21	66.42	B0-U0-G1	75
P01B	4	D-Series Size 0 LCCO EGS_2	DSX0 LED P1 30K 80CRI LCCO EGS-F	1844	0.900	0.900	1.000	0.810	33.21	33.21	B0-U0-G0	75

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Structure_Top	Fc	0.90	2.2	0.3	3.00	7.33

1 SITE LIGHTING - PARKING GARAGE TOP LEVEL
1/8" = 1'-0"

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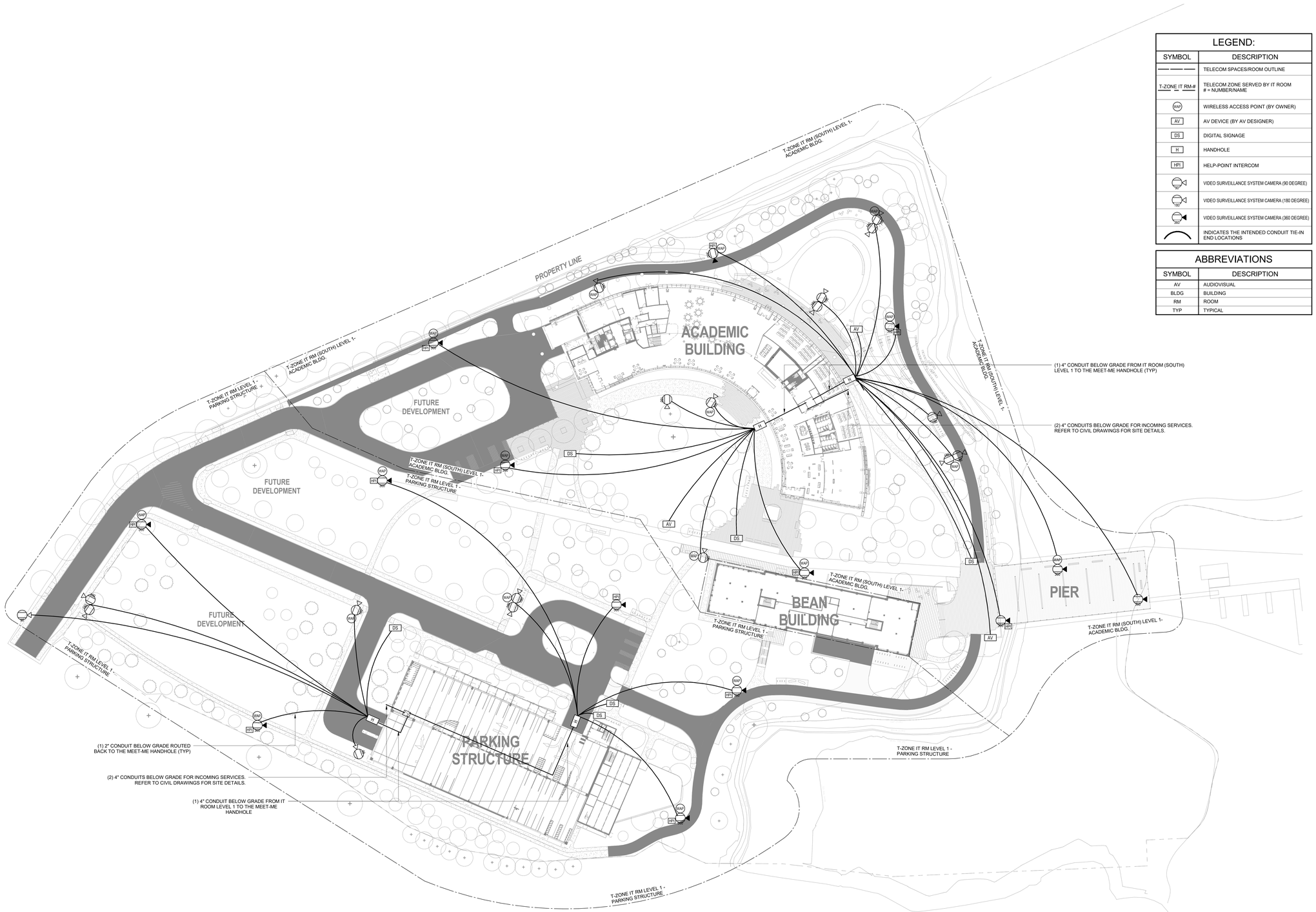
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Drawing Title
SITE PHOTOMETRIC PLAN - PARKING GARAGE TOP LEVEL

E1.07

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LEGEND:	
SYMBOL	DESCRIPTION
	TELECOM SPACES/ROOM OUTLINE
T-ZONE IT RM-#	TELECOM ZONE SERVED BY IT ROOM # = NUMBER/NAME
WAP	WIRELESS ACCESS POINT (BY OWNER)
AV	AV DEVICE (BY AV DESIGNER)
DS	DIGITAL SIGNAGE
H	HANDHOLE
HPI	HELP-POINT INTERCOM
90°	VIDEO SURVEILLANCE SYSTEM CAMERA (90 DEGREE)
180°	VIDEO SURVEILLANCE SYSTEM CAMERA (180 DEGREE)
360°	VIDEO SURVEILLANCE SYSTEM CAMERA (360 DEGREE)
	INDICATES THE INTENDED CONDUIT TIE-IN END LOCATIONS

ABBREVIATIONS	
SYMBOL	DESCRIPTION
AV	AUDIOVISUAL
BLDG	BUILDING
RM	ROOM
TYP	TYPICAL

NOTES:

1. REFER TO SECURITY DRAWINGS FOR SECURITY SYMBOL LEGEND DETAILS.
2. ALL EXTERIOR DEVICES SHOWN ON PLAN SHALL BE MOUNTED ON LIGHT POLES (BY OTHERS) UNLESS COLOCATED WITH HELP-POINT INTERCOM.
3. BACKBONE AND INCOMING SERVICE PATHWAY DUCT BANKS ARE TO BE CONCRETE ENCASED, 4" PVC MATERIAL, USE MAXCELL FLEXIBLE FABRIC INNERDUCT SYSTEM EQUIPPED WITH PULL CORD.
4. HORIZONTAL DEVICE PATHWAYS ARE TO BE DIRECT BURIED CONDUITS OF UP TO 2" AS REQUIRED.
5. MINIMUM DEPTH FROM TOP OF THE CONDUIT MUST BE BURIED AT LEAST 24" BELOW THE GROUND SURFACE/FINISHED GRADE. IN AREAS WHERE FROST CONDITIONS COULD DAMAGE CABLES IN CONDUITS, AS A MINIMUM, THE DEPTH SHOULD BE BASED ON 50-YEAR FROST LINE.
6. THE MINIMUM BEND RADIUS FOR A CONDUIT THAT IS 2" OR LESS IN DIAMETER SHALL BE 6 TIMES THE INTERNAL CONDUIT DIAMETER. IF THE CONDUIT IS LARGER THAN 2" THE BEND RADIUS SHALL BE 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT.
7. PROVIDE A HANDHOLE IN CONDUIT RUNS SUCH THAT:
   A. MAXIMUM CONTINUOUS CONDUIT RUN SHALL NOT EXCEED 600FT
   B. NO MORE THAN TWO 90 DEGREE BENDS EXIST IN A CONTINUOUS CONDUIT RUN
   C. AT LEAST ONE HANDHOLE PER REVERSE (U-SHAPED) BEND IN CONDUIT RUN
   D. IT IS LOCATED IN THE STRAIGHT SECTION OF A CONDUIT AND NOT IN LIEU OF A BEND
   E. SIZE THE HANDHOLE ACCORDINGLY AND PER TIA STANDARDS
8. CONDUIT ENTRY INTO THE HANDHOLE SHALL BE SUCH THAT THE CONDUITS END ON OPPOSIDE ENDS OF THE HANDHOLE AND AT THE SAME ELEVATION, AND NOT ON THE SIDEWALLS

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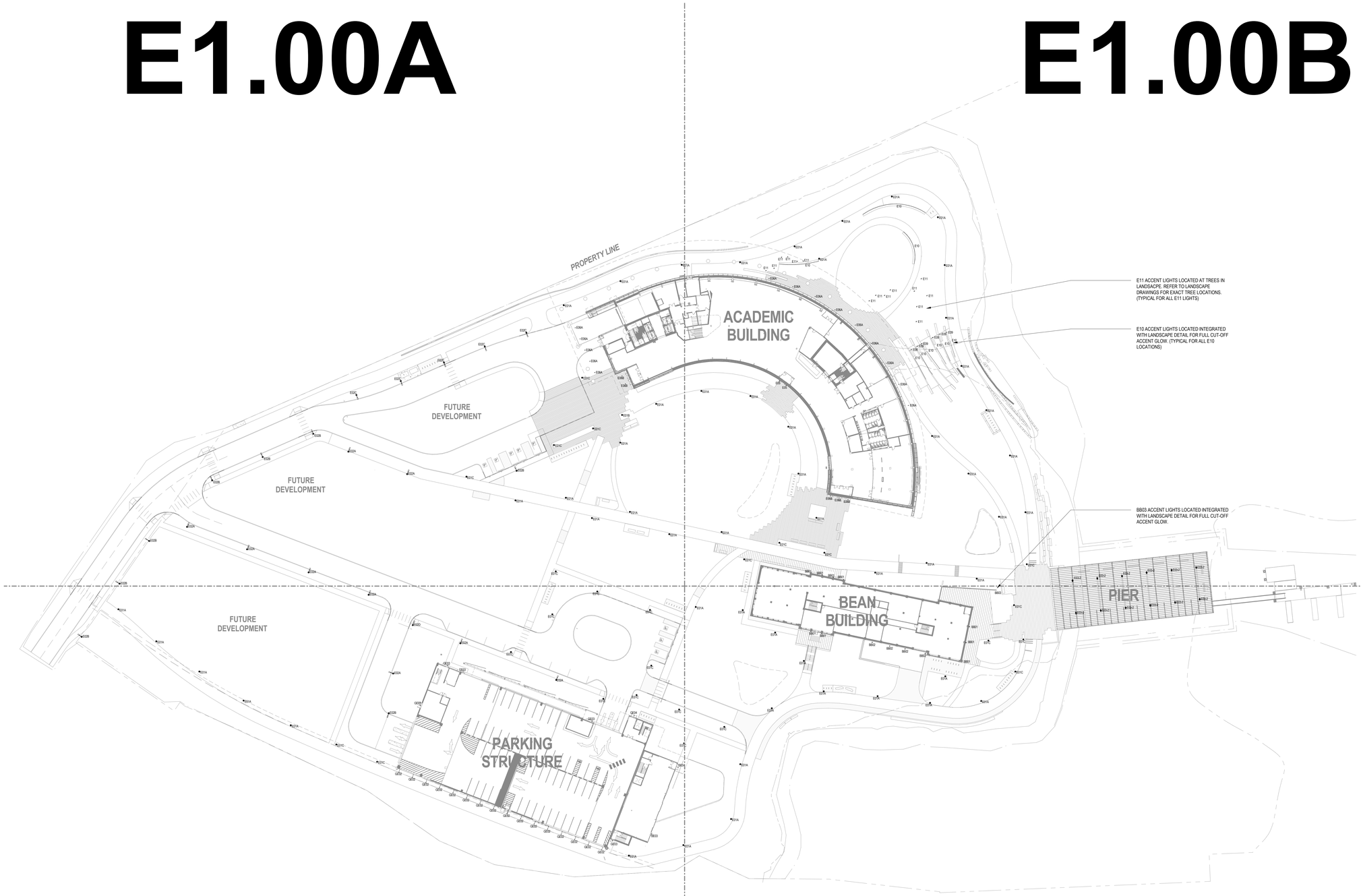
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E1.00A

E1.00B



E1.00D

E1.00C

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Date	March 22, 2024
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Drawing Title
SITE LIGHTING KEY PLAN

E1.00

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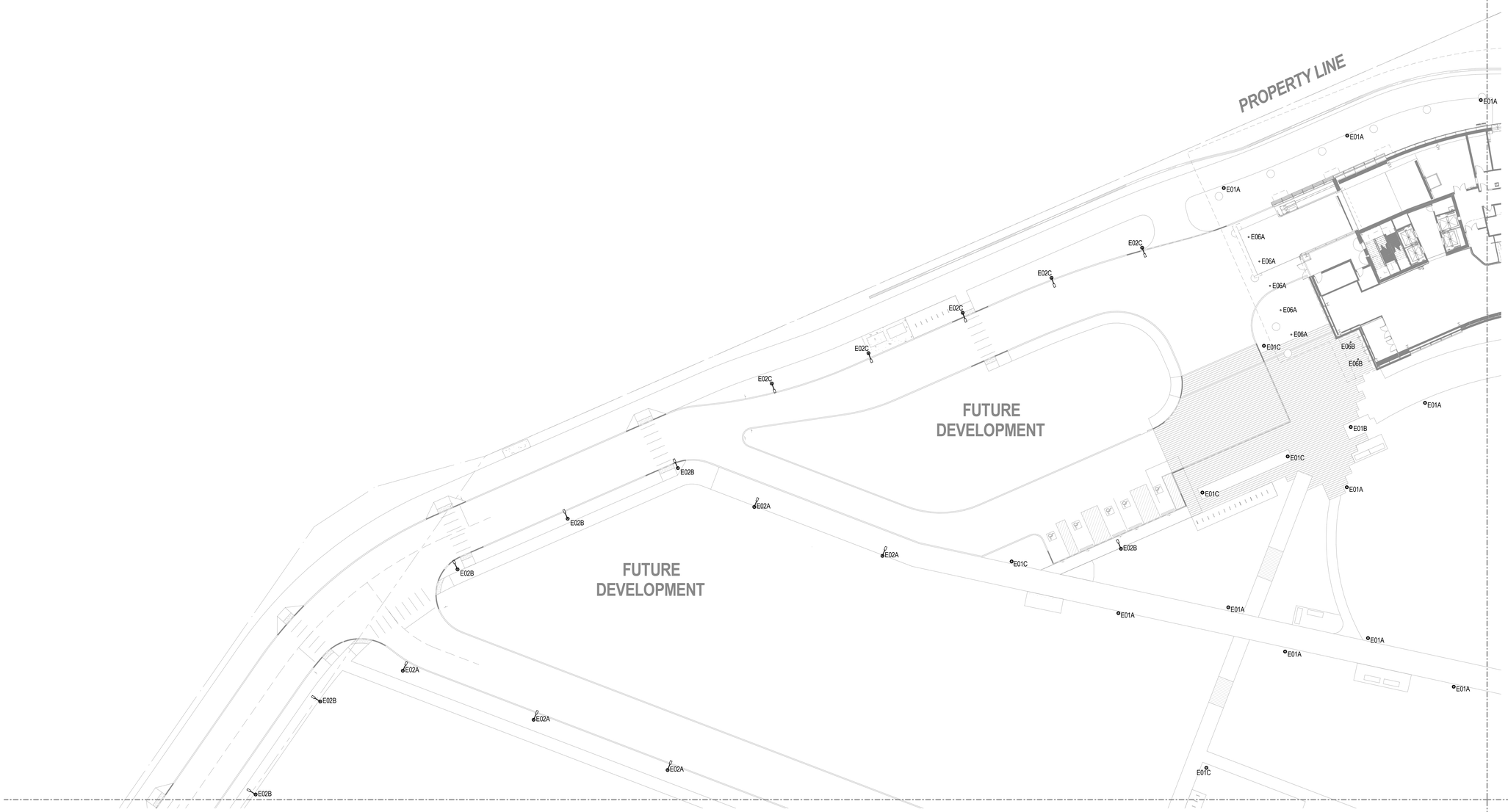
GENERAL NOTES:
1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES REFER TO DRAWING E0.00.

2. REFER TO DRAWING E1.03 FOR SITE LIGHTING HAND HOLE DETAIL. ALL SITE LIGHT FIXTURES SHALL HAVE A HANDHOLE.

3. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF CONDUIT ROUTING AND ADDITIONAL INFORMATION.

4. ALL CONDUCTORS SHALL BE TYPE XHHW INSULATION.

5. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART A
1" = 20'-0"

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03/29/2024

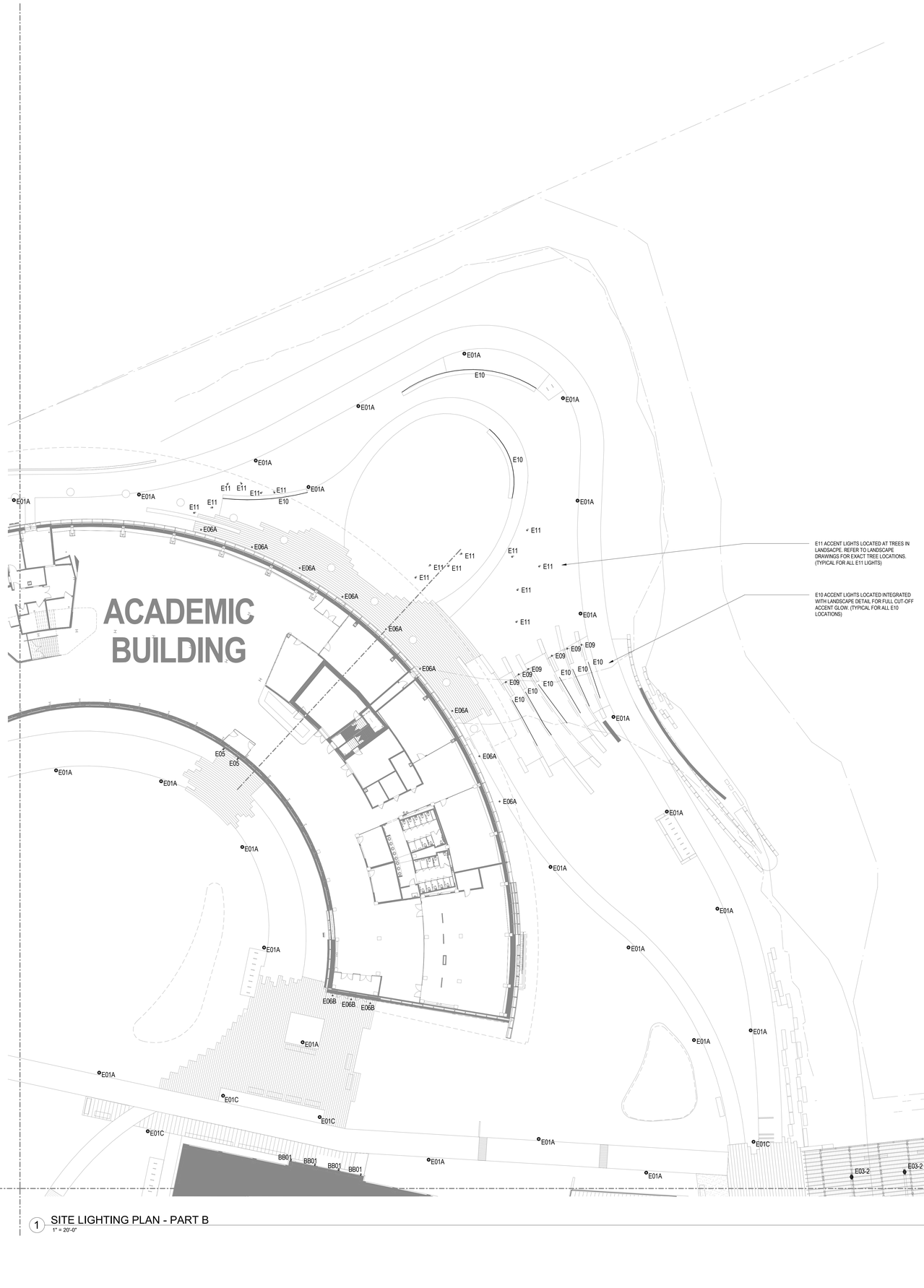
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	March 22, 2024
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART A

E1.00A

3/25/2024 12:49:15 PM

GENERAL NOTES:
1. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART B
1" = 20'-0"

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Number	Revision	Date

STATE OF MAINE
LUKE ASTBURY
LICENSED PROFESSIONAL ENGINEER

03/29/2024
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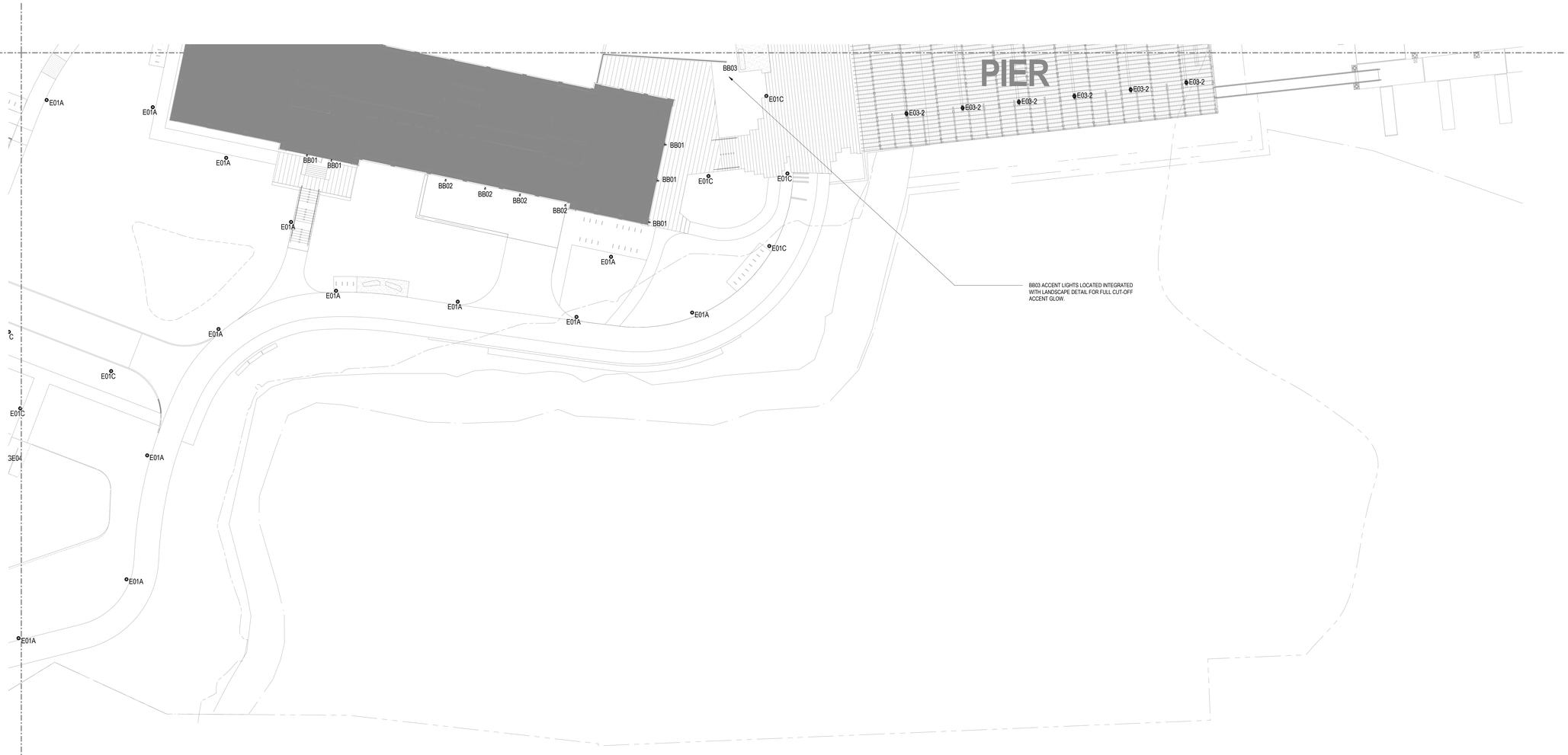
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
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Date	March 22, 2024
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART B

E1.00B

3/25/2024 12:49:17 PM

GENERAL NOTES:
1. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART C
1" = 20'-0"

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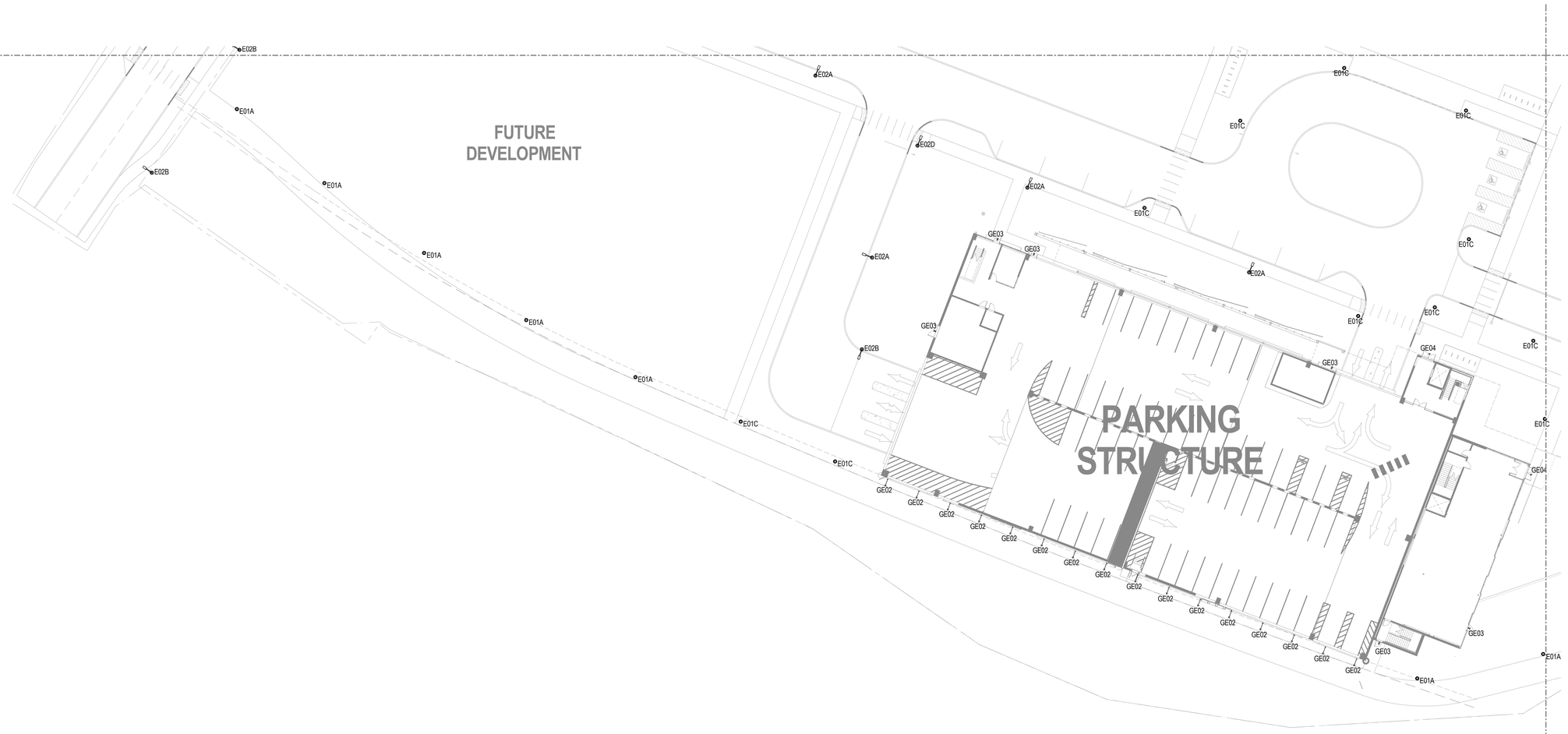
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	March 22, 2024
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART C

E1.00C

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GENERAL NOTES:
1. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART D
1" = 20'-0"

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Number	Revision	Date

STATE OF MAINE
JOHN WILLIAM STROUD
LICENSED PROFESSIONAL ENGINEER

03/29/2024

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Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	March 22, 2024
Scale	1" = 20'-0"

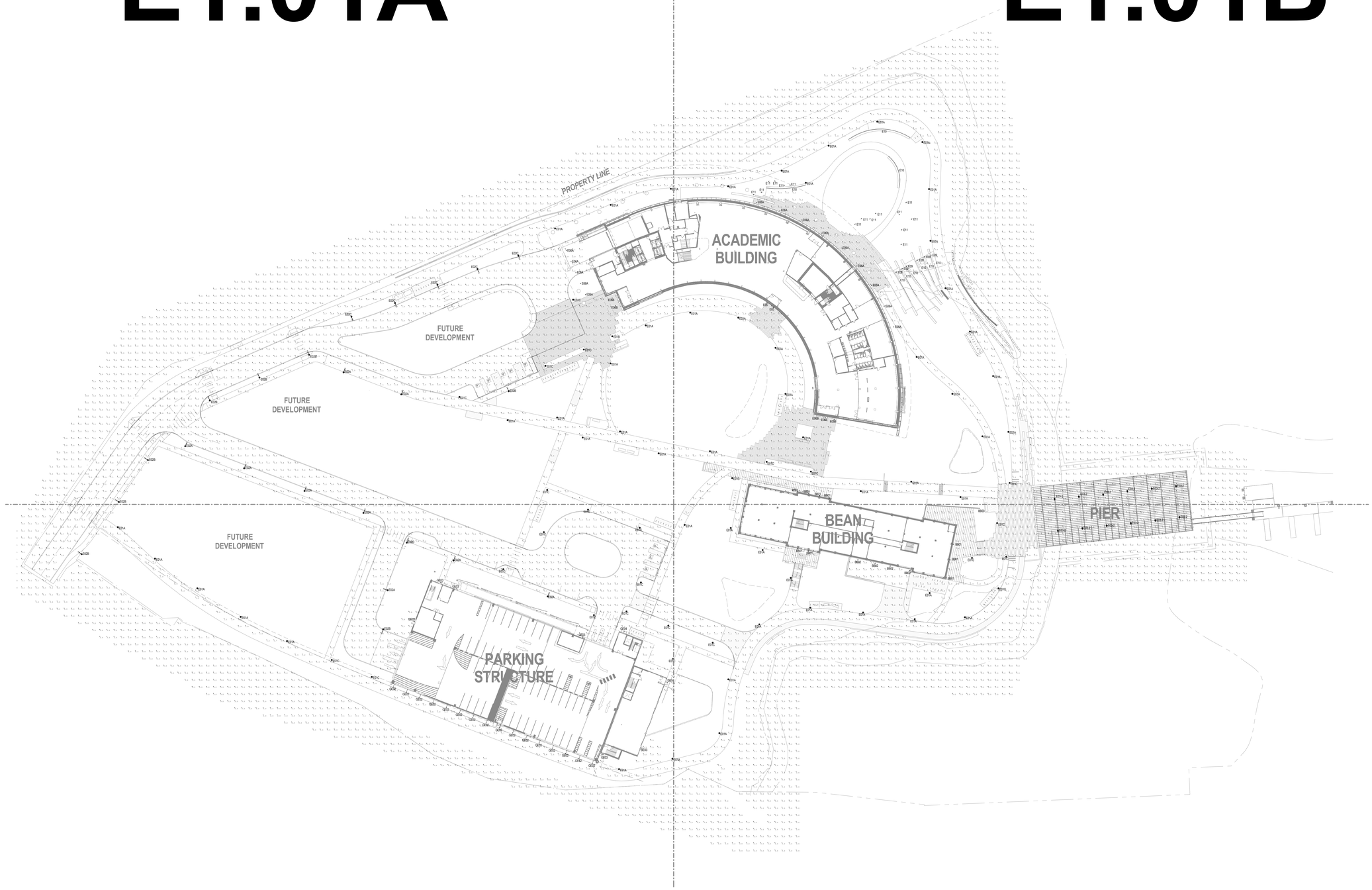
Drawing Title
SITE LIGHTING PLAN - PART D

E1.00D

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E1.01A

E1.01B



E1.01D

E1.01C

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LICENSED PROFESSIONAL ENGINEER

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Project	THE ROUX INSTITUTE
Drawn By	CS
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Date	March 22, 2024
Scale	1" = 40'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC KEY PLAN

E1.01

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The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)
Chapter 12 - Site Lighting Standards

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.
This project is a commercial use (not residential, not industrial), and the standards for commercial applications have been applied in all cases.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Site Lighting
- Uniformity: shall not exceed 20:1
- Illumination levels: Min 0.2 (fc), Max 5.0 (fc), Ave 1.25 (fc). Refer to table for actual calculated values for this site, compliant with Maximum and Minimum values. Average illuminance as report in the table.

12.3..3 Lumens:
- No fixture shall exceed 20,000 lumens (± 3%).
Pathways:
- Pathways on this site are mixed-use for pedestrians and cyclists, and illuminated in a consistent manner with pole lights similar in height and lumen output as the X-8B used along Trails/Waterfront (Commercial/Thames Street).
- Handrail lighting provided by E09 lights are recessed into the handrails aimed down at the stairs, and emit no uplight.
- All Pathway poles (Type E01 series) are full-cut off with no uplight distribution.
Residential/ Commercial Pole at 20': 15,000 lumens Maximum Lumens allowed will apply to E02 Series and E03 pole lights for roadway, vehicular drive aisles, and area lighting at the pier.
- E02 and E03 series pole lights are full-cut off with no uplight distribution.

Building Entrance: 3,500 lumens Maximum Lumens allowed will apply to E05 and E06 Series.

12.3.4 Light Trespass: The maximum illumination level at a property line shall not exceed 1.0 (fc) as all site boundaries are non-sensitive areas.

12.3.5 Color Temperature: All exterior lights shall be 3000K.

12.3.6 Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.

12.3.8 Fixture Height:
- Building Mounted/ Entrances: below the roof eave and not to exceed 20 feet, whichever is lower. As only exceptions, E06B will be mounted under the lowest point of the building canopy, at 32ft.
- All the light poles respect the Residential/Commercial Pole height provision (Light sources on Poles at or below 20ft) per the table in 12.3.3.

All site surface parking spaces are considered within the full context of the site lighting and the site illumination standards, and are not considered as separate parking lots for purpose of this site, as parking spaces are adjacent to exit discharge pathways and/or drive-aisles for vehicles and mixed-use pedestrian/cyclist pathways.

12.5.2 ARCHITECTURAL AND SPECIALTY LIGHTING AND UPLIGHTING
- For accent lighting of the Landscape, E11 fixture will be installed upward and aimed on the trees.
- E11 complies with lumen output limit per accent feature (maximum of 2 luminaires per tree to be illuminated), is fully shielded from view off-site, and uses a narrow cone of light for the purpose of confining the light to the object, and mounted within 1ft of the ground.
- Linear tape light fixtures (BB03 and E10) and are installed aimed at the ground and integrated into an architectural details, to eliminate the possibility of uplight, and used only for landscape features as permitted by 14.5.4F2b of the Land Use Code.

Projected hours of use: Sunset to Sunrise. From one hour after close of business until 1 hour before business opening, general site illuminance levels will be dimmed to reduced output.
- All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.
Distance to nearest property line per fixture:
- E01 series: 25ft
- E02 series: 25ft
- E02 series along Sherwood Frontage: 1ft
- E03: no adjacent property (at pier)
- All other luminaires are not adjacent to other properties and do not contribute to illuminance values beyond the property.

The City of Portland Technical Manual - Section 10 (Adopted 3/26/19; Rev. 11/22/22)
Chapter 10 - Municipal Street Lighting Standards
Lighting for Sherwood Street shall comply with the light level requirements in the table in 10.2.1, for Local/Minor Street Classification, with a 0.9 minimum average footcandles, and maximum pole spacing less than 130'.

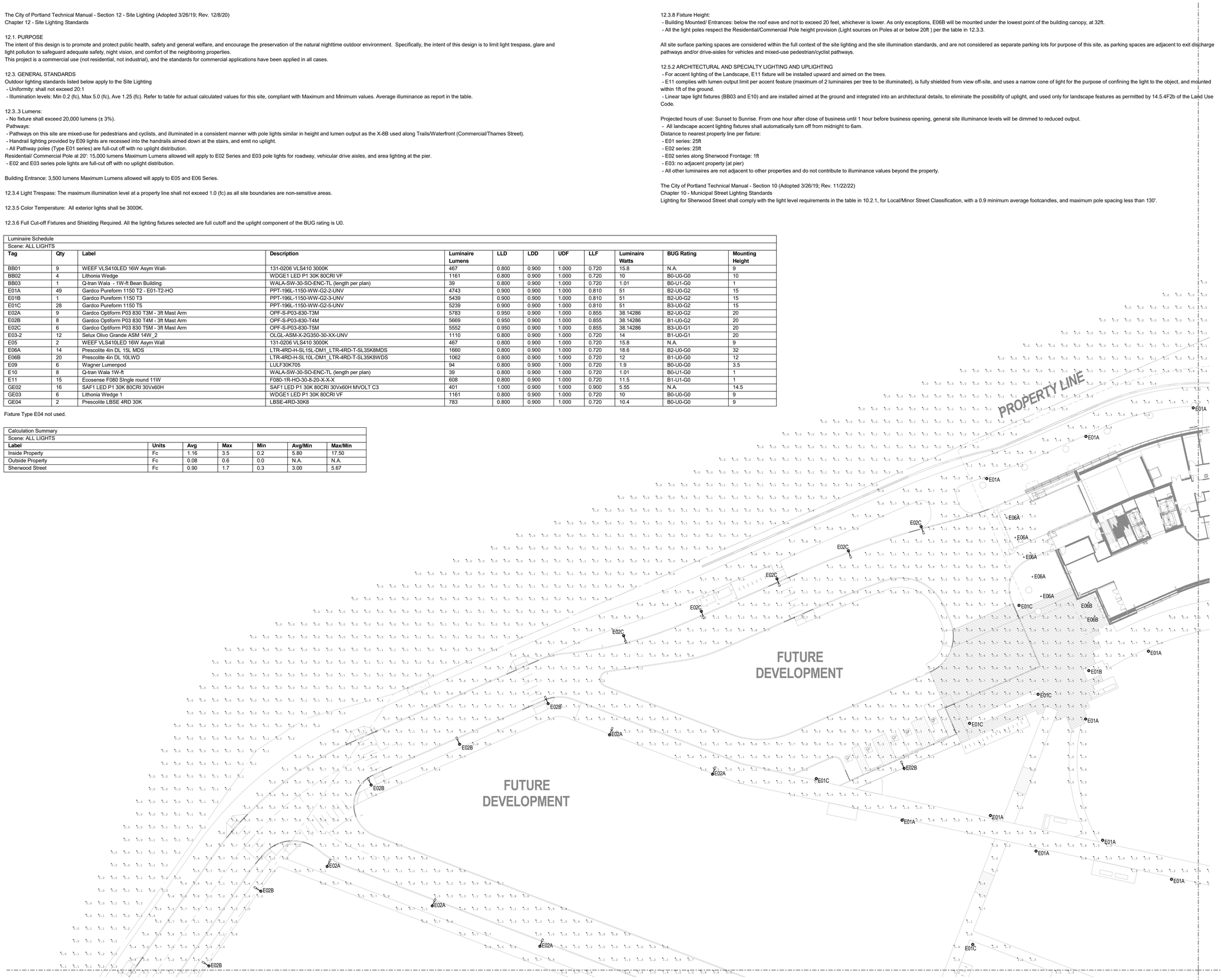
Luminaire Schedule
Scene: ALL LIGHTS

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	BUG Rating	Mounting Height
BB01	9	WEEF VLS410LED 16W Asym Wall-	131-0206 VLS410 3000K	467	0.800	0.900	1.000	0.720	15.8	N.A.	9
BB02	4	Lithonia Wedge	WDGE1 LED P1 30K 80CRI VF	1161	0.800	0.900	1.000	0.720	10	B0-U0-G0	10
BB03	1	Q-tran Wala - 1W-ft Bean Building	WALA-SW-30-SO-ENC-TL (length per plan)	39	0.800	0.900	1.000	0.720	1.01	B0-U1-G0	1
E01A	49	Gardco Pureform 1150 T2 - E01-T2-HO	PPT-196L-1150-WW-G2-2-UNV	4743	0.900	0.900	1.000	0.810	51	B2-U0-G2	15
E01B	1	Gardco Pureform 1150 T3	PPT-196L-1150-WW-G2-3-UNV	5439	0.900	0.900	1.000	0.810	51	B2-U0-G2	15
E01C	28	Gardco Pureform 1150 T5	PPT-196L-1150-WW-G2-5-UNV	5239	0.900	0.900	1.000	0.810	51	B3-U0-G2	15
E02A	9	Gardco Optiform P03 830 T3M - 3ft Mast Arm	OPF-S-P03-830-T3M	5783	0.950	0.900	1.000	0.855	38.14286	B2-U0-G2	20
E02B	8	Gardco Optiform P03 830 T4M - 3ft Mast Arm	OPF-S-P03-830-T4M	5669	0.950	0.900	1.000	0.855	38.14286	B1-U0-G2	20
E02C	6	Gardco Optiform P03 830 T5M - 3ft Mast Arm	OPF-S-P03-830-T5M	5552	0.950	0.900	1.000	0.855	38.14286	B3-U0-G1	20
E03-2	12	Selux Olivo Grande ASM 14W_2	OLGL-ASM-X-2G350-30-XX-UNV	1110	0.800	0.900	1.000	0.720	14	B1-U0-G1	20
E05	2	WEEF VLS410LED 16W Asym Wall	131-0206 VLS410 3000K	467	0.800	0.900	1.000	0.720	15.8	N.A.	9
E06A	14	Prescolite 4in DL 15L MDS	LTR-4RD-H-SL15L-DM1_LTR-4RD-T-SL35K8MDS	1660	0.800	0.900	1.000	0.720	18.6	B2-U0-G0	32
E06B	20	Prescolite 4in DL 10LWD	LTR-4RD-H-SL10L-DM1_LTR-4RD-T-SL35K8WDS	1062	0.800	0.900	1.000	0.720	12	B1-U0-G0	12
E09	6	Wagner Lumenpod	LULF30K705	94	0.800	0.900	1.000	0.720	1.9	B0-U0-G0	3.5
E10	8	Q-tran Wala 1W-ft	WALA-SW-30-SO-ENC-TL (length per plan)	39	0.800	0.900	1.000	0.720	1.01	B0-U1-G0	1
E11	15	Ecosense F080 SIngle round 11W	F080-1R-HO-30-8-20-X-X-X	608	0.800	0.900	1.000	0.720	11.5	B1-U1-G0	1
GE02	16	SAF1 LED P1 30K 80CRI 30Vx60H	SAF1 LED P1 30K 80CRI 30Vx60H MVOLT C3	401	1.000	0.900	1.000	0.900	5.55	N.A.	14.5
GE03	6	Lithonia Wedge 1	WDGE1 LED P1 30K 80CRI VF	1161	0.800	0.900	1.000	0.720	10	B0-U0-G0	9
GE04	2	Prescolite LBSE 4RD 30K	LBSE-4RD-30K8	783	0.800	0.900	1.000	0.720	10.4	B0-U0-G0	9

Fixture Type E04 not used.

Calculation Summary
Scene: ALL LIGHTS

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Inside Property	Fc	1.16	3.5	0.2	5.80	17.50
Outside Property	Fc	0.08	0.6	0.0	N.A.	N.A.
Sherwood Street	Fc	0.90	1.7	0.3	3.00	5.67



1 SITE LIGHTING PHOTOMETRIC PLAN - PART A
1" = 20'-0"

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SITE PLAN SUBMISSION

Number	Revision	Date

STATE OF MAINE JOHN WILLIAM STROUD LICENSED PROFESSIONAL ENGINEER

03/29/2024

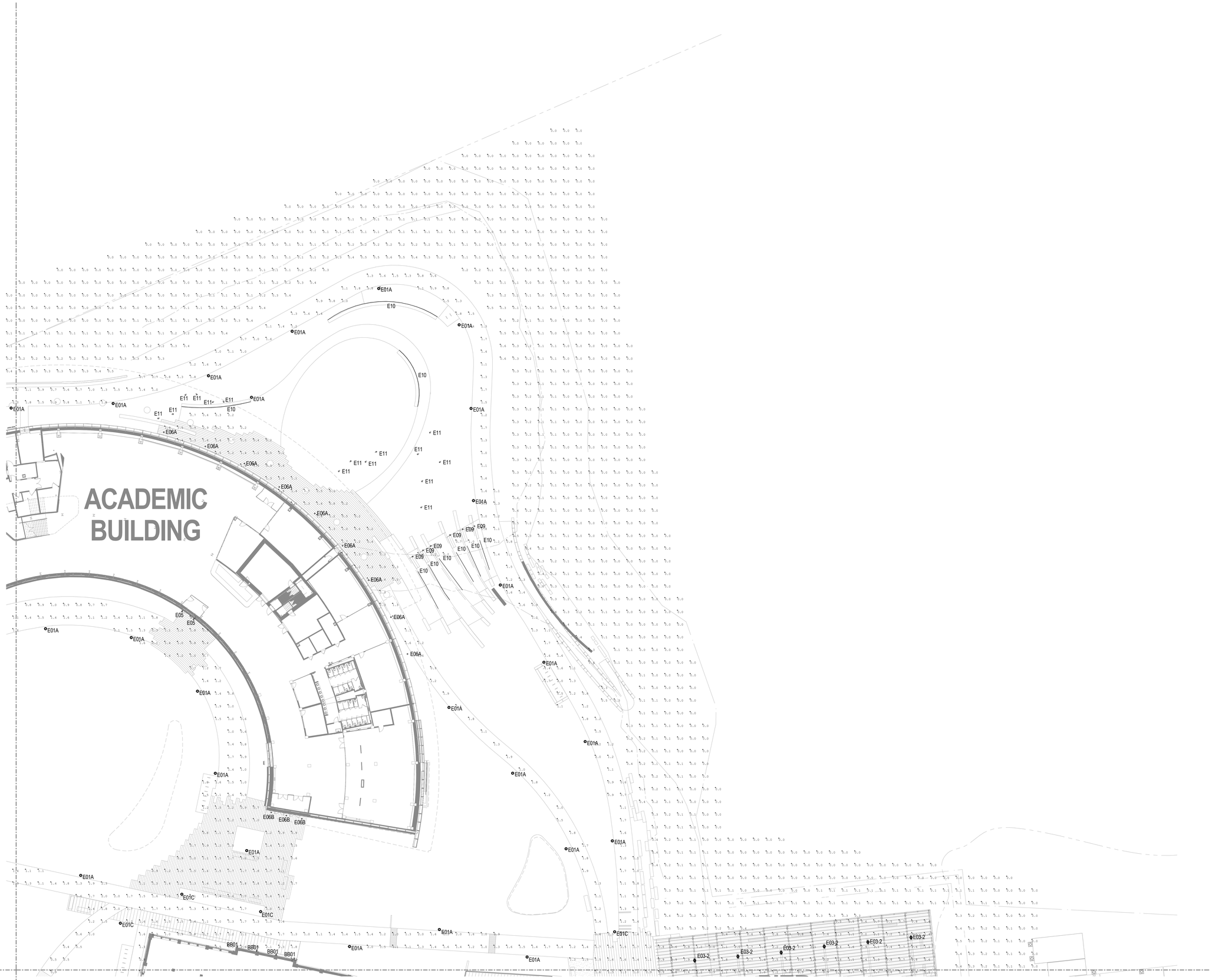
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	March 22, 2024
Scale	As indicated

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART A

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1 SITE LIGHTING PHOTOMETRIC PLAN - PART B
1" = 20'-0"

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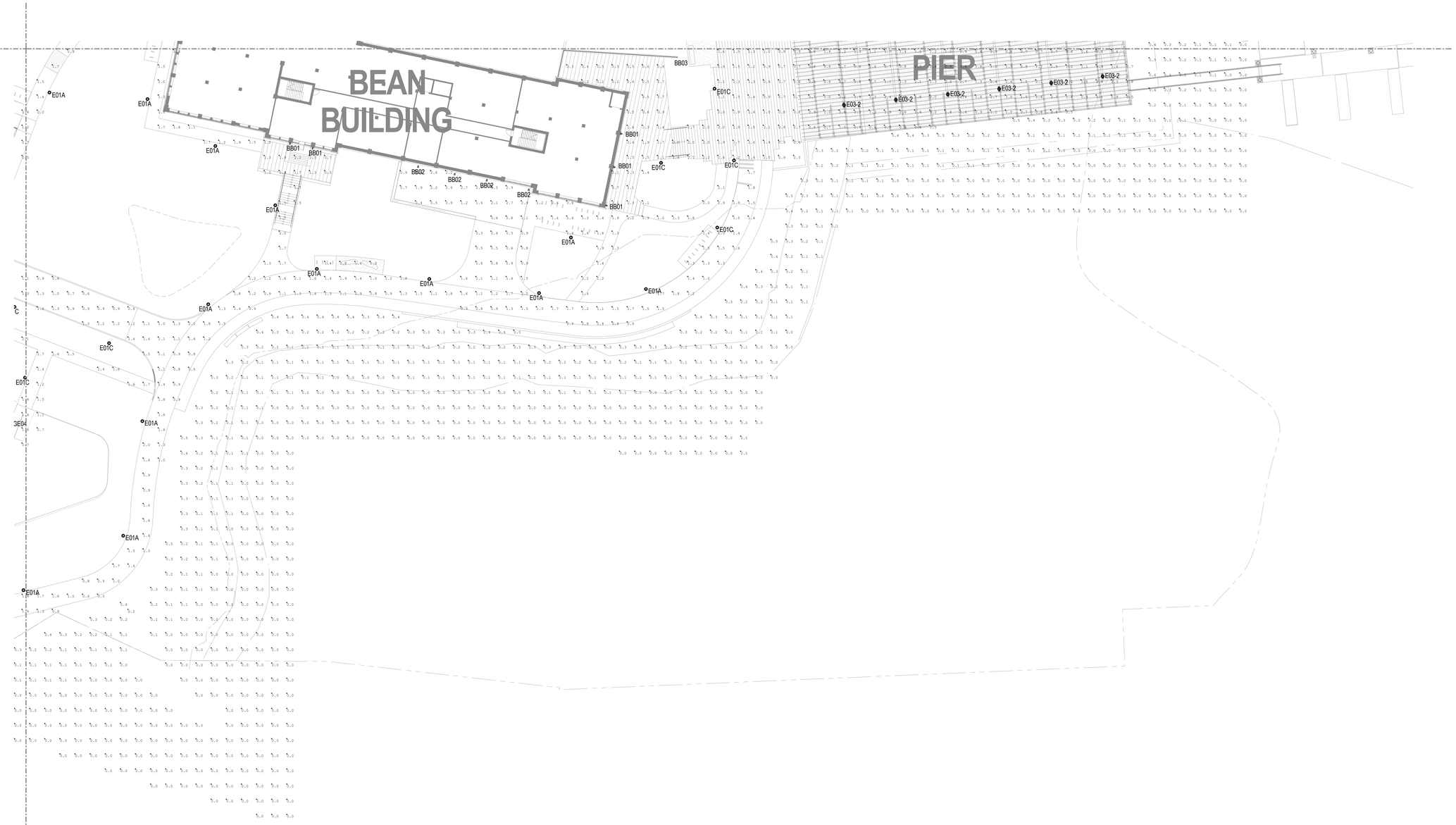
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Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART B

E1.01B

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1 SITE LIGHTING PHOTOMETRIC PLAN - PART C
1" = 20'-0"

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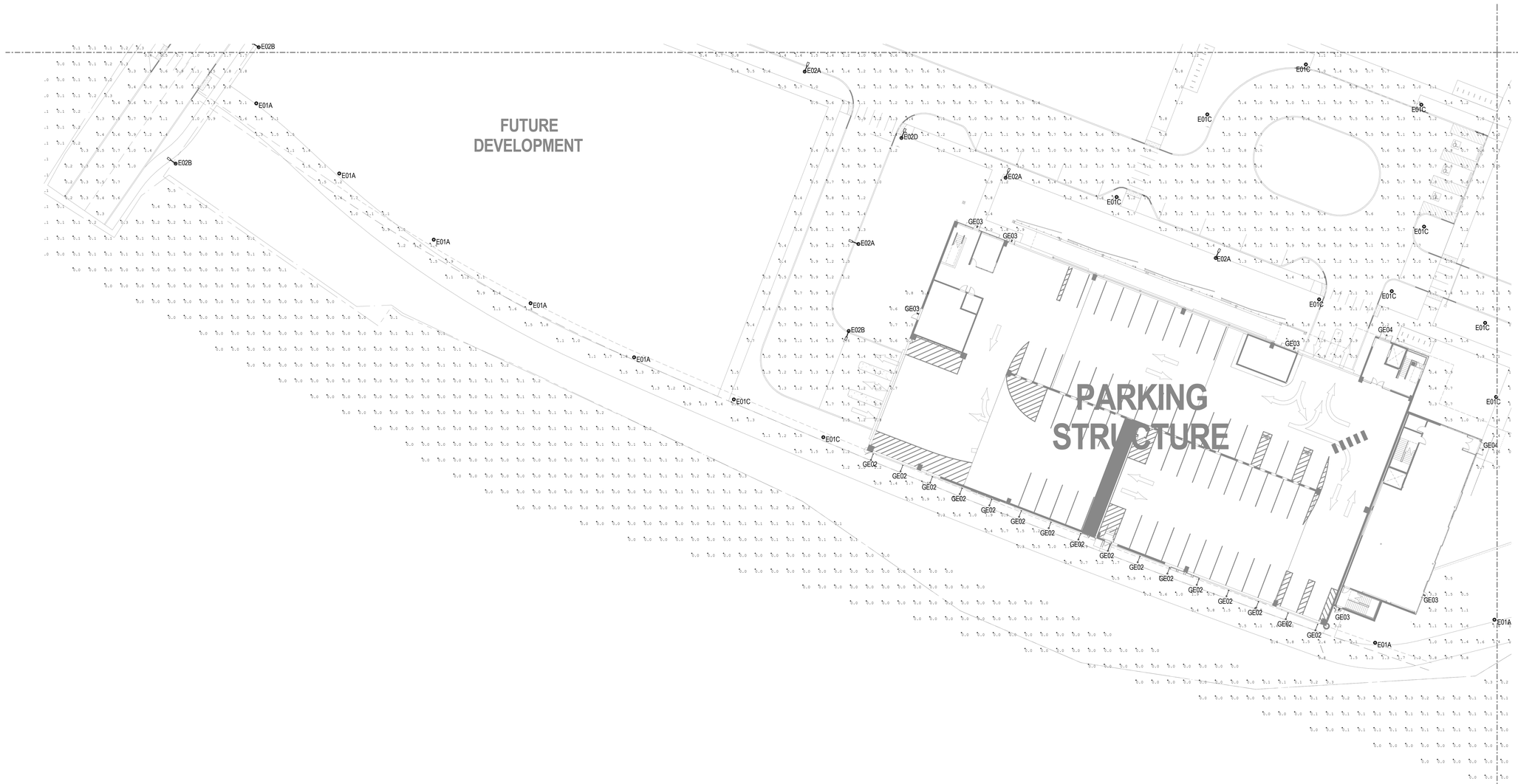
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SITE LIGHTING PHOTOMETRIC PLAN - PART C

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1 SITE LIGHTING PHOTOMETRIC PLAN - PART D
1" = 20'-0"

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Drawn By	CS
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Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART D

E1.01D

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GARDCO by Signify | Site & Area | PureFlow | PPT post top with comfort optics

Gardco PureFlow LED post top features a sleek, low profile design. Comfort optics are designed to enhance visual comfort by reducing glare. Type I, 2, 3, and 5 optical distributions are available with lumen output up to 9000 lumens. A full range of control options provides additional energy savings. Optional integral emergency battery backup is available for path-of-egress illumination.

Project: Location: Cat No: Type: Lamps: Qty: Notes:

Ordering guide — example: PPT-196L-40D-NW-G2-T3-1-UNV-DGY

Prefix	Number of LEDs	Drive Current	CRI Color / Generation	Mounting	Distribution	Emergency	Voltage
PPT PurFlow post top comfort optics	196L 196 LEDs 168L 140 LEDs	40D 450mA 60D 600mA 78D 780mA 107D 1070mA 210D 2100mA	WW-G2 Warm White 3000K, 80CRI Generation 2 NW-G2 Neutral White 4000K, 80CRI Generation 2 CW-G2 Cool White 5000K, 70CRI Generation 2 WY-G2 Warm Yellow 2700K, 80 CRI Generation 2 [1] BW-G2 Balanced White 3500K (80 CRI) Generation 2 [1] AM-G2 Amber Generation 2 [1]	T3 Mounts to a 3" x 4" Tenon (Harmed-it) T2 Mounts to a 2-⅜" x 4" Tenon (must be ordered and shipped as a separate accessory)	1 Comfort Type 1 2 Comfort Type 2 3 Comfort Type 3 5 Comfort Type 5 Leave blank for no battery EBP Emergency battery pack [2] [3] [4] EB Emergency battery pack [3] [4]	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVU 347-480V (50/60Hz)

Options						Finish
Dimming options	Motion sensing	Photocontrol	Electrical/Fitter	Fuse		Textured
SD 0-10V External dimming (by others) [5] FMS Field Adjustable Wattage Selector [6] LLC Integral wireless module [6] [7] [8] BL Bi-level functionality [9]	MRS3 Integral with 8' lens [10]	PCR Photocontrol Button [11] TLR3S Twist Lock Receptacle 3-Pin [12] TLR5T Twist Lock Receptacle 7-Pin [12] TLRPC Twist Lock Receptacle w/Photocell [12] [13]	Single (120-277, 347VAC) [14] Double (208, 240, 480VAC) [14] Canadian Double Fuse (208, 240, 480VAC) [14] Surge Protection (10kA standard) SPI Increased 20kA EHS External house side shield (factory installed)	1.0 1.0A (6) 2.0 2.0A (4) 4.0 4.0A (HVU) 10 Standard Fuse (HVU High Voltage Only) (120V)		SB Black WH White BZ Bronze DGY Dark Gray MGY Medium Gray Customer specified RAL Specify optional color or RAL (ex: RAL7024) CC Custom color (requires additional color chip for required factory quote)

1. 150, 167L, and 210mA not available with emergency battery backup (EBP).
2. Not available with emergency battery backup, cold weather (EBPC).
3. Extended lead times apply. Contact factory for quote.
4. Not available with other control options.
5. Not available with motion sensor.
6. Not available with photocontrol.
7. Not available with BL or SD.
8. Must specify input voltage.
9. Dimming will not be connected to NEMA receptacle if ordering with other control options.
10. Not available in 480V.
11. Not available in 210mA.
12. Not available with 480V.
13. Must specify a motion sensor lens.
14. Cannot be combined with HVU and BL-MRS3.

PPT_PureForm_post_top 04/22 page 1 of 5

E01 SERIES

GARDCO by Signify | Site and Area | OptiForm | OPF-S Small

Gardco OptiForm site and area luminaires are available in three sizes: small, medium and large. Featuring the latest in LED technology, OptiForm achieves up to 192 lumens per watt. Eleven optical distributions are available, suitable for a range of outdoor lighting applications. OptiForm features a unique mounting system with a two-piece housing for hassle-free installation. Mounting options include a standard arm, mast arm, and wall mount bracket. Service Tag is a standard feature with every OptiForm luminaire, providing maintenance or upgrade assistance throughout the life of the product.

Project: Location: Cat No: Type: Lamps: Qty: Notes:

Ordering guide — example: OPF-S-A01-840-TAM-AR1-120-BLSO-L3-BZ

Luminaire	Configuration (nom. lumens)	Color Temperature	Distribution	Mounting	Voltage
OPF-S OptiForm Small Area	Site and Area — Precision Plus™ (TAM, TAR, TAM-HM)	827 2700K 830 3000K 840 4000K 727 2700K 730 3000K 740 4000K 760 5000K 750 5000K	AFR Automatic row T2M Type 2 medium T3M Type 3 medium T4M Type 4 medium T4W Type 4 wide T4L Type 4 narrow T5M Type 5 medium T5W Type 5 wide LDL LED corner optic left LCR LED corner optic right BLC Back light control 2RL Type 2 rotated left 90° 2RR Type 2 rotated right 270° 3RL Type 3 rotated left 90° 3RR Type 3 rotated right 270° 4RL Type 4 rotated left 90° 4RR Type 4 rotated right 270°	ARM* Arm mount (standard) MAM* Mast arm WAL Wall Mount MOW Mounting adapter separately	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 100-277V HVU* 347-480V

Dimming Controls	Sensing	Options (electrical, optical, etc.)	Emergency	Finish
The following options include 0-10V Driver none 0-10V dimming driver DLE** Dimming leads externally accessible (controlled by others) FAWS** Field adjustable wattage selector BLSO*** Bi-level with motion sensor	L2 PIR sensor: #2 lens (Required if BLSO is selected)	None SPD Surge protector 10kV/10kA standard SPI Surge protector 20kV/10kA (option) FSD* Single fuse (120, 277, or 347VAC) FSD2* Double fuse (208, 240, or 480V) PCI Photocontrol button connected to 0-10V driver TRS NEMA Twist-lock 3-pin receptacle connected to 0-10V driver TRS7* NEMA Twist-lock receptacle connected to 0-10V driver TLP7* 7-pin twist-lock receptacle connected to 0-10V driver w/ 3-pin photocell EHS Housing machined to accept external house side shield (shipped loose). Must be combined with OPF-S-EHS-A accessory.	EM*** Emergency Battery Pack (0-40°C) Available with premium finish options PDI-PS3 only PDI-PS2 only	Standard textured finish BK Black SB Black BZ Bronze DG Dark Gray MG Medium Gray Customer specified CC Special optional color or RAL (Specify) SC Special optional color (must supply color chip to match factory quote)

1. Extended leadtime applies. Consult factory for details.
2. Mounts to a square pole with drilling to fit 4" round pole.
3. Mounts to a round pole with 2-3/8" OD tenon. Arm not included.
4. Must be ordered as a separate accessory and shipped loose. Must be selected with mounting accessory. See Page 2 for options.
5. Not available with other dimming control options (mutually exclusive).
6. Not available with motion sensor (physical restriction).
7. Must be specified with a motion sensor lens (L2).
8. Not available with PCR, TRS.
9. Must be specified with a motion sensor LM, LB.
10. Not available with TR7, TLP.
11. Must specify input voltage.
12. Not available with 347-480V.
13. 1kV standard for lumen packages P03-P09. HVU (347-480V) UNV (120-277V) for lumen packages P01-P08 & ROI-40T.
14. UNV (120-277V) only available for lumen packages P04-P09.
15. Not available with Dynadimmer, SRDR, FAWS, FS1, FS2, OMSR, SLCA, BLSO (physical restriction).
16. Precision Plus Optics (P01-P09) available only with TSM, TSW, T4M, and T5M optical distributions and are non-rotatable.
17. OPF-WMB accessory recommended for retrofit applications.

OPF-S_OptiForm_Small 04/23 page 1 of 8

E02 SERIES

Date: Customer: Project: Type: Qty:

selux

Olivio Medio LED
Sistema 2 Arm Mount



Order Code: #1 OLML, #2 OLML, #3 OLML, #4 OLML

Pole Order Code: OLML — Series | Height | Finish | Mounting | Light Engine | RN Round Pole Options | Options — *Rinnut Locations — Refer to chart on page 5 for Round locations

Series	OLML (Olivio Medio LED)
Optics	509 Spot, 5° — 520 Spot, 20° — F40 Flood medium, 40° — F80 Flood wide, 78° — ASM Asymmetric (no SLP or SLF option)
Mounting	SBx Specify Arm Locations and Number of Luminaires per pole
Light Engine	20350 2035 lm, 350mA — 20525 2052 lm, 525mA — 20700 2070 lm, 700mA — 20105 2010 lm, 1050mA
CCT	27 2700K — 30 3000K — 35 3500K — 40 4000K — 50 5000K
Finish	WH White — BK Black — BL Semi-Matte Black — BZ Bronze — SV Silver — SP Specify Premium Color
Voltage	UNV 120-277V — 120 120V — 208 208V — 240 240V — 277 277V
Options	DS Dark Sky 0-10V Trim Option — DM Dimming 0-10V — SLH Spread Lens Horizontal (Front) — SLV Spread Lens Vertical (Front) — PC Photocell (Factory Installed) — HLS0.7 Hi-Lo Switching Output 50% — HLS0.5 Hi-Lo Switching Output 50% — HY* Mast Head Adapter, Universal (Field Installed) — CF Cutter Filter (Factory Installed)

* For approved with DSL option only and 5000K CCT
** Available with 20mA, 350mA, or 525mA and recommended for 525, 52.5 or 70W options
*** Cannot be combined with DM option

Product Modifications — Please list modification requirements for review by factory:

Approvals — Date:

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In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supersede all other printed or electronic versions.

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(Rev. 09/2023)
OLML-SL_SS_v03

E03

131-0206
VLS410 LED

we-ef



Description
IP66, Class I. IK07. Marine-grade, die-cast aluminum alloy. SCE superior corrosion protection including PCS hardware. Silicone. CCG® Controlled Compression Gasket. Safety glass lens. Two cable entries. CAD-optimized optics for superior illumination and glare control. Integral driver. OLC® One LED Concept. Factory-installed LED circuit board. 0-10V Dimming comes standard with luminaire.

Specify product with 7 Digit product code – Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately.
Example: XXX-XXXX-9004 (Black)
+ XXX-XXXX (Accessory 1)

Weight	7.70
Light distribution	asymmetric, forward throw [A60]
Light source	LED-3/13W / 1400 mA - 3000 K
CRI	80
Power supply	EC
BUG	B0 U0 G0
Nominal Lumen (lm)	
LED Lumen	550.0 lm
LEDs	3
Total Lumen	1650.0 lm
T_j	85°C
Rated lumens (lm)	
LED Lumen	164.7 lm
Total Lumen	494.2 lm
Ta	25°C
Rated input power	15.8 W

WE-EF LIGHTING USA, LLC
410-D Keystone Drive, 15086 Warrendale, PA 15086 - Phone: +1 724 742 0030
customersupport.usa@we-ef.com - https://we-ef.com/us
Subject to technical changes and errors. - Generated on 03/25/2024

1 of 5

E05

prescolite

LTR-4RD
LITESTRY 4" ROUND DOWNLIGHT

DATE: LOCATION: TYPE: PROJECT: CATALOG #:

LITESTRY

FEATURES
- 4" architectural LED downlight delivering 600 – 4000 lm
- Five beam distributions from 0.3 to 1.2 Spacing Criteria
- Quiet reflector appearance with superior 50° optical cutoff
- 2700K – 5000K, 80+ and 90+ CRI options
- Available for New Construction (non-IC), IC and Chicago Plenum applications
- Variety of dimming protocol options including 0–10V, DALI, DMX, and Lutron EcoSystem
- NX Lighting Controls wired and wireless controls capability available

*Select models

CONTROL TECHNOLOGY
NX LIGHTING CONTROLS

SPECIFICATIONS

CONSTRUCTION
- Standard Non-IC, Chicago Plenum and IC options
- Painted black durable steel platform with pre-installed bar hangers
- Pre-wired junction box with snap-on covers for easy access
- Snap-on connectors from driver compartment allows easy installation
- Light Engine connections use plenum rated (CMP) cable

OPTICS
- Visually pleasing 50° cutoff to source and source image
- The light distribution is free of distracting bright spots or pixelation and the perimeter has a smooth transition
- Optical grade silicone lens integral to light engine
- High purity spun aluminum reflector, self-flanged
- Flush Mount flange option with mud-in ring available
- Large selection of anodized finishes and colors
- Painted cones and flange options available

ELECTRICAL
- Chip-on-board LED with 2 SDCM
- Multiple CCTs, 80+ or 90+ CRI
- Long LED life: L90 at >55,000 hours (TM-21)
- Universal voltage 120V–277V driver, 347V optional
- UL Class 2, inherent short circuit and overload protection
- Flicker free 0-10V dimming with 1% or <1% performance
- DALI, DMX, and Lutron EcoSystem options
- Integral and remote emergency controller and battery pack options available
- NX or Lutron Hve control options available
- Refer to additional spec sheets for information on SpectraSync™ Tunable White or Dim-to-Warm solutions

INSTALLATION
- Accommodates ceiling thickness up to 2" (See DIMENSIONS section for details)
- Universal adjustable mounting brackets also accept 0.5" EMT conduit or 1/2" or 0.75" lathing channel (by others) or Prescolite accessory bar hangers (BZA or BB)
- Light Engine/Driver fully serviceable from above or below the ceiling

CERTIFICATIONS
- cCSAus certified to UL 1598
- Suitable for wet locations, covered ceiling. EMI EMR. Suitable for damp locations.
- EMERGI Certified under UL 924 standard for emergency lighting and power equipment
- When used with CE Bezel Trim Accessories: IP65/IP66K rating; also meets IK10 per IEC 60068-2-75 impact testing
- Approved for 9 (4 in/4 out) No. 12AWG conductors rated for 90°C through wiring
- ENERGY STAR® certified models available (For list and additional information, visit http://www.energystar.gov)
- This product qualifies as a "designated country construction material" per FAR 52.225-5 Trade Agreements – Made in the USA or Trade Agreements effective 6/6/2020.

WARRANTY
- 5 year warranty

KEY DATA	
Lumen Range	600-4000
Wattage Range	8-52
Efficacy Range (LPW)	90-99*
Reported Life (Hours)	L90 / >55,000
Input Current (mA)	60-433 (120V)

*Based on Specsmart, 25K, B3 U0

Current

currentlighting.com/prescolite
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Rev 09/2020
LTR-4RD_804

E06 SERIES

ECOSENSE — RISE

OVERVIEW • SPECIFICATIONS • ORDERING — INTERIOR + EXTERIOR | **FOBO SINGLE ROUND**

DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE FOBO SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE, DELIVERING UP TO 1170 LUMENS, THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AMABILITY USING ONLY ONE TWIST.

FEATURES :
- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 1170 LUMENS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (120 V-277 V)
- 9 CCTS: 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED



FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
FOBO	1R - Single Round	L0 - Low Output M0 - Medium Output H0 - High Output	22 - 2200K 25 - 2500K 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K 50 - 5000K 65 - 6500K WW - Warm GR - Green BL - Blue AM - Amber *2200K and 2500K not available in 40°, 60°, 70° and 90°	8 - 80 9 - 90* X - For RD, GR, BL, AM *90 CRI not available in 2200K, 2500K, 5000K, and 6500K	05 - Laser Spot (5°) 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 40 - Flood (40°) 60 - Medium Flood (60°) 70 - Wide Flood (70°) 90 - Very Wide Flood (90°) E1 - Elliptical 2.5"(10°x25°) E2 - Elliptical 2.125"(45°x10°) E3 - Elliptical 3.050"(45°) E4 - Elliptical 4.150"(45°)	K - Black Z - Bronze S - Silver W - White C - Custom* *Provide RAL # Will ship as K if not specified	X - No Accessory H - Half Snoot F - Full Snoot Will ship as K if not specified	A - 18" Flying Leads - Internal Cable IC, Bottom Exit, 1/2" NPT - UL/CE Listed B* - 1/2" External Cable Side Exit, Surface Mount - UL Listed C* - 1/2" External Cable Bottom Exit, Surface Mount - 1/2" NPT - UL Listed D* - 1/2" External Cable Side Exit, Surface Mount - CE Listed E* - 1/2" External Cable Bottom Exit, Surface Mount - 1/2" NPT, CE Listed *Will ship as A if not specified

EXAMPLE: FOBO-1R-LO-22-8-05-S-X-A

*SEE PHOTOMETRY CHART FOR LUMEN DATA

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
	4	Low Output	309	429	78	107	21,991	705
	7.5	Medium Output	531	761	71	101	37,824	1,251
	11.5	High Output	744	1,120	65	99	53,048	1,874

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX: 80+, 90+
COLOR CONSISTENCY: 3-STEP MACADAM ELLIPSE

LUMEN DEPRECIATION:

WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
LOW	>60,500*	>60,500*	>60,500*	>60,500*
	>109,000**	>109,000**	>109,000**	>109,000**
MEDIUM	>60,500*	>60,500*	>60,500*	>60,500*
	>109,000**	>109,000**	>109,000**	>109,000**
HIGH	>60,500*	>36,300*	>60,500*	>33,200*
	>97,000**		>89,800**	

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR
** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/rise for the most updated information.

ECOSENSE — ECOSENSE LIGHTING INC., 837 NORTH SPRING STREET SUITE 103, LOS ANGELES, CA 90012 — P: 310.496.6255, F: 310.496.6256, T: 855.632.6736, 855.6.ECOSEN

1/4

E07
LUMINAIRE AIMED DOWN, WITH SHIELDING SNOOT ACCESSORY

Date: Customer: Project: Type: Qty:

selux

Line Black
Round Column



Order Code: LBRC — Series | Height | Optics | Light Engine | CCT | Finish | Voltage | Options

Series	LBRC Line Black Round Column
Height	10 10' — 12 12' — 14 14' — 16 16' — 18 18'
Optics	AS Asymmetric — AM Asymmetric Medium — AW Asymmetric Wide
Light Engine	503 Spot 5 CA 12W/740lm — 506 Single 6 Cell 24W/1,474lm — S12 Single 12 Cell 48W/2,970lm — D03 Double 3 cell (staggered 180°) 24W/1,480lm — D06 Double 6 cell (staggered 180°) 48W/2,960lm — D12 Double 12 cell (staggered 180°) 96W/5,940lm
CCT	27 2700K — 30 3000K — 35 3500K — 40 4000K — 50 5000K
Finish	WH White — BK Black — BL Semi-Matte Black — BZ Bronze — SV Silver — SP Specify Premium Color
Voltage	UNV 100-277V — 120 120V — 240 240V — 277 277V — 347 347V — 480 480V
Options	REC1 Receptacle with weatherproof cover — REC2* Receptacle with weatherproof cover and photocell in use cover — REC3* 120/5 Duplex Receptacle with weatherproof cover — REC4* USB Duplex Receptacle with weatherproof cover and photocell in use cover — DM* Dimming 0-10V — TLR* Twist Lock Receptacle 7-Pin with Shorting Cap — TLRP* Twist Lock Receptacle 5-Pin with Photocell — MS* Motion Sensor (Meets Title 24 requirements) (Not available for order code) — BC Base Cover — BBXX Buried Base, Indicate Depth (See page 4) — CF Comfort Festival (Shields LEDs)

* For mixing of optics/light engines, please contact factory
* Light engines can not be mixed with options up to 350° in the same luminaire
* Based on 3000 CCT and 40 optics.
* Consult factory for lead time. * Meets CA requirements with 2700K and 3000K CCT.
* Equipped with step down transformer. Wattage increases nominal 10%.
* See page 7 for details.
** Not available with 347V

Product Modifications — Please list modification requirements for review by factory:

Approvals — Date:

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In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supersede all other printed or electronic versions.

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LBRC_SL_v01

E08

LUMENPOD® 16 | Another Luminii® Component for Life Safety and Light

PROJECT NAME:
REP AGENCY:
APPROX. LINEAR FT:
SERVICE OPTIONS: ☐ Field Measure ☐ Job Site Support ☐ System Installation

SCAN QR CODE for technical information, downloads and instructions

PART NUMBER BUILDER

LUL40K703	LULF			
EXAMPLE	FIXTURE TYPE	COLOR TEMP	OPTIC	DRIVE CURRENT

* Indicates stock, other options may require additional lead time.

LULF Lumenpod® 16

*27K 2700 K, 30K 3000 K, *40K 4000 K, 50K 5000 K

BLU Blue, BRN Brown, RED Red, AMB Amber

16 16° beam, 23 23° beam, 40 40° beam, *90 90° beam, 94 94° beam

*15 2,218 lt 500 mA, *9 1,749 lt 350 mA
Consult factory for other drive current options (15,000 hr minimum life)

ELECTRICAL SPECIFICATIONS

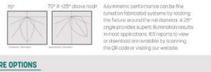
Intertek	24VDC	ETL LISTED WET, IK10, IP67, CE	0-10V INPUT	-40°F TO +120°F
All electrical connections to be made to a qualified electrician in accordance with all national, state and local electrical codes	INPUT VOLTAGE	CERTIFICATIONS	DIMMING	OPERATING TEMP
	CLASS 2 REQUIRED	5 YEARS	UP TO 116 LM/W LED	80+ / 9*
	DRIVER	WARRANTY	EFFICIENCY	CRI / WIRE LENGTH

CONSTRUCTION



The Lumenpod's threaded stainless steel body dissipates heat directly into the mounting material. A machined shoulder position it nearly flush with any diameter hand-hole, as well as flat or square stock.

PHOTOMETRICS



Asymmetric performance can be fine tuned on fabricated surfaces by rotating the fixture around the rail diameter. A 295° angle provides superb illumination results in most applications. IES reports to view or download are available by scanning the QR code or visiting our website.

LUMENGEAR™ LED DRIVER & NEMA ENCLOSURE OPTIONS

Wagner offers multiple ETL listed options for both 24VDC power supplies and NEMA enclosures. Quantities and types will be configured based on your specifications and design. Additional specification options are available by request. Not all options apply to all products, please verify compatibility with the factory.

CLASS II DRIVERS:
- 670-100W
- Dali, DMX, 0-10V Dimming Protocols
- Multiple Wattages
- Made in USA Units Available

NEMA ENCLOSURES:
- 4X - Polycarbonate, Painted Steel or Stainless Steel

LUMENOSITY™
- Integrated 1ROW, 0-10V DIM

Specifications may change without prior notice, verify latest at time of order. All rights reserved

Page 2 of 2

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WagnerCompanies.com
LULF SUBM 05

fiveginecompanies

WAGNER — 888-243-6914 // mp@wagnergear.com — 10600 West Brown Deer Road // Milwaukee, WI 53224, USA

E09

WALA STATIC WHITE
Flexible Fixtures - Q-CAP

Declare.

- Flexible retrofit fixture with 6" side bend radius
- Easily cuts to length with standard 3 wire LED Decks
- Perfect for interior and exterior applications
- Optional seamless connections eliminate 'light gap'



1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/OUTPUT	8 CONNECTOR/WIRE IN	9 CONNECTOR/WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACT/OPTIMAL
WALA-SW											

Sample Part Number: **WALA-SW-WSC-DRY-30-4-END(TL,P1-B9-B9-N/A-48"-E**

1 PRODUCT
WALA-SW
See last page for compatible fixture(s) number.

2 MOUNTING
PPB-S PVC Clip
PPB-P PVC Channel
PPB-CT-3 PVC Channel Custom Length
PPB-LP-S PVC Low Profile Clip
PPB-LP-CT PVC Low Profile Channel Custom Length
PPB-LP-16 PVC Low Profile Chrome
WSC White Snap Clip

White snap clip only for metal cove use, not intended for hanging fixture from ceiling.
*TPS mounting clip recommended for seam less applications

3 RATED
DRY IP20
WET IP67

4 CCT
24 2400K
27 2700K
30 3000K
35 3500K
40 4000K

5 WATTAGE
1.0 1.0W/ft (6) 3.0W/4ft
2.0 2.0W/ft (4) 6.0W/4ft
4.0 4.0W/4ft (HVU)
10 Standard Fuse (HVU High Voltage Only) (120V)

6 LENS
ENCFL Encapsulated in Clear
ENCFL Encapsulated in Translucent
For representation on all LED models, see Circle Fly profile located on WALA product page.

7 WIRE INPUT/OUTPUT
S1 Single 1 (Input only) - End Feed
S2 Single 2 (Input only) - Seamless Feed
S3 Single 3 (Input only) - Seamless Feed
P1 Pass Through 1 (Input/Output) - End Feed
P2 Pass Through 2 (Input/Output) - Seamless Feed
P3 Pass Through 3 (Input/Output) - Seamless Feed

8 CONNECTOR/WIRE IN
B18 Bare Wire (Standard 24") — B18L Bare Wire (Standard 24") Long — B18S Bare Wire (Standard 24") Short — B9L Bare Wire (Standard 9") Long — B9S Bare Wire (Standard 9") Short — C2MM Connector 2" — C5MM Connector 5"
Connector/Wire-In not needed is specify "N/A" when ordering. Bare Wire (Standard 24") Stripped length is 6", Tinned length is 1/4". Please custom length to wiring in part number here (48 [example: 144in]).

9 CONNECTOR/WIRE OUT
N/A Closed End (No feed)
B18 Bare Wire (Standard 24") — B18L Bare Wire (Standard 24") Long — B18S Bare Wire (Standard 24") Short — B9L Bare Wire (Standard 9") Long — B9S Bare Wire (Standard 9") Short — C2MM Connector 2" — C5MM Connector 5"
Connector/Wire-Out not needed is specify "N/A" when ordering. Bare Wire (Standard 24") Stripped length is 6", Tinned length is 1/4". Please custom length to wiring in part number here (48 [example: 144in]).

10 END CAPS
SL Slim
SQ Square
Pass Through: N/A — Not Applicable

11 LENGTH (IN)
Fixture length min 12", max 196". Consult factory for lengths under 12". Available in 1" increments.

12 EXACT/OPTIMAL
E Exact (Illuminated)
O Optimal (Illuminated)
Exact: Fixtures are the exact specified length. Optimal: Fixture length is specified length with illuminated portion under 48" shown. Illuminated portion is 4" less than fixture length.

Field modifications are not covered under Q-Tran warranty | 5 year warranty | Size Band | Data subject to change, all data has +/- 5% tolerance | PPS/TT and PPS-LP/TT is to be cut at Q-Tran to requested length | Not field scalable

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Specification subject to change. Rev 06.09.20

E10
LUMINAIRE AIMED DOWN, CONCEALED WITHIN ARCHITECTURAL DETAIL

ECOSENSE — RISE

OVERVIEW • SPECIFICATIONS • ORDERING — INTERIOR + EXTERIOR | **FOBO SINGLE ROUND**

DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE FOBO SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE, DELIVERING UP TO 1170 LUMENS, THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AMABILITY USING ONLY ONE TWIST.

FEATURES :
- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 1170 LUMENS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (120 V-277 V)
- 9 CCTS: 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED



FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
FOBO	1R - Single Round	L0 - Low Output M0 - Medium Output H0 - High Output	22 - 2200K 25 - 2500K 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K 50 - 5000K 65 - 6500K WW - Warm GR - Green BL - Blue AM - Amber *2200K and 2500K not available in 40°, 60°, 70° and 90°	8 - 80 9 - 90* X - For RD, GR, BL, AM *90 CRI not available in 2200K, 2500K, 5000K, and 6500K	05 - Laser Spot (5°) 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 40 - Flood (40°) 60 - Medium Flood (60°) 70 - Wide Flood (70°) 90 - Very Wide Flood (90°) E1 - Elliptical 2.5"(10°x25°) E2 - Elliptical 2.125"(45°) E3 - Elliptical 3.050"(45°) E4 - Elliptical 4.150"(45°)	K - Black Z - Bronze S - Silver W - White C - Custom* *Provide RAL #	X - No Accessory H - Half Snoot F - Full Snoot Will ship as K if not specified	A - 18" Flying Leads - Internal Cable IC, Bottom Exit, 1/2" NPT - UL/CE Listed B* - 1/2" External Cable Side Exit, Surface Mount - UL Listed C* - 1/2" External Cable Bottom Exit, Surface Mount - 1/2" NPT - UL Listed D* - 1/2" External Cable Side Exit, Surface Mount - CE Listed E* - 1/2" External Cable Bottom Exit, Surface Mount - 1/2" NPT, CE Listed *Will ship as A if not specified

EXAMPLE: FOBO-1R-LO-22-8-05-S-X-A

*SEE PHOTOMETRY CHART FOR LUMEN DATA

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
	4	Low Output	309	429	78	107	21,991	705
	7.5	Medium Output	531	761	71	101	37,824	1,251
	11.5	High Output	744	1,120	65	99	53,048	1,874

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX: 80+, 90+
COLOR CONSISTENCY: 3-STEP MACADAM ELLIPSE

LUMEN DEPRECIATION:

WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
LOW	>60,500*	>60,500*	>60,500*	>60,500*
	>109,000**	>109,000**	>109,000**	>109,000**
MEDIUM	>60,500*	>60,500*	>60,500*	>60,500*
	>109,000**	>109,000**	>109,000**	>109,000**
HIGH	>60,500*	>36,300*	>60,500*	>33,200*
	>97,000**		>89,800**	

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR
** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/rise for the most updated information.

ECOSENSE — ECOSENSE LIGHTING INC., 837 NORTH SPRING STREET SUITE 103, LOS ANGELES,



D-Series Size 0
LED Area Luminaire

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (19.0 cm)
Weight:	23 lbs (10.4 kg)

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Design Select options indicated by this color background.

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature*	Color Rendering Index*	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics**	(this section 70CRI only)		AFR Automotive front row	MVOLT 120-277V†	**Shipped included**
	P1 P5	30K 3000K	70CRI	T1S Type I short	HVOLT 347V-480V††	SPA Square pole mounting (#4 drilling, 3.5" min. SQ pole)
	P2 P6	40K 4000K	90CRI	T2M Type II medium	XVOLT 277V-480V††	RPA Round pole mounting (#4 drilling, 3" min. RND pole)
	P3 P7	50K 5000K		T3LG Type III low glare*	120 1,2,3	
	P4	(this section 80CRI only, extended lead times apply)		T3M Type III medium	208 1,2,3	SPBS Square pole mounting (#5 drilling, 3" min. SQ pole)
	Rotated optics			T4LG Type IV low glare*	240 1,2,3	RPBS Round pole mounting (#5 drilling, 3" min. RND pole)
	P10° P12°	27K 2700K	80CRI	T4M Type IV medium	277 1,2,3	
	P11° P13°	30K 3000K	80CRI	BLC4 Type IV backlight control*	480 1,2,3	SPABN Square narrow pole mounting (#8 drilling, 2" min. SQ pole)
		35K 3500K	80CRI	LCCO Left corner cutoff*		WBA Wall bracket *
		40K 4000K	80CRI	RCCO Right corner cutoff*		WA Wall arm adapter (mounts on 2 3/8" OD horizontal tenon)
		50K 5000K	80CRI			

Control options	Other options	Finish (required)
Shipped installed	**Shipped installed**	DDBXD Dark Bronze
NLTAIR2 PIRHN Nightlin 2 fully integrated, network, bi-level motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc.*1,2,3,4	HS Houseside shield (black finish standard)*	DBLXD Black
PIR High/low, motion/ambient sensor, 8-40 mounting height, ambient sensor enabled at 2fc.*1,2,3,4	L90 Left rotated optics*	DNAXD Natural Aluminum
PER NEMA twist-lock receptacle only (controls ordered separate)*	R90 Right rotated optics*	DWHXD White
PERS Five-pin receptacle only (controls ordered separate)*5	CCE Coastal Construction*	DDBTXD Textured dark bronze
PE Single fuse (120, 277, 347V)*	HA 50°C ambient operation*	DBLBXD Textured black
DF Double fuse (208, 240, 480V)*	BAA Buy American Act Compliant	DNATXD Textured natural aluminum
PEBT Seven-pin receptacle only (controls ordered separate)*1,2,3	SF Single fuse (120, 277, 347V)*	DWHGXD Textured white
EAD Field adjustable output*1,2,3	DF Double fuse (208, 240, 480V)*	
BL30 Bi-level switched dimming, 30%*1,2,3	**Shipped separately**	
BL50 Bi-level switched dimming, 50%*1,2,3	BSCR Bird Spike Clip (Set)*	
DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)*1,2,3	EGSR External Gear Shield (reversible, field install required, matches housing finish)	
	BSDR Bird Spike (field install required)	

*See Ordering Info tab for details. †Not available with BL30 or BL50. ††Not available with NLTAIR2 PIRHN. 1 Not available with SPBS. 2 Not available with SPABN. 3 Not available with RPBS. 4 Not available with SPA. 5 Not available with PIR or PIRH. Not available with PIRHN.

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GE01 SERIES

EXTERIOR LIGHTING FOR PARKING GARAGE
ALL LUMINAIRES 3000K

HYDREL

CATALOG NUMBER
NOTES
TYPE



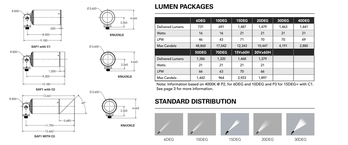
SAF1 LED SPECIALTY ARCHITECTURAL FLOOD
MVOLT LED

Specifications
Weight: 4 lbs.
EPA: C1: 0.266 Square Feet; C2: 0.296 Square Feet; C3: 0.374 Square Feet

HIGHLIGHTS

- Suitable for a variety of mounting applications including ground, wall, pole, standoff and tree
- 0-10V, Reverse phase Dimming
- Taper-Lock technology provides full aiming integrity utilizing a rugged knurkle design
- Available in 80CRI
- 1500 lm
- Minimalist design that provides clean and intentional lines and sharp angles
- Slightly convex watershed lens that evades water build up and standing
- NOM-I Listed
- 3G vibration rating per ANSI C136.31

DIMENSIONS

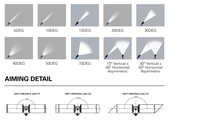


LUMEN PACKAGES

	40K5	70K5	150K5	250K5	300K5	400K5
Delivered Lumens	731	691	1,407	1,419	1,463	1,441
Watts	16	16	31	31	31	31
LPW	46	43	45	46	47	46
Max Candela	18,000	17,042	32,943	19,407	4,193	2,893
	50CRI	70CRI	150CRI	300CRI		
Delivered Lumens	1,306	1,320	1,468	1,370		
Watts	31	31	31	31		
LPW	44	43	70	46		
Max Candela	1,442	964	2,955	1,997		

Note: Information based on 4000K @ P2, for 4080 and 10080 and P3 for 15120 • see C1, See page 3 for more information.

STANDARD DISTRIBUTION



AIMING DETAIL



© 2022-2023 Acuity Brands Lighting, Inc. • One Lithonia Way, Conyers GA 30012
Phone: 800-705-SERV (7378) • www.hydrel.com
SAF1_LED | Rev. 12/01/23
Page 1 of 8

GE02 SERIES
LUMINAIRE AIMED DOWN, WITH
C3 SHIELD ACCESSORY

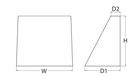


WDGE1 LED
Architectural Wall Sconce

Catalog Number
Notes
Type

Specifications

Depth (D1): 5.5"
Depth (D2): 1.5"
Height: 8"
Width: 9"
Weight: (without options) 9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)					
					P0	P1	P2	P3	P5	P6
WDGE1 LED	Visual Comfort	4W			750	1,200	2,000	--	--	--
WDGE2 LED	Visual Comfort	10W	10W	Standalone / eLight	--	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	10W	Standalone / eLight	700	1,200	2,000	3,200	4,200	--
WDGE3 LED	Precision Reflective	15W	15W	Standalone / eLight	4,000	7,500	8,500	10,000	12,000	--
WDGE4 LED	Precision Reflective			Standalone / eLight	--	12,000	16,000	18,000	20,000	23,000

Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT SRM PE DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE1 LED	P0	27K 2700K	80CRI	VF Visual comfort forward throw	MVOLT	**Shipped included**
	P1	30K 3000K	90CRI	VW Visual comfort wide	347	SRM Surface mounting bracket
	P2	35K 3500K				ICW Indirect Canopy/Ceiling Washer bracket (for canopy locations only)
		40K 4000K				**Shipped separately**
		50K* 5000K				AWS 3/8inch Architectural wall spacer *
						PBBW Surface mounted back box (1pg, 4/0, right conduit entry) Use when there is no junction box available *

Options	Finish
E4WH Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)*	DDBXD Dark bronze
PE Photocell, Button Type*	DBLXD Black
DS Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)	DNAXD Natural aluminum
DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)	DWHXD White
BCE Bottom conduit entry for back box (PBBW). Total of 4 entry points.	DSSD Sandstone
BAA Buy American Act Compliant	
DSCE Dual Switching (1 Driver, 1 Light Engines)	
CCE Coastal Construction*	

DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

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GE03 SERIES

prescolite

LBSES-RD
EDGE-LIT ROUND SWITCHABLE CCT
DIRECT J-BOX MOUNT DOWNLIGHT

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

LITEBOX edge-lit



SERVICE PROGRAMS
STOCK

FEATURES

- 4", 6", and 8" aperture, delivering 750-1750 lumens
- Low surface profile of ½"
- Quick snap installation with no housing required
- Installs directly to most 3-1/2" and 4" J-Boxes
- CCT Switchable (2700K/3000K/3500K/4000K, 90+ CRI)
- Universal 120-277V, ideal for commercial applications
- All models standard with 0-10V/Triac/ELV dimming

SPECIFICATIONS

CONSTRUCTION
- Durable cast aluminum low profile trim with ½" surface profile
- Suitable for New Construction or remodel, IC or Non-IC applications
- Eliminates the need for a recessed housing; ideal for areas with limited plenum space
- Optional non-conductive Decorative Color Trim accessories available in White, Black, Silver, and Brushed Oil Rubbed Bronze

OPTICS
- Utilizes the latest Edge-Lit LED technology
- Integral diffuse polycarbonate lens provides uniform light distribution
- Light distribution is free of distracting bright spots
- Visually comfortable with low glare

ELECTRICAL
- Edge-Lit LED array with 3 SDCM color consistency
- Long LED life: Maintains 80% of lumen output at 54,000 hours of operation, L80 at >54,000 hours (TM-21)
- CCT Switchable (2700K/3000K/3500K/4000K)
- 90+ CRI with R9 >50
- High efficiency integral driver with universal 120V-277V, 50/60Hz

ELECTRICAL (CONTINUED)
- All models have flicker-free dimming with 120-277V 0-10V Dim to Off or 120V Triac or ELV phase-cut to 5%
- See Additional Information section for a list of recommended dimmers
- EMI: Meets Class A (<24dBa) noise rating, FCC CFR 47 Part 15 Class B, ≥0.9 Power Factor, <20% THD

INSTALLATION
- Installs directly to most common 3-1/2" or 4" octagonal and round junction boxes with a minimum 1-1/2" depth including fire rated (by others)
- Metal plate mounts to the J-Box and accepts snap-in spring clips for a secure fit
- CCT Switchable Models: Field select one of four CCTs at installation with an integral switch accessible on the back of the driver

CERTIFICATIONS
- cETLus listed to UL1598
- Can be used in direct contact with insulation (IC Rated)
- Suitable for wet locations, covered ceiling
- Suitable for use in clothes closets when installed in accordance to N.E.C. 410.16
- ENERGY STAR® certified
- Meets CA Title 24 High Efficacy (JA8 2019) requirements

WARRANTY
- 5 year warranty

KEY DATA	
Lumen Range	701-1754
Wattage Range	9.9-19.3
Efficacy Range (LPW)	77-91
Reported Life (Hours)	L80 / >54,000
Input Current (mA)	83-161

*Based on 3000K, 90 CRI

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GE04 SERIES

131-0206
VLS410 LED

we-ef



Description
IP66, Class I. IK07. Marine-grade, die-cast aluminum alloy. SCE superior corrosion protection including PCS hardware. Silicone CCG® Controlled Compression Gasket. Safety glass lens. Two cable entries. CAD-optimized optics for superior illumination and glare control. Integral driver. OLC® One LED Concept. Factory-installed LED circuit board. 0-10V Dimming comes standard with luminaire.

Specify product with 7 Digit product code + Finish Color. Accessories, such as mounting, optical, and electrical, must be specified separately.
Example: XXX-XXXX-9004 (Black)
+ XXX-XXXX (Accessory 1)

Weight	7.70
Light distribution	asymmetric, forward throw [A60]
Light source	LED-3/13W / 1400 mA - 3000 K
CRI	80
Power supply	EC
BUG	B0 U0 G0
Nominal Lumen (lm)	
LED Lumen	550.0 lm
LEDs	3
Total Lumen	1650.0 lm
Tj	85°C
Rated lumens (lm)	
LED Lumen	164.7 lm
Total Lumen	494.2 lm
Ta	25°C
Rated input power	15.8 W

WE-EF LIGHTING USA, LLC
410-D Keystone Drive, 15086 Warrendale, PA 15086 - Phone: +1 724 742 0030
customersupport.usa@we-ef.com - https://we-ef.com/us
Subject to technical changes and errors. - Generated on 03/25/2024

BB01

EXTERIOR LIGHTING FOR BEAN BUILDING
ALL LUMINAIRES 3000K

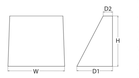


WDGE1 LED
Architectural Wall Sconce

Catalog Number
Notes
Type

Specifications

Depth (D1): 5.5"
Depth (D2): 1.5"
Height: 8"
Width: 9"
Weight: (without options) 9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)					
					P0	P1	P2	P3	P5	P6
WDGE1 LED	Visual Comfort	4W			750	1,200	2,000	--	--	--
WDGE2 LED	Visual Comfort	10W	10W	Standalone / eLight	--	1,200	2,000	3,000	4,500	6,000
WDGE2 LED	Precision Reflective	10W	10W	Standalone / eLight	700	1,200	2,000	3,200	4,200	--
WDGE3 LED	Precision Reflective	15W	15W	Standalone / eLight	4,000	7,500	8,500	10,000	12,000	--
WDGE4 LED	Precision Reflective			Standalone / eLight	--	12,000	16,000	18,000	20,000	23,000

Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT SRM PE DDBXD

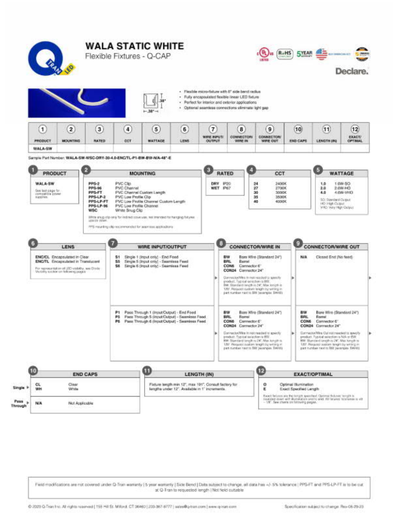
Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE1 LED	P0	27K 2700K	80CRI	VF Visual comfort forward throw	MVOLT	**Shipped included**
	P1	30K 3000K	90CRI	VW Visual comfort wide	347	SRM Surface mounting bracket
	P2	35K 3500K				ICW Indirect Canopy/Ceiling Washer bracket (for canopy locations only)
		40K 4000K				**Shipped separately**
		50K* 5000K				AWS 3/8inch Architectural wall spacer *
						PBBW Surface mounted back box (1pg, 4/0, right conduit entry) Use when there is no junction box available *

Options	Finish
E4WH Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)*	DDBXD Dark bronze
PE Photocell, Button Type*	DBLXD Black
DS Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)	DNAXD Natural aluminum
DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)	DWHXD White
BCE Bottom conduit entry for back box (PBBW). Total of 4 entry points.	DSSD Sandstone
BAA Buy American Act Compliant	
DSCE Dual Switching (1 Driver, 1 Light Engines)	
CCE Coastal Construction*	

DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

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BB02



WALA STATIC WHITE
Flexible Fixtures - Q-CAP

- Flexible microfixture with 8" side bend radius
- Ideal for accent lighting in tight spaces
- Perfect for interior and exterior applications
- Optional seamless connections eliminate light gap

1 PRODUCT	2 MOUNTING	3 RATED	4 CCT	5 WATTAGE	6 LENS	7 WIRE INPUT/ OUTPUT	8 CONNECTOR/ WIRE IN	9 CONNECTOR/ WIRE OUT	10 END CAPS	11 LENGTH (IN)	12 EXACTOPTIMAL
WALA-SW											

Sample Part Number: **WALA-SW-WSC-DRY-30-4.0-ENCTL-P1-BW-BW-N/A-N/A-E**

1 PRODUCT
WALA-SW — Side feed edge-lit Q-CAP, Linear luminaire

2 MOUNTING
PPD-2 PVC Clip
PPD-EM PVC Channel
PPD-CP PVC Channel Custom Length
PPD-LP-E PVC Low Profile Clip
PPD-LP-E-CP PVC Low Profile Channel Custom Length
PPD-LP-IN PVC Low Profile Channel
WSC White Snap Clip
*White snap clip ramp for tracked cove use. Not intended for hanging fixtures. Ordered separately.
**PPD mounting clip recommended for seam-less applications.

3 RATED
DRY IP20
WET IP67

4 CCT
24 2400K
27 2700K
30 3000K
35 3500K
40 4000K

5 WATTAGE
1.0 1.0W/ft/2
2.0 2.0W/ft/2
4.0 4.0W/ft/2
*Q1 Standard Output only (High Output + PPD Clip or High Density)

6 LENS
ENCCL Encapsulated in Clear
ENCTL Encapsulated in Translucent
For replacement lens of LED modules, see Cross Novelty located on following pages.

7 WIRE INPUT/OUTPUT
S1 Single 1 (Input only) - End Feed
S5 Single 5 (Input only) - Seamless Feed
S6 Single 6 (Input only) - Seamless Feed
P1 Pass Through 1 (Input/Output) - End Feed
P5 Pass Through 5 (Input/Output) - Seamless Feed
P6 Pass Through 6 (Input/Output) - Seamless Feed

8 CONNECTOR/WIRE IN
BW 8IN Bare Wire (Standard 24"). Barrel CONNA Connector 24"
Connector/Wire In not included to specify standard. Typical wire feed is 18AWG, 600V, 105°C, UL1007 stranded copper. Add 12" to 156" (Request custom length by writing in part number here in MN Examples: BW36)

BW 8IN Bare Wire (Standard 24"). Barrel CONNB Connector 6"
CONNC Connector 24"
Connector/Wire In not included to specify standard. Typical wire feed is 18AWG, 600V, 105°C, UL1007 stranded copper. Add 12" to 156" (Request custom length by writing in part number here in MN Examples: BW36)

9 CONNECTOR/WIRE OUT
N/A Closed End (No feed)

BW 8IN Bare Wire (Standard 24"). Barrel CONNB Connector 6"
CONNC Connector 24"
Connector/Wire Out not included to specify standard. Typical wire feed is 18AWG, 600V, 105°C, UL1007 stranded copper. Add 12" to 156" (Request custom length by writing in part number here in MN Examples: BW36)

10 END CAPS
Single → CL Clear; WH White
Pass Through → N/A Not Applicable

11 LENGTH (IN)
Fixture length min 12", max 156". Consult factory for lengths under 12". Available in 1" increments.

12 EXACTOPTIMAL
E Optimal Illumination
Exact Specified Length
Basis for optimal illumination. Optimal fixtures' length is regulated down and rounded up (+/-) while the desired increment is set per specified increment (inches).

Field modifications are not covered under Q-Train warranty | Sizes Bend | Data subject to change, all data has +/- 5% tolerance | PPS-LP and PPS-LP-IT to be cut at Q-Train to requested length | Not field cuttable

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Specification subject to change. Rev-06-09-20

BB03
LUMINAIRE AIMED DOWN, CONCEALED WITHIN
ARCHITECTURAL DETAIL

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute
LVX VERITAS VIRTVS

KeyPlan

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

ARUP
Arup US Inc
60 State Street
Boston MA 02109
617.864.2987
www.arup.com

SITE PLAN SUBMISSION

Number	Revision	Date

STATE OF MAINE — JOHN — STRATTON — LICENSED PROFESSIONAL ENGINEER

03/29/2024

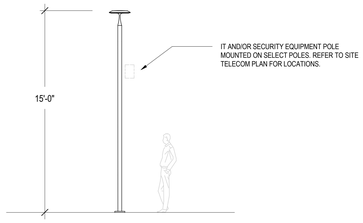
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Drawn By	CS
Checked	JW
Date	27 OCTOBER 2023
Scale	NTS

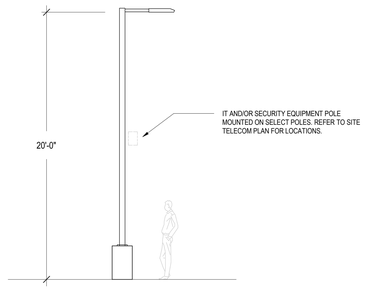
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SITE LIGHTING SCHEDULES AND DETAILS SHEET 2

E1.03

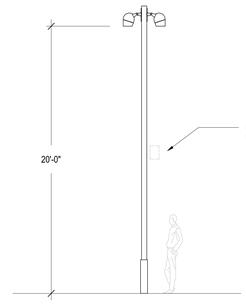
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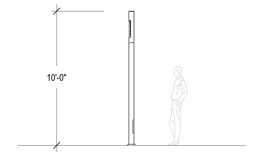
E01 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



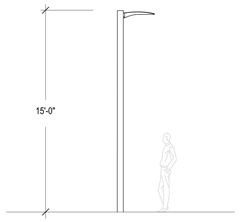
E02 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



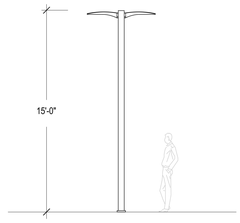
E03-2 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



E08 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



GE01 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



GE01A-2 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

KeyPlan

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
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03/29/2024

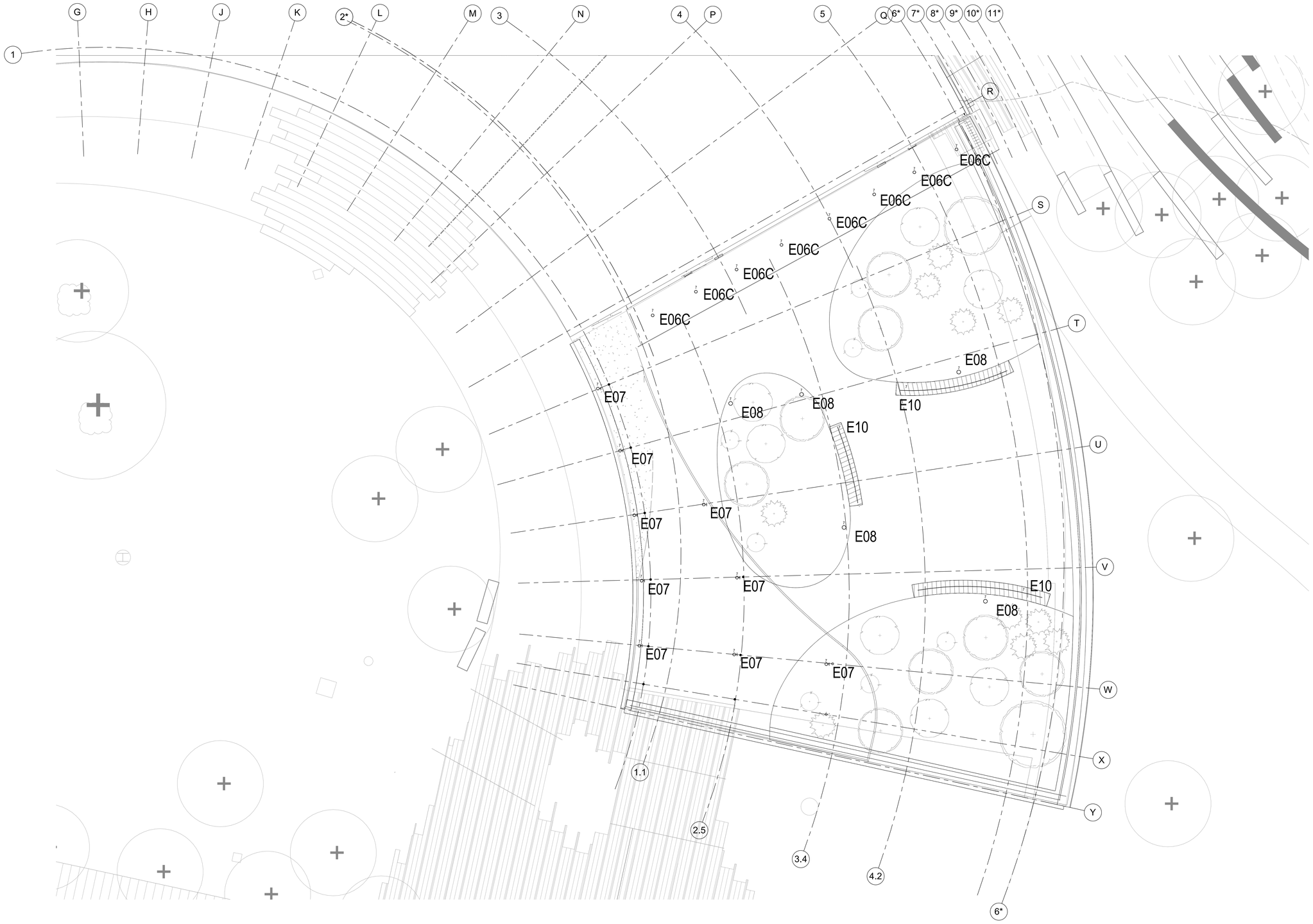
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	March 22, 2024
Scale	1/4" = 1'-0"

Drawing Title
SITE LIGHTING SCHEDULES AND DETAILS SHEET 3

E1.04

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1 SITE LIGHTING - LEVEL 3 TERRACE
1/8" = 1'-0"

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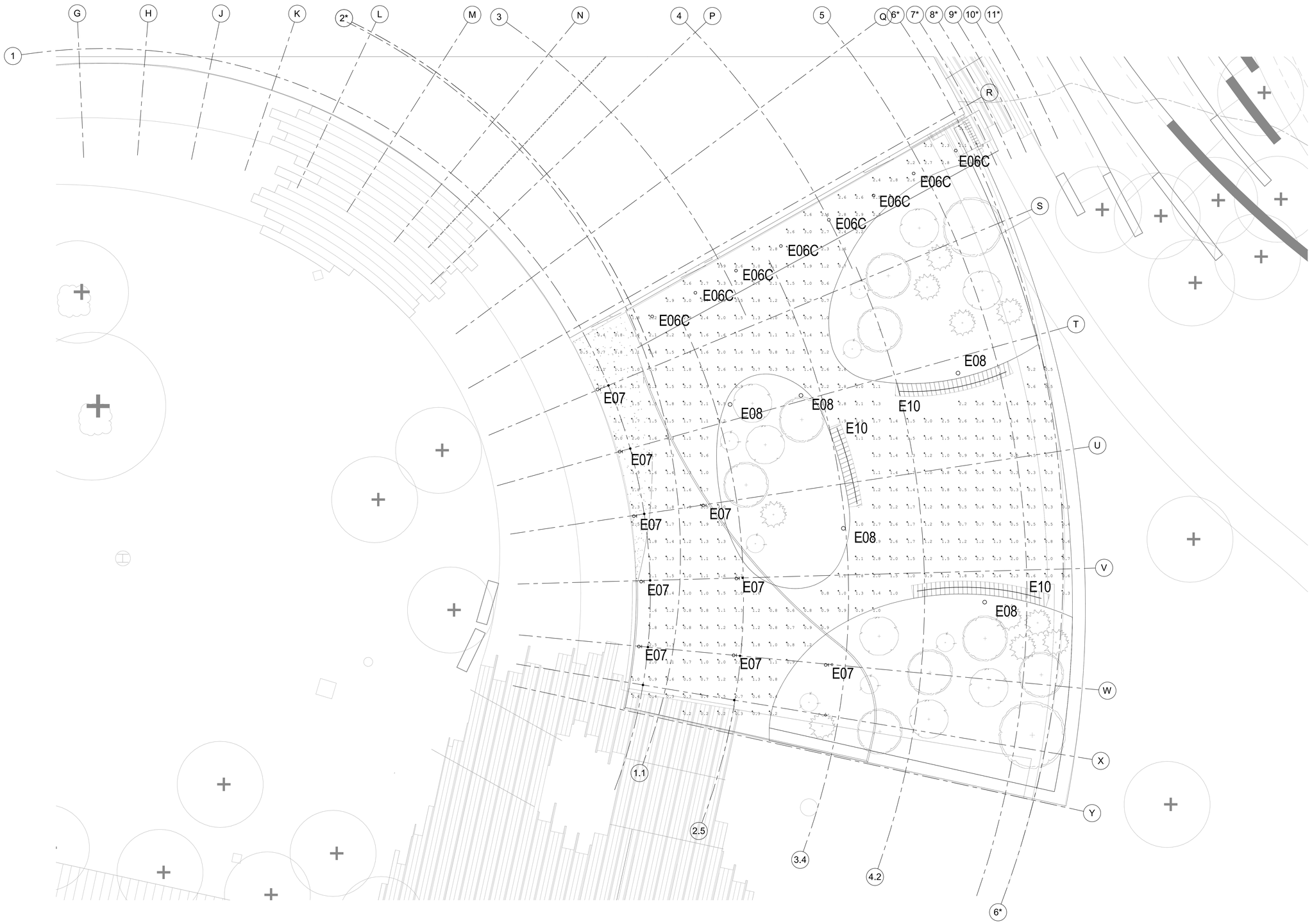
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Job #	2202
Project	THE ROUX INSTITUTE
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Drawing Title
SITE LIGHTING - LEVEL 3 TERRACE

E1.05

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The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Level 3 Terrace Lighting
• Uniformity: 20:1
• Illumination levels: Min 0.2 (fc), Max 5.0 (fc), Ave 1.25 (fc)
• No fixture shall exceed 20,000 lumens (± 3%).
- Path lighting: 1,500 lumens Maximum Lumens allowed will apply to E08.
- Building Entrance: 3,500 lumens Maximum Lumens allowed will apply to E06C
• Light Trespass: The maximum illumination level at a property line shall not exceed 0.1 (fc)
• Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.
Please note that the E08 is Night Sky friendly with minimum uplight component and U1 rating. The E10
linear tape light fixtures are installed aimed at the ground and integrated into an architectural detail, to eliminate the possibility of uplight. E07 is installed below the trellis structure aimed down.
• Fixture Height:
- All the light poles and bollards respect the height provision (Light sources on Poles at or below 20ft)

Projected hours of use: From 11pm or close of business until 6am general site illuminance levels will be dimmed. All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.

Luminaire Schedule
Scene: Flood Light Scheme

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	Arrangement Watts	BUG Rating	Mounting Height
E06C	8	Prescolite LTR	LTR-4RD-H-SL06L-DMTW_LTR-4RD-T-SL2230TD9XWS	571	0.800	0.900	1.000	0.720	10	10	B1-U0-G0	11.454
E07	9	Ecosense WF 11W	F080-1R-HO-30-9-90-X-X-X	708	0.900	0.800	1.000	0.720	11.5	11.5	B1-U1-G0	9, 11, 12, 13.6
E08	5	Linea Black Selux S06 Asymmetric Wide 24W	LRBC-XX-AW-S06-30-XX-UNV	1479	0.900	0.950	1.000	0.855	24	24	B0-U1-G1	10
E10	1	Q-tran Wala 1W-ft	WALA-SW-WSC-DRY-30-SO-ENC-TL_1	39	0.800	0.900	1.000	0.720	1.01	1.01	B0-U1-G0	2

Calculation Summary
Scene: Flood Light Scheme

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Floor_Planar	Fc	1.46	3.3	0.2	7.30	16.50

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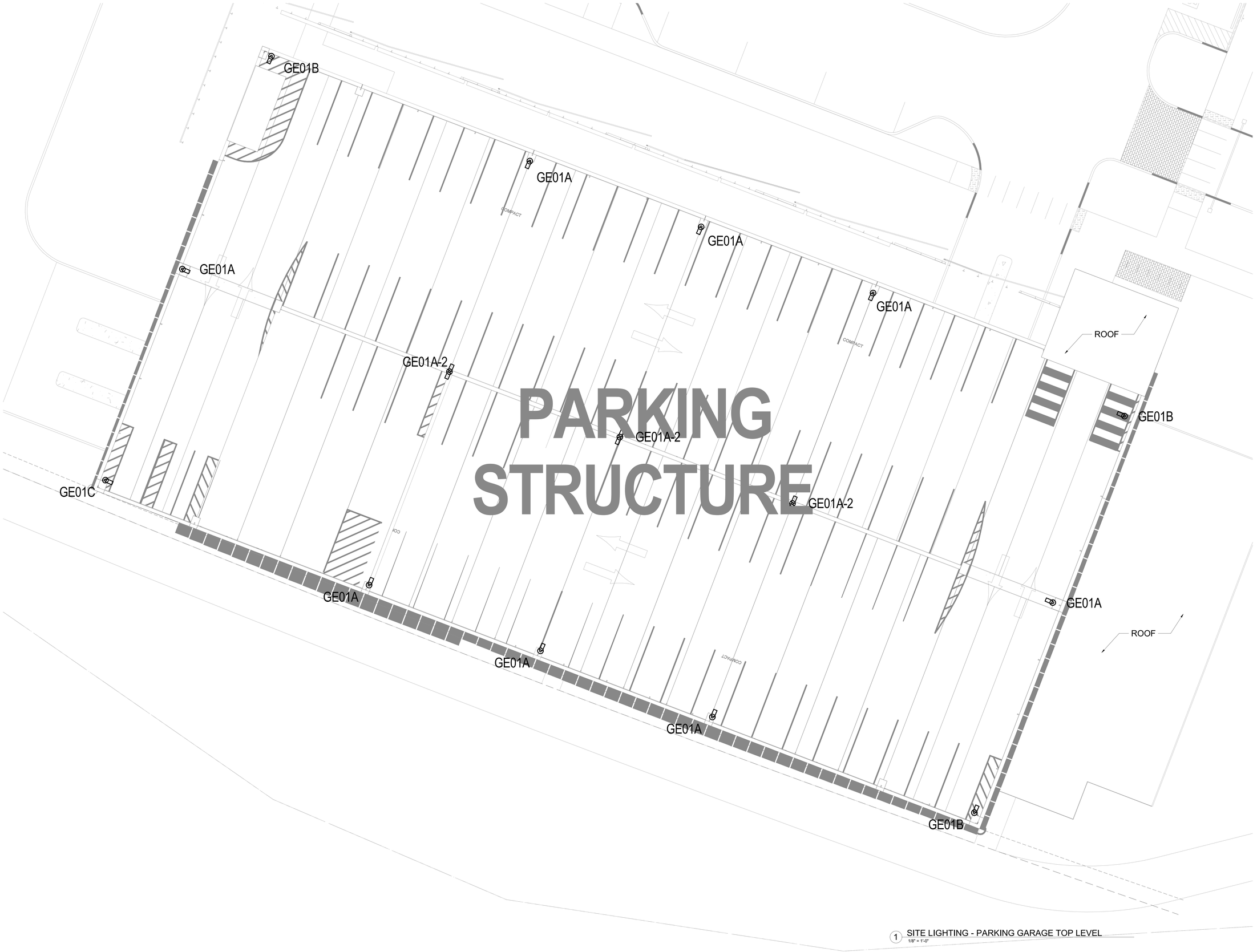
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Project	THE ROUX INSTITUTE
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Checked	JW
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Drawing Title
SITE LIGHTING - LEVEL 3 TERRACE PHOTOMETRIC PLAN

E1.06

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1 SITE LIGHTING - PARKING GARAGE TOP LEVEL
1/8" = 1'-0"

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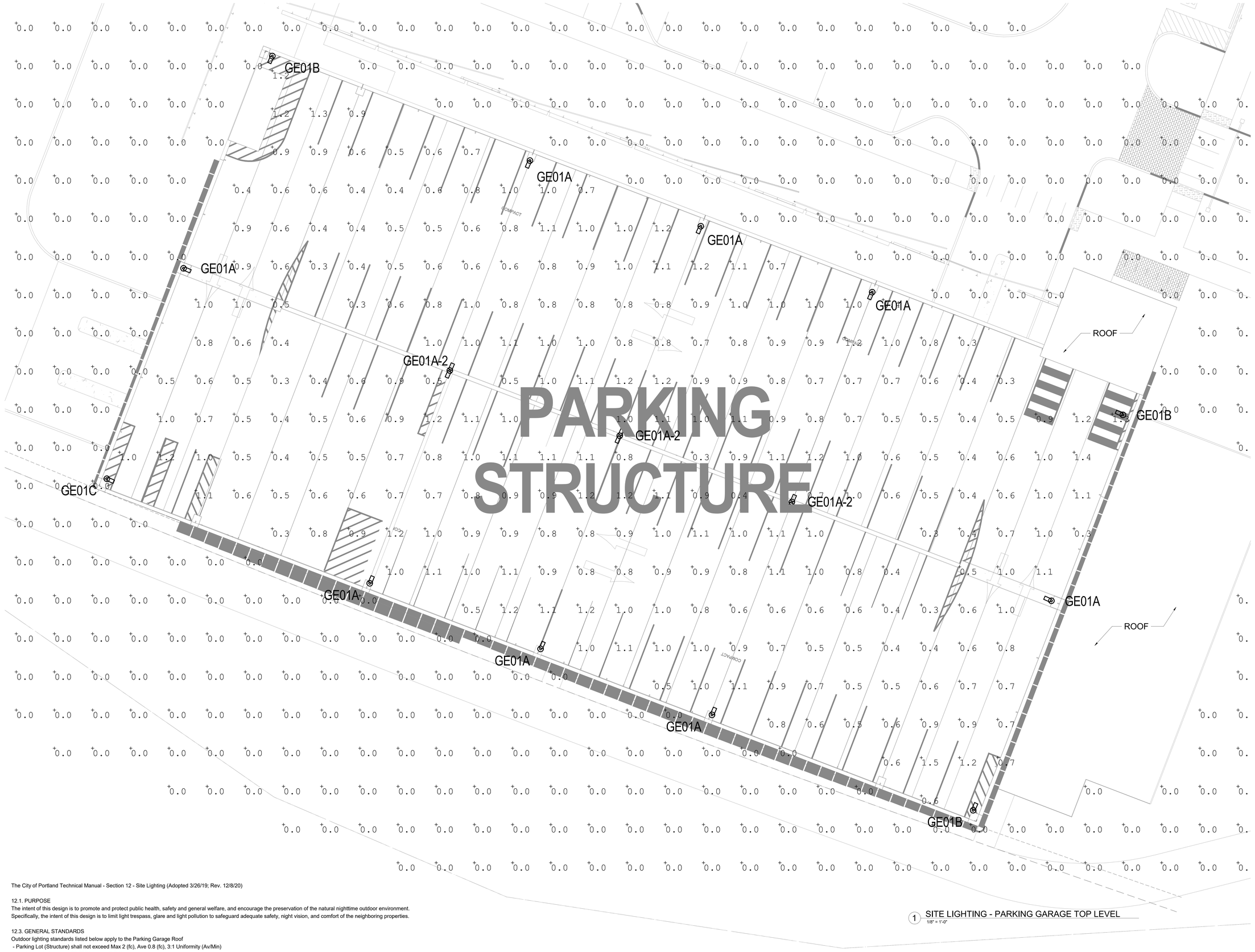
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Drawing Title
SITE LIGHTING - PARKING GARAGE TOP LEVEL

E1.07

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1 SITE LIGHTING - PARKING GARAGE TOP LEVEL
1/8" = 1'-0"

The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Parking Garage Roof
- Parking Lot (Structure) shall not exceed Max 2 (fc), Ave 0.8 (fc), 3:1 Uniformity (Av/Min)
- No fixture shall exceed 20,000 lumens (± 3%).
  - Residential/ Commercial Pole at 20' : 15,000 lumens Maximum Lumens allowed will apply to GE01 Series.
  - Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.
- Fixture Color Temperature: All lights shall be 3000K.
- Fixture Height:
  - All the light poles at the garage roof deck are 15ft height above floor and respect the height provision (Light sources on Poles at or below 20ft)

Projected hours of use:
- Sunset to Sunrise.
- From one hour after close of business until 1 hour before business opening, illuminance levels will be dimmed to 50%.

All calculation points on the parking structure are at the floor level. All calculation points outside of the parking structure are at ground level.
- Luminaires at top deck of parking structure contribute no light to the ground plane or beyond the site property.

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Structure Ground Level	Fc	0.00	0.0	0.0	N.A.	N.A.
Parking Structure_Top	Fc	0.79	1.5	0.3	2.63	5.00

Luminaire Schedule

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	BUG Rating
GE01A	14	D-Series Size 0 BLC4 EGS	DSX0 LED P1 30K 80CRI BLC4 EGS-F	1610	0.900	0.900	1.000	0.810	33.21	B0-U0-G1
GE01B	3	D-Series Size 0 RCCO EGS	DSX0 LED P1 30K 80CRI RCCO EGS-F Derated for 70% output	1844	0.900	0.900	0.700	0.567	33.21	B0-U0-G0
GE01C	1	D-Series Size 0 LCCO EGS	DSX0 LED P1 30K 80CRI LCCO EGS-F Derated for 70% output	1844	0.900	0.900	0.700	0.567	33.21	B0-U0-G0

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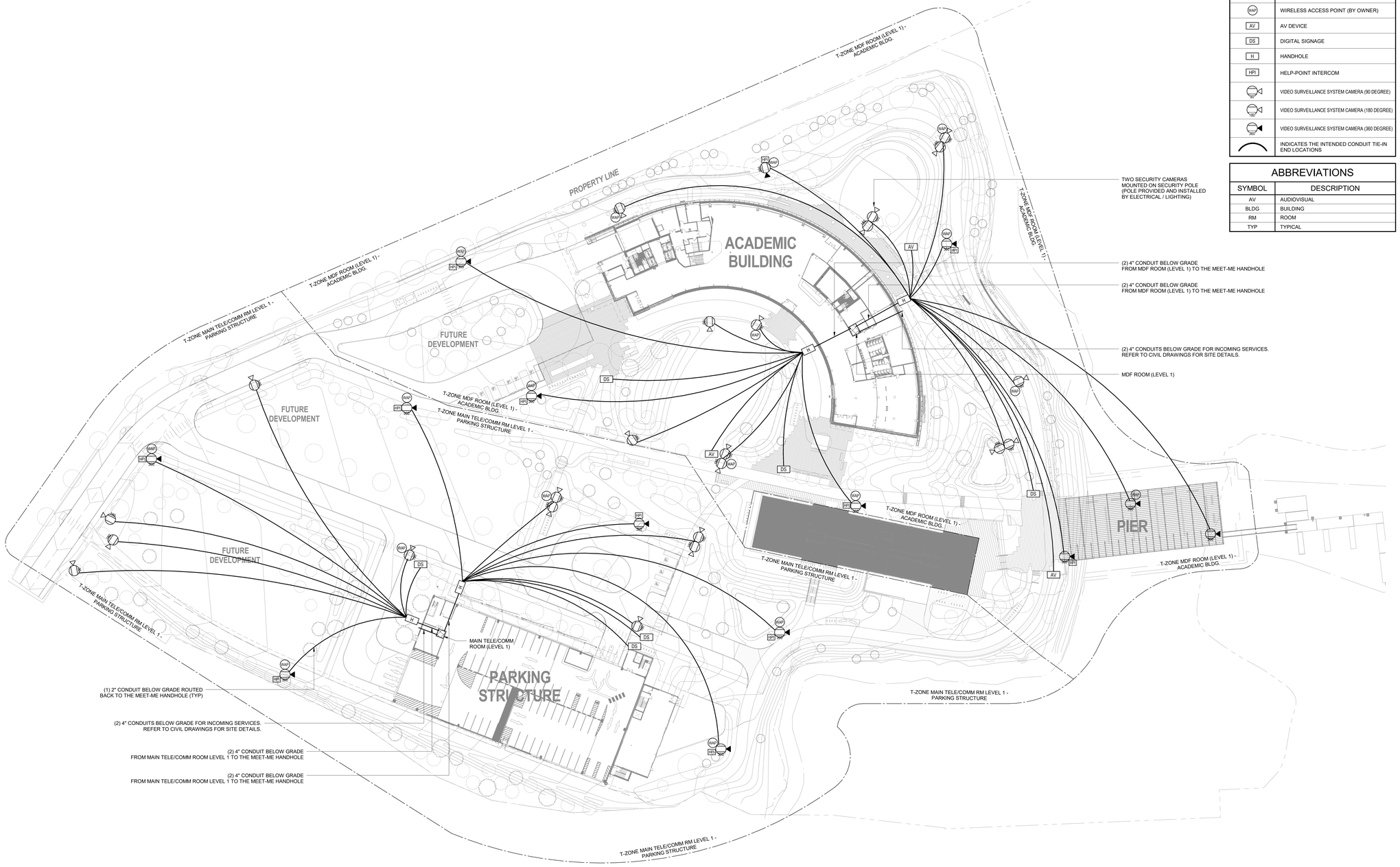
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Job # 2202
Project THE ROUX INSTITUTE
Drawn By CS Checked JW
Date March 22, 2024
Scale 1/8"=1'-0"

Drawing Title
SITE PHOTOMETRIC PLAN - PARKING GARAGE TOP LEVEL

E1.08

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LEGEND:

SYMBOL	DESCRIPTION
	TELECOM SPACES/ROOM OUTLINE
T-ZONE IT RM-#	TELECOM ZONE SERVED BY IT ROOM # = NUMBER/NAME
WAP	WIRELESS ACCESS POINT (BY OWNER)
AV	AV DEVICE
DS	DIGITAL SIGNAGE
H	HANDHOLE
HPI	HELP-POINT INTERCOM
VSC 90°	VIDEO SURVEILLANCE SYSTEM CAMERA (90 DEGREE)
VSC 180°	VIDEO SURVEILLANCE SYSTEM CAMERA (180 DEGREE)
VSC 360°	VIDEO SURVEILLANCE SYSTEM CAMERA (360 DEGREE)
	INDICATES THE INTENDED CONDUIT TIE-IN END LOCATIONS

ABBREVIATIONS

SYMBOL	DESCRIPTION
AV	AUDIOVISUAL
BLDG	BUILDING
RM	ROOM
TYP	TYPICAL

NOTES:

1. REFER TO SECURITY DRAWINGS FOR SECURITY SYMBOL LEGEND DETAILS.
2. ALL EXTERIOR DEVICES SHOWN ON PLAN SHALL BE MOUNTED ON LIGHT POLES (POLES BY LIGHTING/ELECTRICAL), UNLESS:
   A. MOUNTED ON SECURITY POLE, AS INDICATED ON PLAN
   B. COLOCATED WITH HELP-POINT INTERCOM
3. BACKBONE AND INCOMING SERVICE PATHWAY DUCT BANKS ARE TO BE CONCRETE ENCASED, 4" PVC MATERIAL, USE MAXCELL FLEXIBLE FABRIC INNERDUCT SYSTEM EQUIPPED WITH PULL CORD.
4. HORIZONTAL DEVICE PATHWAYS ARE TO BE DIRECT BURIED CONDUITS OF UP TO 2" AS REQUIRED.
5. MINIMUM DEPTH FROM TOP OF THE CONDUIT MUST BE BURIED AT LEAST 24" BELOW THE GROUND SURFACE/FINISHED GRADE. IN AREAS WHERE FROST CONDITIONS COULD DAMAGE CABLES IN CONDUITS, AS A MINIMUM, THE DEPTH SHOULD BE BASED ON 50-YEAR FROST LINE.
6. THE MINIMUM BEND RADIUS FOR A CONDUIT THAT IS 2" OR LESS IN DIAMETER SHALL BE 6 TIMES THE INTERNAL CONDUIT DIAMETER. IF THE CONDUIT IS LARGER THAN 2" THE BEND RADIUS SHALL BE 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT.
7. PROVIDE A HANDHOLE IN CONDUIT RUNS SUCH THAT:
   A. MAXIMUM CONTINUOUS CONDUIT RUN SHALL NOT EXCEED 600FT
   B. NO MORE THAN TWO 90 DEGREE BENDS EXIST IN A CONTINUOUS CONDUIT RUN
   C. AT LEAST ONE HANDHOLE PER REVERSE (U-SHAPED) BEND IN CONDUIT RUN
   D. IT IS LOCATED IN THE STRAIGHT SECTION OF A CONDUIT AND NOT IN LIEU OF A BEND
   E. SIZE THE HANDHOLE ACCORDINGLY AND PER TIA STANDARDS
8. CONDUIT ENTRY INTO THE HANDHOLE SHALL BE SUCH THAT THE CONDUITS END ON OPPOSIDE ENDS OF THE HANDHOLE AND AT THE SAME ELEVATION, AND NOT ON THE SIDEWALLS

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Job #	2102
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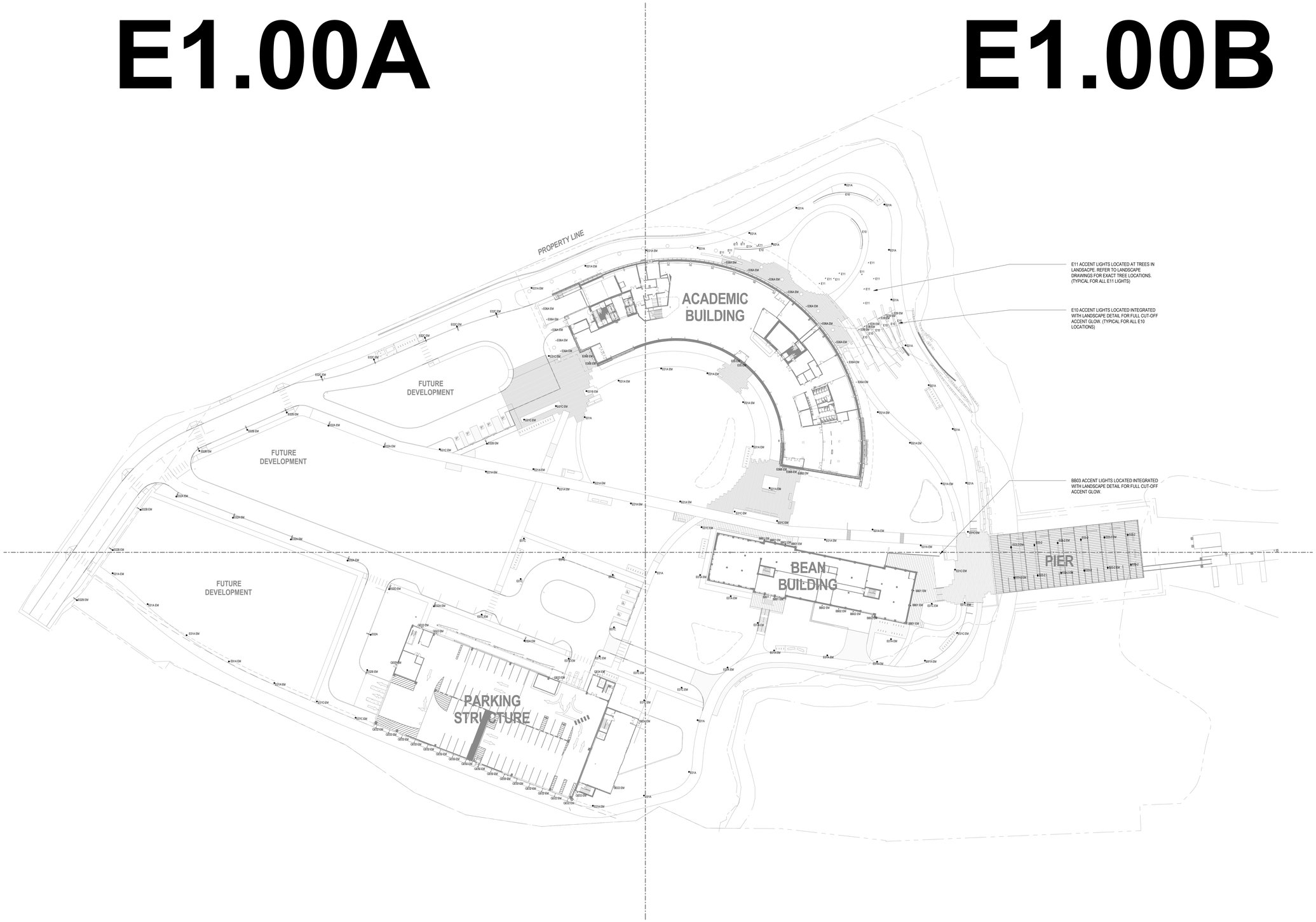
Drawing Title
TELECOM SITE PLAN

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E1.00A

E1.00B



E1.00D

E1.00C

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Number	Revision	Date

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2024-05-16

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	May 17, 2024
Scale	1" = 40'-0"

Drawing Title
SITE LIGHTING KEY PLAN

E1.00

5/16/2024 5:18:11 PM

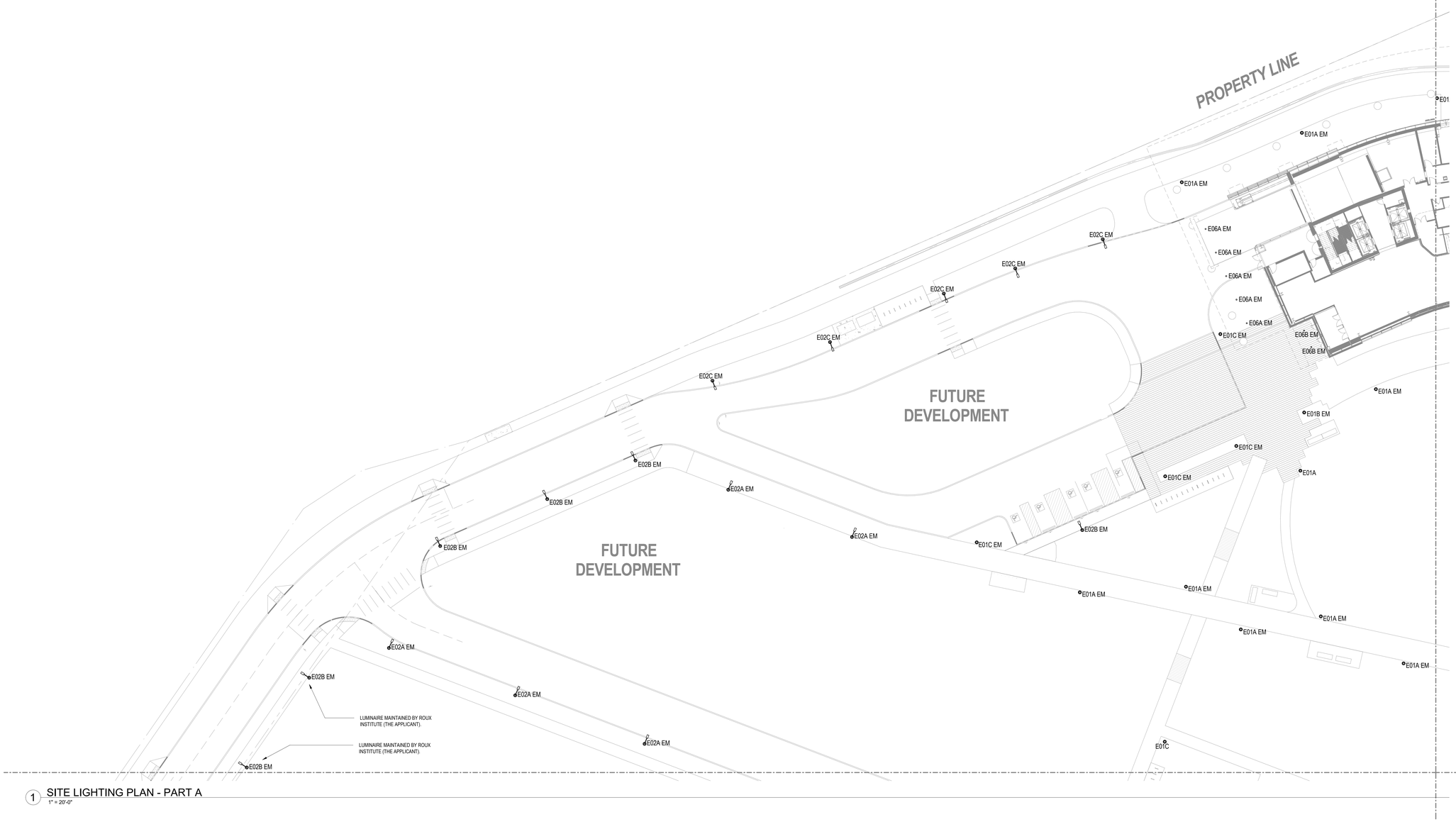
GENERAL NOTES:
1. FOR ELECTRICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES REFER TO DRAWING E0.00.

2. REFER TO DRAWING E1.03 FOR SITE LIGHTING HAND HOLE DETAIL. ALL SITE LIGHT FIXTURES SHALL HAVE A HANDHOLE.

3. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF CONDUIT ROUTING AND ADDITIONAL INFORMATION.

4. ALL CONDUCTORS SHALL BE TYPE XHHW INSULATION.

5. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART A
1" = 20'-0"

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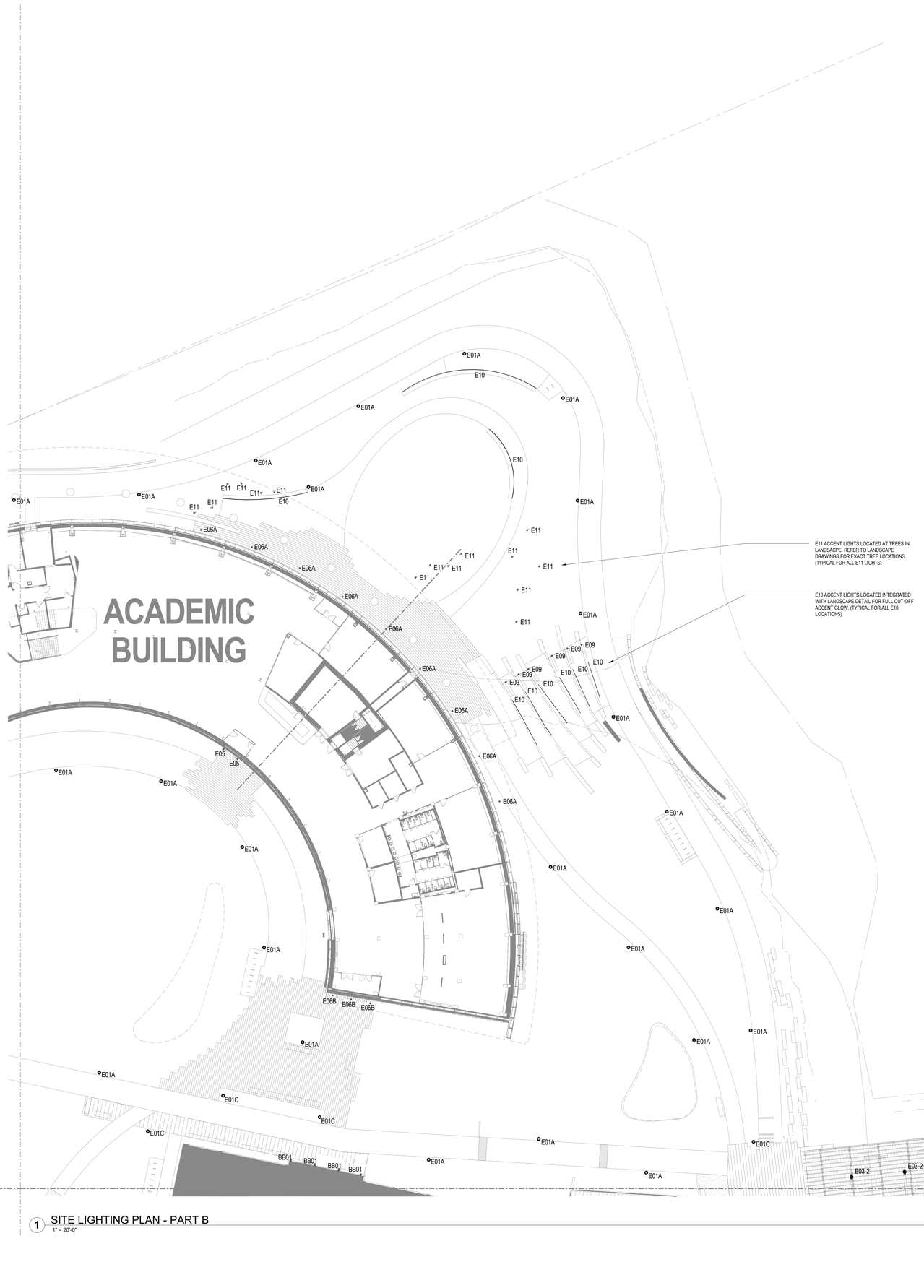
Job #	2202
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Drawing Title
SITE LIGHTING PLAN - PART A

E1.00A

5/16/2024 5:19:01 PM

GENERAL NOTES:
1. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART B
1" = 20'-0"

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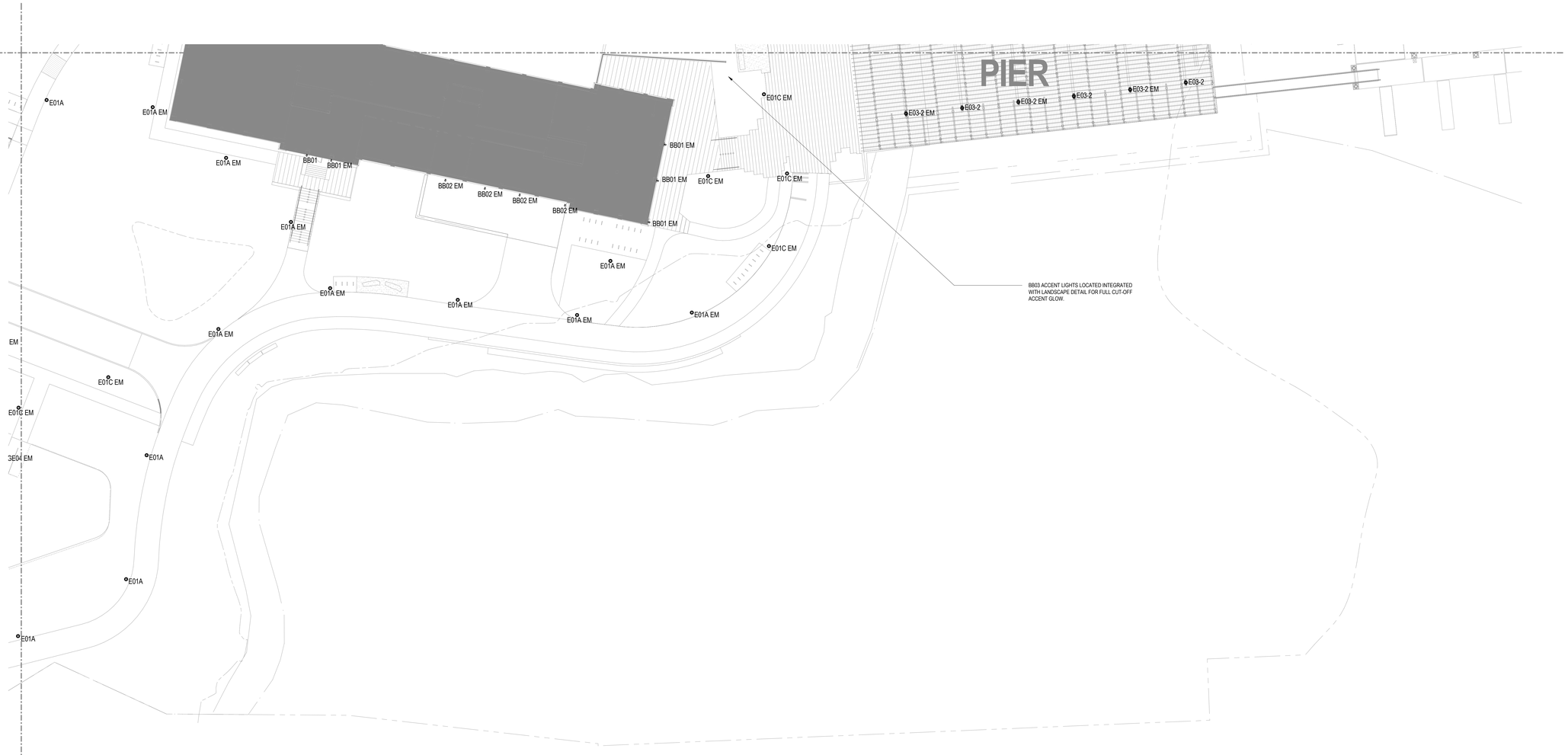
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Drawing Title
SITE LIGHTING PLAN - PART B

E1.00B

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GENERAL NOTES:
1. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART C
1" = 20'-0"

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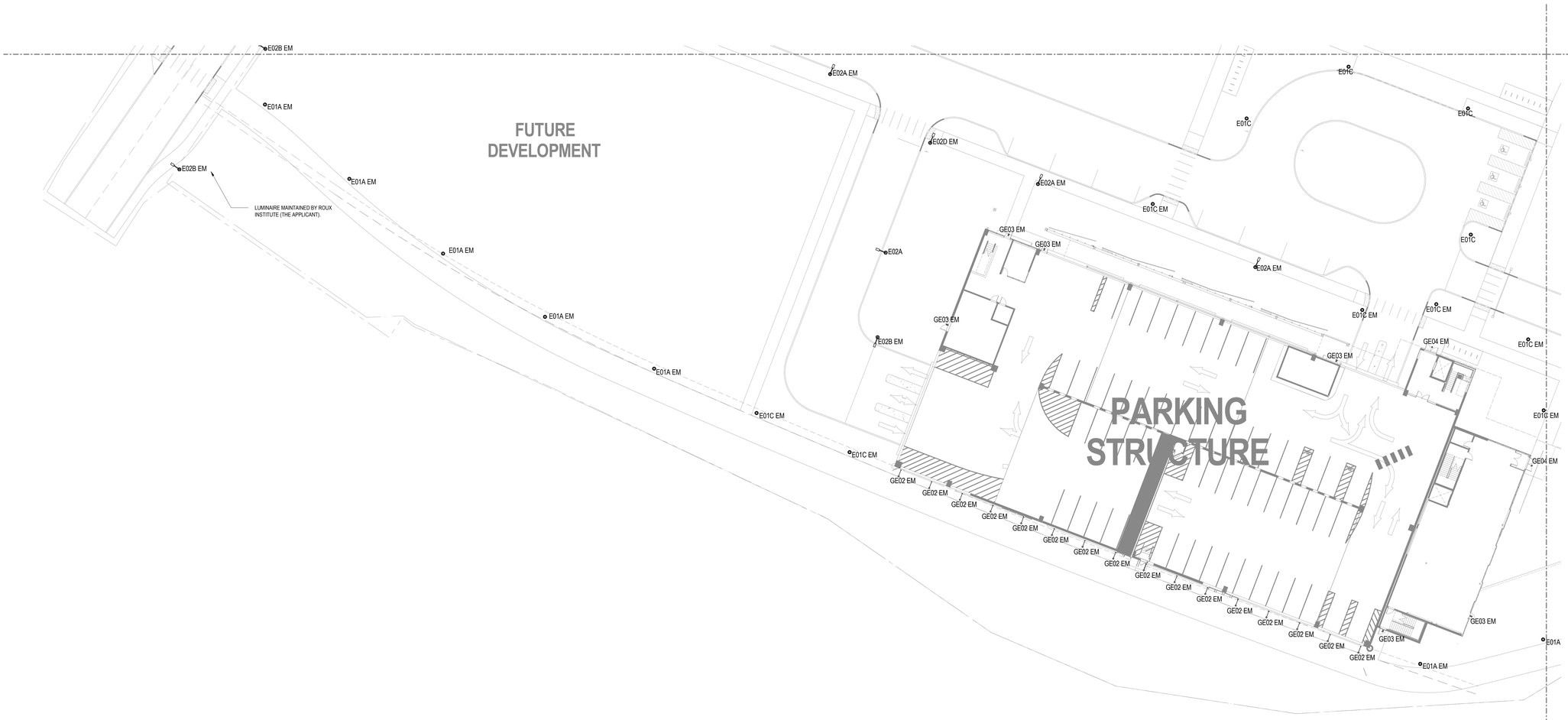
Job #	2202
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Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PLAN - PART C

E1.00C

5/16/2024 5:19:07 PM

GENERAL NOTES:
1. ALL CIRCUITS IN THIS AREA TO BE SERVED BY PANEL L1S1H1.



1 SITE LIGHTING PLAN - PART D
1" = 20'-0"

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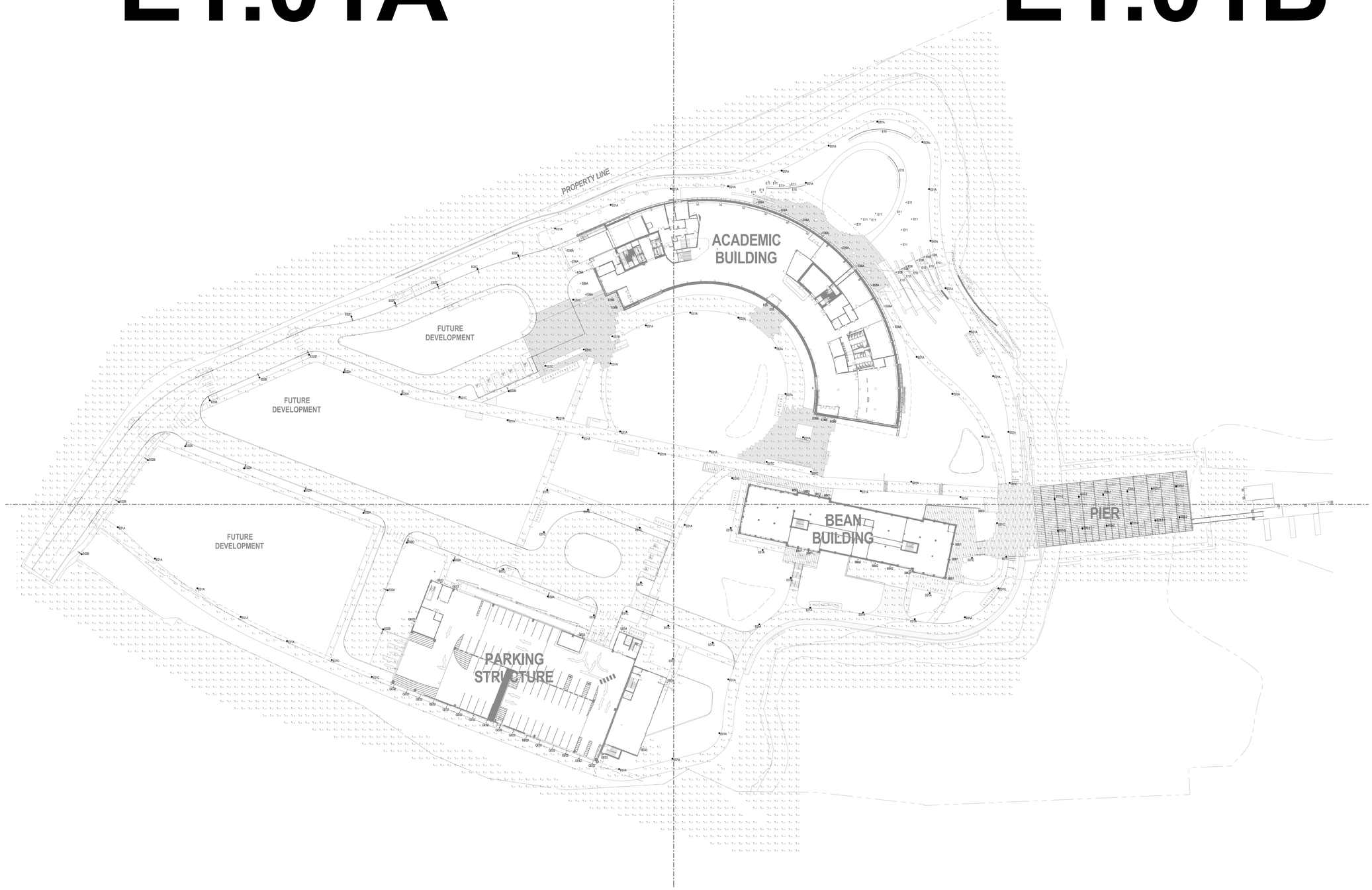
Drawing Title
SITE LIGHTING PLAN - PART D

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E1.01A

E1.01B



E1.01D

E1.01C

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Drawing Title
SITE LIGHTING PHOTOMETRIC KEY PLAN

E1.01

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The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)
Chapter 12 - Site Lighting Standards

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.
This project is a commercial use (not residential, not industrial), and the standards for commercial applications have been applied in all cases.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Site Lighting
- Uniformity: shall not exceed 20:1
- Illumination levels: Min 0.2 (fc), Max 5.0 (fc), Ave 1.25 (fc). Refer to table for actual calculated values for this site, compliant with Maximum and Minimum values. Average illuminance as report in the table.

12.3..3 Lumens:
- No fixture shall exceed 20,000 lumens (± 3%).
Pathways:
- Pathways on this site are mixed-use for pedestrians and cyclists, and illuminated in a consistent manner with pole lights similar in height and lumen output as the X-8B used along Trails/Waterfront (Commercial/Thames Street).
- Handrail lighting provided by E09 lights are recessed into the handrails aimed down at the stairs, and emit no uplight.
- All Pathway poles (Type E01 series) are full-cut off with no uplight distribution.
Residential/ Commercial Pole at 20': 15,000 lumens Maximum Lumens allowed will apply to E02 Series and E03 pole lights for roadway, vehicular drive aisles, and area lighting at the pier.
- E02 and E03 series pole lights are full-cut off with no uplight distribution.

Building Entrance: 3,500 lumens Maximum Lumens allowed will apply to E05 and E06 Series.

12.3.4 Light Trespass: The maximum illumination level at a property line shall not exceed 1.0 (fc) as all site boundaries are non-sensitive areas.

12.3.5 Color Temperature: All exterior lights shall be 3000K.

12.3.6 Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.

12.3.8 Fixture Height:
- Building Mounted/ Entrances: below the roof eave and not to exceed 20 feet, whichever is lower. As only exceptions, E06B will be mounted under the lowest point of the building canopy, at 32ft.
- All the light poles respect the Residential/Commercial Pole height provision (Light sources on Poles at or below 20ft) per the table in 12.3.3.

All site surface parking spaces are considered within the full context of the site lighting and the site illumination standards, and are not considered as separate parking lots for purpose of this site, as parking spaces are adjacent to exit discharge pathways and/or drive-aisles for vehicles and mixed-use pedestrian/cyclist pathways.

12.5.2 ARCHITECTURAL AND SPECIALTY LIGHTING AND UPLIGHTING
- For accent lighting of the Landscape, E11 fixture will be installed upward and aimed on the trees.
- E11 complies with lumen output limit per accent feature (maximum of 2 luminaires per tree to be illuminated), is fully shielded from view off-site, and uses a narrow cone of light for the purpose of confining the light to the object, and mounted within 1ft of the ground.
- Linear tape light fixtures (BB03 and E10) and are installed aimed at the ground and integrated into an architectural details, to eliminate the possibility of uplight, and used only for landscape features as permitted by 14.5.4F2b of the Land Use Code.

Projected hours of use: Sunset to Sunrise. From one hour after close of business until 1 hour before business opening, general site illuminance levels will be dimmed to reduced output.
- All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.
Distance to nearest property line per fixture:
- E01 series: 25ft
- E02 series: 25ft
- E02 series along Sherwood Frontage: 1ft
- E03: no adjacent property (at pier)
- All other luminaires are not adjacent to other properties and do not contribute to illuminance values beyond the property.

The City of Portland Technical Manual - Section 10 (Adopted 3/26/19; Rev. 11/22/22)
Chapter 10 - Municipal Street Lighting Standards
Lighting for Sherwood Street shall comply with the light level requirements in the table in 10.2.1, for Local/Minor Street Classification, with a 0.9 minimum average footcandles, and maximum pole spacing less than 130'.

Luminaire Schedule
Scene: Normal

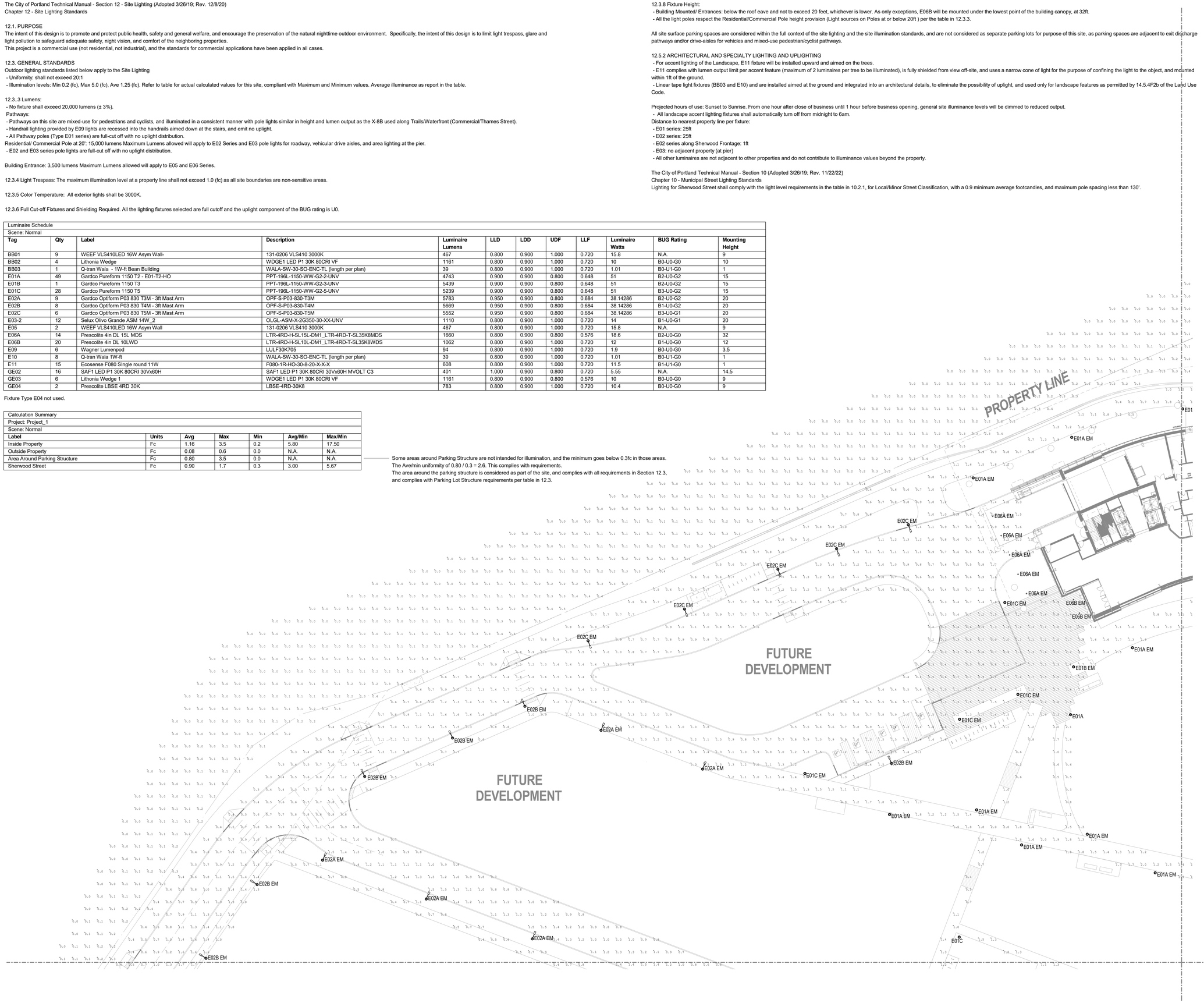
Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	BUG Rating	Mounting Height
BB01	9	WEEF VLS410LED 16W Asym Wall-	131-0206 VLS410 3000K	467	0.800	0.900	1.000	0.720	15.8	N.A.	9
BB02	4	Lithonia Wedge	WDGE1 LED P1 30K 80CRI VF	1161	0.800	0.900	1.000	0.720	10	B0-U0-G0	10
BB03	1	Q-tran Wala - 1W-ft Bean Building	WALA-SW-30-SO-ENC-TL (length per plan)	39	0.800	0.900	1.000	0.720	1.01	B0-U1-G0	1
E01A	49	Gardco Pureform 1150 T2 - E01-T2-HO	PPT-196L-1150-WW-G2-2-UNV	4743	0.900	0.900	0.800	0.648	51	B2-U0-G2	15
E01B	1	Gardco Pureform 1150 T3	PPT-196L-1150-WW-G2-3-UNV	5439	0.900	0.900	0.800	0.648	51	B2-U0-G2	15
E01C	28	Gardco Pureform 1150 T5	PPT-196L-1150-WW-G2-5-UNV	5239	0.900	0.900	0.800	0.648	51	B3-U0-G2	15
E02A	9	Gardco Optiform P03 830 T3M - 3ft Mast Arm	OPF-S-P03-830-T3M	5783	0.950	0.900	0.800	0.684	38.14286	B2-U0-G2	20
E02B	8	Gardco Optiform P03 830 T4M - 3ft Mast Arm	OPF-S-P03-830-T4M	5669	0.950	0.900	0.800	0.684	38.14286	B1-U0-G2	20
E02C	6	Gardco Optiform P03 830 T5M - 3ft Mast Arm	OPF-S-P03-830-T5M	5552	0.950	0.900	0.800	0.684	38.14286	B3-U0-G1	20
E03-2	12	Selux Olivo Grande ASM 14W_2	OLGL-ASM-X-2G350-30-XX-UNV	1110	0.800	0.900	1.000	0.720	14	B1-U0-G1	20
E05	2	WEEF VLS410LED 16W Asym Wall	131-0206 VLS410 3000K	467	0.800	0.900	1.000	0.720	15.8	N.A.	9
E06A	14	Prescolite 4in DL 15L MDS	LTR-4RD-H-SL15L-DM1_LTR-4RD-T-SL35K8MDS	1660	0.800	0.900	0.800	0.576	18.6	B2-U0-G0	32
E06B	20	Prescolite 4in DL 10LWD	LTR-4RD-H-SL10L-DM1_LTR-4RD-T-SL35K8WDS	1062	0.800	0.900	1.000	0.720	12	B1-U0-G0	12
E09	6	Wagner Lumenpod	LULF30K705	94	0.800	0.900	1.000	0.720	1.9	B0-U0-G0	3.5
E10	8	Q-tran Wala 1W-ft	WALA-SW-30-SO-ENC-TL (length per plan)	39	0.800	0.900	1.000	0.720	1.01	B0-U1-G0	1
E11	15	Ecosense F080 SIngle round 11W	F080-1R-HO-30-8-20-X-X-X	608	0.800	0.900	1.000	0.720	11.5	B1-U1-G0	1
GE02	16	SAF1 LED P1 30K 80CRI 30Vx60H	SAF1 LED P1 30K 80CRI 30Vx60H MVOLT C3	401	1.000	0.900	0.800	0.720	5.55	N.A.	14.5
GE03	6	Lithonia Wedge 1	WDGE1 LED P1 30K 80CRI VF	1161	0.800	0.900	0.800	0.576	10	B0-U0-G0	9
GE04	2	Prescolite LBSE 4RD 30K	LBSE-4RD-30K8	783	0.800	0.900	1.000	0.720	10.4	B0-U0-G0	9

Fixture Type E04 not used.

Calculation Summary
Project: Project_1
Scene: Normal

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Inside Property	Fc	1.16	3.5	0.2	5.80	17.50
Outside Property	Fc	0.08	0.6	0.0	N.A.	N.A.
Area Around Parking Structure	Fc	0.80	3.5	0.0	N.A.	N.A.
Sherwood Street	Fc	0.90	1.7	0.3	3.00	5.67

Some areas around Parking Structure are not intended for illumination, and the minimum goes below 0.3fc in those areas.
The Ave/min uniformity of 0.80 / 0.3 = 2.6. This complies with requirements.
The area around the parking structure is considered as part of the site, and complies with all requirements in Section 12.3, and complies with Parking Lot Structure requirements per table in 12.3.



1 SITE LIGHTING PHOTOMETRIC PLAN - PART A
1" = 20'-0"

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Number	Revision	Date

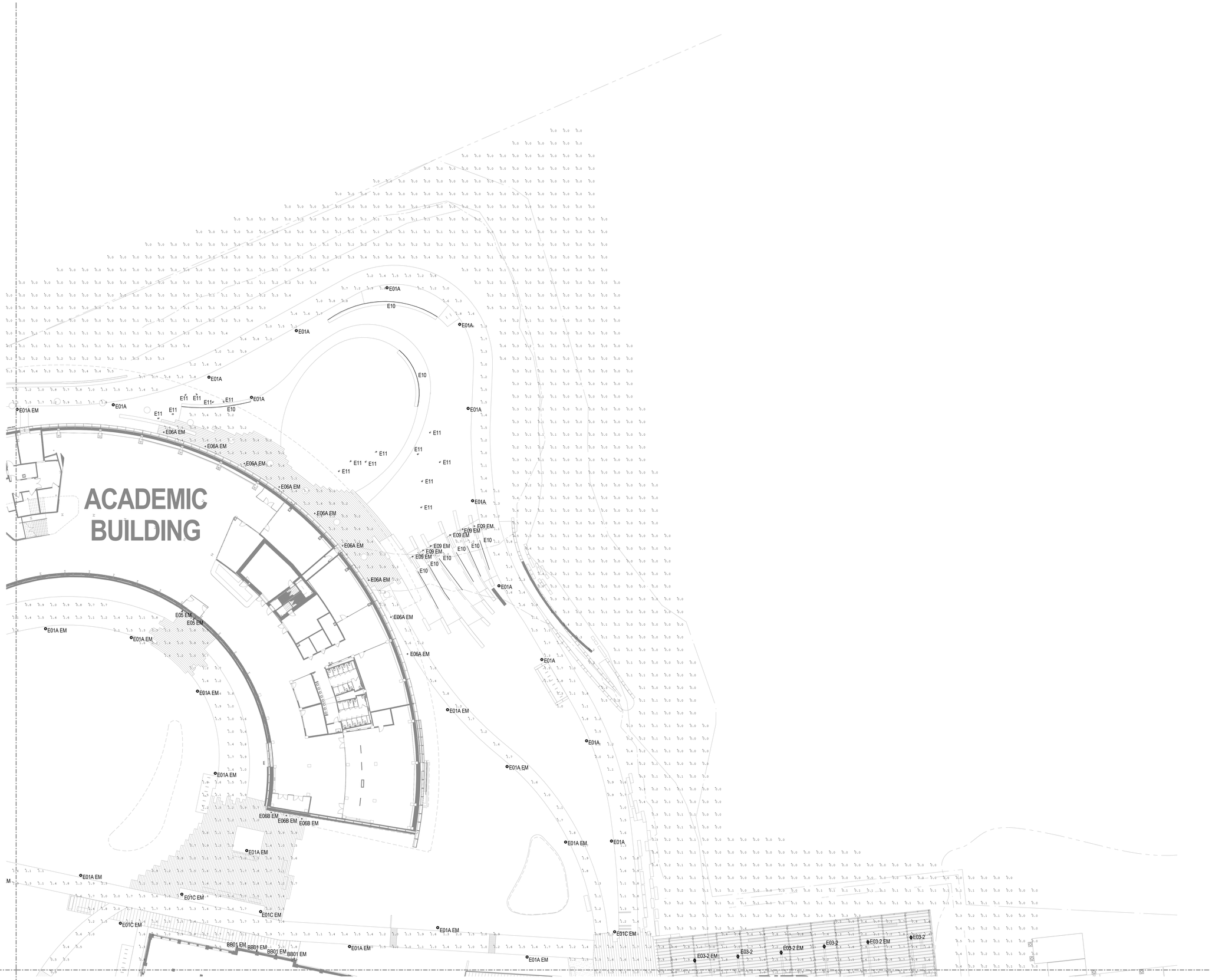
STATE OF MAINE JUN ASTOUR LICENSED PROFESSIONAL ENGINEER
2024-05-16
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	May 17, 2024
Scale	As indicated

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART A

E1.01A

5/16/2024 5:19:24 PM



1 SITE LIGHTING PHOTOMETRIC PLAN - PART B
1" = 20'-0"

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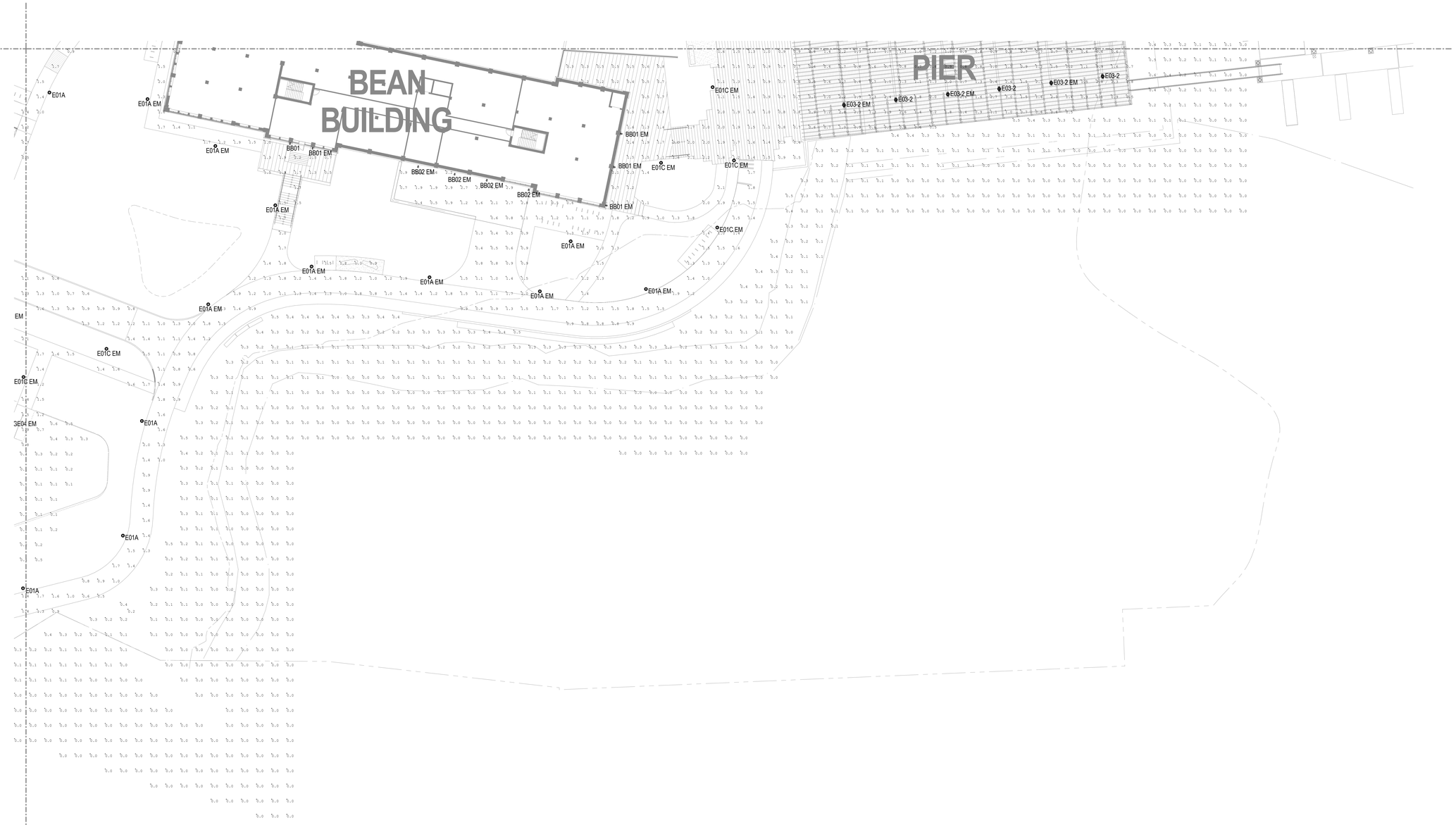
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	May 17, 2024
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART B

E1.01B

5/16/2024 5:19:20 PM



1 SITE LIGHTING PHOTOMETRIC PLAN - PART C
1" = 20'-0"

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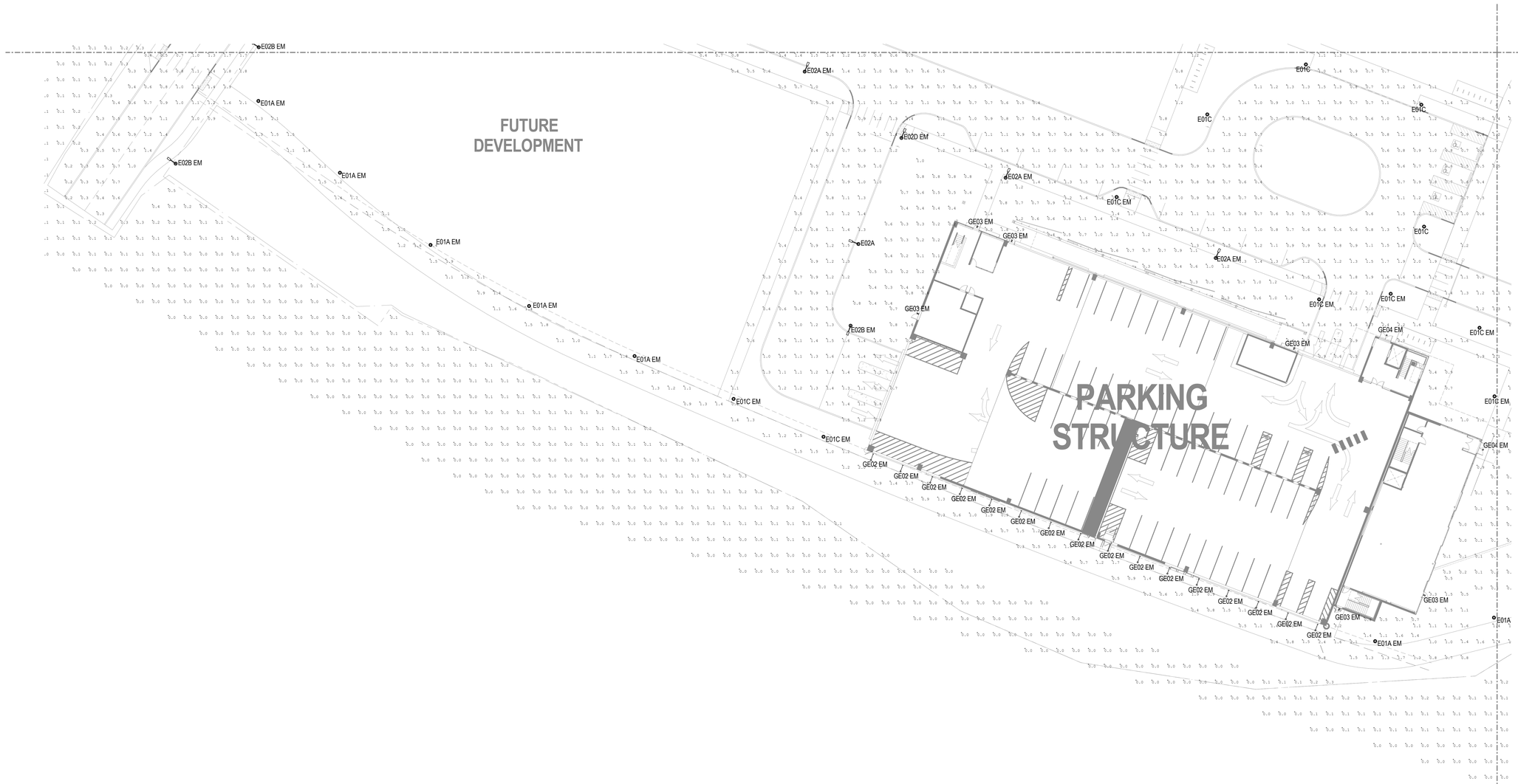
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	May 17, 2024
Scale	1" = 20'-0"

Drawing Title
SITE LIGHTING PHOTOMETRIC PLAN - PART C

E1.01C

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1 SITE LIGHTING PHOTOMETRIC PLAN - PART D
1" = 20'-0"

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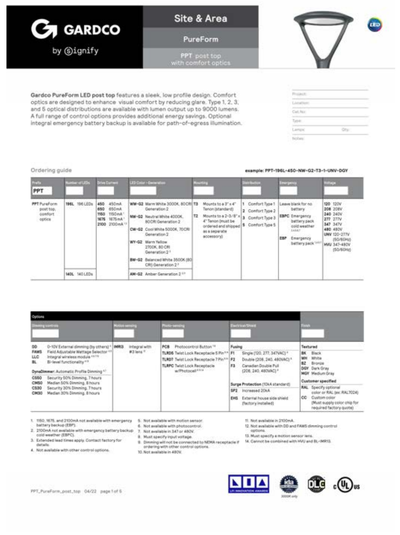
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Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	May 17, 2024
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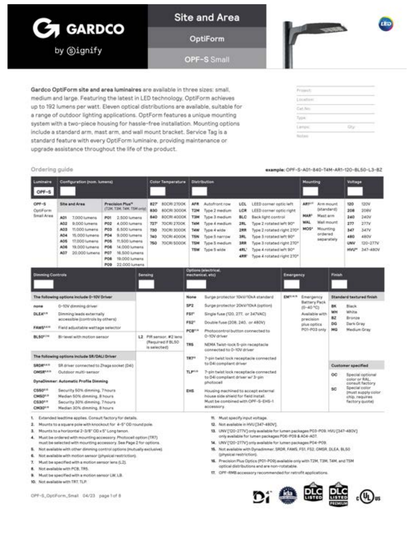
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SITE LIGHTING PHOTOMETRIC PLAN - PART D

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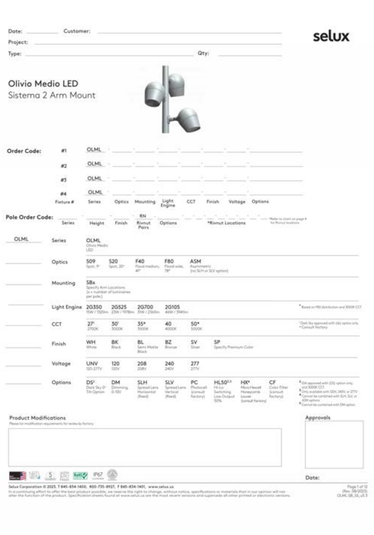
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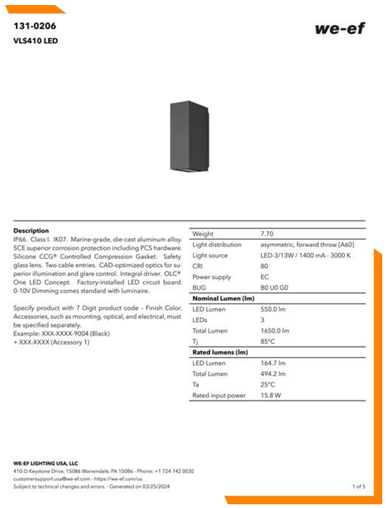
E01 SERIES



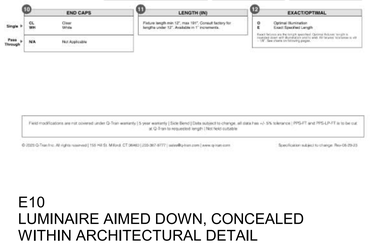
E02 SERIES



E03



E05



E06 SERIES



E07
LUMINAIRE AIMED DOWN, WITH
SHIELDING SNOOT ACCESSORY



E08

E09

E10
LUMINAIRE AIMED DOWN, CONCEALED
WITHIN ARCHITECTURAL DETAIL

E11
LANDSCAPE ACCENT UPLIGHT WITH
SHIELDING SNOOT ACCESSORY

EXTERIOR LUMINAIRES FOR LRC ACADEMIC BUILDING AND SITE
ALL LUMINAIRES 3000K

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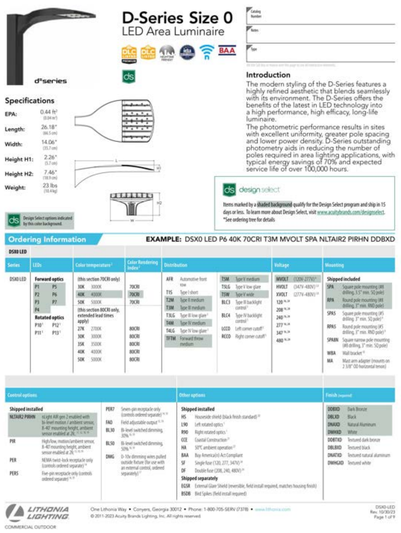
03/29/2024

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	March 22, 2024
Scale	NTS

Drawing Title
SITE LIGHTING SCHEDULES AND DETAILS SHEET 1

E1.02

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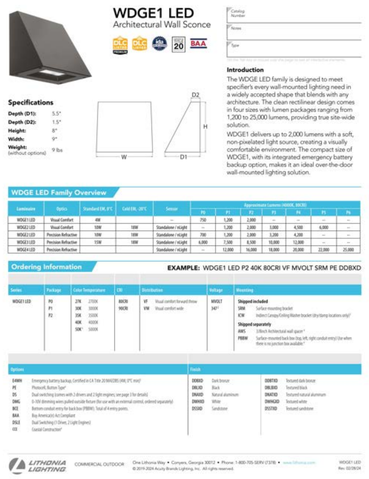


GE01 SERIES

EXTERIOR LIGHTING FOR PARKING GARAGE
ALL LUMINAIRES 3000K



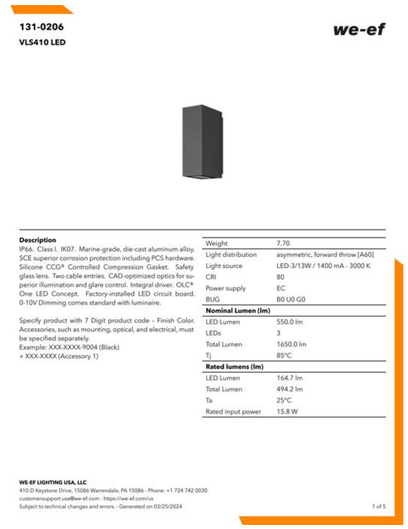
GE02 SERIES
LUMINAIRE AIMED DOWN, WITH
C3 SHIELD ACCESSORY



GE03 SERIES

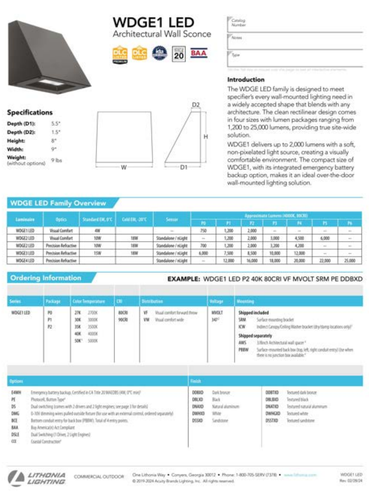


GE04 SERIES

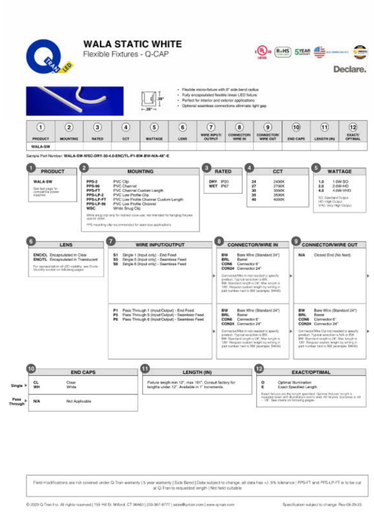


BB01

EXTERIOR LIGHTING FOR BEAN BUILDING
ALL LUMINAIRES 3000K



BB02



BB03
LUMINAIRE AIMED DOWN, CONCEALED WITHIN
ARCHITECTURAL DETAIL

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Number	Revision	Date

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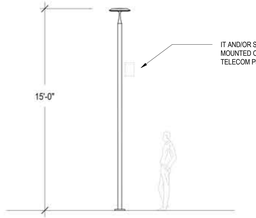
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	27 OCTOBER 2023
Scale	NTS

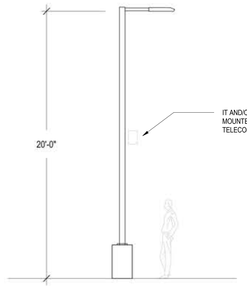
Drawing Title
SITE LIGHTING SCHEDULES AND DETAILS SHEET 2

E1.03

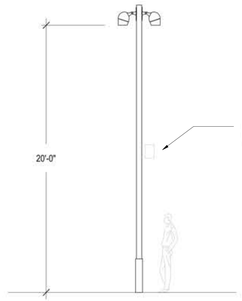
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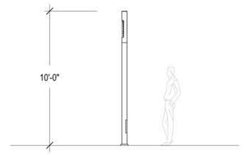
E01 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



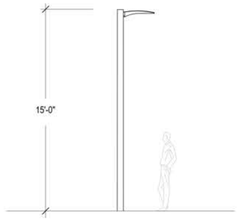
E02 SERIES POLE MOUNTED LUMINAIRES
SCALE: 1/4" = 1'-0"



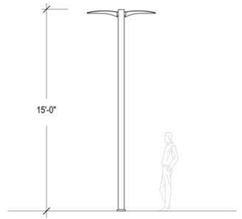
E03-2 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



E08 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



GE01 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"



GE01A-2 POLE MOUNTED LUMINAIRE
SCALE: 1/4" = 1'-0"

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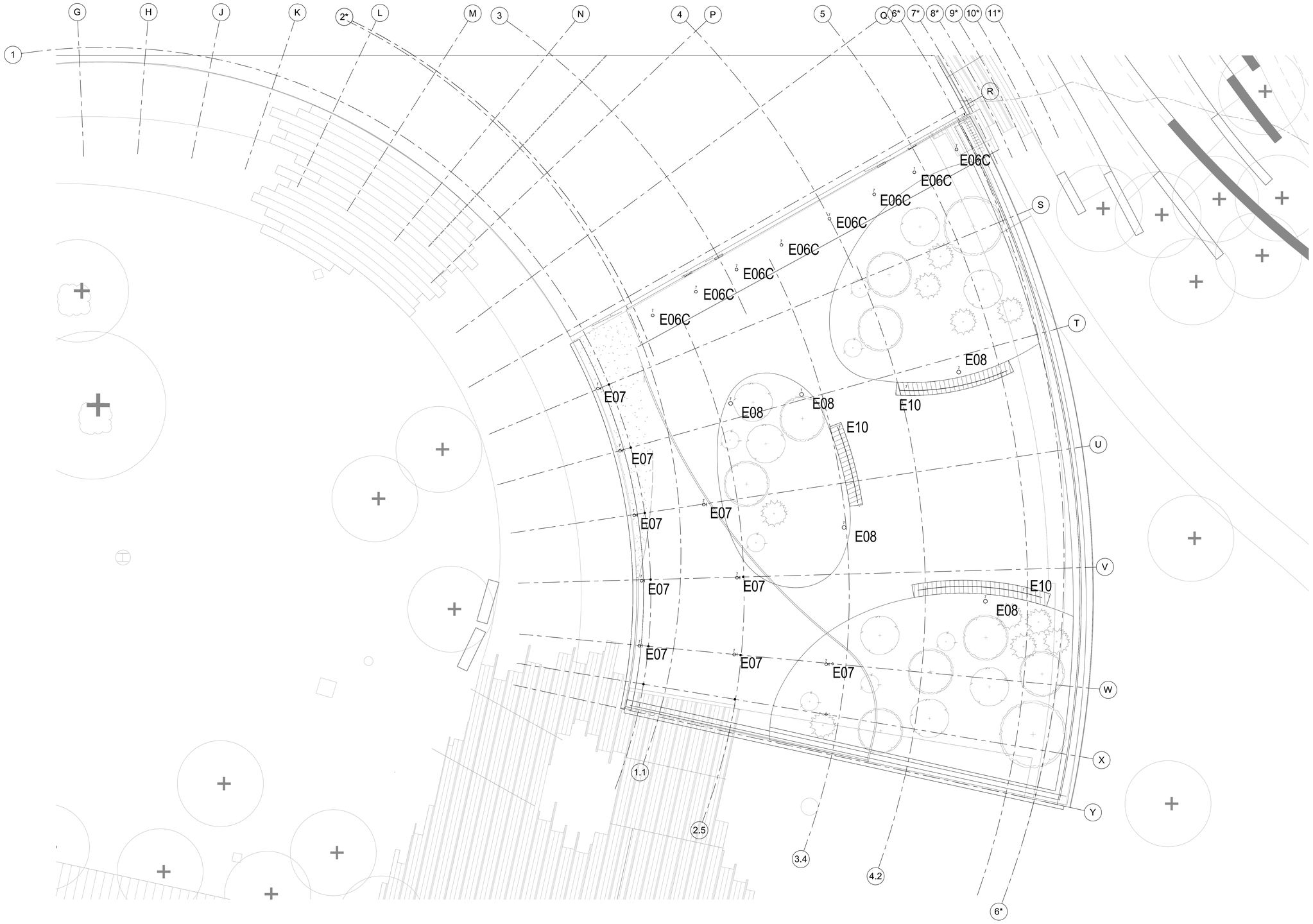
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03/29/2024

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	March 22, 2024
Scale	1/4" = 1'-0"

Drawing Title
SITE LIGHTING SCHEDULES AND DETAILS SHEET 3

E1.04

3/25/2024 12:49:01 PM



1 SITE LIGHTING - LEVEL 3 TERRACE
1/8" = 1'-0"

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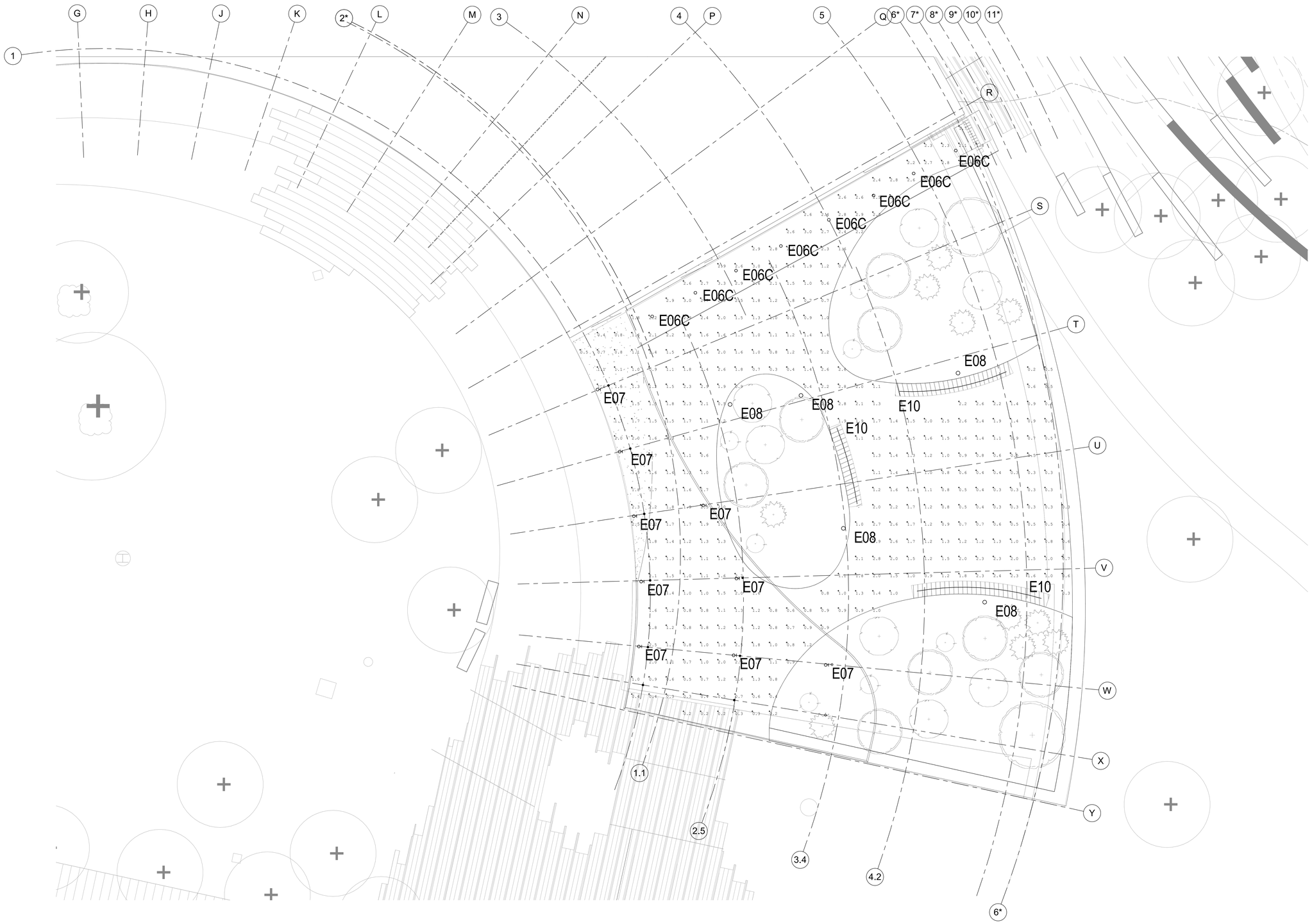
Stamp
03/29/2024

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	March 22, 2024
Scale	1/8" = 1'-0"

Drawing Title
SITE LIGHTING - LEVEL 3 TERRACE

E1.05

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The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Level 3 Terrace Lighting
• Uniformity: 20:1
• Illumination levels: Min 0.2 (fc), Max 5.0 (fc), Ave 1.25 (fc)
• No fixture shall exceed 20,000 lumens (± 3%).
- Path lighting: 1,500 lumens Maximum Lumens allowed will apply to E08.
- Building Entrance: 3,500 lumens Maximum Lumens allowed will apply to E06C
• Light Trespass: The maximum illumination level at a property line shall not exceed 0.1 (fc)
• Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.
Please note that the E08 is Night Sky friendly with minimum uplight component and U1 rating. The E10
linear tape light fixtures are installed aimed at the ground and integrated into an architectural detail, to eliminate the possibility of uplight. E07 is installed below the trellis structure aimed down.
• Fixture Height:
- All the light poles and bollards respect the height provision (Light sources on Poles at or below 20ft)

Projected hours of use: From 11pm or close of business until 6am general site illuminance levels will be dimmed. All landscape accent lighting fixtures shall automatically turn off from midnight to 6am.

Luminaire Schedule
Scene: Flood Light Scheme

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	Arrangement Watts	BUG Rating	Mounting Height
E06C	8	Prescolite LTR	LTR-4RD-H-SL06L-DMTW_LTR-4RD-T-SL2230TD9XWS	571	0.800	0.900	1.000	0.720	10	10	B1-U0-G0	11.454
E07	9	Ecosense WF 11W	F080-1R-HO-30-9-90-X-X-X	708	0.900	0.800	1.000	0.720	11.5	11.5	B1-U1-G0	9, 11, 12, 13.6
E08	5	Linea Black Selux S06 Asymmetric Wide 24W	LRBC-XX-AW-S06-30-XX-UNV	1479	0.900	0.950	1.000	0.855	24	24	B0-U1-G1	10
E10	1	Q-tran Wala 1W-ft	WALA-SW-WSC-DRY-30-SO-ENC-TL_1	39	0.800	0.900	1.000	0.720	1.01	1.01	B0-U1-G0	2

Calculation Summary
Scene: Flood Light Scheme

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Floor_Planar	Fc	1.46	3.3	0.2	7.30	16.50

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The Roux Institute

KeyPlan

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Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

ARUP
Arup US Inc
60 State Street
Boston MA 02109
617.864.2987
www.arup.com

SITE PLAN SUBMISSION

Number	Revision	Date

STATE OF MAINE
JOHN ANTHONY ROUIN
LICENSED PROFESSIONAL ENGINEER

03/29/2024

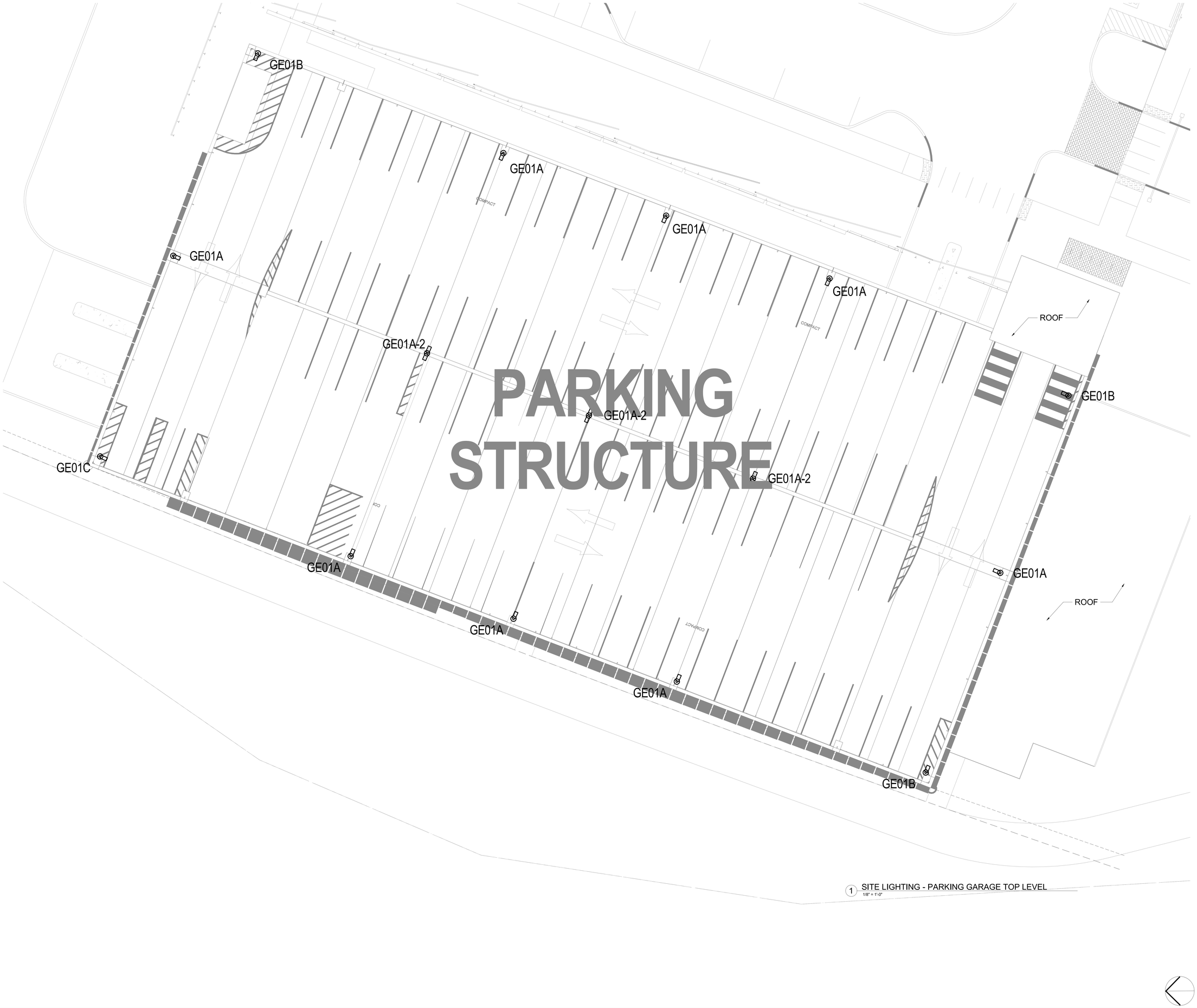
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS
Checked	JW
Date	March 22, 2024
Scale	1/8"=1'-0"

Drawing Title
SITE LIGHTING - LEVEL 3 TERRACE PHOTOMETRIC PLAN

E1.06

3/25/2024 12:49:34 PM



1 SITE LIGHTING - PARKING GARAGE TOP LEVEL
1/8" = 1'-0"

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Number	Revision	Date

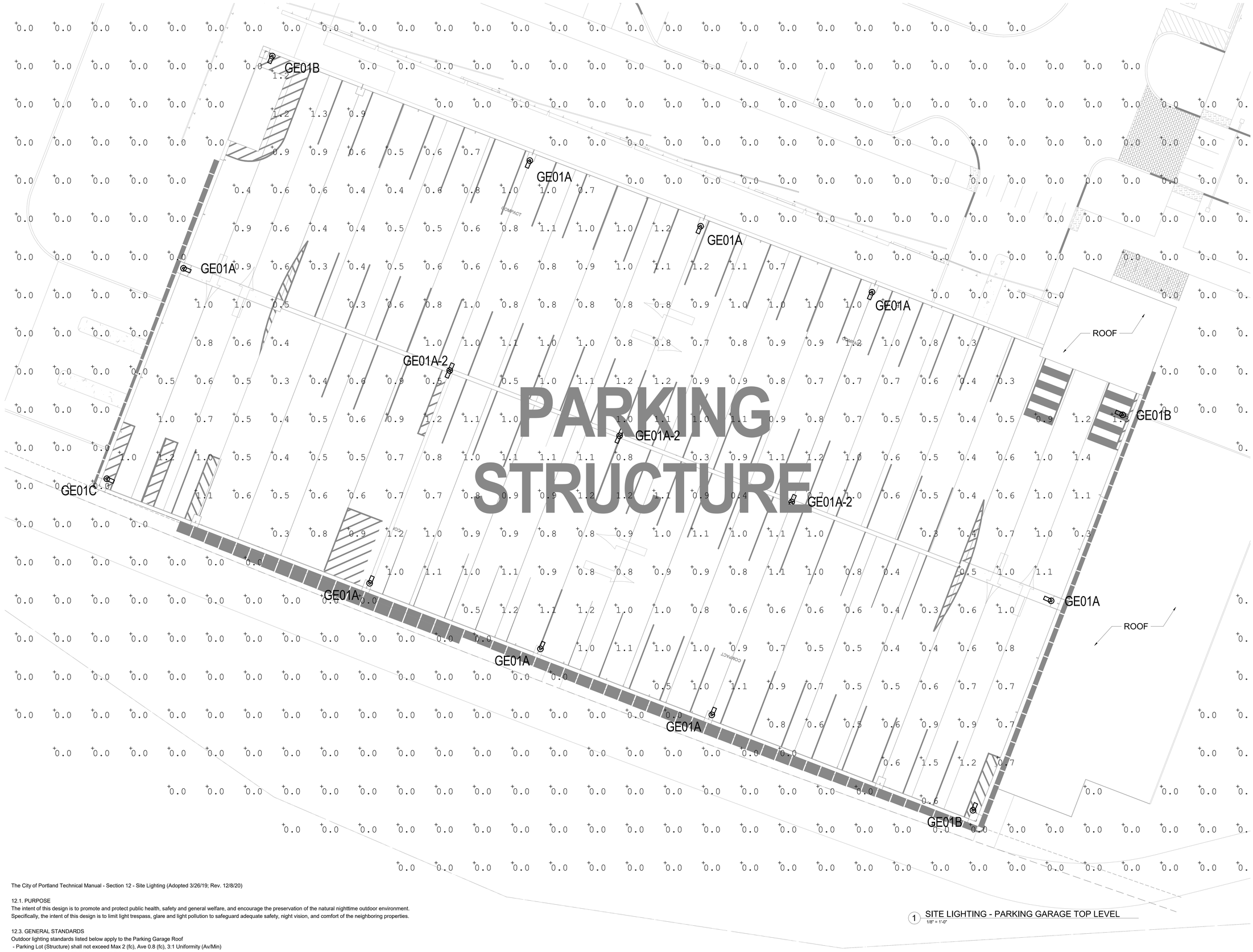
Stamp
03/29/2024

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	CS Checked JW
Date	March 22, 2024
Scale	1/8" = 1'-0"

Drawing Title
SITE LIGHTING - PARKING GARAGE TOP LEVEL

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1 SITE LIGHTING - PARKING GARAGE TOP LEVEL
1/8" = 1'-0"

The City of Portland Technical Manual - Section 12 - Site Lighting (Adopted 3/26/19; Rev. 12/8/20)

12.1. PURPOSE
The intent of this design is to promote and protect public health, safety and general welfare, and encourage the preservation of the natural nighttime outdoor environment. Specifically, the intent of this design is to limit light trespass, glare and light pollution to safeguard adequate safety, night vision, and comfort of the neighboring properties.

12.3. GENERAL STANDARDS
Outdoor lighting standards listed below apply to the Parking Garage Roof
- Parking Lot (Structure) shall not exceed Max 2 (fc), Ave 0.8 (fc), 3:1 Uniformity (Av/Min)
- No fixture shall exceed 20,000 lumens (± 3%).
  - Residential/ Commercial Pole at 20' : 15,000 lumens Maximum Lumens allowed will apply to GE01 Series.
  - Full Cut-off Fixtures and Shielding Required. All the lighting fixtures selected are full cutoff and the uplight component of the BUG rating is U0.
- Fixture Color Temperature: All lights shall be 3000K.
- Fixture Height:
  - All the light poles at the garage roof deck are 15ft height above floor and respect the height provision (Light sources on Poles at or below 20ft)

Projected hours of use:
- Sunset to Sunrise.
- From one hour after close of business until 1 hour before business opening, illuminance levels will be dimmed to 50%.

All calculation points on the parking structure are at the floor level. All calculation points outside of the parking structure are at ground level.
- Luminaires at top deck of parking structure contribute no light to the ground plane or beyond the site property.

Calculation Summary

Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Structure Ground Level	Fc	0.00	0.0	0.0	N.A.	N.A.
Parking Structure_Top	Fc	0.79	1.5	0.3	2.63	5.00

Luminaire Schedule

Tag	Qty	Label	Description	Luminaire Lumens	LLD	LDD	UDF	LLF	Luminaire Watts	BUG Rating
GE01A	14	D-Series Size 0 BLC4 EGS	DSX0 LED P1 30K 80CRI BLC4 EGS-F	1610	0.900	0.900	1.000	0.810	33.21	B0-U0-G1
GE01B	3	D-Series Size 0 RCCO EGS	DSX0 LED P1 30K 80CRI RCCO EGS-F Derated for 70% output	1844	0.900	0.900	0.700	0.567	33.21	B0-U0-G0
GE01C	1	D-Series Size 0 LCCO EGS	DSX0 LED P1 30K 80CRI LCCO EGS-F Derated for 70% output	1844	0.900	0.900	0.700	0.567	33.21	B0-U0-G0

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SITE PLAN SUBMISSION

Number	Revision	Date

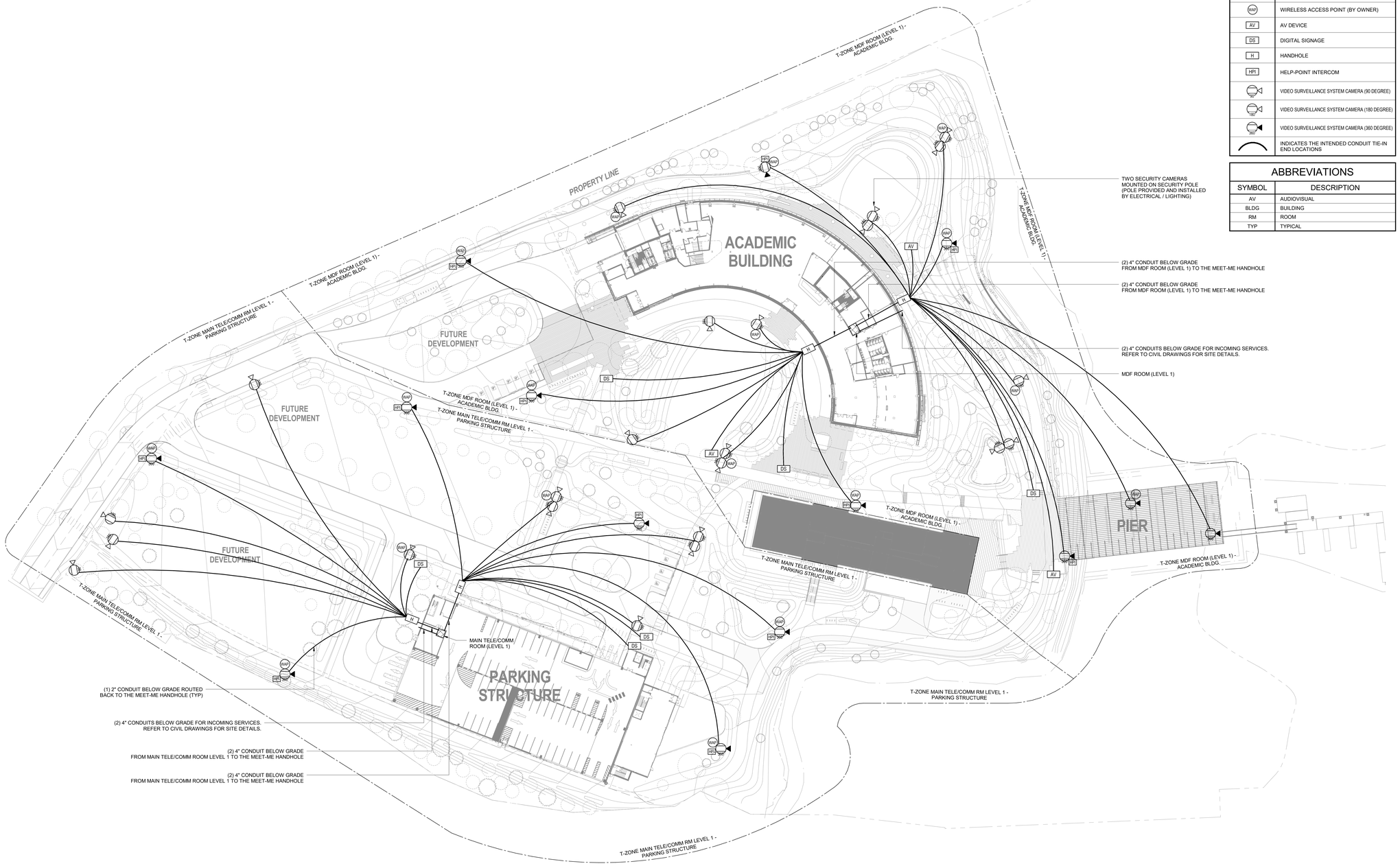
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Job # 2202
Project THE ROUX INSTITUTE
Drawn By CS Checked JW
Date March 22, 2024
Scale 1/8"=1'-0"

Drawing Title
SITE PHOTOMETRIC PLAN - PARKING GARAGE TOP LEVEL

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LEGEND:	
SYMBOL	DESCRIPTION
	TELECOM SPACES/ROOM OUTLINE
T-ZONE IT RM-#	TELECOM ZONE SERVED BY IT ROOM # = NUMBER/NAME
WAP	WIRELESS ACCESS POINT (BY OWNER)
AV	AV DEVICE
DS	DIGITAL SIGNAGE
H	HANDHOLE
HPI	HELP-POINT INTERCOM
90°	VIDEO SURVEILLANCE SYSTEM CAMERA (90 DEGREE)
180°	VIDEO SURVEILLANCE SYSTEM CAMERA (180 DEGREE)
360°	VIDEO SURVEILLANCE SYSTEM CAMERA (360 DEGREE)
	INDICATES THE INTENDED CONDUIT TIE-IN END LOCATIONS

ABBREVIATIONS	
SYMBOL	DESCRIPTION
AV	AUDIOVISUAL
BLDG	BUILDING
RM	ROOM
TYP	TYPICAL

NOTES:

1. REFER TO SECURITY DRAWINGS FOR SECURITY SYMBOL LEGEND DETAILS.
2. ALL EXTERIOR DEVICES SHOWN ON PLAN SHALL BE MOUNTED ON LIGHT POLES (POLES BY LIGHTING/ELECTRICAL), UNLESS:
   A. MOUNTED ON SECURITY POLE, AS INDICATED ON PLAN
   B. COLOCATED WITH HELP-POINT INTERCOM
3. BACKBONE AND INCOMING SERVICE PATHWAY DUCT BANKS ARE TO BE CONCRETE ENCASED, 4" PVC MATERIAL, USE MAXCELL FLEXIBLE FABRIC INNERDUCT SYSTEM EQUIPPED WITH PULL CORD.
4. HORIZONTAL DEVICE PATHWAYS ARE TO BE DIRECT BURIED CONDUITS OF UP TO 2" AS REQUIRED.
5. MINIMUM DEPTH FROM TOP OF THE CONDUIT MUST BE BURIED AT LEAST 24" BELOW THE GROUND SURFACE/FINISHED GRADE. IN AREAS WHERE FROST CONDITIONS COULD DAMAGE CABLES IN CONDUITS, AS A MINIMUM, THE DEPTH SHOULD BE BASED ON 50-YEAR FROST LINE.
6. THE MINIMUM BEND RADIUS FOR A CONDUIT THAT IS 2" OR LESS IN DIAMETER SHALL BE 6 TIMES THE INTERNAL CONDUIT DIAMETER. IF THE CONDUIT IS LARGER THAN 2" THE BEND RADIUS SHALL BE 10 TIMES THE INTERNAL DIAMETER OF THE CONDUIT.
7. PROVIDE A HANDHOLE IN CONDUIT RUNS SUCH THAT:
   A. MAXIMUM CONTINUOUS CONDUIT RUN SHALL NOT EXCEED 600FT
   B. NO MORE THAN TWO 90 DEGREE BENDS EXIST IN A CONTINUOUS CONDUIT RUN
   C. AT LEAST ONE HANDHOLE PER REVERSE (U-SHAPED) BEND IN CONDUIT RUN
   D. IT IS LOCATED IN THE STRAIGHT SECTION OF A CONDUIT AND NOT IN LIEU OF A BEND
   E. SIZE THE HANDHOLE ACCORDINGLY AND PER TIA STANDARDS
8. CONDUIT ENTRY INTO THE HANDHOLE SHALL BE SUCH THAT THE CONDUITS END ON OPPOSIDE ENDS OF THE HANDHOLE AND AT THE SAME ELEVATION, AND NOT ON THE SIDEWALLS

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Number	Revision	Date

STATE OF MAINE — CHRISTOPHER T. JOHNSON — 5201 — LICENSED PROFESSIONAL ENGINEER

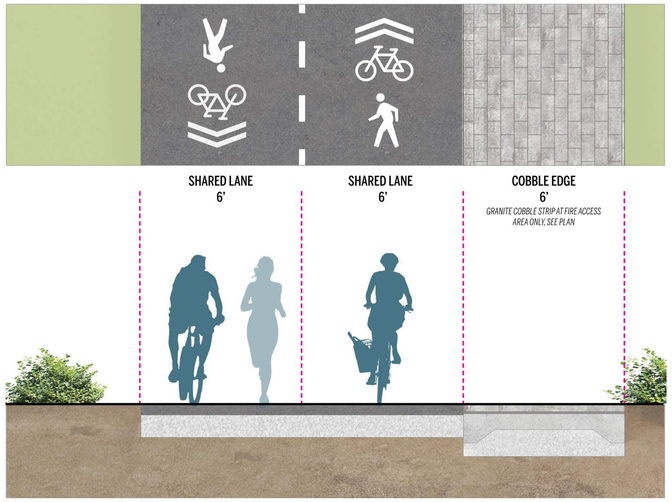
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Checked	CJT
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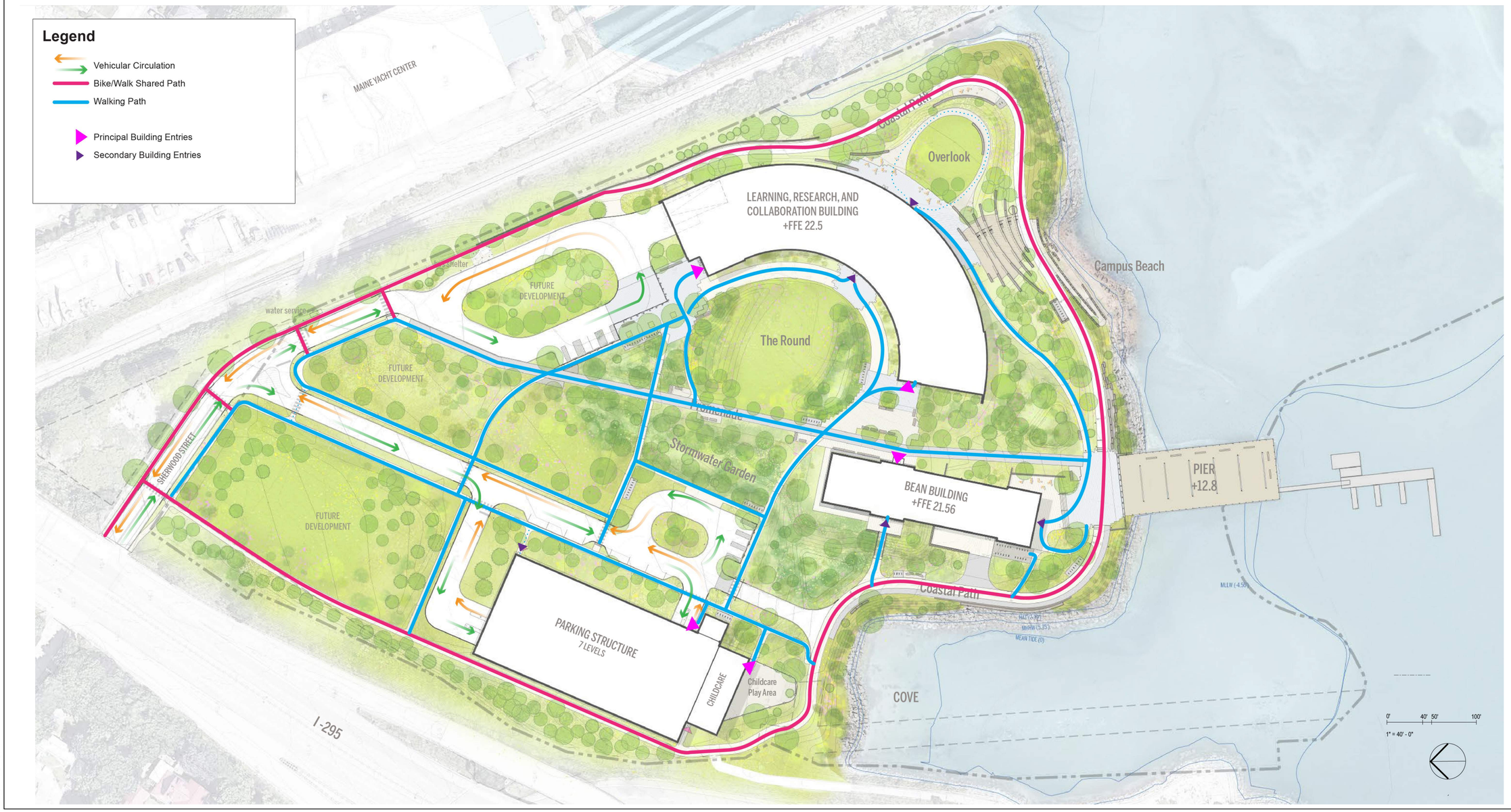
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TELECOM SITE PLAN

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BIKE PATH | TWO LANE SECTION



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B
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LAND-USE PERMIT SET

Number	Revision	Date

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Job #	2202
Project	THE ROUX INSTITUTE
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Checked	BC
Date	30 JANUARY 2024
Scale	

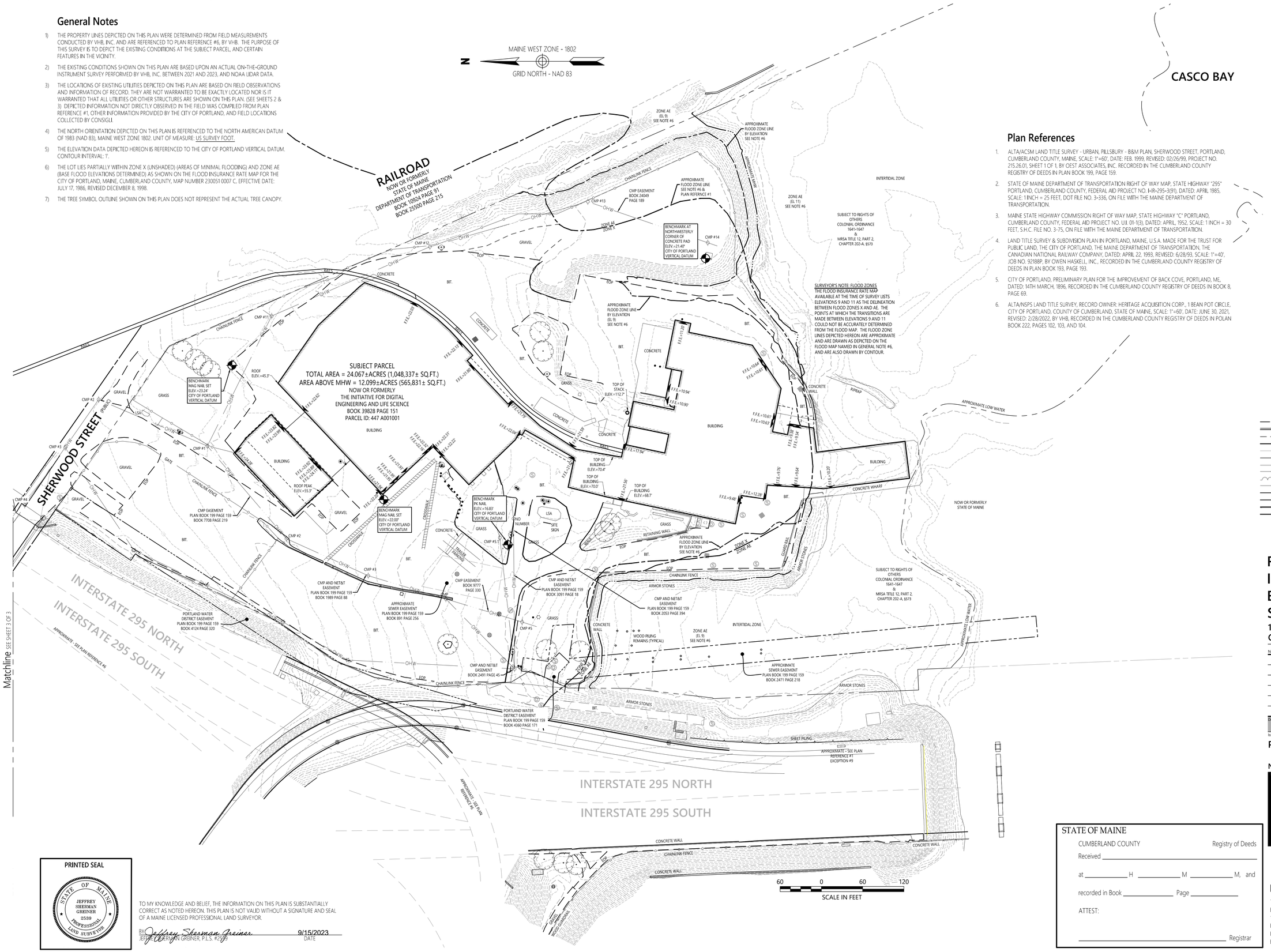
Drawing Title
Site Circulation Plan

Figure 3-17

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General Notes

1) THE PROPERTY LINES DEPICTED ON THIS PLAN WERE DETERMINED FROM FIELD MEASUREMENTS CONDUCTED BY VHB, INC. AND ARE REFERENCED TO PLAN REFERENCE #6, BY VHB. THE PURPOSE OF THIS SURVEY IS TO DEPICT THE EXISTING CONDITIONS AT THE SUBJECT PARCEL, AND CERTAIN FEATURES IN THE VICINITY.
2) THE EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VHB, INC. BETWEEN 2021 AND 2023, AND NOAA LIDAR DATA.
3) THE LOCATIONS OF EXISTING UTILITIES DEPICTED ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. (SEE SHEETS 2 & 3) DEPICTED INFORMATION NOT DIRECTLY OBSERVED IN THE FIELD WAS COMPILED FROM PLAN REFERENCE #1, OTHER INFORMATION PROVIDED BY THE CITY OF PORTLAND, AND FIELD LOCATIONS COLLECTED BY CONSIGLI.
4) THE NORTH ORIENTATION DEPICTED ON THIS PLAN IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), MAINE WEST ZONE 1802. UNIT OF MEASURE: US SURVEY FOOT.
5) THE ELEVATION DATA DEPICTED HEREON IS REFERENCED TO THE CITY OF PORTLAND VERTICAL DATUM. CONTOUR INTERVAL: 1'.
6) THE LOT LIES PARTIALLY WITHIN ZONE X (UNSHADED) (AREAS OF MINIMAL FLOODING) AND ZONE AE (BASE FLOOD ELEVATIONS DETERMINED) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF PORTLAND, MAINE, CUMBERLAND COUNTY, MAP NUMBER 230051 0007 C, EFFECTIVE DATE: JULY 17, 1986, REVISED DECEMBER 8, 1998.
7) THE TREE SYMBOL OUTLINE SHOWN ON THIS PLAN DOES NOT REPRESENT THE ACTUAL TREE CANOPY.



Plan References

1. ALTA/ACSM LAND TITLE SURVEY - URBAN, PILLSBURY - B&M PLAN, SHERWOOD STREET, PORTLAND, CUMBERLAND COUNTY, MAINE, SCALE: 1"=60', DATE: FEB. 1999, REVISED: 02/26/99, PROJECT NO. 215.26.01, SHEET 1 OF 1, BY OEST ASSOCIATES, INC. RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 199, PAGE 159.
2. STATE OF MAINE DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, STATE HIGHWAY "295" PORTLAND, CUMBERLAND COUNTY, FEDERAL AID PROJECT NO. I-IR-295-3(91), DATED: APRIL 1985, SCALE: 1 INCH = 25 FEET, DOT FILE NO. 3-336, ON FILE WITH THE MAINE DEPARTMENT OF TRANSPORTATION.
3. MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY MAP, STATE HIGHWAY "C" PORTLAND, CUMBERLAND COUNTY, FEDERAL AID PROJECT NO. U.I. 01-1(3), DATED: APRIL, 1952, SCALE: 1 INCH = 30 FEET, S.H.C. FILE NO. 3-75, ON FILE WITH THE MAINE DEPARTMENT OF TRANSPORTATION.
4. LAND TITLE SURVEY & SUBDIVISION PLAN IN PORTLAND, MAINE, U.S.A. MADE FOR THE TRUST FOR PUBLIC LAND, THE CITY OF PORTLAND, THE MAINE DEPARTMENT OF TRANSPORTATION, THE CANADIAN NATIONAL RAILWAY COMPANY, DATED: APRIL 22, 1993, REVISED: 6/28/93, SCALE: 1"=40', JOB NO. 92188P, BY OWEN HASKELL, INC., RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 193, PAGE 193.
5. CITY OF PORTLAND, PRELIMINARY PLAN FOR THE IMPROVEMENT OF BACK COVE, PORTLAND, ME, DATED: 14TH MARCH, 1896, RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 8, PAGE 69.
6. ALTA/NSPS LAND TITLE SURVEY, RECORD OWNER: HERITAGE ACQUISITION CORP., 1 BEAN POT CIRCLE, CITY OF PORTLAND, COUNTY OF CUMBERLAND, STATE OF MAINE, SCALE: 1"=60', DATE: JUNE 30, 2021, REVISED: 2/28/2022, BY VHB, RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN POLAN BOOK 222, PAGES 102, 103, AND 104.

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH□ HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- F.F.E.=45.27' FINISHED FLOOR ELEVATION
- BIT. BITUMINOUS
- LSA LANDSCAPED AREA
- EOP EDGE OF PAVEMENT
- CURB
- GRAVEL
- STREETLINE
- HIGHWAY LINE
- PROPERTY LINE
- GUARD RAIL
- CHAIN LINK FENCE
- TREELINE
- OHW OVERHEAD WIRE
- SEWER EASEMENT
- WATER EASEMENT
- FLOOD ZONE
- FLOOD CONTOUR

vhb.com
vhb
500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Record Owner: The Initiative for Digital Engineering and Life Science

1 Bean Pot Circle, City of Portland
County of Cumberland, State of Maine

No.	Revision	Date	Appvd.

Designed by | Checked by

Issued for: **Permitting** — Date: **Sept. 15, 2023**

Not Issued For Construction

Drawing Title: **Existing Conditions Survey**

Drawing Number: **Sv-1**

Sheet 1 of 3

Project Number: **58570.00**

Record Owner

THE INITIATIVE FOR DIGITAL
ENGINEERING AND LIFE SCIENCE
100 COMMERCIAL STREET
PORTLAND, MAINE
PARCEL ID: 447 A001001
BOOK 39828 PAGE 151

PRINTED SEAL

STATE OF MAINE
JEFFREY SHERMAN GREINER
2539
PROFESSIONAL LAND SURVEYOR

TO MY KNOWLEDGE AND BELIEF, THE INFORMATION ON THIS PLAN IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS PLAN IS NOT VALID WITHOUT A SIGNATURE AND SEAL OF A MAINE LICENSED PROFESSIONAL LAND SURVEYOR.

BY Jeffrey Sherman Greiner 9/15/2023
JEFFREY SHERMAN GREINER, P.L.S. #2539 DATE

STATE OF MAINE
CUMBERLAND COUNTY Registry of Deeds
Received _____
at _____ H _____ M _____ M, and
recorded in Book _____ Page _____
ATTEST:
_____ Registrar

Saved: Friday, September 15, 2023 3:07:40 PM JGREINER Plotted: Friday, September 15, 2023 3:36:22 PM Jeffrey Greiner

N

MAINE WEST ZONE - 1802

GRID NORTH - NAD 83

General Notes

SEE SHEET 1 OF 3

Utility Notes

1) THE PURPOSE OF THIS PLAN IS TO COMPILE UTILITY LOCATIONS FROM VARIOUS SOURCES.
2) THE LOCATIONS OF EXISTING UTILITIES DEPICTED ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. DEPICTED INFORMATION NOT DIRECTLY OBSERVED IN THE FIELD WAS COMPILED FROM PLAN REFERENCE #1, OTHER INFORMATION PROVIDED BY THE CITY OF PORTLAND, AND FIELD LOCATIONS COLLECTED BY CONSIGLI.
3) THE NORTH ORIENTATION DEPICTED ON THIS PLAN IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), MAINE WEST ZONE 1802; UNIT OF MEASURE: US SURVEY FOOT.
4) THE ELEVATION DATA DEPICTED HEREON IS REFERENCED TO THE CITY OF PORTLAND VERTICAL DATUM. CONTOUR INTERVAL: 1'.

CASCO BAY

RAILROAD

SHERWOOD STREET (PUBLIC)

INTERSTATE 295 NORTH

INTERSTATE 295 SOUTH

CMP #2

CMP #3

CMP #4

CMP #5.1

CMP #10

CMP #11

CMP #12

CMP #13

CMP #14

RECORD SEWER LOCATION

TOP OF FRAME = 27.86'
INV A = 12.1' (18" *)
INV B = 16.8' (8" PVC)
INV C = 12.6' (12" *)
INV D = 12.1' (18" *)
(* PIPE MATERIAL NOT VISIBLE)

TOP OF FRAME = 17.82'
COVER NOT REMOVEABLE AT TIME OF SURVEY

APPROXIMATE SEE GENERAL NOTE #3

TOP OF FRAME = 14.9'
TOP OF PIPE = 11.3' (6" CAST?)
TOP OF SILT = 10.9'±
OTHER FEATURES NOT VISIBLE

TOP OF FRAME = 15.0'
INV = 11.4' (18" CMP)
TOP OF SILT = 10.4'±

TOP OF FRAME = 15.47'
FU = 7.0' (10" CLAY)

TOP OF FRAME = 14.65'

TOP OF FRAME = 11.33'
INV A = 6.19' (12" RCP)
INV B = 5.77' (18" RCP)
INV C = 5.71' (12" RCP)
INV D = 6.05' (15" CMP)

TOP OF FRAME = 15.52'
INV A = 4.80' (18" RCP)
INV B = 10.99' (15" CMP)
INV C = 4.48' (24" CMP)
INV D = 6.08' (12" RCP)

RECORD DRAINAGE LOCATION

TOP OF FRAME = 14.75'
INV A = 4.1' (*)
TOP OF WATER = -6.2'
(* PIPE SIZE & TYPE NOT OBSERVABLE)

FRAME DISLODGED FROM VAULT
TOP OF FRAME & INVERTS NOT MEASUREABLE

CONNECTION COULD NOT BE DETERMINED AT THE TIME OF SURVEY

RECORD SEWER LOCATION

TOP OF FRAME = 17.60'
FULL OF WATER
FEATURES NOT VISIBLE

APPROXIMATE RECORD WATERLINE LOCATION

12" WATER LINE

WATERLINE LOCATION BY CONSIGLI

APPROXIMATE RECORD WATERLINE LOCATION

12" WATER LINE

ASSUMED CONNECTION

TOP OF FRAME = 10.34'
INACCESSIBLE AT TIME OF SURVEY

TOP OF FRAME = 8.25'
INV A = 3.2' (8" PVC)
INV B = 3.4' (12" PVC)
INV C = 3.0 (8" PVC)

TOP OF FRAME = 9.63'
INV A = 4.1' (10" PVC)
INV B = 4.1' (10" PVC)
INV C = 3.8' (12" PVC)

TOP OF FRAME = 9.55'
INV A = 6.4' (6" PVC)
INV B = 6.4' (6" PVC)
SUMP = 3.4'

TOP OF FRAME = 9.3'
INV A = 4.4' (12" PVC)
INV B = 4.8' (6" PVC)
INV C = 4.7' (8" PVC)
INV D = 4.8' (6" PVC)

TOP OF FRAME = 9.30'
FU = 5.7' (6" PVC)

10" PVC

COOLING WATER OUTFALL

TOP OF FRAME = 9.12'
INV = 5.7' (12" PVC)

GAS LINE MARKED IN FIELD

TOP OF FRAME = 8.84'
INV A = 3.3' (12" PVC)
INV B = 5.0' (12" PVC)
INV C = 2.8 (12" PVC)

12" PVC

12" PVC

12" PVC

TOP OF FRAME = 8.41'
FU = 3.8' (12"PVC)

ASSUMED CONNECTION

12" PVC
INV = 1.5'

TOP OF FRAME = 8.71'
FU = 3.2' (12" PVC)

10" PVC
INV = 0.8'
CONNECTION COULD NOT BE DETERMINED AT THE TIME OF SURVEY

TOP OF FRAME = 11.21'
FU = 2.9' (12" PVC)

TOP OF FRAME = 15.00'
INACCESSIBLE AT TIME OF SURVEY

32" DIAMETER SMH
TOP OF FRAME = 11.15'
FU = 1.3' (12" PVC)

32" DIAMETER SMH
TOP OF FRAME = 11.26'
FU = -0.4' (12" PVC)

TOP OF FRAME = 11.13'
INV A = -0.9' (30" CMP)
INV B = -1.0 (30" CMP)

GAS GATE

30" CMP

28" CMP
INV = 3.6'

18" CMP

18" CMP
INV = 4.1'

18" CMP
INV = 4.3'

18" CMP
INV = 4.0'

TOP OF FRAME = 7.97'

TOP OF FRAME = 23.93'
INV A = 14.32" (18" RCP)
INV B = 14.47' (15" RCP)
INV C = 14.33" (18" RCP)

18" CONC
INV = 19.5'

18" CONC
INV = 7.9'

ASSUMED CONNECTION

60 0 60 120
SCALE IN FEET

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- OHW OVERHEAD WIRES
- SANITARY LINE
- W RECORD WATER LINE
- DRAINAGE
- G GAS LINE
- UNDERGROUND ELECTRIC
- W CONSIGLI WATER LINE
- E CONSIGLI ELECTRIC LINE
- S CONSIGLI SANITARY LINE

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2539
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Jeffrey Sherman Greiner

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County of Cumberland, State of Maine

No.	Revision	Date	Appvd.

Designed by | Checked by

Issued for
Permitting

Date
Sept. 15, 2023

Not Issued For Construction

Drawing Title
Existing Conditions Survey Utilities

Drawing Number
Sv-2

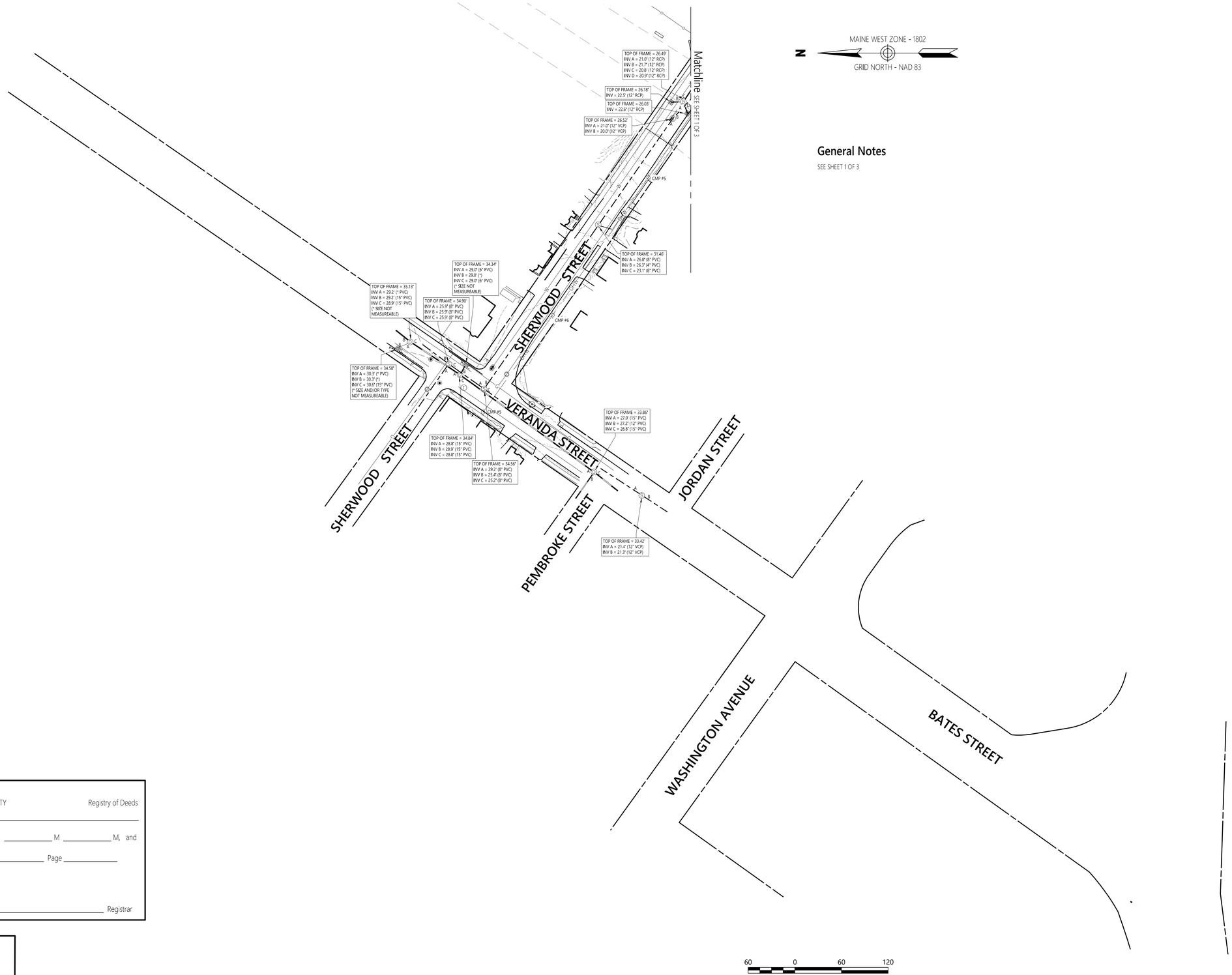
Sheet 2 of 3

Project Number
58570.00

Record Owner

THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCE
100 COMMERCIAL STREET
PORTLAND, MAINE
PARCEL ID: 447 A001001
BOOK 39828 PAGE 151

Saved: Friday, September 15, 2023 3:07:40 PM JGRENER Plotted: Friday, September 15, 2023 3:38:08 PM Jeffrey Greiner



N

MAINE WEST ZONE - 1802

GRID NORTH - NAD 83

General Notes

SEE SHEET 1 OF 3

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- BOLLARD w/LIGHT
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- CURB
- GRAVEL
- STREETLINE
- HIGHWAY LINE
- PROPERTY LINE
- GUARD RAIL
- CHAIN LINK FENCE
- TREELINE
- OHW — OVERHEAD WIRE
- SEWER EASEMENT
- WATER EASEMENT
- SANITARY LINE
- W — WATER LINE
- DRAINAGE
- G — GAS LINE
- UNDERGROUND ELECTRIC

60 0 60 120

SCALE IN FEET

STATE OF MAINE

CUMBERLAND COUNTY Registry of Deeds

Received _____

at _____ H _____ M _____ M, and

recorded in Book _____ Page _____

ATTEST:

_____ Registrar

PRINTED SEAL

STATE OF MAINE · JEFFREY SHERMAN GREINER · 10209 · PROFESSIONAL LAND SURVEYOR

Jeffrey Sherman Greiner

9/15/2023

vhb.com

vhb

500 Southborough Drive
Suite 105B
South Portland, ME 04106
207.889.3150

Record Owner: The Initiative for Digital Engineering and Life Science

1 Bean Pot Circle, City of Portland
County of Cumberland, State of Maine

No.	Revision	Date	Appvd.

Designed by | Checked by

Issued for: Permitting

Date: Sept. 15, 2023

Not Issued For Construction

Drawing Title: Existing Conditions Survey Off-Site Utilities

Drawing Number: Sv-3

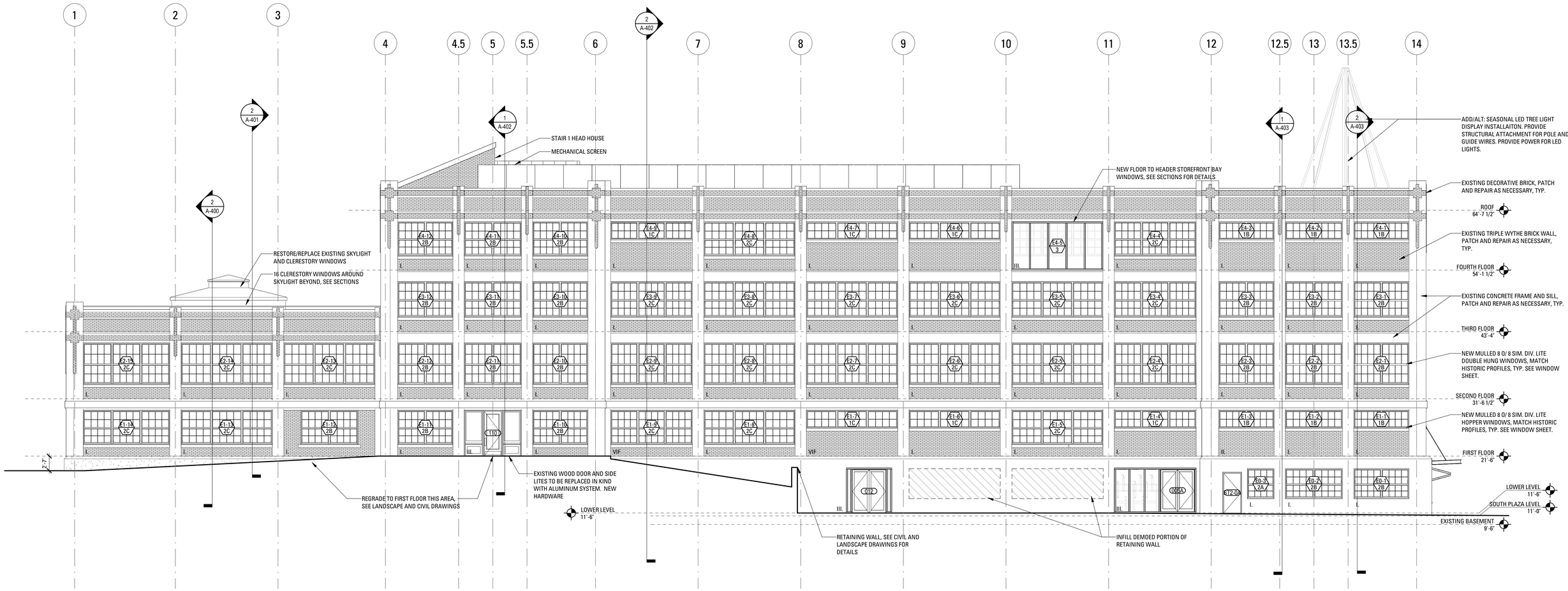
Sheet 3 of 3

Project Number: 58570.00

Record Owner

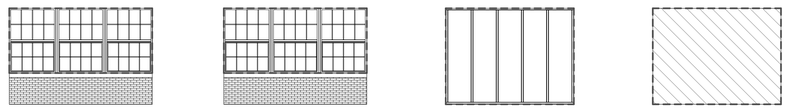
THE INITIATIVE FOR DIGITAL ENGINEERING AND LIFE SCIENCE
100 COMMERCIAL STREET
PORTLAND, MAINE
PARCEL ID: 447 A001001
BOOK 39828 PAGE 151

Saved: Friday, September 15, 2023 3:07:40 PM JGREINER Plotted: Friday, September 15, 2023 3:39:11 PM Jeffrey Greiner



1 WEST ELEVATION
1/8" = 1'-0"

INFILL TYPOLOGIES LEGEND



TYPE I.
NEW MULTI-PANE WINDOW IN EXISTING OPENING, MINOR REPAIRS TO INFILL

TYPE II.
NEW HISTORIC STYLE WINDOW, NEW CONCRETE SILL, NEW MASONRY INFILL

TYPE III.
NEW STOREFRONT WINDOWS FILLING OPENING

TYPE IV.
CONCRETE INFILL AT DEMOED PORTIONS OF FOUNDATION WALL

PROJECT NORTH
TRUE NORTH

REGISTERED ARCHITECT
ARC4420
STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

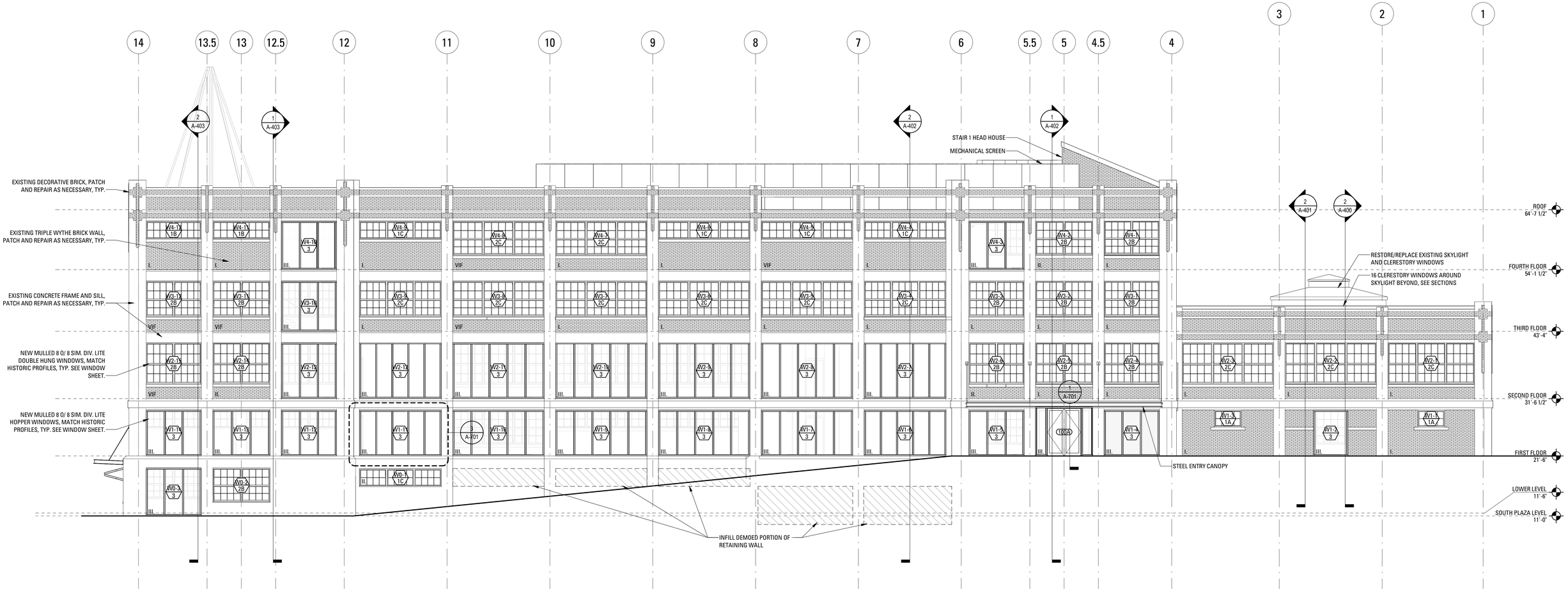
Northeastern University - IDEALS
Portland, ME 04103

OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

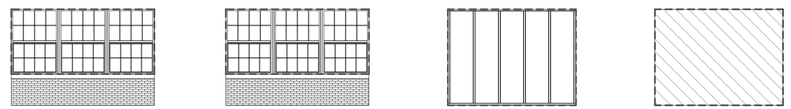
WEST ELEVATION

A-301



1 EAST ELEVATION
1/8" = 1'-0"

INFILL TYPOLOGIES LEGEND



TYPE I.
NEW MULTI-PANE WINDOW IN EXISTING OPENING, MINOR REPAIRS TO INFILL

TYPE II.
NEW HISTORIC STYLE WINDOW, NEW CONCRETE SILL, NEW MASONRY INFILL

TYPE III.
NEW STOREFRONT WINDOWS FILLING OPENING

TYPE IV.
CONCRETE INFILL AT DEMOED PORTIONS OF FOUNDATION WALL

PROJECT NORTH
TRUE NORTH

REGISTERED ARCHITECT
Jason Vallancey
ARC4420
STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

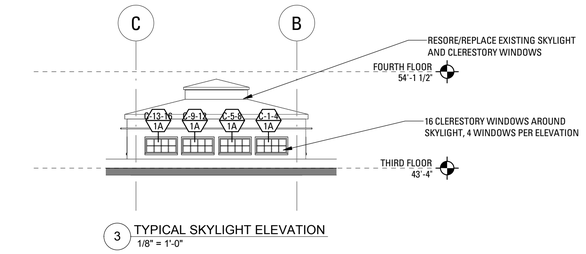
Northeastern University - IDEALS
Portland, ME 04103

OCTOBER 27, 2023 **LAND-USE PERMIT SET**

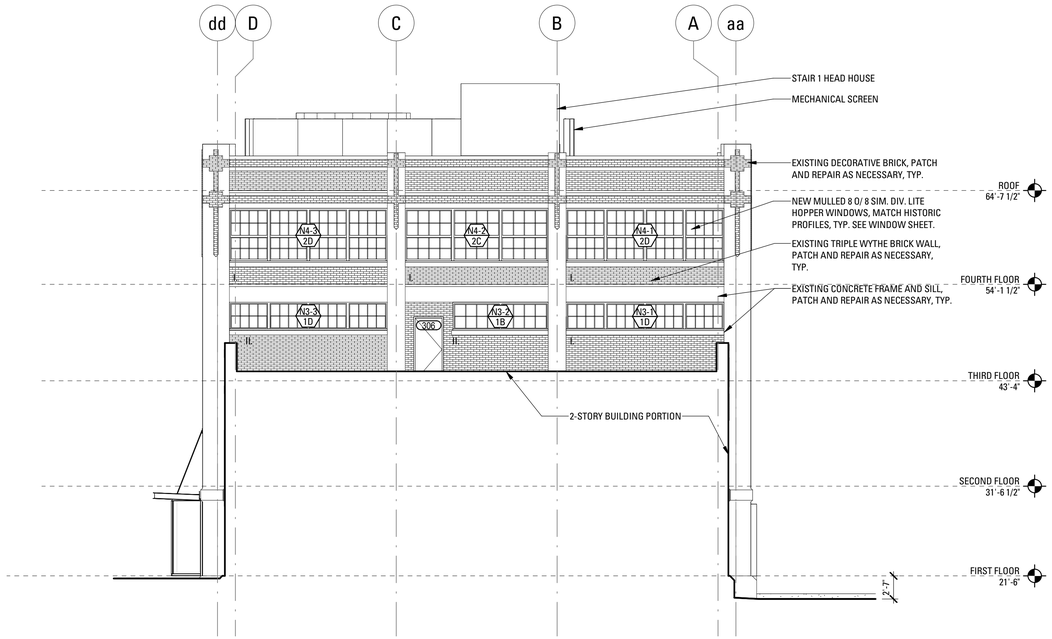
Rev.	Date	Revision Title

EAST ELEVATION

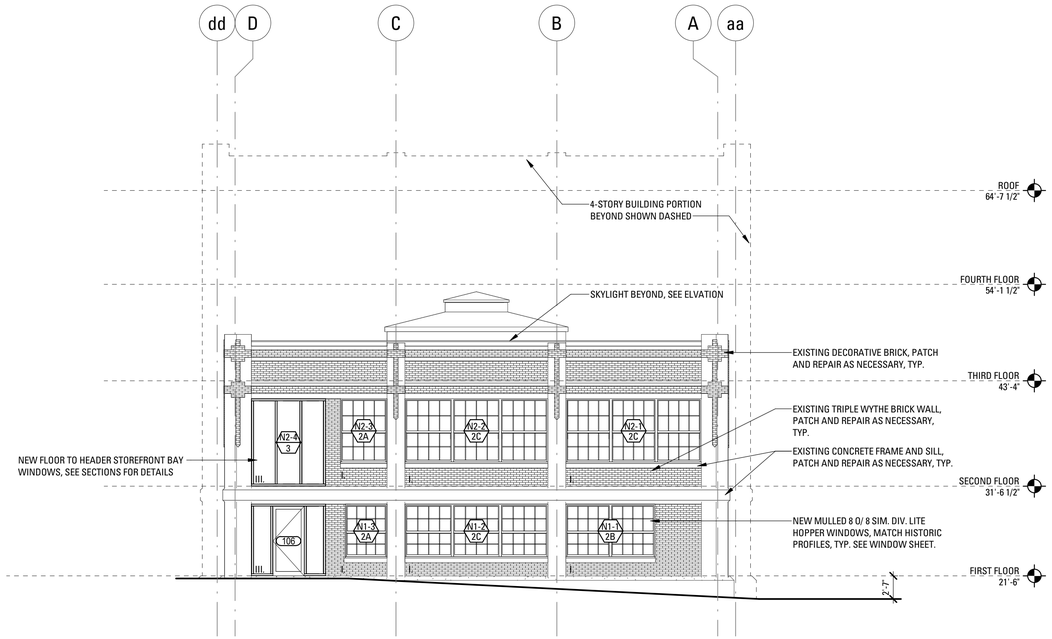
A-302



3 TYPICAL SKYLIGHT ELEVATION
1/8" = 1'-0"

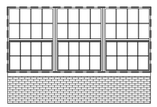


2 NORTH ELEVATION - UPPER FLOORS
1/8" = 1'-0"

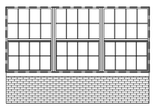


1 NORTH ELEVATION - LOWER FLOORS
1/8" = 1'-0"

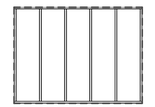
INFILL TYPOLOGIES LEGEND



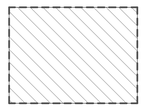
TYPE I.
NEW MULTI-PANE WINDOW IN EXISTING OPENING, MINOR REPAIRS TO INFILL



TYPE II.
NEW HISTORIC STYLE WINDOW, NEW CONCRETE SILL, NEW MASONRY INFILL



TYPE III.
NEW STOREFRONT WINDOWS FILLING OPENING



TYPE IV.
CONCRETE INFILL AT DEMOED PORTIONS OF FOUNDATION WALL

PROJECT NORTH
TRUE NORTH



Roux Institute Bean Building
Project # 22.031

Northeastern University - IDEALS
Portland, ME 04103

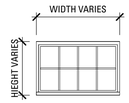
OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

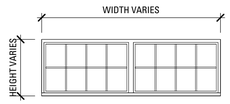
NORTH ELEVATION

A-303

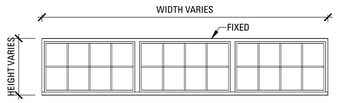
WINDOW TYPES



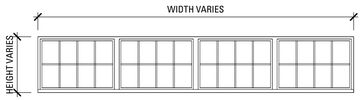
TYPE 1A - ONE WINDOW



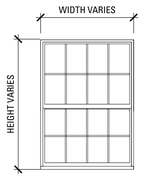
TYPE 1B - TWO WINDOWS



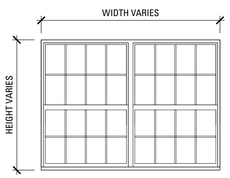
TYPE 1C - THREE WINDOWS



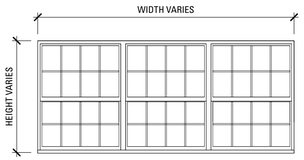
TYPE 1D - FOUR WINDOWS



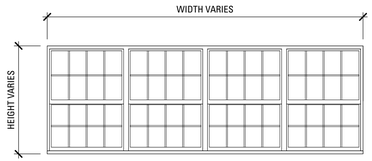
TYPE 2A - ONE WINDOW



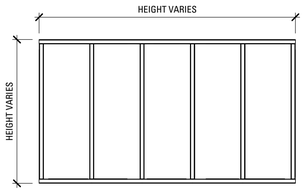
TYPE 2B - TWO WINDOWS



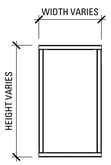
TYPE 2C - THREE WINDOWS



TYPE 2D - FOUR WINDOWS



TYPE 3 - INSET STOREFRONT WINDOW

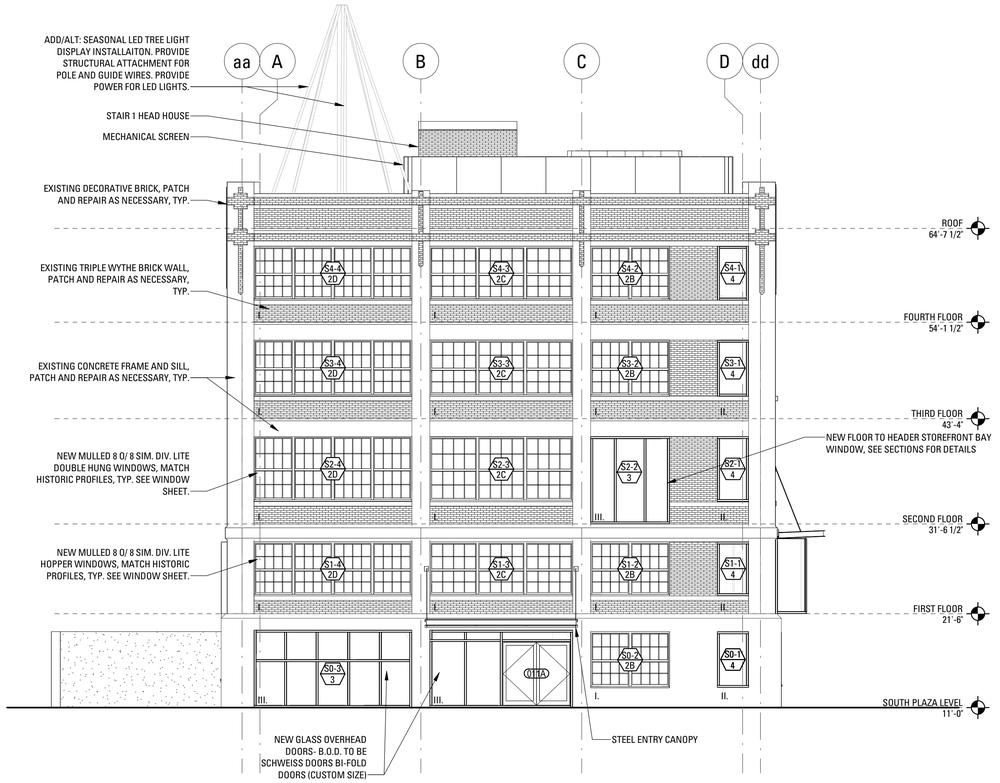


TYPE 4 - ONE WINDOW

NOTE:
-TYPE 1 & 2 WINDOW BASIS OF DESIGN IS TRIPLE-GLAZED WAUSAU INVENT RETRO - XLT WITH SIMULATED DIVIDED LITES, FIXED-SIMULATED SASH
-TYPE 3 & 4 STOREFRONT BASIS OF DESIGN IS TRIPLE-GLAZED KAWNEER TRIFAB 451T.

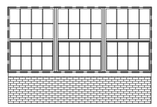
WINDOW SCHEDULE

MARK	TYPE	JAMB	HEAD	SILL	COMMENTS
1A	Single Sash (1-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
1B	Single Sash (2-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
1C	Single Sash (3-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
1D	Single Sash (4-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
2A	Simulated Double Sash (1-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
2B	Simulated Double Sash (2-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
2C	Simulated Double Sash (3-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD
2D	Simulated Double Sash (4-Unit)				WINDOWS WITHIN EXISTING OPENINGS, DIMENSIONS TO BE VERIFIED IN FIELD

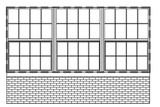


1 SOUTH ELEVATION
1/8" = 1'-0"

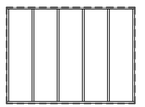
INFILL TYPOLOGIES LEGEND



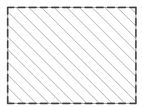
TYPE I.
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TYPE II.
NEW HISTORIC STYLE WINDOW, NEW CONCRETE SILL, NEW MASONRY INFILL



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NEW STOREFRONT WINDOWS FILLING OPENING



TYPE IV.
CONCRETE INFILL AT DEMOED PORTIONS OF FOUNDATION WALL

PROJECT NORTH
TRUE NORTH



Roux Institute Bean Building
Project # 22.031

Northeastern University - IDEALS
Portland, ME 04103

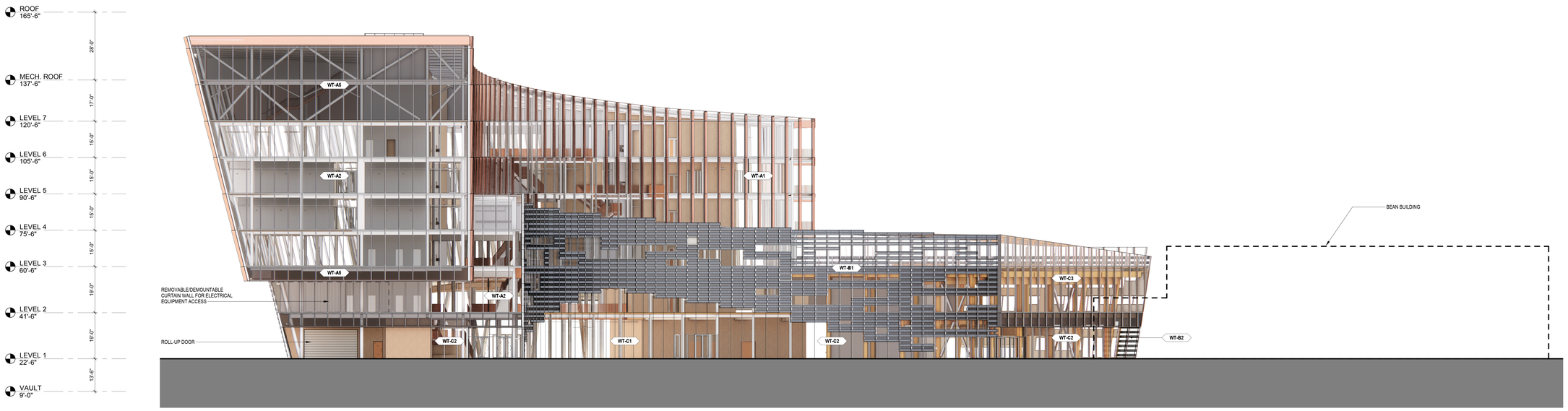
OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

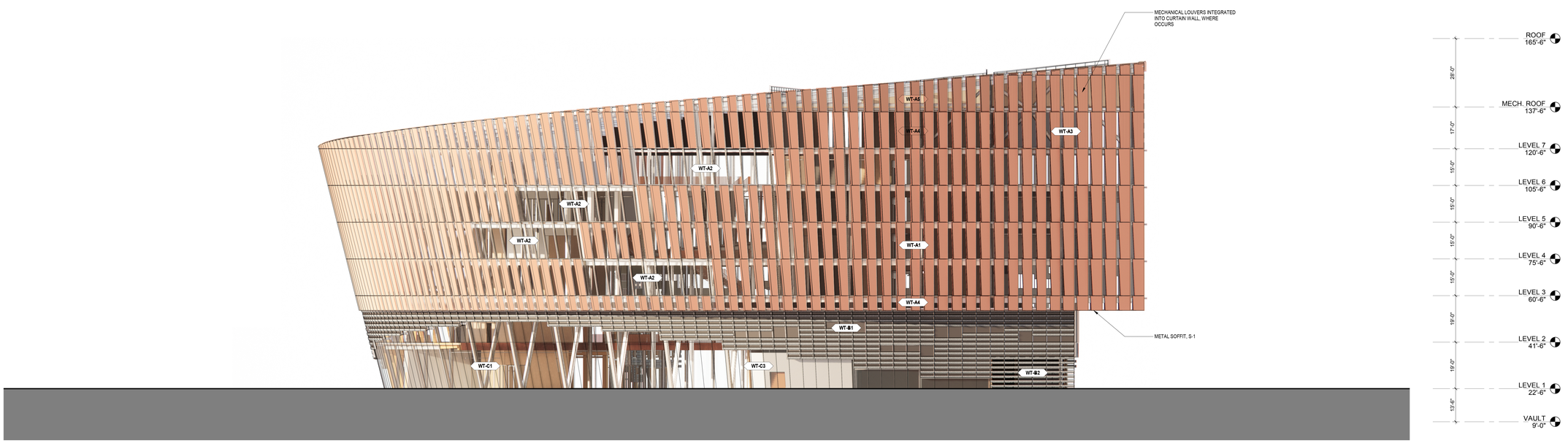
SOUTH ELEVATION AND WINDOW TYPES

A-304

System	**Plan color code**														
	Name	**Unitized System**						**Unitized System**		**Cassette Toggle System**			**Vertical Rainscreen System**	**Soffit**	
	Type number	**WT-A**						**WT-B**		**WT-C**			**WT-D**	**S-1**	
	Sub type	WT-A1	WT-A2	WT-A3	WT-A4	WT-A5	WT-A6	WT-B1	WT-B2	WT-C1	WT-C2	WT-C3			
	General description	The unitized curtain wall system consists of thermally broken aluminum framing with a double chicken head extrusion, pressure equalized to the rear seal. The vision panels are TGU, structurally glazed to the thermally broken aluminum framing. This system includes varying depth/profile of exterior extruded aluminum vertical fins supported by thermally broken knife plates at the stack joint and custom formed 1/4" painted aluminum panels with mineral wool insulation and Glv. steel backpan. This unitized system includes insulated open shadowbox with 1/8" painted formed aluminum panel and galc. steel backpan at the edge of slab. Curtainwall system allows for steel stiffeners as required. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	The unitized curtain wall system consists of thermally broken aluminum framing with a double chicken head extrusion, pressure equalized to the rear seal. The vision panels are TGU, structurally glazed to the thermally broken aluminum framing. This unitized system includes insulated open shadowbox with 1/8" painted formed aluminum panel and galc. steel backpan at the edge of slab. Curtainwall system allows for steel stiffeners as required. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-A1, but the glass is replaced by Louvers.	Similar to WT-A1, but the TGU is fully fritted/opacified, and the system includes backpan and mineral wool insulation. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-A2, but the TGU is fully fritted/opacified, the system includes backpan and mineral wool insulation.	Similar to WT-A2, but the Glazing unit is a fully fritted/opacified Laminated glass. The system is a screen system, hence does not include open spandrel.	The unitized curtain wall system consists of thermally broken aluminum framing with a double chicken head extrusion, pressure equalized to the rear seal. TGU is structurally glazed to the thermally broken aluminum framing. The opaque surfaces consist of granite panels and custom formed painted aluminum panels with black fabric faced mineral wool insulation and galv. backpan. The granite panels are supported by stainless steel undercut anchors and aluminum substructure which is locally supported by thermally broken stainless steel angles fixed to the mullion. Curtainwall system allows for steel stiffeners as required. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-B1, but bottom bearing @ ground level only, without custom formed painted aluminum panel, backpan, insulation or glass.	The cassette toggle system consists of triple glazing units structurally glazed to aluminum U channel, toggled onto a custom extruded glazing adapter which is fixed onto bottom-bearing, double-story glass fins. TGU panels have horizontal joint at the 19ft without a horizontal transom. Upper row of glass panels are stacked on top of the glass panels at grade with setting blocks between the panels. Glazing adapter contains a pressure equalized cavity which is vented and drained to the exterior, and vented to the head connection. The fin connection at the top has a vertical slotted hole to accommodate the building movements. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-C1, the glass fins are replaced by Aluminum extrusion. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-C2, the TGU is fully fritted/opacified. In addition, the system would include Mineral wool insulation and galv. Steel back pan. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Metal panel rainscreen system with steel stud back up wall. Build-up from interior to exterior: -Structural framing -Exterior Sheathing -Continuous air/vapor barrier -Mineral wool insulation -Thermally broken substructure -Air cavity -1/8" Painted Aluminum Panels Joints to be designed as per architectural drawings. Fixings and substructure to include bi-metallic separator as required, to prevent galvanic corrosion.	Exterior soffit cladding panel with continuous air/vapor barrier and mineral wool insulation. The exterior cladding is to be mechanically fastened to the sub-structure which is supported by the backup structure. Build-up from interior to exterior: -Structural framing -Exterior Sheathing -Continuous air/vapor barrier -Mineral wool insulation -Thermally broken substructure -Air cavity -1/8" Painted aluminum soffit panels Joints to be designed as per architectural drawings. Fixings and substructure to include bi-metallic separator as required, to prevent galvanic corrosion.
	Primary specification section	084413 - Glazed Aluminum Curtain Walls						084413 - Glazed Aluminum Curtain Walls		084401 - Glass Fin Supported Glazing System	084414 - Glazed Stick-Built Systems		070001 - Rainscreen System	070001 - Rainscreen System	



1 NORTH ELEVATION - OVERALL
1/16" = 1'-0"



2 EAST ELEVATION - OVERALL
1/16" = 1'-0"

10/2/2023 4:52:50 PM

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

The Roux Institute

KeyPlan

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

DESIGN DEVELOPMENT

Number	Revision	Date

LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
NO. 3838
STATE OF MAINE

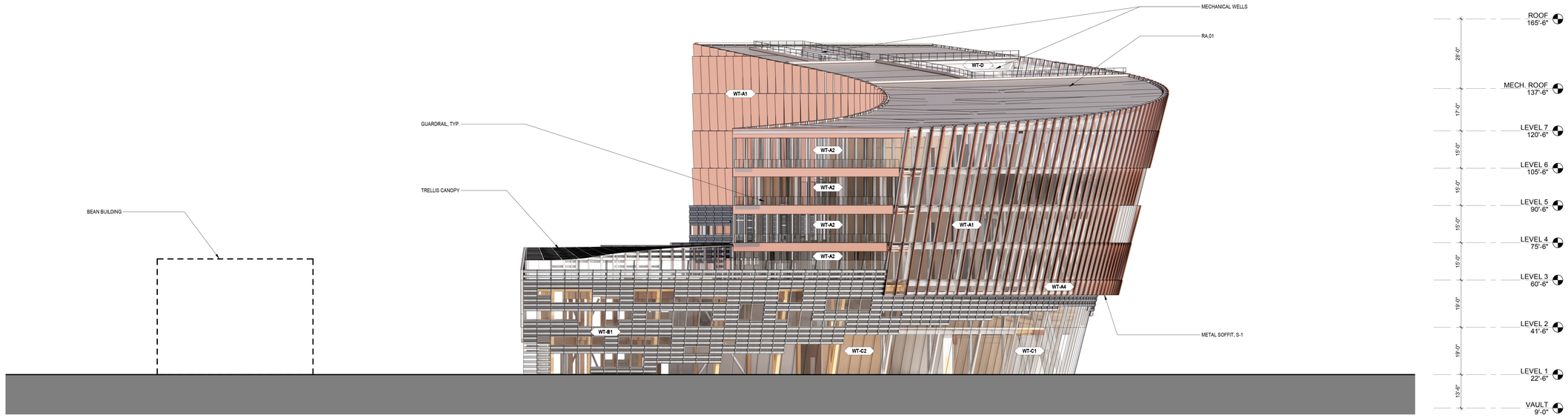
Stamp 10/27/2023

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS
Checked	BC
Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

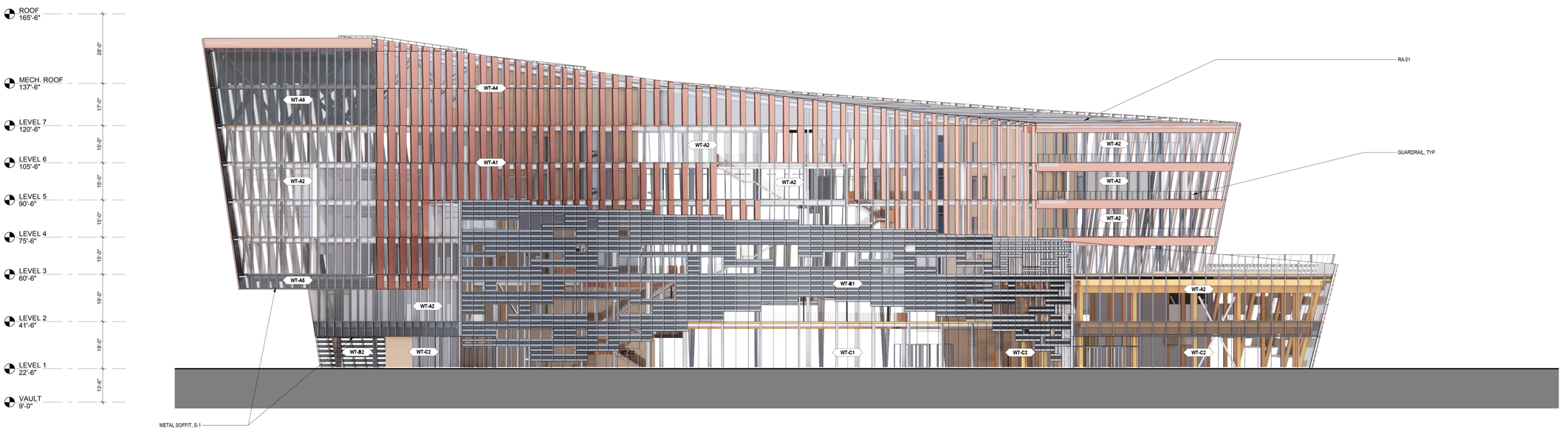
Drawing Title
NORTH & EAST EXTERIOR ELEVATIONS

A20.01

	Plan color code														
	Name	Unitized System						Unitized System		Cassette Toggle System			Vertical Rainscreen System	Soffit	
	Type number	WT-A						WT-B		WT-C			WT-D	S-1	
System	Sub type	WT-A1	WT-A2	WT-A3	WT-A4	WT-A5	WT-A6	WT-B1	WT-B2	WT-C1	WT-C2	WT-C3			
	General description	The unitized curtain wall system consists of thermally broken aluminum framing with a double chicken head extrusion, pressure equalized to the rear seal. The vision panels are TGU, structurally glazed to the thermally broken aluminum framing. This system includes varying depth/profile of exterior extruded aluminum vertical fins supported by thermally broken knife plates at the stack joint and custom formed 1/4" painted aluminum panels with mineral wool insulation and Glv. steel backpan. This unitized system includes insulated open shadowbox with 1/8" painted formed aluminum panel and galc. steel backpan at the edge of slab. Curtainwall system allows for steel stiffeners as required. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	The unitized curtain wall system consists of thermally broken aluminum framing with a double chicken head extrusion, pressure equalized to the rear seal. The vision panels are TGU, structurally glazed to the thermally broken aluminum framing. This unitized system includes insulated open shadowbox with 1/8" painted formed aluminum panel and galc. steel backpan at the edge of slab. Curtainwall system allows for steel stiffeners as required. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-A1, but the glass is replaced by Louvers.	Similar to WT-A1, but the TGU is fully fritted/opacified, and the system includes backpan and mineral wool insulation. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-A2, but the TGU is fully fritted/opacified, the system includes backpan and mineral wool insulation.	Similar to WT-A2, but the Glazing unit is a fully fritted/opacified Laminated glass. The system is a screen system, hence does not include open spandrel.	The unitized curtain wall system consists of thermally broken aluminum framing with a double chicken head extrusion, pressure equalized to the rear seal. TGU is structurally glazed to the thermally broken aluminum framing. The opaque surfaces consist of granite panels and custom formed painted aluminum panels with black fabric faced mineral wool insulation and galv. backpan. The granite panels are supported by stainless steel undercut anchors and aluminum substructure which is locally supported by thermally broken stainless steel angles fixed to the mullion. Curtainwall system allows for steel stiffeners as required. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-B1, but bottom bearing @ ground level only, without custom formed painted aluminum panel, backpan, insulation or glass.	The cassette toggle system consists of triple glazing units structurally glazed to aluminum U channel, toggled onto a custom extruded glazing adapter which is fixed onto bottom-bearing, double-story glass fins. TGU panels have horizontal joint at the 19ft without a horizontal transom. Upper row of glass panels are stacked on top of the glass panels at grade with setting blocks between the panels. Glazing adapter contains a pressure equalized cavity which is vented and drained to the exterior, and vented to the head connection. The fin connection at the top has a vertical slotted hole to accommodate the building movements. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-C1, the glass fins are replaced by Aluminum extrusion. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Similar to WT-C2, the TGU is fully fritted/opacified. In addition, the system would include Mineral wool insulation and galv. Steel back pan. The sloped glass is not tilted outward more than 15 degrees, provide mechanical restraint as an alternate only if deemed to be required.	Metal panel rainscreen system with steel stud back up wall. Build-up from interior to exterior: -Structural framing -Exterior Sheathing -Continuous air/vapor barrier -Mineral wool insulation -Thermally broken substructure -Air cavity -1/8" Painted Aluminum Panels Joints to be designed as per architectural drawings. Fixings and substructure to include bi-metallic separator as required, to prevent galvanic corrosion.	Exterior soffit cladding panel with continuous air/vapor barrier and mineral wool insulation. The exterior cladding is to be mechanically fastened to the sub-structure which is supported by the backup structure. Build-up from interior to exterior: -Structural framing -Exterior Sheathing -Continuous air/vapor barrier -Mineral wool insulation -Thermally broken substructure -Air cavity -1/8" Painted aluminum soffit panels Joints to be designed as per architectural drawings. Fixings and substructure to include bi-metallic separator as required, to prevent galvanic corrosion.
	Primary specification section	084413 - Glazed Aluminum Curtain Walls						084413 - Glazed Aluminum Curtain Walls		084401 - Glass Fin Supported Glazing System	084414 - Glazed Stick-Built Systems		070001 - Rainscreen System	070001 - Rainscreen System	



1 SOUTH ELEVATION - OVERALL
1/16" = 1'-0"



2 WEST ELEVATION - OVERALL
1/16" = 1'-0"

10/2/2023 4:53:42 PM

IDEALS
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LVX VERITAS VIRTVS
The Roux Institute

KeyPlan

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Cambridge, MA 02138
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DESIGN DEVELOPMENT

Number	Revision	Date

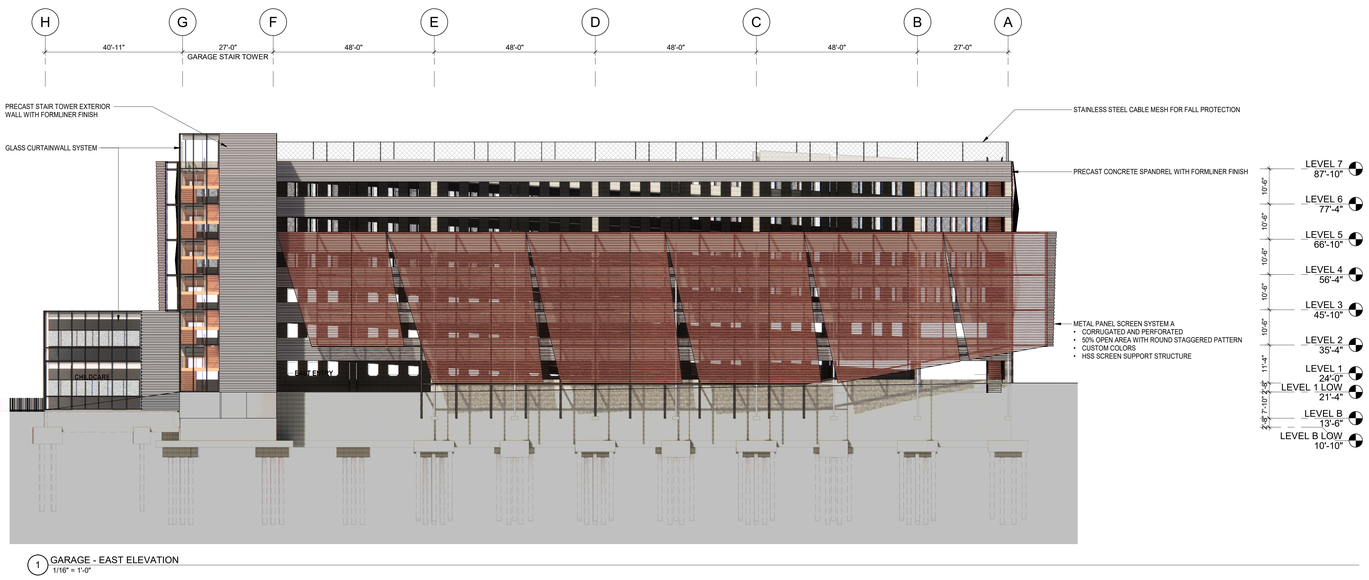
LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
NO. 3838
STATE OF MAINE

Stamp 10/27/2023

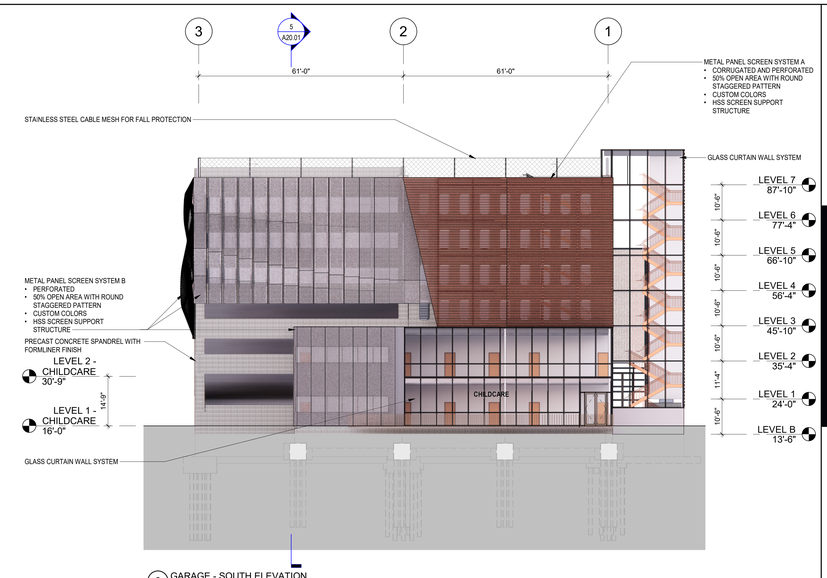
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS Checked BC
Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

Drawing Title
SOUTH & WEST EXTERIOR ELEVATIONS

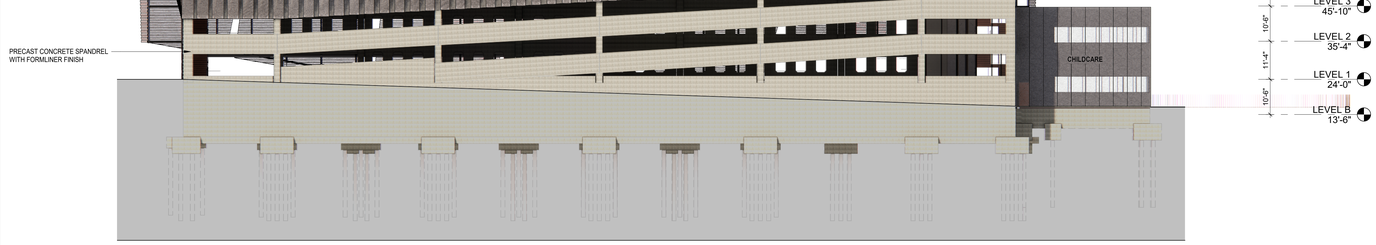
A20.02



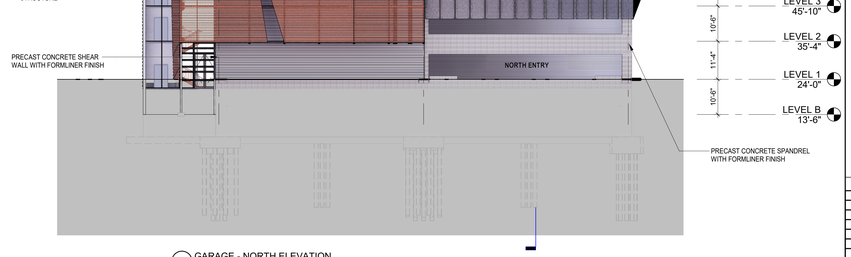
1 GARAGE - EAST ELEVATION
1/16" = 1'-0"



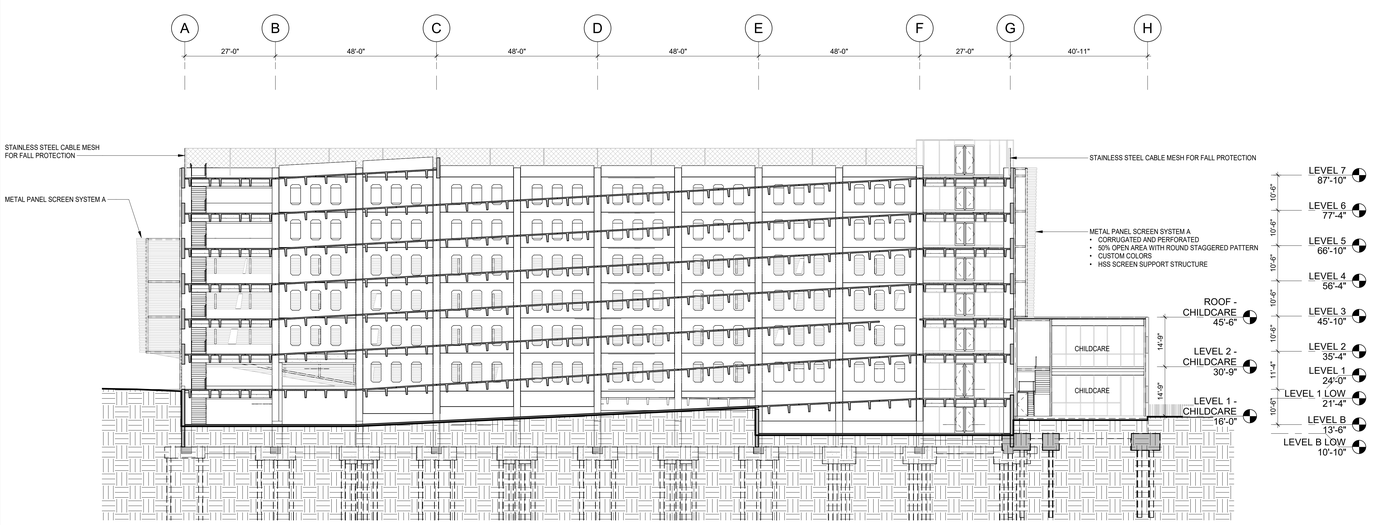
2 GARAGE - SOUTH ELEVATION
1/16" = 1'-0"



3 GARAGE - WEST ELEVATION
1/16" = 1'-0"



4 GARAGE - NORTH ELEVATION
1/16" = 1'-0"



5 GARAGE - SECTION
1/16" = 1'-0"

11/2/2023 11:54:41 AM

IDEALS
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Roux Campus

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LAND-USE PERMIT SET

Number	Revision	Date

Stamp

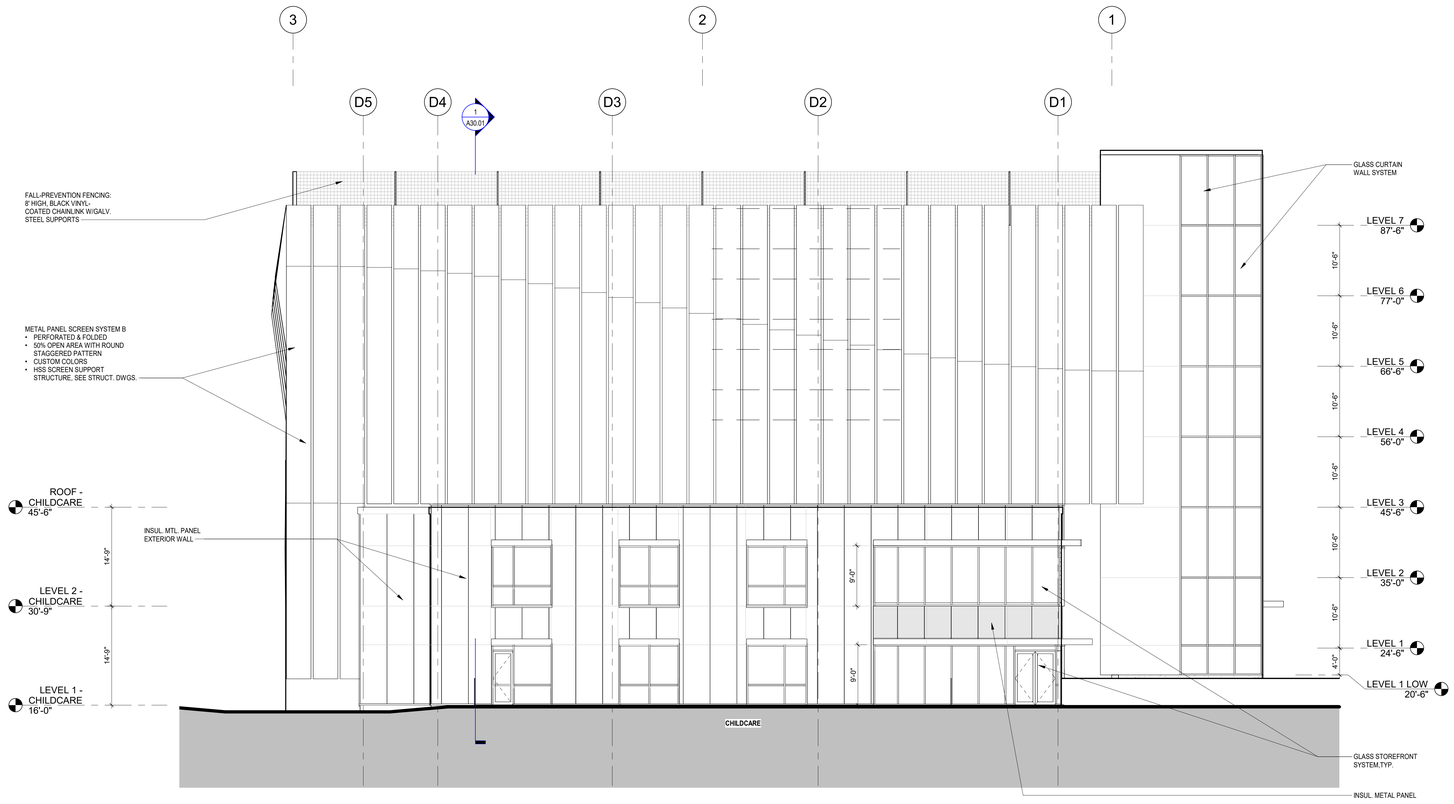
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS
Checked	BC
Date	27 OCTOBER 2023
Scale	

Drawing Title
PARKING GARAGE EXT. ELEVATIONS AND SECTION

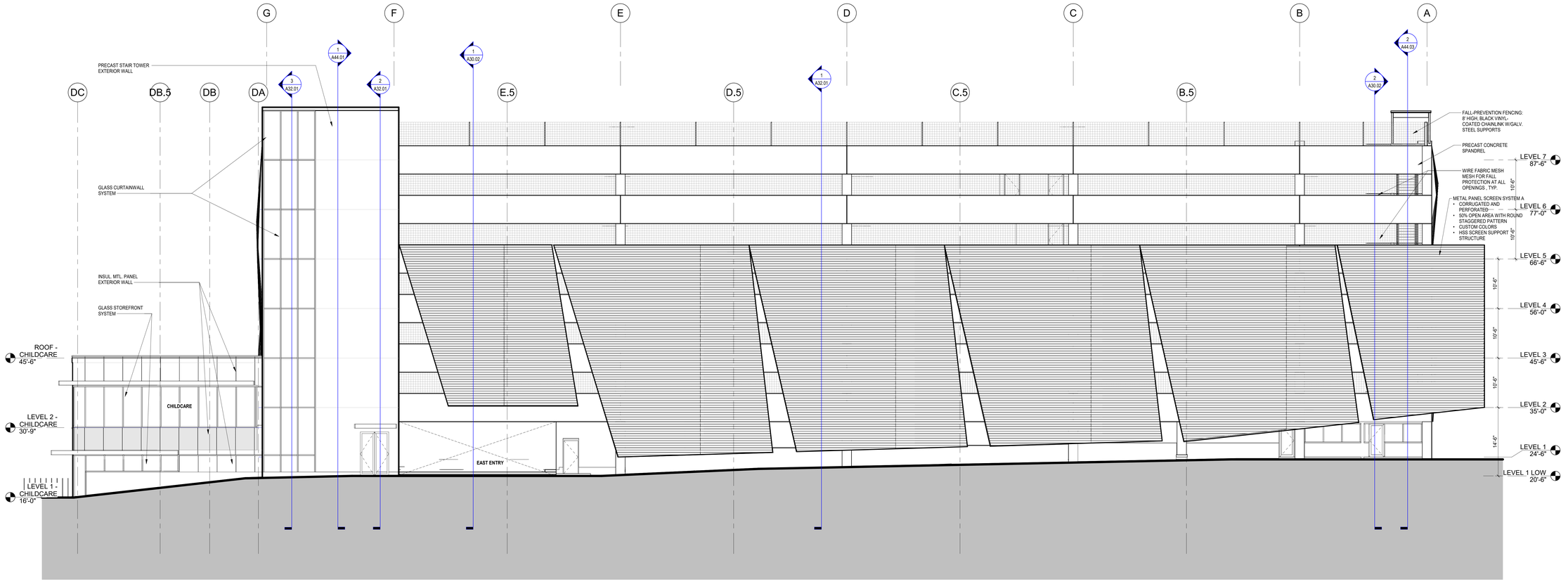
A20.01

GENERAL NOTES

1. ELECTRICAL - LIGHTING: INTERIOR BUILDING LIGHTING SHALL COMPLY WITH ANSI/ASHRAE/IES STANDARD 90.1-2022.
2. ELECTRICAL - POWER: RECEPTACLES WILL BE PROVIDED ADJACENT TO INTERIOR BIKE PARKING AS REQUIRED.



1 GARAGE - SOUTH ELEVATION
1/8" = 1'-0"



2 GARAGE - EAST ELEVATION
1/8" = 1'-0"

3/22/2024 8:15:32 AM

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LAND-USE PERMIT SET

Number	Revision	Date
1	ADDENDUM NO.2	11.17.2023

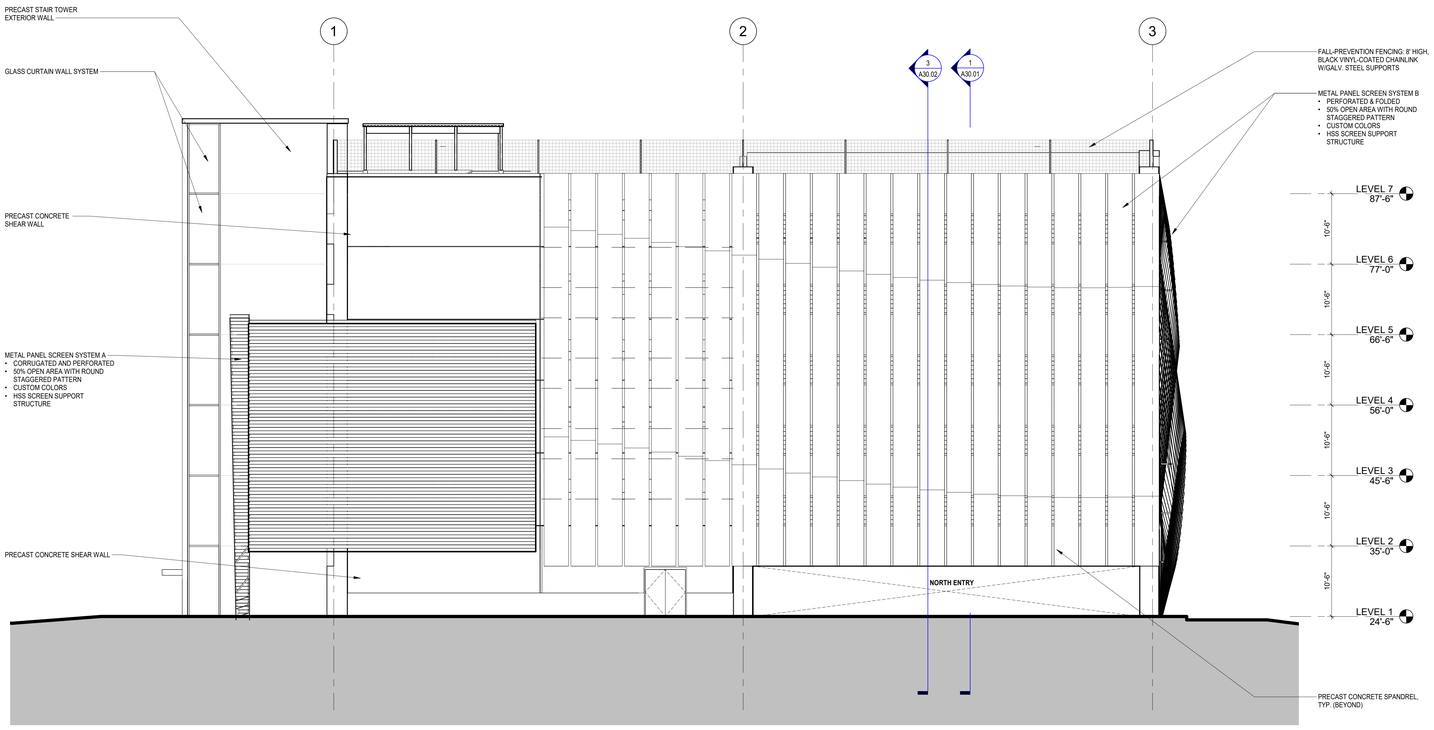
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Job #	2202		
Project	THE ROUX INSTITUTE - GARAGE		
Drawn By	WS/MW	Checked	BC
Date	22 MARCH 2024		
Scale			

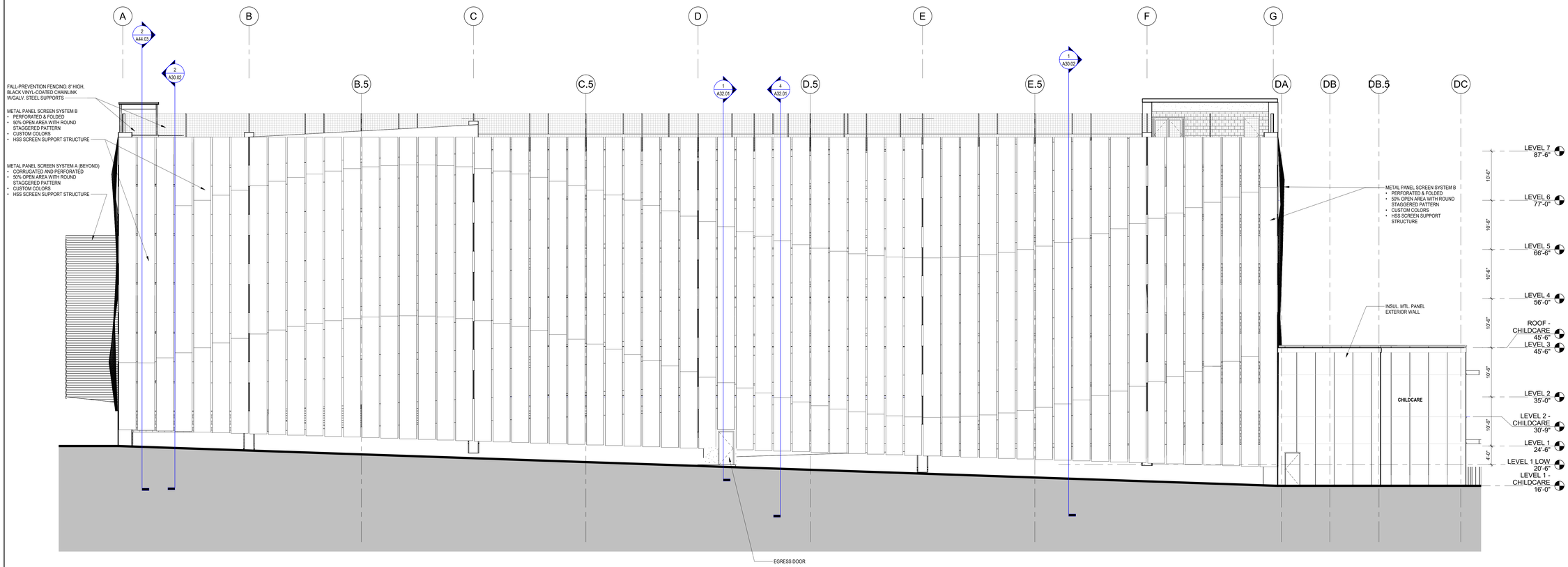
Drawing Title

PARKING GARAGE EXTERIOR ELEVATIONS

A20.01



1 GARAGE - NORTH ELEVATION
1/8" = 1'-0"



2 GARAGE - WEST ELEVATION
1/8" = 1'-0"

GENERAL NOTES

1. ELECTRICAL - LIGHTING: INTERIOR BUILDING LIGHTING SHALL COMPLY WITH ANSI/ASHRAE/IES STANDARD 90.1-2022.
2. ELECTRICAL - POWER: RECEPTACLES WILL BE PROVIDED ADJACENT TO INTERIOR BIKE PARKING AS REQUIRED.

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Number	Revision	Date
1	ADDENDUM NO.2	11.17.2023

Stamp

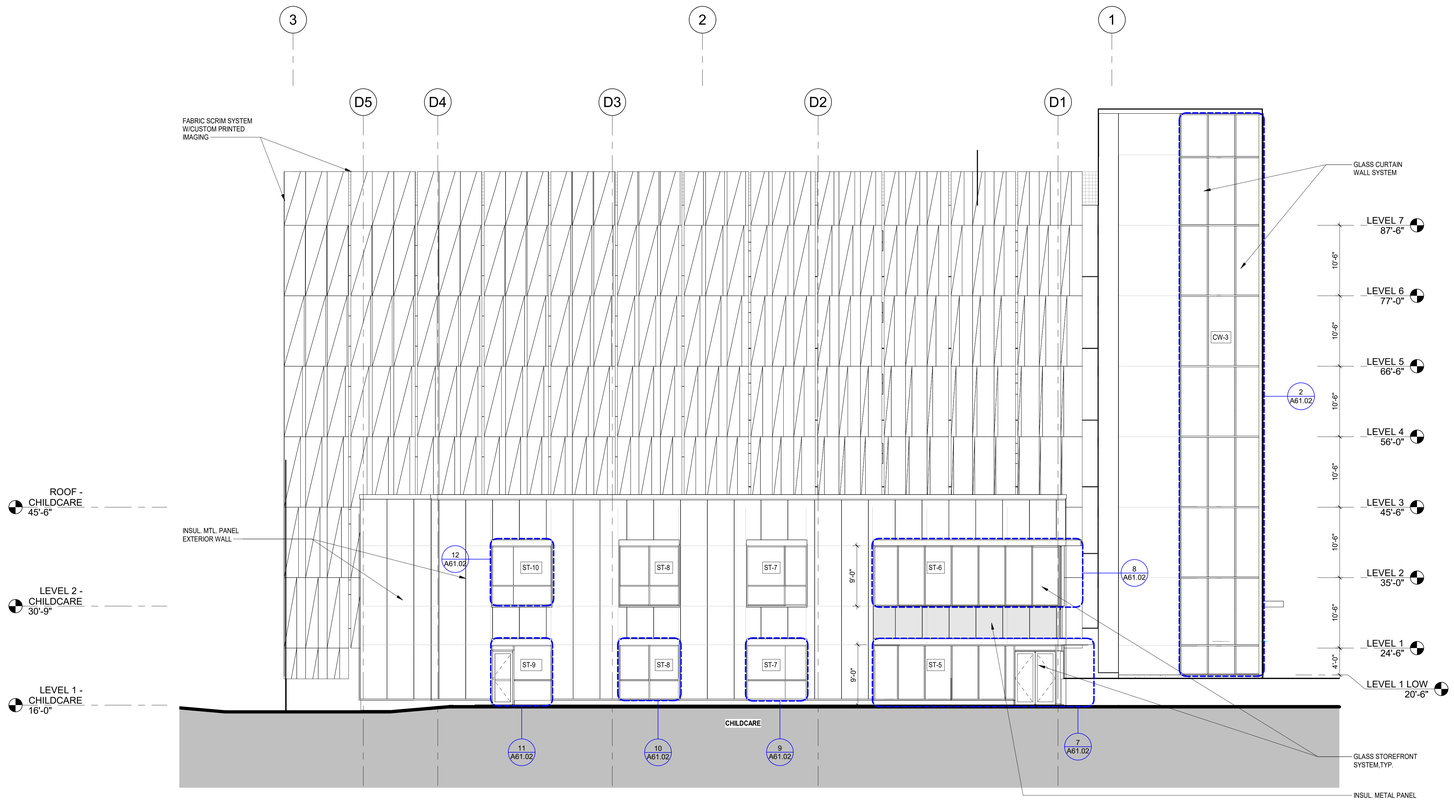
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Project	THE ROUX INSTITUTE - GARAGE
Drawn By	WS/MW
Checked	BC
Date	22 MARCH 2024
Scale	

Drawing Title

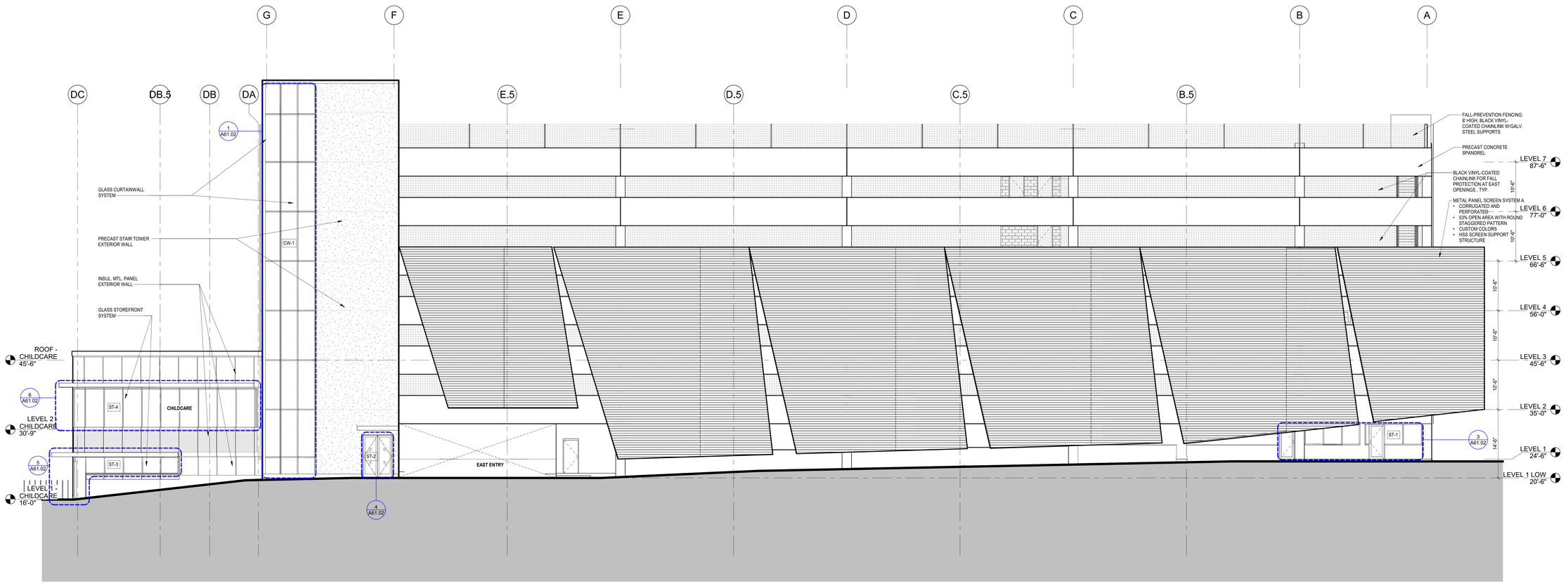
PARKING GARAGE EXTERIOR ELEVATIONS

A20.02

3/22/2024 8:22:12 AM



1 SOUTH BUILDING ELEVATION
1/8" = 1'-0"



2 EAST BUILDING ELEVATION
1/8" = 1'-0"

5/1/2024 3:31:52 PM

IDEALS
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MAY 1, 2024 CONSTRUCTION DOCUMENTS

Number	Revision	Date
1	ADDENDUM NO.2	11.17.2023

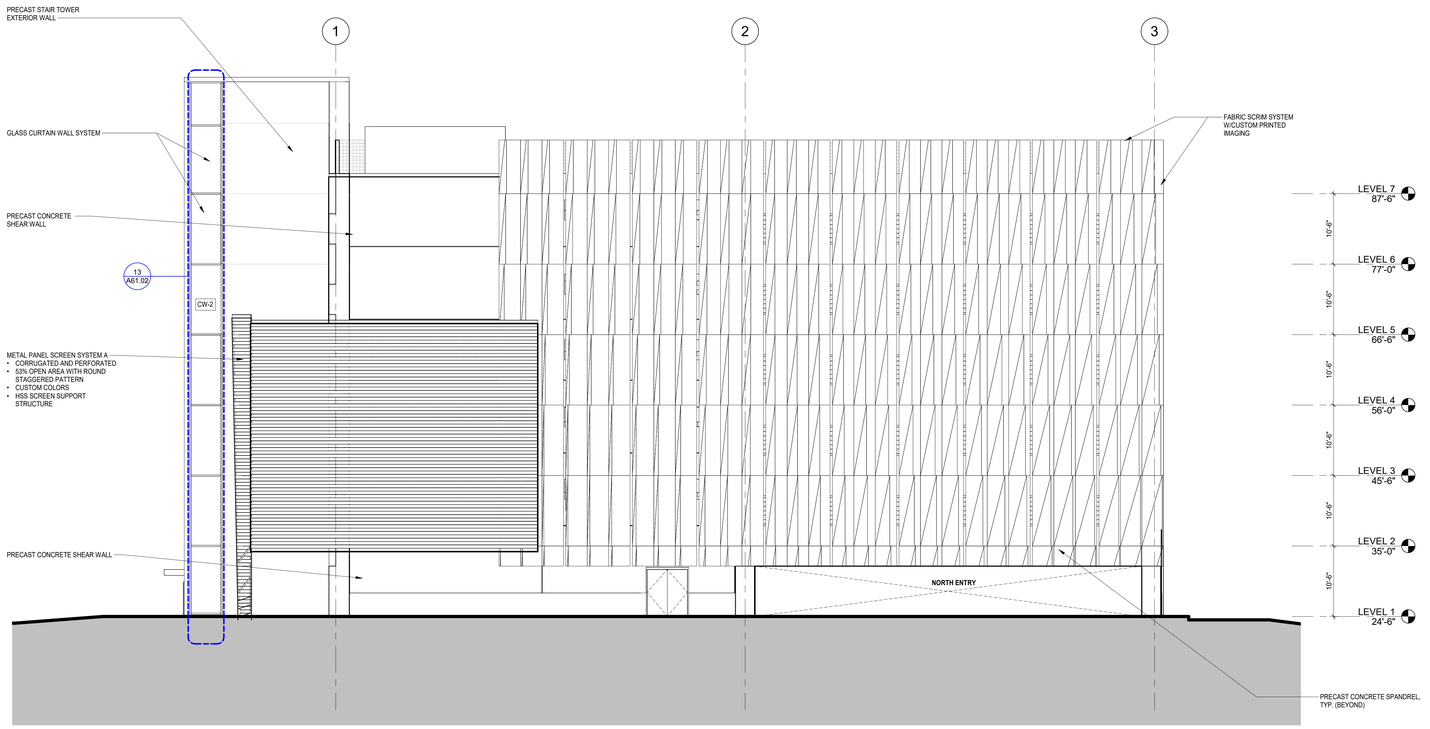
LICENSED ARCHITECT TIMOTHY D. MANSFIELD No. 3838 STATE OF MAINE

Stamp

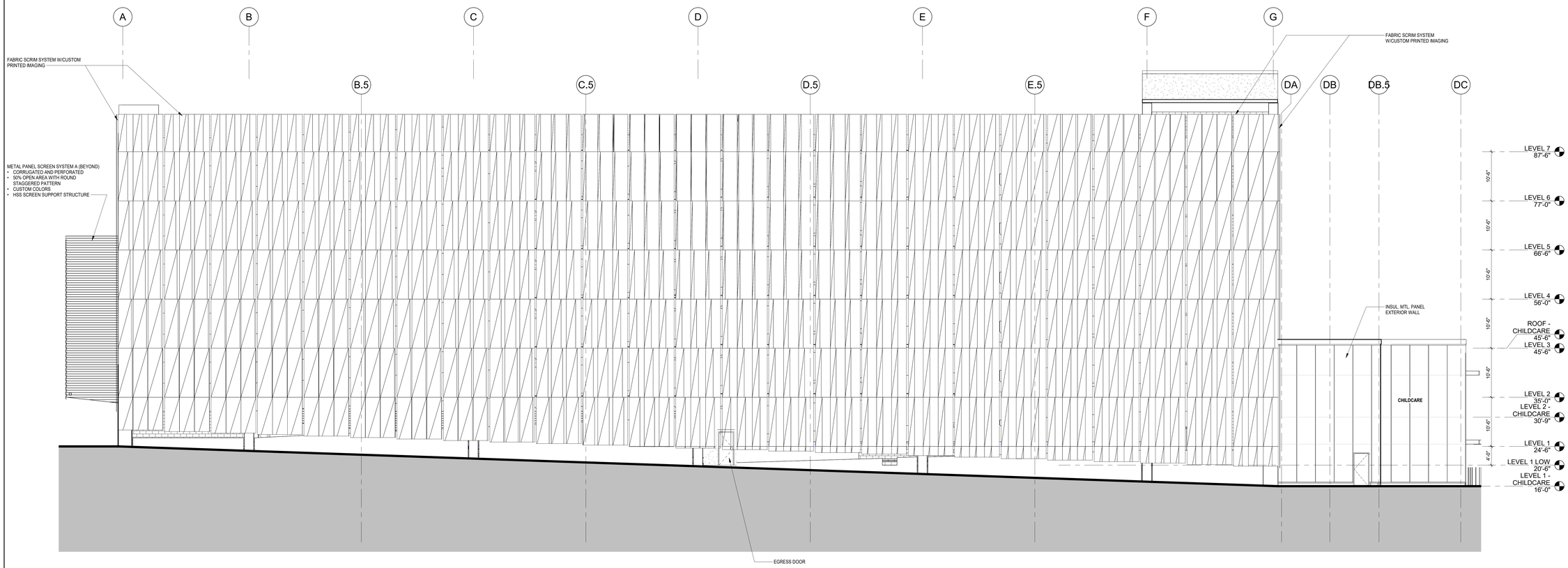
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Project	THE ROUX INSTITUTE - GARAGE
Drawn By	WS/MW
Checked	BC
Date	MAY 1, 2024
Scale	

Drawing Title
EXTERIOR ELEVATIONS

A20.01



1 NORTH BUILDING ELEVATION
1/8" = 1'-0"



2 WEST BUILDING ELEVATION
1/8" = 1'-0"

5/1/2024 3:31:55 PM

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MAY 1, 2024 CONSTRUCTION DOCUMENTS

Number	Revision	Date
1	ADDENDUM NO.2	11.17.2023

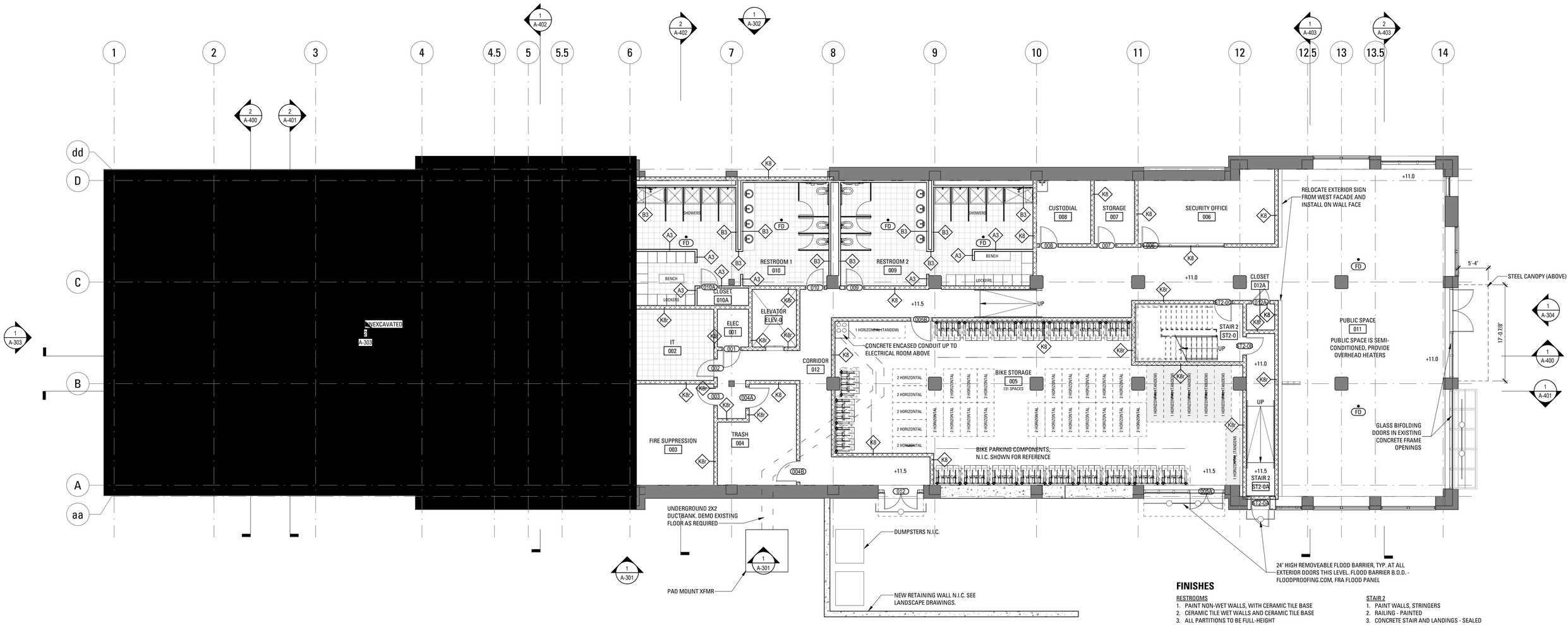
LICENSED ARCHITECT TIMOTHY D. MANSFIELD No. 3838 STATE OF MAINE

Stamp

Job #	2202
Project	THE ROUX INSTITUTE - GARAGE
Drawn By	WS/MW
Checked	BC
Date	MAY 1, 2024
Scale	

Drawing Title
EXTERIOR ELEVATIONS

A20.02



1 LOWER LEVEL FLOOR PLAN

SCALE: 1/8" = 1'-0"

NOTE WELL: THIS ENTIRE FLOOR TO BE RAISED ABOVE EXISTING CONCRETE LEVEL OF 9.5'. SEE ELEVATION NUMBERS ON PLAN AND BUILDING SECTIONS.

NOTE : INTERIOR FACE OF EXTERIOR WALLS IN RESTROOMS ONLY TO BE FURRED OUT WITH 3-5/8" STUD W/ MINERAL WOOL INSULATION AND FINISHED W/ PAINT ON (1) LAYER 5/8" TYPE 'X' DRYWALL. REMAINING EXTERIOR WALLS TO REMAIN AS-IS BUT RECEIVE NEW PAINT

BIKE RACK NOTES

- VERTICAL BIKE RACKS (HOLD 4 BIKES)
- HORIZONTAL BIKE RACKS (HOLD 2 BIKES)
- HORIZONTAL BIKE RACKS (HOLD 1 TANDEM BIKE)

*ASSUMING 25% OF BIKE RACKS HAVE OUTLETS FOR E-BIKE

FINISHES

RESTROOMS
1. PAINT NON-WET WALLS, WITH CERAMIC TILE BASE
2. CERAMIC TILE WET WALLS AND CERAMIC TILE BASE
3. ALL PARTITIONS TO BE FULL-HEIGHT
4. CERAMIC TILE FLOOR (THIN SET) OVER CONCRETE
5. ACT CEILING
6. RECESS LIGHTING, WALL MOUNT AT MIRROR
7. FLOOR DRAIN IN FLOOR

IT
1. NO PAINT ON WALLS, NO BASE
2. STATIC-FREE VCT FLOOR - GLUED
3. NO CEILING
4. SURFACE MOUNT LIGHT

CUSTODIAL/TRASH/ELEC/FIRE SUPPRESSION
1. FRP ON ALL WALLS
2. FLOOR DRAIN IN FLOOR
3. EPOXY FLOOR FINISH OVER CONCRETE TOPPING
4. NO CEILING
5. SURFACE MOUNT LIGHT

STAIR 2
1. PAINT WALLS, STRINGERS
2. RAILING - PAINTED
3. CONCRETE STAIR AND LANDINGS - SEALED
4. CUSTOM GUARD RAIL - PAINTED
5. SURFACE MOUNTED LIGHTING

OFFICE/PUBLIC SPACE/CORRIDOR
1. PAINT EXTERIOR WALLS, CORE WALLS
2. SEAL EXISTING CONCRETE COLUMNS
3. PAINT EXISTING CEILING
4. SURFACE MOUNTED (CEILING) LIGHTING
5. SEAL NEW CONCRETE FLOOR

BIKE STORAGE
1. PAINT EXTERIOR WALLS, CORE WALLS
2. STOREFRONT ON SOUTH WALL - FULL LENGTH
3. SEAL EXISTING CONCRETE COLUMNS
4. PAINT EXISTING CEILING
5. SURFACE MOUNTED (CEILING) LIGHTING
6. SEAL NEW CONCRETE FLOOR

NOTE: ALL GWB THIS FLOOR TO BE MOISTURE RESISTANT

PROJECT NORTH
TRUE NORTH

LICENSED ARCHITECT Jason Vickery RICHARD STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

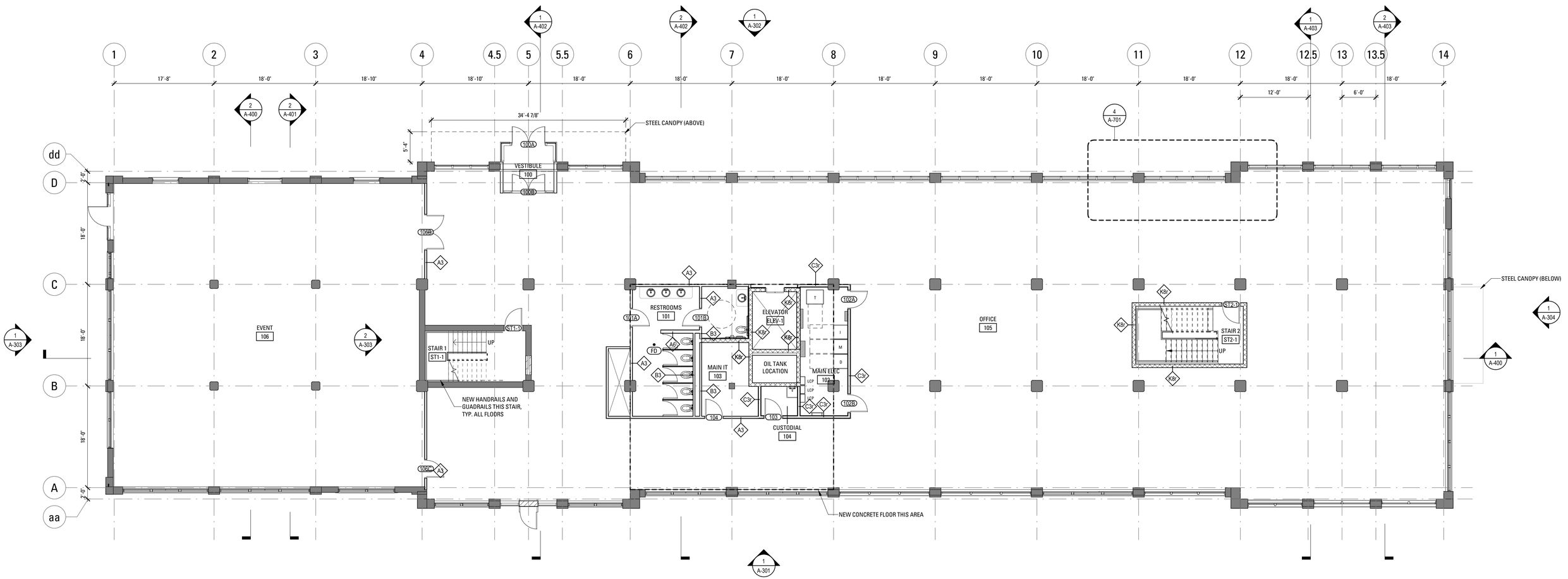
Northeastern University - IDEALS
Portland, ME 04103

OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

LOWER LEVEL FLOOR PLAN

A-100



1 FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

NOTE : INTERIOR FACE OF EXTERIOR WALLS TO BE FURRED OUT WITH 3-5/8" STUD W/ MINERAL WOOL INSULATION AND FINISHED W/ PAINT ON (1) LAYER 5/8" TYPE 'X' DRYWALL

FINISHES

RESTROOMS
1. PAINT NON-WET WALLS, WITH CERAMIC TILE BASE
2. CERAMIC TILE WET WALLS AND CERAMIC TILE BASE
3. CERAMIC TILE FLOOR (THIN SET) OR EPOXY FLOOR OVER EXISTING CONCRETE
4. ACT CEILING
5. RECESS LIGHTING, WALL MOUNT AT MIRROR
6. FLOOR DRAIN IN FLOOR

ELEC/IT/FIRE SUPPRESSION
1. PAINT WALLS, RUBBER BASE
2. STATIC-FREE VCT FLOOR - GLUED
3. NO CEILING
4. SURFACE MOUNT LIGHT

CUSTODIAL/TRASH
1. FRP ON ALL WALLS
2. FLOOR DRAIN IN FLOOR
3. EPOXY FLOOR FINISH OVER EXISTING CONCRETE
4. NO CEILING
5. SURFACE MOUNT LIGHT

STAIR 1
1. PAINT EXISTING CONCRETE/CMU
2. NEW RAILING - PAINTED
3. SEAL EXISTING CONCRETE FLOOR
4. NEW, CUSTOM GUARD RAIL - PAINTED
5. SURFACE MOUNTED LIGHTING

STAIR 2
1. PAINT WALLS, STRINGERS
2. RAILING - PAINTED
3. CONCRETE STAIR AND LANDINGS - SEALED
4. CUSTOM GUARD RAIL - PAINTED
5. SURFACE MOUNTED LIGHTING

OFFICE/EVENT
1. PAINT EXTERIOR WALLS, CORE WALLS
2. SEAL EXISTING CONCRETE COLUMNS
3. PAINT EXISTING CEILING
4. SURFACE MOUNTED (CEILING) LIGHTING
5. SEAL EXISTING CONCRETE FLOOR

PROJECT NORTH
TRUE NORTH

Licensed Architect Joseph Connelly ARC14429 State of Maine

Roux Institute Bean Building
Project # 22.031

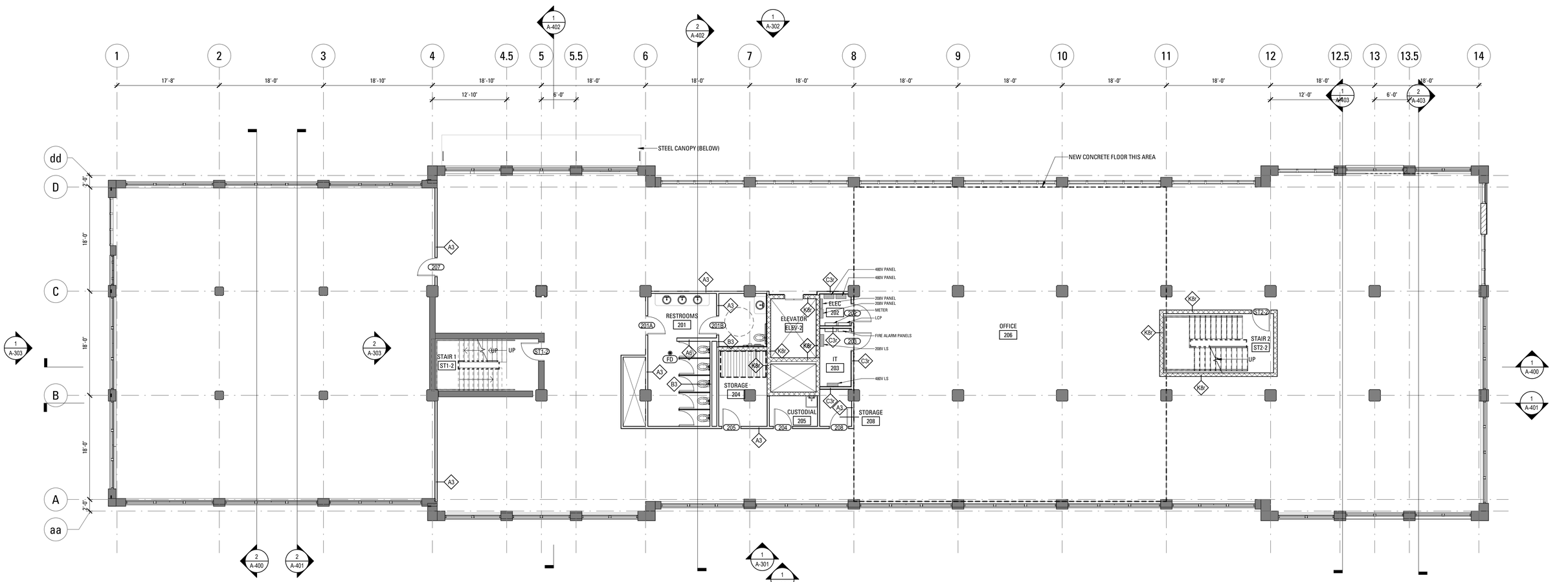
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OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

FIRST FLOOR PLAN

A-101



1 SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

NOTE : INTERIOR FACE OF EXTERIOR WALLS TO BE FURRED OUT WITH 3-5/8" STUD W/ MINERAL WOOL INSULATION AND FINISHED W/ PAINT ON (1) LAYER 5/8" TYPE 'X' DRYWALL

PROJECT NORTH
TRUE NORTH

LICENSED ARCHITECT
Justin Farney
ARC4429
STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

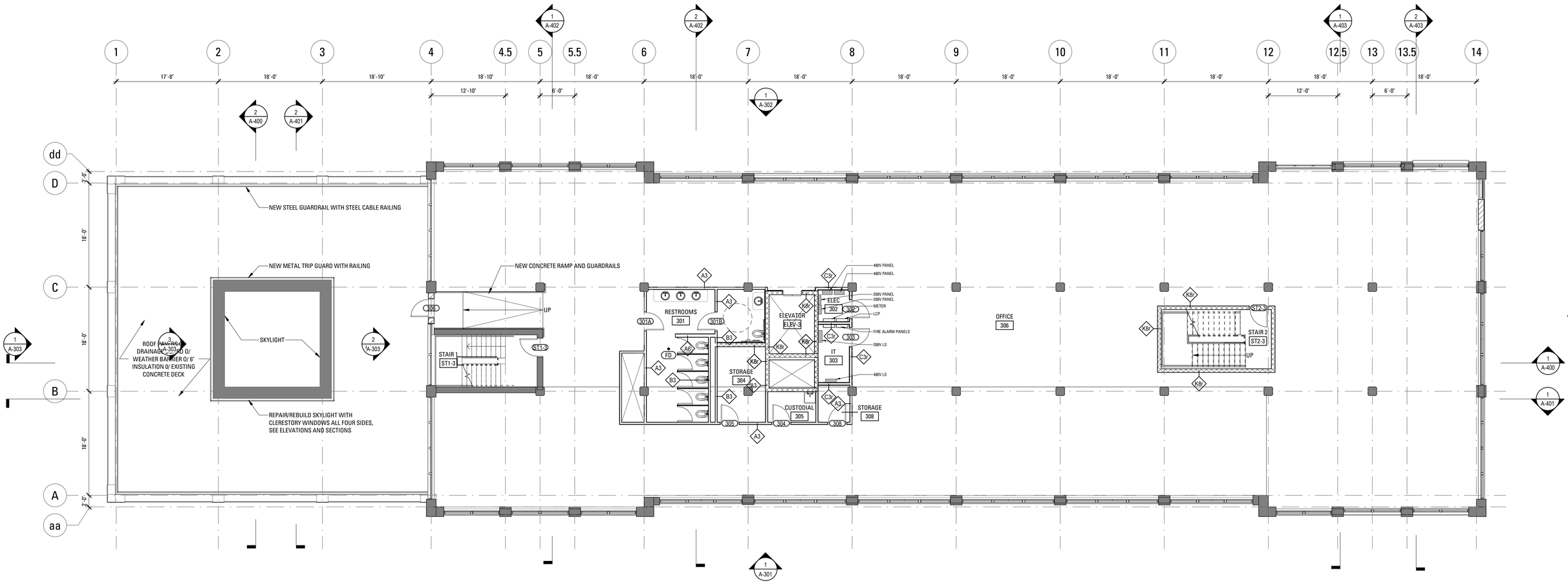
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OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

SECOND FLOOR PLAN

A-102



1 THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

NOTE : INTERIOR FACE OF EXTERIOR WALLS TO BE FURRED OUT WITH 3-5/8" STUD W/ MINERAL WOOL INSULATION AND FINISHED W/ PAINT ON (1) LAYER 5/8" TYPE 'X' DRYWALL

PROJECT NORTH
TRUE NORTH

REGISTERED ARCHITECT
Justin Farney
ARC4429
STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

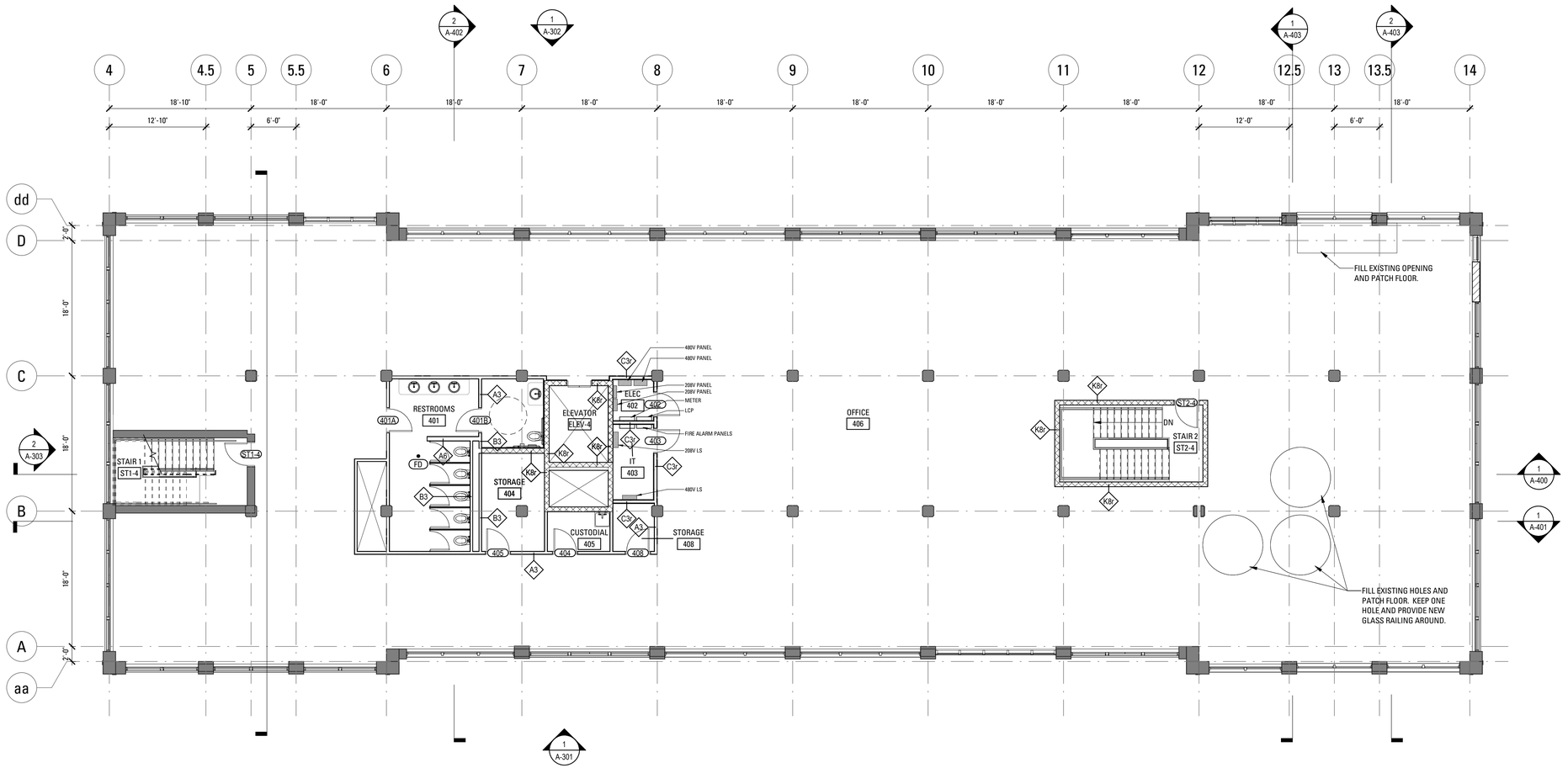
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OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

THIRD FLOOR PLAN

A-103



1 FOURTH FLOOR PLAN
SCALE: 1/8" = 1'-0"

NOTE : INTERIOR FACE OF EXTERIOR WALLS TO BE FURRED OUT WITH 3-5/8" STUD W/ MINERAL WOOL INSULATION AND FINISHED W/ PAINT ON (1) LAYER 5/8" TYPE 'X' DRYWALL

PROJECT NORTH
TRUE NORTH

REGISTERED ARCHITECT
Justin Farney
ARC4429
STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

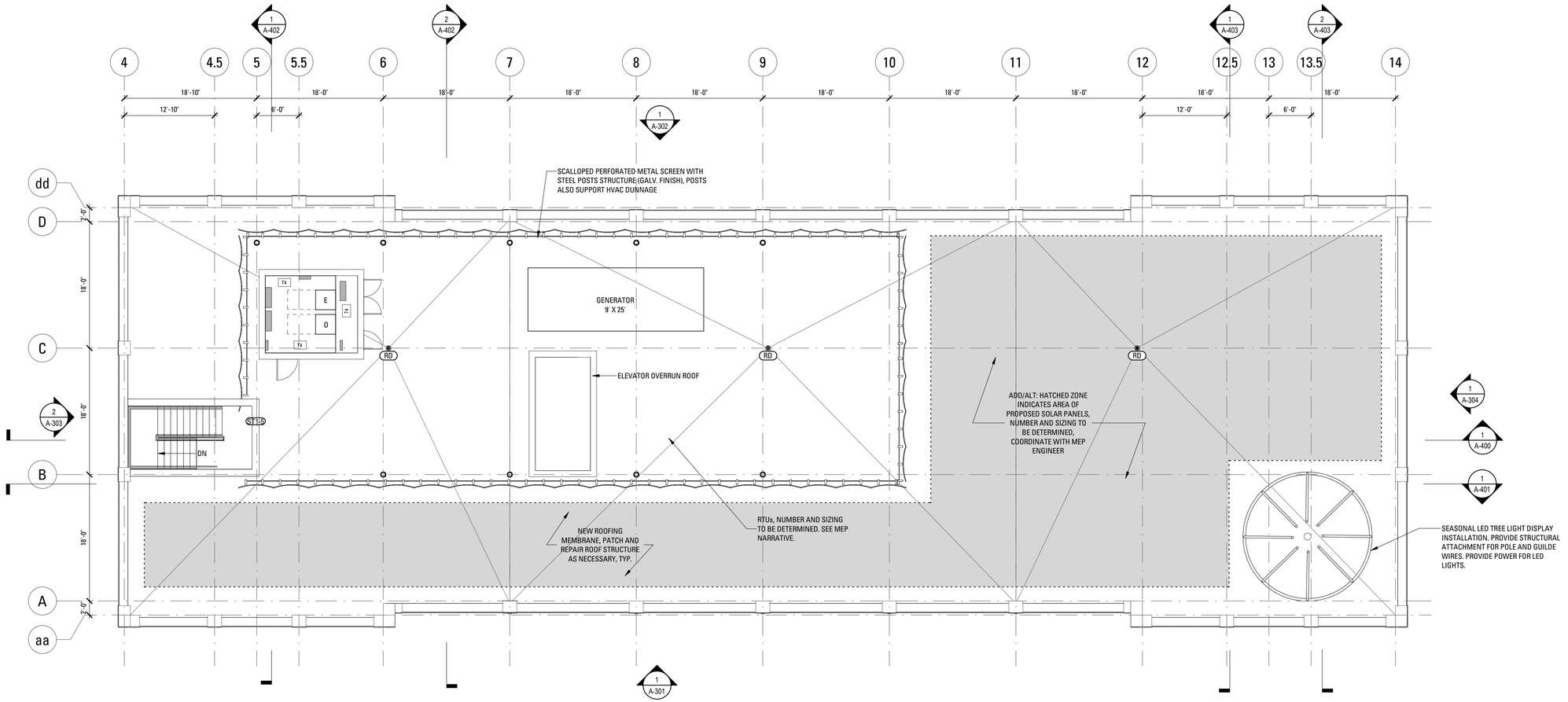
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OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

FOURTH FLOOR PLAN

A-104



1 ROOF PLAN
SCALE: 1/8" = 1'-0"

PROJECT NORTH
TRUE NORTH

REGISTERED ARCHITECT
JOHN PAPPAS
ARC4420
STATE OF MAINE

Roux Institute Bean Building
Project # 22.031

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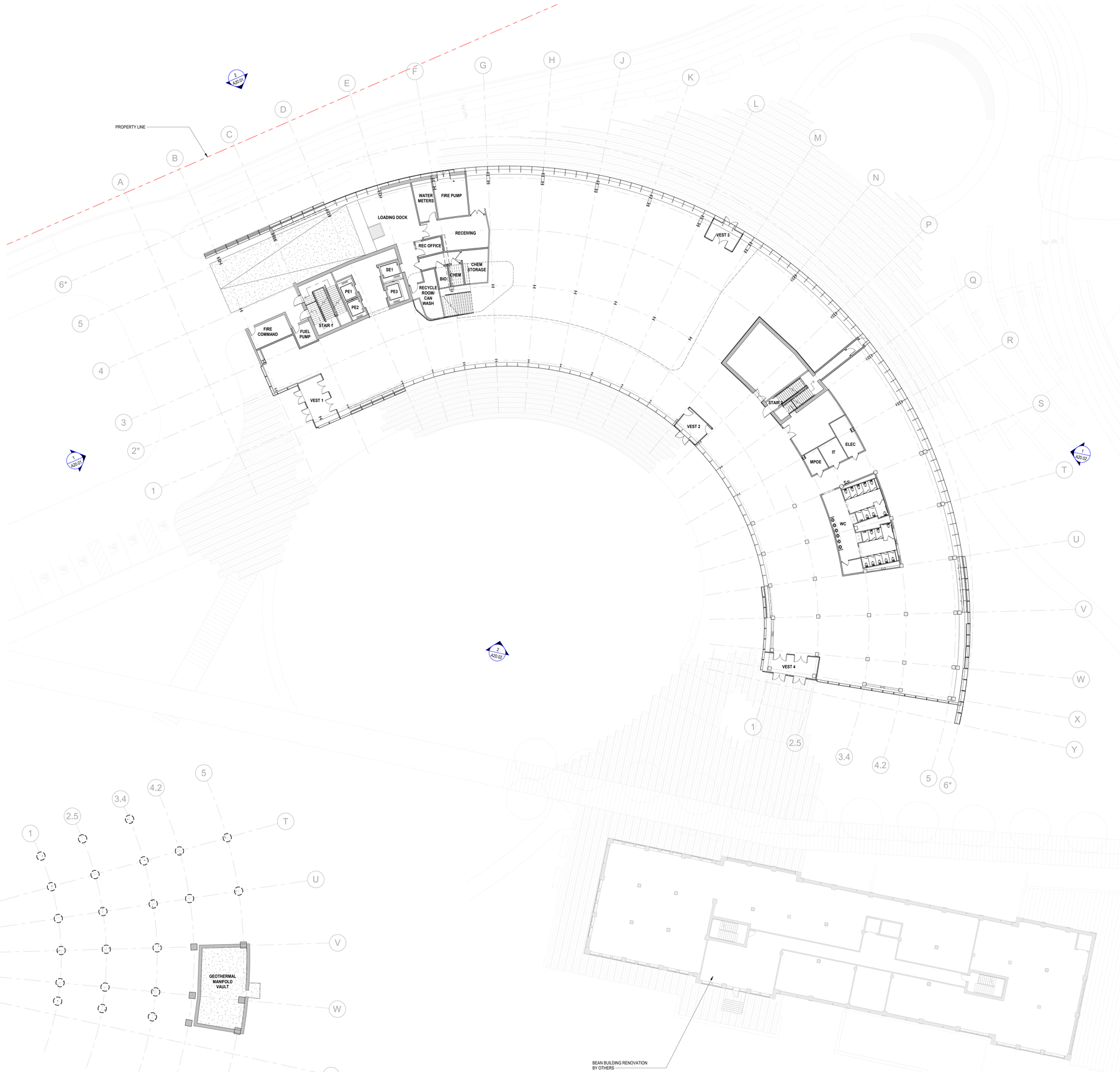
OCTOBER 27, 2023 **LAND-USE PERMIT SET**

Rev.	Date	Revision Title

ROOF PLAN

A-105

40,100 GSF



2 GSHP MANIFOLD VAULT -
1/16" = 1'-0"

1 1ST FLOOR PLAN
1/16" = 1'-0"

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LAND-USE PERMIT SET

Number	Revision	Date

LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
No. 3838
STATE OF MAINE
Stamp 10/27/2023

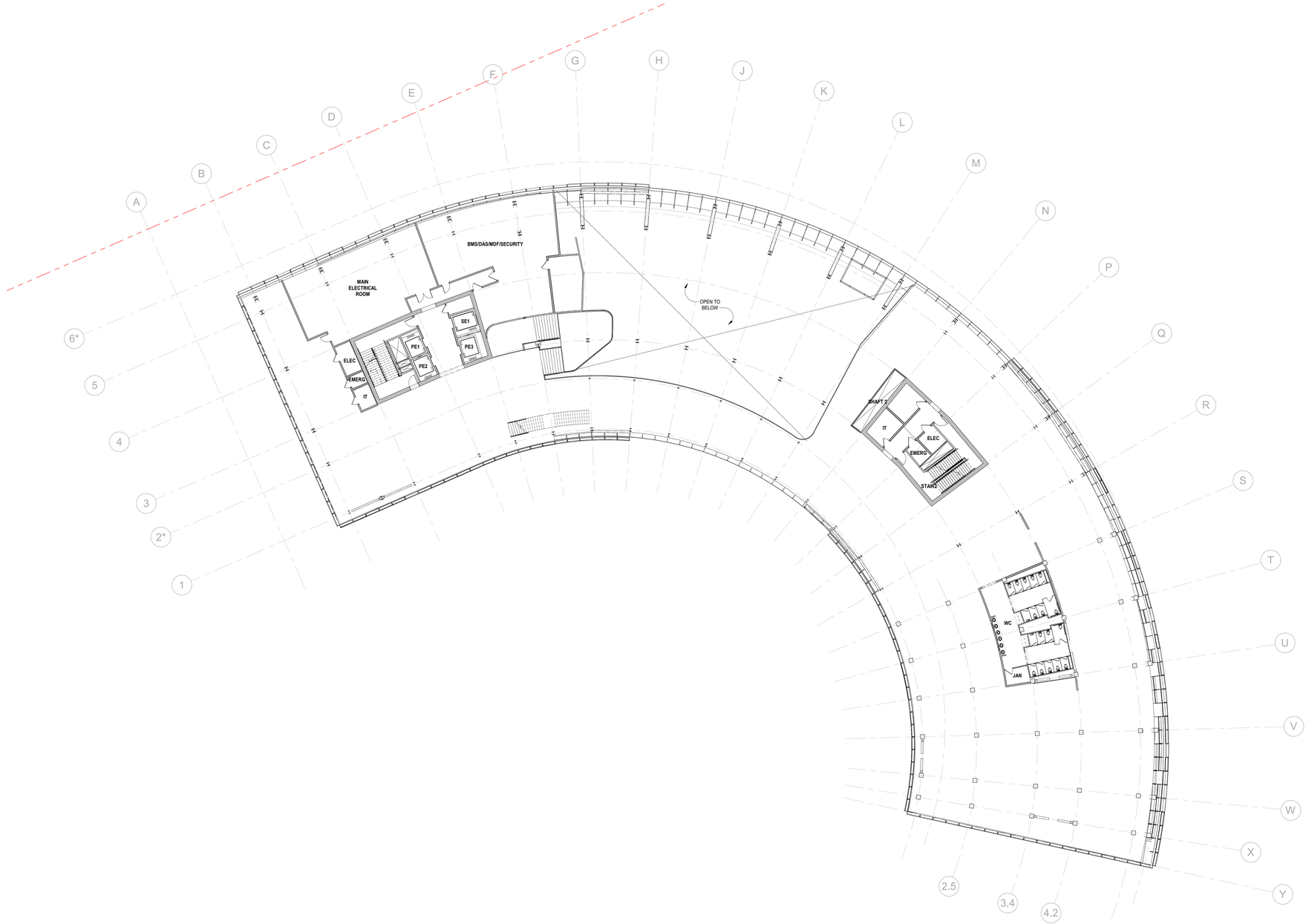
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS
Checked	BC
Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

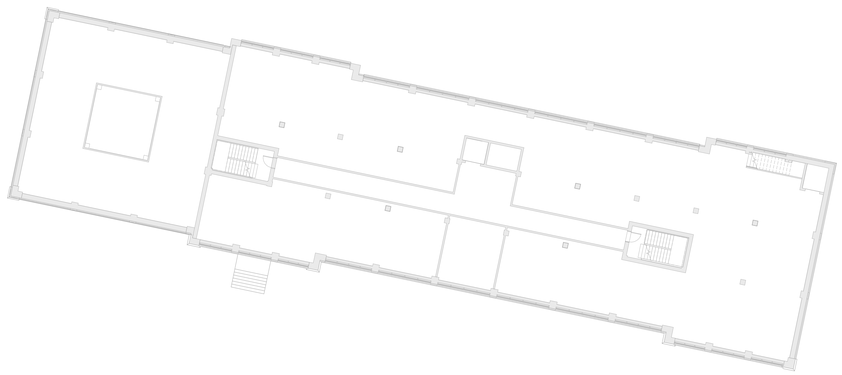
Drawing Title
1ST FLOOR PLAN

A1.01

9/29/2023 12:25:19 PM

34,720 GSF





1 2ND FLOOR PLAN
1/16" = 1'-0"

9/29/2023 12:25:21 PM

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Number	Revision	Date

LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
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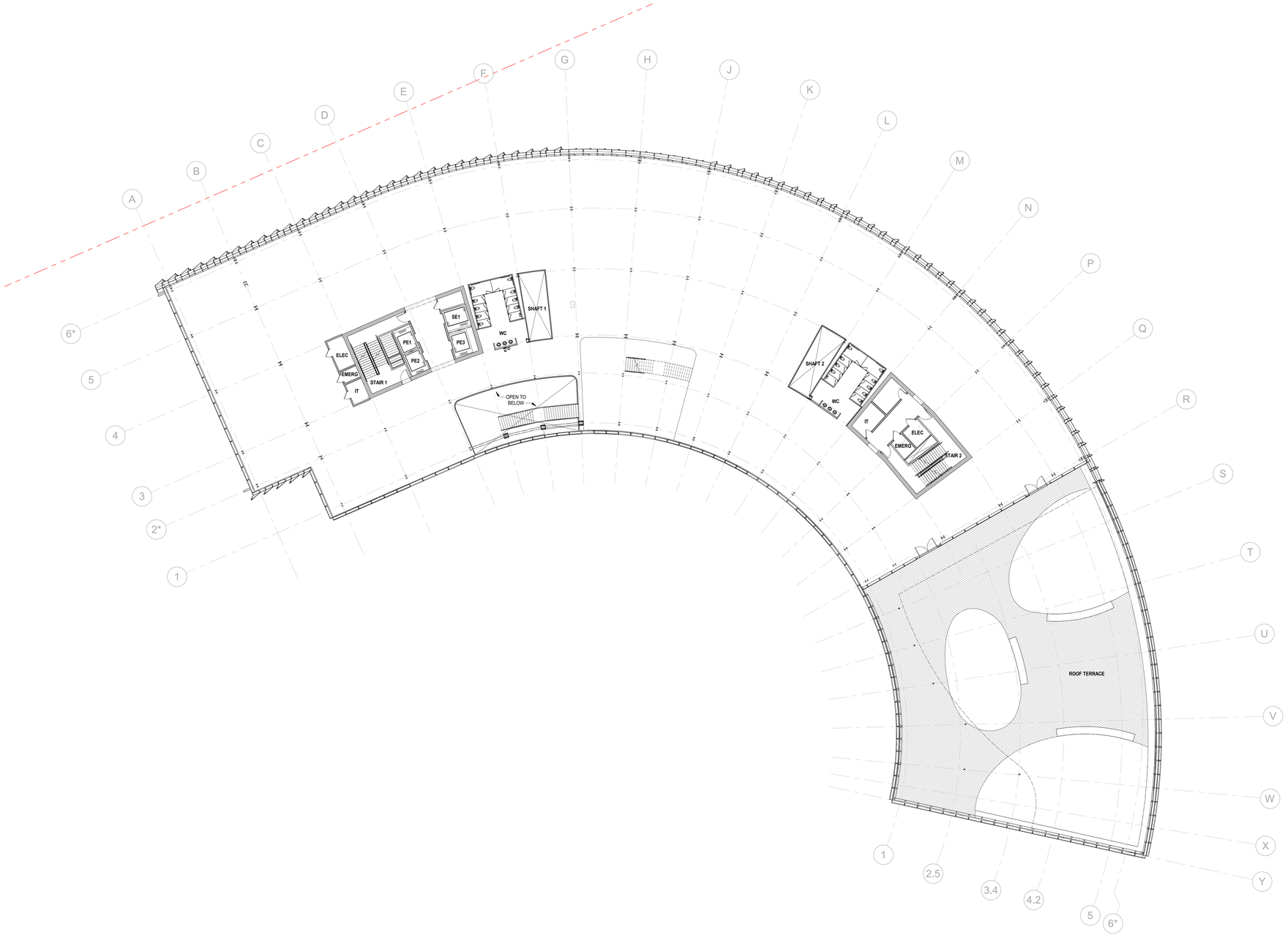
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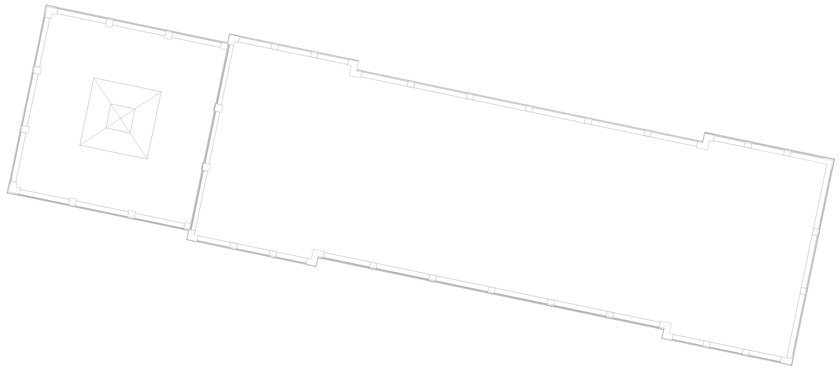
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Project	THE ROUX INSTITUTE
Drawn By	WS Checked BC
Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

Drawing Title
2ND FLOOR PLAN

A1.02

39,540 GSF





1 3RD FLOOR PLAN
1/16" = 1'-0"

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LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
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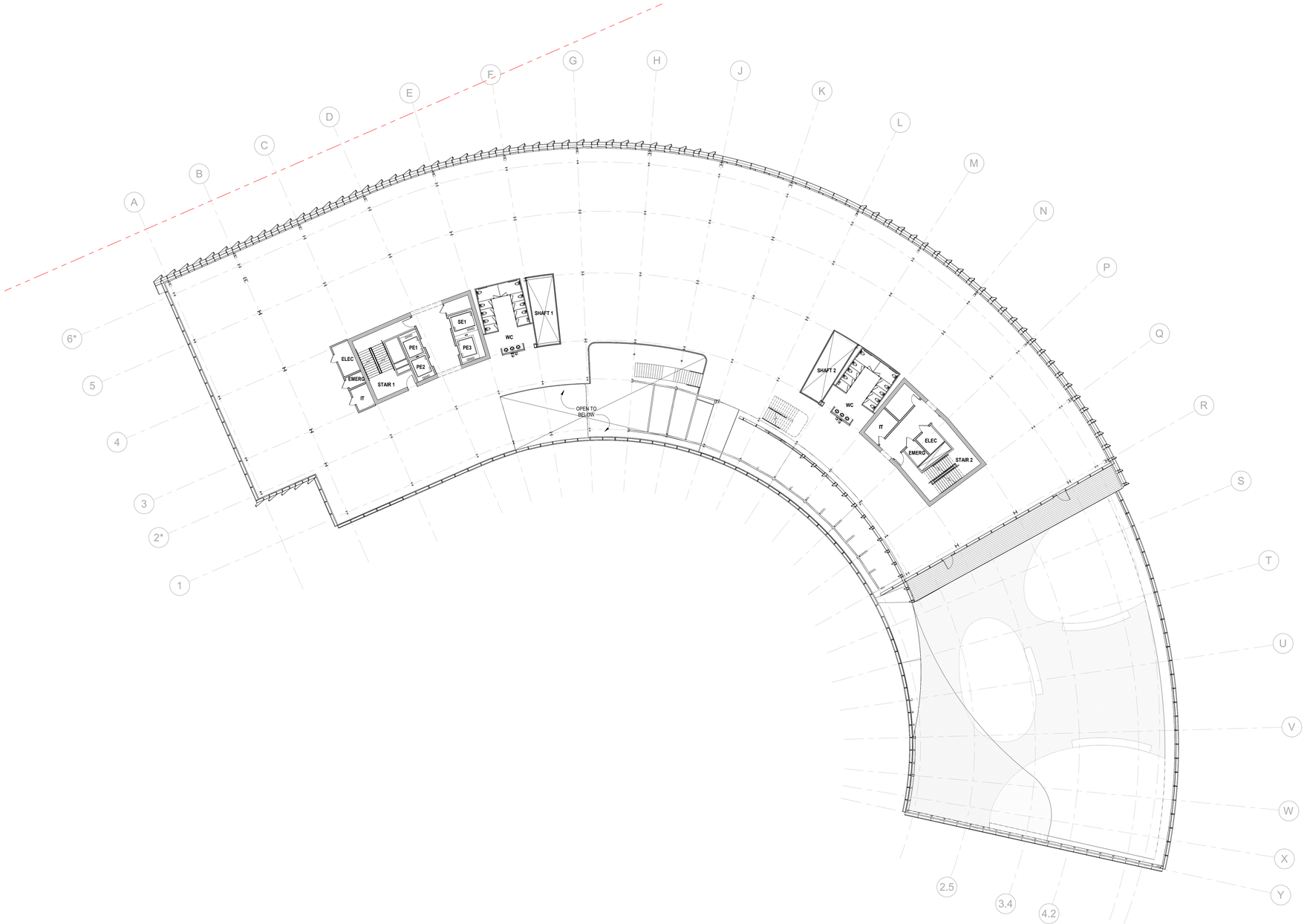
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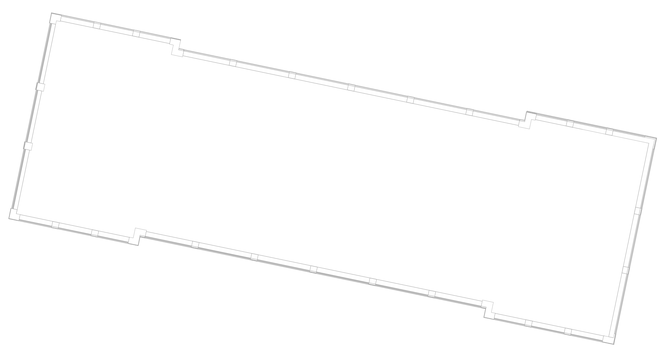
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Project	THE ROUX INSTITUTE
Drawn By	WS
Checked	BC
Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

Drawing Title
3RD FLOOR PLAN

A1.03

36,970 GSF





1 4TH FLOOR PLAN
1/16" = 1'-0"

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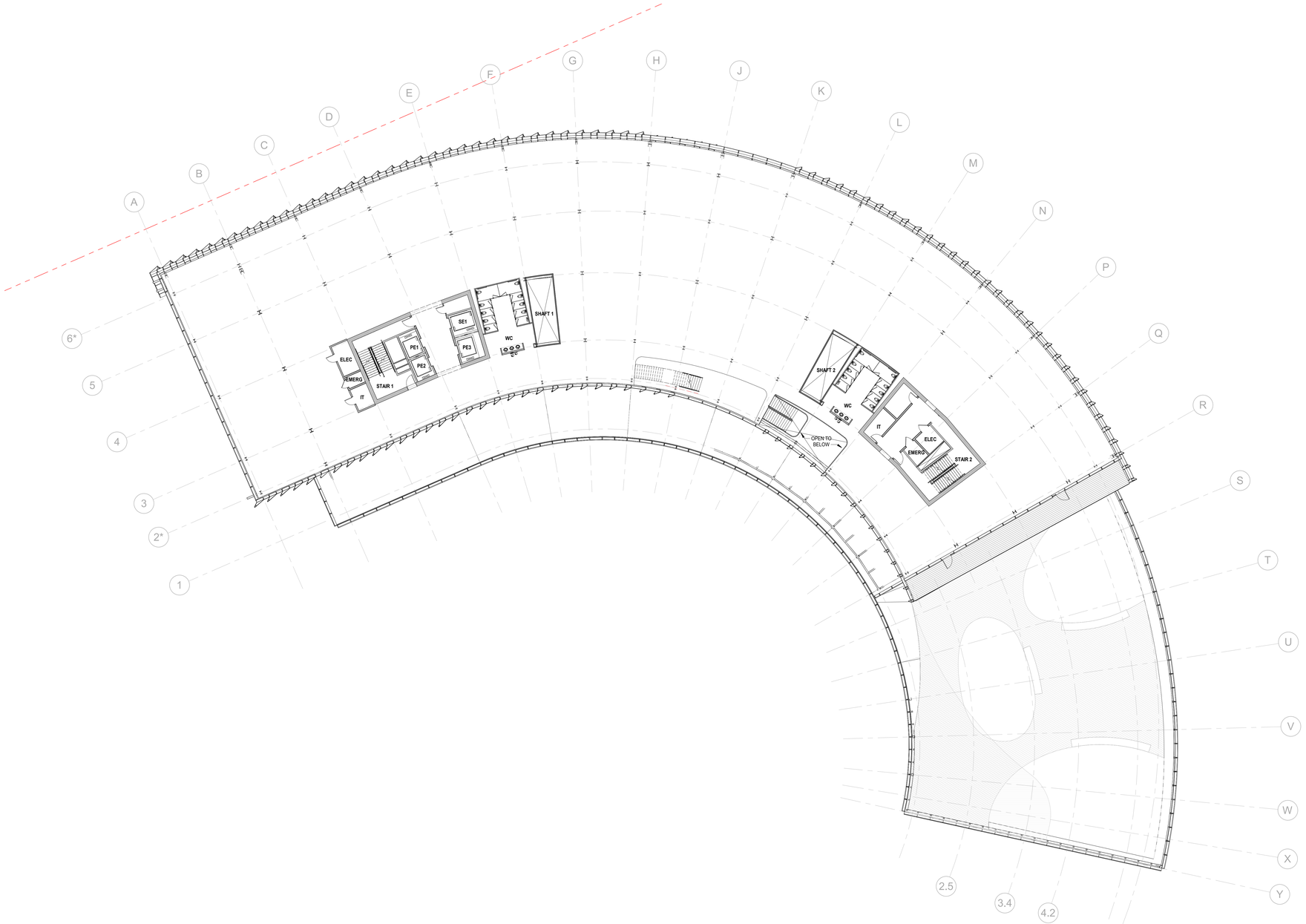
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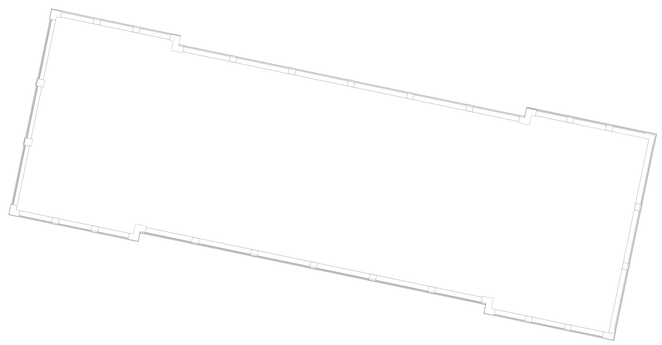
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Project	THE ROUX INSTITUTE		
Drawn By	WS	Checked	BC
Date	27 OCTOBER, 2023		
Scale	1/16" = 1'-0"		

Drawing Title
4TH FLOOR PLAN

A1.04

37,220 GSF





1 5TH FLOOR PLAN
1/16" = 1'-0"

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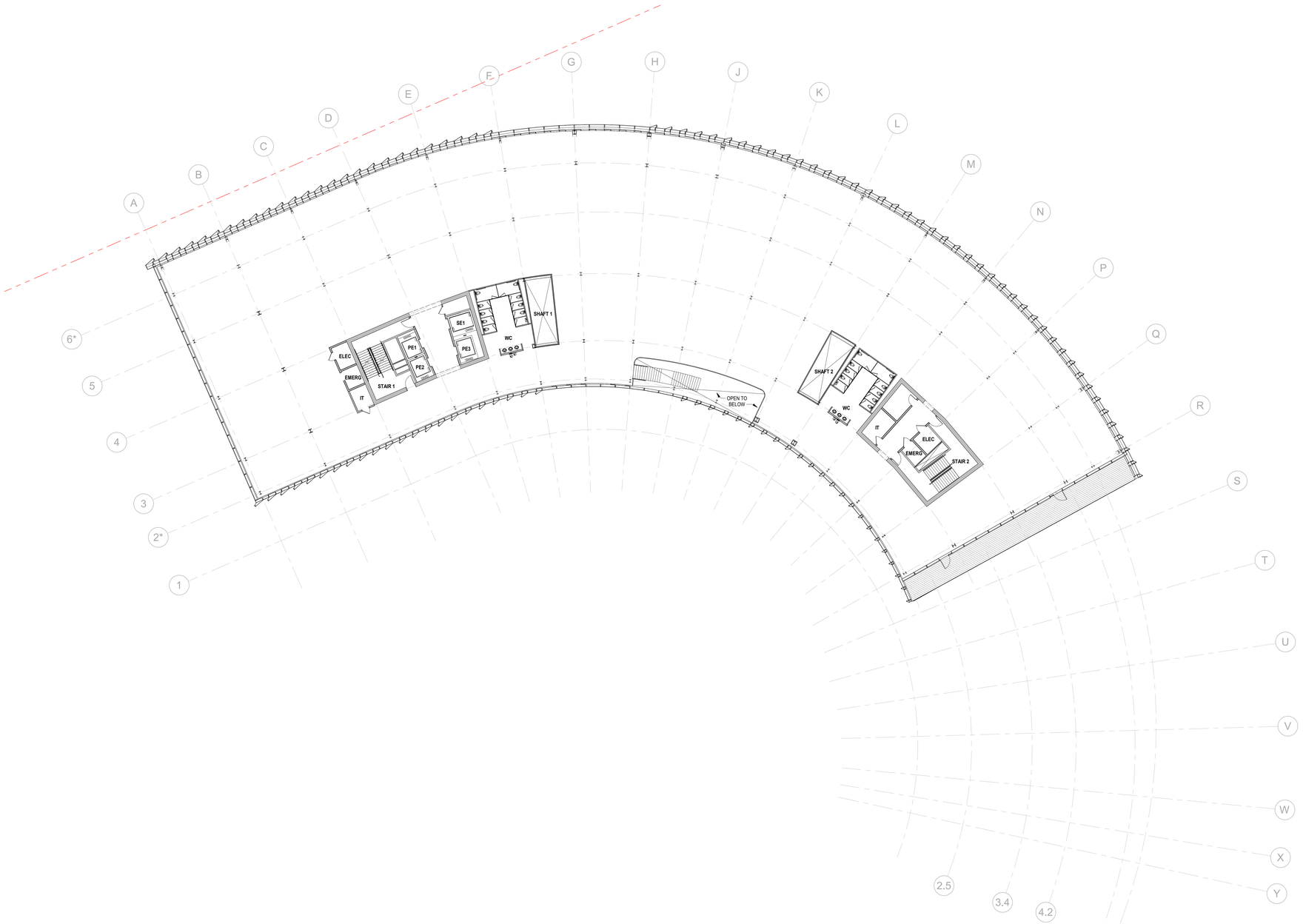
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS
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Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

Drawing Title
5TH FLOOR PLAN

A1.05

38,510 GSF



1 6TH FLOOR PLAN
1/16" = 1'-0"

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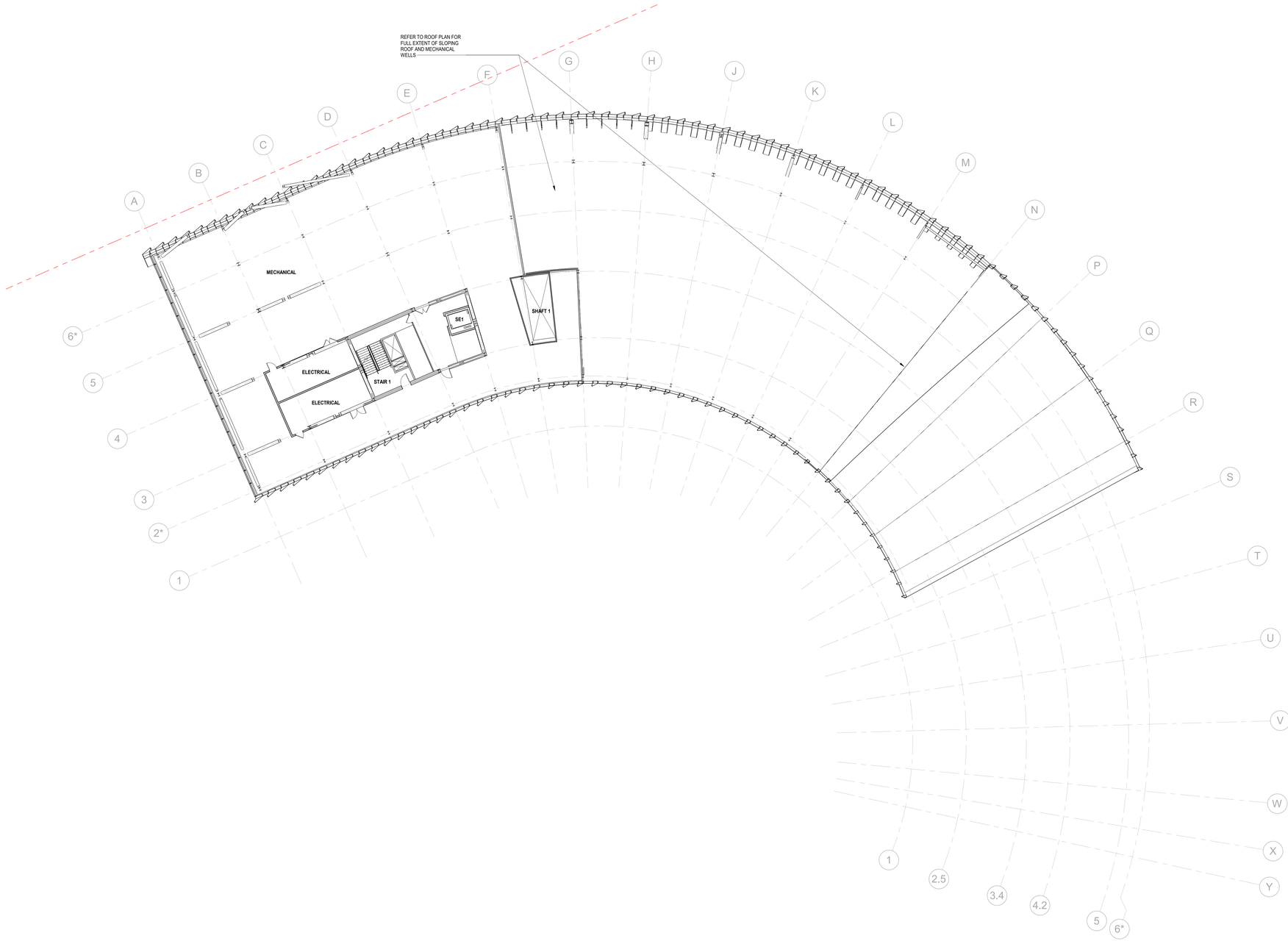
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Project	THE ROUX INSTITUTE
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Scale	1/16" = 1'-0"

Drawing Title
6TH FLOOR PLAN

A1.06

10,940 GSF



1 7TH FLOOR PLAN
1/16" = 1'-0"

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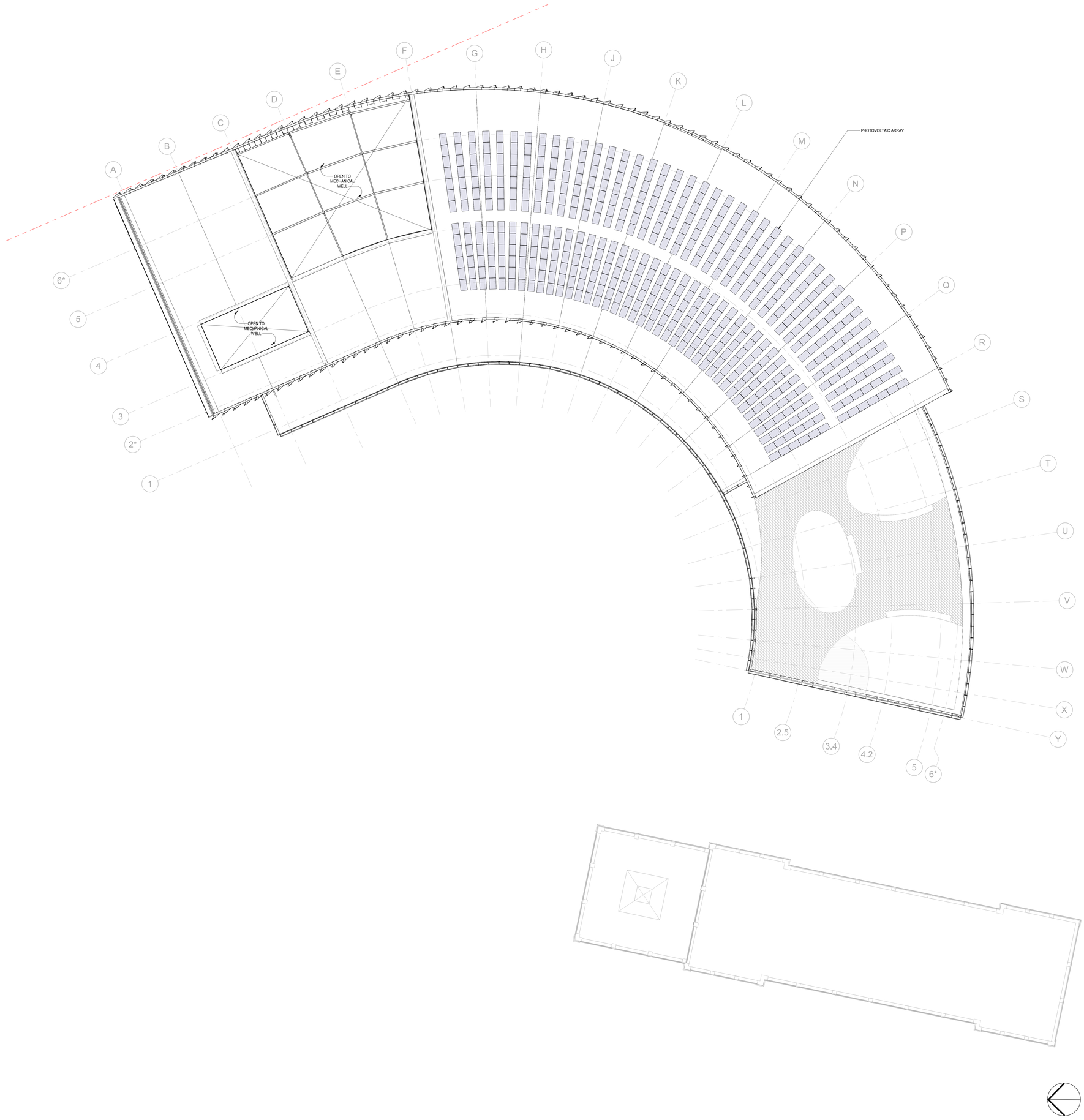
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Project	THE ROUX INSTITUTE
Drawn By	WS
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Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

Drawing Title
7TH FLOOR PLAN

A1.07

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1 ROOF PLAN - OVERALL Copy 2
1/16" = 1'-0"

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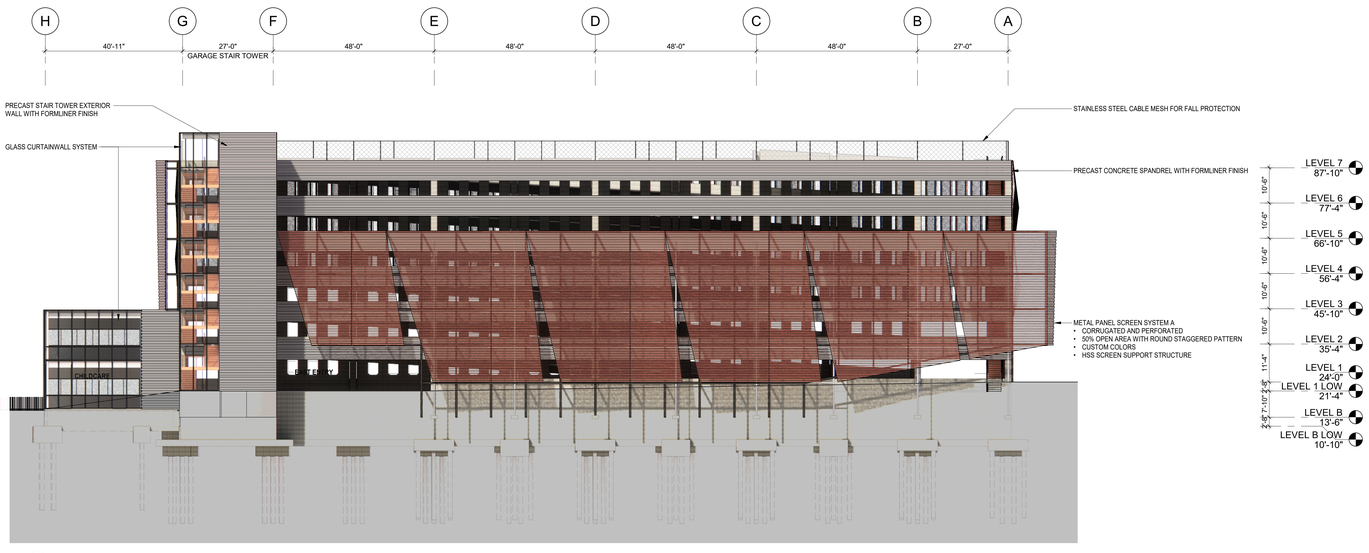
Number	Revision	Date

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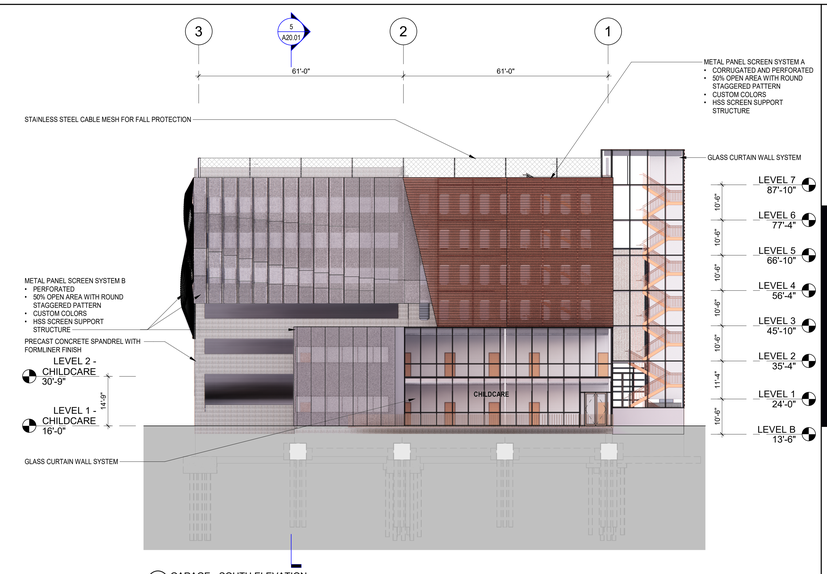
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS
Checked	BC
Date	27 OCTOBER, 2023
Scale	1/16" = 1'-0"

Drawing Title
ROOF PLAN

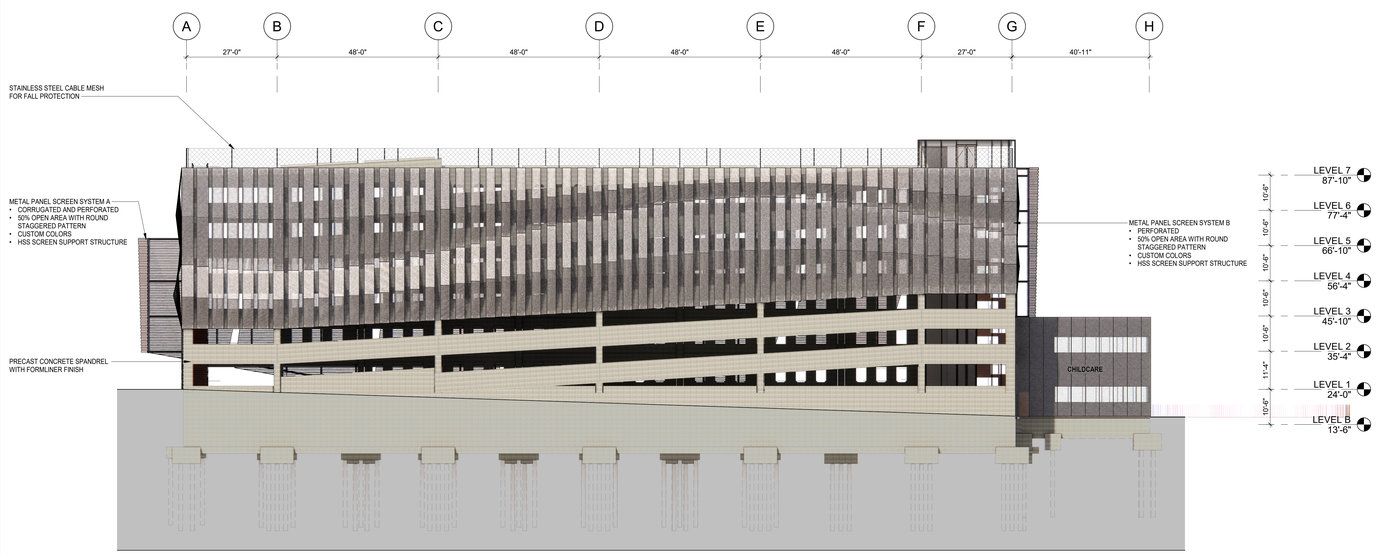
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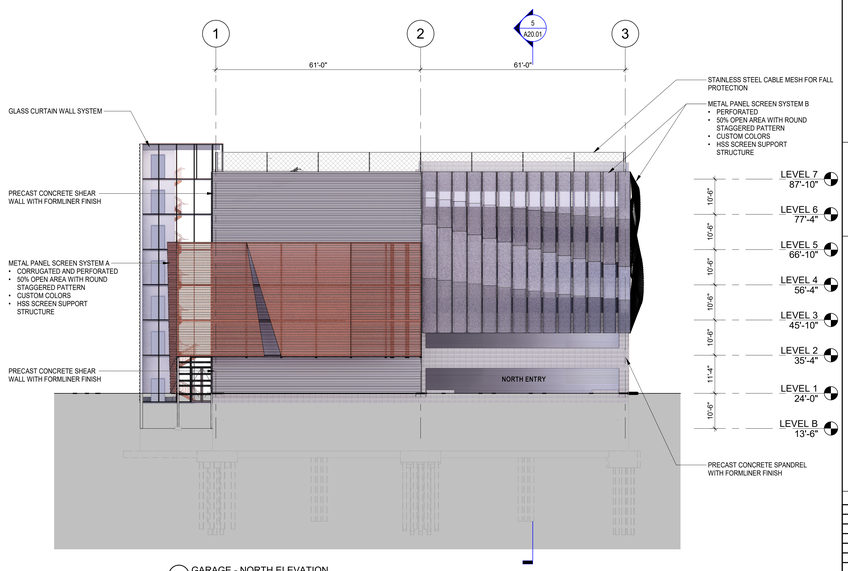
1 GARAGE - EAST ELEVATION
1/16" = 1'-0"



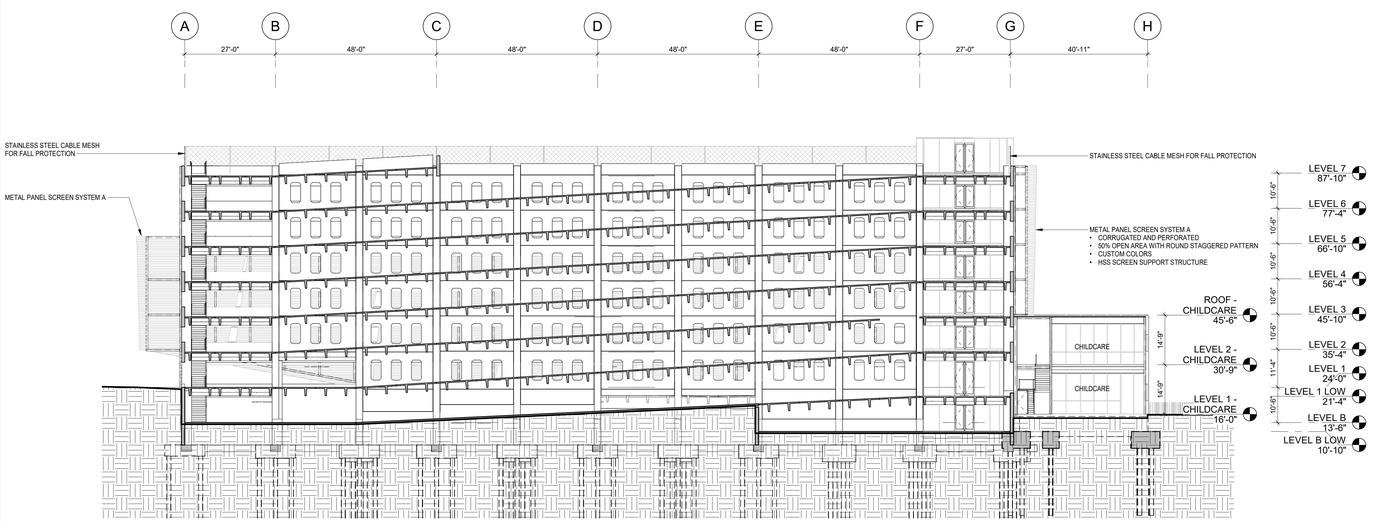
2 GARAGE - SOUTH ELEVATION
1/16" = 1'-0"



3 GARAGE - WEST ELEVATION
1/16" = 1'-0"



4 GARAGE - NORTH ELEVATION
1/16" = 1'-0"



5 GARAGE - SECTION
1/16" = 1'-0"

11/2/2023 11:54:41 AM

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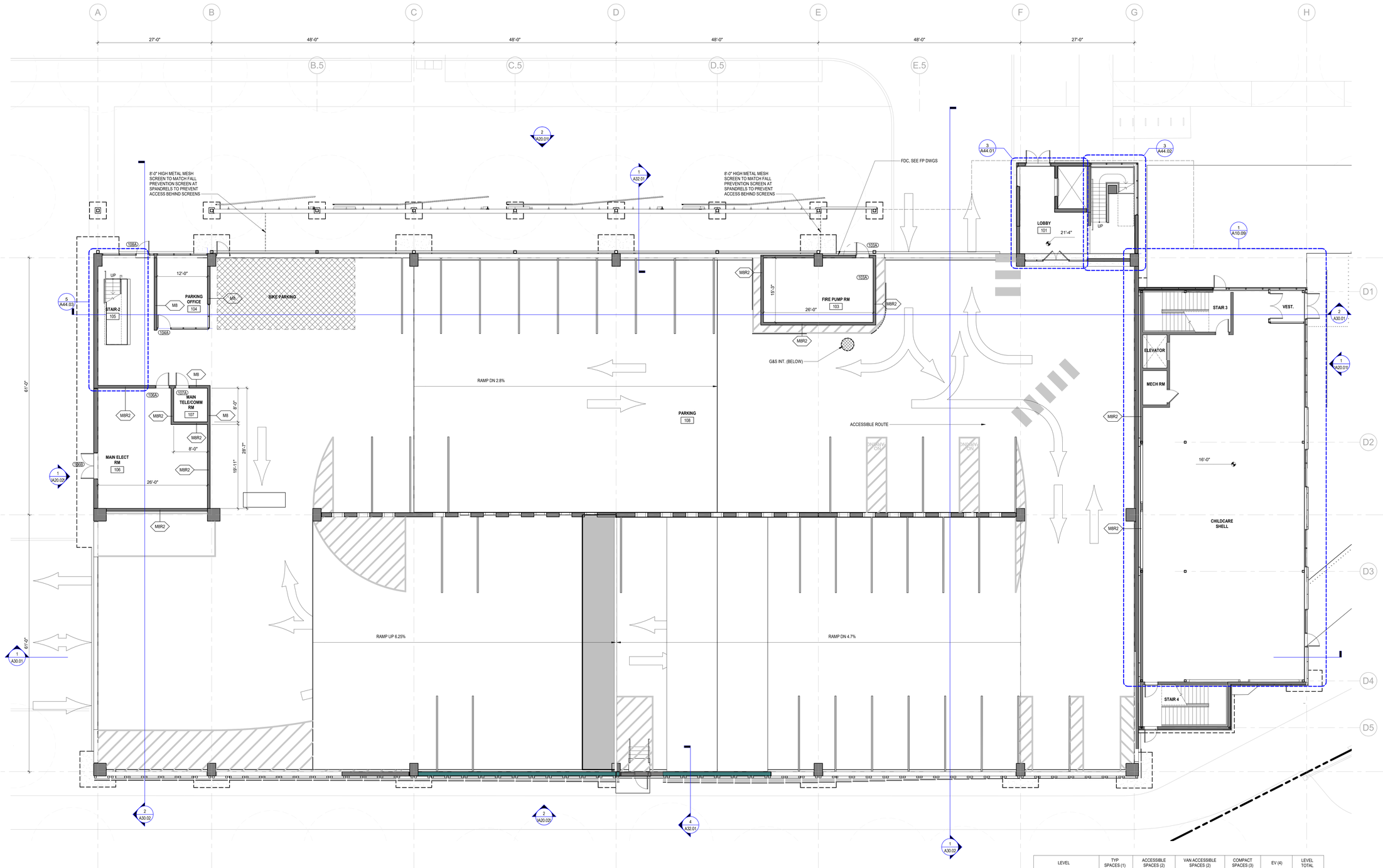
Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	WS
Checked	BC
Date	27 OCTOBER 2023
Scale	

Drawing Title
PARKING GARAGE EXT. ELEVATIONS AND SECTION

A20.01



1 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

LEVEL	TYP SPACES (1)	ACCESSIBLE SPACES (2)	VAN ACCESSIBLE SPACES (2)	COMPACT SPACES (3)	EV (4)	LEVEL TOTAL
SITE	6	4	4	0	0	14
LEVEL 01	52	4	0	4	2	62
LEVEL 02	82	2	0	4	4	92
LEVEL 03	83	2	0	4	4	93
LEVEL 04	83	0	0	6	4	93
LEVEL 05	84	0	0	6	4	94
LEVEL 06	81	0	0	6	6	93
LEVEL 07	77	0	0	7	0	84
TOTAL SPACES	548	12	4	37	24	625

	REQUIRED	PROVIDED
ACCESSIBLE SPACES REQUIRED (2%)	12.5	16
VAN SPACES REQUIRED (1/6 OF TOTAL)	2.08	4
EV SPACES PER STUDY	23	24
MAX COMPACT (20%)	143	37

NOTES:
1. TYPICAL SPACES 8'-0" WIDE BY 18'-0" DEEP.
2. ADA SPACES AND AISLE PER ADA REQUIREMENTS.
3. COMPACT SPACES 8'-0" WIDE BY 16'-0" DEEP.
4. EV SPACES 8'-0" WIDE BY 18' DEEP WITH EXTRA SPACE BETWEEN VEHICLES.

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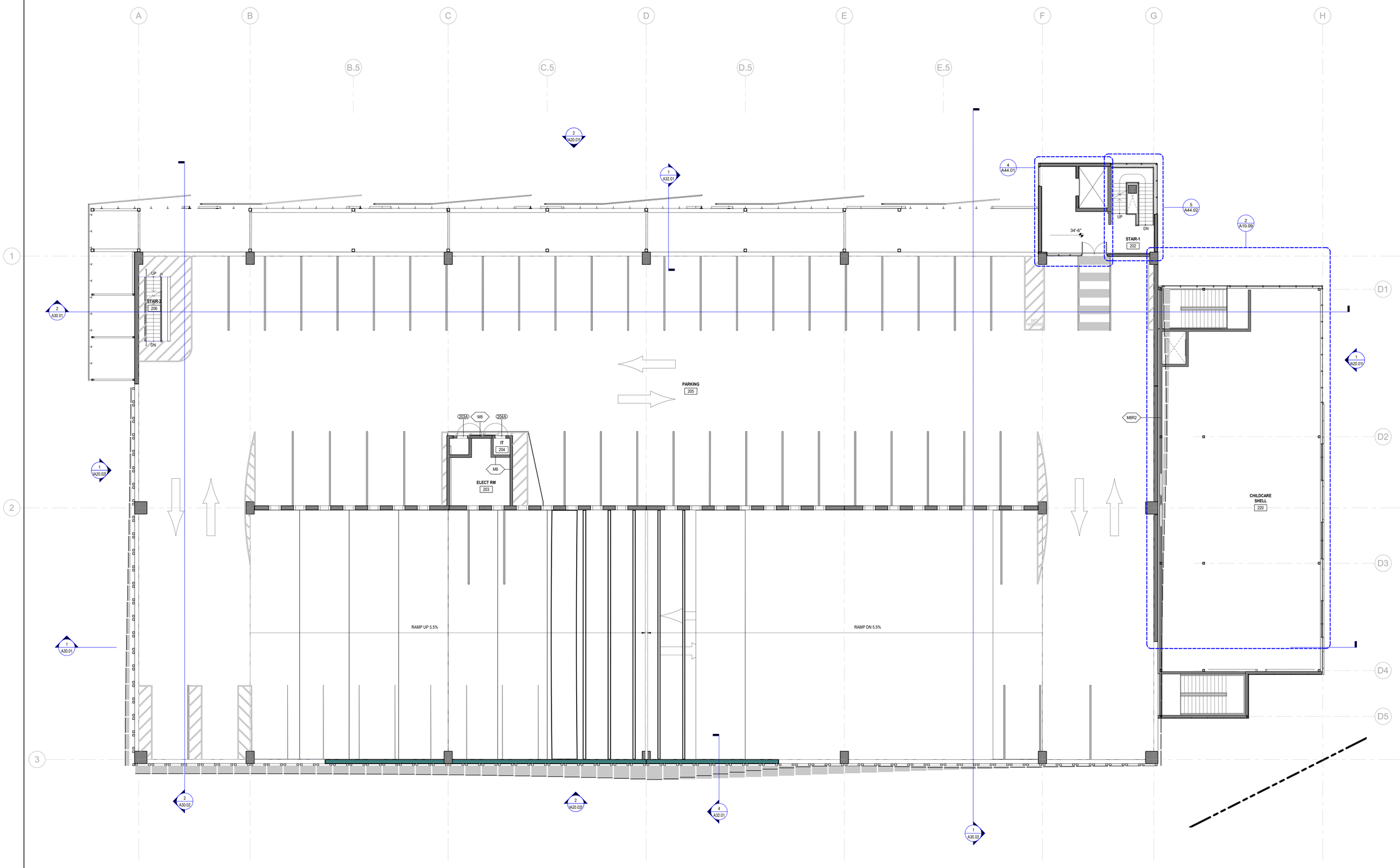
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-1 FLOOR PLAN

A10.01

2/1/2024 8:51:30 AM



1 LEVEL 2 FLOOR PLAN
1/8" = 1'-0"

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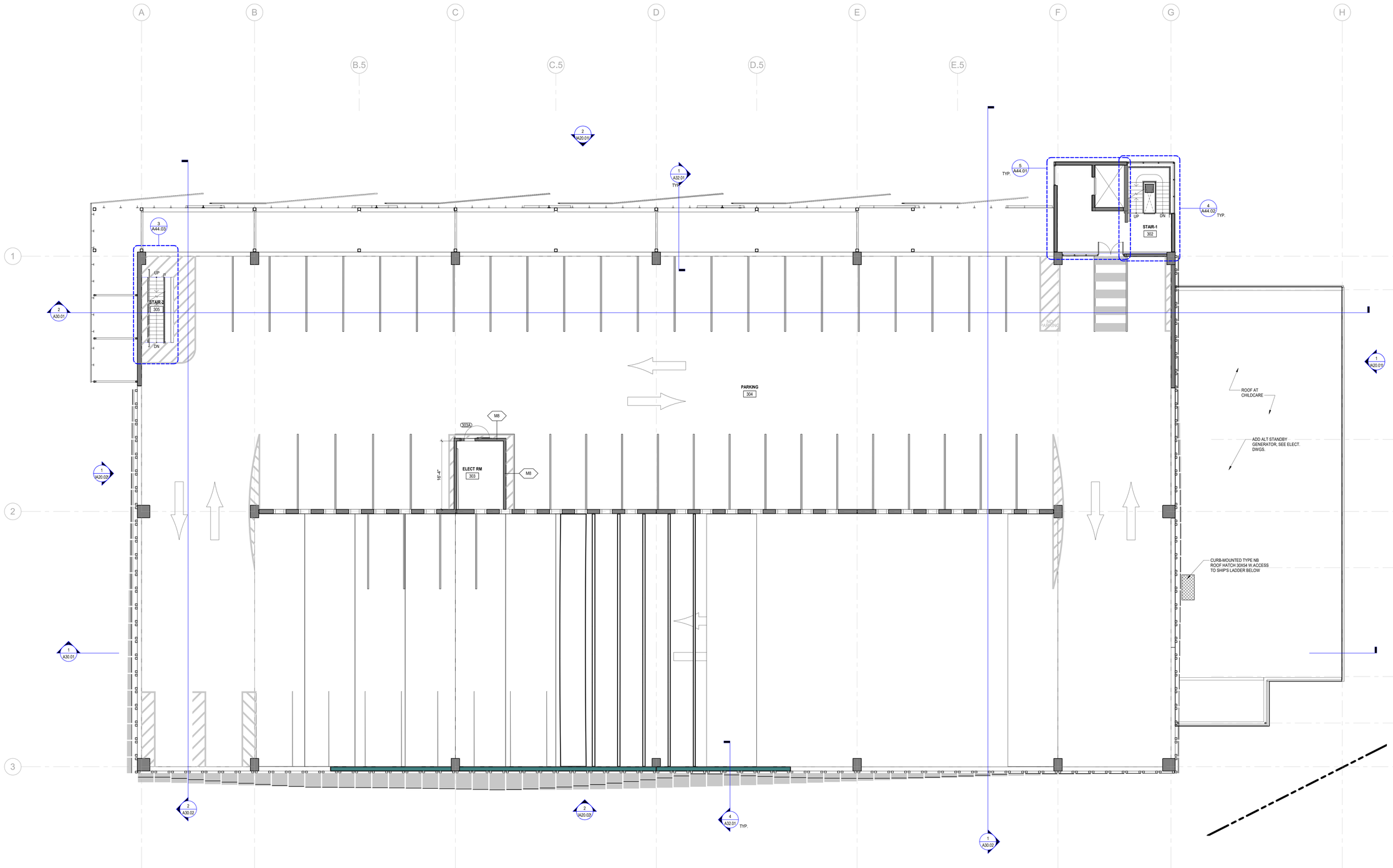
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-2 FLOOR PLAN

A10.02

2/1/2024 8:51:31 AM



1 LEVEL 3 FLOOR PLAN
1/8" = 1'-0"

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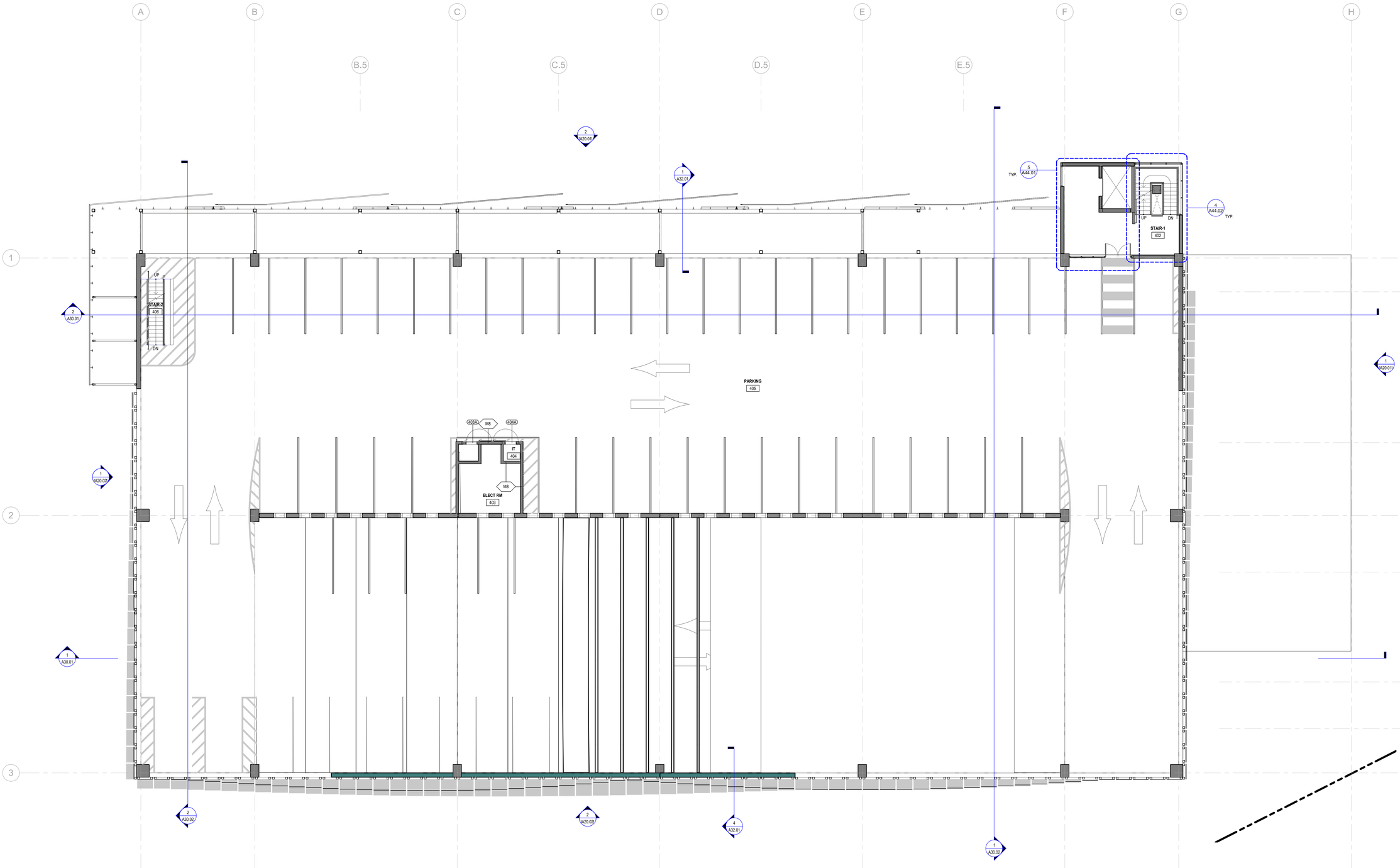
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-3 FLOOR PLAN

A10.03

2/1/2024 8:51:32 AM



1 LEVEL 4 FLOOR PLAN
1/8" = 1'-0"

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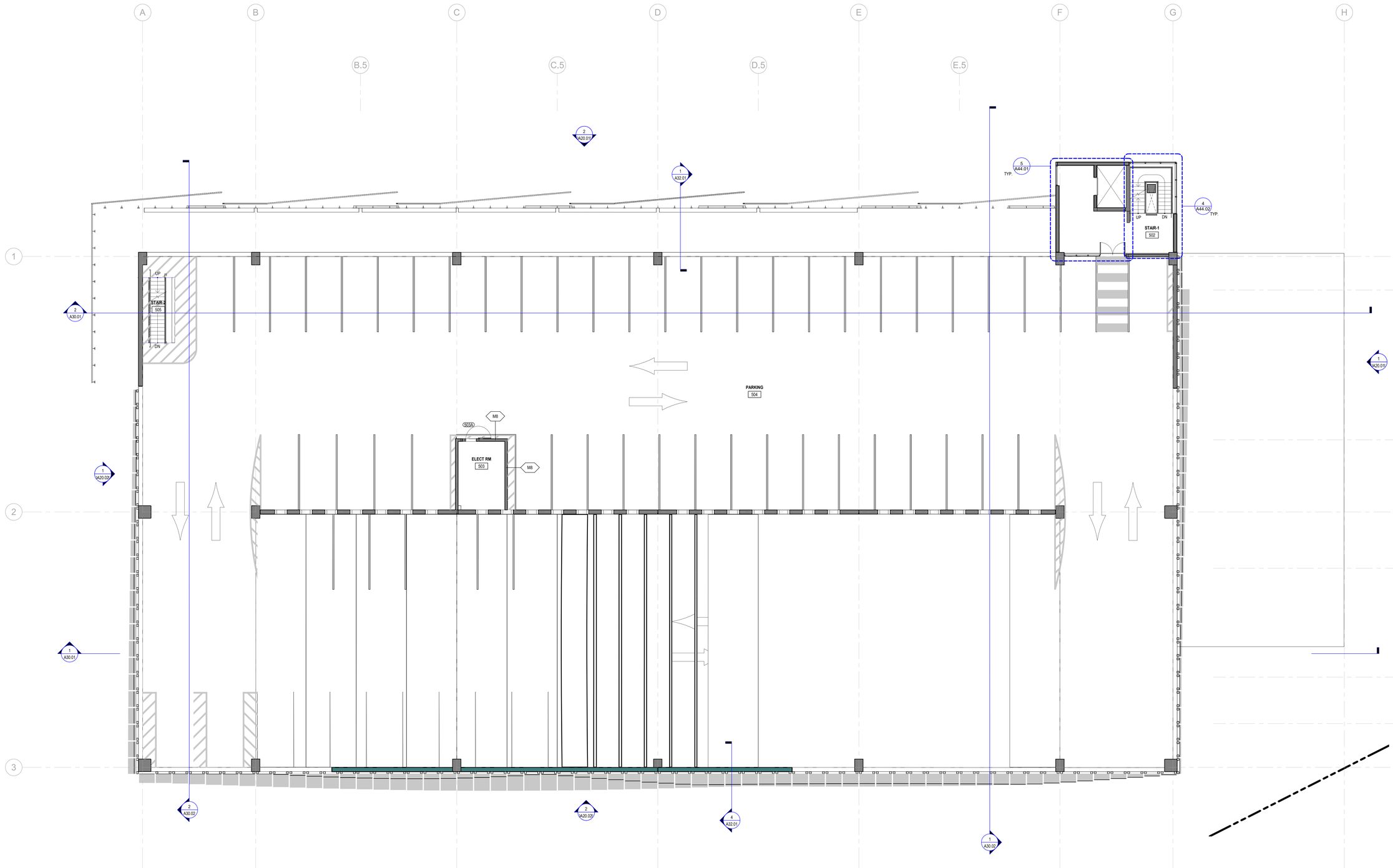
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Job #	2202
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Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
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Drawing Title
LEVEL-4 FLOOR PLAN

A10.04

2/1/2024 8:54:54 AM



1 LEVEL 5 FLOOR PLAN
1/8" = 1'-0"

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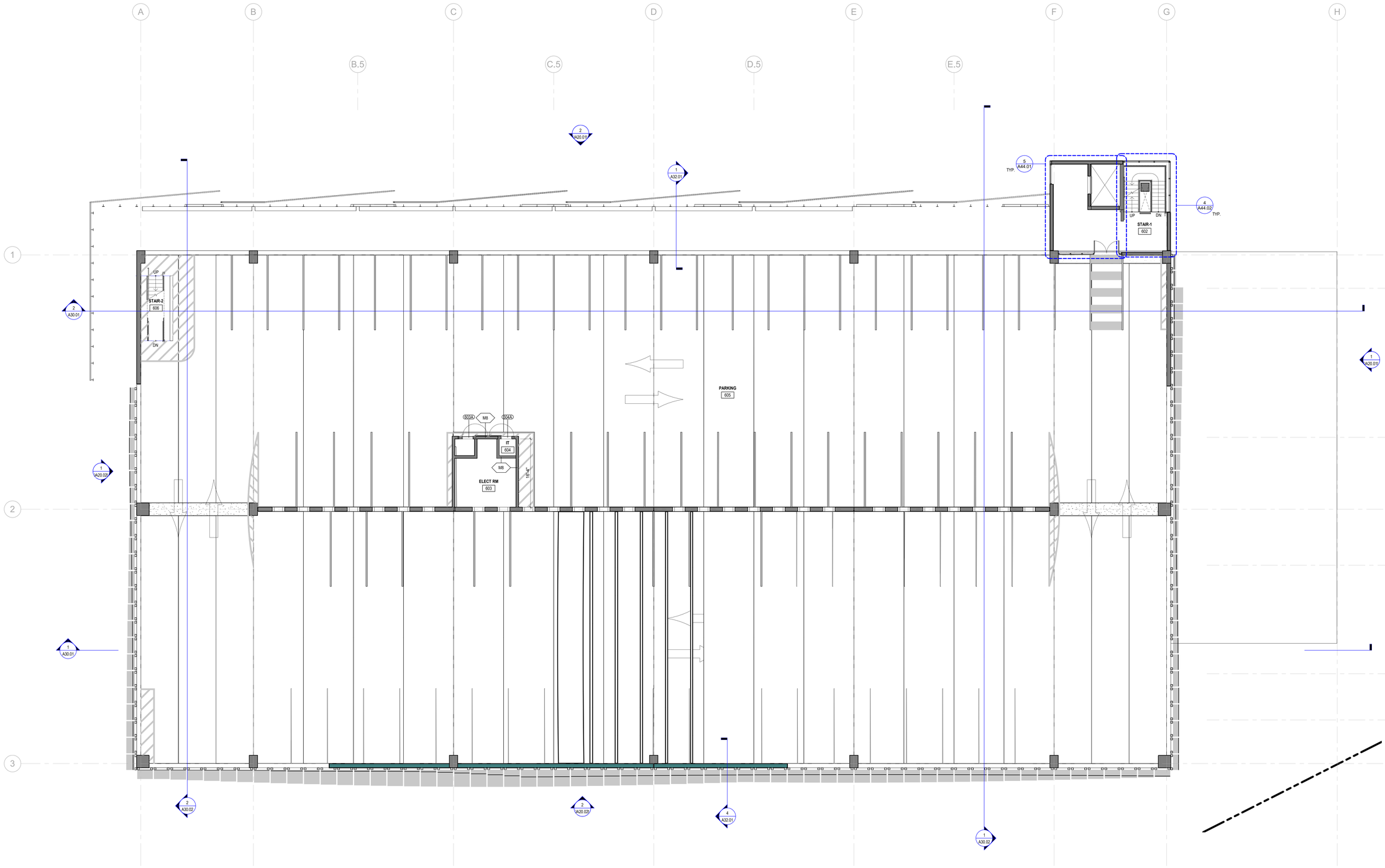
Number	Revision	Date

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Job #	2202
Project	THE ROUX INSTITUTE
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Checked	BC
Date	31 JANUARY 2024
Scale	
Drawing Title	LEVEL-5 FLOOR PLAN

A10.05

2/1/2024 8:51:35 AM



1 LEVEL 6 FLOOR PLAN
1/8" = 1'-0"

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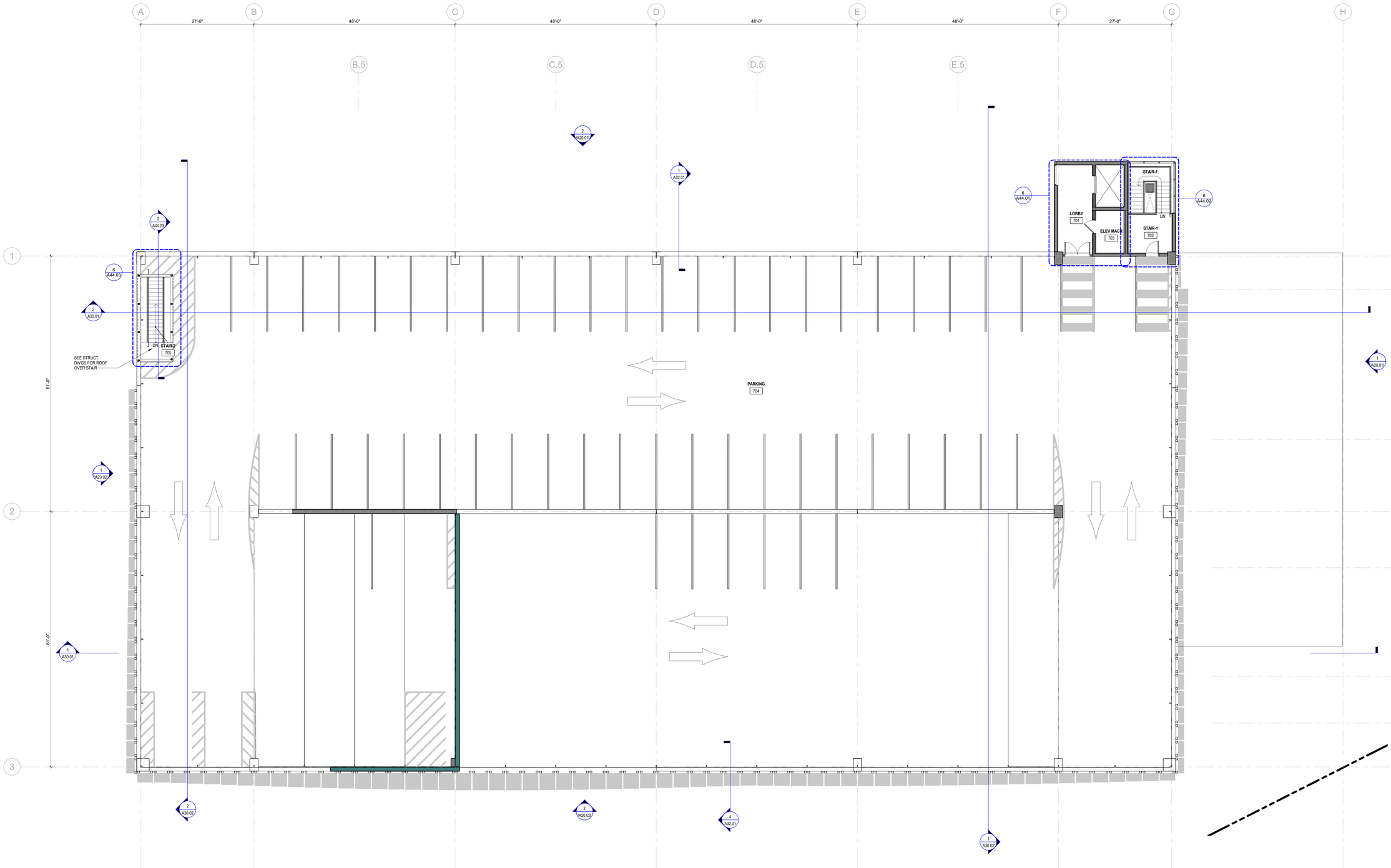
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
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Drawing Title
LEVEL-6 FLOOR PLAN

A10.06

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1 LEVEL 7 FLOOR PLAN
1/8" = 1'-0"

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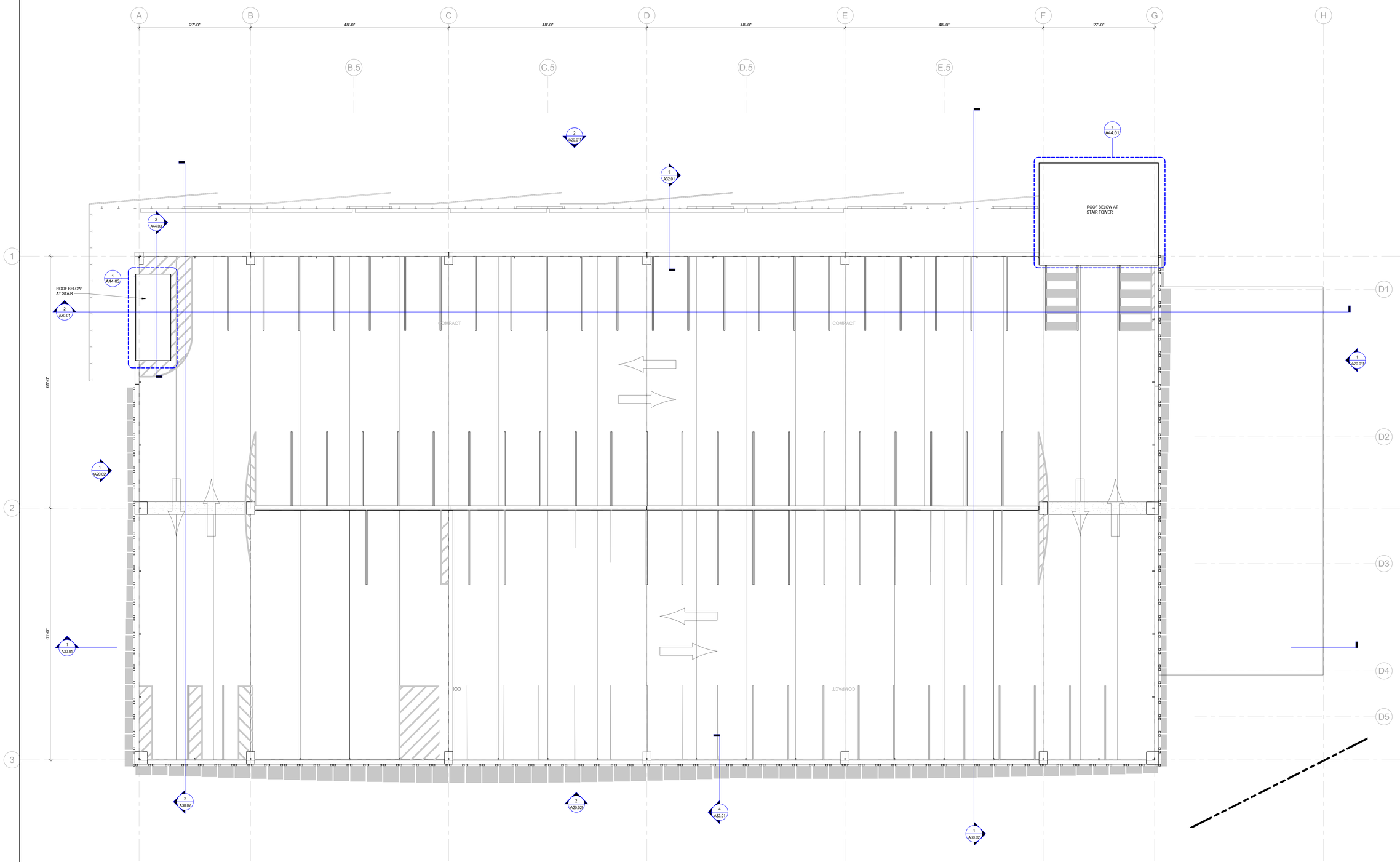
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-7 FLOOR PLAN

A10.07

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1 ROOF PLAN
1/8" = 1'-0"

2/1/2024 8:51:39 AM

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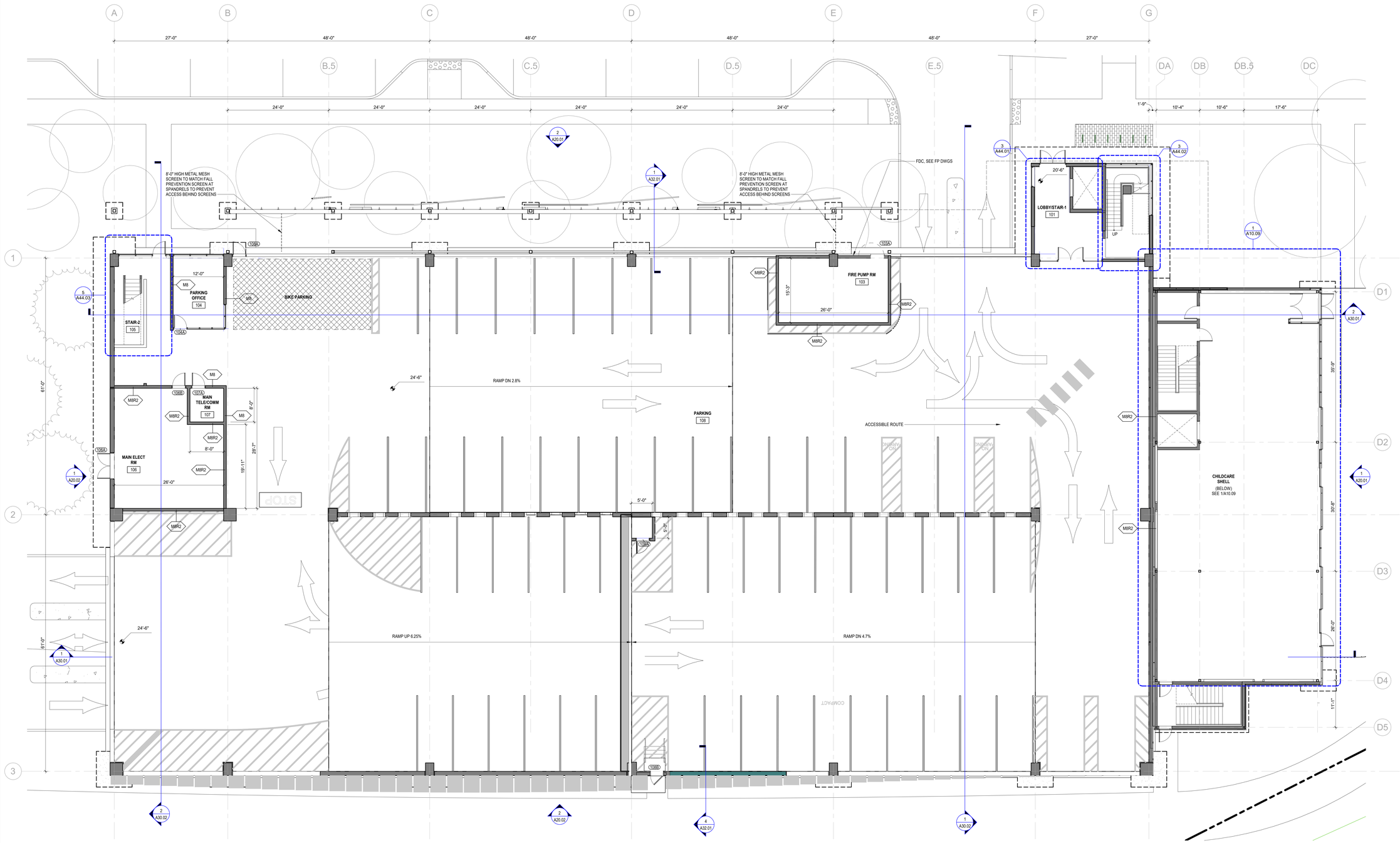
Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	Author
Checked	Checker
Date	31 JANUARY 2024
Scale	

Drawing Title
ROOF PLAN

A10.08

GENERAL NOTES

1. ELECTRICAL - LIGHTING: INTERIOR BUILDING LIGHTING SHALL COMPLY WITH ANSI/ASHRAE/IES STANDARD 90.1-2022.
2. ELECTRICAL - POWER: RECEPTACLES WILL BE PROVIDED ADJACENT TO INTERIOR BIKE PARKING AS REQUIRED.



1 LEVEL 1 FLOOR PLAN
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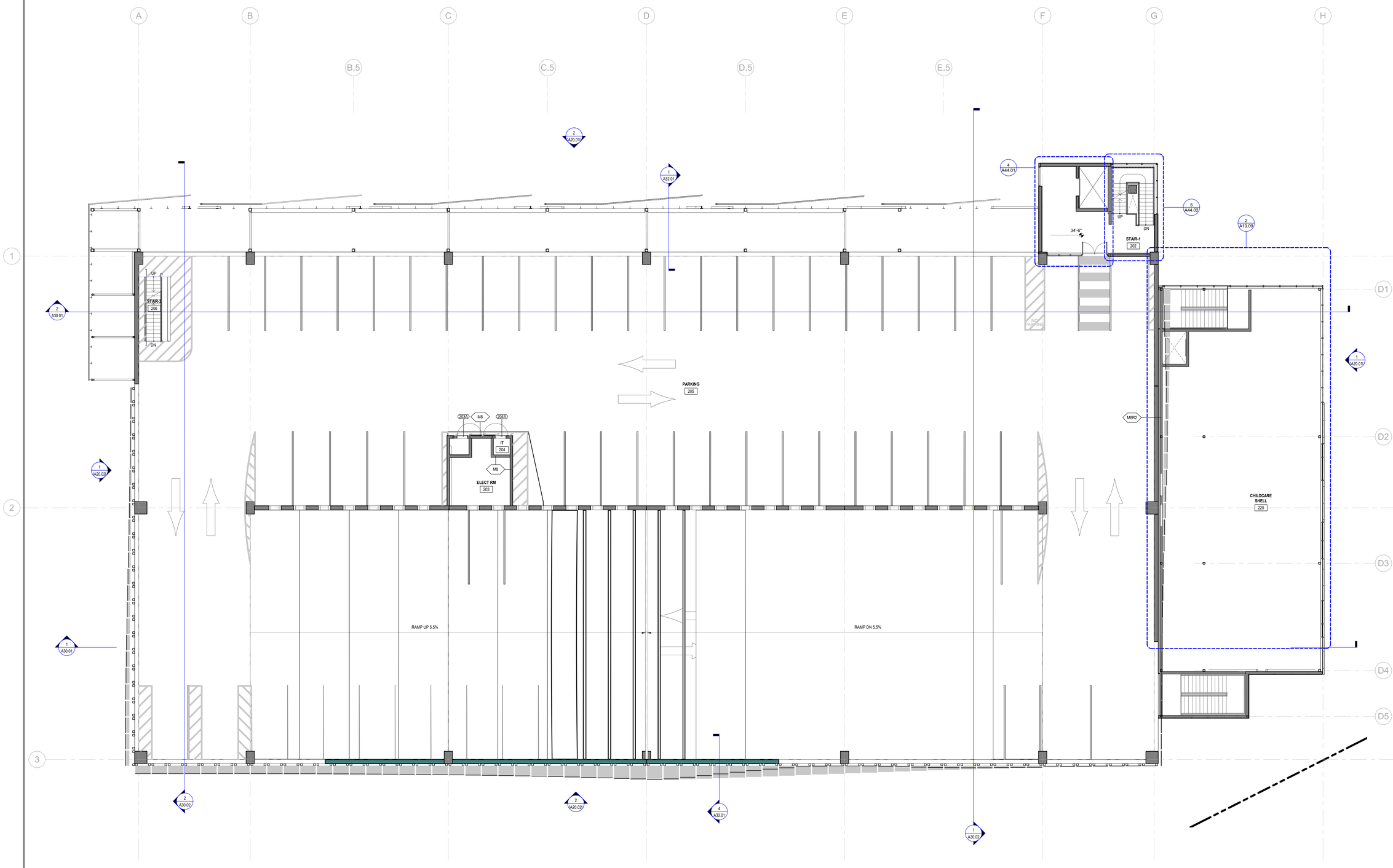
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Project	THE ROUX INSTITUTE - GARAGE
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Scale	

Drawing Title
LEVEL-1 FLOOR PLAN

A10.01

3/22/2024 9:05:37 AM



1 LEVEL 2 FLOOR PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

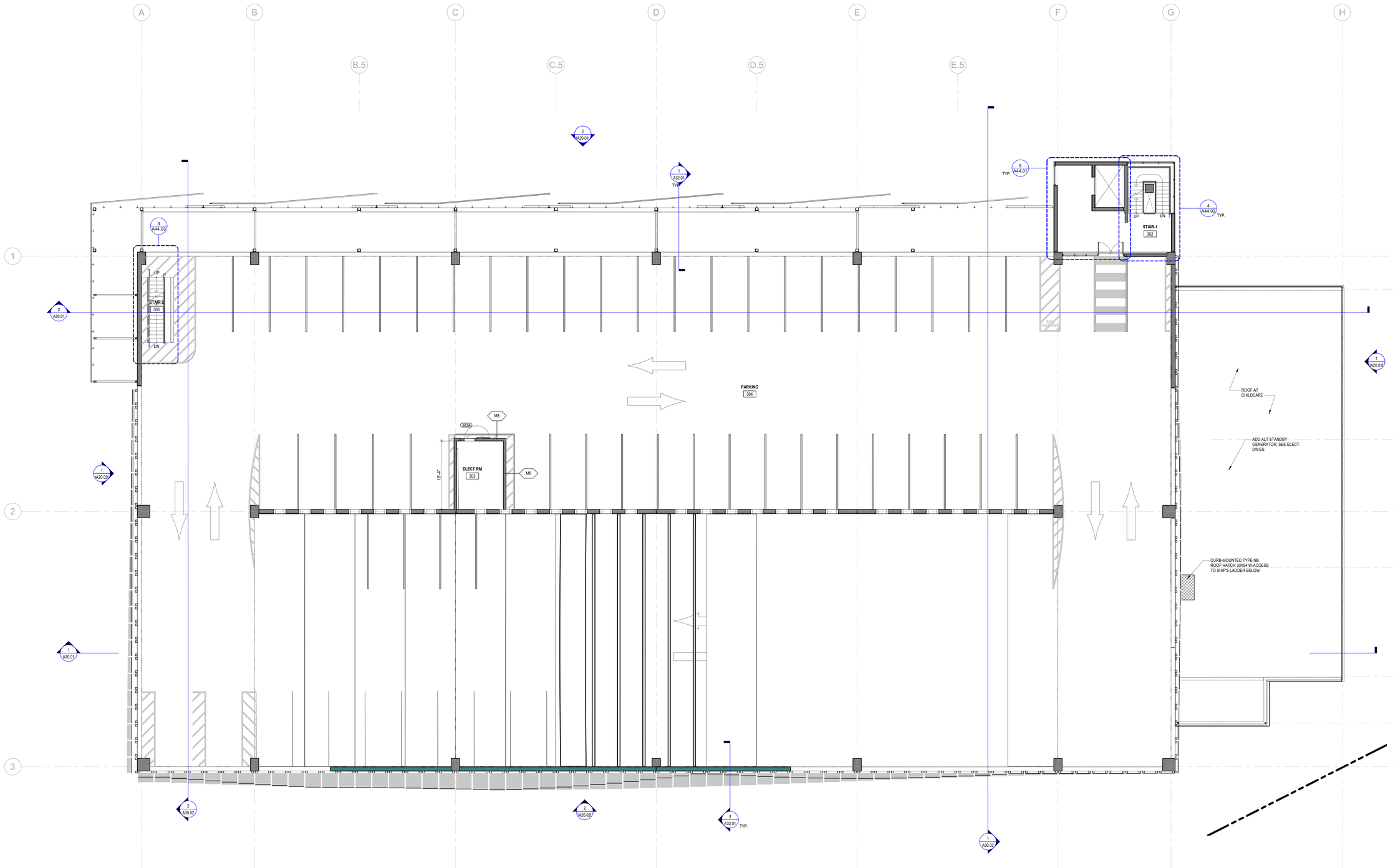
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-2 FLOOR PLAN

A10.02

2/1/2024 8:51:31 AM



1 LEVEL 3 FLOOR PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

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DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

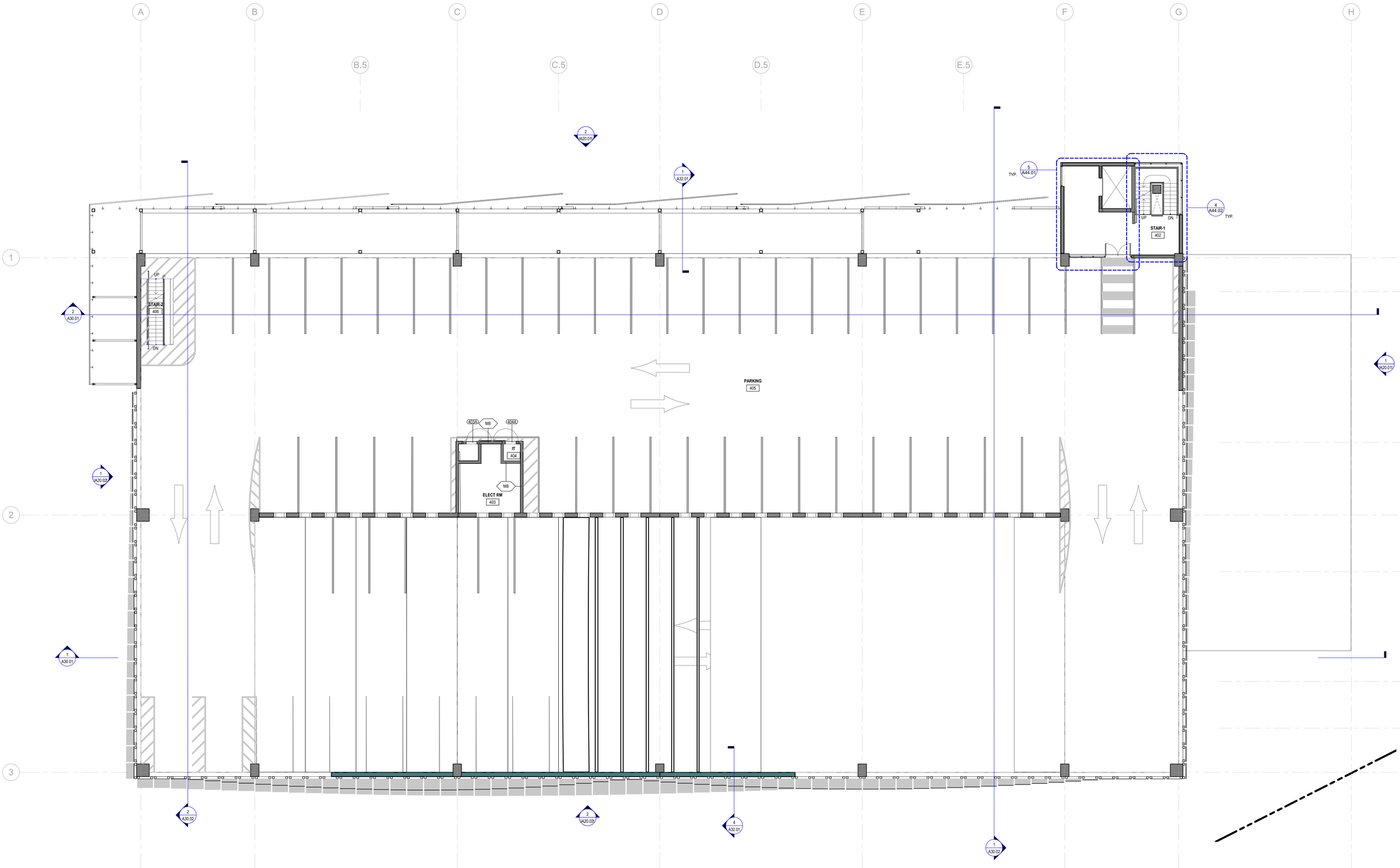
Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-3 FLOOR PLAN

A10.03

2/1/2024 8:51:32 AM



1 LEVEL 4 FLOOR PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

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Architects and Planners
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DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

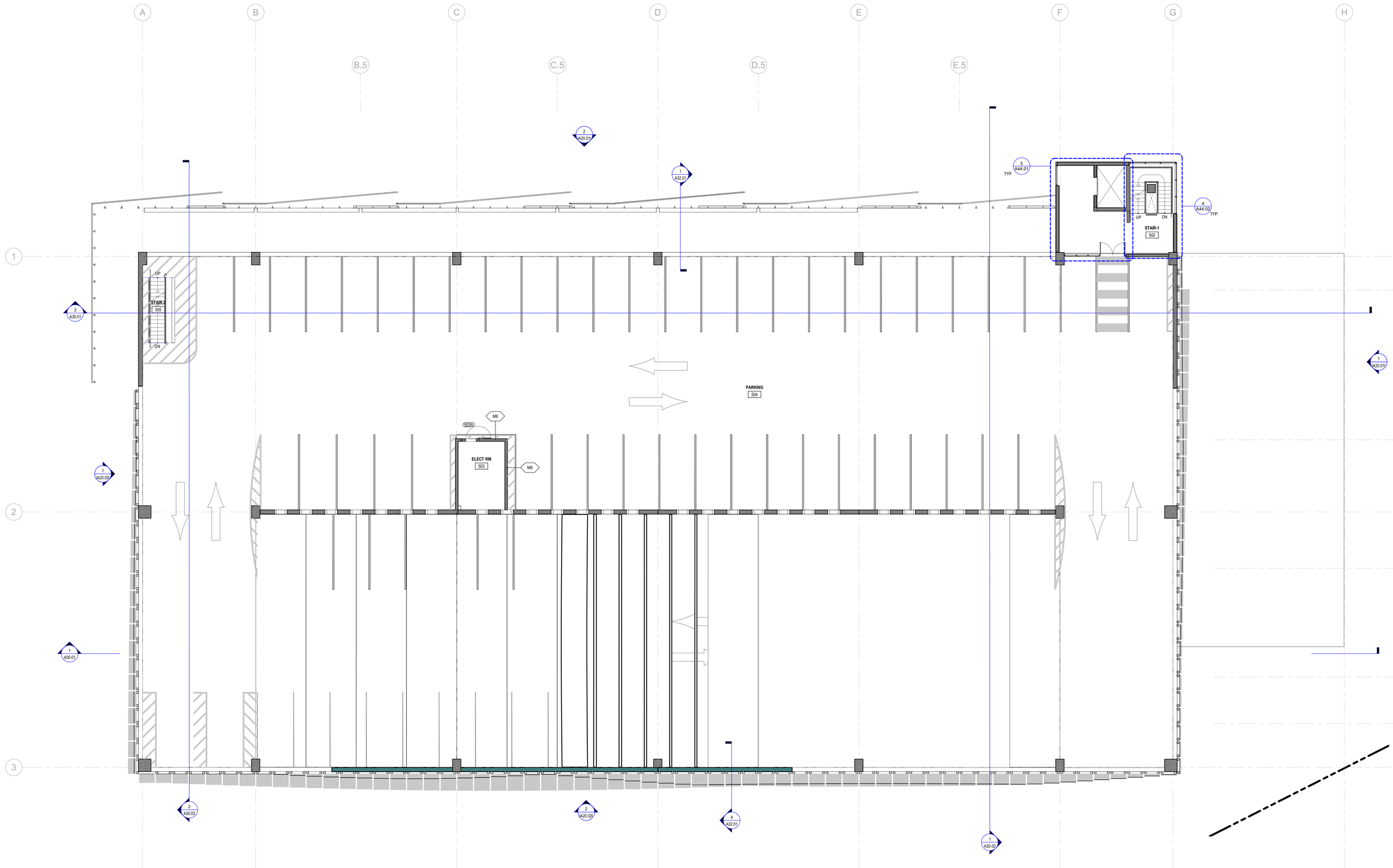
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-4 FLOOR PLAN

A10.04

2/1/2024 8:54:54 AM



1 LEVEL 5 FLOOR PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
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DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

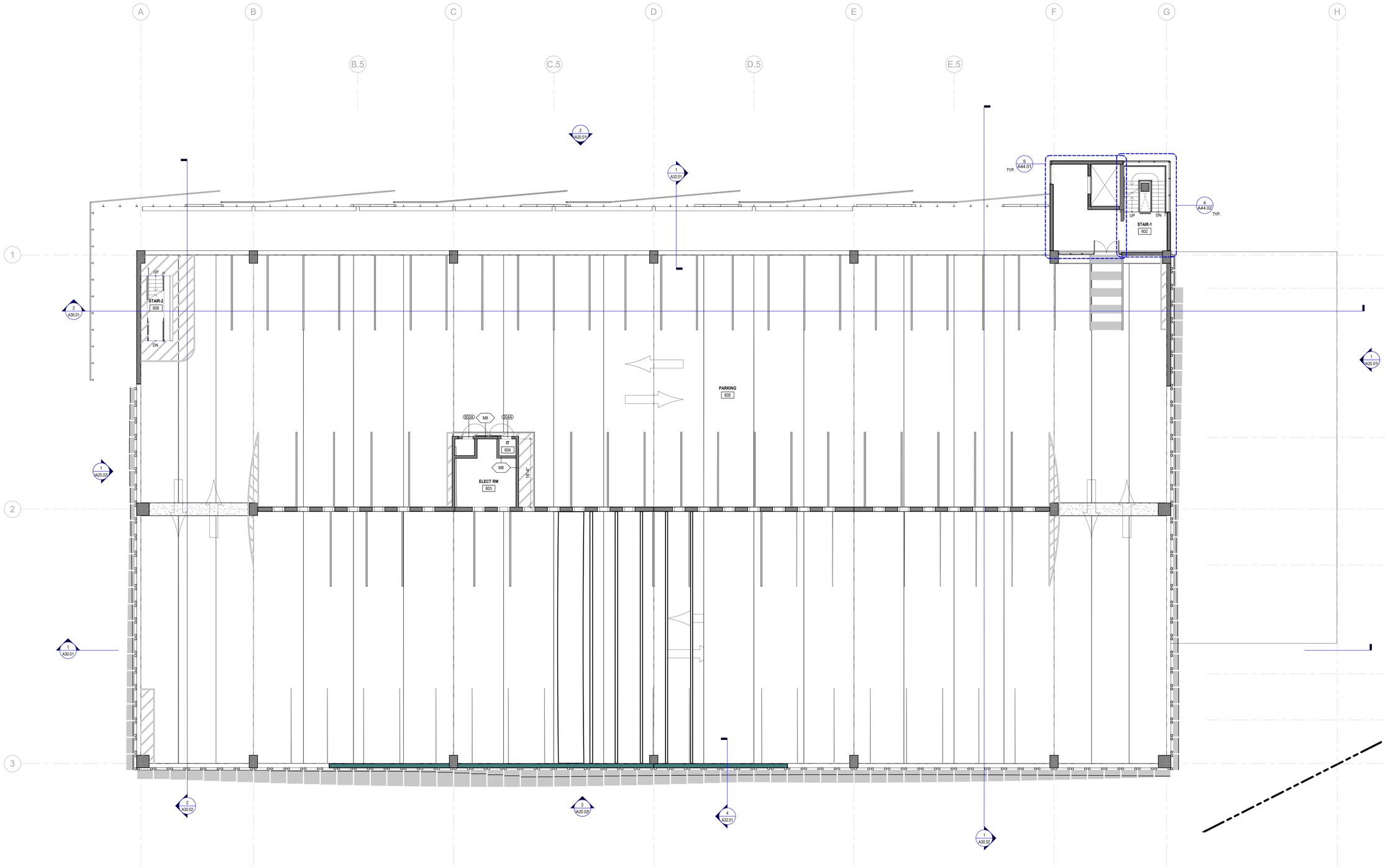
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-5 FLOOR PLAN

A10.05

2/1/2024 8:51:35 AM



1 LEVEL 6 FLOOR PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
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DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

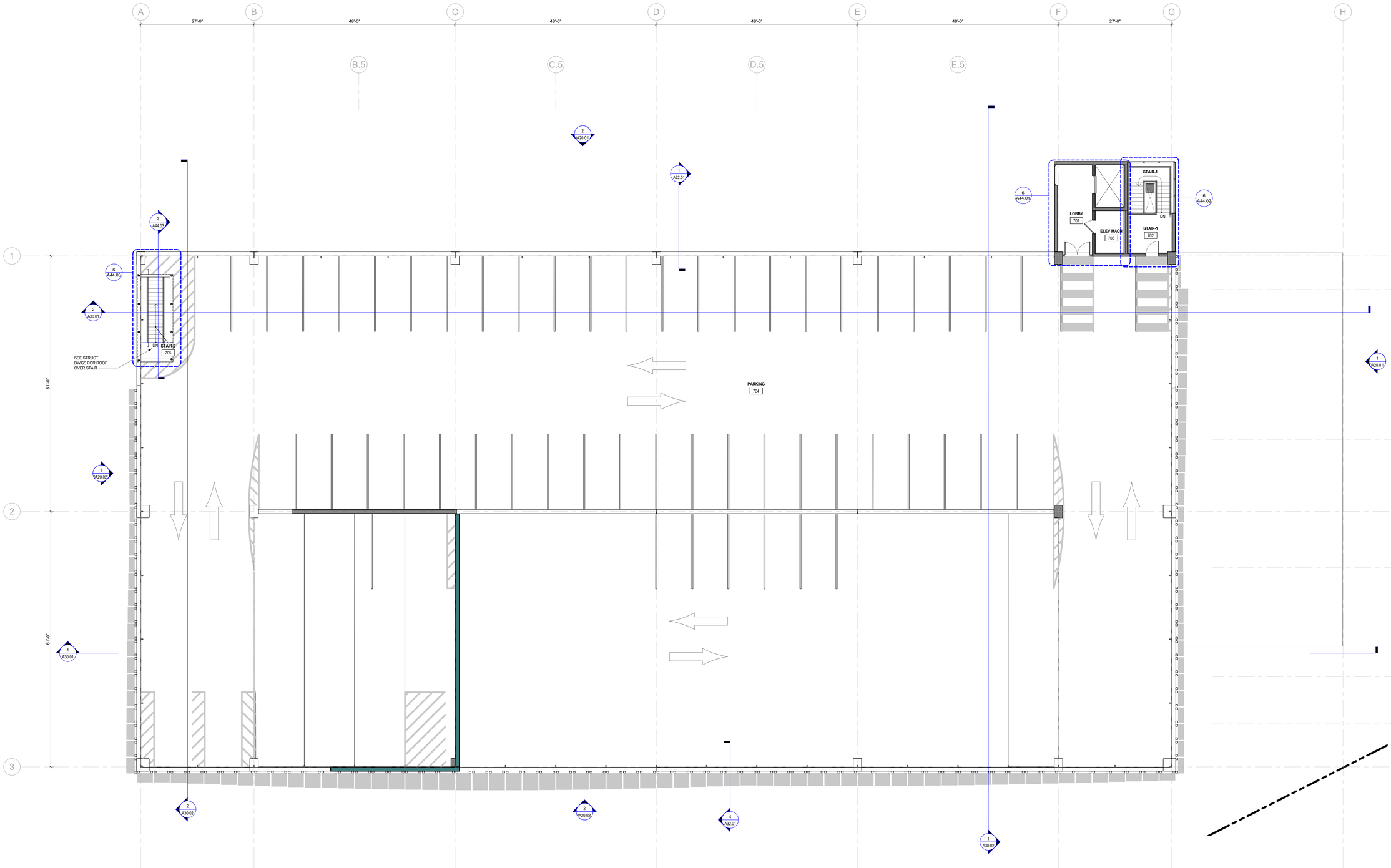
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Project	THE ROUX INSTITUTE
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Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-6 FLOOR PLAN

A10.06

2/1/2024 8:51:36 AM



1 LEVEL 7 FLOOR PLAN
1/8" = 1'-0"

IDEALS
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DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

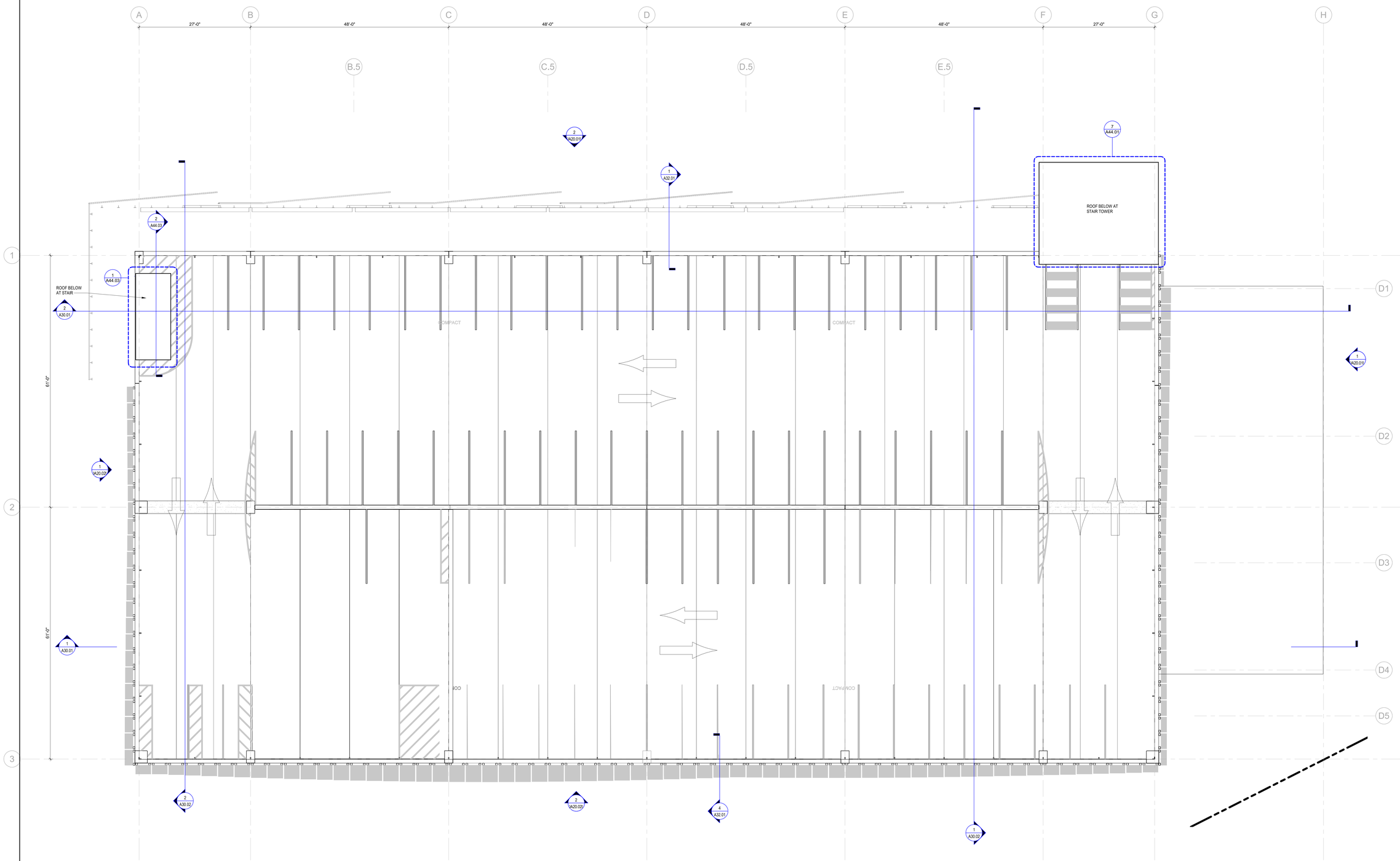
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Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	MW
Checked	BC
Date	31 JANUARY 2024
Scale	

Drawing Title
LEVEL-7 FLOOR PLAN

A10.07

2/1/2024 8:53:51 AM



1 ROOF PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
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Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

DESIGN DEVELOPMENT GARAGE

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	Author
Checked	Checker
Date	31 JANUARY 2024
Scale	

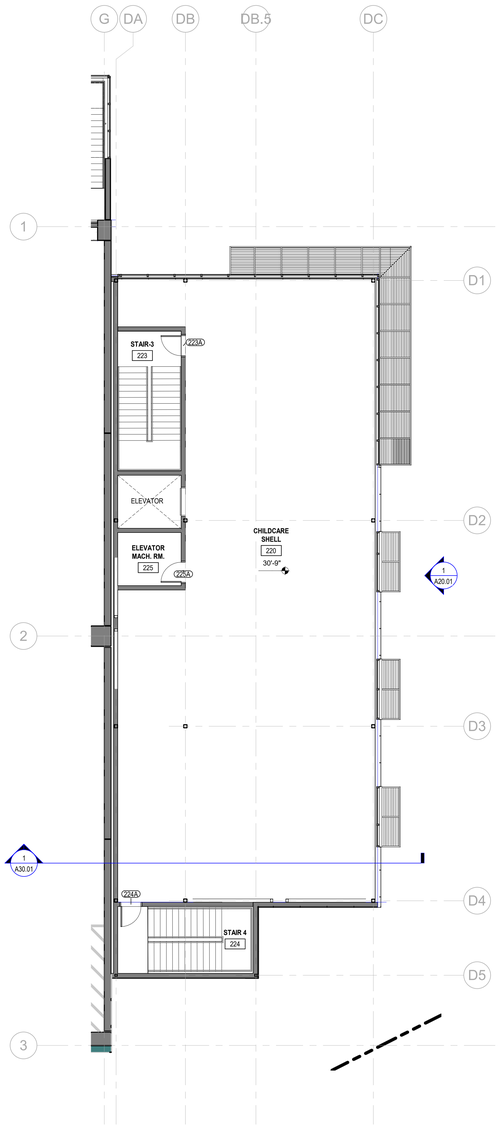
Drawing Title
ROOF PLAN

A10.08

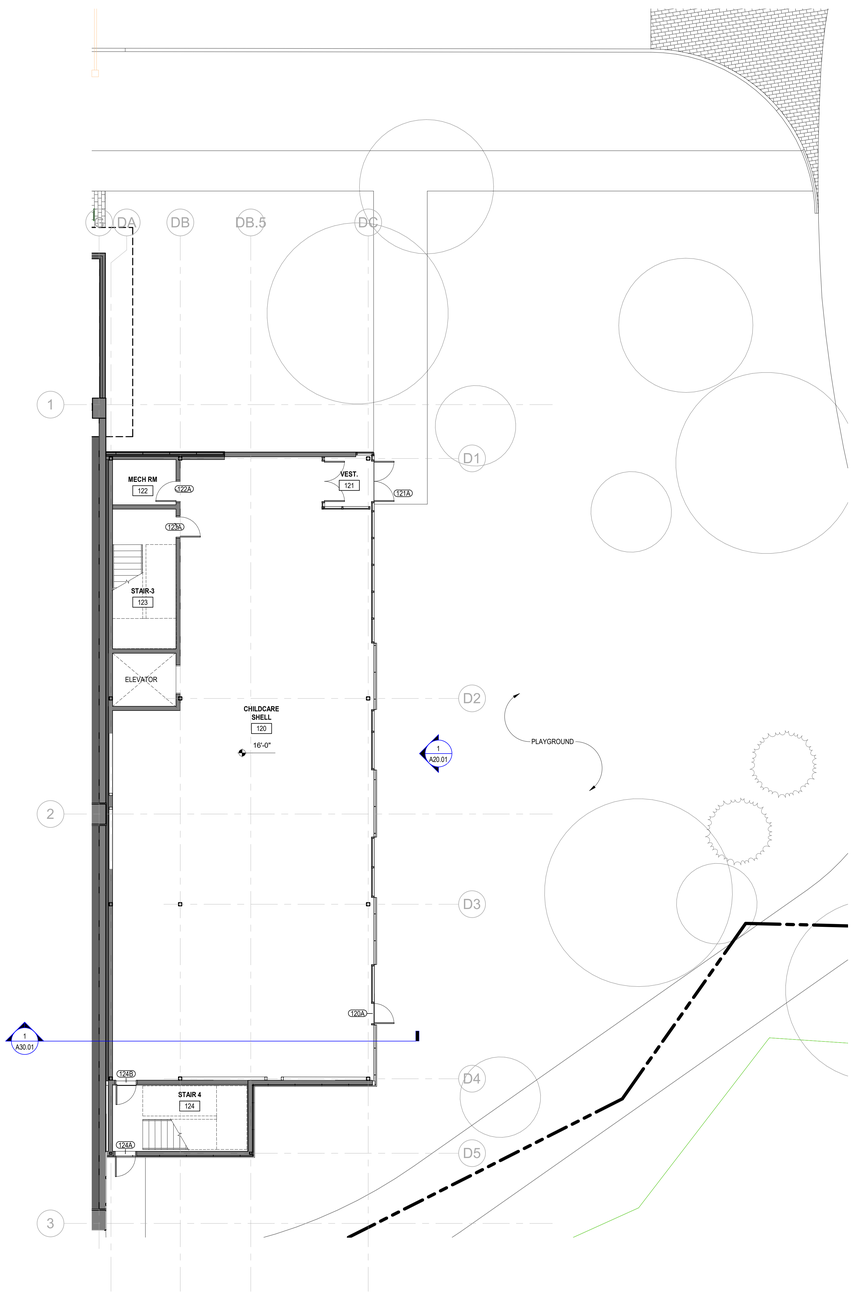
2/1/2024 8:51:39 AM

GENERAL NOTES

1. ELECTRICAL - LIGHTING: INTERIOR BUILDING LIGHTING SHALL COMPLY WITH ANSI/ASHRAE/IES STANDARD 90.1-2022.
2. ELECTRICAL - POWER: RECEPTACLES WILL BE PROVIDED ADJACENT TO INTERIOR BIKE PARKING AS REQUIRED.



2 CHILDCARE - LEVEL 2 FLOOR PLAN
1/8" = 1'-0"



1 CHILDCARE - LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

Stamp

Job #	2202
Project	THE ROUX INSTITUTE - GARAGE
Drawn By	WS/MW
Checked	BC
Date	22 MARCH 2024
Scale	

Drawing Title
CHILDCARE FLOOR PLANS

A10.09

3/22/2024 9:06:23 AM

50% SUBMISSION
NOT FOR CONSTRUCTION
11/1/2023

IDEALS - ROUX CAMPUS

PORTLAND

CUMBERLAND COUNTY

SHERWOOD STREET

PROJECT LENGTH: 0.09 MILES

PERMIT REVIEW
NOT FOR CONSTRUCTION

PLANS PREPARED BY:

vhb

500 Southborough Drive, Suite 105B
South Portland, Maine 04106

PLAN LEGEND

Town, County, State		Catch Basins	Existing ■ Proposed
Property Lines		Manholes	Existing ● Proposed
R/W Lines-Existing		Proposed Underdrain	
R/W Lines-Proposed		Proposed Ditch	
Culvert-Existing		Existing Ditch	
Culvert Proposed		Utility Poles	Existing ♦ Proposed
Curbing	Existing Proposed	Fire Hydrants	Existing ◈ Proposed
Type 1		Existing Water Line	
Type 3		Existing San. Sewer	
Type 5		Existing San. Sewer Manhole	
Outline of Bodies of Water		Guardrail-Existing	
Exposed Bedrock		Guardrail-Proposed	
Buildings		Guardrail-Cable, Other	
Trees	Conifer Deciduous	Centerline-Existing	
Tree Line		Centerline-Proposed	10+00
Clearing Limit Line		Travelway-Existing	
Railroad		Travelway-Proposed	

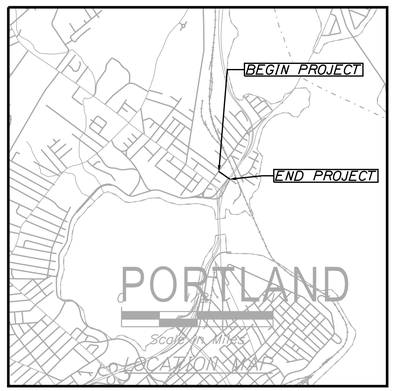
Boring HB-XXX-###

Pavement Core PC-#

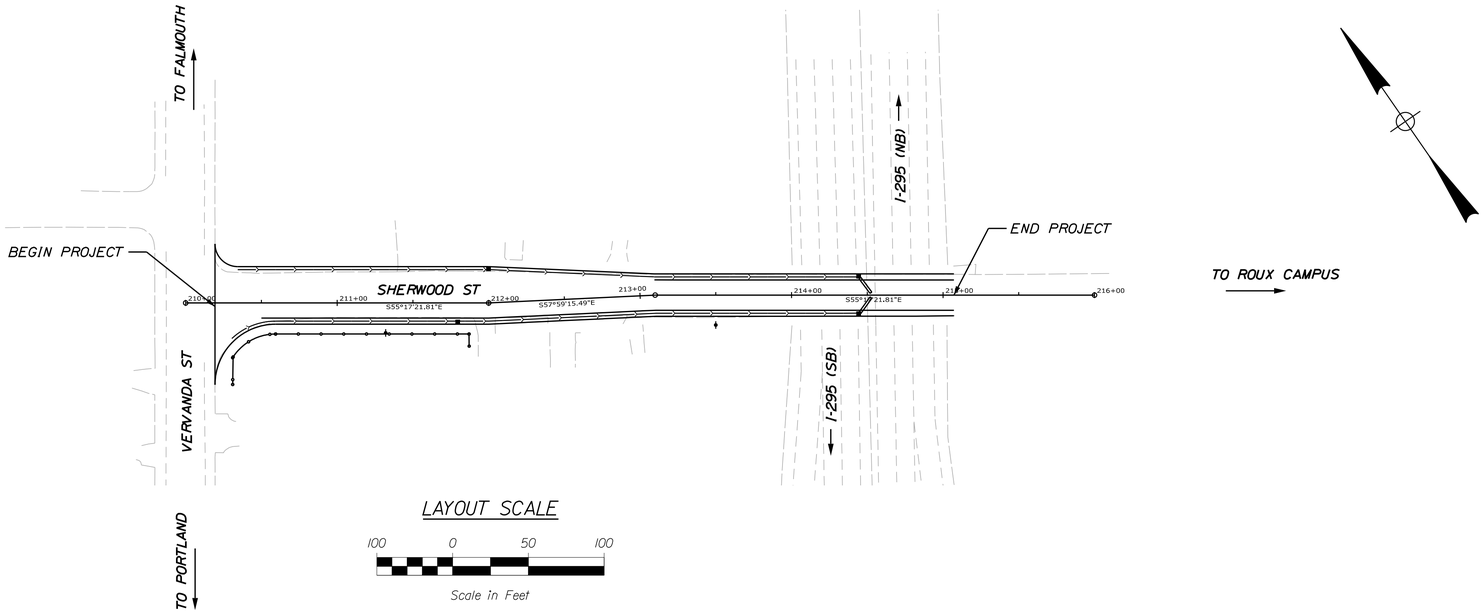
Test Pit TP-XXX-###

Probe P-#.#X

#.# = Depth
X = W (Weathered Rock)
R (Refusal)
NR (No Refusal)



0 1/2 1
Scale in Miles
LOCATION MAP



LAYOUT SCALE

100 0 50 100
Scale in Feet

INDEX OF SHEETS

Description	Sheet No.
Title Sheet	1
Typical Sections	2
Plans	3
Profiles	4
Cross Sections	5-16

TRAFFIC DATA — SHERWOOD ST

Current (2023) AADT	XXX
Future (2043) AADT	XXX
DHV - % of AADT	XX%
Design Hour Volume	XXXX
% Heavy Trucks (AADT)	X%
Directional Distribution (DHV)	XX%
Design Speed (mph)	XX
Functional Class:	Major Collector
Corridor Priority	3

PROJECT LOCATION:	FROM THE INTERSECTION OF SHERWOOD STREET AND VERNANDA STREET RUNNING SOUTHEAST 0.09 MILES TO JUST PAST THE I-295 UNDERPASS.
PROGRAM AREA:	HIGHWAY PROGRAM
SCOPE OF WORK:	ROADWAY RECONSTRUCTION WITH INTERSECTION AND PEDESTRIAN IMPROVEMENTS

IDEALS

APPROVED — DATE

COMMISSIONER:

CHIEF ENGINEER:

STATE OF MAINE — ETHAN C. FLYNN 13436 — LICENSED PROFESSIONAL ENGINEER

SIGNATURE — Ethan C. Flynn

P.E. NUMBER — 13436

DATE — 11-01-2023

PROJECT INFORMATION

PROGRAM	HIGHWAY
PROJECT MANAGER	J. CONLEY
DESIGNER	J.DAVIS
CONSULTANT	VHB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

PORTLAND
SHERWOOD STREET

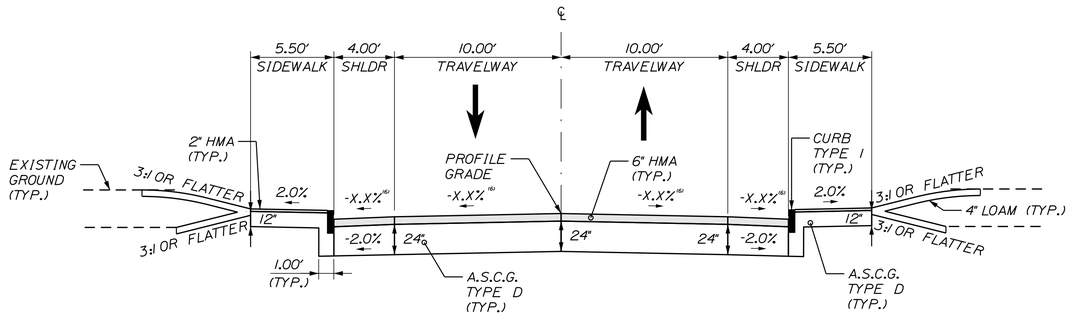
TITLE SHEET

SHEET NUMBER
1
OF 16

Filename: ...\ls\Sherwood_St\001_Title.dgn Division: HIGHWAY Username: EFlynn Date:11/1/2023

TYPICAL SECTIONS
Sherwood St

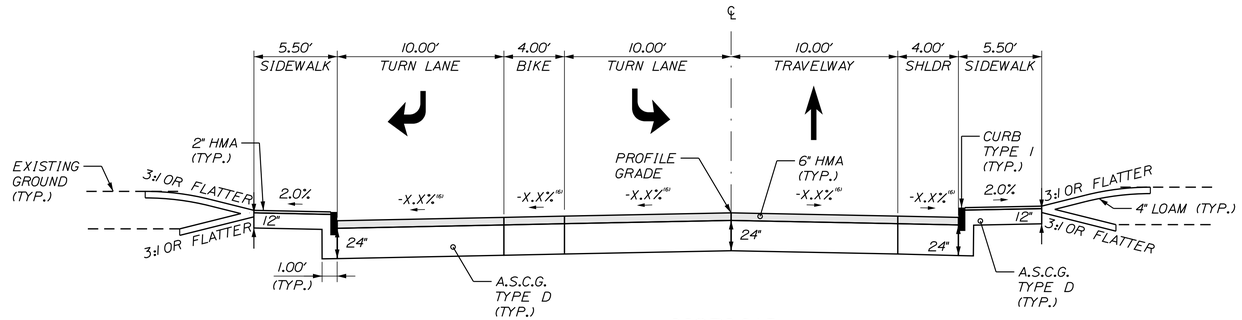
SHERWOOD STREET SUPERELEVATION TABLE					
LEFT SHLDR (%)	TURN LANE (%)	TRAVEL LANE (%)	STATION	TRAVEL LANE %	RIGHT SHLDR (%)
			START		
-	0.6%	0.6%	**210+19.34**	-0.7%	-0.7%
-	0.3%	0.3%	**210+25.00**	-0.8%	-0.8%
-	-0.8%	-0.8%	**210+50.00**	-1.4%	-1.4%
-	-2.0%	-2.0%	**210+75.00**	-2.0%	-2.0%
			TO		
-	-2.0%	-2.0%	**211+50.00**	-2.0%	-2.0%
-	-2.3%	-2.3%	**211+75.00**	-1.5%	-1.5%
			TO		
-2.3%	-	-2.3%	**213+00.00**	-1.5%	-1.5%
-2.1%	-	-2.1%	**213+25.00**	-1.8%	-1.8%
-2.0%	-	-2.0%	**213+50.00**	-2.0%	-2.0%
			TO		
-2.0%	-	-2.0%	**215+00.00**	-2.0%	-2.0%
MATCH	-	MATCH	**215+07.17**	MATCH	MATCH
			END		



NORMAL

LEFT SIDEWALK	(2) 11' WIDE LANES & (2) 4' BIKE LANES	RIGHT SIDEWALK
STATION TO STATION	STATION TO STATION	STATION TO STATION
213+10.00 TO 215+07.17	213+10.00 TO 215+07.17	213+10.00 TO 215+07.17

NOTE: BRIDGE UNDERPASS STA. 213+98.00 TO 215+07.35



NORMAL

LEFT SIDEWALK	(3) 11' WIDE LANES & (2) 4' BIKE LANES	RIGHT SIDEWALK
STATION TO STATION	STATION TO STATION	STATION TO STATION
210+19.34 TO 212+00.00	210+19.34 TO 212+00.00	210+19.34 TO 212+00.00

NOTES:

1. THE PAVEMENT AND BASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
2. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
3. THE ALGEBRAIC DIFFERENCE BETWEEN THE SHOULDER AND TRAVELWAY CROSS SLOPES 'ROLLOVER' SHALL NOT EXCEED 8%.
4. THE STATIONING SHOWN UNDER EACH TYPICAL IS APPROXIMATE.
5. 4" OF LOAM SHALL BE USED IN ALL LAWN AREAS.
6. SEE SUPERELEVATION TABLE FOR CROSS SLOPES

NOT TO SCALE

IDEALS

HIGHWAY PLANS

vhb

	BY	DATE
PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	JBD	09/2023
CHECKED-REVIEWED	EOF	09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET

TYPICALS

SHEET NUMBER

2

OF 16

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023

CURVE DATA #1
PI = 212+00.00
Δ = 2°41'53.7" Lt.

POB = STA. 210+00.00

STA. 210+19.34
BEGIN FULL CONSTRUCTION
MATCH EXISTING
LIMIT OF WORK

INSTALL CB
TYPE A1-C

MATCH EXISTING
PAVED PATH

MATCH EXISTING WALL

REDUCE SIDWALK WIDTH TO
MATCH EXISTING STEPS

EXTEND SIDEWALK TO
MATCH EXISTING WALL

MATCH EXISTING STEPS

PI = STA. 212+00.00

SB I-295

NB I-295

STA. 215+07.17
END FULL CONSTRUCTION
MATCH EXISTING
LIMIT OF WORK

EXISTING
BRIDGE
DECK

INSTALL CB
TYPE A1-C

POE = STA. 216+00.00

5.5'

5.8'

5.8'

6" UD

12" UD

12" UD

10'

10'

10'

10'

10'

10'

210+00

211+00

212+00

213+00

214+00

215+00

216+00

S55°17'21.81"E

S57°59'15.49"E

S55°17'21.81"E

SHERWOOD STREET

VERANDA STREET

5.5'

6.0'

6.0'

RELOCATE POLE

INSTALL CB
TYPE A1-C

MATCH EXISTING STEPS

RELOCATE POLE

INSTALL (2) 12" X 16 FT
RCP

INSTALL CB
TYPE A1-C

EXTEND SIDEWALK TO
MATCH EXISTING WALL

PI = STA. 213+10.00

CURVE DATA #1
PI = 213+10.00
Δ = 2°41'53.7" Rt.

THIS APPEARS TO
BE A PAVED PATH
DISCUSS IF WE
NEED CURB CUT?

EXTEND SIDEWALK TO
MATCH EXISTING WALL

PLAN

25 0 25 50

Scale of Feet

IDEALS

HIGHWAY PLANS

vhb

	DATE	BY
JENN CONLEY	09/2023	AHS
PROJ. MANAGER	JBD	JC
DESIGN-DETAILED	ECF	
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET

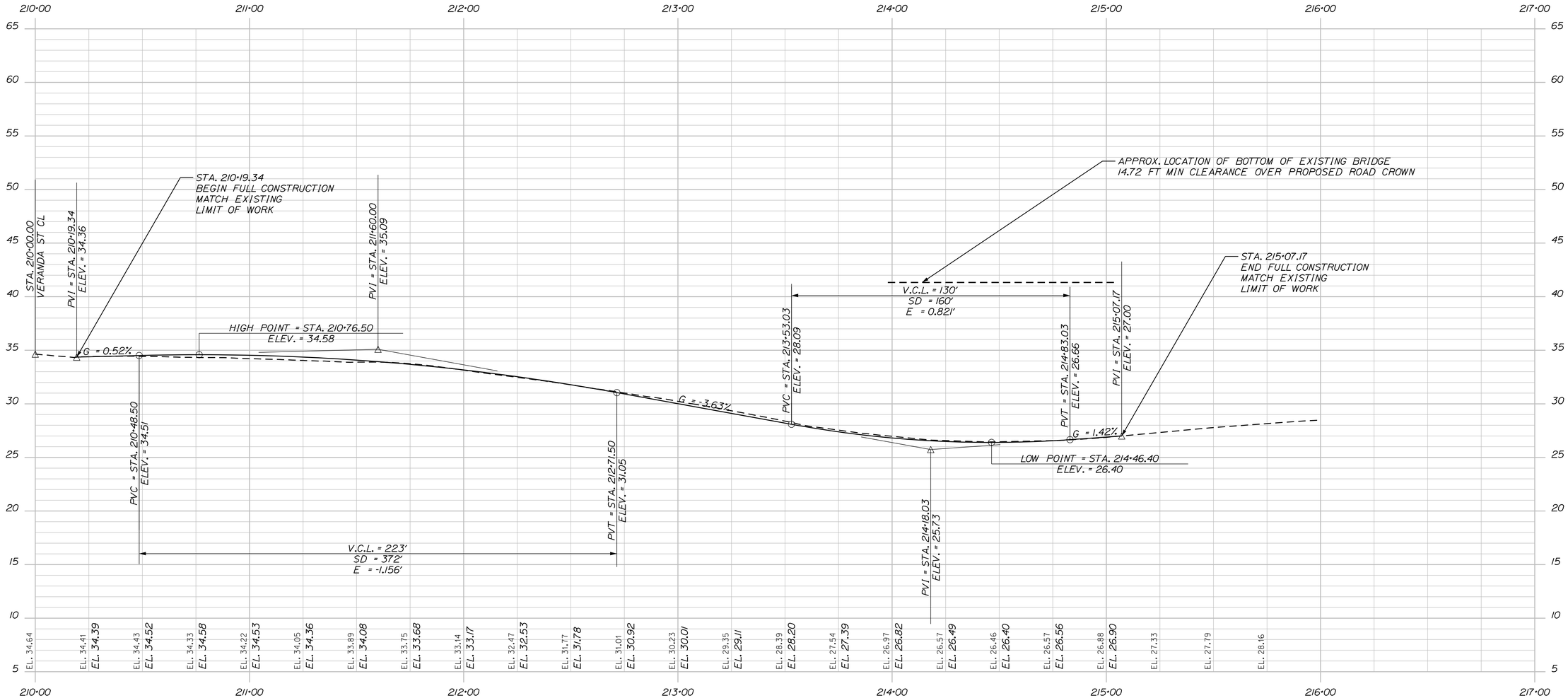
PLAN

SHEET NUMBER

3

OF 16

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



PROFILE

Horiz. 25 0 25 50

Vert. 5 0 5 10

Scale of Feet

IDEALS

HIGHWAY PLANS

vhb

	BY	DATE
PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	JBD	AHS 09/2023
CHECKED-REVIEWED	ECF	JC 09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET

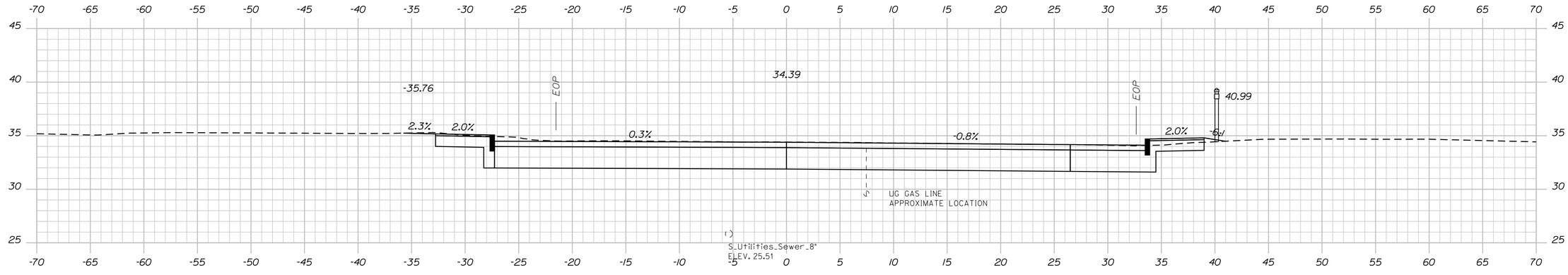
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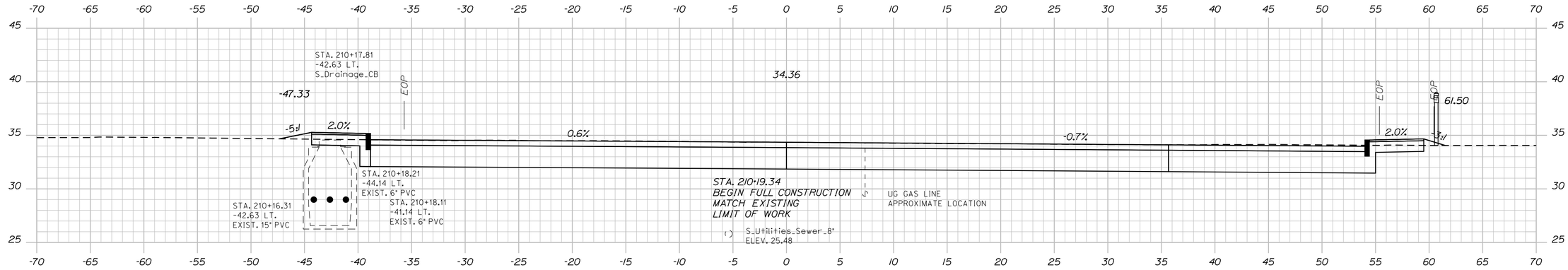
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OF 16

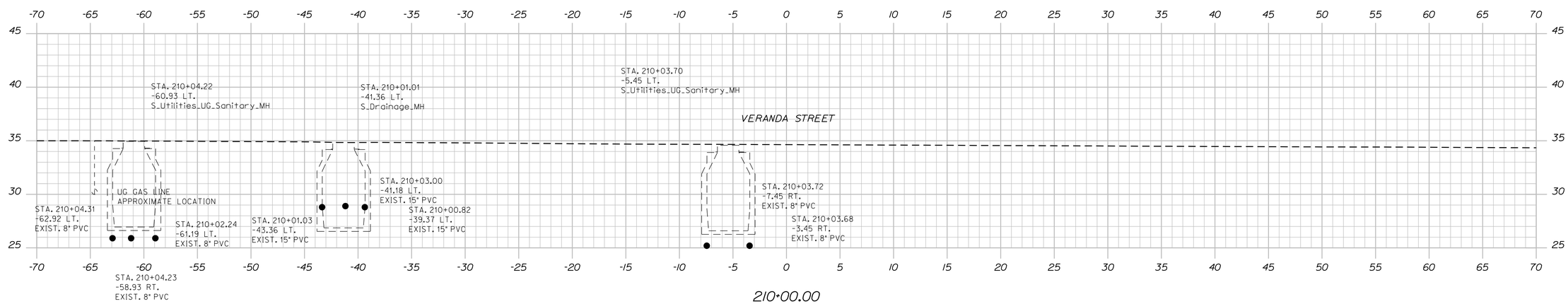
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210+25.00



210+19.34



210+00.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	JBD	09/2023
CHECKED-REVIEWED	ECF	09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1	AHS	
REVISIONS 2	JC	
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND SHERWOOD STREET

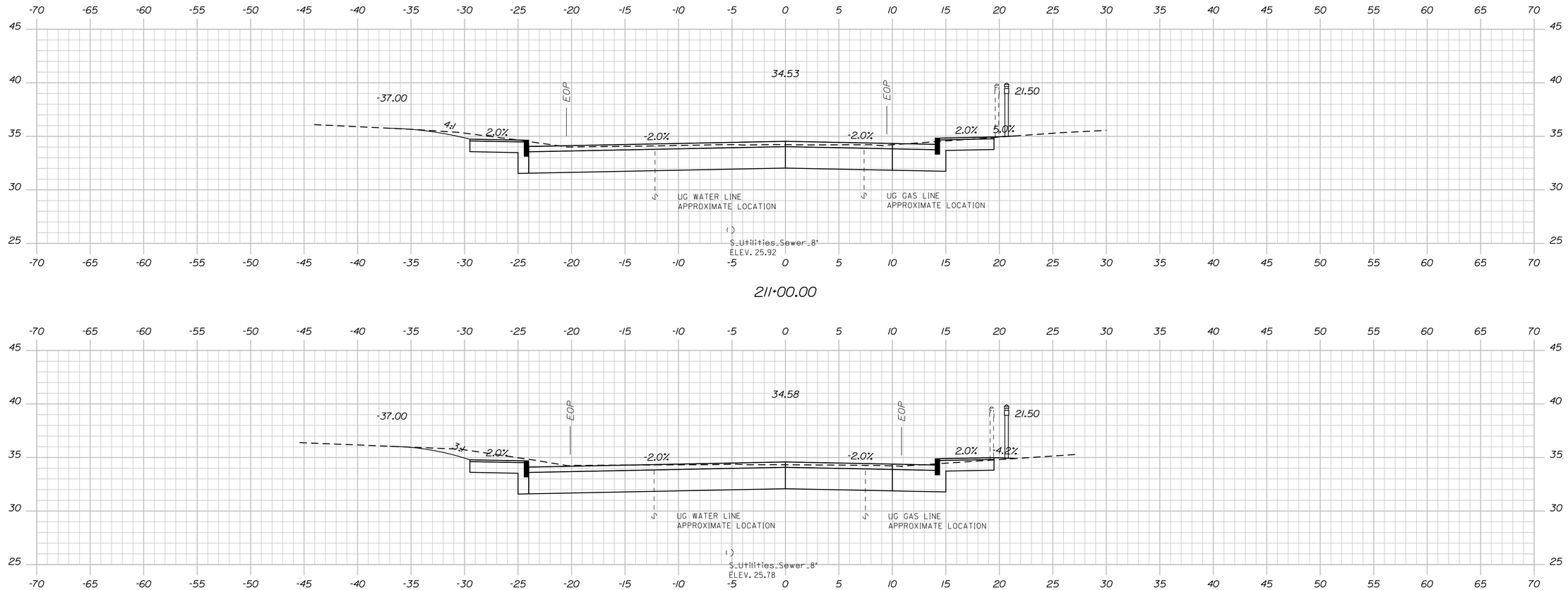
CROSS-SECTIONS (1 OF 12)

SHEET NUMBER

5

OF 16

Sta. 210+00.00 to Sta. 210+25.00



211+00.00

210+75.00

210+50.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	DATE
DESIGN-DETAILED	JBD	09/2023
CHECKED-REVIEWED	ECF	09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BY
AHS
JC

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(2 OF 12)

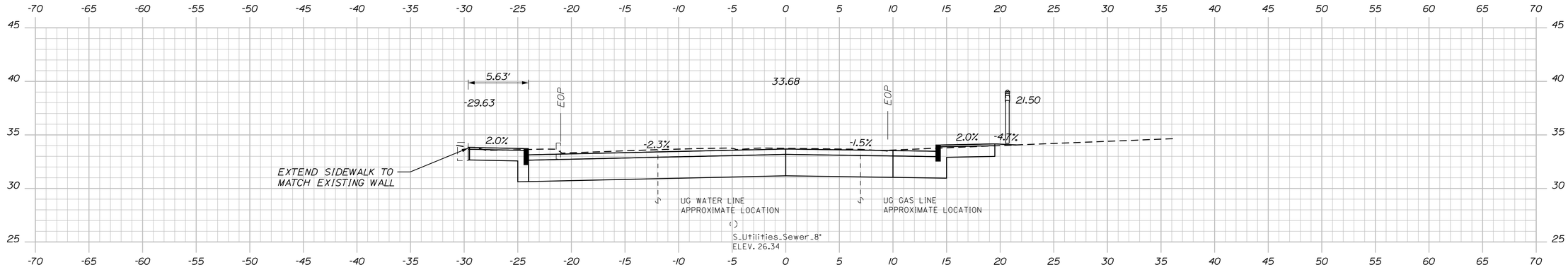
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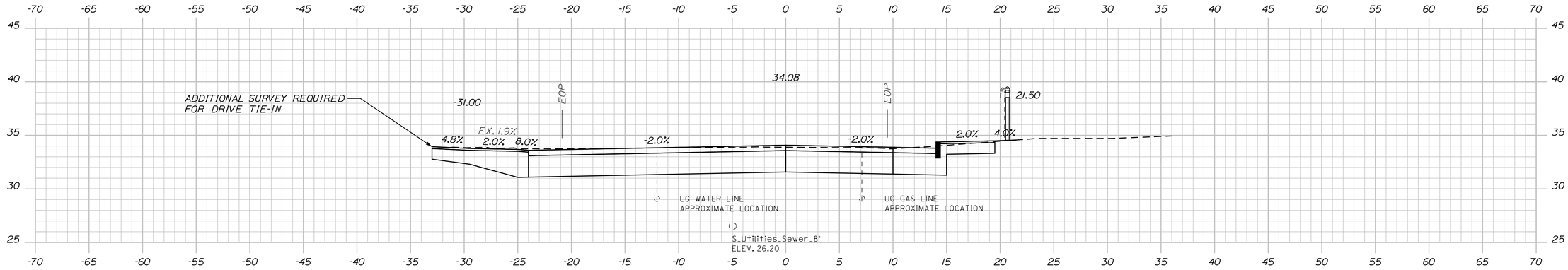
OF 16

Sta. 210+50.00 to Sta. 211+00.00

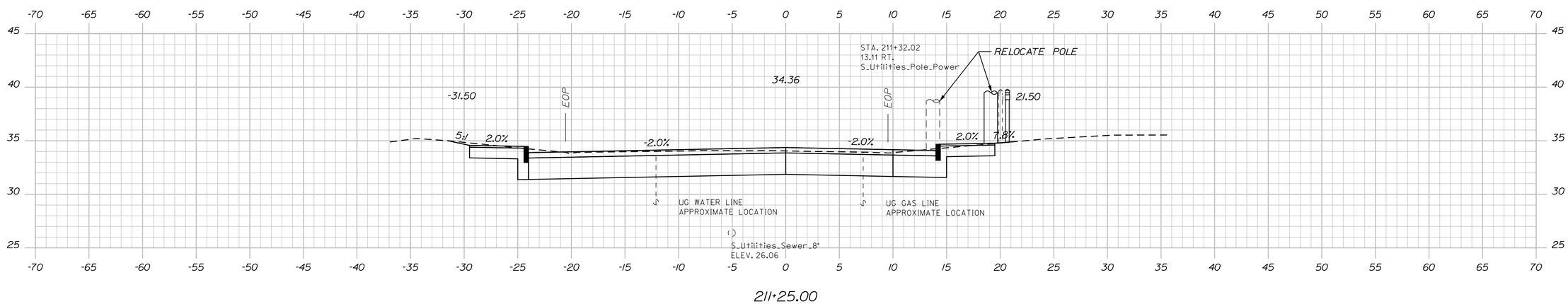
Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



211+75.00



211+50.00



211+25.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	JBD	09/2023
CHECKED-REVIEWED	EOF	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

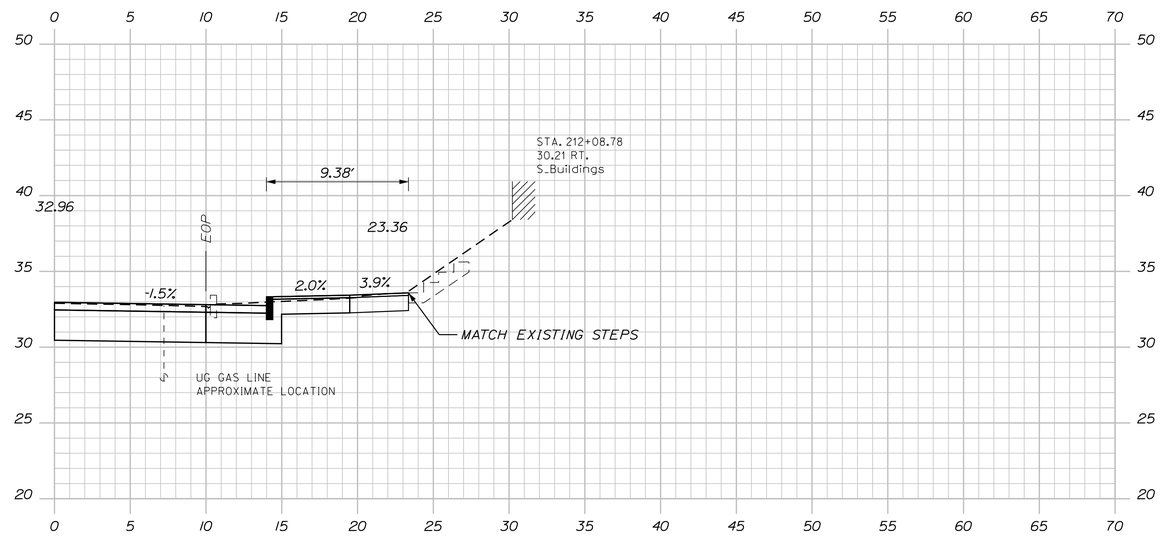
BY	DATE
AHS	09/2023
JC	

IDEALS - PORTLAND
SHERWOOD STREET
CROSS-SECTIONS
(3 OF 12)

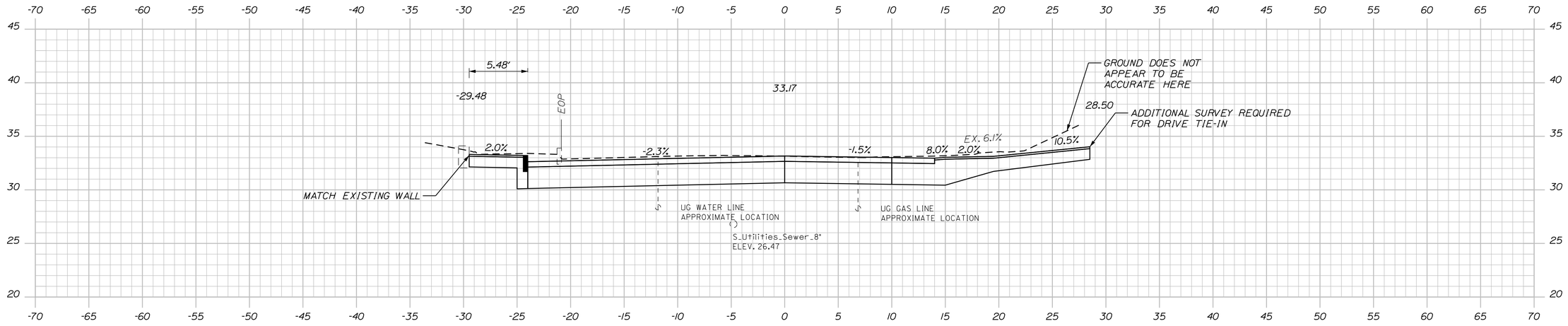
SHEET NUMBER
7
OF 16

Sta. 211+25.00 to Sta. 211+75.00

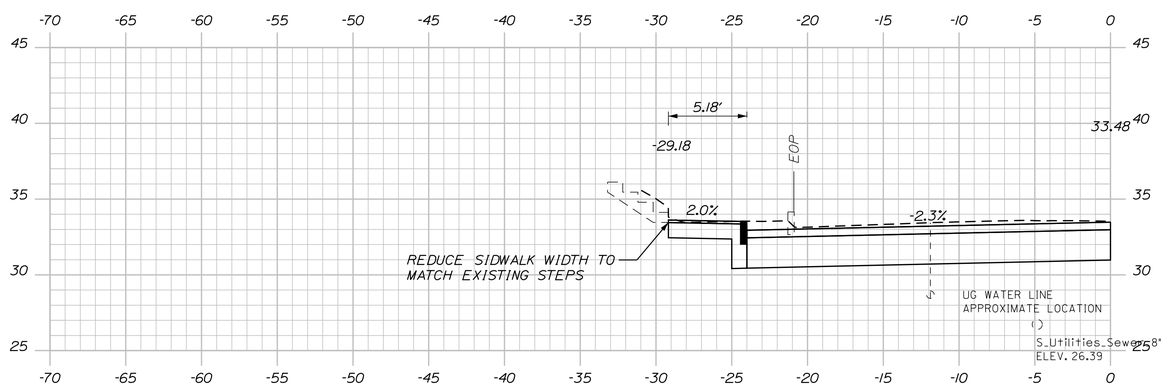
Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



212+08.78



212+00.00



211+85.47

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	DATE
DESIGN-DETAILED	JBD	09/2023
CHECKED-REVIEWED	ECF	09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		BY
REVISIONS 2		AHS
REVISIONS 3		JC
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET
CROSS-SECTIONS
(4 OF 12)

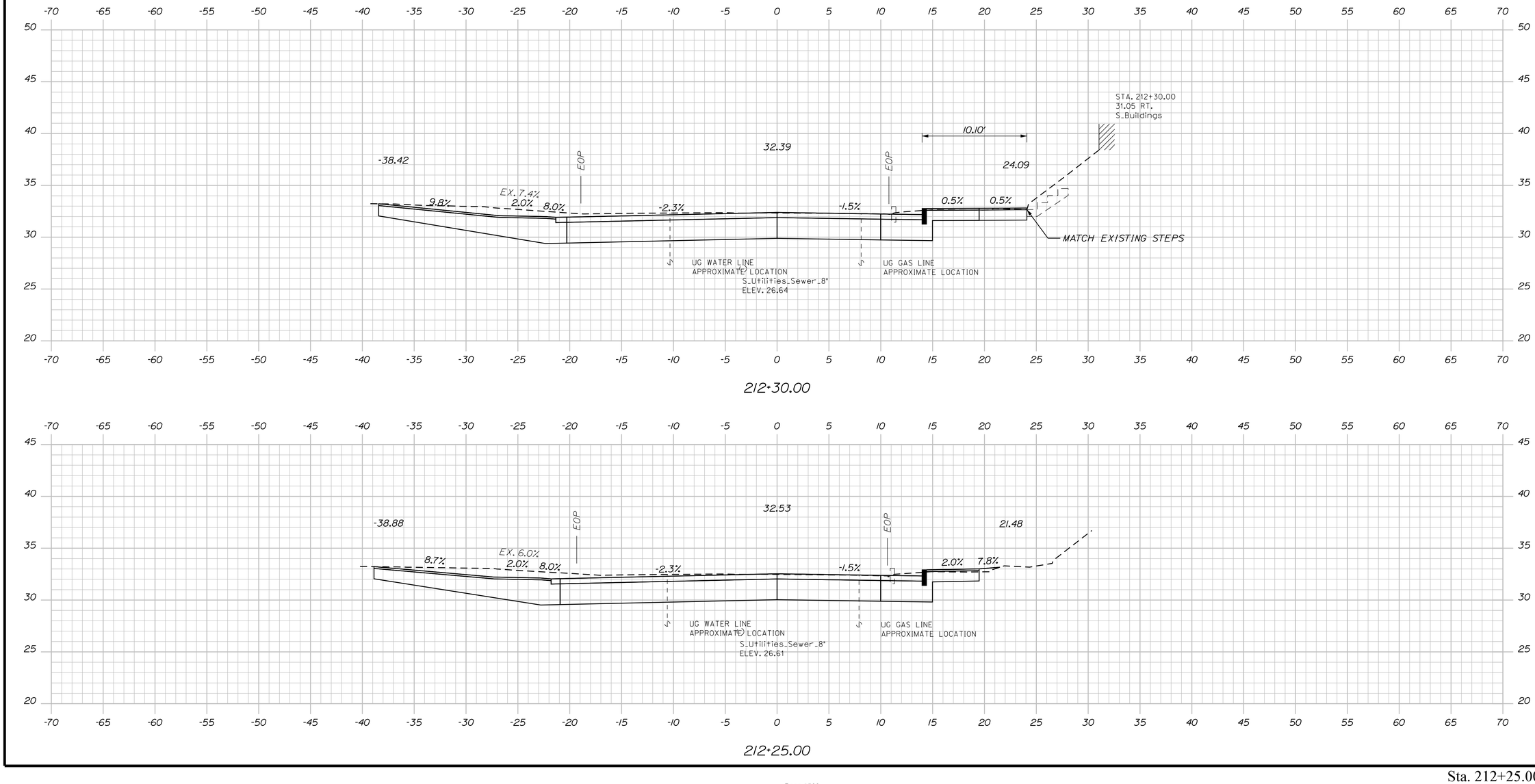
SHEET NUMBER

8

OF 16

Sta. 211+85.47 to Sta. 212+08.78

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	JBD	AHS	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (5 OF 12)

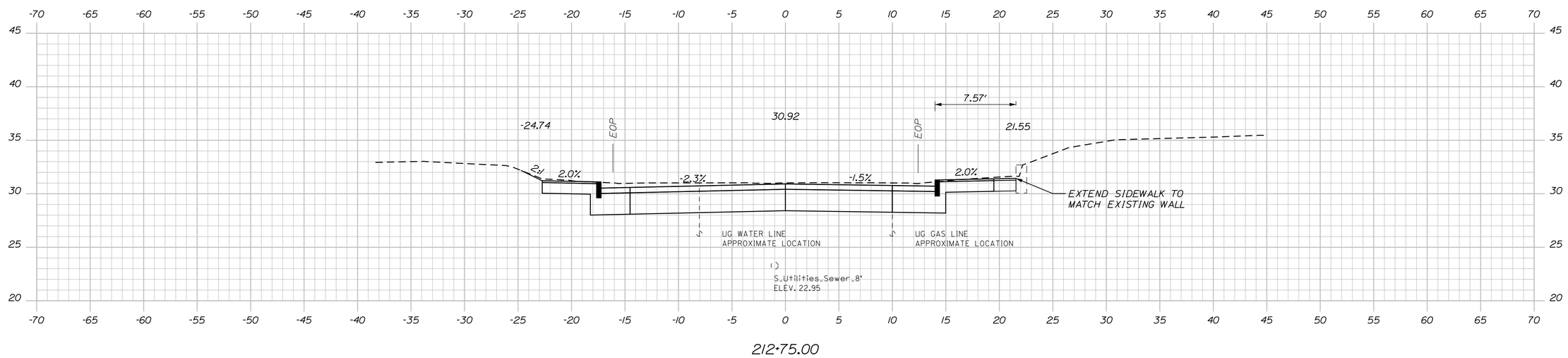
SHEET NUMBER

9

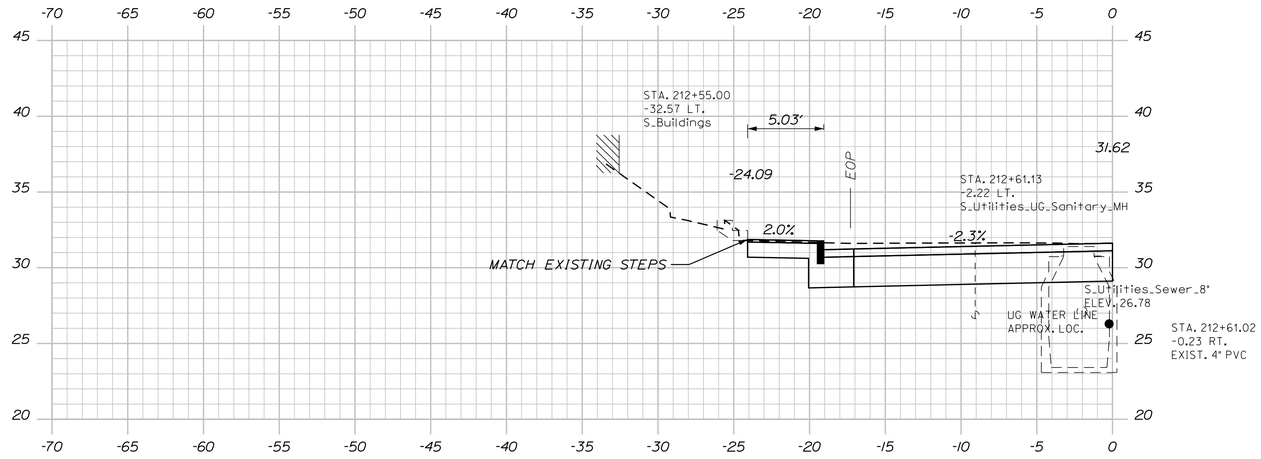
OF 16

Sta. 212+25.00 to Sta. 212+30.00

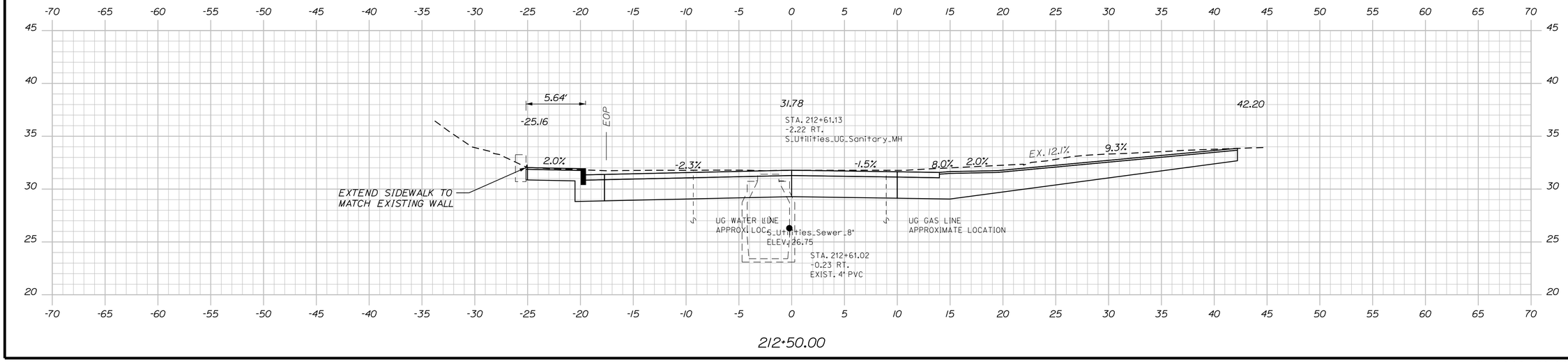
Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



212+75.00



212+55.00



212+50.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	BY	DATE
DESIGN-DETAILED	JBD	AHS	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(6 OF 12)

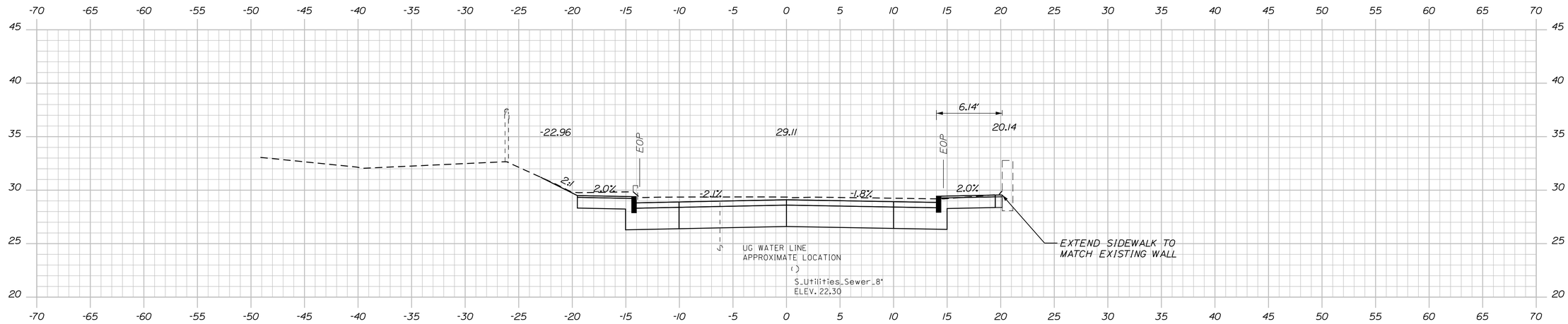
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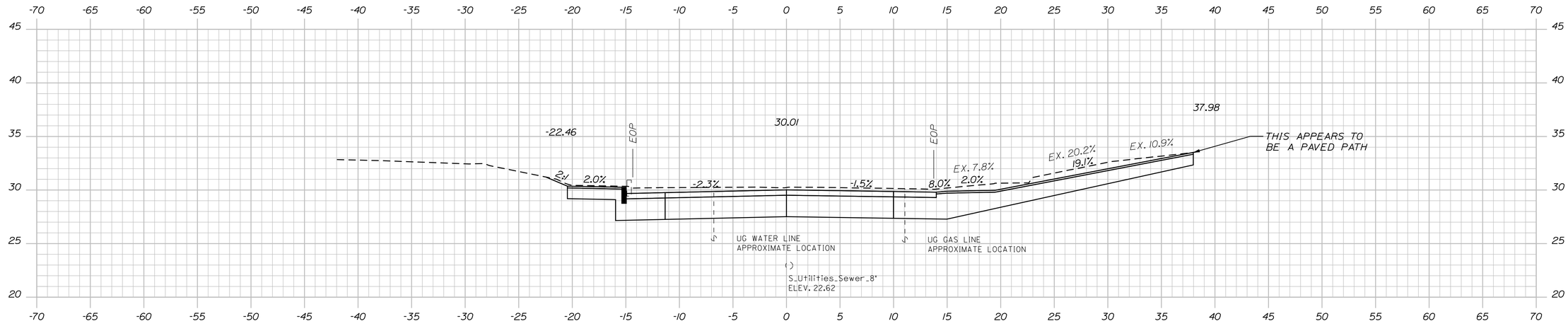
OF 16

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023

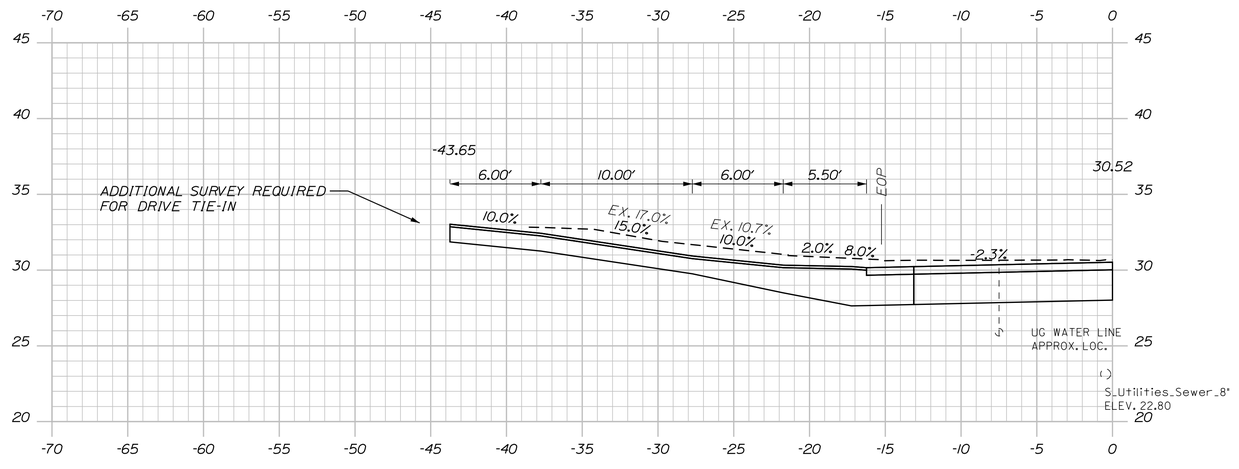
Sta. 212+50.00 to Sta. 212+75.00



213+25.00



213+00.00



212+86.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		DATE
DESIGN-DETAILED	JBD	BY	09/2023
CHECKED-REVIEWED	ECF	AHS	09/2023
DESIGN2-DETAILED2		JC	
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(7 OF 12)

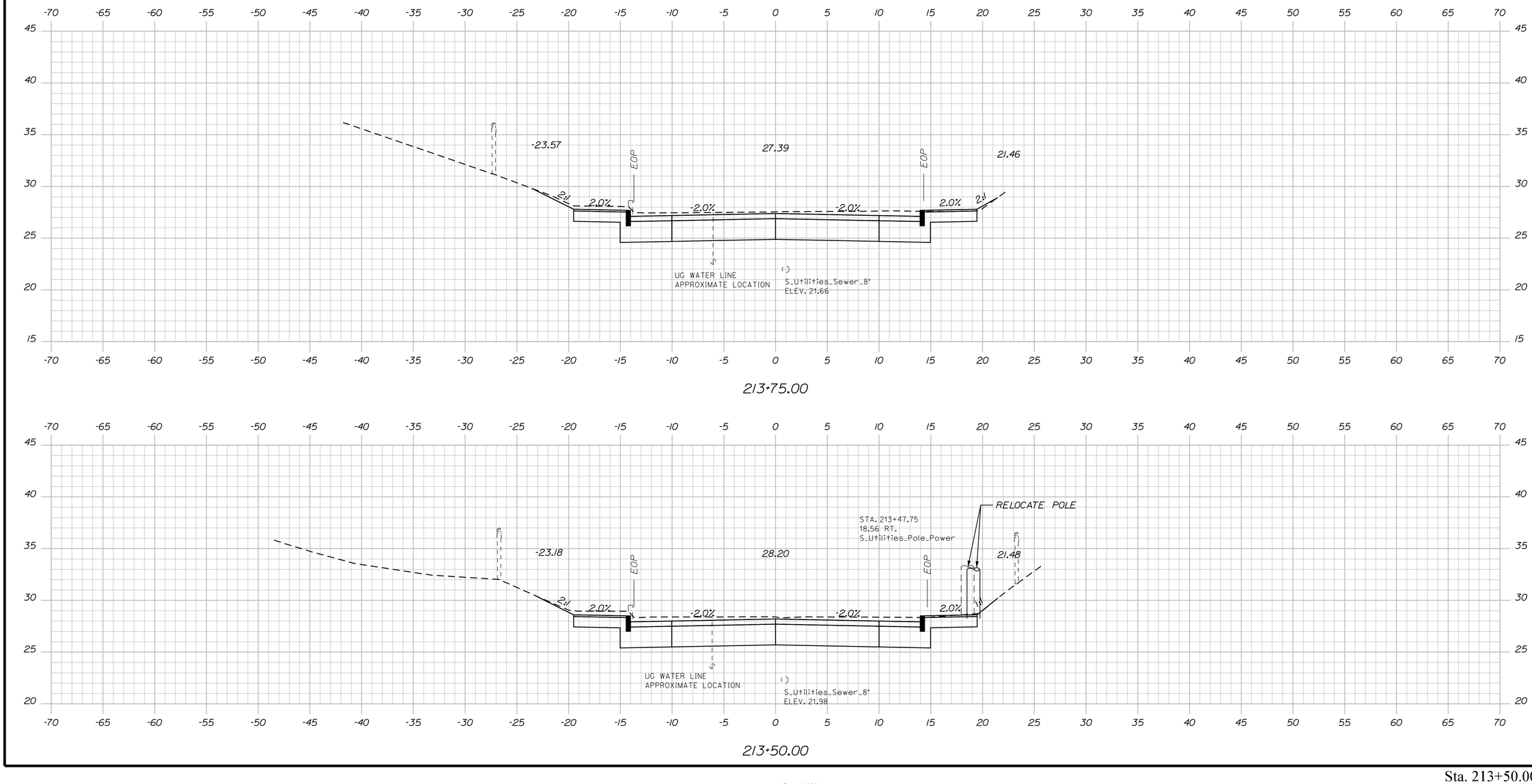
SHEET NUMBER

11

OF 16

Sta. 212+86.00 to Sta. 213+25.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	JBD	BY	AHS
CHECKED-REVIEWED	ECF		JC
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

DATE
09/2023
09/2023

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(8 OF 12)

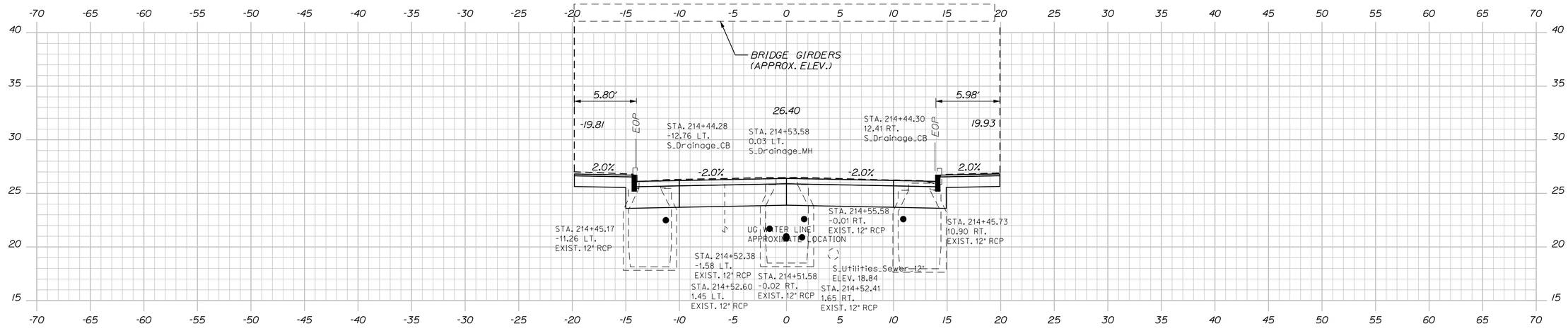
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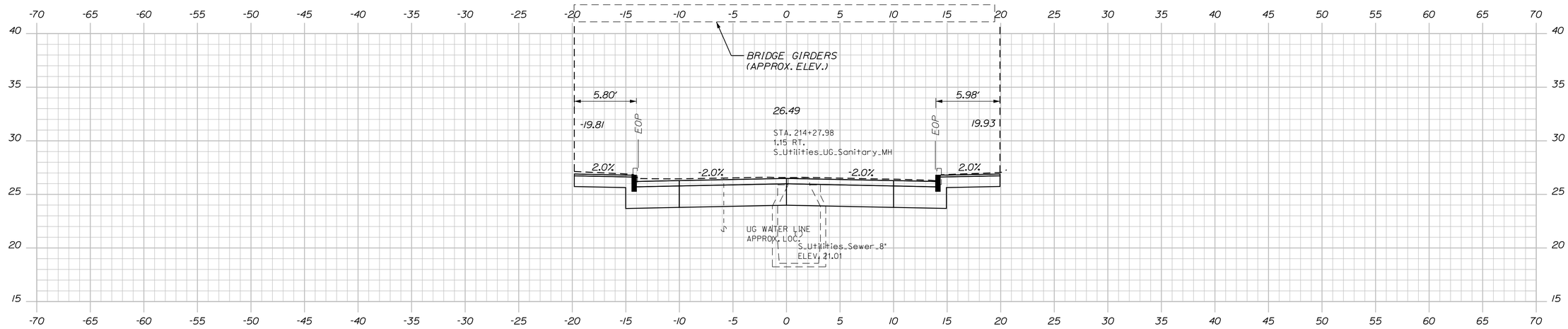
OF 16

Sta. 213+50.00 to Sta. 213+75.00

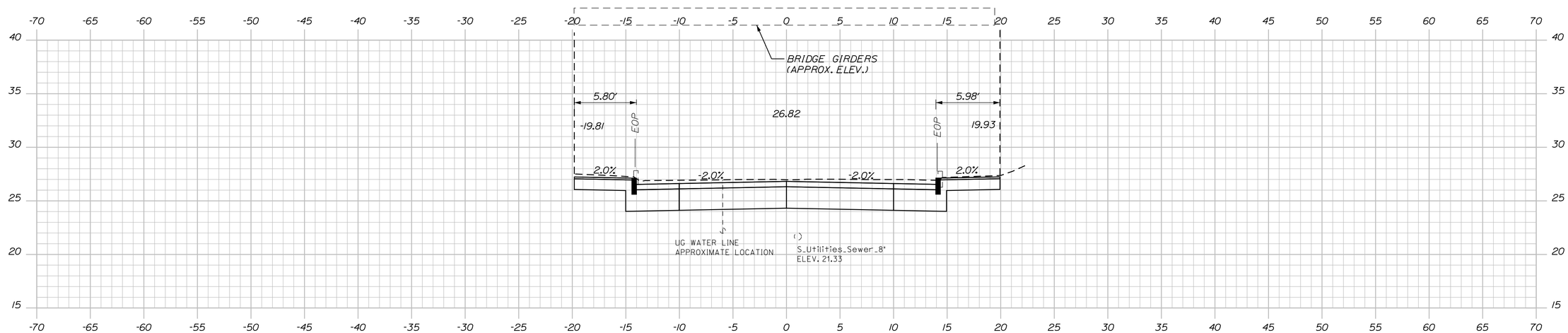
Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



214+50.00



214+25.00



214+00.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	JBD	DATE	09/2023
CHECKED-REVIEWED	ECF	BY	AHS
DESIGN2-DETAILED2			JC
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (9 OF 12)

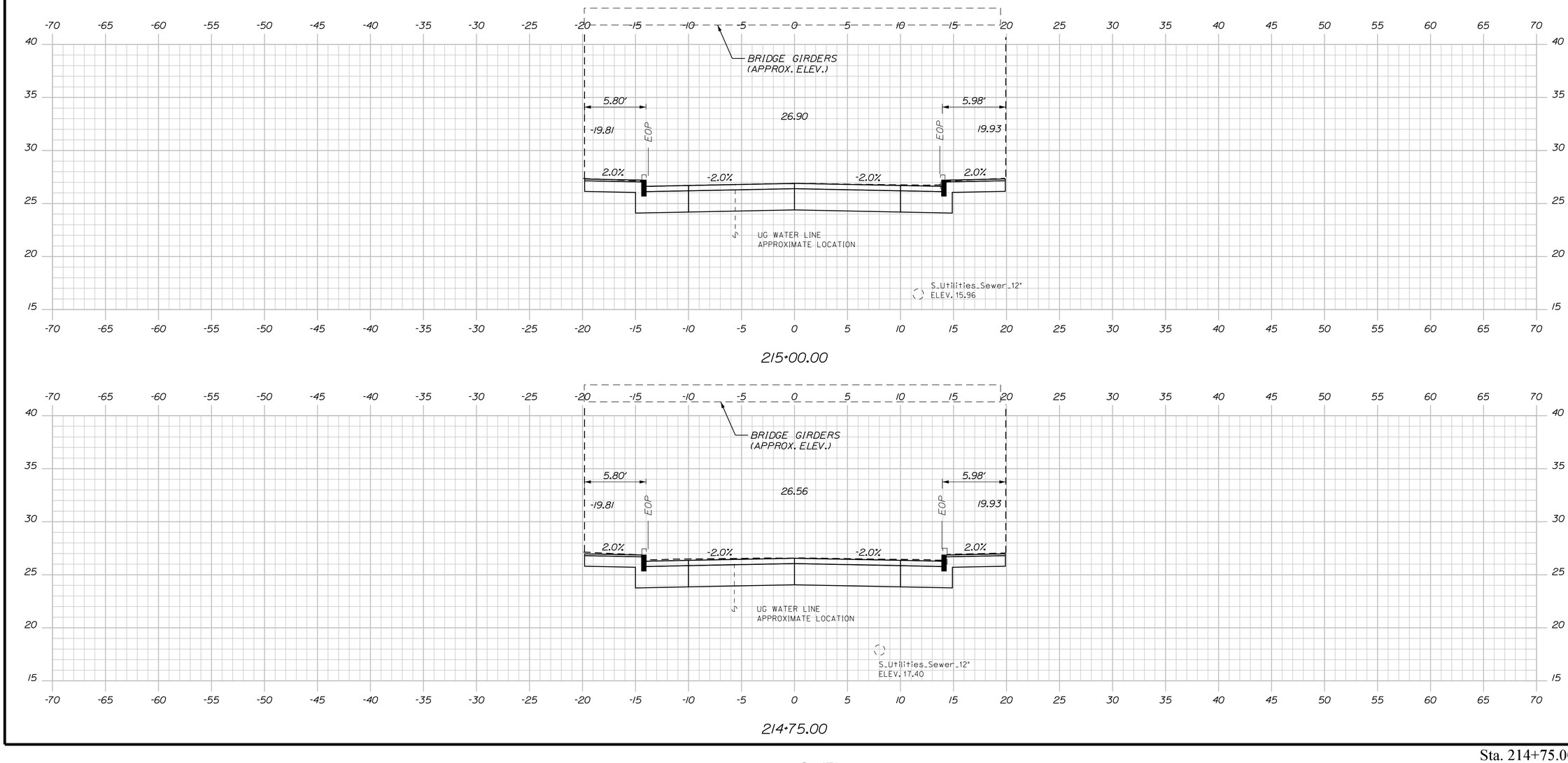
SHEET NUMBER

13

OF 16

Sta. 214+00.00 to Sta. 214+50.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	JBD	AHS	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (10 OF 12)

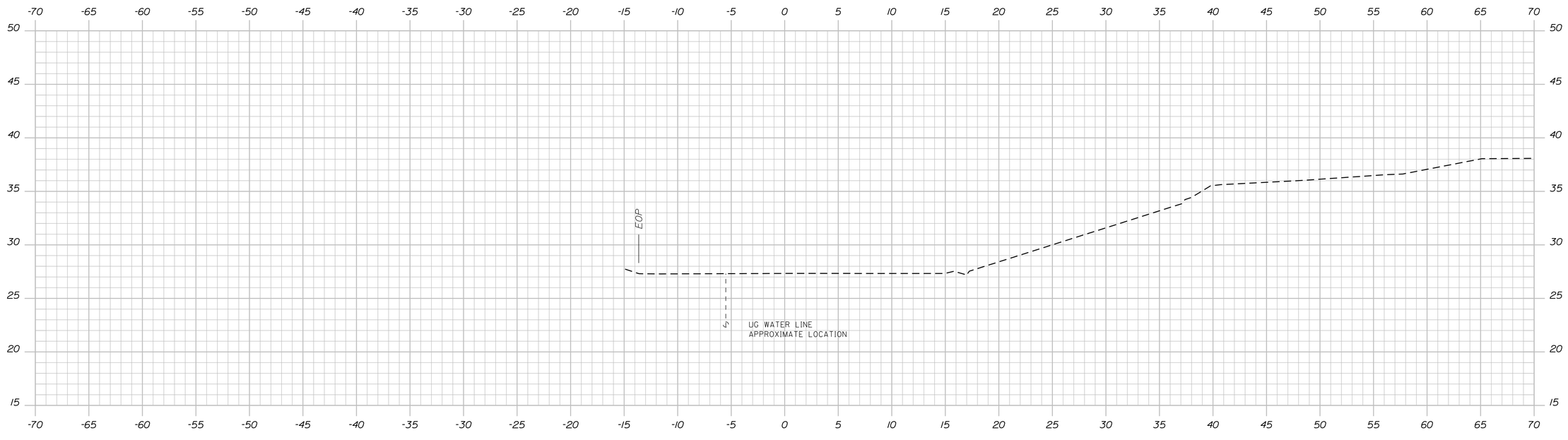
SHEET NUMBER

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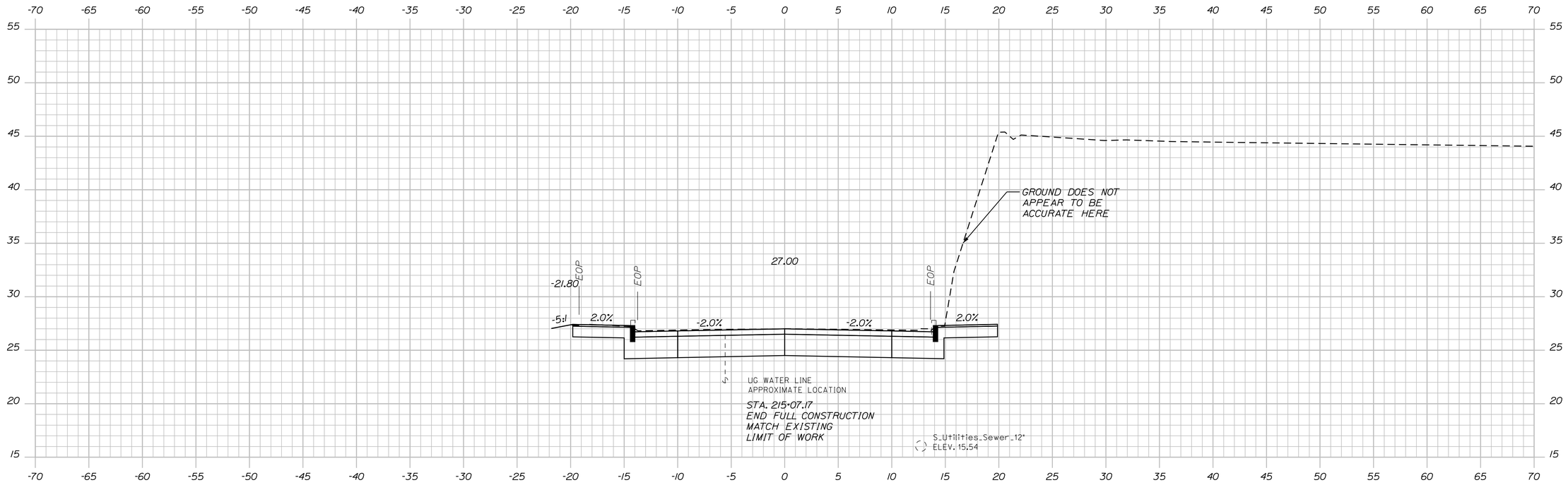
OF 16

Sta. 214+75.00 to Sta. 215+00.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



215+25.00



215+07.17

IDEALS

HIGHWAY PLANS

vhb

	BY	DATE
PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	JBD	09/2023
CHECKED-REVIEWED	ECF	09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(11 OF 12)

SHEET NUMBER

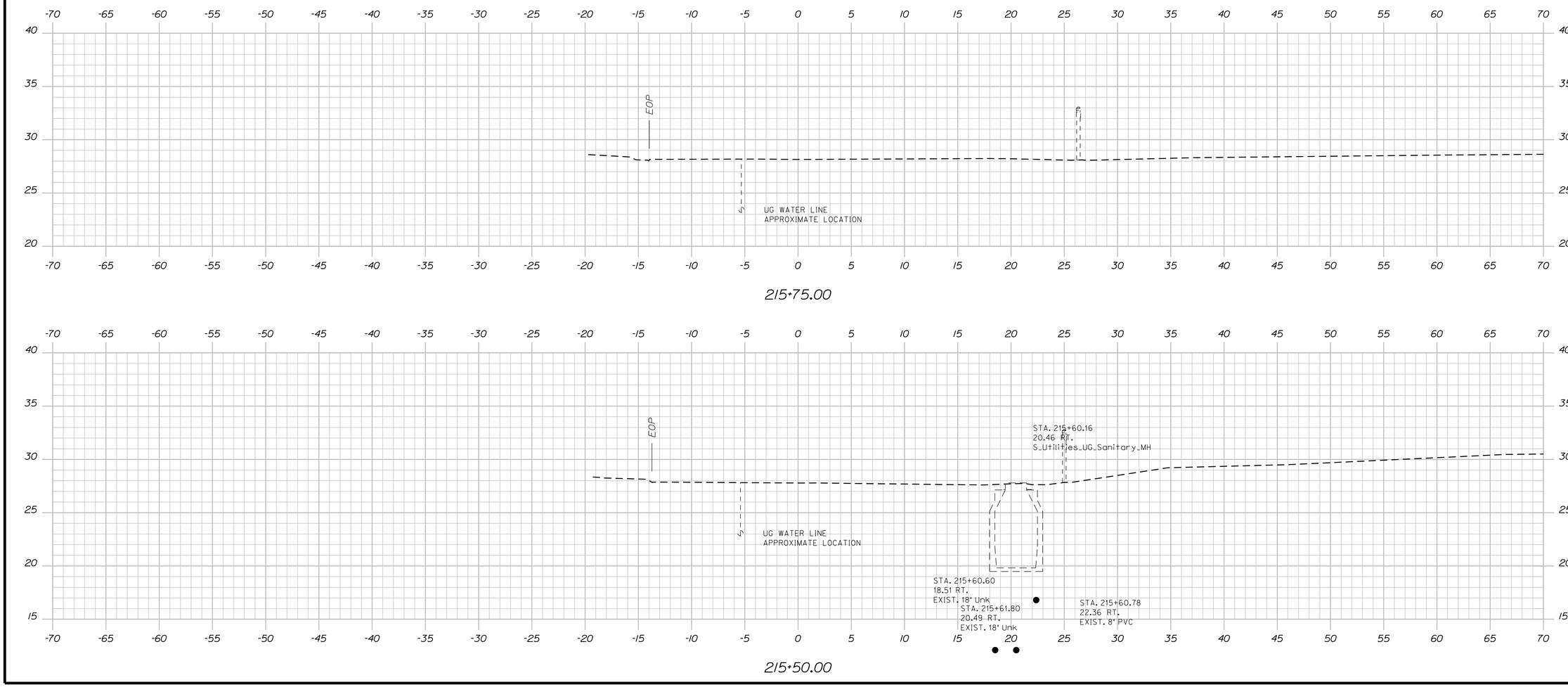
15

OF 16

Sta. 215+07.17 to Sta. 215+25.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:9/15/2023



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		DATE
DESIGN-DETAILED	JBD	AHS	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(12 OF 12)

SHEET NUMBER

16

OF 16

Sta. 215+50.00 to Sta. 215+75.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024

IDEALS

HIGHWAY PLANS

vhb

	DATE	BY
	09/2023	SP
	09/2023	JC

	JENN CONLEY
PROJ. MANAGER	
DESIGN-DETAILED	AHS
CHECKED-REVIEWED	ECF
DESIGN2-DETAILED2	
DESIGN3-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

IDEALS - PORTLAND SHERWOOD STREET

PLAN

SHEET NUMBER

1

OF 1

TOP OF FRAME = 35.13'
INV A = 29.2' (15" PVC)
INV B = 29.2' (15" PVC)
INV C = 28.9' (15" PVC)
(* SIZE NOT MEASUREABLE)

TOP OF FRAME = 34.90'
INV A = 25.9' (8" PVC)
INV B = 25.9' (8" PVC)
INV C = 25.9' (8" PVC)

TOP OF FRAME = 34.34'
INV A = 29.0' (*)
INV B = 29.0' (*)
INV C = 29.0' (6" PVC)
(* SIZE NOT MEASUREABLE)

TOP OF FRAME = 33.86'
INV A = 27.0' (15" PVC)
INV B = 27.2' (12" PVC)
INV C = 26.8' (15" PVC)

TOP OF FRAME = 31.46'
INV A = 26.8' (8" PVC)
INV B = 26.3' (4" PVC)
INV C = 23.1' (8" PVC)

TOP OF FRAME = 26.18'
INV = 22.5' (12" RCP)

TOP OF FRAME = 26.03'
INV = 22.6' (12" RCP)

TOP OF FRAME = 26.52'
INV A = 21.1' (12" VCP)
INV B = 20.7' (12" VCP)

TOP OF FRAME = 26.49'
INV A = 21.0' (12" RCP)
INV B = 21.7' (12" RCP)
INV C = 20.8' (12" RCP)

TOP OF FRAME = 27.86'
INV A = 12.1' (18" *)
INV B = 16.8' (8" PVC)
INV C = 12.5' (12" *)
INV D = 12.1' (18" *)
(* PIPE MATERIAL NOT VISIBLE)

INSTALL CB TYPE AI-P
W/ INLET PROTECTION

MATCH EXISTING STEPS

PROP. ELEV.
33.3'

UNDERDRAIN SHOWN OFFSET
FOR CLARITY.
SEE CROSS-SECTIONS FOR
ACTUAL OFFSET (TYP.)

CURVE DATA #1
PI = 212+00.00
Δ = 3°21'17.9" Lt.

PI = STA. 212+00.00

POB = STA. 210+00.00

PROP. ELEV.
33.9'

RELOCATE POLE

STA. 210+19.34
BEGIN FULL CONSTRUCTION
MATCH EXISTING
LIMIT OF WORK

SB I-295

NB I-295

EXISTING
BRIDGE
DECK

INSTALL CB
W/ INLET PROTECTION
BEHIND CURB

INSTALL 12" X 14 FT
RCP

STA. 215+07.25
END FULL CONSTRUCTION
MATCH EXISTING
LIMIT OF WORK

SHERWOOD STREET

ROADWAY
CENTERLINE

VERANDA STREET

210+00

S55°17'21.81"E

211+00

6" UD

212+00

S58°38'39.75"E

213+00

12" UD

214+00

S55°17'24.15"E

215+00

216+00

RELOCATE POLE

INSTALL CB TYPE AI-P
W/ INLET PROTECTION

PROP. ELEV.
34.0'

MATCH EXISTING STEPS

PROP. ELEV.
33.9'

PROP. ELEV.
33.6'

GAS MAIN END

ROW (TYP.)

RELOCATE POLE

INSTALL CB TYPE AI-P
W/ INLET PROTECTION

INSTALL 12" X 16 FT
RCP

PI = STA. 213+10.07

CURVE DATA #1
PI = 213+10.07
Δ = 3°21'15.6" Rt.

PC = STA. 216+82.01

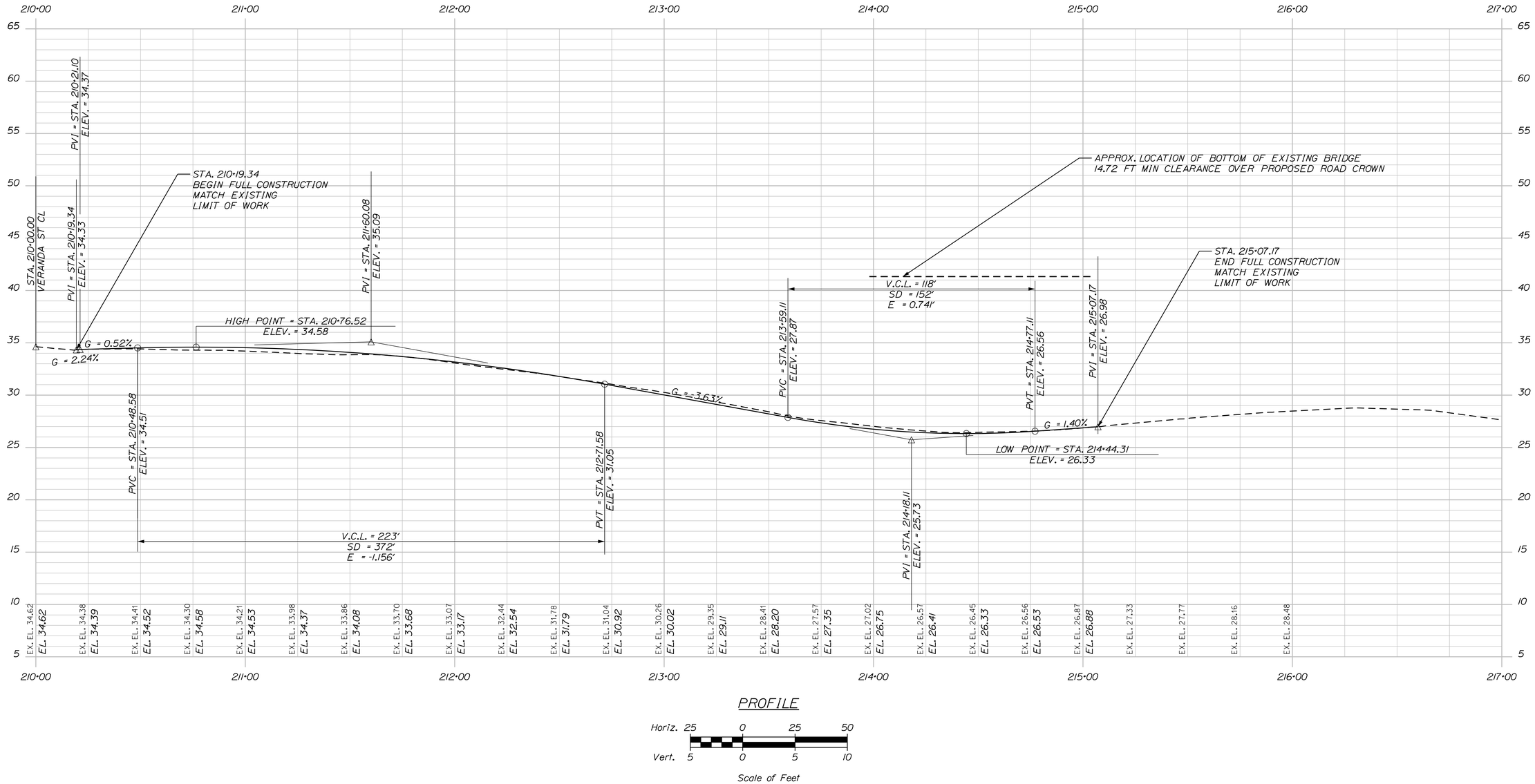
CURVE DAT
PI = 217+
D = 28°38
Δ = 31°38
R = 200.0
L = 110.47
T = 56.68'
E = 7.88'

PLAN

25 0 25 50

Scale of Feet

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



PROFILE

Horiz. 25 0 25 50

Vert. 5 0 5 10

Scale of Feet

IDEALS

HIGHWAY PLANS

vhb

	BY	DATE
JENN CONLEY		
PROJ. MANAGER	SP	09/2023
DESIGN-DETAILED	AHS	
CHECKED-REVIEWED	JC	09/2023
DESIGN2-DETAILED2	ECF	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET

PROFILE

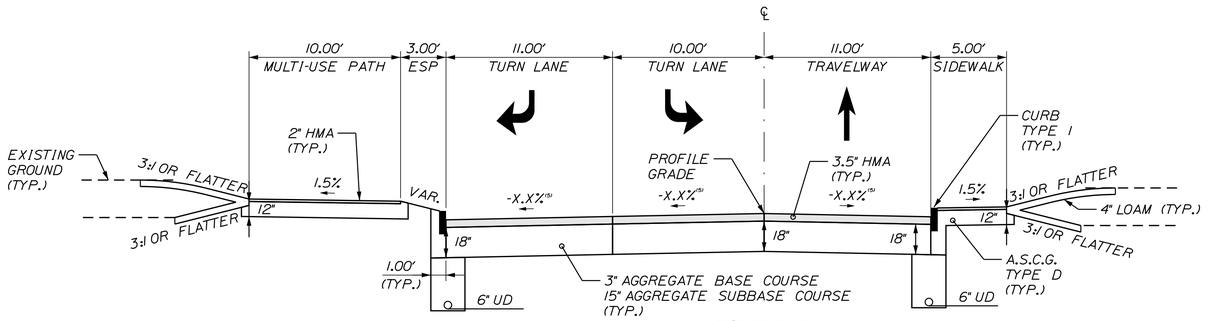
SHEET NUMBER

2

OF 25

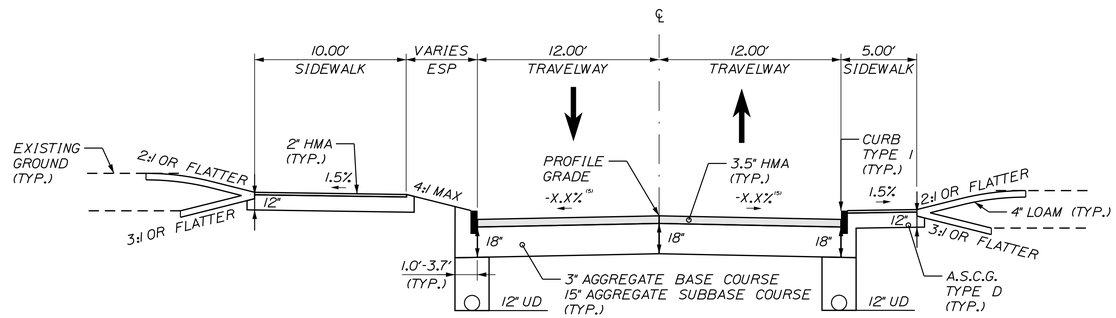
TYPICAL SECTIONS
Sherwood St

SHERWOOD STREET SUPERELEVATION TABLE			
TURN LANE (%)	TRAVEL LANE (%)	STATION	TRAVEL LANE %
		START	
0.6%	0.6%	**210+19.34**	-0.7%
0.3%	0.3%	**210+25.00**	-0.8%
-0.8%	-0.8%	**210+50.00**	-1.4%
-2.0%	-2.0%	**210+75.00**	-2.0%
		TO	
-2.0%	-2.0%	**211+50.00**	-2.0%
-2.25%	-2.25%	**211+75.00**	-1.5%
		TO	
-	-2.25%	**213+00.00**	-1.5%
-	-2.1%	**213+25.00**	-1.8%
-	-2.0%	**213+50.00**	-2.0%
		TO	
-	-2.0%	**215+00.00**	-2.0%
-	MATCH	**215+07.17**	MATCH
		END	



NORMAL

LEFT SIDEWALK	(2) 11' WIDE LANES & (1) 10' WIDE LANE	RIGHT SIDEWALK
STATION TO STATION	STATION TO STATION	STATION TO STATION
210+19.34 TO 212+00.00	210+19.34 TO 212+00.00	210+19.34 TO 212+00.00



NORMAL

LEFT SIDEWALK	(2) 12' WIDE LANES	RIGHT SIDEWALK
STATION TO STATION	STATION TO STATION	STATION TO STATION
213+25.00 TO 213+98.00	213+25.00 TO 213+98.00	213+25.00 TO 213+98.00

NOTES:

1. THE PAVEMENT AND BASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
2. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
3. THE STATIONING SHOWN UNDER EACH TYPICAL IS APPROXIMATE.
4. 4" OF LOAM SHALL BE USED IN ALL DISTURBED AREAS.
5. SEE SUPERELEVATION TABLE FOR CROSS SLOPES

NOT TO SCALE

IDEALS

HIGHWAY PLANS

vhb

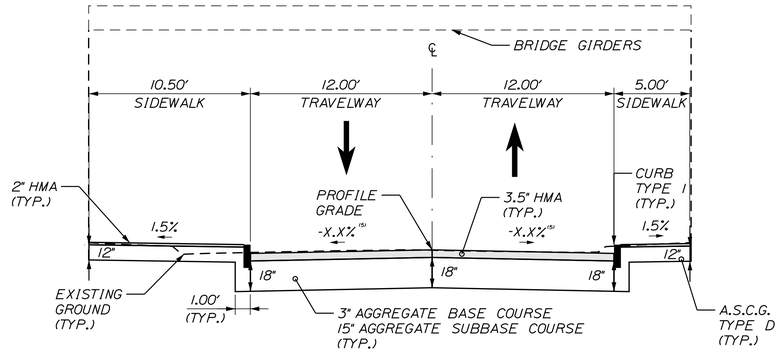
PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	EOF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET
TYPICALS
(1 OF 6)

SHEET NUMBER
3
OF 25

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024

TYPICAL SECTIONS
Sherwood St



NORMAL

LEFT SIDEWALK	(2) 12' WIDE LANES	RIGHT SIDEWALK
STATION TO STATION	STATION TO STATION	STATION TO STATION
213+98.00 TO 215+07.17	213+98.00 TO 215+07.17	213+98.00 TO 215+07.17

NOTES:

1. THE PAVEMENT AND BASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
2. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
3. THE STATIONING SHOWN UNDER EACH TYPICAL IS APPROXIMATE.
4. 4" OF LOAM SHALL BE USED IN ALL DISTURBED AREAS.
5. SEE SUPERELEVATION TABLE FOR CROSS SLOPES

NOT TO SCALE

IDEALS

HIGHWAY PLANS

vhb

		BY	DATE
PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	EOF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET
TYPICALS
(2 OF 6)

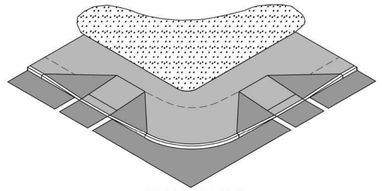
SHEET NUMBER
4
OF 25

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024

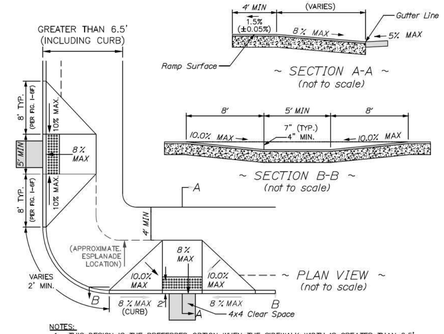
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GENERAL NOTES

1. DESIGN OF ACCESSIBLE RAMPS AND ASSOCIATED FACILITIES ARE GOVERNED BY THE 2010 AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN, WHICH IS DETAILED IN DOJ SECTION 28 CFR 35.151. ADDITIONAL GUIDANCE AND INFORMATION CAN BE FOUND IN THE PROPOSED PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES PUBLISHED BY THE U.S. ACCESS BOARD. IN ANY CASE WHERE THE DESIGN REQUIREMENTS ARE MORE STRINGENT BETWEEN ADA STANDARDS AND CITY REQUIREMENTS, THE ADA STANDARDS SHALL GOVERN.
2. SIDEWALKS SHALL BE CONSTRUCTED IN BRICK, CONCRETE, OR BITUMINOUS, ACCORDING TO THE SIDEWALK & DRIVEWAY APRON MATERIALS POLICY, UNLESS DIRECTED OTHERWISE BY THE CITY ENGINEER.
3. SIDEWALKS AND RAMPS SHALL BE BUILT ACCORDING TO THE FOLLOWING DIMENSIONS AND GRADES:
   SIDEWALK RUNNING SLOPE: MATCH ADJACENT STREET GRADE
   SIDEWALK CROSS SLOPE: 1.0% MINIMUM, 2.0% MAXIMUM
   SIDEWALK WIDTH: 5'-0" MINIMUM, WIDER PREFERRED.
   ESPLANADE (WHERE PROVIDED) 2'-0" MINIMUM, 4'-0" OR GREATER PREFERRED IF LANDSCAPED.
4. TWO CURB RAMPS ARE REQUIRED AT EACH SIDEWALK CORNER. EACH CURB RAMP SHALL CONNECT THE PEDESTRIAN ACCESS ROUTE AT EACH PEDESTRIAN STREET CROSSING. IN ALTERATIONS WHERE PHYSICAL CONSTRAINTS PREVENT TWO CURB RAMPS FROM BEING INSTALLED AT A STREET CORNER, A SINGLE PEDESTRIAN CURB RAMP MAY BE PERMITTED.
5. OPPOSING CURB RAMPS AT A SINGLE CROSSING SHALL ALIGN TO PROVIDE A STRAIGHT PATH OF TRAVEL FROM THE TOP OF THE RAMP TO THE CURB RAMP ON THE OPPOSITE SIDE OF THE ROADWAY TO THE MAXIMUM EXTENT FEASIBLE.
6. ALL SIDEWALKS AND RAMPS SHALL DRAIN TOWARD THE STREET, DRIVEWAY, OR PARKING AREA, WITH A MAXIMUM CROSS SLOPE OF 2.0%.
7. LEVEL LANDINGS (NO GREATER THAN 2.0% SLOPE IN ANY DIRECTION) AT THE BOTTOM OF PERPENDICULAR RAMPS SHALL BE WHOLLY CONTAINED WITHIN MARKED CROSSWALKS.
8. PONDING SHALL NOT BE PERMITTED WITHIN THE CURB RAMP LIMITS. RAMPS SHALL NOT ALTER ROADWAY DRAINAGE PATTERNS.
9. TRANSITION FROM RAMPS TO WALKS OR STREET SURFACE SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. PAVEMENT AT THE STREET SURFACE SHALL BE MILLED AND REPAVED TO ACHIEVE FLUSH CONDITION.
10. CURB RAMP AND FORM WORK SLOPES SHALL BE CHECKED WITH A DIGITAL LEVEL OF AN APPROPRIATE LENGTH. NO PORTION OF A RAMP RUN SHALL EXCEED THE MAXIMUM SLOPE REQUIREMENT.
11. THE COUNTER SLOPE WITHIN 2' OF THE CURB RAMP SHALL BE 5% MAXIMUM. IN ALTERATIONS, IF THE COUNTER SLOPE OF 5% MAXIMUM CANNOT BE ACHIEVED, THE SLOPE ELEVATION MAY BE ADJUSTED SO THAT THE COMBINED COUNTER SLOPE AND RAMP SLOPE DO NOT EXCEED 13.3%.
12. VERTICAL DROP-OFF EDGES TO RAMPS SHALL NOT BE BUILT UNLESS THE RAMP ABUTS AN ESPLANADE OR OTHER AREA NOT TO BE USED BY PEDESTRIANS.
13. AT MARKED CROSSWALKS, THE FULL WIDTH OF THE RAMP OR LANDING SHALL BE CONTAINED WITHIN THE PAVEMENT MARKINGS.
14. DETECTABLE WARNING PANELS SHALL BE PROVIDED ON ALL RAMPS AS PER FIGURE I-7 OF THESE STANDARD DETAILS.
15. RAMP FLARES SHOULD BE LOCATED OUTSIDE THE DIRECT LINE OF TRAVEL MOST LIKELY TO BE FOLLOWED BY THE VISUALLY IMPAIRED.
16. SIGNS, POLES, PLANTERS, MAILBOXES, ETC. SHALL NOT BE LOCATED WHERE THEY WILL INTERFERE WITH THE USE OF SIDEWALK RAMPS.
17. SIDEWALK RAMPS SHALL NOT BE LOCATED WHERE USERS MUST CROSS DROP INLET GRATES, MANHOLE COVERS, OR OTHER ACCESS LIDS. IF THIS CANNOT BE AVOIDED, THEN GRATE DESIGN AND PLACEMENT SHALL CONFORM TO ADA REQUIREMENTS.
18. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. RAMP DESIGNS THAT ARE COMPLIANT WITH ADA BUT NOT LISTED IN THESE DETAILS MAY BE APPROVED BY THE CITY ENGINEER.
19. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THESE DETAILS AND TO ADA GUIDELINES TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS, AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE ADA ACCESSIBILITY GUIDELINES.
20. MAXIMUMS AND MINIMUMS DO NOT HAVE TOLERANCES AND ARE NOT TO BE EXCEEDED OR UNMET.
21. THE STANDARD TURNING SPACE (LEVEL LANDING) IS 4'-0" X 4'-0" SLOPING NO MORE THAN 2.0%. WHERE THE TURNING SPACE SHALL BE 4'-0" MINIMUM BY 5'-0" MINIMUM. THE 5'-0" DIMENSION SHALL BE PROVIDED IN THE DIRECTION OF THE RAMP RUN.
22. DETECTABLE WARNINGS SHALL BE INSTALLED AT ALL SIGNED OR SIGNALIZED INTERSECTIONS. THEY SHALL HAVE A TRUNCATED DOME SURFACE. THE DOMES SHALL BE IN A SQUARE PATTERN AND ALIGNED WITH PEDESTRIAN TRAFFIC WHERE POSSIBLE.
23. DETECTABLE WARNINGS SHALL SPAN THE WIDTH OF THE PEDESTRIAN RAMP. SEE STANDARD DETAIL FIGURE I-7.
24. ALL DETECTABLE WARNING FIELDS PLACED AT THE SAME INTERSECTION SHALL BE MADE UP OF THE SAME UNIFORM MATERIAL TYPE. DETECTABLE WARNINGS SHALL BE CONTRASTING IN COLOR TO THE ADJACENT WALKWAY.
25. A RAMP WITH A RUNNING SLOPE LESS THAN 5.0% IS DEFINED AS A "BLENDED TRANSITION". BLENDED TRANSITIONS DO NOT REQUIRE A LEVEL LANDING AT THE TOP OF THE RAMP.
26. THE RAMP LENGTH SHALL NOT EXCEED 15 FEET. ADJUST RAMP LENGTH OR SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
27. ALL CURB RAMP JOINTS AND GRADE BREAKS SHALL BE FLUSH.
28. RAMP GRADE BREAKS SHALL BE PERPENDICULAR TO THE RUNNING SLOPE.
29. THERE SHALL BE A MINIMUM OF 12" AGGREGATE SUBBASE COURSE - GRAVEL UNDER THE SIDEWALK SURFACE ON PEDESTRIAN RAMPS.
30. DRAINAGE STRUCTURES, UTILITY POLES, TRAFFIC SIGNAL EQUIPMENT OR OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED IN THE CURB RAMP OR TURNING SPACE AREAS.
31. BEFORE RETROFITTING RAMPS, THE CONTRACTOR SHALL VERIFY REMOVAL LIMITS ARE SUFFICIENT TO PROVIDE POSITIVE DRAINAGE, MAINTAIN EXISTING DRAINAGE PATTERNS AND AVOID PONDING IN THE FINAL CONFIGURATION.
32. A TEMPORARY PEDESTRIAN ACCESS ROUTE SHALL BE PROVIDED WHENEVER THE EXISTING PEDESTRIAN ACCESS ROUTE IN THE PUBLIC RIGHT OF WAY IS BLOCKED BY CONSTRUCTION, ALTERATION, MAINTENANCE OR OTHER TEMPORARY CONDITIONS. REFER TO MUTCD FOR GUIDANCE.

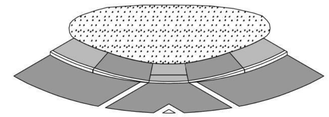


~ ISOMETRIC VIEW ~
(not to scale)

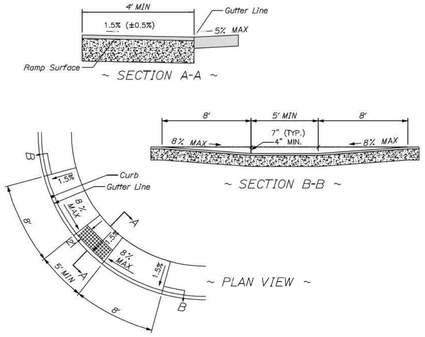


NOTES:
1. THIS DESIGN IS THE PREFERRED OPTION WHEN THE SIDEWALK WIDTH IS GREATER THAN 6.5'. USE OTHER OPTIONS ONLY WHEN REQUIRED BY DESIGN CONSTRAINTS.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

PERPENDICULAR ADA RAMP – SIDEWALK WIDTH GREATER THAN 6.5' WIDE WITH OR WITHOUT ESPLANADE
NOT TO SCALE

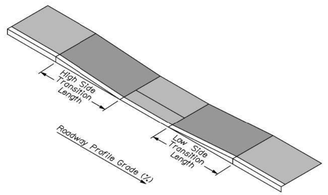


~ ISOMETRIC VIEW ~
(NOT TO SCALE)



NOTES:
1. THIS LESS DESIRABLE DESIGN SHOULD NOT BE USED UNLESS REQUIRED BY DESIGN CONSTRAINTS. IT DOES NOT PROVIDE DIRECTIONAL CUES.
2. A MINIMUM CURB REVEAL OF 4" IS REQUIRED AT THE APEX OF THE CURB RADIUS.
3. MINIMUM TERMINAL CURB LENGTH SHALL BE 4 FEET.
4. SIDEWALK MATERIAL PER CITY SIDEWALK MATERIAL POLICY.

APEX RAMP – SIDEWALKS **LESS THAN** 6.5' WIDE WITH NO ESPLANADE
NOT TO SCALE



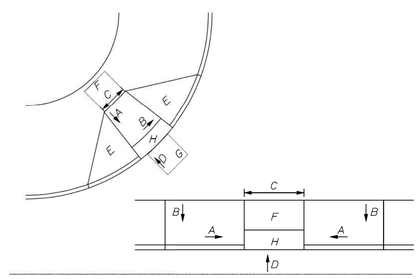
Pedestrian Ramp Length Table

Curb Reveal (Inches)		7	6	5	4	3
	Roadway Profile Grade	Minimum Transition Length Required (Feet)				
Low Side Transition Length	-7% and Lower	4.0	4.0	4.0	4.0	4.0
	-6%	8.0	4.0	4.0	4.0	4.0
	-5%	8.0	4.0	4.0	4.0	4.0
	-4%	8.0	8.0	4.0	4.0	4.0
	-3%	8.0	8.0	4.0	4.0	4.0
	-2%	8.0	8.0	8.0	4.0	4.0
	-1%	8.0	8.0	8.0	4.0	4.0
	0%	8.0	8.0	8.0	8.0	4.0
High Side Transition Length	1%	8.0	8.0	8.0	8.0	4.0
	2%	10.0	8.0	8.0	8.0	4.0
	3%	12.0	10.0	8.0	8.0	8.0
	4%	14.0	12.0	10.0	8.0	8.0
	5%	15.0	15.0	14.0	10.0	8.0
	6%	15.0	15.0	15.0	15.0	12.0
	7% and Hgher	15.0	15.0	15.0	15.0	15.0

Choose roadway profile grade by rounding up for positive grades and down for negative grades. Round to the nearest whole integer. If constraints prevent placement of the ramp length required by the table, place the maximum length possible and check the slope. If above the maximum allowable slope, consider design modifications before considering technical infeasibility.

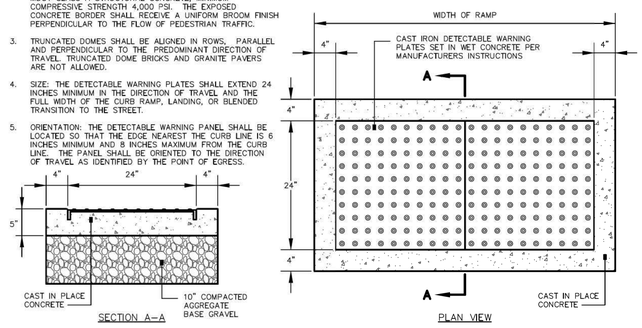
RAMP LENGTH TABLE
FOR SIDEWALK RAMPS
NOT TO SCALE

CURB RAMP REQUIREMENTS		
Running Slope	A	Max. 8.33% (1:12)
Cross Slope	B	Max. 2% (1:50) MIN. 1% *Ramp cross slope at street crossings without stop or signal control may match roadway profile.*
Clear Width	C	Min. 5 feet *For existing ramps only, ramp width may remain 4 feet.*
Counter Slope	D	Max. 5% (1:20) *Adjacent surface must be flush with the ramp.*
Flared Sides	E	Max. 10% (1:10)
Turning Space	F	4 feet by 4 feet *Maximum slope of 2% in any direction. May include Detectable Warnings*
Clear Space	G	4 feet by 4 feet *Located at the bottom of the ramp outside active travel lanes.*
Detectable Warnings	H	*Required at traffic controlled intersections and mid-block crossings, full ramp width.*



PEDESTRIAN RAMP REQUIREMENTS
FOR SIDEWALK RAMPS
NOT TO SCALE

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 MOOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FROM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



SIDEWALK RAMP DETECTABLE WARNING PANEL
NOT TO SCALE

IDEALS

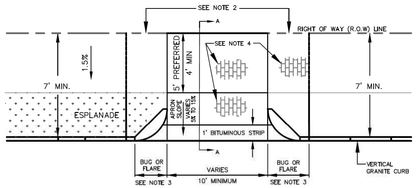
HIGHWAY PLANS

vhb

	BY	DATE
PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	AHS	09/2023
CHECKED-REVIEWED	ECF	09/2023
DESIGN2-DETAILED2	JC	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

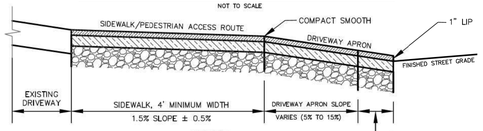
IDEALS - PORTLAND
SHERWOOD STREET
TYPICALS
(3 OF 6)

SHEET NUMBER
5
OF 25



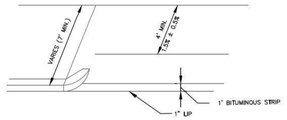
STANDARD RESIDENTIAL DRIVEWAY APRON LAYOUT

NOT TO SCALE



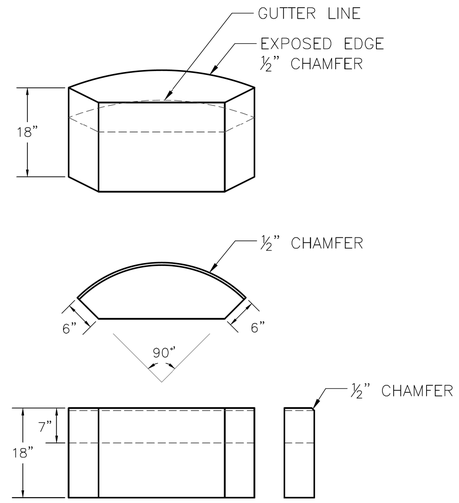
SECTION A–A

NOT TO SCALE



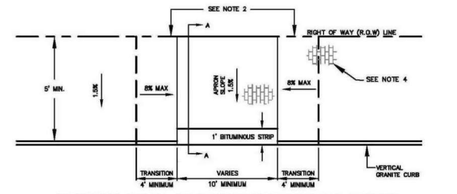
NOTES:

1. MATCH EXISTING GRADE AT R.O.W LINE. WHERE REQUIRED TO MEET A.D.A. AND DRIVEWAY APRON SLOPE REQUIREMENTS, A CONSTRUCTION EASEMENT MAY BE REQUIRED.
2. IF MATCHING THE EXISTING GRADE AT ROW CAUSES APRON SLOPE TO EXCEED RECOMMENDED %, SIDEWALK TRANSITION AREAS MAY BE ADDED, BUT SHALL NOT EXCEED 8.33%.
3. TWO–FOOT RADIUS CORNER GRANITE PIECES ("BUGS") ARE REQUIRED AT LOW–VOLUME DRIVEWAYS UNLESS OTHERWISE DIRECTED BY DPW. AT OTHER DRIVEWAYS, STANDARD FLARE/TIPDOWN TREATMENTS SHALL BE USED.
4. ALL MATERIALS IN ROW TO COMPLY WITH CITY'S SIDEWALK & DRIVEWAY MATERIAL POLICY. BRICK IN DRIVEWAY APRONS, WHERE APPLICABLE, SHALL BE ORIENTED IN THE SAME WAY AS THE ADJACENT BRICK SIDEWALK.
5. THIS LAYOUT MAY BE REQUIRED AT MINOR DRIVEWAYS SERVING COMMERCIAL OR INDUSTRIAL USES.



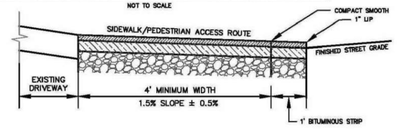
GRANITE RADIUS CORNER "BUG"

NOT TO SCALE



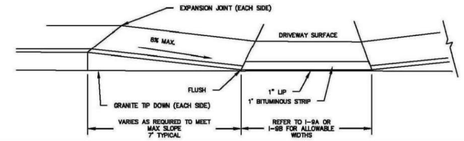
DRIVEWAY APRON AT CONSTRAINED SIDEWALK LAYOUT

NOT TO SCALE



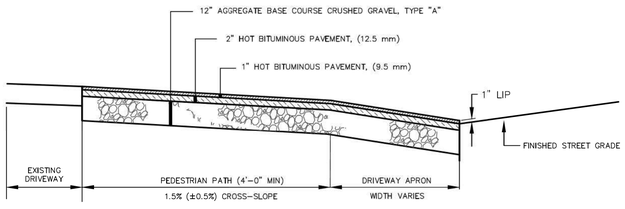
SECTION A–A

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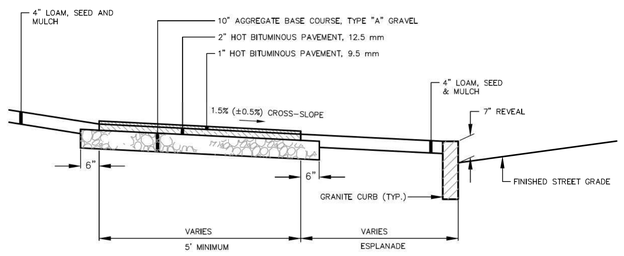
NOTES:

1. MATCH EXISTING GRADE AT R.O.W LINE. WHERE REQUIRED TO MEET A.D.A. AND DRIVEWAY APRON SLOPE REQUIREMENTS, A CONSTRUCTION EASEMENT MAY BE REQUIRED.
2. SIDEWALK TRANSITION SLOPE SHALL NOT EXCEED 8.33% RAMP LENGTH SHALL ACCOMMODATE THIS CONSTRAINT UP TO 15 FOOT RAMP LENGTH OR AS OTHERWISE REQUIRED BY ADA STANDARDS.
3. MOUNTABLE CURB (SEE DETAIL I–15) OR INCREASE IF BITUMINOUS LIP IS PREFERRED TO MAINTAIN SIDEWALK GRADE THROUGH APRON.
4. ALL MATERIALS IN ROW TO COMPLY WITH CITY'S SIDEWALK & DRIVEWAY MATERIAL POLICY. BRICK IN DRIVEWAY APRONS, WHERE APPLICABLE, SHALL BE ORIENTED IN THE SAME WAY AS THE ADJACENT BRICK SIDEWALK.



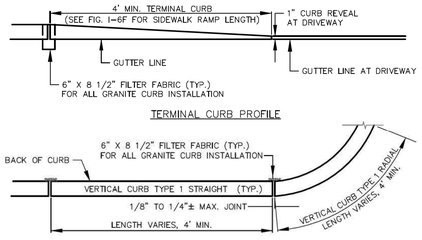
BITUMINOUS DRIVEWAY APRON

NOT TO SCALE



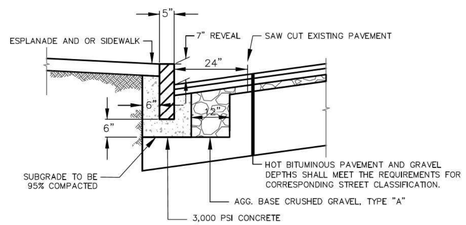
BITUMINOUS SIDEWALK

NOT TO SCALE



TERMINAL CURB PROFILE

VERTICAL GRANITE CURB PLAN VIEW



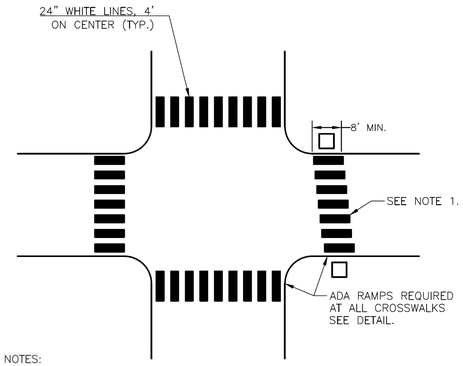
VERTICAL GRANITE CURB CROSS SECTION

NOTES:

1. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
2. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10–INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF CURB.
3. CURBING SHALL BE SET IN A 6–INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
4. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB

NOT TO SCALE



NOTES:

1.) CROSSWALK BLOCKS SHALL BE STAGGERED AND REMAIN PARALLEL TO THE ROADWAY CENTERLINE AT SKEWED CROSSING LOCATIONS.
2.) CROSSWALK MARKINGS LOCATED ON ARTERIAL STREETS SHALL BE APPLIED WITH A THERMOPLASTIC MATERIAL (OR APPROVED EQUAL) MEETING ALL MANUFACTURER AND MUTCD REQUIREMENTS.
3.) THE ESTABLISHMENT PERIOD FOR CROSSWALK MARKINGS SHALL BE BASED ON MANUFACTURER'S SPECIFICATIONS AND SHALL AT A MINIMUM MEET MAINE DOT STANDARD SPECIFICATION 627.07 ESTABLISHMENT PERIOD REQUIREMENTS.

CROSSWALK MARKINGS

NOT TO SCALE

IDEALS

HIGHWAY PLANS

vhb

	BY	DATE
PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	AHS	09/2023
CHECKED-REVIEWED	ECF	09/2023
DESIGN2-DETAILED2	JC	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET
TYPICALS
(4 OF 6)

SHEET NUMBER

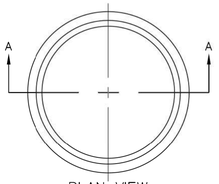
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OF 25

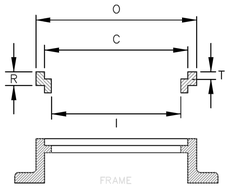
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1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
3. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
4. ALL PIPES ENTERING MANHOLES AND CATCH BASINS SHALL HAVE FLEXIBLE PIPE CONNECTIONS WITH STAINLESS STEEL BANDS. FILL ANY ANNUAL SPACE WITH NON SHRINK GROUT.
5. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID
6. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
7. SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
8. INVERTS SHALL BE BUILT TO THE HEIGHT OF THE FOLLOWING AS DETERMINED BY THE LARGEST PIPE SIZE.
   - 8.1. FOR PIPE SIZES 4"-12" INVERTS SHALL GO TO THE TOP OF THE PIPE.
   - 8.2. FOR PIPE SIZES 15"-36" INVERTS SHALL GO TO THE SPRING LINE.
   - 8.3. FOR PIPE SIZES 42"-60" INVERTS SHALL GO TO THE 1/3 OF PIPE SIZE
9. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
10. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
11. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
12. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A HOOD / CASCO TRAP. SEE FIGURE II-09.
13. ALL MANHOLES AND CATCH BASINS REQUIRE BUOYANCY CALCULATIONS AND THE STRUCTURES SHALL BE MODIFIED AS NECESSARY BASED ON THOSE CALCULATIONS.

GENERAL NOTES FOR MANHOLES AND CATCH BASINS



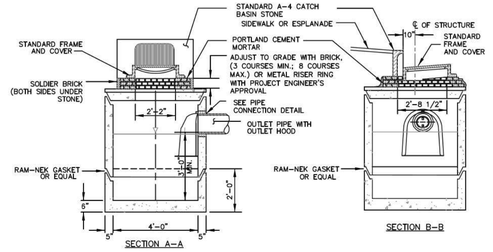
PLAN VIEW

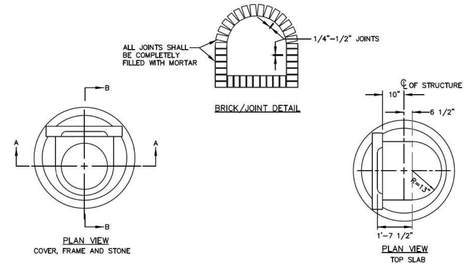


SECTION A-A

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

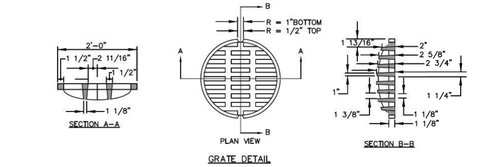
MANHOLE RISER RING
NOT TO SCALE

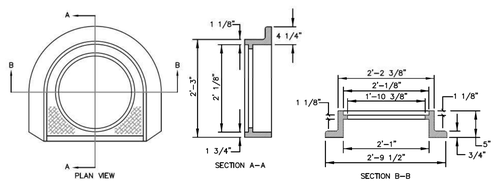




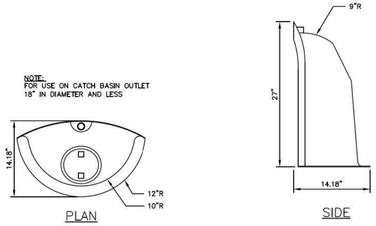
PRECAST CONCRETE CATCH BASIN - TYPE "E"
NOT TO SCALE

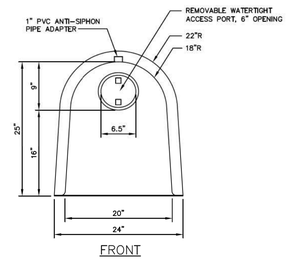
1. APPROVED CATCH BASIN FRAMES:
   - 1.1. EAST JORDAN = 7375Z
   - 1.2. NEENAH = R-3248
   - 1.3. OR APPROVED EQUAL
2. APPROVED CATCH BASIN GRATES
   - 2.1. EAST JORDAN = 2440M
   - 2.2. NEENAH = R-3248
   - 2.3. OR APPROVED EQUAL



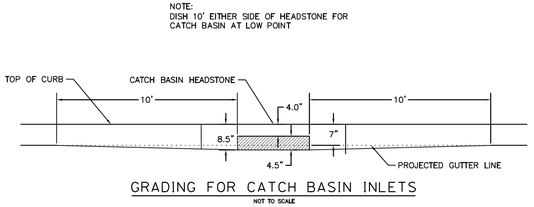


CATCH BASIN FRAME & GRATE

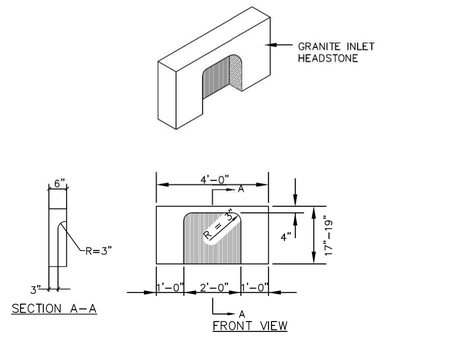




CATCH BASIN HOOD
NOT TO SCALE



GRADING FOR CATCH BASIN INLETS
NOT TO SCALE



4' GRANITE HEADSTONE FOR CATCH BASIN INLET
NOT TO SCALE

IDEALS

HIGHWAY PLANS

vhb

		DATE
PROJ. MANAGER	JENN CONLEY	BY
DESIGN-DETAILED	AHS	SP 09/2023
CHECKED-REVIEWED	EDF	JC 09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

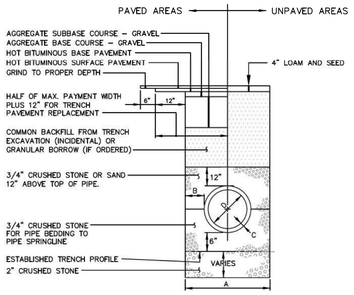
IDEALS - PORTLAND
SHERWOOD STREET
TYPICALS
(5 OF 6)

SHEET NUMBER
7
OF 25

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024

NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.

ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES..



NOTES

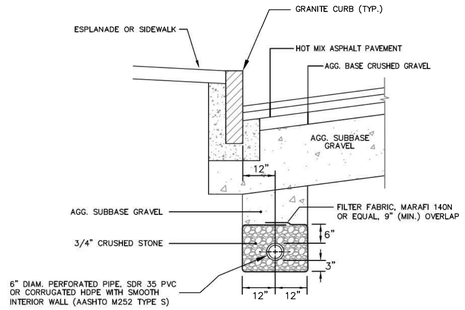
1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE; BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
4. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER D, AS SET FORTH IN THE FOLLOWNG TABLE.

PIPE DIAMETER, D (INCHES)	MAX. TRENCH WIDTH, A (FEET)
4 – – – – –	4.0
6	4.0
8	4.0
10	4.0
12	5.0
15	5.0
18 – – – – –	5.0
21	5.0
24	6.0
27	6.0
30	6.0
36 – – – – –	6.0
42	7.0
48	7.0

TYPICAL PIPE TRENCH INSTALLATION

NOT TO SCALE

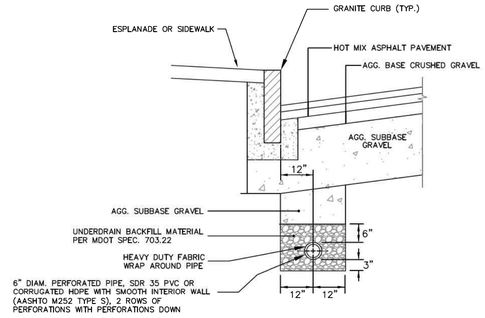
TYPE "B" UNDERDRAIN INSTALLATION ALTERNATIVE A



NOT TO SCALE

NOTES
1. UNDERDRAIN PIPE INVERT ELEVATIONS SHALL BE AT LEAST 42 INCHES BELOW GUTTER GRADES.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

TYPE "B" UNDERDRAIN INSTALLATION ALTERNATIVE B



NOT TO SCALE

NOTES
1. UNDERDRAIN PIPE INVERT ELEVATIONS SHALL BE AT LEAST 42 INCHES BELOW GUTTER GRADES.
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN. THE PIPE SHALL BE FURNISHED WITH A HEAVY DUTY FABRIC WRAP, SUCH AS "FILTER SOCK" BY ADS.

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	EOF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

TYPICALS
(6 OF 6)

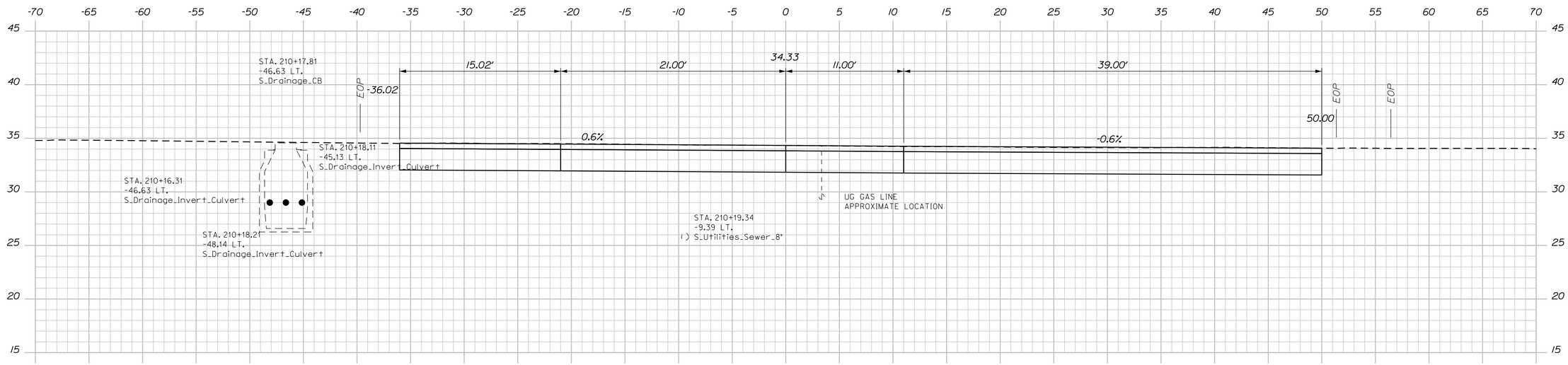
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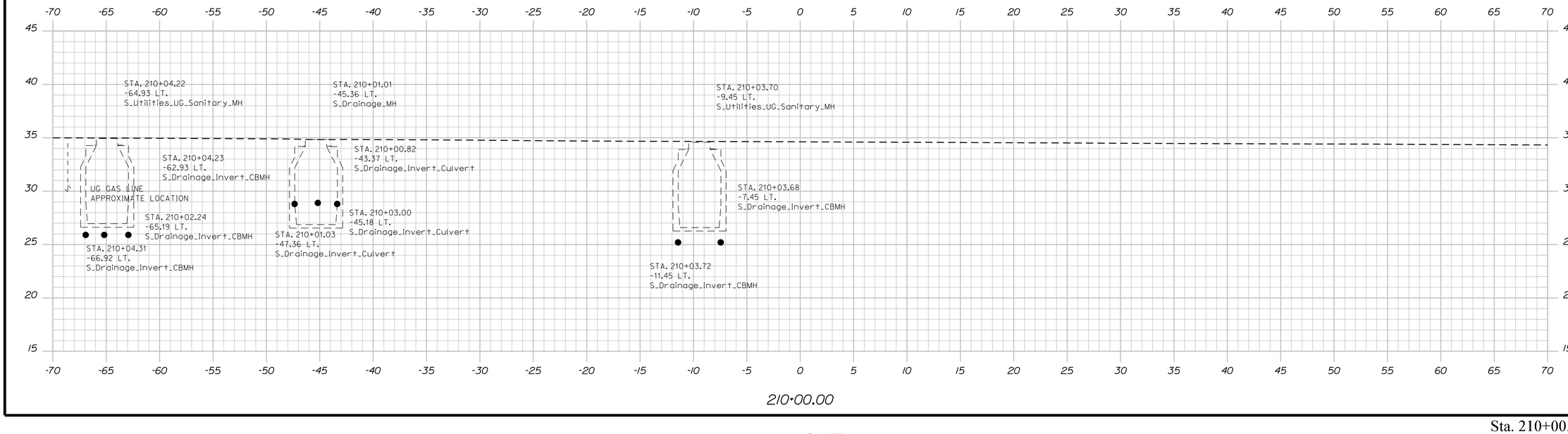
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OF 25

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024





IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
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FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

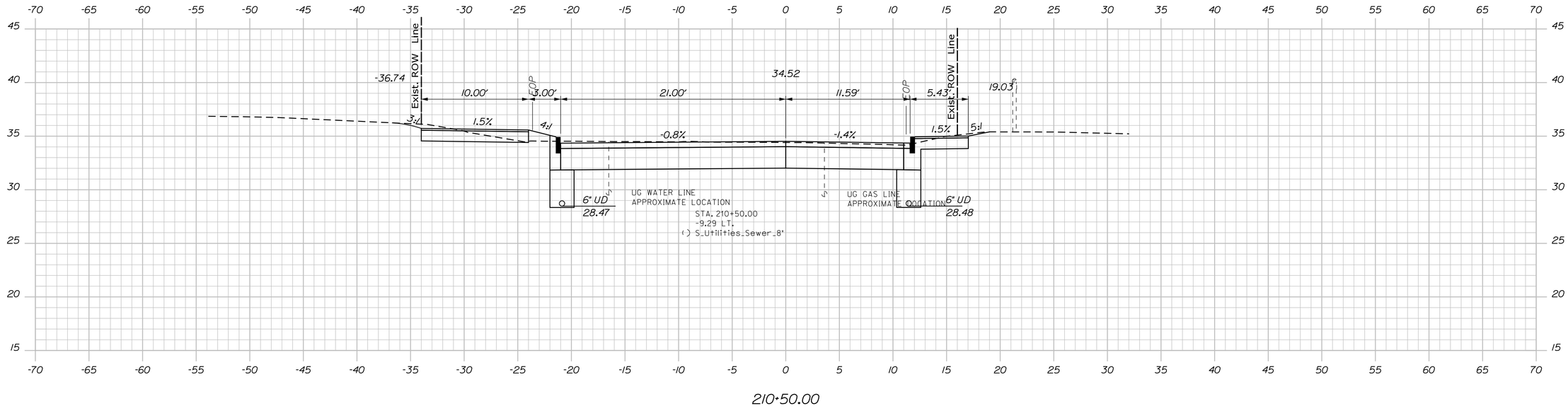
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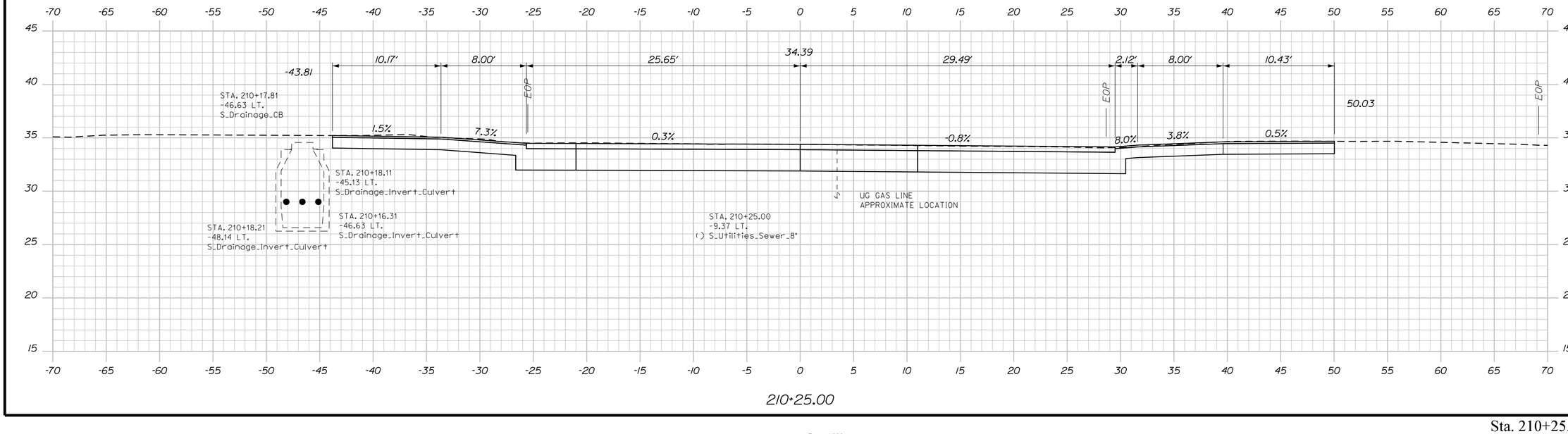
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9

OF 25

Sta. 210+00.00 to Sta. 210+19.34





IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
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REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(2 OF 17)

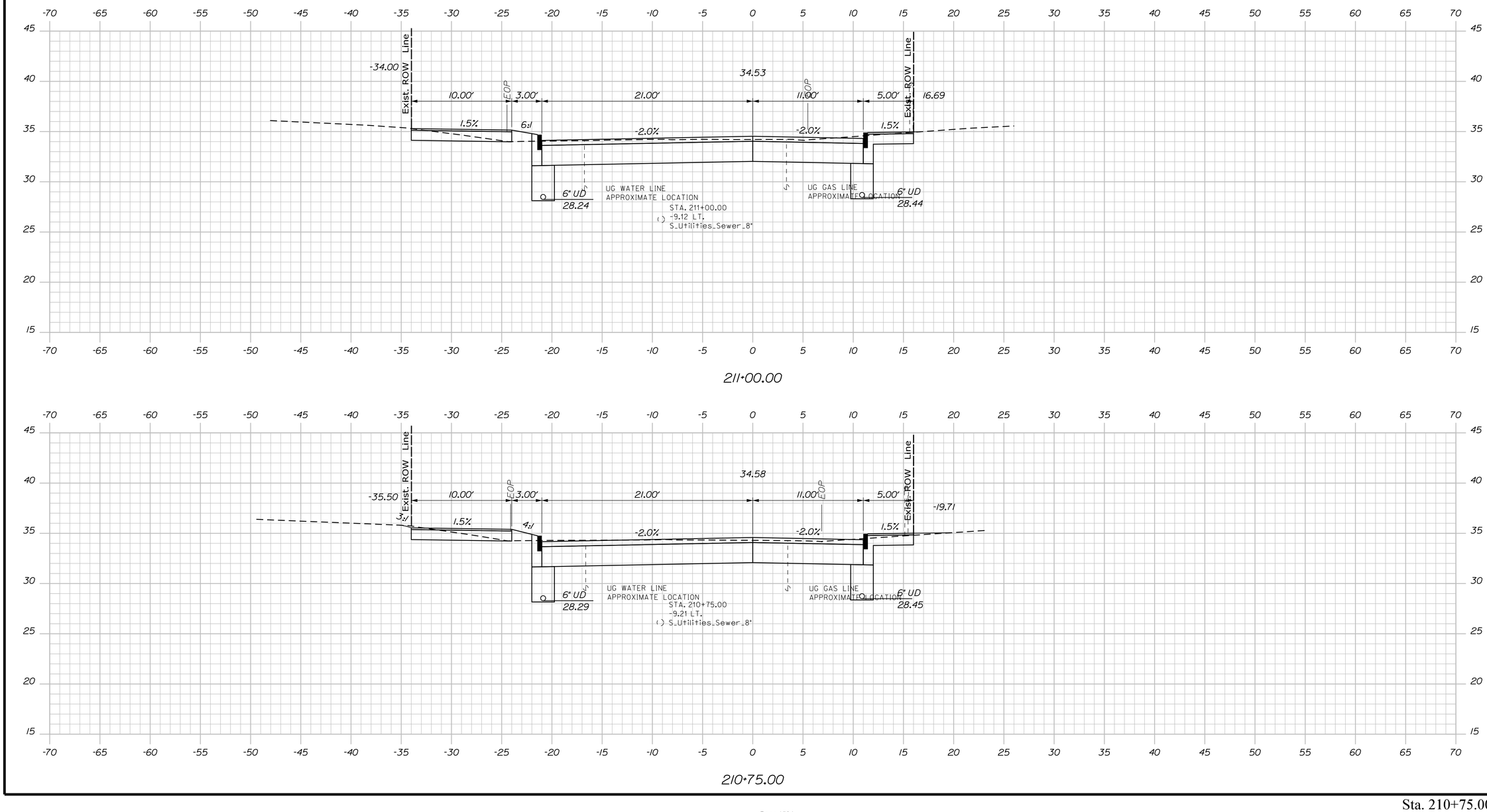
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OF 25

Sta. 210+25.00 to Sta. 210+50.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (3 OF 17)

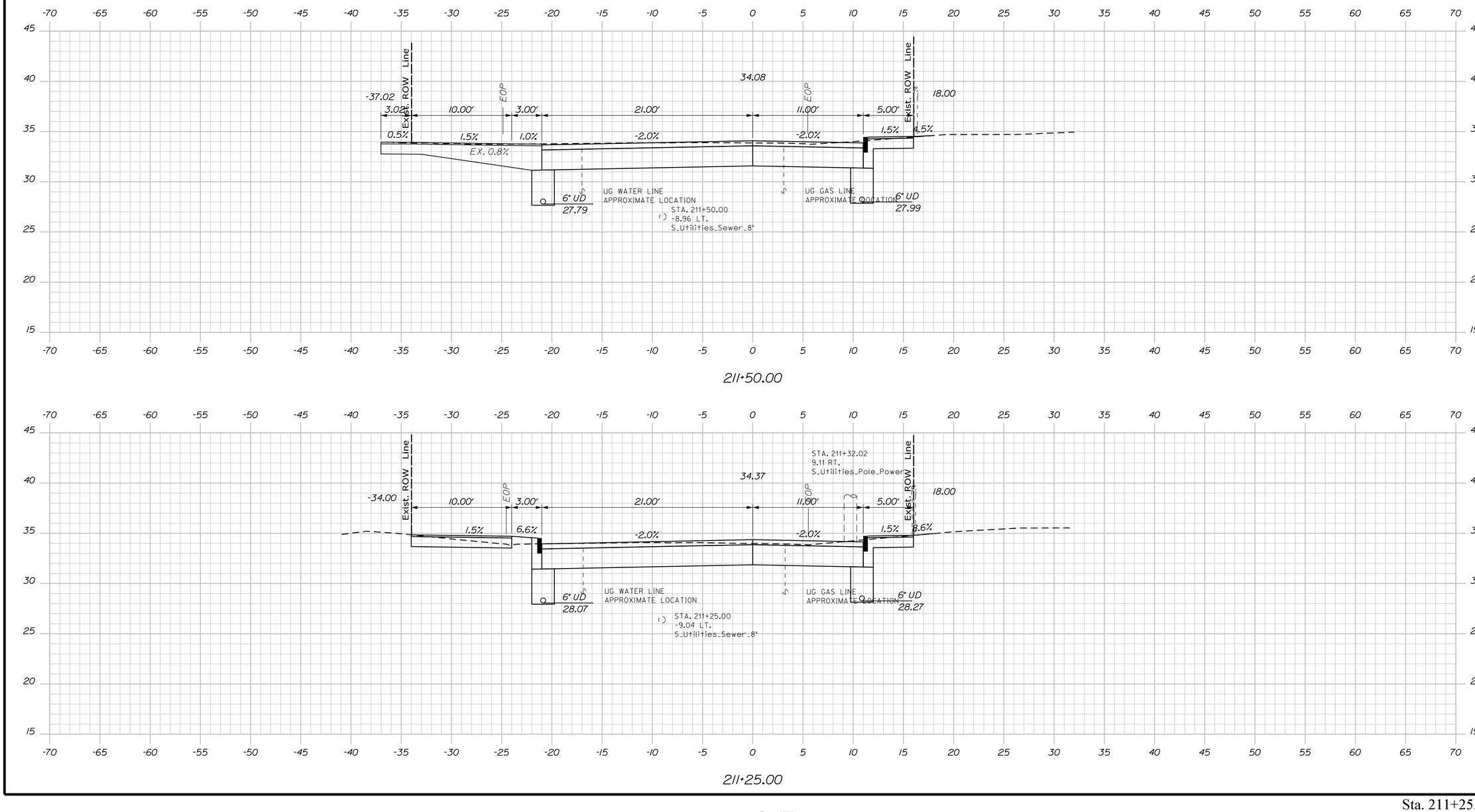
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OF 25

Sta. 210+75.00 to Sta. 211+00.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(4 OF 17)

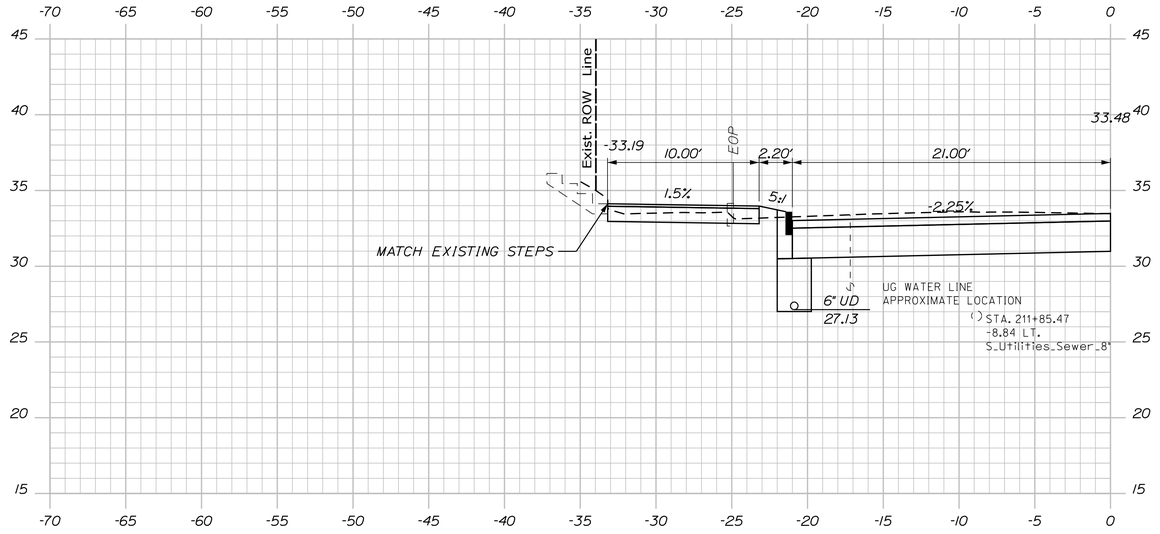
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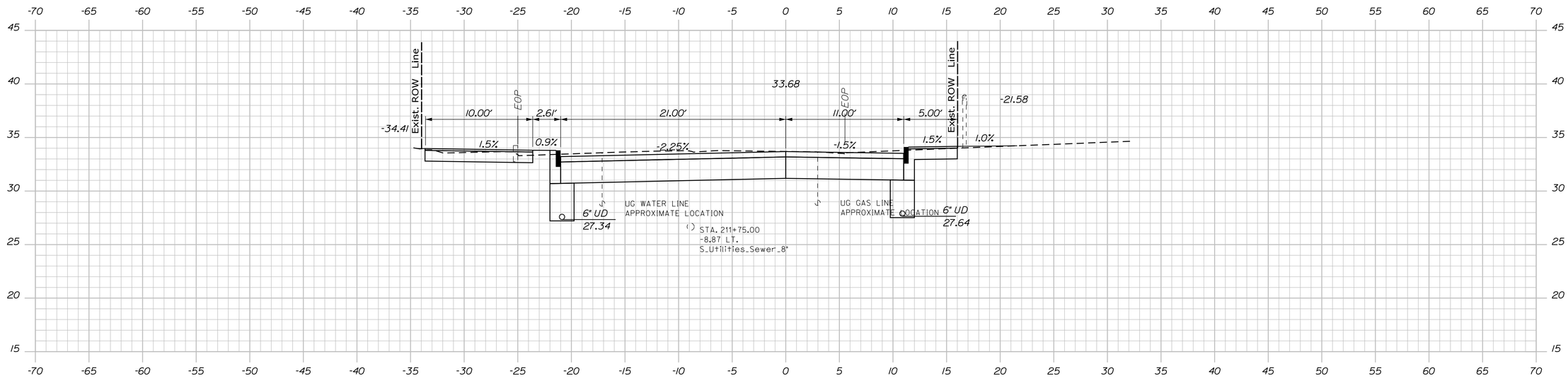
OF 25

Sta. 211+25.00 to Sta. 211+50.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



211+85.47



211+75.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	AHS	SP
CHECKED-REVIEWED	ECF	JC
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

DATE: 09/2023, 09/2023

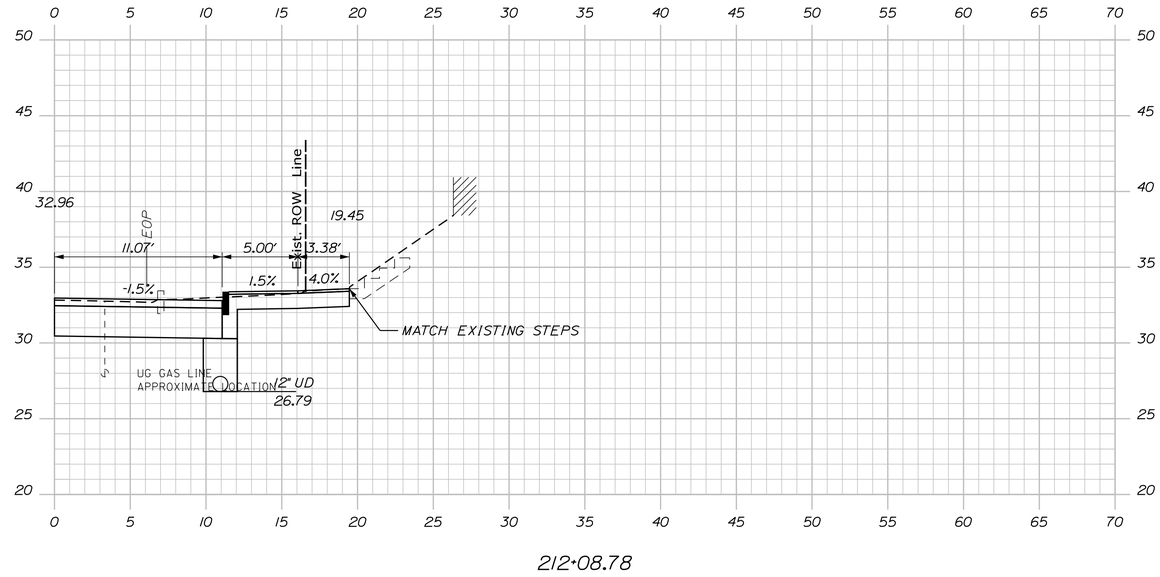
IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(5 OF 17)

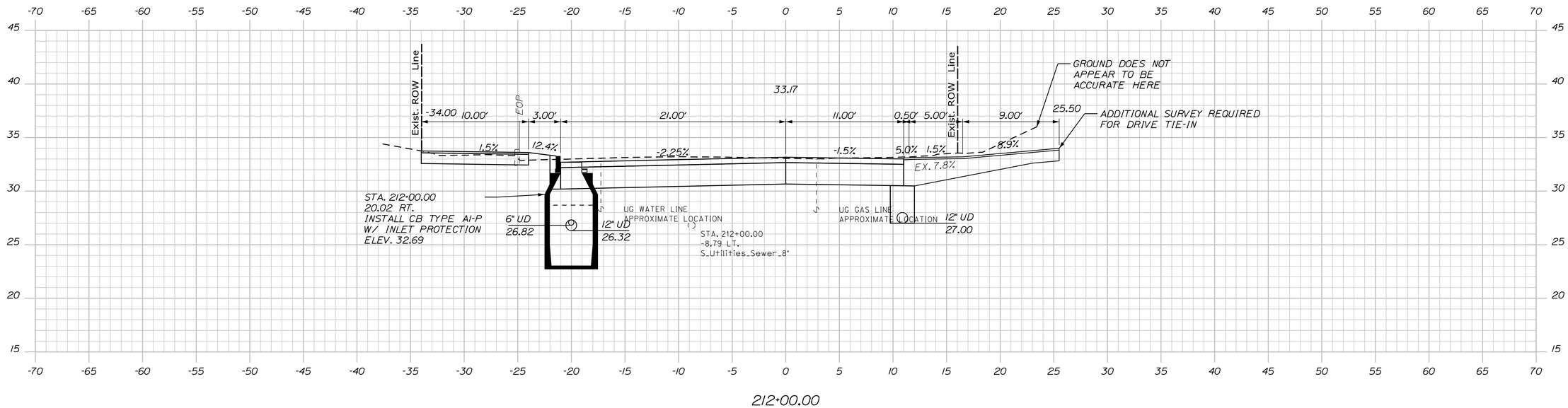
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OF 25

Sta. 211+75.00 to Sta. 211+85.47

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



212+08.78



212+00.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
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REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (6 OF 17)

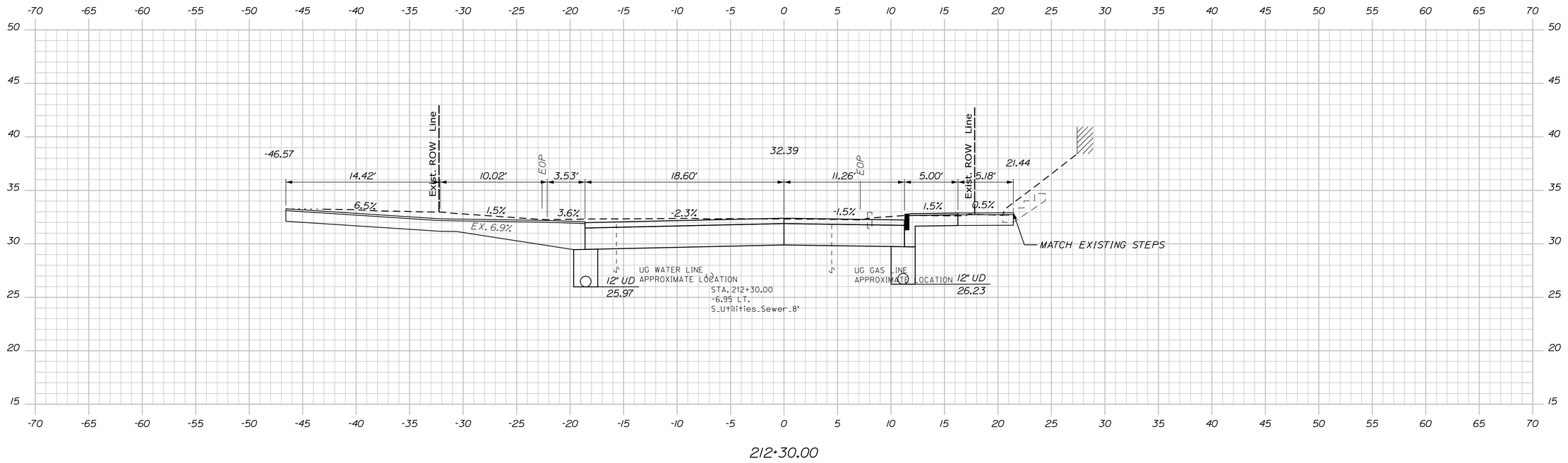
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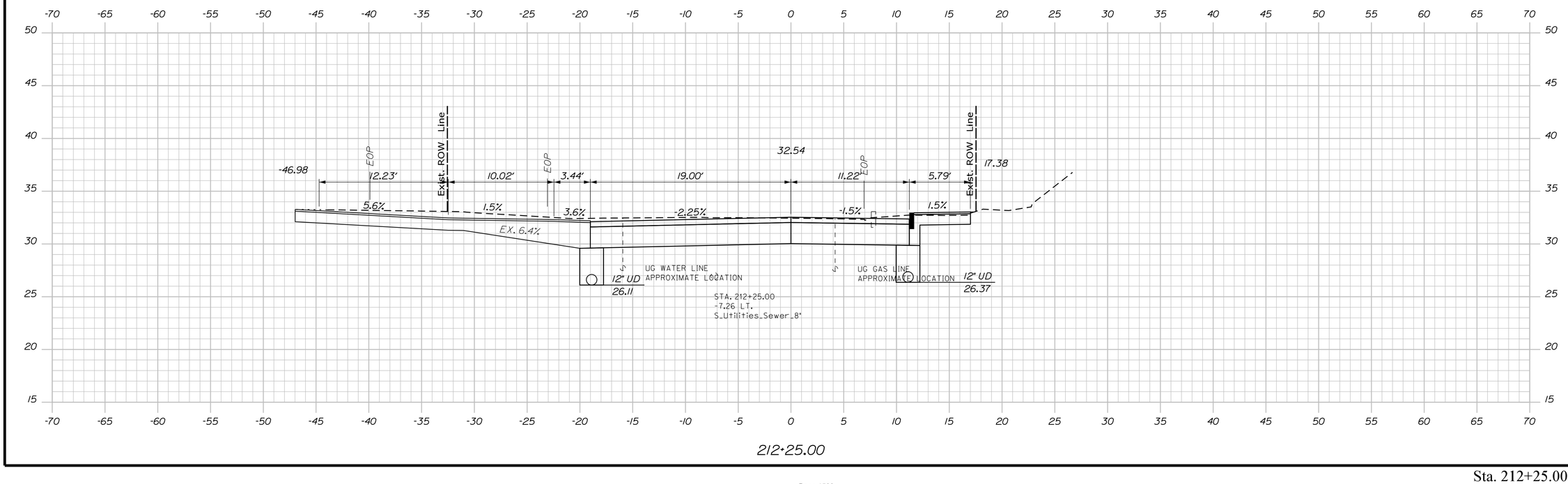
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OF 25

Sta. 212+00.00 to Sta. 212+08.78

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024





IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	EOF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
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REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (7 OF 17)

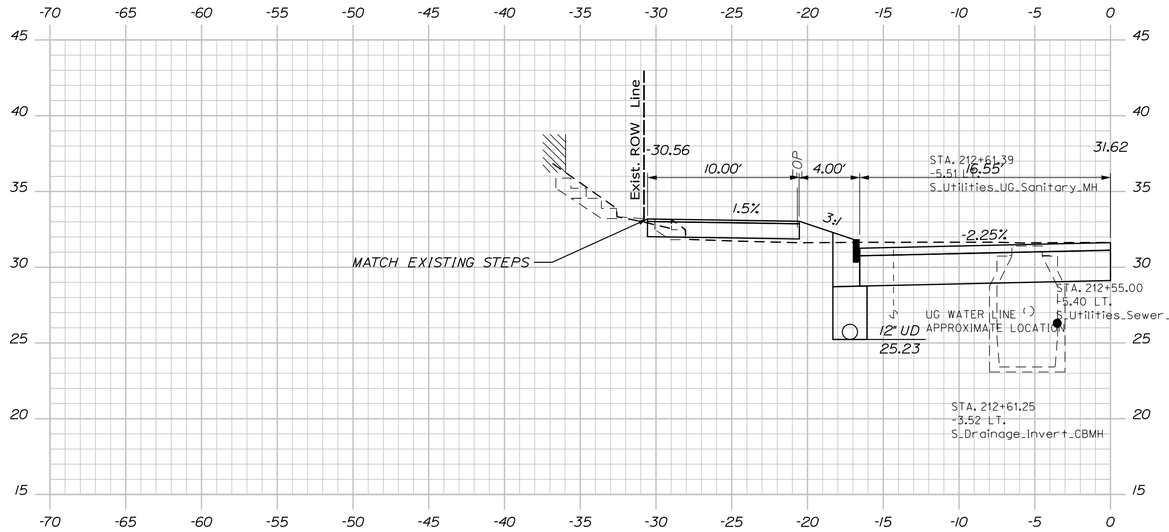
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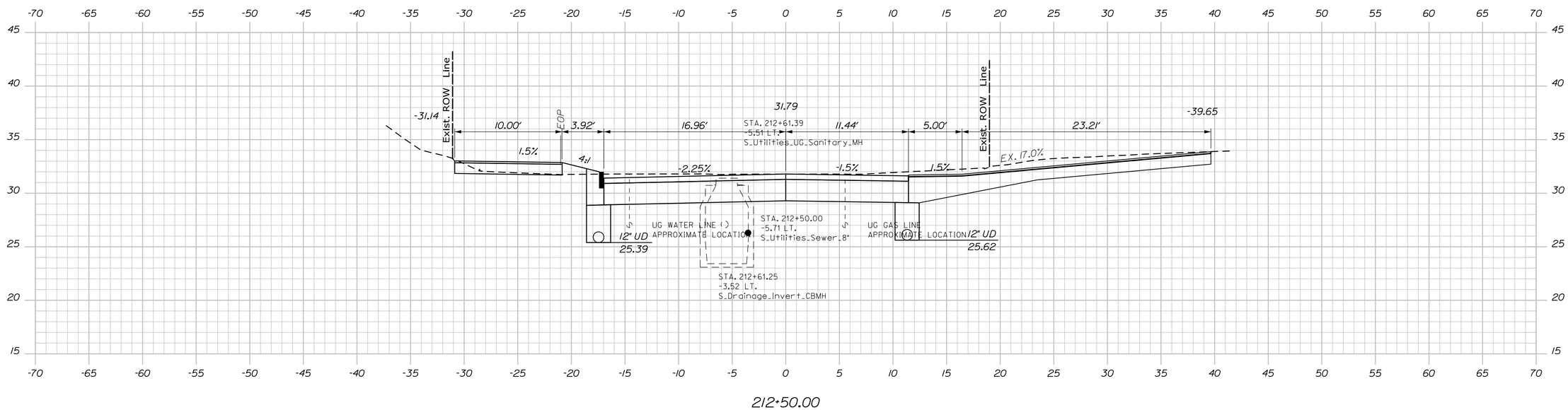
OF 25

Filename: ...\000_HDPLAN_Plonset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024

Sta. 212+25.00 to Sta. 212+30.00



212+55.00



212+50.00

Sta. 212+50.00 to Sta. 212+55.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY	
DESIGN-DETAILED	AHS	SP 09/2023
CHECKED-REVIEWED	ECF	JC 09/2023
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

IDEALS - PORTLAND
SHERWOOD STREET

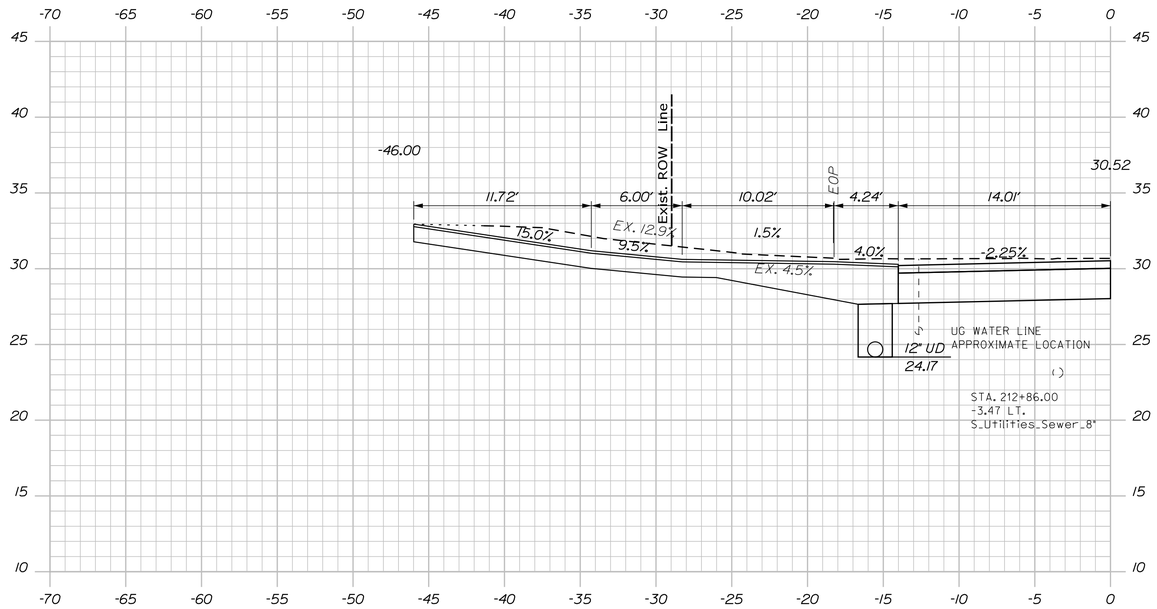
CROSS-SECTIONS
(8 OF 17)

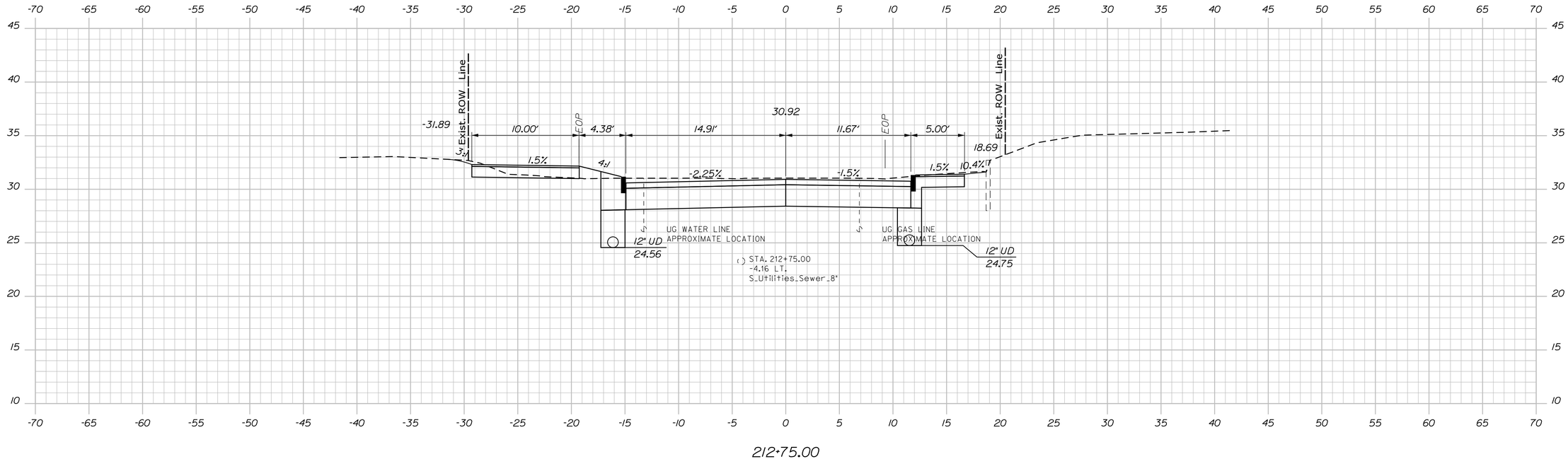
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16

OF 25

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024





IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(9 OF 17)

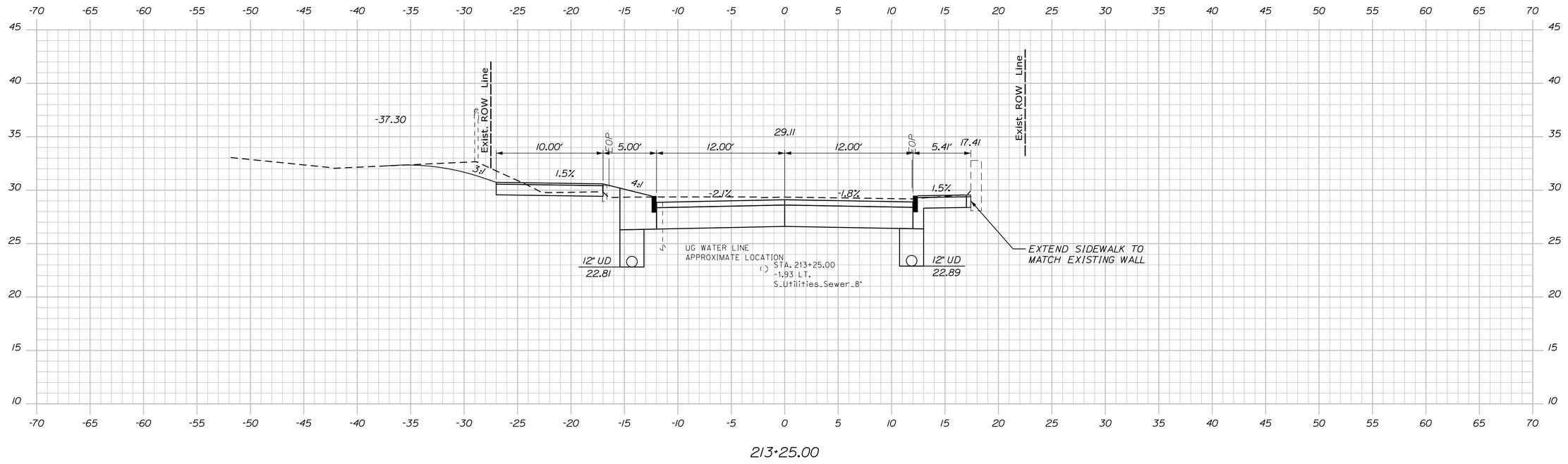
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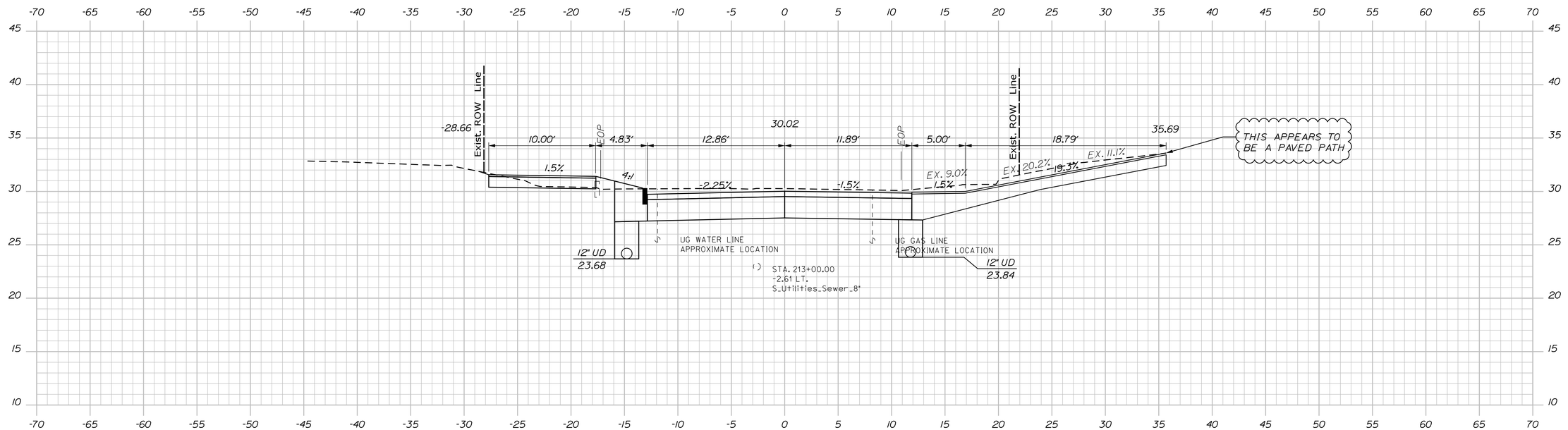
OF 25

Sta. 212+75.00 to Sta. 212+86.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



213+25.00



213+00.00

Sta. 213+00.00 to Sta. 213+25.00

IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
DESIGN-DETAILED	AHS	SP	09/2023
CHECKED-REVIEWED	ECF	JC	09/2023
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IDEALS - PORTLAND
SHERWOOD STREET

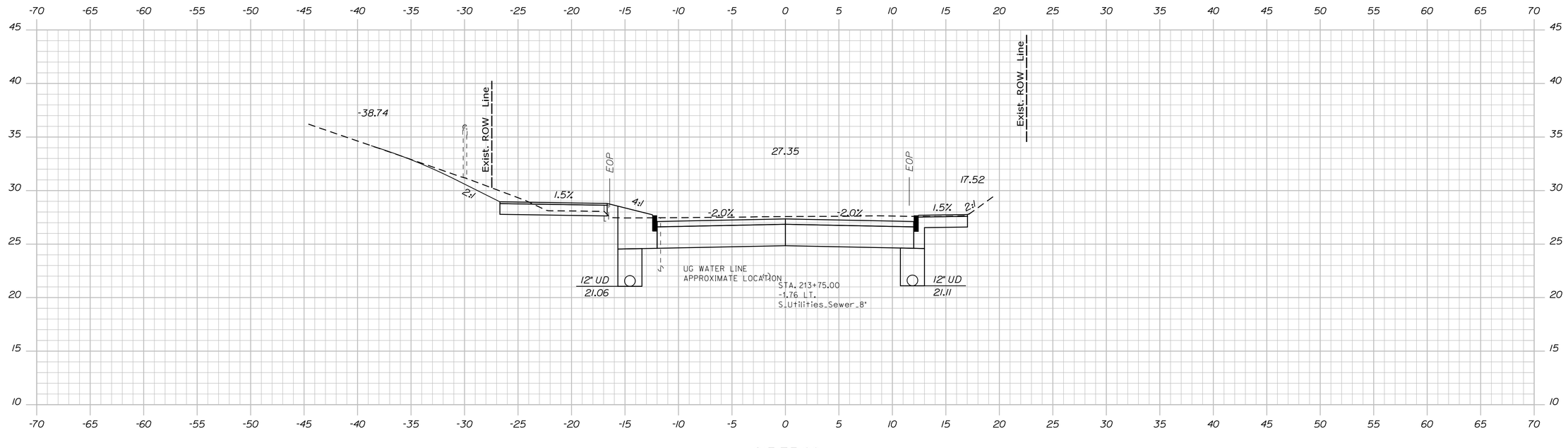
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18

OF 25

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
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IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(11 OF 17)

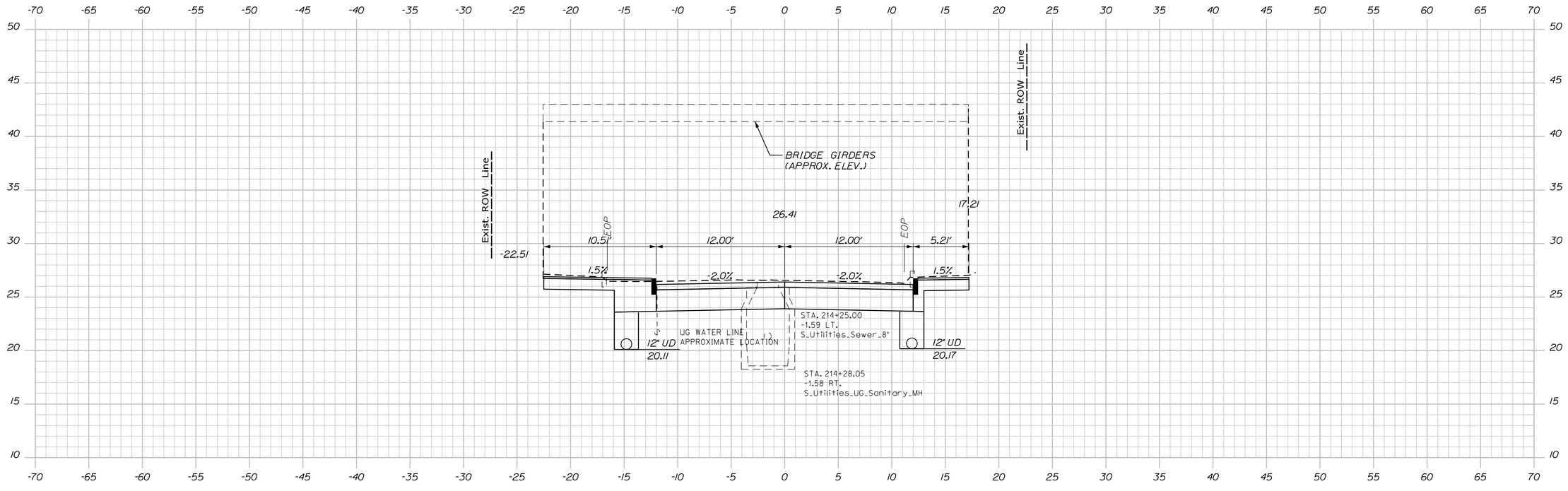
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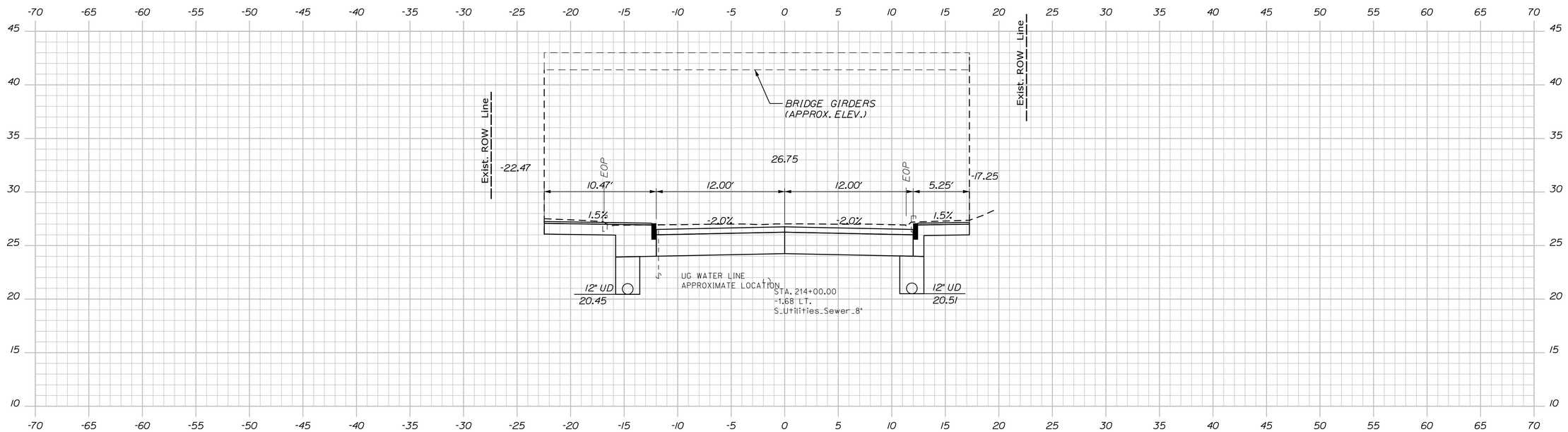
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Sta. 213+50.00 to Sta. 213+75.00

Filename: ...\000_HDPLAN_Planset_25Scale.DGN Division: HIGHWAY Username: asiegel Date:3/21/2024



214+25.00



214+00.00

IDEALS

HIGHWAY PLANS

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IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(12 OF 17)

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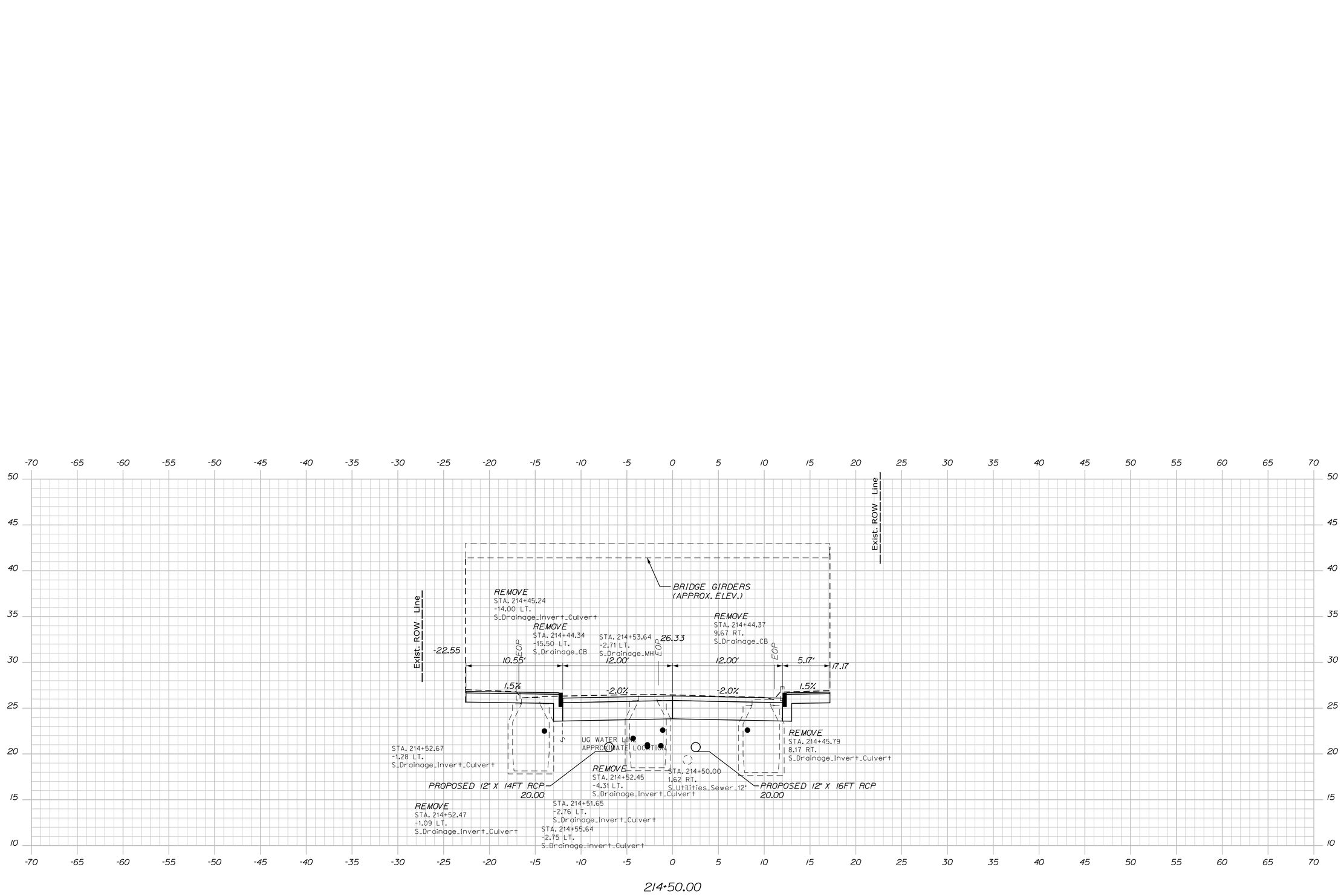
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OF 25

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IDEALS

HIGHWAY PLANS

IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(13 OF 17)

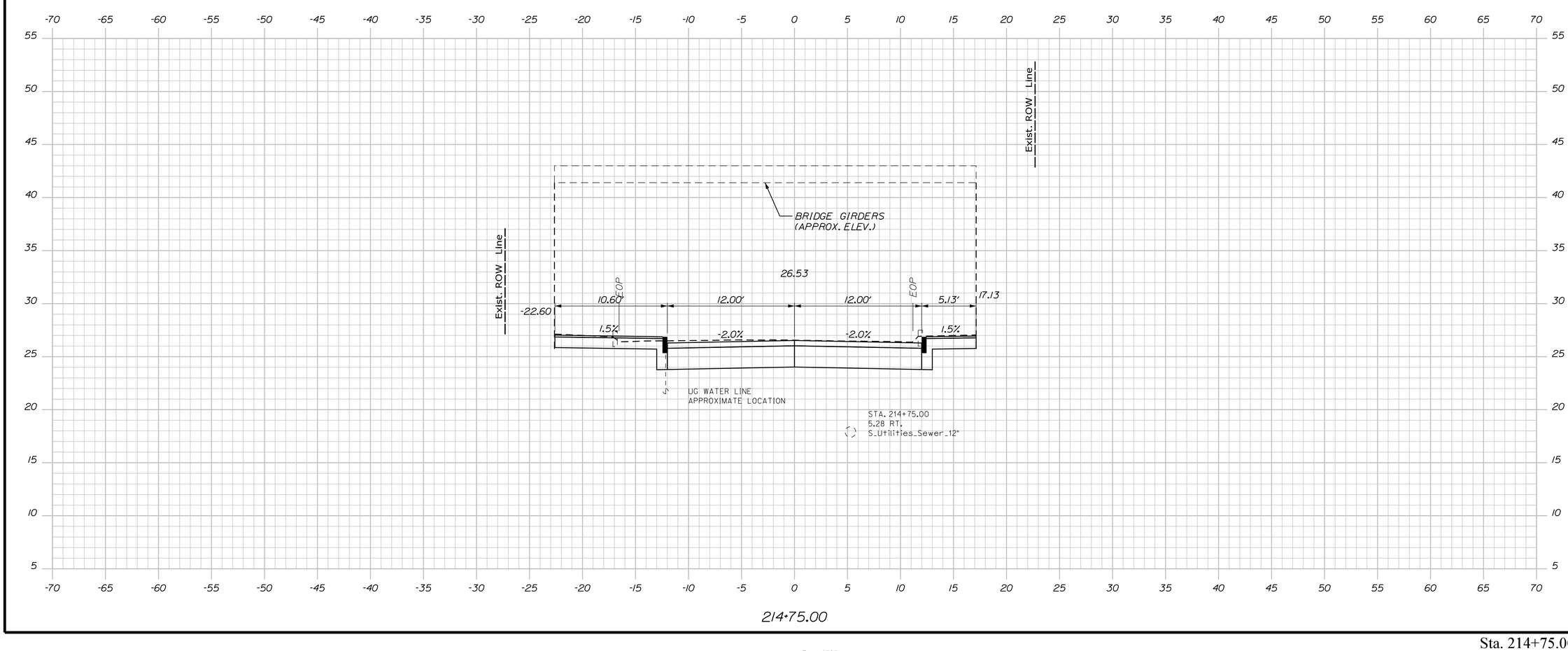
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OF 25

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IDEALS

HIGHWAY PLANS

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IDEALS - PORTLAND SHERWOOD STREET

CROSS-SECTIONS (14 OF 17)

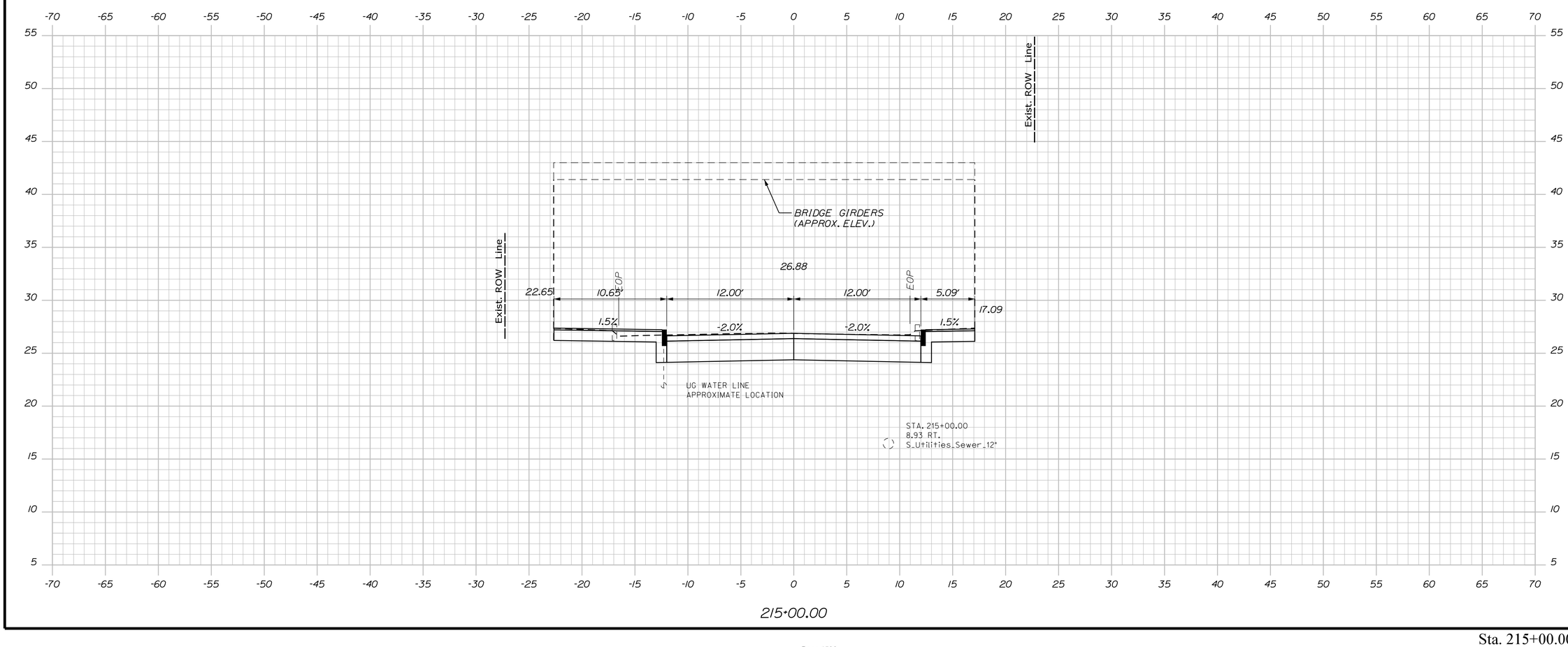
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IDEALS

HIGHWAY PLANS

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IDEALS - PORTLAND
SHERWOOD STREET

CROSS-SECTIONS
(15 OF 17)

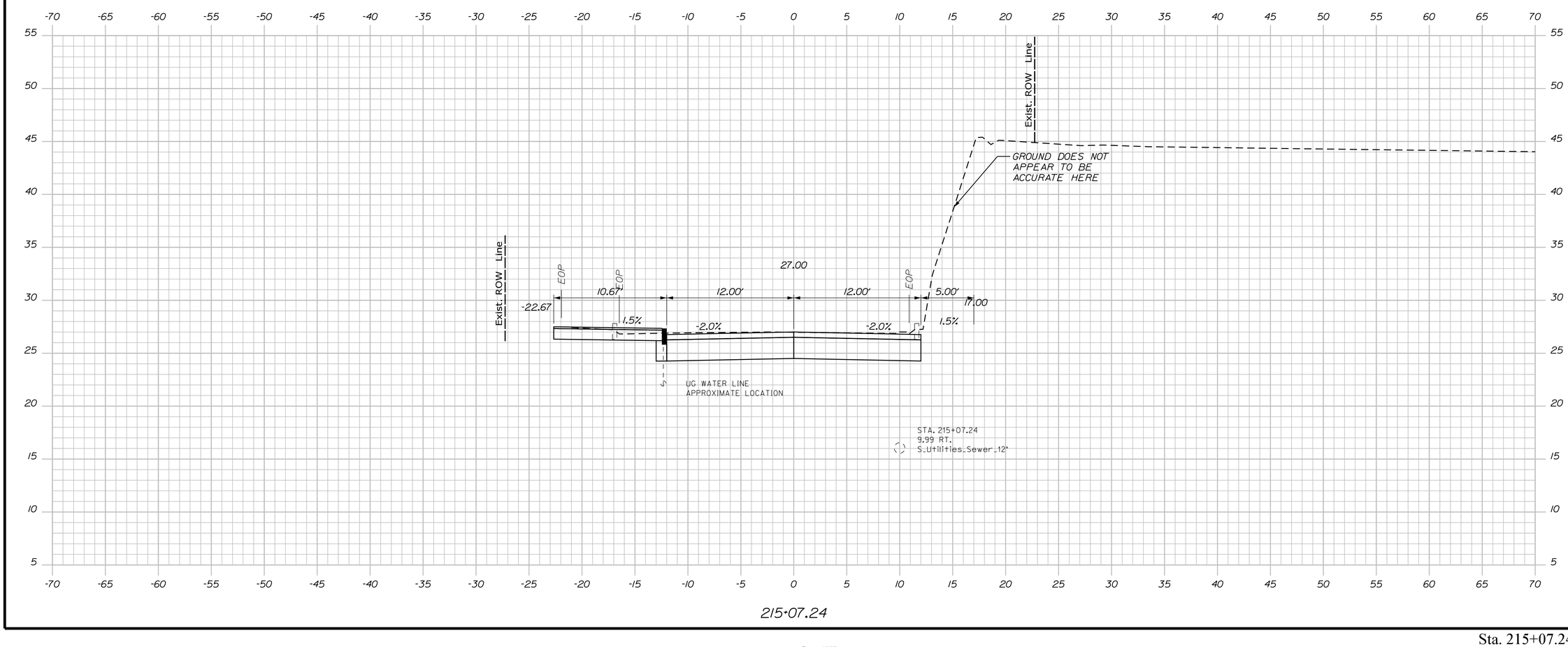
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OF 25

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IDEALS

HIGHWAY PLANS

vhb

PROJ. MANAGER	JENN CONLEY		
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IDEALS - PORTLAND SHERWOOD STREET

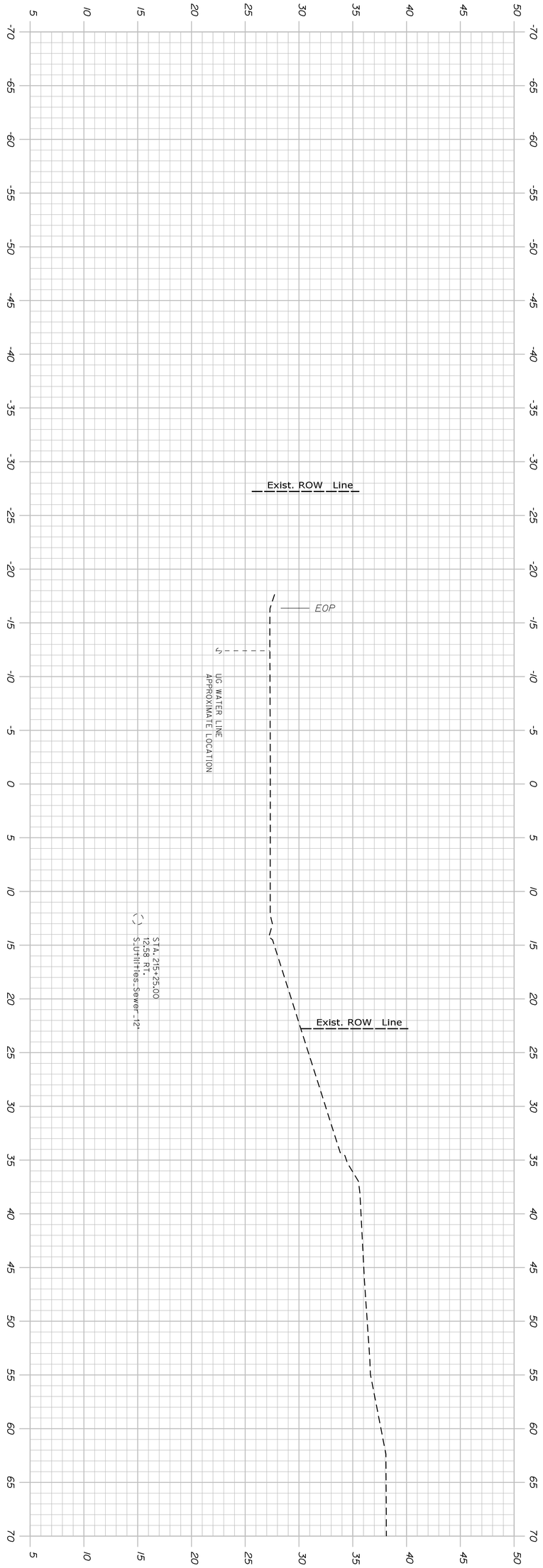
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SHEET NUMBER

24

OF 25

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215+25.00

Sta. 215+25.00 to Sta. 215+50.00

PROJ. MANAGER	JENN CONLEY	BY	DATE
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FIELD CHANGES			

SHEET NUMBER 25 OF 25

IDEALS - PORTLAND SHERWOOD STREET

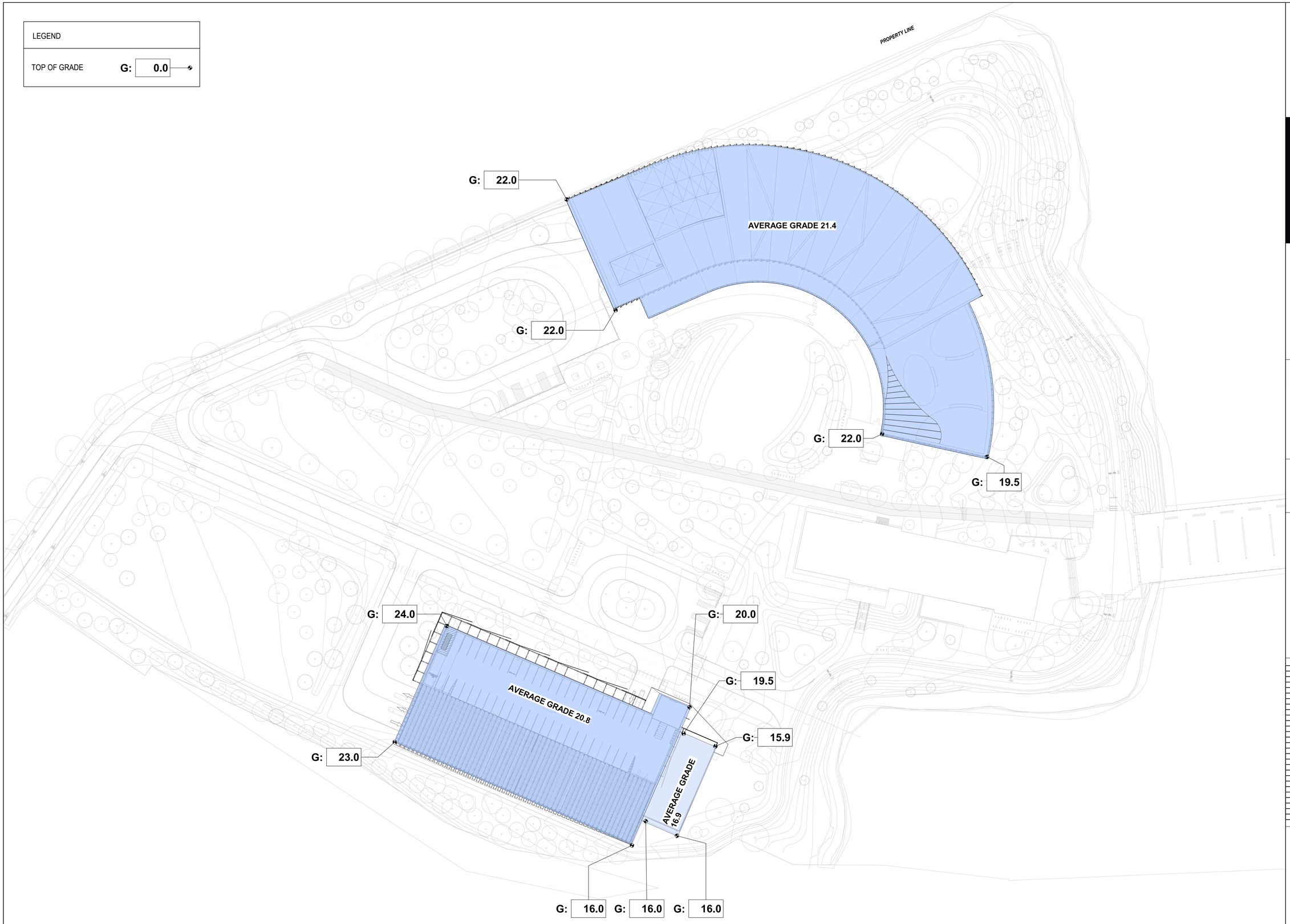
CROSS-SECTIONS (17 OF 17)

IDEALS

HIGHWAY PLANS

LEGEND

TOP OF GRADE G: 0.0



IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
NO. 3838
STATE OF MAINE

Stamp 10/27/2023

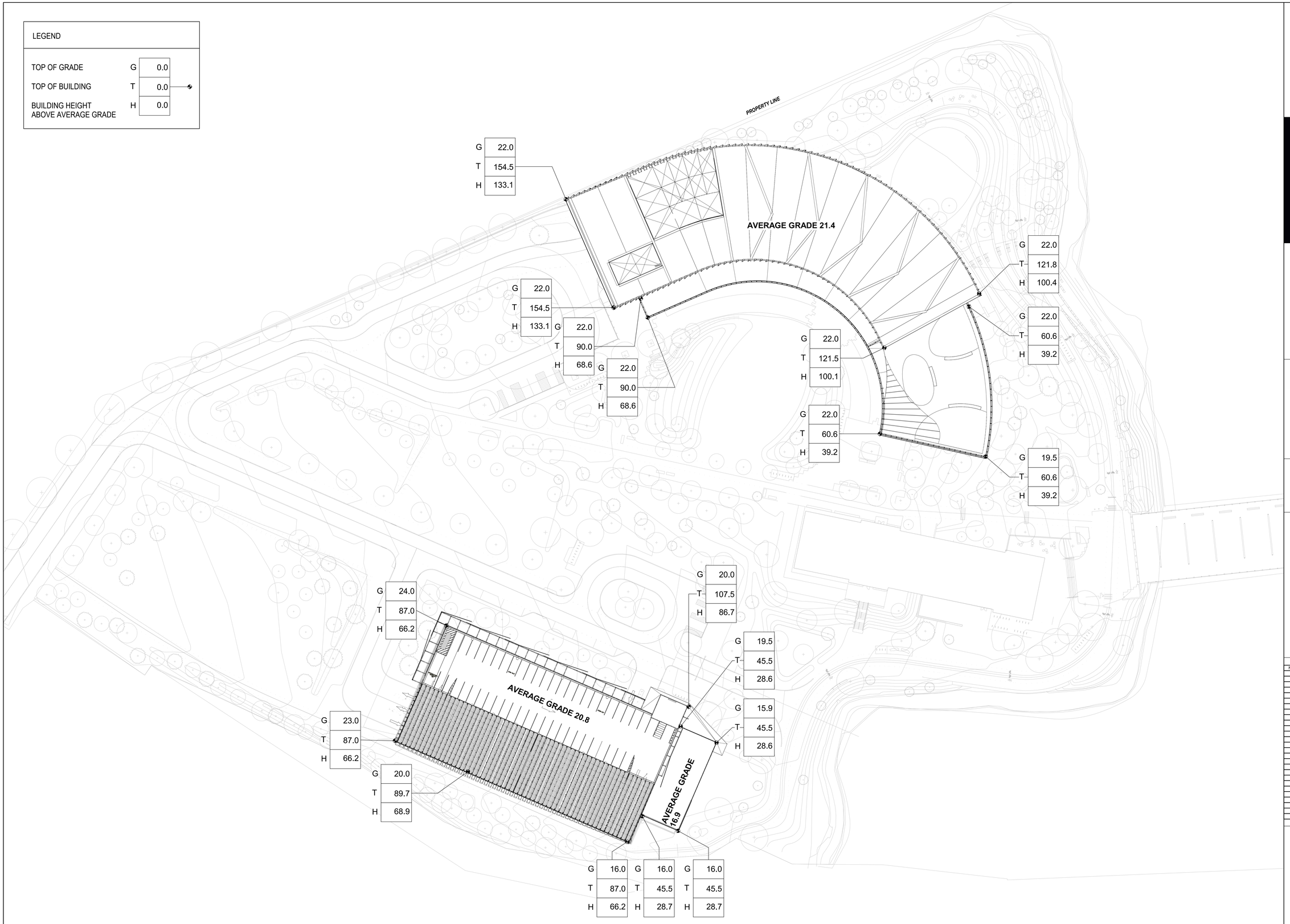
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Project	THE ROUX INSTITUTE
Drawn By	SB
Checked	CM
Date	27 OCTOBER 2023
Scale	1" = 30'-0"

Drawing Title
AVERAGE GRADE DIAGRAM

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LEGEND		
TOP OF GRADE	G	0.0
TOP OF BUILDING	T	0.0
BUILDING HEIGHT ABOVE AVERAGE GRADE	H	0.0



IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

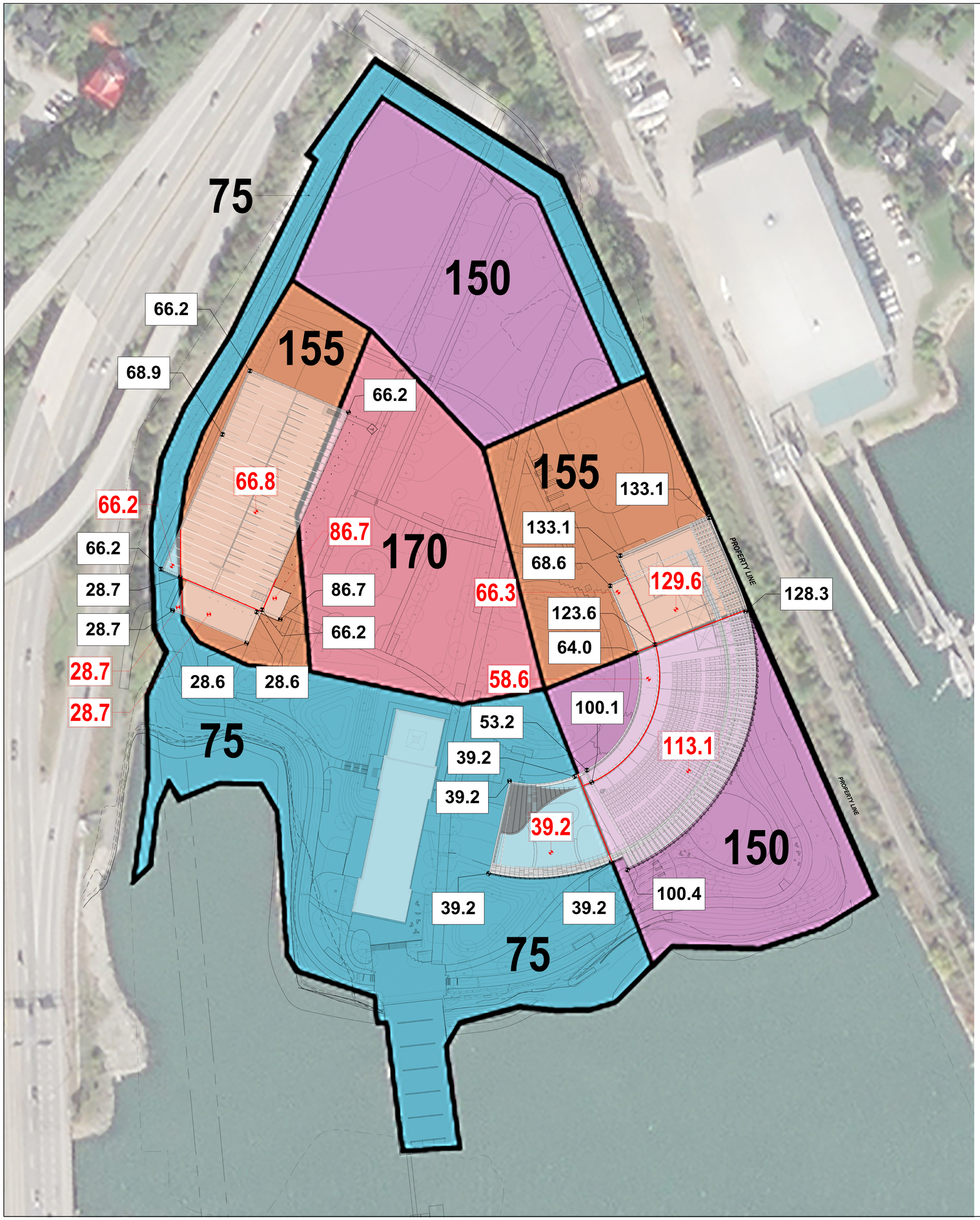
LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
No. 3038
STATE OF MAINE
Stamp 10/27/2023

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	SB
Checked	CM
Date	27 OCTOBER 2023
Scale	1" = 30'-0"

Drawing Title
BUILDING HEIGHT DIAGRAM

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LEGEND

128.3

BUILDING HEIGHT ABOVE AVERAGE GRADE

66.3

AVERAGE BUILDING HEIGHT ABOVE AVERAGE GRADE PER HEIGHT ZONE

BUILDING HEIGHTS THAT SPAN TWO OR MORE HEIGHT ZONES ARE MEASURED BY CALCULATING THE HIGHEST POINT OF THAT PORTION OF THE BUILDING WITHIN A PARTICULAR HEIGHT ZONE. IF THE ROOF IS SLOPED, HEIGHT IS MEASURED AT THE MIDPOINT OF ALL SLOPES LOCATED WITHIN THE PARTICULAR HEIGHT ZONE.

IDEALS
Initiative for Digital Engineering and Life Sciences
Roux Campus

LVX VERITAS VIRTVS
The Roux Institute

CambridgeSeven
Architects and Planners
1050 Massachusetts Avenue
Cambridge, MA 02138
617 492-7000 Fax 492-7007

LAND-USE PERMIT SET

Number	Revision	Date

LICENSED ARCHITECT
TIMOTHY D. MANSFIELD
No. 3838
STATE OF MAINE

Stamp 10/27/2023

Job #	2202
Project	THE ROUX INSTITUTE
Drawn By	SB
Checked	CM
Date	27 OCTOBER 2023
Scale	1" = 40'-0"

Drawing Title
BUILDING HEIGHT MAP DIAGRAM

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SOUTH ENTRANCE

Garage View | from the Round looking Northwest



Garage View | from I-295 looking East



Garage View | from Eastern Prom I-295 looking North



Garage View | from Tukey's Bridge and I-295 looking North



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

June 11, 2024

Denise Cameron, Woodard & Curran
12 Mountfort Street
Portland, ME 04101

Sam Reiche, IDEALS
100 Commercial Street
Portland, ME 04101

Project Name:	Major Site Plan; Site Law of Development
Project ID:	PL-002724-2023
Address:	1 Bean Pot Circle
CBL:	447 A001001
Applicant:	IDEALS & Northeastern University
Planner:	Zach Powell

Dear Denise Cameron and Sam Reiche:

On June 11, 2024, the Planning Board approved a major site plan project at 1 Bean Pot Circle to construct a ±238,000 square foot post-secondary education building with on-site restaurant, construct a ±241,950 square foot mixed-use building with 610 automobile parking spaces and ±7,500 square feet of daycare facility space, redevelop the ±58,000 square foot Cannery Building, and completed associated site improvements & landscaping. The property is located in the B-5 Urban Commercial Zone and the Roux Institute at Northeastern University Institutional Overlay Zone, is partially located in the Shoreland Overlay Zone, and contains a locally designated historic landmark (B&M Cannery). Based on the information provided to the Board in the application, plans, reports, through testimony and other information submitted by the applicant, the Planning Board [**adopts/does not adopt**] the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024, which is attached hereto and incorporated herein by reference. Based upon those findings, conclusions and recommendations, the Planning Board found that the application met all relevant standards and voted [**vote count**] to approve the application with the following conditions as presented below.

A. WAIVERS

On the basis of the application, plans, reports, and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application 002724-2023 at 1 Bean Pot Circle relevant to the Site Plan Standards of the Land Use Code and the City of Portland's Technical Manual, and other regulations, and the testimony presented at the Planning Board hearing:

1. Parking Garage Space Width
   The Planning Board [finds/does not find] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard Section 1.10, Parking Lot and Parking Space Design, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] the Technical Manual standard Section 1.10, to allow parking spaces with a width of 8.5', when 9' is required.

2. Direct Discharge of Treated Stormwater into Casco Bay
   The Planning Board [finds/does not find] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard Section 5 and Maine DEP Chapter 500, Stormwater Management Section IV, which does not permit direct discharge of stormwater into a surface water body source, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] the Technical Manual Section 5 and Maine DEP Chapter 500, Stormwater Management Section IV, to allow for direct discharge of pre-treated stormwater into Casco Bay.

3. Installation of Street Lights on Private Property that vary from residential street lighting standards
   The Planning Board [finds/does not find] based upon the City's Review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual Section 10.2, which requires the installation of residential street lights listed in Figure X-1 in the public right-of-way, that substantial justice and the public interest are secured with the proposed variation in this standard, and that variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] the Technical Manual standard of Section 10.2 to allow for the installation of street lights on private property that vary from the residential lighting standards identified in Figure X-1.

B. SITE PLAN REVIEW

On the basis of the application, plans, reports, and other information submitted by the applicant, findings and recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002724-2023 at 1 Bean Pot Circle relevant to the Site Plan Standards, Roux IOZ Regulatory Framework, Shoreland Standards, and Site Law of Development Standards; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with these standards of the Land Use Code subject to the following conditions of approval:

PRIOR TO APPLICATION FOR A BUILDING PERMIT

1. The Applicant shall provide a copy of the final issued Maine Department of Transportation Traffic Movement Permit (TMP) to the Planning Authority.
2. The Applicant shall submit a final TDM plan that incorporates mitigation measures required as part of the MDOT TMP for review by the Planning Authority.

PRIOR TO ISSUANCE OF A BUILDING PERMIT

3. The Applicant shall provide the City with $75,000 for the installation of at least three traffic calming devices on Sherwood Street between Veranda & Presumpscot Streets.
4. The Applicant shall provide evidence of all necessary permits from the Department of Environmental Protection and the Army Corps of Engineers to the Planning Authority prior to issuance of a building permit for any construction activity that requires approval from said state or federal agencies.
5. The Applicant shall provide ability to serve letters from the Portland Water District (PWD) and Central Maine Power (CMP).
6. The Applicant shall provide updated site plan drawings demonstrating final streetscape improvements along Sherwood Street east of Veranda Street informed by final utility locations for review and approval by the Planning Authority.
7. The Applicant shall submit and receive approval from the Department of Public Works and the Planning Authority for water utility connections within Sherwood Street.

PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY

8. The Applicant shall provide a public access easement over the bicycle and pedestrian perimeter access loop for review and approval by the Planning Authority and Corporation Counsel.
9. The Applicant shall provide updated site plan drawings for the final design of the bicycle and pedestrian path under Tukey's Bridge connecting the existing terminus of the Back Cove Trail to the Roux Camps and

improvements to the approaches to the existing bicycle and pedestrian path on Tukey's Bridge for review by the Planning Authority. This alignment shall include an acceptable functional pathway width dimensioned with the shy distance from fixed objects.

C. IMPACT FEES

On the basis of the application, plans, reports, and other information submitted by the applicant, and findings, recommendations contained in the Planning Board Report for the public hearing on June 11, 2024 for application PL-002724-2023 at 1 Bean Pot Circle relevant to the Site Plan Standards, Roux IOZ Regulatory Framework, Shoreland Standards, and Site Law of Development Standards; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that a transportation impact fee modification shall be granted under the following conditions:

1. Prior to issuance of Certificate of Occupancy, the applicant shall use a portion of their impact fee credit on the plans, details, and cost estimates to be prepared by a licensed professional engineer and approved by the Planning Authority and the Department of Public Works for the construction of the bicycle and pedestrian path under Tukey's Bridge connecting to the existing terminus of the Back Cove Trail and improvements to the approaches to the existing bicycle and pedestrian path on Tukey's Bridge.

2. Within 24 months of receiving the Certificate of Occupancy, the applicant, in coordination with Maine DOT, shall construct the bicycle and pedestrian path under Tukey's Bridge connecting existing terminus of the Back Cove Trail to the Roux Campus and improvements to the approaches to the existing bicycle and pedestrian path on Tukey's Bridge. The Planning Authority may extend the completion of either or both projects in the event circumstances arise which impact the completion. In the event Northeastern determines that either or both of the projects are not feasible, it shall apply to the Planning Board for a major amendment to the site plan.

D. PLANNING BOARD DECISION

On the basis of the findings, conclusions, and recommendations contained in the Planning Board report for the public hearing on June 11, 2024 related to application PL-002724-2023 for 1 Bean Pot Circle, which is attached to the draft approval letter and incorporated therein, the Planning Board [adopts/does not adopt] the approval letter as drafted as the Planning Board's decision for application PL-002724-2023, and authorizes the Planning Board Chair to sign the approval letter as drafted.

The approval is based on the submitted plans and findings related to site plan review as contained in the Planning Board report dated June 11, 2024 for application PL-002724-2023 which is attached.

Standard Procedures

Note: The following standard procedures and requirements apply to all approved site plans:

1. Site Plan Expiration The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

2. Separate Building Permits Are Required This approval does not constitute approval of building plans, which must be reviewed and approved by the City of Portland's Permitting and Inspections Department.

3. Performance Guarantee and Inspection Fees A performance guarantee covering the site improvements and an inspection fee payment of 2.0% of the guarantee amount and three (3) final sets of plans must be submitted to and approved by the Planning and Urban Development Department and Public Works Department prior to the release of a building permit, street opening permit or certificate of occupancy for site plans.

4. Construction Management Plans The applicant, contractor and subcontractors are required to conform to the approved Construction Management Plan, and all conditions contained within the project's approval, for the entire duration of the project. Any amendments to the approved Construction Management Plan shall be reviewed and approved by the Department of Public Works prior to the execution. The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan. The applicant shall coordinate the project's construction schedule with the timing of nearby construction activities to avoid cumulative impacts on a neighborhood and prevent unsafe vehicle and pedestrian movements. Accordingly, nearby construction activities could involve a delay in the commencement of construction.

5. Preconstruction Meeting Prior to the release of a building permit and scheduling of a preconstruction meeting, a hard copy set of approved plans shall be submitted to the Development Review Coordinator. A pre-construction meeting shall be held at the project site with the contractor, Development Review Coordinator, Public Works representative, and owner to review the construction schedule and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan and the approved Construction Management Plan. The site/building contractor shall provide one (1) copy 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 pre-construction meeting.

6. Department of Public Works Permits If work or obstructions will occur within the public right-of-way, such as utilities, curb, sidewalk, driveway construction, site deliveries and equipment siting, a Street Opening and/or Occupancy Permits are required for your site. Please contact the Department of Public Works Permit Clerk at (207) 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

7. Develop Site According to Plan The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Any modifications of an approved site plan or alteration of a parcel, or of any approved exterior elevations, which were the subject of site plan approval after May 20, 1974, shall require the prior approval of an amended site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

8. Stormwater Management The owner/operator of an approved stormwater management system, and all assigns shall comply with the conditions of Chapter 32, Stormwater including Article III, Post Construction Stormwater Management, which specifies the annual inspections and reporting requirements.

   A maintenance agreement for the stormwater drainage system, as attached, or in substantially the same form, shall be submitted for review by Corporation Counsel. Once approved, the document shall be signed and recorded at the Cumberland County Registry of Deeds prior to the issuance of a building permit. Final copies shall be submitted to both the Department of Planning and Urban Development and the Department of Public Works.

9. Third Party Inspections For all sites with one acre or greater of disturbance, the applicant shall retain the services of a third-party inspector for the duration of construction until final site stabilization is in place. The inspection is required in order to ensure that all construction and stabilization activities comply with the approved drawings and specifications; that field decisions regarding erosion control implementation, stormwater system installation, and natural resource protection are based on sound engineering and environmental considerations; and that any changes to the development's erosion control plan, stormwater management plan, or final stabilization plan is communicated to the City of Portland for additional review and approval.

   The inspector will submit weekly written reports to the Stormwater Coordinator(s) in the Water

Resources Division of Public Works. Reports must include: project ID, project address, the date(s) and time(s) of inspection(s), site photographs of areas under construction, and the date(s) and approximate duration(s) of any rainfall events. The report will identify and describe any erosion problems or discharge of pollutants and what actions will be taken to address these issues and repair any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.

10. Defect Guarantee A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

11. As-Built Final Plans Final sets of as-built plans shall be submitted digitally to the Planning and Urban Development Department, on a CD or DVD, in AutoCAD format (.dwg), release AutoCAD 2005 or greater. Please provide one hard copy of the mylar.

12. Mylar Copies Mylar copies of the as-built drawings for the public streets and other public infrastructure in the subdivision must be submitted to Public Works prior to the issuance of a certificate of occupancy.

13. Impact Fees New development or changes of use that result in net new residential dwelling units, non-residential building square footage, or water meters, are subject to the City of Portland's impact fee ordinance (Chapter 14, Article XVII). Impact fees are calculated at the time of building permit and must be paid prior to the certificate of occupancy. For more information, visit https://www.portlandmaine.gov/2409/Impact-Fees

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning and Urban Development Department at drc@portlandmaine.gov or (207)874-8901. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Zach Powell at (207) 756-8083 or via email at zpowell@portlandmaine.gov.

Sincerely,

Brandon Mazer, Planning Board Chair

Attachments:
1. Planning Board Report
2. Portland City Code: Chapter 32
3. Sample Stormwater Maintenance Agreement
4. Performance Guarantee Packet