PLANNING BOARD

Tuesday, October 22, 2024 at 4:30 PM
Room 209 (2nd Floor of City Hall) and Zoom

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

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AGENDA:

WORKSHOP - 4:30 PM

i. Major Site Plan and Conditional Use; 1 Hope Avenue; GenX Capital Partners, LLC, Applicant. The Planning Board will hold a hybrid workshop to consider a major site plan and conditional use application for inclusionary zoning to facilitate the development of a 60-unit Planned Residential Unit Development at 1 Hope Avenue. The subject property is currently undeveloped woodlands, is 13.7 acres in size, and is located within the R-3 Residential 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-002454-2023.

PUBLIC HEARING - 5:00 PM

1. ROLL CALL AND DECLARATION OF QUORUM

2. COMMUNICATION AND REPORTS

3. REPORT OF ATTENDANCE AT THE MEETING HELD ON OCTOBER 8, 2024.

Public Hearing
ReCode: Barker, Chann, Mazer, Murphy, Silk, Smith, and Stanley present.

4. REPORTS OF DECISIONS AT THE MEETING HELD ON OCTOBER 8, 2024.

i. Zoning Text and Map Amendments for ReCode; City of Portland, Applicant. Barker motioned, and Stanley seconded a motion to find that the proposed amended Land Use Code and zoning map are consistent with the City's Comprehensive Plan, and recommend adoption of the amended land use code and zoning map to the City Council. Vote 7-0. Barker motioned, and Stanley seconded a motion to find that the proposed amendments to the conditional rezoning in the vicinity of Diamond Cove, Great Diamond Island are consistent with the City's Comprehensive Plan, Sec. 5.3 of the Land Use Code, and *30-A M.R.S.A. § 4352 (8),* and recommended adoption of these proposed amendments to the City Council. Vote 7-0.

5. NEW BUSINESS

i. Letter to Maine State Housing Authority. The Planning Board will consider and adopt a letter to be sent to the Maine State Housing Authority (MSHA) on behalf of the Planning Board, requesting reconsideration of MSHA's funding stipulation for the application at 165 Lambert Street/622 Auburn Street (PL-002078-2022 and PL-002995-2024) requiring that the applicant provide off-street parking at a ratio of 0.75 parking spaces per residential unit.

ii. Major Site Plan; 400 Commercial Street; 400 Commercial Street, LLC, Applicant. The Planning Board will hold a hybrid public hearing to consider a proposal to construct a new 21,000 square foot boat storage structure at 400 Commercial Street. The subject property totals approximately 3 acres, is zoned Waterfront Central Zone and is located in the Shoreland 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-002826-2024.

iii. Major Site Plan Amendment; 2 Riverton Drive; Portland Housing Authority, Applicant. The Planning Board will hold a hybrid public hearing to consider a proposal for the redevelopment

of portions of Riverton Park. This proposal includes the construction of a new multi-family building, residential townhomes, renovations to the existing administration and service buildings, as well as site improvements throughout the property. The subject property totals 17.72 acres and is located in the B-2 Community Business and R-5A Residential zones. A project and plan summary are available for viewing on the city's CSS Portal (https://css.portlandmaine.gov/) by referencing Plan Number PL-003053-2024.

To: Chair Mazer and Members of the Portland Planning Board
From: Zach Powell, Senior Planner
Date: October 18, 2024
Re: 1 Hope Avenue (60-Unit Planned Residential Unit Development)
Applicant: Gen-X Capital Partners, LLC
Project ID: PL-002454-2023
Meeting Date: October 22, 2024

I. INTRODUCTION

GenX Capital Partners, LLC has submitted a Major Site Plan application as well as an Inclusionary Zoning Conditional Use application to facilitate the development of a Planned Residential Unit Development (PRUD) on a 13.59 acre (592,061 square feet) parcel, addressed at 1 Hope Avenue in the R-3 (Residential) zoning district. The proposed development includes 60 new residential units, housed within 12 duplex buildings and 12 triplex buildings, along with a 20-foot wide paved private road.



Figure 1: Rendered site plan

The 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), Subdivision standards (Section 15.4), Inclusionary Zoning (Section 18.2.3), and Site Location of Development (Site Law) (Technical Manual Section 14).

The application previously appeared before the Planning Board for a workshop on September 12, 2023, which served as an introduction to the project and provided background on the annexation & rezoning of the project site.

The Planning and Urban Development Department mailed 54 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the October 12, 2024 and October 13, 2024 editions of the *Portland Press Herald*.

Applicant: GenX Capital Partners, LLC
Applicant Representatives : Haley Ward, Inc. & Barton & Loguidice

II. REQUIRED REVIEWS, WAIVER REQUEST & PROJECT DATA

Review	Applicable Standards
Site Plan Standards	Section 14.6
Subdivision Standards	Section 15.4 (Triggered by Table 6-A, Footnote 4)
Inclusionary Zoning	Section 18.2.3
Site Location of Development	Technical Manual Section 14
Design Review	Design Review Manual Section (h)

Waiver Request	Applicable Standard
Encroachment of ±0.4 acres into the required 100-foot perennial stream buffer	Section 8.2.1. of the Technical Manual – Development located adjacent to perennial streams, a minimum 100-foot buffer strip on either side of the stream should be maintained. The undisturbed buffer must be placed in deed restrictions.

Project Data	
Existing Zoning	R-3 (Residential)
Property Size	592,061 square feet (13.71 acres)
Existing Use	Undeveloped, Forest
Proposed Use	Planned Residential Unit Development (PRUD)
Total Developed Area	388,727 square feet
Impervious Surface Area	176,147 square feet
Parking Spaces	87 (60 garage & 27 on-street along proposed private road)

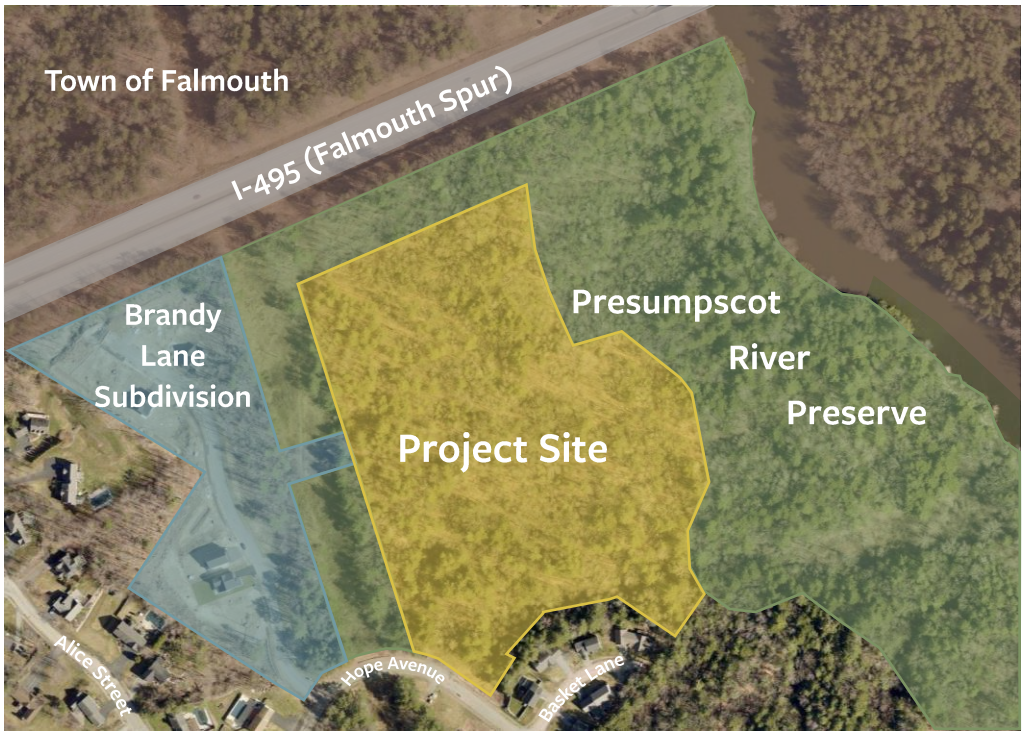


Figure 2: Aerial imagery of the project site and surrounding context

III. EXISTING CONDITIONS AND SURROUNDING AREA

The development site consists of three parcels, totaling 13.71 acres, that are currently undeveloped woodlands bounded by the Presumpscot River Preserve to the east, the Basket Lane Subdivision to the southeast, and Hope Avenue to the south. The property has a high degree of relief in topography due to a transecting stream running approximately east-west along the southerly property boundary, and a consistent slope towards the Presumpscot River. Other property constraints include extensive wetlands located throughout the site. Immediately to the west of the proposed development site is a Central Maine Power (CMP) transmission line, which is situated within a 135-foot-wide utility easement. The Brandy Lane Subdivision also partially borders the proposed development to the west. Development of Brandy Lane commenced in 2018, and the construction of new single-family homes began in 2023. In looking at the surrounding context, this area of North Deering is predominantly low-density single-family housing, with the majority of properties being zoned R-2 (Residential).

IV. PROPOSED DEVELOPMENT

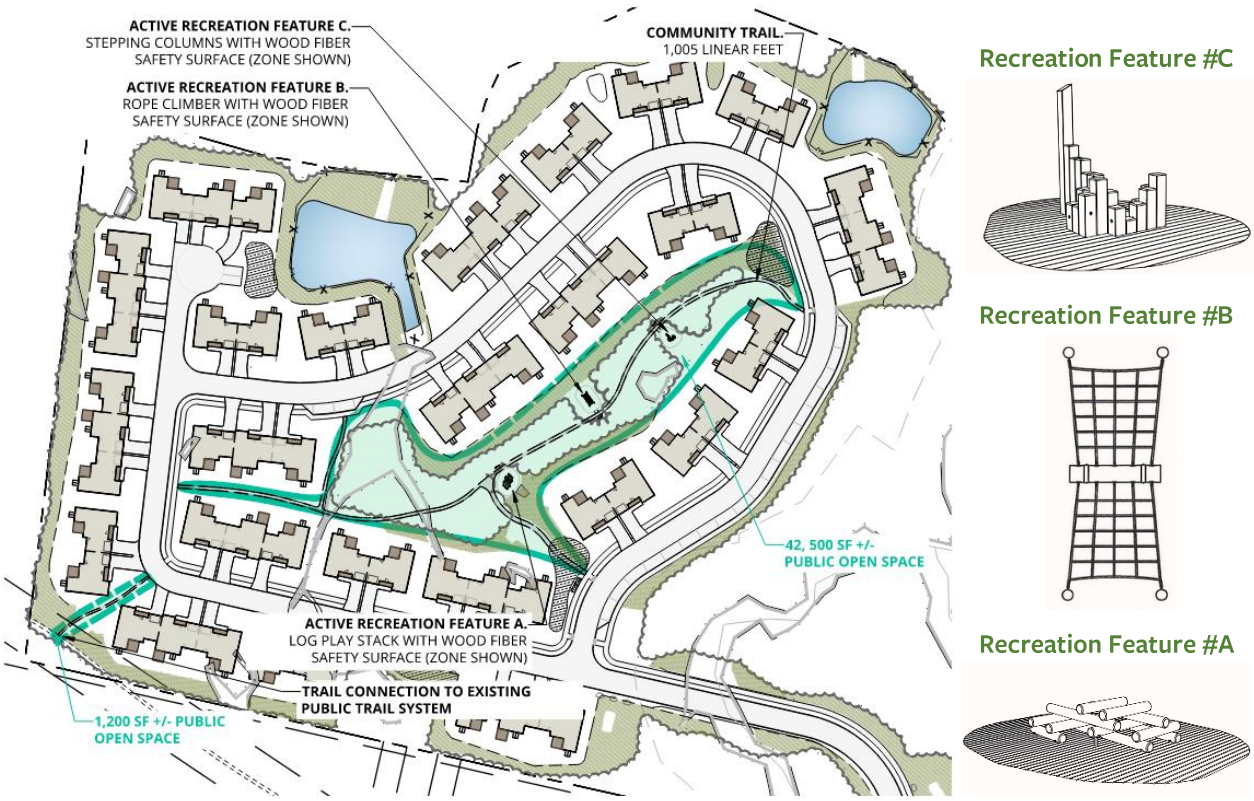


Figure 3: Public Open Space Plan documenting open space in green with a connection plan south to the Portland Trails network and a central open space with three play features.

GenX Capital Partners, LLC proposes the development of 60 new dwelling units through a combination of duplex and triplex buildings. The development includes a private road through the site that connects to an existing curb cut on Hope Avenue. The proposed road contains a stream crossing with a box culvert. The proposed development includes sidewalks throughout the site connecting to the existing sidewalk network at Hope Avenue. As the site is located adjacent to existing conservation land and an extensive trail network managed by Portland Trails, the applicant is proposing to dedicate passive recreation open space and would connect the eastern and western portions of the site with existing trails in the area.

V. RIGHT, TITLE, & INTEREST

The applicant has provided a short form quitclaim deed dated June 17, 2022 for the parcels associated with 1 Hope Avenue as demonstration of Right, Title, and Interest (Attachment 3). The deed includes an easement to the City of Portland for the purpose of providing a gravel emergency access road and a 3,083 sq. ft. culvert easement benefiting the City of Portland which includes the right to construct, repair, and perpetually maintain the culverts, pipes, or ditches related to the existing drainage system. The applicant has provided an easement dated December 30, 1955 granted to the Portland Water District for the purposes of accessing portions of the site as well as lay, relay, repair, maintain, and remove water pipe or pipes (Attachment 4).

VI. FINANCIAL & TECHNICAL CAPACITY

The applicant has provided evidence demonstrating technical capacity of the development team (Attachment 11) which details previous engineering and development projects in the Greater Portland area.

As part of demonstrating compliance with site plan, subdivision, and SLOD standards, City Staff have requested documentation of financial capacity from the Applicant either through:

- A letter from a financial institution, governmental agency, or other funding entity indicating a commitment to fund the cost of the project; or
- The most recent corporate annual report of financial statements indicating availability of sufficient funds to finance the development together with material explaining the report, and evidence that funds have been set aside for the proposed development. The financial information in any annual report and any financial statement should be audited, or an explanation provided why audited reports are not available; or
- Copies of bank statements of accounts held by the applicant or other evidence indicating that funds are available and have been set aside for the proposed development.

VII. ZONING ANALYSIS

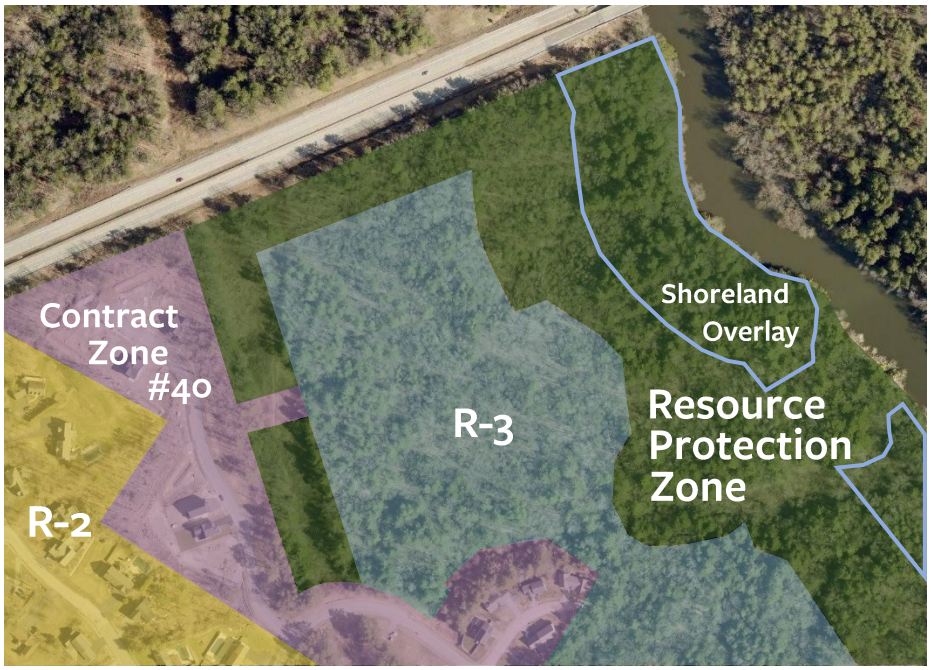


Figure 4: City of Portland Zoning Map

The proposed development is located entirely within the R-3 (Residential) zone and abuts the RPZ (Resource Protection) & Contract Zone #40. The R-3 Residential zone provides for medium-density residential development characterized by single-family homes on individual lots and also allows for planned residential unit developments (PRUD) on substantially sized parcels. The applicant is proposing a PRUD and is subject to *Table 7-B: PRUD Dimensional* Standards in Chapter 14, Article 7. The table below provides information on PRUD dimensional requirements in the R-3 zone and the proposed development's conformance. Overall, the development complies with the majority of these standards. Zoning Administrator Ann Machado has requested updated, accurate calculations of the height, given that an incorrect measurement point & scale were provided on the submitted building elevations.

Zoning Dimensional Review (Article 7)			
Dimensional Standards (Table 7-B)			
Standard	***R-3 PRUD Requirement***	***Proposed***	***Finding***
Lot area (Minimum)	3 acres	13.71 acres	Complies
Net land area per dwelling unit (Minimum)	6,500 square feet x 60 dwelling units = 390,000 square feet (8.95 acres)	13.71 acres/60 units = 9,951 square feet	Complies
Units per building (Maximum)	6	3	Complies
Average number of units per building (Maximum)	5	2.5	Complies
Structure height (Maximum)	35 feet	35.7 feet	Does Not Comply
Building length with internal garages (Maximum)	140 feet	117 feet	Complies
Building setback from external subdivision property lines (Minimum)	25 feet	25 feet	Complies
Distance between detached PRUD dwelling units (Minimum)	16 feet	16 feet	Complies
Common recreation open space area (Minimum)	300 square feet per dwelling unit x 60 dwelling units = 18,000 square feet	43,322 square feet/60 units = 722 square feet per dwelling unit	Complies
Habitable space elevation	No habitable space in a PRUD shall be below grade, except basements that are part of and below above-ground units.	Basements are proposed as part of units with habitable space exclusively above grade.	Complies

VIII. SEPTEMBER 12, 2023 WORKSHOP

City Staff and the Applicant team provided an overview of the existing site and the proposed development. The Applicant team discussed the intent of focusing development on the flatter portions of the site, given the steep topography and a desire to avoid more sensitive portions of the site. Barton & Loguidice summarized the results of a speed study using the average and 85th percentile speeds on Garsoe Drive, Hope Avenue & Curtis Street. The study found that average speeds were below the posted speed limit (25 mph) and 85th percentile speeds were ~0-3 mph above the posted speed limit, indicating that traffic calming devices are not needed. The development as proposed does not meet the traffic movement permit threshold of 100 anticipated peak hour trips, with the proposed project anticipated to generate 30 peak hour trips.

The Applicant also described the studies requested by the Portland Water District to achieve sewer capacity for the site. Required upgrades will be informed by camera inspection between the Curtis Road & Hope Avenue pump stations to confirm that existing lines are not damaged, and whether additional improvements may be required for the Hope Avenue pump station.

Public comment raised concerns related to the speed and increase in traffic in the surrounding area, the location of the proposed detention ponds relative to steep slopes, impacts on City schools, and whether the development would consist of condominiums or rental units.

Board members requested additional information related to the sewer capacity determination and traffic impacts on the surrounding area. The Board recommended that the applicant provide additional vegetation surrounding the detention ponds to minimize negative erosion impacts and encouraged the applicant to consider providing additional active-use open space area, varying the materiality of the buildings and further recess garages from the front façade.

IX. UPDATES FROM SEPTEMBER 12, 2023 WORKSHOP

Following the last workshop, a staff comment letter was sent on October 5, 2023 primarily focusing on requests for additional information. From November 2023 to August 2024, the applicant has submitted the following updated application materials in response to that comment letter:

- A survey identifying all trees over 16" DBH by type on the site
- A geotechnical report & high-intensity soil survey to verify the suitability of the soil for the proposed development
- An ADA assessment of the sidewalks & tipdowns in the surrounding area
- Updated elevation drawings for the three-unit typology
- 48-hour speed study to provide additional data for speeds on Garsoe Drive, Hope Avenue & Curtis Street
- Additional design materials related to the sewer capacity application for the project
- Updated landscaping plans documenting the types of proposed play equipment in the public open space
- Updated site plan that shifts detention ponds and safety fencing away from the property line to provide sufficient space for maintenance without encroachment on the City-owned Presumpscot River Preserve.

On September 6, 2024, a subsequent comment letter was sent to the applicant team, with the comments from that letter discussed in the following section. As of the writing of this memorandum, the Applicant is revising materials to satisfy staff comments.

X. PUBLIC SCHOOL ENROLLMENT DATA

Based on Board member interest and public comments, City Staff have compiled information in **Table 1** related to current 23-24 & projected 24-25 elementary, middle, and high school enrollment, maximum capacity, and recommended capacity by the closest schools to the project and district-wide. Calculations are based on 2019 enrollment projections, 2023-2024 Fast Facts, and the 2024-2025 Portland Public Schools Budget Book.

Overall, the school system has capacity system-wide across all levels, and the closest schools to the site meet or are within two percentage points of meeting recommended capacity.

Table 1: Portland Public Schools Student Enrollment Data					
Level	School	Maximum Student Capacity	Recommended Student Capacity (%)	23-24 Enrollment (% of Maximum Capacity)	Projected 24-25 Enrollment (% of Maximum Capacity
Elementary	Lyseth	570	85%	494 (87%)	492 (86%)
	System-wide	3,876		3,116 (80%)	3,221 (83%)
Middle	Moore	1,009	50-60%	500 (50%)	467 (46%)
	System-wide	2,529		1,347 (53%)	1,308 (52%)
High	Casco Bay	567	90%	381 (67%)	387 (68%)
	Deering	1,267		856 (68%)	830 (66%)
	Portland	2,079		974 (47%)	902 (43%)
	System-wide	3,913		2,169 (55%)	2,119 (54%)

XI. SITE PLAN REVIEW

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

Section 14.6.1. Transportation Standards

A. Impact on Surrounding Street Systems

Staff Comment: Based on the most recent submission, the Third-Party Traffic Engineer and City Staff do not expect the proposed development to result in significant or unacceptable impacts to the City's street system. The project does not meet the minimum threshold to require a Traffic Movement Permit and is anticipated to create 33 trips in the AM peak hour and 37 trips in the PM peak hour. Sight distances have been measured in both directions from the proposed intersection of the private street with Hope Avenue and provide the minimum 200 feet for the posted 25 mph speed limit (240 ft. to the left; 300 feet to the right).

A detailed traffic study evaluating the capacity of roadways and intersections in the vicinity of the project is not required given the relatively low levels of new traffic volume to be generated. City Staff repeated a request to document existing vehicle speeds at an additional location on Summit Street.

B. Access and Circulation

Staff Comment: Access to the proposed structures would be from a private street off Hope Avenue. The Applicant has updated the cul-de-sac design to ensure a sufficient turning radius for emergency vehicles. An internal sidewalk is proposed to connect to the site from Hope Avenue.

The applicant has provided revised plans showing a sidewalk at the end of the cul-de-sac and provided crosswalks for roadway crossings.

City Staff continue to express concern related to the locations and distribution of on-street parking on the private street, with some spaces not located next to a sidewalk, especially when snow storage is proposed next to these areas (see **Figure 5**).

Suggestions on updated parking configurations and an extension of internal sidewalks to address these issues were included in the September 4, 2024 Design Memorandum based on consultation with Consulting Traffic Engineer Tom Errico.

City Staff repeated a comment from the past comment letter that the proposed crosswalk at Hope Avenue must meet the City Standard detail for typical crosswalk markings from the Technical Manual.

C. Public Transit Access

Staff Comment: The applicant conducted a general evaluation of pedestrian facilities and noted ADA-compliance issues related to ramp conditions. The Department of Public Works provided no further comment/request related to this topic.

D. Parking

Staff Comment: The development meets the minimum parking requirements per Ch. 14, Article 19, Table 19-A, which requires a minimum off-street parking ratio of one space per residential unit. The development provides each unit with one garage space, 27 additional on-street spaces along the private road, and additional space for vehicles to park one vehicle each of the unit driveways.

As mentioned under Access & Circulation, Consulting Traffic Engineer Tom Errico has repeated requests for additional information regarding the management of proposed on-street parking will be managed and has indicated that the proposed on-street parking at station 6+00 (**Figure 5**) is not acceptable given the lack of an adjacent sidewalk and abutment to a snow storage area.

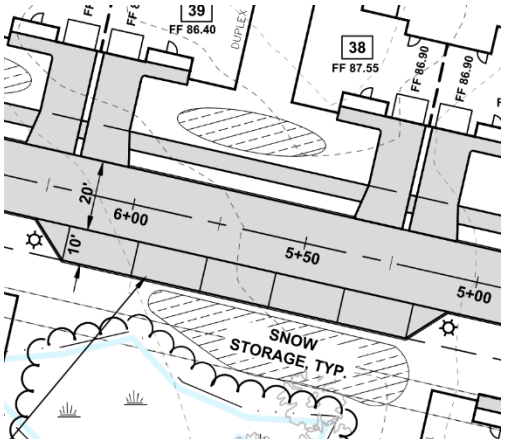


Figure 5: Proposed parking area at Station 6+00 located next to a snow storage area without an accompanying sidewalk.

E. Transportation Demand Management

Staff Comment: Not applicable. The proposed development does not meet or exceed the thresholds requiring a transportation demand management plan.

Section 14.6.2. Environmental Quality Standards

A. Preservation of Significant Natural Features

Staff Comment: Since the project is proposing a ±0.4-acre encroachment into the perennial stream buffer, submission of a waiver to §8.2.1 of the Technical Manual was identified by Water Resources. The applicant submitted a replanting and invasive species management plan to promote natural revegetation with a 2:1 ratio of trees to shrubs. The plan was reviewed by Water Resources and was determined to adequately address their concerns in supporting a waiver.

Waivers for encroachments into perennial stream buffers must be accompanied by recorded deed restrictions, which would be recommended as a condition of approval if the Board approves the waiver.

City Staff have requested that the Applicant submit approvals for the NRPA & Army Corps of Engineers applications related to the proposed stream crossing and ±13,457 square feet of wetland impacts.

B. Landscape Preservation

Staff Comment: A revised existing conditions plan has been provided which identifies the location, species, and size of trees over 16" DBH. The landscaping plan has been updated to diversify street trees in response to Forester concerns about Asian Long-Horned Beetles.

In response to the updated plan, the Forester is requesting additional information on the basal area targeted for retention, information on how existing trees will be preserved with the steep terrain & grading, and updates to landscape plan notes.

C. Site Landscaping and Buffers



Figure 6: Landscape plan showing site frontage along Hope Avenue with trees proposed to be preserved (outlined in orange), new street trees (in green), grassed underdrain storm filter (in purple), transformer (in red), and projected sign location (in blue).

Staff Comment: The Applicant has submitted a landscaping plan that provides native buffers along the perimeter of the site, with access points to the east and west to the Portland Trails network. Each unit includes a combination of an ornamental tree, small shrubs, and herbaceous plants, which provide screening between units and the central open space, as well as the preservation of 54 trees with a diameter breast height (DBH) of 16" or greater. This exceeds the City's requirement for site landscaping as detailed in §14.6.2.C, which requires one mature tree or six plantings for every 30 feet of roadway frontage, for a total requirement of 83 trees, based upon the 2,496 feet of frontage on Hope Avenue. Given the expansive tree-save areas proposed around the periphery of the site, staff consider this standard to be addressed.

Staff have requested additional information related to the location and proposed buffering of the HVAC units for the units, as well as the transformer proposed to be located along Hope Avenue.

A total of 77 street trees have been proposed when 120 are required for the site. The Forestry Division has requested additional information related to existing trees proposed to be preserved, which may count as an alternative to meet part of the remaining 43 street trees. Staff encourages the Applicant to consider planting street trees along the Hope Avenue frontage as part of meeting this requirement. For any remaining trees that cannot be feasibly planted along the street or through an alternative on-site, a contribution to the City's Tree Fund will be made and included as a recommended condition of approval.

D. Water Quality, Stormwater Management, and Erosion Control

Staff Comment: Based on feedback from Staff and the Planning Board, stormwater detention ponds and fencing have been moved from the lot lines to provide sufficient space for maintenance access & minimize erosion impacts onto the Presumpscot River Preserve.

A soil survey & geotechnical report have been submitted. The soil survey finds that the soils for the site are generally suitable for the proposed development through avoiding and minimizing development in areas with fine textured soils and a high seasonal water table. The geotechnical report identified changes to the embankment that should be considered, including the removal of soft soils from the bottom of the gully prior to placing any new embankment fill and culvert bedding, the flattening of proposed embankment slopes with reinforcement, potential removal of bedrock for the box culvert, and the establishment of clear 'limits of work' to protect native and sensitive silts and clays.



Figure 7: Aerial image identifying the Hope Avenue & Curtis Road pump stations, with the force main to be cleaned & camera inspected (in green) and the site (identified with a star).

Water Resources has identified necessary updates related to the access drive embankment, outlet protection, HydroCAD post-development modeling for Ponds A & B, and the construction management plan related to ESC measures. Additionally, responses have been requested on how discharge flows will impact the design of the proposed access drive/culvert embankment.

Section 14.6.3. Public Infrastructure and Community Safety Standards

A. Consistency with City Master Plans

Staff Comment: As land annexed from Falmouth and disposed for housing creation, the project meets Portland Plan goals to *increase, preserve, and modify the overall supply of housing city-wide*, as well as *leveraging underused properties owned by the City*.

The project also furthers Portland's Plan 2030 goal to strengthen connections between open space by establishing two trail connections that connect the proposed internal open space area on the site to the greater Portland Trails network & Presumpscot River Preserve.

B. Public Safety and Fire Prevention

Staff Comment: Staff feedback from previous reviews led to an increase in the number of hydrants for the site and the provision of turning templates for fire trucks to confirm sufficient emergency access.

Units are proposed to be sprinklered and provide a 20-foot wide access road, which meet the minimum subdivision standards.

Staff have requested additional information related to the lighting and relocation of lighting near crosswalks to improve visibility & safety between transportation modes. Staff also encourage opportunities to coordinate with Portland Trails to install wayfinding signage to direct trail users to the larger network.

C. Public Utilities

Staff Comment: As mentioned during the last workshop, The Department of Public Works has provided guidance and direction to the applicant on wastewater system upgrades which will be required to be implemented by the applicant before the project's private wastewater system can begin operation and connect to the City system. These upgrades include at a minimum, upgrades to the Hope Avenue pump station, cleanout of the wastewater line between the Hope Avenue pump station and Alice Street discharge point, and a camera inspection of this portion of City infrastructure. Any required repair work identified through the camera inspection would be the responsibility of the applicant.

At this time the Department of Public Works has requested a formal status update on the design package that needs to be submitted for the project's wastewater capacity authorization application. Some of the items for this package have been submitted, but additional information and plan updates are required to complete this review.

The Applicant has submitted evidence that outreach with the Portland Water District & Central Maine Power for ability to serve letters has begun. Letters will be recommended as conditions of approval, with the potential for additional conditions associated with the improvements to the Hope Avenue pump station.

Section 14.6.4. Site Design Standards

A. Massing, Ventilation, and Wind Impact

Staff Comment: Structures are located in the center of the site and provide distance from existing structures to avoid negative health, safety, and diminution impacts. As mentioned in noise and vibration, Staff are requesting additional information on the location of the HVAC units to determine any impacts to units within the development and the central open space of the site.

B. Shadows

Staff Comment: Not applicable, since shadow analyses are only required for structures greater than 45 feet outside of the B-3, B-5, B-6, and B-7 zones. The proposed structures are less than 45 feet in height.

C. Snow and Ice Loading

Staff Comment: The Applicant has noted that snow removal from a private contractor will be employed should onsite snow storage be inadequate.

As noted in comments related to Parking and Design, a reconfiguration of snow storage areas adjacent to on-street parking with no sidewalks is warranted.

D. View Corridors

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

E. Historic Resources

Staff Comment: Not applicable. The site is not designated as a local landmark or located within/within 100 feet of a local historic district. A copy of the application was forwarded to the Maine Historic Preservation Commission who determined that the proposed application would not have an impact on historic properties and no further consultation is required unless additional resources are discovered.

F. Exterior Lighting

Staff Comment: The site currently has 195 feet of frontage along Hope Avenue and an existing street light meets the street lighting standards of the Technical Manual.

A photometric plan was submitted for the on-site lighting. Additional information is needed on the proposed lights and how the lighting plan meets the uniformity and illumination standards of §12.3 of the Technical Manual.

G. Noise and Vibration

Staff Comment: Staff continue to request additional information on the proposed mechanical units/HVAC systems, including their locations and how they will be screened/located away from adjacent units and the street. This question has also been raised for the proposed transformer along Hope Avenue.

H. Signage and Wayfinding

Staff Comment: The Applicant states that aside from traffic regulation, the only sign for the development will be an identifying sign along Hope Avenue, that will be submitted for a sign permit at a later date in compliance with Article 20 of the Land Use Code.

Staff encourages the Applicant to identify opportunities for signage at trail crossings for the private road and with Portland Trails to promote safer and easier connections to the greater Portland Trails network.

I. Design Standards

Staff Comment: An assessment of the design standards is included in the September 4th design memorandum (Attachment C) that assesses compliance with the R-3 PRUD design standards. Overall, the application meets the majority of design standards, with requested updates related to pedestrian safety at crosswalks, relocation of street lights to align with crosswalks, and relocation of parallel parking spots without a corresponding sidewalk.

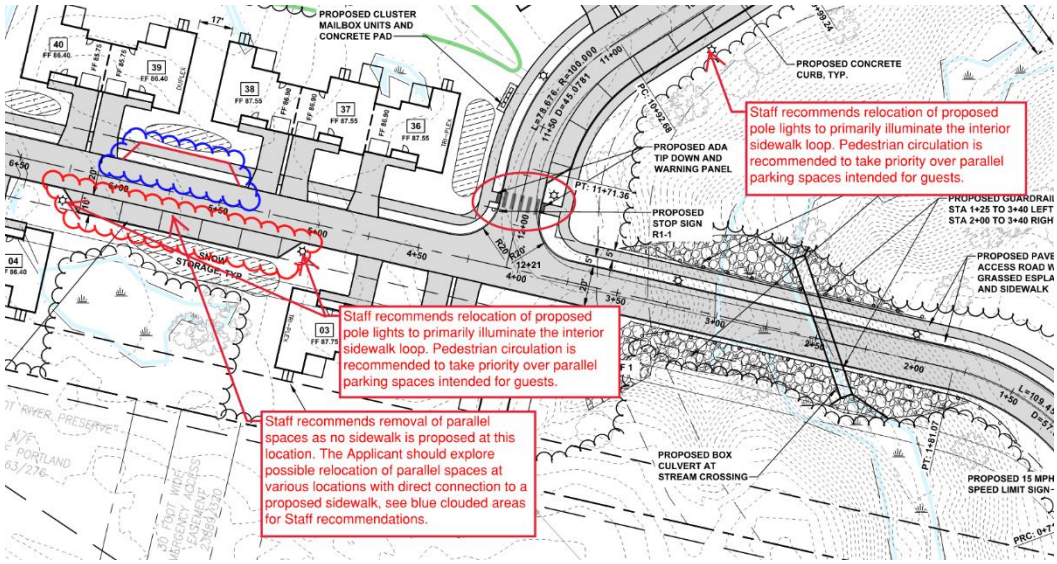


Figure 8: Portion of annotated site plan from the September 4, 2024 design memorandum speaking to relocating proposed parallel parking and street lights to improve pedestrian safety.

XII. SUBDIVISION REVIEW

Section 15.4.1 of the City's Land Use Code establishes standards under which Subdivision applications must be reviewed. Per this section, Subdivisions shall adhere to the following requirements:

A. Water or Air Pollution

Staff Comment: Refer to site plan assessment of water quality, stormwater management, and erosion control standards in Section X of this report under §14.6.2(D).

B. Sufficient Water Supply

Staff Comment: Refer to site plan assessment of public utilities in Section X of this report under §14.6.3(C).

C. Impacts to Existing Water Supply

Staff Comment: Refer to site plan assessment of public utilities in Section X of this report under §14.6.3(C).

D. Soil Erosion & Stormwater Detention

Staff Comment: Refer to site plan assessment of water quality, stormwater management, and erosion control standards in Section X of this report under §14.6.2(D).

E. Impacts to Highways & Public Roads

Staff Comment: Refer to site plan assessment of transportation standards in Section X of this report under §14.6.1.

F. Adequate Sewer & Stormwater Disposal

Staff Comment: Refer to site plan assessment of public utilities in Section X of this report under §14.6.3(C).

G. Impacts to City Solid Waste & Sewage

Staff Comment: The Applicant has submitted a letter indicating ability for solid waste collection during construction, with solid waste anticipated to be collected by the City at approximately 0.84 tons a week.

Refer to site plan assessment of public utilities in Section X of this report under §14.6.3(C) for assessed impacts to the City's sewer system.

H. Adverse Impacts on Visual, Historic & Natural Resources

Staff Comment: Refer to the site plan assessment of impacts to existing natural resources and landscape preservation, view corridors, and historic preservation in Section X of this report under §14.6.2(A&B) and §14.6.4(D&E).

I. Compliance with Comprehensive Plan

Staff Comment: Refer to site plan assessment of consistency with City master plans in Section X of this report under §14.6.3(A).

J. Financial and Technical Capacity

Staff Comment: Refer to Section VI of this report.

K. Shoreland Zone Impacts

Staff Comment: Not applicable. The project is not located within the shoreland zone.

L. Groundwater Quality & Quantity

Staff Comment: Refer to site plan assessment of water quality, stormwater management, and erosion control standards in Section X of this report under §14.6.2(D).

M. Flood Risk

Staff Comment: Not Applicable. The site is not located in a flood zone.

N. Stormwater Management

Staff Comment: Refer to the site plan assessment of the site plan stormwater management review in Section X of this report under §14.6.2(D) & §14.6.3(C).

O. Depth-to-Shore Frontage Ratio

Staff Comment: Not Applicable.

P. Subdivisions Located in Two or More Municipalities

Staff Comment: Not Applicable.

XIII. SITE LOCATION OF DEVELOPMENT

The proposed development is required to receive approval for a Site Location of Development (SLOD) Permit application. The City of Portland has delegated review authority for SLOD permits. Section 14.3 of the *Technical Manual* contains the SLOD standards required to be met. SLOD review standards overlap with several site plan standards, which are listed below:

- Financial & Technical Capacity: Refer to Section VI of this memorandum
- Traffic Movement: Refer to the assessment of §14.6.1(A) in Section X of this memorandum
- 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 in Section X of this memorandum
- Soil Types: Refer to the assessment of §14.6.2(D) in Section X of this memorandum
- Infrastructure: Refer to the assessment of §14.6.3(C) in Section X of this memorandum

XIV. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting on May 31, 2023 (Attachment 36). Comments from the neighborhood meeting focused on impacts on the transportation system, school system, and Presumpscot River Preserve/Portland Trails.

Since the last Planning Board workshop, the Planning & Urban Development Department has received eight public comments (PC#1 – PC#8) regarding the proposed development. Comments have raised similar concerns expressed at the May 31, 2023 neighborhood meeting on traffic volumes and access, erosion and environmental impacts to surrounding open space, and the scale of the development.

XV. NEXT STEPS

Currently, the Applicant is in the process of responding to the latest round of City reviewer comments. Following the workshop, the Applicant should incorporate feedback from the Board and City Staff as part of a resubmission package. Once the Applicant has resubmitted application materials, City Staff and Third-Party

Reviewers will review the application to determine if there are any additional comments and look to schedule the next Planning Board meeting for the project.

XVI. ATTACHMENTS

STAFF ATTACHMENTS

A. City Staff + Third Party Review (October 5, 2023)
B. City Staff + Third Party Review (September 4, 2024)
C. September 4, 2024 Design Review Memorandum

APPLICANT SUBMITTAL

1. Project Description + Narrative
2. Major Site Plan & Subdivision Checklists
3. Right, Title & Interest
4. Condominium Documents
5. Evidence of State & Federal Approvals
6. SLOD Application Form
7. NRPA Permit by Rule Application
8. NRPA Tier 1 Application
9. Zoning
10. Waiver Request
11. Financial & Technical Capacity
12. Consistency with City Master Plans
13. Public Safety and Fire Prevention
14. Availability of Public Utilities
15. Massing, Ventilation, and Wind Impact
16. Shadows
17. Snow and Ice Loading
18. View Corridors
19. Historic Areas
20. Exterior Lighting
21. Noise and Vibration
22. Signage and Wayfinding
23. Zoning Related Standards
24. Construction Management Plan
25. Building Information and Design Specs
26. Solid Waste
27. Traffic Assessment
28. Speed Appendix
29. Photo Log for ADA Compliance
30. Soils
31. Geotechnical Report
32. High-Intensity Soil Survey
33. Stormwater Management
34. Buffering
35. May 31, 2023 Neighborhood Meeting Materials & Minutes
36. Applicant Response to Comments (August 29, 2023)(1 of 2)

37. Applicant Response to Comments (August 29, 2023)(2 of 2)
38. Applicant Response to Comments (November 6, 2023)

PLANS

Plan 1. Site Plan Set 2023-11-20
Plan 2. Boundary Survey 2023-11-21
Plan 3. Landscaping Plan Set 2023-10-26
Plan 4. Active Recreation Plan 2023-11-20
Plan 5. Force Main Cleaning Figure

PUBLIC COMMENT

PC 1. James Macisso
PC 2. Lisa McCafferty
PC 3. Marco & Kristen Giancotti
PC 4. Stephen Champagne
PC 5. Mark Arienti
PC 6. Mark Arienti
PC 7. Friends of Presumpscot River
PC 8. Friends of Presumpscot River

Review Comments Round III | October 5, 2023 | PL-002454-2023 | 1 Hope Ave.
Planner: Charles Tetelman | ctetelman@portlandmaine.gov | 207-874-8724

City Staff and Third-Party Peer Reviewers have completed the latest review of this application based off of the most recent submissions. Comments below have been provided to the Planning & Urban Development Department from the Department of Public Works, Water Resources, Zoning, and Third-Party Consulting Engineers (Stormwater + Traffic).

Please submit a written response to the comments below and upload the response, revised submissions, and new material to Project Dox (Project Dox has automatic versioning so long as the files has the same name as the original submission). Once uploaded, please send an email to ctetelman@portlandmaine.gov notifying the planner of the resubmission.

Be advised that additional comments may be forthcoming and other changes may still be required if the comments are not addressed adequately. If you have any questions, please do not hesitate to ask.

General Review Comments		
Review	***Discussion***	***Status***
General	Comments: • Please provide an updated and reorganized upload to Project Dox. It may be helpful to refer to the 9.12.23 Planning Board Workshop memo for organization. Many applicants organize their uploads based on the site plan standard category (example: Transportation Standards, Environmental Quality Standards). These standards are found in Section 14.6 of the Land Use Code. Files should be combined if possible. • Please submit draft Homeowner's Association Documents for City Staff and Corporation Counsel review. • Please identify how the proposed development is meeting the Subdivision Review Standards of section 15.4.1. The applicant provided documentation speaking to site plan standards and not subdivision standards.	Not Met
State/Federal Permits	Comments: • The applicant will also need to provide evidence of any necessary state and federal permits for the proposed disturbance within the state required 75' setback from the stream. • The applicant previously noted that a NRPA Tier 1 Application for wetland impacts was submitted to the DEP. Evidence of approval should be sent to the City upon receipt. DPW notes that the applicant recently uploaded evidence of the NRPA PBR associated with the stream crossing. • Please be sure all documentation from MaineDEP and US Army Corps of Engineers is submitted.	Not Met
Zoning/Design	Comments: • City Staff require elevations to confirm heights of the structures. The previous upload contained a variety of now deleted elevations/renderings/floorplans. Please provide documents/drawings that include elevations, floorplans, and renderings of the proposed structure. • Please provide calculations for Minimum Common Recreation Open Space Area on site. • More information is needed for: Maximum Structure Height, Maximum Building Length, and Minimum Building Setback from External Subdivision Property Lines.	Not Met
Additional Submissions Requested: • Updated elevations, floorplans, and renderings		

- Minimum Common Recreation Open Space Calculations
- Zoning Clarification: Structure Height, Building Length, Building Setback from External Subdivision Property Lines

14.6.1: Transportation Standards

Standard	*Discussion*	*Status*
Impact on Surrounding Street Systems	Overview: Based on the most recent submission, the Third-Party Traffic Engineer and City Staff do not expect the proposed development to create unacceptable mobility problems. The applicant has provided revised plans showing a sidewalk at the end of the cul-de-sac and provided crosswalks for roadway crossings. A detailed traffic study evaluating the capacity of roadways and intersections in the vicinity of the project is not required given the relatively low levels of new traffic volume to be generated. City Staff note that documenting existing vehicle speeds and understanding speeding and neighborhood traffic management issues is required below. Comments: • The applicant collected a limited sample of speed data within the neighborhood. It is requested that speed data be collected over a minimum 48-hour period and that an additional location on Summit Street be included. • Improvements (existing and proposed) in the ROW should be dimensioned on the plan view sheets (in this case the 20 Scale Plan). For example, dimensions for street, lanes, sidewalk, esplanade, driveways, and other improvements should be noted. Please also note the widths and when the widths change.	Not Met
Public Transit Access	Comments: • The applicant conducted a general evaluation of pedestrian facilities. The evaluation shall also include an evaluation of ADA facility compliance between the site and the bus stop. • Crosswalks in the ROW shall follow the City Standard detail Figure I-17 Typical Crosswalk Markings (COP Technical Manual)	Not Met
Parking	Comments: • The location of on-street parking spaces is not evenly distributed throughout the site and the applicant should note how parking will be managed so that vehicles do not park in non-pull-out areas. • The five parking spaces at station 6+00 are not abutting a sidewalk and access into and out of vehicles may be difficult as it also abuts a snow storage area.	Not Met

Additional Submissions Requested:
- Updated speed data
- ADA Evaluation of pedestrian facilities between the site and bus stop
- Response to parking concerns
- 20 Scale Plan for ROW Improvements

14.6.2: Environmental Quality Standards

Standard	*Discussion*	*Status*

Landscape Preservation	**Comments:** • Since any disturbance within the buffer may impact the existing vegetation and allow for invasive species to move in, a robust re-planting plan and invasive species management plan for any areas of disturbance within the set-backs that will be left to naturally revegetate will be required for water resources to support a waiver.	Not Met
Site Landscaping and Buffers	**Overview:** City Staff are still waiting for the revised existing conditions plan with trees over 16" DBH identified and named. **Comments:** • Could the applicant consider alternative layouts (homes closer to raod, reducing driveway footprints) to increase forest buffers? Previous submission does not address this outstanding comment. Please call out reference to the site plan comments and response or indicate on landscaping plan movement of buffer. • Because maples currently make up upwards of 30% of the City's urban street tree canopy and are susceptible to the Asian Long-Horned Beetle, the City Arborist is strongly urging against planting any more maples (of any species or variety) as street trees in Portland for the time being. To be resilient to current and future pests, the City's street trees should be as diverse as possible and maples are currently overrepresented in the City's canopy posing a risk to the City's canopy health and resiliency. Alternative street trees would preferably be native and straight species as they offer greater ecosystem value. If fall color is a driving factor, Betula nigra and its cultivars are native, less susceptible to bronze birch borer and would contribute to fall color in a similar fashion to maple, albeit yellow instead of red.	Not Met
Water Quality, Stormwater Management and Erosion Control	**Comments:** • The proposed adverse sewer manhole connection angle from SMH-20 into the City's sewer manhole in Hope Avenue is not acceptable. Flow shall not be discharged into the City's sewer manhole against the mainline flow direction. • The applicant notes that a geotechnical study is currently being arranged to assess site conditions including the proposed 1:1 riprap slope located at the driveway entrance stream crossing. The applicant should provide this information for City staff review once completed. • The applicant will need to file a waiver request from technical manual standard 8.2.1 for the proposed encroachment into the required 100' perennial stream buffer at several locations. • Hydraulic sizing information for the proposed culvert should be provided for review to ensure that the proposed culvert meets, at a minimum, the Maine DOT Instream Culvert Sizing methodology. • Outlet protection should be provided for the piped outlet discharge from GUSF-2.	Not Met
Additional Submissions Requested: • Tree Survey • Alternative Layout Response • Tree Species Response • Updated Sewer Connections • Geotechnical Study response • Waiver Request • Hydraulic Sizing update		

- Outlet Protection

14.6.3: Public Infrastructure + Community Safety Standards		
Standard	***Discussion***	***Status***
Public Utilities	DPW provided guidance and direction to the applicant on wastewater system upgrades which will be required to be implemented by the applicant before the project's private wastewater system can be brought online and connected into the City's system. It's DPW's understanding that the applicant is working on the design of the required system upgrades and will continue coordinating the design work with DPW. Comments: • The applicant should formally submit a wastewater capacity application to DPW for review and approval. DPW will need to formally approve the design of the required system upgrades and receive assurance that the work will be completed by the applicant, in coordination with the development project, prior to the wastewater capacity authorization being granted. Application forms are located here: https://www.portlandmaine.gov/574/Sewer-Rules-Regulations	Not Met
Additional Submissions Requested: • Wastewater Capacity Application • Update regarding wastewater system upgrade		

14.6.4: Site Design Standards		
Standard	***Discussion***	***Status***
Snow and Ice Loading	Comments: • Please note how snow will be managed unless snow storage areas will be the only form of snow storage/management.	Not Met
Exterior Lighting	Overview: Please provide more information on lighting around the premises and on the proposed structures.	Not Met
Noise and Vibration	Overview: Please provide more information on how mechanical units / HVAC systems will be screen or where they will be located.	Not Met
Design Standards	Overview: Once more documents/drawings are submitted, Staff will follow up with an updated design review memo.	Not Met

Review Comments | September 6, 2024 | PL-002454-2023 | 1 Hope Avenue
Submission #4: November 6, 2023 – August 14, 2024
Planner: Zach Powell (zpowell@portlandmaine.gov)

General Review Comments		
Review	***Discussion***	***Status***

General	Comments:
	• Updated and reformatted documents were uploaded by review category, including draft condominium & homeowner association documents.
	• As requested in the last comment letter, please identify how the proposed development is meeting the Subdivision Review Standards of §15.4.1. The last application submission included a short statement stating that the application meets the applicable site plan and subdivision standards with additional narratives specifying compliance with each applicable section. While some narratives speak to the standards of §15.4.1., there are missing sections.
	• As relayed by email in August, the project must demonstrate financial capacity to meet Site Law of Development (SLOD) standards through submission of one of the following items:
	  ○ A letter from a financial institution, governmental agency, or other funding entity indicating a commitment to fund the cost of the project; or
	  ○ The most recent corporate annual report or financial statements indicating availability of sufficient funds to finance the development together with material explaining the report, and evidence that funds have been set aside for the proposed development. The financial information in any annual report and any financial statement should be audited, or an explanation provided why audited reports are not available; or
	  ○ Copies of bank statements of accounts held by the applicant or other evidence indicating that funds are available and have been set aside for the proposed development.
		Not Met

State/Federal Permits	Comments: • The applicant will also need to provide evidence of any necessary state and federal permits for the proposed disturbance within the state-required 75′ setback from the stream. • Evidence of MaineDEP and US Army Corps of Engineers approvals should be sent to the City upon receipt.	Not Met
Zoning/Design	Comments: • Upon review of the requested building elevations, the listed building heights do not correspond with the listed scale & maximum permitted heights. Please update building elevations to use an accurate scale and have a maximum building height of 35 feet, along with updating the site plan to reflect updated calculations. • Calculations for the proposed open space, building length for triplexes, and minimum building setback from external subdivision property lines have been provided. Submission of the duplex elevations & flood plans is still required. As mentioned in the bullet above, the scale for the elevations should be revised to provide consistent building height and length between application documents.	Not Met
Additional Submissions Requested: • Updated elevations and floor plans • Zoning Clarification: Structure Height		

14.6.1: Transportation Standards		
Standard	***Discussion***	***Status***
Impact on Surrounding Street Systems	Overview: Based on the most recent submission, the Third-Party Traffic Engineer and City Staff do not expect the proposed development to create unacceptable mobility problems. The applicant has provided revised plans showing a sidewalk at the end of the cul-de-sac and provided crosswalks for roadway crossings. A detailed traffic study evaluating the capacity of roadways and intersections in the vicinity of the project is not required given the relatively low levels of new traffic volume to be generated. City Staff repeat a request to document existing vehicle speeds at an additional location on Summit Street. Comments: • Submit additional speed data over a minimum 48-hour period from a location on Summit Street. • Improvements (existing and proposed) in the ROW should be dimensioned on the plan view sheets (in this case the 20 Scale Plan). For example, dimensions for streets, lanes, sidewalks, esplanade, driveways, and other improvements should be noted. Please also note the widths and when the widths change.	Not Met
Public Transit Access	Comments: • The applicant conducted a general evaluation of pedestrian facilities and noted ADA-compliance issues related to ramp conditions. The Department of Public Works provided no further comment/request related to this topic. • As mentioned in the previous comment letter, crosswalks in the ROW shall follow the City Standard detail Figure I-17 Typical Crosswalk Markings (COP Technical Manual)	Not Met
Parking	Overview: Consulting Traffic Engineer Tom Errico has repeated requests for noting how on-street parking will be managed and that the proposed location of parking spaces at station 6+00 is not acceptable given the lack of an adjacent sidewalk and abutment to a snow storage area. Suggestions on updated parking configurations and an extension of proposed sidewalks to address these issues have been included in Attachment #3 (September 4, 2024 Design Memorandum). Comments: • The location of on-street parking spaces is not evenly distributed throughout the site and the applicant should note how parking will be managed so that vehicles do not park in non-pull-out areas. • The five parking spaces at station 6+00 are not abutting a sidewalk and access into and out of vehicles may be difficult as it also abuts a snow storage area.	Not Met
Additional Submissions Requested: • Updated speed data for Summit Street • Response to parking concerns • 20 Scale Plan for ROW Improvements		

14.6.2: Environmental Quality Standards		
Standard	***Discussion***	***Status***
Landscape Preservation	Overview: Comments: A replanting plan was submitted as part of landscape plan updates in response to comments from Water Resources on the submitted waiver related to encroachment in the perennial stream buffer. Water Resources is currently reviewing the updated materials and will respond under a separate cover if any additional materials/revisions are needed for a determination of support of the waiver.	To be determined
Site Landscaping and Buffers	Overview: A revised existing conditions plan with trees over 16" DBH identified and named was submitted. The landscaping plan has been updated to diversify street trees in response to Forester concerns about Asian Long-Horned Beetles. In response to the updated plan, the Forester is requesting additional information on the basal area targeted for retention, information on how existing trees will be preserved with the steep terrain & grading, and updates to landscape plan notes. Comments: • Provide a response on how tree preservation will take place given the existing steep terrain and proposed grading activities. • In the central area to be selectively cut and retained as recreational open space, identify on the site plan the existing basal area that is targeted to be retained. • Revise Note #3 on landscape plan sheet LA101 to read "*All planting shall be done in accordance with ANSI A300 standard Ch 6: Planting and Transplanting*" • For Planting Note #7 on landscape plan sheet LA101, please include text explicitly stating that compost will not have 'sludge' or biosolids as a parent material.	Not Met
Water Quality, Stormwater Management and Erosion Control	Overview: Water Resources has identified necessary updates related to the access drive embankment, outlet protection, HydroCAD post-development modeling for Ponds A & B, and the construction management plan related to ESC measures. Additionally, responses are requested on how discharge flows will impact the design of the proposed access drive/culvert embankment. Comments: • The submitted geotechnical report analyzed the proposed 1:1 embankment design located at the proposed access drive and box culvert stream crossing near station 2+50. The report indicated the design of the 1:1 embankment slopes should be revised to flatten slopes to 2:1 or be designed as reinforced slopes with engineered face treatments and internal geotextile reinforcement. The design should be updated to reflect all of the findings of this report. • Stormwater discharge flows from GUSF-1 and some existing drainage areas appear to be directed towards an existing gully that will be impounded by the proposed access driveway/embankment construction.	Not Met

	Flows will ultimately spill over towards the inlet side of the proposed stream crossing box culvert. The applicant should consider and comment on how this may impact the design of the proposed access drive/culvert embankment. Water Resources expresses concern that stormwater flows being directed to flow along the toe of the embankment could lead to future scour issues. • Water Resources remains concerned with the lack of outlet protection being provided at the proposed stormwater outfall pipe locations, especially at the piped discharge locations for Wetpond's A and B and Bio Cell's A and B. These outfalls should be designed with plunge pools and level spreaders per design guidance listed in Maine DEP's ESC manual for designers and engineers. This area is known to have high highly erodible soils and import that concentrated stormwater discharges from this site do not cause downstream erosion and land stability issues. • Water Resources has identified a potential calculation error in the post-development HydroCAD model pond nodes for Wet Ponds A and B. The model appears to allow storage volume to be utilized below the design permanent pool volume for each pond during simulated rainfall events. The applicant should revise the model to set a starting storage elevation at the proposed permanent pool elevation and re-run the analysis. This could affect the conclusions of the flooding standard analysis and proposed plunge pool/outfall protection design. • The construction management plan should be updated to discuss in more detail how erosion and sediment control practices will be implemented and managed on-site during construction.	
Additional Submissions Requested: • Response on tree preservation related to slopes & grading • Updates to Landscape Plan Notes • Flows near access drive embankment response • Updates to embankment design based on geotechnical report findings • Outlet Protection • HydroCAD model updates • Construction management plan updates on ESC practices		

14.6.3: Public Infrastructure + Community Safety Standards		
Standard	***Discussion***	***Status***
Public Utilities	DPW provided guidance and direction to the applicant on wastewater system upgrades which will be required to be implemented by the applicant before the project's private wastewater system can be brought online and connected to the City's system. DPW has requested a formal status update on the design package that needs to be submitted for the wastewater capacity authorization for the project. Some of the items for this package have been submitted, but additional information and plan updates are required to complete the review Comments: • Submit a formal status update on the design package and continue to work with DPW to submit any additional information/plan revisions.	Not Met
Additional Submissions Requested: • Update regarding wastewater system upgrade		

14.6.4: Site Design Standards		
Standard	***Discussion***	***Status***
Snow and Ice Loading	Overview: The November 6, 2023 application response indicates that snow removal from a private contractor will be employed should onsite snow storage be inadequate. As noted in comments related to Parking and Design, a reconfiguration of snow storage areas adjacent to on-street parking with no sidewalks is warranted.	Met
Exterior Lighting	Overview: The site currently has 195 feet of frontage along Hope Avenue and an existing street light meets the street lighting standards of the Technical Manual. A photometric plan was submitted for the on-site lighting. Additional information is needed on the proposed lights and how the lighting plan meets the uniformity and illumination standards of §12.3 of the Technical Manual. Comments: • Submit a specification sheet for the proposed on-site lighting that includes the maximum lumens and CCT (3000K CCT is the maximum permitted). The referenced model number in the lighting plan appears to be for lights that are not currently manufactured. • Update the lighting plan to include the Uniformity (Maximum to Minimum Illumination) and minimum, maximum, and average illumination values measured at grade that meet the standards of §12.3.1 & §12.3.2 of the Technical Manual.	Not Met
Noise and Vibration	Overview: As requested in the last comment letter, please provide more information on mechanical units / HVAC systems including their locations and how they will be screened and/or located away from adjacent properties and the street, including the proposed transformer along Hope Avenue.	Not Met
Design Standards	Overview: Please refer to Attachment # 3 (September 4, 2024 Design Memorandum), which speaks to the overall compliance with the R-3 PRUD design standards. Overall, the application meets the majority of design standards, with requested updates related to pedestrian safety at crosswalks and relocation of parallel parking spots without a corresponding sidewalk.	Not Met
Additional Submissions Requested: • Specification sheet for onsite lighting & updated lighting plan • Response on where mechanical units/HVAC systems will be located & screened away from adjacent properties and the street. • Response to September 4, 2024 Design Memo		

Zoning Use Review (Article 6)

Use Permissions (Table 6-A)

Proposed Use	***Zones***	***Type of Use***
Planned Residential Unit Developments	***R-3***	Permitted

Zoning Dimensional Review (Article 7)

Dimensional Standards (Table 7-B)

Standard	***R-3 PRUD Requirement***	***Proposed***	***Finding***
Lot area (Minimum)	3 acres	13.71 acres	Complies
Net land area per dwelling unit (Minimum)	6,500 square feet x 60 dwelling units = 390,000 square feet (8.95 acres)	9.40 acres (409,860 square feet)/60 units = 6,831 square feet	Complies
Units per building (Maximum)	6	3	Complies
Average number of units per building (Maximum)	5	2.5	Complies
Structure height (Maximum)	35 feet	35.7 feet	Does Not Comply
Building length with internal garages (Maximum)	140 feet	117 feet	Complies
Building setback from external subdivision property lines (Minimum)	25 feet	25 feet	Complies
Distance between detached PRUD dwelling units (Minimum)	16 feet	16 feet	Complies
Common recreation open space area (Minimum)	300 square feet per dwelling unit x 60 dwelling units = 18,000 square feet	43,322 square feet/60 units = 722 square feet per dwelling unit	Complies
Habitable space elevation	No habitable space in a PRUD shall be below grade, except basements that are part of and below above-ground units.	Basements are proposed as part of units with habitable space exclusively above grade.	Complies

Zachary Powell <zpowell@portlandmaine.gov>

1 Hope Ave comments

Mark Reiland <mreiland@portlandmaine.gov> Thu, Nov 30, 2023 at 2:59 PM
To: Zachary Powell <zpowell@portlandmaine.gov>

Hi Zach
Sorry for the delay but here are the comments for the 1 Hope Ave site plan:

1 Hope Ave

- Steep terrain of the site presents substantial challenges for tree preservation with the amount of grading necessary
- In the central area to be selectively cut and retained as recreational open space, what portion of the existing basal area is the target for retention?
- In the planting notes on landscape plan LA101, please revise note #3 to read
  - “All planting shall be done in accordance with ANSI A300 standard Ch 6: Planting and Transplanting”
- Regarding planting note #7 on landscape plan LA101, please include text explicitly stating that compost will not have ‘sludge’ or biosolids as a parent material

Mark Reiland
City Arborist

City of Portland, Maine

212 Canco Road - Suite A
Portland, ME 04103

Zachary Powell <zpowell@portlandmaine.gov>

1 Hope Avenue - Status Traffic Review Comments

Tom Errico <thomas.errico@tylin.com> Tue, Sep 3, 2024 at 8:34 AM
To: "zpowell@portlandmaine.gov" <zpowell@portlandmaine.gov>
Cc: Jeremiah Bartlett <JBartlett@portlandmaine.gov>, Kristoffer DeVolder <kdevolder@portlandmaine.gov>

Hi Zack – I have reviewed the application materials and have the following traffic review comments.

- In my professional opinion traffic from the project will not create unacceptable mobility problems.

Status: I have no further comment.

- The applicant should consider adding a sidewalk to the end of the cul-de-sac. Crosswalks shall also be provided for roadway crossings.

Status: The plans have been revised and I have no further comment.

- The applicant shall conduct a traffic calming study on the abutting neighborhood streets that will provide access to the development. This study shall document existing vehicle speed conditions and identify strategies to address potential problems.

Status: The applicant collected a limited sample of speed data within the neighborhood. It is requested that speed data be collected over a minimum 48-hour period and that an additional location on Summit Street be included.

Current Status: The applicant has conducted the extended speed data on Garsoe Drive, Hope Avenue and Curtis Road. The data indicates vehicle speeds are compliant with the regulatory speed limit. As requested previously, the speed study should include a location on Summit Street.

- The applicant shall conduct an evaluation of pedestrian facilities documenting adequate accessibility from the site to the nearest Metro transit stop.

Status: The applicant conducted a general evaluation of facilities. The evaluation shall also include an evaluation of ADA facility compliance between the site and the bus stop.

Current Status: The applicant conducted the evaluation and noted ADA issues. These generally consisted of ADA ramp non-compliant conditions. DPW should note if improvements are warranted.

- A detailed traffic study evaluating the capacity of roadways and intersections in the vicinity of the project is not required given the relatively low levels of new traffic volume to be generated. I would note that documenting existing vehicle speeds and understanding speeding and neighborhood traffic management issues is required and requested above.

Status: See above comment.

- The location of on-street parking spaces is not evenly distributed throughout the site and the applicant should note how parking will be managed so that vehicles do not park in non-pull-out areas. Also, the five parking spaces at station 6+00 are not abutting a sidewalk and access into and out of vehicles may be difficult, since it also abuts a snow storage area.

Status: The applicant has noted that no further changes to on-street parking is proposed. I find these comments to be inadequately addressed.

Please contact me if you have any questions.

Best regards,

Tom Errico, P.E.
NE TRAFFIC ENG. DIRECTOR
T +1 207.347.4354
M +1 207.400.0719

TYLin

12 Northbrook Drive
Building A, Suite One
Falmouth, ME 04105, United States

TYLin.com

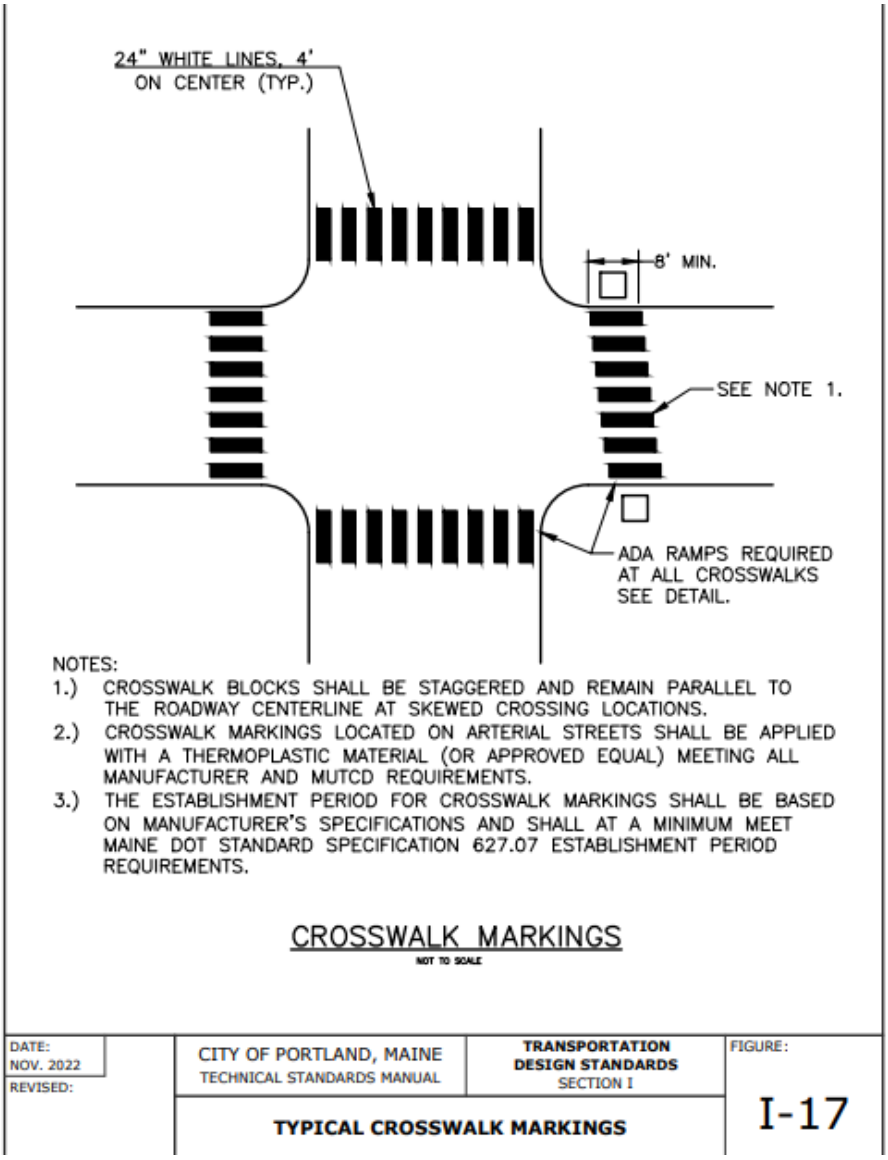
Zachary Powell <zpowell@portlandmaine.gov>

PL-002454-2024 1 Hope Ave

Kristoffer DeVolder <kdevolder@portlandmaine.gov> Tue, Sep 3, 2024 at 2:06 PM
To: Zachary Powell <zpowell@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, "thomas.errico@tylin.com" <Thomas.Errico@tylin.com>, Benjamin Pearson <bnp@portlandmaine.gov>, Justin Pellerin <jrp@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>

Hello Zach,

- **PL-002454-2024 1 Hope Ave** Major Site Plan & Conditional Use
  - Comments for Review
  - DPW Transportation
    - C-102 - Revise proposed ladder truck turning movements, what is shown appears to be for a previous site plan.
    - The 20 scale plan was not included in the submission so the following comment should be repeated.
    - Improvements (existing and proposed) in the ROW shall be dimensions on the plan view sheets (in this case the 20 scale plan). For example overall ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as when a width changes.
    - Crosswalks in the ROW shall follow the City standard detail Figure I-17 Typical Crosswalk Markings. See below.



- 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

public works

Zachary Powell <zpowell@portlandmaine.gov>

PL-002454-2024 1 Hope Ave

Justin Pellerin <jrp@portlandmaine.gov> Wed, Sep 4, 2024 at 12:25 PM
To: Kristoffer DeVolder <kdevolder@portlandmaine.gov>
Cc: Zachary Powell <zpowell@portlandmaine.gov>, Keith Gray <kgray@portlandmaine.gov>, "thomas.errico@tylin.com" <Thomas.Errico@tylin.com>, Benjamin Pearson <bnp@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>

Hi Zach

- Water Resources provided direction to the applicant on required upgrades to the City's Hope Avenue pump station in the summer/fall of 2023. Water Resources has reached out to the applicant to request a formal status update on the required design package that needs to be reviewed and approved prior to the City issuing a wastewater capacity authorization for the project. Some documents relating to the pump station were previously submitted to ProjectDox in November of 2023, but further information and plan updates are needed in order to complete the review.
- The applicant provided a geotechnical report which analyzed the proposed 1:1 embankment design located at the proposed access drive and box culvert stream crossing near station 2+50. The report indicated the design of the 1:1 embankment slopes should be revised to flatten slopes to 2:1 or be designed as reinforced slopes with engineered face treatments and internal geotextile reinforcement. The design should be updated to reflect all of the findings of this report.
- It appears that stormwater discharge flows from GUSF-1 and some existing drainage area is being directed towards an existing gully that will be impounded by the proposed access driveway/embankment construction. Flows will ultimately spill over towards the inlet side of the proposed stream crossing box culvert. The applicant should consider and comment on how this may impact the design of the proposed access drive/culvert embankment. I would worry that stormwater flows being directed to flow along the toe of the embankment could lead to future scour issues.
- Water resources remains concerned with the lack of outlet protection being provided at the proposed stormwater outfall pipe locations, especially at the piped discharge locations for Wetpond's A and B and Bio Cell's A and B. These outfalls should be designed with plunge pools and level spreaders per design guidance listed in Maine DEP's ESC manual for designers and engineers. https://www.maine.gov/dep/land/erosion/escbmps/esc_bmp_engineers.pdf. This area is known to have high highly erodible soils. It is of the utmost importance that concentrated stormwater discharges from this site do not cause down stream erosion and land stability issues.
- Water Resources has identified a potential calculation error in the post development HydroCad model pond nodes for Wet Pond's A and B. The model appears to allow storage volume to be utilized ***below*** the design permanent pool volume for each pond during simulated rainfall events. The applicant should revise the model to set a starting storage elevation at the proposed permanent pool elevation and re-run the analysis. This could affect the conclusions of the flooding standard analysis and proposed plunge pool/outfall protection design.
- The construction management plan should be updated to discuss in more detail how erosion and sediment control practices will be implemented and managed on site during construction.

Thanks
Justin Pellerin, P.E.
Senior Water Resources Engineer
Department of Public Works
jrp@portlandmaine.gov
207-874-8881

[Quoted text hidden]

Zachary Powell <zpowell@portlandmaine.gov>

Reminder - 1 Hope Avenue (PL-002454-2023) Comments due next Wednesday

Ann Machado <amachado@portlandmaine.gov> Tue, Sep 3, 2024 at 4:53 PM
To: Zachary Powell <zpowell@portlandmaine.gov>

Zach -

I just took a look at the most recent uploads.

Reviewing the architectural plans that were submitted on 10/13/23 using the scale provided, the building height to the midpoint of the roof appears to exceed the maximum allowed of 35'. They need to provide the actual height to the midpoint of the roof to grade for the buildings.

Ann

Ann Machado
Zoning Administrator
Permitting and Inspections Department
City of Portland, Maine
(207) 874-8709
amachado@portlandmaine.gov

[Quoted text hidden]

Design Review
Planning and Urban Development Department

Subject:	1 Hope Avenue
Zone:	R-3
Date of Review:	Wednesday, September 4, 2024 – Design Review #3
Reviewer(s):	Sean King (Urban Designer), Matt Grooms (Development Review Service Manager), Zach Powell (Senior Planner)
Project ID:	PL-002454-2023

I. DESIGN REVIEW COMMENTS

(h) Planned Residential Unit Development (PRUDs) in the R-3 Residential Zones.

(1) ***STANDARDS.*** *Planned residential unit developments (PRUDs) in the R-3, R-5 or R-5a residential zones and manufactured housing parks in any zone shall meet the following standards. Design standard not met are shown in red.*

Standard (1) a. Design relationship to the site

The layout and design of buildings, roadways, parking areas, open space, recreation amenities, landscaping, drainage facilities and control mechanisms and other site improvements are organized to complement and accentuate the natural topography, vegetation, streams, water features, and other existing features of the site, and the solar orientation provides natural light within dwelling units, in outdoor open space and in recreation areas.

Staff comments: The proposed placement, orientation and arrangement of buildings types (Duplex and Triplex units) seek to minimize disturbance to the site's natural features, significant wetlands and forested areas. The development plan preserves wetlands within the center of the site for passive recreation use with the preservation of existing trees and includes drainage facilities towards the perimeter of the development area that Staff finds appropriate. The proposed internal vehicular circulation includes a single looped vehicular drive with individual driveways for each dwelling unit, Staff finds the organization of streets is responsive to natural features and topography. **Staff finds the variety of driveway lengths to be acceptable to allow for the Applicant's proposed building locations greater than 20 feet from the private street.**

Standard (1) b. Internal design character and relationship to the surrounding neighborhood

The design and layout of the development and buildings exhibit a cohesive design character and complement existing development in the surrounding neighborhood by virtue of such features as architectural style, height, scale and massing, character of exterior facades and roofs, circulation, open space, landscaping, and the transition of scale and massing with the surrounding neighborhood. Buildings with more than two (2) dwelling units or greater than forty (40) feet in length shall provide variation in roof and facade character through changes in facade setback, roof configuration, and projecting or recessed building elements.

Staff comments:

Context: The surrounding neighborhood is dominated by single-family residences organized on similar lot sizes that connect to the public street network. The proposed development and multi-family buildings exhibit a cohesive design character and site connectivity to Hope Lane, which is a small neighborhood street.

The site context is a wooded forest with existing wetlands and a perennial stream that the Applicant has proposed to minimize disturbance with a singular roadway crossing. The Applicant has proposed a native plant palette that generally transitions the development site into the existing vegetation to remain and forested edges of the property abutting the City of Portland public property.

Architectural character: The surrounding neighborhood context of single-family residences include traditional lap siding with attached garages and simple roof forms. The architectural character of the proposed building types (Duplex and Triplex) appears to include variations of vinyl siding material at entrances, living spaces and roof eaves. The proposed 2-story building types include shared entrance canopies and window fenestration patterns oriented toward primary circulation routes. **The Applicant has resubmitted elevations for the Triplex building type that Staff finds provides sufficient variation in roof and façade character that expresses materiality changes at the gable roof and primary entrances to meet this design standard. Staff observes that the building design of the Duplex will match that of the Triplex aka Townhouse CTM-R proposed on the resubmitted Architectural plan set.**

Pedestrian circulation: **The proposed pedestrian circulation prioritizes sidewalks in several locations throughout the development but not along all frontages which would require residents to traverse roadways to access pedestrian pathways internal to the site. Staff finds the distribution of proposed sidewalks primarily at the interior loop road and cul-de-sac to be acceptable based on anticipated low volume of traffic.** Staff finds the proposed crosswalk locations to be appropriate and request that the Applicant adjust proposed pole light locations to properly illuminate each crosswalk along with provide ADA-compliant tipdowns and warning panels to allow residents to access sidewalks and pathways. In addition, Staff does not support the proposed parallel parking spots where no sidewalk is indicated and recommends that the Applicant disperse these guest parking spaces to allow for direct access to a sidewalk. Graphic representation of these design comments is attached to this design review memo.

Standard (1) c. Recreation and open space

All open spaces on the site shall be integrated into the development and designated on the site plan. Each development shall have the following features:

1. *External buffers: An effective and permanent screening from neighboring properties and roadways;*

Staff comments: The proposed development intends to minimize existing vegetation clearing to preserve trees and natural features at the property edges. Staff finds the proposed street trees promote a welcoming buffer into the private property. **The Applicant has resubmitted plans that revise the limit of clearing to concentrate the area of development and revegetate with suitable trees and vegetation that Staff finds appropriate.**

2. Internal buffers: Areas planted, maintained and located in such a manner as to provide privacy between units and buildings and paved areas and screening of parking, utilities, roadways, waste collection facilities and storage facilities;

Staff comments: The proposed development has indicated internal buffers through shade and ornamental trees located within proximity to each dwelling unit and parking. In addition, planted screening adjacent to existing vegetation and walking trail buffer dwelling units that Staff finds meet this design standard.

3. Passive recreational open space: Open spaces, designated and improved with such features as gardens, picnic areas, walking trails; benches and lawn and seating areas;

Staff comments: The proposed development has indicated proposed walking trails located at the center of the development and a trail connection to the existing Presumpscot River Preserve. In addition, Staff finds the proposed play features with bench seating complement the proposed passive recreational use.

4. Active recreational open space: Open spaces designated and improved for active recreational use with facilities such as tennis courts, basketball courts, multipurpose game fields, swimming pools, and children's playgrounds; and

Staff comments: The Applicant has resubmitted plans that indicate a network of trails and two trailhead connections for pedestrians from the proposed sidewalk that Staff finds is appropriate for the development to foster walkability as a recreational amenity. The proposed development has indicated three play features. The Applicant has included three play features constructed of natural materials located along trail within the center of the development that Staff finds appropriate for as an active recreational open space component.

5. Private open spaces: Open spaces designated for the individualized use of unit owners such as yards, decks and patios;

Staff comments: The proposed development has indicated private decks at the rear of each dwelling unit, yard space and ornamental tree plantings that Staff finds appropriate for providing private open space for each unit. The Applicant has resubmitted plans with additional trees and shrubs to buffer between the rear of each unit that Staff finds appropriate.

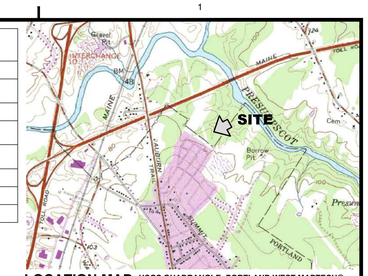
GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

PRUD LAND AREA CALCULATION

TOTAL LAND AREA	592,063 SF
WETLAND & WATERCOURSE AREA	42,951.25 SF
AREA WITH SLOPE >25%	139,230 SF
AREA OF SPECIAL FLOOD HAZARD	N/A
TOTAL NET AREA FOR DEVELOPMENT	409,882 SF
NUMBER OF UNITS	60 UNITS
RESULTING NET AREA/UNIT	6,831 SF
REQUIRED NET AREA/UNIT	6,500 SF



LOCATION MAP
SCALE: 1"=2000'

USGS QUADRANGLE: PORTLAND WEST MAPTECH®
USGS TOPOGRAPHIC SERIES™,
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PARCEL INFORMATION

MAP / LOT:	390/A001, 448/A001001, 449/A002	
LOT AREA:	13.59	ACRES
ZONE OR DISTRICT:	R-3 PRUD	
FLOOD ZONE:	ZONE C (MINIMAL HAZARD)	
WATER:	MUNICIPAL	
SEWER:	MUNICIPAL	

SITE DEVELOPMENT DATA

EXISTING IMPERVIOUS SF / AC:	0	0.00
NEW IMPERVIOUS SF/AC:	176,147	4.04
TOTAL IMPERVIOUS SF / AC:	176,147	4.04
TOTAL DEVELOPED SF / AC:	388,727	8.92
LOT COVERAGE ALLOWED/ PROVIDED:	35%	30%
NEW ROADWAY AND PARKING SF / AC	52,171	1.20
WETLAND IMPACTS SF / AC:	9,916	0.23

DESIGN STANDARDS

	REQUIRED	*PROPOSED*
R.O.W. WIDTH:	50'	N/A
TRAVELED WAY WIDTH:	20'	20'
MINIMUM GRADE:	0.5%	1%
MAXIMUM GRADE:	8%	4%
ROADWAY CROWN:	3% LOCAL / 2% OTHER	2%
MAX GRADE @ INT:	3% FOR 100'	2.46%
BUILDING HEIGHT:	35 FT	25
MINIMUM FRONT SETBACK:	25 FT	340
MINIMUM REAR SETBACK:	25 FT	25
MINIMUM SIDE SETBACK:	25 FT	25
MINIMUM FRONTAGE:	50 FT	191.39
MINIMUM LOT WIDTH:	65 FT	191.39
PARKING REQUIRED	1 PER DWELLING / UNIT	
PARKING PROVIDED	(2) 1 GARAGE / 1 DRIVEWAY	
OPEN SPACE (ACTIVE & PASSIVE) (PRUD W/ WORKFORCE HOUSING)	18,000 SF	43,700 SF

RECORD OWNER:
GENX CAPITAL PARTNERS, LLC
2 COTTON STREET
PORTLAND, MAINE 04101

THIS IS TO CERTIFY THAT AFTER REVIEWING THE SITE PLAN SUBMISSION INFORMATION FOR THE PROJECT SHOWN ON THIS PLAN AND CONSIDERING EACH OF THE CRITERIA SET FORTH IN THE CITY OF PORTLAND'S CODE OF ORDINANCES AND IN ACCORDANCE WITH THE APPLICATION REQUIREMENTS, THE UNDERSIGNED HAVE MADE FINDINGS OF FACT ESTABLISHING THAT THIS PLAN ALONG WITH ITS ADDITIONAL SUBMISSION INFORMATION (IF APPLICABLE) HAS MET ALL THE CRITERIA SET FORTH AND THEREFORE THE SITE PLAN IS APPROVED.

APPROVED BY THE CITY OF PORTLAND PLANNING BOARD ON: _____

CONDITIONS: _____

PLANNING BOARD SIGNED ON: _____

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

PROPOSED SITE PLAN

DATE: 2022.08.29	SCALE: 1"=40'
DRAWN BY: BLQ	DESIGNED BY: BLQ
CHECKED BY: JHW	
PROJECT No.: 13773.001	
DRAWING No.: C102	REV.: 3

STATE OF MAINE
CUMBERLAND, SS.
REGISTRY OF DEEDS
RECEIVED AND FILED

20 _____
h m M.

Attest _____ Register

RECORDED AS MAP FILE:

BUILDING SETBACK
PROPERTY BOUNDARY
PROPOSED CHAIN LINK FENCE W/ DOUBLE GATE (12' TOTAL WIDTH)
DECORATIVE STREET LIGHT, TYP.
(2) 10'x18' PROPOSED PARKING SPACES
POND A
RETAINING WALL
BULKHEAD BASEMENT ACCESS
SNOW STORAGE, TYP.
LADDER TRUCK TURNING MOVEMENT
PROPOSED STOP SIGN R1-1
PROPOSED ROOF DRIPLINE FILTER BMP, TYP.
LIMIT OF 40' WIDE EASEMENT FOR PORTLAND WATER DISTRICT
PROPOSED STONE DUST SURFACE WALKING PATH, TYP.
(5) 10'x20' PROPOSED PARKING SPACES
(2) 10'x20' PROPOSED PARKING SPACES
OPEN/RECREATION SPACE REFER TO LANDSCAPE PLAN
PROPOSED CLUSTER MAILBOX UNITS AND CONCRETE PAD
PROPOSED RIP RAP SLOPE
STA 2+50 (L) 5' CURB CUT
BIOCELL A
BIOCELL B
POND B
PROPOSED CHAIN LINK FENCE W/ DOUBLE GATE (12' TOTAL WIDTH)
BULKHEAD BASEMENT ACCESS
PROPOSED TREE LINE
PROPOSED TRIPLEX, TYP.
PROPOSED ADA TIP DOWN AND WARNING PANEL
SNOW STORAGE, TYP.
PROPOSED 5' SIDEWALK AND ESPLANADE
PROPOSED CONCRETE CURB, TYP.
PROPOSED ADA TIP DOWN AND WARNING PANEL
PROPOSED STOP SIGN R1-1
PROPOSED GUARDRAIL STA 1+25 TO 3+40 LEFT STA 2+00 TO 3+40 RIGHT
EXISTING TREE TO BE PRESERVED, TYP.
PROPOSED PAVED ACCESS ROAD W/ GRASSED ESPLANADE AND SIDEWALK
PROPOSED BOULDERS SPACED 6' APART
GUSF 2
PROPOSED BOX CULVERT AT STREAM CROSSING
PROPOSED 15 MPH SPEED LIMIT SIGN
TRANSITION FROM GRANITE CURB TO CONCRETE SLIP-FORM CURB
PROPOSED STOP SIGN R1-1
EXISTING GRANITE CURB TO BE REMOVED. GRANITE CURBING MAY BE RE-SET IF AUTHORIZED BY CITY ENGINEER
GRIND PAVEMENT
APPROXIMATE LOCATION OF PROJECT SIGN
EXTEND PROPOSED SIDEWALK AND CURB, AND MATCH INTO HOPE AVE. SIDEWALK AND CURB
NEW OR RE-SET GRANITE CURBING TO MATCH INTO STRAIGHT EDGE OR EXIST. CURB. SOME REMOVAL MAY BE NECESSARY TO CREATE THE STRAIGHT EDGE.
INSTALL ADA TIP-DOWNS AND DETECTABLE WARNING PANEL
SIGHT DISTANCE 220'
SIGHT DISTANCE 220'

Pedestrian circulation should include a light pole within closest proximity to the painted crosswalk locations.

Pedestrian circulation should include a light pole within closest proximity to the painted crosswalk locations. In addition, ADA-complaint tipdown/warning panel at each side of street.

Staff recommends relocation of proposed pole lights to primarily illuminate the interior sidewalk loop. Pedestrian circulation is recommended to take priority over parallel parking spaces intended for guests.

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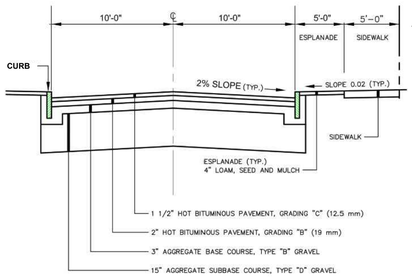
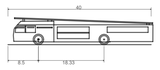
Staff recommends removal of parallel spaces as no sidewalk is proposed at this location. The Applicant should explore possible relocation of parallel spaces at various locations with direct connection to a proposed sidewalk, see blue clouded areas for Staff recommendations.



LOCAL STREET CROSS SECTION
NOT TO SCALE



Ladder Truck	
Overall Length	40.000ft
Overall Width	8.330ft
Overall Body Height	7.514ft
Min Body Ground Clearance	0.764ft
Max Track Width	8.330ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\000\HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-C-SP.DWG, 2023.10.27, 2:17 PM

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40 0 20 40 80 120

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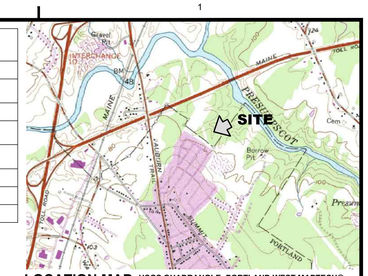

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ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
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h m M.

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RETAINING WALL
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SNOW STORAGE, TYP.
LADDER TRUCK TURNING MOVEMENT
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STA 2+50 (L) 5' CURB CUT
PROPOSED BOX CULVERT AT STREAM CROSSING
BIOCELL A
BIOCELL B
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PROPOSED CHAIN LINK FENCE W/ DOUBLE GATE (12' TOTAL WIDTH)
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PROPOSED TRIPLEX, TYP.
PROPOSED ADA TIP DOWN AND WARNING PANEL
Staff recommends relocation of proposed pole lights to primarily illuminate the interior sidewalk loop. Pedestrian circulation is recommended to take priority over parallel parking spaces intended for guests.
PROPOSED 5' SIDEWALK AND ESPLANADE
Staff recommends relocation of proposed pole lights to primarily illuminate the interior sidewalk loop. Pedestrian circulation is recommended to take priority over parallel parking spaces intended for guests.
PROPOSED CONCRETE CURB, TYP.
PROPOSED ADA TIP DOWN AND WARNING PANEL
PROPOSED STOP SIGN R1-1
PROPOSED QUARDRAIL STA 1+25 TO 3+40 LEFT STA 2+00 TO 3+40 RIGHT
EXISTING TREE TO BE PRESERVED, TYP.
PROPOSED PAVED ACCESS ROAD W/ GRASSED ESPLANADE AND SIDEWALK
PROPOSED BOULDERS SPACED 6' APART
GUSF 2
APPROXIMATE LOCATION OF PROJECT SIGN
EXTEND PROPOSED SIDEWALK AND CURB, AND MATCH INTO HOPE AVE. SIDEWALK AND CURB
NEW OR RE-SET GRANITE CURBING TO MATCH INTO STRAIGHT EDGE OR EXIST. CURB. SOME REMOVAL MAY BE NECESSARY TO CREATE THE STRAIGHT EDGE.
PROPOSED 15 MPH SPEED LIMIT SIGN
TRANSITION FROM GRANITE CURB TO CONCRETE SLIP-FORM CURB
PROPOSED STOP SIGN R1-1
EXISTING GRANITE CURB TO BE REMOVED. GRANITE CURBING MAY BE RE-SET IF AUTHORIZED BY CITY ENGINEER
GRIND PAVEMENT
INSTALL ADA TIP-DOWNS AND DETECTABLE WARNING PANEL
SIGHT DISTANCE 200'
PROPOSED 5' SIDEWALK AND ESPLANADE
PROPOSED CONCRETE CURB, TYP.
PROPOSED ADA TIP DOWN AND WARNING PANEL
PROPOSED STOP SIGN R1-1
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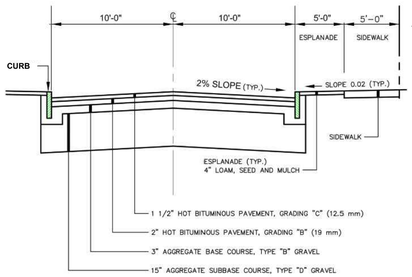
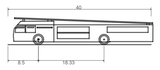
INSTALL ADA TIP-DOWNS AND DETECTABLE WARNING PANEL
SIGHT DISTANCE 200'



LOCAL STREET CROSS SECTION
NOT TO SCALE



Ladder Truck	
Overall Length	40.000ft
Overall Width	8.330ft
Overall Body Height	7.514ft
Min Body Ground Clearance	0.764ft
Max Track Width	8.330ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\000\HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-C-SP.DWG, 2023.10.27, 2:17 PM

Presumpscot Woods
0 Hope Ave., Portland, Maine
Project Description

The Presumpscot Woods project is a proposed residential, condominium development consisting of the creation of 60 new dwelling units through a combination of duplex and triplex buildings supported by a private access way and associated utilities. The project is located off Hope Avenue, in Portland, Maine on Parcels 390/A001, 448/A001001, 449/A002. The applicant/owner, GenX Capital Partners, LLC (Owner), is proposing to develop this subdivision under the PRUD dimensional standards within the City's R-3 Zoning District.

The project site is approximately 13.7 acres in size and, although located in an urban residential neighborhood, it is currently forested and undeveloped. The land slopes range from gentle to steep on the outskirts of the property. There are small pockets of wetlands within the site and a narrow stream located in an eroded channel that divides the property. The site abuts the Falmouth Spur of the Maine Turnpike to the north and undeveloped, conservation lands to the east, which border the Presumpscot River.

Access to the site will be through an existing curb cut on Hope Ave. The Owner proposes a 20-foot wide, private access road with sidewalk on one side to traverse the property and provide vehicle, bicycle, and pedestrian access to each residential unit. A combination of garage space, driveway length, and on-street parallel parking provide applicable parking for residents and guests, while maintaining clear roadway widths for emergency access.

Residential units will be presented in a combination of duplex and triplex buildings. Each unit will be two-stories tall and include three (3) bedrooms, single-car garage, front porch, rear patio, and other such amenities. Underground power and communications conductors will service each unit along with public sewer and water services. It is expected that each unit will have individual propane tanks to provide fuel for heating, cooling, cooking, etc. Residential scale lighting will be provided by a combination of street-side light pole fixtures and residential light fixtures on the front porch of each unit.

Given the proximity of conservation land and public trail systems, the Owner is proposing to dedicate passive recreation open space as part of the development. Areas of natural forest are proposed to be maintained, with the possibility of creating and maintaining natural surface walking trails that connect to existing trails in the area.

Per the Green New Deal, the City of Portland requires that 25 percent of the 60 proposed

housing units be offered as affordable housing units (AHUs), resulting in a total of 15 AHUs for this project. The applicant is proposing to meet this requirement by constructing 8 AHUs and paying a compensation fee to offset the remaining 7 AHUs. The applicant is proposing to integrate the AHUs into the development as required by the regulations. The interior finishes of the AHUs are expected to be less expensive to construct than the market rate units and they will have 3-bedroom units, with single bay garage, front porch, back patio, etc., like the market rate units.

The Presumpscot Woods Subdivision requires review and approval through the City of Portland (City) Major Site Plan and Subdivision permitting process, as well as the Maine Department of Environmental Protection (MDEP) Site Location of Development Act (SLODA) and Natural Resources Protection Act (NRPA) permitting process. On behalf of the Owner, we are submitting application materials in support of each of these permit applications. We look forward to meeting with City Staff and Planning Board as this project's review progresses. Please feel free to reach out to us with any questions or comments.

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

CITY OF PORTLAND
Planning & Urban Development Department

SUBDIVISION
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 of 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	**Subdivision Standards Assessment** (see Article 15.4 of the land use code) • Summary of compliance with subdivision review standards of the land use code
Yes	NA	**Existing and/or Proposed Easements or Covenants, applicable.** • Evidence of existing easements and any proposed easements
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

SUBDIVISION
SUPPLEMENTAL SUBMISSIONS CHECKLIST

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

Yes (NA)	• When private sewage systems are used, the results and supporting data of a soil test of each lot in the subdivision conducted by a soil evaluator licensed in the state.
Yes (NA)	• When the adequacy of the subdivision's load bearing capacity is in question, a geotechnical report with supporting data that includes the result of test borings shall be prepared by a professional engineer registered in the state and submitted.
(Yes) NA	• Price range of houses that will be built in the subdivision.
(Yes) NA	• Traffic impact analysis.
Yes (NA)	• High intensity soil survey, if required by the Planning Authority.
(Yes) NA	• Types and estimated quantities of solid waste to be generated by the development.
(Yes) NA	• A narrative describing all proposed buffer strips, their dimensions, and maintenance plans and responsibilities.
(Yes) NA	• A description of any wetlands, wildlife and fisheries habitats, archaeological sites or unusual natural areas located on or near the project site and a description of the methods that will be used to protect such area.
(Yes) NA Yes NA	• Construction plan outlining the anticipated sequence of construction of the major features of the project including without limitation roads, retention basins, sewer lines, seeding and other erosion and sedimentation control measures, and pollution abatement measures and also setting forth the approximate dates for commencement and completion of the project.
(Yes) NA	• When conditions warrant, a program to control dust, erosion and sedimentation and/or vehicular traffic during construction.
Yes (NA)	• At the option of the subdivider, any other information that may be necessary for the full and proper consideration of the subdivision shall be submitted in writing.

SUBDIVISION
DRAWINGS CHECKLIST

Please submit each document as a separate PDF file.
All drawings must be submitted in a 24 x 36 sheet size.

SUBDIVISION PLAT (at a scale not more than 1"=60', unless lots are more than one acre in size)

1. Date, north point, title and graphic scale.
2. Names, addresses and stamp or certification, if applicable, of registered professional engineer, subdivider, and owner
3. Vicinity sketch (may be shown on separate plan);
4. Names of adjacent property owners with parcels over 25,000 square feet or names of adjacent subdivision;
5. Location and designation of any zoning district boundaries affecting the subdivision;
6. Total site data, including total area of the subdivision, total area in streets, total area in recreation or open space and number of house lots;
7. Based on a recent survey by the subdivider, existing contours at two foot intervals or as otherwise required by the Public Works Authority. Existing structures which are to remain will shall be delineated;
8. Tract boundary lines and property lines of lots, with accurate dimensions and either bearings or deflection angles. All lots shall be numbered;
9. Names of proposed streets, width of rights of way, typical cross section reservation, and depth of construction materials;
10. Locations, widths and purposes of other rights of way or easements to be recorded;
11. All appropriate street geometry information, including point of curvature, point of tangency, tangent distance, radii and interior angle, in standard engineering format;
12. Location of those utilities existing on or adjacent to the tract to be subdivided, including size and elevation of buried or underground utilities (may be shown on separate plan);
13. Designation of flood hazard areas, as defined by the National Flood Insurance Program and shown on the city flood hazard boundary map, as well as any other areas in the subdivision subject to inundation by stormwater or storm sewer overflow;
14. All potential wetlands within the proposed subdivision, regardless of the size of those wetlands;

15. Any river, stream or brook within or abutting the proposed subdivision. For purposes of this section, "river, stream or brook" has the same meaning as in 38 M.R.S. § 480 B, Subsection 9.

16. Existing historic sites and structures which either appear on the National Register or are nominated to the National Register by the state historic preservation officer;

17. Proposed private and public utility system including water, gas, telephone, fire hydrants, and any other services which shall supply the area (may be shown on separate plan);

18. Sanitary sewer and storm drain plans and profiles showing size, kind and slope of pipe, proposed manhole rim and invert elevations and catch basin locations and drains (may be shown on separate plan);

19. Lighting plan showing the location, design, height and spacing from each other of the support poles, in accordance with standards and specifications established by the Public Works Authority (may be shown on separate plan);

20. Tree plan showing groups of existing, sizeable trees which the subdivider intends to preserve (may be shown on separate plan);

21. A detailed plan of the entire subdivision and the immediate vicinity showing all existing and proposed drainage both on- and off-site including drainage swales, ditches, etc., with directional flow arrows and approximate slope grades, and showing proposed finished "spot elevations" around the perimeter of the subdivision. Proposed drainage shall be shown as it may affect or restrict development on individual lots and with reference to improvements for which a performance guarantee is required under this article. Where deemed feasible by the Public Works Authority, proposed finished contours at intervals of two feet shall be provided on the drainage plan upon request (may be shown on separate plan);

22. All future phases and sections of the subdivision proposed by the subdivider (may be shown on separate plan);

23. Proposed parks and school sites, or other public open space that the developer proposes to convey to the city;

24. Streets and right of way monuments and property line markers;

25. Profiles of each street or way in the subdivision shall be shown on the subdivision plat. They shall be drawn to a longitudinal scale of 40 feet to one foot and a vertical scale of four feet to one inch. Such profiles shall include separate profiles of each side line and center line of the street or way. Any buildings abutting on the street shall be shown in standard engineering format as requested by the Public Works Authority.

26. Where submission drawings are available in electronic form, the applicant shall submit any available electronic CAD files with final plans.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Existing or Proposed Easements or Covenants

The Presumpscot Woods project property is currently subject certain drainage easements and an access easement that are described within the property's deed and depicted on the Existing Conditions Plan. Both documents are included within other sections of the Major Site Plan application. It is expected that new easements will need to be created to support maintenance of proposed utilities.

MAINE REAL ESTATE TAX-Paid

DLN: 1002240198225

QUITCLAIM DEED

ESTELLE ESTATES, LLC, a Maine limited liability company with its principal place of business in Portland, County of Cumberland and State of Maine, for consideration paid, grants to 338 FALMOUTH FORESIDE PARTNERS LLC, a Maine limited liability company with its principal place of business in Falmouth, County of Cumberland and State of Maine, with a mailing address of 2 Town Landing Road, Falmouth, ME 04105, WITH QUITCLAIM COVENANT, in and to the land, buildings, improvements and all appurtenances thereof situated in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

PARCEL ONE

A certain lot or parcel of land located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Lot 24" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, recorded in the Cumberland County Registry of Deeds in Plan Book 206, Page 412, being more particularly bounded and described as follows:

Beginning at a point on the northwesterly side of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650, said point of beginning lying N 31°28'15" E by said Lot 1 a distance of Three Hundred Forty-Six and 08/100 (346.08) feet from the northeasterly sideline of Hope Avenue as depicted on said plan of Presumpscot River Place III. Thence:

1) N 58°31'45" W a distance of One Hundred Fifty-Two and 96/100 (152.96) feet to a point.

2) S 75°51'37" W a distance of One Hundred Sixty-Four and 63/100 (164.63) feet to a point.

3) S 39°42'09" W a distance of One Hundred Seventeen and 91/100 (117.91) feet to a point.

4) S 58°31'45" E a distance of Twenty and 00/100 (20.00) feet to a point.

5) S 31°28'15" W a distance of Ninety-Nine and 50/100 (99.50) feet to a point on the northeasterly side of said Hope Avenue.

6) N 55°52'57" W by said Hope Avenue a distance of Ninety and 61/100 (90.61) feet to a point of curvature.

7) Northwesterly by said Hope Avenue following a curve to the left having a radius of Two Hundred Twenty-Five and 00/100 (225.00) feet an arc distance of One Hundred One and 64/100

(101.64) feet to a point and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276.

8) N 19°30'58" W by said land of City of Portland and Lot 1 as depicted on a plan entitled "Riverwalk Subdivision Plan" made by Titcomb Associates dated October 25, 2005, a distance of Eight Hundred Forty-Seven and 44/100 (847.44) feet to a point.

9) N 64°27'37" E by said land of City of Portland a distance of Five Hundred Forty-Four and 52/100 (544.52) feet to a point.

10) S 02°55'37" E by said land of City of Portland a distance of Seventy-Five and 57/100 (75.57) feet to a point.

11) S 16°16'41" E by said land of City of Portland a distance of Ninety-Seven and 28/100 (97.28) feet to a point.

12) S 21°57'26" E by said land of City of Portland a distance of Seventy-Five and 78/100 (75.78) feet to a point.

13) S 26°42'50" E by said land of City of Portland and land depicted as Land Proposed for Conveyance to City of Portland (11,714 s.f.) on said Riverwalk Subdivision Plan a distance of One Hundred Twenty and 38/100 (120.38) feet to a point.

14) N 67°31'46" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Fifty and 73/100 (50.73) feet to a point.

15) N 74°57'11" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Twenty-Seven and 25/100 (27.25) feet to a point.

16) N 82°42'53" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Thirty and 98/100 (30.98) feet to a point.

17) S 57°41'42" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of One Hundred Twenty-Nine and 99/100 (129.99) feet to a point and land depicted as Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) on said Riverwalk Subdivision Plan.

18) S 05°41'39" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of Fifty-Three and 28/100 (53.28) feet to a point.

19) S 12°34'45" W by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.

20) S 54°10'20" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of One Hundred Ten and 21/100 (110.21) feet to a point.

21) S 59°34'29" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of Twenty-Eight and 61/100 (28.61) feet to a point and land depicted as Land Proposed for Conveyance to City of Portland (46,012 s.f.).

22) S 14°07'58" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Forty-Seven and 20/100 (47.20) feet to a point.

23) S 20°34'09" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Sixty-Six and 74/100 (66.74) feet to a point.

24) S 01°32'31" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Seventy-Seven and 90/100 (77.90) feet to a point.

25) S 27°16'40" E by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Sixty and 84/100 (60.84) feet to a point.

26) S 55°18'28" E by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Eleven and 40/100 (11.40) feet to a point and the northwesterly side of Lot 1 as depicted on a plan entitled "Presumpscot River Place III" recorded in said Registry in Plan Book 202, Page 650.

27) S 31°28'15" W by said Lot 1 a distance of One Hundred Seventeen and 43/100 (117.43) feet to the point of beginning.

Bearings are based on true north.

The above described parcel is a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed TOGETHER WITH, a certain easement located on the northerly side of but not adjacent to Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

A thirty (30) foot wide strip of land, the centerline of which begins at a point lying N 19°30'58" W a distance of Thirty-Seven and 50/100 (37.50) feet from the northeasterly corner of the second parcel conveyed to the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276, with said centerline continuing S 70°29'02''W to the easterly sideline of a road to be constructed by Grantor and referred to as "Road A" on preliminary concept plans for the development of Grantor's property, as such road is actually built.

The easement shall be appurtenant to Grantee's above described premises (Parcel One herein). The easement shall be for the purpose of providing a gravel emergency access road (public or private), as may be required by the City of Portland pursuant to Grantee's development of the dominant tenement. Grantor agrees to extend such easement rights to the general public, as necessary, by separate easement deed. In the event that Grantee is not required to construct such emergency access road, as a condition of site plan approval, subdivision approval or any conditional zone agreement that Grantee may enter into with the City of Portland to develop the dominant tenement, all rights of Grantee and his successors in and to the easement created hereby shall be promptly terminated, and Grantee shall record an instrument in the Cumberland County Registry of Deeds confirming the termination of such easement rights.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a portion of a certain culvert easement, benefiting the City of Portland, located on the northeasterly sideline of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, and more particularly bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet from the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) N 55°52'57" W by said Hope Avenue a distance of Thirty-One and 95/100 (31.95) feet to a point.

2) N 06°46'58' W a distance of Eighty and 00/100 (80.00) feet to a point.

3) S 85°29'48" E a distance of Thirty- Five and 69/100 (35.69) feet to a point.

4) S 06°46'58" E a distance of Eighty and 18/100 (80.15) feet to a point.

5) S 31°28'15" W a distance of Seventeen and 51/100 (17.51) feet to a point and said Hope Avenue.

Bearings are based on true north.

The above described portion of the culvert easement contains 3,083 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel,

all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain drainage easement, benefiting the City of Portland, adjoining the above referenced culvert easement, shown as "City of Portland Drainage Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, being thirty and 00/100 (30.00) feet in width, beginning near the northeasterly corner of the above described culvert easement and continuing northeasterly across the above described parcel. The center of said drainage easement follows the center of the naturally occurring drainage course, which course may vary from time to time. The easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain Portland Water District Easement, recorded in the Cumberland County Registry of Deeds in Book 2267, Page 257.

PARCEL TWO

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on a line of the remaining land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point of beginning lying N 62° 51'18" W a distance of One Hundred Twenty-Nine and 32/100 (129.32) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

1) N 59°34'29" W by said remaining land of Adam and Wolf a distance of Twenty-Eight and 61/100 (28.61) feet to a point

2) N 54°10'20" W by said remaining land of Adam and Wolf a distance of One Hundred Ten and 21/100 (110.21) feet to a point.

3) N 12°34'45" E by said remaining land of Adam and Wolf a distance of a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.

4) N 05°41'39" W by said remaining land of Adam and Wolf a distance of Fifty-Three and 28/100 (53.28) feet to a point.

5) S 57°41'42" E a distance of Twenty-One and 28/100 (21.28) feet to a point.

6) S 39°27'41" E a distance of Sixty-Six and 70/100 (66.70) feet to a point.

7) S 10°53'57' E a distance of One Hundred Eighty-Two and 18/100 (182.18) feet to the point of beginning.

Bearings are based on true north.

Being the same premises conveyed to Grantor and Grantee herein by the City of Portland, by deed of even or recent date herewith, to be recorded at the Cumberland County Registry of Deeds. The above described parcel is a portion of land formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

Meaning and intending to convey, and hereby conveying, all and the same premises described in the Deed of Sale by Personal Representative of the Estate of Robert Lincoln Adam to Estelle Estates, LLC dated November 19, 2018 and recorded in the Cumberland County Registry of Deeds in Book 35303, Page 331.

IN WITNESS WHEREOF, ESTELLE ESTATES, LLC has executed, acknowledged and delivered this Quitclaim Deed by and through Paul F. Driscoll, its Vice President, on this 17th day of June, 2022, hereunto duly authorized.

ESTELLE ESTATES, LLC

Witness

By: _____

Paul F. Driscoll
Its Vice President

[Acknowledgment Located on Following Page]

STATE OF MAINE
Cumberland, ss.

June 17, 2022

Personally appeared the above-named Paul F. Driscoll, Vice President of Estelle Estates, LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of Estelle Estates, LLC.

Before me,

Jamee McCormack

~~Notary Public~~/Attorney-at-Law

Jamee McCormack

Drew Olehowski

From: Mark McClure <mark@genxcp.com>
Sent: Wednesday, September 6, 2023 2:04 PM
To: Greg Shinberg
Cc: Jon Whitten, Jr.; Drew Olehowski
Subject: Re: Authorization letter for Shinberg Consulting

I hereby authorize Greg Shinberg as my designated agent for the approvals of Presumpscot Woods.

Thank you

Mark McClure
Managing Partner
GenX Capital Partners LLC
www.GenXCP.com
214-417-1218

From: Greg Shinberg <gls@shinbergconsulting.com>
Sent: Wednesday, September 6, 2023 1:55:38 PM
To: Mark McClure <mark@genxcp.com>
Cc: Jon Whitten, Jr. <jwhitten@haleyward.com>; Drew Olehowski <dolehowski@haleyward.com>
Subject: Authorization letter for Shinberg Consulting

Hi Mark,

Please send an email that designates Greg Shinberg of Shinberg Consulting as the authorized agent for local and state agencies for the approvals for Presumpscot Woods.

Greg Shinberg
Owner, Shinberg Consulting, LLC
gls@shinbergconsulting.com
Mail: PO Box 4424, Portland, ME 04101
Office: 181 State Street, Suite 303, Portland, ME 04101
Tel: (207) 772-7070
Cell: (207) 653-7510



Warning: The sender of this message could not be validated and may not be the actual sender.

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TO HAVE AND TO HOLD the aforegranted and bargained premises, with all the privileges and appurtenances thereof to the said Central Maine Power Company, its successors and assigns, to its and their use and behoof forever. And I do covenant with the said Grantee, its 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 Grantee to hold as aforesaid; and that I and my heirs, shall and will warrant and defend the same to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, I, the said Lester F. Smith

and I, Mildred L. Smith , wife of the said Lester F. Smith

joining in this deed as Grantor , and relinquishing and conveying my rights by descent and all other rights in the above described premises, have hereunto set our hand(s) and seal(s) this 28th day of November , in the year of our Lord one thousand nine hundred and fifty-five.

Signed, Sealed and Delivered
in presence of

Arline W. Smith

Lester F. Smith

Lester F. Smith

Mildred L. Smith

FLORIDA
STATE OF [redacted] ss. November 28, 1955.
COUNTY OF PINELLAS

Personally appeared the above named Lester F. Smith and Mildred L. Smith

and acknowledged the above instrument to be their free act and deed.

NOTARY PUBLIC STATE OF FLORIDA AT LARGE

DOCUMENTARY

Notary Public, State of Florida at Large.
My Commission Expires September 1, 1958.

Before me,

Justice of the Peace
Notary Public

Information for Grantee's File. Do Not Record. Consideration
W. O. Check No. P. P. O.
REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE DEC 30 1955
Received at 9 H — M A.M. and recorded in
BOOK 2267 PAGE 256 Register

KNOW ALL MEN BY THESE PRESENTS, That Philip L. Hamlin, of Portland in the County of Cumberland and State of Maine, in consideration of One Dollar ($1.00) and other valuable considerations paid by Portland Water District, a corporation organized and existing under the laws of the State of Maine and located at Portland in the 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 Portland Water District, its successors and assigns forever, the following described property:

Hamlin to Portland Water District

The right perpetually to enter at any and all times upon three (3) certain strips of land situated partly in said Portland and partly in Falmouth in said County of Cumberland and State of Maine, being a part of the land conveyed to the Grantor by Harold L. Carter by deed dated May 8, 1946, recorded in Cumberland County Registry of Deeds in Book 1819, Page 249, to which deed reference is hereby made for a more particular description of said land, the first of said strips being fifty (50) feet in width and lying equally on either side of the following described center line, namely, twenty-five (25) feet in width on either side of said center line and its projection at both ends:
Beginning at a point in the dividing line between said land

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of the Grantor and land of Harold W. Stevens, said point being distant Westerly along said dividing line, twenty-five (25) feet from the Westerly sideline of a certain right-of-way conveyed by the Grantor to Central Maine Power Company by deed dated February 10, 1954, and recorded in said Registry of Deeds in Book 2167, Page 435; thence N. 38° W. parallel to and distant twenty-five (25) feet Westerly from the Westerly sideline of said Central Maine Power Company right-of-way and the Northwesterly extension thereof five hundred eighty-five (585) feet, more or less, to a stake (said stake being hereinafter referred to as Stake B); thence N. 21° 27' E. across the dividing line between the Town of Falmouth and the City of Portland and across said Central Maine Power Company right-of-way one thousand seventy-nine and seven tenths (1,079.7) feet, more or less, to an iron pipe; thence N. 5° 49' W. fifty (50) feet, more or less, to the Southerly side line of a certain lot or parcel of land conveyed by the Grantor to Maine Turnpike Authority by deed dated June 25, 1954, recorded in said Registry of Deeds in Book 2181, Page 423.

Also the right to enter upon a triangular strip adjacent to said first described strip and more particularly bounded and described as follows: Beginning in the Easterly side line of said first described strip at a point opposite Stake B hereinabove described; thence N. 21° 27' E. along the Easterly sideline of said first described strip across the dividing line between the Town of Falmouth and the City of Portland two hundred thirty-four (234) feet; thence S. 8° 16½' E. across said dividing line between the Town of Falmouth and the City of Portland four hundred six (406) feet, more or less, to the Easterly sideline of said first

described strip; thence N. 38° W. along the Easterly sideline of said first described strip two hundred thirty-four (234) feet to the point of beginning.

The second of said strips also being fifty (50) feet in width and lying equally on either side of the following described center line, namely, twenty-five (25) feet in width on either side of said center line and its projection at both ends: Beginning in the Northerly sideline of said Maine Turnpike Authority land at its point of intersection with the Northerly extension of the center line of the first described strip; thence continuing N. 5° 49' W. forty (40) feet, more or less, to an iron pipe, said iron pipe being distant twenty-five (25) feet Easterly from the Easterly sideline of land of Frederick R. Pride, et al.; thence N. 25° 01' E. parallel to and distant twenty-five (25) feet Easterly from the Easterly sideline of said Pride land five hundred (500) feet, more or less, to a stake (said stake being hereinafter referred to as Stake C).

The third of said strips also being fifty (50) feet in width and lying ten (10) feet on the Northwesterly side and forty (40) feet on the Southeasterly side of the following described center line and its projection at both ends: Beginning at a point in the Westerly sideline of the first described strip, said point being distant Northerly along the Westerly sideline of said first described strip one hundred forty (140) feet from the dividing line between said land of the Grantor and said land of Harold W. Stevens; thence Southwesterly parallel to and distant one hundred forty (140) feet Northwesterly from said Stevens land nine hundred fifty (950) feet, more or less, to Carter Street, so-called, as shown on Plan of Land of Philip E. Hamlin, dated March 25, 1953, made by Myron U. Lamb, recorded in Cumberland County Registry of Deeds in Plan Book 44, Page 37.

And to construct and perpetually maintain through and across said strips conduits or pipe lines for conveying water and to lay, relay, repair, maintain and remove water pipe or pipes upon or under said strips with all necessary fixtures and appurtenances together with the right at all times to make connections with said conduits or pipe lines to land adjoining said strips by means of pipes or services; to trim, cut down and remove bushes and trees and to remove grass and crops growing on said strips to such extent as in the judgment of the Grantee is necessary for any of the above purposes and to enter upon said strips at any and all times for any of the foregoing purposes; reserving to the Grantor, his heirs and assigns, the use and enjoyment of said strips for such purposes only as will in no way interfere with the perpetual use thereof by the Grantee, its successors and assigns, for the purposes above mentioned, provided that no building or any kind of permanent structure shall be erected on said strips by the Grantor, his heirs and

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assigns, and that the Grantor, his heirs and assigns, shall not remove earth from said strips or place fill thereon without the written permission of the Grantee; provided further, however, that the Grantor, his heirs and assigns, shall have the right to lay out and construct a road or street over and along the third strip hereinabove described, and to make any customery use of said strip as a public street.
Together with the right perpetually to enter at any and all times for any of the foregoing purposes upon that portion of said Carter Street as shown on the above mentioned Plan, extending from the Southwesterly terminus of the third strip of land hereinabove described in a Southwesterly direction a distance of nine hundred (900) feet, more or less, to Summit Street.

Also hereby conveying a strip of land situated in said Falmouth and also being a portion of the land conveyed to the Grantor by Harold L. Carter by said deed dated May 8, 1946,

recorded in said Registry of Deeds in Book 1819, Page 249, said strip being fifty (50) feet in width and lying equally on either side of the following described center line, namely twenty-five (25) feet in width on either side of said center line and its projection at both ends: Beginning at Stake C hereinabove described; thence N. 25° 01' E. parallel to and distant twenty-five (25) feet Easterly from the Easterly sideline of said Pride land three hundred eighty-five (385) feet, more or less, to a stake on the Southerly bank of the Presumpscot River; thence continuing N. 25° 01' E. parallel to and distant twenty-five (25) feet Easterly from the Easterly sideline of said Pride land to the center of said Presumpscot River and land of Nathan S. Clifford, et al.

The above described courses are magnetic and as of the year 1955.

This conveyance is made subject to the easement conveyed by the Grantor to said Central Maine Power Company by the abovementioned deed dated February 10, 1954, recorded in Cumberland County Registry of Deeds in Book 2167, Page 435.

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

AND I do COVENANT with the said Grantee, its successors and assigns, that I am lawfully seized in fee of the premises; that they are free of all incombrances; that I have good right to sell and convey the same to the said Grantee to hold as aforesaid; and that I and my Heirs, shall and will WARRANT AND DEFEND the same to the said Grantee, its successors and assigns, forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, the said Philip E. Hamlin and Elizabeth G. Hamlin, wife of the said Philip E. Hamlin, joining in this deed as Grantor, and relinquishing and conveying her rights by descent and all other rights in the above described premises, have hereunto set their hands and seals this 30th day of December in the year of our Lord one thousand nine hundred and fifty-five.



Signed, Sealed and Delivered
in Presence of:

Edward J. Norris — Philip E. Hamlin

to both — Elizabeth G. Hamlin

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STATE OF MAINE
CUMBERLAND, SS. December 30, 1955

Personally appeared the above named Philip E. Hamlin and acknowledged the above instrument to be his free act and deed.

Before me,
Edward J. Morris
Justice of the Peace

REGISTRY OF DEEDS
CUMBERLAND COUNTY MAINE
Received DEC 30 1955
at 4 H 36 M P M, and recorded
in BOOK 2267 PAGE 257
Attest: Robert V. Cram
Register

1200 7-53 2000

PERMIT OR EASEMENT FOR POLE LOCATIONS ON PRIVATE PROPERTY

Hinman to Central Maine Power Co

Permit

KNOW ALL MEN BY THESE PRESENTS, That Ethel C. Hinman

of West Newton in the County of Middlesex and State of Massachusetts, in consideration of One Dollar and other valuable consideration, paid by Central Maine Power Company, a Maine corporation of Augusta, Maine, the receipt whereof is hereby acknowledged, does hereby grant to the Central Maine Power Company, its successors and assigns, the right to set and maintain Two poles over and across my land situated in the Town of No. Bridgton County of Cumberland said State, together with fixtures and wires connecting to convey electricity to my residence and also the right to attach wires and appliances for guying from said poles where necessary to and into my land, the location of the poles to be as follows:

One pole Northwesterly from pole #6, as now staked in Central Maine Power Compwny's so called "Wells Line", and to be numbered #7. Also one pole Southeasterly from said pole #7 to be known as 7.1.

Also with the right to enter upon my said land for the purpose of trimming and cutting such tree or trees as may in the judgment of said Central Maine Power Company, its successors or assigns, interfere with or endanger said electric lines or their operation.

IN WITNESS THEREOF, the said Ethel C. Hinman and wife of the said joining in this right and easement as grantor and relinquishing and conveying her rights by descent and all other rights in the above described easement, have hereunto set her hand (s) and seal (s) this third day of September 1955.

Signed, Sealed and Delivered
in the presence of

O. E. Durgin

Ethel C Hinman

STATE OF MAINE,

Cumberland ss. September 3, 1955

Personally appeared the above named Ethel C. Hinman and acknowledged this instrument to be her free act and deed, before me,

O. E. Durgin
Justice of the Peace.

(Note: Use this form when one customer only is involved).

REGISTRY OF DEEDS, CUMBERLAND COUNTY, MAINE DEC 30 1955
Received at 9 H — M A M, and recorded in
BOOK 2267 PAGE 260 Robert V. Cram Register

PRESUMPSCOT WOODS CONDOMINIUM
Portland, Cumberland County, Maine

DECLARATION OF CONDOMINIUM

338 FALMOUTH FORESIDE PARTNERS LLC, a Maine limited liability company with a principal place of business located Falmouth, County of Cumberland and State of Maine (together with its successors and assigns, the "Declarant"), being the owner of that certain real property located at 0 Hope Avenue, Portland, Cumberland County, Maine, as more fully described hereinafter, by duly executing and recording this Declaration, does hereby submit said land, together with the buildings and improvements now or to be hereafter erected thereon, and all easements, rights and appurtenances belonging thereto, excepting and reserving such rights and interests reserved by and to the Declarant hereunder (the "Property"), to the provisions of Title 33 Maine Revised Statutes, Chapter 31, §§ 1601-101, *et seq.*, as now and as may be hereinafter amended (the "Condominium Act"), and does hereby declare and create, with respect to the Property, a condominium governed by and subject to the provisions of the Act. To that end, the Declarant does hereby declare and provide as follows:

1. Name of the Condominium; Defined Terms. The name of the condominium created shall be the PRESUMPSCOT WOODS CONDOMINIUM (the "Condominium"). Capitalized terms used herein, if not defined herein, shall have the meanings defined in the Act or in the Association's Bylaws.

2. Organization of Owners. The organization through which the Unit Owners will manage and regulate the Condominium is the PRESUMPSCOT WOODS OWNERS ASSOCIATION, a Maine non-profit corporation governed by Bylaws of near or even date and referenced herein (the "Association" and the "Bylaws," respectively). Said Bylaws are not incorporated into this Declaration and therefore may be amended pursuant to the terms of the Bylaws and without complying with the requirements for amending this Declaration by its terms or pursuant to the Act. Said Bylaws establish an association of which all Owners shall be members and in which such Owners shall have a membership interest for voting, assessment, and all other purposes in proportion to the percentage of Undivided Interest in the Common Elements to which they are entitled hereunder, pursuant to and in accordance with the provisions of the Act. The names of the original Declarant-appointed members of the Association's Executive Board are as follows:

_____, _____ and _____

The Declarant hereby reserves the right to appoint and control the Executive Board of the Association for a period of time, as follows: during the period from the date of the first conveyance of a Unit to a third party other than a successor Declarant until sixty (60) days after the

conveyance to third-party purchasers by the Declarant or successor Declarant of seventy-five percent (75%) of the Units that Declarant or successor Declarant is allowed to create pursuant to its reserved development rights, or if sooner, seven (7) years from the date of the first conveyance of a Unit to a third party other than the Declarant (the "Transition Date"), there shall be three (3) Board Members so appointed by the Declarant, its successors and assigns. Upon any vacancy existing in such Board, its or their successor(s) prior to the Transition Date shall be appointed solely by the Declarant, its successor and assigns. On or before the Transition Date, a special meeting of the Unit Owners shall be held for the purpose of electing five (5) Board Members, as described in the Bylaws; one of the five (5) member Board shall be appointed by the Declarant and the four (4) remaining Board members shall be at-large Board members appointed by vote of all the Unit Owner, all as more specifically set forth in the Bylaws.

3. Description of the Land; Plats and Plans. The Land portion of the Property comprising the Condominium (the "Land") is that certain parcel of land situated at 0 Hope Avenue, Portland, Cumberland County, Maine, being described on Schedule A attached hereto. The Land is subject to such rights, easements, restrictions and encumbrances recited in Schedule A; and the rights and easements established herein. The Land is additionally subject to such rights, interests and easements as have been herein reserved to the Declarant, INCLUDING WITHOUT LIMITATION DECLARANT'S DEVELOPMENT RIGHTS AND SPECIAL DECLARANT RIGHTS, all of which rights, interests and easements shall, in all instances, be exercisable by the Declarant and its successors or assigns. The Condominium is comprised of the Land and includes sixty (60) Units (the "Units") hereby created. Recorded herewith is a certain site plan or plat (the "Condominium Plat" or "Plat") entitled "_____" (__ Sheets) prepared by _____ last revised on _____, 2023, depicting the Land and the location and dimension of the improvements thereon. Also recorded herewith are certain plans (the "Condominium Plans" or "Plans") entitled "_____" (__ Sheets) prepared by _____ and dated _____, 2023, depicting the Units, their designated Unit numbers, horizontal Unit boundaries with reference to established datum, the location and dimensions of vertical Unit boundaries, Common Elements, and certain Limited Common Elements appurtenant to certain Units (such as parking spaces, balconies, and storage closets).

4. Description of the Buildings. As described above, the Condominium consists of sixty (60) residential townhouse units in twelve (12) two-story tri-plex buildings and twelve (12) two-story duplex buildings (each, a "Building", and collectively the "Buildings"). The Units are listed on Schedule B attached hereto, along with each Unit's appurtenant undivided percentage interest ("Undivided Interest") in the Common Elements of the Condominium.

5. Descriptions of the Units and Their Boundaries. Units in the Condominium are defined as those physical portions of the Condominium designated for separate ownership hereunder, or in any amendment hereto. The Units, their respective boundaries and the appurtenances thereof are as hereinafter delineated:

(a) Boundaries of Units. The boundaries of each Unit created under this Declaration are generally shown on the Condominium Plat and Plans, and shall consist of:

(1) *Horizontal Boundaries*: The general upper and lower horizontal boundaries of each Unit are generally the following boundaries extended to an intersection with the vertical (perimeter) boundaries:

i. Upper Horizontal Boundaries: The planes formed by the bottom sides of the roof rafters of the Unit's Building.

ii. Lower Horizontal Boundaries: The lower horizontal boundary of each Unit is the final graded physical surface of the earth, whether natural or disturbed, situated below the Unit's Building, approximately as shown on the Plat and Plans.

(2) *Vertical (perimeter) Boundaries*: The vertical boundaries of the Unit are generally the vertical planes at the interior edge of each exterior wall (including party walls) stud line, which includes the exterior back surfaces of the sheetrock of all walls bounding the unit, extending to intersections with each other and with the upper and lower boundaries. The vertical boundary lines also specifically include the exterior surface of doors, garage doors, windows, sliding glass doors, storm windows, and glass walls.

A Unit does not include: the earth and land underlying a Unit's lower horizontal boundary and any improvements therein from time to time; any pipes, ducts, cables, electrical and transmission wires and conduits, distribution popes and water and sewer utility lines which serve more than one Unit or the Common Elements (excepting equipment owned by public and municipal utilities) up to the valve, shut off or switch being a part of the Unit; the driveway leading to the Unit garage from the common road.

(b) Relocation and Subdivision. Relocation of boundaries between Units is permitted by amendment to the Declaration in compliance with the provisions of the Condominium Act. The subdivision of Units is not permitted.

(c) Easements. Each Unit and the Common Elements shall have an easement for lateral and subjacent support from the adjacent Unit or Units and the Common Elements, and shall have the benefit of the easement for encroachments established under Section 1602-114 of the Condominium Act. In addition, each Unit Owner has an unrestricted, perpetual right of ingress and egress to their Unit across the Common Elements, which automatically transfers with a transfer of title to the Unit. Any conveyance, encumbrance, judicial sale, or other transfer (whether voluntary or involuntary) of an interest in the Common Elements shall be void unless the Unit to which that Common Element interest is allocated is also transferred.

(d) Condominium Units Subject to Eligibility Restrictions. In accordance with Section 18.2 of Chapter 14 of the of the City of Portland's Code of Ordinances in effect as of this date (the "Portland Code"), Units

_____ shall be designated as a Workforce Housing Units for Sale, as that term is defined at Article 3 of the Portland Code (the "Workforce Units"). Therefore, the Workforce Units shall be (i) sold at a purchase price which is affordable to a household earning 80% or less of average median income ("AMI") for greater Portland; (ii) sold only to a household earning 80% or less of AMI or to another authorized owner as determined by the Portland Code; and (iii) these restrictions shall be recorded in the deed from Declarant conveying the Workforce Units and/or in other legally binding agreements, as may be required by the City of Portland, including one or more Affordable Housing Agreements, by and between the Declarant and the City of Portland, and executed if necessary by the Association, which shall be recorded in the Cumberland County Registry of Deeds. Declarant and the Association shall cooperate with the City of Portland's verification processes, and shall, together with any prospective buyer, provide the City with sufficient information to determine any prospective buyer's eligibility, as well as meet any additional requirements as put forth in the applicable Affordable Housing Agreements.

Responsibilities for the maintenance of the Unit and Common Elements are governed by Article 7 below.

6. Description of Common Elements and Limited Common Elements, Maintenance of Common Elements and Units.

(a) Description of the Common Elements. The common elements of the Condominium (the "Common Elements") consist of the entire Property described in Schedule A exclusive of the Units, all as hereinbefore described and defined (and exclusive of any and all rights, interests and/or easements reserved by the Declarant). Without limitation, the Common Elements include the open and guest parking spaces, bike racks, walkways, sidewalks, roadways, ponds, open spaces, snow storage areas, dumpsters, landscaping, stormwater drainage systems, shared mechanical and utility service lines, and mailboxes, all as shown on the Plat and Plans. The Common Elements shall be subject to the provisions hereof, and of the Bylaws, and the Rules and Regulations as may be promulgated thereunder with respect to the use and maintenance thereof. Notwithstanding the foregoing, the Common Elements shall exclude the exclusive rights, interests and easements reserved to the Declarant by law or by the Declarant in this Declaration.

(b) Limited Common Elements. As provided in Section 1602-102 of the Act:

If any chute, flue, duct, wire, conduit, bearing wall, bearing column or any other fixture lies partially within and partially outside the designated boundaries of a Unit, any portion thereof serving only that Unit is a Limited Common Element allocated solely to that Unit, and any portion thereof serving more than one Unit or any portion of the Common Elements is a part of the Common Elements; and

Any shutters, awnings, window boxes, doorsteps, and all exterior doors and windows or other fixtures designed to serve a single Unit, but located outside the Unit's boundaries, are Limited Common Elements allocated exclusively to that Unit.

Any electrical or mechanical system serving only one Unit shall be a Limited Common Element appurtenant to that Unit.

The Declarant hereby reserves the development right to allocate the exclusive right to use certain other Limited Common Elements to the owner(s) of certain Units, which Limited Common Elements shall be appurtenant to the Unit(s) to which they are allocated. Such Limited Common Elements may include, without limitation, the following: deck's appurtenant to some or all Units, ground floor patio areas outside the rear of some or all Units, the driveway leading from the Condominium's roadway to the garage entrance of each Unit, all as marked on the Plat and Plans. Such allocations by the Declarant of Limited Common Elements, if not established as described above, may be carried out in any Unit Deed or other recorded instrument from the Declarant. The Declarant may, in the future, allocate additional Limited Common Elements by Special Amendment to this Declaration, in Unit Deeds or other recorded instrument, and the Declarant hereby retains and reserves the exclusive right to so establish and allocate future Limited Common Elements.

(c) Outdoor Parking Area; Guest Parking.

The outdoor parking areas shall consist of twenty-seven (27) parking spaces (the "Outdoor Parking Spaces") as shown on the Plat and Plans. _____ (__) Outdoor Parking Spaces shall be assigned as Limited Common Elements to individual Units, with each parking space assigned to a Unit as shown on the Plat and Plans (the "LCE Parking Spaces"). LCE Parking Spaces may be transferred between Unit Owners pursuant to Section 1602-108(b) of the Act. _____ (__) parking spaces, as shown on the Plats and Plans shall be reserved as Common Elements for use by guests of the Unit Owners (the "Guest Parking").

(i) The Outdoor Parking Spaces shall be used only for the parking of registered and operational private automobiles, motorcycles, and noncommercial vans and trucks and recreational vehicles. No trucks, (except non-commercial pickup trucks), boats, trailers (whether capable of independent operation or attached to an automobile or other vehicle), commercial vehicles, and the like, may be parked in the Outdoor Parking Spaces except with the written consent of the Executive Board.

(ii) A Unit Owner may permit any Unit tenant, guest, invitee or licensee the right to use its assigned LCE Parking Spaces, but all parties using said Outdoor Parking Space shall comply with the provisions relating to such use and occupancy contained in this Declaration, the Condominium Bylaws, and the Rules and Regulations.

(iii) A Unit Owner who permits any Unit tenant, guest, invitee or licensee to use their LCE Parking Space shall be responsible for the compliance by such other user

with provisions of this Declaration, the Condominium Bylaws, and the Rules and Regulations, to the extent the same may be applicable.

(iv) In instances where vehicles using the Outdoor Parking Spaces and other facilities of the Condominium do not comply with this Declaration or the Rules and Regulations, the Executive Board is authorized to allow the towing of the offending vehicles at the expense of the owners of such vehicles.

(v) The Association may further regulate the use of the Outdoor Parking Spaces through the promulgation of Rules and Regulations, from time to time.

7. Maintenance and Repair of Units and Common Elements. Except as otherwise provided in the Act or this Declaration, the Association is responsible for carrying out the operation, maintenance, repair and replacement of the Common Elements, and each Unit Owner is responsible for the operation, maintenance, repair and replacement of his or her Unit and the fixtures, equipment, and appliances therein. Notwithstanding the foregoing, the following shall apply:

(a) The Association shall maintain, repair and replace any portion of a Unit that consists of exterior windows and doors, structural wall, exterior siding or cladding, or other structural element, exterior wall, or interior partition walls. As such, Unit Owners shall not modify, maintain, repair, replace or alter such elements in any manner.

(b) The cost of any maintenance, repair or replacement of any area or component of the Common Elements necessitated or arising from the act or omission of a Unit Owner (or his or her tenant, guest, invitee or licensee) may be assessed exclusively to such Unit Owner, including the cost of insurance deductibles incurred by the Association.

(c) If the Executive Board shall at any time, in its reasonable judgment, determine that any Unit may be in such need of maintenance or repair that the Common Elements may be adversely affected, or that the market value or reasonable enjoyment of one or more other Units may be adversely affected, or that the condition of a Unit or fixtures, furnishings, appliances or equipment therein may be or may become hazardous to any Unit or the occupants, the Executive Board may request in writing that the Unit Owner perform the needed maintenance, repair or replacement or to correct the hazardous condition, and in case such work shall not have been commenced within fifteen (15) days (or such reasonable shorter period in case of emergency as the Executive Board shall determine) of such request and thereafter diligently brought to completion, the Executive Board shall be entitled to have the work performed for the account of the Owner(s) of such Unit and to enter upon and have access to such Unit for that purpose. The cost of such work promptly shall be reimbursed by the Unit Owner to the Association and constitute a lien upon such Unit until paid and the Owner(s) of such Unit shall be personally liable therefore.

(d) The Association shall be responsible for engaging a private trash hauler to pick up trash generated by the Units, the cost of which service shall be a Common Expense.

(e) The Association shall maintain all components of the storm water drainage and management system serving the Property as provided in the "_____" given by Declarant for the benefit of the City of Portland dated _____, and recorded in the Cumberland County Registry of Deeds in Book _____, Page _____, the costs of which maintenance shall be a Common Expense.

8. Undivided Interests. Each Unit shall have an Undivided Interest in the Common Elements in the percentages set forth in Schedule B, which have been rounded to obtain a one hundred percent total for all Units. The Undivided Interests of Units have been determined by the calculating the relative floor areas of the Units. Declarant reserves the right to modify and adjust the Undivided Interests of the Units following the same methodology in connection with exercise by Declarant of its Development Rights pursuant to Section 13 of this Declaration.

9. Other Matters Relating to Condominium Association.

(a) Allocation of Undivided Interests. Each Unit's percentage of the Undivided Interests set forth herein have been, and will be, determined based upon each such Unit's floor area (as measured in square feet), in relation to the aggregate floor area of all Units. Such Undivided Interests shall be used in determining each Unit's Common Expense assessments, voting weight on Association matters for which Unit Owners have a right to vote, distribution of surplus assets, and certain other Association-related matters, all as described more fully in the Association's Bylaws and the Act.

(b) Common Expense Assessments.

(i) Assessments for Common Expenses shall be levied as provided in this Declaration and the relevant sections of the Act and the Association's Bylaws, the terms and provisions of which are incorporated into this Declaration by reference. Such assessments, as well as any late charges, interest, collection costs, attorneys' and paralegals' fees (whether a legal action is filed or not), service fees, charges and fines shall constitute, until paid in full, both the personal obligation of the Unit Owner and a lien against the Unit pursuant to Section 1603-116 of the Act.

(ii) If any Common Expense is caused by the negligence or misconduct of any Unit Owner, the Association may assess that expense exclusively against him or her, and his or her Unit.

(c) Executive Board's Power to Act on Behalf of Association. Except as expressly limited by the Act, this Declaration or the Association's Bylaws, the Executive Board shall be empowered to act on behalf of the Association as described in the Bylaws and Act, including (without limitation) the power and authority to assign its right to collect future Common Expense assessments and other income as security for loans to the Association, and the power to assess Common Expenses benefiting fewer than all the units exclusively against the units benefited.

(d) Notice of Matters Affecting the Condominium. Notice of matters relating to the Condominium shall be given to Unit Owners by the Executive Board by first class U.S. Mail,

postage prepaid, at the Unit (unless the Unit Owner has provided an alternate mailing address in writing to the Association), or by such other means as may be required by law. Notices relating to Condominium meetings shall be provided as set forth in the Condominium Bylaws.

10. Common Easements and Right of Access. To the fullest extent allowed by the Act, each Unit shall have an easement in common with the other Units to use all pipes, wires, ducts, flues, cables, conduits, utility lines, and other Common Elements located in any of the other Units or elsewhere in the Condominium and serving his or her Unit. Each Unit shall be subject to an easement in favor of the other Units to use the pipes, wires, ducts, flues, cables, conduits, utility lines, structural elements, and other Common Elements located in such Unit and serving other Units. The Executive Board, and any of them, any managing agent, and any other person authorized by the Executive Board or by the managing agent, shall have an easement and a right of access to each Unit at reasonable times and upon reasonable notice, except in emergencies, for the purpose of making inspections or for the purpose of correcting any conditions originating in any Unit or threatening another Unit or Common Element or adversely affecting the Common Elements, or for the purpose of obtaining access to, and performing inspections, installations, alterations or repairs on the mechanical, electrical or fire alarm systems and services, exterior walls or structural elements, or any Common Elements in or adjacent to any Unit or elsewhere in the Building(s), or for any other purpose permitted by this Declaration or the Bylaws. In case of an emergency, such right of entry shall be immediate, by any appropriate means, whether or not the Unit occupant is present at the time.

11. Encroachments. If any portion of the Common Elements now encroaches upon any Unit, or if any Unit now encroaches upon any other Unit or upon any portion of the Common Elements, or if any such encroachment shall occur hereafter as a result of (a) alteration or repair to the Common Elements made by the Declarant, or by or with the consent of the Executive Board, or (b) settling of all or any portion of the Building(s), or (c) repair or restoration of the Building(s) or any Unit after damage by fire or other casualty, or (d) condemnation or eminent domain proceedings or (e) immaterial deviations from the Floor Plans, a valid easement shall exist for such encroachment and for the maintenance of the same.

12. Intended Use and Restrictions on Use of the Buildings and Units.
The purposes for which the Buildings and the Units and Common Elements are intended to be used are as follows:

(a) The Units may be used only for residential purposes, subject, in all events, to the further restrictions set forth below in this Section 12, provided, however, that such Units may be used by the Declarant for other purposes pursuant to the provisions of Section 12 and Section 13 below. This restriction shall not be construed to prohibit Unit Owners from leasing their Units, so long as any such leases are in compliance with and adhere to the provisions of this Declaration, the Association's Bylaws, the Rules and Regulations and any pertinent City of Portland Ordinance, and any lessees do so occupy and use the leased premises in accordance with the provisions of the Declaration, the Association and the Rules and Regulations. The Units may also be used for "home office" purposes, so long as no commercial signage is used in connection therewith and no customers, clients or business associates visit the Condominium in connection with such home-office use.

(b) The Units and the Common Elements shall be subject to the restrictions that, unless otherwise permitted in writing duly executed by the Executive Board:

(i) The owner of a Unit may, at their sole cost and expense, if the rights of any other Unit Owner are not materially and adversely affected, and if the structural walls, supports and other structural aspects of the Building are not adversely affected, change or add to the interior partitioning thereof, by adding, modifying, removing or installing non-load bearing walls lying wholly within such Unit; provided, however, that the Executive Board may impose reasonable conditions on such work, and any and all work shall be done in a good and workmanlike manner, pursuant to a building permit validly issued therefor (if required by law). If the foregoing rights are to be exercised by the Owner of a Unit, the prior written approval by the Executive Board of the plans and specifications related thereto must be obtained, which approval shall not be unreasonably withheld, conditioned or delayed.

(ii) Except for up to two (2) dogs, cats, and non-exotic animals that live in an enclosure no larger than three (3) cubic feet (e.g., aquariums, terrariums, bird cages), no animals, reptiles, birds, or pets of any kind shall be raised, bred or kept in the Units or in the Common Elements without the prior written approval of the Executive Board, which approval will be required for each specific animal, reptile or pet. Unit Owners may not keep any poisonous or dangerous animals of any type in their Unit, or in the Common Elements. The Executive Board may impose additional reasonable limits and restrictions on the care of maintenance of pets by Unit Owners through the Rules and Regulations.

(iii) No Unit Owner shall alter his Unit in such a way as to cause unreasonable levels of sound, vibration, light or odors to be transmitted to other Units, the Common Elements or neighboring buildings.

(iv) If any governmental license or permit (other than a Certificate of Occupancy, or a license or permit applicable to the Building as a whole and required in order to render lawful the occupancy of the Building) shall be required for any particular improvement or construction in any particular Unit, and if failure to secure such license or permit would in any way affect any other Unit or the Owner thereof or the Association, the Owner of such particular Unit, at such Owner's expense, shall procure and maintain such license or permit, submit a copy of the same to inspection by the Executive Board, and comply with all terms and conditions thereof.

(v) A Unit Owner shall not place or cause to be placed in or on any of the Common Elements, other than a Limited Common Element, any furniture, packages, bicycles, carriages, baby strollers, or personal property of any nature whatsoever, provided, however, that the Unit Owners have the right to use any bicycle storage facilities, dumpster, trash compactors or trash barrels, if any, located on the Common Elements, but only for ordinary household trash.

(vi) All use and maintenance of the Units shall be conducted in a manner consistent with the reasonable comfort and convenience of the occupants of other Units.

(vii) The Common Elements shall be used only for the furnishing of the services and facilities for which they are reasonably suited and which are incident to the use and occupancy of Units or of the other premises entitled to the use or benefit thereof.

(viii) No nuisances shall be allowed on or in the Condominium, nor shall any use or practice be allowed which is a source of unreasonable annoyance to Unit Owners or which interferes with the reasonably peaceful possession or proper use of the Units by their occupants.

(ix) No Unit shall be rented or let except those pursuant to a written lease, in compliance with applicable Ordinances of the City of Portland, this Declaration, the Bylaws of the Association and the Rules and Regulations, which lease shall specifically provide that the tenant/lessee is subject to the terms of this Declaration, the Bylaws and the Rules and Regulations, and that the Executive Board is delegated the power to (but not the obligation) to evict the tenant/lessee for noncompliance, and a copy of said lease shall be delivered to the Executive Board of the Association.

(x) No immoral, improper, offensive, or unlawful use shall be made of the Condominium, or any part thereof, and all valid laws, zoning ordinances and regulations of all governmental bodies having jurisdiction thereof shall be observed by the Unit Owners and the Association. Violations of laws, orders, rules, regulations or requirements of any governmental agency having jurisdiction thereof, relating to any Unit shall be eliminated by and at the sole expense of the Unit Owner of said Unit and those relating to the Common Elements shall be eliminated by the Executive Board.

(xi) No pictures, advertisements, signs or posters of any kind shall be erected, posted or attached in or on the Units if visible from the exterior of the Units, except those approved in writing by the Executive Board, provided, however, this restriction shall not apply to pictures, advertisements, signs or posters utilized by the Declarant or its agents in selling or leasing the Units.

(xii) Except as allowed by the Rules and Regulations and applicable law with respect to television antennae and satellite dishes, no Unit Owner shall allow the installation of wiring for electrical or telecommunication use, an air conditioning unit or other machine or equipment which protrudes through the walls or the roof of the Buildings or is otherwise visible on the exterior of the Building.

(xiii) No activity shall be done or maintained in any Unit which will materially increase the rate of insurance on any Unit or the Common Elements or result in the cancellation of insurance thereof, provided, however. that any use or activity which will increase the rate of insurance maintained by the Executive Board for the Condominium or by any individual Unit Owner may be permitted by the Executive Board, in the reasonable discretion of the Executive Board, if the Unit Owner conducting such use or allowing such

use to be conducted agrees to conform to any special rules or regulations promulgated by the Executive Board with respect to such use and agrees to pay any and all additional costs associated therewith, including without limitation the increase in the insurance premiums paid by the Association on behalf of the Condominium as a result thereof.

(xiv) Portions of any Unit window treatments visible from the outside of the Building shall be generally white in color, and shall be of a material and style approved in writing by the Executive Board, such approval not to be unreasonably withheld, conditioned or delayed.

(c) Notwithstanding anything to the contrary contained herein, the Declarant may, until all of said Units have been sold by said Declarant, (a) lease Units which have not been sold for any duration but otherwise as per the leasing requirements set forth in this Declaration; or (b) use any Units owned by the Declarant as models for display, as offices and/or as storage areas or for any other uses which it deems necessary or desirable in connection with redecoration and construction in the Units or Common Elements, or the sale or leasing of units. Rental of the Workforce Units by Declarant, if any, shall be rented only subject to the applicable ordinance and regulation of the City of Portland.

13. Development Rights and Other Rights Reserved to the Declarant.

13.1 In addition to all other rights of Declarant reserved hereunder and pursuant to Declarant's right to amend this Declaration so as to develop, construct, and market the Units, Declarant reserves unto itself and its agents, servants, employees, contractors, workmen, work crews, successors and assigns the right and easement to use, occupy, and alter, for construction purposes, all areas of the Property, other than Units and Limited Common Elements already conveyed to third-party buyers, for all purposes necessary or desirable in order to develop, construct and/or manage the Property, and to market and sell the Units. The Declarant further reserves for itself and its successors and assigns the exclusive right to grant easements across any portion of the Property for the installation and use of utilities and for access to and operation of the developments on the Property and the right to grant easements to others to use the Property for access to other property.

Without limiting the generality of the foregoing and in furtherance thereof, the Declarant hereby reserves unto itself and its agents, servants, employees, independent contractors, workmen, work crews, successors and assigns, the following rights over all of the Property subject to this Declaration: the right of access, ingress, and egress over and upon the Property and the Common Elements of the Condominium, including that deemed by the Declarant to be necessary for marketing purposes and for the work of construction, reconstruction, rehabilitation, improvement, and other work in progress or contemplated by Declarant; the right to lay, maintain, repair and replace, construct, and install and connect (or connect with and make use of) all utilities, utility lines, poles, tanks, walls, ducts; conduits, and similar facilities to serve any or all of the buildings and/or Units and the Common Elements, and all conduits, ducts, plumbing, wiring, and other facilities for the furnishing of power, gas, light, master antenna, satellite antenna, cable television, water, air and all sewer and drainage pipes and fire alarms systems to serve any or all of the buildings and/or Units and the Common Elements and facilities; to pass

and repass by foot and vehicle over all driveways, roadways, accessways, and walkways, whether now existing or to be constructed in the future, for all purposes for which driveways, roadways, accessways, and walkways are commonly used, including the transportation of construction materials, equipment, and personnel for the purposes of construction; to construct buildings and improvements on the Property, and to engage in all activities necessary or appropriate to accomplish the same, including without limitation the exclusive right to grant to others including any public utility or authority, easements for the installation and maintenance of utilities; to store construction materials, equipment, and supplies in those portions of the Common Elements and Limited Common Elements; to restrict (for periods of not more than sixteen (16) hours at any time during any day) the use by owners of any Common Elements to facilitate construction or for purposes of safety (provided, of course, no Owner shall be denied at least one means of access to his or her Unit during such periods of restriction); to leave debris resulting from construction in the Common Elements and facilities, provided the same do not endanger safety; to reasonably interrupt for brief intervals of time, water, gas, electric, and other utilities and service provided by such utility lines, pipes, tanks, wells, wires, cables, conduits, and sewage and drainage lines in order to facilitate construction or in order to facilitate the installation of appliances; equipment, or fixtures in the buildings, Units or Common Elements under construction without liability for such interruption of service, provided however that the Declarant shall use reasonable efforts to minimize any such interruption of service; to park vehicles used in connection with the construction work or incident thereto in such a manner as to avoid disruption; and, in general, the right to do all things necessary or desirable in order to construct and complete all of the buildings and/or Units and the Common Elements and facilities in connection therewith.

The Declarant further reserves the exclusive right to use any office area, sitting area or storage area located in the Common Elements and not necessary to serve the Units already sold by the Declarant to third-party buyers, as well as any Unit owned by the Declarant, for storage or as a model, for display, as an office, for purposes of facilitating marketing and sales, as well as the right to park and use one or more vehicles or trailers, for as long as the Declarant owns any Units or holds any Development Rights or Special Declarant Rights. Any such areas exclusively used by the Declarant shall be located either in Unit(s) owned by the Declarant or in the Common Elements of the Building at the ground (i.e., terrace or parking garage area).
The Declarant further hereby expressly reserves the right and easement, for itself and its agents, employee, contractors, or invitees, to utilize any plaza and courtyard area, sidewalks, walkways, hallways, driveways, parking areas, and other Common Elements for suitable access located on the Land, in common with all other Unit Owners.

13.2 The rights and easements reserved by the Declarant in this Section 13 shall be in addition to and not in limitation of, the rights and easements allowed in the Act, reserved by the Declarant in other sections of this Declaration or the Schedules hereto, in the Bylaws, or in any prior-recorded instrument.

13.3 The rights and easements reserved by the Declarant for itself and its successors and assigns in this Declaration shall survive the sale of all of the Units by the Declarant, and are to be deemed to be fully transferable.

13.4 The Declarant, by deed or by separate assignment, shall be entitled to assign, sell, grant or mortgage, any and all of its interests, rights and easements owned by it or reserved herein and in the Bylaws, at any time, and from time to time, to any mortgage holder, person, trust, or entity as may be determined by Declarant. Each Executive Board member, as well as each Unit Owner and mortgagee of an individual Unit (which shall not include a mortgagee of Declarant whose consent is required by agreement), by acceptance and recordation of a deed or mortgage, shall be deemed to have thereby consented to any such assignment, sale, grant or mortgaging of the Declarant's said interests, rights and easements without the necessity of securing any further consent or execution of any further documents by such Executive Board member, Unit Owner or mortgagee (which shall not include a mortgagee of Declarant whose consent is required by agreement). The Executive Board and Owners, at Declarant's request, promptly shall execute whatever confirmatory instruments which Declarant deems appropriate or necessary in order to perfect, carry out, or effectuate the rights and easements reserved by the Declarant in this Declaration and in the Condominium Bylaws. The foregoing shall not apply to any mortgagee of the Declarant.

14. Title to Units. Title to Units may be taken in any form, including without limitation one or more corporations, companies, trusts or partnerships, or in the name of two (2) or more individuals, as tenants in common, joint tenants, or tenants by the entirety or in the name of a fiduciary.

15 Units Subject to Declaration and Association Bylaws. All present and future Owners, tenants, visitors, invitees, licensees and occupants of Units shall be subject to, and shall comply with, the provisions of this Declaration, the Bylaws, and the Rules and Regulations promulgated pursuant thereto, as they may be amended from time to time, and the instruments of record affecting title to the Property including, but not limited to, those instruments of record listed in the Schedules to this Declaration. The acceptance of a deed or conveyance of a Unit or the entering into lease or occupancy of any Unit shall constitute an agreement that the provisions of this Declaration, Bylaws, and the Rules and Regulations promulgated pursuant thereto, as they may be amended from time to time, and the said instruments of record affecting title to the Property, are accepted and ratified by such Owner, tenant, visitor, invitee, licensee or occupant, and all of such provisions shall be deemed and taken to be covenants running with the land and shall bind any person having at any time any interest or estate in such Unit, as though such provisions were recited and stipulated at length in each and every deed, conveyance, or lease thereof. A violation of the provisions of this Declaration, the Deed, the Bylaws, or the Rules and Regulations promulgated pursuant thereto by any tenant, occupant, licensee or invitee shall be deemed a substantial violation of the duties and obligations of an Owner, which shall entitle the Executive Board and any Owner the right to recovery of damages and/or injunctive relief.

16. Amendment of Declaration.

(a) Notwithstanding any contrary or inconsistent provision in this Declaration, for so long as Declarant owns one or more Units in the Condominium or holds any Development Rights or Special Declarant Rights, any amendment to the Declaration which affects a right reserved to the Declarant hereunder or imposes an additional obligation or duty upon the Declarant must be signed by the Declarant or its successors and assigns.

(b) Amendments to this Declaration are governed generally by Section 1602-117 of the Act, this Section 16, and Section 17 below. Except as may be required by the Act, and except as otherwise provided in Section 17 below or in Subsections A or C of this Section 16, this Declaration may be amended by the vote or agreement of Unit Owners representing 67% or more of the Undivided Interests in the Condominium.

(c) Notwithstanding the foregoing, this Declaration may also be amended by Special Amendment as follows: The Declarant, without the consent of any Unit Owner or mortgagee, may execute and record, as long as it owns any Units or holds any Development Rights or Special Declarant Rights, special amendments in order to (i) correct any errors and/or omissions in this Declaration, provided no such special amendment shall materially and adversely affect the rights of any Unit Owner or mortgagee; or (ii) to make this Declaration comply with the provisions of the Act, any other law, code, permit or approval, or the requirements or guidelines of the Federal National Mortgage Association ("FNMA"), the Federal Home Loan Mortgage Corporation ("FHLMC") or any other purchaser, insurer or guarantor of Unit mortgages. Special Amendments may also be executed and recorded as described above in connection with the combination, subdivision, and/or alteration of Units.

(d) Effective Date. Amendments to this Declaration shall be effective upon recording in the Registry of Deeds. As to General Amendments, the recorded version thereof need not include the signatures of Unit Owners agreeing thereto, but rather the recorded instrument need only be signed by an Officer of the Association, as long as such Officer certifies that the required consents described above have been obtained and will be retained with the Association's records for a period of at least six (6) years after recording.

17. Provisions Protecting Rights of Secured Lenders. Subject to the limitations set forth in Section 1602-119(a) of the Act, the following shall apply with respect to the protection of rights of holders of first mortgages on Units ("First Mortgagees") and "Eligible Mortgage Holders" (meaning First Mortgagees who have delivered written notice to the Association by prepaid certified U.S. Mail, return receipt requested, or by delivery in-hand securing a receipt therefore, which notice states the First Mortgagee's name and address, the Unit upon which it holds first mortgage, the Unit Owner's name and address, and that it holds a first mortgage on such Unit).

(a) Notwithstanding anything in this Declaration or in the Bylaws to the contrary, the following provisions shall apply for the protection of First Mortgagees, and shall be enforceable by any First Mortgagee:

(i) In the event that the Unit Owners shall amend this Declaration or the Bylaws to include therein any right of first refusal in connection with the sale of a Unit, such right of first refusal shall not impair the rights of a First Mortgagee to:

(a) Foreclose or take title to a Unit pursuant to the remedies provided in its mortgage; or

(b) Accept a deed (or assignment) in lieu of foreclosure in the event of default by a Unit Owner, or

(c) Sell or lease a Unit acquired by the First Mortgagee through the procedures described in subparagraphs (a) and (b) above.

(ii) As to any conveyance whereby a party who takes title to a Unit through either a deed in lieu of foreclosure or a foreclosure sale duly conducted by a First Mortgagee, such conveyance shall be exempt from any such right of first refusal adopted by the Unit Owners and incorporated in this Declaration or the Condominium Bylaws, and the ownership of the Unit by such party through deed in lieu of foreclosure shall be exempt from any leasing restrictions set forth therein but only for such party's period of ownership.

(b) Any First Mortgagee who obtains title to a Unit by foreclosure shall not be liable for such Unit's unpaid common expenses or other amounts which accrued prior to the acquisition of title to such Unit by such First Mortgagee, except to the extent that such common expenses and/or other amounts are entitled to priority over such First Mortgage under the Act. Liens for any and all Common Expenses, assessments and charges that may be levied by the Association shall be subordinate to the rights of any First Mortgagee pursuant to its mortgage to the extent permitted by applicable Maine law,

(c) A lien for Common Expenses assessments shall not be affected by any sale or transfer of a Unit, except that a sale or transfer pursuant to a foreclosure of a First Mortgage shall extinguish a subordinate lien for assessments which became payable prior to such sale or transfer. Any such sale or transfer pursuant to a foreclosure (1) shall not relieve the prior Unit Owner of a personal liability for any unpaid assessments or other sums owed to the Association, and (2) shall not relieve the purchaser or transferee from liability for, nor the Unit from the lien of, any assessments made thereafter.

(d) As provided in Section 1602-119 of the Act, the Association shall send reasonable prior written notice by prepaid U.S. Mail to Eligible Mortgage Holders of the consideration by the Association of any of the following proposed actions:

(i) The termination of the Condominium pursuant to Section 1602-118 of the Act;

(ii) A change in the percentage of Undivided Interest of a Unit, a change in the boundaries of a Unit, or a subdivision of a Unit, unless carried out by the Declarant pursuant to the terms of this Declaration;

(iii) The merger or consolidation of the Condominium with another condominium;

(iv) The conveyance or subjection to a security interest of any portion of the Common Elements;

(v) The proposed use of any proceeds of hazard insurance required to be maintained by the Association under Section 1603-113, subsection (a) of the Act for purposes other than the repair or restoration of the damaged property;

(vi) The adoption of any proposed Budget by the Executive Board and of the date of the scheduled Unit Owners' meeting to consider ratification thereof with a summary of the proposed Budget to accompany such notice; and

(vii) Any default in the performance or payment by a. Unit Owner of any obligation under the Condominium Declaration or Bylaws including, without limitation, default in the payment of common expense liabilities.

In the event of any proposed actions described in Subsection (d), paragraphs (i), (ii), (ii), (iv) or (v) immediately above, Eligible Mortgage Holders shall have the right (but not the obligation) in place of the Unit Owner to cast the votes allocated to that Unit or give or withhold any consent required of the Unit Owner for such action by delivering written notice to the Association, with a copy to the Unit Owner prior to or at the time of the taking of the proposed action, which notice shall be sent by prepaid certified United States mail, return receipt requested, or by delivery in-hand. Failure of the Eligible Mortgage Holder to so exercise such rights shall constitute a waiver thereof, and shall not preclude the Unit Owner from exercising such right. In the event of any default described in Subsection D, paragraph (7) above, the Eligible Mortgage Holder shall have the right but not the obligation to cure such default.

In addition, an Eligible Mortgage Holder, or its representative, shall have the right to attend Association and Executive Board meetings for the purposes of discussing the matters described in Subsection (d), paragraphs (i) to (vi) above.

(e) In addition to the statutory rights of Eligible Mortgage Holders summarized in Subsection (d) above, and subject in all events to the provisions of the Act and the exercise by Declarant of Development Rights or Special Declarant Rights, unless Unit Owners representing at least two-thirds (2/3) of the Undivided Interest hereunder (or such larger percentage as may be required by law) and at least two-thirds (2/3) of the First Mortgagees holding mortgages on the individual Units of the Condominium have given their prior written approval, neither the Owners nor the Executive Board shall be entitled to:

(i) By act or omission, seek to abandon or terminate the Condominium except in the event of substantial destruction of the Condominium premises by fire or other casualty or in the case of taking by condemnation or eminent domain;

(ii) Change the percentage of Undivided Interest or obligation of any individual Unit for the purpose of: (a) levying assessments or charges or allocating distributions of hazard insurance proceeds or condemnation awards, or (b) determining the voting interest of each Unit;

(iii) Partition any Unit (other than in connection with the subdivision of Units as permitted herein, which shall not require First Mortgagee consent);

(iv) By act or omission, seek to abandon, partition, subdivide, encumber, sell or transfer the Common Elements; provided, however, that the granting of easements for purposes not materially inconsistent with the intended use of the Common Elements by the Unit Owners and the exercise of other actions with respect to granting of special rights of use or Limited Common Elements contemplated herein or in the Condominium Bylaws shall not be deemed an action for which any prior approval of a First Mortgagee shall be required under this Subsection;

(v) Use hazard insurance proceeds for losses to any property of the Condominium (whether of Units or Common Elements) for other than the repair, replacement or reconstruction of such property of the Condominium, except as provided by statute; or

(vi) Terminate professional management and establish self-management of the Condominium.

(f) In no case shall any provision of the Declaration or the Bylaws give an Owner or any other party priority over any rights of a First Mortgagee pursuant to its mortgage in the case of a distribution to such Owner of insurance proceeds or condemnation awards for damages or losses to or a taking of such Unit and/or the Common Elements of the Condominium.

(g) In addition to the statutory rights of Eligible Mortgage Holders summarized in Subsection D above, First Mortgagees, upon request to the Executive Board, will be entitled to:

(i) Written notification from the Executive Board of any default by its borrower who is the Owner of a Unit with respect to any obligation of such borrower under this Declaration or the provisions of the Bylaws which is not cured within sixty (60) days;

(ii) Inspect the books and records of the Association at all reasonable times;

(iii) Receive an audited annual financial statement of the Condominium Association (at its expense) within ninety (90) days following the end of any fiscal year of the Association;

(iv) Receive written notice of all meetings of the Association and be permitted to designate a representative to attend all such meetings;

(v) Receive prompt written notification from the Executive Board of any damage by fire or other casualty to a material portion of the Condominium or the Unit upon which the First Mortgagee holds a mortgage or proposed taking by condemnation or eminent domain of said Unit or the Common Elements of the Condominium;

(vi) Receive written notice of any lapse, cancellation or material modification of any insurance policy maintained by the Association; and

(vii) Receive written notice of any action which requires the consent of a specified percentage of Eligible Mortgage Holders.

(h) No amendment of a material nature to this Declaration will be made unless such is agreed to by Eligible Mortgage Holders who represent at least fifty-one percent (51%) in number of the First Mortgages on the Units that are subject to mortgages held by Eligible Mortgage Holders. A change to any provisions governing the following shall be considered material, unless done in connection with the exercise of the Declarant's Development Rights or Special Declarant Rights:

(i) Voting;

(ii) Assessments, assessment liens or subordination of such liens;

(iii) Reserves for maintenance, repair and replacement of the common areas;

(iv) insurance;

(v) Rights to use of the Common Elements;

(vi) Responsibility for maintenance and repair of the several portions of Property;

(vii) Expansion or contraction of the Condominium or the addition, annexation or withdrawal of property to or from the Condominium;

(viii) Boundaries of any Unit;

(ix) The apportionment of Undivided Interests in the Common Elements;

(x) Convertibility of Units into Common Elements or of Common Elements into Units;

(xi) Leasing of Units;

(xii) Imposition of any right of first refusal or similar restriction on the right of a Unit Owner to sell, transfer, or otherwise convey his/her/their Unit estate; and

(xiii) Any provisions which are for the express benefit of First Mortgagees, Eligible Mortgage Holders or insurers or guarantors of first mortgages on Units.

The Declarant intends that the provisions of this Section 17 and all other provisions of this Declaration comply with the requirements of FHLMC and FNMA with respect to

condominium mortgage loans and, except as otherwise required by the provisions of Act, all questions with respect thereto shall be resolved consistent with that intention. In the event of any conflict between the approval requirements of FNMA, FHLMC, other sections of the Declaration and the Act with respect to any action or non-action to be taken or omitted by the Unit Owners or Executive Board, or with respect to any other matter, the greatest percentage requirement shall control. This Section 17 may be amended only with prior written approval of First Mortgagees representing 67% in number and Undivided Interest of the mortgaged Units in the Condominium and 67% in Undivided Interest of the Unit Owners in the Condominium.

Except as otherwise provided in the Act, any consent of an Eligible Mortgage Holder or First Mortgagee herein provided for shall be deemed given if such mortgagee fails to submit a response to any written proposal for an amendment within sixty (60) days after it received proper notice of the proposal, provided the notice was delivered by certified mail, return receipt requested.

18. Common Expenses.

Until such time as the Association makes a Common Expense assessment, the Declarant shall pay all Common Expenses, as provided in Section 1603-115(a) of the Act. Once a Common Expense assessment is made, Unit Owners shall be liable for Common Expenses as provided in this Declaration, as amended.

(a) Determination of Common Expenses and Fixing of Common Charges. The Executive Board shall prepare a budget (the "Budget") for the Condominium by establishing the Common Expenses expected to be incurred during the ensuing fiscal year, together with a reasonable provision for contingencies and reserves equal to at least ten percent (10%) of the total annual budget (with such exclusions from the calculation as are allowed under secondary mortgage market underwriting standards), and after taking into account any undistributed surplus from prior years (reserves excepted), shall determine the assessment to be made for such fiscal year (herein referred to as "Common Expenses"). The Common Expenses shall include, but in no way be limited to, all such amounts as the Board may deem proper for the operation, maintenance and repair of the Condominium, including, without limitation, the cost of all insurance premiums on all policies of insurance required to be or which have been obtained pursuant to the provisions of this Declaration and adequate reserves to pay for insurance deductibles in the event of a casualty loss, and an amount to make up for any deficit in the Common Expenses for any prior year. The Common Expenses may also include such amounts as may be required for the purchase or lease by the Executive Board, on behalf of all Owners of any Unit which is to be sold at foreclosure or other judicial sale, or otherwise. Unless otherwise determined by the Board, there shall be a single Association Budget each fiscal year which accounts for all of the Condominium expenses and services which benefit, or may benefit, the Units. Examples include electricity for exterior lighting and common areas, exterior maintenance, legal fees, sewer and water fees, landscaping and grounds maintenance, insurance premiums, snow removal, property management fees, operation, maintenance, repair, or replacement of the stormwater drainage system.

Assessments for expenses set forth in the Budget will be based upon each Unit's Undivided Interest in the Common Elements, or otherwise in accordance with benefits received therefrom, in the Executive Board's reasonable discretion, excluding the fees directly associated with the garage parking areas. The LCE Parking Fee shall be sufficient to pay for those expenses specific to the maintenance and operation of the LCE Parking Spaces and shall be allocated to the Units based on the assignment of the LCE Parking Spaces.

Upon adoption, the Executive Board shall then pursue ratification of the Budget at a Special Budgetary Meeting of Unit Owners as provided in Section 1603-103(c) of the Act, and then promptly render statements to the Unit Owners for their respective shares of such assessment, according to the formulas set forth above, and the amount shown on such statement shall, unless otherwise provided therein, be due and payable in equal monthly installments during the fiscal year to which it applies. In the event an annual assessment is not made as above required, an assessment shall be presumed to have been made in the amount of the last prior assessment. In the event that the Executive Board shall determine at any time during any fiscal year that the assessment so made is less than the Common Expenses actually incurred, or in the reasonable opinion of the Executive Board, likely to be incurred, or in the event that the Executive Board shall determine that it is advisable to establish a larger reserve or other fund for projected capital or other expenditures or otherwise, the Executive Board may make one or more supplemental assessments ("Special Assessments") and render such statements as they may deem necessary therefor in the manner aforesaid, and the amount shown in such statement shall be payable and take effect as aforesaid.

(b) Payment and Collection of Common Expenses. The Executive Board shall, so far as reasonably possible, provide for payment of the annual assessment of Common Expenses in monthly installments, in advance. The amount of each such assessment, together with late charges as may be reasonably imposed by the Executive Board, reasonable attorneys' fees (whether or not a legal action is filed), fines, and interest on the assessment at the rate of 18% per annum or as otherwise determined from time to time by the Executive Board, if not paid when due, shall constitute a lien on the Unit and shall be the personal obligation of the Owner.

(c) Default in Payment of Common Expenses. In the event of default by any Unit Owner in paying to the Association the Common Expenses attributable to his Unit, such Unit Owner shall be obligated to pay all expenses, including attorneys' and paralegals' fees (whether or not a legal action is filed), fines, late charges and interest imposed or incurred by the Association in any proceeding brought to collect such unpaid Common Expenses, irrespective of the amount so unpaid. The Executive Board shall have the right to attempt to recover such amounts in an action to recover the same brought against such Unit Owner, or by foreclosure of the statutory lien on such Unit, or in any proceeding wherein the Unit Owner seeks to avoid payment of the Common Expenses due.

(d) Working Capital Fund and Surplus Funds. The Declarant shall establish a working capital fund for the Association. Each Unit's share of the working capital fund shall be collected from the Unit Purchaser upon the initial transfer of the Unit's title from the Declarant to the Purchaser and it shall be transferred to the Association for deposit into a segregated working capital fund. The amount paid by the Unit Purchaser shall be equal to two (2) months of the Unit's

share of the Common Expenses as set forth in the then active Budget, and shall not be considered as advance payment of the normal common expense liability and no Unit Owner shall be entitled to refund of these monies by the Association upon a subsequent conveyance of his Unit or otherwise. Upon transfer of control of the Association to the Unit Owners pursuant to Section 2 above, the Declarant shall pay each unsold Unit's share of the working capital fund to the Association. When any such unsold Unit is sold, the declarant shall be entitled to reimbursement for that Unit's prepaid share. The working capital fund shall not be used for any purposes until after such transfer of control. Any amounts accumulated from assessments for Common Expenses in excess of the amount required for actual Common Expenses shall be added to the working capital fund.

19. Insurance. The Association shall obtain and maintain, to the extent reasonably available, the following insurance policies:

(a) Casualty Insurance. The Executive Board shall obtain and maintain, to the extent reasonably obtainable at reasonable costs and permitted by applicable law, so-called master policies of insurance providing fire-with-extended-coverage and so-called all risk coverage insurance, insuring the Condominium, including, without limitation, the Common Elements, all of the Units with all fixtures therein, all heating and cooling equipment and other service machinery, apparatus, equipment and installations comprising the Common Elements or Units, and also all such portions normally deemed to constitute part of the building and customarily covered by such insurance, but not including any personal property belonging to and owned by individual Unit Owners or tenants, in an amount equal to not less than one hundred percent (100%) of the full replacement value thereof, exclusive of foundations, land and other items normally excluded therefrom without deduction for depreciation, but subject to a reasonable deductible as the Executive Board may determine, and which shall include, if available, so-called Agreed Amount, Inflation Guard, Construction Code and Replacement Cost Endorsements. Any insurance deductible shall be deemed a Common Expense unless such amount may lawfully be allocated or assessed to one or more individual Unit Owner(s). In determining full replacement value, the Executive Board may reasonably rely upon the advice of the insurer or insurance agent. The name of the insured under such policy shall be stated in form, substance and effect similar to the following: "PRESUMPTSCOT WOODS OWNERS ASSOCIATION and its Unit Owners and mortgagees as their interests may appear." Such insurance shall name the Executive Board as Insurance Trustee(s) for the use and benefit of all Unit Owners and their mortgagees as their interests may appear, with losses payable to and adjusted by the Executive Board as Insurance Trustee(s) in accordance with the provisions of these Bylaws and the Act. The Executive Board may insure against such other hazards or risks of casualty as the Executive Board from time to time in its discretion shall determine to be appropriate, including, but not limited to, vandalism, malicious mischief, windstorm and water damage, earthquake, flood and machinery explosion or damage.

(b) Liability Insurance. The Executive Board shall obtain and maintain, to the extent reasonably obtainable at reasonable costs and/or applicable, master policies of insurance with respect to the Common Elements for the benefit and protection of the Association and all Unit Owners for: (i) comprehensive general liability insurance in such limits as the Board may, from time to time, determine but in no case less than $2,000,000/$1,000,000 in coverage, covering the

Association, the Executive Board, the Property Manager, if any, and each Unit Owner with respect to liability arising out of ownership, maintenance or repair of the Common Elements and structural and exterior wall portions of the Units, such insurance containing a "severability of interest" endorsement which shall preclude the insurer from denying the claim of a Unit Owner because of negligent acts of the Association, the Executive Board, the Unit Owner or other Unit Owners, and other provisions commonly referred to as a "Special Condominium Endorsement" or its equivalent; (ii) workmen's compensation and employee's liability insurance; (iii) boiler and machinery insurance in such limits as the Executive Board may, from time to time, determine; and (iv) such other liability insurance as the Executive Board may from time to time deem appropriate and desirable.

(c) Fidelity Coverage. The Executive Board shall obtain fidelity coverage against dishonest acts on the part of the Executive Board, the Property Manager, if any, employees or volunteers responsible for handling funds belonging to Association or administered by the Executive Board.

(d) Directors' and Officers' Liability Insurance. The Executive Board may obtain as a Common Expense, Directors' and Officers' Liability Insurance in such amounts and upon such terms as they deem appropriate.

(e) Executive Board as Insurance Trustee(s). The Executive Board (i) shall have exclusive authority to negotiate all losses as herein provided for, (ii) shall collect and receive all loss insurance proceeds, and (iii) shall hold, use, apply and disburse the same in accordance with the applicable provisions of the Declaration, these Bylaws and the Act for the benefit of the Owners and their respective mortgagees. With respect to losses which affect portions or elements covered by such insurance of more than one Unit and/or the Common Elements to different extents, the proceeds relating thereto shall be used, applied and disbursed by the Executive Board in their judgment in a fair and equitable manner, primarily based upon the relative losses.

(f) Additional Requirements. Insurance policies obtained pursuant to the above shall also provide that:

(i) Each Unit Owner is an insured person under the policy with respect to liability arising out of his ownership of an undivided interest in the Common Elements or membership in the Association;

(ii) The insurer waives its right to subrogation under the policy against any Unit Owner or members of his household;

(iii) No act or omission by any Unit Owner, unless acting within the scope of his authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; and

(iv) If, at the time of a loss under the policy, there is other insurance in the name of a Unit Owner covering the same risk covered by the policy, the Association's policy provides primary insurance.

In the event that any insurance coverage described above is not reasonably available, the Association shall cause notice of that fact to be sent to all Unit Owners, as required by Section 1603-113(c) of the Act.

20. Rebuilding, Restoration and Condemnation.

(a) Casualty Loss. Except as provided in Section 1603-113(h) of the Act, and subject to such statutory provisions, in the event of damage to or destruction of the Condominium as a result of fire or any other casualty, the Executive Board, acting as Insurance Trustee(s) designated herein, shall promptly adjust and collect the loss and disburse the master policy insurance proceeds in appropriate progress payments with appropriate retainage, so as to facilitate and ensure the repair and restoration of the Unit or Units or Common Elements so damaged or destroyed.

The Executive Board may perform emergency work essential to the preservation and safety of the property or the safety of persons, or required to avoid the suspension of any essential service to the Condominium without having first adjusted the loss or obtained proceeds of insurance or otherwise having complied herewith.

The cost of repair or replacement in excess of insurance proceeds and reserves shall be a Common Expense. If there shall have been a repair or restoration pursuant to the foregoing and the amount of insurance proceeds shall have exceeded the cost of such repair or restoration, then the excess of such insurance proceeds, if any, shall be added to the Association's capital expense reserve account or shall be, at the option of the Executive Board, divided among the Owners in proportion to their respective Undivided Interests; provided, however, that no provision herein shall be deemed to give an Owner or any other party priority over any rights of the holder of a first mortgage (if any) on such Owner's Unit pursuant to such mortgage in the case of a distribution to such Owner of insurance proceeds for losses to Units and/or Common Elements. First Mortgagees of Units will be entitled to priority with respect to any insurance proceeds distributed to their mortgagors.

(b) Eminent Domain. In the event of a total or partial taking under the powers of eminent domain, the Owners shall be represented by the Condominium acting through the Executive Board. Eminent domain proceedings and awards shall be governed by Section 1601-107 of the Act.

21. Rules, Regulations, Restrictions and Requirements. The use and occupancy of the Condominium and each Unit shall be restricted to and shall be in accordance with the provisions of this Declaration, the Bylaws and such Rules and Regulations as the Executive Board may adopt, and all applicable laws, ordinances, rules, regulations and requirements of all governmental bodies having jurisdiction over the Condominium or the use and occupancy thereof.

The Executive Board shall have the right at any time and from time to time to adopt, amend and rescind Rules and Regulations governing the operation, appearance and use of the Common Elements and the occupancy of Units.

This Declaration, the Bylaws and the Rules and Regulations, as from time to time amended, may be enforced by the Executive Board, in its discretion. The Executive Board may eliminate any violation, and the cost and expense, including but not limited to attorneys' and paralegals' fees (whether or not a legal action is filed), of eliminating such violation may be chargeable to the Unit Owner who himself or whose family, servants, employees, agents, visitors, lessees, tenants, licensees, or pets are responsible for such violation. Otherwise, the cost of so eliminating a violation shall be a Common Expense. After notice and an opportunity to be heard, the Executive Board may also levy reasonable fines against the Owner for such violations if any such violation is not cured immediately, and such fine shall constitute a portion of such Unit Owner's Common Expense assessment and shall be payable by the Owner upon demand and enforceable by the same means as a Common Expense assessment. For each day a violation continues after notice it may be considered a separate violation, in the discretion of the Executive Board.

In enforcing this Declaration, the Bylaws or the Rules and Regulations, the Executive Board may proceed against the Owner, any tenant, occupant or licensee, or both as the Executive Board, in its sole discretion, may determine.

22. Unit Owner Responsibility. Except as may be otherwise specifically provided in this Declaration, a Unit Owner shall be fully responsible for the acts and omissions, feasance, malfeasance and misfeasance, and all other conduct of his family members, servants, agents, employees, invitees, lessees, tenants, licensees, guests, pets or others upon the property at the behest of the Unit Owner.

23. Enforcement of Charges, Fines, Obligations. Any charge, fine, interest, attorneys' or paralegals' fees or other financial obligation to, of or on any Unit Owner shall constitute a lien upon such Unit and be enforceable to the same manner and extent as for Common Expenses.

24. Attorneys' Fees and Costs. In such case as it is necessary for the Executive Board to engage the services of an attorney, or attorneys, for the purpose of enforcing (whether a legal action is filed or not) against an Owner, tenant, occupant, or other person bound thereby, any provision of the Declaration, the Bylaws, the Rules and Regulations, or obligations thereunder, and/or for the purpose of defending any action brought by such person(s), said Unit Owner, tenant, occupant or other such person shall be liable for, in addition to any other liability, the fees and costs of such attorneys and paralegals in so proceeding thereto, including the fees of all experts engaged in connection therewith. As to Unit Owners, the amount of such fines, fees, interest and costs and attorneys' and paralegals' fees shall constitute a lien upon the Unit enforceable to the same manner and extent as a lien for Common Expenses, and the Unit Owner shall be personally liable therefor.

25. Conflicting Provisions. If any provisions of this Declaration shall be invalid or shall conflict with the Act, as amended, or if any provision of this Declaration conflicts with any other provision thereof or with any provision of the Bylaws, then the following rules of construction shall be used:

(a) In the event of a conflict between the Declaration and said Act, as amended, the provisions of the Act shall control; and

(b) In the event of a conflict between this Declaration and the Bylaws, this Declaration shall control.

26. Invalidity. The invalidity of any provision of this Declaration shall not be deemed to impair or affect in any manner the validity, enforceability or effect of the remainder of this Declaration and, in such event, all of the other provisions of this Declaration shall continue in full force and effect as if such invalid provision had never been included herein.

27. Waiver. No provision contained in this Declaration shall be deemed to have been abrogated or waived by reason of any failure or delay in enforcing the same, irrespective of the number of violations or breaches which may occur.

28. Captions. The captions herein are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Declaration nor the intent of any provision hereof. Terms of gender shall be interchangeable, as shall be terms reflecting the singular and plural.

29. Declarant. The term declarant shall include the Declarant and its successors and assigns. Successors and assigns shall include, but not be limited to, those succeeding to the Declarant's interest by foreclosure, deed in lieu of foreclosure, deed, grant or assignment. Successors and assigns shall not include individual Unit Owners. This Declaration, the Bylaws and Rules and Regulations may not be amended to affect the rights of the Declarant and its mortgagee(s), successors and assigns without the written consent of the Declarant and its mortgagee(s), successors and assigns.

{*signature page follows*}

DRAFT

{*signature page to Condominium Declaration*}

IN WITNESS WHEREOF, 338 FALMOUTH FORESIDE PARTNERS LLC has executed, acknowledged and delivered this Declaration under seal on this ____ day of _____, 2023.

338 FALMOUTH FORESIDE PARTNERS LLC

_____ By:_____

Witness Mark McClure
Its Manager

STATE OF _____ _____ ____, 2023

_____, ss.

Personally appeared the above-named Mark McClure, Manager of 338 Falmouth Foreside Partners LLC, and acknowledged the foregoing Declaration to be his free act and deed in his said capacity and the free act and deed of Cumberland Foreside Partners LLC.

Before me,

_____

Notary Public / Attorney-at-Law

Print Name:_____

Commission expires: _____

DRAFT

SCHEDULE A
Legal Description

Certain lots or parcels of land together with any buildings, improvements and all appurtenances thereof situated in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

PARCEL ONE

A certain lot or parcel of land located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Lot 24" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, recorded in the Cumberland County Registry of Deeds in Plan Book 206, Page 412, being more particularly bounded and described as follows:

Beginning at a point on the northwesterly side of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650, said point of beginning lying N 31º28'15" E by said Lot 1 a distance of Three Hundred Forty-Six and 08/100 (346.08) feet from the northeasterly sideline of Hope Avenue as depicted on said plan of Presumpscot River Place III. Thence:

1) N 58º31'45" W a distance of One Hundred Fifty-Two and 96/100 (152.96) feet to a point.

2) S 75º51'37" W a distance of One Hundred Sixty-Four and 63/100 (164.63) feet to a point.

3) S 39º42'09" W a distance of One Hundred Seventeen and 91/100 (117.91) feet to a point.

4) S 58º31'45" E a distance of Twenty and 00/100 (20.00) feet to a point.

5) S 31º28'15" W a distance of Ninety-Nine and 50/100 (99.50) feet to a point on the northeasterly side of said Hope Avenue.

6) N 55º52'57" W by said Hope Avenue a distance of Ninety and 61/100 (90.61) feet to a point of curvature.

7) Northwesterly by said Hope Avenue following a curve to the left having a radius of Two Hundred Twenty-Five and 00/100 (225.00) feet an arc distance of One Hundred One and 64/100 (101.64) feet to a point and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276.

8) N 19º30'58" W by said land of City of Portland and Lot 1 as depicted on a plan entitled "Riverwalk Subdivision Plan" made by Titcomb Associates dated October 25, 2005, a distance of Eight Hundred Forty-Seven and 44/100 (847.44) feet to a point.

9) N 64º27'37" E by said land of City of Portland a distance of Five Hundred Forty-Four and 52/100 (544.52) feet to a point.

10) S 02º55'37" E by said land of City of Portland a distance of Seventy-Five and 57/100 (75.57) feet to a point.

11) S 16º16'41" E by said land of City of Portland a distance of Ninety-Seven and 28/100 (97.28) feet to a point.

12) S 21º57'26" E by said land of City of Portland a distance of Seventy-Five and 78/100 (75.78) feet to a point.

13) S 26º42'50" E by said land of City of Portland and land depicted as Land Proposed for Conveyance to City of Portland (11,714 s.f.) on said Riverwalk Subdivision Plan a distance of One Hundred Twenty and 38/100 (120.38) feet to a point.

14) N 67º31'46" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Fifty and 73/100 (50.73) feet to a point.

15) N 74º57'11" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Twenty-Seven and 25/100 (27.25) feet to a point.

16) N 82º42'53" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Thirty and 98/100 (30.98) feet to a point.

17) S 57º41'42" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of One Hundred Twenty-Nine and 99/100 (129.99) feet to a point and land depicted as Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) on said Riverwalk Subdivision Plan.

18) S 05º41'39" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of Fifty-Three and 28/100 (53.28) feet to a point.

19) S 12º34'45" W by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.

20) S 54º10'20" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of One Hundred Ten and 21/100 (110.21) feet to a point.

21) S 59º34'29" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of Twenty-Eight and 61/100 (28.61) feet to a point and land depicted as Land Proposed for Conveyance to City of Portland (46,012 s.f.).

22) S 14º07'58" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Forty-Seven and 20/100 (47.20) feet to a point.

23) S 20º34'09" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Sixty-Six and 74/100 (66.74) feet to a point.

24) S 01º32'31" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Seventy-Seven and 90/100 (77.90) feet to a point.

25) S 27º16'40" E by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Sixty and 84/100 (60.84) feet to a point.

26) S 55º18'28" E by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Eleven and 40/100 (11.40) feet to a point and the northwesterly side of Lot 1 as depicted on a plan entitled "Presumpscot River Place III" recorded in said Registry in Plan Book 202, Page 650.

27) S 31º28'15" W by said Lot 1 a distance of One Hundred Seventeen and 43/100 (117.43) feet to the point of beginning.

Bearings are based on true north.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed TOGETHER WITH, a certain easement located on the northerly side of but not adjacent to Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

A thirty (30) foot wide strip of land, the centerline of which begins at a point lying N 19º30'58" W a distance of Thirty-Seven and 50/100 (37.50) feet from the northeasterly corner of the second parcel conveyed to the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276, with said centerline continuing S 70º29'02''W to the easterly sideline of a road to be constructed by Grantor and referred to as "Road A" on preliminary concept plans for the development of Grantor's property, as such road is actually built.

The easement shall be appurtenant to Declarant's above described premises (Parcel One herein). The easement shall be for the purpose of providing a gravel emergency access road (public or private), as may be required by the City of Portland pursuant to Grantee's development of the dominant tenement. Grantor agrees to extend such easement rights to the general public, as necessary, by separate easement deed. In the event that Grantee is not required to construct such emergency access road, as a condition of site plan approval, subdivision approval or any conditional zone agreement that Grantee may enter into with the City of Portland to develop the dominant tenement, all rights of Grantee and his successors in and to the easement created hereby shall be promptly terminated, and Grantee shall record an instrument in the Cumberland County Registry of Deeds confirming the termination of such easement rights.

The above-described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a portion of a certain culvert easement, benefiting the City of Portland, located on the northeasterly sideline of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, and more particularly bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue, said point lying N 55º52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet from the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) N 55º52'57" W by said Hope Avenue a distance of Thirty-One and 95/100 (31.95) feet to a point.

2) N 06º46'58' W a distance of Eighty and 00/100 (80.00) feet to a point.

3) S 85º29'48" E a distance of Thirty- Five and 69/100 (35.69) feet to a point.

4) S 06º46'58" E a distance of Eighty and 18/100 (80.15) feet to a point.

5) S 31º28'15" W a distance of Seventeen and 51/100 (17.51) feet to a point and said Hope Avenue.

Bearings are based on true north.

The above-described portion of the culvert easement contains 3,083 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above-described parcel is conveyed subject to a certain drainage easement, benefiting the City of Portland, adjoining the above referenced culvert easement, shown as "City of Portland Drainage Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, being thirty and 00/100 (30.00) feet in width, beginning near the northeasterly corner of the above described culvert easement

and continuing northeasterly across the above described parcel. The center of said drainage easement follows the center of the naturally occurring drainage course, which course may vary from time to time. The easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above-described parcel is conveyed subject to a certain Portland Water District Easement, recorded in the Cumberland County Registry of Deeds in Book 2267, Page 257.

PARCEL TWO

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on a line of the remaining land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point of beginning lying N 62º 51'18" W a distance of One Hundred Twenty-Nine and 32/100 (129.32) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

1) N 59º34'29" W by said remaining land of Adam and Wolf a distance of Twenty-Eight and 61/100 (28.61) feet to a point

2) N 54º10'20" W by said remaining land of Adam and Wolf a distance of One Hundred Ten and 21/100 (110.21) feet to a point.

3) N 12º34'45" E by said remaining land of Adam and Wolf a distance of a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.

4) N 05º41'39" W by said remaining land of Adam and Wolf a distance of Fifty-Three and 28/100 (53.28) feet to a point.

5) S 57º41'42" E a distance of Twenty-One and 28/100 (21.28) feet to a point.

6) S 39º27'41" E a distance of Sixty-Six and 70/100 (66.70) feet to a point.

7) S 10º53'57' E a distance of One Hundred Eighty-Two and 18/100 (182.18) feet to the point of beginning.

Bearings are based on true north.

The foregoing premises are further subject to the following:

1. Rights and easements granted to Central Maine Power Company by instruments dated February 10, 1954 and recorded in said Registry of Deeds in Book 2167, Pages 432 and 435.
2. Rights and easements granted to Central Maine Power Company and New England Telephone and Telegraph Company by instrument dated December 29, 1955 and recorded in Book 2276, Page 277.
3. Permanent Use Agreement by and between Central Maine Power Company and Robert Adam and Lloyd B. Wolf, dated September 24, 2002 and recorded in said Registry of Deeds in Book 18246, Page 96.
4. Rights and easements set forth in deed dated January 31, 1986 and recorded in said Registry of Deeds in Book 7058, Page 70, to the extent that they may apply.
5. General notes and other matters as shown on the Plan entitled "Plan of Property for Robert Adam, dated August 1978 and recorded in Plan Book 125, Pages 45 and 46.
6. Notes, easements, reservations, exceptions, covenants, conditions and other matters as set forth or depicted on the plan entitled "River Walk Subdivision Plan, dated October 25, 2005 and recorded in plan Book 206, Pages 412 and 413.
7. Restrictions, covenants and conditions as set forth in a Conditional Zone Agreement by and between Lloyd B. Wolf, Robert L. Adam and the City of Portland, dated July 11, 2005 and recorded in said Registry of Deeds in Book 22894, Page 133.
8. Terms and conditions of a Site Location Development Act, Findings of Fact and Order, dated September 16, 2005 and recorded in said Registry of Deeds in Book 23226, Page 170.
9. Rights and easements granted to the City of Portland by instruments dated April 5, 2006 and recorded in said Registry of Deeds in Book 23889, Pages 344, 346 and 349.
10. Rights and easements granted to Robert L. Adam, Lloyd B. Wolf and Golden Eye Corp. by instrument dated May 23, 2006 and recorded in said Registry of Deeds in Book 24046, Page 214.
11. Easement by and between Robert L. Adam, Lloyd B. Wolf, Golden Eye Corp. and the City of Portland, dated July 6, 2004 and recorded in said Registry of Deeds in Book 21610, Page 52.
12. Drainage easement by and between Housing Strategies, LLC and Lloyd B. Wolf and Robert L. Adam, dated October 7, 2005 and recorded in said Registry of Deeds in Book 23250, Page 170.
13. Mortgage from 338 Falmouth Foreside Partners LLC to Estelle Estates, LLC, dated June 16, 2022 and recorded in said Registry of Deeds in Book 39512, Page 48. **[verify still on]**
14. Mortgage from 338 Falmouth Foreside Partners LLC to Titan Funding, LLC, dated _____, 2023 and recorded in said Registry of Deeds in Book _____, Page ___.
15. **Any additional encumbrances added since 10/2023.**

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Meaning and intending to convey, and hereby conveying, all and the same premises described in the Quitclaim Deed from Estelle Estates, LLC to 338 Falmouth Foreside Partners LLC, dated June 17, 2022 and recorded in said Registry of Deeds in Book 39511, Page 313.

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SCHEDULE B
The Mark Condominium

Unit No.	Prorated Square Footage	Percentage Interest	No. of Votes	LCE Parking Space No.*
1			1	
2			1	
3			1	
4			1	
5			1	
6			1	
7			1	
8			1	
9			1	
10			1	
11			1	
12			1	
13			1	
14			1	
15			1	
16			1	
17			1	
18			1	
19			1	
20			1	
21			1	
22			1	
23			1	
24			1	
25			1	
26			1	
27			1	
28			1	
29			1	
30			1	

Continued on next page. . .

Unit No.	Prorated Square Footage	Percentage Interest	No. of Votes	LCE Parking Space No.*
31			1	
32			1	
33			1	
34			1	
35			1	
36			1	
37			1	
38			1	
39			1	
40			1	
41			1	
42			1	
43			1	
44			1	
45			1	
46			1	
47			1	
48			1	
49			1	
50			1	
51			1	
52			1	
53			1	
54			1	
55			1	
56			1	
57			1	
58			1	
59			1	
60			1	
TOTAL		100%	60	

* LCE Parking Spaces shall be added to this Schedule B upon allocation. Holders of LCE Parking Spaces shall be subject to the LCE Garage Parking Fee in addition to their portion of the general Common Expenses.

BYLAWS
(DRAFT)

PRESUMPSCOT WOODS OWNERS ASSOCIATION

BYLAWS (DRAFT)

PRESUMPSCOT WOODS OWNERS ASSOCIATION

ARTICLE I
Introductory Provisions

1.1. Unit Ownership. The land located at 0 Hope Avenue, Portland, Cumberland County, Maine, known or to be known as Presumpscot Woods Condominium, together with all improvements constructed thereon, as described in the Declaration of Presumpscot Woods Condominium (the "Declaration") dated _____, _____, and recorded in the Cumberland County Registry of Deeds in Book _____, Page _____, has been submitted pursuant to the provisions of the Maine Condominium Act, Chapter 31 of Title 33 of the Maine Revised Statutes of 1964, as amended (the "Act"), by said Declaration and declared as a condominium to be known as Presumpscot Woods Condominium (the "Condominium"). These Bylaws have been adopted as required by Section 1603-106 of the Act to govern the Unit Owners' Association of the Condominium (the "Association").

1.2. Name. The name of this Association is PRESUMPSCOT WOODS OWNERS ASSOCIATION.

1.3. Applicability of Bylaws. The provisions of these Bylaws are applicable to the Association and the Condominium and to the use and occupancy thereof. All present and future Unit owners, Mortgagees, lessees and occupants of the Units and their employees and any other persons who may use the facilities of the Condominium in any manner are subject to these Bylaws, the Declaration and to the Rules and Regulations established by the Executive Board as hereinafter set forth.

1.4. Office. The principal office of the Association and the Executive Board shall be located at_____, or at such other location as the Executive Board may designate from time to time.

1.5. Corporation Law. Except as otherwise expressly provided herein, in the Declaration, or in the Act, the Association shall be governed by the provisions of the Maine Nonprofit Corporation Act, Title 13-B of the Maine Revised Statutes of 1964, as amended (the "Nonprofit Corporation Act").

1.6. Nonprofit Status. The Association is not organized for profit and no property or profit thereof shall inure to the benefit of any person except in furtherance of the nonprofit-making purposes of the Association or in the course of acquiring, constructing or providing management, maintenance or care of the Condominium.

1.7. Declaration Controlling. The Declaration shall control and govern these Bylaws. In the event of any conflict or discrepancy between these Bylaws and the Declaration, the provisions of the Declaration shall control and govern.

1.8. Definitions. Capitalized terms used herein without definition shall have the meanings specified for such terms in said Declaration to which these Bylaws pertain or, if not defined therein, the meanings specified or used for such terms in the Act.

ARTICLE II
The Association

2.1. Composition. The Association has been organized prior to the date hereof as a nonprofit corporation pursuant to the Nonprofit Corporation Act. The Association shall consist of all of the Unit Owners acting as a group in accordance with the Act, the Declaration and these Bylaws. The membership of the Association shall consist of all the Unit Owners of the Condominium or, following any termination of the Condominium as provided in Section 1602-118 of the Act, of all former Unit Owners entitled to distributions of proceeds under said Section 1602-118, or their heirs, successors or assigns, but shall not include persons having an interest in a Unit solely as security for an obligation. The terms "member" and "Unit Owner" appearing in these Bylaws are interchangeable.

2.2. Nontransferability of Interests. Except as provided herein or in the Declaration, membership shall not be transferable. The membership of each Unit Owner shall terminate upon a sale, transfer or other disposition, other than by mortgage, of the ownership interest of such Unit Owner in the Property, accomplished in accordance with the provisions of the Declaration, and thereupon the membership and any interest in the Reserve and Capital Funds, as hereinafter defined, and other common funds shall automatically transfer to and be vested in the next Owner or Owner succeeding to such ownership interest.

2.3. Powers and Duties. Subject to the Declaration, the Association shall have the purposes, duties and powers to: (a) adopt and amend these Bylaws and Rules and Regulations for the operation of the Association and Condominium, provided that the initial Executive Board shall have the power to adopt these Bylaws; (b) adopt and amend budgets for revenues, expenditures and reserves and collect assessments for Common Expenses from Unit owners; (c) hire and terminate managing agents and other employees, agents and independent contractors; (d) institute, defend or intervene in litigation or administrative proceedings in its own name on behalf of itself or two or more Unit Owners on matters affecting the Condominium; (e) make contracts and incur liabilities relating to the purposes of the Association stated in these Bylaws and the Declaration; (f) regulate the use, maintenance, repair, replacement and modification of the Common Elements; (g) cause additional improvements to be made as a part of the Common Elements; (h) acquire, hold, encumber and convey in its own name any right, title or interest to real or personal property, provided that Common Elements may be conveyed or subjected to a security interest only pursuant to Section 1603-112 of the Act; (i) grant easements, leases, licenses and concessions through or over the Common Elements; (j) impose and receive any payments, fees or charges for the use, rental or operation of the Common Elements (other than Limited Common Elements) and for services provided to Unit Owners; (k) impose charges for late payment of assessments and, after notice and an opportunity to be heard, levy reasonable fines for violations of the Declaration and of these Bylaws and Rules and Regulations of the Association; (l) impose reasonable charges for the preparation and recordation of amendments to the Declaration, resale certificates required by Section 1604-108 and statements of unpaid

assessments; (m) provide for the indemnification of its officers and Executive Board and maintain directors' and officers' liability insurance; (n) assign its right to future income; (o) lease as lessee any real or personal property, accept assignments of leases of real or personal property, cause improvements to be made as a part of such leased property, regulate the use, maintenance and repair of such leased property, and impose and receive any payments, fees or charges for the use, rental or operation of such leased property; (p) exercise any other powers conferred to it by the Declaration; (q) exercise all other powers that may be exercised in the State of Maine by corporations organized pursuant to the Nonprofit Corporation Act, as the same or its equivalent may be amended or modified from time to time; and (r) exercise any other powers necessary and proper for the governance and operation of the Condominium by the Association.

The foregoing responsibilities shall be performed by the Executive Board or managing agent as more particularly set forth in these Bylaws.

2.4. Meeting of Members. Meetings of the membership shall be held at the principal office of the Association or at such other place as may be specified in the notice of the meeting.

2.5. Annual Meetings. The annual meetings of the members shall be held each year on a date no later than thirty (30) days, and no earlier than sixty (60) days, before the beginning of each fiscal year. In the event that the day for which an annual meeting is scheduled is a legal holiday, then the meeting shall be held on the first day thereafter which is not a legal holiday. At such meetings there shall be elected by ballot of the members an Executive Board in accordance with the provisions of Article III. The members shall also transact such other business as may properly come before them.

2.6. Special Meetings. The Secretary shall call a special meeting of the Association if so directed by resolution of the Executive Board or upon a petition signed and presented to the Secretary by Unit Owners of the Units to which are allocated not less than thirty percent (30%) of the Votes in the Association. The notice of any special meeting shall state the time, place and purpose thereof. Such meeting shall be held no earlier than ten (10) days and no later than forty-five (45) days after receipt by the President of said resolution or petition; provided, however, if the purpose includes the approval and ratification of a budget or further assessment pursuant to subparagraph 5.2.2, or Paragraphs 5.6 or 5.8., such meeting must be held within the time frames provided in subparagraph 5.2.2 for an annual budget and in Paragraph 5.8 for a revised budget or further assessment. No business shall be transacted at a special meeting, except as stated in the said notice, unless with the consent of no less than sixty-five (65%) percent of the Votes in the Association, subject, however, to the provisions of paragraph 2.12 hereof.

2.7. Notice of Meeting. It shall be the duty of the Secretary, or upon his failure or neglect then of any other officer, to give notice of each annual or special meeting, the time and place of the meeting, and the items on the agenda for that meeting, including the general nature of any proposed amendment to the Declaration or these Bylaws, any budget changes and any proposal to remove a member of the Executive Board or officer, to each member of record and to each Eligible Mortgage Holder as long as it is the record holder of a first Mortgage of a Unit.

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With respect to any annual or special meeting such notice shall be so mailed at least ten (10) days but no more than forty-five (45) days prior to the date so set for the meeting.

2.8. Quorum. The presence, either in person or by proxy, of the Owners of the Units to which are allocated at least sixty-six percent (66%) of the Votes in the Association shall be requisite for and shall constitute a quorum for the transaction of business at all meetings of members.

2.9. Adjournment of Meetings. If at any meeting of members a quorum shall not be in attendance, those members who are present may adjourn the meeting to a time not less than forty-eight (48) hours from the time at which the original meeting was called.

2.10. Votes in Association. The Votes in the Association allocated to each Unit are listed in Schedule B to the Declaration. The voting right of each member is equivalent to the Votes allocated to his Unit.

2.11. Voting. The Votes in the Association allocated to a Unit can only be cast as a unit and cannot be split. If a Unit is owned of record by one person, that Unit owner's right to cast all the Votes allocated to that Unit shall be established by the record title to the Unit, provided, however, that such person's spouse may cast the Votes allocated to such Unit if authorized to do so in a certificate executed by the Unit Owner and filed with the Secretary of the Association, which certificate shall be valid until revoked by a subsequent certificate similarly executed and filed with the Secretary of the Association. If ownership of a Unit is in more than one person, the person who shall be entitled to cast all the Votes allocated to that Unit shall be the person named in a certificate executed by all of the Owners of such Unit and filed with the Secretary of the Association. If ownership of a Unit is in a corporation, partnership, limited liability company, limited liability partnership, trust or estate, the officer or employee of that corporation, general partner of that partnership, member of that limited liability company, or partner of that limited liability partnership, trustee of that trust, or agent of that estate, entitled to cast for the corporation, partnership, limited liability company, limited liability partnership, trust or estate the Votes allocated to such Unit shall be designated in a certificate for that purpose executed by the president or a vice president of that corporation, and attested to by the secretary, assistant secretary or clerk of that corporation, executed by all the general partners of that partnership, executed by all the managing members or members with sufficient authority of that limited liability company, executed by the managing partner or partners with sufficient authority of that limited liability partnership, executed by all the trustees of that trust, or executed by either all the devises of that estate or by order of the probate court and filed with the Secretary of the Association. Such certificates of multiple owners, corporations, partnerships, limited liability companies, limited liability partnerships, trusts or estates shall be valid until revoked by a subsequent certificate similarly executed and filed with the Secretary of the Association. Wherever the vote, approval or disapproval of a Unit Owner is required by this Declaration or the Act, such vote, approval or disapproval shall be made only by the person who would be entitled pursuant to such certificate to cast at any meeting of the Association the Votes allocated to such Unit. If the person named or designated in said certificate for a particular Unit shall be absent from a meeting of the Association, no person may cast the Votes allocated to that Unit at the meeting although the presence at the meeting of a non-named or non-designated co-Owner or

member, officer, employee, agent or designee of such Owner shall be counted in determining whether a quorum is present. If a multiple Owner of a Unit that is not a corporation, partnership, limited liability company, limited liability partnership, trust or estate has failed to file said certificate with the Secretary of the Association and only one of the multiple Owners is present at a meeting of the Association, he shall be entitled to cast at the meeting all the Votes allocated to that Unit without establishing the concurrence of the absent Owners just as though that person were the sole Owner of the Unit. If a multiple Owner of a Unit that is not a corporation, partnership, limited liability company, limited liability partnership, trust or estate has failed to file said certificate with the Secretary and if more than one Owner of that Unit is present at the meeting, the Votes allocated to that Unit may be cast only in accordance with the agreement of a majority of the multiple Owners present at the meeting. Such majority agreement shall be conclusively presumed if any one of those multiple Owners shall cast the Votes allocated to the Unit without protest being promptly made to the person presiding over the meeting by any other Owners of that Unit. No Votes allocated to a Unit owned by the Association may be cast.

2.12. Vote Required. Unless by express provisions of the Act, these Bylaws or the Declaration a different vote is required, each question presented at a meeting of the Association shall be determined by the affirmative vote of Owners of Units to which are allocated no less than sixty-six percent (66%) of the Votes in the Association. Provided, however, that notwithstanding any provision to the contrary contained in these Bylaws or the Declaration, the affirmative vote of one hundred percent (100%) of all of the Unit Owners shall be required for the Association to act on any of the following matters: Termination of the Condominium pursuant to Section 1602-118 of the Act; merger or consolidation of the Condominium with another condominium; conveyance or subjection to a security interest of any portion of the Common Elements; use of any proceeds of insurance required to be maintained by the Association pursuant to the Declaration or any eminent domain awards or proceeds for purposes other than repair and restoration of the damaged Property in accordance with the Condominium Documents, the original elevation thereof and the original building plans and specifications therefor; and amendments to the Condominium Documents which govern or regulate (a) voting, (b) assessments, assessment liens or subordination of such liens, (c) reserves for replacement, repair and replacement of the Common Elements or Units, if applicable, (d) insurance or fidelity bonds, (e) responsibility for maintenance and repair of the Common Elements and the Units, (f) leasing of Units, (g) imposition of any right of first refusal or similar restriction on the right of a Unit Owner to sell, transfer, or otherwise convey or lease an owner's Unit.

2.13. Informal Action. Subject to the Declaration, any action required or permitted to be taken at any meeting of the members may be taken without a meeting if a written consent thereto is signed by all the members. The Secretary shall file such written consent with the records of the meetings of the members and such consent shall be treated as a unanimous vote of members for all purposes.

2.14. Proxies. A vote may be cast in person or by proxy. If a Unit is owned by more than one person, each Owner of the Unit may vote or register protest to the casting of Votes by the other Owners of the Unit through a duly executed proxy. Proxies shall be duly executed in writing and must be filed with the Secretary before the appointed time of the meeting. Such proxy shall be deemed revoked only upon actual receipt by the person presiding over the meeting

of written notice of revocation from the grantor(s) of the proxy. No proxy shall be valid for a period in excess of eleven (11) months after the execution thereof unless it specifies a shorter term. A proxy is void if it is not dated or purports to be revocable without notice.

2.15. Order of Business. The order of business at all meetings of the members shall be as follows:

(a) Roll call;
(b) Proof of notice of meeting;
(c) Reading of minutes of preceding meeting for approval of same;
(d) Reports of Executive Board or of officers or of the manager or managing agent;
(e) Reports of committees, if any;
(f) Fix number of members of Executive Board (when so required);
(g) Election of inspectors of election (when so required);
(h) Election of members of the Executive Board (when so required);
(i) Unfinished business;
(j) New business.

At all meetings of the Association or of the Executive Board, Robert's Rules of Order, as then amended, shall be followed, except in the event of conflict in which these Bylaws or the Declaration, as the case may be, shall prevail.

ARTICLE III
Executive Board

3.1. Number and Qualification. The affairs of the Association shall be governed by an Executive Board (sometimes referred to as the "Board of Directors") composed of a minimum three (3) natural persons, all of whom shall be Unit owners or spouses of Unit Owners or in the case of a Unit Owner which is a corporation, partnership, limited liability company, trust or estate, a designated agent thereof. The initial Executive Board shall be elected by the incorporator of the Association and shall serve until the earlier of (i) at least two (2) units have been sold, or (ii) the third annual meeting.

3.2. Election and Term of Office. Except as provided in Paragraph 3.1 regarding election of the initial Executive Board, the members of the Executive Board shall be elected as follows:

3.2.1. At the annual meetings of the Association the election of members of the Executive Board shall be held. The term of office of any Executive Board member to be elected (except as set forth in Paragraphs 3.6 and 3.7.) shall be fixed at three (3) years. The members of the Executive Board shall hold office until the earlier to occur of the election of their respective successors or their death, adjudication of incompetency, removal or resignation. Any Executive Board member may serve an unlimited number of terms to succeed himself or herself.

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3.2.2. Persons qualified to be members of the Executive Board may be nominated for election only as follows:

3.2.2.1. Any Unit Owner may submit to the Secretary at least three (3) days before the meeting at which the election is to be held a nominating petition signed by that Unit Owner and a statement that the person nominated is willing to serve on the Executive Board. The Secretary shall mail or hand deliver the submitted items to every Unit owner along with the notice of such meeting;

3.2.2.2. Nominations may be submitted from the floor at the meeting at which the election is held for each vacancy on the Executive Board.

3.3. Vote Required for Election to Executive Board. No person shall be elected to the Executive Board who does not receive the affirmative vote of Unit Owners holding in the aggregate no less than fifty percent (50%) of the Votes in the Association.

3.4. Powers and Duties. Subject to the provisions of the Declaration, the Executive Board shall have the powers and duties necessary for the administration of the affairs of the Association and shall have all powers and duties referred to in the Declaration and the statutes of the State of Maine pertaining to corporations without capital stock, as amended from time to time, and may do all such other acts and things provided from time to time by the Act to be done by an Executive Board or by the Unit Owners collectively except such acts or things as are by law or by these Bylaws or by the Declaration directed to be exercised and done by the Unit Owners individually. Subject to the provisions of the Declaration, the powers and duties of the Executive Board shall include but not be limited to the following:

3.4.1. The power and duty to determine the Common Expenses of the Condominium and the assessments to each Unit for the Common Expenses.

3.4.2. The power and duty to make assessments against Unit Owners to defray the costs and expenses of the Condominium, establish the means and methods of collecting such assessments from the Unit Owners and establish the period of the installment payment of annual assessments for Common Expenses.

3.4.3. The power and duty to provide for the operation, care, upkeep, maintenance and repair (structural or otherwise) of all of the Common Elements and the other Property and services of the Condominium.

3.4.4. The power and duty to designate, hire and dismiss the personnel necessary for the maintenance, operation, repair and replacement of the Common Elements and provide services for the Property and, where appropriate, provide for the compensation of such personnel and for the purchase of equipment, supplies and material to be used by such personnel in the performance of their duties.

3.4.5. The power and duty to collect the assessments for Common Expenses against the Unit Owners, deposit the proceeds thereof in any bank depositories or money

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market funds designated by the Executive Board and use the proceeds to carry out the administration of the Property.

3.4.6. The power to make and amend Rules and Regulations covering the details of the operation and use of the Property.

3.4.7. The power to open bank accounts on behalf of the Association and designate the signatories thereon.

3.4.8. The power and duty to make, or contract for the making of, repairs, additions and improvements to or alterations of the Property, and repairs to and restoration of the Property, in accordance with the Declaration, after damage or destruction by fire or other casualty, or as a result of condemnation or eminent domain proceedings.

3.4.9. The power to enforce by legal means the provisions of the Declaration, these Bylaws and the Rules and Regulations and duty and power to act on behalf of the Unit owners with respect to all matters arising out of any eminent domain proceeding.

3.4.10. The power and duty to obtain and carry insurance against casualties and liabilities, as provided in the Declaration, pay the premiums therefor and adjust and settle any claims thereunder.

3.4.11. The power and duty to pay the cost of all authorized services rendered to the Association and not billed to Unit Owners of individual Units.

3.4.12. The power to notify an Eligible Mortgage Holder of any default hereunder or under the Declaration by the Unit owner of the Unit subject to the Mortgage of such Holder, in the event such default continues for a period exceeding sixty (60) days.

3.4.13. The power to borrow money on behalf of the Condominium when required in connection with any one instance relating to the operation, care, upkeep, maintenance and repair (structural or otherwise) of the Common Elements.

3.4.14. The power to acquire, hold and dispose of Units and mortgage the same on behalf of the Unit Owners.

3.4.15. The power and duty to furnish statements as required by Section 1603-116(h) of the Act and certificates as required by Section 1604-108(b) of the Act.

3.4.16. The power to invest and reinvest funds of the Association and to take all actions necessary and proper in connection therewith, and for any year in which the Executive Board exercises this power to invest and reinvest funds of the Association, the Executive Board shall have the duty to invest the funds of the Association subject to any investment policy that the Executive Board may adopt which reflects the basic investment objectives of safety, liquidity and income return. At least annually, the

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Executive Board shall disclose to the members a listing on an itemized basis as to amount, type and rate of return, of the instruments, funds, money market accounts, investments and accounts in which the funds of the Association are invested or deposited.

3.4.17. The power to do such other things and acts not inconsistent with the Act or the Declaration which the Executive Board may be authorized to do by a resolution of the Association.

3.5. Delegation of Powers: Managing. The Executive Board may employ for the Condominium a "Managing Agent" or "Manager" at a compensation established by the Executive Board. The Managing Agent shall perform such duties and services as the Executive Board shall delegate or authorize the Managing Agent to perform, including, but not limited to, all of the duties of the Executive Board and officers of the Association listed in the Act, the Declaration and these Bylaws; provided, however, where a Managing Agent does not have the power to act under the Act, the Declaration or these Bylaws, such duties shall be performed as advisory to the Executive Board. The Executive Board may delegate to the Managing Agent all of the powers granted to the Executive Board by the Act, the Declaration and these Bylaws other than the powers: (a) to adopt the annual budget and any amendment thereto or to assess any Common Expenses; (b) to adopt, repeal or amend Rules and Regulations of the Association; (c) to designate signatories on Association bank accounts; (d) to borrow money on behalf of the Association; (e) to invest and reinvest funds of the Association; (f) to acquire and mortgage Units.

Any employment contract between the Managing Agent and the Association must provide that it may be terminated with cause on no more than thirty (30) days' written notice and without cause on no more than ninety (90) days' written notice.

3.6. Removal or Resignation of Members of the Executive Board. At any regular or special meeting of the Association duly called, any one or more of the members of the Executive Board may be removed with or without cause by Unit Owners entitled to cast at least sixty-seven percent (67%) of all the Votes in the Association and a successor may then and there be elected to fill the vacancy thus created. Any Unit Owner proposing removal of a Board member shall give notice thereof to the Secretary. Any member whose removal has been proposed by a Unit Owner shall be given at least ten (10) days' notice by the Secretary of the time, place and purpose of the meeting and shall be given an opportunity to be heard at the meeting. A member of the Executive Board may resign at any time and shall be deemed to have resigned upon transfer of title to his Unit.

3.7. Vacancies. Vacancies in the Executive Board caused by any reason other than the removal of a member by a vote of the Unit Owners shall be filled by a vote of a majority of the remaining members at a special meeting of the Executive Board held for such purpose promptly after the occurrence of any such vacancy, even though the members present at such meeting may constitute less than a quorum. Each person so elected shall be a member of the Executive Board for the remainder of the term of the member being replaced and until a successor shall be elected at the next annual meeting of the Association at which such seat is to be filled upon expiration of

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the term of his predecessor. In the case of multiple vacancies, the member receiving the greatest number of Votes shall be elected for the longest term.

3.8. Organizational Meeting. The first meeting of the Executive Board following each annual meeting of the Association shall be held within ten (10) days thereafter at such time and place as shall be fixed by the President (even if he is the outgoing President) at the meeting at which such Executive Board shall have been elected, and no notice shall be necessary to the newly elected members of the Executive Board in order legally to constitute such meeting, if a majority of the Executive Board members shall be Present at such meeting.

3.9. Regular Meetings. Regular meetings of the Executive Board may be held at such time and place as shall be determined from time to time by a majority of the members, but such meeting shall be held at least twice each fiscal year. Notice of regular meetings of the Executive Board shall be given to each member by the Secretary in the manner provided in the Declaration for service of notice upon Unit Owners, at least ten (10) business days prior to the day named for such meeting.

3.10. Special Meetings. Special meetings of the Executive Board may be called by the President on at least three (3) business days' notice by the Secretary to each member and Eligible Mortgage Holder, given by mail, telegraph or hand delivery, securing a receipt therefor, which notice shall state the time, place and purpose of the meeting. Special meetings of the Executive Board shall be called by the President or Secretary in like manner and on like notice on the written request of at least two (2) members of the Executive Board.

3.11. Waiver of Notice. Any member may at any time, in writing, waive notice of any meeting of the Executive Board, and such waiver shall be deemed equivalent to the giving of such notice. Attendance by a member of any meeting of the Executive Board shall constitute a waiver of notice by him of the time, place and purpose of such meeting unless the sole purpose of the member's attendance is to protest the holding of the meeting. If all members are present at any meeting of the Executive Board, no notice shall be required and any business may be transacted at such meeting.

3.12. Quorum of the Executive Board. At all meetings of the Executive Board, a majority of the members present shall constitute a quorum for the transaction of business, and the vote of a majority of the members present at the meeting at which a quorum is present shall constitute the decision of the Executive Board. If at any meeting of the Executive Board there shall be less than a quorum present, a majority of those present may adjourn the meeting from time to time. At any such adjourned meeting at which a quorum is present, any business, which might have been transacted at the meeting originally called, may be transacted without further notice. One or more members of the Executive Board may participate in and be counted for quorum purposes at any meeting by means of conference telephone or similar communication equipment by means of which all persons participating in the meeting can hear each other.

3.13. Compensation. No member of the Executive Board shall receive any compensation from the Association for acting as such, but may be reimbursed for any expenses incurred in the performance of his duties.

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3.14. Conduct of Meetings. The President shall preside over all meetings of the Executive Board and the Secretary shall keep a minute book of the Executive Board meetings, recording therein all resolutions adopted by the Executive Board and a record of all transactions and proceedings occurring at such meetings. The then current edition of Robert's Rules of Order shall govern the conduct of the meetings of the Executive Board if and to the extent not in conflict with the Declaration, these Bylaws or the Act.

3.15. Voting. The act of a majority of the members of the Executive Board present at a meeting at which a quorum is present shall be deemed the act of the Executive Board.

3.16. Action Without Meeting. Any action by the Executive Board required or permitted to be taken at any meeting may be taken without a meeting if all of the members of the Executive Board shall individually or collectively consent in writing to such action. Any such written consent shall be filed with the minutes of the proceedings of the Executive Board.

3.17. Validity of Contracts with Interested Executive Board Members. No contract or other transaction between the Association and one or more of its Board of Director members or between the Association and any corporation, firm or association in which one or more of the Board of Director members are directors or officers, or are financially interested, shall be void or voidable because such Executive Board member or members are present at any meeting of the Executive Board which authorized or approved the contract or transaction or because his or their votes are counted, if the circumstances specified in either of the following subparagraphs exists:

3.17.1. The fact that a Board of Director member is also such a director or officer or has such financial interest is disclosed or known to the Executive Board and is noted in the minutes thereof, and the Executive Board authorizes, approves or ratifies the contract or transaction in good faith by a vote sufficient for the purpose without counting the vote or votes of such Executive Board member or members;

3.17.2. The contract or transaction is made in good faith and is not unconscionable to the Association at the time it is authorized, approved or ratified.

3.18. Inclusion of Interested Executive Board Members in the Quorum. Any Executive Board member holding such director or officer position or having such financial interest in another corporation, firm or association may be counted in determining the presence of a quorum at a meeting of the Executive Board or a committee thereof which authorizes, approves or ratifies a contract or transaction of the type described in Paragraph 3.17.

ARTICLE IV
Officers

4.1. Designation. The principal officers of the Association shall be the President, the Secretary and the Treasurer, all of whom shall be elected by the Executive Board. The President shall be a Unit Owner and a member of the Executive Board. Any other officers may, but need

not, be Unit Owners or members of the Executive Board. An officer other than the President may hold more than one office.

4.2. Election of Officers. The officers of the Association shall be elected annually by the Executive Board at the annual meeting of the Board and shall hold office at the pleasure of the Executive Board.

4.3. Removal and Replacement of Officers. Upon the affirmative vote of a majority of all members of the Executive Board, any officer may be removed, either with or without cause, and a successor may be elected at any meeting of the Executive Board called for such purpose.

4.4. President. The President shall be the chief executive officer of the Association, preside at all meetings of the Association and of the Executive Board and have all of the general powers and duties which are incident to the office of president of a nonprofit corporation organized under the laws of the State of Maine including without limitation the power to appoint committees from among the Unit Owners from time to time as the President may in his discretion decide is appropriate to assist in the conduct of the affairs of the Association. The President shall cease holding such office at such time he ceases to be a member of the Executive Board.

4.5. Secretary. The Secretary shall keep the minutes of all meetings of the Association and of the Executive Board, have charge of such books and papers as the Executive Board may direct, maintain a register setting forth the place to which all notices to Unit Owners and Eligible Mortgage Holders hereunder and pursuant to this Declaration shall be delivered and, in general, perform all the duties incident to the office of secretary of a nonprofit corporation organized under the laws of the State of Maine. The Secretary shall, within ten (10) days after receipt of request, provide any person, or cause to be provided to any person, entitled thereto at the expense of the person requesting the same a written statement or certification of the information required to be provided by the Association pursuant to Sections 1603-116(h) and 1604-108(b) of the Act.

4.6. Treasurer. The Treasurer shall have the responsibility for the safekeeping of Association funds and securities, be responsible for keeping full and accurate financial records and books of account showing all receipts and disbursements, and for the preparation of all required financial data, be responsible for providing to the Secretary the financial and budgetary information necessary for the Secretary to provide the certifications required by Paragraph 4.5 and be responsible for the deposit of all monies in the name of the Executive Board, the Association or the Managing Agent, in such depositories as may from time to time be designated by the Executive Board and, in general, perform all the duties incident to the office of treasurer of a nonprofit corporation organized under the laws of the State of Maine.

4.7. Execution of Documents. Except as provided in Paragraph 8.6, all agreements, contracts, deeds, leases, checks and other instruments of the Association for expenditures or obligations not in excess of, or authorized pursuant to, the budget approved by the members may be executed by any one officer of the Association or such other person or employee as the Executive Board may designate in writing.

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4.8. Compensation of Officers. No officer who is also a member of the Executive Board shall receive any compensation from the Association for acting as such officer, but may be reimbursed for any out-of-pocket expenses incurred in performing his duties; provided, however, the Secretary and Treasurer may be compensated for their services if the Executive Board determines such compensation to be appropriate.

ARTICLE V
Operation of the Property

5.1. Fiscal Year. The fiscal year of the Association shall begin on such date as shall be established by the Executive Board, except for the first fiscal year of the Association, which shall begin at the date of incorporation of the Association. The commencement date of the fiscal year so established shall be subject to change by the Executive Board.

5.2. Preparation and Approval of Budget:

5.2.1. On or before ninety days (90) before the beginning of the fiscal year for which a Common Expense assessment is made, the Executive Board shall adopt an annual budget for the Association containing an estimate of the total amount of the Common Expenses considered necessary to pay the cost of maintenance, management, operation, repair and replacement of the Common Elements and those parts of the Units as to which it is the responsibility of the Association to maintain, repair and replace, and the cost of wages, materials, insurance premiums, services, supplies and other expenses that may be declared to be Common Expenses by the Act, the Condominium Documents or a resolution of the Association and which will be required during the ensuing fiscal year for the administration, operation, maintenance and repair of the Property and the rendering to the Unit Owners of all related services. The budget shall include such amounts as the Executive Board shall consider necessary to provide working capital, a general operating reserve fund for current Common Expenses, and a reserve fund for contingencies, replacements, capital improvements, and other items which cannot be expected to occur on a regular basis. The budget shall also reflect the separate assessment of Limited Common Expenses.

5.2.2. On or before the thirtieth (30) day after the adoption of an annual budget as provided in subparagraph 5.2.1 the Executive Board shall make such budget available for inspection during business hours by any Unit Owner or Mortgagee at the office of the Association and the Manager or Managing Agent, if any, and the Secretary shall provide to the Unit Owners and Eligible Mortgage Holders a summary of that budget in reasonably itemized form setting forth the separate amounts of the Common Expenses and Limited Common Expenses and shall set a date for a special meeting of the Unit Owners and Eligible Mortgage Holders to consider approval and ratification of such budget no less than fourteen (14) days nor more than thirty (30) days after mailing of such summary of budget accompanied by notice of the meeting to each Unit Owner and Eligible Mortgage Holder. The Executive Board shall endeavor to schedule the date for consideration of the budget to coincide with the date of the annual meeting of the Association. Unless at the meeting sixty-six percent (66%) in voting interest of all of the

Unit Owners reject the proposed budget, that budget is approved. In the event such budget shall be rejected at the meeting, the budget last ratified with respect to the period covered by the proposed budget shall be continued as the budget for the Condominium until such time as the Unit Owners approve and ratify a subsequent budget proposed by the Executive Board upon the same conditions as are provided in this subparagraph with respect to the original budget.

5.2.3. Subject to subparagraph 5.2.2, the budget adopted pursuant to this Paragraph shall constitute the basis for determining each Unit Owner's assessments for Common Expenses and Limited Common Expenses and shall automatically take effect at the beginning of the fiscal year for which it is adopted.

5.3. Assessment of Common Expenses. The total amount of the estimated funds for Common Expenses required from assessments for the operation of the Property as described in subparagraph 5.2.1 and set forth in the budget adopted by the Executive Board shall be assessed on an annual basis against each Unit Owner in proportion to his respective Common Expense Liability as provided in subparagraph 8.1.1 and Schedule B of the Declaration, except for Limited Common Expenses which shall be assessed against each Unit benefited as provided in subparagraph 8.1.2 of the Declaration.

5.4. End of Fiscal Year. Within ninety (90) days after the end of each fiscal year for which a Common Expense assessment was made, the Executive Board shall prepare and deliver to all Unit Owners and Eligible Mortgage Holders, and to each Mortgagee requesting in writing the same, an itemized accounting of the Common Expenses for such fiscal year actually incurred and paid, together with a tabulation of the amounts collected pursuant to the budget adopted by the Executive Board for such fiscal year, and showing the net amount over or short of the actual expenditures plus reserves. Any net shortage with regard to Common Expenses that are not Limited Common Expenses, after application of such reserves as the Executive Board may determine, shall be assessed promptly against the Unit Owners in accordance with their Common Expense Liabilities and shall be payable either (i) in full with payment of the next monthly assessment due, or (ii) in one or more monthly assessments, as the Executive Board may determine. Any net shortage with regard to Limited Common Expenses, after application of such reserve as the Executive Board may determine, shall be assessed promptly against the Unit Owners obligated to pay those Limited Common Expenses and if those Limited Common Expenses benefit more than a single Unit that Limited Common Expenses shall be assessed against the Owners of the Units benefited in accordance with their relative Common Expense Liabilities as between themselves, any and all of which Limited Common Expenses shall be payable either (i) in full with payment of the next monthly assessment or (ii) in one or more monthly assessments, as the Executive Board may determine.

5.5. Reserves. The Executive Board shall build up and maintain reasonable reserves for working capital including a general operating reserve fund for current Common Expenses (the "Working Capital Fund") and a reserve fund for contingencies, replacements, capital improvements, expenses of repair and replacement in the amount of the applicable deductible on property insurance carried by the Association, and other items which cannot be expected to occur on a regular basis (the "Reserve Fund"). However, nothing contained herein shall limit, preclude

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or impair the establishment of additional funds by the Association so long as the amounts credited to, and debited from any such additional funds are earmarked for specified purposes authorized by the Condominium Documents. The Working Capital Fund, Reserve Fund and such other funds shall be conclusively deemed to be common funds of the Association and shall be deposited in a special account with a lending institution, the accounts of which are insured by an agency of the United States of America unless otherwise invested pursuant to subparagraphs 3.4.5 or 3.4.16. Neither the Executive Board nor the Treasurer shall commingle in the books and records of the Association any amounts deposited into the Reserve Fund, the Working Capital Fund or such other funds. Extraordinary expenditures not originally included in the annual budget, which may become necessary during the year shall be charged first against such reserves. If the reserves are deemed by the Executive Board to be inadequate for any reason, including nonpayment of any Unit Owner's assessment, the Executive Board may at any time levy a further assessment which, depending on whether the reserve is for the benefit of all the Units or fewer than all the Units, shall be assessed against all the Unit owners according to their respective Common Expense Liabilities or only against the Unit owners benefited according to their respective Common Expense Liabilities as between themselves, and which may be payable in a lump sum or in installments as the Board may determine.

5.6. Further Assessments. Subject to Paragraph 5.8, the Executive Board shall give notice to all Unit Owners and Eligible Mortgage Holders of any further assessments on Unit Owners for Common Expenses or Limited Common Expenses accompanied by a statement in writing giving the amount and reasons therefor, and such further assessment shall, unless otherwise specified in a notice, and subject to Paragraph 5.8, become effective, as provided in Paragraph 5.13, on the first day of the next month which begins more than ten (10) days after the delivery of such notice of further assessment. All Unit Owners so notified shall be obligated to pay the adjusted monthly amount at the times provided for in Paragraph 5.11. Such assessment shall be a lien as set forth in Paragraph 5.13.

5.7. Effect of Failure to Prepare or Adopt Budget. The failure or delay of the Executive Board to prepare or adopt a budget for any fiscal year shall not constitute a waiver or release in any manner of a Unit Owner's obligation to pay his allocable share of the Common Expenses as herein provided whenever the same shall be determined and, in the absence of any annual budget or adjusted budget, each Unit Owner shall continue to pay each monthly installment at the monthly rate established for the previous fiscal year until the new annual or adjusted budget shall have been adopted.

5.8. Rejection of Budget: Limitation on Expenditures. Subject to Paragraph 5.9, but anything else herein to the contrary notwithstanding, within thirty (30) days after adoption by the Executive Board of any revised budget for the Condominium (or adoption of a further assessment pursuant to Paragraph 5.6) the Executive Board shall provide a summary of that revised budget in a reasonably itemized form or, if appropriate, the notice of any further assessment pursuant to Paragraph 5.6, to each Unit Owner and Eligible Mortgage Holder. The Executive Board shall set a date for a meeting of the Unit Owners and Eligible Mortgage Holders to consider approval and ratification of such revised budget, or further assessment, no less than fourteen (14) days nor more than thirty (30) days after the mailing of said summary of budget or notice. Unless at that meeting sixty-six percent (66%) in voting interest of all of the Unit

Owners approve and ratify the revised budget, or further assessment, that budget or assessment is rejected. In the event such revised budget or assessment shall be rejected at the meeting, the budget last ratified with respect to the period covered by the proposed budget or revised budget, or further assessment shall be continued as the budget for the Condominium until such time as the Unit Owners approve and ratify a subsequent revised budget, or further assessment, proposed by the Executive Board upon the conditions as are provided with respect to the original review of the budget or further assessment.

5.9. Limitations on Borrowing; Emergency Expenditures. The power of the Executive Board to borrow money on behalf of the Association is subject to the requirement that the consent of the Owners of Units to which are allocated at least sixty-six percent (66%) of the Votes in the Association shall be required to borrow in any fiscal year any sum in excess of fifteen percent (15%) of the current annual operating budget. Any provision of limitation on expenditures contained in these Bylaws to the contrary notwithstanding, the Executive Board or the Manager may, on behalf of the Association and the Owners without prior notice or consent, expend any amount, or incur a contractual obligation in any amount, required to deal with emergency conditions which may involve a danger to life or property or may threaten the safety of the Condominium or the owners or occupants of Units or may threaten the suspension of any necessary service to the Condominium or may involve the immediate damage to or destruction of the Common Elements. Where such action was taken to respond to a situation created by the negligence, wrongful action, or omission of a Unit Owner (or its employees, agents, clients, visitors or guests) the expenditure, contractual obligation and expenses shall be charged as a Limited Common Expense to such Unit Owner.

5.10. Accounts: Audits. All sums collected by the Executive Board with respect to assessments against the Unit Owners or from any other source may be commingled in a single fund or held for each Unit Owner in accordance with his respective Common Expense Liability notwithstanding that the Reserve Fund, Working Capital Fund, and such other funds shall not and may not be commingled in the books and records of the Association and that unless otherwise invested pursuant to subparagraphs 3.4.5 or 3.4.16 such funds must be deposited with a lending institution, the accounts of which are insured by an agency of the United States of America. All books and records of the Association shall be kept under the direction of the Treasurer or the Manager and in accordance with customary accounting principles and practices. Any Eligible Mortgage Holder shall have the right to give written notice to the Association and cause the records and books of the Association to be audited and have an audited financial statement of the financial position of the Association prepared each at the expense of such Eligible Mortgage Holder.

5.11. Payment Obligations. Each Unit Owner shall pay to the Association or its authorized representative (1) on the first day of each month, or on such other date that the Association may determine in writing, one-twelfth (l/12th) of the Common Expenses including Limited Common Expenses, and revised Common Expenses including revised Limited Common Expenses, assessed on an annual basis against his Unit in the proportions required in Paragraph 8.1. of the Declaration and (2) all special assessments, any other sums duly levied against the Unit pursuant to the Declaration, these Bylaws or the Act, including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common

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Element pursuant to Paragraph 8.4 of the Declaration, all interest thereon and charges for late payment thereof and legal fees and other costs of collection thereof, and fines, penalties and fees as provided by the Declaration, these Bylaws or the Act, on the first day of the next month which begins more than ten (10) days after delivery to the Unit Owner of notice of such special assessment or levy If for any reason the Association shall revise the annual budget of the Association in accordance with these Bylaws, whereby the Common Expenses or any component thereof may be increased, and subject to Paragraph 5.8, then commencing on the first day of the first month subsequent to the adoption of such revised budget each Unit Owner shall pay to the Association or its authorized representative such revised annual Common Expenses including Limited Common Expenses assessed against his Unit in the proportions required in Paragraph 8.1 of the Declaration.

5.12. Interest: Acceleration. In the event of a default by an Unit Owner in paying any sum assessed against his Unit which continues for a period in excess of thirty (30) days, interest shall be imposed on the principal amount unpaid from the date when due until paid at a rate of interest to be established annually by the Executive Board which shall not exceed the lower of the maximum interest rate allowed by law which may be charged by the Association at such time or eighteen percent (18%) per annum. If the Executive Board shall fail to set such rate, it shall be deemed to have been set at the rate of eighteen percent (18%) per annum. The Association shall have the right to establish and impose charges for late payment of assessments. In any case where an assessment against a Unit Owner is payable in installments, upon a default by such Unit Owner in the timely payment of any two consecutive installments, the maturity of the remaining total of the unpaid installments of such assessments may be accelerated at the option of the Executive Board, and the entire balance of the assessment may be declared due and payable in full by the service of notice to such effect upon the defaulting Unit Owner by the Executive Board or its representative.

5.13. Lien for Assessments. The total annual assessment levied against each Unit for Common Expenses including Limited Common Expenses, revised Common Expenses including revised Limited Common Expenses, or any special assessment, and any other sums duly levied against the Unit pursuant to the Declaration, these Bylaws or the Act, including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4 of the Declaration, all interest thereon and charges for late payment thereof and legal fees and other costs of collection thereof, and fines, penalties and fees as provided in the Declaration or these Bylaws shall, until fully paid, constitute a lien against the Unit in favor of the Association as provided in Section 1603-116 of the Act. Such lien shall, with respect to annual assessments and revised annual assessments, be effective on the first day of each fiscal year of the Association as to the full amount of the annual assessment or revised annual assessments, and, as to special assessments and other sums duly levied including Limited Common Expenses assessed against Unit Owners for maintenance, repair or replacement of a Limited Common Element pursuant to Paragraph 8.4 of the Declaration, interest, charges for late payments, legal fees, costs of collection, fines, penalties and fees as described in Paragraph 5.12, on the first day of the next month which begins more than ten (10) days after delivery to the Unit Owner of notice of such special assessment or levy. Such lien is prior to all other liens and encumbrances on a Unit except (a) liens and encumbrances recorded before the recordation of this Declaration, (b) a first Mortgage recorded

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before or after the date which the assessment sought to be enforced becomes delinquent, and (c) liens for real estate taxes and other governmental assessments or charges against the Units; provided, however, that such lien is not subject to the provisions of 14 M.R.S.A. Section 4651 and 18-A M.R.S.A. Section 201, *et seq*., as they or their equivalents may be amended or modified from time to time.

5.14. Enforcement. The lien for assessments described in Paragraph 5.13 may be enforced and foreclosed by the Association in like manner as a mortgage on real estate as provided in Section 1603-116(a) of the Act or by any other means presently or hereafter provided by law or in equity. A suit to recover a money judgment for unpaid assessments, interest, penalties, and costs of collection may be maintained against the Unit Owner personally without foreclosing or waiving the lien securing such assessments and a foreclosure may be maintained notwithstanding the pendency of any suit to recover a money judgment. During the pendency of any such suit, the Unit Owner shall be required to pay a reasonable rental for the unit for any period prior to sale pursuant to any judgment or order of any Court having jurisdiction over such sale.

5.15. Exemption From Expenses by Waiver of Use of Common Elements or Unit Elements. Subject to Paragraph 15.5 of the Declaration, no Unit Owner may exempt himself from Common Expense Liability with respect to the payment of assessments for Common Expenses by waiver of the enjoyment of the right to use any of the Common Elements or by abandonment of his Unit or otherwise. Subject to Paragraph 15.5 of the Declaration, the obligation to pay assessments for Common Expenses is absolute and unconditional and shall not be subject to set-offs or counterclaims.

5.16. Collection of Assessments. The Executive Board or the Managing Agent, at the request of the Executive Board, shall take prompt action to collect any assessment for Common Expenses due from any Unit Owner which remains unpaid for more than thirty (30) days from the due date for payment thereof together with any interest thereon and charges for late payment as provided in Paragraphs 5.11 and 5.12.

5.17. Statement of Common Expense. The Association shall promptly provide to any Unit Owner, contract purchaser or Mortgagee so requesting the same in writing with a statement setting forth the amount of unpaid assessments currently levied against the Unit of such Unit Owner as provided in Section 1603-116(h) of the Act. The Association shall also promptly provide to any Unit Owner or contract purchaser so requesting the same with a certificate containing the information described in Section 1604-108(a) of the Act enabling such Unit Owner to comply with the provisions of Section 1604-108 of the Act. The Association shall have the right to impose a reasonable charge for the preparation of such statement or information to cover the costs of preparation thereof against the Unit Owner requesting the same.

5.18. Reallocation of Allocated Interests. If Common Expense Liabilities are reallocated for any reason, assessments for Common Expenses and any installments thereof not yet due shall be recalculated in accordance with the reallocation Common Expense Liabilities. Within thirty (30) days after the reallocation of the Common Expense Liabilities, the Executive Board shall revise the budget to reflect changes in Common Expenses and Limited Common Expenses

resulting from such reallocation of Common Expense Liabilities to reflect the proportionate liability of all the Units for such Common Expenses and Limited Common Expenses for the remainder of the fiscal year in which such events occur. The amount of assessments attributable to each Unit thereafter shall be the amount specified in the adjusted budget, until a new budget shall have been adopted by the Executive Board subject to the Condominium Documents.

5.19. Taxation.

5.19.1. Separate Taxation. If there is any Unit Owner other than the Declarant, each Unit and its Allocated Interests shall be deemed to be a separate tax parcel and shall be separately taxed and assessed by the City of Portland. Neither the Building, the Property nor any of the Common Elements shall be deemed to be or assessed as a separate tax parcel.

5.19.2. Units Not Yet Separately Assessed. In the event that for any year real estate taxes assessed by the City of Portland are not separately taxed and assessed to each separate Unit Owner but are taxed on the Property as a whole, then each Unit Owner shall pay his proportionate share thereof in accordance with his respective Common Expense Liabilities.

ARTICLE VI
Repair and Reconstruction After Fire or Other Casualty

6.1. When Repair and Reconstruction are Required. In the event of damage to or destruction of all or any part of the Property as a result of fire, other casualty or the exercise of the power of eminent domain, the Executive Board on behalf of the Association shall promptly arrange for and supervise the prompt repair, replacement and restoration thereof, including any damaged Units (including the unfinished floor slab or basement floor, as the case may be, roof and roof rafters, wall studs, joists, columns, studs or beams, and all exterior windows and doors; but not including the plaster or sheetrock forming the perimeter walls of the Units, any floorcovering (such as tile; wood flooring and carpeting) and any wallcovering (such as paint, wallpaper, paneling or tiles), furniture, fixtures (such as cabinets, built-in closets or bookshelves, vanities, lamps and chandeliers) furnishings, appliances or other personal property owned by Unit Owners) (the "Unit Owner Property") substantially in accordance with the Declaration, the Plat and Plans, these Bylaws, the original elevation thereof and the original plans and specifications therefor unless, subject to Paragraph 9.3 of the Declaration, (a) the Condominium is terminated, or (b) repair, replacement or restoration would be illegal under any state or local health, safety, land-use or environmental statute, code or ordinance, or (c) one hundred percent (100%) of the Unit Owners and at least sixty percent (60%) of the Eligible Mortgage Holders vote not to repair, restore or replace the damaged or destroyed Property, and such decision is approved by every Owner of a Unit or assigned or allocated Limited Common Element, which will not be repaired, replaced or restored, and by all Eligible Mortgage Holders of all Mortgages thereon. Each Unit owner shall supervise the repair, replacement and restoration of its Unit Owner Property.

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6.2. Procedure for Reconstruction and Repair. Subject to Paragraph 9.3 of the Declaration, if repair, replacement or restoration (of non-Unit Owner Property) shall be required pursuant to Paragraph 6.1:

6.2.1. Cost Estimates. The Executive Board shall promptly obtain reliable and detailed estimates of the cost of repairing and restoring such portion including any damaged Units (and the fixtures, service machinery and other apparatus, but not including any Unit Owner Property in the Unit) substantially in accordance with this Declaration, the Plat and Plans, the original elevation thereof and original building plans and specifications therefor unless other action is approved by one hundred percent (100%) in voting interest of the Unit Owners and at least sixty percent (60%) of the Eligible Mortgage Holders. Such costs may also include professional fees and premiums for such bonds as the Insurance Trustee may determine to be necessary.

6.2.2. Assessments. If the net proceeds of insurance, eminent domain awards, and any appropriate reserve for replacement funds, if any, are not sufficient to defray such estimated costs of reconstruction, repair, and replacement, or if upon completion of reconstruction and repair the funds for the payment of the costs thereof are insufficient, any such costs in excess of insurance proceeds, any eminent domain awards, and reserves shall be deemed a Common Expense and a special assessment therefor shall be levied by the Association.

6.2.3. Construction Fund and Disbursement. The proceeds of insurance collected on account of the casualty, any eminent domain awards, and any appropriate reserve for replacement funds, and the sums received by the Association from collections of assessments against Unit Owners pursuant to subparagraph 6.2.2 on account of any such casualty or taking, shall constitute a construction fund which shall be held in trust by the Insurance Trustee or Association as provided in Paragraph 14.3 of the Declaration and disbursed in payment of the costs of reconstruction and repair in the following manner:

6.2.3.1. If the estimated cost of reconstruction and repair is less than Fifty Thousand Dollars ($50,000), then the construction fund shall be disbursed in appropriate progress payments, or payment of such costs upon order of the Executive Board; provided, however, that upon request of sixty percent (60%) of the Eligible Mortgage Holders, such funds shall be disbursed pursuant to subparagraph 6.2.3.2.

6.2.3.2. If the estimated cost of reconstruction and repair is Fifty Thousand Dollars ($50,000.00) or more, then the construction fund shall be disbursed in payment of such costs upon approval of an architect qualified to practice in the State of Maine employed by the Association or Insurance Trustee or of such other qualified person acceptable to no less than sixty percent (60%) of the Eligible Mortgage Holders and to the Owners of the Units to which are allocated no less than sixty-six percent (66%) of the Votes in the Association (generically, the "Architect"), to supervise such work, payment to be made from time to time as the work progresses. The Architect shall be required to furnish a

certificate giving a brief description of the services and materials furnished by various contractors, subcontractors, materialmen, the Architect and other persons who have rendered services or furnished materials in connection with the work stating that: (a) the sums requested by them in payment are justly due and owing and that such sums do not exceed the value of the services and materials furnished; (b) there is no other outstanding indebtedness known to the Architect for the services and materials described; and (c) the cost as estimated by the Architect for the work remaining to be done subsequent to the date of such certificate does not exceed the amount of the construction fund remaining after payment of the sum so requested.

6.2.3.3. Common Elements. When the damage is to both Common Elements and Units, the insurance proceeds or eminent domain proceeds shall be applied first to the cost of repairing those portions of the Common Elements which enclose and service the Unit, then to the costs of repairing the other Common Elements and then to the costs of repairing the Units.

6.2.3.4. Distribution After Payment. The first monies disbursed in payment of the cost of reconstruction and repair shall be from any insurance proceeds or eminent domain awards and, if there is a balance in the construction fund after the payment of all of the costs of the reconstruction and repair for which the fund is established, such balance shall be distributed among all Unit Owners, Mortgage holders and lien holders, as their respective interests may appear, in proportion to their respective Common Element Interests or the Common Element Interests of the Units to which their respective Mortgages or liens are subject.

6.3. Damage or Destruction: No Repair or Replacement. If the entire Condominium is not repaired or replaced:

6.3.1. The insurance proceeds and any eminent domain awards attributable to the damaged Common Elements shall be used to restore the damaged area to a condition compatible with the remainder of the condominium as determined by the Executive Board or Architect;

6.3.2. The insurance proceeds and any eminent domain awards attributable to Units and Limited Common Elements which are not rebuilt shall be distributed to the Owners and Mortgagees of those Units as their insurable interests may appear and the Owners and Mortgagees of the Units to which those Limited Common Elements were assigned or allocated, as their insurable interests may appear; and

6.3.3. The remainder of the insurance proceeds and any eminent domain awards shall be distributed to all the Unit Owners and Mortgagees, as their insurable interest may appear, in proportion to their respective Common Element Interests or the Common Element Interests subject to their respective Mortgages.

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6.3.4. If the Unit Owners and their Mortgagees vote not to rebuild any Unit, that Unit's entire Allocated Interests shall be automatically reallocated upon said vote as if the Unit had been condemned under Section 1601-107(a) of the Act and the Association shall prepare, execute and record an amendment to the Declaration reflecting the reallocations. Notwithstanding any provision of this Article VI to the contrary, Section 1602-118 of the Act governs the distribution of insurance proceeds and any eminent domain awards if the Condominium is terminated.

6.4. Mortgagee Priority. No provision of the Condominium Documents shall be deemed or construed to give a Unit Owner, or any other person, priority over the rights of any Eligible Mortgage Holder pursuant to its Mortgage in the case of a distribution to Unit Owners of insurance proceeds or eminent domain awards for losses to or a taking of Units, Common Elements, or both.

ARTICLE VII
Records of Information

7.1. Title. Every Unit Owner shall promptly cause to be duly recorded the deed, assignment, or other conveyance to him of his Unit or other evidence of his title thereto and file such evidence of his title with the Executive Board through the Secretary or Manager. The Secretary shall maintain such information in the record of ownership of the Association.

7.2. Availability of Information. The Association shall make available to Unit owners, lenders and the holders, insurers and guarantors of the first Mortgage on any Unit, for inspection at the office of the Association or the Manager, if any, current copies of the Declaration, these Bylaws and the Rules and Regulations governing the Property and other books, records and financial statements of the Association. The Association shall also make available to Eligible Mortgage Holders, Unit Owners and prospective purchasers at the cost of the person requesting the same current copies of the Declaration, these Bylaws and the Rules and Regulations governing the Property. "Available" means available for inspection or receipt upon request, during normal business hours or under other reasonable circumstances.

ARTICLE VIII
Amendments

Subject to the provisions of Article 16 of the Declaration governing the amendment of the Declaration, and subject also to Article 17 of the Declaration governing the rights of Mortgagees, and subject to the other provisions of the Declaration including, but not limited to, Paragraphs 9.3 thereof, these Bylaws and of the Act, these Bylaws may be amended as follows:

8.1. Notice. Notice of the subject matter of a proposed amendment shall be included in the notice of any meeting of the Executive Board or Association in which a proposed amendment is considered, and shall be served upon all Unit Owners and Eligible Mortgage Holders.

8.2. Resolution. An amendment may be proposed by either the Executive Board or by Unit Owners holding in the aggregate no less than thirty percent (30%) of the Votes in the

Association. No resolution of the Executive Board adopting a proposed amendment or the proposed amendment itself shall be effective unless it has been adopted at a meeting of the Association duly called and held in accordance with these Bylaws by the affirmative vote of at least sixty-six percent (66%) in voting interest of all of the Unit Owners and then executed as Provided in Paragraph 8.5.

8.3. Agreement. In the alternative, an amendment may be made by an agreement signed by the record Owners of Units to which are allocated at least one hundred percent (100%) of the Votes in the Association, in which case such amendment shall become effective when signed by such Unit Owners.

8.4. Proviso. Provided, however, that except as otherwise permitted by the Act and provided in the Declaration, no amendment may increase the number of Units or change the boundaries of any Unit, the Allocated Interests allocated to a Unit, or the uses to which any Unit is restricted without the unanimous consent of the Unit owners and the consent of at least Sixty Percent (60%) of the Eligible Mortgage Holders.

8.5. Execution. A copy of each amendment shall be attached to or included with a certificate, certifying that the amendment was duly adopted, which certificate shall be executed by the President or Treasurer and attested by the Secretary. The amendment shall be effective when such certificate and copy of the amendment are executed and certified.

8.6. Amendments to Declaration; Designation of Officers. The President or Treasurer may be designated to prepare, execute and record, and the Secretary shall certify on behalf of the Association any amendments to the Declaration which have been approved under Article 16 and Article 17 of the Declaration.

ARTICLE IX
Standards and Control of Condominium

9.1. Establishment of Rules and Regulations. The Executive Board shall have the power to adopt, amend and enforce compliance with such reasonable Rules and Regulations relative to the operation, use and occupancy of the Units and the Common Elements consistent with the provisions of the Condominium Documents and the Act and the enactment and enforcement of such enforcement procedures and penalties for violations as they shall deem appropriate. Any such Rules and Regulations shall be adopted or amended from time to time by means of appropriate resolutions duly approved by the Executive Board in accordance with these Bylaws and the Declaration. The Executive Board shall have the right to establish various rules and procedures governing the operation and administration of the appeal and hearing process and the enforcement of the Condominium Documents and Rules and Regulations. A copy of all such policy guidelines, rules, procedures and regulations and copies of any amendments thereto shall be delivered or mailed to each Owner or occupant of a Unit promptly after the adoption thereof and shall become binding upon all Owners, their successors in title and assigns, and occupants.

9.2. Additions, Alterations or Improvements by the Executive Board. Whenever in the judgment of the Executive Board the Common Elements shall require additions, alterations or improvements costing in excess of Ten Thousand Dollars ($10,000.00) which are not included within the approved budget for the fiscal year(s) in which the additions, alterations or improvements will be made, the making of such additions, alterations or improvements requires a vote of one hundred percent (100%) of the Unit Owners, and the Executive Board shall assess all Unit Owners benefited for the cost thereof as a Common Expense (or Limited Common Expense). Any additions, alterations or improvements costing less than Ten Thousand Dollars ($10,000.00) may be made by the Executive Board without approval of the Unit Owners and the cost thereof shall constitute a Common Expense or Limited Common Expense, depending on the nature of the additions, alterations or improvements. Notwithstanding the foregoing, if, in the opinion of no less than two-thirds (2/3) of the members of the Executive Board, such additions, alterations or improvements are exclusively or substantially exclusively for the benefit of the Unit Owners requesting the same, such requesting Unit Owners shall be assessed therefor as a Limited Common Expense in such proportion as they jointly approve or, if they are unable to agree thereon, in such proportion as may be determined by the members of the Executive Board.

9.3. Additions, Alterations or Improvements by the Unit Owners. Subject to any applicable provisions of the Declaration, these Bylaws or rules or regulations of the Association, a Unit Owner may make nonstructural improvements and alterations to the interior of his Unit but no Unit Owner may make any improvements or alterations or do any work whatsoever which would impair the structural integrity or mechanical systems of the Building or of a Unit owned by another Unit Owner, lessen the support of any portion of the Condominium, or jeopardize the soundness or safety of the Property, or reduce the fire rating of any walls or violate any building fire codes. No Unit Owner shall alter any of the Common Element, or paint or otherwise change the appearance of the Common Elements (including the Limited Common Elements) or paint or otherwise change the exterior appearance of his Unit (including, but not limited to, the exterior surface of doors) or any other portion of the Condominium without the prior written approval of the Executive Board.

9.4. Residential Restriction; Prohibition on Short Term Rentals. All Units are restricted to residential use, which shall not preclude leasing or rental, subject, however, to the requirement that rentals or leases of any nature (including, without limitation, any rentals facilitated through any third-party/online services such as Airbnb, Homeaway.com or VRBO) shall comply with the provisions of these Bylaws, the Declaration, the Rules & Regulations of the Association and any applicable ordinance in the City of Portland Code of Ordinances.

ARTICLE X
Corporate Seal

10.1. Seal. The Association may have a seal in circular form having within its circumference the words:

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ARTICLE XI
Third Parties Protected

11.1. Protection of Third Parties. With respect to a third person dealing with a member of the Executive Board, an officer of the Association or the Managing Agent employed by the Executive Board pursuant to Paragraph 3.5 (each hereinafter collectively referred to as a "Representative") acting on behalf of the Executive Board of the Association, the third person is not bound to inquire whether the Representative has power to act in its purported capacity or is properly exercising the powers granted to the Representative. Such third person, without actual knowledge that the Representative is exceeding or improperly exercising its powers, is fully protected in dealing with the Representative as if it possessed and properly exercised the powers it purports to exercise.

ARTICLE XII
Miscellaneous

12.1. Remedies Cumulative. All rights, remedies and privileges granted to the Executive Board or a Unit Owner pursuant to any terms, provisions, covenants or conditions of the Condominium Documents shall be deemed to be cumulative, and the exercise of any one or more shall not be deemed to constitute an election of remedies nor shall it preclude the party thus exercising the same from exercising such other and additional rights, remedies, or privileges as may be granted to such party hereunder or by any instruments or documents incorporated herein by reference or at law or in equity.

12.2. Captions. The headings in these Bylaws are for purposes of reference only and shall not limit or otherwise affect the meaning hereof. Any tables of contents or indices attached to these Bylaws are for purposes of reference and convenience only and shall neither limit nor otherwise affect the meaning hereof nor be deemed as part of these Bylaws. References in these Bylaws to Articles, Paragraphs, subparagraphs and Schedules without references to the document in which they are contained are references to these Bylaws. Any Exhibits are attached to these Bylaws for purposes of identification only and shall not be deemed as part of these Bylaws.

12.3. Gender; Number; Etc. The use of the singular number in these Bylaws shall be deemed to include the plural, the plural the singular, and the use of any one gender shall be deemed applicable to all genders.

12.4. Severability. The invalidity of any provisions of these Bylaws shall not be deemed to impair or affect in any manner the validity, enforceability or effect of the remainder of these Bylaws, and in such event, all of the other provisions of these Bylaws shall continue in full force and effect as if such invalid provision had never been included herein.

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Presumpscot Woods
0 Hope Ave., Portland, Maine
Evidence of State and Federal Approvals

The Presumpscot Woods project will be required to obtain approvals through the Maine Department of Environmental Protection (MDEP) and the Army Corps of Engineers.

Required MDEP permitting will include a Site Location of Development Act (SLODA) permit, and Natural Resources Protection Act (NRPA) permits. Because the City of Portland has delegated authority, they will review the project for SLODA requirements. A NRPA PBR application for the proposed stream crossing, and a NRPA Tier 1 application for wetland impacts, will be required. These applications will be submitted simultaneously with the City Site Plan Application, and evidence of approval will be sent to the City upon receipt.

SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION 38 M.R.SA. §§481-490

PLEASE TYPE OR PRINT IN *INK ONLY*

This application is for: (CHECK THE ONE THAT APPLIES)	☐ 20 acre development ☐ Planning Permit ☐ Metallic Mining	☐ Marine Oil Terminal ☐ Structure ☒ Subdivision	☐ Major Amendment ☐ Minor Amendment

1. Name of Applicant:	GENX CAPITAL PARTNERS, LLC	**6. Name of Agent: (if applicable)**	HALEY WARD, INC. (Attn: Jon Whitten Jr., PE)
2. Applicant's Mailing Address:	PO BOX 4424, PORTLAND, ME 04101	**7. Agent's Mailing Address:**	ONE MERCHANTS PLAZA SUITE 701 BANGOR, ME 04401
3. Applicant's Daytime Phone #:	207-772-7070	**8. Agent's Daytime Phone # :**	207-989-4824
4. Applicant's Fax #: (if available)	N/A	**9. Agent's Fax # :**	207-989-4881
5. Applicant's *e-mail address*: (license will be sent via e-mail)	gls@shinberg.com	**10. Agent's *e-mail address* (license will be sent via e-mail**	jwhitten@haleyward.com

PROJECT INFORMATION

11. Name of Development:	PRESUMPSCOT WOODS						
12. Map and Lot #'s:	**Map #:** 390/448/449	**Lot #:** A001/A001001/A002	**13. Deed Reference #'s:**		**Book #:** 39511	**Page #:** 313	
14. Location of Project City/Town:	PORTLAND	**15. County:**	CUMBERLAND	**16. UTM Northing**	4838090N	**17. UTM Easting**	190398966E
18. Brief Description of Project including total parcel size:	60-UNIT PLANNED RESIDENITAL UNIT DEVELOPMENT ON 13.07 ACRES OFF HOPE AVE. IN PORTLAND, ME.						

19. Type of Direct Watershed: (Check all that apply)	☐ Lake not most at risk ☐ Lake most at risk ☐ Lake most at risk, severely blooming	☒ **River, stream or brook** ☐ Urban impaired stream ☒ **Freshwater wetland**	☐ Coastal wetland ☐ Wellhead or public water

19. Name of Waterbody Project Site drains to:	PRESUMPSCOT RIVER

21. Amount of Developed Area:	Total acres: **8.93** acres	Existing Developed area: **0 acres**	New Developed area: **8.93 acres**
22. Amount of Impervious Area:	Total acres: **4.05** acres	Existing Impervious: **0 acres**	New Impervious area: **4.05 acres**

23. Development started prior to obtaining a license?:	☐ Yes ☒ **No**				
24. Development or any portion of the site subject to enforcement action?	☐ **Yes** ☒ **No**	**If yes**, name of enforcement staff involved?			
25. Common scheme of development?:	☐ **Yes** ☒ No	**26. Title, Right or Interest:**	☒ **own** ☐ **lease**	☐ **purchase option** ☐ **written agreement**	
27. Natural Resources Protection Act permit required?:	☒ **Yes** ☐ **No**	**If yes:**	☒ **PBR**	☒ **Tier 1** ☐ **Full Permit** ☐ **Tier 2**	
28. Existing DEP Permit number (if applicable):	N/A				
29. Names of DEP staff person(s) present at the pre-application meeting:	N/A				
30. Does agent have an interest in project? If yes, what is the interest?	☐ **Yes** ☒ **No**				

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

CERTIFICATIONS / SIGNATURES

"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 am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment. 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.

Signed: _____ **Title** Agent **Date:** 04/06/2023

Notice of Intent to Comply with Maine Construction General Permit	**With this Site Law application form and my signature, I am filing notice of my intent to carry out work which meets the requirements of the Maine Construction General Permit (MCGP). I have read and will comply with all of the MCGP standards.** **If this form is not being signed by the landowner or lessee of the property, attach documentation showing authorization to sign.** **Signed** _____ **Date:** 04/06/2023

NOTE: You must file a MCGP Notice of Termination (Form K) within 20 days of completing permanent stabilization of the project site.

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): Jon H. Whitten, Jr., PE (ME#10414)

Date: 04/06/2023

Re/Cert/Lic No.: _____
Engineer X
Geologist _____
Soil Scientist _____
Land Surveyor _____
Site Evaluator _____
Active Member of the Maine Bar _____
Professional Landscape Architect _____
Other _____

*"I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #5 for the applicant and #10 for the agent)**. Do not sign if you elect to "opt out" or receive the decision via regular mail.***

Signed (Applicant) _____ ***Date:*** _____

and/or

Signed (Agent) _____ ***Date:*** ***04/06/2023***

Wetland and Stream Review

Date:	July 28, 2022
To:	Mark McClure (GenX Capital Partners, LLC)
From:	Meg Thurrell (Flycatcher LLC)
CC:	Richard Jordan (Flycatcher); Jon Whitten (Haley Ward); Ron Goddard and Greg Shinberg
Subject:	Hope Ave, Portland – Wetland and Stream Review Results

As requested by GenX Capital Partners, LLC, In July of 2022, Flycatcher LLC completed a wetland and stream review on a 13.7-acre parcel located on Hope Avenue in Portland, Maine (the Survey Area – Attachment 1). The Survey Area was previously delineated in 2017. Flycatcher determined that the previously delineated wetland boundaries were generally accurate, with the exception of a few small areas (some wetland area was added and some area was removed). Flycatcher also flagged and GPS-located two streams which were mentioned in the existing reporting but were not included in GIS information provided by GenX Capital's engineering consultant, Haley Ward.

A locus map and map of delineated natural resources are included herein as Attachment 1. Photographs of delineated resources are presented in Attachment 2. The 2017 wetland delineation report is included as Attachment 3.

SURVEY AREA

The Survey Area is located north of Hope Avenue, to the south of the Falmouth I-95 Spur and to the east of a Central Maine Power transmission line corridor. The surrounding area is mostly residential, interspersed with some forested lands. The Presumpscot River is located to the east of the Survey Area.

The Survey Area is primarily comprised of forested uplands interspersed with historically eroded valleys with wetland drainage features and streams. Surface drainage tends generally to the north and east, toward the Presumpscot River.

There is evidence of recreational and former logging trails throughout the Survey Area. Active trail features include bike/foot bridges. There is also evidence of former sand/gravel extractions, including apparent borrow pits and spoil piles along the northern and western edges of the Survey Area.

METHODS

Wetlands

It is our understanding that wetlands within the Survey Area were previously delineated in 2017 by TRC. Flycatcher was provided with GIS data of the previously delineated boundaries.

The US Army Corps of Engineers (USACE) and Maine Department of Environmental Protection (MDEP) require wetlands to be reviewed when delineations are greater than 5 years old. Flycatcher scientists reviewed the previously-mapped wetland boundaries based on the criteria and protocol provided in the 1987 USACE Wetland Delineation Manual and the Northcentral and Northeast Regional Supplement (Version 2.0). The manual and supplement provide a repeatable methodology to identify wetland areas and are the accepted wetland delineation methodology of the MDEP and the USACE. When wetlands were identified (or confirmed), the boundaries were marked with pink survey flagging labelled with the word "Wetland Delineation." Unmoved boundary flags were not re-located, new flags were geo-located as described below under "GPS Location".

Watercourses

Watercourse identification followed the NRPA definition of a "river, stream or brook" (Section 480-B). If a watercourse meeting the above definition was observed, blue survey flagging was hung along the centerline (for streams less than six feet in width) or along the top of the bank (for streams six feet or wider). The locations of each flag were geolocated as described below under "GPS Location."

GPS Location

Features (e.g., wetland boundaries) located during the site visit were geolocated using a mapping grade global positioning system ("GPS") unit (Juniper Systems' Geode GPS Antenna and ESRI's ArcGIS Collector software). The data were collected using real-time correction and standards specified by the manufacturer to achieve sub-meter accuracy. A shapefile of final results was provided to Haley Ward's Jon Whitten on July 21, 2022.

Agency Outreach

No outreach to natural resource agencies (e.g. MNAP, MDIFW, USFWS) was conducted as part of this survey.

FINDINGS

Wetlands

Flycatcher verified the presence of eight (8) wetlands on site, no new (previously unmapped) wetlands were observed. Most of the wetlands are forested pit and mound depressions (natural and unnatural) or riparian drainage wetlands associated with southern stream channels. The previous wetland delineations were found to be generally accurate, however Flycatcher scientists adjusted the boundary of wetlands in a few small areas as highlighted in Attachment 1.

Summary descriptions of wetlands are provided in Table 1. Photographs are included in Attachment 2.

The 2017 delineation report is included in Attachment 3. This report includes a representative USACE delineation form ("Wetland 5"); the data therein was confirmed (soils, hydrology and vegetation) as accurate during the 2022 review.

Watercourses

Two (2) perennial watercourses (MDEP streams) were identified within the Survey Area associated with and located within the boundaries of wetland W-FC-1. These watercourses were between 2 and 4 feet wide and had sand, gravel, and cobble bottoms. S-EGD-1 flowed east and was between 1 and 10 inches deep. S-EGD-2, a tributary to S-EGD-1, flowed northeast and was between 2 inches and 1.5 feet deep.

Table 1. Wetland Summary

Resource ID	*Dominant Covertype*	*Hydrology Indicators*	*Dominant Vegetation*	*Hydric Soil Indicators*	*Potential WoSS*[1]	*Description*
W-FC-1	PSS/ PEM	High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2)	Green ash *(Fraxinus pennsylvanica),* red maple *(Acer rubrum),* Eastern hemlock *(Tsuga canadensis)*, American hornbeam *(Carpinus caroliniana),* maple-leaf arrow-wood *(Viburnum acerifolium),* sensitive fern *(Onoclea sensibilis),* wrinkle-leaf goldenrod *(Solidago rugosa),* cinnamon fern *(Osmundastrum cinnamomeum),* wrinkle-leaf goldenrod *(Solidago rugosa),* jack-in-the-pulpit *(Arisaema triphyllum),* spotted touch-me-not *(Impatiens capensis)*	Depleted Matrix (F3)	Yes – wetland within 25 ft of a stream is WoSS	Ravine riparian wetland to S-EGD-1
W-FC-2, 3, 4, & 6	PFO	High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9)	Sensitive fern, cinnamon fen, fowl manna grass *(Glyceria striata),* eastern poison ivy *(Toxicodendron pubescens),* red maple	Depleted Matrix (F3)	No	Very small, isolated areas of ruts and depressions with groundwater discharge on seepy side slopes.
W-FC-5	PFO	Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), Drainage Patterns (B10), Moss Trim Lines (B16)	White pine *(Pinus strobus),* red maple, red oak *(Quercus rubra),* green ash, glossy false buckthorn *(Frangula alnus),* fringed sedge *(Carex crinite)*, broadleaf meadowsweet *(Spiraea latifolia)*, sensitive fern *(Onoclea sensibilis),* fowl manna grass *(Glyceria striata),* Asian bittersweet *(Celastrus orbiculatus)*	Depleted Matrix (F3)	No	Eroded drainage on side lope; deeper rutted and ephemerally ponded area on the western edge of the property. Wetland ends where a large, natural drainage valley forms below a footbridge and recreational trail.
W-FC-9 & 10	PUBx	Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), Moss Trim Lines (B16)	No vegetation in the basins	Depleted Matrix (F3)	No	Former sand/gravel borrow pits.

[1] MDEP NRPA Freshwater Wetlands of Special Significance. WoSS findings are based on review of on-site features; the Maine Department of Inland Fisheries and Wildlife (MDIFW) and Maine Natural Areas Program (MNAP) were not consulted regarding the potential presence of significant wildlife habitats or communities.

Thank you for the opportunity to assist you with natural resource review for this project. If you have questions regarding the results provided in this report, please do not hesitate to contact me or Rich Jordan (rich@flycatcherllc.com).

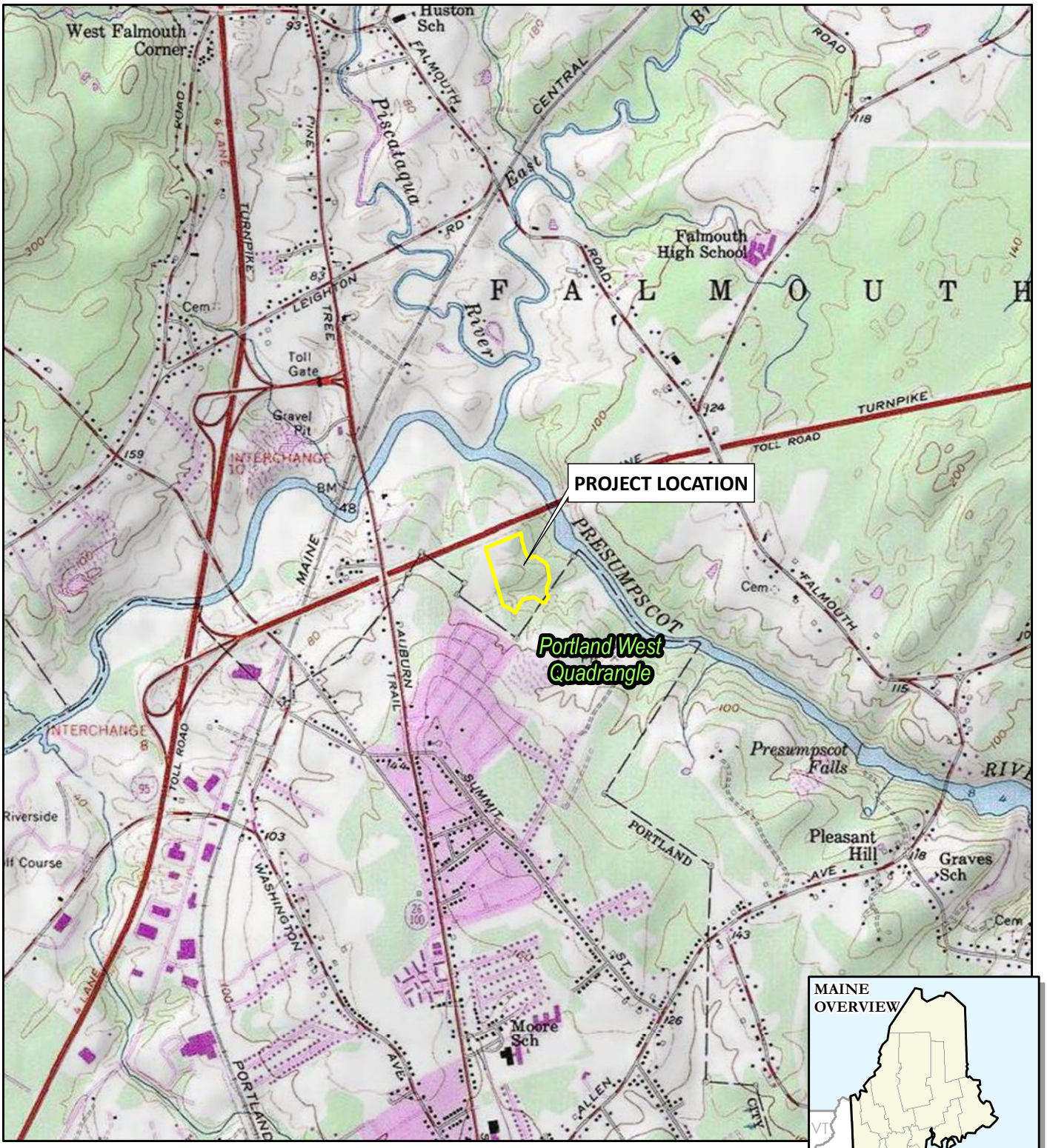
Sincerely,



Meg Thurrell, Environmental Scientist and Biologist
Flycatcher LLC

ATTACHMENT 1

2022 Locus Map and Map of Wetlands/Streams



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

1 " = 2,000 '
1:24,000

0 2,000 4,000 FEET

PROJECT:	**GENX CAPITAL PARTNERS, LLC** **HOPE AVENUE** **PORTLAND, CUMBERLAND COUNTY, MAINE**
LEGEND:	SURVEY AREA USGS 7.5-MINUTE QUADRANGLE BOUNDARY

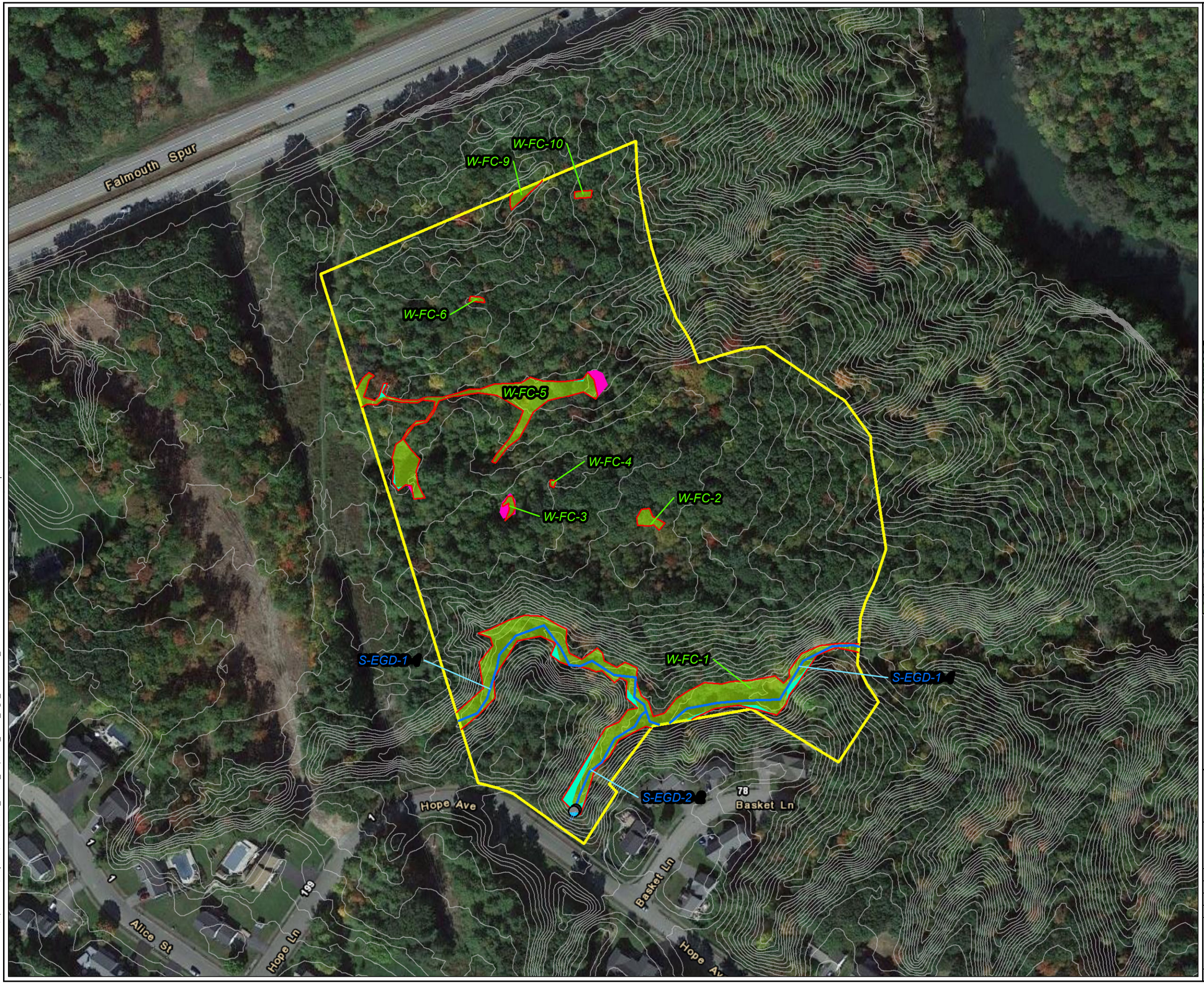
DRAWN BY:	D. KENWORTHY
CHECKED BY:	R. JORDAN
MONTH:	JULY
YEAR:	2022
PROJ. NO.:	22W-1
CLIENT:	GENX

FIGURE 1

D:\Flycatcher\Projects\GenX\GenX_22W1_HopeAve_Delin_Fig1_USGS_8x11P.mxd -- Saved By: JAKEN on 7/20/2022, 15:18:19 PM

Coordinate System: NAD 1983 StatePlane Maine West FIPS 1802 Feet (Foot US)
Map Rotation: 0

Plot Date: 7/21/2022, 06:00:59 AM by JAKEN -- LAYOUT: ANSI B(11"x17")
Path: D:\Flycatcher\Projects\GenX\GenX_22W1_HopeAve_Delin_Fig2_Resources_11X17L.mxd



LEGEND

- SURVEY AREA
- CULVERT
- DELINEATED PERENNIAL STREAM (CENTERLINE)
- DELINEATED WETLAND BOUNDARY
- DELINEATED WETLAND
- PREVIOUS WETLAND AREA REMOVED
- EXPANDED WETLAND AREA
- 2-FOOT CONTOUR LINE



NOTES:

1 BASEMAP IMAGERY FROM ESRI/NAIP "WORLD IMAGERY" SERVICE LAYER.
2 RESOURCE DELINEATIONS WERE CONDUCTED BY FLYCATCHER IN JULY 2022.

N

0 150 300
Feet
1 " = 150 '
1:1,800

PROJECT:
GENX CAPITAL PARTNERS, LLC
HOPE AVENUE
PORTLAND, CUMBERLAND COUNTY, MAINE

TITLE:
DELINEATED WETLAND AND WATERCOURSE MAP

DRAWN BY:	D. KENWORTHY	PROJ NO.:	22W-1
CHECKED BY:	R. JORDAN		**FIGURE 2**
MONTH:	JULY		
YEAR:	2022		

Flycatcher LAND + SCIENCE + PEOPLE

GenX Capital Partners

FILE NO.: GenX_22W1_HopeAve_Delin_Fig2_Resources_11X17L.mxd

ATTACHMENT 2

Representative Photographs



Wetland W-FC-1 and stream S-EGD-1, July 7, 2022.



Wetland W-FC-1 and stream S-EGD-2, July 7, 2022.



Wetland W-FC-3, July 16, 2022.



Wetland W-FC-4, July 16, 2022.



Wetland W-FC-5, July 16, 2022.



Wetland W-FC-6, July 16, 2022.



Wetland W-FC-9, July 16, 2022.



Wetland W-FC-10, July 16, 2022.

ATTACHMENT 3

TRC Wetland Report - 2017

TRC
6 Ashley Drive
Scarborough, ME 04074

Main 207-879-1930
Fax 207-879-9293

Memorandum

To: Doug Reynolds, Gorrill-Palmer

From: Stephenie Jordan, TRC

Subject: Natural Resource Survey – Hope Avenue, Portland, Maine

Date: November 1, 2017

CC: Rich Jordan (TRC)

Dear Doug,

Per your request, on October 17th and 23rd, 2017, TRC wetland scientists visited the property located off Hope Avenue in Portland, Maine. The purpose of this site visit was to review and revise, as necessary, delineated wetland and stream boundaries that were mapped several years ago on the property (old mapping conducted by another firm). The U.S. Army Corps of Engineers (USACE) and the Maine Department of Environmental Protection (MDEP) typically require a review of wetland delineations that are over five years old in the event that site conditions have changed or new standards have been developed that change the way we determine the extent of wetland boundaries. The previous delineation appears to have occurred over 10 years ago. Despite the length of time between mapping efforts, in general, TRC agreed with and confirmed many of the original wetland boundaries, however we found a few of the wetlands previously delineated currently do not have hydric soils or other criteria required to be identified as a jurisdictional wetland by the USACE and MDEP. These features were remapped or removed as appropriate. Other features were confirmed to be consistent with the original delineation. No new wetland areas were identified or added.

Property Description and Survey Area

The survey area borders an existing Central Maine Power transmission line corridor and Portland Water District mainline to the west and northwest, Hope Avenue to the south, the Falmouth I-95 Spur toll road to the north, and undeveloped forest land to the east (Attachment A - Resource Map). The Presumpscot River flows within the mature forest approximately 500 feet west of the survey area. The survey area consists of approximately 13 acres of undeveloped forest land that has historically been disturbed presumably by agricultural and forestry uses. Several depressions associated with historic ditching and borrow areas were observed on the property within the upland forest and rusty farm equipment can be found within the survey area.

Methodology

Prior to the site visit, TRC wetland delineators reviewed existing data sources including:

- United States Geological Survey (USGS) topographic mapping;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- Natural Resources Conservation Service (NRCS) medium-intensity soil survey mapping;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs);
- State of Maine Office of GIS (MEGIS) data; and
- Recent and historic aerial photography.

These data were used to assist in the identification of protected natural resources during the field surveys.

Wetlands: Wetland delineations were conducted in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (USACE 2012). This supplement follows criteria established in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, Technical Report T-87-1, 1987), but is region specific, giving the wetland delineator a better tool to apply to regional vegetation communities, indicators of hydrology and indicators of hydric soils when conducting a wetland boundary determination. This document provides a repeatable methodology to identify potential wetland areas within the project study area.

The study area was investigated on foot. When a location having the requisite three factors that constitute a wetland (i.e., hydrophytic vegetation, indicators of hydrology, and the presence of hydric soils) was encountered, the boundaries were flagged in the field and each flag was geo-located using a mapping grade global positioning system (GPS) unit (e.g. a Trimble GeoXH). The data were then post-processed using data collection and processing standards designed by the manufacturer to achieve sub-meter accuracy. These data are being provided to Gorrill Palmer as an ESRI Shapefile for use in project design and planning natural resource avoidance and minimization measures.

Streams: Watercourse identification followed the Maine Natural Resources Protection Act (NRPA) definition of a "River, stream or brook." Streams meeting this definition were flagged and geolocated as described above.

Non-Jurisdictional Drainages: As part of this survey, non-stream drainage areas were located and mapped as "non-jurisdictional drainages" (NJDs). Typical examples of NJDs include concentrated surface flow in uplands, natural or dug ditches, and drainage swales of natural or unnatural origin. The key difference between NJDs and regulated resources is a lack of stream characteristics or a combination of hydric soils, dominance of hydrophytic plants and evidence of hydrology. Furthermore, NJDs commonly lack a discernable streambed, contiguous defined stream banks, and/or evidence of mineral scour within the drainage path. Although non-regulated, these features often drain to protected resources or offsite, and they may be potential conduits for siltation or sedimentation during rain events. NJDs are important to note so that mitigation measures can be taken during construction to limit soil disturbance and prevent unintended impacts to adjacent resources.

Findings

Ten previously identified wetlands were reviewed and evaluated for the presence of the three factors that constitute a wetland. Based on the current site-specific conditions and the latest version of the USACE wetland delineation manual, not all of these features (either wholly or in part) exhibited indicators of hydrophytic vegetation, hydric soil, or wetland hydrology. All features identified on site are described in more detail below and numbered and displayed on the Resource Map in Attachment A.

Copies of the representative wetland/upland data forms, photographs, and GIS shapefiles showing the location of the review areas and delineated resources are also provided with this report. The unique identifiers noted on the data forms and photographs can be cross referenced against the data herein and the resource map to see where a particular resource is located.

All wetlands discussed herein are considered forested wetlands.

Review Area #1

This wetland feature is located in a valley that follows a perennial stream (a tributary to the Presumpscot River). The location of this previously flagged feature was confirmed as being unchanged from the prior delineation. The wetland and stream complex was reviewed, however, only a portion of the wetland near the site entrance from Hope Avenue was flagged in the field.

Review Areas #2, 3, 4, 6, and 10

All of these features were reviewed, confirmed and flagged as previously delineated.

Review Area #5

This wetland feature follows a slight pattern of microtopographic relief in the landscape and drains to the northeast via a non-jurisdictional (upland) drainage feature. Review area 5 appears to indicate both ditching and erosional features, and appears to be a relic of former agricultural use and impacts. The NJD pattern indicates that water flows from the wetland and to the northeast, eventually forming into a tributary (offsite) that drains to the Presumpscot River during storm events. The wetland was flagged in the field and the NJD feature GPS-located as shown on the Resource Map in Attachment A.

Review Areas #7 and 8

Although these two features had previously been identified as wetland in the previous (old) survey, they are lacking the indicators of hydrophytic vegetation and hydric soils described in current wetland delineation manuals. Both features are small localized depressions that are likely associated with historic ditching and excavation. Vegetation surrounding the depressions included red oak, red maple, and hemlock, all are tree species that can be found in upland areas. Signs of hydrology included moss trim lines and microtopographic relief but a closer examination of soils showed no indications of saturation during the growing season in the upper part of the soil. Based on this evidence, we concluded that these depressions do not hold water long enough to develop the anaerobic conditions that form hydric soils or favor the growth of hydrophytic vegetation and therefore, are not wetlands.

Review Area #9

This depressional feature is likely an old burrow pit. It is likely that portions of this area fill with storm and meltwater during certain times of the year, but it appears that the site drains rather quickly after filling. The southwestern portion of the previously delineated excavation area was evaluated closely and determined to lack hydrophytic vegetation and hydric soils. The wetland boundary was redelineated as shown on the Resource Map in Attachment A and flagged in the field.

If you have any questions regarding my assessments, or if you would like additional assistance with project permitting, please do not hesitate to contact me or Rich.

Respectfully submitted,



Stephenie Jordan

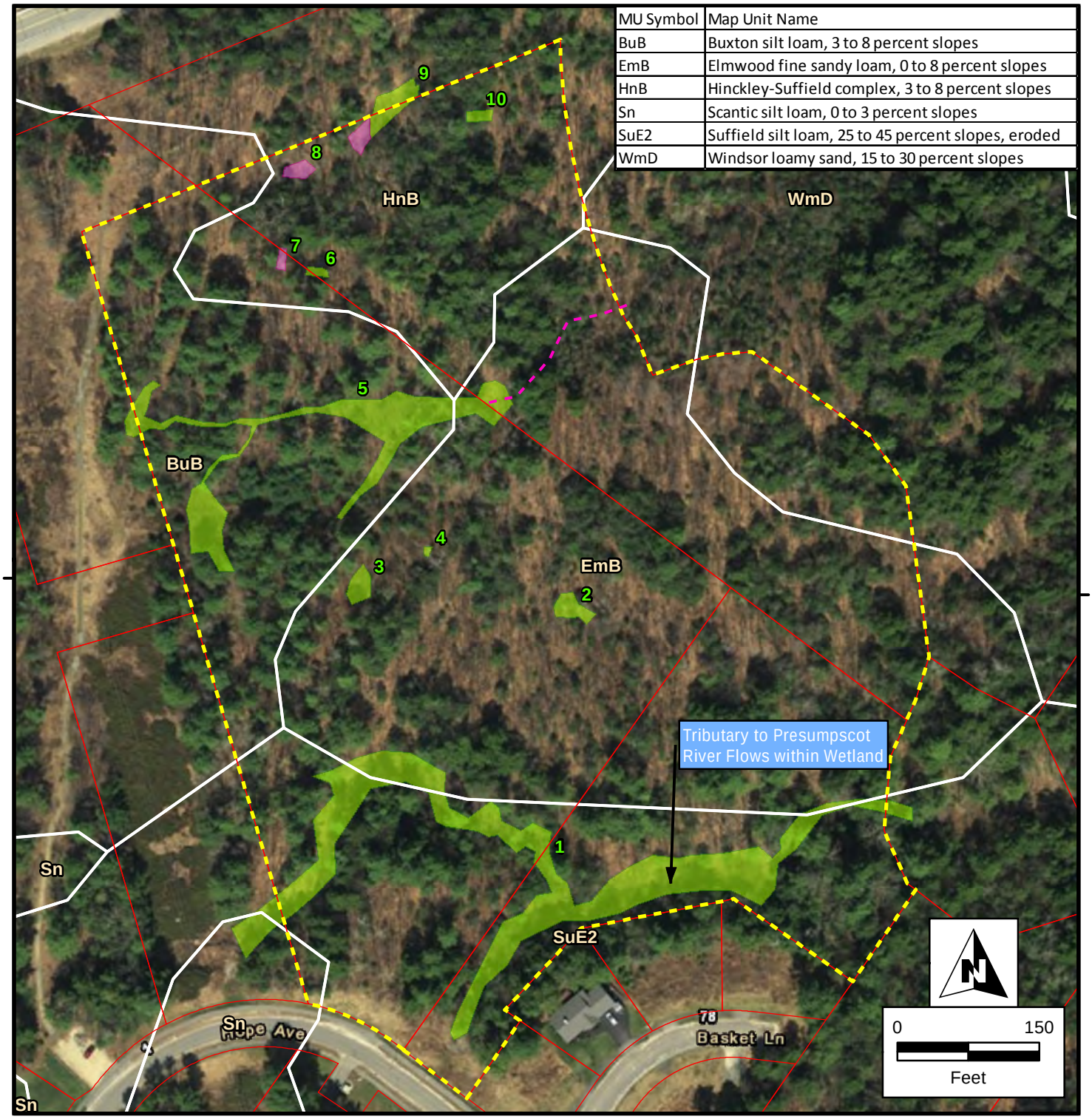
Wetland Scientist

Cell: 207-319-9801 Office: 207-274-2611

Email: sjordan@trcsolutions.com

ATTACHMENT A

Resource Mapping



MU Symbol	Map Unit Name
BuB	Buxton silt loam, 3 to 8 percent slopes
EmB	Elmwood fine sandy loam, 0 to 8 percent slopes
HnB	Hinckley-Suffield complex, 3 to 8 percent slopes
Sn	Scantic silt loam, 0 to 3 percent slopes
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded
WmD	Windsor loamy sand, 15 to 30 percent slopes



- Parcel Boundaries
- Limit of Wetlands Survey
- Delineated Non-Jurisdictional Drainage
- Delineated Wetland
- Old Data Wetlands Reviewed and Removed
- NRCS Soils

Data Sources: ESRI, TRC, MEGIS, NRCS
Coordinate System: NAD 1983 UTM Zone 19N M

Hope Avenue

Portland, Maine

Resource Map

Aerial Location Figure

6 Ashley Drive
Scarborough, ME 04074
TRC

Created: 11/1/2017

V:\PROJECTS\AUGUSTA\Small_Projects\222955_Hope_Ave_Portland\Hope_Ave_Resource_Map.mxd

ATTACHMENT B

Photographic Log



Review Area #1: Water flowing in perennial stream within wetland, 10/18/2017.



Review Area #2: Looking southwest in wetland, 10/18/2017.



Review Area #3: Looking north in wetland, 10/18/2017. Review Area #4 is a small depressional feature located approximately 40 feet to the northeast of the wetland shown above.



Review Area #5: Looking east from wetland toward non-jurisdictional drainage, 10/18/2017.



Review Area #5: Looking west toward wetland, 10/18/2017.



Review Area #6: Looking west toward wetland, 10/18/2017.



Review Area #7: Looking northwest toward depression in upland forest (does not meet the criteria for a wetland), 10/18/2017.



Review Area #8: Looking northeast toward bowl-like depression that is likely an old burrow pit (does not meet the criteria for a wetland), 10/18/2017.



Review Area #9: Facing northeast in wetland, 10/18/2017.



Review Area #10: Facing west looking at wetland, 10/18/2017.

ATTACHMENT C

Representative Wetland Determination Data Form

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hope Ave City/County: Portland, Cumb. Co. Sampling Date: 10-23-17

Applicant/Owner: G.P. (client) State: ME Sampling Point: wet-5

Investigator(s): S. Jordan, R. Jordan Section, Township, Range: —

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): —

Subregion (LRR or MLRA): LRR Lat: 43° 43' 27.18" Long: 70° 17' 13.87" Datum: —

Soil Map Unit Name: Buxton Silt Loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

Evidence of Drainage in channels heading east.

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 ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wet-5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pin strobus *Aerial	* 25	N	FACU
2. Ace rubrum	* 25	N	FAC
3. Que rubra	* 10	N	FACU
4. Fra pensylvanica	* 10	N	FACW
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. Rha frangula	15	Y	FAC
2. Fra pensylvanicum	15	Y	FACW
3. Ace rubrum	10	Y	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Car crinita	10	Y	OBL
2. Gno sensibilis	5	N	FACW
3. Spi Latifolia	10	Y	FACW
4. Gly striata	5	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. Oriental bittersweet	5	N	UpL
2.			
3.			
4.			
	5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	1	x 2 =	2
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	6 (A)		12 (B)

Prevalence Index = B/A = 2

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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	-	-	-	-	-	-	-	Duff
1-9	7.5YR 4/2	50	7.5YR 4/6	50	C	M	Silo	compact Bw
9-15+	10YR 4/1	90	7.5YR 6/8	10	C	M	Silo	compact Bc

[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) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ 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)

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)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

No dark surface but depleted matrix

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hope Avenue City/County: Portland Cumb. Co Sampling Date: 10-23-17

Applicant/Owner: G.P. (client) State: ME Sampling Point: upl-5

Investigator(s): SJordan, RJordan Section, Township, Range: —

Landform (hillslope, terrace, etc.): fill pile Local relief (concave, convex, none): convex Slope (%): —

Subregion (LRR or MLRA): LRR Lat: 43° 43' 27.18" Long: 70° 17' 13.87" Datum: _____

Soil Map Unit Name: Buxton Silt Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes _____	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)

- ___ 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 ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UpL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pin strobus	30	Y	FACU
2. Que rubra	20	Y	FACU-
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. Fag grandifolia	15	Y	FACU
2. Rha frangula	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Aster spp	15	Y	Unk
2. Pin strobus	5	N	FACU
3. Lonicera spp	10	Y	Unk
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. celas orbiculatus	<5	N	Upl
2.			
3.			
4.			
	<5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	5 (A)		19 (B)

Prevalence Index = B/A = 3.8

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UpL-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15+	2.5YR 5/4	100						

[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) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ 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)

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)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Disturbed fill pile, No redox, friable soils

Drew Olehowski

From: Drew Olehowski
Sent: Tuesday, August 29, 2023 9:57 AM
To: Settele, Rebecca
Subject: GenX Capital Partners LLC, Portland, ME
Attachments: MDIFWResponse_ERid5998_ERVerID7272-FINAL.pdf; 13773.001 MDIFW.pdf

Good morning, Becca,

In Fall of 2022, we reached out to your office regarding a project owned by GenX Capital Partners, to be located off Hope Avenue in Portland, ME. I have attached your original response letter. The City of Portland has provided comments on this project, one of which was to obtain an updated letter from your office on significant natural features in this area. I have attached a copy of our current site plan for use in your review. Please let me know if I can be of further assistance for your review of this project.

Thank you,

HALEY WARD
AN EMPLOYEE-OWNED COMPANY

Drew Olehowski, PE
Civil Engineer
t: 207.283.9151 m: 207.576.6488
a: 120 Main Street, Suite 132, Saco, ME 04072

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STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

May 17, 2022

Drew Olehowski
Haley Ward
One Merchants Plaza, Suite 701
Bangor, ME 04401

Via email: dolehowski@haleyward.com

Re: Rare and exemplary botanical features in proximity to: #13773.001, GenX Capital Partners, Hope Avenue Subdivision, Portland, Maine

Dear Mr. Olehowski:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received May 16, 2022 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Lisa St. Hilaire

Lisa St. Hilaire | Information Manager | Maine Natural Areas Program
207-287-8044 | lisa.st.hilaire@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #13773.001, GenX Capital Partners, Hope Avenue Subdivision, Portland, ME

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
	SC	S2	G5	2016-09-04	28	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G5	2000-06-06	5	Dry barrens (partly forested, upland)
Columbia Water-meal						
	SC	S2	G5	2002-08-04	2	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested,
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested,
Enriched Northern Hardwoods						
		S3	GNR	2001-08-28	34	Hardwood to mixed forest (forest, upland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed
Foxtail Bog-clubmoss						
	E	S1	G5	2017-08-22	1	

Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested,
Hollow Joe-pye Weed						
	SC	S2	G5?	2011-08-04	19	Open wetland, not coastal nor rivershore (non-forested,
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested,
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
MacGregor's Rye						
	SC	S2	G5	2019-08-20	13	
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not
Missouri Rockcress						
	T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested,
Mountain-laurel						
	SC	S2	G5	1985-08-01	13	Conifer forest (forest, upland),Hardwood to mixed forest
Mountain Honeysuckle						
	E	S2	G5	2007-07-30	10	Dry barrens (partly forested, upland),Hardwood to mixed
	E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed
	E	S2	G5	2018-06-02	14	Dry barrens (partly forested, upland),Hardwood to mixed
Pitch Pine Woodland						
		S3	G2	2005-12-08	28	Rocky summits and outcrops (non-forested, upland)
Pocket Swamp						
		S2	G5	2017-07-27	24	Forested wetland,Hardwood to mixed forest (forest,
Rattlesnake Hawkweed						
	E	S1	G5T4Q	1909-07	1	Dry barrens (partly forested, upland)
Salt-hay Saltmarsh						
		S3	G5	2020-07-02	68	Tidal wetland (non-forested, wetland)
Screwstem						
		S1	G5T3T5	2020-09-17	4	

Screwstem					
	S1	G5T3T5	2014-09-24	17	
Slender Knotweed					
PE	SH	G5	1902-09-07	1	Dry barrens (partly forested, upland)
Small Reed Grass					
SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Smooth Winterberry Holly					
SC	S3	G5	2017-08-22	32	Forested wetland
Spotted Pondweed					
T	S1	G5	2016-06-22	3	Open water (non-forested, wetland)
Tidal Marsh Estuary Ecosystem					
	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Upper Floodplain Hardwood Forest					
	S3	GNR	2012	20	Forested wetland
Upright Bindweed					
T	S2	G4G5	2007-06-28	5	Dry barrens (partly forested, upland),Old field/roadside
Variable Sedge					
E	S1	G3	2012-08-09	1	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	2017-08-22	4	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	2018-08-29	6	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	1911-06-29	9	Dry barrens (partly forested, upland),Hardwood to mixed
Vasey's Pondweed					
SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Water-plantain Spearwort					
PE	SH	G4	1903-07-29	2	Open water (non-forested, wetland)
Wild Garlic					
SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest,
Wild Leek					

Wild Leek						
	SC	S3	G5	2018-05-02	55	Hardwood to mixed forest (forest, upland),Forested

Date Exported: 2022-05-17 09:08

Conservation Status Ranks

State and Global Ranks: This ranking system facilitates a quick assessment of a species' or habitat type's rarity and is the primary tool used to develop conservation, protection, and restoration priorities for individual species and natural habitat types. Each species or habitat is assigned both a state (S) and global (G) rank on a scale of critically imperiled (1) to secure (5). Factors such as range extent, the number of occurrences, intensity of threats, etc., contribute to the assignment of state and global ranks. The definitions for state and global ranks are comparable but applied at different geographic scales; something that is state imperiled may be globally secure.

The information supporting these ranks is developed and maintained by the Maine Natural Areas Program (state ranks) and NatureServe (global ranks).

Rank	Definition
S1 **G1**	**Critically Imperiled** – At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
S2 **G2**	**Imperiled** – At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3 **G3**	**Vulnerable** – At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4 **G4**	**Apparently Secure** – At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5 **G5**	**Secure** – At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
SX **GX**	**Presumed Extinct** – Not located despite intensive searches and virtually no likelihood of rediscovery.
SH **GH**	**Possibly Extinct** – Known from only historical occurrences but still some hope of rediscovery.
S#S# **G#G#**	**Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem.
SU **GU**	**Unrankable** – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNR **SNR**	**Unranked** – Global or subnational conservation status not yet assessed.
SNA **GNA**	**Not Applicable** – A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., non-native species or ecosystems.
Qualifier	**Definition**
S#? **G#?**	**Inexact Numeric Rank** – Denotes inexact numeric rank.
Q	**Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable. The "Q" modifier is only used at a global level.
T#	**Infraspecific Taxon (trinomial)** – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank.

State Status: Endangered and Threatened are legal status designations authorized by statute. Please refer to MRSA Title 12, §544 and §544-B.

Status	Definition
E	**Endangered** – Any native plant species in danger of extinction throughout all or a significant portion of its range within the State or Federally listed as Endangered.
T	**Threatened** – Any native plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range in the State or Federally listed as Threatened.
SC	**Special Concern** – A native plant species that is rare in the State, but not rare enough to be considered Threatened or Endangered.
PE	**Potentially Extirpated** – A native plant species that has not been documented in the State in over 20 years, or loss of the last known occurrence.

Element Occurrence (EO) Ranks: Quality assessments that designate viability of a population or integrity of habitat. These ranks are based on size, condition, and landscape context. Range ranks (e.g., AB, BC) and uncertainty ranks (e.g., B?) are allowed. The Maine Natural Areas Program tracks all occurrences of rare plants and natural communities/ecosystems (S1-S3) as well as exemplary common natural community types (S4-S5 with EO ranks A/B).

Rank	Definition
A	**Excellent** – Excellent estimated viability/ecological integrity.
B	**Good** – Good estimated viability/ecological integrity.
C	**Fair** – Fair estimated viability/ecological integrity.
D	**Poor** – Poor estimated viability/ecological integrity.
E	**Extant** – Verified extant, but viability/ecological integrity not assessed.
H	**Historical** – Lack of field information within past 20 years verifying continued existence of the occurrence, but not enough to document extirpation.
X	**Extirpated** – Documented loss of population/destruction of habitat.
U	**Unrankable** – Occurrence unable to be ranked due to lack of sufficient information (e.g., possible mistaken identification).
NR	**Not Ranked** – An occurrence rank has not been assigned.

Visit the Maine Natural Areas Program website for more information
http://www.maine.gov/dacf/mnap

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
353 WATER STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

August 2, 2022

Drew Olehowski
Haley Ward
One Merchants Plaza, Suite 701
Bangor, ME 04401

RE: Information Request – GenX Capital Partners LLC Project, Portland

Dear Drew:

Per your request received on May 16, 2022, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *GenX Capital Partners LLC* project in Portland. Please note that as project details are lacking our comments should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bat Species – Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Spotted Turtle - Occurrences of spotted turtle, a State Threatened species, have been documented within the vicinity of the proposed project. Spotted turtles are most frequently associated with small, acidic wetlands and vernal pools located in large, intact landscapes. Development activity that compromises riparian integrity or migration permeability among seasonally critical wetlands can lead to degradation of habitat quality and potential loss of local populations for either of these species. Additionally, development projects that lead to significant increases in local traffic volume will likely lead to increased roadkill and possible extirpation of local populations.

Eastern Ribbon Snake - There is a potential for occurrences of Eastern ribbon snake, a state Species of Special Concern, within the project area. This rare species is a slender, semiaquatic snake often observed near the edges of emergent marshes, wet meadows, scrub-shrub wetlands, beaver impoundments, bogs, river and stream floodplains, and vegetated shorelines of ponds and lakes.

If habitats for either turtle or snake species are present in the project area, we recommend that they be avoided and adequately buffered with 250-foot intact, no cut buffers. Alternatively, the applicant can survey for spotted turtle and ribbon snakes to determine presence or absence in the project area. These surveys should be conducted by qualified biologists following MDIFW's most recent survey protocols.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

We generally recommend maintaining 100-foot undisturbed vegetated buffers from the upland edge of all intermittent and perennial streams and any contiguous wetlands. Maintaining and enhancing buffers along these resources is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support fish and other aquatic species. Riparian buffers also provide critical habitat and important travel corridors for a variety of wildlife species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide for full aquatic passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis. Undersized crossings may inhibit these functions and become a frequent maintenance problem that causes reoccurring damage to the resource. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e., natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in providing habitat connectivity for fish and other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils can travel significant distances as well as transport other pollutants resulting in direct impacts to fish, other aquatic life, and their habitats. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



Becca Settele
Wildlife Biologist

ArcGIS Web Map



4/18/2022, 12:36:57 PM

Streams

Waves Transects

Flood Zones 1986 Effective

AE

VE

500 Year

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Web AppBuilder for ArcGIS
Maxar |

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

NATURAL RESOURCES PROTECTION ACT PERMIT-BY-RULE NOTIFICATION

TO THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

FOR PRESUMPSCOT WOODS

Portland, Maine

Applicant:
GenX Capital Partners LLC
2 Cotton Street | Portland, ME 04101



OCTOBER 2022
JN: 13773.001

Report Prepared By:
Haley Ward
One Merchants Plaza, Suite 701 | Bangor, Maine 04401

Corporate Office
One Merchants Plaza
Suite 701
Bangor, ME 04401
T: 207.989.4824
F: 207.989.4881

HALEYWARD.COM

TABLE OF CONTENTS

APPLICATION
NARRATIVE
LOCATION MAP
PHOTOGRAPHIC LOG
GOOD STANDING RECORDS
GENX PARTNERS, LLC
SHINBERG CONSULTING, LLC

APPLICATION

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT BY RULE NOTIFICATION FORM

(For use with DEP Regulation, Natural Resources Protection Act - Permit by Rule Standards, Chapter 305)

APPLICANT INFORMATION (Owner)		AGENT INFORMATION (If Applying on Behalf of Owner)	
Name:	GENX CAPITAL PARTNERS	Name:	HALEY WARD INC., ATTN: JON WHITTEN, JR.
Mailing Address:	2 COTTON STREET	Mailing Address:	ONE MERCHANTS PLAZA, SUITE 701
Mailing Address:		Mailing Address:	
Town/State/Zip:	PORTLAND, ME 04101	Town/State/Zip:	BANGOR, ME 04401
Daytime Phone #:	Ext:	Daytime Phone #:	(207) 989-4824 Ext:
Email Address:	gls@shinbergconsulting.com	Email Address:	jwhitten@haleyward.com

PROJECT INFORMATION

Part of a larger project? (check 1):	☑ Yes ☐ No	After the Fact? (check 1):	☐ Yes ☑ No	Project involves work below mean low water? (check 1):	☑ Yes ☐ No	Name of waterbody:	UNNAMED STREAM
Project Town:	PORTLAND		Town Email Address:	jrather@portlandmaine.gov		Map and Lot Number:	390/A001
Brief Project Description:	PLANNED RESIDENTIAL UNIT DEVELOPMENT WITH 60 UNITS.						
Project Location & Brief Directions to Site:	FROM CANCO ROAD, TURN LEFT ONTO ME-26. FOLLOW FOR 0.6 MILES, THEN TURN RIGHT ONTO ALLEN AVE. FOLLOW FOR 0.5 MILES, THEN TURN LEFT ONTO SUMMIT STREET. FOLLOW FOR 0.7 MILES, THEN TURN RIGHT ONTO CURTIS ROAD.FOLLOW FOR 0.6 MILES, THEN TURN LEFT ONTO HOPE AVENUE. ENTRANCE TO SITE IS JUST AFTER BASKET LANE ON RIGHT.						

PERMIT BY RULE (PBR) SECTIONS (Check at least one): I am filing notice of my intent to carry out work that meets the requirements for Permit-by-Rule (PBR) under DEP Rules, Chapter 305. I and my agent(s), if any, have read and will comply with all of the standards in the Sections checked below.

- ☐ **Sec. (2) Act. Adj. to Prot. Natural Res.**
- ☐ **Sec. (3) Intake Pipes**
- ☐ **Sec. (4) Replacement of Structures**
- ☐ **Sec. (6) Movement of Rocks or Veg.**
- ☐ **Sec. (7) Outfall Pipes**
- ☐ **Sec. (8) Shoreline Stabilization**
- ☐ **Sec. (9) Utility Crossing**
- ☑ **Sec. (10) Stream Crossing**
- ☐ **Sec. (11) State Transportation Facilities**
- ☐ **Sec. (12) Restoration of Natural Areas**
- ☐ **Sec. (13) F&W Creat./Water Qual. Improv.**
- ☐ **Sec. (15) Public Boat Ramps**
- ☐ **Sec. (16) Coastal Sand Dune Projects**
- ☐ **Sec. (17) Transfer/Permit Extension**
- ☐ **Sec. (18) Maintenance Dredging**
- ☐ **Sec. (19) Act. Near SVP Habitat**
- ☐ **Sec. (20) Act. Near Waterfowl/Bird Habitat**

NOTE: Municipal permits also *may* be required. Contact your local code enforcement office for information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for information.

NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS AND FEE

- ☑ ***Attach*** **all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.**
- ☑ ***Attach*** a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).
- ☑ ***Attach*** *Proof of Legal Name* if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's *registration information* (available at http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x). Individuals and municipalities are not required to provide any proof of identity.

FEE: Pay by credit card at the Payment Portal. The Permit-by-Rule fee may be found here https://www.maine.gov/dep/feeschedule.pdf and is currently $266.

- ☑ ***Attach*** **payment confirmation from the Payment Portal when filing this notification form.**

Signature & Certification:

- I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules**.**
- I understand that this PBR becomes effective 14 calendar days after receipt by the Department of this completed form, the required submissions, and fee, *unless the Department approves or denies the PBR prior to that date.*

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in Chapter 305 rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant (may be typed):		**Date:**	10/24/2022

***Keep a copy as a record of permit*.** Email this completed form with attachments to DEP at: DEP.PBRNotification@maine.gov. DEP will send a copy to the Town Office as evidence of DEP's receipt of notification. No further authorization will be issued by DEP after receipt of notice. A PBR is valid for two years, except Section 4, "Replacement of Structures," are valid for three years. **Work carried out in violation of the Natural Resources Protection Act or any provision in Chapter 305 is subject to enforcement.**

NARRATIVE

The Presumpscot Woods project is a proposed residential, condominium development consisting of the creation of 60 new dwelling units through a combination of duplex and triplex buildings supported by a private access way and associated utilities. The project is located off Hope Avenue, in Portland, Maine on Parcels 390/A001, 448/A001001, 449/A002. The applicant/owner, GenX Capital Partners, LLC (Owner), is proposing to develop this subdivision under the PRUD dimensional standards within the City's R-3 Zoning District.

The project site is approximately 13.7 acres in size and, although located in an urban residential neighborhood, it is currently forested and undeveloped. The land slopes range from gentle to steep on the outskirts of the property. There are small pockets of wetlands within the site and a narrow stream located in an eroded channel that divides the property. The site abuts the Falmouth Spur of the Maine Turnpike to the north and undeveloped, conservation lands to the east, which border the Presumpscot River.

There is one proposed stream crossing associated with this project. The stream was identified in a Natural Resource Survey conducted by Flycatcher LLC in July 2022.

The watershed of the stream to be crossed includes approximately 20 acres of residential area in North Deering. The stream is perennial and has a bankful width of approximately 4 feet at the proposed crossing location. The channel originates in the general location of the proposed crossing and is approximately 1,500 feet long, draining directly into the Presumpscot River.

A 4-sided concrete box culvert is proposed for the crossing. The crossing has been designed to meet the Army Corps of Engineers' Stream Smart guidelines. Construction will occur during the approved crossing construction work window (July 15 - October 1) during periods of low water and will adhere to all standards and conditions outlined under Section 10 of Chapter 305 – Permit by Rule Standards and the current Erosion and Sediment Control BMPS.

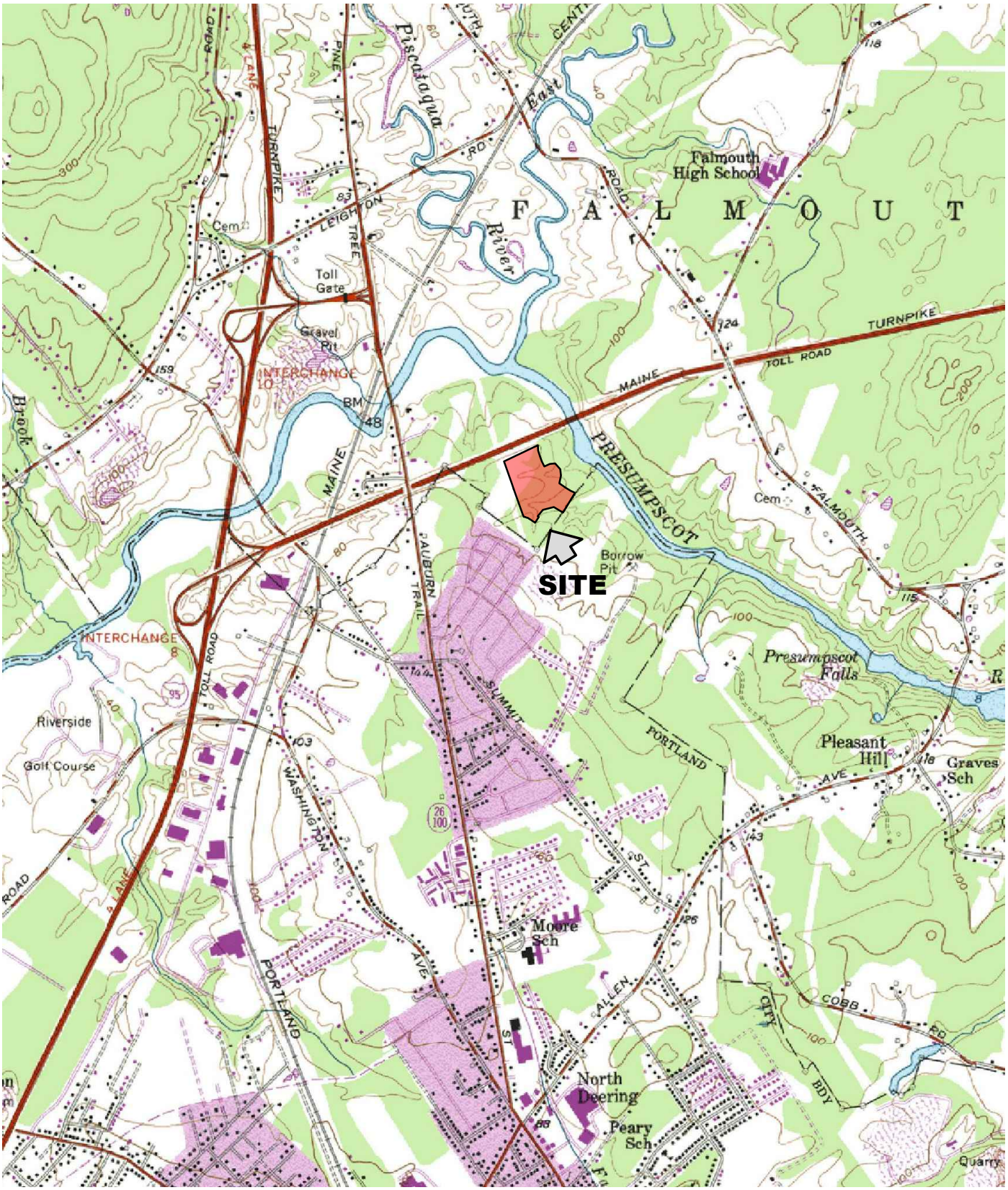
This Applicant is also seeking City of Portland Site Plan and Subdivision approval, a Maine Department of Environmental Protection (MDEP) Site Location of Development permit, and a MDEP NRPA Tier 1 permit for wetland alterations for this Site.

SITE LOCATION AND NATURAL RESOURCE PLAN

Refer to the attached Site Location Map which shows the location of the proposed stream crossing.

LOCATION MAP

Terrain Navigator.© Maptech 800-627-7236



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
PORTLAND WEST
@ 1:24,000

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

HOPE AVENUE DEVELOPMENT
PORTLAND, MAINE
LOCATION MAP

05/02/2022
13773.001

Photo No. 1 **Photo Date:** August 2022 **Site Location:** Portland, Maine **Description:** Approximate location of stream crossing, looking downstream. **Photo By:** DJO	

Photo No. 2 **Photo Date:** August 2022 **Site Location:** Portland, Maine **Description:** Approximate location of stream crossing, looking upstream. **Photo By:** DJO	

Photo No. 3 **Photo Date:** August 2022 **Site Location:** Portland, Maine **Description:** Approximate location of stream crossing, looking downstream. **Photo By:** DJO	

Photo No. 4 **Photo Date:** August 2022 **Site Location:** Portland, Maine **Description:** Approximate location of stream crossing, looking downstream. **Photo By:** DJO	

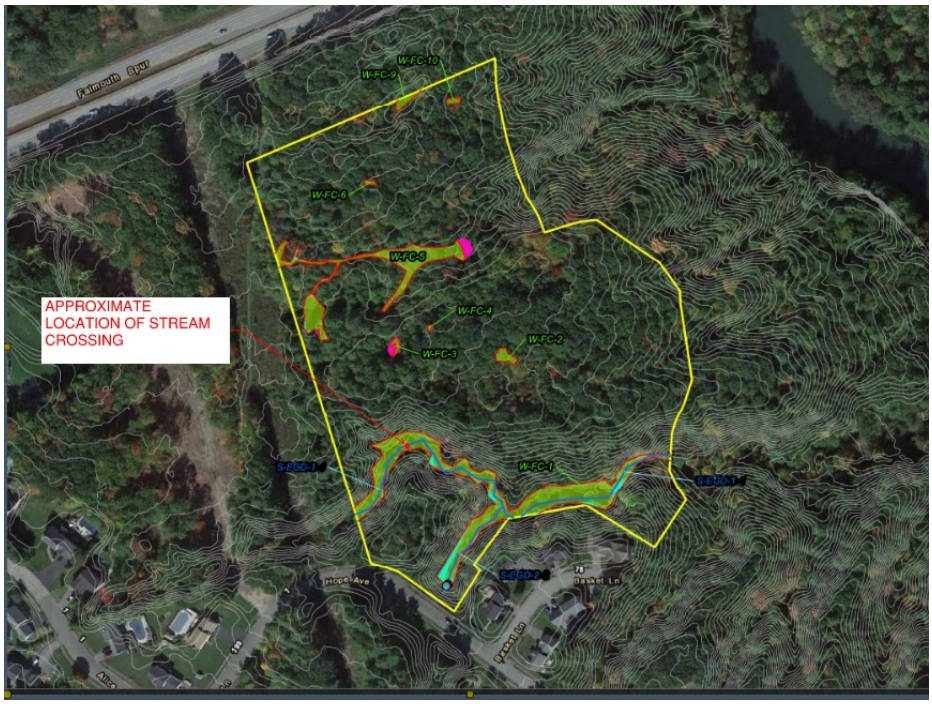
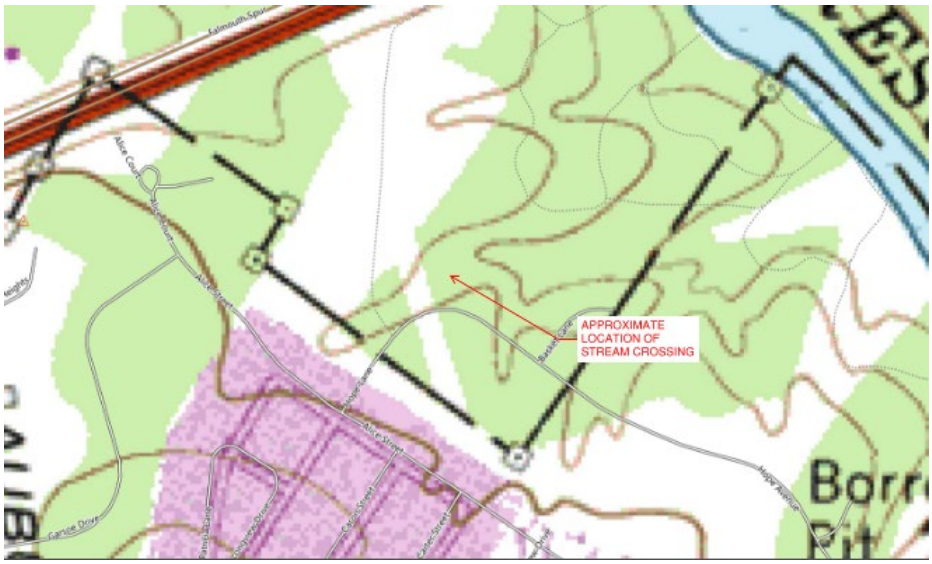
Photo No. 5	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Approximate location of stream crossing.	
Photo By: Google Earth	

Photo No. 6	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Approximate location of stream crossing.	
Photo By: TerrainNav	

GOOD STANDING RECORDS

GENX PARTNERS, LLC
SHINBERG CONSULTING, LLC

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Apr 18 2022 09:39:36. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
GENX CAPITAL PARTNERS LLC	20201169FC	LIMITED LIABILITY COMPANY (FOREIGN)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
05/12/2020	N/A	FLORIDA

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

REGISTERED AGENTS INC
415 CONGRESS ST
STE 202A
PORTLAND, ME 04101

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MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Apr 18 2022 09:56:17. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
SHINBERG CONSULTING, LLC	20061216DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
10/27/2005	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

GREG L. SHINBERG
PO BOX 4424
PORTLAND, ME 04101

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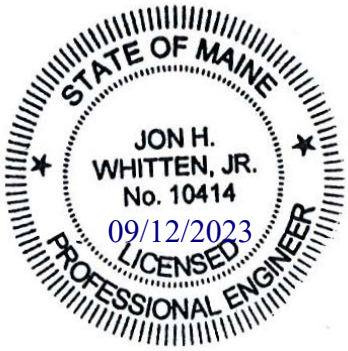
HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

NATURAL RESOURCES PROTECTION ACT
TIER 1 PERMIT APPLICATION

TO THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

FOR PRESUMPSCOT WOODS
Portland, Maine

Applicant:
GenX Capital Partners LLC
2 Cotton Street | Portland, Maine 04101



SEPTEMBER 2023
JN: 13773.001

Application Prepared By:
Haley Ward, Inc.
One Merchants Plaza, Suite 701 | Bangor, Maine 04401

Corporate Office
One Merchants Plaza
Suite 701
Bangor, ME 04401
T: 207.989.4824
F: 207.989.4881

HALEYWARD.COM

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Maine Department of Inland Fisheries and Wildlife
Maine Natural Areas Program
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C103 – Proposed Grading and Drainage Plan

APPLICATION

AGENT AUTHORIZATION

APPLICATION FOR A NATURAL RESOURCES PROTECTION ACT PERMIT

➔**PLEASE TYPE OR PRINT IN *BLACK INK ONLY***

1. Name of Applicant:	**GENX CAPITAL PARTNERS, LLC**	**5 Name of Agent: (if applicable)**	**HALEY WARD, INC. (ATTN: JON WHITTEN, JR., PE)**
2. Applicant's Mailing Address:	**2 COTTON STREET PORTLAND, MAINE 04101**	**6 Agent's Mailing Address:**	**ONE MERCHANTS PLAZA, SUITE 701 BANGOR, MAINE 04401**
3. Applicant's Daytime Phone #:	**207-772-7070**	**7 Agent's Daytime Phone #:**	**207-989-4824**
4 Applicant's Email Address Required from *either* applicant or agent:	**gls@shinbergconsulting.com**	**8. Agent's Email Address:**	jwhitten@haleyward.com

9. Location of Activity: (Nearest Road, Street, Rt.#)	**HOPE AVENUE**	**10. Town:**	**PORTLAND**	**11. County:**	**CUMBERLAND**

12A. Significant Groundwater well? ❑ Yes **OR** ☒ No

12. Type of Resource: (Check all that apply)	❑ River, stream or brook ❑ Great Pond ❑ Coastal Wetland ☒ **Freshwater Wetland** ❒ Wetland Special Significance ❑ Significant Wildlife Habitat ❑ Fragile Mountain	**13. Name of Resource:**	**UNNAMED WETLANDS**
		14. Amount of Impact: (Sq.Ft.)	**Fill: 6,595 sf** **Dredging/Veg Removal/Other: 3,942 SF (HYDROLOGY ALTERATION)**

15. Type of Wetland: (Check all that apply)	☒ **Forested** ❑ Scrub Shrub ❑ Emergent ❑ Wet Meadow ❑ Peatland ❑ Open Water ❑ Other_____	**FOR FRESHWATER WETLANDS**		
		Tier 1	*Tier 2*	*Tier 3*
		❑ 0 - 4,999 sq ft. ❑ 5,000-9,999 sq ft ☒ 10,000-14,999 sq ft.	❑ 15,000 – 43,560 sq.ft.	❑ > 43,560 sq. ft. or ❑ smaller than 43,560 sq ft., not eligible for Tier 1

16. Brief Activity Description	**PLANNED RESIDENTIAL UNIT DEVELOPMENT WITH 60 UNITS.**

17. Size of Lot or Parcel:	❑ square feet, or ☒ **13.7 acres**	UTM Northing: **4838090N**	UTM Easting: **190398966E**

18. Title, Right or Interest:	☒ **own**	❑ lease	❑ purchase option	❑ written agreement	
19. Deed Reference Numbers:	Book#: **39511** Page: **311**	**20. Map and Lot Numbers:**	Map #: **390**	Lot #: **A001**	
21. DEP Staff Previously Contacted:	**N/A**	**22. Part of a larger project:**	❑ Yes ☒ **No**	**After-the-Fact:**	❑ Yes ☒ **No**

23. Resubmission of Application?	❑ Yes➔ ☒ **No**	**If yes, previous application #**	**N/A**	**Previous project manager:**	**N/A**
24. Written Notice of Violation?	❑ Yes ➔ ☒ **No**	**If yes, name of DEP enforcement staff involved:**	**N/A**	**25. Previous Wetland Alteration:**	❑ Yes ☒ **No**

26. Detailed Directions to the Project Site:	**FROM CANCO ROAD, TURN LEFT ONTO ME-26. FOLLOW FOR 0.6 MILES, THEN TURN RIGHT ONTO ALLEN AVE. FOLLOW FOR 0.5 MILES, THEN TURN LEFT ONTO SUMMIT STREET. FOLLOW FOR 0.7 MILES, THEN TURN RIGHT ONTO CURTIS ROAD. FOLLOW FOR 0.6 MILES, THEN TURN LEFT ONTO HOPE AVENUE. ENTRANCE TO SITE IS JUST AFTER BASKET LANE INTERSECTION, ON RIGHT.**

27. **TIER 1**	**TIER 2/3 AND INDIVIDUAL PERMITS**	
☒ Title, right or interest documentation ☒ Topographic Map ☒ Narrative Project Description ☒ Plan or Drawing (8 1/2" x 11") ☒ Photos of Area ☒ Statement of Avoidance & Minimization ☒ Statement/Copy of cover letter to MHPC	❒ Title, right or interest documentation ❒ Topographic Map ❒ Copy of Public Notice/Public Information Meeting Documentation ❒ Wetlands Delineation Report (Attachment 1) that contains the Information listed under Site Conditions ❒ Alternatives Analysis (Attachment 2) including description of how wetland impacts were Avoided/Minimized	❒ Erosion Control/Construction Plan ❒ Functional Assessment (Attachment 3),if required ❒ Compensation Plan (Attachment 4), if required ❒ Appendix A and others, if required ❒ Statement/Copy of cover letter to MHPC ❒ Description of Previously Mined Peatland, if required

28. FEES, Amount Enclosed:	**$150.00**

CERTIFICATIONS AND SIGNATURES LOCATED ON PAGE 2

IMPORTANT: IF THE SIGNATURE BELOW IS NOT THE APPLICANT'S SIGNATURE, ATTACH LETTER OF AGENT AUTHORIZATION SIGNED BY THE APPLICANT.

By signing below the applicant (or authorized agent), certifies that he or she has read and understood the following:

DEP SIGNATORY REQUIREMENT

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor a permit be issued.

CORPS SIGNATORY REQUIREMENT

USC Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry shall be fines not more than $10,000 or imprisoned not more than five years or both. I authorize the Corps to enter the property that is subject to this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein.

DEP SIGNATORY REQUIREMENT

"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 that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Further, I hereby authorize the DEP to send me an electronically signed decision on the license I am applying for with this application by emailing the decision to the address located on the front page of this application (see #4 for the applicant and #8 for the agent)."



_____ Date: 09/12/2023

SIGNATURE OF AGENT/APPLICANT

NOTE: Any changes in activity plans must be submitted to the DEP and the Corps in writing and must be approved by both agencies prior to implementation. Failure to do so may result in enforcement action and/or the removal of the unapproved changes to the activity.

Drew Olehowski

From: Mark McClure <mark@genxcp.com>
Sent: Wednesday, September 6, 2023 2:04 PM
To: Greg Shinberg
Cc: Jon Whitten, Jr.; Drew Olehowski
Subject: Re: Authorization letter for Shinberg Consulting

I hereby authorize Greg Shinberg as my designated agent for the approvals of Presumpscot Woods.

Thank you

Mark McClure
Managing Partner
GenX Capital Partners LLC
www.GenXCP.com
214-417-1218

From: Greg Shinberg <gls@shinbergconsulting.com>
Sent: Wednesday, September 6, 2023 1:55:38 PM
To: Mark McClure <mark@genxcp.com>
Cc: Jon Whitten, Jr. <jwhitten@haleyward.com>; Drew Olehowski <dolehowski@haleyward.com>
Subject: Authorization letter for Shinberg Consulting

Hi Mark,

Please send an email that designates Greg Shinberg of Shinberg Consulting as the authorized agent for local and state agencies for the approvals for Presumpscot Woods.

Greg Shinberg
Owner, Shinberg Consulting, LLC
gls@shinbergconsulting.com
Mail: PO Box 4424, Portland, ME 04101
Office: 181 State Street, Suite 303, Portland, ME 04101
Tel: (207) 772-7070
Cell: (207) 653-7510



Warning: The sender of this message could not be validated and may not be the actual sender.

ATTACHMENT 1

DEED

MAINE REAL ESTATE TAX-Paid

DLN: 1002240198225

QUITCLAIM DEED

ESTELLE ESTATES, LLC, a Maine limited liability company with its principal place of business in Portland, County of Cumberland and State of Maine, for consideration paid, grants to 338 FALMOUTH FORESIDE PARTNERS LLC, a Maine limited liability company with its principal place of business in Falmouth, County of Cumberland and State of Maine, with a mailing address of 2 Town Landing Road, Falmouth, ME 04105, WITH QUITCLAIM COVENANT, in and to the land, buildings, improvements and all appurtenances thereof situated in the City of Portland, County of Cumberland and State of Maine bounded and described as follows:

PARCEL ONE

A certain lot or parcel of land located on the northeasterly side of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, generally depicted as "Lot 24" on a certain plan entitled "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, recorded in the Cumberland County Registry of Deeds in Plan Book 206, Page 412, being more particularly bounded and described as follows:

Beginning at a point on the northwesterly side of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650, said point of beginning lying N 31°28'15" E by said Lot 1 a distance of Three Hundred Forty-Six and 08/100 (346.08) feet from the northeasterly sideline of Hope Avenue as depicted on said plan of Presumpscot River Place III. Thence:

1) N 58°31'45" W a distance of One Hundred Fifty-Two and 96/100 (152.96) feet to a point.

2) S 75°51'37" W a distance of One Hundred Sixty-Four and 63/100 (164.63) feet to a point.

3) S 39°42'09" W a distance of One Hundred Seventeen and 91/100 (117.91) feet to a point.

4) S 58°31'45" E a distance of Twenty and 00/100 (20.00) feet to a point.

5) S 31°28'15" W a distance of Ninety-Nine and 50/100 (99.50) feet to a point on the northeasterly side of said Hope Avenue.

6) N 55°52'57" W by said Hope Avenue a distance of Ninety and 61/100 (90.61) feet to a point of curvature.

7) Northwesterly by said Hope Avenue following a curve to the left having a radius of Two Hundred Twenty-Five and 00/100 (225.00) feet an arc distance of One Hundred One and 64/100

(101.64) feet to a point and land now or formerly of the City of Portland as described in a deed recorded in said Registry in Book 17463, Page 276.

8) N 19°30'58" W by said land of City of Portland and Lot 1 as depicted on a plan entitled "Riverwalk Subdivision Plan" made by Titcomb Associates dated October 25, 2005, a distance of Eight Hundred Forty-Seven and 44/100 (847.44) feet to a point.

9) N 64°27'37" E by said land of City of Portland a distance of Five Hundred Forty-Four and 52/100 (544.52) feet to a point.

10) S 02°55'37" E by said land of City of Portland a distance of Seventy-Five and 57/100 (75.57) feet to a point.

11) S 16°16'41" E by said land of City of Portland a distance of Ninety-Seven and 28/100 (97.28) feet to a point.

12) S 21°57'26" E by said land of City of Portland a distance of Seventy-Five and 78/100 (75.78) feet to a point.

13) S 26°42'50" E by said land of City of Portland and land depicted as Land Proposed for Conveyance to City of Portland (11,714 s.f.) on said Riverwalk Subdivision Plan a distance of One Hundred Twenty and 38/100 (120.38) feet to a point.

14) N 67°31'46" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Fifty and 73/100 (50.73) feet to a point.

15) N 74°57'11" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Twenty-Seven and 25/100 (27.25) feet to a point.

16) N 82°42'53" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of Thirty and 98/100 (30.98) feet to a point.

17) S 57°41'42" E by said Land Proposed for Conveyance to City of Portland (11,714 s.f.) a distance of One Hundred Twenty-Nine and 99/100 (129.99) feet to a point and land depicted as Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) on said Riverwalk Subdivision Plan.

18) S 05°41'39" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of Fifty-Three and 28/100 (53.28) feet to a point.

19) S 12°34'45" W by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.

20) S 54°10'20" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of One Hundred Ten and 21/100 (110.21) feet to a point.

21) S 59°34'29" E by said Land Proposed for Conveyance to Adam-Wolf (13,787 s.f.) a distance of Twenty-Eight and 61/100 (28.61) feet to a point and land depicted as Land Proposed for Conveyance to City of Portland (46,012 s.f.).

22) S 14°07'58" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Forty-Seven and 20/100 (47.20) feet to a point.

23) S 20°34'09" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Sixty-Six and 74/100 (66.74) feet to a point.

24) S 01°32'31" W by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Seventy-Seven and 90/100 (77.90) feet to a point.

25) S 27°16'40" E by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Sixty and 84/100 (60.84) feet to a point.

26) S 55°18'28" E by said Land Proposed for Conveyance to City of Portland (46,012 s.f.) a distance of Eleven and 40/100 (11.40) feet to a point and the northwesterly side of Lot 1 as depicted on a plan entitled "Presumpscot River Place III" recorded in said Registry in Plan Book 202, Page 650.

27) S 31°28'15" W by said Lot 1 a distance of One Hundred Seventeen and 43/100 (117.43) feet to the point of beginning.

Bearings are based on true north.

The above described parcel is a portion of land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70.

Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed TOGETHER WITH, a certain easement located on the northerly side of but not adjacent to Hope Avenue in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

A thirty (30) foot wide strip of land, the centerline of which begins at a point lying N 19°30'58" W a distance of Thirty-Seven and 50/100 (37.50) feet from the northeasterly corner of the second parcel conveyed to the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276, with said centerline continuing S 70°29'02''W to the easterly sideline of a road to be constructed by Grantor and referred to as "Road A" on preliminary concept plans for the development of Grantor's property, as such road is actually built.

The easement shall be appurtenant to Grantee's above described premises (Parcel One herein). The easement shall be for the purpose of providing a gravel emergency access road (public or private), as may be required by the City of Portland pursuant to Grantee's development of the dominant tenement. Grantor agrees to extend such easement rights to the general public, as necessary, by separate easement deed. In the event that Grantee is not required to construct such emergency access road, as a condition of site plan approval, subdivision approval or any conditional zone agreement that Grantee may enter into with the City of Portland to develop the dominant tenement, all rights of Grantee and his successors in and to the easement created hereby shall be promptly terminated, and Grantee shall record an instrument in the Cumberland County Registry of Deeds confirming the termination of such easement rights.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

The above described parcel is conveyed subject to a portion of a certain culvert easement, benefiting the City of Portland, located on the northeasterly sideline of Hope Avenue in the City of Portland, County of Cumberland, State of Maine, shown as "City of Portland Culvert Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, and more particularly bounded and described as follows:

Beginning at a point on the northeasterly sideline of Hope Avenue, said point lying N 55°52'57" W by said Hope Avenue a distance of Two Hundred Sixty-Five and 28/100 (265.28) feet from the westerly corner of Lot 1 as depicted on a plan of Presumpscot River Place III recorded in the Cumberland County Registry of Deeds in Plan Book 202, Page 650. Thence:

1) N 55°52'57" W by said Hope Avenue a distance of Thirty-One and 95/100 (31.95) feet to a point.

2) N 06°46'58' W a distance of Eighty and 00/100 (80.00) feet to a point.

3) S 85°29'48" E a distance of Thirty- Five and 69/100 (35.69) feet to a point.

4) S 06°46'58" E a distance of Eighty and 18/100 (80.15) feet to a point.

5) S 31°28'15" W a distance of Seventeen and 51/100 (17.51) feet to a point and said Hope Avenue.

Bearings are based on true north.

The above described portion of the culvert easement contains 3,083 square feet. The above described culvert easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel,

all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain drainage easement, benefiting the City of Portland, adjoining the above referenced culvert easement, shown as "City of Portland Drainage Easement" on the above referenced "Riverwalk Subdivision Plan" prepared by Titcomb Associates, Sheet 1 of 2, dated October 25, 2005, being thirty and 00/100 (30.00) feet in width, beginning near the northeasterly corner of the above described culvert easement and continuing northeasterly across the above described parcel. The center of said drainage easement follows the center of the naturally occurring drainage course, which course may vary from time to time. The easement includes the right to construct, repair and perpetually maintain through, under, across and upon said easement parcel, culverts, pipes, ditches or the like, for conveying drainage water, and to lay, relay, repair, alter, enlarge, maintain and remove said drainage systems upon, across or under said easement parcel, with all necessary fixtures and appurtenances, to trim, cut down and remove bushes and trees growing on said easement parcel, to remove grass, vegetation and crops growing on said easement parcel and to excavate or fill said easement parcel, all to such extent as in the judgment of the City of Portland is necessary for any of the above purposes, and to enter upon said easement parcel at any and all times for any of the foregoing purposes.

The above described parcel is conveyed subject to a certain Portland Water District Easement, recorded in the Cumberland County Registry of Deeds in Book 2267, Page 257.

PARCEL TWO

A certain lot or parcel of land located in the City of Portland, County of Cumberland, State of Maine, bounded and described as follows:

Beginning at a point on a line of the remaining land now or formerly of Lloyd B. Wolf and Robert L. Adam as described in a deed recorded in the Cumberland County Registry of Deeds in Book 7058, Page 70, said point of beginning lying N 62° 51'18" W a distance of One Hundred Twenty-Nine and 32/100 (129.32) feet from the northerly corner of Lot 1 as depicted on the Presumpscot River Place Phase III- Subdivision Plan, dated December 4, 2001 recorded in said Registry in Plan Book 202, Page 650; Thence:

1) N 59°34'29" W by said remaining land of Adam and Wolf a distance of Twenty-Eight and 61/100 (28.61) feet to a point

2) N 54°10'20" W by said remaining land of Adam and Wolf a distance of One Hundred Ten and 21/100 (110.21) feet to a point.

3) N 12°34'45" E by said remaining land of Adam and Wolf a distance of a distance of One Hundred Twelve and 44/100 (112.44) feet to a point.

4) N 05°41'39" W by said remaining land of Adam and Wolf a distance of Fifty-Three and 28/100 (53.28) feet to a point.

5) S 57°41'42" E a distance of Twenty-One and 28/100 (21.28) feet to a point.

6) S 39°27'41" E a distance of Sixty-Six and 70/100 (66.70) feet to a point.

7) S 10°53'57' E a distance of One Hundred Eighty-Two and 18/100 (182.18) feet to the point of beginning.

Bearings are based on true north.

Being the same premises conveyed to Grantor and Grantee herein by the City of Portland, by deed of even or recent date herewith, to be recorded at the Cumberland County Registry of Deeds. The above described parcel is a portion of land formerly of the City of Portland as described in a deed recorded in the Cumberland County Registry of Deeds in Book 17463, Page 276. Reference is herein made to Private & Special Laws of Maine, Second Regular Session of the 120th Legislature, Chapter 62, S.P. 499-L.D. 1586, An Act to Separate Territory from the Town of Falmouth and Annex it to the City of Portland, approved April 2, 2002.

The above described parcel is conveyed subject to any and all easements and restrictions of record and includes all rights, easements, privileges and appurtenances pertaining thereto.

Meaning and intending to convey, and hereby conveying, all and the same premises described in the Deed of Sale by Personal Representative of the Estate of Robert Lincoln Adam to Estelle Estates, LLC dated November 19, 2018 and recorded in the Cumberland County Registry of Deeds in Book 35303, Page 331.

IN WITNESS WHEREOF, ESTELLE ESTATES, LLC has executed, acknowledged and delivered this Quitclaim Deed by and through Paul F. Driscoll, its Vice President, on this 17th day of June, 2022, hereunto duly authorized.

ESTELLE ESTATES, LLC

Witness

By: _____

Paul F. Driscoll
Its Vice President

[Acknowledgment Located on Following Page]

STATE OF MAINE
Cumberland, ss.

June 17, 2022

Personally appeared the above-named Paul F. Driscoll, Vice President of Estelle Estates, LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of Estelle Estates, LLC.

Before me,

Jamee McCormack

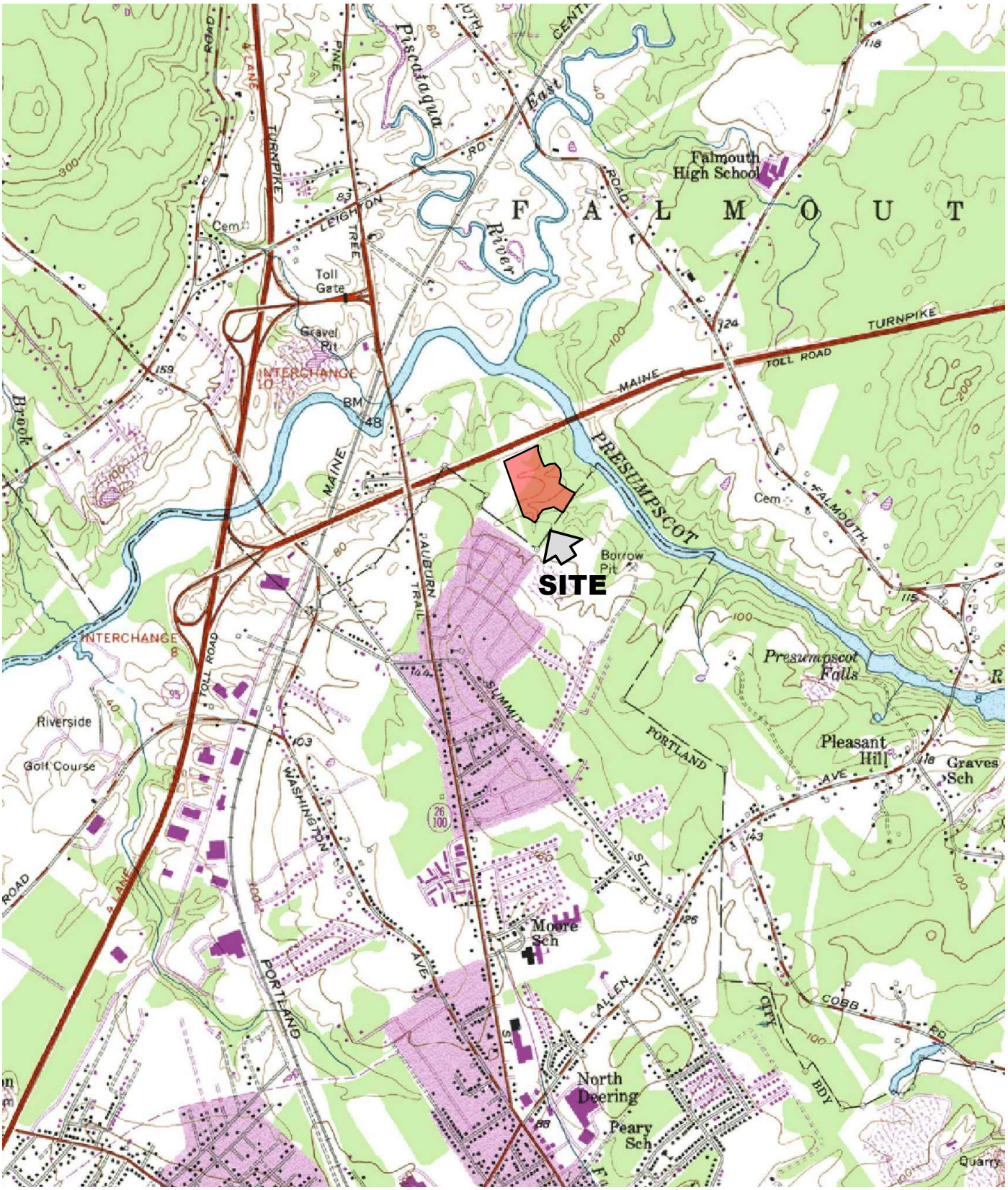
~~Notary Public~~/Attorney-at-Law

Jamee McCormack

ATTACHMENT 2

LOCATION MAP

Terrain Navigator.© Maptech 800-627-7236



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
PORTLAND WEST
@ 1:24,000

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

HOPE AVENUE DEVELOPMENT
PORTLAND, MAINE
LOCATION MAP

05/02/2022
13773.001

ATTACHMENT 3

PROJECT DESCRIPTION

PROJECT DESCRIPTION

The Presumpscot Woods project is a proposed residential, condominium development consisting of the creation of 60 new dwelling units through a combination of duplex and triplex buildings supported by a private access way and associated utilities. The project is located off Hope Avenue, in Portland, Maine on Parcels 390/A001, 448/A001001, 449/A002. The applicant/owner, GenX Capital Partners, LLC (Owner), is proposing to develop this subdivision under the PRUD dimensional standards within the City's R-3 Zoning District.

The project site is approximately 13.7 acres in size and, although located in an urban residential neighborhood, it is currently forested and undeveloped. The land slopes range from gentle to steep, on the outskirts of the property. There are small pockets of wetlands within the site and a narrow stream located in an eroded channel that divides the property. The site abuts the Falmouth Spur of the Maine Turnpike to the north and undeveloped, conservation lands to the east, which border the Presumpscot River.

Site Overview

The areas proposed for the development (herein referred to as the Site) consists of surrounding undeveloped woodland. The Site vicinity is dominated by undeveloped land and residential development. Residential structures adjoin the Site to the southeast and southwest. An overhead utility transmission corridor runs parallel to the west side of the Site.

The overall topography of the Site is gently sloping to the northeast towards wetlands and streams which drain to the Presumpscot River, which is located approximately 400 feet northeast of the Site

Protected Natural Resources

On July 28, 2022, Flycatcher, LLC completed a Natural Resource Survey on the Site. The natural resource survey included wetlands, a stream, and an appropriately timed vernal pool survey. A copy of this survey report has been provided which includes locations, descriptions, and photos of all identified natural resources.

Protected Species and Consultation

Based on on-line review of State protected habitats and the consultation letter received from Maine Department of Inland Fisheries and Wildlife, no Significant Wildlife Habitats are mapped on the Site.

The Maine Natural Areas Program (MNAP) indicates that there are no rare botanical features documented specifically within the Project area. MNAP notes that this lack of data may indicate minimal survey efforts, rather than confirm the absence of rare botanical features.

Proposed Project

Proposed wetland impacts have been shown on the provided drawings and in the table below. All proposed impacts are to wetlands not of special significance, except for those associated with the stream crossing which have been permitted under a separate Permit by Rule. One section of wetland ,W-FC-5, will not be dredged or filled, however, there will be new stormwater runoff inflows and outlets which are expected to alter the hydrologic function of the system and will therefore be considered impacted for the purposes of this application.

WETLAND ID	TERMPORARY IMPACT, SF	MDEP DIRECT IMPACT , SF	ACOE DIRECT IMPACT , SF
W-FC-1	0	435*	3,277
W-FC-2	0	0	0
W-FC-3	0	345	328
W-FC-4	0	0	0
W-FC-5	0	5,070 (Direct) 3,942 (Indirect)	5,070 (Direct) 3,942 (Indirect)
W-FC-6	0	197	197
W-FC-9	0	545	545
W-FC-10	0	0	0
TOTAL IMPACT	**0**	**10,537**	**13,457**

* Impacts from stream crossing permitted through a NRPA PBR.

ATTACHMENT 4

GOOD STANDING CERTIFICATES

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Apr 18 2022 09:39:36. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
GENX CAPITAL PARTNERS LLC	20201169FC	LIMITED LIABILITY COMPANY (FOREIGN)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
05/12/2020	N/A	FLORIDA

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

REGISTERED AGENTS INC
415 CONGRESS ST
STE 202A
PORTLAND, ME 04101

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List of Filings	View list of filings
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Certificate of Existence (more info)	Short Form without amendments ($30.00)

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If you encounter problems, visit the troubleshooting page.

If you encounter technical difficulties while using these services, please contact the Webmaster. If you are unable to find the information you need through the resources provided on this web site, please contact the Bureau's Reporting and Information Section at 207-624-7752 or e-mail or visit

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Mon Apr 18 2022 09:56:17. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
SHINBERG CONSULTING, LLC	20061216DC	LIMITED LIABILITY COMPANY (DOMESTIC)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
10/27/2005	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

GREG L. SHINBERG
PO BOX 4424
PORTLAND, ME 04101

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ATTACHMENT 5

PHOTOGRAPHIC LOG

Photo No. 1	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Approximate location of stream crossing, looking downstream.	
Photo By: DJO	

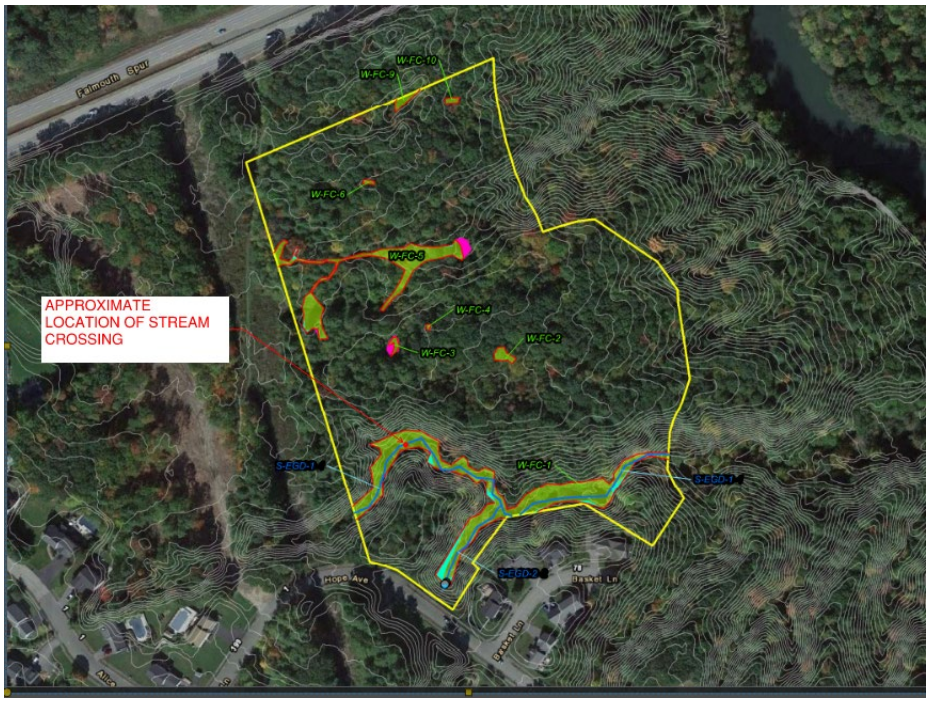
Photo No. 2	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Approximate location of stream crossing, looking upstream.	
Photo By: DJO	

Photo No. 3	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Approximate location of stream crossing, looking downstream.	
Photo By: DJO	



Photo No. 4	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Approximate location of stream crossing, looking downstream.	
Photo By: DJO	



Photo No. 5	
Photo Date: August 2022	
Site Location: Portland, Maine	
Description: Natural Resource Mapping from Flycatcher, LLC report	
Photo By: Flycatcher Report	

Additional photographs can be seen in the provided Flycatcher LLC Natural Resources Report.

ATTACHMENT 6

STATEMENT OF AVOIDANCE AND MINIMIZATION

AVOIDANCE AND MINIMIZATION

The Applicant, GenX Capital Partners, has reduced natural resource impacts to the greatest extent practicable while still accomplishing the goals of this development.

Avoidance: Site layout took into account wetland avoidance. The majority of the proposed development has been placed in upland areas. The layout has been oriented so that the larger wetlands would be at the center, undeveloped portion of the lot. The majority of the proposed building footprints are in upland areas. The roadway is also in upland areas except for where a stream crossing was required to access the site, and for where the road loops on itself to provide site connectivity. There is only one stream crossing proposed for the development, minimizing impacts to the stream, and to wetlands adjacent to the stream. The Site was walked to select lot locations that required less earthwork and reduced the area of impact.

Minimization: Where impacts are proposed, these wetland impacts have been minimized. It was required that grade was raised for the proposed roadways and building finish floor elevations, which resulted in a small amount of impact from the side slopes. These slopes were kept as steep as possible while still providing a practical road base/building foundation, without the need for additional reinforcement. At the stream crossing, the elevation of the road was kept as low as possible to reduce the need for extensive side slopes. These slopes are 1:1 to prevent encroachment onto adjacent wetlands.

Under the Maine Natural Resources Protection Act, the project is required to avoid and minimize disturbance to natural resources and to ensure that no unreasonable impact will occur. The proposed project has been designed to avoid and minimize impacts to natural resources to the greatest practicable extent.

ATTACHMENT 7

STATE AGENCY CORRESPONDENCES

Maine Historic Preservation Commission
Maine Department of Inland Fisheries And Wildlife
Maine Natural Areas Program

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

RECEIVED
MAY 16 2022
By 0782-22

May 16, 2022

Maine Historic Preservation Commission
Attn: Ms. Megan Rideout
55 Capitol Street
65 State House Station
Augusta, ME 04333-0065
Megan.M.Rideout@maine.gov

RECEIVED
MAY 27 2022
AND SCANNED

Re: GenX Capital Partners, LLC | Hope Avenue Subdivision | Portland, ME

Dear Ms. Rideout:

GenX Capital Partners, LLC is currently preparing Local and State permit applications for the construction of an approximately 10-acre residential development in Portland, Maine. The project site is to be located on a 14-acre property that is mostly wooded and undeveloped. The parcel is located in North Deering, just south of the Falmouth Spur Road. The proposed project will include approximately 60 duplexes and a private road.

Per permitting requirements, we are submitting this request to your office to determine if any historical sites of concern are located within the project area. The development will be screened on all sides by a vegetated buffer, and buildings in the surrounding neighborhood were constructed within the last 50 years; therefore, a photolog of nearby structures has not been provided. Any response can be forwarded to our office located at 1 Merchants Plaza, Suite 701, Bangor, ME 04401 or by email at dolehowski@haleyward.com.

Thank you for your assistance in this matter.

Sincerely,
Haley Ward, Inc.

Drew Olehowski, P.E.
Civil Engineer

DJO/cmg
Enc.

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

5/23/22
Date

One Merchants Plaza, Suite 701, Bangor, ME 04401
T: 207.989.4824 | HALEYWARD.COM

JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
353 WATER STREET
41 STATE HOUSE STATION
AUGUSTA ME 04333-0041

JUDITH CAMUSO
COMMISSIONER

August 2, 2022

Drew Olehowski
Haley Ward
One Merchants Plaza, Suite 701
Bangor, ME 04401

RE: Information Request – GenX Capital Partners LLC Project, Portland

Dear Drew:

Per your request received on May 16, 2022, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *GenX Capital Partners LLC* project in Portland. Please note that as project details are lacking our comments should be considered preliminary.

Our Department has not mapped any Essential Habitats that would be directly affected by your project.

Endangered, Threatened, and Special Concern Species

Bat Species – Of the eight species of bats that occur in Maine, the three *Myotis* species are protected under Maine's Endangered Species Act (MESA) and are afforded special protection under 12 M.R.S §12801 - §12810. The three *Myotis* species include little brown bat (State Endangered), northern long-eared bat (State Endangered), and eastern small-footed bat (State Threatened). The five remaining bat species are listed as Special Concern: big brown bat, red bat, hoary bat, silver-haired bat, and tri-colored bat. While a comprehensive statewide inventory for bats has not been completed, based on historical evidence it is likely that several of these species occur within the project area during migration and/or the breeding season. However, our Agency does not anticipate significant impacts to any of the bat species as a result of this project.

Spotted Turtle - Occurrences of spotted turtle, a State Threatened species, have been documented within the vicinity of the proposed project. Spotted turtles are most frequently associated with small, acidic wetlands and vernal pools located in large, intact landscapes. Development activity that compromises riparian integrity or migration permeability among seasonally critical wetlands can lead to degradation of habitat quality and potential loss of local populations for either of these species. Additionally, development projects that lead to significant increases in local traffic volume will likely lead to increased roadkill and possible extirpation of local populations.

Eastern Ribbon Snake - There is a potential for occurrences of Eastern ribbon snake, a state Species of Special Concern, within the project area. This rare species is a slender, semiaquatic snake often observed near the edges of emergent marshes, wet meadows, scrub-shrub wetlands, beaver impoundments, bogs, river and stream floodplains, and vegetated shorelines of ponds and lakes.

If habitats for either turtle or snake species are present in the project area, we recommend that they be avoided and adequately buffered with 250-foot intact, no cut buffers. Alternatively, the applicant can survey for spotted turtle and ribbon snakes to determine presence or absence in the project area. These surveys should be conducted by qualified biologists following MDIFW's most recent survey protocols.

Significant Wildlife Habitat

Significant Vernal Pools - At this time MDIFW Significant Wildlife Habitat (SWH) maps indicate no known presence of SWHs subject to protection under the Natural Resources Protection Act (NRPA) within the project area, which include Waterfowl and Wading Bird Habitats, Seabird Nesting Islands, Shorebird Areas, and Significant Vernal Pools. However, a comprehensive statewide inventory for Significant Vernal Pools has not been completed. Therefore, we recommend that surveys for vernal pools be conducted within the project boundary by qualified wetland scientists prior to final project design to determine whether there are Significant Vernal Pools present in the area. These surveys should extend up to 250 feet beyond the anticipated project footprint because of potential performance standard requirements for off-site Significant Vernal Pools, assuming such pools are located on land owned or controlled by the applicant. Once surveys are completed, survey forms should be submitted to our Agency for review well before the submission of any necessary permits. Our Department will need to review and verify any vernal pool data prior to final determination of significance.

Fisheries Habitat

We generally recommend maintaining 100-foot undisturbed vegetated buffers from the upland edge of all intermittent and perennial streams and any contiguous wetlands. Maintaining and enhancing buffers along these resources is critical to the protection of water temperatures, water quality, natural inputs of coarse woody debris, and various forms of aquatic life necessary to support fish and other aquatic species. Riparian buffers also provide critical habitat and important travel corridors for a variety of wildlife species. Stream crossings should be avoided, but if a stream crossing is necessary, or an existing crossing needs to be modified, it should be designed to provide for full aquatic passage. Small streams, including intermittent streams, can provide crucial rearing habitat, cold water for thermal refugia, and abundant food for juvenile salmonids on a seasonal basis. Undersized crossings may inhibit these functions and become a frequent maintenance problem that causes reoccurring damage to the resource. Generally, MDIFW recommends that all new, modified, and replacement stream crossings be sized to span at least 1.2 times the bankfull width of the stream. In addition, we generally recommend that stream crossings be open bottomed (i.e., natural bottom), although embedded structures which are backfilled with representative streambed material have been shown to be effective in providing habitat connectivity for fish and other aquatic organisms. Construction Best Management Practices should be closely followed to avoid erosion, sedimentation, alteration of stream flow, and other impacts as eroding soils can travel significant distances as well as transport other pollutants resulting in direct impacts to fish, other aquatic life, and their habitats. In addition, we recommend that any necessary instream work occur between July 15 and October 1.

This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program, Maine Department of Marine Resources, and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,



Becca Settele
Wildlife Biologist

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
177 STATE HOUSE STATION
AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

May 17, 2022

Drew Olehowski
Haley Ward
One Merchants Plaza, Suite 701
Bangor, ME 04401

Via email: dolehowski@haleyward.com

Re: Rare and exemplary botanical features in proximity to: #13773.001, GenX Capital Partners, Hope Avenue Subdivision, Portland, Maine

Dear Mr. Olehowski:

I have searched the Maine Natural Areas Program's Biological and Conservation Data System files in response to your request received May 16, 2022 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM
BLOSSOM LANE, DEERING BUILDING

PHONE: (207) 287-804490
WWW.MAINE.GOV/DACF/MNAP

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $150.00 for two hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Lisa St. Hilaire

Lisa St. Hilaire | Information Manager | Maine Natural Areas Program
207-287-8044 | lisa.st.hilaire@maine.gov

Rare and Exemplary Botanical Features within 4 miles of
Project: #13773.001, GenX Capital Partners, Hope Avenue Subdivision, Portland, ME

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Allegheny Vine						
	E	S1	G4	1860-10	9	Rocky summits and outcrops (non-forested, upland),Dry
American Sea-blite						
	T	S2	G5	1932-09-12	5	Tidal wetland (non-forested, wetland)
Bottlebrush Grass						
	SC	S3	G5	1905-09-13	10	Hardwood to mixed forest (forest, upland)
Broad Beech Fern						
	SC	S2	G5	1872-08	15	Hardwood to mixed forest (forest, upland)
	SC	S2	G5	2016-09-04	28	Hardwood to mixed forest (forest, upland)
Clothed Sedge						
	E	S1	G5	2000-06-06	5	Dry barrens (partly forested, upland)
Columbia Water-meal						
	SC	S2	G5	2002-08-04	2	Open water (non-forested, wetland)
Ebony Spleenwort						
	SC	S2	G5	1910-06-06	10	Rocky summits and outcrops (non-forested,
Engelmann's Spikerush						
	PE	SH	G4G5	1916-08-31	2	Open wetland, not coastal nor rivershore (non-forested,
Enriched Northern Hardwoods						
		S3	GNR	2001-08-28	34	Hardwood to mixed forest (forest, upland)
Fern-leaved False Foxglove						
	SC	S3	G5	1902-09-02	13	Dry barrens (partly forested, upland),Hardwood to mixed
Foxtail Bog-clubmoss						
	E	S1	G5	2017-08-22	1	

Great Blue Lobelia						
	PE	SX	G5	1905-09	3	Forested wetland,Non-tidal rivershore (non-forested,
Hollow Joe-pye Weed						
	SC	S2	G5?	2011-08-04	19	Open wetland, not coastal nor rivershore (non-forested,
	SC	S2	G5?	2014-06-18	24	Open wetland, not coastal nor rivershore (non-forested,
Horned Pondweed						
	SC	S2	G5	1913-09-13	9	Tidal wetland (non-forested, wetland)
MacGregor's Rye						
	SC	S2	G5	2019-08-20	13	
Marsh Milkwort						
	PE	SH	G5T4	1903-08-18	1	Dry barrens (partly forested, upland),Open wetland, not
Missouri Rockcress						
	T	S1	G5	1905-06-11	5	Rocky summits and outcrops (non-forested,
Mountain-laurel						
	SC	S2	G5	1985-08-01	13	Conifer forest (forest, upland),Hardwood to mixed forest
Mountain Honeysuckle						
	E	S2	G5	2007-07-30	10	Dry barrens (partly forested, upland),Hardwood to mixed
	E	S2	G5	2007-10-05	11	Dry barrens (partly forested, upland),Hardwood to mixed
	E	S2	G5	2018-06-02	14	Dry barrens (partly forested, upland),Hardwood to mixed
Pitch Pine Woodland						
		S3	G2	2005-12-08	28	Rocky summits and outcrops (non-forested, upland)
Pocket Swamp						
		S2	G5	2017-07-27	24	Forested wetland,Hardwood to mixed forest (forest,
Rattlesnake Hawkweed						
	E	S1	G5T4Q	1909-07	1	Dry barrens (partly forested, upland)
Salt-hay Saltmarsh						
		S3	G5	2020-07-02	68	Tidal wetland (non-forested, wetland)
Screwstem						
		S1	G5T3T5	2020-09-17	4	

Screwstem					
	S1	G5T3T5	2014-09-24	17	
Slender Knotweed					
PE	SH	G5	1902-09-07	1	Dry barrens (partly forested, upland)
Small Reed Grass					
SC	S3	G5	2011-08-28	18	Old field/roadside (non-forested, wetland or upland)
Smooth Winterberry Holly					
SC	S3	G5	2017-08-22	32	Forested wetland
Spotted Pondweed					
T	S1	G5	2016-06-22	3	Open water (non-forested, wetland)
Tidal Marsh Estuary Ecosystem					
	S3	GNR	2011-08-25	8	Tidal wetland (non-forested, wetland)
Upper Floodplain Hardwood Forest					
	S3	GNR	2012	20	Forested wetland
Upright Bindweed					
T	S2	G4G5	2007-06-28	5	Dry barrens (partly forested, upland),Old field/roadside
Variable Sedge					
E	S1	G3	2012-08-09	1	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	2017-08-22	4	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	2018-08-29	6	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	1911	8	Dry barrens (partly forested, upland),Hardwood to mixed
E	S1	G3	1911-06-29	9	Dry barrens (partly forested, upland),Hardwood to mixed
Vasey's Pondweed					
SC	S2	G4	1901-08-04	7	Open water (non-forested, wetland)
Water-plantain Spearwort					
PE	SH	G4	1903-07-29	2	Open water (non-forested, wetland)
Wild Garlic					
SC	S2	G5	1918-07-16	6	Forested wetland,Hardwood to mixed forest (forest,
Wild Leek					

Wild Leek						
	SC	S3	G5	2018-05-02	55	Hardwood to mixed forest (forest, upland),Forested

Date Exported: 2022-05-17 09:08

Conservation Status Ranks

State and Global Ranks: This ranking system facilitates a quick assessment of a species' or habitat type's rarity and is the primary tool used to develop conservation, protection, and restoration priorities for individual species and natural habitat types. Each species or habitat is assigned both a state (S) and global (G) rank on a scale of critically imperiled (1) to secure (5). Factors such as range extent, the number of occurrences, intensity of threats, etc., contribute to the assignment of state and global ranks. The definitions for state and global ranks are comparable but applied at different geographic scales; something that is state imperiled may be globally secure.

The information supporting these ranks is developed and maintained by the Maine Natural Areas Program (state ranks) and NatureServe (global ranks).

Rank	Definition
S1 **G1**	**Critically Imperiled** – At very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors.
S2 **G2**	**Imperiled** – At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3 **G3**	**Vulnerable** – At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.
S4 **G4**	**Apparently Secure** – At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5 **G5**	**Secure** – At very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats.
SX **GX**	**Presumed Extinct** – Not located despite intensive searches and virtually no likelihood of rediscovery.
SH **GH**	**Possibly Extinct** – Known from only historical occurrences but still some hope of rediscovery.
S#S# **G#G#**	**Range Rank** – A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem.
SU **GU**	**Unrankable** – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNR **SNR**	**Unranked** – Global or subnational conservation status not yet assessed.
SNA **GNA**	**Not Applicable** – A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., non-native species or ecosystems.
Qualifier	**Definition**
S#? **G#?**	**Inexact Numeric Rank** – Denotes inexact numeric rank.
Q	**Questionable taxonomy that may reduce conservation priority** – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable. The "Q" modifier is only used at a global level.
T#	**Infraspecific Taxon (trinomial)** – The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank.

State Status: Endangered and Threatened are legal status designations authorized by statute. Please refer to MRSA Title 12, §544 and §544-B.

Status	Definition
E	**Endangered** – Any native plant species in danger of extinction throughout all or a significant portion of its range within the State or Federally listed as Endangered.
T	**Threatened** – Any native plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range in the State or Federally listed as Threatened.
SC	**Special Concern** – A native plant species that is rare in the State, but not rare enough to be considered Threatened or Endangered.
PE	**Potentially Extirpated** – A native plant species that has not been documented in the State in over 20 years, or loss of the last known occurrence.

Element Occurrence (EO) Ranks: Quality assessments that designate viability of a population or integrity of habitat. These ranks are based on size, condition, and landscape context. Range ranks (e.g., AB, BC) and uncertainty ranks (e.g., B?) are allowed. The Maine Natural Areas Program tracks all occurrences of rare plants and natural communities/ecosystems (S1-S3) as well as exemplary common natural community types (S4-S5 with EO ranks A/B).

Rank	Definition
A	**Excellent** – Excellent estimated viability/ecological integrity.
B	**Good** – Good estimated viability/ecological integrity.
C	**Fair** – Fair estimated viability/ecological integrity.
D	**Poor** – Poor estimated viability/ecological integrity.
E	**Extant** – Verified extant, but viability/ecological integrity not assessed.
H	**Historical** – Lack of field information within past 20 years verifying continued existence of the occurrence, but not enough to document extirpation.
X	**Extirpated** – Documented loss of population/destruction of habitat.
U	**Unrankable** – Occurrence unable to be ranked due to lack of sufficient information (e.g., possible mistaken identification).
NR	**Not Ranked** – An occurrence rank has not been assigned.

Visit the Maine Natural Areas Program website for more information
http://www.maine.gov/dacf/mnap

ATTACHMENT 8

FLYCATCHER LLC REPORT

Wetland and Stream Review

Date:	July 28, 2022
To:	Mark McClure (GenX Capital Partners, LLC)
From:	Meg Thurrell (Flycatcher LLC)
CC:	Richard Jordan (Flycatcher); Jon Whitten (Haley Ward); Ron Goddard and Greg Shinberg
Subject:	Hope Ave, Portland – Wetland and Stream Review Results

As requested by GenX Capital Partners, LLC, In July of 2022, Flycatcher LLC completed a wetland and stream review on a 13.7-acre parcel located on Hope Avenue in Portland, Maine (the Survey Area – Attachment 1). The Survey Area was previously delineated in 2017. Flycatcher determined that the previously delineated wetland boundaries were generally accurate, with the exception of a few small areas (some wetland area was added and some area was removed). Flycatcher also flagged and GPS-located two streams which were mentioned in the existing reporting but were not included in GIS information provided by GenX Capital's engineering consultant, Haley Ward.

A locus map and map of delineated natural resources are included herein as Attachment 1. Photographs of delineated resources are presented in Attachment 2. The 2017 wetland delineation report is included as Attachment 3.

SURVEY AREA

The Survey Area is located north of Hope Avenue, to the south of the Falmouth I-95 Spur and to the east of a Central Maine Power transmission line corridor. The surrounding area is mostly residential, interspersed with some forested lands. The Presumpscot River is located to the east of the Survey Area.

The Survey Area is primarily comprised of forested uplands interspersed with historically eroded valleys with wetland drainage features and streams. Surface drainage tends generally to the north and east, toward the Presumpscot River.

There is evidence of recreational and former logging trails throughout the Survey Area. Active trail features include bike/foot bridges. There is also evidence of former sand/gravel extractions, including apparent borrow pits and spoil piles along the northern and western edges of the Survey Area.

METHODS

Wetlands

It is our understanding that wetlands within the Survey Area were previously delineated in 2017 by TRC. Flycatcher was provided with GIS data of the previously delineated boundaries.

The US Army Corps of Engineers (USACE) and Maine Department of Environmental Protection (MDEP) require wetlands to be reviewed when delineations are greater than 5 years old. Flycatcher scientists reviewed the previously-mapped wetland boundaries based on the criteria and protocol provided in the 1987 USACE Wetland Delineation Manual and the Northcentral and Northeast Regional Supplement (Version 2.0). The manual and supplement provide a repeatable methodology to identify wetland areas and are the accepted wetland delineation methodology of the MDEP and the USACE. When wetlands were identified (or confirmed), the boundaries were marked with pink survey flagging labelled with the word "Wetland Delineation." Unmoved boundary flags were not re-located, new flags were geo-located as described below under "GPS Location".

Watercourses

Watercourse identification followed the NRPA definition of a "river, stream or brook" (Section 480-B). If a watercourse meeting the above definition was observed, blue survey flagging was hung along the centerline (for streams less than six feet in width) or along the top of the bank (for streams six feet or wider). The locations of each flag were geolocated as described below under "GPS Location."

GPS Location

Features (e.g., wetland boundaries) located during the site visit were geolocated using a mapping grade global positioning system ("GPS") unit (Juniper Systems' Geode GPS Antenna and ESRI's ArcGIS Collector software). The data were collected using real-time correction and standards specified by the manufacturer to achieve sub-meter accuracy. A shapefile of final results was provided to Haley Ward's Jon Whitten on July 21, 2022.

Agency Outreach

No outreach to natural resource agencies (e.g. MNAP, MDIFW, USFWS) was conducted as part of this survey.

FINDINGS

Wetlands

Flycatcher verified the presence of eight (8) wetlands on site, no new (previously unmapped) wetlands were observed. Most of the wetlands are forested pit and mound depressions (natural and unnatural) or riparian drainage wetlands associated with southern stream channels. The previous wetland delineations were found to be generally accurate, however Flycatcher scientists adjusted the boundary of wetlands in a few small areas as highlighted in Attachment 1.

Summary descriptions of wetlands are provided in Table 1. Photographs are included in Attachment 2.

The 2017 delineation report is included in Attachment 3. This report includes a representative USACE delineation form ("Wetland 5"); the data therein was confirmed (soils, hydrology and vegetation) as accurate during the 2022 review.

Watercourses

Two (2) perennial watercourses (MDEP streams) were identified within the Survey Area associated with and located within the boundaries of wetland W-FC-1. These watercourses were between 2 and 4 feet wide and had sand, gravel, and cobble bottoms. S-EGD-1 flowed east and was between 1 and 10 inches deep. S-EGD-2, a tributary to S-EGD-1, flowed northeast and was between 2 inches and 1.5 feet deep.

Table 1. Wetland Summary

Resource ID	*Dominant Covertype*	*Hydrology Indicators*	*Dominant Vegetation*	*Hydric Soil Indicators*	*Potential WoSS*[1]	*Description*
W-FC-1	PSS/ PEM	High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Drainage Patterns (B10), Geomorphic Position (D2)	Green ash *(Fraxinus pennsylvanica),* red maple *(Acer rubrum),* Eastern hemlock *(Tsuga canadensis)*, American hornbeam *(Carpinus caroliniana),* maple-leaf arrow-wood *(Viburnum acerifolium),* sensitive fern *(Onoclea sensibilis),* wrinkle-leaf goldenrod *(Solidago rugosa),* cinnamon fern *(Osmundastrum cinnamomeum),* wrinkle-leaf goldenrod *(Solidago rugosa),* jack-in-the-pulpit *(Arisaema triphyllum),* spotted touch-me-not *(Impatiens capensis)*	Depleted Matrix (F3)	Yes – wetland within 25 ft of a stream is WoSS	Ravine riparian wetland to S-EGD-1
W-FC-2, 3, 4, & 6	PFO	High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9)	Sensitive fern, cinnamon fen, fowl manna grass *(Glyceria striata),* eastern poison ivy *(Toxicodendron pubescens),* red maple	Depleted Matrix (F3)	No	Very small, isolated areas of ruts and depressions with groundwater discharge on seepy side slopes.
W-FC-5	PFO	Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), Drainage Patterns (B10), Moss Trim Lines (B16)	White pine *(Pinus strobus),* red maple, red oak *(Quercus rubra),* green ash, glossy false buckthorn *(Frangula alnus),* fringed sedge *(Carex crinite)*, broadleaf meadowsweet *(Spiraea latifolia)*, sensitive fern *(Onoclea sensibilis),* fowl manna grass *(Glyceria striata),* Asian bittersweet *(Celastrus orbiculatus)*	Depleted Matrix (F3)	No	Eroded drainage on side lope; deeper rutted and ephemerally ponded area on the western edge of the property. Wetland ends where a large, natural drainage valley forms below a footbridge and recreational trail.
W-FC-9 & 10	PUBx	Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), Moss Trim Lines (B16)	No vegetation in the basins	Depleted Matrix (F3)	No	Former sand/gravel borrow pits.

[1] MDEP NRPA Freshwater Wetlands of Special Significance. WoSS findings are based on review of on-site features; the Maine Department of Inland Fisheries and Wildlife (MDIFW) and Maine Natural Areas Program (MNAP) were not consulted regarding the potential presence of significant wildlife habitats or communities.

Thank you for the opportunity to assist you with natural resource review for this project. If you have questions regarding the results provided in this report, please do not hesitate to contact me or Rich Jordan (rich@flycatcherllc.com).

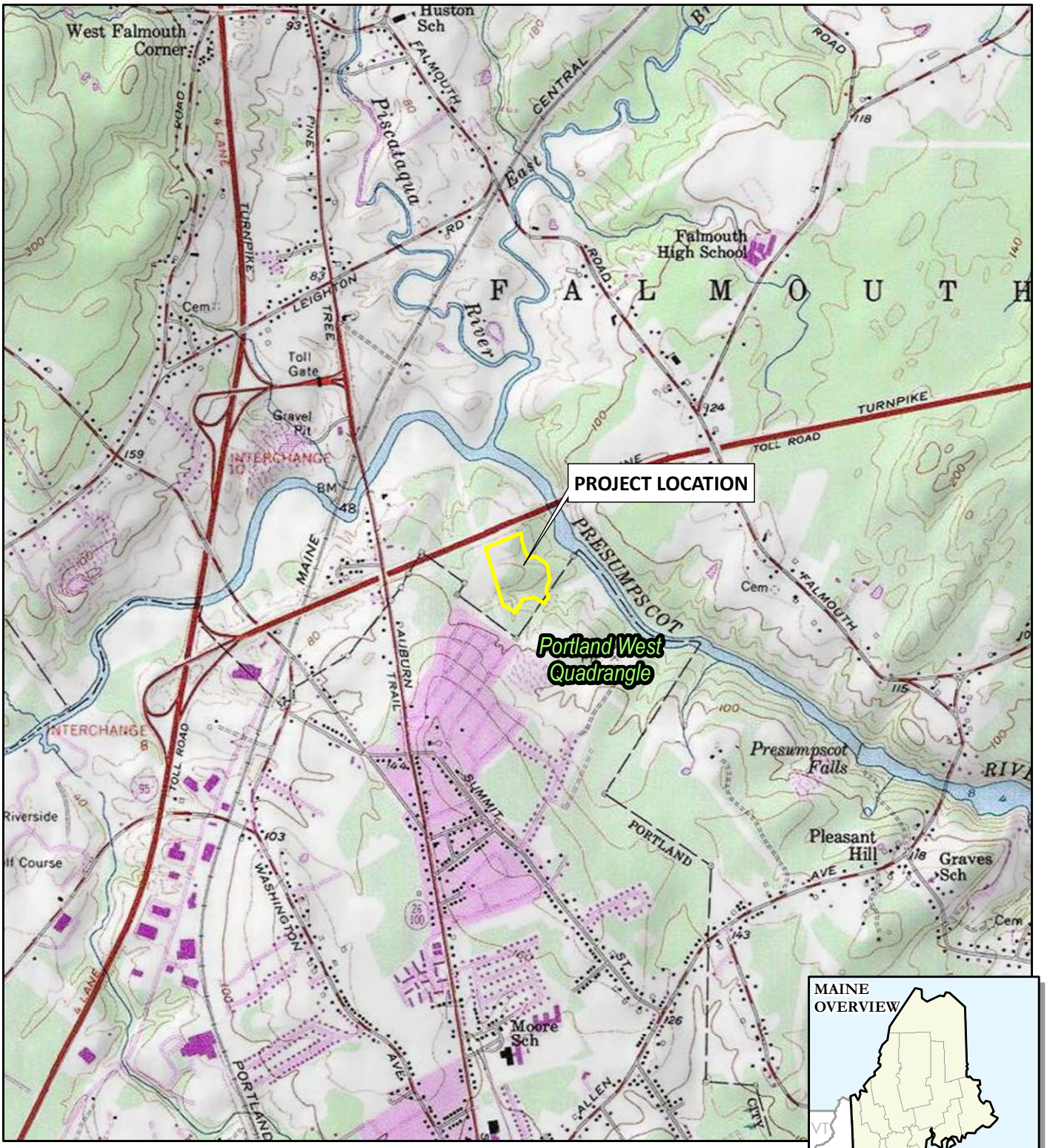
Sincerely,



Meg Thurrell, Environmental Scientist and Biologist
Flycatcher LLC

ATTACHMENT 1

2022 Locus Map and Map of Wetlands/Streams



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

1 " = 2,000 '
1:24,000

0 2,000 4,000 FEET

PROJECT:	GENX CAPITAL PARTNERS, LLC HOPE AVENUE PORTLAND, CUMBERLAND COUNTY, MAINE
LEGEND:	SURVEY AREA USGS 7.5-MINUTE QUADRANGLE BOUNDARY

DRAWN BY:	D. KENWORTHY
CHECKED BY:	R. JORDAN
MONTH:	JULY
YEAR:	2022
PROJ. NO.:	22W-1
CLIENT:	GENX

FIGURE 1

D:\Flycatcher\Projects\GenX\GenX_22W1_HopeAve_Delin_Fig1_USGS_8x11P.mxd -- Saved By: JAKEN on 7/20/2022, 15:18:19 PM

Coordinate System: NAD 1983 StatePlane Maine West FIPS 1802 Feet (Foot US)
Map Rotation: 0

Plot Date: 7/21/2022, 06:00:59 AM by JAKEN -- LAYOUT: ANSI B(11"x17")
Path: D:\Flycatcher\Projects\GenX\GenX_22W1_HopeAve_Delin_Fig2_Resources_11X17L.mxd

Falmouth Spur
W-FC-10
W-FC-9
W-FC-6
W-FC-5
W-FC-4
W-FC-2
W-FC-3
S-EGD-1
W-FC-1
S-EGD-1
S-EGD-2
70
Basket Ln
Hope Ave
Basket Ln
Alice St
Hope Ln
199
1
1
1
Hope Av

LEGEND

- SURVEY AREA
- CULVERT
- DELINEATED PERENNIAL STREAM (CENTERLINE)
- DELINEATED WETLAND BOUNDARY
- DELINEATED WETLAND
- PREVIOUS WETLAND AREA REMOVED
- EXPANDED WETLAND AREA
- 2-FOOT CONTOUR LINE



NOTES:

1 BASEMAP IMAGERY FROM ESRI/NAIP "WORLD IMAGERY" SERVICE LAYER.
2 RESOURCE DELINEATIONS WERE CONDUCTED BY FLYCATCHER IN JULY 2022.

0 150 300
Feet
1 " = 150 '
1:1,800

PROJECT:
GENX CAPITAL PARTNERS, LLC
HOPE AVENUE
PORTLAND, CUMBERLAND COUNTY, MAINE

TITLE:
DELINEATED WETLAND AND WATERCOURSE MAP

DRAWN BY:	D. KENWORTHY	PROJ NO.:	22W-1
CHECKED BY:	R. JORDAN		**FIGURE 2**
MONTH:	JULY		
YEAR:	2022		

Flycatcher LAND + SCIENCE + PEOPLE
GenX Capital Partners

FILE NO.: GenX_22W1_HopeAve_Delin_Fig2_Resources_11X17L.mxd

ATTACHMENT 2

Representative Photographs



Wetland W-FC-1 and stream S-EGD-1, July 7, 2022.



Wetland W-FC-1 and stream S-EGD-2, July 7, 2022.



Wetland W-FC-3, July 16, 2022.



Wetland W-FC-4, July 16, 2022.



Wetland W-FC-5, July 16, 2022.



Wetland W-FC-6, July 16, 2022.



Wetland W-FC-9, July 16, 2022.



Wetland W-FC-10, July 16, 2022.

ATTACHMENT 3

TRC Wetland Report - 2017

TRC
6 Ashley Drive
Scarborough, ME 04074

Main 207-879-1930
Fax 207-879-9293

Memorandum

To: Doug Reynolds, Gorrill-Palmer

From: Stephenie Jordan, TRC

Subject: Natural Resource Survey – Hope Avenue, Portland, Maine

Date: November 1, 2017

CC: Rich Jordan (TRC)

Dear Doug,

Per your request, on October 17th and 23rd, 2017, TRC wetland scientists visited the property located off Hope Avenue in Portland, Maine. The purpose of this site visit was to review and revise, as necessary, delineated wetland and stream boundaries that were mapped several years ago on the property (old mapping conducted by another firm). The U.S. Army Corps of Engineers (USACE) and the Maine Department of Environmental Protection (MDEP) typically require a review of wetland delineations that are over five years old in the event that site conditions have changed or new standards have been developed that change the way we determine the extent of wetland boundaries. The previous delineation appears to have occurred over 10 years ago. Despite the length of time between mapping efforts, in general, TRC agreed with and confirmed many of the original wetland boundaries, however we found a few of the wetlands previously delineated currently do not have hydric soils or other criteria required to be identified as a jurisdictional wetland by the USACE and MDEP. These features were remapped or removed as appropriate. Other features were confirmed to be consistent with the original delineation. No new wetland areas were identified or added.

Property Description and Survey Area

The survey area borders an existing Central Maine Power transmission line corridor and Portland Water District mainline to the west and northwest, Hope Avenue to the south, the Falmouth I-95 Spur toll road to the north, and undeveloped forest land to the east (Attachment A - Resource Map). The Presumpscot River flows within the mature forest approximately 500 feet west of the survey area. The survey area consists of approximately 13 acres of undeveloped forest land that has historically been disturbed presumably by agricultural and forestry uses. Several depressions associated with historic ditching and borrow areas were observed on the property within the upland forest and rusty farm equipment can be found within the survey area.

Methodology

Prior to the site visit, TRC wetland delineators reviewed existing data sources including:

- United States Geological Survey (USGS) topographic mapping;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- Natural Resources Conservation Service (NRCS) medium-intensity soil survey mapping;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs);
- State of Maine Office of GIS (MEGIS) data; and
- Recent and historic aerial photography.

These data were used to assist in the identification of protected natural resources during the field surveys.

Wetlands: Wetland delineations were conducted in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (USACE 2012). This supplement follows criteria established in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, Technical Report T-87-1, 1987), but is region specific, giving the wetland delineator a better tool to apply to regional vegetation communities, indicators of hydrology and indicators of hydric soils when conducting a wetland boundary determination. This document provides a repeatable methodology to identify potential wetland areas within the project study area.

The study area was investigated on foot. When a location having the requisite three factors that constitute a wetland (i.e., hydrophytic vegetation, indicators of hydrology, and the presence of hydric soils) was encountered, the boundaries were flagged in the field and each flag was geo-located using a mapping grade global positioning system (GPS) unit (e.g. a Trimble GeoXH). The data were then post-processed using data collection and processing standards designed by the manufacturer to achieve sub-meter accuracy. These data are being provided to Gorrill Palmer as an ESRI Shapefile for use in project design and planning natural resource avoidance and minimization measures.

Streams: Watercourse identification followed the Maine Natural Resources Protection Act (NRPA) definition of a "River, stream or brook." Streams meeting this definition were flagged and geolocated as described above.

Non-Jurisdictional Drainages: As part of this survey, non-stream drainage areas were located and mapped as "non-jurisdictional drainages" (NJDs). Typical examples of NJDs include concentrated surface flow in uplands, natural or dug ditches, and drainage swales of natural or unnatural origin. The key difference between NJDs and regulated resources is a lack of stream characteristics or a combination of hydric soils, dominance of hydrophytic plants and evidence of hydrology. Furthermore, NJDs commonly lack a discernable streambed, contiguous defined stream banks, and/or evidence of mineral scour within the drainage path. Although non-regulated, these features often drain to protected resources or offsite, and they may be potential conduits for siltation or sedimentation during rain events. NJDs are important to note so that mitigation measures can be taken during construction to limit soil disturbance and prevent unintended impacts to adjacent resources.

Findings

Ten previously identified wetlands were reviewed and evaluated for the presence of the three factors that constitute a wetland. Based on the current site-specific conditions and the latest version of the USACE wetland delineation manual, not all of these features (either wholly or in part) exhibited indicators of hydrophytic vegetation, hydric soil, or wetland hydrology. All features identified on site are described in more detail below and numbered and displayed on the Resource Map in Attachment A.

Copies of the representative wetland/upland data forms, photographs, and GIS shapefiles showing the location of the review areas and delineated resources are also provided with this report. The unique identifiers noted on the data forms and photographs can be cross referenced against the data herein and the resource map to see where a particular resource is located.

All wetlands discussed herein are considered forested wetlands.

Review Area #1

This wetland feature is located in a valley that follows a perennial stream (a tributary to the Presumpscot River). The location of this previously flagged feature was confirmed as being unchanged from the prior delineation. The wetland and stream complex was reviewed, however, only a portion of the wetland near the site entrance from Hope Avenue was flagged in the field.

Review Areas #2, 3, 4, 6, and 10

All of these features were reviewed, confirmed and flagged as previously delineated.

Review Area #5

This wetland feature follows a slight pattern of microtopographic relief in the landscape and drains to the northeast via a non-jurisdictional (upland) drainage feature. Review area 5 appears to indicate both ditching and erosional features, and appears to be a relic of former agricultural use and impacts. The NJD pattern indicates that water flows from the wetland and to the northeast, eventually forming into a tributary (offsite) that drains to the Presumpscot River during storm events. The wetland was flagged in the field and the NJD feature GPS-located as shown on the Resource Map in Attachment A.

Review Areas #7 and 8

Although these two features had previously been identified as wetland in the previous (old) survey, they are lacking the indicators of hydrophytic vegetation and hydric soils described in current wetland delineation manuals. Both features are small localized depressions that are likely associated with historic ditching and excavation. Vegetation surrounding the depressions included red oak, red maple, and hemlock, all are tree species that can be found in upland areas. Signs of hydrology included moss trim lines and microtopographic relief but a closer examination of soils showed no indications of saturation during the growing season in the upper part of the soil. Based on this evidence, we concluded that these depressions do not hold water long enough to develop the anaerobic conditions that form hydric soils or favor the growth of hydrophytic vegetation and therefore, are not wetlands.

Review Area #9

This depressional feature is likely an old burrow pit. It is likely that portions of this area fill with storm and meltwater during certain times of the year, but it appears that the site drains rather quickly after filling. The southwestern portion of the previously delineated excavation area was evaluated closely and determined to lack hydrophytic vegetation and hydric soils. The wetland boundary was redelineated as shown on the Resource Map in Attachment A and flagged in the field.

If you have any questions regarding my assessments, or if you would like additional assistance with project permitting, please do not hesitate to contact me or Rich.

Respectfully submitted,



Stephenie Jordan

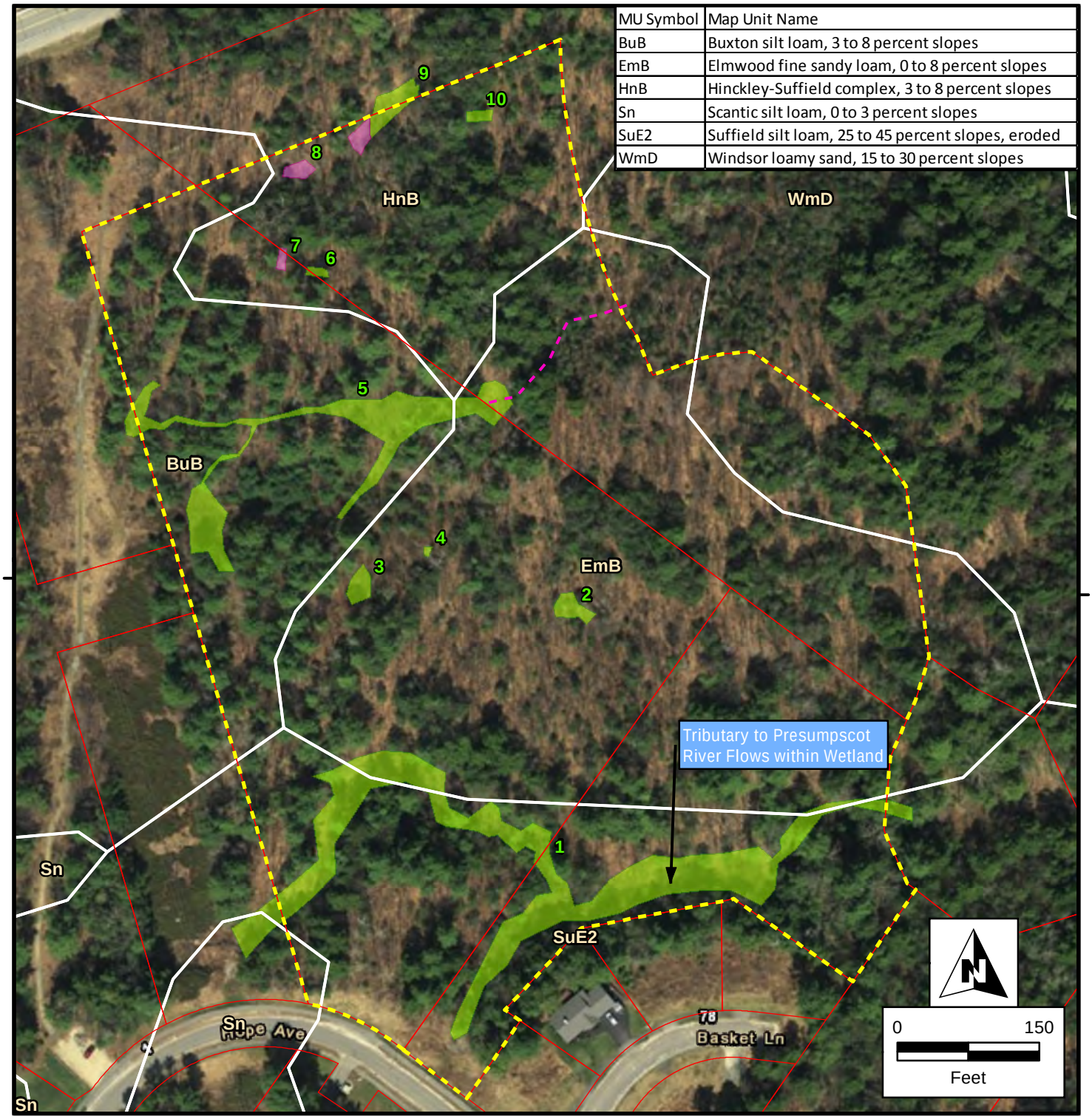
Wetland Scientist

Cell: 207-319-9801 Office: 207-274-2611

Email: sjordan@trcsolutions.com

ATTACHMENT A

Resource Mapping



MU Symbol	Map Unit Name
BuB	Buxton silt loam, 3 to 8 percent slopes
EmB	Elmwood fine sandy loam, 0 to 8 percent slopes
HnB	Hinckley-Suffield complex, 3 to 8 percent slopes
Sn	Scantic silt loam, 0 to 3 percent slopes
SuE2	Suffield silt loam, 25 to 45 percent slopes, eroded
WmD	Windsor loamy sand, 15 to 30 percent slopes



- Parcel Boundaries
- Limit of Wetlands Survey
- Delineated Non-Jurisdictional Drainage
- Delineated Wetland
- Old Data Wetlands Reviewed and Removed
- NRCS Soils

Data Sources: ESRI, TRC, MEGIS, NRCS
Coordinate System: NAD 1983 UTM Zone 19N M

Hope Avenue

Portland, Maine

Resource Map

Aerial Location Figure

6 Ashley Drive
Scarborough, ME 04074
TRC

Created: 11/1/2017

V:\PROJECTS\AUGUSTA\Small_Projects\222955_Hope_Ave_Portland\Hope_Ave_Resource_Map.mxd

ATTACHMENT B

Photographic Log



Review Area #1: Water flowing in perennial stream within wetland, 10/18/2017.



Review Area #2: Looking southwest in wetland, 10/18/2017.



Review Area #3: Looking north in wetland, 10/18/2017. Review Area #4 is a small depressional feature located approximately 40 feet to the northeast of the wetland shown above.



Review Area #5: Looking east from wetland toward non-jurisdictional drainage, 10/18/2017.



Review Area #5: Looking west toward wetland, 10/18/2017.



Review Area #6: Looking west toward wetland, 10/18/2017.



Review Area #7: Looking northwest toward depression in upland forest (does not meet the criteria for a wetland), 10/18/2017.



Review Area #8: Looking northeast toward bowl-like depression that is likely an old burrow pit (does not meet the criteria for a wetland), 10/18/2017.



Review Area #9: Facing northeast in wetland, 10/18/2017.



Review Area #10: Facing west looking at wetland, 10/18/2017.

ATTACHMENT C

Representative Wetland Determination Data Form

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hope Ave City/County: Portland, Cumb. Co. Sampling Date: 10-23-17

Applicant/Owner: G.P. (client) State: ME Sampling Point: wet-5

Investigator(s): S. Jordan, R. Jordan Section, Township, Range: —

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): —

Subregion (LRR or MLRA): LRR Lat: 43° 43' 27.18" Long: 70° 17' 13.87" Datum: —

Soil Map Unit Name: Buxton Silt Loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

Evidence of Drainage in channels heading east.

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 ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wet-5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pin strobus *Aerial	*25	N	FACU
2. Ace rubrum	*25	N	FAC
3. Que rubra	*10	N	FACU
4. Fra pensylvanica	*10	N	FACW
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. Rhamnus frangula	15	Y	FAC
2. Fra pensylvanicum	15	Y	FACW
3. Ace rubrum	10	Y	FAC
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Car crinita	10	Y	OBL
2. Ono sensibilis	5	N	FACW
3. Spi Latifolia	10	Y	FAC+
4. Gly striata	5	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. Oriental bittersweet	5	N	UpL
2.			
3.			
4.			
	5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	1	x 2 =	2
FAC species	3	x 3 =	9
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	6 (A)		12 (B)

Prevalence Index = B/A = 2

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 _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	-	-	-	-	-	-	-	Duff
1-9	7.5YR 4/2	50	7.5YR 4/6	50	C	M	Silo	compact Bw
9-15+	10YR 4/1	90	7.5YR 6/8	10	C	M	Silo	compact Bc

[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) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ 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)

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)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

No dark surface but depleted matrix

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hope Avenue City/County: Portland Cumb. Co Sampling Date: 10-23-17

Applicant/Owner: G.P. (client) State: ME Sampling Point: upl-5

Investigator(s): SJordan, RJordan Section, Township, Range: —

Landform (hillslope, terrace, etc.): fill pile Local relief (concave, convex, none): convex Slope (%): —

Subregion (LRR or MLRA): LRR Lat: 43° 43' 27.18" Long: 70° 17' 13.87" Datum: _____

Soil Map Unit Name: Buxton Silt Loam NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes _____	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)

- ___ 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 ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UpL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pin strobus	30	Y	FACU
2. Que rubra	20	Y	FACU-
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. Fag grandifolia	15	Y	FACU
2. Rha frangula	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Aster spp	15	Y	Unk
2. Pin strobus	5	N	FACU
3. Lonicera spp	10	Y	Unk
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. celas orbiculatus	<5	N	Upl
2.			
3.			
4.			
	<5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	5 (A)		19 (B)

Prevalence Index = B/A = 3.8

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UpL-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15+	2.5YR 5/4	100						

[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) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ 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)

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)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ 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 (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

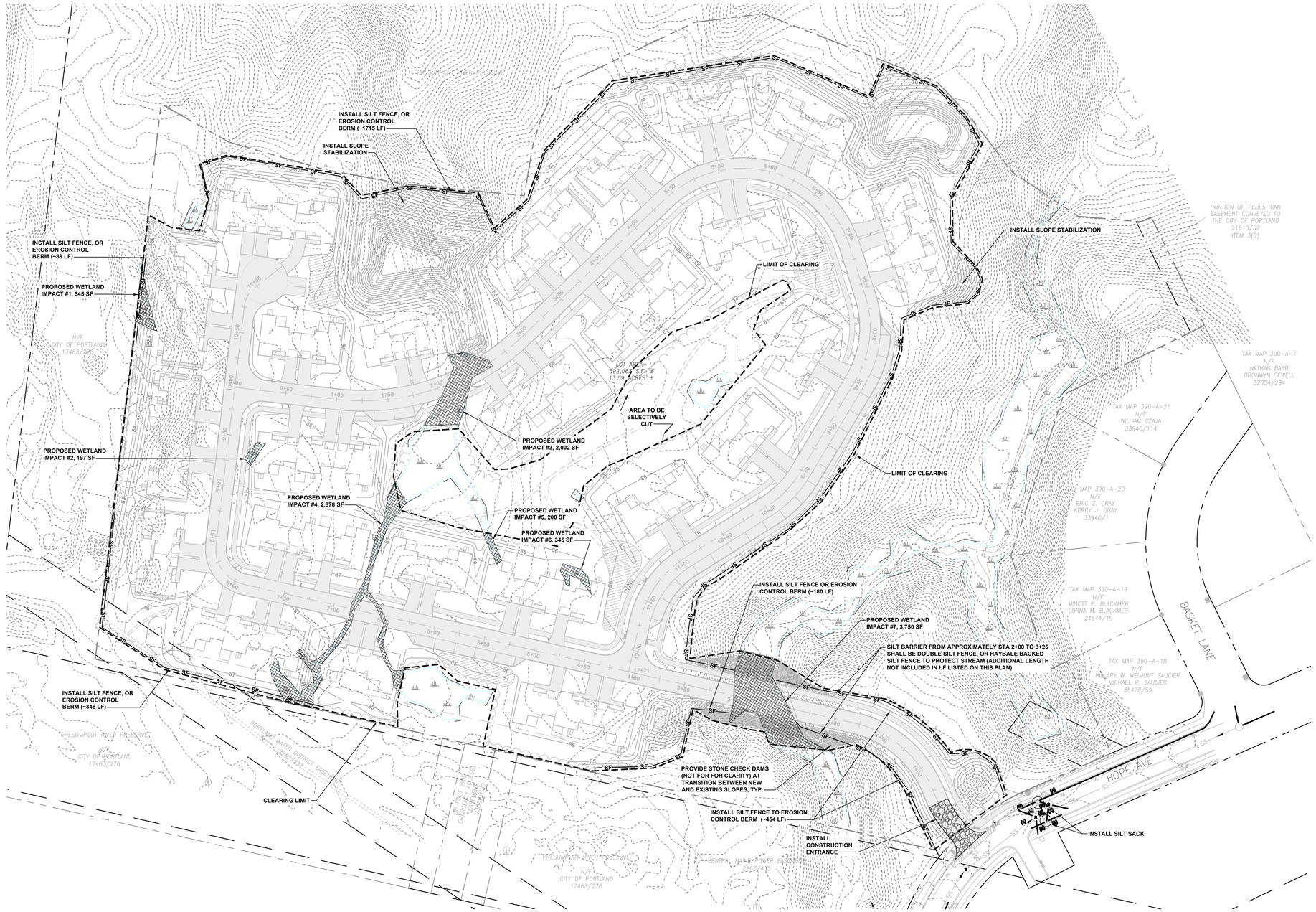
Remarks:

Disturbed fill pile, No redox, friable soils

ATTACHMENT 9

PLANS

C001 – Erosion Control, Clearing Limits, Legend and Notes
C103 – Proposed Grading and Drainage Plan



PARCEL INFORMATION

MAP / LOT:	390/A001, 448/A001001, 449/A002
LOT AREA:	13.59 ACRES
ZONE OR DISTRICT:	R-3 PRUD
FLOOD ZONE:	ZONE C (MINIMAL HAZARD)
WATER:	MUNICIPAL
SEWER:	MUNICIPAL

SITE DEVELOPMENT DATA

EXISTING IMPERVIOUS SF / AC:	0	0.00
NEW IMPERVIOUS SF/AC:	176,147	4.04
TOTAL IMPERVIOUS SF / AC:	176,147	4.04
TOTAL DEVELOPED SF / AC:	388,727	8.92
LOT COVERAGE ALLOWED/ PROVIDED:	35%	30%
WETLAND IMPACTS SF / AC:	9,917	0.23

DESIGN STANDARDS

R.O.W. WIDTH:	50'
TRAVELED WAY WIDTH:	20'
MINIMUM GRADE:	0.5%
MAXIMUM GRADE:	8%
ROADWAY CROWN:	3% LOCAL / 2% OTHER
MAX GRADE @ INT.	3% FOR 100'
SIGHT DISTANCE:	200' (BASED ON 25 MPH)
PARKING REQUIRED	1 PER DWELLING / UNIT
PARKING PROVIDED	(2) 1 GARAGE / 1 DRIVEWAY
BUILDING HEIGHT:	35 FT
MINIMUM FRONT SETBACK:	25 FT
MINIMUM REAR SETBACK:	25 FT
MINIMUM SIDE SETBACK:	25 FT
MINIMUM FRONTAGE:	50 FT
MINIMUM LOT WIDTH:	65 FT

PROJECT INFORMATION

APPLICANT:	GENX CAPITAL PARTNERS, LLC 2 COTTON STREET PORTLAND, MAINE 04101
ENGINEER:	HALEY WARD ATTN: JON WHITTEN, JR., PE 120 MAIN STREET SUITE 132 SACO, MAINE 04072

ABBREVIATIONS

@	AT	GAL	GALLON	PERF	PERFORATED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	GALV	GALVANIZED	PSF	POUNDS PER SQUARE FOOT
APPROX;±	APPROXIMATELY	GPH	GALLONS PER HOUR	PSI	POUNDS PER SQUARE INCH
BLDG	BUILDING	GPM	GALLONS PER MINUTE	PVC	POLYVINYL CHLORIDE
CL	CENTERLINE	HDPE	HIGH DENSITY POLYETHYLENE	PL POH PUGE	PROPERTY LINE PROPOSED OVERHEAD ELECTRIC PROPOSED UNDERGROUND ELECTRIC
CB	CATCH BASIN	ID	INSIDE DIAMETER	R	RADIUS
CLR	CLEAR	IN.	INCHES	S	SLOPE
CMP	CORRUGATED METAL PIPE	INT.	INTERSECTION	SCL	STORMWATER COLLECTION LINE
CO	CLEANOUT	INV.	INVERT	SCS	STORMWATER COLLECTION SYSTEM
CPE	CORRUGATED POLYETHYLENE	MAX.	MAXIMUM	SDR	STANDARD DIMENSION RATIO
DI	DUCTILE IRON	MDOT	MAINE DEPT. OF TRANSPORTATION	SE	SOUTHEAST
DIA.	DIAMETER	MH	MANHOLE	SHT	SHEET
E	EASTING	MIN	MINIMUM	SQ	SQUARE
EL	ELEVATION	N	NORTHING	SS	STAINLESS STEEL
EFM	EXISTING FORCE MAIN	NE	NORTHEAST	SY	SQUARE YARD
EPS	EXTRUDED POLYSTYRENE	N.T.S.	NOT TO SCALE	TBM	TEMPORARY BENCH MARK
FM	FORCEMAIN	NWT	NON WOVEN GEOTEXTILE	TOC	TOP OF CONCRETE
		OD	OUTSIDE DIAMETER	TYP	TYPICAL
		O.C.	ON CENTER		
		OH	OVERHEAD		
		OZ	OUNCES		

LEGEND:

DESCRIPTION	EXISTING	PROPOSED
BENCHMARK		
SURVEY STATION		
MANHOLE		
UTILITY POLE		
SIGN		
CATCH BASIN		
HYDRANT		
WATER VALVE		
GATE VALVE		
PROPERTY LINE		NA
EDGE OF GRAVEL		
EDGE OF PAVEMENT		
CENTERLINE		
MAJOR FOOT CONTOUR	100	100
MINOR FOOT CONTOUR	98	98
TREE LINE		

DESCRIPTION	EXISTING	PROPOSED
WATERLINE	W	W
STORM DRAIN	SD	SD
FORCE MAIN		FM
SANITARY SEWER	SS	SS
UNDERGROUND UTILITIES	UGE	UGU
SEDIMENT CONTROL BARRIER	NA	SF
CHAIN LINK FENCE	NA	X
WETLAND BOUNDARY		
STREAM		
PAVED SURFACE		
RIP RAP	NA	
WETLAND IMPACT	NA	
SNOW STORAGE		
WETLAND		

SOURCE NOTES:

1. EXISTING CONDITIONS IS BASED UPON BOUNDARY AND TOPOGRAPHIC SURVEY AT HOPE LAND MADE FOR GENX CAPITAL PARTNERS, 2 COTTON STREET, PORTLAND, ME 04101, BY OWEN HASKELL, INC. PROFESSIONAL LAND SURVEYORS, DATED SEPTEMBER 12, 2022.
2. THIS SURVEY IS ORIENTED TO THE MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
4. THERE MAY BE ADDITIONAL UNDERGROUND WIRES, CABLES, UTILITIES, AND/OR STRUCTURES NOT SHOWN ON THIS PLAN. THE LOCATIONS SHOWN HEREON ARE BASED UPON SURFACE FEATURES VISIBLE AT THE TIME OF THE SURVEY. NO EXCAVATIONS WERE MADE DURING THE COURSE OF THIS SURVEY TO VERIFY AND/OR LOCATE ANY UNDERGROUND STRUCTURES.
5. THE EXISTING TOPOGRAPHY IS A COMBINATION OF SURVEY PERFORMED BY OWEN HASKELL, INC. PROFESSIONAL LAND SURVEYORS AND STATE OF MAINE LIDAR.
6. PROPOSED LAYOUT IS BASED UPON BUILDING FLOOR PLANS FOR PRESUMPSCOT WOODS, PREPARED BY A. MALTESE DESIGN, DATED 07.08.22.
7. NATURAL RESOURCE DATA WAS PROVIDED IN DWG. AND PDF. FORMAT FOR PROJECT GENX CAPITAL PARTNERS, LLC, HOPE AVENUE, PORTLAND, CUMBERLAND COUNTY, MAINE, DELINEATED WETLAND AND WATERCOURSE MAP, PREPARED BY FLYCATCHER, AND DATED JULY 2022.

REV.	DATE	DESCRIPTION	BY	CHK

DRAWING ISSUE STATUS:

ISSUED FOR PERMITTING 4/6/2023
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

EROSION CONTROL, CLEARING LIMITS, LEGEND AND NOTES

STATE OF MAINE JON H. WHITTEN, JR. No. 10414 04 DAY 2023 LICENSED PROFESSIONAL ENGINEER

DATE	SCALE
2022.09.29	1"=50'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	DSB/BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C001** REV.

FILE LOCATION: P:\13773-BW\BERG_CONSULTING\00-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSIGN_DWGS\13773.001-C-GN.DWG, 2023.04.06, 11:47 AM

GENERAL NOTES:

1. DRIP EDGE FILTERS SHALL BE DAYLIGHTED WITH 6" SOLID HDPE PIPE WITH RODENT SCREEN TO REAR OF BUILDINGS, TYP.
2. FOUNDATION DRAINS SHALL BE TIED INTO THE NEAREST CATCH BASIN (BASEMENTS SHALL REQUIRE SUMP PUMPS).
3. CONTRACTOR SHALL USE MEANS AND METHODS NECESSARY TO ENSURE CONSTRUCTION VEHICLES AND ACTIVITIES DO NOT EXTEND BEYOND THE PROPERTY BOUNDARY.

PROPOSED RIP RAP SPILLWAY
OUTLET: 76.65
BIOCELL A REFER TO DETAIL ON SHEET C504
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
OUTLET: 74.65
BIOCELL B REFER TO DETAIL ON SHEET C504
PROPOSED 15" HDPE SD L: 115 LF / S: 0.029
PROPOSED 2:1 RIP RAP SLOPE AND SPILLWAY
PROPOSED 4" HDPE PIPE L: 75 LF / S: 0.005
PROPOSED 6" HDPE PIPE L: 40 LF / S: 0.005
WETPOND A OUTLET STRUCTURE REFER TO DETAIL AND TABLE ON SHEET C505
PROPOSED 2:1 RIP RAP SLOPE AND SPILLWAY
WETPOND A
WETPOND B
PROPOSED OUTLET PROTECTION
WETPOND B OUTLET STRUCTURE REFER TO DETAIL AND TABLE ON SHEET C505
PROPOSED 24" HDPE L: 43 LF / S: 0.002 INV. IN: 74.00 INV. OUT: 74.08
PROPOSED 15" HDPE L: 69 LF / S: 0.005 INV. IN: 84.08 INV. OUT: 83.74
PROPOSED 24" HDPE SD L: 15 LF / S: 0.020
PROPOSED 15" HDPE SD L: 143 LF / S: 0.011
PROPOSED BANK STABILIZATION
PROPOSED 12" HDPE L: 34 LF / S: 0.010 INV. IN: 76.45 INV. OUT: 75.85
100' PERENNIAL STREAM SETBACK
PROPOSED 15" HDPE SD L: 32 LF / S: 0.015
PROPOSED 15" HDPE SD L: 15 LF / S: 0.007
PROPOSED 15" HDPE SD L: 110 LF / S: 0.013
PROPOSED 15" HDPE SD L: 70 LF / S: 0.005
PROPOSED 15" HDPE SD L: 128 LF / S: 0.032
PROPOSED 18" HDPE L: 67 LF / S: 0.005 INV. IN: 76.50 INV. OUT: 76.15
PROPOSED 24" HDPE SD L: 93 LF / S: 0.005
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE L: 63 LF / S: 0.006 INV. IN: 83.15 INV. OUT: 82.77
PROPOSED 18" HDPE SD L: 92 LF / S: 0.005
PROPOSED 15" HDPE SD L: 51 LF / S: 0.005
PROPOSED 15" HDPE L: 15 LF / S: 0.157 INV. IN: 83.80 INV. OUT: 81.45
PROPOSED 15" HDPE SD L: 58 LF / S: 0.005
PROPOSED 15" HDPE SD L: 38 LF / S: 0.006
PROPOSED CONCRETE BOX CULVERT 6' H x 6' W x 72' L
PROPOSED 15" HDPE SD L: 17 LF / S: 0.005
OUTLET: 79.65
RIP RAP SPILLWAY AND 2:1 SLOPE
PROPOSED GUSF 1 SOIL GROUP: C FILTER SIZE: 10'x20' REFER TO DETAIL AND TABLE ON SHEET C505
PROPOSED GUSF 2 SOIL GROUP: C FILTER SIZE: 10'x20' REFER TO DETAIL AND TABLE ON SHEET C505
OUTLET: 72.88
PROPOSED RIP RAP SPILLWAY
PROPOSED 15" HDPE SD L: 27 LF / S: 0.002
PROPOSED 15" HDPE SD L: 14 LF / S: 0.005
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
CB-01 CB-02 CB-03 CB-04 CB-05 CB-06 CB-07 CB-08 CB-09 CB-10 CB-11 CB-12 CB-13 CB-14 CB-15 CB-16 CB-17 CB-18 CB-19 CB-20 CB-21 CB-22 CB-23 CB-24 CB-25 CB-26 CB-27
SMH-18 SMH-19 SMH-20
HOPE AVE
BAY

DROP INLET RIM=76.47 6"INV. IN (A)=72.61 6"INV. IN (B)=72.98 H20=72.27 TOP HOOD=73.37 SUMP=69.57
RIM=76.93 14"INV. IN (A)=72.17 14"INV. IN (B)=72.52 14"INV. OUT=70.20
DROP INLET RIM=76.60 (A)6"INV. IN=73.35 (B)6"INV. IN=72.84 TOP HOOD=73.70 SUMP=69.60
RIM=77.07 INV. IN (A)=69.29 INV. IN (B)=69.21 INV. IN (C)=69.27 (CAPPED) INV. OUT=69.19
RIM=79.11 INV. IN=70.13 INV. OUT=70.12

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
PROPOSED GRADING AND DRAINAGE PLAN

DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	DSB	JHW

PROJECT No. 13773.001

DRAWING No. **C103** REV. **2**

FILE LOCATION: P:\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-C-GR.DWG, 2023.08.29, 4:06 PM

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) R-3 PRUD

All Projects: **REFER TO PRUD REQUIRMENTS TABLE, BELOW**

	Required	Proposed
Lot Size	PRUD	
Area Per Dwelling Unit	PRUD	
Minimum Street Frontage	PRUD	
Front Yard Minimum	PRUD	
Front Yard Maximum	PRUD	
Rear Yard	PRUD	
Yard Right	PRUD	
Yard Left	PRUD	
Side Street Setback	PRUD	
Step Back	N/A	
Maximum Lot Coverage	35%	29.8%
Minimum Lot Coverage	N/A	
Maximum Height	PRUD	
Open Space	PRUD	
Maximum Impervious Area	N/A	
Pavement Setback	N/A	
Floor Area Ratio	N/A	
Off Street Parking Spaces	1 SPC/UNIT	2.5 SPC/UNIT
Loading Bays	N/A	
Other 1	N/A	
Other 2	N/A	
Other 3	N/A	

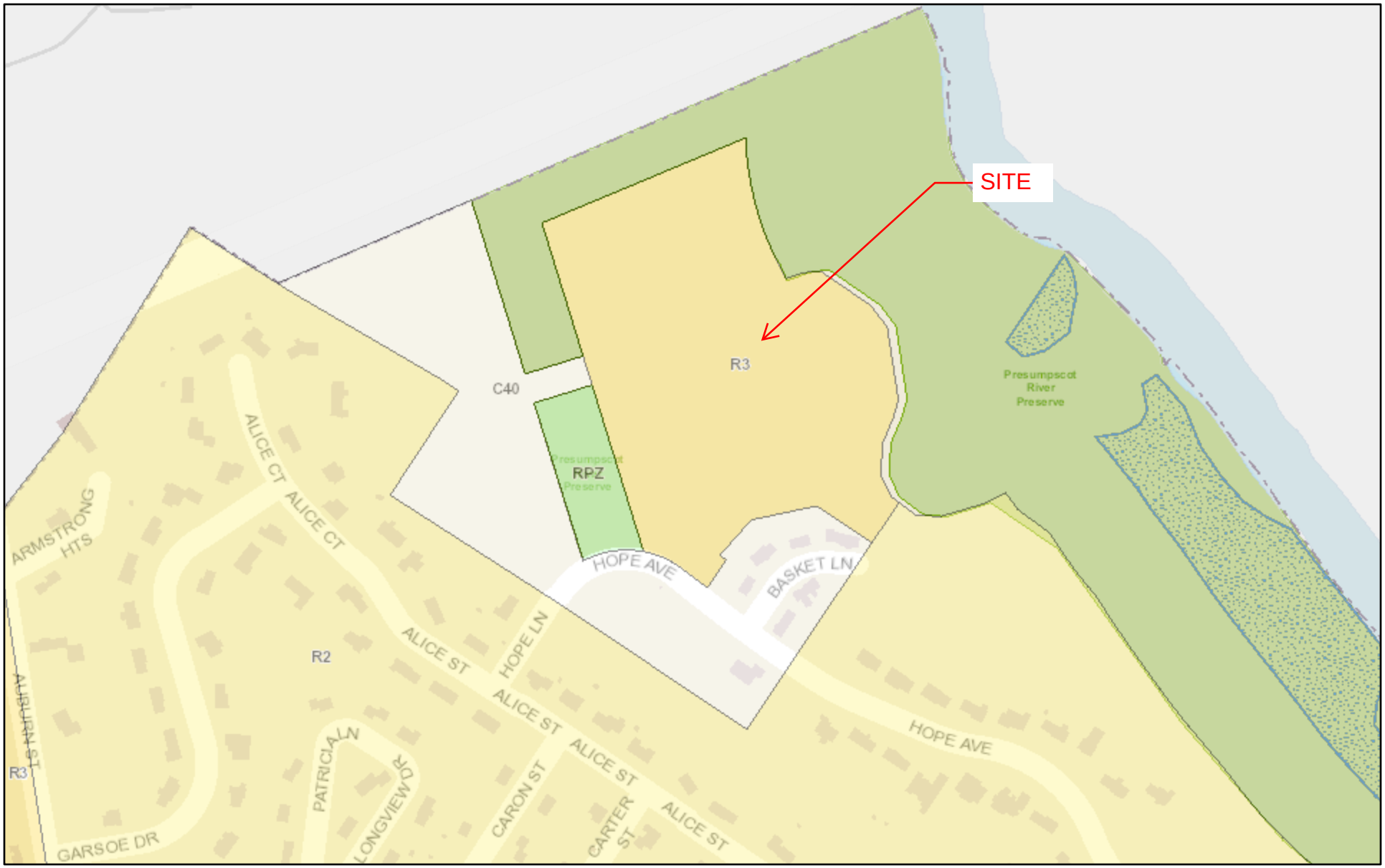
Planned Residential Unit Developments (PRUD) Requirements

	Required	Proposed
Minimum Lot Size	3 AC	13.7 AC
Minimum Lot Area per Dwelling	6500 SF	~9900 SF
Maximum # Units per Building	6	3
Maximum Building Length	140'	110'
Maximum Accessory Building Length	N/A	N/A
Minimum Setbacks	25'	25'
Minimum Building Separation	16'	16'
Minimum Open Space	300 SF/UNIT	900 +

Affordable Housing Density Bonuses (if applicable)

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

ArcGIS Web Map



5/2/2022, 9:15:00 AM

1:4,080

0 0.03 0.07 0.13 mi

0 0.05 0.1 0.2 km

City of Portland, DPS

Zoning

- IR-1 Island Residential
- IR-2 Island Residential
- IR-3 Island Residential
- I-B Island Business
- I-TS Island Transfer Station
- R1 Residential
- R2 Residential
- R3 Residential
- R4 Residential
- R5 Residential
- R-5A Residential
- R6 Residential
- R-6A Residential

ArcGIS Web AppBuilder

City of Portland, DPS |

Presumpscot Woods
0 Hope Ave., Portland, Maine
Waiver Requests

The following waivers are requested for the Presumpscot Woods development:

1. **City of Portland Technical Manual Standard 8.2.1 – 100' perennial stream buffer**
   The Applicant requests a waiver for the 100' perennial stream setback as required by Section 8.2.1 of the City of Portland's Technical Manual. This project maintains a 75' buffer as required by the Maine Department of Environmental Protection. Disturbance within the 100' setback is minimal, consisting of approximately 1,000 square feet of roadway/sidewalk, and approximately 2,700 square feet of lawn/structure. This minor encroachment is necessary in order to preserve the wooded/wetland areas in the center of the development. The majority of disturbed areas within the encroachment will be internally drained to stormwater management systems, and those that aren't will be adequately addressed with erosion control best management practices.

GenX Capital Partners

Property Location: O Hope Lane, Portland, ME

Subject: Level III Site Plan Application

Date: September 26, 2022

General Application Documents: Financial Capability

The following are key members of the development team:

1) Shinberg Consulting, Portland, Maine
2) Haley Ward Engineering, Saco, Maine
3) Owen Haskell Surveyors, Falmouth, Maine
4) RS Leonard Landscape Architecture, Portland, Maine
5) John Q. Adams, P.E. Barton & Loguidice, Inc. Transportation Engineer, Scarborough, Maine
6) GenX Capital Partners, LLC, Portland, ME

GenX Capital Partners, LLC has developed and also financed more than $500 million in commercial real estate projects over the past 6 years throughout the U.S.

Current and Past Successful development projects

Cottages at Pine Meadow, Saco, Maine- 32 home "Over 55" subdivision that is now 90% SOLD OUT- $10+ million development

1179 Shore Rd, Cape Elizabeth, Maine- $1.7MM

3 Caydens Way, Cape Elizabeth, Maine- $1.3 MM

Carr Woods, 18 Home Subdivision, Cape Elizabeth, Maine- $22 million Pre-Approved development- Town has approved GenX/Mark McClure's technical and financial capability

The Mark, Cumberland Foreside, Maine- 45 unit FULLY APPROVED condo development. GenX has capitalized the initial $4MM in soft and acquisition costs with lender and equity financing. Bank financing term sheets in place. Town of Cumberland has approved GenX-McClure's financial capacity for this $21 million development

53 Waites Landing, Falmouth, ME $2.2MM

2 Town Landing, Falmouth ME $2.4MM

GenX Capital Partners has also financed more than 15 projects thus far in Maine for clients to the tune of $20+ million for 2022

www.GenXCP.com
www.GenX-Lending.com

GenX Capital Partners

Property Location: O Hope Lane, Portland, ME

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53 Waites Landing, Falmouth, ME $2.2MM

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www.GenXCP.com
www.GenX-Lending.com

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Wed May 04 2022 13:40:06. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
GENX CAPITAL PARTNERS LLC	20201169FC	LIMITED LIABILITY COMPANY (FOREIGN)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
05/12/2020	N/A	FLORIDA

Other Names **(A=Assumed ; F=Former)**

NONE

Clerk/Registered Agent

REGISTERED AGENTS INC
415 CONGRESS ST
STE 202A
PORTLAND, ME 04101

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our Feedback page.

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181 State Street, PO Box 4424, Portland, Maine 04101
(207) 772-7070 Office | info@shinbergconsulting.com

Property Location: O Hope Lane, Portland, ME

Subject: Level III Site Plan Application

Date: September 26, 2022

General Application Documents: Technical Capability

The following are key members of the development team:

1) Shinberg Consulting, Portland, Maine
2) Haley Ward Engineering, Saco, Maine
3) Owen Haskell Surveyors, Falmouth, Maine
4) RS Leonard Landscape Architecture, Portland, Maine
5) John Q. Adams, P.E. Barton & Loguidice, Inc. Transportation Engineer, Scarborough, Maine

Haley Ward has worked with the LA, Surveyor and Engineers on several projects.

Shinberg Consulting has provided Owners Representative services to private and public entities since 2004.

We have acted as the Owners Representative services in addition to part ownership for projects located at 135 Sheridan St. and 645 Congress St.

Some of the notable projects that Shinberg Consulting has provided Owners Representative Services include:

- The Intermed Building
- Hyatt Hotel Old Port
- The Press Hotel
- 63 Marginal Way
- 280 Fore St.
- The Mina Building
- 50 Portland Pier
- 154 Clark St. for Shalom House
- Randall Place for The Opportunity Alliance
- 135 Sheridan Street
- 645 Congress Street
- Ocean House Common in Cape Elizabeth
- Two Lights Dental and apartments Cape Elizabeth
- 192 Western Avenue in South Portland

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

Jon H. Whitten, Jr., PE

Senior Project Manager

jwhitten@haleyward.com | 207.989.4824



Jon H. Whitten, Jr. has over 25 years of civil engineering experience related to site development design, permitting, and project management. Design experience includes site layout, roadways, public and private utility infrastructure, stormwater management systems, and erosion control features for municipal, commercial, and residential projects. Jon continues to further expand his professional engineering, project management, and business management skills by working on a wide range of projects, both in type and size, for a variety of clients throughout Maine. He is well versed in guiding these projects through design and the Local, State and Federal zoning, natural resources, and regulatory permitting processes. Additionally, Jon has worked on; Gravel and Rock Extractions, Solid Waste Facilities, Recreation Trails, Construction Administration/Observation, Post Construction Stormwater Inspections, etc.

PROFESSIONAL HISTORY

2019 – Present
Haley Ward, Inc.
Senior Project Manager

2015 – 2019
Plymouth Engineering Inc.
Senior Project Manager

2006 – 2015
Terradyn Consultants, LLC
Principal / Project Manager

1996 – 2006
Sebago Technics, Inc.
Project Manager / Project Engineer

CORE EXPERTISE:
Site Design and Permitting
Utilities and Roads Construction Administration/Oversight
Environmental Permitting

EDUCATION:
B.S. Civil Engineering, University of Maine, Orono

REGISTRATIONS:
Professional Engineer, State of Maine (#10414)

AFFILIATIONS:
American Society of Civil Engineers
National Society of Professional Engineers

PROJECT EXPERIENCE

Whole Oceans Aquaculture Facility | Bucksport, Maine

Jon served as Haley Ward's Engineering Design Project Manager for the proposed Whole Oceans Aquaculture Facility, a large, state of the art, Land Based Aquaculture Facility, on the site of the old Verso Paper Mill in Bucksport, Maine. The project includes the development of approximately 22-Acres of new buildings and a myriad of support system components on a 104-Acre site. Haley Ward played an important role as a member of the Whole Oceans Design Team, which was a collaboration of several consultants from the United States and Canada. Haley Ward, Inc., recently, successfully prepared and coordinated the submittal, review, and approval of an Amended Site Location of Development Act (SLODA) Permit from the Maine Department of Environmental Protection and a Town of Bucksport Land Use Permit. Haley Ward looks forward to assisting in moving this project into the construction phase soon.

Center for Professional Mariner Development Campus – Maine Maritime Academy | Bucksport, Maine

As Project Manager, Jon worked with Maine Maritime Academy (MMA) staff to develop a Master Plan for their Center for Professional Mariner Development Campus on approximately 4.5 acres of the old Verso Paper Mill property in Bucksport, Maine. After securing the Amended Site Location of Development Act Permit from the Maine Department of Environmental Protection and a Land Use Permit from the Town of Bucksport for the Master Plan; Jon again acted as Project Manager to develop construction plans for a fire training building. This required the coordination of our Civil and Structural Engineering groups, as well as our Architectural group. Jon was also responsible for oversight of a team to manage the construction bidding process and to assist MMA with technical support throughout construction.

Route 15 Business Park – Town of Orrington | Orrington, Maine

Jon worked with the Town of Orrington for approximately two years to develop and finalize a 35-Lot Business Park off Route 15 in Orrington, Maine. As the Project Manager, Jon managed a team of professionals (both in-house and sub-consultants) to work with the Town's Selectmen's Economic Advisory Committee to develop a Master Plan for the project and then to finalize the design and secure Land Use Permits, Natural Resource Permits, and a Traffic Movement Permit. The project included the design of approximately 6,000 feet of roadway, stormwater management for all future development, a roadway/railroad crossing, protection of an archaeological find, and a new entrance on Route 15.

Deer Park Village | Milford, Maine
As the Project Manager, Jon has worked closely with the owner/applicant and a local wetland scientist to manage the Site Location of Development Act Permit, Natural Resources Protection Act Permit, and Town of Milford Land Use Permit for this proposed 146-unit, 55 and older residential community. The project includes new roadways, dwellings, water, sewer, power, and communications utilities, stormwater management, etc. Due to it being adjacent to the Penobscot River, an archaeological study was required, and Jon was able to manage a bid process to hire a company to perform that work. Extensive coordination with the Maine Department of Environmental Protection, the Town of Milford, Maine Department of Inland Fisheries & Wildlife, and the City of Old Town was required as well.

Dearborn Precision Tubular Products, Inc. | Fryeburg, Maine
Jon managed the campus planning and design, site grading, stormwater management and permitting for a large expansion of an existing site. The site included 22-acres of impervious area on a 76-acre parcel of land. Stormwater management features included catch basin and pipe system, dry swales, and large infiltration basins. Jon worked closely with the owner, a Construction Manager as Constructor, and other professional consultants to obtain a Site Location of Development Permit from MDEP for this project.

Town of Baldwin | Baldwin, Maine
Jon served as Project Manager and Project Engineer for the stormwater modeling of over 200 acres of mountainous terrain to establish flow characteristics and flood levels at two problematic culvert crossings on Brown Road in Baldwin, Maine. The re-design of the culvert crossings included the installation of new, larger pipes as well as new vertical alignment for approximately 700 linear feet of roadway. Jon coordinated with the Federal Emergency Management Agency (FEMA) and MDEP throughout the project design and construction observation for this project.

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

Drew Olehowski, PE

Project Engineer

dolehowski@haleyward.com | 207.989.4824



Drew Olehowski has five years of experience providing civil engineering design to residential and commercial clients. As a Project Engineer, Drew contributes to the design, permitting, bidding, and construction administration for a wide array of projects such as: sites, roadways, and stormwater management/erosion control systems. Drew is experienced in working with local, state, and federal agencies to obtain required permitting, including: local planning board approval; Site Location of Development; Stormwater Permit by Rule; Stormwater Permit; and the Natural Resources Protection Act.

PROFESSIONAL HISTORY

2017 – Present
Haley Ward, Inc.
Civil Engineer

Summer 2016
United States Geological Survey
Student Trainee

Summer 2015
Maine Department of Transportation, Environmental Unit
Internship

CORE EXPERTISE:
Site Design and Permitting
Utility/Roadway Design
Environmental Permitting
Hydrology/ Water Resources
Construction Inspection and Administration

EDUCATION:
Master of Engineering, Environmental Engineering (2017) Rensselaer Polytechnic Institute, Troy, New York
B.S. Environmental Engineering (2017), Rensselaer Polytechnic Institute, Troy, New York

REGISTRATION:
Maine PE License (#16372) exp 12/31/23

LPA Certified through 12/31/23

PROJECT EXPERIENCE

Atlantic Salmon Stream Crossings | Various Maine Locations
Drew was responsible for the design and construction administration and inspection of stream crossings throughout Maine. These projects consisted of the implementation of crossings that meet the requirement of maintaining the natural migratory route for the endangered Atlantic Salmon. Drew's tasks for these projects included stream surveys for fish passage assessment and culvert design, as well as basic regression hydrology for culvert and bridge sizing. His responsibilities also included general task planning and management, field work, data reduction, analysis, and construction inspection and reporting.

Sylvan Road Drainage Improvements | Mount Desert Island, Maine
Drew was responsible for the construction inspection and administration of the Sylvan City Drainage project in Northeast Harbor, Maine during the Summer of 2018. This project consisted of the implementation of a full stormwater management system for a residential neighborhood. Tasks for this role included documentation of all daily construction activities, establishing communication with the project owner, residents, and project engineer while resolving any issues that would arise amongst the above parties. Drew was also accountable for various construction administration items, including change orders, submittals, and cost/quantity estimates.

Rumford Downtown Infrastructure Improvements | Rumford, Maine
Drew provided construction inspection and administration of the Rumford Downtown Infrastructure Improvements project in Rumford, Maine from April 2020 to July 2020. This project consisted of a complete rebuild of all utilities (sewer, water, drainage, underground electric), roadways, and sidewalks in the downtown area. Tasks for this role included documentation of daily construction activities (work tasks completed, material quantities stored/installed, photologs,) establishing communication with the project owner, residents, and project engineer while resolving any issues that would arise amongst the above parties. Drew was also in charge of various construction administration items, including change orders, submittals, and cost/quantity estimates.

SWEB Wind Farm | Clifton, Maine
Drew prepared the design and permitting of a 163-acre wind farm in Clifton, Maine. The project design included access road and tower site layout, and stormwater management. Drew was also responsible for preparing the project's Maine Department of Environmental Protection Site Location of Development permit application.

Solar Farm Design and Permitting | Various Maine Locations
Drew was responsible for the design and permitting of several Solar Farm projects throughout Maine, including in Saco, Augusta, Topsham, Surry, Winthrop, and Turner. Project designs focused on stormwater management, access road layout, solar panel layout, and natural resource protection. Drew was also responsible for preparing permit applications for these solar projects, including local Site Plan Review, and Maine Department of Environmental Protection Stormwater Permit-by-rule, Site Location of Development, and Natural Resources Protection Act Permit-by-rule applications.

T2R9 Training Site | T2R9, Maine
Drew was responsible for the design of a roadway in one of Maine's unorganized territories (T2R9). This project consisted of the design of a one-mile-long roadway that provided accessibility to a Department of Defense training site. The road design included horizontal and vertical alignment in an undeveloped area and was required to meet the needs of both the client and various natural resource protection agencies.

Gushee Private Way | Gorham, Maine
Drew served as the Project Manager and Project Engineer for a Private Drive project in Gorham, Maine. This project consisted of a 1000-foot-long roadway for an individual client. The road design included horizontal and vertical alignment in an undeveloped area and was required to meet the needs of both the client and the municipality. This project included extensive collaboration with the Town of Gorham, as it required a local Site Plan Application and Planning Board Approval.

Salmons Processing Facility | Prospect, Maine
Drew served at the Project Engineer for the design and permitting of a quarry material processing facility in Prospect, Maine that is approximately 50-acres in size. This project required obtaining Site Location of Development, Natural Resource Protection Act Tier 1 and Tier 3, and local Site Plan permits. Project design included a 4,300-foot access road, and a 50-acre site to support a mineral processing facility and storage areas. The design included a variety stormwater management and erosion control systems.

Emerald River of Maine| Lewiston, Maine
Drew was responsible for the design and permitting of a commercial recreational marijuana facility in Lewiston, Maine. This project including creating a site design and obtaining a Development Review Permit from the City of Lewiston.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Consistency with City Master Plans

The Presumpscot Woods project is not associated with any active City Master Plans.

The Portland Water and Sewer districts have been contacted to determine if off-site infrastructure is capable of serving this development. Refer to the applicable sections of this application for more information on proposed sewer and water systems. Easements will be provided for these systems as necessary. There are no other easements proposed at this time.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Public Safety and Fire Prevention

To the best of our knowledge, the Presumpscot Woods project has been designed to meet all public safety and fire prevention standards.

The development is a residential neighborhood that is generally open and allows for natural surveillance. A combination on on-street lighting and residential scale lighting on each unit is proposed to provide adequate lighting to promote safe use of the access ways and sidewalks.

The proposed access ways have been designed to have a 20-foot-wide paved surface and turning radii adequate for typical maneuvering and turning around of emergency vehicles. Each unit has a single bay garage and space for an additional vehicle in a driveway to minimize the need to park on the street. Additionally, on-street parking spaces are proposed to further ensure that the minimum 20-foot-wide clear space is maintained throughout the subdivision.

Buildings are spaced with the required separation distances listed in the City of Portland Technical Manual and will adhere to fire protection requirements as part of their design and construction. The buildings will include sprinkler systems, as required.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Availability and Adequacy of Public Utilities

The Presumpscot Woods project is proposing to utilize public sewer, water, and electric utilities.

Public water will be supplied from the existing main on Hope Avenue. The location of the proposed main and services are shown on the Proposed Utilities plan. A letter of Ability to serve has been requested from the Portland Water District and is currently pending review.

Wastewater generated by this development will be disposed of using the public system on Hope Avenue. Correspondence with City staff providing further detail on this topic has been provided with this application..

Stormwater runoff will be treated and detained appropriately on-site. Treated runoff will outlet to existing drainage features on the site and allowed to flow to the Presumpscot River as it does today, in the pre-development condition. Minimal runoff is proposed to be directed to Hope Ave. or any City maintained drainage components.

The development proposes to connect to power and communications infrastructure from Hope Avenue. All power and communications infrastructure are proposed to be installed underground.

Solid Waste will be disposed of using individual receptacles for each unit. A letter of ability to serve from Casella Waste has been provided.

Drew Olehowski

From: Reed Allen <rhallen@portlandmaine.gov>
Sent: Wednesday, August 16, 2023 3:45 PM
To: Drew Olehowski; Greg Shinberg
Cc: Jon Whitten, Jr.; Benjamin Pearson; Bradley Roland; jrp@portlandmaine.gov; mgrooms@portlandmaine.gov; Charles Tetelman; William C. Boornazian
Subject: Re: Hope Ave Sewer Alternatives Report 1

Greg and Drew,

Thank you for providing your initial alternatives analysis to meet the development needs in this limited capacity area. We have reviewed all the options presented in conjunction with the future proposed flow rates and existing conditions. Note we do not assume a different capacity approval for peak flows vs average daily flows and those conditions need to be associated with our infrastructure to have adequate design capacity. We have not provided a response to each alternative and are choosing to provide key points which lead into a recommendation for the developers review.

We have determined that:

- The 8" gravity sewer pipe connecting discharge flows from the Hope Avenue pump station to the gravity sewer system in Alice Street has adequate capacity to accept the proposed flows.
- The Curtis road pump station upgrades in 2019 included a maximum design capacity of 420 gpm which is enough to convey the future flow rates proposed. The station has had to be turned down due to electrical overloads and may be considered planned maintenance to correct issues to meet future conditions. The existing conditions of this station at the proposed flow rates are still under review at this time.
- The Curtis road Forcemain has adequate capacity for existing and future flows.
- The Hope Avenue pump station was taken over from a previous development and has stated design capacity in some documentation that's considered large enough for additional flows although the City has never seen this capability nor has it been required to handle such additional proposed flows. The associated type of equipment, age and current conditions would be a best fit for run to failure for equipment replacement and therefore is not scheduled to be upgraded or replaced at this time.
- The functionality, operation and maintenance of a proposed 24,000 gallon wet/well storage and pumping station shown on the proposed site plans is not understood or recommended. It would appear this system could have many unknown failures conditions, odors, and long-term maintenance issues. Proper sewer capacity requirements need to assume normal conditions which assume peak hours, so it is also unnecessary to construct such an equalization and pumping system.

Based on these conditions, the proposed flow rates, and taking into consideration efficient use of funds to meet the sewer capacity requirements the most appropriate actions would be as follows:

- Eliminate the storage / pumping system proposed on the development site and connect the development by gravity to the Hope Avenue collection system.
- Upgrade the Hope Avenue pump station to meet a condition of 150 gpm per pump. We note that original design conditions proposed these values so efforts are likely to be focused on in-kind replacement of existing equipment. This may include additional maintenance of the Forcemain such as “pigging” the line to assure the system will have adequate capacity upon completion of the development. Details of needs would be determined further along in the planning process.
- The Curtis road pump station may warrant future upgrades but it the interest of time and likely less significant in nature we feel comfortable moving past this at the current response.

We're happy to meet and discuss these design considerations ahead of your September planning board workshop.

Thank you,
Reed

Reed Allen, EI
Water Resources Engineer
He/Him

City of Portland Public Works
212 Canco Rd, Suite B
Portland, Maine 04103
Tel: (207) 874-8828
rhallen@portlandmaine.gov



On Thu, Aug 10, 2023 at 11:02 AM William C. Boornazian <wboornazian@portlandmaine.gov> wrote:

Drew,

In progress, we had to verify some more existing conditions. You can expect our response early next week at the latest.

Regards,

-Bill

On Thu, Aug 10, 2023 at 7:58 AM Drew Olehowski <dolehowski@haleyward.com> wrote:

Good morning, Bill,

I wanted to check in on the status of your review of the Hope Avenue Sewer Alternatives Report. Do you still expect to provide preliminary comments this week?

Thank you,

Drew Olehowski, PE
Civil Engineer
t: 207.283.9151

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Drew Olehowski

From: Dumont, Katherine <Katherine.Dumont@cmpco.com>
Sent: Friday, August 25, 2023 8:46 AM
To: Drew Olehowski; Jon Whitten, Jr.
Subject: CMP Three Phase Service Process and Ability to Serve Letter - Hope Avenue Portland Me Notification # TBD
Attachments: Easement_Information_Worksheet.doc; Standard Easement Sample.pdf; blank W9.pdf; August 2022 EDET.xlsx

You don't often get email from katherine.dumont@cmpco.com. Learn why this is important

Drew Olehowski
Haley Ward Inc-Civil Engineer
203 Anderson St #2
Portland, ME 04101

RE: Hope Avenue
60 Unit Development
Letter of Ability to Serve Request

SAP TBD
Project Description:

The development area is approximately acres in size and is currently undeveloped. The proposed project will include a mixed residential development with a network of roadways and walkways, landscaped areas, trails, and stormwater maintenance facilities.
The proposed mixed residential development is expected to provide 60 units subdivision. The existing site is located off Alice St.

CMP has the ability to serve the proposed project in accordance with our CMP Handbook (web link below). We can provide you the desired pad or pole mounted transformers per your request and city approval, in accordance with our CMP Handbook of Standard Requirements. If you have any questions on the process, or need help in completion of the documents, please contact CMP at 800-565-3181.

Here is our typical process for getting your three phase or CT rated single phase service installed. If you have any questions, please let us know. The underlined links will redirect you to the appropriate site for additional information.

Service Milestones for Three Phase Services and CT Rated Single Phase Services. There are additional requirements for primary metered Solar Service Installations listed in the Chapter 324 Interconnections section below. Please refer to CMP Installation Checklists for other installations.

- Call 800-750-4000 option 4 to establish a new account (if needed) and an SAP work order. Please provide both of these to me.
- Submit Load information. Please complete the attached EDET (excel file) using load information. Please complete this and email back to me. If the loads are over 500 kw, more in depth load studies may be required with our Distribution Planning and Transmission Planning Departments. Be advised that these will involve more detailed load information, a load study agreement (signed contract), as well as other items. This additional study process may add up to two additional months to completion of the job.

- Submit the easement information worksheet, including where any CMP structures may be on ANY private property (Poles, Wires, Anchors). You are responsible for obtaining all information for all required easements. Please complete this form and either email or fax back to me.
- Submit any electronic drawings (PDF (preferred) or DWG files) of the site layout and proposed electrical connections.
- For Primary Metered installations (including PV), please have the access road in for pole staking.
- Preliminary meetings with CMP Advisor and Engineer to determine details of job (I will need to schedule with your electrician/contractor-please let me know who this is)
- Field planner design appointment scheduled once the preliminary information is complete. This will allow us to cost out the job and develop a CMP Invoice. The invoice is typically generated 5-6 weeks after the design appointment. This expires after 90 days from the invoice date.
- Submit completed W9 so that your bill can be properly processed. This is a new CMP process.
- CMP submits invoice to the customer for payment (typically via email). Payment received from customer.
- Easements (based on easement information worksheet) sent out, signed and originals returned to CMP.
- Job scheduled for completion after the electrical inspection has been received.

This process can take several months, depending upon several factors including transformer or materials delivery, return of completed paperwork, and other jobs in the system that may be ahead of yours. In addition, contact with the other utilities, including telephone and cable, should be commenced as soon as practical. They may have additional work or charges in addition to the CMP work required to bring your project on line.

As you may be aware, there are global supply chain issues impacting the utility industry. CMP is closely monitoring and managing their inventory in order to serve our customers. Larger padmount transformers may not be readily available for the date that you will need to be energized. Please consider this as part of your construction plan. The energy service advisor will continue to work closely with you and let you know as soon as the transformer becomes available. Should you have any questions or concerns throughout this process, please do not hesitate to contact your ESA directly at the number or email provided.

Please complete the attached forms (the specific instructions are on each form) and email them back to me at your earliest convenience.

For your convenience, here is a link to the CMP Website which contains our Handbook with details on most service requirements: CMP Handbook of Standard Requirements An additional resource is our Distribution Construction Standards: CMP Distribution Construction Standards CMP Distribution Construction Standards.

You will be responsible for installing the customer connections, conduits, and metering in accordance with the CMP Handbook of Standard Requirements The transformer will be sized based on your submitted load sheets.

Your deposit amount will be typically based on an estimated two month bill, calculated from your completed load sheet unless otherwise determined by CMP.

In addition, we have recently added on an online map that shows single phase and three phase power locations within CMP. Here is that link: CMP ArcGIS Information

Metering:

All metering (including locations) must be preapproved by CMP. If you have any questions, please consult the CMP Handbook of Standard Requirements

Chapter 324 Interconnections:

Please be advised that if you plan to install solar/wind/hydro generation, you must complete an application under the MPUC mandated Chapter 324 Interconnection Standards. If you go to Chapter 324 Interconnection Standards and follow the instructions for the Small Generator Interconnection Procedures, CMP can do this work in parallel to your service request that will be handled by me. If you project is under 660 KW You will be able to have a Customer Net Energy Billing contract. Information concerning Customer Net Energy Billing can be accessed thru the Chapter 324 website or by clicking here: Net Energy Billing

Reallocation/Line Extensions:

Recently, changes were made to the three-phase construction policy, which require CMP to reallocate construction costs paid by customers. If applicable, those projects identified as "developments" do not qualify for reallocation of funds. Please see this document at our website for details about the reallocation conditions. Any reallocation charges will be specifically denoted on your invoice. The website address for this is: PolyphaseLineExtension.

This line extension will be part of Central Maine Power's distribution system. In the event the property served under this Agreement is sold or otherwise conveyed, all rights and obligations of the Agreement shall stay with the property. Please note that if you rent or lease this property to another and you want to receive the reimbursement payments, you must make special arrangements with the Central Maine Power Company. Otherwise, any reimbursement payments will be sent to the "Customer" taking service at the service location.

Electricity Supplier Information:

Central Maine Power Company (CMP) will provide your facility with electric delivery service. If you don't already have a provider, you will need to make arrangements with a competitive electricity provider in order to receive electricity supply for your facility. In the event you fail to choose a competitive electricity provider, you will receive Standard Offer service arranged by the Maine Public Utilities Commission. If you wish to be served by a competitive electricity provider immediately upon establishment of delivery service, you must arrange for this service directly through your chosen competitive electricity provider, who must enroll your account no later than 5 PM on the business day prior initiation of delivery service by CMP. An up-to-date list of competitive suppliers can be found at the:

1. Maine Public Utilities Commission (MPUC) web site- **Maine PUC**
2. By calling the MPUC at (207) 287-3831

Attachments:

Excel Load Sheet (EDET)
Easement Worksheet and Sample Standard Easement
W9

Please do not hesitate to contact me with any questions regarding your project.

Kind Regards,
Kathy

Central Maine Power
An Avangrid company

Katherine Dumont
Energy Service Specialist

162 Canco Rd
Portland, ME 04103

207-242-5744
katherine.dumont@cmpco.com

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Drew Olehowski

From: AMaP MEANS <means@pwd.org>
Sent: Friday, August 18, 2023 10:42 AM
To: Drew Olehowski
Subject: RE: Presumpscot Woods - Ability to Serve - Proj # 525533

Good morning,

The plans were received. I have forwarded them on for review, you should hear back soon with next steps.

Have a great weekend,

Kathryn Rodriguez

MEANS Group
Main Extensions and New Services
Portland Water District
225 Douglass Street
Portland, ME 04104-3553
P:(207)774-5961 Ext. 3199
F:(207)761-8307
MEANS@pwd.org

From: Drew Olehowski <dolehowski@haleyward.com>
Sent: Friday, August 18, 2023 9:45 AM
To: AMaP MEANS <means@pwd.org>
Subject: RE: Presumpscot Woods - Ability to Serve - Proj # 525533

ATTENTION: This email did NOT originate from Portland Water District. This email is from an external source outside of the District. Exercise EXTREME caution when opening external attachments or links from unknown senders.

Please see attached.

Drew Olehowski, PE
Civil Engineer
t: 207.283.9151

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From: AMaP MEANS <means@pwd.org>
Sent: Friday, August 18, 2023 9:36 AM
To: Drew Olehowski <dolehowski@haleyward.com>
Subject: RE: Presumpscot Woods - Ability to Serve - Proj # 525533

Good morning,

I have not received any other emails than this one.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
212 Canco Road
Portland, Maine 04103

Date: 11.6.2023

Bradley Roland, P.E.
Water Resources Division
Department of Public Works
212 Canco Road
Portland, ME 04103

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

Site Address: 0 HOPE AVENUE

Chart Block Lot Number: 448-A001001

Proposed Use: 60 UNIT MULTI-FAMILY
Previous Use: UNDEVELOPED
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.
HOPE AVENUE PUMP STATION

Site Category		
	Commercial *(see part 4 below)*	
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	X
	Other *(specify)*	

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

2. Please, Submit Contact Information.

City Planner's Name: CHARLES TETLEMAN Phone: 207-874-8724
Owner/Developer Name: GENX CAPITAL PARTNERS
Owner/Developer Address: PO BOX 4424, PORTLAND, ME 04101
Phone: 214-417-1218 Fax: E-mail:
Engineering Consultant Name: HALEY WARD, INC. ATTN: JON WHITTEN, JR.
Engineering Consultant Address: 120 MAIN STREET, #132, SACO, ME 04072
Phone: 207-989-4824 Fax: E-mail: jwhitten@haleyward.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: 16,200 GPD
Peaking Factor/ Peak Times: 5
Specify the source of design guidelines: *(i.e.* X *"Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, __ Other (specify)*

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: NOT APPLICABLE

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: NOT APPLICABLE GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

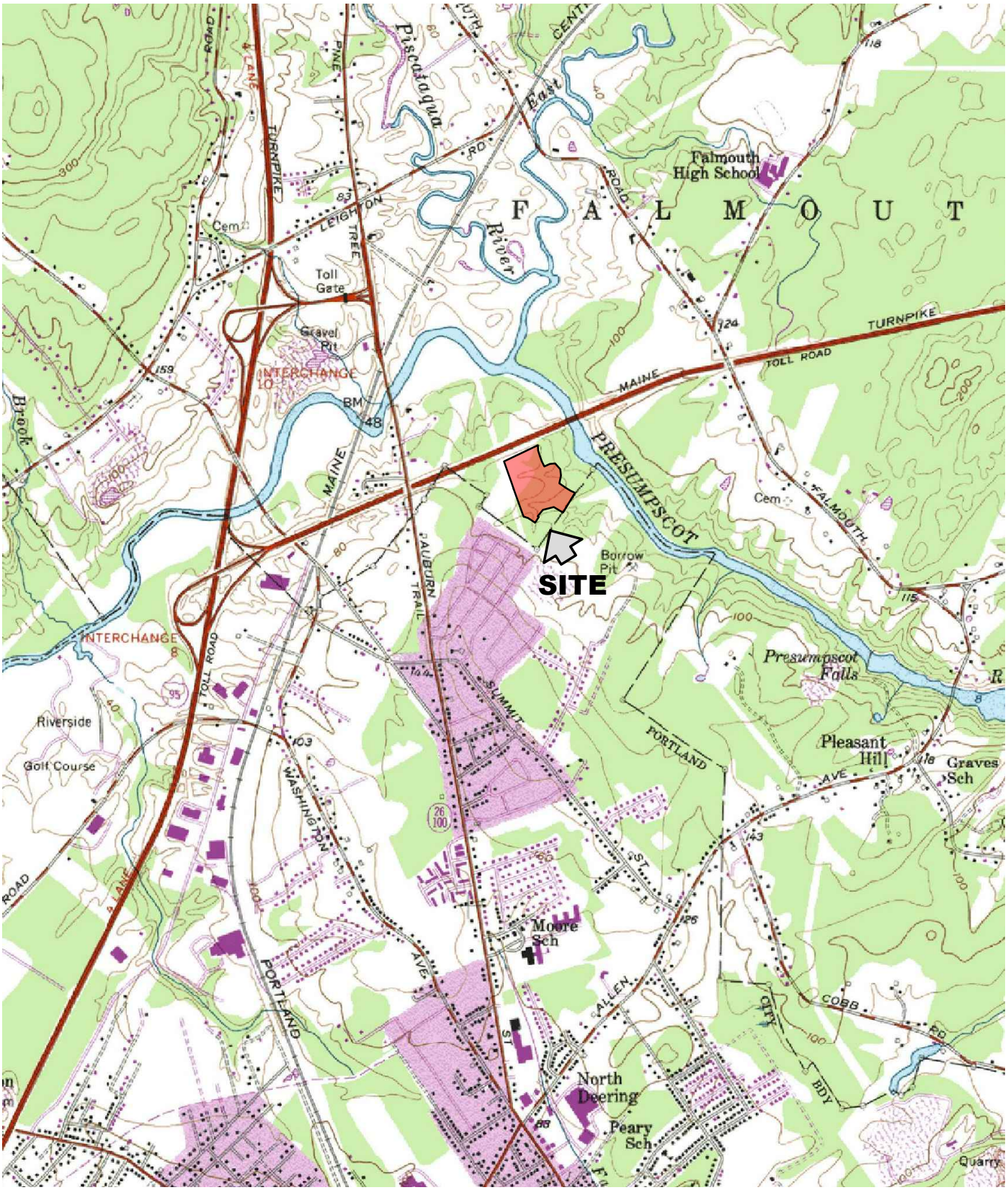
OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

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

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

Terrain Navigator.© Maptech 800-627-7236



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
PORTLAND WEST
@ 1:24,000

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

HOPE AVENUE DEVELOPMENT
PORTLAND, MAINE
LOCATION MAP

05/02/2022
13773.001

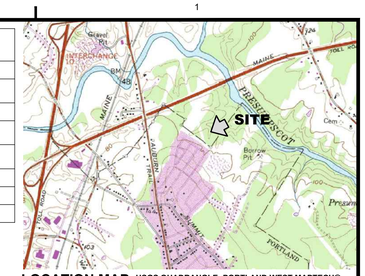
GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

PRUD LAND AREA CALCULATION

TOTAL LAND AREA	592,063 SF
WETLAND & WATERCOURSE AREA	42,951.25 SF
AREA WITH SLOPE >25%	139,230 SF
AREA OF SPECIAL FLOOD HAZARD	N/A
TOTAL NET AREA FOR DEVELOPMENT	409,882 SF
NUMBER OF UNITS	60 UNITS
RESULTING NET AREA/UNIT	6,831 SF
REQUIRED NET AREA/UNIT	6,500 SF



LOCATION MAP
SCALE: 1"=2000'

USGS QUADRANGLE: PORTLAND WEST MAPTECH®
USGS TOPOGRAPHIC SERIES™.
©MAPTECH®, INC. 978-933-3000
WWW.MAPTECH.COM/TOPO

PARCEL INFORMATION

MAP / LOT:	390/A001, 448/A001001, 449/A002	
LOT AREA:	13.59	ACRES
ZONE OR DISTRICT:	R-3 PRUD	
FLOOD ZONE:	ZONE C (MINIMAL HAZARD)	
WATER:	MUNICIPAL	
SEWER:	MUNICIPAL	

SITE DEVELOPMENT DATA

EXISTING IMPERVIOUS SF / AC:	0	0.00
NEW IMPERVIOUS SF/AC:	176,147	4.04
TOTAL IMPERVIOUS SF / AC:	176,147	4.04
TOTAL DEVELOPED SF / AC:	388,727	8.92
LOT COVERAGE ALLOWED/ PROVIDED:	35%	30%
NEW ROADWAY AND PARKING SF / AC	52,171	1.20
WETLAND IMPACTS SF / AC:	9,916	0.23

DESIGN STANDARDS

	REQUIRED	*PROPOSED*
R.O.W. WIDTH:	50'	N/A
TRAVELED WAY WIDTH:	20'	20'
MINIMUM GRADE:	0.5%	1%
MAXIMUM GRADE:	8%	4%
ROADWAY CROWN:	3% LOCAL / 2% OTHER	2%
MAX GRADE @ INT:	3% FOR 100'	2.46%
BUILDING HEIGHT:	35 FT	25
MINIMUM FRONT SETBACK:	25 FT	340
MINIMUM REAR SETBACK:	25 FT	25
MINIMUM SIDE SETBACK:	25 FT	25
MINIMUM FRONTAGE:	50 FT	191.39
MINIMUM LOT WIDTH:	65 FT	191.39
PARKING REQUIRED	1 PER DWELLING / UNIT	
PARKING PROVIDED	(2) 1 GARAGE / 1 DRIVEWAY	
OPEN SPACE (ACTIVE & PASSIVE) (PRUD W/ WORKFORCE HOUSING)	18,000 SF	43,700 SF

RECORD OWNER:
GENX CAPITAL PARTNERS, LLC
2 COTTON STREET
PORTLAND, MAINE 04101

THIS IS TO CERTIFY THAT AFTER REVIEWING THE SITE PLAN SUBMISSION INFORMATION FOR THE PROJECT SHOWN ON THIS PLAN AND CONSIDERING EACH OF THE CRITERIA SET FORTH IN THE CITY OF PORTLAND'S CODE OF ORDINANCES AND IN ACCORDANCE WITH THE APPLICATION REQUIREMENTS, THE UNDERSIGNED HAVE MADE FINDINGS OF FACT ESTABLISHING THAT THIS PLAN ALONG WITH ITS ADDITIONAL SUBMISSION INFORMATION (IF APPLICABLE) HAS MET ALL THE CRITERIA SET FORTH AND THEREFORE THE SITE PLAN IS APPROVED.

APPROVED BY THE CITY OF PORTLAND PLANNING BOARD ON: _____

CONDITIONS: _____

PLANNING BOARD SIGNED ON: _____

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
PROPOSED SITE PLAN

DATE: 2022.08.29	SCALE: 1"=40'
DRAWN BY: BLQ	DESIGNED BY: BLQ
CHECKED BY: JHW	
PROJECT No.: 13773.001	
DRAWING No.: C102	REV.: 3

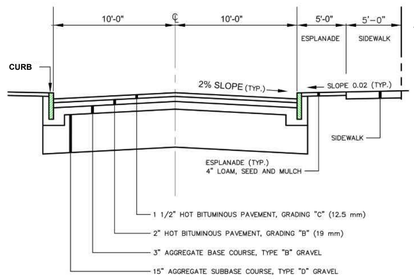
STATE OF MAINE
CUMBERLAND, SS.
REGISTRY OF DEEDS
RECEIVED AND FILED

20 ____

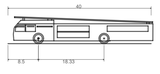
____ **h** **m** **M.**

Attest _____ **Register**

RECORDED AS MAP FILE: _____

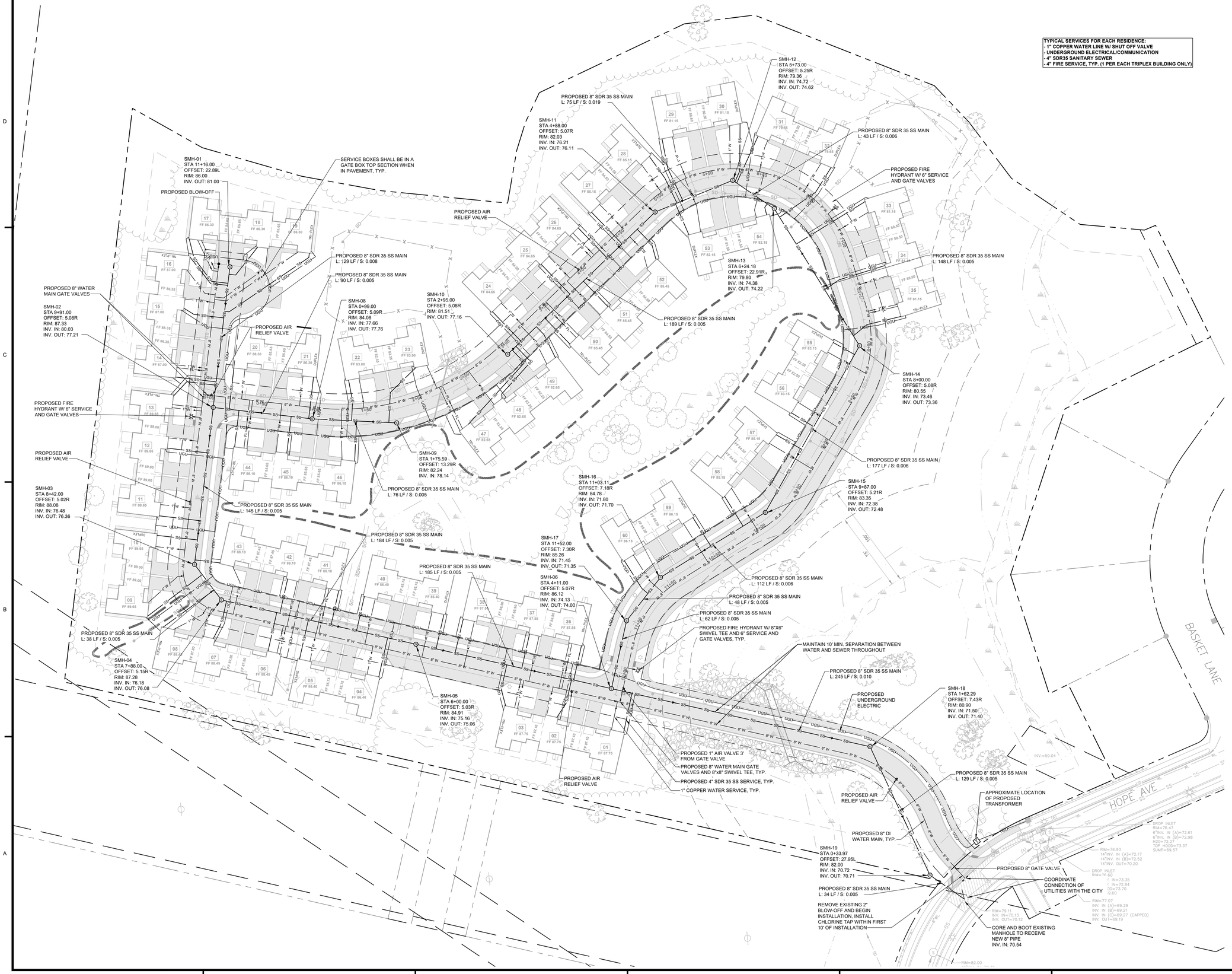


LOCAL STREET CROSS SECTION
NOT TO SCALE



Ladder Truck	
Overall Length	40.000ft
Overall Width	8.330ft
Overall Body Height	7.514ft
Min Body Ground Clearance	0.764ft
Max Track Width	8.330ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-J-AWG\2-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-SP.DWG, 2023.10.27, 2:17 PM



TYPICAL SERVICES FOR EACH RESIDENCE:
- **1" COPPER WATER LINE W/ SHUT OFF VALVE**
- **UNDERGROUND ELECTRICAL/COMMUNICATION**
- **4" SDR35 SANITARY SEWER**
- **4" FIRE SERVICE, TYP. (1 PER EACH TRIPLEX BUILDING ONLY)**

UTILITY NOTES:

1. ALL STORM INFRASTRUCTURE SHALL RECEIVE (1) LAYER OF RIGID STYROFOAM INSULATION BETWEEN CROSSINGS, (2) LAYERS AT CROSSING WHERE PIPE DAYLIGHTS.
2. (1) RESTRAINT JOINT GASKET SHALL BE INSTALLED BEFORE AND AFTER ALL BENDS, IN ADDITION TO T-BLOCKS.
3. ALL HYDRANTS SHALL BE SUPPLIED WITH 8"x6" SWIVEL TEES AND GATE VALVES. FACE OF CURB TO FACE OF 4" PORT SHALL BE 3'.
4. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO THE MAIN AT WHICH THEY ARE CONNECTING TO.
5. CURBSTOPS SHALL BE LOCATED 2.5' FROM FACE OF CURB, UNLESS OTHERWISE SHOWN ON PLAN DUE TO CONFLICTS.
6. THE PROPOSED WATER MAIN SHALL HAVE A MINIMUM OF 5.5' OF COVER.
7. A 40' WIDE EASEMENT BENEFITING THE PORTLAND WATER DISTRICT HAS BEEN PROVIDED AND IS NOTED ON THE SITE PLAN.

WATER MAIN SEPARATION:

THE FOLLOWING MINIMUM SEPARATIONS FROM WATER MAINS SHALL BE OBSERVED AT ALL TIMES UNLESS DIRECTED OTHERWISE BY PWD PERSONNEL:

HORIZONTAL
SANITARY SEWERS: 10'
STORM DRAINS: 3' FACE TO FACE, 2' AT CONTACT POINTS FOR CB'S AND DMH'S
GAS MAINS: 6' FACE TO FACE
UNDERGROUND ELECTRIC/COMM: 6' FACE TO FACE
UTILITY POLES: 6' FACE TO FACE

VERTICAL
SANITARY SEWERS: 12" OVER AND UNDER
STORM DRAINS: 6" OVER AND UNDER
ALL OTHER CROSSINGS: 12" MINIMUM

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
WWW.HALEYWARD.COM
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

UTILITIES PLAN

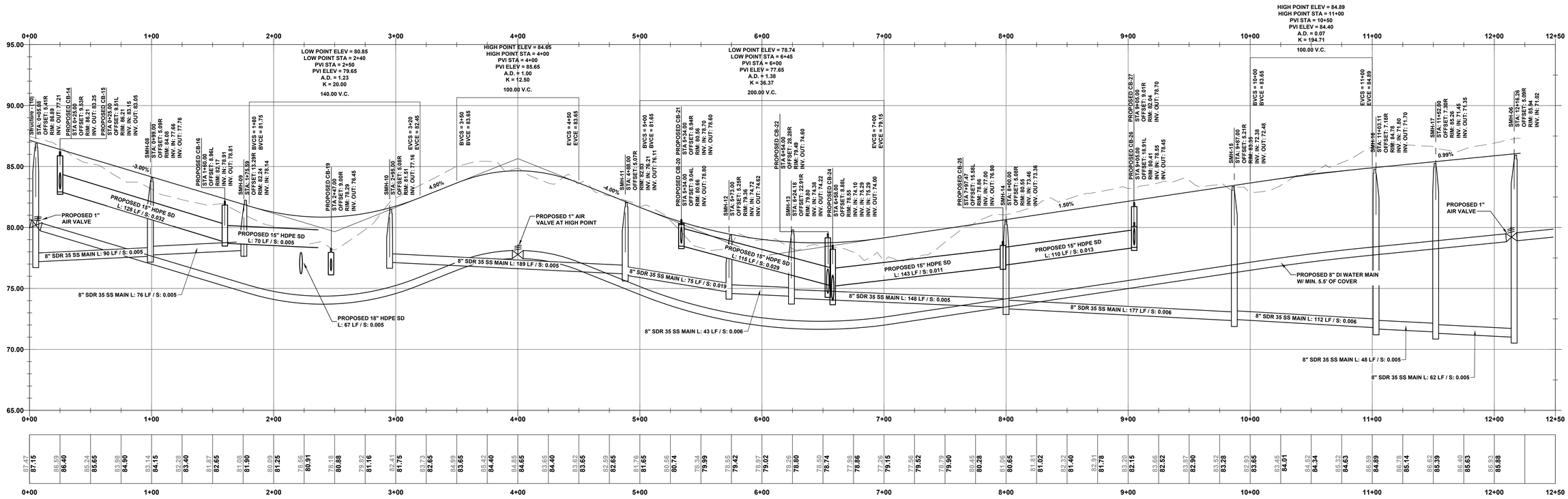
DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	DJO/BLQ	JHW

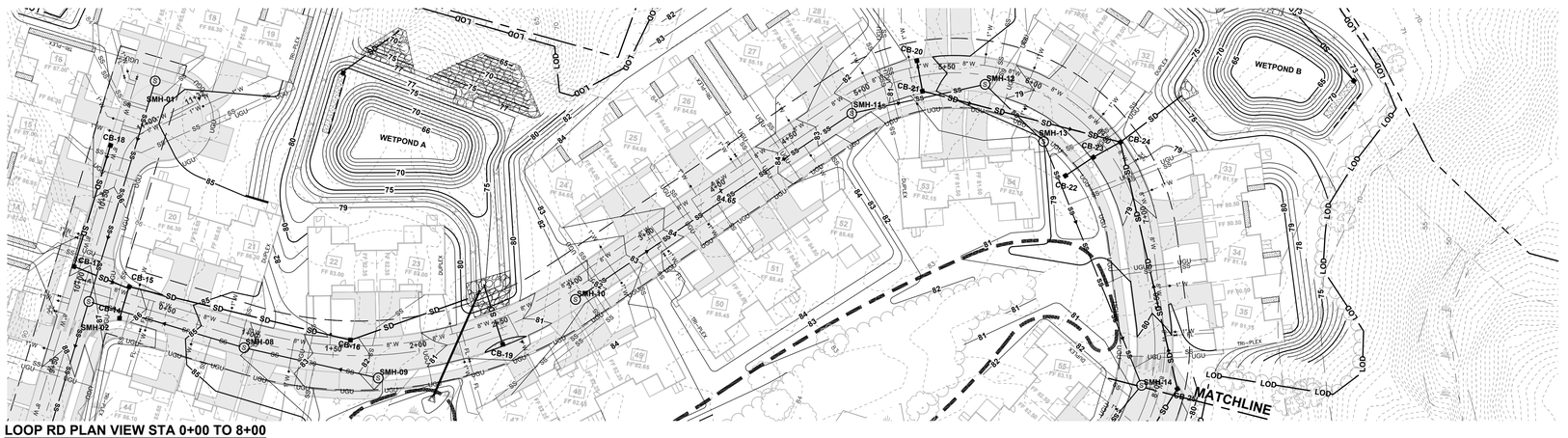
PROJECT No. 13773.001

DRAWING No. **C104** REV. **3**

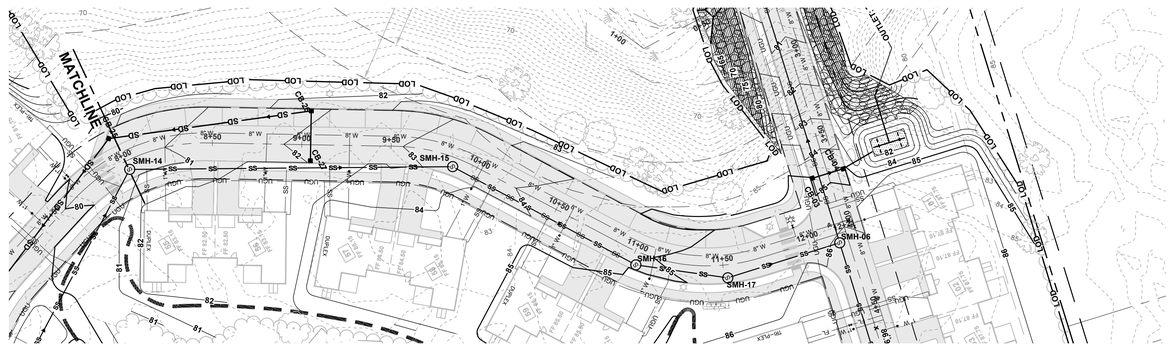
FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\00-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-CUT.DWG, 2023.10.27, 2:21 PM



PROFILE VIEW OF CL-LOOP - STA 0+00 TO 12+50
SCALE: H: 1"=40' / V: 1"=4'



LOOP RD PLAN VIEW STA 0+00 TO 8+00
SCALE: 1"=40



LOOP RD PLAN VIEW STA 8+00 TO 11+09
SCALE: 1"=40

GRAPHIC SCALE
40 0 20 40 80 120
(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
LOOP RD
PLAN AND PROFILE

DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C202** REV. **3**

FILE LOCATION: P:\ME\13773-SHW\ENGR\D_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DISIGN_DWGS\13773.001-C-GR.DWG, 2023.10.27, 2:25 PM

Presumpscot Woods
0 Hope Ave., Portland, Maine
Massing, Ventilations, and Wind Impact

The proposed buildings will not result in health or safety problems from a reduction in ventilation to abutting structures or changes to the existing wind climate that would result in unsafe wind conditions for users of the site and/or adjacent public spaces. The site is surrounded by dense wooded areas, and so the construction of these buildings will not block wind from abutting properties.

The proposed project site will conform in use and appearance to the surrounding neighborhood. The development is not expected to minimize the value or utility to neighboring structures under different ownership.

The development will include residential buildings with their own individual HVAC systems. These systems will not negatively impact abutting properties or public spaces.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Shadow

The Presumpscot Woods project has been designed to avoid adverse impacts of shadows. Proposed buildings are similar in height to those of the surrounding neighborhood and will not create any shadowing on abutting properties. The proposed open space for the development is located at the center of the lot away from proposed buildings, where shadowing will not be an issue.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Snow and Ice Loading

The Presumpscot Woods project has been designed to avoid adverse impacts of snow and ice loading. The proposed structures are not adjacent to any public ways where falling snow and ice would present a danger. Designated snow storage areas are shown on the Proposed Site Plan.

Presumpscot Woods
0 Hope Ave., Portland, Maine
View Corridors

The Presumpscot Woods project will not obstruct any public view corridors identified in the *Downtown Vision View Corridor Protection Plan*.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Historic Areas

The Presumpscot Woods project is not located within the City's Historic District. The Maine Historic Preservation Commission was contacted, and they did not identify any sensitive areas on the site; a copy of their response has been provided.

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

RECEIVED
MAY 16 2022
By 0782-22

May 16, 2022

Maine Historic Preservation Commission
Attn: Ms. Megan Rideout
55 Capitol Street
65 State House Station
Augusta, ME 04333-0065
Megan.M.Rideout@maine.gov

RECEIVED
MAY 27 2022
AND SCANNED

Re: GenX Capital Partners, LLC | Hope Avenue Subdivision | Portland, ME

Dear Ms. Rideout:

GenX Capital Partners, LLC is currently preparing Local and State permit applications for the construction of an approximately 10-acre residential development in Portland, Maine. The project site is to be located on a 14-acre property that is mostly wooded and undeveloped. The parcel is located in North Deering, just south of the Falmouth Spur Road. The proposed project will include approximately 60 duplexes and a private road.

Per permitting requirements, we are submitting this request to your office to determine if any historical sites of concern are located within the project area. The development will be screened on all sides by a vegetated buffer, and buildings in the surrounding neighborhood were constructed within the last 50 years; therefore, a photolog of nearby structures has not been provided. Any response can be forwarded to our office located at 1 Merchants Plaza, Suite 701, Bangor, ME 04401 or by email at dolehowski@haleyward.com.

Thank you for your assistance in this matter.

Sincerely,
Haley Ward, Inc.

Drew Olehowski, P.E.
Civil Engineer

DJO/cmg
Enc.

Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Kirk F. Mohney,
State Historic Preservation Officer
Maine Historic Preservation Commission

5/23/22
Date

One Merchants Plaza, Suite 701, Bangor, ME 04401
T: 207.989.4824 | HALEYWARD.COM

Presumpscot Woods
0 Hope Ave., Portland, Maine
Exterior Lighting

The Presumpscot Woods project proposes street lighting to provide a safe means of vehicular and pedestrian access throughout the development. The proposed street lighting has been designed in accordance with the City of Portland Technical Manual, Section 10 – Municipal Street Lighting. Locations of proposed lighting fixtures can be seen on Sheets C102. A photometric layout has been provided (Sheet C105.) This exterior lighting layout only includes street lighting; individual lights will be used for the individual units but were not shown on this plan. A copy of the cutsheet for the proposed street lighting fixtures has been included.

EVOLVE

EPTT Town & Country

LED Post Top



Project Name _____

Date _____ Type _____

Notes _____

The **Evolve**® LED Post Top Town & Country (EPTT) offers energy efficiency and quality of light in a classic look and style. The advanced LED optical system provides improved horizontal and vertical uniformity, reduced glare and improved lighting control.

CONSTRUCTION

Housing:	Die-cast aluminum housing with traditional lantern design. Cupola compatible with C136.41-2010 PE's, Shorting Caps and LightGrid Nodes
Refractors:	Acrylic, Polycarbonate, None/Open
Lens:	Impact resistant UV resistant polymer
Paint:	Corrosion resistant polyester powder paint, minimum 2.0 mil thickness Standard = Black, Dark Bronze (RAL & custom colors available)
Weight:	14 - 18 lbs (6.2 - 8 kg)

OPTICAL SYSTEM

Lumens:	1,930-8,530
Distribution:	Symmetric Asymmetric
CCT:	2700K, 3000K, 4000K, 5000K
CRI (Min):	≥70

ELECTRICAL

Input Voltage:	120-277V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

SURGE PROTECTION*

Standard	Optional
☐ 10kV/5kA	☐ Secondary 10kV/5kA (R Option)

*Per ANSI C136.2-2015

LUMEN MAINTENANCE

Projected Lxx per IES TM-21-11 at 25°C

Distribution	LXX(10K) @ Hours		
	25,000 HR	50,000 HR	60,000 HR
02, 03	L99	L99	L98
04, 05, 06, 07	L96	L91	L89

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted Industry tolerances apply to initial luminous flux and lumen maintenance measurements.

AMBIENT TEMPERATURE FACTOR

Ambient Temp (°C)	Initial Flux Factor	Ambient Temp (°C)	Initial Flux Factor
10	1.02	30	0.99
20	1.01	40	0.98
25	1.00	50	0.97

RATINGS

Operating Temperature:	-40°C to 50°C (Optical Code 02-06) -40°C to 40°C (Optical Code 07)
Vibration:	3G per ANSI C136.31-2010
LM-79:	Testing in accordance with IES Standards

CONTROLS

Dimming:	Standard - 0-10V	☐
	Optional - DALI (Option U)	☐
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible	

WARRANTY

☐ 5 Year (Standard) ☐ 10 Year (Optional)

UL 1598 WET LOCATIONS · IP65 Optical · CONTROLS ENABLED

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

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EPTT Town & Country

LED Post top

Catalog Logic

Project Name _____

Date _____ Type _____

Notes _____

EPTT 02

_ _ _ _ __ _ __ _ _ __ _ _ ____ ___

PROD. ID	GEN	VOLTAGE	OPTIC CODE	DISTRIBUTION	REFRACTOR	CCT	CONTROLS PER ANSI C136.41	MOUNTING	COLOR	OPTIONS
E = Evole	02	0 = 120-277	02	A = Symmetric	A = Acrylic	27 = 2700K[1]	A = ANSI C136.41 7-Pin PE Receptacle[2]	P = Pole Mounted	BLCK = Black	L = Tool-Less Entry
P = Post Top			03	B = Asymmetric	P = Polycarbonate	30 = 3000K[1]	D = ANSI C136.41 7-Pin PE Receptacle w/ Shorting Cap		DKBZ = Dark Bronze	P06 = Prewire with 6 ft of 14/3 Cable
TT = Town & Country Traditional			04		N = None[1]	40 = 4000K	E = ANSI C136.41 7-Pin PE Receptacle w/ non Dimming PE			R = Secondary 10kV/5kA
			05			50 = 5000K				U = DALI Programmable[2]
			06							Y = Coastal Finish[3]
			07							XXX = Special Options

[1] Select for IDA Approved Units

[2] Compatiable with LightGrid Nodes

[3] Recommended for installations within 750 feet of coast. Lead time varies, check with factory.

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EPTT Town & Country

LED Post top

Spec Tables

Project Name _____

Date _____ Type _____

Notes _____

LUMEN OUTPUT	DIST. CODE	DESCRIPTION	REFRACTOR CODE	TYPICAL INITIAL LUMENS			WATTAGE	BUG RATINGS		
				2700K	3000K	4000K/5000K	120-277V	2700K	3000K	4000K/5000K
02	A	Symmetric	A	2600	2810	2930	25	B1-U3-G2	B1-U3-G2	B1-U3-G2
03	A	Symmetric	A	3070	3310	3450	29	B2-U3-G2	B2-U3-G2	B2-U3-G2
04	A	Symmetric	A	4230	4560	4760	41	B2-U3-G2	B2-U3-G2	B2-U3-G2
05	A	Symmetric	A	5150	5560	5790	50	B2-U3-G3	B2-U3-G3	B2-U4-G3
06	A	Symmetric	A	5710	6160	6410	56	B2-U4-G3	B2-U4-G3	B3-U4-G3
07	A	Symmetric	A	6960	7500	7820	72	B3-U4-G3	B3-U4-G3	B3-U4-G3
02	B	Asymmetric	A	2430	2630	2730	25	B1-U3-G2	B1-U3-G2	B1-U3-G2
03	B	Asymmetric	A	2870	3100	3220	29	B1-U3-G2	B1-U3-G2	B1-U3-G2
04	B	Asymmetric	A	3950	4270	4440	41	B1-U3-G3	B1-U3-G3	B1-U3-G3
05	B	Asymmetric	A	4810	5190	5410	50	B1-U4-G3	B2-U4-G3	B2-U4-G3
06	B	Asymmetric	A	5330	5750	5990	56	B2-U4-G3	B2-U4-G3	B2-U4-G3
07	B	Asymmetric	A	6500	7010	7300	72	B2-U4-G3	B2-U4-G3	B2-U4-G3
02	A	Symmetric	P	2770	2230	2330	25	B1-U3-G1	B1-U3-G1	B1-U3-G1
03	A	Symmetric	P	2440	2630	2740	29	B1-U3-G1	B1-U3-G2	B1-U3-G2
04	A	Symmetric	P	3370	3630	3780	41	B2-U3-G2	B2-U3-G2	B2-U3-G2
05	A	Symmetric	P	4100	4420	4600	50	B2-U3-G2	B2-U4-G2	B2-U4-G2
06	A	Symmetric	P	4540	4900	5100	56	B2-U4-G2	B2-U4-G2	B2-U4-G2
07	A	Symmetric	P	5530	5970	6220	72	B2-U4-G3	B2-U4-G3	B3-U4-G3
02	B	Asymmetric	P	1930	2090	2170	25	B1-U3-G2	B1-U3-G1	B1-U3-G2
03	B	Asymmetric	P	2280	2460	2560	29	B1-U3-G2	B1-U3-G2	B1-U3-G2
04	B	Asymmetric	P	3140	3390	3530	41	B1-U3-G2	B1-U3-G2	B1-U3-G2
05	B	Asymmetric	P	3830	4130	4300	50	B1-U3-G2	B1-U4-G3	B1-U4-G3
06	B	Asymmetric	P	4240	4580	4770	56	B1-U4-G3	B1-U4-G3	B2-U4-G3
07	B	Asymmetric	P	5170	5580	5810	72	B2-U4-G3	B2-U4-G3	B2-U4-G3
02	A	Symmetric	N	2840	3070	3190	25	B2-U0-G1	B2-U0-G1	B2-U0-G1
03	A	Symmetric	N	3350	3620	3770	29	B2-U0-G1	B2-U0-G1	B2-U0-G1
04	A	Symmetric	N	4620	4980	5190	41	B2-U0-G1	B3-U0-G1	B3-U0-G1
05	A	Symmetric	N	5620	6070	6320	50	B3-U0-G1	B3-U0-G1	B3-U0-G1
06	A	Symmetric	N	6230	6720	7000	56	B3-U0-G1	B3-U0-G1	B3-U0-G1
07	A	Symmetric	N	7590	8190	8530	72	B3-U0-G1	B3-U0-G1	B3-U0-G1
02	B	Asymmetric	N	2660	2870	2980	25	B1-U0-G1	B1-U0-G1	B1-U0-G1
03	B	Asymmetric	N	3130	3380	3520	29	B1-U0-G1	B1-U0-G1	B1-U0-G1
04	B	Asymmetric	N	4320	4660	4850	41	B1-U0-G1	B1-U0-G1	B1-U0-G2
05	B	Asymmetric	N	5250	5670	5900	50	B1-U0-G2	B1-U0-G2	B1-U0-G2
06	B	Asymmetric	N	5820	6280	6540	56	B1-U0-G2	B1-U0-G2	B2-U0-G2
07	B	Asymmetric	N	7090	7650	7970	72	B2-U0-G2	B2-U0-G2	B2-U0-G2

For additional information on EPTT IES files, please click the following link: **EPTT IES Files**

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EPTT Town & Country

LED Post top

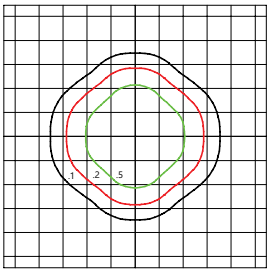
Photometric Plots

Project Name _____

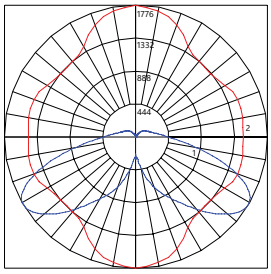
Date _____ Type _____

Notes _____

EPTT
Symmetric (Acrylic Refractor)
7,820 Lumens
5,000K
EPTT02 _07AA50_-120-277V.IES

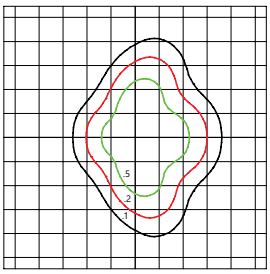


- Grid Distance in Units of Mounting Height at 16'
- Initial Footcandle Values at Grade

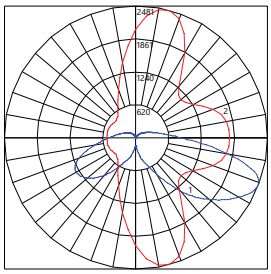


— Vertical plane through horizontal angle of Max. Cd at 90°
— Horizontal cone through vertical angle of Max. Cd at 58°

EPTT
Asymmetric (Acrylic Refractor)
7,300 Lumens
5,000K
EPTT02 _07BA50_-120-277V.IES

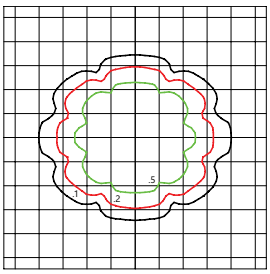


- Grid Distance in Units of Mounting Height at 16'
- Initial Footcandle Values at Grade

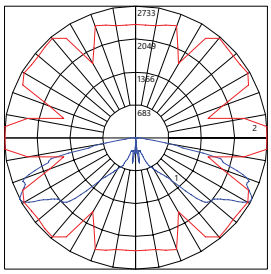


— Vertical plane through horizontal angle of Max. Cd at 75°
— Horizontal cone through vertical angle of Max. Cd at 69°

EPTT
Symmetric (No Refractor)
8,530 Lumens
5,000K
EPTT02 _07AN50_-120-277V.IES

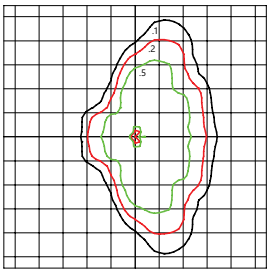


- Grid Distance in Units of Mounting Height at 16'
- Initial Footcandle Values at Grade

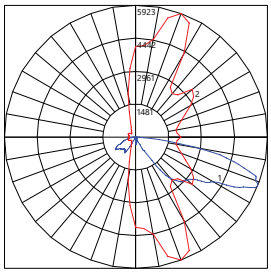


— Vertical plane through horizontal angle of Max. Cd at 5°
— Horizontal cone through vertical angle of Max. Cd at 62°

EPTT
Asymmetric (No Refractor)
7,970 Lumens
5,000K
EPTT02 _07BN50_-120-277V.IES

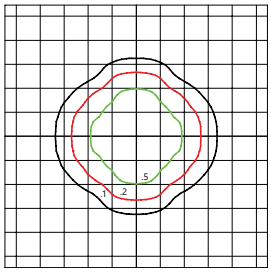


- Grid Distance in Units of Mounting Height at 16'
- Initial Footcandle Values at Grade

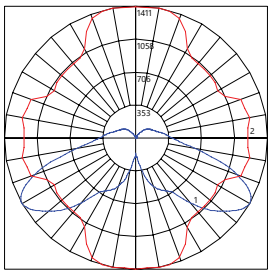


— Vertical plane through horizontal angle of Max. Cd at 70°
— Horizontal cone through vertical angle of Max. Cd at 68°

EPTT
Symmetric (Poly Refractor)
6,220 Lumens
5,000K
EPTT02 _07AP50_-120-277V.IES

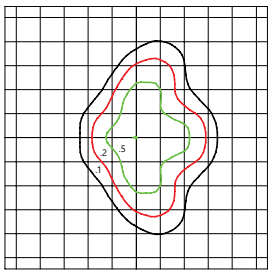


- Grid Distance in Units of Mounting Height at 16'
- Initial Footcandle Values at Grade

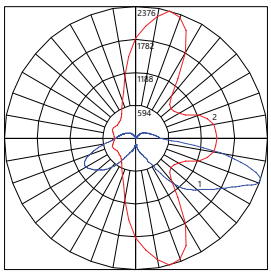


— Vertical plane through horizontal angle of Max. Cd at 80°
— Horizontal cone through vertical angle of Max. Cd at 60°

EPTT
Asymmetric (Poly Refractor)
8,810 Lumens
5,000K
EPTT02 _07BP50_-120-277V.IES



- Grid Distance in Units of Mounting Height at 16'
- Initial Footcandle Values at Grade



— Vertical plane through horizontal angle of Max. Cd at 75°
— Horizontal cone through vertical angle of Max. Cd at 71°

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EPTT Town & Country

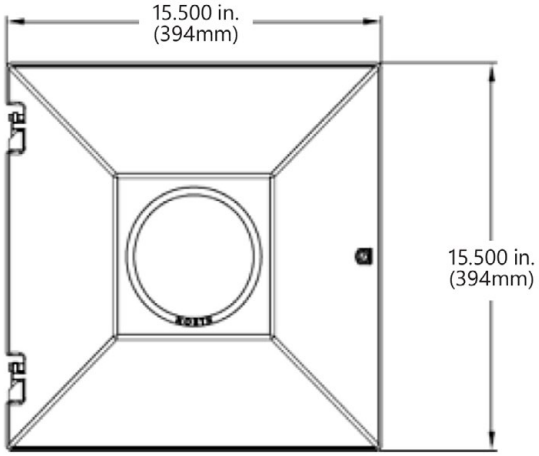
LED Post top

Mounting & Accessories

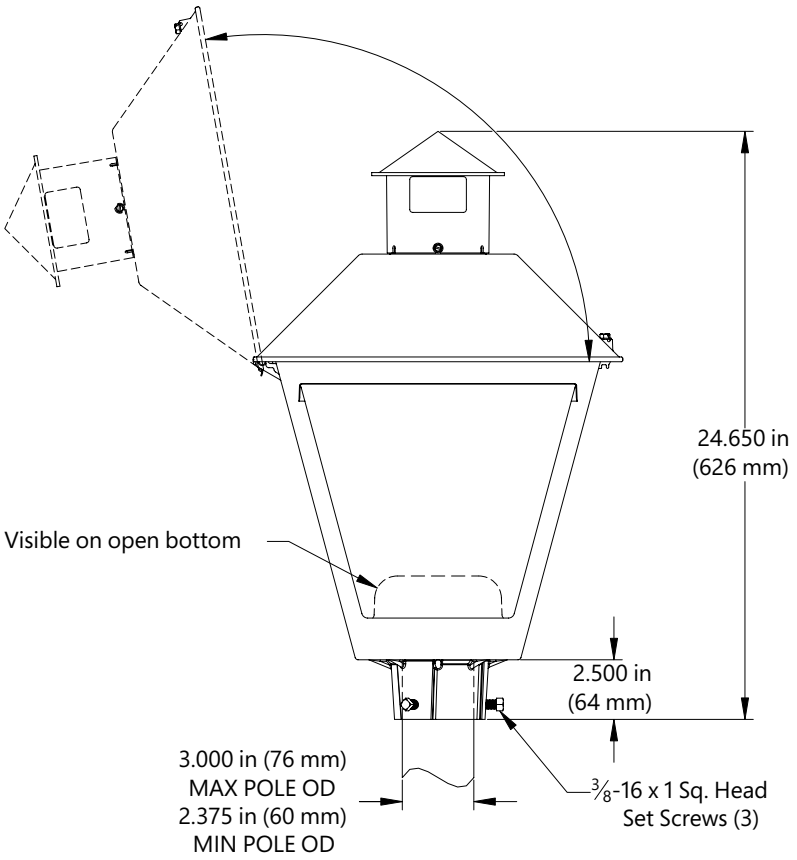
Project Name _____

Date _____ Type _____

Notes _____



TOP VIEW



SIDE VIEW

MOUNTING

- Mounts to 2-3/8 to 3-inch (60-76mm) OD vertical tenon
- Suggested Mounting Height = 8-18 ft. (2.5 - 5.5M)

EFFECTIVE PROJECTED AREA

- 1.6 sq. ft. max (0.15 sq M max)

WEIGHT

- 14 lbs (6.2 kgs) - 18 lbs (8 kgs)

EPTT HOUSE SIDE SHIELDS

Part Number	Description
LSPX-TT	Perforated Shield for Open Sided or Refractor Designs
LSSX-TT	Solid "Black" Shield for Open Sided or Refractor Designs
LR-TC	Ladder Rest - Black

NETWORK LIGHTING CONTROLS



Current's **LightGrid**™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.

© 2022 Current Lighting Solutions, LLC. All rights reserved. GE and the GE monogram are trademarks of the General Electric Company and are used under license. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Noise and Vibration

The Presumpscot Woods project is a residential development; therefore, it is expected to conform with the nature of the surrounding area and is not expected to generate noise or vibrations that will significantly, negatively impact surrounding areas.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Signage and Wayfinding

Signage and Wayfinding for the Presumpscot Woods development will consist of a main identifying sign at the site entrance on Hope Avenue, and traffic signage throughout the site. Individual buildings are residential in use and will not require signage. The proposed site-sign and traffic signage will adhere to the standards identified in the Land Use Code.

Presumpscot Woods
0 Hope Ave., Portland, Maine
Zoning Related Standards

The Presumpscot Woods project is a Planned Residential Unit Development (PRUD) within the R-3 residential zone. The proposed buildings are similar in size, scale and use to the existing residential neighborhoods in the area. Please review the attached building plans and renderings for further building design information. We have also attached a Zoning Analysis Table that summarizes the zoning requirements for the site and how our design complies with those requirements.

181 State Street, PO Box 4424, Portland, Maine 04101
(207) 772-7070 Office | info@shinbergconsulting.com

Property Location: 0 Hope Lane, Portland, Maine

Subject: Level III Site Plan Application

General Application Docs Construction Management Plan

Date: October 3, 2022

Shinberg Consulting (SC) is the Owner's Representative for GenXCapital Partners and will oversee the project. SC has provided Owners Representative services to private and public entities since 2004. This has also included Construction Management on many projects.

Some of the notable projects that Shinberg Consulting has provided Owner's Rep and CM service for include:

- 135 Sheridan Street Condominiums
- 50 Portland Pier offices
- 154 Clark St. for Shalom House
- Randall Place for The Opportunity Alliance
- 959 Congress St offices
- 84 Marginal Way (The Intermed Building)
- 63 Marginal Way offices
- 645 Congress St Apartments and Retail Space
- 202 Kennebec St Office and Car Wash
- 602 Congress St Apartments and Retail Space (The Shwartz Building)
- 657 Congress St renovations
- 59 State St renovations

- 51 State St renovations
- Morrison House for The Opportunity Alliance (formerly Ingraham)
- Just for Kids Dental, Scarborough
- Two Lights Dental, Cape Elizabeth
- 191 Pine St. apartments utilizing Historic Tax Credits
- 100 Foden Road, South Portland
- 192 Western Avenue S Portland Root Dental Associates
- Five Points Shopping Center, Biddeford

Construction Management Plan

1) The project is expected to take approximately 18 to 22 months to complete from start to finish. At this time, it is not possible to provide a starting date because the Owner has not yet received the Building Permit and the General Contractors ("GC") that are providing a bid require a firm starting date to commit to the project. Once the GC has been selected a project schedule will be provided.

2) The GC will be required to install temporary stakes and flagging to designate an area for material delivery and storage.

3) A temporary work trailer will be placed on the site for the duration of the site work.

4) A temporary storage container will be placed on the property.

5) A temporary toilet will be placed on site during the duration of construction.

6) Dig Safe will be contacted prior to any work commencing on the site.

7) Temporary erosion control measures will be installed prior to construction as per the notations by Haley Ward.

8) The work will be performed during the normal work hours of 7 AM to 5 PM and as per the City's established ordinance. Material deliveries

will be coordinated so as to not block any public street or sidewalk. The GC will be required to coordinate the subs to observe weather conditions to assure that no adverse effects are created for the neighbors or City owned streets or sidewalks etc.

9) The GC will place signs at the site that state, “Danger Construction Area – No Trespassing”. The GC will be responsible for daily safety site walks to be certain that no issues exist inside or outside the construction site. The Owner’s Rep will also check the job on a regular basis each week for safety concerns and will inform the GC in writing of the issue and the time to correct the issue (this will be an item that is listed in the contract with the GC). During any times that the foundation is under construction (digging the hole, etc.) a rigid “snow fence” will be placed around the site to keep anyone from entering the site. Standard protective caps will be installed on any rebar that presents a hazard. Erosion control measures shall be done as per the plans provided by Haley Ward.

10) The GC shall install temporary protective fencing as needed to secure the site.

11) Deliveries shall be coordinated during the permitted times and will not block traffic on Hope Lane.

12) The GC will coordinate the removal of snow as per Section 25-173 of the City Ordinance.

13) It will be necessary to temporarily close the sidewalk and part of Hope Lane to install the utilities. This will require temporary signage and directions. It is anticipated that this sidewalk closure will last one to two weeks. The GC will be required to coordinate sidewalk closure with the City of Portland Public Works Department. It is anticipated that the street closures will take 3 to 4 weeks. The GC will be required to obtain all necessary permits before any work commences in any public area (street, sidewalk etc).

14) Existing overhead wires that may be a hazard will be covered by CMP prior to the start of work on the project.

15) A Performance Guarantee for the site improvements will be provided to the City before the Building Permit will be issued.

16) A Preconstruction meeting will be scheduled with the City Inspection Departments before work commences. The GC

17) It is not anticipated that a significant amount of ledge will need to be removed. Before construction starts a pre-blast survey will be conducted and the GC will be required to follow the rules and regulations of the City of Portland.

Att. 25

PREMIUM
series

Clopay®

America's Favorite Garage Doors®



Model 9200, Short Elegant Panel with Optional Colonial 509 Window Design

intellicore®
insulation technology

Premium Series garage doors featuring Intellicore® insulation technology represent the ultimate smart choice for homeowners. Clopay's Intellicore® insulation is a proprietary polyurethane foam that is injected into our Premium Series doors, expanding to fill the entire structure. The result is a door with incredible strength and durability. Its dense insulation also produces a quieter door, and with one of the industry's leading R-values of 18.4, it provides year-round comfort and improved energy efficiency.



WARMER
Energy efficiency provides year-round comfort

QUIETER
Dense insulation reduces noise by up to 16 decibels

STRONGER
Enhanced strength resists everyday wear and tear

PREMIUM series

Improve your home's appearance and energy efficiency with a Clopay Premium Series insulated garage door. Available with Intellicore® polyurethane insulation or bonded polystyrene insulation in 2" or 1-3/8" thicknesses, Premium Series models offer exceptional insulating R-values, strength and security, as well as quiet operation and a beautiful appearance. Choose from two panel styles, multiple color options and a wide range of window options to create a door that fits your budget and enhances your home's curb appeal.

3-LAYER CONSTRUCTION

- Weathertight tongue-and-groove section joints help seal out wind, rain and snow.
- Replaceable vinyl bottom weatherseal in a rust-resistant aluminum retainer helps seal out the elements.
- 2" thick polystyrene and all Intellicore® insulation filled doors come standard with 10-ball nylon rollers and heavy-duty 14 gauge steel hinges.
- Clopay's Safe-T-Bracket® helps prevent serious injury that could occur if the bottom bracket were removed with the garage door closed and under tension.
- Prepainted white end stiles and interior steel backing create a clean, finished appearance.
- Inside/outside step plates and grip handles make doors easy and safe to operate.
- 2" thick polystyrene and all Intellicore® insulation filled doors comply with 2015 IECC air infiltration requirement of 0.40 cfm/ft² or less (IECC, Section C402.5.2).



2" 1-3/8" 2" 1-3/8"

Polyurethane Models

27 GAUGE STEEL† — **9200** short panel, **9203** long panel

2" POLYURETHANE — EFFICIENCY 18.4 R-VALUE*

27 GAUGE STEEL† — **9130** short panel, **9133** long panel

1 3/8" POLYURETHANE — EFFICIENCY 12.9 R-VALUE*

Bonded Polystyrene Models

27 GAUGE STEEL† — **4300** short panel, **4310** long panel

2" POLYSTYRENE — EFFICIENCY 9.0 R-VALUE*

26 GAUGE STEEL — **4050** short panel, **4053** long panel

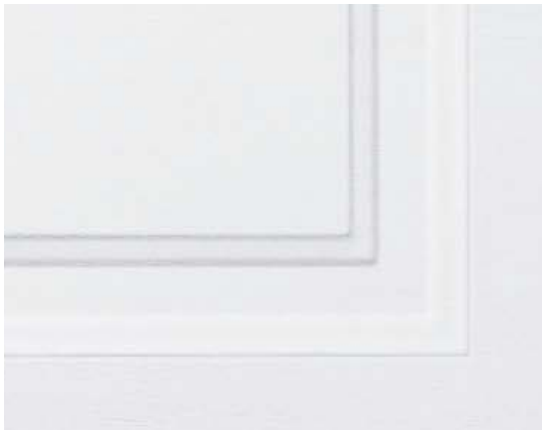
1 3/8" POLYSTYRENE — EFFICIENCY 6.5 R-VALUE*

*Calculated door section R-value is in accordance with DASMA TDS-163.
† Models with Ultra-Grain® finish and Black paint options are 25 gauge steel.



Model 9203, Long Elegant Panel with Optional Charleston 608 Window Design

DETAIL



Deep panel edging and natural embossed woodgrain texture improve appearance close-up and from the curb.

STYLE



Elegant Short
Complements homes with traditional styling. Models 9200, 9130, 4300 and 4050.

Elegant Long
Ideal for ranch style homes. Models 9203, 9133, 4310 and 4053.

Doors range from 6' to 16' high and 6'2" to 20' wide. Consult your Clopay Dealer for size options.
WindCode® Doors are available to meet most regional wind load requirements.
Consult your local dealer for specific information.



Model 4050, Short Elegant Panel with Optional Colonial 509 Window Design

COLORS

Standard White

Glacier White*†

Almond

Desert Tan

Sandtone

Bronze

Chocolate

Mocha Brown*

Hunter Green

Gray

Charcoal*

Black*‡

- Exterior steel on standard color doors has a natural woodgrain texture.
- Doors can be painted to match the home's exterior using a high-quality latex exterior paint. Do not use oil-based paint.

Due to the printing process, colors may vary. See your Clopay Dealer for color samples.

**Not available on Models 4050 and 4053.*
†Popular in select markets, Glacier White is a brighter white.
‡Additional charges apply.

CUSTOM PAINT OPTION

COLOR BLAST®

Color Blast® finish offers more than 1,500 Sherwin-Williams® color options to complement your home. Clopay's durable two-part paint system has been thoroughly tested and is backed by a five-year warranty.

ULTRA-GRAIN® FINISH OPTION



Classic Medium Finish



Classic Cherry Finish



Classic Walnut Finish

Due to the printing process, colors may vary.
Not available on Models 4050 or 4053.
Additional charges apply.

- Painted steel surface simulates a real stained door without the need of staining and the ongoing maintenance of wood.
- Woodgrain runs horizontal on stiles and vertical on panels for an authentic, natural look.
- Available in Medium, Cherry or Walnut Classic finishes that complement Clopay Entry Doors, shutters and other exterior stained wood products.
- Exterior steel surface on an Ultra-Grain® finish door has a stucco texture to create a more natural woodgrain appearance.

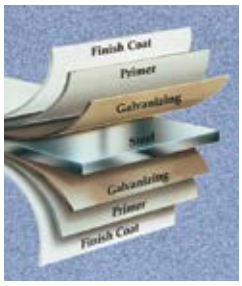


Model 4300, Short Elegant Panel;
Shown in Ultra-Grain® Classic Cherry Finish



Model 9200, Short Elegant Panel with Plain Short Windows; Shown in Ultra-Grain® Classic Cherry Finish

RUST-PREVENTION SYSTEM



Steel skins are protected through a tough, layered coating system, including a hot-dipped galvanized layer, a protective metal oxide pretreatment and a baked-on primer and top coat.

GREATER ENERGY EFFICIENCY



Thermal break* separates the interior from the exterior skin to improve energy efficiency and comfort.

**Thermal break is not present on Models 4050 and 4053.*

ENVIRONMENTAL ASSURANCE

Clopay doors are compliant with environmental laws and regulations. Clopay doors do not contain HFCs. All Clopay doors are compliant with:

- California SB 1013
- Washington HB 1112 – Hydrofluorocarbon Greenhouse Gas Emissions
- Canadian regulations amending the ozone-depleting substances and halocarbon alternatives regulations

WARRANTIES

PAINT SYSTEM	WINDOWS	HARDWARE
LIMITED LIFE WARRANTY	LIMITED 10 YR WARRANTY	LIMITED 3 YR WARRANTY

WINDOW OPTIONS

Our windows add natural light to your garage while adding curb appeal to your home. All Clopay window frames are UV-protected and are color matched to our prefinished door colors. Window frames screw in from the inside for easy glass replacement or to change designs.

ARCHITECTURAL SERIES WINDOWS

These windows are from Clopay's Architectural Series, featuring a larger viewing area and are available on select models and heights. Short windows are 19-1/2" × 16" and long windows are 42" × 16".

Available on These Models

9200* 9133
9203 4300*
9130* 4310



Windows are available single pane or insulated in clear, frosted, seeded, obscure and rain designs.



DECORATIVE INSERT SERIES WINDOWS

UV-protected cellular plastic insert designs snap into either the inside or outside of the window frame for easy cleaning or to change designs. Windows are offered in single strength, double strength, acrylic, obscure or insulated glass. Short windows are 19-1/2" × 12" and long windows are 40-1/2" × 12".

Available on These Models

9200* 4300*
9203 4310
9130* 4050*
9133 4053



Windows are available single pane or insulated in clear, frosted, obscure and rain designs. Clear acrylic also available.



Short windows not available on long panel doors.
** Panel emboss may not align with windows due to size difference. Some size limitations apply.*
† Shown with clear glass. Acrylic and obscure glass optional.
‡ Sunset windows not available on Ultra-Grain® finish doors.
Additional charges for optional glass apply.
Acrylic windows require special cleaning. Never use products that contain ammonia or petroleum products to clean acrylic. Please visit clopaydoor.com/acrylic for complete details.

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Westchester Specifications

Floor System

- 2 x 10 floor joist 16" on center as required by span with double rim joist. Steel joist hangers where required.
- Solid wood bridging installed at center spans. Double Metal Bridging on all 15' and 16' wide units.
- 3/4 Nominal (23/32) Tongue and groove plywood sturdi-floor glued and fastened.
- Wall to wall carpet with 3/8" pad and tack strip. Shipped loose for field installation.

Exterior

- 2 x 6 studding 16" on center.
- R-21 Batt type wall insulation.
- 1/2" Nominal (15/32) rated plywood sheathing, exposure #1, glued and fastened.
- Andersen® Tilt Wash® 400 Series double-hung vinyl clad windows with High Performance™ insulating glass, removable grilles and full screens. Extended window sill included.
- Andersen® vinyl clad wood framed sliding glass patio door with tempered double glass and screen.
- Insulated Thermatru® "smooth star" fiberglass exterior doors.
- Wireless chime for two doors.
- Low maintenance Certainteed® "Mainstreet" solid vinyl siding with lifetime non-prorated transferable warranty.
- Air infiltration barrier installed on all exterior insulated walls.
- 5/12 Roof Pitch with dimensional fiberglass/ asphalt self sealing shingles with limited lifetime warranty and aluminum drip edge.
- 5/8" Nominal (19/32) rated plywood roof sheathing, exposure #1.
- Full length attic shingle-over ridge ventilating system.
- Ice and water shield installed under shingles 6' up on all eave overhangs.
- R-38 ceiling insulation, foam baffles and eves.
- Low maintenance ventilating soffit and fascia system.

Interior

- Full 8' ceiling height.
- 2 x 4 studding 16" on center.
- 1/2" drywall on walls and 5/8" on ceilings with smooth finish.
- All interior drywall surfaces primed with white latex no voc paint with smooth finish.
- All interior openings are cased in pine.
- Six panel hardboard hollow core interior doors painted white with triple brushed nickel hinges and lever hardware.
- Painted colonial wood interior trim with extended window sills.
- Pre-finished ventilated closet shelving.
- First floor stairwell walls insulated.

Kitchen

- Oak or hardwood frame cabinetry with recessed panel doors. Choice of colors.
- All kitchen designs incorporate lazy susan and angled wall cabinets.
- Self edge high pressure laminate counter top with 4" backsplash.
- Double bowl stainless steel sink with Delta single lever faucet and pull-out spray.
- Recessed light over kitchen sink.
- Lighted ventless range hood with choice of colors.

Bathrooms

- Oak or hardwood frame cabinetry with recessed panel doors. Choice of colors.
- Self edge high pressure laminate vanity top with 4" backsplash and china basin.
- Dual handle Delta® vanity faucet.
- Mirror with lights above and recess mirrored medicine cabinet.
- Bath fan/light combination
- Elongated vitreous china water closet.
- One piece smooth finish fiberglass tub/ shower unit with choice of color.
- All shower valves incorporate pressure balancing valve to prevent "shower shock".
- Towel bar, towel ring and paper-holder to match faucet finish.

Electrical/Plumbing

- PEX water lines.
- Hot water baseboard heat.
- Washer and dryer hook up available.
- 200 Amp service panel with circuit breakers shipped loose for field installation.
- Ground fault protected receptacles provided in kitchen, bath and exterior locations as required by code. Arc Fault receptacles are used in all bedrooms.
- Smoke detector/alarm system with built-in battery back up provided as required by code.
- Carbon monoxide detectors.
- Lighting fixtures provided at kitchen, dining, bath, walk in closet, hall, entry foyer, exterior door locations and basement stairwells.

Code Compliance Policy

Westchester Modular Homes are built in accordance with state specific adopted codes including residential, building, mechanical, plumbing, and electrical codes. In order to assure code compliance it is the builder's responsibility to notify Westchester Modular Homes prior to order placement of any additional provisions that may be required by any authorities having jurisdiction.

Specifications and suppliers are subject to change without notice.

Westchester Modular Homes, Inc. is a wholesale manufacturer of modular components that sells its products to residential builders from whom you buy your new home. Westchester Modular Homes, Inc. is independent of the builders that use its products and services, and is only responsible for manufacturing and servicing according to the terms and conditions of the contract and warranty it has with the builder of your new home.

Westchester Modular Homes, Inc.

AN EMPLOYEE OWNED COMPANY

30 Reagans Mill Road • Wingdale, NY 12594

800-832-3888 • 845-832-9400

WestchesterModular.com

Featuring High-Quality Andersen® Products

Andersen Windows and Doors

ENERGY STAR PARTNER

Upgrades to Standard Westchester Specifications as Indicated on Purchase Order – Both Units

- Floor Section
  - Install 12 x 12 Ceramic Tile in All Bathrooms, Laundry areas
  - Install Hardwood Floors onsite in LR/DR/LR/Study/Entry
  - Carpets installed in Bedrooms 2 and 3, 2nd floor Hall and Stairs to second floor
- Walls
  - Upgraded to Zip Sheathing ILO Plywood
- Roofs
  - Upgraded to R-49 Ceiling Insulation
  - Upgraded to 7/12 Pitch Roof
- Electric
  - Added Additional Lighting (Recess, ceiling, etc) above Standard Minimum requirements
- Interior
  - Upgrade Interior Doors to Solid Masonite
  - Upgrade Trim from Standard
- Kitchen
  - Upgrade Cabinets to Marlin – Hardwood Painted with Deluxe Construction
  - Upgrade Countertop to Quartz/Granit in Standard Unit (Smaller Unit to remain Formica)
  - Upgrade Sink / Faucet in Standard Unit (installed onsite) – Smaller Unit to be standard
- All Bathrooms
  - Upgrade Cabinets to Marlin – Hardwood Painted w
  - Upgrade toilet to Comfort Height

Presumpscot Woods
0 Hope Ave., Portland, Maine
Solid Waste

Solid waste to be generated by this development will include construction waste and municipal household waste.

Construction Waste
Solid waste generated by this development will include vegetative waste from the clearing required for the project, as well as general construction debris from the development of the project features.

This project will require approximately 10 acres of clearing of an undeveloped area. Using a conservative estimate of 80 tons of wood waste per acre, (https://www.forest2market.com/blog/how-many-tons-of-wood-are-on-an-acre-of-land), this project will generate approximately 800 tons of woods waste. Vegetative waste will either be sold or mulched and used as erosion control on site.

The project will develop approximately 85,000 square feet of residential building area, and it is estimated that a new construction project yields 3.9 lbs of construction waste per square foot of building area (https://www.buildings.com/department/article/10192921/diverting-construction-waste); therefore, this project will generate approximately 331,500lbs, or 165 tons of building construction waste. This waste will be disposed of by the contractor at a local transfer station – see the attached letter from Pine Tree Waste.

Municipal Solid Waste
After construction is completed, this development will generate a consistent stream of residential household waste. It is estimated that 4 lbs of waste is generated per dwelling unit per day (https://www2.calrecycle.ca.gov/wastecharacterization/general/rates) For this 60-unit development, there will be 240 lbs of waste generated per day, or 0.84 tons per week. Household waste will be collected by the city from the individual buildings on a weekly basis - see the attached letter from the Public Works Dept.

May 17, 2022

Haley Ward
120 Main St Suite 132
Saco ME 04072
Attn: Drew Olehowski

Re: Capabilities Statement – GenX Capital Partners Development, Portland, ME

Dear Mr. Daniels,

This letter is to confirm that Casella Waste Services located in Hermon, ME has the capabilities to pick up, truck, and dispose of all volumes of Construction and Demolition Debris generated by the proposed construction at the GenX Capital Partners Development Project located in Portland, ME. These materials can be disposed of at the Juniper Ridge Secured Landfill Facility located in West Old Town, ME.

Casella Waste Services can transport all anticipated volumes of non-hazardous MSW (Municipal Solid Waste) to the Penobscot Energy Recovery Corporation facility located in Orrington, ME. (Anticipate 600#/Wk) We are also prepared to handle all amounts of Wood products that may be generated from this development at Re-Energy located in Lewiston, ME, as well as Carboard Recycling at Casella Recycling, located in Scarborough, ME.

This letter is not a quote for services. Rather it is a statement of capabilities. The sole purpose of this letter is to communicate the willingness and capabilities that Casella Waste Services has towards providing these services as requested.

Please feel free to contact me with any future requests. I can be reached at (207) 310-0509.

Sincerely,

Adam Graham

Adam Graham
Accounts Manager
Casella Waste Services

Barton & Loguidice

Traffic Assessment

Date: September 29, 2022

To: **Greg Shinberg, Shinberg Consulting, LLC.**

From: Jacob Sirois
Engineer 1
Barton & Loguidice, LLC.

John Q. Adams, P.E., PTOE
Associate, Senior Transportation Engineer
Barton & Loguidice, LLC.

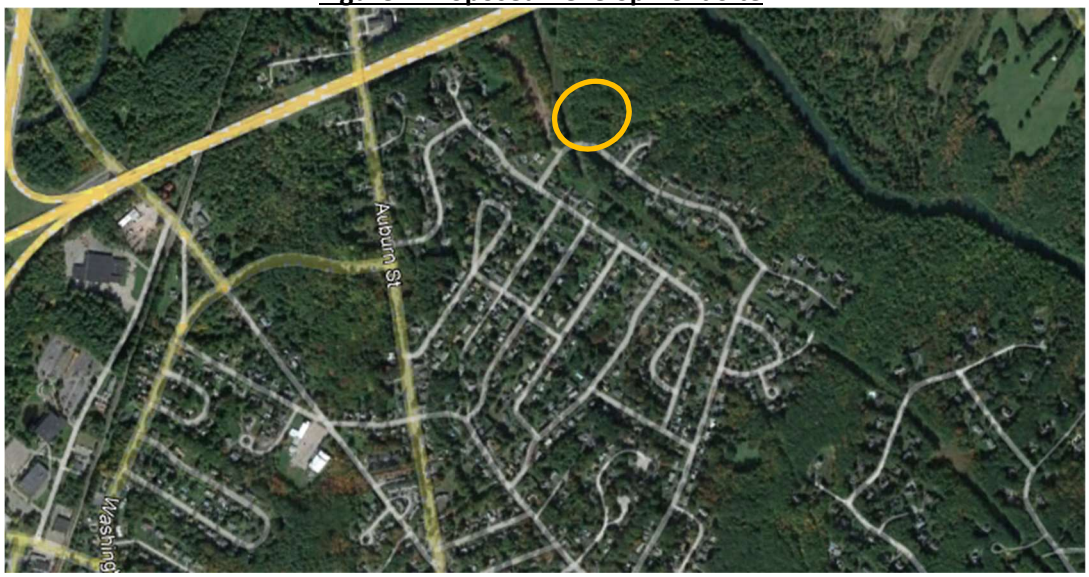
Re: **Hope Avenue Residential Subdivision**
Hope Avenue, Portland, Maine

Introduction

A 60-unit residential duplex subdivision is proposed on Hope Avenue in the City of Portland (refer to Figure 1 below for project location. The site will be accessed via a single 20-foot wide full-access entrance located on the northern side of Hope Avenue, approximately 150-feet north of the intersection of Hope Avenue and Alice Street. The residential units will be provided access via an internal 20-ft. wide circulating roadway that runs bi-directionally throughout the site.

The purpose of this traffic assessment is to evaluate and measure the level of impact on traffic operations and safety resulting with the development of the proposed project. Site generated trip projections are provided for "key" peak hour time periods throughout a typical week; road safety conditions were determined based upon a review of MaineDOT's latest road safety data and intersection sight distance was field reviewed and measured to ensure safe and acceptable sight distance is provided at the proposed intersection with Hope Lane.

Figure 1 Proposed Development Site



Site Trip Generation

Daily and peak hour trip generation was determined for the proposed development based upon trip tables presented in the 11th edition of the Institute of Transportation Engineers (ITE) "**TRIP GENERATION**

MANUAL". The ITE publication provides numerous land use categories and the average volume of trips generated by each category.

Site trip estimates for the Hope Avenue Residential Subdivision are based upon LUC #215 – Single-Family Attached Housing; which is described in the ITE publication as: *any single-family housing unit that shares a wall with an adjoining unit*. Calculation of the total number of trips generated per each corresponding time period are summarized below in Table 1.1.

Table 1.1
ITE Trip Generation Calculations

Land Use	Single-Family Attachedd Housing - LUC 215					
Time Period	Dwelling Units	Avg. Trip Generation Rate Trips/Dwelling Units	Trips Generated	Distribution Entering / Exiting	Enter	Exit
Weekday	60	7.20	432	50% / 50%	216	216
AM Weekday Peak Hour (Street)	60	0.48	29	31% / 69%	9	20
PM Weekday Peak Hour (Street)	60	0.57	35	57% / 43%	20	15
AM Weekday Peak Hour (Generator)	60	0.55	33	25% / 75%	8	25
PM Weekday Peak Hour (Generator)	60	0.61	37	62% / 38%	23	14

As presented in the preceding table, this development will generally be a low trip generator; generating a maximum of 33 Weekday AM peak hour trips and 37 Weekday PM peak hour trips during the sites peak hours. During the peak hour of the adjacent street, the trips generated by the proposed development are slightly lower, with 29 trips during the AM peak hour and 35 trips during the PM peak hour. During the typical weekday, there will be a total of 432 daily trips.

Vehicle Sight Distance

The City of Portland's Entrance and Driveway Rules require the following sight distances for roadways:

Sight Distance Standards

Speed Limit	Sight Distance
25 mph	**200 feet**
30 mph	250 feet
35 mph	305 feet
40 mph	360 feet
45 mph	425 feet
50 mph	495 feet

The section of Hope Avenue fronting the proposed residential development is presently unposted and assumed to be 25mph, which requires a sight distance of 200-feet. The City of Portland's Regulations require sight distance to be measured in accordance with the following procedures: *"Sight distance is measured to and from the point on the centerline of the proposed access that is located 10-feet from the edge of traveled way. The height of the hypothetical person's view is considered to be 3½ feet above the pavement and the height of the object being viewed is considered to be 4¼ feet above the pavement."* Our field measurements looking both left and right from the proposed site driveway entrance directionally onto Hope Avenue indicate existing sight distances are in excess of the requirements based on a posted speed limit of 25mph. Looking to the left from the site entrance we measured a sight distance of **240-feet**, and a measurement in excess of **300-feet** was recorded to right. An increase of sight distance, looking

to the right, can be achieved by minor clearing of trees on Lot# 448 B001, located on the southern side of Hope Avenue, and shown below in the following image which has the site driveway entrance circled.

Potential Clearing Zone



Existing Road Safety Conditions

The Maine Department of Transportation's (MaineDOT) Accident Records Section provided the latest three-year (2019 through 2021) crash data for network of roadways between Hope Avenue and Auburn Street (refer to the map titled "*Hope Avenue, Portland*" for the roads included in the safety analysis). Their report is presented as follows:

2019 -2021 Traffic Accident Summary

Location	Total Crashes	Critical Rate Factor
1. Auburn Street @ Washington Avenue Extension	1	0.26
2. Auburn Street @ Clayton Street	2	0.54
3. Auburn Street @ Summit Street	2	0.61
4. Auburn Street @ Garsoe Drive	1	0.26
5. Summit Street @ Frost Hill Road and Jackson Street	1	0.92
6. Summit Street @ Hillside Road	1	1.03
7. Alice Street @ Garsoe Drive	1	1.47
8. Auburn Street btw. Summit Park Avenue and Jackson Street	4	0.92
9. Auburn Street btw. Jackson Street and Clayton Street	2	0.42
10. Summit Street btw. Clayton Street and Hillside Road	1	0.67
11. Summit Street btw. Abby Lane and Carter Street	1	0.63
12. Curtis Street btw. Wendy Way and Summit Street	1	0.10
13. Longview Drive btw. Patricia Lane	1	2.94
14. Jackson Street btw. Summit Street and Kenneth Street	1	1.47

The MaineDOT considers any roadway intersection or segment a high crash location if both of the following criteria are met:

- ***8 or more accidents in a three-year period***
- ***A Critical Rate Factor greater than 1.00***

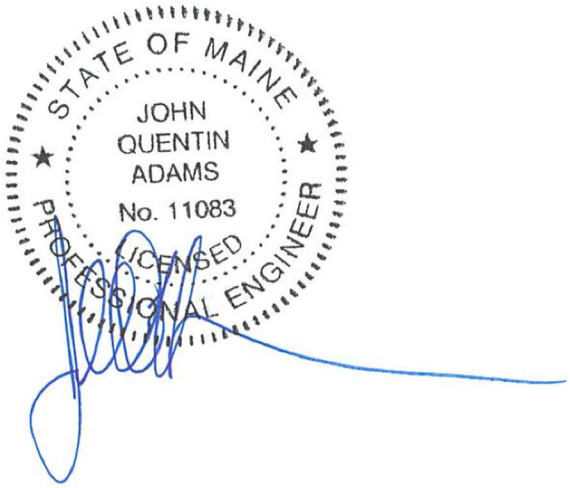
As the data presented in the chart shows, there are no identified high crash locations within the defined study area.

On-site Parking

The project is proposing 135 total parking spaces. The intent is for each of the 60 units to be provided with one space in their garage and one outdoor space in their driveway. In addition, the site will be provided with 15 on-street spaces for guests, see enclosed preliminary site plan. The required width for the on-street spaces will be designed in addition to the proposed roadway width of 20 feet so that parked vehicles on-street will not stop or restrict emergency vehicles from efficiently and safely accessing the site.

Summary

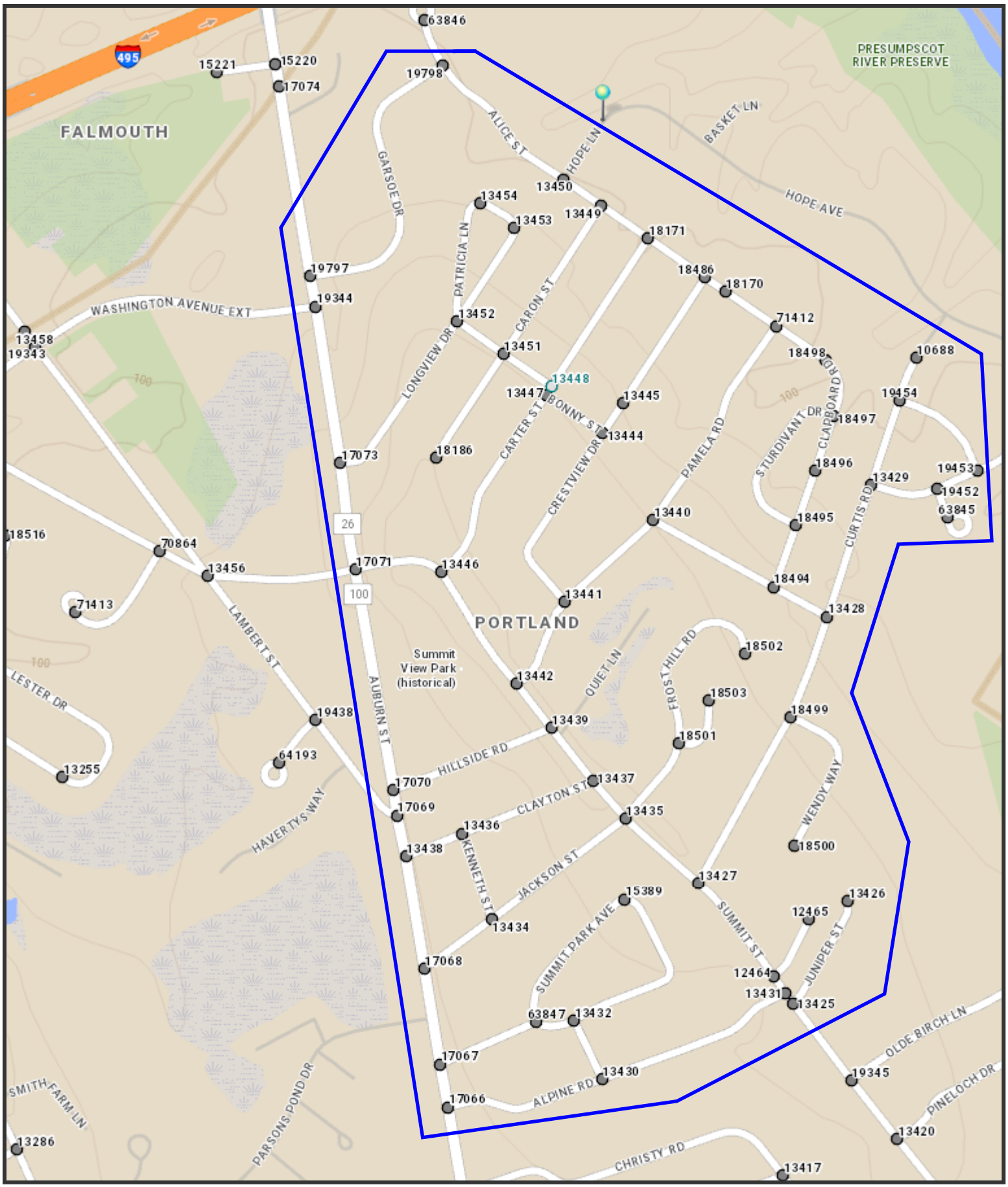
1. The expected trip generation for the proposed development is estimated to be 432 weekday daily trips. The project generates a total of 33 trips during the weekday AM peak hour and 37 trips during the weekday PM. Overall, the project will be a low volume trip generator and will be well below the minimum MaineDOT threshold of 100 new peak hour trips ends that would require a Traffic Movement Permit.
2. A review of MaineDOT crash data available for the latest 3-yeaar period (2019-2021) for the section of Hope Avenue at Alice Street, and the section of Curtis Road between Hope Avenue and Summit Street was reviewed. Our review indicated that there were no high crash locations within the defined study area.
3. Vehicle sight distance field measurements looking both left and right from the proposed site driveway entrance directionally onto Hope Avenue indicate existing sight distances are in excess of the requirements based on a posted speed of 25mph. Looking to the left from the site entrance, we measured a sight distance in excess of 300-feet, and a measurement of 240-feet was recorded to the right.



John Q. Adams, PE, PTOE, Date: 09/29/2022

APPENDIX

HOPE AVENUE, PORTLAND



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 = 0.14 miles

Date: 9/1/2022
Time: 3:45:14 PM

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
Hope Ave. Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: **0026X**	Start Node: **17066**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19797**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560689**	Start Node: **13425**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **17071**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560178**	Start Node: **13427**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **10688**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560851**	Start Node: **18498**	Start Offset: **0**	☐ **Exclude First Node**
	End Node: **19798**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560819**	Start Node: **13428**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13440**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560819**	Start Node: **13440**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13442**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560838**	Start Node: **13440**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **71412**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0561166**	Start Node: **18494**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18498**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560011**	Start Node: **17066**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13431**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0561241**	Start Node: **19797**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19798**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560116**	Start Node: **13446**	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
Hope Ave. Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

	End Node: **18171**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560172**	Start Node: **13441**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18486**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560114**	Start Node: **13449**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18186**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560455**	Start Node: **17073**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13453**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0561114**	Start Node: **13452**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13453**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560562**	Start Node: **13448**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13451**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560562**	Start Node: **13451**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13452**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560066**	Start Node: **13444**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13447**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0561177**	Start Node: **18495**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18497**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0561203**	Start Node: **13429**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19453**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0561215**	Start Node: **19454**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **19453**	End Offset: **0**	☑ **Exclude Last Node**

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ Crash Summary I ☐ Section Detail ☑ Crash Summary II ☐ 1320 Public ☐ 1320 Private ☐ 1320 Summary

REPORT DESCRIPTION

Portland
Hope Ave. Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: **0561217**	Start Node: **19452**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **63845**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560372**	Start Node: **13439**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **17070**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560138**	Start Node: **13438**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13437**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560400**	Start Node: **17068**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13435**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560415**	Start Node: **13434**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13436**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0560688**	Start Node: **17067**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13432**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0561120**	Start Node: **13430**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13432**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0561120**	Start Node: **13432**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **63847**	End Offset: **0**	☑ **Exclude Last Node**
Route: **0561167**	Start Node: **13435**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18502**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0561169**	Start Node: **18501**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18503**	End Offset: **0**	☐ **Exclude Last Node**

Crash Summary Report

Report Selections and Input Parameters

REPORT SELECTIONS

☑ **Crash Summary I** ☐ **Section Detail** ☑ **Crash Summary II** ☐ **1320 Public** ☐ **1320 Private** ☐ **1320 Summary**

REPORT DESCRIPTION

Portland
Hope Ave. Area

REPORT PARAMETERS

Year 2019, Start Month 1 through Year 2021 End Month: 12

Route: **0561179**	Start Node: **18499**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **18500**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560695**	Start Node: **12464**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **12465**	End Offset: **0**	☐ **Exclude Last Node**
Route: **0560409**	Start Node: **13425**	Start Offset: **0**	☑ **Exclude First Node**
	End Node: **13426**	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
17066	0026X - 4.16	Int of ALPINE RD, AUBURN ST	2	0	0	0	0	0	0	0.0	3.621	0.00	0.34	0.00
												Statewide Crash Rate:	0.12	
17067	0026X - 4.20	Int of AUBURN ST SUMMIT PARK AV	2	0	0	0	0	0	0	0.0	3.633	0.00	0.34	0.00
												Statewide Crash Rate:	0.12	
17070	0026X - 4.43	Int of AUBURN ST HILLSIDE RD	2	0	0	0	0	0	0	0.0	2.708	0.00	0.37	0.00
												Statewide Crash Rate:	0.12	
19344	0026X - 4.83	Int of AUBURN ST WASHINGTON AV EXT	2	1	0	1	0	0	0	100.0	3.836	0.09	0.34	0.00
												Statewide Crash Rate:	0.12	
13438	0026X - 4.37	Int of AUBURN ST CLAYTON ST	2	2	0	0	0	0	2	0.0	3.588	0.19	0.35	0.00
												Statewide Crash Rate:	0.12	
17069	0026X - 4.41	Int of AUBURN ST LAMBERT ST	2	0	0	0	0	0	0	0.0	3.643	0.00	0.34	0.00
												Statewide Crash Rate:	0.12	
17071	0026X - 4.61	Int of AUBURN ST SUMMIT ST	2	2	0	0	1	1	0	100.0	3.006	0.22	0.36	0.00
												Statewide Crash Rate:	0.12	
19797	0026X - 4.86	Int of AUBURN ST GARSOE DR	2	1	0	0	1	0	0	100.0	3.764	0.09	0.34	0.00
												Statewide Crash Rate:	0.12	
17073	0026X - 4.70	Int of AUBURN ST LONGVIEW RD	2	0	0	0	0	0	0	0.0	2.993	0.00	0.36	0.00
												Statewide Crash Rate:	0.12	
17068	0026X - 4.28	Int of AUBURN ST JACKSON ST	2	0	0	0	0	0	0	0.0	3.627	0.00	0.34	0.00
												Statewide Crash Rate:	0.12	
13425	0560689 - 0.47	Int of JUNIPER ST SUMMIT ST	2	0	0	0	0	0	0	0.0	1.121	0.00	0.46	0.00
												Statewide Crash Rate:	0.12	
13431	0560689 - 0.48	0503845 POR,SUMMIT ST,ALPINE RD.	2	0	0	0	0	0	0	0.0	1.106	0.00	0.46	0.00
												Statewide Crash Rate:	0.12	
12464	0560689 - 0.50	0502876 POR,SUMMIT ST,TALBOT ST	2	0	0	0	0	0	0	0.0	1.150	0.00	0.46	0.00
												Statewide Crash Rate:	0.12	
13427	0560689 - 0.60	Int of CURTIS RD SUMMIT ST	2	0	0	0	0	0	0	0.0	1.161	0.00	0.45	0.00
												Statewide Crash Rate:	0.12	
13435	0560689 - 0.68	Int of FROST HILL RD JACKSON ST SUMMIT ST	2	1	0	0	0	0	1	0.0	0.718	0.46	0.50	0.00
												Statewide Crash Rate:	0.12	
13437	0560689 - 0.72	Int of CLAYTON ST SUMMIT ST	2	0	0	0	0	0	0	0.0	0.618	0.00	0.51	0.00
												Statewide Crash Rate:	0.12	
13439	0560689 - 0.78	Int of HILLSIDE RD SUMMIT ST	2	1	0	0	0	1	0	100.0	0.646	0.52	0.50	1.03
												Statewide Crash Rate:	0.12	
13442	0560689 - 0.83	Int of ABBY LN SUMMIT ST	2	0	0	0	0	0	0	0.0	0.602	0.00	0.51	0.00
												Statewide Crash Rate:	0.12	
13446	0560689 - 0.94	Int of CARTER ST SUMMIT ST	2	0	0	0	0	0	0	0.0	0.381	0.00	0.52	0.00
												Statewide Crash Rate:	0.12	
18499	0560178 - 0.16	Int of CURTIS RD WENDY WY	2	0	0	0	0	0	0	0.0	0.421	0.00	0.52	0.00
												Statewide Crash Rate:	0.12	
13428	0560178 - 0.25	Int of ABBY LN CURTIS RD	2	0	0	0	0	0	0	0.0	0.335	0.00	0.51	0.00
												Statewide Crash Rate:	0.12	
13429	0560178 - 0.36	Int of CURTIS RD OVERSET RD	2	0	0	0	0	0	0	0.0	0.200	0.00	0.44	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
19454	0560178 - 0.43	Int of CURTIS RD WHALE BOAT RD	2	0	0	0	0	0	0	0.0	0.110	0.00	0.16	0.00
												Statewide Crash Rate:	0.12	
10688	0560178 - 0.47	End of CURTIS RD	2	0	0	0	0	0	0	0.0	0.043	0.00	-1.30	0.00
												Statewide Crash Rate:	0.12	
18498	0560851 - 0	Int of ALICE ST CLAPBOARD RD	2	0	0	0	0	0	0	0.0	0.040	0.00	-1.45	0.00
												Statewide Crash Rate:	0.12	
71412	0560851 - 0.05	Int of ALICE ST PAMELA DR	2	0	0	0	0	0	0	0.0	0.054	0.00	-0.74	0.00
												Statewide Crash Rate:	0.12	
18170	0560851 - 0.10	Non Int ALICE ST	2	0	0	0	0	0	0	0.0	0.049	0.00	-0.97	0.00
												Statewide Crash Rate:	0.12	
18486	0560851 - 0.12	0508906 POR,ALICE ST,CRESTVIEW ST	2	0	0	0	0	0	0	0.0	0.075	0.00	-0.22	0.00
												Statewide Crash Rate:	0.12	
18171	0560851 - 0.18	Int of ALICE ST CARTER ST	2	0	0	0	0	0	0	0.0	0.042	0.00	-1.34	0.00
												Statewide Crash Rate:	0.12	
13449	0560851 - 0.23	Int of ALICE ST CARON ST	2	0	0	0	0	0	0	0.0	0.039	0.00	-1.58	0.00
												Statewide Crash Rate:	0.12	
13450	0560851 - 0.27	Non Int ALICE ST	2	0	0	0	0	0	0	0.0	0.029	0.00	-2.57	0.00
												Statewide Crash Rate:	0.12	
19798	0560851 - 0.41	Int of ALICE CT ALICE ST GARSOE DR	2	1	0	0	0	0	1	0.0	0.070	4.76	-0.31	0.00
												Statewide Crash Rate:	0.12	
18494	0560819 - 0.05	0508914 POR,ABBY LA,CLAPBOARD RD.	2	0	0	0	0	0	0	0.0	0.145	0.00	0.32	0.00
												Statewide Crash Rate:	0.12	
13440	0560819 - 0.16	Int of ABBY LN PAMELA DR	2	0	0	0	0	0	0	0.0	0.073	0.00	-0.26	0.00
												Statewide Crash Rate:	0.12	
13441	0560819 - 0.26	Int of ABBY LN CRESTVIEW DR	2	0	0	0	0	0	0	0.0	0.228	0.00	0.47	0.00
												Statewide Crash Rate:	0.12	
18495	0561166 - 0.05	Int of CLAPBOARD RD STURDIVANT DR	2	0	0	0	0	0	0	0.0	0.110	0.00	0.16	0.00
												Statewide Crash Rate:	0.12	
18496	0561166 - 0.10	0508916 POR,CLAPBOARD RD,.10 BK.ABBY	2	0	0	0	0	0	0	0.0	0.047	0.00	-1.06	0.00
												Statewide Crash Rate:	0.12	
18497	0561166 - 0.15	Int of CLAPBOARD RD STURDIVANT DR	2	0	0	0	0	0	0	0.0	0.064	0.00	-0.45	0.00
												Statewide Crash Rate:	0.12	
13430	0560011 - 0.13	0503844 POR,ALPINE RD,UNN 62	2	0	0	0	0	0	0	0.0	0.081	0.00	-0.13	0.00
												Statewide Crash Rate:	0.12	
P13447	0560116 - 0.17	Int of BONNY ST CARTER ST	2	0	0	0	0	0	0	0.0	0.100	0.00	0.09	0.00
												Statewide Crash Rate:	0.12	
A13448	0560116 - 0.18	Int of CARTER ST PANORAMIC VIEW ST	2	0	0	0	0	0	0	0.0	0.000	0.00	0.00	0.00
												Statewide Crash Rate:	0.12	
13444	0560172 - 0.17	Int of BONNY ST CRESTVIEW DR	2	0	0	0	0	0	0	0.0	0.124	0.00	0.24	0.00
												Statewide Crash Rate:	0.12	
13445	0560172 - 0.20	0503859 POR,CRESTVIEW DR,.12 AHD ALICE	2	0	0	0	0	0	0	0.0	0.080	0.00	-0.15	0.00
												Statewide Crash Rate:	0.12	
13451	0560114 - 0.15	Int of CARON ST PANORAMIC VIEW ST	2	0	0	0	0	0	0	0.0	0.069	0.00	-0.33	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
18186	0560114 - 0.25	0508605 POR,CARON ST,END	2	0	0	0	0	0	0	0.0	0.014	0.00	-7.52	0.00
												Statewide Crash Rate:	0.12	
13452	0560455 - 0.16	Int of LONGVIEW RD PANORAMIC VIEW ST PATRICIA LN	2	0	0	0	0	0	0	0.0	0.085	0.00	-0.07	0.00
												Statewide Crash Rate:	0.12	
13453	0560455 - 0.25	0503867 POR,PATRICIA LA,LONGVIEW RD.	2	0	0	0	0	0	0	0.0	0.019	0.00	-4.99	0.00
												Statewide Crash Rate:	0.12	
13454	0561114 - 0.10	0503868 POR,PATRICIA LA,.10 BK.60562	2	0	0	0	0	0	0	0.0	0.017	0.00	-5.58	0.00
												Statewide Crash Rate:	0.12	
19452	0561203 - 0.06	Int of OVERSET RD, WHITEHEAD CIR	2	0	0	0	0	0	0	0.0	0.075	0.00	-0.22	0.00
												Statewide Crash Rate:	0.12	
19453	0561203 - 0.10	Int of OVERSET RD WHALE BOAT RD	2	0	0	0	0	0	0	0.0	0.053	0.00	-0.80	0.00
												Statewide Crash Rate:	0.12	
63845	0561217 - 0.03	Loop of WHITEHEAD CIR	2	0	0	0	0	0	0	0.0	0.030	0.00	-2.45	0.00
												Statewide Crash Rate:	0.12	
63845	0561217 - 0.08	Loop of WHITEHEAD CIR	2	0	0	0	0	0	0	0.0	0.030	0.00	-2.45	0.00
												Statewide Crash Rate:	0.12	
13436	0560138 - 0.05	Int of CLAYTON ST KENNETH ST	2	0	0	0	0	0	0	0.0	0.053	0.00	-0.77	0.00
												Statewide Crash Rate:	0.12	
13434	0560400 - 0.07	Int of JACKSON ST KENNETH ST	2	0	0	0	0	0	0	0.0	0.122	0.00	0.23	0.00
												Statewide Crash Rate:	0.12	
63847	0560688 - 0.09	Non Int SUMMIT PARK AV	2	0	0	0	0	0	0	0.0	0.136	0.00	0.29	0.00
												Statewide Crash Rate:	0.12	
15389	0560688 - 0.22	Non Int SUMMIT PARK AV	2	0	0	0	0	0	0	0.0	0.052	0.00	-0.83	0.00
												Statewide Crash Rate:	0.12	
13432	0560688 - 0.38	Int of SUMMIT PARK AV UNNAMED 62	2	0	0	0	0	0	0	0.0	0.103	0.00	0.11	0.00
												Statewide Crash Rate:	0.12	
18501	0561167 - 0.08	Int of FROST HILL RD OLD BARN LN	2	0	0	0	0	0	0	0.0	0.075	0.00	-0.22	0.00
												Statewide Crash Rate:	0.12	
18502	0561167 - 0.24	0508922 POR,FROST HILL RD,END	2	0	0	0	0	0	0	0.0	0.026	0.00	-3.04	0.00
												Statewide Crash Rate:	0.12	
18503	0561169 - 0.05	0508923 POR,OLD BARN LA,END	2	0	0	0	0	0	0	0.0	0.007	0.00	-16.20	0.00
												Statewide Crash Rate:	0.12	
18500	0561179 - 0.14	End of WENDY WY	2	0	0	0	0	0	0	0.0	0.023	0.00	-3.82	0.00
												Statewide Crash Rate:	0.12	
12465	0560695 - 0.06	0502877 POR,TALBOT ST, END	2	0	0	0	0	0	0	0.0	0.012	0.00	-9.38	0.00
												Statewide Crash Rate:	0.12	
13426	0560409 - 0.10	End of JUNIPER ST	2	0	0	0	0	0	0	0.0	0.018	0.00	-5.27	0.00
												Statewide Crash Rate:	0.12	
Study Years:	3.00	**NODE TOTALS:**		9	0	1	2	2	4	55.6	45.500	0.07	0.19	0.34

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
17066	17067	3106528	0 - 0.04	0026X - 4.16	0.04	2	0	0	0	0	0	0	0.0	0.00143	0.00	608.38	0.00
Int of ALPINE RD, AUBURN ST				ST RTE 26											Statewide Crash Rate: 187.10		
17067	17068	3122276	0 - 0.08	0026X - 4.20	0.08	2	4	0	0	0	0	4	0.0	0.00286	466.46	509.30	0.00
Int of AUBURN ST SUMMIT PARK AV				ST RTE 26											Statewide Crash Rate: 187.10		
13438	17068	3130462	0 - 0.09	0026X - 4.28	0.09	2	2	0	0	0	1	1	50.0	0.00321	207.89	494.37	0.00
Int of AUBURN ST CLAYTON ST				ST RTE 26											Statewide Crash Rate: 187.10		
13438	17069	3106258	0 - 0.04	0026X - 4.37	0.04	2	0	0	0	0	0	0	0.0	0.00143	0.00	609.02	0.00
Int of AUBURN ST CLAYTON ST				ST RTE 26											Statewide Crash Rate: 187.10		
17069	17070	3123986	0 - 0.02	0026X - 4.41	0.02	2	0	0	0	0	0	0	0.0	0.00053	0.00	756.09	0.00
Int of AUBURN ST LAMBERT ST				ST RTE 26											Statewide Crash Rate: 187.10		
17070	17071	3130499	0 - 0.18	0026X - 4.43	0.18	2	0	0	0	0	0	0	0.0	0.00483	0.00	445.32	0.00
Int of AUBURN ST HILLSIDE RD				ST RTE 26											Statewide Crash Rate: 187.10		
17071	17073	3938275	0 - 0.09	0026X - 4.61	0.09	2	0	0	0	0	0	0	0.0	0.00263	0.00	520.33	0.00
Int of AUBURN ST SUMMIT ST				ST RTE 26											Statewide Crash Rate: 187.10		
17073	19344	192822	0 - 0.13	0026X - 4.70	0.13	2	0	0	0	0	0	0	0.0	0.00387	0.00	470.91	0.00
Int of AUBURN ST LONGVIEW RD				ST RTE 26											Statewide Crash Rate: 187.10		
19344	19797	3118714	0 - 0.03	0026X - 4.83	0.03	2	0	0	0	0	0	0	0.0	0.00110	0.00	648.88	0.00
Int of AUBURN ST WASHINGTON AV EXT				ST RTE 26											Statewide Crash Rate: 187.10		
13425	13431	188172	0 - 0.01	0560689 - 0.47	0.01	2	0	0	0	0	0	0	0.0	0.00011	0.00	1493.47	0.00
Int of JUNIPER ST SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
12464	13431	186821	0 - 0.02	0560689 - 0.48	0.02	2	0	0	0	0	0	0	0.0	0.00021	0.00	1480.08	0.00
0502876 POR,SUMMIT ST,TALBOT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
12464	13427	186820	0 - 0.10	0560689 - 0.50	0.10	2	0	0	0	0	0	0	0.0	0.00122	0.00	1013.16	0.00
0502876 POR,SUMMIT ST,TALBOT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13427	13435	188174	0 - 0.08	0560689 - 0.60	0.08	2	0	0	0	0	0	0	0.0	0.00053	0.00	1249.83	0.00
Int of CURTIS RD SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13435	13437	188190	0 - 0.04	0560689 - 0.68	0.04	2	0	0	0	0	0	0	0.0	0.00024	0.00	1459.76	0.00
Int of FROST HILL RD JACKSON ST SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13437	13439	188194	0 - 0.06	0560689 - 0.72	0.06	2	1	0	0	0	0	0	0.0	0.00037	910.87	1353.11	0.00
Int of CLAYTON ST SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13439	13442	5095097	0 - 0.05	0560689 - 0.78	0.05	2	0	0	0	0	0	0	0.0	0.00030	0.00	1404.28	0.00
Int of HILLSIDE RD SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13442	13446	188204	0 - 0.11	0560689 - 0.83	0.11	2	1	0	0	1	0	0	100.0	0.00040	832.72	1328.27	0.00
Int of ABBY LN SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13446	17071	5084411	0 - 0.07	0560689 - 0.94	0.07	2	0	0	0	0	0	0	0.0	0.00021	0.00	1478.21	0.00
Int of CARTER ST SUMMIT ST				RD INV 05 60689											Statewide Crash Rate: 351.32		
13427	18499	5080637	0 - 0.16	0560178 - 0	0.16	2	1	0	0	0	0	1	0.0	0.00071	467.08	1161.28	0.00
Int of CURTIS RD SUMMIT ST				RD INV 05 60178											Statewide Crash Rate: 351.32		
13428	18499	188178	0 - 0.09	0560178 - 0.16	0.09	2	0	0	0	0	0	0	0.0	0.00032	0.00	1392.58	0.00
Int of ABBY LN CURTIS RD				RD INV 05 60178											Statewide Crash Rate: 351.32		

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
13428	13429	5084409	0 - 0.11	0560178 - 0.25	0.11	2	0	0	0	0	0	0	0.0	0.00024	0.00	1458.95	0.00
Int of ABBY LN CURTIS RD				RD INV 05 60178											Statewide Crash Rate: 351.32		
13429	19454	188180	0 - 0.07	0560178 - 0.36	0.07	2	0	0	0	0	0	0	0.0	0.00007	0.00	1336.05	0.00
Int of CURTIS RD OVERSET RD				RD INV 05 60178											Statewide Crash Rate: 351.32		
10688	19454	5095093	0 - 0.04	0560178 - 0.43	0.04	2	0	0	0	0	0	0	0.0	0.00003	0.00	231.45	0.00
End of CURTIS RD				RD INV 05 60178											Statewide Crash Rate: 351.32		
71412	18498	5095160	0 - 0.05	0560851 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-950.49	0.00
Int of ALICE ST PAMELA DR				RD INV 05 60851											Statewide Crash Rate: 351.32		
18170	71412	5095159	0 - 0.05	0560851 - 0.05	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-856.95	0.00
Non Int ALICE ST				RD INV 05 60851											Statewide Crash Rate: 351.32		
18170	18486	193763	0 - 0.02	0560851 - 0.10	0.02	2	0	0	0	0	0	0	0.0	0.00001	0.00	-7868.46	0.00
Non Int ALICE ST				RD INV 05 60851											Statewide Crash Rate: 351.32		
18171	18486	193765	0 - 0.06	0560851 - 0.12	0.06	2	0	0	0	0	0	0	0.0	0.00001	0.00	-4792.46	0.00
Int of ALICE ST CARTER ST				RD INV 05 60851											Statewide Crash Rate: 351.32		
13449	18171	5095153	0 - 0.05	0560851 - 0.18	0.05	2	0	0	0	0	0	0	0.0	0.00001	0.00	-10215.50	0.00
Int of ALICE ST CARON ST				RD INV 05 60851											Statewide Crash Rate: 351.32		
13449	13450	188213	0 - 0.04	0560851 - 0.23	0.04	2	0	0	0	0	0	0	0.0	0.00001	0.00	-8795.41	0.00
Int of ALICE ST CARON ST				RD INV 05 60851											Statewide Crash Rate: 351.32		
13450	19798	5087298	0 - 0.14	0560851 - 0.27	0.14	2	0	0	0	0	0	0	0.0	0.00005	0.00	962.43	0.00
Non Int ALICE ST				RD INV 05 60851											Statewide Crash Rate: 351.32		
13428	18494	188177	0 - 0.05	0560819 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00005	0.00	1021.10	0.00
Int of ABBY LN CURTIS RD				RD INV 05 60819											Statewide Crash Rate: 351.32		
13440	18494	188201	0 - 0.11	0560819 - 0.05	0.11	2	0	0	0	0	0	0	0.0	0.00006	0.00	1234.92	0.00
Int of ABBY LN PAMELA DR				RD INV 05 60819											Statewide Crash Rate: 351.32		
13440	13441	188199	0 - 0.10	0560819 - 0.16	0.10	2	0	0	0	0	0	0	0.0	0.00008	0.00	1349.53	0.00
Int of ABBY LN PAMELA DR				RD INV 05 60819											Statewide Crash Rate: 351.32		
13441	13442	188202	0 - 0.08	0560819 - 0.26	0.08	2	0	0	0	0	0	0	0.0	0.00019	0.00	1495.81	0.00
Int of ABBY LN CRESTVIEW DR				RD INV 05 60819											Statewide Crash Rate: 351.32		
13440	71412	5095156	0 - 0.19	0560838 - 0	0.19	2	0	0	0	0	0	0	0.0	0.00002	0.00	-976.30	0.00
Int of ABBY LN PAMELA DR				RD INV 05 60838											Statewide Crash Rate: 351.32		
18494	18495	194000	0 - 0.05	0561166 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00006	0.00	1217.38	0.00
0508914 POR,ABBY LA,CLAPBOARD RD.				RD INV 05 61166											Statewide Crash Rate: 351.32		
18495	18496	194001	0 - 0.05	0561166 - 0.05	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-1015.72	0.00
Int of CLAPBOARD RD STURDIVANT DR				RD INV 05 61166											Statewide Crash Rate: 351.32		
18496	18497	194003	0 - 0.05	0561166 - 0.10	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-1015.72	0.00
0508916 POR,CLAPBOARD RD,.10 BK.ABBY				RD INV 05 61166											Statewide Crash Rate: 351.32		
18497	18498	5095094	0 - 0.05	0561166 - 0.15	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-2843.86	0.00
Int of CLAPBOARD RD STURDIVANT DR				RD INV 05 61166											Statewide Crash Rate: 351.32		
13430	17066	188183	0 - 0.13	0560011 - 0	0.13	2	0	0	0	0	0	0	0.0	0.00009	0.00	1455.01	0.00
0503844 POR,ALPINE RD,UNN 62				RD INV 05 60011											Statewide Crash Rate: 351.32		

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
13430	13431	188181	0 - 0.17	0560011 - 0.13	0.17	2	0	0	0	0	0	0	0.0	0.00010	0.00	1464.82	0.00
0503844 POR,ALPINE RD,UNN 62				RD INV 05 60011											Statewide Crash Rate: 351.32		
19797	19798	195401	0 - 0.26	0561241 - 0	0.26	2	0	0	0	0	0	0	0.0	0.00023	0.00	1462.68	0.00
Int of AUBURN ST GARSOE DR				RD INV 05 61241											Statewide Crash Rate: 351.32		
13446	13447	188208	0 - 0.17	0560116 - 0	0.17	2	0	0	0	0	0	0	0.0	0.00016	0.00	1514.73	0.00
Int of CARTER ST SUMMIT ST				RD INV 05 60116											Statewide Crash Rate: 351.32		
13447	13448	188210	0 - 0.01	0560116 - 0.17	0.01	2	0	0	0	0	0	0	0.0	0.00001	0.00	-	0.00
Int of BONNY ST CARTER ST				RD INV 05 60116											Statewide Crash Rate: 351.32	10785.99	
13448	18171	188212	0 - 0.15	0560116 - 0.18	0.15	2	0	0	0	0	0	0	0.0	0.00007	0.00	1291.62	0.00
Int of CARTER ST PANORAMIC VIEW ST				RD INV 05 60116											Statewide Crash Rate: 351.32		
13441	13444	5084404	0 - 0.17	0560172 - 0	0.17	2	0	0	0	0	0	0	0.0	0.00024	0.00	1454.05	0.00
Int of ABBY LN CRESTVIEW DR				RD INV 05 60172											Statewide Crash Rate: 351.32		
13444	13445	188205	0 - 0.03	0560172 - 0.17	0.03	2	0	0	0	0	0	0	0.0	0.00002	0.00	-925.05	0.00
Int of BONNY ST CRESTVIEW DR				RD INV 05 60172											Statewide Crash Rate: 351.32		
13445	18486	188207	0 - 0.12	0560172 - 0.20	0.12	2	0	0	0	0	0	0	0.0	0.00010	0.00	1458.63	0.00
0503859 POR,CRESTVIEW DR,.12 AHD ALICE				RD INV 05 60172											Statewide Crash Rate: 351.32		
13449	13451	188214	0 - 0.15	0560114 - 0	0.15	2	0	0	0	0	0	0	0.0	0.00006	0.00	1118.53	0.00
Int of ALICE ST CARON ST				RD INV 05 60114											Statewide Crash Rate: 351.32		
13451	18186	188218	0 - 0.10	0560114 - 0.15	0.10	2	0	0	0	0	0	0	0.0	0.00003	0.00	-364.08	0.00
Int of CARON ST PANORAMIC VIEW ST				RD INV 05 60114											Statewide Crash Rate: 351.32		
13452	17073	188221	0 - 0.16	0560455 - 0	0.16	2	0	0	0	0	0	0	0.0	0.00013	0.00	1514.30	0.00
Int of LONGVIEW RD PANORAMIC VIEW ST PATRICIA LN				RD INV 05 60455											Statewide Crash Rate: 351.32		
13452	13453	188219	0 - 0.09	0560455 - 0.16	0.09	2	0	0	0	0	0	0	0.0	0.00003	0.00	-598.80	0.00
Int of LONGVIEW RD PANORAMIC VIEW ST PATRICIA LN				RD INV 05 60455											Statewide Crash Rate: 351.32		
13452	13454	188220	0 - 0.10	0561114 - 0	0.10	2	0	0	0	0	0	0	0.0	0.00003	0.00	-603.99	0.00
Int of LONGVIEW RD PANORAMIC VIEW ST PATRICIA LN				RD INV 05 61114											Statewide Crash Rate: 351.32		
13453	13454	188222	0 - 0.04	0561114 - 0.10	0.04	2	1	0	0	0	0	0	0.0	0.00000	95129.38	-	0.00
0503867 POR,PATRICIA LA,LONGVIEW RD.				RD INV 05 61114											Statewide Crash Rate: 351.32	32321.31	
13448	13451	5084406	0 - 0.05	0560562 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-2085.47	0.00
Int of CARTER ST PANORAMIC VIEW ST				RD INV 05 60562											Statewide Crash Rate: 351.32		
13451	13452	188217	0 - 0.05	0560562 - 0.05	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-2566.86	0.00
Int of CARON ST PANORAMIC VIEW ST				RD INV 05 60562											Statewide Crash Rate: 351.32		
13444	13447	5084405	0 - 0.06	0560066 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00002	0.00	-3507.00	0.00
Int of BONNY ST CRESTVIEW DR				RD INV 05 60066											Statewide Crash Rate: 351.32		
18495	18497	5084408	0 - 0.15	0561177 - 0	0.15	2	0	0	0	0	0	0	0.0	0.00007	0.00	1319.16	0.00
Int of CLAPBOARD RD STURDIVANT DR				RD INV 05 61177											Statewide Crash Rate: 351.32		
13429	19452	188179	0 - 0.06	0561203 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00005	0.00	901.52	0.00
Int of CURTIS RD OVERSET RD				RD INV 05 61203											Statewide Crash Rate: 351.32		

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
19452	19453	195141	0 - 0.04	0561203 - 0.06	0.04	2	0	0	0	0	0	0	0.0	0.00002	0.00	-1748.14	0.00
Int of OVERSET RD, WHITEHEAD CIR				RD INV 05 61203											Statewide Crash Rate: 351.32		
19453	19454	195143	0 - 0.09	0561215 - 0	0.09	2	0	0	0	0	0	0	0.0	0.00003	0.00	-422.78	0.00
Int of OVERSET RD WHALE BOAT RD				RD INV 05 61215											Statewide Crash Rate: 351.32		
19452	63845	2672710	0 - 0.03	0561217 - 0	0.03	2	0	0	0	0	0	0	0.0	0.00001	0.00	-15963.47	0.00
Int of OVERSET RD, WHITEHEAD CIR				RD INV 05 61217											Statewide Crash Rate: 351.32		
63845	63845	2672712	0 - 0.05	0561217 - 0.03	0.05	2	0	0	0	0	0	0	0.0	0.00001	0.00	-7454.27	0.00
Loop of WHITEHEAD CIR				RD INV 05 61217											Statewide Crash Rate: 351.32		
13439	17070	5080633	0 - 0.14	0560372 - 0	0.14	2	0	0	0	0	0	0	0.0	0.00011	0.00	1496.36	0.00
Int of HILLSIDE RD SUMMIT ST				RD INV 05 60372											Statewide Crash Rate: 351.32		
13436	13438	5080634	0 - 0.05	0560138 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-768.23	0.00
Int of CLAYTON ST KENNETH ST				RD INV 05 60138											Statewide Crash Rate: 351.32		
13436	13437	5080632	0 - 0.12	0560138 - 0.05	0.12	2	0	0	0	0	0	0	0.0	0.00004	0.00	758.25	0.00
Int of CLAYTON ST KENNETH ST				RD INV 05 60138											Statewide Crash Rate: 351.32		
13434	17068	5080631	0 - 0.07	0560400 - 0	0.07	2	0	0	0	0	0	0	0.0	0.00008	0.00	1397.33	0.00
Int of JACKSON ST KENNETH ST				RD INV 05 60400											Statewide Crash Rate: 351.32		
13434	13435	188187	0 - 0.14	0560400 - 0.07	0.14	2	1	0	0	0	0	1	0.0	0.00015	2233.96	1516.44	1.47
Int of JACKSON ST KENNETH ST				RD INV 05 60400											Statewide Crash Rate: 351.32		
13434	13436	188188	0 - 0.07	0560415 - 0	0.07	2	0	0	0	0	0	0	0.0	0.00001	0.00	-3788.09	0.00
Int of JACKSON ST KENNETH ST				RD INV 05 60415											Statewide Crash Rate: 351.32		
63847	17067	5080630	0 - 0.09	0560688 - 0	0.09	2	0	0	0	0	0	0	0.0	0.00010	0.00	1479.51	0.00
Non Int SUMMIT PARK AV				RD INV 05 60688											Statewide Crash Rate: 351.32		
63847	15389	2672735	0 - 0.13	0560688 - 0.09	0.13	2	0	0	0	0	0	0	0.0	0.00006	0.00	1127.42	0.00
Non Int SUMMIT PARK AV				RD INV 05 60688											Statewide Crash Rate: 351.32		
13432	15389	5080629	0 - 0.16	0560688 - 0.22	0.16	2	0	0	0	0	0	0	0.0	0.00010	0.00	1459.60	0.00
Int of SUMMIT PARK AV UNNAMED 62				RD INV 05 60688											Statewide Crash Rate: 351.32		
13430	13432	188182	0 - 0.05	0561120 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00002	0.00	-3231.28	0.00
0503844 POR,ALPINE RD,UNN 62				RD INV 05 61120											Statewide Crash Rate: 351.32		
13432	63847	2672733	0 - 0.03	0561120 - 0.05	0.03	2	0	0	0	0	0	0	0.0	0.00003	0.00	250.13	0.00
Int of SUMMIT PARK AV UNNAMED 62				RD INV 05 61120											Statewide Crash Rate: 351.32		
13435	18501	5080635	0 - 0.08	0561167 - 0	0.08	2	0	0	0	0	0	0	0.0	0.00007	0.00	1253.71	0.00
Int of FROST HILL RD JACKSON ST SUMMIT ST				RD INV 05 61167											Statewide Crash Rate: 351.32		
18501	18502	194006	0 - 0.16	0561167 - 0.08	0.16	2	0	0	0	0	0	0	0.0	0.00008	0.00	1409.29	0.00
Int of FROST HILL RD OLD BARN LN				RD INV 05 61167											Statewide Crash Rate: 351.32		
18501	18503	194007	0 - 0.05	0561169 - 0	0.05	2	0	0	0	0	0	0	0.0	0.00001	0.00	-11731.96	0.00
Int of FROST HILL RD OLD BARN LN				RD INV 05 61169											Statewide Crash Rate: 351.32		
18499	18500	5080636	0 - 0.14	0561179 - 0	0.14	2	0	0	0	0	0	0	0.0	0.00006	0.00	1223.01	0.00
Int of CURTIS RD WENDY WY				RD INV 05 61179											Statewide Crash Rate: 351.32		

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
12464	12465	186819	0 - 0.06	0560695 - 0	0.06	2	0	0	0	0	0	0	0.0	0.00001	0.00	-4093.82	0.00
0502876 POR,SUMMIT ST,TALBOT ST				RD INV 05 60695											Statewide Crash Rate: 351.32		
13425	13426	5080638	0 - 0.10	0560409 - 0	0.10	2	0	0	0	0	0	0	0.0	0.00004	0.00	376.37	0.00
Int of JUNIPER ST	SUMMIT ST			RD INV 05 60409											Statewide Crash Rate: 351.32		
Study Years:	3.00			**Section Totals:**	6.92		11	0	0	1	1	7	18.2	0.03004	122.05	356.73	0.34
				Grand Totals:	6.92		20	0	1	3	3	11	35.0	0.03004	221.91	471.25	0.47

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
17066	17067	3106528	0 - 0.04	0026X - 4.16	0	0	0	0	0	0				
17067	17068	3122276	0 - 0.08	0026X - 4.20	4	0	0	0	0	4	2019-1418	01/13/2019	4.24	PD
											2021-17141	07/06/2021	4.24	PD
											2021-24573	09/16/2021	4.25	PD
											2021-34736	12/10/2021	4.27	PD
13438	17068	3130462	0 - 0.09	0026X - 4.28	2	0	0	0	1	1	2019-50246	04/27/2019	4.29	C
											2021-25703	09/25/2021	4.32	PD
13438	17069	3106258	0 - 0.04	0026X - 4.37	0	0	0	0	0	0				
17069	17070	3123986	0 - 0.02	0026X - 4.41	0	0	0	0	0	0				
17070	17071	3130499	0 - 0.18	0026X - 4.43	0	0	0	0	0	0				
17071	17073	3938275	0 - 0.09	0026X - 4.61	0	0	0	0	0	0				
17073	19344	192822	0 - 0.13	0026X - 4.70	0	0	0	0	0	0				
19344	19797	3118714	0 - 0.03	0026X - 4.83	0	0	0	0	0	0				
13425	13431	188172	0 - 0.01	0560689 - 0.47	0	0	0	0	0	0				
12464	13431	186821	0 - 0.02	0560689 - 0.48	0	0	0	0	0	0				
12464	13427	186820	0 - 0.10	0560689 - 0.50	0	0	0	0	0	0				
13427	13435	188174	0 - 0.08	0560689 - 0.60	0	0	0	0	0	0				
13435	13437	188190	0 - 0.04	0560689 - 0.68	0	0	0	0	0	0				
13437	13439	188194	0 - 0.06	0560689 - 0.72	1	0	0	0	0	0	2021-26097	09/29/2021	0.73	
13439	13442	5095097	0 - 0.05	0560689 - 0.78	0	0	0	0	0	0				
13442	13446	188204	0 - 0.11	0560689 - 0.83	1	0	0	1	0	0	2021-13280	05/30/2021	0.85	B
13446	17071	5084411	0 - 0.07	0560689 - 0.94	0	0	0	0	0	0				
13427	18499	5080637	0 - 0.16	0560178 - 0	1	0	0	0	0	1	2019-3097	01/25/2019	0.05	PD
13428	18499	188178	0 - 0.09	0560178 - 0.16	0	0	0	0	0	0				
13428	13429	5084409	0 - 0.11	0560178 - 0.25	0	0	0	0	0	0				
13429	19454	188180	0 - 0.07	0560178 - 0.36	0	0	0	0	0	0				
10688	19454	5095093	0 - 0.04	0560178 - 0.43	0	0	0	0	0	0				
71412	18498	5095160	0 - 0.05	0560851 - 0	0	0	0	0	0	0				
18170	71412	5095159	0 - 0.05	0560851 - 0.05	0	0	0	0	0	0				
18170	18486	193763	0 - 0.02	0560851 - 0.10	0	0	0	0	0	0				
18171	18486	193765	0 - 0.06	0560851 - 0.12	0	0	0	0	0	0				
13449	18171	5095153	0 - 0.05	0560851 - 0.18	0	0	0	0	0	0				
13449	13450	188213	0 - 0.04	0560851 - 0.23	0	0	0	0	0	0				
13450	19798	5087298	0 - 0.14	0560851 - 0.27	0	0	0	0	0	0				
13428	18494	188177	0 - 0.05	0560819 - 0	0	0	0	0	0	0				
13440	18494	188201	0 - 0.11	0560819 - 0.05	0	0	0	0	0	0				
13440	13441	188199	0 - 0.10	0560819 - 0.16	0	0	0	0	0	0				
13441	13442	188202	0 - 0.08	0560819 - 0.26	0	0	0	0	0	0				
13440	71412	5095156	0 - 0.19	0560838 - 0	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
18494	18495	194000	0 - 0.05	0561166 - 0	0	0	0	0	0	0				
18495	18496	194001	0 - 0.05	0561166 - 0.05	0	0	0	0	0	0				
18496	18497	194003	0 - 0.05	0561166 - 0.10	0	0	0	0	0	0				
18497	18498	5095094	0 - 0.05	0561166 - 0.15	0	0	0	0	0	0				
13430	17066	188183	0 - 0.13	0560011 - 0	0	0	0	0	0	0				
13430	13431	188181	0 - 0.17	0560011 - 0.13	0	0	0	0	0	0				
19797	19798	195401	0 - 0.26	0561241 - 0	0	0	0	0	0	0				
13446	13447	188208	0 - 0.17	0560116 - 0	0	0	0	0	0	0				
13447	13448	188210	0 - 0.01	0560116 - 0.17	0	0	0	0	0	0				
13448	18171	188212	0 - 0.15	0560116 - 0.18	0	0	0	0	0	0				
13441	13444	5084404	0 - 0.17	0560172 - 0	0	0	0	0	0	0				
13444	13445	188205	0 - 0.03	0560172 - 0.17	0	0	0	0	0	0				
13445	18486	188207	0 - 0.12	0560172 - 0.20	0	0	0	0	0	0				
13449	13451	188214	0 - 0.15	0560114 - 0	0	0	0	0	0	0				
13451	18186	188218	0 - 0.10	0560114 - 0.15	0	0	0	0	0	0				
13452	17073	188221	0 - 0.16	0560455 - 0	0	0	0	0	0	0				
13452	13453	188219	0 - 0.09	0560455 - 0.16	0	0	0	0	0	0				
13452	13454	188220	0 - 0.10	0561114 - 0	0	0	0	0	0	0				
13453	13454	188222	0 - 0.04	0561114 - 0.10	1	0	0	0	0	0	2020-30449	12/06/2020	0.13	
13448	13451	5084406	0 - 0.05	0560562 - 0	0	0	0	0	0	0				
13451	13452	188217	0 - 0.05	0560562 - 0.05	0	0	0	0	0	0				
13444	13447	5084405	0 - 0.06	0560066 - 0	0	0	0	0	0	0				
18495	18497	5084408	0 - 0.15	0561177 - 0	0	0	0	0	0	0				
13429	19452	188179	0 - 0.06	0561203 - 0	0	0	0	0	0	0				
19452	19453	195141	0 - 0.04	0561203 - 0.06	0	0	0	0	0	0				
19453	19454	195143	0 - 0.09	0561215 - 0	0	0	0	0	0	0				
19452	63845	2672710	0 - 0.03	0561217 - 0	0	0	0	0	0	0				
63845	63845	2672712	0 - 0.05	0561217 - 0.03	0	0	0	0	0	0				
13439	17070	5080633	0 - 0.14	0560372 - 0	0	0	0	0	0	0				
13436	13438	5080634	0 - 0.05	0560138 - 0	0	0	0	0	0	0				
13436	13437	5080632	0 - 0.12	0560138 - 0.05	0	0	0	0	0	0				
13434	17068	5080631	0 - 0.07	0560400 - 0	0	0	0	0	0	0				
13434	13435	188187	0 - 0.14	0560400 - 0.07	1	0	0	0	0	1	2021-16139	06/28/2021	0.14	PD
13434	13436	188188	0 - 0.07	0560415 - 0	0	0	0	0	0	0				
63847	17067	5080630	0 - 0.09	0560688 - 0	0	0	0	0	0	0				
63847	15389	2672735	0 - 0.13	0560688 - 0.09	0	0	0	0	0	0				
13432	15389	5080629	0 - 0.16	0560688 - 0.22	0	0	0	0	0	0				
13430	13432	188182	0 - 0.05	0561120 - 0	0	0	0	0	0	0				
13432	63847	2672733	0 - 0.03	0561120 - 0.05	0	0	0	0	0	0				
13435	18501	5080635	0 - 0.08	0561167 - 0	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
18501	18502	194006	0 - 0.16	0561167 - 0.08	0	0	0	0	0	0				
18501	18503	194007	0 - 0.05	0561169 - 0	0	0	0	0	0	0				
18499	18500	5080636	0 - 0.14	0561179 - 0	0	0	0	0	0	0				
12464	12465	186819	0 - 0.06	0560695 - 0	0	0	0	0	0	0				
13425	13426	5080638	0 - 0.10	0560409 - 0	0	0	0	0	0	0				
				Totals:	11	0	0	1	1	7				

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	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3
MONDAY	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
TUESDAY	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
WEDNESDAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
THURSDAY	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	4
FRIDAY	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3
SATURDAY	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	4
Totals	0	0	0	0	0	0	0	2	1	0	2	2	4	1	0	3	2	0	1	0	0	1	0	1	0	**20**

Vehicle Counts by Type

Unit Type	Total
1-Passenger Car	19
2-(Sport) Utility Vehicle	6
3-Passenger Van	1
4-Cargo Van (10K lbs or Less)	0
5-Pickup	8
6-Motor Home	0
7-School Bus	0
8-Transit Bus	0
9-Motor Coach	0
10-Other Bus	0
11-Motorcycle	1
12-Moped	0
13-Low Speed Vehicle	0
14-Autocycle	0
15-Experimental	0
16-Other Light Trucks (10,000 lbs or Less)	0
17-Medium/Heavy Trucks (More than 10,000 lbs)	2
18-ATV - (4 wheel)	0
20-ATV - (2 wheel)	0
21-Snowmobile	0
22-Pedestrian	0

Unit Type	Total
23-Bicyclist	0
24-Witness	2
25-Other	2
26-Construction	0
27-Farm Vehicle	0
Total	**41**

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	1	14	2	1	0	0	18
Ran Off Roadway	3	0	0	0	0	0	3
Failed to Yield Right-of-Way	6	0	0	0	0	0	6
Ran Red Light	0	0	0	0	0	0	0
Ran Stop Sign	0	0	0	0	0	0	0
Disregarded Other Traffic Sign	0	0	0	0	0	0	0
Disregarded Other Road Markings	0	0	0	0	0	0	0
Exceeded Posted Speed Limit	0	0	0	0	0	0	0
Drove Too Fast For Conditions	0	0	0	0	0	0	0
Improper Turn	2	0	0	0	0	0	2
Improper Backing	0	0	0	0	0	0	0
Improper Passing	0	0	0	0	0	0	0
Wrong Way	0	0	0	0	0	0	0
Followed Too Closely	3	0	0	0	0	0	3
Failed to Keep in Proper Lane	0	0	0	0	0	0	0
Operated Motor Vehicle in Erratic, Reckless, Careless, Negligent or Aggressive Manner	2	0	0	0	0	0	2
Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway	0	0	0	0	0	0	0
Over-Correcting/Over-Steering	0	0	0	0	0	0	0
Other Contributing Action	1	0	0	0	0	0	1
Unknown	0	0	0	0	0	0	0
Total	**18**	**14**	**2**	**1**	**0**	**0**	**35**

Crashes by Apparent Physical Condition And Driver

Apparent Physical Condition	Dr 1	Dr 2	Dr 3	Dr 4	Dr 5	Other	Total
Apparently Normal	16	14	2	1	0	0	33
Physically Impaired	0	0	0	0	0	0	0
Emotional(Depressed, Angry, Disturbed, etc.)	0	0	0	0	0	0	0
Ill (Sick)	0	0	0	0	0	0	0
Asleep or Fatigued	0	0	0	0	0	0	0
Under the Influence of Medications/Drugs/Alcohol	1	0	0	0	0	0	1
Other	1	0	0	0	0	0	1
Total	**18**	**14**	**2**	**1**	**0**	**0**	**35**

Driver Age by Unit Type

Age	Driver	Bicycle	SnowMobile	Pedestrian	ATV	Total
09-Under	0	0	0	0	0	0
10-14	0	0	0	0	0	0
15-19	4	0	0	0	0	4
20-24	7	0	0	0	0	7
25-29	4	0	0	0	0	4
30-39	6	0	0	0	0	6
40-49	8	0	0	0	0	8
50-59	3	0	0	0	0	3
60-69	5	0	0	0	0	5
70-79	0	0	0	0	0	0
80-Over	0	0	0	0	0	0
Unknown	2	0	0	0	0	2
Total	**39**	**0**	**0**	**0**	**0**	**39**

Crash Summary II - Characteristics

Most Harmful Event

Most Harmful Event	Total	Most Harmful Event	Total
1-Overturn / Rollover	0	38-Other Fixed Object (wall, building, tunnel, etc.)	2
2-Fire / Explosion	0	39-Unknown	0
3-Immersion	0	40-Gate or Cable	0
4-Jackknife	0	41-Pressure Ridge	0
5-Cargo / Equipment Loss Or Shift	0	**Total**	**37**
6-Fell / Jumped from Motor Vehicle	0		
7-Thrown or Falling Object	0		
8-Other Non-Collision	0		
9-Pedestrian	0		
10-Pedalcycle	0		
11-Railway Vehicle - Train, Engine	0		
12-Animal	0		
13-Motor Vehicle in Transport	35		
14-Parked Motor Vehicle	0		
15-Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	0		
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	0		
31-Tree (Standing)	0		
32-Utility Pole / Light Support	0		
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	0	0
A	1	1
B	3	3
C	3	4
PD	11	0
Total	**18**	**8**

Road Character

Road Grade	Total
1-Level	16
2-On Grade	2
3-Top of Hill	1
4-Bottom of Hill	1
5-Other	0
Total	**20**

Traffic Control Devices

Traffic Control Device	Total
1-Traffic Signals (Stop & Go)	0
2-Traffic Signals (Flashing)	0
3-Advisory/Warning Sign	0
4-Stop Signs - All Approaches	1
5-Stop Signs - Other	5
6-Yield Sign	0
7-Curve Warning Sign	0
8-Officer, Flagman, School Patrol	0
9-School Bus Stop Arm	0
10-School Zone Sign	0
11-R.R. Crossing Device	0
12-No Passing Zone	0
13-None	13
14-Other	1
Total	**20**

Light

Light Condition	Total
1-Daylight	15
2-Dawn	0
3-Dusk	0
4-Dark - Lighted	4
5-Dark - Not Lighted	1
6-Dark - Unknown Lighting	0
7-Unknown	0
Total	**20**

Crash Summary II - Characteristics

Crashes by Year and Month

Month	2019	2020	2021	Total
JANUARY	3	0	1	4
FEBRUARY	0	1	0	1
MARCH	0	0	0	0
APRIL	2	0	0	2
MAY	0	1	1	2
JUNE	1	0	1	2
JULY	0	0	1	1
AUGUST	0	0	0	0
SEPTEMBER	0	0	3	3
OCTOBER	0	0	0	0
NOVEMBER	0	1	1	2
DECEMBER	1	1	1	3
Total	**7**	**4**	**9**	**20**

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	4	2	0	2	0	1	0	0	0	0	0	0	0	0	9
Head-on - Sideswipe	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Intersection Movement	0	0	5	0	0	1	0	0	0	0	0	0	0	0	6
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	1	0	1	1	0	1	0	0	0	0	0	0	0	0	4
All Other Animal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	**6**	**2**	**6**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**

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	2	0	0	0	0	0	0	0	0	0	0	2
Dark - Not Lighted	1	0	0	0	0	0	0	0	0	0	0	1
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	6	1	0	0	0	0	0	0	0	0	2	9
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Cloudy												
Dark - Lighted	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	2	0	0	0	0	0	0	0	0	0	2	4
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
Fog, Smog, Smoke												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Other												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	0	0	0	0	0	0	0	0	0	0	0	0
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Rain												
Dark - Lighted	0	0	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	2	2
Dusk	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Severe Crosswinds												
Dark - Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	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	1	1
Dark - Not Lighted	0	0	0	0	0	0	0	0	0	0	0	0
Dark - Unknown Lighting	0	0	0	0	0	0	0	0	0	0	0	0
Dawn	0	0	0	0	0	0	0	0	0	0	0	0
Daylight	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	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
TOTAL	**12**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**20**

Barton & Loguidice

Traffic Assessment –Speed Study

Date: 8/25/2023

To: Jon Whitten, Jr., P.E., Project Manager
Haley Ward

From: Jacob Sirois, E.I.
Engineer 1
Barton & Loguidice, LLC.

John Q. Adams, P.E., PTOE
Associate, Senior Transportation Engineer
Barton & Loguidice, LLC.

Re: **Speed Study, Hope Avenue Residential Multi-Family Subdivision**
Hope Avenue, Portland, Maine

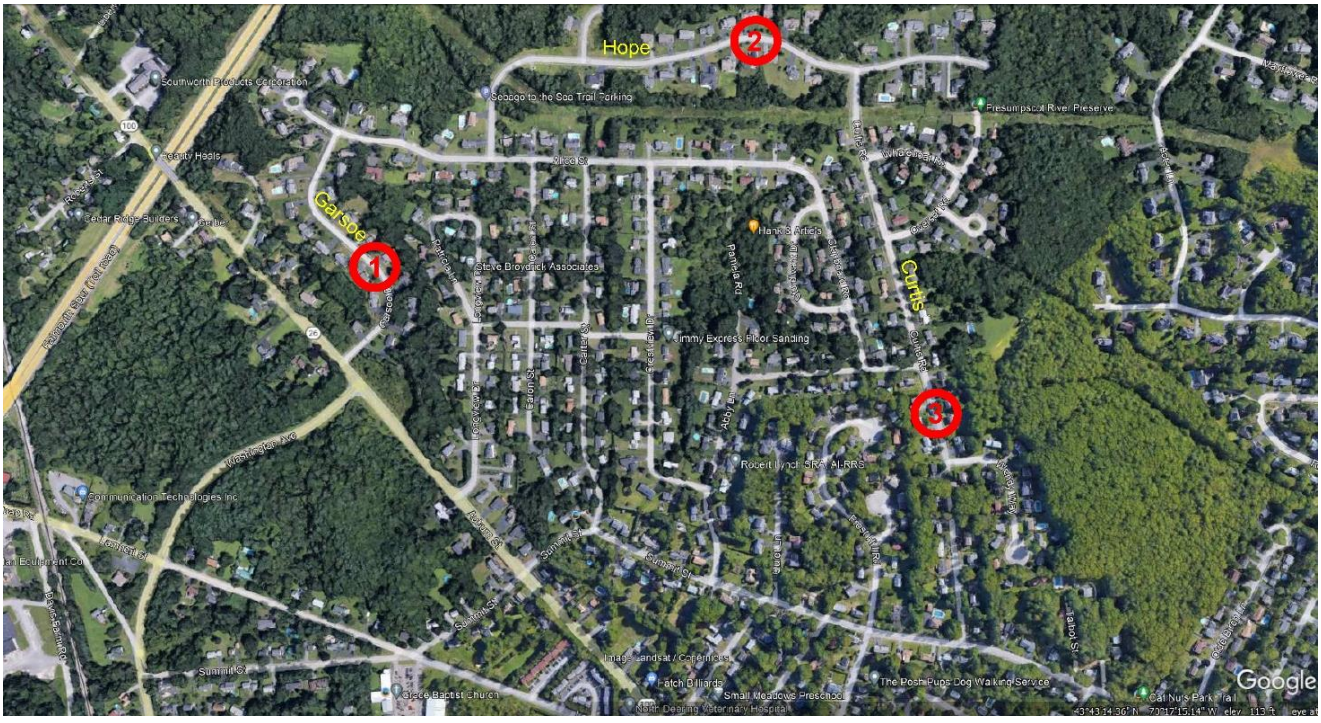
Introduction

The purpose of this memo is to respond to comments from the City of Portland staff and neighborhood citizens pertaining to potential concerns with traffic speeds along Garsoe Drive, Hope Avenue, and Curtis Street, and the potential need for traffic calming measures. To respond to these comments, we have reviewed the existing conditions for the subject roads and performed speed studies on each.

Speed Study

The speed study was completed on July 27, 2023 with speed data collected at the three locations shown below. These included; 1. Garsoe Drive, 2. Hope Avenue, and 3. Curtis Street. The data was completed in the afternoon generally within the weekday peak commuter hours so that more data could be collected. The speed study data and results were compiled by James Tasse, PhD, Assistant Director, Bicycle Coalition of Maine.

Figure 1 Proposed Development Site



Garsoe Drive

Garsoe Drive is a residential street with single family homes along both sides. The roadway is approximately 24 ft. wide, with a cross-section generally comprised of a curbed roadway, esplanades and sidewalk on both sides of the road with street lights and street trees. Based on our observations, the context of this roadway provides traffic calming and prevailing speeds were generally at or below the posted speed limit of 25 mph. The results of the speed data collected is shown in Table 1 below.

Table 1 - Garsoe Drive Speed Data Results

Speed Limit	Northbound	Southbound
Average	17.7	21.0
85th Percentile	20.5	25.8

The data indicates that both the Average and 85th Percentile Speeds were generally at or below the posted speed limit of 25mph. In the northbound direction the average speed was 17.7 mph and 85th was 20.5 mph, and the southbound average speed was 21.0 mph and the 85th was 25.8 mph. Based on these results motorists were generally adhering to or driving below the posted speed limit.

Hope Avenue

Hope Avenue is a residential street with single family home along both sides. The roadway is approximately 24 ft. wide, with a cross-section generally comprised of a curbed roadway, esplanades and sidewalk on both sides of the road with street lights and street trees. The context of this roadway provides traffic calming and generally does not seem to encourage higher speeds above the posted speed limit of 25 mph. The results of the speed data collected is shown in Table 2 below.

Table 2 - Hope Ave Speed Data Results

Speed Limit	Eastbound	Westbound
Average	17.5	22.0
85th Percentile	17.9	27.6

The data indicates that both the Average and 85th Percentile Speeds were generally near or below the posted speed limit of 25 mph. In the eastbound direction the average speed was 17.5 mph and the 85th was 17.9 mph, and the westbound average speed was 22.0 mph and the 85th was 27.6 mph. Based on these results motorists were generally adhering to or driving below the posted speed limit.

Curtis Street

Curtis Street is a residential street with single family homes along both sides and a posted speed of 25 mph. The roadway is wider than either Hope Avenue or Garsoe Drive, but does have on-street parking which takes up some of the roadway width. Based on our observations, the roadway has three different widths as you traverse from Summit Street northerly to Hope Avenue, a distance of about 2,800 ft. See descriptions below:

Southerly Section (Summit Street to Abby Street) - roadway approximately 28 ft. wide, no curbing, but esplanades, sidewalks, and street trees on both sides, with on-street parking. There is an all-way stop at the intersection of Abby Street and Curtis Street, which tends to slow traffic.

Middle Section (Abby Street to south of Overset Street) – roadway approximately 36-37 ft. wide, no curbing, but esplanades, sidewalks, and street trees, with on-street parking.

Northerly Section (Overset Street to Hope Ave) – roadway approximately 32 ft. wide, curbed roadway with esplanades, sidewalks, street trees, street lights on both sides of street, with on-street parking.

The context of this roadway provides some traffic calming and has prevailing speeds near the posted speed limit of 25 mph. The results of the speed data collected is shown in Table 2 below.

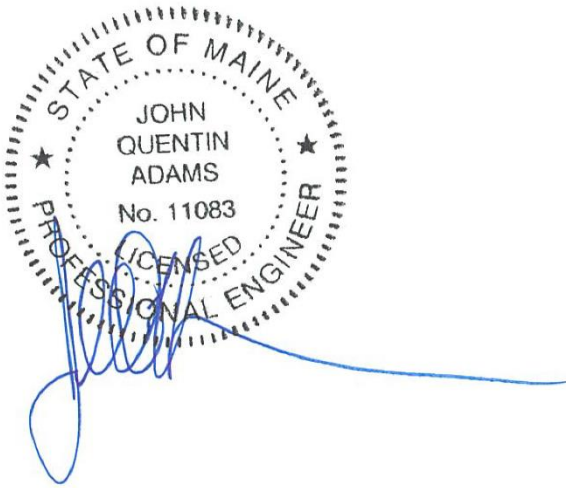
Table 3 – Curtis Street Speed Study Results

Speed Limit	Northbound	Southbound
Average	24.6	24.0
85th Percentile	27.0	28.5

The data indicates that both the Average and 85th Percentile Speeds were generally near or below the posted speed limit of 25mph. In the northbound direction the average speed was 24.6 mph and 85th was 27.0 mph, and in the southbound direction the average was 24.0 mph and 85th was 28.6 mph. Based on these results motorists were generally driving at or near the posted speed limit.

Summary

The speed data collected on Garsoe Drive, Hope Avenue and Curtis Street indicates that there does not seem to be a significant issue with motorists driving at excessive speeds. Generally, the average speeds recorded on the three roads were below the posted speed limit of 25 mph, and the recorded 85th percentile speeds were below or only 2 to 3 miles above the speed limit. It is typical of many speed studies to see average speeds that are 5 mph over the posted speed limit and 85th percentile speeds that are 10 to 15 mph over the speed limit. Based on the results of this speed study, it does not appear that additional traffic calming elements are required at this time.



John Q. Adams, PE, PTOE, Date: 08/25/2023

APPENDIX

Speed Study Data for Garsoe Dr, Hope Ave, and Curtis St

Study done by:	Street		Speed Limit	Location Description
JTasse	**Garsoe Dr,** on straight section		**25**	similar to Hope, narrow, 25' curved
DATE	between curves as marked on map			
7/27/23	NORTHBOUND	SOUTHBOUND		very few cars observed
Time	15	20		
5:30-6	20	15		4 Different residents mentioned a speed problem on Summit,
	13	25		
	18	18		
	15	27		
	25			
	18			

Study done by:	Street	City/Town	Speed Limit	Location Description
J Tasse	**Hope Ave**	**Portland**	**25**	
DATE				
7/27/23	East BOUND	West BOUND		very few vehicles observed on street
Time	17	14		much narrower street (25'?) curved
4:55-5:30	18	30		
		22		
				residents thanked me for doing speed study;

Study done by:	Street		Speed Limit	Location Description
JTasse	**Curtis St,** just north of Wendy Lane.		**25**	Wide residential street 30+ feet?
DATE				
7/27/23	NORTHBOUND	SOUTHBOUND		
Time	26	22		
4:15-4:50	29	23		
	21	24		
	24	23	3 residents thanked me for doing speed study; claimed	
	24	23		
	27	17		
	27	25		
	27	22		
	27	23		
	24	30		
	23	24		
	26	19		
	30	29		
	24	29		
	20	24		
	18	27		
	22			
	24			
	24			
	23			
	28			
	23			
	25			
	25			
	23			
	25			
	25			
	25			
	25			

PHOTO EXHIBIT FOR ADA FACILITY COMPLIANCE

Photo No. 1 **Photo Date:** 10/24/23 **Site Location:** Entrance to Garsoe Drive from Auburn Street **Description:** The tipdowns to the intersection do not contain detectable pads, and are in excess of 10% slope. **Photo By:** Andrew Godfrey, EIT	

Photo No. 2 **Photo Date:** 10/24/23 **Site Location:** Garsoe Drive **Description:** Looking down the 6-7% slope hill at the beginning of Garsoe Drive. **Photo By:** Andrew Godfrey, EIT	

PHOTO EXHIBIT FOR ADA FACILITY COMPLIANCE

Photo No. 3 **Photo Date:** 10/24/23 **Site Location:** End of Garsoe Drive **Description:** Looking up the 8-9% grade hill on Garsoe Drive **Photo By:** Andrew Godfrey, EIT	

Photo No. 4 **Photo Date:** 10/24/23 **Site Location:** Intersection of Alice Street and Hope Lane **Description:** A typical tipdown at an intersection in excess of 10% grade. **Photo By:** Andrew Godfrey, EIT	

Presumpscot Woods
0 Hope Ave., Portland, Maine
Soils Report

A medium-intensity soils report has been provided for this development, (see attached.) According to the USDA Soils Map of the project area, soils are mainly sandy loams and are not anticipated to have a negative impact on the structural integrity of the project, or the ability to manage stormwater runoff.

A Class B high-intensity soils survey was performed for this site in Summer 2024. The results of this survey do not suggest any soils-related limitations on the development.

S.W.COLE ENGINEERING, INC.

REPORT

23-1728 S

February 14, 2024

Explorations and Geotechnical Engineering Services

Proposed Road Embankment
Presumpscot Woods Subdivision
"0" Hope Avenue
Portland, Maine

Prepared For:
GenX Capital Partners
Attention: Mark McClure
2 Cotton Street
Portland, ME 04101

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, ME 04039
T: 207-657-2866

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Appendix A Limitations
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23-1728 S

February 14, 2024

GenX Capital Partners
Attention: Mark McClure
2 Cotton Street
Portland, ME 04101

Subject: Explorations and Geotechnical Engineering Services
Proposed Road Embankment
Presumpscot Woods Subdivision
"0" Hope Avenue
Portland, Maine

Dear Mark:

In accordance with our Proposal, dated December 19, 2023, we have performed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations and earthwork associated with the proposed construction. Our scope of services included test boring and probe explorations, a geotechnical analysis of the subsurface findings, and preparation of this report.

1.2 Site and Proposed Construction

The site is located at "0" Hope Avenue, west of Basket Lane, in Portland, Maine and is comprised of an undeveloped wooded parcel. Existing terrain includes relatively flat and level uplands separated by an erosional gully which is up to about 25 feet deep and conveys an unnamed streamflow. Some gravel and cobbles are visible in the existing

stream channel. Existing grades at the subject site range from about elevation 60 to 85 feet (project datum).

We understand development plans include a new housing subdivision which will be accessed from a proposed roadway crossing the existing erosional gully, requiring a new fill embankment up to about 20 feet high. The fill embankment is currently proposed with 1H:1V side slopes. A 6-foot high, 6-foot wide, 72-foot long concrete box culvert is proposed to convey existing streamflow beneath the proposed embankment.

Proposed and existing site features are shown on the "Exploration Location Plan" attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Three test borings (B-1 through B-3) and one auger probe (P-1) were made at the site on January 29, 2024 by Northern Test Boring, Inc. of Gorham, Maine working under subcontract to S. W. Cole Engineering, Inc. (S.W.COLE). The exploration locations were selected by S.W.COLE in conjunction with Shinberg Consulting (Owner's Representative) and located by S.W.COLE using a mapping grade GPS. The approximate exploration locations are shown on the "Exploration Location Plan" attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.2 Testing

The test borings were drilled using hollow-stem augers and the probe was drilled using solid-stem augers. The soils were sampled at 2-to-5-foot intervals in the borings using a split spoon sampler and Standard Penetration Testing (SPT) methods. Pocket Penetrometer Tests (PPT) were performed where stiffer cohesive soils were encountered. SPT blow counts and PPT results are shown on the logs. Soil samples obtained from the explorations were returned to our laboratory for further visual classification.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Underlying a surficial layer of forest duff and topsoil, the test borings encountered a subsurface profile generally consisting of glaciomarine sands, silts, and clays, overlying glacial outwash and refusal surfaces. An alluvial deposit of sand and silt with organics was encountered in boring B-1 at the bottom of the gully. The principal soils encountered at the explorations are summarized below. Not all of the strata were encountered at each exploration; refer to the attached logs for more detailed subsurface information.

Alluvial Deposits: Below a thin layer of topsoil and forest duff, boring B-1 at the bottom of the gully, encountered an alluvial deposit of loose sand and silt with organics.

Glaciomarine Deposits: Underlying surficial layers of forest duff and topsoil, and alluvial deposits, the borings encountered glaciomarine soils.

In higher elevations at the top of the gully (B-2 and B-3), these glaciomarine soils generally consisted of an upper “crust” of stiff brown silty clay and medium dense silty sand. At boring B-3, the upper “crust” transitioned to a layer of softer gray silty clay below a depth of about 15.5 feet below ground surface (bgs). Boring B-3 was terminated in the softer gray silty clay at a depth of 17 feet.

In lower elevations at the bottom of the gully (B-1), these glaciomarine soils consisted of layered, loose silt and fine sand and soft gray silty clay with frequent sand seams and layers extending to a depth of about 4 feet bgs.

Glacial Outwash Deposits: Underlying the glaciomarine deposits, where penetrated, the borings encountered up to about 2 feet of glacial outwash deposits consisting of loose to medium dense silty sand with varying portions of gravel.

Refusal Surfaces: Underlying the glacial outwash, borings B-1 and B-2 encountered refusal surfaces (probable bedrock) at depths of about 6 and 21 feet bgs. Auger probe P-1 encountered a refusal surface at a depth of about 6 feet bgs.

3.2 Groundwater

The soils encountered at the test borings were generally moist to wet from the ground surface. Saturated soils were encountered below a depth of about 2 feet bgs in boring B-1, made towards the bottom of the gully. Saturated soils were encountered below depths of about 15 feet bgs in borings B-2 and B-3, made towards the top of the gully. Groundwater likely becomes perched on the relatively impervious silty clay and outwash encountered in the test borings. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to the stream level, periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- Test boring B-1, made towards the bottom of the gully, encountered surficial organics and relatively soft alluvial and glaciomarine sediments (loose silt and sand and soft gray silty clay) overlying glacial outwash and a relatively shallow refusal surface (probable bedrock). The organics and sediments are compressible and should be removed from beneath the proposed embankment and box culvert, to expose undisturbed glacial outwash or sound intact bedrock prior to placing new embankment fill and culvert bedding materials, as discussed herein.

- In our opinion, proposed 1H:1V embankment slopes are unstable against failure and sloughing. We recommend consideration be given to flattening slopes to 2H:1V or flatter. Slopes steeper than 2H:1V will need to be designed as reinforced slopes with engineered face treatments and internal geotextile reinforcement.

- Based on the subsurface findings and provided the recommendations for subgrade preparation and side slope inclinations of 2H:1V or flatter as presented herein are followed, the proposed embankment should be adequately stable against a deep rotational global failure.

- Depending on the final design elevations, some bedrock removal may be required for installation of the proposed box culvert.

- Subgrades at the site will consist of sensitive silts and clays. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native soils. Excavation of bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.

4.2 Global Stability and Slope Considerations

Provided the organics, alluvial deposits, and glaciomarine sediments (loose sands and silts and soft gray silty clay) are removed and replaced from beneath the proposed embankment and box culvert. In our opinion, proposed 1H:1V embankment sideslopes are unstable against failure and sloughing. We recommend consideration be given to flattening embankment sideslopes to 2H:1V or flatter. Sideslopes steeper than 2H:1V will need to be designed as reinforced slopes with engineered face treatments and internal geotextile reinforcement.

The proposed embankment slopes, regardless of slope inclination, will be susceptible to surface erosion, slumping, and sloughing especially during precipitation and freeze/thaw events. Vegetation should be established as soon as practicable over the slopes. Synthetic erosion control mesh may be required to reinforce the surface soils until vegetation is established.

4.3 Site and Subgrade Preparation

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil should be completely removed from areas of proposed fill and construction. As much vegetation as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

As discussed, boring B-1 made towards the bottom of the gully encountered surficial organics overlying alluvial and glaciomarine sediments (loose sands and silts and soft silty clay), overlying glacial outwash and a relatively shallow refusal surface (probable bedrock). We recommend the organics and alluvial and glaciomarine sediments be completely removed from beneath the proposed fill embankment and culvert to expose

undisturbed glacial outwash or sound intact bedrock. The limits of removal should extend at least 1 foot beyond the proposed toe of slope for each foot of overexcavation. Overexcavations should be backfilled with compacted Structural Fill.

Following removal and replacement of the unsuitable soils, the proposed embankment may be constructed with compacted Granular Borrow (for permanent embankment side slopes of 2H:1V or flatter). Embankment sideslopes steeper than 2H:1V will need to be designed as reinforced slopes with engineered face treatments and internal geotextile reinforcement.

The embankment should be constructed as level lifts that are laterally overbuilt to facilitate proper compaction. The final slope faces should be constructed by cutting back into the compacted core to final dimensions and elevations. We recommend benching into the native ground surface of the gully sidewall at 2-foot intervals during placement of embankment fills.

We recommend final excavation to subgrade for the proposed box culvert be made with a smooth-edged bucket. Loose and weathered bedrock, if encountered, should be removed from beneath the box culvert. We recommend at least 12 inches of compacted Crushed Stone wrapped in non-woven geotextile, such as Mirafi 180N or equivalent, be provided beneath the proposed box culvert.

4.4 Excavation and Dewatering

Excavation work will generally encounter surficial organics overlying alluvial deposits and glaciomarine sands, silts, and clays, overlying glacial outwash and refusal surfaces (probable bedrock). Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native soils when wet. Low ground pressure tracked equipment may be needed and temporary haul roads overlying geotextile fabric may be necessary. Final cuts to subgrade should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Based on the subsurface findings and depending on final finish grades, we anticipate bedrock removal may be required for installation of the proposed box culvert. We

recommend bedrock be removed by hydraulic hoe-ramming in lieu of blasting. Pre-construction surveys should be completed on surrounding structures, water supply wells and infrastructure prior to commencing blasting activities.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, water supply wells and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity.

Temporary stream diversion will be required during construction. Sumping and pumping dewatering techniques should be adequate to control groundwater in shallow excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.5 Foundations

We recommend the proposed box culvert be supported on at least 12-inches of compacted Crushed Stone fully wrapped in non-woven geotextile fabric, such as Mirafi 180N, bearing undisturbed glacial outwash soils or sound, intact bedrock, or compacted Structural Fill overlying undisturbed glacial outwash soils. We recommend the following geotechnical parameters for design consideration:

Geotechnical Parameters for Proposed Box Culvert	
Design Frost Depth (100 year AFI)	4.5 feet
Net Allowable Soil Bearing Pressure	3.0 ksf
Base Friction Factor	0.35
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	30°
Seismic Soil Site Class	C (ASCE-7)
Estimated Total Settlement	1-inch
Differential Settlement	½-inch

4.6 Fill, Backfill and Compaction

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Common Borrow: Fill to raise grades in landscape areas should be non-organic compactable earth meeting the requirements of 2020 MaineDOT Standard Specification 703.18 Common Borrow.

Granular Borrow: Fill to construct fill embankments with final slope inclinations of 2H:1V or flatter may consist of sand or silty sand meeting the requirements of 2020 MaineDOT Standard Specification 703.19 Granular Borrow. Granular Borrow for Underwater Backfill will be required over wet subgrades.

Structural Fill: Backfill for the box culvert and backfill for overexcavations should be clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

Crushed Stone: Crushed Stone, used beneath the box culvert foundation should be washed ¾-inch crushed stone meeting the requirements of 2020 MaineDOT Standard Specification 703.13 Crushed Stone ¾-Inch.

Reuse of Site Soils: The site soils are unsuitable for proposed fill embankment and roadway construction but may be suitable for reuse as Common Borrow in landscape areas, provided they are free of organics and are at a compactable moisture content at the time of reuse.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

4.7 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades and foundations must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.8 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork and foundation recommendations have been properly interpreted and implemented.

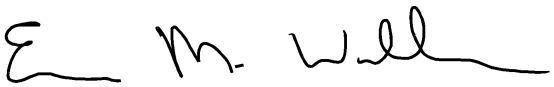
A construction materials testing and quality assurance program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities, the preparation of foundation bearing surfaces and pavement subgrades, as well as to provide testing inspection services for soils, concrete and asphalt construction materials.

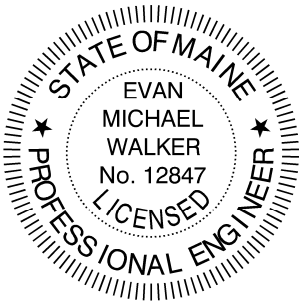
5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.





Evan M. Walker, P.E.
Senior Geotechnical Engineer

EMW:tjb

APPENDIX A

Limitations

This report has been prepared for the exclusive use of GenX Capital Partners for specific application to the proposed Access Road Embankment associated with the Presumpscot Woods Subdivision at 0 Hope Avenue in Portland, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

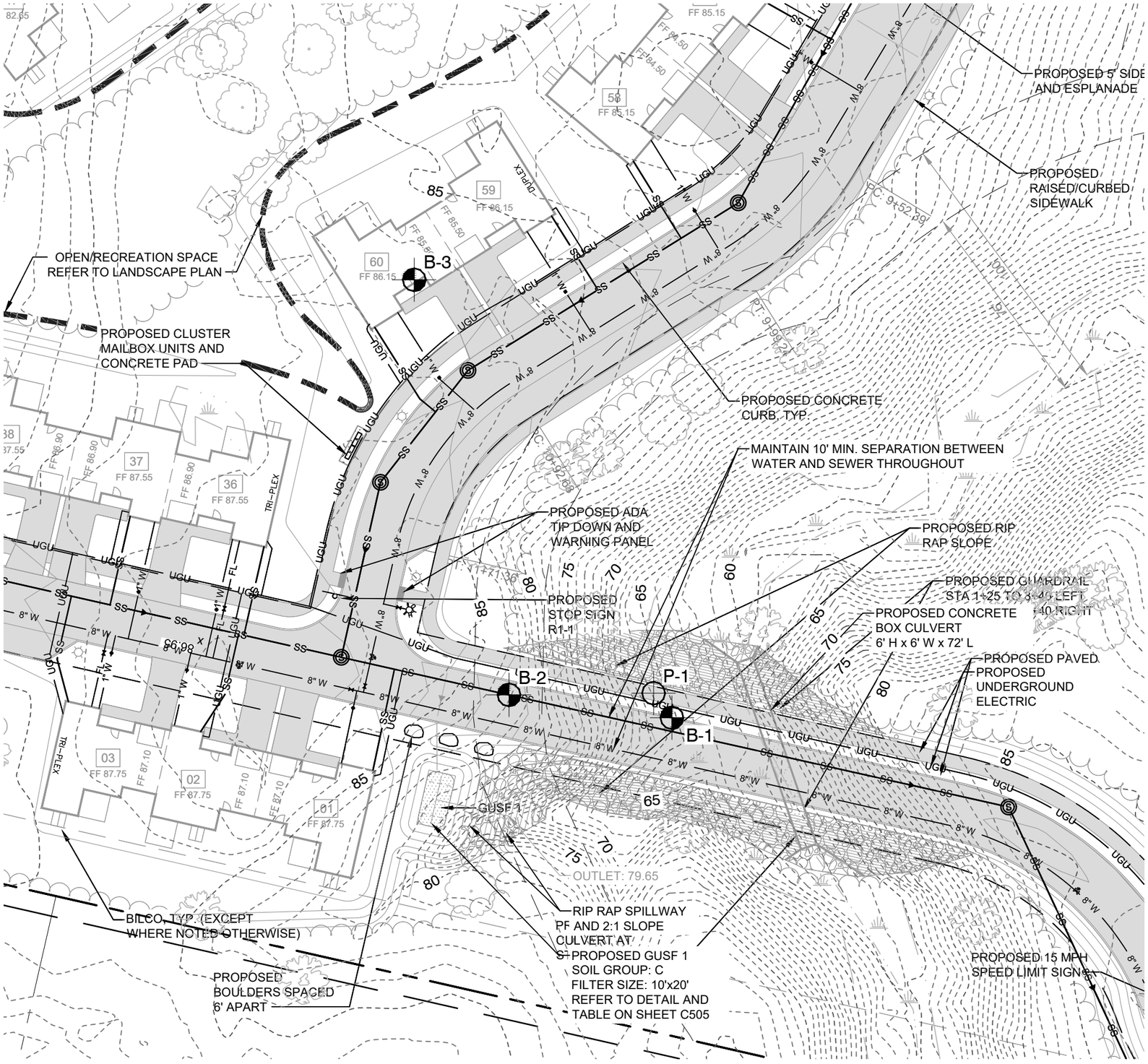
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures



LEGEND:

- APPROXIMATE BORING LOCATION
- APPROXIMATE PROBE LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=40' SCALE PLAN OF THE SITE TITLED "UTILITIES PLAN," PREPARED BY HALEY WARD, DATED 8/29/2022, REVISED 10/27/2023.
2. THE EXPLORATIONS WERE LOCATED IN THE FIELD BY S. W. COLE ENGINEERING, INC. USING A MAPPING GRADE GNSS GPS RECEIVER.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 40 80 Feet

S.W.COLE ENGINEERING, INC.

GENX CAPITAL PARTNERS

EXPLORATION LOCATION PLAN

PROPOSED ROADWAY EMBANKMENT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

Job No.:	23-1728	Scale:	1" = 40'
Date :	02/14/2024	Sheet:	1

R:\2023\23-1728\CAD\Drawings\23-1728 ELP.dwg, 2/14/2024 2:52:49 PM, CEM, S. W. Cole Engineering, Inc.

APPENDIX C

Exploration Logs and Key

BORING LOG

BORING NO.:	**B-1**
SHEET:	1 of 1
PROJECT NO.	23-1728
DATE START:	1/29/2024
DATE FINISH:	1/29/2024

CLIENT: GenX Capital Partners
PROJECT: Proposed Presumpscot Woods Subdivision Road Embankment
LOCATION: 0 Hope Avenue, Portland, ME

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 65' +/- **TOTAL DEPTH (FT):** 5.8 **LOGGED BY:** Evan Walker
DRILLING CO.: Northern Test Boring, Inc. **DRILLER:** Mike Nadeau **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** N/A
HAMMER CORRECTION FACTOR: **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 2 ft Soils Wet from Surface, Saturated Below 2' +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/15	1-1-2-1			0.4 Forest Duff / Topsoil Loose, gray, SILT AND FINE SAND, with silty seams, trace organics	▽	
			2D		2-4	24/16	1-1/12"-4			2.0 Soft, gray, silty CLAY, with frequent sand seams and layers		
										3.6 Loose to medium dense, gray, silty SAND AND GRAVEL		
60	5		3D	☒	5-5.3	4/4	50/4"			5.3 Probable Weathered Bedrock		

Refusal at 5.8 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-1**

BORING / WELL 10-12-2022 23-1728.GPJ SWCE TEMPLATE.GDT 2/14/24

BORING LOG

BORING NO.: B-2
SHEET: 1 of 1
PROJECT NO. 23-1728
DATE START: 1/29/2024
DATE FINISH: 1/29/2024

CLIENT: GenX Capital Partners
PROJECT: Proposed Presumpscot Woods Subdivision Road Embankment
LOCATION: 0 Hope Avenue, Portland, ME

Drilling Information

LOCATION: See Exploration Location Plan | **ELEVATION (FT):** 83' +/- | **TOTAL DEPTH (FT):** 20.7 | **LOGGED BY:** Evan Walker
DRILLING CO.: Northern Test Boring, Inc. | **DRILLER:** Mike Nadeau | **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 | **AUGER ID/OD:** 2 1/4 in / 5 5/8 in | **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic | **HAMMER WEIGHT (lbs):** 140 | **CASING ID/OD:** N/A /N/A | **CORE BARREL:** N/A
HAMMER CORRECTION FACTOR: | **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 15 ft Soils Moist to Wet from Surface, Saturated Below 15' +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
			1D		0-2	24/18	1/12"-2-3			0.3 Forest Duff / Topsoil Loose, brown, clayey SILT, with roots and organics 1.5 Very stiff to stiff, brown, silty CLAY		
80												
	5		2D		5-7	24/22	4-6-10-19	q_P=7-9 ksf				
75												
	10		3D		10-12	24/24	4-3-4-4	q_P=2-6 ksf				
70												
	15		4D		15-17	24/18	5-7-6-4	q_P=1.5-2 ksf			▽	
										16.0 Medium dense, gray-brown to gray, silty fine SAND		
65												
	20		5D		20-20.8	9/5	2-50/3"			20.0 Loose, gray, silty SAND, some gravel 20.5 Probable Weathered Bedrock Refusal at 20.7 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: B-2

BORING / WELL 10-12-2022 23-1728.GPJ SWCE TEMPLATE.GDT 2/14/24

BORING LOG

BORING NO.:	**B-3**
SHEET:	1 of 1
PROJECT NO.	23-1728
DATE START:	1/29/2024
DATE FINISH:	1/29/2024

CLIENT: GenX Capital Partners
PROJECT: Proposed Presumpscot Woods Subdivision Road Embankment
LOCATION: 0 Hope Avenue, Portland, ME

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 86' +/- **TOTAL DEPTH (FT):** 17.0 **LOGGED BY:** Evan Walker
DRILLING CO.: Northern Test Boring, Inc. **DRILLER:** Mike Nadeau **DRILLING METHOD:** Hollow Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** 2 1/4 in / 5 5/8 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** N/A
HAMMER CORRECTION FACTOR: **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft): ▽ 15 ft Soils Moist to Wet from Surface, Saturated Below 15' +/-
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_U = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
85			1D		0-2	24/18	1/12"-1-5			0.3 Forest Duff / Topsoil Loose, dark brown, clayey SILT, with roots and organics 1.5 Loose, brown, clayey SILT, some fine sand, with roots 3.0 Very stiff to stiff, brown, silty CLAY, with occasional sand seams		
80	5		2D		5-7	24/22	4-6-10-12	q_P=9 ksf				
75	10		3D		10-12	24/24	3-4-6-7	q_P=4-5 ksf				
70	15		4D		15-17	24/24	2-2-3-3	q_P=0.5-1 ksf		15.5 Medium, gray, silty CLAY	▽	

Bottom of Exploration at 17.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: **B-3**

BORING / WELL 10-12-2022 23-1728.GPJ SWCE TEMPLATE.GDT 2/14/24

BORING LOG

BORING NO.: P-1
SHEET: 1 of 1
PROJECT NO. 23-1728
DATE START: 1/29/2024
DATE FINISH: 1/29/2024

CLIENT: GenX Capital Partners
PROJECT: Proposed Presumpscot Woods Subdivision Road Embankment
LOCATION: 0 Hope Avenue, Portland, ME

Drilling Information

LOCATION: See Exploration Location Plan **ELEVATION (FT):** 66' +/- **TOTAL DEPTH (FT):** 5.6 **LOGGED BY:** Evan Walker
DRILLING CO.: Northern Test Boring, Inc. **DRILLER:** Mike Nadeau **DRILLING METHOD:** Solid Stem Auger
RIG TYPE: Track Mounted Diedrich D-50 **AUGER ID/OD:** N/A / 4 1/2 in **SAMPLER:** Standard Split-Spoon
HAMMER TYPE: Automatic **HAMMER WEIGHT (lbs):** 140 **CASING ID/OD:** N/A /N/A **CORE BARREL:** N/A
HAMMER CORRECTION FACTOR: **HAMMER DROP (inch):** 30
WATER LEVEL DEPTHS (ft):
GENERAL NOTES:

KEY TO NOTES AND SYMBOLS:
Water Level: ▽ At time of Drilling; ▼ At Completion of Drilling; ▼ After Drilling
D = Split Spoon Sample; U = Thin Walled Tube Sample; R = Rock Core Sample; V = Field Vane Shear
Pen. = Penetration Length; Rec. = Recovery Length; bpf = Blows per Foot; mpf = Minute per Foot
WOR = Weight of Rods; WOH = Weight of Hammer; RQD = Rock Quality Designation; PID = Photoionization Detector
S_v = Field Vane Shear Strength, kips/sq.ft.; q_u = Unconfined Compressive Strength, kips/sq.ft.; Ø = Friction Angle (Estimated); N/A = Not Applicable

Elev. (ft)	Depth (ft)	Casing Pen. (bpf)	SAMPLE INFORMATION: Sample No.	Type	Depth (ft)	Pen./ Rec. (in)	Blow Count or RQD	Field / Lab Test Data	Graphic Log	Sample Description & Classification	H_20 Depth	Remarks
65	0									No Sampling - Auger Probe		
	5									Refusal at 5.6 feet Probable Bedrock		

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

BORING NO.: P-1

BORING / WELL 10-12-2022 23-1728.GPJ SWCE TEMPLATE.GDT 2/14/24

KEY TO NOTES & SYMBOLS

Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

CLASS B – HIGH INTENSITY SOIL SURVEY

Presumpscot Woods Subdivision
0 Hope Avenue
Portland, Maine

FOR

Shinberg Consulting, LLC
181 State Street
Portland, ME 04101

August 8, 2024
JN: 13773.001

Report Prepared By:
Haley Ward, Inc.
One Merchants Plaza, Suite 701 | Bangor, Maine 04401

Corporate Office
One Merchants Plaza
Suite 701
Bangor, ME 04401
T: 207.989.4824
F: 207.989.4881

HALEYWARD.COM

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APPENDICES

Appendix A Class B High Intensity Soil Survey Map

Appendix B Soil Conditions Summary Table and Test Pit Logs

Appendix C Soils Map Unit Descriptions

Appendix D Glossary of Soil Science Terms

CLASS B – HIGH INTENSITY SOIL SURVEY
Presumpscot Woods Subdivision, Portland, Maine

1.0 | INTRODUCTION

Haley Ward, Inc. (Haley Ward) has completed a Class B – High Intensity Soil Survey for the proposed Presumpscot Woods Subdivision (the Project) located at 0 Hope Avenue (the Site) in Portland, Maine. The Site is the location of a proposed residential subdivision on the parcel identified by the City of Portland as Parcel ID 448 A001001. The following report describes the observations and findings of this Soil Survey on the Project area which consists of an approximately 13.8-acre parcel described above.

2.0 | PURPOSE

The purpose of our work was to identify, describe, and map the major soil types in the Project area in support of a proposed residential subdivision. This report and associated plans will be used to supplement other information required by regulatory agencies in their review of this project. The information provided in this report should also assist in evaluating the suitability of the Project area for the proposed project and indicate the relative suitability of the soils for the proposed improvements, including residential building locations and engineered stormwater control features. If limitations related to soils exist, measures to overcome these are reviewed in this report.

3.0 | METHODOLOGY

As required by the City of Portland, a Class B – High Intensity Soil Survey was completed for the Project area. This soil survey, report, and attached plans were completed in accordance with the Maine Association of Professional Soil Scientists (MAPSS) Mapping Standards. As defined in these Standards, the standards associated with this soil survey are as follows.

3.1 Soil Survey Standards Class B – High Intensity Soil Survey

1. Map units may contain dissimilar limiting individual inclusions larger than one acre. Dissimilar limiting inclusions may total more than one acre in the aggregate if not contiguous.
2. Scale of one-inch equals 200 feet or larger.
3. Ground control – base line and test pits for which detailed data are recorded and located to sub-meter accuracy under the direction of a qualified professional.
4. Base map with five-foot contour intervals.

This soil survey is a compilation of on-site investigations performed on the Project area and soil survey data published by the USDA – Natural Resource Conservation Service (NRCS) for Cumberland County.

3.2 Field Methodology

Prior to the field work completed on the site, Haley Ward reviewed available information about the Project area. This data included Project area surveys, wetland data, and online publicly available data such as wetland data through the US Fish and Wildlife Service's National Wetlands Inventory Mapping, soils mapping information available through the NRCS, and surficial geology information available from the Maine Geological Survey.

Field work for the soil survey was completed on June 19 and 20, 2024. In total, 16 test pits were dug and described. Twelve test pits were dug with an excavator and four test pits were dug by hand in areas inaccessible to the excavator.

Test pit locations were selected based upon observed changes in relief, vegetation, and landform as well as based on location of proposed improvements. Soil properties such as texture, structure, color, consistence, and coarse fragment content were described when they could be observed within a test pit. Test pit characteristics such as depth to restrictive horizon(s), depth to seasonal high-water table, depth of rooting, and depth to bedrock were described for each test pit, if observed. Soils were correlated to the nearest match soil series established by the NRCS in the National Cooperative Soil Survey. In addition, the Field Indicators of Hydric Soils in the United States published by the National Technical Committee for Hydric Soils (NTCHS) was used for guidance on hydric soils.

Test pit locations and other site features were located using a sub-meter capable GPS unit and are shown on the Soil Survey Plan which is included in **Appendix B**. A Soil Conditions Summary Table and Test Pit Logs are included in **Appendix C**.

4.0 | SITE DESCRIPTION

The Project is located north of Hope Avenue in Portland, Maine (see Site location inset in **Appendix A**). The Project area is an approximately 13.8-acre, undeveloped wooded terrace along the top and shoulder slopes of a moderate, linear, slope to the Presumpscot River.

According to surficial geology data available from the Maine Geological survey, surficial materials in the Project area consist of the Presumpscot Formation which is described as consisting of silt, clay, and minor sand deposited on the sea floor during the late-glacial marine submergence. Within the Project area the landscape consists of a relatively flat terrace with steep slopes off the project area to the east leading to the Presumpscot River. Also within the Project area is a steep slope to an unnamed tributary to the Presumpscot River.

4.1 Soil Characteristics

The soils observed on-site are generally deep, fine-loamy soils that are formed from the glacimarine sediments deposits of the Presumpscot Formation. These soils are the Buxton-

Lamoine-Scantic catena and the Nicholville-Roundabout catena. The Lamoine series soil is the somewhat poorly drained soil that dominates the soil observed in test pits on the Project area. The related Scantic soil, which is poorly drained, is the hydric soil observed and mapped in the wetlands on the Project area. Moderately well drained Buxton soils were observed as well, on east-facing hillslopes on the eastern boundary of the Project area. The closely related Nicolville and Roundabout soil series were also observed and described on the Project area. These soils have a higher silt content than the related Buxton-Lamoine-Scantic catena. They are deep (greater than 60 inches to bedrock), silt loam textured at the surface, and transition to silty clay loam, sometimes with thin layers of sand, in the substratum. These series are made up of fine-grained material which tend to percolate slowly. Complexes of Lamoine-Buxton and Lamoine-Roundabout were mapped where the areas of each soil occurred such that they could not be separated at the scale of mapping.

One area of Elmwood soils was mapped in the northern portion of the Project area. As contrasted with the soils described above, the Elmwood series has sandy-textured soils in the upper horizons, then transitions to silt loam in the substratum. Elmwood soils are deep and moderately well drained.

As compared with the USDA-NRCS Cumberland County soil map for the project area, which mapped the Project area as dominated by Elmwood, Windsor, Hinckley-Suffield complex and Suffield series soils, Haley Ward observed soils that are generally finer textured and more poorly drained than the series mapped by USDA-NRCS. However, the soils observed and mapped on the Project area by Haley Ward are similar in parent material, texture and general properties as those mapped by USDA-NRCS. The remaining soils mapped by USDA-NRCS are Elmwood, Scantic, and Lamoine series soils, which were observed and mapped on the Project area.

4.2 Soil and Map Unit Descriptions

A Class B – High Intensity Soil Survey Plan is included in **Appendix A**, and illustrates our interpretation of the type, location, and extent of the soils observed on the Project area. Each map unit symbol consists of three letters (e.g., LaB). The first two letters represent the soil series (described above) and phase which is a differential commonly based on surface texture, stoniness, drainage, or similar characteristics that affect the use and management of the soil. The third letter in the map unit symbol indicates the surface slope of the area within the map unit (e.g., B slope – 3 to 8 percent slopes). The area within the map unit delineation defines an area that is estimated to be the same soil type. There may be small areas of slightly differing soils, called inclusions, which exist within the map unit delineated. As defined by MAPSS for a Class B soil survey, these map units may contain dissimilar limiting individual inclusions larger than one-acre. Descriptions of each map unit are included in **Appendix C**. Map unit descriptions include a description of a typical soil description, as well as information on physical properties and related interpretations. The physical properties and interpretations are from the USDA-NRCS. A soils glossary is included in **Appendix D**.

5.0 | FINDINGS

Based on the proposed development and the soils that we mapped on-site, the soils on-site are generally suitable for the proposed development. Limitations exist in the Buxton, Lamoine, Scantic soils series as related to fine textured soils percolating slowly resulting in a relatively high seasonal high-water table. These soils have high potential for frost action and a relatively high seasonal water table. These limitations are a consideration for the design and construction of roads, underground utilities, foundations, and drainage structures.

Limiting conditions are associated with the hydric soil, Scantic, and associated wetlands. These areas have been reviewed and mapped as wetlands where the regulatory criteria have been met. Where limitations associated with wetlands and hydric soils are present, these limitations were mitigated by avoidance and minimization. Where these areas could not be avoided, the applicable permitting has been completed and limitations are overcome with proper design based on the soil's conditions. Additional limiting factors related to soils, such as indications of shallow bedrock, were not identified during our field work. Additional discussion of use and management considerations associated with these soils series is described in **Appendix D**.

The scope of this work has been limited to the development of a Class B – High Intensity and Soil Survey in general accordance with the standards established by the Maine Association of Professional Soil Scientists. This report has been prepared for Shinberg Consulting, LLC for specific application to the proposed residential subdivision in Portland, Maine. The conclusions and recommendations presented in this report are based on our interpretations of the data obtained from the explorations and are in part based upon the proposed development.

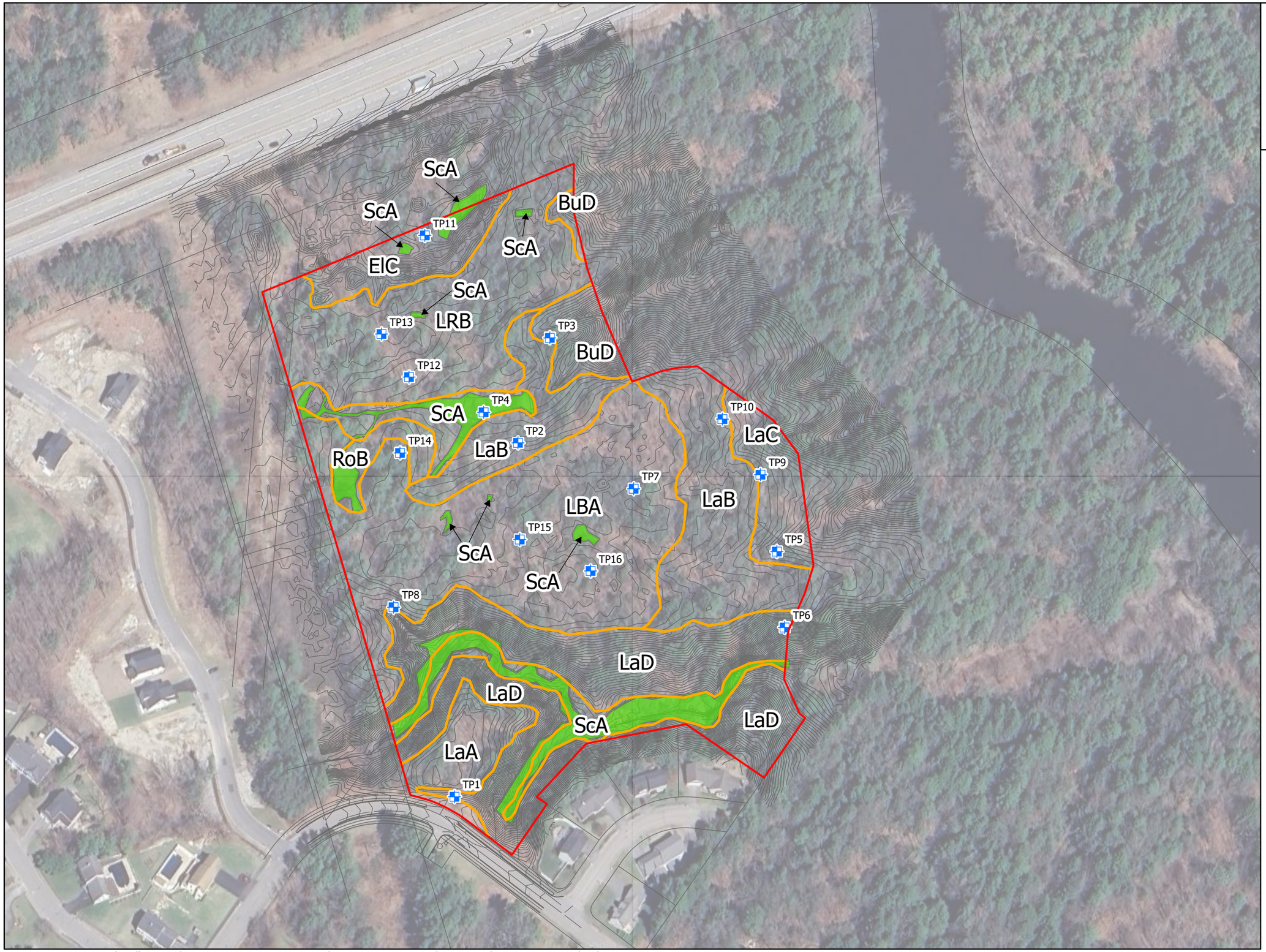
The accompanying soil profile descriptions, soil survey map, and this report were completed in accordance with the standards for a Class B – High Intensity Soil Survey adopted by the Maine Associations of Professional Soil Scientists (February 2004, revised March 2009), as amended, and prepared by Johanna E. Szillery, L.S.S. #494.

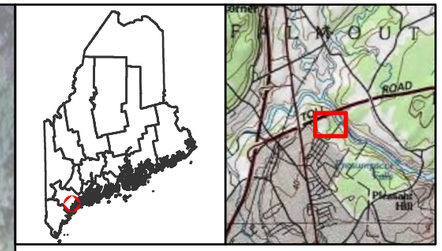


Johanna E. Szillery, L.S.S. #494, Senior Project Scientist

APPENDIX A

CLASS B – HIGH INTENSITY SOIL SURVEY MAP





Legend

- Site Boundary
- Test Pits
- Soil Map Unit Boundary
- Wetland
- Contours_1ft

CLASS B – HIGH INTENSITY SOIL SURVEY
SOIL SURVEY LEGEND
HOPE AVE, PORTLAND, MAINE

MAP UNIT SYMBOL	MAP UNIT NAME
BuD	Buxton silt loam, 15 to 35 percent slopes
EIC	Elmwood sandy loam, 3 to 15 percent slopes
LBA	Lamoine-Buxton Complex, 0 to 3 percent slopes
LaB	Lamoine Silt Loam, 3 to 8 percent slopes
LaC	Lamoine Silt Loam, 8 to 15 percent slopes
LaD	Lamoine Silt Loam, 25 to 45 percent slopes
LRB	Lamoine-Roundabout Complex, 0 to 8 percent slopes
RoB	Roundabout Silt Loam, 3 to 8 percent slopes
ScA	Scantic Silt Loam, 0 to 3 percent slopes

1.This soil survey plan and the map unit delineations meet the Maine Association of Professional Soil Scientists' (MAPSS) Guidelines for a Class B – High Intensity Soil Survey as described in the publication entitled Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping (February 2004, Rev March 2009).

2.Test pit locations, control points, and other features were located using a sub-meter GPS.

3.This map should be used and interpreted with the accompanying Soil Survey Report, titled "Class B – Medium High Intensity Soil Survey, Presumpscot Woods Subdivision, 0 Hope Avenue, Portland, Maine" by Johanna Szillery, LSS #494, and dated August 8, 2024.

4. Natural resource survey depicted on this plan was provided by Flycatcher, LLC based on field surveys completed in July 2022

0 75 150 Feet

1 inch equals 150 feet

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
1 Merchants Plaza, Suite 701
Bangor, ME 04401
WWW.HALEYWARD.COM 207-989-4824

CLIENT	SHINBERG CONSULTING
PROJECT	HOPE AVENUE DUPLEXES
TITLE	CLASS B-SOIL SURVEY MAP
DATE	8/8/2024
PROJECT No.	13773.001
DRAWN BY	KOVERTURF
SCALE	1" = 150 '

© OpenStreetMap (and) contributors, CC-BY-SA, Copyright:© 2013 National Geographic Society, i-cubed

APPENDIX B

SOIL CONDITIONS SUMMARY TABLE AND TEST PIT LOGS

FORM E Rev. 7/21

SOIL CONDITIONS SUMMARY TABLE

SUMMARY LOG OF SUBSURFACE EXPLORATIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Hope Ave Duplexes	Shinberg Consulting	Portland, Maine

Lot No.	Exploration Symbol (TP 1, B 2, etc.)	✕ if at SSWD Field	Description of subsurface materials by: ● Soil profile/condition (if by S.E.), ● Soil series name (if by S.S.), or by ● Geologic unit (if by C.G.)	Depths to (inches): Redoximorphic Features	Bedrock	Hydraulically Restrictive Layer	Limit of Exploration	Ground Surface Slope (%)	Ground Surface Elevation
	TP1	☐	Lamoine Silt Loam	13	-	13	100		
	TP2	☐	Lamoine Silt Loam	14	-	14	25		
	TP3	☐	Buxton Silt Loam	20	120	30	120		
	TP4	☐	Scantic Mucky Silt Loam	4	-	18	25		
	TP5	☐	Lamoine Silt Loam	15	-	15	100		
	TP6	☐	Lamoine Silt Loam	13	-	23	60		
	TP7	☐	Nicholville Silt Loam	18	-	18	84		
	TP8	☐	Lamoine Silt Loam	14	-	20	72		
	TP9	☐	Buxton Silt Loam	16	-	24	78		
	TP10	☐	Lamoine Silt Loam	14	-	22	72		
	TP11	☐	Elmwood Sandy Loam	17	-	32	34		
	TP12	☐	Lamoine Silt Loam	13	-	10	58		
	TP13	☐	Roundabout Silt Loam	11	-	22	68		
	TP14	☐	Roundabout Silt Loam	12	-	26	70		
	TP15	☐	Lamoine Silt Loam	14	-	14	48		
	TP16	☐	Buxton Fine Sandy Loam	20	-	20	24		
		☐							
		☐							
		☐							
		☐							
		☐							
		☐							
		☐							
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		☐							
		☐							
		☐							
		☐							

INVESTIGATOR INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna S Szillery
Name Printed

☐ Site Evaluator
☒ Soil Scientist
☐ Geologist
☐ Professional Engineer

7/31/2024
Date

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License No.

STATE OF MAINE
JOHANNA E. SZILLERY
NO. SS494
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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave | Applicant Name: Stinson Consulting | Project Location (municipality): Portland

TP1

Exploration Symbol # TP1 ☒ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

100 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	2.5Y4/4	sil o	sbk→ gran	fr	ø
A2	2.5Y5/4	↓	↓		
	5Y4/2	sicl o	prz	firm	ped face
C1					5Y 2.5/1
C2			massive	firm (saturated)	none

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 18 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

TP2

Exploration Symbol # TP2 ☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. _____

25 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR4/2	sil o	gran	vfr	none
Bw	10YR5/3	↓	↓	fr	
BC	2.5Y 5/1	sicl o	sbk→ gran	firm	10YR 5/6

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 14 " Depth ☒ Groundwater ☒ Restrictive Laye ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

TP3

Exploration Symbol # TP3 ☒ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

126 " Depth: ☐ of exploration, or ☒ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR 3/2	sil o	gran	vfr	ø
Bw	2.5Y 4/2	↓	sbk→ gran	↓	
Bw2	2.5Y 4/2	↓	sbk	fr	10YR 3/4
BC	2.5Y 3/2	sicl o	mass	firm	2.5Y 4/3
	2.5Y 4/3 + fine sand layers @ 160"				10YR 4/4
	bedrock @ 126"				

Soil Series/Phase Name: Buxton Silt Loam

Limiting Factor: 20 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

TP4

Exploration Symbol # TP4 ☒ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

25 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	2.5Y 3/2	m. sil o	sbk	fr	none
B	5Y 5/2	sil o	sbk	fr	10YR 4/6
	↓	↓	↓	↓	↓
BC	2.5Y 4/2	sicl o	sbk	firm	2.5Y 5/1 10YR 4/4

Soil Series/Phase Name: Scantic Mucky Silt Loam

Limiting Factor: 4 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group: _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szilley
Signature

Johanna Szilley
Name Printed

7/31/2024
Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave | Applicant Name: Shinberg Consulting | Project Location (municipality): Portland Maine

Exploration Symbol # TP5 — ☒ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

100 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR2/2	silo	gran	vfr	
Bw1	2.5Y4/4	↓	↓	↓	none
Bw2	↓	↓	abk pbk	fr	↓
BC	5Y5/2	silo	abk	firm	2.5Y 4/4
C	5Y4/2	sicl o	massive → lg abk	↓	10YR 4/4

Depth below mineral soil horizon *(inches)*

Soil Details ▶▶

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 15 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Exploration Symbol # TP6 — ☒ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

60 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR3/2	silo	gran	vfr	none
Bw1	10YR4/2	↓	↓	↓	
Bw2	2.5Y5/3	↓	abk	fr	10YR 3/6
BC	2.5Y4/2 w/ 2.5Y 4/4	sicl o	massive	firm	10YR 2/2

Depth below mineral soil horizon *(inches)*

Soil Details ▶▶

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 13 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave | Applicant Name: Stinebury Consulting | Project Location (municipality): Portland

Exploration Symbol # TP7 — ☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. _____

84 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
BS	10YR 4/6	silo	gran	vfr	ø
BW	2.5Y 4/4	↓	abk→gran	fr	↓
BC	2.5Y 4/3	↓	platy	firm	2.5Y 5/2
C	2.5Y 4/2	↓	massive	firm	10YR 3/4
		↓	↓	↓	2.5Y 5/2

Depth below mineral soil horizon (inches)

Soil Details

Soil Series/Phase Name: Nicholville Silt Loam

Limiting Factor: 18 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Exploration Symbol # TP8 — ☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. _____

72 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bw	2.5Y 5/3	silo	gran	vfr	ø
Bw2	2.5Y 4/2	↓	platy	fr	↓
					2.5Y 6/2
BC	5Y 4/2	silo	massive	firm	10YR 4/4

Depth below mineral soil horizon (inches)

Soil Details

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 14 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave | Applicant Name: Stinburg Consulting | Project Location (municipality): Portland

Exploration Symbol # TP9 — ☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. _____

78 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	10YR 3/4	silo	gran	v fr	ø
Bs	10YR 3/6				
BW	2.5Y 4/4		abk		
BC	5Y 4/2	sicl		fr firm	10YR 3/4
C			massive		10YR 4/4
					assumed

Soil Series/Phase Name: Buxton Silt Loam

Limiting Factor: 16 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Exploration Symbol # TP10 — ☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. _____

72 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs					
Bs		silt loam		friable	none
BW					
BC					
C				firm	mottled

same as TP9

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 14 " Depth — ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery — Signature

Johanna Szillery — Name Printed

7/31/2024 — Date

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave | Applicant Name: Shinberg Consulting | Project Location (municipality): Portland

Exploration Symbol # TP 11 — ☒ Test Pit ☐ Boring ☐ Probe

8 " Organic horizon thickness Ground surface elev. _____

34 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
Bhs	7.5YR 3/2	SL	grain		
BS	10YR 4/4	fine sand	sg	friable	none
BC	2.5Y 5/6	↓	↓	↓	7.5YR 5/6
C	2.5Y 5/3	sand			
2C	2.5Y 4/2	sicLo		firm	10YR 4/6

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150

Soil Details ▶▶

Soil Series/Phase Name: Elmwood Sandy Loam

Limiting Factor: 17 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Exploration Symbol # TP 12 — ☐ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

58 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR 3/2	SiLo	gra	VFr	none
B	2.5Y 4/3	↓	↓	↓	↓
BC	5Y 4/2	SiCLo	Massive	firm	10YR 4/4

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150

Soil Details ▶▶

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 13 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave | Applicant Name: Stinbury Consulting | Project Location (municipality):

Exploration Symbol # TP13 ☒ Test Pit ☐ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

68 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	2.5Y 3/2	SiL	GR	Fr	none
Bw	2.5Y 4/2		SAB weak PL		10YR 3/3
			Massive	Firm	
	2.5Y 4/4	LS			none
BC1	5Y 4/2	SiL			10YR 4/4
BC2	2.5Y 4/4	LS			5Y 4/2

Depth below mineral soil horizon (inches)

Soil Details

Soil Series/Phase Name: Roundabout Silt Loam

Limiting Factor: 14 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Exploration Symbol # TP14 ☒ Test Pit ☐ Boring ☐ Probe

1 " Organic horizon thickness Ground surface elev. _____

70 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	2.5Y 4/3	SiL	GR	Fr	none
Bw			AB	firming	10YR 4/4
BC	10YR 4/4	S	Massive	Firm	2.5Y 6/3
Several narrow (<1") SiL lenses below 30"		2.5Y 4/2		w/ 10YR 3/4	

Any Rock Fragments

Depth below mineral soil horizon (inches)

Soil Details

Soil Series/Phase Name: Roundabout Silt Loam

Limiting Factor: 12 " Depth ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

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SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name: Hope Ave

Applicant Name: Stinburg Consulting

Project Location (municipality):

Exploration Symbol # TP 15

☒ Test Pit ☐ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. _____

48 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR 3/3	SiL	GR	FR	none
BW	2.5Y 5/3	SiL			
BC	5Y 4/2	SiCL	Massive	Firm	10YR 4/4

Soil Series/Phase Name: Lamoine Silt Loam

Limiting Factor: 14 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☒ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Exploration Symbol # TP 16

☐ Test Pit ☒ Boring ☐ Probe

2 " Organic horizon thickness Ground surface elev. _____

24 " Depth: ☒ of exploration, or ☐ to refusal

Horizon	Color	Texture	Structure	Consistence	Redox
A	10YR 3/2	FSL	GR		10YR 3/3
E	2.5Y 5/2				
Bh	10YR 4/4	SiL			10YR 4/6
			Massive?		
BW	2.5Y 5/2				2.5Y 6/2
BC	2.5Y 3/2	SiCL			10YR 4/4
					2.5Y 6/2

Redox Features ↓

hand Auger Boring

Soil Series/Phase Name: Buxton Fine Sandy Loam

Limiting Factor: 20 " Depth — ☒ Groundwater ☐ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: _____ Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: _____

Depth below mineral soil horizon *(inches)*: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150

Soil Details ▶▶

SOIL SCIENTIST INFORMATION AND SIGNATURE

Johanna Szillery
Signature

Johanna Szillery
Name Printed

7/31/2024
Date

494
SS License No.

STATE OF MAINE ★ JOHANNA E. SZILLERY NO. SS494 ★ SOIL SCIENTIST

affix professional seal

APPENDIX C

SOILS MAP UNIT DESCRIPTIONS

CLASS B – HIGH INTENSITY SOIL SURVEY
SOIL SURVEY LEGEND
HOPE AVE, PORTLAND, MAINE

MAP UNIT SYMBOL	MAP UNIT NAME
BuD	Buxton silt loam, 15 to 35 percent slopes
ElC	Elmwood sandy loam, 3 to 15 percent slopes
LBA	Lamoine-Buxton Complex, 0 to 3 percent slopes
LaB	Lamoine Silt Loam, 3 to 8 percent slopes
LaC	Lamoine Silt Loam, 8 to 15 percent slopes
LaD	Lamoine Silt Loam, 25 to 45 percent slopes
LRB	Lamoine-Roundabout Complex, 0 to 8 percent slopes
RoB	Roundabout Silt Loam, 3 to 8 percent slopes
ScA	Scantic Silt Loam, 0 to 3 percent slopes

Buxton Silt Loam, 15 to 35 percent slopes (BuD)
Buxton (frigid Aquic Dystric Eutrudepts)

SETTING

Parent Material: Glaciomarine deposits
Landform: River valleys, marine terraces.
Position in Landscape: Backslopes and sideslopes.
Slope gradient ranges: 15 to 35 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP3.

Surface Layer: The surface did not have any buildup of decomposed organic matter.

Subsurface: Approximately 10 inches of very friable, granular, very dark brown silt loam.

Subsoil Layer: Very friable to friable, subangular blocky, mottled, dark grayish brown silt loam.

Substratum: Firm, massive, mottled, brown silt loam.

At approximately 60 inches, firm, massive, olive brown fine sand.

Bedrock began 120 inches below mineral soil surface.

Drainage Class: Moderately well drained, seasonal high water table 17 to 24 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: C/D

Saturated Hydraulic Conductivity: 2.3918 micro m/sec

Depth to Bedrock: Greater than 80 inches.

Potential for Frost Action: Moderate

Erosion Factor (Kf): 0.37

Buxton Silt Loam, 15 to 35 percent slopes (BuD)

INCLUSIONS WITHIN MAP UNIT

Similar: Lamoine, Nicholville
Dissimilar: Scantic

USE AND MANAGEMENT

Buxton soils are limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads.

Slopes over 15%, may be limited by steepness. Limitations due to steepness can be mitigated by grading and excavation.

Elmwood Sandy Loam, 3 to 15 percent slopes (ElC)
Elmwood (frigid Aquic Dystric Eutrudepts)

SETTING

Parent Material: Loamy outwash material over clayey marine or lacusterine
Landform: Plains, outwash plains, and deltas
Position in Landscape: Terrace
Slope gradient ranges: 3 to 15 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP11.

Surface Layer: Approximately 4 inches of friable, angular blocky, dark brown sandy loam.

Subsurface: Approximately 16 inches of friable, single grain, dark yellowish brown to light olive brown fine sand.

Subsoil Layer: Friable, single grain, mottled, dark yellowish brown to olive brown sand.

Substratum: Firm, single grain, mottled, dark grayish brown silt clay loam.

Drainage Class: Moderately well drained, seasonal high water table 18 to 36 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: B

Saturated Hydraulic Conductivity: 12.2974 micro m/sec

Depth to Bedrock: Greater than 80 inches.

Potential for Frost Action: High

Erosion Factor (Kf): 0.20

Elmwood Sandy Loam, 3 to 15 percent slopes (ElC)

INCLUSIONS WITHIN MAP UNIT

Similar: Buxton, Nicholville
Dissimilar:

USE AND MANAGEMENT

Elmwood soils are limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads, and avoidance of soils with high seasonal water table.

Lamoine Silt Loam, 3 to 8 percent slopes (LaB)
frigid Aeric Epiaquepts

SETTING

Parent Material: Glaciomarine deposits
Landform: Coastal lowlands and river valleys.
Position in Landscape: Backslopes and footslopes.
Slope gradient ranges: 3 to 8 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP10.

Surface Layer: Approximately 3 inches of friable, granular, dark yellowish brown silt loam.

Subsurface: Approximately 11 inches of friable, granular to angular blocky, dark yellowish brown to olive brown silt loam.

Subsoil Layer: Friable, angular blocky, mottled, olive brown silt loam.

Substratum: Firm, massive, mottled, olive gray silty clay loam.

Drainage Class: Somewhat poorly drained, seasonal high water table 6 to 17 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: C/D

Saturated Hydraulic Conductivity: 4.5868 micro m/sec

Depth to Bedrock: Greater than 80 inches.

Potential for Frost Action: High

Erosion Factor (Kf): 0.37

Lamoine Silt Loam, 3 to 8 percent slopes (LaB)

INCLUSIONS WITHIN MAP UNIT

Similar:	Nicholville, Roundabout, Buxton
Dissimilar:	Scantic

USE AND MANAGEMENT

Lamoine soils are limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads.

Lamoine Silt Loam, 8 to 15 percent slopes (LaC)
frigid Aeric Epiaquepts

SETTING

Parent Material: Glaciomarine deposits
Landform: Coastal lowlands and river valleys.
Position in Landscape: Backslopes and footslopes.
Slope gradient ranges: 8-15 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP5.

Surface Layer: Approximately 3 inches of very friable, granular, very dark brown silt loam.

Subsurface: Approximately 12 inches of friable, angular blocky, olive brown silt loam.

Subsoil Layer: Firm, angular blocky, mottled, olive gray silt loam.

Substratum: Firm, massive, mottled, olive gray silty clay loam.

Drainage Class: Somewhat poorly drained, seasonal high water table 6 to 17 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: C/D

Saturated Hydraulic Conductivity: 4.5868 micro m/sec

Depth to Bedrock: Greater than 80 inches.

Potential for Frost Action: High

Erosion Factor (Kf): 0.37

Lamoine Silt Loam, 8 to 15 percent slopes (LaC)

INCLUSIONS WITHIN MAP UNIT

Similar:	Buxton, Nicholville, Roundabout
Dissimilar:	Scantic

USE AND MANAGEMENT

Lamoine soils are limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads.

Lamoine Silt Loam, 25 to 45 percent slopes (LaD)
frigid Aeric Epiaquepts

SETTING

Parent Material: Glaciomarine deposits
Landform: Coastal lowlands and river valleys.
Position in Landscape: Backslopes and footslopes.
Slope gradient ranges: 25-45 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP6.

Surface Layer: Approximately 4 inches of very friable, granular, very dark brown silt loam.

Subsurface: Approximately 9 inches of very friable, angular blocky, dark yellowish brown silt loam.

Subsoil Layer: Firm, angular blocky, mottled, light olive brown silt loam.

Substratum: Firm, massive, mottled, dark grayish brown silty clay loam.

Drainage Class: Somewhat poorly drained, seasonal high water table 6 to 17 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: C/D

Saturated Hydraulic Conductivity: 4.5868 micro m/sec

Depth to Bedrock: Greater than 80 inches.

Potential for Frost Action: High

Erosion Factor (Kf): 0.37

Lamoine Silt Loam, 25 to 45 percent slopes (LaD)

INCLUSIONS WITHIN MAP UNIT

Similar: Buxton, Nicholville
Dissimilar:

USE AND MANAGEMENT

Lamoine soils are limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads.

Slopes over 15%, may be limited by steepness. Limitations due to steepness can be mitigated by grading and excavation.

Lamoine – Buxton Complex, 0 to 3 percent slopes (LBA)

SETTING

Parent Material: Glaciomarine deposits
Landform: Coastal lowlands and river valleys.
Position in Landscape: Backslopes and footslopes.
Slope gradient ranges: 0 to 3 percent slopes

General: Map unit contains 20% moderately well drained Buxton and 80% somewhat poorly drained Lamoine that cannot be differentiated at the current map scale.

COMPOSITION AND SOIL CHARACTERISTICS

Lamoine Part (frigid Aeric Epiaquepts)

Typical Profile Description: Typical profile was described for this soil at TP8.
Surface Layer: Approximately 11 inches of decomposed organic material.
Subsurface: Approximately 10 inches of very friable, granular, light olive brown silt loam.
Subsoil Layer: Friable, platy, mottled, dark grayish b rown silt loam.
Substratum: Firm, massive, mottled, olive gray silty clay loam.
Drainage Class: Somewhat poorly drained, seasonal high water table 6 to 17 inches below the mineral soil surface. No potential for ponding or flooding.
Hydrologic Group: C/D
Saturated Hydraulic Conductivity: 4.5868 micro m/sec
Depth to Bedrock: Greater than 80 inches.
Potential for Frost Action: High
Erosion Factor (Kf): 0.37

Buxton Part (frigid Aquic Dystric Eutrudepts)
Typical Profile Description: Typical profile was described for this soil at TP3.
Surface Layer: The surface did not have any buildup of decomposed organic matter.
Subsurface: Approximately 10 inches of very friable, granular, very dark brown silt loam.
Subsoil Layer: Very friable to friable, subangular blocky, mottled, dark grayish brown silt loam.
Substratum: Firm, massive, mottled, brown silt loam.
At approximately 60 inches, firm, massive, olive brown fine sand.
Bedrock began 120 inches below mineral soil surface.
Drainage Class: Moderately well drained, seasonal high water table 17 to 24 inches below the mineral soil surface. No potential for ponding or flooding.
Hydrologic Group: C/D
Saturated Hydraulic Conductivity: 2.3918 micro m/sec
Depth to Bedrock: Greater than 80 inches.
Potential for Frost Action: Moderate
Erosion Factor (Kf): 0.37

Lamoine – Buxton Complex, 0 to 3 percent slopes (LBA)

INCLUSIONS WITHIN MAP UNIT

Similar: Nicholville, Roundabout
Dissimilar:

USE AND MANAGEMENT

This soil complex is limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads.

Lamoine-Roundabout Complex, 0 to 8 percent slopes (LRB)

SETTING

Parent Material: Glaciomarine deposits
Landform: Coastal lowlands and river valleys.
Position in Landscape: Backslopes and footslopes.
Slope gradient ranges: 0 to 8 percent slopes

General: This map unit is composed of a complex of 75% somewhat poorly drained Lamoine and 25% somewhat poorly drained Roundabout soils that cannot be differentiated at the current map scale. The Roundabout found in this map unit is located higher on the plateau with Lamoine occurring on steeper slopes.

COMPOSITION AND SOIL CHARACTERISTICS

Lamoine Part (frigid Aeric Epiaquepts)

Typical Profile Description: Typical profile was described for this soil at TP5.
Surface Layer: Approximately 3 inches of very friable, granular, very dark brown silt loam.
Subsurface: Approximately 12 inches of friable, angular blocky, olive brown silt loam.
Subsoil Layer: Firm, angular blocky, mottled, olive gray silt loam.
Substratum: Firm, massive, mottled, olive gray silty clay loam.
Drainage Class: Somewhat poorly drained, seasonal high water table 6 to 17 inches below the mineral soil surface. No potential for ponding or flooding.
Hydrologic Group: C/D
Saturated Hydraulic Conductivity: 4.5868 micro m/sec
Depth to Bedrock: Greater than 80 inches.
Potential for Frost Action: High
Erosion Factor (Kf): 0.37

Lamoine Roundabout Complex, 0 to 8 percent slopes (LRB)

Roundabout Part (frigid Aeric Epiaquepts)

Typical Profile Description: Typical profile was described for this soil at TP14.
Surface Layer: The surface did not have any buildup of decomposed organic matter.
Subsurface: Approximately 12 inches of friable, granular, olive brown silt loam.
Subsoil Layer: Very firming friable, angular blocky, mottled, olive brown silt loam.
Substratum: Firm, massive, mottled, dark yellowish brown silt loam.
Drainage Class: Somewhat poorly drained, seasonal high water table at 12 inches below the mineral soil surface. No potential for ponding or flooding.
Hydrologic Group: B/D
Saturated Hydraulic Conductivity: 5.93 micro m/sec.
Depth to Bedrock: Very deep, greater than 60 inches of mineral soil over bedrock.
Potential for Frost Action: High
Erosion Factor (Kf): .43 in the surface; .49 in the subsurface, .64 in the subsoil and substratum

INCLUSIONS WITHIN MAP UNIT

Similar: Nicholville, Buxton
Dissimilar:

USE AND MANAGEMENT

These soils are primarily limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads.

Roundabout Silt Loam, 3 to 8 percent slopes (RoB)
frigid Aeric Epiaquepts

SETTING

Parent Material: Glaciomarine and Glaciolacustrine Deposits
Landform: Lake and marine plains
Position in Landscape: Linear slope
Slope gradient ranges: 3 to 8 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP14.

Surface Layer: The surface did not have any buildup of decomposed organic matter.

Subsurface: Approximately 12 inches of friable, granular, olive brown silt loam.

Subsoil Layer: Very firming friable, angular blocky, mottled, olive brown silt loam.

Substratum: Firm, massive, mottled, dark yellowish brown silt loam.

Drainage Class: Somewhat poorly drained, seasonal high water table at 12 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: B/D

Saturated Hydraulic Conductivity: 5.93 micro m/sec.

Depth to Bedrock: Very deep, greater than 60 inches of mineral soil over bedrock.

Potential for Frost Action: High

Erosion Factor (Kf): .43 in the surface; .49 in the subsurface, .64 in the subsoil and substratum

Buxton Silt Loam, 3 to 8 percent slopes (BuD)

INCLUSIONS WITHIN MAP UNIT

Similar: Lamoine
Dissimilar: Scantic

USE AND MANAGEMENT

Roundabout soils are limited by a high seasonal water table and fine particle size which reduces hydraulic conductivity. Slow drainage impacts the frost properties and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material, diversion of water from structures and roads, and avoidance of soils with high seasonal water table.

Scantic Silt Loam, 0 to 3 percent slopes (ScA)
frigid Typic Epiaquepts

SETTING

Parent Material: Glaciomarine deposits
Landform: River valleys, marine terraces
Position in Landscape: Plains, terraces, depressions.
Slope gradient ranges: 0 to 3 percent slopes

COMPOSITION AND SOIL CHARACTERISTICS

Typical Profile Description: Typical profile was described for this soil at TP4.

Surface Layer: Approximately 4 inches of friable, angular blocky, mottled brown silt loam.

Subsurface: Approximately 14 inches of friable, angular blocky, mottled olive gray silt loam.

Subsoil Layer: Firm, angular blocky, mottled olive gray silty clay loam.

Drainage Class: Poorly drained, seasonal high water table 0 to 12 inches below the mineral soil surface. No potential for ponding or flooding.

Hydrologic Group: D

Saturated Hydraulic Conductivity: 2.3215 micro m/sec

Depth to Bedrock: Greater than 80 inches.

Potential for Frost Action: High

Erosion Factor (Kf): 0.28

Scantic Silt Loam, 0 to 3 percent slopes (ScA)

INCLUSIONS WITHIN MAP UNIT

Similar:
Dissimilar: Lamoine, Roundabout

USE AND MANAGEMENT

Scantic soils are limited by a high seasonal water table and fine subsoil which limits permeability. This impacts the hydraulic conductivity of this soil, and related water and frost properties, and potential uses for roads, shallow excavations, and structures with basements. Limitations due to a high seasonal water table can be mitigated by excavation and fill with a free-draining material and diversion of water from structures and roads, and avoidance of soils with high seasonal water table.

Scantic soils are hydric and make up one component of a jurisdictional wetland. Federal and State permitting may be required for impacts to areas in this map unit, if these area are mapped as jurisdictional wetlands.

APPENDIX D

GLOSSARY OF SOIL SCIENCE TERMS

GLOSSARY OF SOIL SCIENCE TERMS

The following terms relate to the practice of soil science and classification of soils. These definitions are separated into terms which are used to describe a soil or soil profile, terms which relate to the practice of soils mapping, and terms which are interpreted based on the properties of a soil.

SOIL MAPPING TERMS

These terms relate to the soils survey map and the soils and landforms that are depicted on this map.

Association and Complex – Two or more dissimilar soils that occur in a regularly repeating pattern on the landscape. At the scale of mapping shown, these dissimilar soils could not be separated. (USDA, *Soil Survey Manual*)

Consociation – A delineated polygon which is dominated by one soil type or series and similar soils. (USDA, *Soil Survey Manual*)

Dissimilar soil – Soil inclusions within a mapped polygon which are different from the named map unit. The characteristics, properties, and use and management of a dissimilar soil are different enough that there are important differences between these soils for the purpose of the soil survey. (USDA, *Soil Survey Manual*; MAPSS, *Guidelines*)

Inclusion – Components within a delineated polygon that are not identified by the polygon name. These inclusions may be similar soils or dissimilar soils. Inclusions of dissimilar soil shall not exceed 25 percent of the map unit area, based on MAPSS Standards. (USDA, *Soil Survey Manual*; MAPSS, *Guidelines*)

Map Unit – An area that is defined and named the same in terms of its soil components and is named for the dominant soil component. Each map unit differs in some way from a differently named map unit. (USDA, *Soil Survey Manual*)

Map Unit Purity – Within a delineated polygon, the amount of the polygon that is made up of the named soil relative to the amount of polygon made up of inclusions, for which the polygon is not named. (USDA, *Soil Survey Manual*). MAPSS *Guidelines* indicate that 75% of a delineated map unit should be the named or similar soils; dissimilar soils shall not exceed 25% of a delineated map unit.

Phase – A subset of a soil series which can be significant for use and management. Phases may be differentiated for different classes of surface stoniness and slopes. (USDA, *Soil Survey Manual*)

Series – A group of soils that share similar defining characteristics. This is the most homogenous category of soil taxonomy: a given soil series has a relatively narrow range of properties. (USDA, *Soil Survey Manual*)

Similar Soil – Soil inclusions within a mapped polygon which are different from the named map unit; however, the properties, management, and interpretations of the similar soil are such that no important differences exist for the purpose of the soil survey. (USDA, *Soil Survey Manual*; MAPSS, *Guidelines*)

Taxajunct/Variant – A group of soils that have properties outside the range of any established soil series. These differences are small so that major interpretations are not affected. (USDA, *Soil Survey Manual*)

SOIL PROPERTIES TERMS

Consistence – As used in soil surveys, consistence is the resistance of a soil sample to crushing or penetration and is described as loose, friable, firm, and rigid. As used generally in soils, consistence also includes the plasticity, toughness, or stickiness of a puddled soil, and the behavior of a soil under compression. This property is based on the cohesion and adhesion of soil particles. (USDA, *Soil Survey Manual;* Brady and Weil, *The Nature and Properties of Soils*)

Depth classes – classes of soil depth to bedrock. In Maine, soils are categorized into five depth classes: (MAPSS, *Guidelines*)

1. Very shallow: Less than 10 inches of soil above bedrock.
2. Shallow: 10 to less than 20 inches of soil above bedrock.
3. Moderately deep: 20 to less than 40 inches of soil above bedrock.
4. Deep: 40 to less than 60 inches of soil above bedrock.
5. Very Deep: Greater than 60 inches of soil above bedrock.

Drainage classes – the frequency and duration of wet periods within the soil profile. The USDA defines seven drainage classes based on the length that the soil is inundated by water during the growing season, the depth to free water, and the restriction of plant growth. Maine USDA and soil scientists have correlated these seven drainage classes into observations of the seasonal high-water table in soils: (USDA, *Soil Survey Manual;* MAPSS, *Guidelines*)

1. Very poorly drained: Seasonal high-water table at or near the surface.
2. Poorly drained: Seasonal high-water table at or near the surface.
3. Somewhat poorly drained: Seasonal high-water table (redoximorphic features) less than 16 inches below the soil surface.
4. Moderately well drained: Seasonal high-water table (redoximorphic features) 16 to less than 40 inches below the surface.
5. Well drained: Seasonal high-water table (redoximorphic features) 40 inches or more below the surface.
6. Somewhat excessively drained: Soil depth is 10 to 20 inches to bedrock with specific textural properties; or soil depth is 20 inches or greater to bedrock with specific textural properties.
7. Excessively drained: Soil depth is 10 inches to bedrock; or specific textural properties.

Redoximorphic features – changes in soil color which are attributed to soil wetness. These features may be "concentrations" of color or "depletions" of color. Redoximorphic features are evidence of the seasonal high-water table. This was formerly called "mottling" or "redoximorphic mottling" (USDA, *Soil Survey Manual*).

Seasonal High-Water Table – a zone of saturation which occurs within the soil profile during the wettest part of the year. The depth of this zone is described at the highest average depth (i.e., closest to the surface) in the soil profile (USDA, *Soil Survey Manual*).

Structure – The arrangement of primary soil particles (sand, silt, and clay) into secondary units. These units are characterized by size, shape, and degree of distinctiveness. Common soil structure types include granular, angular and subangular blocky, platy, prismatic, single grain, and massive. (USDA, *Soil Survey Manual;* Brady and Weil, *The Nature and Properties of Soils*)

Texture – the relative proportion, by weight, of sand, silt, and clay in a soil. The soil textural class is a grouping of soils based on the relative proportions of sand, silt, and clay in a soil. Soils within a textural class have similar physical properties. Soil textural classes are, from coarse to fine: sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay. (USDA, *Soil Survey Manual;* Brady and Weil, *The Nature and Properties of Soils*)

DESCRIPTIVE SOIL PROFILE OR SOIL CHARACTERISTIC TERMS

Erodibility factor (K factor) – a relative index of the susceptibility of bare, cultivated soil to particle detachment and transport by rainfall.

Hydraulic conductivity (saturated) (Ksat) - the factor relating soil water flow rate to the hydraulic gradient. Ksat is the reciprocal of the resistance of soil to water movement. (USDA, *Soil Survey Manual*)

Hydrologic soil group – groups of soils that have similar runoff potential under similar climatic and land cover conditions. In Maine, soils are place into one of four hydrologic groups: A, B, C, and D. These groups are described as follows:

A. Soils with low runoff potential when thoroughly wet. Water is transmitted freely throughout the soil. These soils tend to have less than 10% clay and more than 90% sand or gravel.

B. These soils have moderately low runoff potential when thoroughly wet, with unimpeded water transmission. These soils are typically 10-20% clay or silt and 50-90% sand.

C. Soils with a moderately high runoff potential when thoroughly wet. Water transmission is somewhat restricted in this soil. These soils are typically 20-40% clay or silt and less than 50% sand.

D. These soils have a high runoff potential when thoroughly wet, with restricted or very restricted water transmission. These soils are 40% or greater clay or silt, and less than 50% sand. (USDA, *National Engineering Handbook*)

LIMITATIONS

Permeability – the ease with which gases, liquids, or plant roots penetrate through a mass or layer of soil. (Brady and Weil, *The Nature and Properties of Soils*)

Soil Potential Ratings – classes that indicate the relative quality of a soil for a particular use as compared with other soils in a given area. The purpose of this rating system is to identify the relative suitability of soils for a given use for planning purposes. These ratings are developed at the Federal (USDA) level, and range from very high potential, high potential, medium potential, low potential, to very low potential. (USDA, *National Soil Survey Handbook*)

REFERENCES

Brady, Nyle C. and Ray R. Weil. 1999. The Natural and Properties of Soils. 12th edition. Prentice Hall.

Maine Association of Professional Soil Scientists. 2009. Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping.

USDA-NRCS. 1993. Soil Survey Manual.

USDA-NRCS. 2009. National Engineering Handbook.

USDA-NRCS. National Soil Survey Handbook.

SECTION 12

STORMWATER MANAGEMENT

UPDATE FOR APRIL 2023 RESUBMISSION

The following stormwater management report was prepared for the original project layout that was submitted to the City in October 2022. Since this submission, the project layout has been modified. The footprint of the revised buildings was slightly altered, and many of the duplexes were replaced with triplexes. As a result, the proposed impervious area was decreased. Because the impervious area was reduced and the stormwater treatment areas are nearly the same, we believe that the original stormwater report adequately demonstrates that the applicable stormwater management standards have been met.

ORIGINAL OCTOBER 2022 SUBMISSION

A. NARRATIVE

The intent of this Stormwater Management Plan is to comply with the requirements of the City of Portland Land Use Ordinance, the City of Portland Technical Manual, and the Maine Department of Environmental Protection (MDEP) Chapter 500 regulations.

This project involves creation of a Planned Residential Unit Development in Portland, Maine. This permit application will account for the development of 60 residential units, open space, and a private road. This project includes the creation of approximately 4.05 acres (176,552 square feet) of new impervious surface, 4.88 acres (212,580 square feet) of landscaped area, and 8.93 acres (389,132 square feet) of total developed area. Based on the Chapter 500 rules, the Basic Standards, General Standards, and Flooding Standards apply to this project. As a result, it will be required to treat 95% of the impervious area and 80% of the developed area. Additionally, the inner-site road network is defined as linear and is only required to treat 75% of new impervious and 50% of developed area for that portion. We are proposing to utilize grass under drained soil filters, bioretention cells, wet ponds, and roof dripline filters to provide the stormwater management for this project.

Basic Standard Submission: Information is provided as required for the Basic Standard Submission in **Section 14.0-Basic Standards**.

Phosphorous Standard Submission: This development is not located within a lake watershed; this standard does not apply.

Urban Impaired Stream Standard Submission: This development is not located within an urban impaired stream watershed; this standard does not apply.

General Standards Submission: The following information is provided as required in the General Standard Submission.

1. Narrative: The proposed development will include 60 dwelling units (duplexes and triplexes) and open space. These areas will be included in the "site" portion of the project, while the inner-site road network will be classified as the "linear portion." The site portion will create a total of approximately 113,450 square feet of new impervious surface and 284,785 square feet of total developed area. The linear portion will create a total of approximately 63,102 square feet of new impervious surface and 71,759 square feet of developed area.
2. Drainage Plans: A set of Hydrology Plans and Proposed Site Plans are provided in **Appendix A** of this Application. These plans include watershed boundaries and locations of the stormwater management features.
3. Calculations: This project will include various filters which have been designed in accordance with Chapters 4 and 7 of the MDEP Stormwater BMP Technical Design Manual, Volume III. Sizing calculations can be seen in Section 12A.
4. Details, Designs, and Specifications: Please refer to the plans for stormwater management details, designs, and specifications.

Flooding Standard Submission: The following information is provided as required in the Flooding Standard Submission.

1. Control of Peak Flows: The project is required to meet Flooding Standards in accordance with Chapter 500 requirements. The Pre- and Post-Development Hydrology models and narrative are located in Section 12B.

2. Details, Design, and Specifications: The model runoff calculations are performed using a HydroCAD 10.0 model. Sizing of the required stormwater treatment methods are included in Section 12A.

SECTION 12A

STORMWATER QUALITY CONTROL NARRATIVE

The Hope Avenue Subdivision project is primarily being developed to provide housing opportunity in Portland, Maine. In total, the project will develop approximately 9 acres of undeveloped wooded area. The proposed development will include a site portion and a linear portion.

The Site portion of the project consists of residential duplexes/triplexes with attached garages and landscaped open space. The site portion will cover approximately 317,373 square feet and will consist of approximately 113,450 square feet of new impervious area and 203,923 square feet of new landscaped developed area that will be stabilized with vegetation or other approved permanent measures. Approximately 32,588 square feet of developed site area will be designated to be restored to natural conditions, lowering the total developed site portion to 284,785 square feet.

The linear portion of the project consists of the inner site road network. This road will be 20' wide and will include curbing and sidewalk on one side. The road is approximately 2,353 linear feet. The road network will consist of approximately 63,102 square feet of new impervious area.

Based on Maine Department of Environmental Protection stormwater standards, the required treatment is 95% of the impervious surface and 80% of the developed area resulting from the impervious surface, landscaped surface, and stormwater conveyance provisions created by the development. The portion of the project involving the access road qualifies for the linear portion exemption. As a result, this portion of the development is required to treat 75% of the impervious and 50% of the developed area.

The project is proposing grassed underdrain soil filters, bioretention cells, wet ponds, and roof dripline filters to meet stormwater quality standards. The systems will be located at various locations within the Site to maximize the treatment of runoff and provide the necessary treatment areas. The locations of these treatment devices are shown on the Proposed Site Plans (**Appendix A**).

The following tables summarize the impervious and developed area created by the project, as well as the treatment structure, area treated, and relationship with the total developed and impervious areas for the project.

SITE AREA

PROJECT AREA	IMPERVIOUS AREA	DEVELOPED AREA
Total Proposed Site Area	113,450 SF (2.60 acres)	284,785 SF (6.53 acres)

STORMWATER TREATMENT SYSTEMS (SITE AREA)

TREATMENT METHOD	AREA TREATED	
	IMPERVIOUS AREA	DEVELOPED AREA
Grassed Underdrained Soil Filter A	2,103 SF	4,037 SF
Grassed Underdrained Soil Filter B	0 SF	3,633 SF
Bioretention Cell A	910 SF	2,865 SF
Bioretention Cell B	854 SF	2,371 SF
Wetpond A	58,466 SF	134,948 SF
Wetpond B	35,955 SF	83,386 SF
Roof Drip Edge Filters	13,579 SF	13,579 SF
TOTAL	**111,867 SF**	**244,819 sf**
PERCENT OF TOTAL AREA TREATED	**98.60**	**85.97**

As can be seen in the table above, we are proposing to treat **98.60%** of the Impervious Area and **85.97%** of the Developed Area from the site portion of the project. This exceeds the standards required by Chapter 500.

LINEAR AREA

PROJECT AREA	IMPERVIOUS AREA	DEVELOPED AREA
Total Proposed Linear Area	63,102 SF (1.44 acres)	71,759 SF (1.64 acres)

STORMWATER TREATMENT SYSTEMS (LINEAR AREA)

TREATMENT METHOD	AREA TREATED	
	IMPERVIOUS AREA	DEVELOPED AREA
Grassed Underdrained Soil Filter A	1,835 SF	1,980 SF
Grassed Underdrained Soil Filter B	2,629 SF	3,079 SF
Bioretention Cell A	0	0
Bioretention Cell B	0	0
Wetpond A	27,146 SF	30,027
Wetpond B	25,348 SF	28,931 SF
Roof Drip Edge Filters	0	0
TOTAL	**56,958 SF**	**64,017 SF**
PERCENT OF TOTAL AREA TREATED	**90.26**	**89.21**

As can be seen in the table above, we are proposing to treat **90.26%** of the Impervious Area and **89.21%** of the Developed Area from the site portion of the project. This exceeds the standards required by Chapter 500.

BMP DESCRIPTIONS AND SIZING CALCULATIONS

The proposed stormwater quality control devices have been designed in accordance with the standards outlined in Stormwater Management for Maine, Volume II BMP Manual, January 2006 and revised May 2016. Construction and maintenance will be done according to the standards outlined in this manual.

Descriptions of the treatment types follow.

1. Grassed Underdrain Soil Filter A

Description:
The proposed soil filter will treat developed area in Sub catchment 11. This filter is located on Type C, upland soils and will outlet into natural drainage pathways. A test pit was taken at the proposed filter location.

Calculations:
This filter was sized using Chapter 7.1 of the MDEP Stormwater BMP Technical Design Manual, Volume III.

Required Filter Area:
5% (imperious area) + 2% (landscaped area)
= 0.05(3,938 SF) + 0.02 (2,079 SF)
= 238 SF (Proposed filter is 240 SF)

Required Treatment Volume:

1-inch*(impervious area) + 0.4-inches*(Landscaped Area)
= (1/12*3,938 SF) +(0.4/12*2,079 SF)
= 397 CF (Proposed filter is 546 CF @ 18-inches of impoundment depth)

Drain time

$$\Delta t = \frac{A_F}{3600 \cdot A_o}\sqrt{\frac{2H}{G}}$$

Where Δt = Drain time (hrs),
A_F = Filter Area (sf) = 240 sf,
A_o = Area of the 2" ball valve opening (sf) = 0.001 sf (5% open)
H = Storage Height (ft) = 3.50 ft (1.5 ft CPV, 2.0 ft soil filter)
and G = Acceleration due to gravity (32.2 ft/s^2).

$$\Delta t = \frac{240}{3600 \cdot 0.001}\sqrt{\frac{2 \cdot 3.5}{32.2}} = 28 \text{ hours}$$

2. Grassed Underdrain Soil Filter B

Description:

The proposed soil filter will treat developed area from Subcatchment 12. This filter is located on Type C, upland soils and will outlet into natural drainage pathways. A test pit was taken at the proposed filter location.

Calculations:

This filter was sized using Chapter 7.1 of the MDEP Stormwater BMP Technical Design Manual, Volume III.

Required Filter Area:

5% (imperious area) + 2% (landscaped area)
= 0.05(2,629 SF) + 0.02 (4,083 SF)
= 213 SF (Proposed filter is 220 SF)

Required Treatment Volume:

1-inch*(impervious area) + 0.4-inches*(Landscaped Area)
= (1/12*2,629 SF) +(0.4/12*4,083 SF)
= 355 CF (Proposed filter is 512 CF @ 18-inches of impoundment depth)

Drain time

$$\Delta t = \frac{A_F}{3600 \cdot A_o}\sqrt{\frac{2H}{G}}$$

Where Δt = Drain time (hrs),
A_F = Filter Area (sf) = 220 sf,
A_o = Area of the 2" ball valve opening (sf) = 0.001 sf (5% open)
H = Storage Height (ft) = 3.5 ft (1.5 ft CPV, 2.0 ft soil filter)
and G = Acceleration due to gravity (32.2 ft/s^2).

$$\Delta t = \frac{220}{3600 \cdot 0.001}\sqrt{\frac{3.50}{32.2}} = 26 \text{ hours}$$

3. Bioretention Cell A

Description:
The proposed soil filter will treat developed area from Subcatchment 7. This filter is located on Type D, upland soils and will outlet into natural drainage pathways. A test pit was taken at the proposed filter location.

Calculations:
This filter was sized using Chapter 7.1 of the MDEP Stormwater BMP Technical Design Manual, Volume III.

Required Filter Area:
7% (imperious area) + 3% (landscaped area)
= 0.07(910 SF) + 0.03 (1,955 SF)
= 122 SF (Proposed filter is 140 SF)

Required Treatment Volume:
1-inch*(impervious area) + 0.4-inches*(Landscaped Area)
= (1/12*910 SF) +(0.4/12*1,955 SF)
= 141 CF (Proposed filter is 151 CF @ 6-inches of impoundment depth)

Drain time

$$\Delta t = \frac{A_F}{3600 \cdot A_o}\sqrt{\frac{2H}{G}}$$

Where Δt = Drain time (hrs),
A_F = Filter Area (sf) = 140 sf,
A_o = Area of the outlet orifice (sf) = 0.0003 sf (0.25-inch diameter)
H = Storage Height (ft) = 3.50 ft (1.5 ft CPV, 2.0 ft soil filter)
and G = Acceleration due to gravity (32.2 ft/s^2).

$$\Delta t = \frac{140}{3600 \cdot 0.0003}\sqrt{\frac{2 \cdot 3.50}{32.2}} = 46 \text{ hours}$$

4. Bioretention Cell B

Description:

The proposed soil filter will treat developed area from Parcels 8. This filter is located on Type C, upland soils and will outlet into natural drainage pathways. A test pit was taken at the proposed filter location.

Calculations:

This filter was sized using Chapter 7.1 of the MDEP Stormwater BMP Technical Design Manual, Volume III.

Required Filter Area:

7% (imperious area) + 3% (landscaped area)
= 0.07(854 SF) + 0.03 (1,517 SF)
= 105 SF (Proposed filter is 116 SF)

Required Treatment Volume:

1-inch*(impervious area) + 0.4-inches*(Landscaped Area)
= (1/12*854 SF) +(0.4/12*1517 SF)
= 121 CF (Proposed filter is 142 CF @ 6-inches of impoundment depth)

Drain time

$$\Delta t = \frac{A_F}{3600 \cdot A_o}\sqrt{\frac{2H}{G}}$$

Where Δt = Drain time (hrs),
A_F = Filter Area (sf) = 116 sf,
A_o = Area of the 2" ball valve opening (sf) = 0.001 sf (5% open)
H = Storage Height (ft) = 3.50 ft (1.5 ft CPV, 2.0 ft soil filter)
and G = Acceleration due to gravity (32.2 ft/s^2).

$$\Delta t = \frac{116}{3600 \cdot 0.001}\sqrt{\frac{2 \cdot 3.50}{32.2}} = 26 \text{ hours}$$

5. Wet Pond A

Description:

This pond has been designed to provide flood control as well as water quality treatment. The wet pond is designed to store 23,252 cubic feet with a mean depth of 4.2 feet. An outlet structure will be constructed to promote plug flow through the pond and maximize settlement of pollutants. Calculating the size required for the mean depth is provided below. A test pit was taken at the proposed wet pond location.

Calculations:

Required Permanent Pool Volume:
(2" x Impervious Area) + (0.8" x Landscaped Area) = (2" x 85,621 SF) + (0.8" x 134,635 SF)
= 23,244 CF
Provided: 23,252 CF @ elevation 74.09.

Required Channel Protection Volume:
(1" x Impervious Area) + (0.4" x Landscaped Area) = (1" x 85,621 SF) + (0.4" x 134,635 SF)
= 11,622 CF
Provided: 11,659 CF @ elevation 76.05.

Wetpond Mean Depth
= Storage divided by surface area 1' below Permanent Pool Elevation
= 18,538 CF/4,410 SF = 4.20'

Gravel Trench Length
3 x Channel Protection Volume/1000 = 3 x 11,659 CF / 1000 = 34.97' (35' Provided)

Drain time

$$\Delta t = \frac{A_F}{3600 \cdot A_o}\sqrt{\frac{2H}{G}}$$

Where Δt = Drain time (hrs),
A_F = Filter Area (sf) = 280 sf,
A_o = Area of the 2" ball valve opening (sf) = 0.001 sf (5% open)
H = Storage Height (ft) = 4.46 ft (1.96 ft CPV, 2.5 ft soil filter)
and G = Acceleration due to gravity (32.2 ft/s^2).

$$\Delta t = \frac{280}{3600 \cdot 0.001}\sqrt{\frac{2 \cdot 4.46}{32.2}} = 37 \text{ hours}$$

6. Wet Pond B

Description:
This pond has been designed to provide flood control as well as water quality treatment. The wet pond is designed to store 14,538 cubic feet with a mean depth of 3.31 feet. An outlet structure will be constructed to promote plug flow through the

pond and maximize settlement of pollutants. Calculating the size required for the mean depth is provided below. A test pit was taken at the proposed wet pond location.

Calculations:

Required Permanent Pool Volume:
(2" x Impervious Area) + (0.8" x Landscaped Area) = (2" x 61,303 SF) + (0.8" x 64,733 SF)
= 14,532 CF
Provided: 14,538 CF @ elevation 70.76'.

Required Channel Protection Volume:
(1" x Impervious Area) + (0.4" x Landscaped Area) = (1" x 61,303 SF) + (0.4" x 64,733 SF)
= 7,266 CF
Provided: 7,285 CF @ elevation 72.39.

Wetpond Mean Depth
= Storage divided by surface area 1' below Permanent Pool Elevation
= 10,924 CF/3,294 SF = 3.31'

Gravel Trench Length
3 x Channel Protection Volume/1000 = 3 x 7,285 CF / 1000 = 21.85 (25' Provided)

Drain time

$$\Delta t = \frac{A_F}{3600 \cdot A_o}\sqrt{\frac{2H}{G}}$$

Where Δt = Drain time (hrs),
A_F = Filter Area (sf) = 200 sf,
A_o = Area of the 2" ball valve opening (sf) = 0.001 sf (5% open)
H = Storage Height (ft) = 4.13 ft (1.63 ft CPV, 2.5 ft soil filter)
and G = Acceleration due to gravity (32.2 ft/s^2).

$$\Delta t = \frac{200}{3600 \cdot 0.001}\sqrt{\frac{2 \cdot 4.13}{32.2}} = 25 \text{ hours}$$

7. Roof Dripline Filters

Roof dripline filters will be utilized to treat runoff from the backside of several of the proposed building roofs. The filter widths were determined as follows:

Volume from 1" of runoff from typical roof area: 80 CF
Typical length of filter: 45 LF
Stone Reservoir Layer: 12" thick

Stone Reservoir Voids: 40%
Stone Reservoir volume required: 80CF/0.4 = 200 CF
Filter Width Required: 200CF/12" depth/45'length = 4.5'
Filter Width Provided: 4.5'

The proposed stormwater quality control devices have been designed in accordance with the standards outlined in Stormwater Management for Maine, Volume II BMP Manual, January 2006, and revised May 2016. Construction and maintenance will be done according to the standards outlined in this manual.

SECTION 12B

STORMWATER PEAK RUNOFF CONTROL NARRATIVE

As previously stated, the project is required to meet the flooding standard under Chapter 500 Section 4.E(2)(a). To meet the flooding standard, HydroCAD calculations were performed to compare pre-development and post-development conditions. Curve numbers and peak runoff flows were calculated using HydroCAD.

The pre-development site is undeveloped woodland with some trails, wetlands, and a stream. Soils on the site per the USDA web soil survey are classified as Elmwood fine sandy loam (Hydrologic Soil Group B,) Hinckley Suffield complex (Hydrologic Soil Group A,) Suffield silt loam (Hydrologic Soil Group C,) and Windsor loamy sand (Hydrologic Soil Group A.) The southern and eastern portions of the Site drain to the south and east to a stream which drains to the Presumpscot River. The northern and western portions drain to the north, also to the Presumpscot River. The post-development site was broken into 41 subareas encompassing the same footprint as pre-development. Most of the developed site areas are collected in underdrain soil filters, wet ponds, and roof drip edge filters located at various locations around the development. These filters release runoff as controlled flow to natural drainage pathways

Summation Points were chosen in similar areas between pre-development and post-development to compare peak flow runoff for the 2-year, 10-year, and 25-year storm events. Summation Points 1 and 2 are located north of the site and compare the runoff flowing to the Presumpscot River. Summation points 3, and 4 are located east of the site and are a comparison of the runoff flowing to an unnamed tributary stream to the river.

Based on results of the HydroCAD, it is expected that stormwater runoff from the site will be similar or lessened in post-development conditions as in pre-development conditions. Overall, it is expected that runoff from the site will be similar to post-development conditions and a similar stormwater runoff will be realized. A comparison of each of the watershed areas in both Pre- and Post-Development is organized in the table below.

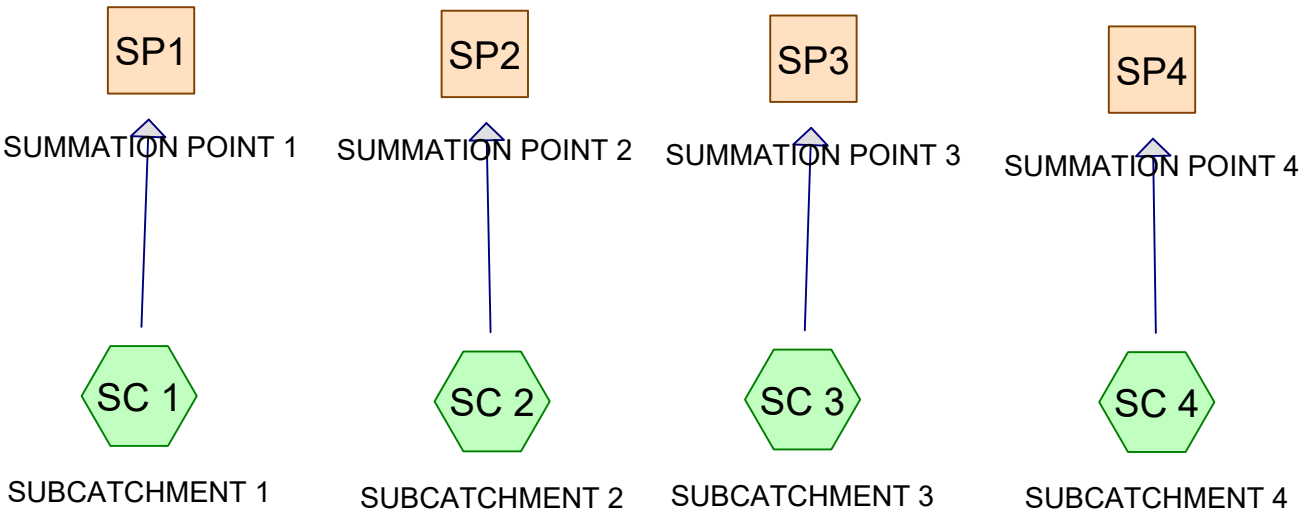
		2 Year (cfs)	10 Year (cfs)	25 Year (cfs)	25 Year Net Change (cfs)	25 Year % Change
Summation Point 1	Pre	0.05	0.92	2.10	**+1.11**	**+52.85**
	Post	0.29	1.65	3.21		
Summation Point 2	Pre	0.83	3.80	7.12	**-5.22**	**-73.31**
	Post	0.01	0.62	1.90		
Summation Point 3	Pre	0.26	1.66	3.38	**-1.94**	**-66.27**
	Post	0.05	0.51	1.44		
Summation Point 4	Pre	3.41	8.88	13.94	**-0.89**	**-6.38**
	Post	3.50	8.27	13.05		

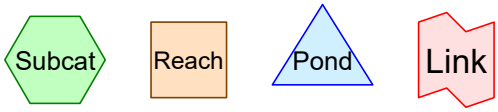
As can be seen in the table above, most of the summation points will see decreased post development flow rates due to stormwater detention. For Summation Point 1, there will be an increase of 1.11 CFS for the 25-year storm event. Summation Point 1 is a wetland located on undeveloped, forested property that is unlikely to be developed due to its wetland cover type and proximity to the highway and the conservation area. Surface runoff in this area flows over approximately 1,000 feet of forested, conservation land, eventually entering the Presumpscot River. This model does not include the additional storage capacity likely available for the wetland summation point. Given these conditions, a 1.11 CFS increase in the 25-year, 24-hour storm event can be considered insignificant. For Summation Point 4, there is a 0.09 cfs increase for the 2-year event. Summation Point 4 represents an existing stream that runs through conservation land to the Presumpscot River. There are no downstream properties that would be impacted by this increase, and it is our opinion that the stream has the capacity to handle a <0.1 cfs increase. Based on the results of our stormwater management design and calculations we conclude that this project will not have significant negative impacts on adjacent and downstream areas.

Prepared by:
Haley Ward, Inc.

Drew Olehowski, PE
Project Engineer







Routing Diagram for Pre Development
Prepared by Haley Ward, Printed 8/28/2023
HydroCAD® 10.20-2b s/n 00641 © 2021 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC 1: SUBCATCHMENT1 Runoff Area=62,407 sf 0.00% Impervious Runoff Depth>0.12"
Flow Length=90' Tc=12.0 min CN=52 Runoff=0.05 cfs 0.014 af

Subcatchment SC 2: SUBCATCHMENT2 Runoff Area=283,071 sf 0.00% Impervious Runoff Depth>0.28"
Flow Length=860' Tc=40.1 min CN=59 Runoff=0.83 cfs 0.151 af

Subcatchment SC 3: SUBCATCHMENT3 Runoff Area=140,971 sf 0.00% Impervious Runoff Depth>0.20"
Flow Length=590' Tc=32.8 min CN=56 Runoff=0.26 cfs 0.054 af

Subcatchment SC 4: SUBCATCHMENT4 Runoff Area=246,493 sf 2.12% Impervious Runoff Depth>0.64"
Flow Length=880' Tc=24.7 min CN=69 Runoff=3.41 cfs 0.300 af

Reach SP1: SUMMATION POINT 1 Inflow=0.05 cfs 0.014 af
Outflow=0.05 cfs 0.014 af

Reach SP2: SUMMATION POINT 2 Inflow=0.83 cfs 0.151 af
Outflow=0.83 cfs 0.151 af

Reach SP3: SUMMATION POINT 3 Inflow=0.26 cfs 0.054 af
Outflow=0.26 cfs 0.054 af

Reach SP4: SUMMATION POINT 4 Inflow=3.41 cfs 0.300 af
Outflow=3.41 cfs 0.300 af

Total Runoff Area = 16.826 ac Runoff Volume = 0.518 af Average Runoff Depth = 0.37"
99.29% Pervious = 16.706 ac 0.71% Impervious = 0.120 ac

Summary for Subcatchment SC 1: SUBCATCHMENT 1

Runoff = 0.05 cfs @ 12.17 hrs, Volume= 0.014 af, Depth> 0.12"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

Area (sf)	CN	Description
34,923	36	Woods, Fair, HSG A
27,484	73	Woods, Fair, HSG C
62,407	52	Weighted Average
62,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.3	40	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	90	Total			

Summary for Subcatchment SC 2: SUBCATCHMENT 2

Runoff = 0.83 cfs @ 12.52 hrs, Volume= 0.151 af, Depth> 0.28"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

Area (sf)	CN	Description
148,732	73	Woods, Fair, HSG C
92,813	36	Woods, Fair, HSG A
41,526	60	Woods, Fair, HSG B
283,071	59	Weighted Average
283,071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.3	270	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.3	310	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	75	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	80	0.1900	2.18		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
40.1	860	Total			

Summary for Subcatchment SC 3: SUBCATCHMENT 3

Runoff = 0.26 cfs @ 12.45 hrs, Volume= 0.054 af, Depth> 0.20"
Routed to Reach SP3 : SUMMATION POINT 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

Area (sf)	CN	Description
24,080	36	Woods, Fair, HSG A
116,891	60	Woods, Fair, HSG B
140,971	56	Weighted Average
140,971		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	140	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
32.8	590	Total			

Summary for Subcatchment SC 4: SUBCATCHMENT 4

Runoff = 3.41 cfs @ 12.21 hrs, Volume= 0.300 af, Depth> 0.64"
Routed to Reach SP4 : SUMMATION POINT 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	87,038	60	Woods, Fair, HSG B
	146,744	73	Woods, Fair, HSG C
	7,481	79	Woods, Fair, HSG D
*	5,230	98	IMPERVIOUS
	246,493	69	Weighted Average
	241,263		97.88% Pervious Area
	5,230		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.2	70	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	90	0.1750	2.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	520	0.0300	10.39	166.29	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
0.2	150	0.0700	15.88	254.01	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
24.7	880	Total			

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.433 ac, 0.00% Impervious, Inflow Depth > 0.12" for 2 YEAR event
Inflow = 0.05 cfs @ 12.17 hrs, Volume= 0.014 af
Outflow = 0.05 cfs @ 12.17 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 6.498 ac, 0.00% Impervious, Inflow Depth > 0.28" for 2 YEAR event
Inflow = 0.83 cfs @ 12.52 hrs, Volume= 0.151 af
Outflow = 0.83 cfs @ 12.52 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP3: SUMMATION POINT 3

Inflow Area = 3.236 ac, 0.00% Impervious, Inflow Depth > 0.20" for 2 YEAR event
Inflow = 0.26 cfs @ 12.45 hrs, Volume= 0.054 af
Outflow = 0.26 cfs @ 12.45 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP4: SUMMATION POINT 4

Inflow Area = 5.659 ac, 2.12% Impervious, Inflow Depth > 0.64" for 2 YEAR event
Inflow = 3.41 cfs @ 12.21 hrs, Volume= 0.300 af
Outflow = 3.41 cfs @ 12.21 hrs, Volume= 0.300 af, Atten= 0%, Lag= 0.0 min

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

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC 1: SUBCATCHMENT1 Runoff Area=62,407 sf 0.00% Impervious Runoff Depth>0.54"
Flow Length=90' Tc=12.0 min CN=52 Runoff=0.92 cfs 0.065 af

Subcatchment SC 2: SUBCATCHMENT2 Runoff Area=283,071 sf 0.00% Impervious Runoff Depth>0.88"
Flow Length=860' Tc=40.1 min CN=59 Runoff=3.80 cfs 0.476 af

Subcatchment SC 3: SUBCATCHMENT3 Runoff Area=140,971 sf 0.00% Impervious Runoff Depth>0.73"
Flow Length=590' Tc=32.8 min CN=56 Runoff=1.66 cfs 0.196 af

Subcatchment SC 4: SUBCATCHMENT4 Runoff Area=246,493 sf 2.12% Impervious Runoff Depth>1.50"
Flow Length=880' Tc=24.7 min CN=69 Runoff=8.88 cfs 0.709 af

Reach SP1: SUMMATION POINT 1 Inflow=0.92 cfs 0.065 af
Outflow=0.92 cfs 0.065 af

Reach SP2: SUMMATION POINT 2 Inflow=3.80 cfs 0.476 af
Outflow=3.80 cfs 0.476 af

Reach SP3: SUMMATION POINT 3 Inflow=1.66 cfs 0.196 af
Outflow=1.66 cfs 0.196 af

Reach SP4: SUMMATION POINT 4 Inflow=8.88 cfs 0.709 af
Outflow=8.88 cfs 0.709 af

Total Runoff Area = 16.826 ac Runoff Volume = 1.446 af Average Runoff Depth = 1.03"
99.29% Pervious = 16.706 ac 0.71% Impervious = 0.120 ac

Summary for Subcatchment SC 1: SUBCATCHMENT 1

Runoff = 0.92 cfs @ 12.07 hrs, Volume= 0.065 af, Depth> 0.54"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

Area (sf)	CN	Description
34,923	36	Woods, Fair, HSG A
27,484	73	Woods, Fair, HSG C
62,407	52	Weighted Average
62,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.3	40	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	90	Total			

Summary for Subcatchment SC 2: SUBCATCHMENT 2

Runoff = 3.80 cfs @ 12.43 hrs, Volume= 0.476 af, Depth> 0.88"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

Area (sf)	CN	Description
148,732	73	Woods, Fair, HSG C
92,813	36	Woods, Fair, HSG A
41,526	60	Woods, Fair, HSG B
283,071	59	Weighted Average
283,071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.3	270	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.3	310	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	75	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	80	0.1900	2.18		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
40.1	860	Total			

Summary for Subcatchment SC 3: SUBCATCHMENT 3

Runoff = 1.66 cfs @ 12.34 hrs, Volume= 0.196 af, Depth> 0.73"
Routed to Reach SP3 : SUMMATION POINT 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

Area (sf)	CN	Description
24,080	36	Woods, Fair, HSG A
116,891	60	Woods, Fair, HSG B
140,971	56	Weighted Average
140,971		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	140	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
32.8	590	Total			

Summary for Subcatchment SC 4: SUBCATCHMENT 4

Runoff = 8.88 cfs @ 12.20 hrs, Volume= 0.709 af, Depth> 1.50"
Routed to Reach SP4 : SUMMATION POINT 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	87,038	60	Woods, Fair, HSG B
	146,744	73	Woods, Fair, HSG C
	7,481	79	Woods, Fair, HSG D
*	5,230	98	IMPERVIOUS
	246,493	69	Weighted Average
	241,263		97.88% Pervious Area
	5,230		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.2	70	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	90	0.1750	2.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	520	0.0300	10.39	166.29	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
0.2	150	0.0700	15.88	254.01	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
24.7	880	Total			

Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.433 ac, 0.00% Impervious, Inflow Depth > 0.54" for 10 YEAR event
Inflow = 0.92 cfs @ 12.07 hrs, Volume= 0.065 af
Outflow = 0.92 cfs @ 12.07 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 6.498 ac, 0.00% Impervious, Inflow Depth > 0.88" for 10 YEAR event
Inflow = 3.80 cfs @ 12.43 hrs, Volume= 0.476 af
Outflow = 3.80 cfs @ 12.43 hrs, Volume= 0.476 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP3: SUMMATION POINT 3

Inflow Area = 3.236 ac, 0.00% Impervious, Inflow Depth > 0.73" for 10 YEAR event
Inflow = 1.66 cfs @ 12.34 hrs, Volume= 0.196 af
Outflow = 1.66 cfs @ 12.34 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP4: SUMMATION POINT 4

Inflow Area = 5.659 ac, 2.12% Impervious, Inflow Depth > 1.50" for 10 YEAR event
Inflow = 8.88 cfs @ 12.20 hrs, Volume= 0.709 af
Outflow = 8.88 cfs @ 12.20 hrs, Volume= 0.709 af, Atten= 0%, Lag= 0.0 min

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

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment SC 1: SUBCATCHMENT1 Runoff Area=62,407 sf 0.00% Impervious Runoff Depth>1.04"
Flow Length=90' Tc=12.0 min CN=52 Runoff=2.10 cfs 0.124 af

Subcatchment SC 2: SUBCATCHMENT2 Runoff Area=283,071 sf 0.00% Impervious Runoff Depth>1.51"
Flow Length=860' Tc=40.1 min CN=59 Runoff=7.12 cfs 0.819 af

Subcatchment SC 3: SUBCATCHMENT3 Runoff Area=140,971 sf 0.00% Impervious Runoff Depth>1.30"
Flow Length=590' Tc=32.8 min CN=56 Runoff=3.38 cfs 0.351 af

Subcatchment SC 4: SUBCATCHMENT4 Runoff Area=246,493 sf 2.12% Impervious Runoff Depth>2.32"
Flow Length=880' Tc=24.7 min CN=69 Runoff=13.94 cfs 1.096 af

Reach SP1: SUMMATION POINT 1 Inflow=2.10 cfs 0.124 af
Outflow=2.10 cfs 0.124 af

Reach SP2: SUMMATION POINT 2 Inflow=7.12 cfs 0.819 af
Outflow=7.12 cfs 0.819 af

Reach SP3: SUMMATION POINT 3 Inflow=3.38 cfs 0.351 af
Outflow=3.38 cfs 0.351 af

Reach SP4: SUMMATION POINT 4 Inflow=13.94 cfs 1.096 af
Outflow=13.94 cfs 1.096 af

Total Runoff Area = 16.826 ac Runoff Volume = 2.389 af Average Runoff Depth = 1.70"
99.29% Pervious = 16.706 ac 0.71% Impervious = 0.120 ac

Summary for Subcatchment SC 1: SUBCATCHMENT 1

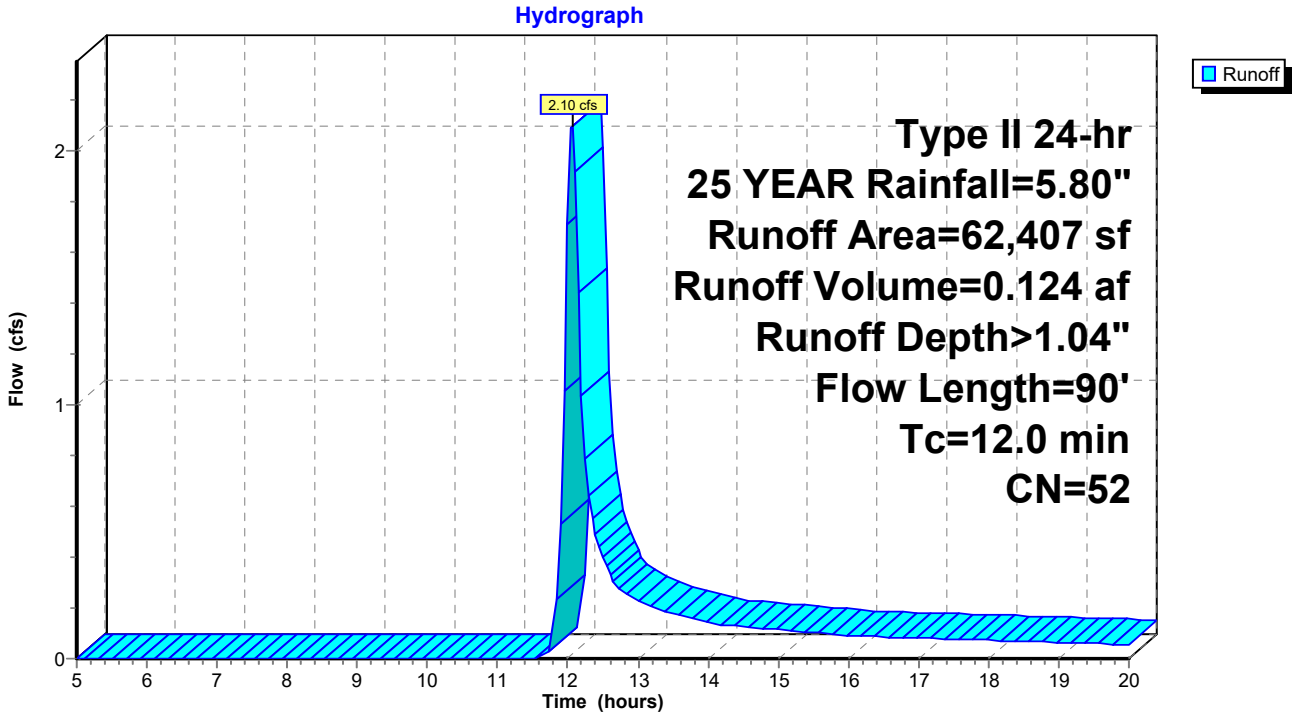
Runoff = 2.10 cfs @ 12.06 hrs, Volume= 0.124 af, Depth> 1.04"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

Area (sf)	CN	Description
34,923	36	Woods, Fair, HSG A
27,484	73	Woods, Fair, HSG C
62,407	52	Weighted Average
62,407		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.3	40	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	90	Total			

Subcatchment SC 1: SUBCATCHMENT 1



Summary for Subcatchment SC 2: SUBCATCHMENT 2

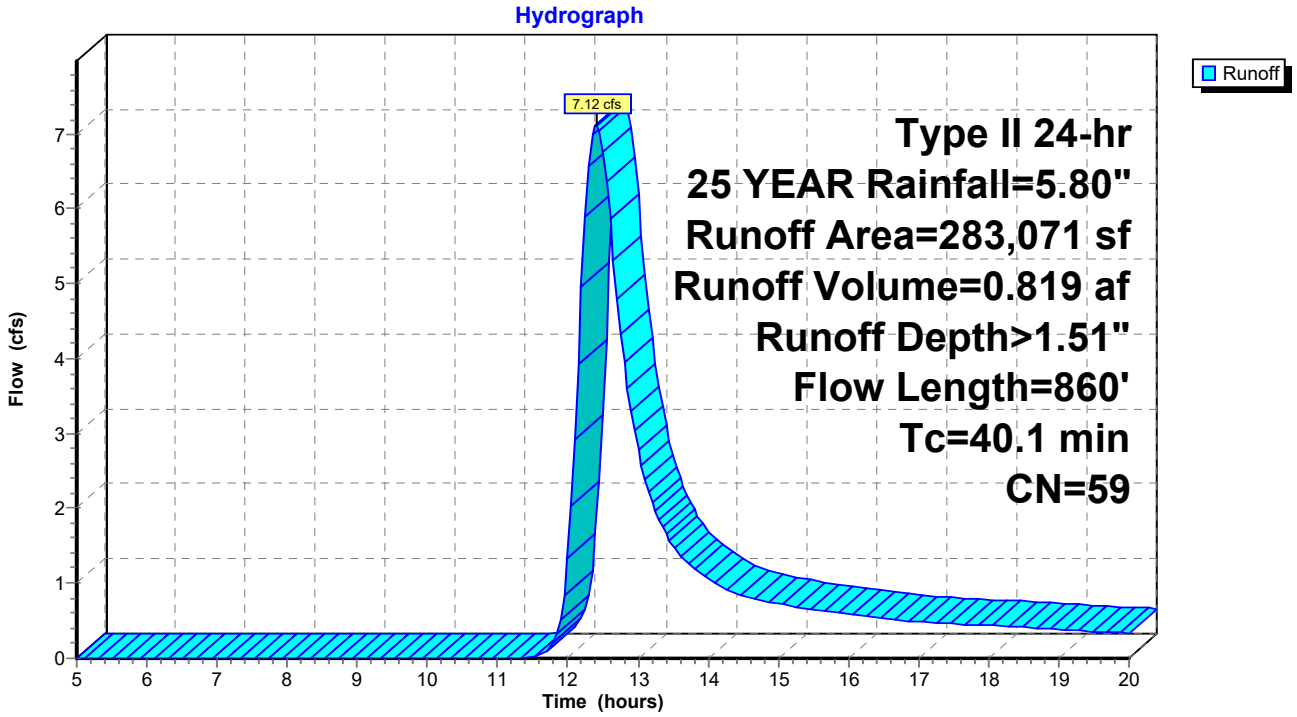
Runoff = 7.12 cfs @ 12.41 hrs, Volume= 0.819 af, Depth> 1.51"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

Area (sf)	CN	Description
148,732	73	Woods, Fair, HSG C
92,813	36	Woods, Fair, HSG A
41,526	60	Woods, Fair, HSG B
283,071	59	Weighted Average
283,071		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.8	75	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.3	270	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.3	310	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	75	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	80	0.1900	2.18		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
40.1	860	Total			

Subcatchment SC 2: SUBCATCHMENT 2



Summary for Subcatchment SC 3: SUBCATCHMENT 3

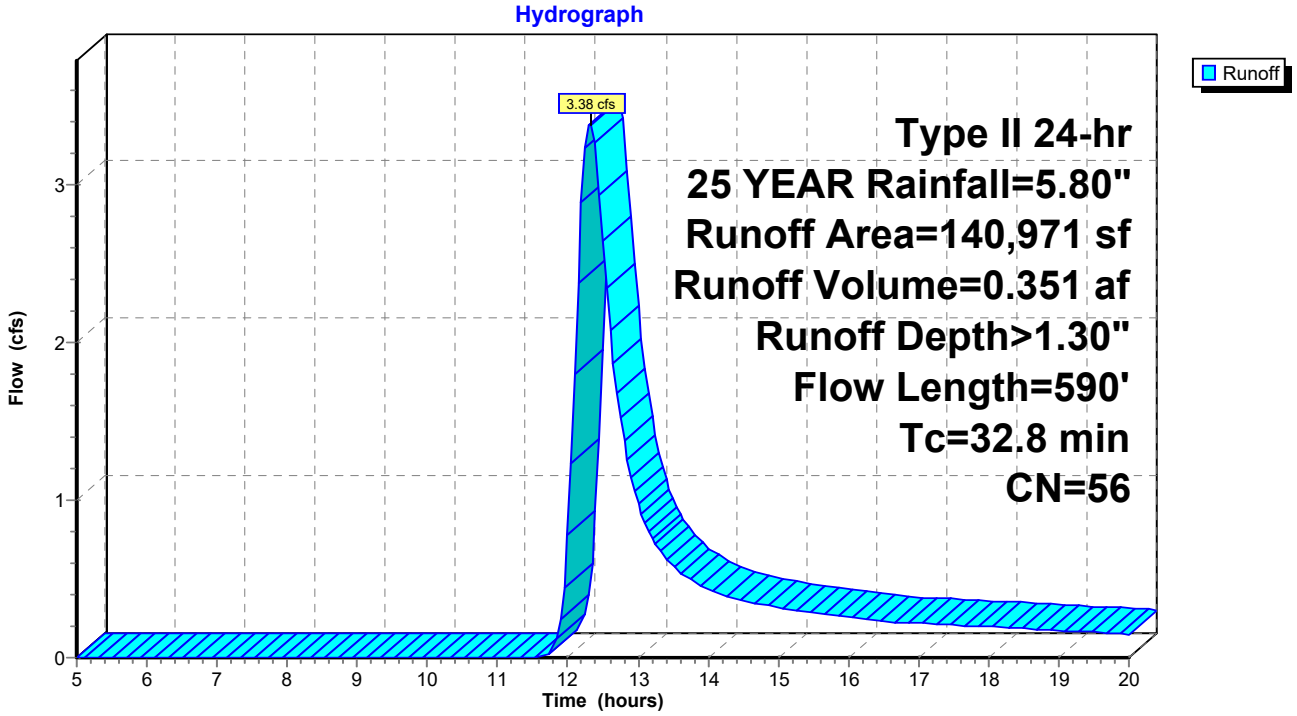
Runoff = 3.38 cfs @ 12.32 hrs, Volume= 0.351 af, Depth> 1.30"
Routed to Reach SP3 : SUMMATION POINT 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

Area (sf)	CN	Description
24,080	36	Woods, Fair, HSG A
116,891	60	Woods, Fair, HSG B
140,971	56	Weighted Average
140,971		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	140	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
32.8	590	Total			

Subcatchment SC 3: SUBCATCHMENT 3



Summary for Subcatchment SC 4: SUBCATCHMENT 4

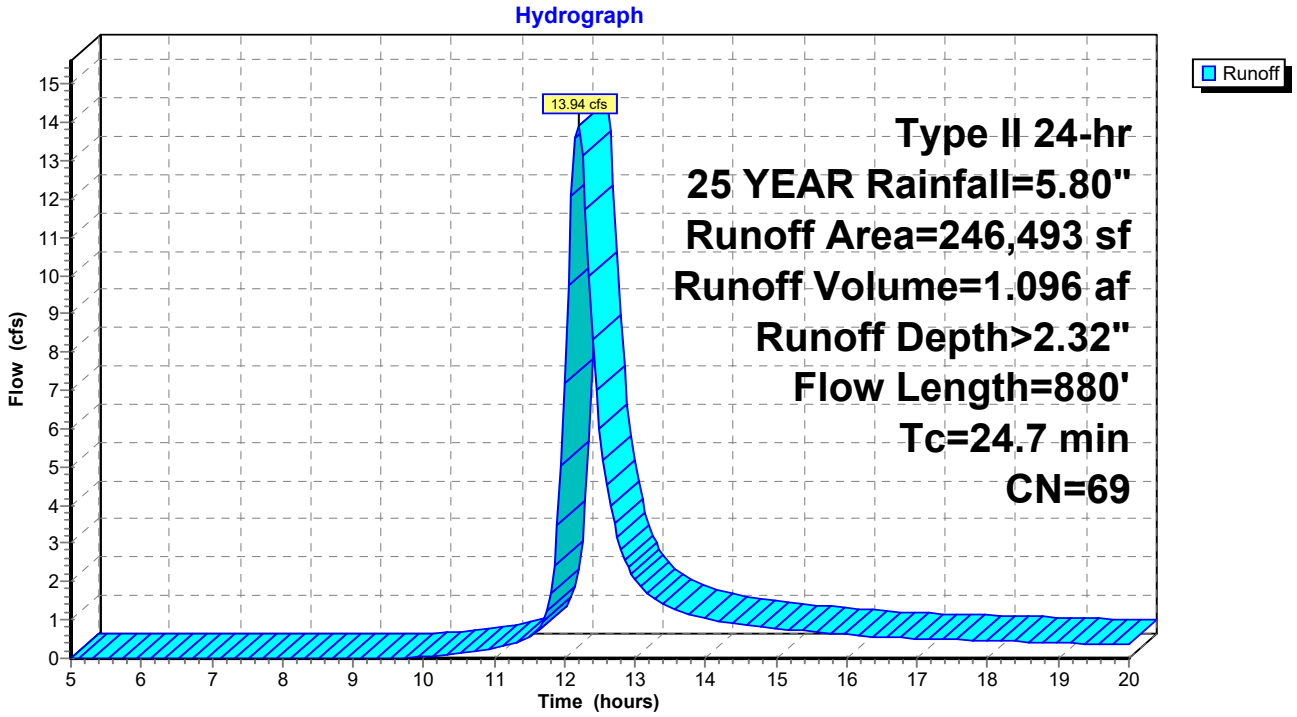
Runoff = 13.94 cfs @ 12.19 hrs, Volume= 1.096 af, Depth> 2.32"
Routed to Reach SP4 : SUMMATION POINT 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	87,038	60	Woods, Fair, HSG B
	146,744	73	Woods, Fair, HSG C
	7,481	79	Woods, Fair, HSG D
*	5,230	98	IMPERVIOUS
	246,493	69	Weighted Average
	241,263		97.88% Pervious Area
	5,230		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.2	70	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	90	0.1750	2.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	520	0.0300	10.39	166.29	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
0.2	150	0.0700	15.88	254.01	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
24.7	880	Total			

Subcatchment SC 4: SUBCATCHMENT 4

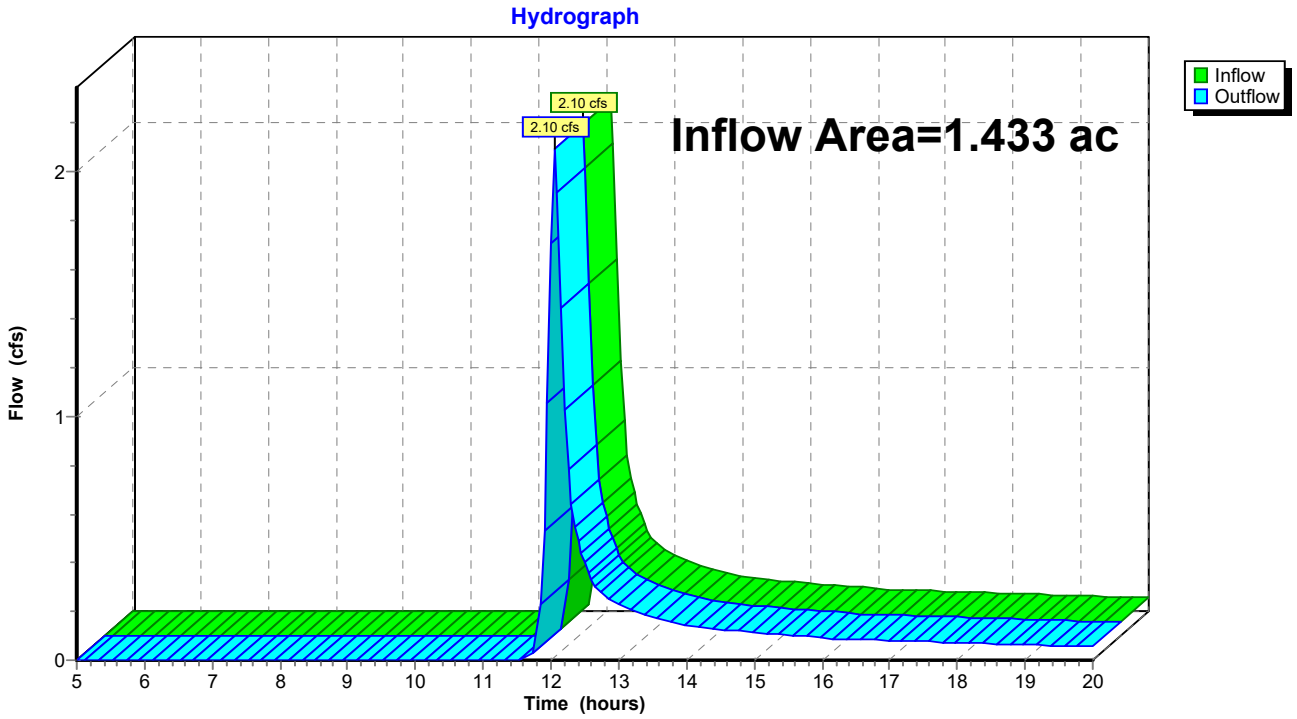


Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.433 ac, 0.00% Impervious, Inflow Depth > 1.04" for 25 YEAR event
Inflow = 2.10 cfs @ 12.06 hrs, Volume= 0.124 af
Outflow = 2.10 cfs @ 12.06 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min

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

Reach SP1: SUMMATION POINT 1

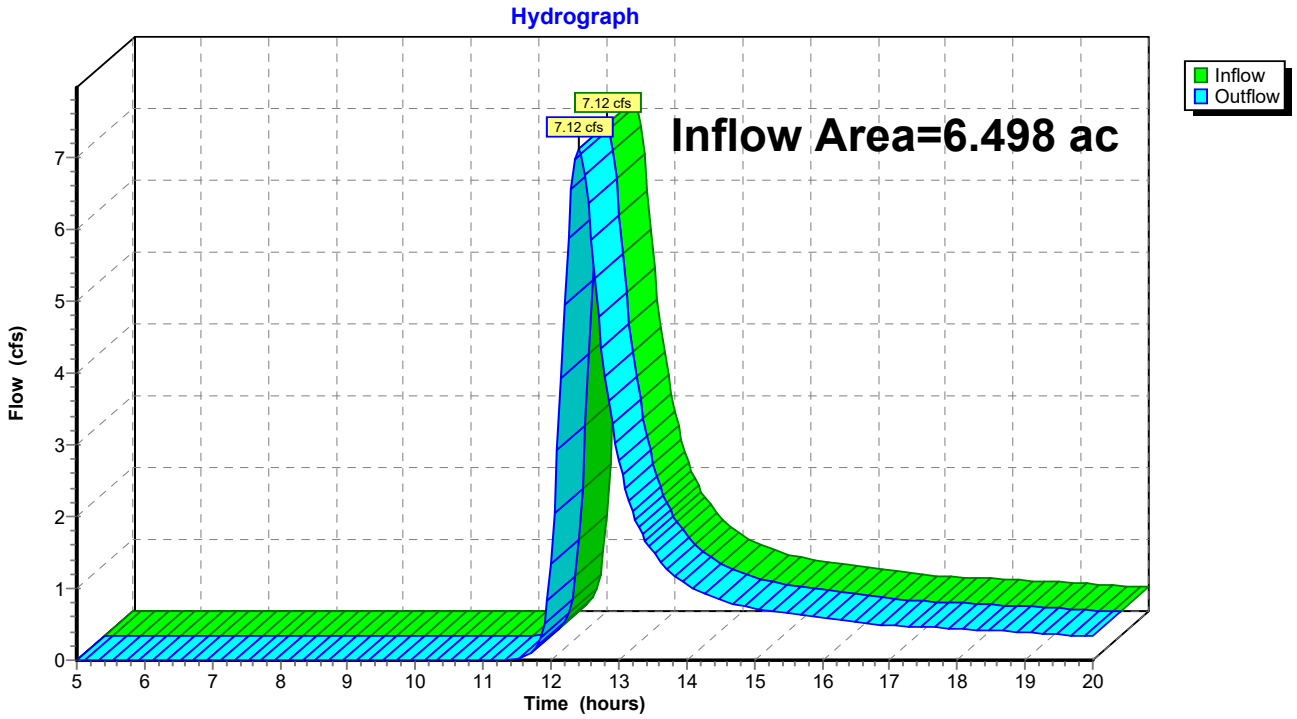


Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 6.498 ac, 0.00% Impervious, Inflow Depth > 1.51" for 25 YEAR event
Inflow = 7.12 cfs @ 12.41 hrs, Volume= 0.819 af
Outflow = 7.12 cfs @ 12.41 hrs, Volume= 0.819 af, Atten= 0%, Lag= 0.0 min

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

Reach SP2: SUMMATION POINT 2

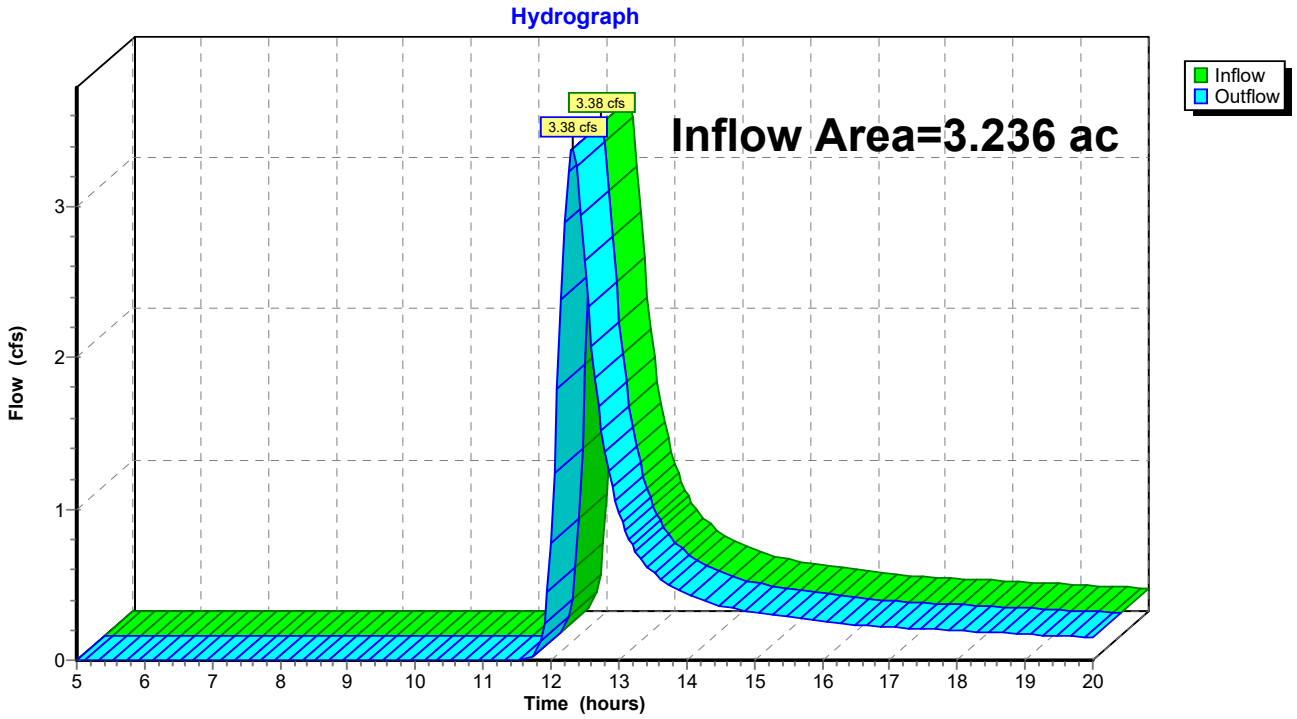


Summary for Reach SP3: SUMMATION POINT 3

Inflow Area = 3.236 ac, 0.00% Impervious, Inflow Depth > 1.30" for 25 YEAR event
Inflow = 3.38 cfs @ 12.32 hrs, Volume= 0.351 af
Outflow = 3.38 cfs @ 12.32 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.0 min

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

Reach SP3: SUMMATION POINT 3

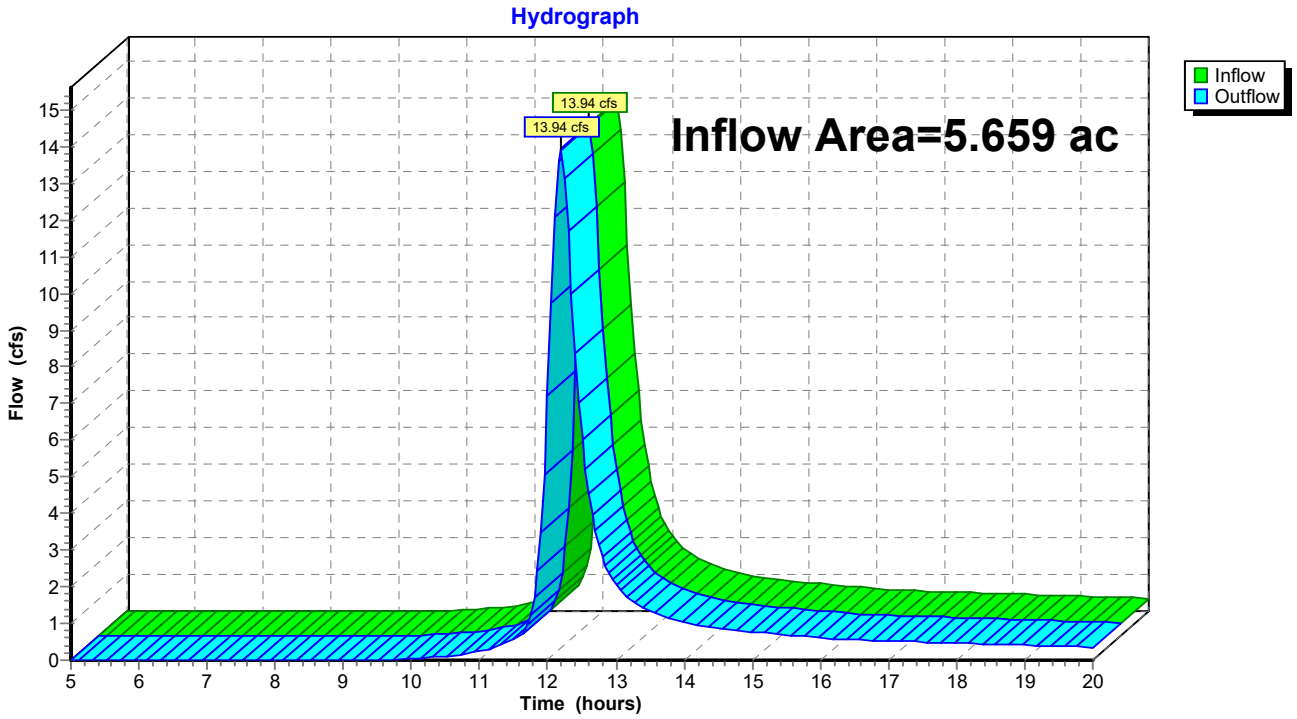


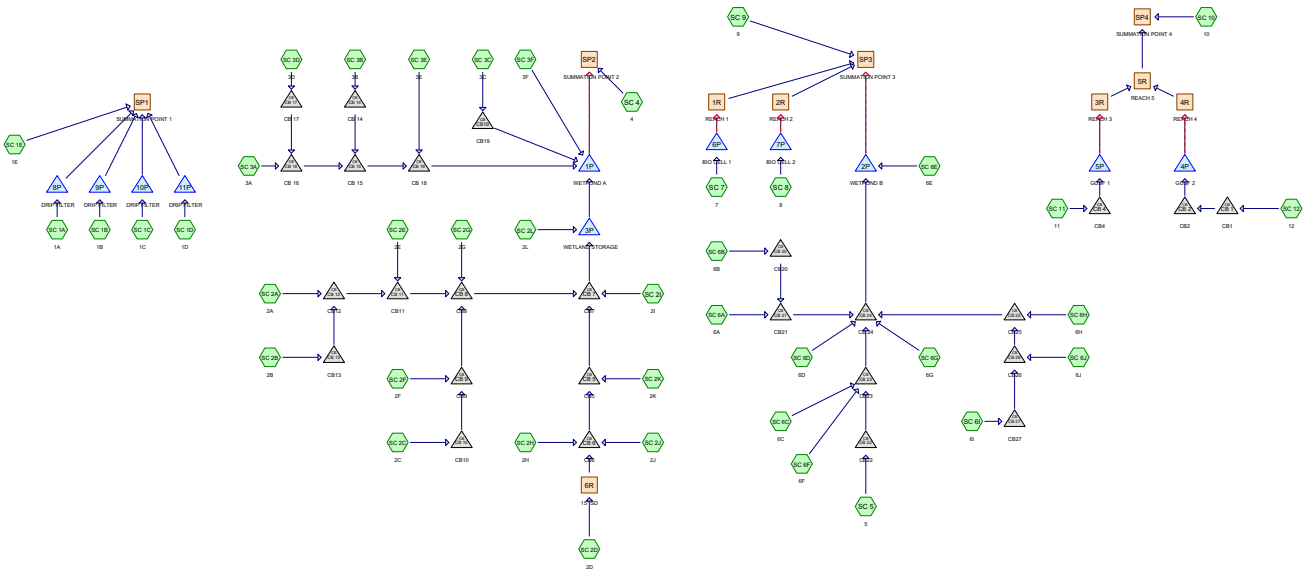
Summary for Reach SP4: SUMMATION POINT 4

Inflow Area = 5.659 ac, 2.12% Impervious, Inflow Depth > 2.32" for 25 YEAR event
Inflow = 13.94 cfs @ 12.19 hrs, Volume= 1.096 af
Outflow = 13.94 cfs @ 12.19 hrs, Volume= 1.096 af, Atten= 0%, Lag= 0.0 min

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

Reach SP4: SUMMATION POINT 4





Subcat Reach Pond Link

Routing Diagram for Post Development
Prepared by Haley Ward, Printed 8/28/2023
HydroCAD® 10.20-2b s/n 00641 © 2021 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentSC 10: 10 Runoff Area=211,215 sf 6.82% Impervious Runoff Depth>0.72"
Flow Length=975' Tc=26.3 min CN=71 Runoff=3.30 cfs 0.292 af

SubcatchmentSC 11: 11 Runoff Area=6,017 sf 65.45% Impervious Runoff Depth>1.94"
Tc=5.0 min CN=90 Runoff=0.50 cfs 0.022 af

SubcatchmentSC 12: 12 Runoff Area=6,712 sf 39.17% Impervious Runoff Depth>1.09"
Tc=5.0 min CN=78 Runoff=0.33 cfs 0.014 af

SubcatchmentSC 1A: 1A Runoff Area=967 sf 100.00% Impervious Runoff Depth>2.65"
Tc=5.0 min CN=98 Runoff=0.10 cfs 0.005 af

SubcatchmentSC 1B: 1B Runoff Area=1,186 sf 100.00% Impervious Runoff Depth>2.65"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.006 af

SubcatchmentSC 1C: 1C Runoff Area=1,595 sf 100.00% Impervious Runoff Depth>2.65"
Tc=5.0 min CN=98 Runoff=0.16 cfs 0.008 af

SubcatchmentSC 1D: 1D Runoff Area=1,152 sf 100.00% Impervious Runoff Depth>2.65"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.006 af

SubcatchmentSC 1E: 1E Runoff Area=61,853 sf 0.00% Impervious Runoff Depth>0.10"
Flow Length=90' Tc=7.4 min CN=51 Runoff=0.03 cfs 0.012 af

SubcatchmentSC 2A: 2A Runoff Area=5,111 sf 68.52% Impervious Runoff Depth>1.55"
Flow Length=127' Tc=4.9 min CN=85 Runoff=0.35 cfs 0.015 af

SubcatchmentSC 2B: 2B Runoff Area=18,599 sf 11.42% Impervious Runoff Depth>0.98"
Flow Length=100' Slope=0.0400 '/' Tc=17.3 min CN=76 Runoff=0.54 cfs 0.035 af

SubcatchmentSC 2C: 2C Runoff Area=16,958 sf 14.97% Impervious Runoff Depth>1.03"
Flow Length=150' Slope=0.0400 '/' Tc=18.2 min CN=77 Runoff=0.50 cfs 0.033 af

SubcatchmentSC 2D: 2D Runoff Area=25,546 sf 9.63% Impervious Runoff Depth>0.98"
Flow Length=160' Tc=16.7 min CN=76 Runoff=0.75 cfs 0.048 af

SubcatchmentSC 2E: 2E Runoff Area=1,667 sf 77.68% Impervious Runoff Depth>1.69"
Tc=5.0 min CN=87 Runoff=0.12 cfs 0.005 af

SubcatchmentSC 2F: 2F Runoff Area=4,179 sf 89.40% Impervious Runoff Depth>2.39"
Tc=5.0 min CN=95 Runoff=0.40 cfs 0.019 af

SubcatchmentSC 2G: 2G Runoff Area=4,722 sf 88.63% Impervious Runoff Depth>2.39"
Tc=5.0 min CN=95 Runoff=0.45 cfs 0.022 af

SubcatchmentSC 2H: 2H Runoff Area=2,889 sf 97.92% Impervious Runoff Depth>2.65"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.015 af

SubcatchmentSC 2I: 2I Runoff Area=3,581 sf 90.51% Impervious Runoff Depth>2.48"
Tc=5.0 min CN=96 Runoff=0.35 cfs 0.017 af

SubcatchmentSC 2J: 2J Runoff Area=3,699 sf 93.21% Impervious Runoff Depth>2.48"
Tc=5.0 min CN=96 Runoff=0.36 cfs 0.018 af

SubcatchmentSC 2K: 2K Runoff Area=5,912 sf 84.88% Impervious Runoff Depth>2.30"
Tc=5.0 min CN=94 Runoff=0.55 cfs 0.026 af

SubcatchmentSC 2L: 2L Runoff Area=47,113 sf 19.70% Impervious Runoff Depth>1.03"
Flow Length=240' Tc=9.4 min CN=77 Runoff=1.89 cfs 0.093 af

SubcatchmentSC 3A: 3A Runoff Area=5,173 sf 62.27% Impervious Runoff Depth>0.98"
Tc=5.0 min CN=76 Runoff=0.23 cfs 0.010 af

SubcatchmentSC 3B: 3B Runoff Area=2,001 sf 78.66% Impervious Runoff Depth>1.55"
Tc=5.0 min CN=85 Runoff=0.14 cfs 0.006 af

SubcatchmentSC 3C: 3C Runoff Area=20,436 sf 68.42% Impervious Runoff Depth>1.54"
Flow Length=297' Tc=8.3 min CN=85 Runoff=1.27 cfs 0.060 af

SubcatchmentSC 3D: 3D Runoff Area=3,167 sf 63.75% Impervious Runoff Depth>1.04"
Tc=5.0 min CN=77 Runoff=0.15 cfs 0.006 af

SubcatchmentSC 3E: 3E Runoff Area=2,986 sf 96.99% Impervious Runoff Depth>2.48"
Tc=5.0 min CN=96 Runoff=0.29 cfs 0.014 af

SubcatchmentSC 3F: 3F Runoff Area=46,508 sf 39.26% Impervious Runoff Depth>0.56"
Tc=5.0 min CN=67 Runoff=1.12 cfs 0.050 af

SubcatchmentSC 4: 4 Runoff Area=58,116 sf 8.45% Impervious Runoff Depth>0.04"
Tc=5.0 min CN=47 Runoff=0.01 cfs 0.004 af

SubcatchmentSC 5: 5 Runoff Area=61,473 sf 26.96% Impervious Runoff Depth>0.73"
Flow Length=492' Tc=8.3 min CN=71 Runoff=1.78 cfs 0.086 af

SubcatchmentSC 6A: 6A Runoff Area=4,112 sf 82.08% Impervious Runoff Depth>2.02"
Tc=5.0 min CN=91 Runoff=0.35 cfs 0.016 af

SubcatchmentSC 6B: 6B Runoff Area=6,451 sf 75.28% Impervious Runoff Depth>1.85"
Tc=5.0 min CN=89 Runoff=0.52 cfs 0.023 af

SubcatchmentSC 6C: 6C Runoff Area=4,203 sf 79.90% Impervious Runoff Depth>2.02"
Tc=5.0 min CN=91 Runoff=0.36 cfs 0.016 af

SubcatchmentSC 6D: 6D Runoff Area=7,390 sf 70.24% Impervious Runoff Depth>1.69"
Tc=5.0 min CN=87 Runoff=0.55 cfs 0.024 af

SubcatchmentSC 6E: 6E Runoff Area=11,284 sf 12.68% Impervious Runoff Depth>0.52"
Flow Length=50' Slope=0.0200 '/' Tc=5.7 min CN=66 Runoff=0.24 cfs 0.011 af

SubcatchmentSC 6F: 6F Runoff Area=6,530 sf 75.51% Impervious Runoff Depth>1.85"
Tc=5.0 min CN=89 Runoff=0.52 cfs 0.023 af

SubcatchmentSC 6G: 6G Runoff Area=4,787 sf 90.01% Impervious Runoff Depth>2.30"
Tc=5.0 min CN=94 Runoff=0.45 cfs 0.021 af

SubcatchmentSC 6H: 6H Runoff Area=2,481 sf 100.00% Impervious Runoff Depth>2.65"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.013 af

SubcatchmentSC 6I: 6I Runoff Area=10,162 sf 78.30% Impervious Runoff Depth>1.94"
Tc=5.0 min CN=90 Runoff=0.84 cfs 0.038 af

SubcatchmentSC 6J: 6J Runoff Area=7,163 sf 95.48% Impervious Runoff Depth>2.48"
Tc=5.0 min CN=96 Runoff=0.70 cfs 0.034 af

SubcatchmentSC 7: 7 Runoff Area=2,865 sf 31.76% Impervious Runoff Depth>0.32"
Tc=5.0 min CN=60 Runoff=0.03 cfs 0.002 af

SubcatchmentSC 8: 8 Runoff Area=2,371 sf 36.02% Impervious Runoff Depth>0.48"
Tc=5.0 min CN=65 Runoff=0.05 cfs 0.002 af

SubcatchmentSC 9: 9 Runoff Area=32,610 sf 6.95% Impervious Runoff Depth>0.04"
Tc=5.0 min CN=47 Runoff=0.00 cfs 0.003 af

Reach 1R: REACH 1 Inflow=0.03 cfs 0.002 af
Outflow=0.03 cfs 0.002 af

Reach 2R: REACH 2 Inflow=0.03 cfs 0.002 af
Outflow=0.03 cfs 0.002 af

Reach 3R: REACH 3 Avg. Flow Depth=0.02' Max Vel=1.19 fps Inflow=0.10 cfs 0.022 af
n=0.025 L=425.0' S=0.0300 '/' Capacity=538.48 cfs Outflow=0.10 cfs 0.022 af

Reach 4R: REACH 4 Avg. Flow Depth=0.02' Max Vel=1.19 fps Inflow=0.10 cfs 0.014 af
n=0.025 L=250.0' S=0.0300 '/' Capacity=538.48 cfs Outflow=0.10 cfs 0.014 af

Reach 5R: REACH 5 Avg. Flow Depth=0.05' Max Vel=1.02 fps Inflow=0.20 cfs 0.036 af
n=0.035 L=360.0' S=0.0300 '/' Capacity=384.63 cfs Outflow=0.20 cfs 0.036 af

Reach 6R: 15" SD Avg. Flow Depth=0.34' Max Vel=2.75 fps Inflow=0.75 cfs 0.048 af
15.0" Round Pipe n=0.013 L=38.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=0.75 cfs 0.048 af

Reach SP1: SUMMATION POINT 1 Inflow=0.29 cfs 0.037 af
Outflow=0.29 cfs 0.037 af

Reach SP2: SUMMATION POINT 2 Inflow=0.01 cfs 0.004 af
Outflow=0.01 cfs 0.004 af

Reach SP3: SUMMATION POINT 3 Inflow=0.05 cfs 0.006 af
Outflow=0.05 cfs 0.006 af

Reach SP4: SUMMATION POINT 4 Inflow=3.50 cfs 0.328 af
Outflow=3.50 cfs 0.328 af

Pond 1P: WETPOND A Peak Elev=73.70' Storage=21,345 cf Inflow=6.74 cfs 0.490 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 2P: WETPOND B Peak Elev=70.43' Storage=13,259 cf Inflow=6.26 cfs 0.305 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond 3P: WETLAND STORAGE Peak Elev=80.05' Storage=1,875 cf Inflow=5.56 cfs 0.345 af
24.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=4.17 cfs 0.344 af

Pond 4P: GUSF 2 Peak Elev=75.81' Storage=129 cf Inflow=0.33 cfs 0.014 af
Primary=0.10 cfs 0.014 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.014 af

Pond 5P: GUSF 1 Peak Elev=82.93' Storage=280 cf Inflow=0.50 cfs 0.022 af
Primary=0.10 cfs 0.022 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.022 af

Pond 6P: BIO CELL 1 Peak Elev=78.51' Storage=0 cf Inflow=0.03 cfs 0.002 af
Primary=0.03 cfs 0.002 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.002 af

Pond 7P: BIO CELL 2 Peak Elev=77.01' Storage=24 cf Inflow=0.05 cfs 0.002 af
Primary=0.03 cfs 0.002 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.002 af

Pond 8P: DRIP FILTER Peak Elev=0.39' Storage=31 cf Inflow=0.10 cfs 0.005 af
Outflow=0.04 cfs 0.005 af

Pond 9P: DRIP FILTER Peak Elev=0.57' Storage=45 cf Inflow=0.12 cfs 0.006 af
Outflow=0.06 cfs 0.006 af

Pond 10P: DRIP FILTER Peak Elev=0.68' Storage=54 cf Inflow=0.16 cfs 0.008 af
Outflow=0.14 cfs 0.008 af

Pond 11P: DRIP FILTER Peak Elev=0.55' Storage=44 cf Inflow=0.12 cfs 0.006 af
Outflow=0.05 cfs 0.006 af

Pond CB 1: CB1 Peak Elev=77.08' Inflow=0.33 cfs 0.014 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.33 cfs 0.014 af

Pond CB 10: CB10 Peak Elev=82.64' Inflow=0.50 cfs 0.033 af
15.0" Round Culvert n=0.013 L=55.0' S=0.0051 '/' Outflow=0.50 cfs 0.033 af

Pond CB 11: CB11 Peak Elev=82.96' Inflow=0.78 cfs 0.055 af
15.0" Round Culvert n=0.013 L=95.0' S=0.0049 '/' Outflow=0.78 cfs 0.055 af

Pond CB 12: CB12 Peak Elev=83.15' Inflow=0.68 cfs 0.050 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.68 cfs 0.050 af

Pond CB 13: CB13 Peak Elev=83.55' Inflow=0.54 cfs 0.035 af
15.0" Round Culvert n=0.013 L=75.0' S=0.0049 '/' Outflow=0.54 cfs 0.035 af

Pond CB 14: CB 14 Peak Elev=83.44' Inflow=0.14 cfs 0.006 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0910 '/' Outflow=0.14 cfs 0.006 af

Pond CB 15: CB 15 Peak Elev=81.71' Inflow=0.52 cfs 0.022 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0200 '/' Outflow=0.52 cfs 0.022 af

Pond CB 16: CB 16 Peak Elev=81.93' Inflow=0.38 cfs 0.016 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=0.38 cfs 0.016 af

Pond CB 17: CB 17 Peak Elev=82.27' Inflow=0.15 cfs 0.006 af
15.0" Round Culvert n=0.013 L=76.0' S=0.0050 '/' Outflow=0.15 cfs 0.006 af

Pond CB 18: CB 18 Peak Elev=79.01' Inflow=0.81 cfs 0.036 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0100 '/' Outflow=0.81 cfs 0.036 af

Pond CB 2: CB2 Peak Elev=77.04' Inflow=0.33 cfs 0.014 af
6.0" Round Culvert n=0.013 L=15.0' S=0.0053 '/' Outflow=0.33 cfs 0.014 af

Pond CB 20: CB20 Peak Elev=79.22' Inflow=0.52 cfs 0.023 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.52 cfs 0.023 af

Pond CB 21: CB21 Peak Elev=79.10' Inflow=0.87 cfs 0.039 af
15.0" Round Culvert n=0.013 L=116.0' S=0.0285 '/' Outflow=0.87 cfs 0.039 af

Pond CB 22: CB22 Peak Elev=75.10' Inflow=1.78 cfs 0.086 af
24.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.78 cfs 0.086 af

Pond CB 23: CB23 Peak Elev=75.05' Inflow=2.54 cfs 0.125 af
24.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=2.54 cfs 0.125 af

Pond CB 24: CB 24 Peak Elev=75.33' Inflow=6.03 cfs 0.293 af
24.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=6.03 cfs 0.293 af

Pond CB 25: CB25 Peak Elev=77.65' Inflow=1.80 cfs 0.084 af
15.0" Round Culvert n=0.013 L=150.0' S=0.0107 '/' Outflow=1.80 cfs 0.084 af

Pond CB 26: CB26 Peak Elev=79.14' Inflow=1.55 cfs 0.072 af
15.0" Round Culvert n=0.013 L=110.0' S=0.0132 '/' Outflow=1.55 cfs 0.072 af

Pond CB 27: CB27 Peak Elev=79.24' Inflow=0.84 cfs 0.038 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=0.84 cfs 0.038 af

Pond CB 4: CB4 Peak Elev=82.57' Inflow=0.50 cfs 0.022 af
15.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/' Outflow=0.50 cfs 0.022 af

Pond CB 5: CB5 Peak Elev=81.84' Inflow=1.59 cfs 0.106 af
15.0" Round Culvert n=0.013 L=62.0' S=0.0050 '/' Outflow=1.59 cfs 0.106 af

Pond CB 6: CB6 Peak Elev=81.96' Inflow=1.06 cfs 0.080 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=1.06 cfs 0.080 af

Pond CB 7: CB7 Peak Elev=81.67' Inflow=3.81 cfs 0.252 af
24.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=3.81 cfs 0.252 af

Pond CB 8: CB8 Peak Elev=82.50' Inflow=1.87 cfs 0.129 af
15.0" Round Culvert n=0.013 L=42.0' S=0.0050 '/' Outflow=1.87 cfs 0.129 af

Pond CB 9: CB9 Peak Elev=82.35' Inflow=0.67 cfs 0.053 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.67 cfs 0.053 af

Pond CB19: CB19 Peak Elev=77.16' Inflow=1.27 cfs 0.060 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0150 '/' Outflow=1.27 cfs 0.060 af

Total Runoff Area = 16.826 ac Runoff Volume = 1.172 af Average Runoff Depth = 0.84"
75.20% Pervious = 12.654 ac 24.80% Impervious = 4.172 ac

Summary for Subcatchment SC 10: 10

Runoff = 3.30 cfs @ 12.23 hrs, Volume= 0.292 af, Depth> 0.72"
Routed to Reach SP4 : SUMMATION POINT 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	67	39	>75% Grass cover, Good, HSG A
	49,329	60	Woods, Fair, HSG B
	11,304	61	>75% Grass cover, Good, HSG B
	121,487	73	Woods, Fair, HSG C
	10,078	74	>75% Grass cover, Good, HSG C
	4,535	79	Woods, Fair, HSG D
*	14,415	98	IMPERVIOUS
	211,215	71	Weighted Average
	196,800		93.18% Pervious Area
	14,415		6.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.7	140	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	90	0.1750	2.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	75	0.0100	10.72	386.00	**Channel Flow,** Area= 36.0 sf Perim= 18.0' r= 2.00' n= 0.022 Earth, clean & straight
0.8	470	0.0300	10.39	166.29	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
0.2	150	0.0700	15.88	254.01	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
26.3	975	Total			

Summary for Subcatchment SC 11: 11

Runoff = 0.50 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 1.94"
Routed to Pond CB 4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	2,079	74	>75% Grass cover, Good, HSG C
*	3,938	98	IMPERVIOUS
	6,017	90	Weighted Average
	2,079		34.55% Pervious Area
	3,938		65.45% Impervious Area

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

Summary for Subcatchment SC 12: 12

Runoff = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af, Depth> 1.09"
Routed to Pond CB 1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,115	39	>75% Grass cover, Good, HSG A
	2,968	74	>75% Grass cover, Good, HSG C
*	2,629	98	IMPERVIOUS
	6,712	78	Weighted Average
	4,083		60.83% Pervious Area
	2,629		39.17% Impervious Area

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

Summary for Subcatchment SC 1A: 1A

Runoff = 0.10 cfs @ 11.95 hrs, Volume= 0.005 af, Depth> 2.65"
Routed to Pond 8P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	967	98	IMPERVIOUS
	967		100.00% Impervious Area

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

Summary for Subcatchment SC 1B: 1B

Runoff = 0.12 cfs @ 11.95 hrs, Volume= 0.006 af, Depth> 2.65"
Routed to Pond 9P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	1,186	98	IMPERVIOUS
	1,186		100.00% Impervious Area

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

Summary for Subcatchment SC 1C: 1C

Runoff = 0.16 cfs @ 11.95 hrs, Volume= 0.008 af, Depth> 2.65"
Routed to Pond 10P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	1,595	98	IMPERVIOUS
	1,595		100.00% Impervious Area

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

Summary for Subcatchment SC 1D: 1D

Runoff = 0.12 cfs @ 11.95 hrs, Volume= 0.006 af, Depth> 2.65"
Routed to Pond 11P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	1,152	98	IMPERVIOUS
	1,152		100.00% Impervious Area

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

Summary for Subcatchment SC 1E: 1E

Runoff = 0.03 cfs @ 12.37 hrs, Volume= 0.012 af, Depth> 0.10"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

Area (sf)	CN	Description
34,276	36	Woods, Fair, HSG A
21,674	73	Woods, Fair, HSG C
2,952	39	>75% Grass cover, Good, HSG A
2,951	74	>75% Grass cover, Good, HSG C
61,853	51	Weighted Average
61,853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	40	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.4	90	Total			

Summary for Subcatchment SC 2A: 2A

Runoff = 0.35 cfs @ 11.96 hrs, Volume= 0.015 af, Depth> 1.55"
Routed to Pond CB 12 : CB12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	845	39	>75% Grass cover, Good, HSG A
	764	74	>75% Grass cover, Good, HSG C
*	3,502	98	IMPERVIOUS
	5,111	85	Weighted Average
	1,609		31.48% Pervious Area
	3,502		68.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
4.3	35	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	80	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	127	Total			

Summary for Subcatchment SC 2B: 2B

Runoff = 0.54 cfs @ 12.11 hrs, Volume= 0.035 af, Depth> 0.98"
Routed to Pond CB 13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	12,451	73	Woods, Fair, HSG C
	4,024	74	>75% Grass cover, Good, HSG C
*	2,124	98	IMPERVIOUS
	18,599	76	Weighted Average
	16,475		88.58% Pervious Area
	2,124		11.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	100	Total			

Summary for Subcatchment SC 2C: 2C

Runoff = 0.50 cfs @ 12.12 hrs, Volume= 0.033 af, Depth> 1.03"
Routed to Pond CB 10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	10,994	73	Woods, Fair, HSG C
	3,426	74	>75% Grass cover, Good, HSG C
*	2,538	98	IMPERVIOUS
	16,958	77	Weighted Average
	14,420		85.03% Pervious Area
	2,538		14.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	150	Total			

Summary for Subcatchment SC 2D: 2D

Runoff = 0.75 cfs @ 12.10 hrs, Volume= 0.048 af, Depth> 0.98"
Routed to Reach 6R : 15" SD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	20,100	73	Woods, Fair, HSG C
	2,985	74	>75% Grass cover, Good, HSG C
*	2,461	98	IMPERVIOUS
	25,546	76	Weighted Average
	23,085		90.37% Pervious Area
	2,461		9.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.6	110	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.7	160	Total			

Summary for Subcatchment SC 2E: 2E

Runoff = 0.12 cfs @ 11.96 hrs, Volume= 0.005 af, Depth> 1.69"
Routed to Pond CB 11 : CB11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	251	39	>75% Grass cover, Good, HSG A
	121	74	>75% Grass cover, Good, HSG C
*	1,295	98	IMPERVIOUS
	1,667	87	Weighted Average
	372		22.32% Pervious Area
	1,295		77.68% Impervious Area

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

Summary for Subcatchment SC 2F: 2F

Runoff = 0.40 cfs @ 11.95 hrs, Volume= 0.019 af, Depth> 2.39"
Routed to Pond CB 9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	443	74	>75% Grass cover, Good, HSG C
*	3,736	98	IMPERVIOUS
	4,179	95	Weighted Average
	443		10.60% Pervious Area
	3,736		89.40% Impervious Area

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

Summary for Subcatchment SC 2G: 2G

Runoff = 0.45 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 2.39"
Routed to Pond CB 8 : CB8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	537	74	>75% Grass cover, Good, HSG C
*	4,185	98	IMPERVIOUS
	4,722	95	Weighted Average
	537		11.37% Pervious Area
	4,185		88.63% Impervious Area

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

Summary for Subcatchment SC 2H: 2H

Runoff = 0.29 cfs @ 11.95 hrs, Volume= 0.015 af, Depth> 2.65"
Routed to Pond CB 6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	60	74	>75% Grass cover, Good, HSG C
*	2,829	98	IMPERVIOUS
	2,889	98	Weighted Average
	60		2.08% Pervious Area
	2,829		97.92% Impervious Area

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

Summary for Subcatchment SC 2I: 2I

Runoff = 0.35 cfs @ 11.95 hrs, Volume= 0.017 af, Depth> 2.48"
Routed to Pond CB 7 : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	340	74	>75% Grass cover, Good, HSG C
*	3,241	98	IMPERVIOUS
	3,581	96	Weighted Average
	340		9.49% Pervious Area
	3,241		90.51% Impervious Area

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

Summary for Subcatchment SC 2J: 2J

Runoff = 0.36 cfs @ 11.95 hrs, Volume= 0.018 af, Depth> 2.48"
Routed to Pond CB 6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	251	74	>75% Grass cover, Good, HSG C
*	3,448	98	IMPERVIOUS
	3,699	96	Weighted Average
	251		6.79% Pervious Area
	3,448		93.21% Impervious Area

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

Summary for Subcatchment SC 2K: 2K

Runoff = 0.55 cfs @ 11.95 hrs, Volume= 0.026 af, Depth> 2.30"
Routed to Pond CB 5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	894	74	>75% Grass cover, Good, HSG C
*	5,018	98	IMPERVIOUS
	5,912	94	Weighted Average
	894		15.12% Pervious Area
	5,018		84.88% Impervious Area

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

Summary for Subcatchment SC 2L: 2L

Runoff = 1.89 cfs @ 12.01 hrs, Volume= 0.093 af, Depth> 1.03"
Routed to Pond 3P : WETLAND STORAGE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	965	39	>75% Grass cover, Good, HSG A
	2,059	60	Woods, Fair, HSG B
	2,162	61	>75% Grass cover, Good, HSG B
	12,048	73	Woods, Fair, HSG C
	20,596	74	>75% Grass cover, Good, HSG C
*	9,283	98	IMPERVIOUS
	47,113	77	Weighted Average
	37,830		80.30% Pervious Area
	9,283		19.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.4	90	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.3	100	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	240	Total			

Summary for Subcatchment SC 3A: 3A

Runoff = 0.23 cfs @ 11.96 hrs, Volume= 0.010 af, Depth> 0.98"
Routed to Pond CB 16 : CB 16

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,952	39	>75% Grass cover, Good, HSG A
*	3,221	98	IMPERVIOUS
	5,173	76	Weighted Average
	1,952		37.73% Pervious Area
	3,221		62.27% Impervious Area

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

Summary for Subcatchment SC 3B: 3B

Runoff = 0.14 cfs @ 11.96 hrs, Volume= 0.006 af, Depth> 1.55"
Routed to Pond CB 14 : CB 14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	427	39	>75% Grass cover, Good, HSG A
*	1,574	98	IMPERVIOUS
	2,001	85	Weighted Average
	427		21.34% Pervious Area
	1,574		78.66% Impervious Area

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

Summary for Subcatchment SC 3C: 3C

Runoff = 1.27 cfs @ 12.00 hrs, Volume= 0.060 af, Depth> 1.54"
Routed to Pond CB19 : CB19

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,684	39	>75% Grass cover, Good, HSG A
	439	60	Woods, Fair, HSG B
	3,700	61	>75% Grass cover, Good, HSG B
	630	74	>75% Grass cover, Good, HSG C
*	13,983	98	IMPERVIOUS
	20,436	85	Weighted Average
	6,453		31.58% Pervious Area
	13,983		68.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
7.1	65	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	220	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.3	297	Total			

Summary for Subcatchment SC 3D: 3D

Runoff = 0.15 cfs @ 11.96 hrs, Volume= 0.006 af, Depth> 1.04"
Routed to Pond CB 17 : CB 17

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,148	39	>75% Grass cover, Good, HSG A
*	2,019	98	IMPERVIOUS
	3,167	77	Weighted Average
	1,148		36.25% Pervious Area
	2,019		63.75% Impervious Area

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

Summary for Subcatchment SC 3E: 3E

Runoff = 0.29 cfs @ 11.95 hrs, Volume= 0.014 af, Depth> 2.48"
Routed to Pond CB 18 : CB 18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	90	39	>75% Grass cover, Good, HSG A
*	2,896	98	IMPERVIOUS
	2,986	96	Weighted Average
	90		3.01% Pervious Area
	2,896		96.99% Impervious Area

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

Summary for Subcatchment SC 3F: 3F

Runoff = 1.12 cfs @ 11.97 hrs, Volume= 0.050 af, Depth> 0.56"
Routed to Pond 1P : WETPOND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	19,802	39	>75% Grass cover, Good, HSG A
	7,113	61	>75% Grass cover, Good, HSG B
	1,334	74	>75% Grass cover, Good, HSG C
*	18,259	98	IMPERVIOUS
	46,508	67	Weighted Average
	28,249		60.74% Pervious Area
	18,259		39.26% Impervious Area

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

Summary for Subcatchment SC 4: 4

Runoff = 0.01 cfs @ 15.04 hrs, Volume= 0.004 af, Depth> 0.04"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	34,054	36	Woods, Fair, HSG A
	7,162	39	>75% Grass cover, Good, HSG A
	10,830	60	Woods, Fair, HSG B
	1,162	61	>75% Grass cover, Good, HSG B
*	4,908	98	IMPERVIOUS
	58,116	47	Weighted Average
	53,208		91.55% Pervious Area
	4,908		8.45% Impervious Area

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

Summary for Subcatchment SC 5: 5

Runoff = 1.78 cfs @ 12.01 hrs, Volume= 0.086 af, Depth> 0.73"
Routed to Pond CB 22 : CB22

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	14,519	60	Woods, Fair, HSG B
	30,033	61	>75% Grass cover, Good, HSG B
	346	74	>75% Grass cover, Good, HSG C
*	16,575	98	IMPERVIOUS
	61,473	71	Weighted Average
	44,898		73.04% Pervious Area
	16,575		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
2.3	210	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.3	130	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	140	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.3	492	Total			

Summary for Subcatchment SC 6A: 6A

Runoff = 0.35 cfs @ 11.95 hrs, Volume= 0.016 af, Depth> 2.02"
Routed to Pond CB 21 : CB21

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	737	61	>75% Grass cover, Good, HSG B
*	3,375	98	IMPERVIOUS
	4,112	91	Weighted Average
	737		17.92% Pervious Area
	3,375		82.08% Impervious Area

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

Summary for Subcatchment SC 6B: 6B

Runoff = 0.52 cfs @ 11.95 hrs, Volume= 0.023 af, Depth> 1.85"
Routed to Pond CB 20 : CB20

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,595	61	>75% Grass cover, Good, HSG B
*	4,856	98	IMPERVIOUS
	6,451	89	Weighted Average
	1,595		24.72% Pervious Area
	4,856		75.28% Impervious Area

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

Summary for Subcatchment SC 6C: 6C

Runoff = 0.36 cfs @ 11.95 hrs, Volume= 0.016 af, Depth> 2.02"
Routed to Pond CB 23 : CB23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	845	61	>75% Grass cover, Good, HSG B
*	3,358	98	IMPERVIOUS
	4,203	91	Weighted Average
	845		20.10% Pervious Area
	3,358		79.90% Impervious Area

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

Summary for Subcatchment SC 6D: 6D

Runoff = 0.55 cfs @ 11.96 hrs, Volume= 0.024 af, Depth> 1.69"
Routed to Pond CB 24 : CB 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	2,199	61	>75% Grass cover, Good, HSG B
*	5,191	98	IMPERVIOUS
	7,390	87	Weighted Average
	2,199		29.76% Pervious Area
	5,191		70.24% Impervious Area

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

Summary for Subcatchment SC 6E: 6E

Runoff = 0.24 cfs @ 11.99 hrs, Volume= 0.011 af, Depth> 0.52"
Routed to Pond 2P : WETPOND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	9,853	61	>75% Grass cover, Good, HSG B
*	1,431	98	IMPERVIOUS
	11,284	66	Weighted Average
	9,853		87.32% Pervious Area
	1,431		12.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"

Summary for Subcatchment SC 6F: 6F

Runoff = 0.52 cfs @ 11.95 hrs, Volume= 0.023 af, Depth> 1.85"
Routed to Pond CB 23 : CB23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,599	61	>75% Grass cover, Good, HSG B
*	4,931	98	IMPERVIOUS
	6,530	89	Weighted Average
	1,599		24.49% Pervious Area
	4,931		75.51% Impervious Area

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

Summary for Subcatchment SC 6G: 6G

Runoff = 0.45 cfs @ 11.95 hrs, Volume= 0.021 af, Depth> 2.30"
Routed to Pond CB 24 : CB 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	478	61	>75% Grass cover, Good, HSG B
*	4,309	98	IMPERVIOUS
	4,787	94	Weighted Average
	478		9.99% Pervious Area
	4,309		90.01% Impervious Area

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

Summary for Subcatchment SC 6H: 6H

Runoff = 0.25 cfs @ 11.95 hrs, Volume= 0.013 af, Depth> 2.65"
Routed to Pond CB 25 : CB25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
*	2,481	98	IMPERVIOUS
	2,481		100.00% Impervious Area

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

Summary for Subcatchment SC 6I: 6I

Runoff = 0.84 cfs @ 11.95 hrs, Volume= 0.038 af, Depth> 1.94"
Routed to Pond CB 27 : CB27

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	2,205	61	>75% Grass cover, Good, HSG B
*	7,957	98	IMPERVIOUS
	10,162	90	Weighted Average
	2,205		21.70% Pervious Area
	7,957		78.30% Impervious Area

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

Summary for Subcatchment SC 6J: 6J

Runoff = 0.70 cfs @ 11.95 hrs, Volume= 0.034 af, Depth> 2.48"
Routed to Pond CB 26 : CB26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	324	61	>75% Grass cover, Good, HSG B
*	6,839	98	IMPERVIOUS
	7,163	96	Weighted Average
	324		4.52% Pervious Area
	6,839		95.48% Impervious Area

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

Summary for Subcatchment SC 7: 7

Runoff = 0.03 cfs @ 11.99 hrs, Volume= 0.002 af, Depth> 0.32"
Routed to Pond 6P : BIO CELL 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,682	39	>75% Grass cover, Good, HSG A
	273	61	>75% Grass cover, Good, HSG B
*	910	98	IMPERVIOUS
	2,865	60	Weighted Average
	1,955		68.24% Pervious Area
	910		31.76% Impervious Area

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

Summary for Subcatchment SC 8: 8

Runoff = 0.05 cfs @ 11.98 hrs, Volume= 0.002 af, Depth> 0.48"
Routed to Pond 7P : BIO CELL 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	1,036	39	>75% Grass cover, Good, HSG A
	481	61	>75% Grass cover, Good, HSG B
*	854	98	IMPERVIOUS
	2,371	65	Weighted Average
	1,517		63.98% Pervious Area
	854		36.02% Impervious Area

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

Summary for Subcatchment SC 9: 9

Runoff = 0.00 cfs @ 15.04 hrs, Volume= 0.003 af, Depth> 0.04"
Routed to Reach SP3 : SUMMATION POINT 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 YEAR Rainfall=3.10"

	Area (sf)	CN	Description
	19,552	36	Woods, Fair, HSG A
	2,610	39	>75% Grass cover, Good, HSG A
	7,418	60	Woods, Fair, HSG B
	765	61	>75% Grass cover, Good, HSG B
*	2,265	98	IMPERVIOUS
	32,610	47	Weighted Average
	30,345		93.05% Pervious Area
	2,265		6.95% Impervious Area

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

Summary for Reach 1R: REACH 1

Inflow Area = 0.066 ac, 31.76% Impervious, Inflow Depth > 0.32" for 2 YEAR event
Inflow = 0.03 cfs @ 12.00 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.00 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Routed to Reach SP3 : SUMMATION POINT 3

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

Summary for Reach 2R: REACH 2

Inflow Area = 0.054 ac, 36.02% Impervious, Inflow Depth > 0.37" for 2 YEAR event
Inflow = 0.03 cfs @ 12.06 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.06 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Routed to Reach SP3 : SUMMATION POINT 3

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

Summary for Reach 3R: REACH 3

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 1.94" for 2 YEAR event
Inflow = 0.10 cfs @ 11.70 hrs, Volume= 0.022 af
Outflow = 0.10 cfs @ 13.35 hrs, Volume= 0.022 af, Atten= 0%, Lag= 99.0 min
Routed to Reach 5R : REACH 5

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.19 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 6.0 min

Peak Storage= 36 cf @ 13.30 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 4.04'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 538.48 cfs

4.00' x 4.00' deep channel, n= 0.025 Earth, clean & winding
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 425.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -12.75'



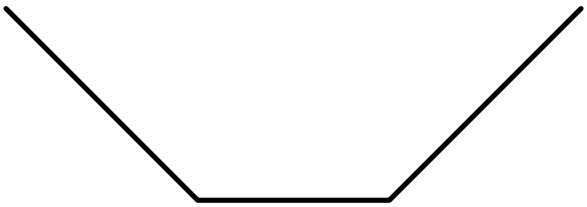
Summary for Reach 4R: REACH 4

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 1.09" for 2 YEAR event
Inflow = 0.10 cfs @ 11.85 hrs, Volume= 0.014 af
Outflow = 0.10 cfs @ 12.70 hrs, Volume= 0.014 af, Atten= 0%, Lag= 51.0 min
Routed to Reach 5R : REACH 5

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.19 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 3.5 min

Peak Storage= 21 cf @ 12.65 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 4.04'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 538.48 cfs

4.00' x 4.00' deep channel, n= 0.025 Earth, clean & winding
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 250.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -7.50'



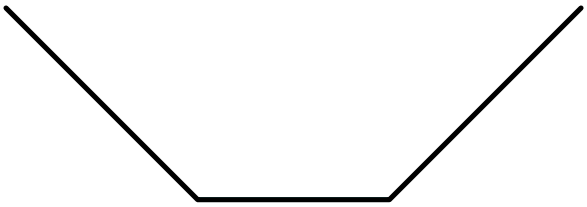
Summary for Reach 5R: REACH 5

Inflow Area = 0.292 ac, 51.59% Impervious, Inflow Depth > 1.49" for 2 YEAR event
Inflow = 0.20 cfs @ 12.70 hrs, Volume= 0.036 af
Outflow = 0.20 cfs @ 12.75 hrs, Volume= 0.036 af, Atten= 0%, Lag= 3.0 min
Routed to Reach SP4 : SUMMATION POINT 4

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.02 fps, Min. Travel Time= 5.9 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 7.0 min

Peak Storage= 71 cf @ 12.70 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 4.10'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 384.63 cfs

4.00' x 4.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 360.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -10.80'



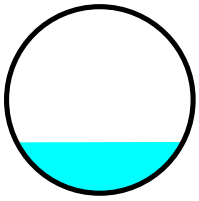
Summary for Reach 6R: 15" SD

Inflow Area = 0.586 ac, 9.63% Impervious, Inflow Depth > 0.98" for 2 YEAR event
Inflow = 0.75 cfs @ 12.10 hrs, Volume= 0.048 af
Outflow = 0.75 cfs @ 12.11 hrs, Volume= 0.048 af, Atten= 1%, Lag= 0.4 min
Routed to Pond CB 6 : CB6

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.75 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.12 fps, Avg. Travel Time= 0.6 min

Peak Storage= 10 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 1.12'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 38.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.19'



Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.532 ac, 7.34% Impervious, Inflow Depth > 0.29" for 2 YEAR event
Inflow = 0.29 cfs @ 12.03 hrs, Volume= 0.037 af
Outflow = 0.29 cfs @ 12.03 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 6.390 ac, 32.52% Impervious, Inflow Depth > 0.01" for 2 YEAR event
Inflow = 0.01 cfs @ 15.04 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 15.04 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP3: SUMMATION POINT 3

Inflow Area = 3.762 ac, 39.87% Impervious, Inflow Depth > 0.02" for 2 YEAR event
Inflow = 0.05 cfs @ 12.05 hrs, Volume= 0.006 af
Outflow = 0.05 cfs @ 12.05 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP4: SUMMATION POINT 4

Inflow Area = 5.141 ac, 9.37% Impervious, Inflow Depth > 0.77" for 2 YEAR event
Inflow = 3.50 cfs @ 12.23 hrs, Volume= 0.328 af
Outflow = 3.50 cfs @ 12.23 hrs, Volume= 0.328 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: WETPOND A

Inflow Area = 5.056 ac, 38.87% Impervious, Inflow Depth > 1.16" for 2 YEAR event
Inflow = 6.74 cfs @ 12.01 hrs, Volume= 0.490 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach SP2 : SUMMATION POINT 2
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach SP2 : SUMMATION POINT 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 73.70' @ 20.00 hrs Surf.Area= 4,779 sf Storage= 21,345 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	41,844 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
66.00	1,128	0	0
67.00	1,476	1,302	1,302
68.00	1,870	1,673	2,975
69.00	2,290	2,080	5,055
70.00	2,747	2,519	7,574
71.00	3,240	2,994	10,567
72.00	3,779	3,510	14,077
73.00	4,356	4,068	18,144
74.00	4,960	4,658	22,802
75.00	5,867	5,414	28,216
76.00	6,838	6,353	34,568
77.00	7,714	7,276	41,844

Device	Routing	Invert	Outlet Devices
#1	Primary	69.14'	**6.0" Round Culvert** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.14' / 68.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	74.09'	**0.50 cfs Exfiltration when above 74.09'**
#3	Device 1	76.05'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	76.50'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=66.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Exfiltration** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=66.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: WETPOND B

Inflow Area = 2.893 ac, 48.64% Impervious, Inflow Depth > 1.26" for 2 YEAR event
Inflow = 6.26 cfs @ 11.97 hrs, Volume= 0.305 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
  Routed to Reach SP3 : SUMMATION POINT 3
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
  Routed to Reach SP3 : SUMMATION POINT 3

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 70.43' @ 20.00 hrs Surf.Area= 3,733 sf Storage= 13,259 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	24,924 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.00	1,409	0	0
66.00	1,752	1,581	1,581
67.00	2,121	1,937	3,517
68.00	2,514	2,318	5,835
69.00	2,933	2,724	8,558
70.00	3,408	3,171	11,729
71.00	4,167	3,788	15,516
72.00	4,698	4,433	19,949
73.00	5,252	4,975	24,924

Device	Routing	Invert	Outlet Devices
#1	Primary	68.26'	**4.0" Round Culvert** L= 85.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 68.26' / 67.84' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Device 1	70.76'	**0.50 cfs Exfiltration when above 70.76'**
#3	Device 1	72.39'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	72.50'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=65.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)
└**2=Exfiltration** (Controls 0.00 cfs)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=65.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 3P: WETLAND STORAGE

Inflow Area = 3.213 ac, 31.19% Impervious, Inflow Depth > 1.29" for 2 YEAR event
Inflow = 5.56 cfs @ 11.99 hrs, Volume= 0.345 af
Outflow = 4.17 cfs @ 12.08 hrs, Volume= 0.344 af, Atten= 25%, Lag= 5.3 min
Primary = 4.17 cfs @ 12.08 hrs, Volume= 0.344 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 80.05' @ 12.08 hrs Surf.Area= 3,463 sf Storage= 1,875 cf

Plug-Flow detention time= 7.8 min calculated for 0.343 af (99% of inflow)
Center-of-Mass det. time= 6.2 min (792.5 - 786.3)

Volume	Invert	Avail.Storage	Storage Description
#1	79.00'	15,212 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.00	112	0	0
81.00	6,500	6,612	6,612
82.00	10,700	8,600	15,212

Device	Routing	Invert	Outlet Devices
#1	Primary	79.00'	**24.0" Round Culvert** L= 70.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.00' / 78.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.13 cfs @ 12.08 hrs HW=80.04' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 4.13 cfs @ 3.62 fps)

Summary for Pond 4P: GUSF 2

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 1.09" for 2 YEAR event
Inflow = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af
Outflow = 0.10 cfs @ 11.85 hrs, Volume= 0.014 af, Atten= 70%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.85 hrs, Volume= 0.014 af
Routed to Reach 4R : REACH 4
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 4R : REACH 4

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.81' @ 12.10 hrs Surf.Area= 255 sf Storage= 129 cf

Plug-Flow detention time= 6.6 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 6.4 min (806.3 - 799.9)

Volume	Invert	Avail.Storage	Storage Description
#1	75.23'	1,020 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
75.23	192	0	0
77.00	385	511	511
78.00	634	510	1,020

Device	Routing	Invert	Outlet Devices
#1	Primary	72.98'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 72.98' / 72.88' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	75.23'	**0.10 cfs Exfiltration when above 75.23'**
#3	Secondary	76.73'	**5.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66
2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 11.85 hrs HW=75.29' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.49 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=75.23' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: GUSF 1

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 1.94" for 2 YEAR event
Inflow = 0.50 cfs @ 11.95 hrs, Volume= 0.022 af
Outflow = 0.10 cfs @ 11.70 hrs, Volume= 0.022 af, Atten= 80%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.70 hrs, Volume= 0.022 af
Routed to Reach 3R : REACH 3
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 3R : REACH 3

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.93' @ 12.12 hrs Surf.Area= 394 sf Storage= 280 cf

Plug-Flow detention time= 15.6 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 15.5 min (782.7 - 767.2)

Volume	Invert	Avail.Storage	Storage Description
#1	82.00'	1,228 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.00	210	0	0
83.00	408	309	309
84.00	673	541	850
84.50	841	379	1,228

Device	Routing	Invert	Outlet Devices
#1	Primary	79.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.75' / 79.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	82.00'	**0.10 cfs Exfiltration when above 82.00'**
#3	Secondary	83.50'	**5.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 11.70 hrs HW=82.03' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=82.00' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 6P: BIO CELL 1

Inflow Area = 0.066 ac, 31.76% Impervious, Inflow Depth > 0.32" for 2 YEAR event
Inflow = 0.03 cfs @ 11.99 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.00 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.2 min
Primary = 0.03 cfs @ 12.00 hrs, Volume= 0.002 af
Routed to Reach 1R : REACH 1
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 1R : REACH 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 78.51' @ 12.00 hrs Surf.Area= 140 sf Storage= 0 cf

Plug-Flow detention time= 0.2 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (854.0 - 853.9)

Volume	Invert	Avail.Storage	Storage Description
#1	78.50'	714 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.50	140	0.0	0	0
79.00	140	40.0	28	28
80.50	775	100.0	686	714

Device	Routing	Invert	Outlet Devices
#1	Primary	76.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.75' / 76.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	78.50'	**0.10 cfs Exfiltration at all elevations**
#3	Secondary	79.50'	**5.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.10 cfs @ 12.00 hrs HW=78.51' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.42 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=78.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: BIO CELL 2

Inflow Area = 0.054 ac, 36.02% Impervious, Inflow Depth > 0.48" for 2 YEAR event
Inflow = 0.05 cfs @ 11.98 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.06 hrs, Volume= 0.002 af, Atten= 44%, Lag= 5.1 min
Primary = 0.03 cfs @ 12.06 hrs, Volume= 0.002 af
Routed to Reach 2R : REACH 2
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 2R : REACH 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.01' @ 12.05 hrs Surf.Area= 119 sf Storage= 24 cf

Plug-Flow detention time= 106.7 min calculated for 0.002 af (75% of inflow)
Center-of-Mass det. time= 38.1 min (872.3 - 834.2)

Volume	Invert	Avail.Storage	Storage Description
#1	76.50'	748 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
76.50	116	0.0	0	0
77.00	116	40.0	23	23
78.50	850	100.0	725	748

Device	Routing	Invert	Outlet Devices
#1	Primary	74.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.75' / 74.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	77.00'	**0.10 cfs Exfiltration when above 77.00'**
#3	Secondary	77.50'	**5.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.10 cfs @ 12.06 hrs HW=77.00' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=76.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 8P: DRIP FILTER

Inflow Area = 0.022 ac,100.00% Impervious, Inflow Depth > 2.65" for 2 YEAR event
Inflow = 0.10 cfs @ 11.95 hrs, Volume= 0.005 af
Outflow = 0.04 cfs @ 11.80 hrs, Volume= 0.005 af, Atten= 59%, Lag= 0.0 min
Primary = 0.04 cfs @ 11.80 hrs, Volume= 0.005 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.39' @ 12.06 hrs Surf.Area= 200 sf Storage= 31 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.0 min (735.7 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.04 cfs @ 11.80 hrs HW=0.02' (Free Discharge)
└─**1=Culvert** (Passes 0.04 cfs of 0.45 cfs potential flow)
└─**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 9P: DRIP FILTER

Inflow Area = 0.027 ac,100.00% Impervious, Inflow Depth > 2.65" for 2 YEAR event
Inflow = 0.12 cfs @ 11.95 hrs, Volume= 0.006 af
Outflow = 0.06 cfs @ 12.05 hrs, Volume= 0.006 af, Atten= 47%, Lag= 6.2 min
Primary = 0.06 cfs @ 12.05 hrs, Volume= 0.006 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.57' @ 12.05 hrs Surf.Area= 200 sf Storage= 45 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.2 min (737.0 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.06 cfs @ 12.05 hrs HW=0.56' (Free Discharge)
└─**1=Culvert** (Passes 0.04 cfs of 0.51 cfs potential flow)
└─**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.71 fps)

Summary for Pond 10P: DRIP FILTER

Inflow Area = 0.037 ac,100.00% Impervious, Inflow Depth > 2.65" for 2 YEAR event
Inflow = 0.16 cfs @ 11.95 hrs, Volume= 0.008 af
Outflow = 0.14 cfs @ 12.01 hrs, Volume= 0.008 af, Atten= 11%, Lag= 3.4 min
Primary = 0.14 cfs @ 12.01 hrs, Volume= 0.008 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.68' @ 12.01 hrs Surf.Area= 200 sf Storage= 54 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.3 min (737.0 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00

Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.14 cfs @ 12.01 hrs HW=0.67' (Free Discharge)
1=Culvert (Passes 0.04 cfs of 0.52 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.04 cfs)
3=Broad-Crested Rectangular Weir (Weir Controls 0.10 cfs @ 1.15 fps)

Summary for Pond 11P: DRIP FILTER

Inflow Area = 0.026 ac,100.00% Impervious, Inflow Depth > 2.65" for 2 YEAR event
Inflow = 0.12 cfs @ 11.95 hrs, Volume= 0.006 af
Outflow = 0.05 cfs @ 12.05 hrs, Volume= 0.006 af, Atten= 53%, Lag= 6.3 min
Primary = 0.05 cfs @ 12.05 hrs, Volume= 0.006 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.55' @ 12.06 hrs Surf.Area= 200 sf Storage= 44 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.2 min (736.9 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.05 cfs @ 12.05 hrs HW=0.55' (Free Discharge)
1=Culvert (Passes 0.04 cfs of 0.51 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.04 cfs)
3=Broad-Crested Rectangular Weir (Weir Controls 0.01 cfs @ 0.59 fps)

Summary for Pond CB 1: CB1

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 1.09" for 2 YEAR event
Inflow = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af
Outflow = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af
Routed to Pond CB 2 : CB2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.08' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.75'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.75' / 76.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.32 cfs @ 11.96 hrs HW=77.07' (Free Discharge)
1=Culvert (Barrel Controls 0.32 cfs @ 1.92 fps)

Summary for Pond CB 10: CB10

Inflow Area = 0.389 ac, 14.97% Impervious, Inflow Depth > 1.03" for 2 YEAR event
Inflow = 0.50 cfs @ 12.12 hrs, Volume= 0.033 af
Outflow = 0.50 cfs @ 12.12 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.12 hrs, Volume= 0.033 af
Routed to Pond CB 9 : CB9

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.64' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.25'	**15.0" Round Culvert** L= 55.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.25' / 81.97' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.50 cfs @ 12.12 hrs HW=82.64' (Free Discharge)
1=Culvert (Barrel Controls 0.50 cfs @ 2.27 fps)

Summary for Pond CB 11: CB11

Inflow Area = 0.583 ac, 27.27% Impervious, Inflow Depth > 1.14" for 2 YEAR event
Inflow = 0.78 cfs @ 12.00 hrs, Volume= 0.055 af
Outflow = 0.78 cfs @ 12.00 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min
Primary = 0.78 cfs @ 12.00 hrs, Volume= 0.055 af
Routed to Pond CB 8 : CB8

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

Peak Elev= 82.96' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.47'	**15.0" Round Culvert** L= 95.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.47' / 82.00' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.78 cfs @ 12.00 hrs HW=82.96' (Free Discharge)
1=Culvert (Barrel Controls 0.78 cfs @ 2.59 fps)

Summary for Pond CB 12: CB12

Inflow Area = 0.544 ac, 23.73% Impervious, Inflow Depth > 1.10" for 2 YEAR event
Inflow = 0.68 cfs @ 12.01 hrs, Volume= 0.050 af
Outflow = 0.68 cfs @ 12.01 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.01 hrs, Volume= 0.050 af
Routed to Pond CB 11 : CB11

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.15' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.67'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.67' / 82.57' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.67 cfs @ 12.01 hrs HW=83.15' (Free Discharge)
1=Culvert (Barrel Controls 0.67 cfs @ 2.29 fps)

Summary for Pond CB 13: CB13

Inflow Area = 0.427 ac, 11.42% Impervious, Inflow Depth > 0.98" for 2 YEAR event
Inflow = 0.54 cfs @ 12.11 hrs, Volume= 0.035 af
Outflow = 0.54 cfs @ 12.11 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.11 hrs, Volume= 0.035 af
Routed to Pond CB 12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.55' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	83.15'	**15.0" Round Culvert** L= 75.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 83.15' / 82.78' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.53 cfs @ 12.11 hrs HW=83.55' (Free Discharge)
1=Culvert (Barrel Controls 0.53 cfs @ 2.32 fps)

Summary for Pond CB 14: CB 14

Inflow Area = 0.046 ac, 78.66% Impervious, Inflow Depth > 1.55" for 2 YEAR event
Inflow = 0.14 cfs @ 11.96 hrs, Volume= 0.006 af
Outflow = 0.14 cfs @ 11.96 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 11.96 hrs, Volume= 0.006 af
Routed to Pond CB 15 : CB 15

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.44' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	83.25'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 83.25' / 81.43' S= 0.0910 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.13 cfs @ 11.96 hrs HW=83.44' (Free Discharge)
1=Culvert (Inlet Controls 0.13 cfs @ 1.16 fps)

Summary for Pond CB 15: CB 15

Inflow Area = 0.237 ac, 65.89% Impervious, Inflow Depth > 1.11" for 2 YEAR event
Inflow = 0.52 cfs @ 11.96 hrs, Volume= 0.022 af
Outflow = 0.52 cfs @ 11.96 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 11.96 hrs, Volume= 0.022 af
Routed to Pond CB 18 : CB 18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 81.71' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.33'	**15.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.33' / 78.63' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.50 cfs @ 11.96 hrs HW=81.70' (Free Discharge)
1=Culvert (Inlet Controls 0.50 cfs @ 1.64 fps)

Summary for Pond CB 16: CB 16

Inflow Area = 0.191 ac, 62.83% Impervious, Inflow Depth > 1.00" for 2 YEAR event
Inflow = 0.38 cfs @ 11.96 hrs, Volume= 0.016 af
Outflow = 0.38 cfs @ 11.96 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 11.96 hrs, Volume= 0.016 af
Routed to Pond CB 15 : CB 15

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

Peak Elev= 81.93' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.58'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.58' / 81.43' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.37 cfs @ 11.96 hrs HW=81.92' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.37 cfs @ 2.02 fps)

Summary for Pond CB 17: CB 17

Inflow Area = 0.073 ac, 63.75% Impervious, Inflow Depth > 1.04" for 2 YEAR event
Inflow = 0.15 cfs @ 11.96 hrs, Volume= 0.006 af
Outflow = 0.15 cfs @ 11.96 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 11.96 hrs, Volume= 0.006 af
Routed to Pond CB 16 : CB 16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.27' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.06'	**15.0" Round Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.06' / 81.68' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.14 cfs @ 11.96 hrs HW=82.27' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.14 cfs @ 1.64 fps)

Summary for Pond CB 18: CB 18

Inflow Area = 0.306 ac, 72.86% Impervious, Inflow Depth > 1.41" for 2 YEAR event
Inflow = 0.81 cfs @ 11.96 hrs, Volume= 0.036 af
Outflow = 0.81 cfs @ 11.96 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 11.96 hrs, Volume= 0.036 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.01' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.53'	**15.0" Round Culvert** L= 73.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.53' / 77.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.79 cfs @ 11.96 hrs HW=79.00' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.79 cfs @ 1.85 fps)

Summary for Pond CB 2: CB2

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 1.09" for 2 YEAR event
Inflow = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af
Outflow = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 11.96 hrs, Volume= 0.014 af
Routed to Pond 4P : GUSF 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.04' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.55'	**6.0" Round Culvert** L= 15.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.55' / 76.47' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.32 cfs @ 11.96 hrs HW=77.03' (Free Discharge)
1=Culvert (Barrel Controls 0.32 cfs @ 2.13 fps)

Summary for Pond CB 20: CB20

Inflow Area = 0.148 ac, 75.28% Impervious, Inflow Depth > 1.85" for 2 YEAR event
Inflow = 0.52 cfs @ 11.95 hrs, Volume= 0.023 af
Outflow = 0.52 cfs @ 11.95 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 11.95 hrs, Volume= 0.023 af
Routed to Pond CB 21 : CB21

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.22' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.80'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.80' / 78.70' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.51 cfs @ 11.95 hrs HW=79.21' (Free Discharge)
1=Culvert (Barrel Controls 0.51 cfs @ 2.14 fps)

Summary for Pond CB 21: CB21

Inflow Area = 0.242 ac, 77.92% Impervious, Inflow Depth > 1.92" for 2 YEAR event
Inflow = 0.87 cfs @ 11.95 hrs, Volume= 0.039 af
Outflow = 0.87 cfs @ 11.95 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 11.95 hrs, Volume= 0.039 af
Routed to Pond CB 24 : CB 24

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

Peak Elev= 79.10' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.60'	**15.0" Round Culvert** L= 116.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.60' / 75.29' S= 0.0285 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 11.95 hrs HW=79.10' (Free Discharge)
1=Culvert (Inlet Controls 0.86 cfs @ 1.89 fps)

Summary for Pond CB 22: CB22

Inflow Area = 1.411 ac, 26.96% Impervious, Inflow Depth > 0.73" for 2 YEAR event
Inflow = 1.78 cfs @ 12.01 hrs, Volume= 0.086 af
Outflow = 1.78 cfs @ 12.01 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min
Primary = 1.78 cfs @ 12.01 hrs, Volume= 0.086 af
Routed to Pond CB 23 : CB23

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.10' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.40'	**24.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.40' / 74.30' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.74 cfs @ 12.01 hrs HW=75.09' (Free Discharge)
1=Culvert (Barrel Controls 1.74 cfs @ 2.71 fps)

Summary for Pond CB 23: CB23

Inflow Area = 1.658 ac, 34.43% Impervious, Inflow Depth > 0.91" for 2 YEAR event
Inflow = 2.54 cfs @ 11.99 hrs, Volume= 0.125 af
Outflow = 2.54 cfs @ 11.99 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 2.54 cfs @ 11.99 hrs, Volume= 0.125 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.05' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.20'	**24.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.20' / 74.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.48 cfs @ 11.99 hrs HW=75.04' (Free Discharge)
1=Culvert (Barrel Controls 2.48 cfs @ 2.95 fps)

Summary for Pond CB 24: CB 24

Inflow Area = 2.634 ac, 52.18% Impervious, Inflow Depth > 1.34" for 2 YEAR event
Inflow = 6.03 cfs @ 11.97 hrs, Volume= 0.293 af
Outflow = 6.03 cfs @ 11.97 hrs, Volume= 0.293 af, Atten= 0%, Lag= 0.0 min
Primary = 6.03 cfs @ 11.97 hrs, Volume= 0.293 af
Routed to Pond 2P : WETPOND B

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.33' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**24.0" Round Culvert** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.00' / 73.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.84 cfs @ 11.97 hrs HW=75.30' (Free Discharge)
1=Culvert (Barrel Controls 5.84 cfs @ 3.82 fps)

Summary for Pond CB 25: CB25

Inflow Area = 0.455 ac, 87.23% Impervious, Inflow Depth > 2.22" for 2 YEAR event
Inflow = 1.80 cfs @ 11.95 hrs, Volume= 0.084 af
Outflow = 1.80 cfs @ 11.95 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min
Primary = 1.80 cfs @ 11.95 hrs, Volume= 0.084 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.65' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.90'	**15.0" Round Culvert** L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.90' / 75.29' S= 0.0107 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.79 cfs @ 11.95 hrs HW=77.65' (Free Discharge)
1=Culvert (Inlet Controls 1.79 cfs @ 2.33 fps)

Summary for Pond CB 26: CB26

Inflow Area = 0.398 ac, 85.40% Impervious, Inflow Depth > 2.16" for 2 YEAR event
Inflow = 1.55 cfs @ 11.95 hrs, Volume= 0.072 af
Outflow = 1.55 cfs @ 11.95 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min
Primary = 1.55 cfs @ 11.95 hrs, Volume= 0.072 af
Routed to Pond CB 25 : CB25

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

Peak Elev= 79.14' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.45'	**15.0" Round Culvert** L= 110.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.45' / 77.00' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.54 cfs @ 11.95 hrs HW=79.14' (Free Discharge)
1=Culvert (Inlet Controls 1.54 cfs @ 2.23 fps)

Summary for Pond CB 27: CB27

Inflow Area = 0.233 ac, 78.30% Impervious, Inflow Depth > 1.94" for 2 YEAR event
Inflow = 0.84 cfs @ 11.95 hrs, Volume= 0.038 af
Outflow = 0.84 cfs @ 11.95 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 11.95 hrs, Volume= 0.038 af
Routed to Pond CB 26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.24' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.70'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.70' / 78.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.83 cfs @ 11.95 hrs HW=79.23' (Free Discharge)
1=Culvert (Barrel Controls 0.83 cfs @ 2.47 fps)

Summary for Pond CB 4: CB4

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 1.94" for 2 YEAR event
Inflow = 0.50 cfs @ 11.95 hrs, Volume= 0.022 af
Outflow = 0.50 cfs @ 11.95 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 11.95 hrs, Volume= 0.022 af
Routed to Pond 5P : GUSF 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.57' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.15'	**15.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.15' / 82.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.49 cfs @ 11.95 hrs HW=82.57' (Free Discharge)
1=Culvert (Barrel Controls 0.49 cfs @ 2.05 fps)

Summary for Pond CB 5: CB5

Inflow Area = 0.873 ac, 36.16% Impervious, Inflow Depth > 1.45" for 2 YEAR event
Inflow = 1.59 cfs @ 11.97 hrs, Volume= 0.106 af
Outflow = 1.59 cfs @ 11.97 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 11.97 hrs, Volume= 0.106 af
Routed to Pond CB 7 : CB7

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 81.84' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.10'	**15.0" Round Culvert** L= 62.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.10' / 80.79' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.55 cfs @ 11.97 hrs HW=81.83' (Free Discharge)
1=Culvert (Barrel Controls 1.55 cfs @ 3.00 fps)

Summary for Pond CB 6: CB6

Inflow Area = 0.738 ac, 27.19% Impervious, Inflow Depth > 1.30" for 2 YEAR event
Inflow = 1.06 cfs @ 11.99 hrs, Volume= 0.080 af
Outflow = 1.06 cfs @ 11.99 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 1.06 cfs @ 11.99 hrs, Volume= 0.080 af
Routed to Pond CB 5 : CB5

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 81.96' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.35'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.35' / 81.20' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.05 cfs @ 11.99 hrs HW=81.96' (Free Discharge)
1=Culvert (Barrel Controls 1.05 cfs @ 2.61 fps)

Summary for Pond CB 7: CB7

Inflow Area = 2.132 ac, 37.02% Impervious, Inflow Depth > 1.42" for 2 YEAR event
Inflow = 3.81 cfs @ 11.97 hrs, Volume= 0.252 af
Outflow = 3.81 cfs @ 11.97 hrs, Volume= 0.252 af, Atten= 0%, Lag= 0.0 min
Primary = 3.81 cfs @ 11.97 hrs, Volume= 0.252 af
Routed to Pond 3P : WETLAND STORAGE

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

Peak Elev= 81.67' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.69'	**24.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.69' / 80.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.70 cfs @ 11.97 hrs HW=81.65' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 3.70 cfs @ 3.64 fps)

Summary for Pond CB 8: CB8

Inflow Area = 1.176 ac, 33.92% Impervious, Inflow Depth > 1.32" for 2 YEAR event
Inflow = 1.87 cfs @ 11.98 hrs, Volume= 0.129 af
Outflow = 1.87 cfs @ 11.98 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min
Primary = 1.87 cfs @ 11.98 hrs, Volume= 0.129 af
Routed to Pond CB 7 : CB7

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.50' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.67'	**15.0" Round Culvert** L= 42.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.67' / 81.46' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.83 cfs @ 11.98 hrs HW=82.49' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.83 cfs @ 3.04 fps)

Summary for Pond CB 9: CB9

Inflow Area = 0.485 ac, 29.68% Impervious, Inflow Depth > 1.30" for 2 YEAR event
Inflow = 0.67 cfs @ 12.00 hrs, Volume= 0.053 af
Outflow = 0.67 cfs @ 12.00 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.00 hrs, Volume= 0.053 af
Routed to Pond CB 8 : CB8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.35' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.87'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.87' / 81.77' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.67 cfs @ 12.00 hrs HW=82.35' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.67 cfs @ 2.29 fps)

Summary for Pond CB19: CB19

Inflow Area = 0.469 ac, 68.42% Impervious, Inflow Depth > 1.54" for 2 YEAR event
Inflow = 1.27 cfs @ 12.00 hrs, Volume= 0.060 af
Outflow = 1.27 cfs @ 12.00 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 1.27 cfs @ 12.00 hrs, Volume= 0.060 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.16' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.55'	**15.0" Round Culvert** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.55' / 75.95' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.26 cfs @ 12.00 hrs HW=77.16' (Free Discharge)
1=Culvert (Inlet Controls 1.26 cfs @ 2.10 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentSC 10: 10 Runoff Area=211,215 sf 6.82% Impervious Runoff Depth>1.64"
Flow Length=975' Tc=26.3 min CN=71 Runoff=8.07 cfs 0.664 af

SubcatchmentSC 11: 11 Runoff Area=6,017 sf 65.45% Impervious Runoff Depth>3.27"
Tc=5.0 min CN=90 Runoff=0.82 cfs 0.038 af

SubcatchmentSC 12: 12 Runoff Area=6,712 sf 39.17% Impervious Runoff Depth>2.19"
Tc=5.0 min CN=78 Runoff=0.66 cfs 0.028 af

SubcatchmentSC 1A: 1A Runoff Area=967 sf 100.00% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=98 Runoff=0.15 cfs 0.007 af

SubcatchmentSC 1B: 1B Runoff Area=1,186 sf 100.00% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=98 Runoff=0.18 cfs 0.009 af

SubcatchmentSC 1C: 1C Runoff Area=1,595 sf 100.00% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.012 af

SubcatchmentSC 1D: 1D Runoff Area=1,152 sf 100.00% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.009 af

SubcatchmentSC 1E: 1E Runoff Area=61,853 sf 0.00% Impervious Runoff Depth>0.50"
Flow Length=90' Tc=7.4 min CN=51 Runoff=1.00 cfs 0.059 af

SubcatchmentSC 2A: 2A Runoff Area=5,111 sf 68.52% Impervious Runoff Depth>2.80"
Flow Length=127' Tc=4.9 min CN=85 Runoff=0.62 cfs 0.027 af

SubcatchmentSC 2B: 2B Runoff Area=18,599 sf 11.42% Impervious Runoff Depth>2.02"
Flow Length=100' Slope=0.0400 '/' Tc=17.3 min CN=76 Runoff=1.13 cfs 0.072 af

SubcatchmentSC 2C: 2C Runoff Area=16,958 sf 14.97% Impervious Runoff Depth>2.10"
Flow Length=150' Slope=0.0400 '/' Tc=18.2 min CN=77 Runoff=1.04 cfs 0.068 af

SubcatchmentSC 2D: 2D Runoff Area=25,546 sf 9.63% Impervious Runoff Depth>2.02"
Flow Length=160' Tc=16.7 min CN=76 Runoff=1.58 cfs 0.099 af

SubcatchmentSC 2E: 2E Runoff Area=1,667 sf 77.68% Impervious Runoff Depth>2.98"
Tc=5.0 min CN=87 Runoff=0.21 cfs 0.010 af

SubcatchmentSC 2F: 2F Runoff Area=4,179 sf 89.40% Impervious Runoff Depth>3.76"
Tc=5.0 min CN=95 Runoff=0.62 cfs 0.030 af

SubcatchmentSC 2G: 2G Runoff Area=4,722 sf 88.63% Impervious Runoff Depth>3.76"
Tc=5.0 min CN=95 Runoff=0.70 cfs 0.034 af

SubcatchmentSC 2H: 2H Runoff Area=2,889 sf 97.92% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=98 Runoff=0.44 cfs 0.022 af

SubcatchmentSC 2I: 2I Runoff Area=3,581 sf 90.51% Impervious Runoff Depth>3.85"
Tc=5.0 min CN=96 Runoff=0.53 cfs 0.026 af

SubcatchmentSC 2J: 2J Runoff Area=3,699 sf 93.21% Impervious Runoff Depth>3.85"
Tc=5.0 min CN=96 Runoff=0.55 cfs 0.027 af

SubcatchmentSC 2K: 2K Runoff Area=5,912 sf 84.88% Impervious Runoff Depth>3.66"
Tc=5.0 min CN=94 Runoff=0.86 cfs 0.041 af

SubcatchmentSC 2L: 2L Runoff Area=47,113 sf 19.70% Impervious Runoff Depth>2.11"
Flow Length=240' Tc=9.4 min CN=77 Runoff=3.85 cfs 0.190 af

SubcatchmentSC 3A: 3A Runoff Area=5,173 sf 62.27% Impervious Runoff Depth>2.03"
Tc=5.0 min CN=76 Runoff=0.47 cfs 0.020 af

SubcatchmentSC 3B: 3B Runoff Area=2,001 sf 78.66% Impervious Runoff Depth>2.80"
Tc=5.0 min CN=85 Runoff=0.24 cfs 0.011 af

SubcatchmentSC 3C: 3C Runoff Area=20,436 sf 68.42% Impervious Runoff Depth>2.79"
Flow Length=297' Tc=8.3 min CN=85 Runoff=2.23 cfs 0.109 af

SubcatchmentSC 3D: 3D Runoff Area=3,167 sf 63.75% Impervious Runoff Depth>2.11"
Tc=5.0 min CN=77 Runoff=0.30 cfs 0.013 af

SubcatchmentSC 3E: 3E Runoff Area=2,986 sf 96.99% Impervious Runoff Depth>3.85"
Tc=5.0 min CN=96 Runoff=0.45 cfs 0.022 af

SubcatchmentSC 3F: 3F Runoff Area=46,508 sf 39.26% Impervious Runoff Depth>1.38"
Tc=5.0 min CN=67 Runoff=2.91 cfs 0.123 af

SubcatchmentSC 4: 4 Runoff Area=58,116 sf 8.45% Impervious Runoff Depth>0.34"
Tc=5.0 min CN=47 Runoff=0.55 cfs 0.037 af

SubcatchmentSC 5: 5 Runoff Area=61,473 sf 26.96% Impervious Runoff Depth>1.66"
Flow Length=492' Tc=8.3 min CN=71 Runoff=4.14 cfs 0.195 af

SubcatchmentSC 6A: 6A Runoff Area=4,112 sf 82.08% Impervious Runoff Depth>3.37"
Tc=5.0 min CN=91 Runoff=0.57 cfs 0.027 af

SubcatchmentSC 6B: 6B Runoff Area=6,451 sf 75.28% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=89 Runoff=0.86 cfs 0.039 af

SubcatchmentSC 6C: 6C Runoff Area=4,203 sf 79.90% Impervious Runoff Depth>3.37"
Tc=5.0 min CN=91 Runoff=0.58 cfs 0.027 af

SubcatchmentSC 6D: 6D Runoff Area=7,390 sf 70.24% Impervious Runoff Depth>2.98"
Tc=5.0 min CN=87 Runoff=0.94 cfs 0.042 af

SubcatchmentSC 6E: 6E Runoff Area=11,284 sf 12.68% Impervious Runoff Depth>1.32"
Flow Length=50' Slope=0.0200 '/' Tc=5.7 min CN=66 Runoff=0.66 cfs 0.028 af

SubcatchmentSC 6F: 6F Runoff Area=6,530 sf 75.51% Impervious Runoff Depth>3.18"
Tc=5.0 min CN=89 Runoff=0.87 cfs 0.040 af

SubcatchmentSC 6G: 6G Runoff Area=4,787 sf 90.01% Impervious Runoff Depth>3.66"
Tc=5.0 min CN=94 Runoff=0.70 cfs 0.034 af

SubcatchmentSC 6H: 6H Runoff Area=2,481 sf 100.00% Impervious Runoff Depth>4.01"
Tc=5.0 min CN=98 Runoff=0.38 cfs 0.019 af

SubcatchmentSC 6I: 6I Runoff Area=10,162 sf 78.30% Impervious Runoff Depth>3.27"
Tc=5.0 min CN=90 Runoff=1.38 cfs 0.064 af

SubcatchmentSC 6J: 6J Runoff Area=7,163 sf 95.48% Impervious Runoff Depth>3.85"
Tc=5.0 min CN=96 Runoff=1.07 cfs 0.053 af

SubcatchmentSC 7: 7 Runoff Area=2,865 sf 31.76% Impervious Runoff Depth>0.95"
Tc=5.0 min CN=60 Runoff=0.12 cfs 0.005 af

SubcatchmentSC 8: 8 Runoff Area=2,371 sf 36.02% Impervious Runoff Depth>1.25"
Tc=5.0 min CN=65 Runoff=0.13 cfs 0.006 af

SubcatchmentSC 9: 9 Runoff Area=32,610 sf 6.95% Impervious Runoff Depth>0.34"
Tc=5.0 min CN=47 Runoff=0.31 cfs 0.021 af

Reach 1R: REACH 1 Inflow=0.10 cfs 0.005 af
Outflow=0.10 cfs 0.005 af

Reach 2R: REACH 2 Inflow=0.10 cfs 0.005 af
Outflow=0.10 cfs 0.005 af

Reach 3R: REACH 3 Avg. Flow Depth=0.03' Max Vel=1.19 fps Inflow=0.17 cfs 0.038 af
n=0.025 L=425.0' S=0.0300 '/' Capacity=538.48 cfs Outflow=0.14 cfs 0.038 af

Reach 4R: REACH 4 Avg. Flow Depth=0.02' Max Vel=1.19 fps Inflow=0.10 cfs 0.028 af
n=0.025 L=250.0' S=0.0300 '/' Capacity=538.48 cfs Outflow=0.10 cfs 0.028 af

Reach 5R: REACH 5 Avg. Flow Depth=0.05' Max Vel=1.08 fps Inflow=0.24 cfs 0.066 af
n=0.035 L=360.0' S=0.0300 '/' Capacity=384.63 cfs Outflow=0.23 cfs 0.065 af

Reach 6R: 15" SD Avg. Flow Depth=0.51' Max Vel=3.38 fps Inflow=1.58 cfs 0.099 af
15.0" Round Pipe n=0.013 L=38.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=1.57 cfs 0.099 af

Reach SP1: SUMMATION POINT 1 Inflow=1.65 cfs 0.097 af
Outflow=1.65 cfs 0.097 af

Reach SP2: SUMMATION POINT 2 Inflow=0.62 cfs 0.352 af
Outflow=0.62 cfs 0.352 af

Reach SP3: SUMMATION POINT 3 Inflow=0.51 cfs 0.248 af
Outflow=0.51 cfs 0.248 af

Reach SP4: SUMMATION POINT 4 Inflow=8.27 cfs 0.729 af
Outflow=8.27 cfs 0.729 af

Pond 1P: WETPOND A Peak Elev=75.23' Storage=29,611 cf Inflow=12.76 cfs 0.943 af
Primary=0.50 cfs 0.315 af Secondary=0.00 cfs 0.000 af Outflow=0.50 cfs 0.315 af

Pond 2P: WETPOND B Peak Elev=71.45' Storage=17,427 cf Inflow=11.60 cfs 0.567 af
Primary=0.35 cfs 0.217 af Secondary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.217 af

Pond 3P: WETLAND STORAGE Peak Elev=80.50' Storage=3,780 cf Inflow=10.39 cfs 0.647 af
24.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=7.61 cfs 0.645 af

Pond 4P: GUSF 2 Peak Elev=76.70' Storage=399 cf Inflow=0.66 cfs 0.028 af
Primary=0.10 cfs 0.028 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.028 af

Pond 5P: GUSF 1 Peak Elev=83.54' Storage=565 cf Inflow=0.82 cfs 0.038 af
Primary=0.10 cfs 0.037 af Secondary=0.07 cfs 0.001 af Outflow=0.17 cfs 0.038 af

Pond 6P: BIO CELL 1 Peak Elev=78.59' Storage=5 cf Inflow=0.12 cfs 0.005 af
Primary=0.10 cfs 0.005 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.005 af

Pond 7P: BIO CELL 2 Peak Elev=77.08' Storage=33 cf Inflow=0.13 cfs 0.006 af
Primary=0.10 cfs 0.005 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.005 af

Pond 8P: DRIP FILTER Peak Elev=0.65' Storage=52 cf Inflow=0.15 cfs 0.007 af
Outflow=0.12 cfs 0.007 af

Pond 9P: DRIP FILTER Peak Elev=0.70' Storage=56 cf Inflow=0.18 cfs 0.009 af
Outflow=0.17 cfs 0.009 af

Pond 10P: DRIP FILTER Peak Elev=0.77' Storage=61 cf Inflow=0.24 cfs 0.012 af
Outflow=0.24 cfs 0.012 af

Pond 11P: DRIP FILTER Peak Elev=0.69' Storage=55 cf Inflow=0.17 cfs 0.009 af
Outflow=0.16 cfs 0.009 af

Pond CB 1: CB1 Peak Elev=77.23' Inflow=0.66 cfs 0.028 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.66 cfs 0.028 af

Pond CB 10: CB10 Peak Elev=82.83' Inflow=1.04 cfs 0.068 af
15.0" Round Culvert n=0.013 L=55.0' S=0.0051 '/' Outflow=1.04 cfs 0.068 af

Pond CB 11: CB11 Peak Elev=83.18' Inflow=1.54 cfs 0.109 af
15.0" Round Culvert n=0.013 L=95.0' S=0.0049 '/' Outflow=1.54 cfs 0.109 af

Pond CB 12: CB12 Peak Elev=83.39' Inflow=1.37 cfs 0.099 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.37 cfs 0.099 af

Pond CB 13: CB13 Peak Elev=83.75' Inflow=1.13 cfs 0.072 af
15.0" Round Culvert n=0.013 L=75.0' S=0.0049 '/' Outflow=1.13 cfs 0.072 af

Pond CB 14: CB 14 Peak Elev=83.50' Inflow=0.24 cfs 0.011 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0910 '/' Outflow=0.24 cfs 0.011 af

Pond CB 15: CB 15 Peak Elev=81.87' Inflow=1.01 cfs 0.044 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0200 '/' Outflow=1.01 cfs 0.044 af

Pond CB 16: CB 16 Peak Elev=82.09' Inflow=0.77 cfs 0.033 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=0.77 cfs 0.033 af

Pond CB 17: CB 17 Peak Elev=82.36' Inflow=0.30 cfs 0.013 af
15.0" Round Culvert n=0.013 L=76.0' S=0.0050 '/' Outflow=0.30 cfs 0.013 af

Pond CB 18: CB 18 Peak Elev=79.20' Inflow=1.46 cfs 0.066 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0100 '/' Outflow=1.46 cfs 0.066 af

Pond CB 2: CB2 Peak Elev=77.57' Inflow=0.66 cfs 0.028 af
6.0" Round Culvert n=0.013 L=15.0' S=0.0053 '/' Outflow=0.66 cfs 0.028 af

Pond CB 20: CB20 Peak Elev=79.35' Inflow=0.86 cfs 0.039 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.86 cfs 0.039 af

Pond CB 21: CB21 Peak Elev=79.26' Inflow=1.43 cfs 0.066 af
15.0" Round Culvert n=0.013 L=116.0' S=0.0285 '/' Outflow=1.43 cfs 0.066 af

Pond CB 22: CB22 Peak Elev=75.51' Inflow=4.14 cfs 0.195 af
24.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=4.14 cfs 0.195 af

Pond CB 23: CB23 Peak Elev=75.50' Inflow=5.41 cfs 0.261 af
24.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=5.41 cfs 0.261 af

Pond CB 24: CB 24 Peak Elev=75.95' Inflow=10.95 cfs 0.538 af
24.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=10.95 cfs 0.538 af

Pond CB 25: CB25 Peak Elev=77.90' Inflow=2.82 cfs 0.135 af
15.0" Round Culvert n=0.013 L=150.0' S=0.0107 '/' Outflow=2.82 cfs 0.135 af

Pond CB 26: CB26 Peak Elev=79.36' Inflow=2.45 cfs 0.116 af
15.0" Round Culvert n=0.013 L=110.0' S=0.0132 '/' Outflow=2.45 cfs 0.116 af

Pond CB 27: CB27 Peak Elev=79.41' Inflow=1.38 cfs 0.064 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=1.38 cfs 0.064 af

Pond CB 4: CB4 Peak Elev=82.70' Inflow=0.82 cfs 0.038 af
15.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/' Outflow=0.82 cfs 0.038 af

Pond CB 5: CB5 Peak Elev=82.14' Inflow=2.76 cfs 0.190 af
15.0" Round Culvert n=0.013 L=62.0' S=0.0050 '/' Outflow=2.76 cfs 0.190 af

Pond CB 6: CB6 Peak Elev=82.23' Inflow=1.99 cfs 0.148 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=1.99 cfs 0.148 af

Pond CB 7: CB7 Peak Elev=82.05' Inflow=6.66 cfs 0.457 af
24.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=6.66 cfs 0.457 af

Pond CB 8: CB8 Peak Elev=82.89' Inflow=3.41 cfs 0.241 af
15.0" Round Culvert n=0.013 L=42.0' S=0.0050 '/' Outflow=3.41 cfs 0.241 af

Pond CB 9: CB9 Peak Elev=82.55' Inflow=1.26 cfs 0.098 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.26 cfs 0.098 af

Pond CB19: CB19 Peak Elev=77.41' Inflow=2.23 cfs 0.109 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0150 '/' Outflow=2.23 cfs 0.109 af

Total Runoff Area = 16.826 ac Runoff Volume = 2.407 af Average Runoff Depth = 1.72"
75.20% Pervious = 12.654 ac 24.80% Impervious = 4.172 ac

Summary for Subcatchment SC 10: 10

Runoff = 8.07 cfs @ 12.21 hrs, Volume= 0.664 af, Depth> 1.64"
Routed to Reach SP4 : SUMMATION POINT 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	67	39	>75% Grass cover, Good, HSG A
	49,329	60	Woods, Fair, HSG B
	11,304	61	>75% Grass cover, Good, HSG B
	121,487	73	Woods, Fair, HSG C
	10,078	74	>75% Grass cover, Good, HSG C
	4,535	79	Woods, Fair, HSG D
*	14,415	98	IMPERVIOUS
	211,215	71	Weighted Average
	196,800		93.18% Pervious Area
	14,415		6.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.7	140	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	90	0.1750	2.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	75	0.0100	10.72	386.00	**Channel Flow,** Area= 36.0 sf Perim= 18.0' r= 2.00' n= 0.022 Earth, clean & straight
0.8	470	0.0300	10.39	166.29	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
0.2	150	0.0700	15.88	254.01	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
26.3	975	Total			

Summary for Subcatchment SC 11: 11

Runoff = 0.82 cfs @ 11.95 hrs, Volume= 0.038 af, Depth> 3.27"
Routed to Pond CB 4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	2,079	74	>75% Grass cover, Good, HSG C
*	3,938	98	IMPERVIOUS
	6,017	90	Weighted Average
	2,079		34.55% Pervious Area
	3,938		65.45% Impervious Area

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

Summary for Subcatchment SC 12: 12

Runoff = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af, Depth> 2.19"
Routed to Pond CB 1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,115	39	>75% Grass cover, Good, HSG A
	2,968	74	>75% Grass cover, Good, HSG C
*	2,629	98	IMPERVIOUS
	6,712	78	Weighted Average
	4,083		60.83% Pervious Area
	2,629		39.17% Impervious Area

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

Summary for Subcatchment SC 1A: 1A

Runoff = 0.15 cfs @ 11.95 hrs, Volume= 0.007 af, Depth> 4.01"
Routed to Pond 8P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	967	98	IMPERVIOUS
	967		100.00% Impervious Area

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

Summary for Subcatchment SC 1B: 1B

Runoff = 0.18 cfs @ 11.95 hrs, Volume= 0.009 af, Depth> 4.01"
Routed to Pond 9P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	1,186	98	IMPERVIOUS
	1,186		100.00% Impervious Area

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

Summary for Subcatchment SC 1C: 1C

Runoff = 0.24 cfs @ 11.95 hrs, Volume= 0.012 af, Depth> 4.01"
Routed to Pond 10P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	1,595	98	IMPERVIOUS
	1,595		100.00% Impervious Area

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

Summary for Subcatchment SC 1D: 1D

Runoff = 0.17 cfs @ 11.95 hrs, Volume= 0.009 af, Depth> 4.01"
Routed to Pond 11P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	1,152	98	IMPERVIOUS
	1,152		100.00% Impervious Area

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

Summary for Subcatchment SC 1E: 1E

Runoff = 1.00 cfs @ 12.02 hrs, Volume= 0.059 af, Depth> 0.50"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

Area (sf)	CN	Description
34,276	36	Woods, Fair, HSG A
21,674	73	Woods, Fair, HSG C
2,952	39	>75% Grass cover, Good, HSG A
2,951	74	>75% Grass cover, Good, HSG C
61,853	51	Weighted Average
61,853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	40	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.4	90	Total			

Summary for Subcatchment SC 2A: 2A

Runoff = 0.62 cfs @ 11.95 hrs, Volume= 0.027 af, Depth> 2.80"
Routed to Pond CB 12 : CB12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	845	39	>75% Grass cover, Good, HSG A
	764	74	>75% Grass cover, Good, HSG C
*	3,502	98	IMPERVIOUS
	5,111	85	Weighted Average
	1,609		31.48% Pervious Area
	3,502		68.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
4.3	35	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	80	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	127	Total			

Summary for Subcatchment SC 2B: 2B

Runoff = 1.13 cfs @ 12.10 hrs, Volume= 0.072 af, Depth> 2.02"
Routed to Pond CB 13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	12,451	73	Woods, Fair, HSG C
	4,024	74	>75% Grass cover, Good, HSG C
*	2,124	98	IMPERVIOUS
	18,599	76	Weighted Average
	16,475		88.58% Pervious Area
	2,124		11.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	100	Total			

Summary for Subcatchment SC 2C: 2C

Runoff = 1.04 cfs @ 12.11 hrs, Volume= 0.068 af, Depth> 2.10"
Routed to Pond CB 10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	10,994	73	Woods, Fair, HSG C
	3,426	74	>75% Grass cover, Good, HSG C
*	2,538	98	IMPERVIOUS
	16,958	77	Weighted Average
	14,420		85.03% Pervious Area
	2,538		14.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	150	Total			

Summary for Subcatchment SC 2D: 2D

Runoff = 1.58 cfs @ 12.09 hrs, Volume= 0.099 af, Depth> 2.02"
Routed to Reach 6R : 15" SD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	20,100	73	Woods, Fair, HSG C
	2,985	74	>75% Grass cover, Good, HSG C
*	2,461	98	IMPERVIOUS
	25,546	76	Weighted Average
	23,085		90.37% Pervious Area
	2,461		9.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.6	110	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.7	160	Total			

Summary for Subcatchment SC 2E: 2E

Runoff = 0.21 cfs @ 11.95 hrs, Volume= 0.010 af, Depth> 2.98"
Routed to Pond CB 11 : CB11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	251	39	>75% Grass cover, Good, HSG A
	121	74	>75% Grass cover, Good, HSG C
*	1,295	98	IMPERVIOUS
	1,667	87	Weighted Average
	372		22.32% Pervious Area
	1,295		77.68% Impervious Area

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

Summary for Subcatchment SC 2F: 2F

Runoff = 0.62 cfs @ 11.95 hrs, Volume= 0.030 af, Depth> 3.76"
Routed to Pond CB 9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	443	74	>75% Grass cover, Good, HSG C
*	3,736	98	IMPERVIOUS
	4,179	95	Weighted Average
	443		10.60% Pervious Area
	3,736		89.40% Impervious Area

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

Summary for Subcatchment SC 2G: 2G

Runoff = 0.70 cfs @ 11.95 hrs, Volume= 0.034 af, Depth> 3.76"
Routed to Pond CB 8 : CB8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	537	74	>75% Grass cover, Good, HSG C
*	4,185	98	IMPERVIOUS
	4,722	95	Weighted Average
	537		11.37% Pervious Area
	4,185		88.63% Impervious Area

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

Summary for Subcatchment SC 2H: 2H

Runoff = 0.44 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 4.01"
Routed to Pond CB 6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	60	74	>75% Grass cover, Good, HSG C
*	2,829	98	IMPERVIOUS
	2,889	98	Weighted Average
	60		2.08% Pervious Area
	2,829		97.92% Impervious Area

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

Summary for Subcatchment SC 2I: 2I

Runoff = 0.53 cfs @ 11.95 hrs, Volume= 0.026 af, Depth> 3.85"
Routed to Pond CB 7 : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	340	74	>75% Grass cover, Good, HSG C
*	3,241	98	IMPERVIOUS
	3,581	96	Weighted Average
	340		9.49% Pervious Area
	3,241		90.51% Impervious Area

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

Summary for Subcatchment SC 2J: 2J

Runoff = 0.55 cfs @ 11.95 hrs, Volume= 0.027 af, Depth> 3.85"
Routed to Pond CB 6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	251	74	>75% Grass cover, Good, HSG C
*	3,448	98	IMPERVIOUS
	3,699	96	Weighted Average
	251		6.79% Pervious Area
	3,448		93.21% Impervious Area

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

Summary for Subcatchment SC 2K: 2K

Runoff = 0.86 cfs @ 11.95 hrs, Volume= 0.041 af, Depth> 3.66"
Routed to Pond CB 5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	894	74	>75% Grass cover, Good, HSG C
*	5,018	98	IMPERVIOUS
	5,912	94	Weighted Average
	894		15.12% Pervious Area
	5,018		84.88% Impervious Area

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

Summary for Subcatchment SC 2L: 2L

Runoff = 3.85 cfs @ 12.01 hrs, Volume= 0.190 af, Depth> 2.11"
Routed to Pond 3P : WETLAND STORAGE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	965	39	>75% Grass cover, Good, HSG A
	2,059	60	Woods, Fair, HSG B
	2,162	61	>75% Grass cover, Good, HSG B
	12,048	73	Woods, Fair, HSG C
	20,596	74	>75% Grass cover, Good, HSG C
*	9,283	98	IMPERVIOUS
	47,113	77	Weighted Average
	37,830		80.30% Pervious Area
	9,283		19.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.4	90	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.3	100	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	240	Total			

Summary for Subcatchment SC 3A: 3A

Runoff = 0.47 cfs @ 11.96 hrs, Volume= 0.020 af, Depth> 2.03"
Routed to Pond CB 16 : CB 16

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,952	39	>75% Grass cover, Good, HSG A
*	3,221	98	IMPERVIOUS
	5,173	76	Weighted Average
	1,952		37.73% Pervious Area
	3,221		62.27% Impervious Area

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

Summary for Subcatchment SC 3B: 3B

Runoff = 0.24 cfs @ 11.95 hrs, Volume= 0.011 af, Depth> 2.80"
Routed to Pond CB 14 : CB 14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	427	39	>75% Grass cover, Good, HSG A
*	1,574	98	IMPERVIOUS
	2,001	85	Weighted Average
	427		21.34% Pervious Area
	1,574		78.66% Impervious Area

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

Summary for Subcatchment SC 3C: 3C

Runoff = 2.23 cfs @ 11.99 hrs, Volume= 0.109 af, Depth> 2.79"
Routed to Pond CB19 : CB19

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,684	39	>75% Grass cover, Good, HSG A
	439	60	Woods, Fair, HSG B
	3,700	61	>75% Grass cover, Good, HSG B
	630	74	>75% Grass cover, Good, HSG C
*	13,983	98	IMPERVIOUS
	20,436	85	Weighted Average
	6,453		31.58% Pervious Area
	13,983		68.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
7.1	65	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	220	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.3	297	Total			

Summary for Subcatchment SC 3D: 3D

Runoff = 0.30 cfs @ 11.96 hrs, Volume= 0.013 af, Depth> 2.11"
Routed to Pond CB 17 : CB 17

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,148	39	>75% Grass cover, Good, HSG A
*	2,019	98	IMPERVIOUS
	3,167	77	Weighted Average
	1,148		36.25% Pervious Area
	2,019		63.75% Impervious Area

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

Summary for Subcatchment SC 3E: 3E

Runoff = 0.45 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 3.85"
Routed to Pond CB 18 : CB 18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	90	39	>75% Grass cover, Good, HSG A
*	2,896	98	IMPERVIOUS
	2,986	96	Weighted Average
	90		3.01% Pervious Area
	2,896		96.99% Impervious Area

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

Summary for Subcatchment SC 3F: 3F

Runoff = 2.91 cfs @ 11.96 hrs, Volume= 0.123 af, Depth> 1.38"
Routed to Pond 1P : WETPOND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	19,802	39	>75% Grass cover, Good, HSG A
	7,113	61	>75% Grass cover, Good, HSG B
	1,334	74	>75% Grass cover, Good, HSG C
*	18,259	98	IMPERVIOUS
	46,508	67	Weighted Average
	28,249		60.74% Pervious Area
	18,259		39.26% Impervious Area

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

Summary for Subcatchment SC 4: 4

Runoff = 0.55 cfs @ 12.00 hrs, Volume= 0.037 af, Depth> 0.34"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	34,054	36	Woods, Fair, HSG A
	7,162	39	>75% Grass cover, Good, HSG A
	10,830	60	Woods, Fair, HSG B
	1,162	61	>75% Grass cover, Good, HSG B
*	4,908	98	IMPERVIOUS
	58,116	47	Weighted Average
	53,208		91.55% Pervious Area
	4,908		8.45% Impervious Area

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

Summary for Subcatchment SC 5: 5

Runoff = 4.14 cfs @ 12.00 hrs, Volume= 0.195 af, Depth> 1.66"
Routed to Pond CB 22 : CB22

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	14,519	60	Woods, Fair, HSG B
	30,033	61	>75% Grass cover, Good, HSG B
	346	74	>75% Grass cover, Good, HSG C
*	16,575	98	IMPERVIOUS
	61,473	71	Weighted Average
	44,898		73.04% Pervious Area
	16,575		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
2.3	210	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.3	130	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	140	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.3	492	Total			

Summary for Subcatchment SC 6A: 6A

Runoff = 0.57 cfs @ 11.95 hrs, Volume= 0.027 af, Depth> 3.37"
Routed to Pond CB 21 : CB21

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	737	61	>75% Grass cover, Good, HSG B
*	3,375	98	IMPERVIOUS
	4,112	91	Weighted Average
	737		17.92% Pervious Area
	3,375		82.08% Impervious Area

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

Summary for Subcatchment SC 6B: 6B

Runoff = 0.86 cfs @ 11.95 hrs, Volume= 0.039 af, Depth> 3.18"
Routed to Pond CB 20 : CB20

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,595	61	>75% Grass cover, Good, HSG B
*	4,856	98	IMPERVIOUS
	6,451	89	Weighted Average
	1,595		24.72% Pervious Area
	4,856		75.28% Impervious Area

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

Summary for Subcatchment SC 6C: 6C

Runoff = 0.58 cfs @ 11.95 hrs, Volume= 0.027 af, Depth> 3.37"
Routed to Pond CB 23 : CB23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	845	61	>75% Grass cover, Good, HSG B
*	3,358	98	IMPERVIOUS
	4,203	91	Weighted Average
	845		20.10% Pervious Area
	3,358		79.90% Impervious Area

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

Summary for Subcatchment SC 6D: 6D

Runoff = 0.94 cfs @ 11.95 hrs, Volume= 0.042 af, Depth> 2.98"
Routed to Pond CB 24 : CB 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	2,199	61	>75% Grass cover, Good, HSG B
*	5,191	98	IMPERVIOUS
	7,390	87	Weighted Average
	2,199		29.76% Pervious Area
	5,191		70.24% Impervious Area

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

Summary for Subcatchment SC 6E: 6E

Runoff = 0.66 cfs @ 11.98 hrs, Volume= 0.028 af, Depth> 1.32"
Routed to Pond 2P : WETPOND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	9,853	61	>75% Grass cover, Good, HSG B
*	1,431	98	IMPERVIOUS
	11,284	66	Weighted Average
	9,853		87.32% Pervious Area
	1,431		12.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"

Summary for Subcatchment SC 6F: 6F

Runoff = 0.87 cfs @ 11.95 hrs, Volume= 0.040 af, Depth> 3.18"
Routed to Pond CB 23 : CB23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,599	61	>75% Grass cover, Good, HSG B
*	4,931	98	IMPERVIOUS
	6,530	89	Weighted Average
	1,599		24.49% Pervious Area
	4,931		75.51% Impervious Area

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

Summary for Subcatchment SC 6G: 6G

Runoff = 0.70 cfs @ 11.95 hrs, Volume= 0.034 af, Depth> 3.66"
Routed to Pond CB 24 : CB 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	478	61	>75% Grass cover, Good, HSG B
*	4,309	98	IMPERVIOUS
	4,787	94	Weighted Average
	478		9.99% Pervious Area
	4,309		90.01% Impervious Area

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

Summary for Subcatchment SC 6H: 6H

Runoff = 0.38 cfs @ 11.95 hrs, Volume= 0.019 af, Depth> 4.01"
Routed to Pond CB 25 : CB25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
*	2,481	98	IMPERVIOUS
	2,481		100.00% Impervious Area

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

Summary for Subcatchment SC 6I: 6I

Runoff = 1.38 cfs @ 11.95 hrs, Volume= 0.064 af, Depth> 3.27"
Routed to Pond CB 27 : CB27

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	2,205	61	>75% Grass cover, Good, HSG B
*	7,957	98	IMPERVIOUS
	10,162	90	Weighted Average
	2,205		21.70% Pervious Area
	7,957		78.30% Impervious Area

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

Summary for Subcatchment SC 6J: 6J

Runoff = 1.07 cfs @ 11.95 hrs, Volume= 0.053 af, Depth> 3.85"
Routed to Pond CB 26 : CB26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	324	61	>75% Grass cover, Good, HSG B
*	6,839	98	IMPERVIOUS
	7,163	96	Weighted Average
	324		4.52% Pervious Area
	6,839		95.48% Impervious Area

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

Summary for Subcatchment SC 7: 7

Runoff = 0.12 cfs @ 11.97 hrs, Volume= 0.005 af, Depth> 0.95"
Routed to Pond 6P : BIO CELL 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,682	39	>75% Grass cover, Good, HSG A
	273	61	>75% Grass cover, Good, HSG B
*	910	98	IMPERVIOUS
	2,865	60	Weighted Average
	1,955		68.24% Pervious Area
	910		31.76% Impervious Area

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

Summary for Subcatchment SC 8: 8

Runoff = 0.13 cfs @ 11.97 hrs, Volume= 0.006 af, Depth> 1.25"
Routed to Pond 7P : BIO CELL 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	1,036	39	>75% Grass cover, Good, HSG A
	481	61	>75% Grass cover, Good, HSG B
*	854	98	IMPERVIOUS
	2,371	65	Weighted Average
	1,517		63.98% Pervious Area
	854		36.02% Impervious Area

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

Summary for Subcatchment SC 9: 9

Runoff = 0.31 cfs @ 12.00 hrs, Volume= 0.021 af, Depth> 0.34"
Routed to Reach SP3 : SUMMATION POINT 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 YEAR Rainfall=4.60"

	Area (sf)	CN	Description
	19,552	36	Woods, Fair, HSG A
	2,610	39	>75% Grass cover, Good, HSG A
	7,418	60	Woods, Fair, HSG B
	765	61	>75% Grass cover, Good, HSG B
*	2,265	98	IMPERVIOUS
	32,610	47	Weighted Average
	30,345		93.05% Pervious Area
	2,265		6.95% Impervious Area

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

Summary for Reach 1R: REACH 1

Inflow Area = 0.066 ac, 31.76% Impervious, Inflow Depth > 0.95" for 10 YEAR event
Inflow = 0.10 cfs @ 11.95 hrs, Volume= 0.005 af
Outflow = 0.10 cfs @ 11.95 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Routed to Reach SP3 : SUMMATION POINT 3

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

Summary for Reach 2R: REACH 2

Inflow Area = 0.054 ac, 36.02% Impervious, Inflow Depth > 1.14" for 10 YEAR event
Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Routed to Reach SP3 : SUMMATION POINT 3

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

Summary for Reach 3R: REACH 3

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 3.27" for 10 YEAR event
Inflow = 0.17 cfs @ 12.12 hrs, Volume= 0.038 af
Outflow = 0.14 cfs @ 12.30 hrs, Volume= 0.038 af, Atten= 20%, Lag= 10.9 min
Routed to Reach 5R : REACH 5

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.19 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 6.0 min

Peak Storage= 49 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 4.06'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 538.48 cfs

4.00' x 4.00' deep channel, n= 0.025 Earth, clean & winding
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 425.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -12.75'



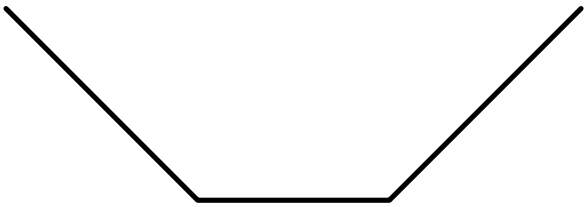
Summary for Reach 4R: REACH 4

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 2.19" for 10 YEAR event
Inflow = 0.10 cfs @ 11.70 hrs, Volume= 0.028 af
Outflow = 0.10 cfs @ 13.70 hrs, Volume= 0.028 af, Atten= 0%, Lag= 120.0 min
Routed to Reach 5R : REACH 5

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.19 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 3.5 min

Peak Storage= 21 cf @ 13.65 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 4.04'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 538.48 cfs

4.00' x 4.00' deep channel, n= 0.025 Earth, clean & winding
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 250.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -7.50'



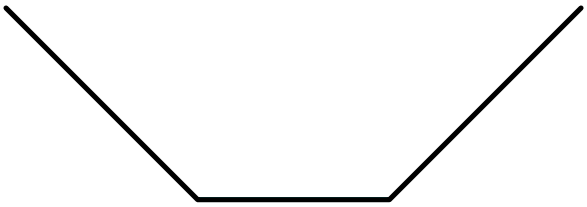
Summary for Reach 5R: REACH 5

Inflow Area = 0.292 ac, 51.59% Impervious, Inflow Depth > 2.69" for 10 YEAR event
Inflow = 0.24 cfs @ 12.30 hrs, Volume= 0.066 af
Outflow = 0.23 cfs @ 12.45 hrs, Volume= 0.065 af, Atten= 2%, Lag= 9.1 min
Routed to Reach SP4 : SUMMATION POINT 4

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.08 fps, Min. Travel Time= 5.5 min
Avg. Velocity = 0.88 fps, Avg. Travel Time= 6.8 min

Peak Storage= 77 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 4.11'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 384.63 cfs

4.00' x 4.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 360.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -10.80'



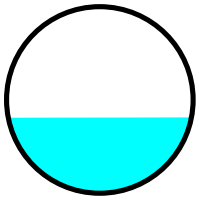
Summary for Reach 6R: 15" SD

Inflow Area = 0.586 ac, 9.63% Impervious, Inflow Depth > 2.02" for 10 YEAR event
Inflow = 1.58 cfs @ 12.09 hrs, Volume= 0.099 af
Outflow = 1.57 cfs @ 12.10 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.3 min
Routed to Pond CB 6 : CB6

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.38 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.28 fps, Avg. Travel Time= 0.5 min

Peak Storage= 18 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.51' , Surface Width= 1.23'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 38.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.19'



Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.532 ac, 7.34% Impervious, Inflow Depth > 0.76" for 10 YEAR event
Inflow = 1.65 cfs @ 12.01 hrs, Volume= 0.097 af
Outflow = 1.65 cfs @ 12.01 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 6.390 ac, 32.52% Impervious, Inflow Depth > 0.66" for 10 YEAR event
Inflow = 0.62 cfs @ 12.45 hrs, Volume= 0.352 af
Outflow = 0.62 cfs @ 12.45 hrs, Volume= 0.352 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP3: SUMMATION POINT 3

Inflow Area = 3.762 ac, 39.87% Impervious, Inflow Depth > 0.79" for 10 YEAR event
Inflow = 0.51 cfs @ 12.00 hrs, Volume= 0.248 af
Outflow = 0.51 cfs @ 12.00 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min

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

Summary for Reach SP4: SUMMATION POINT 4

Inflow Area = 5.141 ac, 9.37% Impervious, Inflow Depth > 1.70" for 10 YEAR event
Inflow = 8.27 cfs @ 12.21 hrs, Volume= 0.729 af
Outflow = 8.27 cfs @ 12.21 hrs, Volume= 0.729 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: WETPOND A

Inflow Area = 5.056 ac, 38.87% Impervious, Inflow Depth > 2.24" for 10 YEAR event
Inflow = 12.76 cfs @ 12.00 hrs, Volume= 0.943 af
Outflow = 0.50 cfs @ 12.45 hrs, Volume= 0.315 af, Atten= 96%, Lag= 27.1 min
Primary = 0.50 cfs @ 12.45 hrs, Volume= 0.315 af
Routed to Reach SP2 : SUMMATION POINT 2
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach SP2 : SUMMATION POINT 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.23' @ 15.62 hrs Surf.Area= 6,094 sf Storage= 29,611 cf

Plug-Flow detention time= 285.8 min calculated for 0.314 af (33% of inflow)
Center-of-Mass det. time= 188.6 min (973.1 - 784.4)

Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	41,844 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
66.00	1,128	0	0
67.00	1,476	1,302	1,302
68.00	1,870	1,673	2,975
69.00	2,290	2,080	5,055
70.00	2,747	2,519	7,574
71.00	3,240	2,994	10,567
72.00	3,779	3,510	14,077
73.00	4,356	4,068	18,144
74.00	4,960	4,658	22,802
75.00	5,867	5,414	28,216
76.00	6,838	6,353	34,568
77.00	7,714	7,276	41,844

Device	Routing	Invert	Outlet Devices
#1	Primary	69.14'	**6.0" Round Culvert** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.14' / 68.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	74.09'	**0.50 cfs Exfiltration when above 74.09'**
#3	Device 1	76.05'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	76.50'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.50 cfs @ 12.45 hrs HW=74.24' (Free Discharge)
└**1=Culvert** (Passes 0.50 cfs of 1.43 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.50 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=66.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: WETPOND B

Inflow Area = 2.893 ac, 48.64% Impervious, Inflow Depth > 2.35" for 10 YEAR event
Inflow = 11.60 cfs @ 11.97 hrs, Volume= 0.567 af
Outflow = 0.35 cfs @ 14.68 hrs, Volume= 0.217 af, Atten= 97%, Lag= 162.9 min
Primary = 0.35 cfs @ 14.68 hrs, Volume= 0.217 af
  Routed to Reach SP3 : SUMMATION POINT 3
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
  Routed to Reach SP3 : SUMMATION POINT 3

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 71.45' @ 14.68 hrs Surf.Area= 4,404 sf Storage= 17,427 cf

Plug-Flow detention time= 289.4 min calculated for 0.217 af (38% of inflow)
Center-of-Mass det. time= 194.3 min (965.6 - 771.2)

Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	24,924 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.00	1,409	0	0
66.00	1,752	1,581	1,581
67.00	2,121	1,937	3,517
68.00	2,514	2,318	5,835
69.00	2,933	2,724	8,558
70.00	3,408	3,171	11,729
71.00	4,167	3,788	15,516
72.00	4,698	4,433	19,949
73.00	5,252	4,975	24,924

Device	Routing	Invert	Outlet Devices
#1	Primary	68.26'	**4.0" Round Culvert** L= 85.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 68.26' / 67.84' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Device 1	70.76'	**0.50 cfs Exfiltration when above 70.76'**
#3	Device 1	72.39'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	72.50'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.35 cfs @ 14.68 hrs HW=71.45' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.35 cfs @ 3.96 fps)
└**2=Exfiltration** (Passes 0.35 cfs of 0.50 cfs potential flow)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=65.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 3P: WETLAND STORAGE

Inflow Area = 3.213 ac, 31.19% Impervious, Inflow Depth > 2.42" for 10 YEAR event
Inflow = 10.39 cfs @ 11.99 hrs, Volume= 0.647 af
Outflow = 7.61 cfs @ 12.09 hrs, Volume= 0.645 af, Atten= 27%, Lag= 6.0 min
Primary = 7.61 cfs @ 12.09 hrs, Volume= 0.645 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 80.50' @ 12.09 hrs Surf.Area= 4,915 sf Storage= 3,780 cf

Plug-Flow detention time= 7.8 min calculated for 0.643 af (99% of inflow)
Center-of-Mass det. time= 6.5 min (784.0 - 777.5)

Volume	Invert	Avail.Storage	Storage Description
#1	79.00'	15,212 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.00	112	0	0
81.00	6,500	6,612	6,612
82.00	10,700	8,600	15,212

Device	Routing	Invert	Outlet Devices
#1	Primary	79.00'	**24.0" Round Culvert** L= 70.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.00' / 78.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.58 cfs @ 12.09 hrs HW=80.50' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 7.58 cfs @ 4.16 fps)

Summary for Pond 4P: GUSF 2

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 2.19" for 10 YEAR event
Inflow = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af
Outflow = 0.10 cfs @ 11.70 hrs, Volume= 0.028 af, Atten= 85%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.70 hrs, Volume= 0.028 af
Routed to Reach 4R : REACH 4
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 4R : REACH 4

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 76.70' @ 12.17 hrs Surf.Area= 352 sf Storage= 399 cf

Plug-Flow detention time= 26.0 min calculated for 0.028 af (100% of inflow)
Center-of-Mass det. time= 25.8 min (811.1 - 785.2)

Volume	Invert	Avail.Storage	Storage Description
#1	75.23'	1,020 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
75.23	192	0	0
77.00	385	511	511
78.00	634	510	1,020

Device	Routing	Invert	Outlet Devices
#1	Primary	72.98'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 72.98' / 72.88' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	75.23'	**0.10 cfs Exfiltration when above 75.23'**
#3	Secondary	76.73'	**5.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66
2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 11.70 hrs HW=75.27' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=75.23' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: GUSF 1

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 3.27" for 10 YEAR event
Inflow = 0.82 cfs @ 11.95 hrs, Volume= 0.038 af
Outflow = 0.17 cfs @ 12.12 hrs, Volume= 0.038 af, Atten= 79%, Lag= 9.9 min
Primary = 0.10 cfs @ 11.65 hrs, Volume= 0.037 af
Routed to Reach 3R : REACH 3
Secondary = 0.07 cfs @ 12.12 hrs, Volume= 0.001 af
Routed to Reach 3R : REACH 3

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.54' @ 12.12 hrs Surf.Area= 550 sf Storage= 565 cf

Plug-Flow detention time= 34.8 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 34.7 min (789.9 - 755.2)

Volume	Invert	Avail.Storage	Storage Description
#1	82.00'	1,228 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.00	210	0	0
83.00	408	309	309
84.00	673	541	850
84.50	841	379	1,228

Device	Routing	Invert	Outlet Devices
#1	Primary	79.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.75' / 79.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	82.00'	**0.10 cfs Exfiltration when above 82.00'**
#3	Secondary	83.50'	**5.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 11.65 hrs HW=82.04' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.06 cfs @ 12.12 hrs HW=83.53' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 0.06 cfs @ 0.41 fps)

Summary for Pond 6P: BIO CELL 1

Inflow Area = 0.066 ac, 31.76% Impervious, Inflow Depth > 0.95" for 10 YEAR event
Inflow = 0.12 cfs @ 11.97 hrs, Volume= 0.005 af
Outflow = 0.10 cfs @ 11.95 hrs, Volume= 0.005 af, Atten= 17%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.95 hrs, Volume= 0.005 af
Routed to Reach 1R : REACH 1
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 1R : REACH 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 78.59' @ 12.00 hrs Surf.Area= 140 sf Storage= 5 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (822.3 - 822.0)

Volume	Invert	Avail.Storage	Storage Description
#1	78.50'	714 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.50	140	0.0	0	0
79.00	140	40.0	28	28
80.50	775	100.0	686	714

Device	Routing	Invert	Outlet Devices
#1	Primary	76.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.75' / 76.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	78.50'	**0.10 cfs Exfiltration at all elevations**
#3	Secondary	79.50'	**5.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.10 cfs @ 11.95 hrs HW=78.54' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.42 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=78.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: BIO CELL 2

Inflow Area = 0.054 ac, 36.02% Impervious, Inflow Depth > 1.25" for 10 YEAR event
Inflow = 0.13 cfs @ 11.97 hrs, Volume= 0.006 af
Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af, Atten= 25%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.005 af
Routed to Reach 2R : REACH 2
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 2R : REACH 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.08' @ 12.02 hrs Surf.Area= 153 sf Storage= 33 cf

Plug-Flow detention time= 42.8 min calculated for 0.005 af (90% of inflow)
Center-of-Mass det. time= 11.4 min (822.2 - 810.8)

Volume	Invert	Avail.Storage	Storage Description
#1	76.50'	748 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
76.50	116	0.0	0	0
77.00	116	40.0	23	23
78.50	850	100.0	725	748

Device	Routing	Invert	Outlet Devices
#1	Primary	74.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.75' / 74.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	77.00'	**0.10 cfs Exfiltration when above 77.00'**
#3	Secondary	77.50'	**5.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=77.02' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=76.50' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 8P: DRIP FILTER

Inflow Area = 0.022 ac,100.00% Impervious, Inflow Depth > 4.01" for 10 YEAR event
Inflow = 0.15 cfs @ 11.95 hrs, Volume= 0.007 af
Outflow = 0.12 cfs @ 12.01 hrs, Volume= 0.007 af, Atten= 19%, Lag= 3.8 min
Primary = 0.12 cfs @ 12.01 hrs, Volume= 0.007 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.65' @ 12.02 hrs Surf.Area= 200 sf Storage= 52 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.2 min (734.0 - 729.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.11 cfs @ 12.01 hrs HW=0.64' (Free Discharge)
└─**1=Culvert** (Passes 0.04 cfs of 0.52 cfs potential flow)
└─**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 0.07 cfs @ 1.03 fps)

Summary for Pond 9P: DRIP FILTER

Inflow Area = 0.027 ac,100.00% Impervious, Inflow Depth > 4.01" for 10 YEAR event
Inflow = 0.18 cfs @ 11.95 hrs, Volume= 0.009 af
Outflow = 0.17 cfs @ 12.00 hrs, Volume= 0.009 af, Atten= 8%, Lag= 2.8 min
Primary = 0.17 cfs @ 12.00 hrs, Volume= 0.009 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.70' @ 12.00 hrs Surf.Area= 200 sf Storage= 56 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.1 min (733.9 - 729.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.16 cfs @ 12.00 hrs HW=0.70' (Free Discharge)
└─**1=Culvert** (Passes 0.04 cfs of 0.53 cfs potential flow)
└─**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 1.24 fps)

Summary for Pond 10P: DRIP FILTER

Inflow Area = 0.037 ac,100.00% Impervious, Inflow Depth > 4.01" for 10 YEAR event
Inflow = 0.24 cfs @ 11.95 hrs, Volume= 0.012 af
Outflow = 0.24 cfs @ 11.97 hrs, Volume= 0.012 af, Atten= 3%, Lag= 1.3 min
Primary = 0.24 cfs @ 11.97 hrs, Volume= 0.012 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.77' @ 11.97 hrs Surf.Area= 200 sf Storage= 61 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.0 min (733.8 - 729.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00

Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.22 cfs @ 11.97 hrs HW=0.76' (Free Discharge)
1=Culvert (Passes 0.04 cfs of 0.53 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.04 cfs)
3=Broad-Crested Rectangular Weir (Weir Controls 0.18 cfs @ 1.44 fps)

Summary for Pond 11P: DRIP FILTER

Inflow Area = 0.026 ac,100.00% Impervious, Inflow Depth > 4.01" for 10 YEAR event
Inflow = 0.17 cfs @ 11.95 hrs, Volume= 0.009 af
Outflow = 0.16 cfs @ 12.00 hrs, Volume= 0.009 af, Atten= 9%, Lag= 3.0 min
Primary = 0.16 cfs @ 12.00 hrs, Volume= 0.009 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.69' @ 12.00 hrs Surf.Area= 200 sf Storage= 55 cf

Plug-Flow detention time= 4.2 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 4.1 min (733.9 - 729.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.16 cfs @ 12.00 hrs HW=0.69' (Free Discharge)
1=Culvert (Passes 0.04 cfs of 0.53 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.04 cfs)
3=Broad-Crested Rectangular Weir (Weir Controls 0.12 cfs @ 1.23 fps)

Summary for Pond CB 1: CB1

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 2.19" for 10 YEAR event
Inflow = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af
Outflow = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af
Routed to Pond CB 2 : CB2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.23' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.75'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.75' / 76.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.64 cfs @ 11.96 hrs HW=77.22' (Free Discharge)
1=Culvert (Barrel Controls 0.64 cfs @ 2.26 fps)

Summary for Pond CB 10: CB10

Inflow Area = 0.389 ac, 14.97% Impervious, Inflow Depth > 2.10" for 10 YEAR event
Inflow = 1.04 cfs @ 12.11 hrs, Volume= 0.068 af
Outflow = 1.04 cfs @ 12.11 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Primary = 1.04 cfs @ 12.11 hrs, Volume= 0.068 af
Routed to Pond CB 9 : CB9

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.83' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.25'	**15.0" Round Culvert** L= 55.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.25' / 81.97' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.03 cfs @ 12.11 hrs HW=82.83' (Free Discharge)
1=Culvert (Barrel Controls 1.03 cfs @ 2.71 fps)

Summary for Pond CB 11: CB11

Inflow Area = 0.583 ac, 27.27% Impervious, Inflow Depth > 2.24" for 10 YEAR event
Inflow = 1.54 cfs @ 12.00 hrs, Volume= 0.109 af
Outflow = 1.54 cfs @ 12.00 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min
Primary = 1.54 cfs @ 12.00 hrs, Volume= 0.109 af
Routed to Pond CB 8 : CB8

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

Peak Elev= 83.18' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.47'	**15.0" Round Culvert** L= 95.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.47' / 82.00' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.54 cfs @ 12.00 hrs HW=83.18' (Free Discharge)
1=Culvert (Barrel Controls 1.54 cfs @ 3.06 fps)

Summary for Pond CB 12: CB12

Inflow Area = 0.544 ac, 23.73% Impervious, Inflow Depth > 2.19" for 10 YEAR event
Inflow = 1.37 cfs @ 12.01 hrs, Volume= 0.099 af
Outflow = 1.37 cfs @ 12.01 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min
Primary = 1.37 cfs @ 12.01 hrs, Volume= 0.099 af
Routed to Pond CB 11 : CB11

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.39' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.67'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.67' / 82.57' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.35 cfs @ 12.01 hrs HW=83.38' (Free Discharge)
1=Culvert (Barrel Controls 1.35 cfs @ 2.71 fps)

Summary for Pond CB 13: CB13

Inflow Area = 0.427 ac, 11.42% Impervious, Inflow Depth > 2.02" for 10 YEAR event
Inflow = 1.13 cfs @ 12.10 hrs, Volume= 0.072 af
Outflow = 1.13 cfs @ 12.10 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.10 hrs, Volume= 0.072 af
Routed to Pond CB 12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.75' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	83.15'	**15.0" Round Culvert** L= 75.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 83.15' / 82.78' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.13 cfs @ 12.10 hrs HW=83.75' (Free Discharge)
1=Culvert (Barrel Controls 1.13 cfs @ 2.80 fps)

Summary for Pond CB 14: CB 14

Inflow Area = 0.046 ac, 78.66% Impervious, Inflow Depth > 2.80" for 10 YEAR event
Inflow = 0.24 cfs @ 11.95 hrs, Volume= 0.011 af
Outflow = 0.24 cfs @ 11.95 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.24 cfs @ 11.95 hrs, Volume= 0.011 af
Routed to Pond CB 15 : CB 15

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.50' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	83.25'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 83.25' / 81.43' S= 0.0910 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.24 cfs @ 11.95 hrs HW=83.50' (Free Discharge)
1=Culvert (Inlet Controls 0.24 cfs @ 1.35 fps)

Summary for Pond CB 15: CB 15

Inflow Area = 0.237 ac, 65.89% Impervious, Inflow Depth > 2.20" for 10 YEAR event
Inflow = 1.01 cfs @ 11.96 hrs, Volume= 0.044 af
Outflow = 1.01 cfs @ 11.96 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
Primary = 1.01 cfs @ 11.96 hrs, Volume= 0.044 af
Routed to Pond CB 18 : CB 18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 81.87' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.33'	**15.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.33' / 78.63' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.99 cfs @ 11.96 hrs HW=81.87' (Free Discharge)
1=Culvert (Inlet Controls 0.99 cfs @ 1.97 fps)

Summary for Pond CB 16: CB 16

Inflow Area = 0.191 ac, 62.83% Impervious, Inflow Depth > 2.06" for 10 YEAR event
Inflow = 0.77 cfs @ 11.96 hrs, Volume= 0.033 af
Outflow = 0.77 cfs @ 11.96 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.77 cfs @ 11.96 hrs, Volume= 0.033 af
Routed to Pond CB 15 : CB 15

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

Peak Elev= 82.09' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.58'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.58' / 81.43' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.75 cfs @ 11.96 hrs HW=82.08' (Free Discharge)
1=Culvert (Barrel Controls 0.75 cfs @ 2.41 fps)

Summary for Pond CB 17: CB 17

Inflow Area = 0.073 ac, 63.75% Impervious, Inflow Depth > 2.11" for 10 YEAR event
Inflow = 0.30 cfs @ 11.96 hrs, Volume= 0.013 af
Outflow = 0.30 cfs @ 11.96 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 11.96 hrs, Volume= 0.013 af
Routed to Pond CB 16 : CB 16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.36' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.06'	**15.0" Round Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.06' / 81.68' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.29 cfs @ 11.96 hrs HW=82.35' (Free Discharge)
1=Culvert (Barrel Controls 0.29 cfs @ 2.00 fps)

Summary for Pond CB 18: CB 18

Inflow Area = 0.306 ac, 72.86% Impervious, Inflow Depth > 2.57" for 10 YEAR event
Inflow = 1.46 cfs @ 11.96 hrs, Volume= 0.066 af
Outflow = 1.46 cfs @ 11.96 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min
Primary = 1.46 cfs @ 11.96 hrs, Volume= 0.066 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.20' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.53'	**15.0" Round Culvert** L= 73.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.53' / 77.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.43 cfs @ 11.96 hrs HW=79.19' (Free Discharge)
1=Culvert (Inlet Controls 1.43 cfs @ 2.18 fps)

Summary for Pond CB 2: CB2

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 2.19" for 10 YEAR event
Inflow = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af
Outflow = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.66 cfs @ 11.96 hrs, Volume= 0.028 af
Routed to Pond 4P : GUSF 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.57' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.55'	**6.0" Round Culvert** L= 15.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.55' / 76.47' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.64 cfs @ 11.96 hrs HW=77.54' (Free Discharge)
1=Culvert (Inlet Controls 0.64 cfs @ 3.28 fps)

Summary for Pond CB 20: CB20

Inflow Area = 0.148 ac, 75.28% Impervious, Inflow Depth > 3.18" for 10 YEAR event
Inflow = 0.86 cfs @ 11.95 hrs, Volume= 0.039 af
Outflow = 0.86 cfs @ 11.95 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
Primary = 0.86 cfs @ 11.95 hrs, Volume= 0.039 af
Routed to Pond CB 21 : CB21

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.35' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.80'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.80' / 78.70' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.85 cfs @ 11.95 hrs HW=79.35' (Free Discharge)
1=Culvert (Barrel Controls 0.85 cfs @ 2.42 fps)

Summary for Pond CB 21: CB21

Inflow Area = 0.242 ac, 77.92% Impervious, Inflow Depth > 3.25" for 10 YEAR event
Inflow = 1.43 cfs @ 11.95 hrs, Volume= 0.066 af
Outflow = 1.43 cfs @ 11.95 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min
Primary = 1.43 cfs @ 11.95 hrs, Volume= 0.066 af
Routed to Pond CB 24 : CB 24

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

Peak Elev= 79.26' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.60'	**15.0" Round Culvert** L= 116.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.60' / 75.29' S= 0.0285 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.41 cfs @ 11.95 hrs HW=79.25' (Free Discharge)
1=Culvert (Inlet Controls 1.41 cfs @ 2.17 fps)

Summary for Pond CB 22: CB22

Inflow Area = 1.411 ac, 26.96% Impervious, Inflow Depth > 1.66" for 10 YEAR event
Inflow = 4.14 cfs @ 12.00 hrs, Volume= 0.195 af
Outflow = 4.14 cfs @ 12.00 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min
Primary = 4.14 cfs @ 12.00 hrs, Volume= 0.195 af
Routed to Pond CB 23 : CB23

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.51' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.40'	**24.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.40' / 74.30' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.12 cfs @ 12.00 hrs HW=75.51' (Free Discharge)
1=Culvert (Barrel Controls 4.12 cfs @ 3.33 fps)

Summary for Pond CB 23: CB23

Inflow Area = 1.658 ac, 34.43% Impervious, Inflow Depth > 1.89" for 10 YEAR event
Inflow = 5.41 cfs @ 11.99 hrs, Volume= 0.261 af
Outflow = 5.41 cfs @ 11.99 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 5.41 cfs @ 11.99 hrs, Volume= 0.261 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.50' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.20'	**24.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.20' / 74.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.27 cfs @ 11.99 hrs HW=75.48' (Free Discharge)
1=Culvert (Barrel Controls 5.27 cfs @ 3.54 fps)

Summary for Pond CB 24: CB 24

Inflow Area = 2.634 ac, 52.18% Impervious, Inflow Depth > 2.45" for 10 YEAR event
Inflow = 10.95 cfs @ 11.97 hrs, Volume= 0.538 af
Outflow = 10.95 cfs @ 11.97 hrs, Volume= 0.538 af, Atten= 0%, Lag= 0.0 min
Primary = 10.95 cfs @ 11.97 hrs, Volume= 0.538 af
Routed to Pond 2P : WETPOND B

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.95' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**24.0" Round Culvert** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.00' / 73.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.63 cfs @ 11.97 hrs HW=75.91' (Free Discharge)
1=Culvert (Barrel Controls 10.63 cfs @ 4.42 fps)

Summary for Pond CB 25: CB25

Inflow Area = 0.455 ac, 87.23% Impervious, Inflow Depth > 3.57" for 10 YEAR event
Inflow = 2.82 cfs @ 11.95 hrs, Volume= 0.135 af
Outflow = 2.82 cfs @ 11.95 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min
Primary = 2.82 cfs @ 11.95 hrs, Volume= 0.135 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.90' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.90'	**15.0" Round Culvert** L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.90' / 75.29' S= 0.0107 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.81 cfs @ 11.95 hrs HW=77.90' (Free Discharge)
1=Culvert (Inlet Controls 2.81 cfs @ 2.68 fps)

Summary for Pond CB 26: CB26

Inflow Area = 0.398 ac, 85.40% Impervious, Inflow Depth > 3.51" for 10 YEAR event
Inflow = 2.45 cfs @ 11.95 hrs, Volume= 0.116 af
Outflow = 2.45 cfs @ 11.95 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min
Primary = 2.45 cfs @ 11.95 hrs, Volume= 0.116 af
Routed to Pond CB 25 : CB25

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

Peak Elev= 79.36' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.45'	**15.0" Round Culvert** L= 110.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.45' / 77.00' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.44 cfs @ 11.95 hrs HW=79.36' (Free Discharge)
1=Culvert (Inlet Controls 2.44 cfs @ 2.56 fps)

Summary for Pond CB 27: CB27

Inflow Area = 0.233 ac, 78.30% Impervious, Inflow Depth > 3.27" for 10 YEAR event
Inflow = 1.38 cfs @ 11.95 hrs, Volume= 0.064 af
Outflow = 1.38 cfs @ 11.95 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 11.95 hrs, Volume= 0.064 af
Routed to Pond CB 26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.41' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.70'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.70' / 78.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.37 cfs @ 11.95 hrs HW=79.40' (Free Discharge)
1=Culvert (Barrel Controls 1.37 cfs @ 2.78 fps)

Summary for Pond CB 4: CB4

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 3.27" for 10 YEAR event
Inflow = 0.82 cfs @ 11.95 hrs, Volume= 0.038 af
Outflow = 0.82 cfs @ 11.95 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 11.95 hrs, Volume= 0.038 af
Routed to Pond 5P : GUSF 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.70' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.15'	**15.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.15' / 82.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.81 cfs @ 11.95 hrs HW=82.70' (Free Discharge)
1=Culvert (Barrel Controls 0.81 cfs @ 2.31 fps)

Summary for Pond CB 5: CB5

Inflow Area = 0.873 ac, 36.16% Impervious, Inflow Depth > 2.61" for 10 YEAR event
Inflow = 2.76 cfs @ 11.98 hrs, Volume= 0.190 af
Outflow = 2.76 cfs @ 11.98 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min
Primary = 2.76 cfs @ 11.98 hrs, Volume= 0.190 af
Routed to Pond CB 7 : CB7

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.14' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.10'	**15.0" Round Culvert** L= 62.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.10' / 80.79' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.70 cfs @ 11.98 hrs HW=82.13' (Free Discharge)
1=Culvert (Barrel Controls 2.70 cfs @ 3.41 fps)

Summary for Pond CB 6: CB6

Inflow Area = 0.738 ac, 27.19% Impervious, Inflow Depth > 2.41" for 10 YEAR event
Inflow = 1.99 cfs @ 12.01 hrs, Volume= 0.148 af
Outflow = 1.99 cfs @ 12.01 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min
Primary = 1.99 cfs @ 12.01 hrs, Volume= 0.148 af
Routed to Pond CB 5 : CB5

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.23' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.35'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.35' / 81.20' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.98 cfs @ 12.01 hrs HW=82.22' (Free Discharge)
1=Culvert (Barrel Controls 1.98 cfs @ 3.04 fps)

Summary for Pond CB 7: CB7

Inflow Area = 2.132 ac, 37.02% Impervious, Inflow Depth > 2.57" for 10 YEAR event
Inflow = 6.66 cfs @ 11.98 hrs, Volume= 0.457 af
Outflow = 6.66 cfs @ 11.98 hrs, Volume= 0.457 af, Atten= 0%, Lag= 0.0 min
Primary = 6.66 cfs @ 11.98 hrs, Volume= 0.457 af
Routed to Pond 3P : WETLAND STORAGE

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

Peak Elev= 82.05' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.69'	**24.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.69' / 80.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.53 cfs @ 11.98 hrs HW=82.03' (Free Discharge)
1=Culvert (Barrel Controls 6.53 cfs @ 4.14 fps)

Summary for Pond CB 8: CB8

Inflow Area = 1.176 ac, 33.92% Impervious, Inflow Depth > 2.46" for 10 YEAR event
Inflow = 3.41 cfs @ 11.98 hrs, Volume= 0.241 af
Outflow = 3.41 cfs @ 11.98 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min
Primary = 3.41 cfs @ 11.98 hrs, Volume= 0.241 af
Routed to Pond CB 7 : CB7

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.89' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.67'	**15.0" Round Culvert** L= 42.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.67' / 81.46' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.35 cfs @ 11.98 hrs HW=82.88' (Free Discharge)
1=Culvert (Barrel Controls 3.35 cfs @ 3.52 fps)

Summary for Pond CB 9: CB9

Inflow Area = 0.485 ac, 29.68% Impervious, Inflow Depth > 2.43" for 10 YEAR event
Inflow = 1.26 cfs @ 12.01 hrs, Volume= 0.098 af
Outflow = 1.26 cfs @ 12.01 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.01 hrs, Volume= 0.098 af
Routed to Pond CB 8 : CB8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.55' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.87'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.87' / 81.77' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.25 cfs @ 12.01 hrs HW=82.55' (Free Discharge)
1=Culvert (Barrel Controls 1.25 cfs @ 2.66 fps)

Summary for Pond CB19: CB19

Inflow Area = 0.469 ac, 68.42% Impervious, Inflow Depth > 2.79" for 10 YEAR event
Inflow = 2.23 cfs @ 11.99 hrs, Volume= 0.109 af
Outflow = 2.23 cfs @ 11.99 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min
Primary = 2.23 cfs @ 11.99 hrs, Volume= 0.109 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.41' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.55'	**15.0" Round Culvert** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.55' / 75.95' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.20 cfs @ 11.99 hrs HW=77.40' (Free Discharge)
1=Culvert (Inlet Controls 2.20 cfs @ 2.48 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentSC 10: 10 Runoff Area=211,215 sf 6.82% Impervious Runoff Depth>2.49"
Flow Length=975' Tc=26.3 min CN=71 Runoff=12.40 cfs 1.008 af

SubcatchmentSC 11: 11 Runoff Area=6,017 sf 65.45% Impervious Runoff Depth>4.36"
Tc=5.0 min CN=90 Runoff=1.07 cfs 0.050 af

SubcatchmentSC 12: 12 Runoff Area=6,712 sf 39.17% Impervious Runoff Depth>3.16"
Tc=5.0 min CN=78 Runoff=0.93 cfs 0.041 af

SubcatchmentSC 1A: 1A Runoff Area=967 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.009 af

SubcatchmentSC 1B: 1B Runoff Area=1,186 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.012 af

SubcatchmentSC 1C: 1C Runoff Area=1,595 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.31 cfs 0.016 af

SubcatchmentSC 1D: 1D Runoff Area=1,152 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.22 cfs 0.011 af

SubcatchmentSC 1E: 1E Runoff Area=61,853 sf 0.00% Impervious Runoff Depth>0.98"
Flow Length=90' Tc=7.4 min CN=51 Runoff=2.35 cfs 0.116 af

SubcatchmentSC 2A: 2A Runoff Area=5,111 sf 68.52% Impervious Runoff Depth>3.85"
Flow Length=127' Tc=4.9 min CN=85 Runoff=0.84 cfs 0.038 af

SubcatchmentSC 2B: 2B Runoff Area=18,599 sf 11.42% Impervious Runoff Depth>2.96"
Flow Length=100' Slope=0.0400 '/' Tc=17.3 min CN=76 Runoff=1.64 cfs 0.105 af

SubcatchmentSC 2C: 2C Runoff Area=16,958 sf 14.97% Impervious Runoff Depth>3.05"
Flow Length=150' Slope=0.0400 '/' Tc=18.2 min CN=77 Runoff=1.50 cfs 0.099 af

SubcatchmentSC 2D: 2D Runoff Area=25,546 sf 9.63% Impervious Runoff Depth>2.96"
Flow Length=160' Tc=16.7 min CN=76 Runoff=2.29 cfs 0.144 af

SubcatchmentSC 2E: 2E Runoff Area=1,667 sf 77.68% Impervious Runoff Depth>4.06"
Tc=5.0 min CN=87 Runoff=0.28 cfs 0.013 af

SubcatchmentSC 2F: 2F Runoff Area=4,179 sf 89.40% Impervious Runoff Depth>4.85"
Tc=5.0 min CN=95 Runoff=0.79 cfs 0.039 af

SubcatchmentSC 2G: 2G Runoff Area=4,722 sf 88.63% Impervious Runoff Depth>4.85"
Tc=5.0 min CN=95 Runoff=0.89 cfs 0.044 af

SubcatchmentSC 2H: 2H Runoff Area=2,889 sf 97.92% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.55 cfs 0.028 af

SubcatchmentSC 2I: 2I Runoff Area=3,581 sf 90.51% Impervious Runoff Depth>4.94"
Tc=5.0 min CN=96 Runoff=0.68 cfs 0.034 af

SubcatchmentSC 2J: 2J Runoff Area=3,699 sf 93.21% Impervious Runoff Depth>4.94"
Tc=5.0 min CN=96 Runoff=0.70 cfs 0.035 af

SubcatchmentSC 2K: 2K Runoff Area=5,912 sf 84.88% Impervious Runoff Depth>4.76"
Tc=5.0 min CN=94 Runoff=1.10 cfs 0.054 af

SubcatchmentSC 2L: 2L Runoff Area=47,113 sf 19.70% Impervious Runoff Depth>3.06"
Flow Length=240' Tc=9.4 min CN=77 Runoff=5.52 cfs 0.276 af

SubcatchmentSC 3A: 3A Runoff Area=5,173 sf 62.27% Impervious Runoff Depth>2.97"
Tc=5.0 min CN=76 Runoff=0.68 cfs 0.029 af

SubcatchmentSC 3B: 3B Runoff Area=2,001 sf 78.66% Impervious Runoff Depth>3.85"
Tc=5.0 min CN=85 Runoff=0.33 cfs 0.015 af

SubcatchmentSC 3C: 3C Runoff Area=20,436 sf 68.42% Impervious Runoff Depth>3.85"
Flow Length=297' Tc=8.3 min CN=85 Runoff=3.01 cfs 0.150 af

SubcatchmentSC 3D: 3D Runoff Area=3,167 sf 63.75% Impervious Runoff Depth>3.06"
Tc=5.0 min CN=77 Runoff=0.43 cfs 0.019 af

SubcatchmentSC 3E: 3E Runoff Area=2,986 sf 96.99% Impervious Runoff Depth>4.94"
Tc=5.0 min CN=96 Runoff=0.57 cfs 0.028 af

SubcatchmentSC 3F: 3F Runoff Area=46,508 sf 39.26% Impervious Runoff Depth>2.17"
Tc=5.0 min CN=67 Runoff=4.58 cfs 0.193 af

SubcatchmentSC 4: 4 Runoff Area=58,116 sf 8.45% Impervious Runoff Depth>0.73"
Tc=5.0 min CN=47 Runoff=1.67 cfs 0.081 af

SubcatchmentSC 5: 5 Runoff Area=61,473 sf 26.96% Impervious Runoff Depth>2.51"
Flow Length=492' Tc=8.3 min CN=71 Runoff=6.26 cfs 0.295 af

SubcatchmentSC 6A: 6A Runoff Area=4,112 sf 82.08% Impervious Runoff Depth>4.46"
Tc=5.0 min CN=91 Runoff=0.74 cfs 0.035 af

SubcatchmentSC 6B: 6B Runoff Area=6,451 sf 75.28% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=89 Runoff=1.13 cfs 0.053 af

SubcatchmentSC 6C: 6C Runoff Area=4,203 sf 79.90% Impervious Runoff Depth>4.46"
Tc=5.0 min CN=91 Runoff=0.76 cfs 0.036 af

SubcatchmentSC 6D: 6D Runoff Area=7,390 sf 70.24% Impervious Runoff Depth>4.06"
Tc=5.0 min CN=87 Runoff=1.25 cfs 0.057 af

SubcatchmentSC 6E: 6E Runoff Area=11,284 sf 12.68% Impervious Runoff Depth>2.09"
Flow Length=50' Slope=0.0200 '/' Tc=5.7 min CN=66 Runoff=1.04 cfs 0.045 af

SubcatchmentSC 6F: 6F Runoff Area=6,530 sf 75.51% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=89 Runoff=1.14 cfs 0.053 af

SubcatchmentSC 6G: 6G Runoff Area=4,787 sf 90.01% Impervious Runoff Depth>4.76"
Tc=5.0 min CN=94 Runoff=0.89 cfs 0.044 af

SubcatchmentSC 6H: 6H Runoff Area=2,481 sf 100.00% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=98 Runoff=0.48 cfs 0.024 af

SubcatchmentSC 6I: 6I Runoff Area=10,162 sf 78.30% Impervious Runoff Depth>4.36"
Tc=5.0 min CN=90 Runoff=1.80 cfs 0.085 af

SubcatchmentSC 6J: 6J Runoff Area=7,163 sf 95.48% Impervious Runoff Depth>4.94"
Tc=5.0 min CN=96 Runoff=1.36 cfs 0.068 af

SubcatchmentSC 7: 7 Runoff Area=2,865 sf 31.76% Impervious Runoff Depth>1.61"
Tc=5.0 min CN=60 Runoff=0.21 cfs 0.009 af

SubcatchmentSC 8: 8 Runoff Area=2,371 sf 36.02% Impervious Runoff Depth>2.01"
Tc=5.0 min CN=65 Runoff=0.22 cfs 0.009 af

SubcatchmentSC 9: 9 Runoff Area=32,610 sf 6.95% Impervious Runoff Depth>0.73"
Tc=5.0 min CN=47 Runoff=0.93 cfs 0.046 af

Reach 1R: REACH 1 Inflow=0.10 cfs 0.009 af
Outflow=0.10 cfs 0.009 af

Reach 2R: REACH 2 Inflow=0.10 cfs 0.009 af
Outflow=0.10 cfs 0.009 af

Reach 3R: REACH 3 Avg. Flow Depth=0.07' Max Vel=1.79 fps Inflow=0.70 cfs 0.050 af
n=0.025 L=425.0' S=0.0300 '/' Capacity=538.48 cfs Outflow=0.52 cfs 0.050 af

Reach 4R: REACH 4 Avg. Flow Depth=0.08' Max Vel=1.87 fps Inflow=0.70 cfs 0.041 af
n=0.025 L=250.0' S=0.0300 '/' Capacity=538.48 cfs Outflow=0.57 cfs 0.040 af

Reach 5R: REACH 5 Avg. Flow Depth=0.12' Max Vel=1.75 fps Inflow=1.01 cfs 0.090 af
n=0.035 L=360.0' S=0.0300 '/' Capacity=384.63 cfs Outflow=0.87 cfs 0.090 af

Reach 6R: 15" SD Avg. Flow Depth=0.63' Max Vel=3.73 fps Inflow=2.29 cfs 0.144 af
15.0" Round Pipe n=0.013 L=38.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=2.29 cfs 0.144 af

Reach SP1: SUMMATION POINT 1 Inflow=3.21 cfs 0.163 af
Outflow=3.21 cfs 0.163 af

Reach SP2: SUMMATION POINT 2 Inflow=1.90 cfs 0.636 af
Outflow=1.90 cfs 0.636 af

Reach SP3: SUMMATION POINT 3 Inflow=1.44 cfs 0.388 af
Outflow=1.44 cfs 0.388 af

Reach SP4: SUMMATION POINT 4 Inflow=13.26 cfs 1.098 af
Outflow=13.26 cfs 1.098 af

Pond 1P: WETPOND A Peak Elev=76.42' Storage=37,503 cf Inflow=17.75 cfs 1.340 af
Primary=1.73 cfs 0.555 af Secondary=0.00 cfs 0.000 af Outflow=1.73 cfs 0.555 af

Pond 2P: WETPOND B Peak Elev=72.59' Storage=22,801 cf Inflow=16.15 cfs 0.795 af
Primary=0.40 cfs 0.261 af Secondary=0.64 cfs 0.063 af Outflow=1.04 cfs 0.325 af

Pond 3P: WETLAND STORAGE Peak Elev=80.83' Storage=5,580 cf Inflow=14.50 cfs 0.908 af
24.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=10.31 cfs 0.905 af

Pond 4P: GUSF 2 Peak Elev=76.89' Storage=468 cf Inflow=0.93 cfs 0.041 af
Primary=0.10 cfs 0.035 af Secondary=0.60 cfs 0.006 af Outflow=0.70 cfs 0.041 af

Pond 5P: GUSF 1 Peak Elev=83.64' Storage=623 cf Inflow=1.07 cfs 0.050 af
Primary=0.10 cfs 0.043 af Secondary=0.60 cfs 0.007 af Outflow=0.70 cfs 0.050 af

Pond 6P: BIO CELL 1 Peak Elev=79.11' Storage=46 cf Inflow=0.21 cfs 0.009 af
Primary=0.10 cfs 0.009 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.009 af

Pond 7P: BIO CELL 2 Peak Elev=77.28' Storage=75 cf Inflow=0.22 cfs 0.009 af
Primary=0.10 cfs 0.009 af Secondary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.009 af

Pond 8P: DRIP FILTER Peak Elev=0.71' Storage=57 cf Inflow=0.19 cfs 0.009 af
Outflow=0.17 cfs 0.009 af

Pond 9P: DRIP FILTER Peak Elev=0.76' Storage=61 cf Inflow=0.23 cfs 0.012 af
Outflow=0.22 cfs 0.012 af

Pond 10P: DRIP FILTER Peak Elev=0.81' Storage=65 cf Inflow=0.31 cfs 0.016 af
Outflow=0.29 cfs 0.016 af

Pond 11P: DRIP FILTER Peak Elev=0.75' Storage=60 cf Inflow=0.22 cfs 0.011 af
Outflow=0.22 cfs 0.011 af

Pond CB 1: CB1 Peak Elev=77.33' Inflow=0.93 cfs 0.041 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=0.93 cfs 0.041 af

Pond CB 10: CB10 Peak Elev=82.97' Inflow=1.50 cfs 0.099 af
15.0" Round Culvert n=0.013 L=55.0' S=0.0051 '/' Outflow=1.50 cfs 0.099 af

Pond CB 11: CB11 Peak Elev=83.35' Inflow=2.19 cfs 0.156 af
15.0" Round Culvert n=0.013 L=95.0' S=0.0049 '/' Outflow=2.19 cfs 0.156 af

Pond CB 12: CB12 Peak Elev=83.55' Inflow=1.96 cfs 0.143 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.96 cfs 0.143 af

Pond CB 13: CB13 Peak Elev=83.90' Inflow=1.64 cfs 0.105 af
15.0" Round Culvert n=0.013 L=75.0' S=0.0049 '/' Outflow=1.64 cfs 0.105 af

Pond CB 14: CB 14 Peak Elev=83.55' Inflow=0.33 cfs 0.015 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0910 '/' Outflow=0.33 cfs 0.015 af

Pond CB 15: CB 15 Peak Elev=81.99' Inflow=1.43 cfs 0.063 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0200 '/' Outflow=1.43 cfs 0.063 af

Pond CB 16: CB 16 Peak Elev=82.20' Inflow=1.11 cfs 0.048 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=1.11 cfs 0.048 af

Pond CB 17: CB 17 Peak Elev=82.42' Inflow=0.43 cfs 0.019 af
15.0" Round Culvert n=0.013 L=76.0' S=0.0050 '/' Outflow=0.43 cfs 0.019 af

Pond CB 18: CB 18 Peak Elev=79.33' Inflow=2.00 cfs 0.091 af
15.0" Round Culvert n=0.013 L=73.0' S=0.0100 '/' Outflow=2.00 cfs 0.091 af

Pond CB 2: CB2 Peak Elev=78.36' Inflow=0.93 cfs 0.041 af
6.0" Round Culvert n=0.013 L=15.0' S=0.0053 '/' Outflow=0.93 cfs 0.041 af

Pond CB 20: CB20 Peak Elev=79.44' Inflow=1.13 cfs 0.053 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.13 cfs 0.053 af

Pond CB 21: CB21 Peak Elev=79.37' Inflow=1.87 cfs 0.088 af
15.0" Round Culvert n=0.013 L=116.0' S=0.0285 '/' Outflow=1.87 cfs 0.088 af

Pond CB 22: CB22 Peak Elev=75.82' Inflow=6.26 cfs 0.295 af
24.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=6.26 cfs 0.295 af

Pond CB 23: CB23 Peak Elev=75.83' Inflow=7.92 cfs 0.385 af
24.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=7.92 cfs 0.385 af

Pond CB 24: CB 24 Peak Elev=76.58' Inflow=15.11 cfs 0.750 af
24.0" Round Culvert n=0.013 L=50.0' S=0.0050 '/' Outflow=15.11 cfs 0.750 af

Pond CB 25: CB25 Peak Elev=78.13' Inflow=3.64 cfs 0.177 af
15.0" Round Culvert n=0.013 L=150.0' S=0.0107 '/' Outflow=3.64 cfs 0.177 af

Pond CB 26: CB26 Peak Elev=79.53' Inflow=3.16 cfs 0.152 af
15.0" Round Culvert n=0.013 L=110.0' S=0.0132 '/' Outflow=3.16 cfs 0.152 af

Pond CB 27: CB27 Peak Elev=79.53' Inflow=1.80 cfs 0.085 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=1.80 cfs 0.085 af

Pond CB 4: CB4 Peak Elev=82.79' Inflow=1.07 cfs 0.050 af
15.0" Round Culvert n=0.013 L=10.0' S=0.0050 '/' Outflow=1.07 cfs 0.050 af

Pond CB 5: CB5 Peak Elev=82.39' Inflow=3.75 cfs 0.261 af
15.0" Round Culvert n=0.013 L=62.0' S=0.0050 '/' Outflow=3.75 cfs 0.261 af

Pond CB 6: CB6 Peak Elev=82.44' Inflow=2.80 cfs 0.208 af
15.0" Round Culvert n=0.013 L=30.0' S=0.0050 '/' Outflow=2.80 cfs 0.208 af

Pond CB 7: CB7 Peak Elev=82.34' Inflow=9.09 cfs 0.632 af
24.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=9.09 cfs 0.632 af

Pond CB 8: CB8 Peak Elev=83.37' Inflow=4.72 cfs 0.337 af
15.0" Round Culvert n=0.013 L=42.0' S=0.0050 '/' Outflow=4.72 cfs 0.337 af

Pond CB 9: CB9 Peak Elev=82.70' Inflow=1.77 cfs 0.138 af
15.0" Round Culvert n=0.013 L=20.0' S=0.0050 '/' Outflow=1.77 cfs 0.138 af

Pond CB19: CB19 Peak Elev=77.59' Inflow=3.01 cfs 0.150 af
15.0" Round Culvert n=0.013 L=40.0' S=0.0150 '/' Outflow=3.01 cfs 0.150 af

Total Runoff Area = 16.826 ac Runoff Volume = 3.545 af Average Runoff Depth = 2.53"
75.20% Pervious = 12.654 ac 24.80% Impervious = 4.172 ac

Summary for Subcatchment SC 10: 10

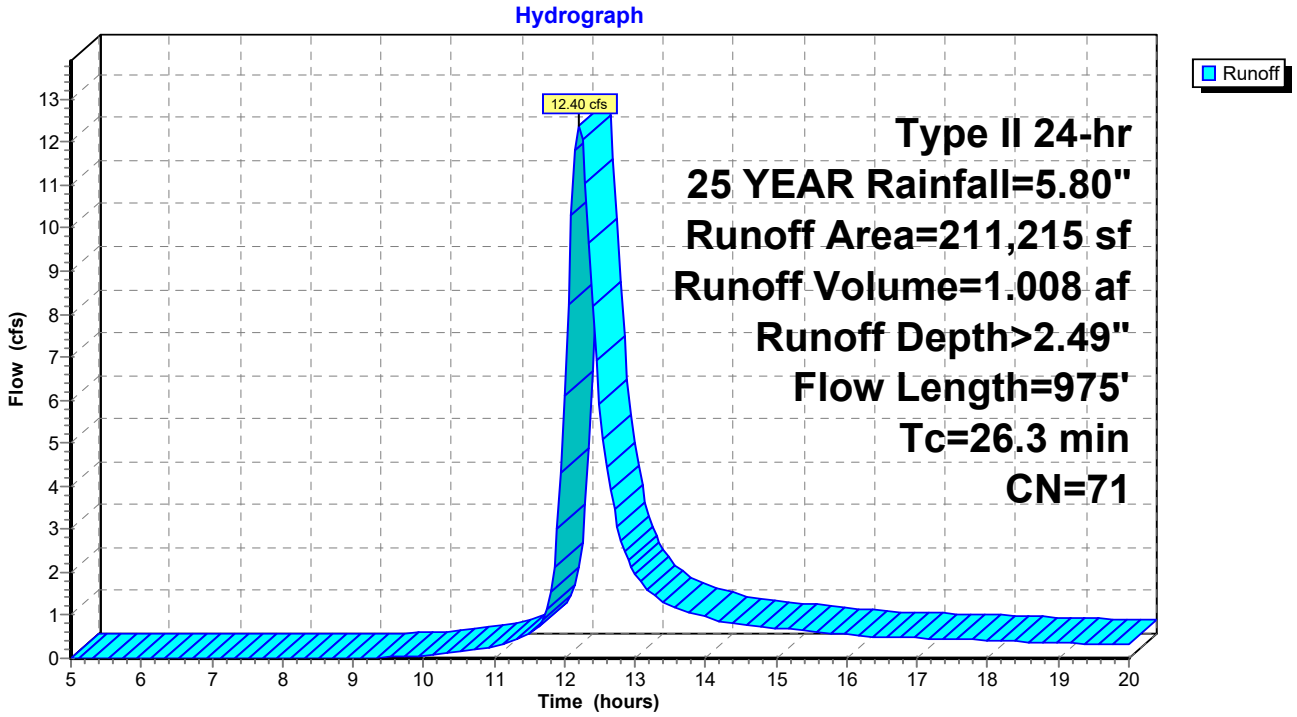
Runoff = 12.40 cfs @ 12.21 hrs, Volume= 1.008 af, Depth> 2.49"
Routed to Reach SP4 : SUMMATION POINT 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	67	39	>75% Grass cover, Good, HSG A
	49,329	60	Woods, Fair, HSG B
	11,304	61	>75% Grass cover, Good, HSG B
	121,487	73	Woods, Fair, HSG C
	10,078	74	>75% Grass cover, Good, HSG C
	4,535	79	Woods, Fair, HSG D
*	14,415	98	IMPERVIOUS
	211,215	71	Weighted Average
	196,800		93.18% Pervious Area
	14,415		6.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.8	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.7	140	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.7	90	0.1750	2.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	75	0.0100	10.72	386.00	**Channel Flow,** Area= 36.0 sf Perim= 18.0' r= 2.00' n= 0.022 Earth, clean & straight
0.8	470	0.0300	10.39	166.29	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
0.2	150	0.0700	15.88	254.01	**Channel Flow,** Area= 16.0 sf Perim= 12.0' r= 1.33' n= 0.030 Earth, grassed & winding
26.3	975	Total			

Subcatchment SC 10: 10



Summary for Subcatchment SC 11: 11

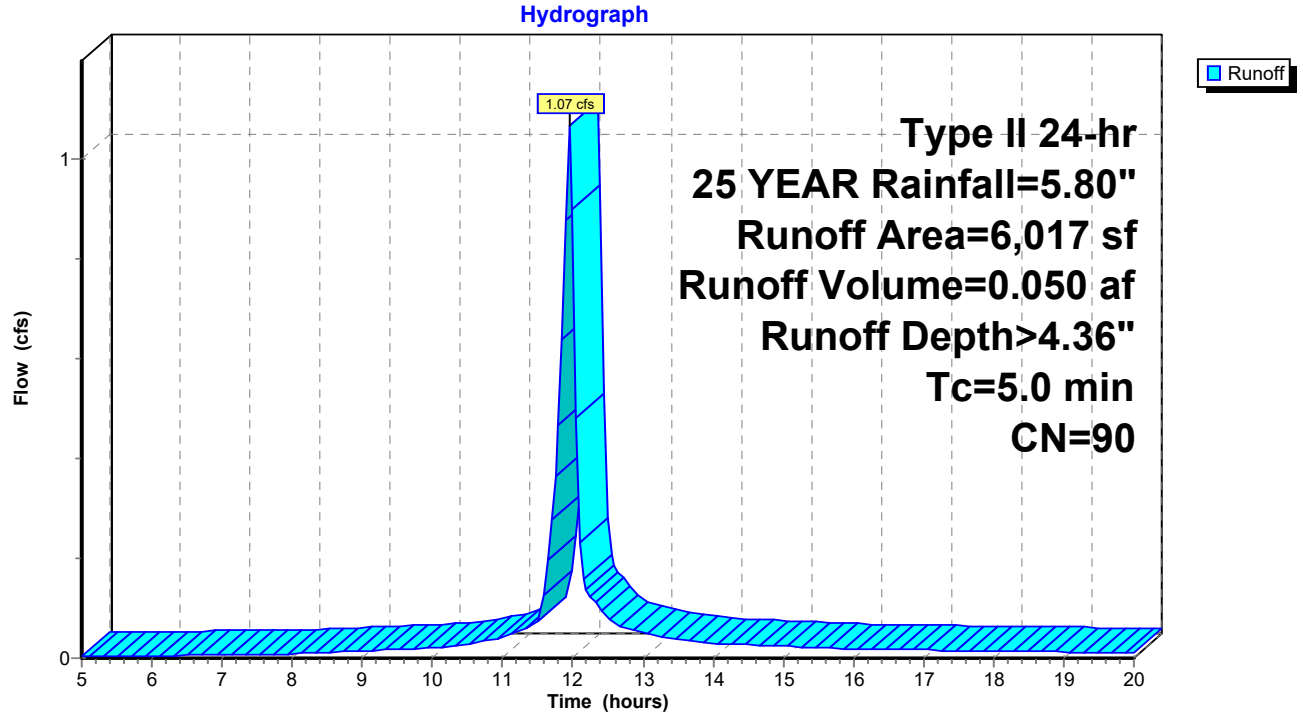
Runoff = 1.07 cfs @ 11.95 hrs, Volume= 0.050 af, Depth> 4.36"
Routed to Pond CB 4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	2,079	74	>75% Grass cover, Good, HSG C
*	3,938	98	IMPERVIOUS
	6,017	90	Weighted Average
	2,079		34.55% Pervious Area
	3,938		65.45% Impervious Area

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

Subcatchment SC 11: 11



Summary for Subcatchment SC 12: 12

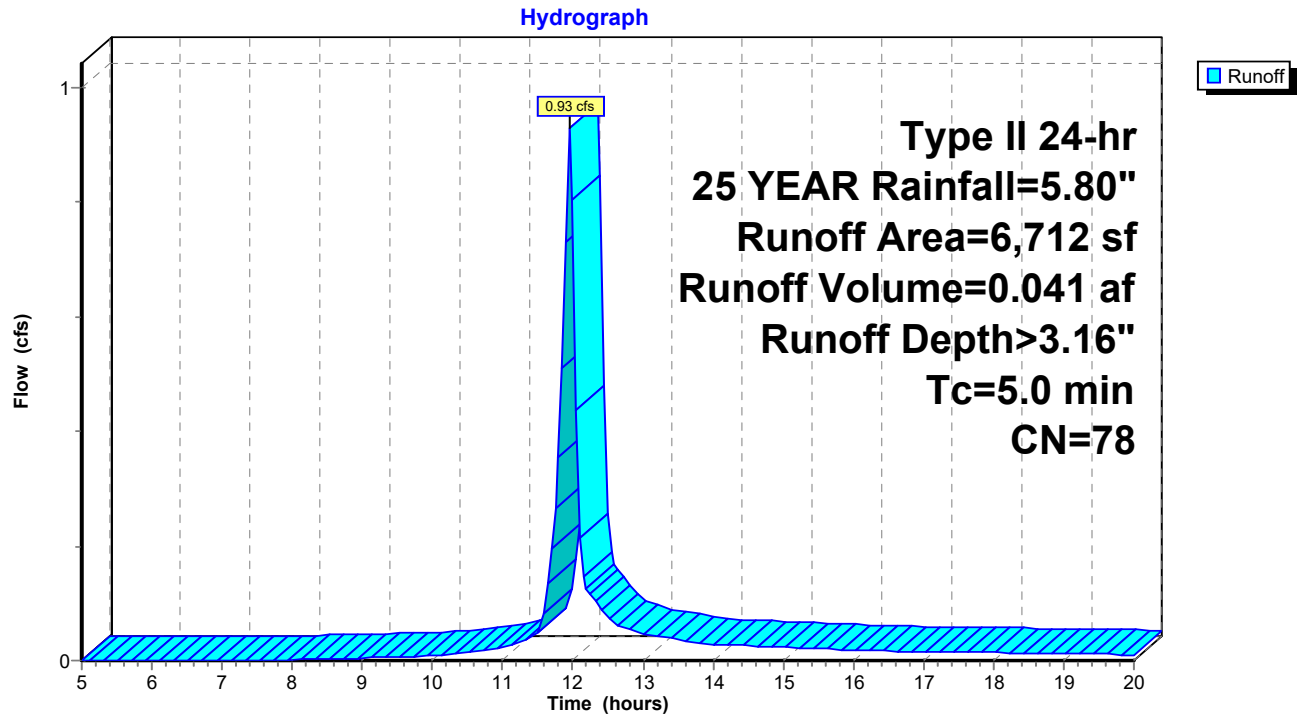
Runoff = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af, Depth> 3.16"
Routed to Pond CB 1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,115	39	>75% Grass cover, Good, HSG A
	2,968	74	>75% Grass cover, Good, HSG C
*	2,629	98	IMPERVIOUS
	6,712	78	Weighted Average
	4,083		60.83% Pervious Area
	2,629		39.17% Impervious Area

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

Subcatchment SC 12: 12



Summary for Subcatchment SC 1A: 1A

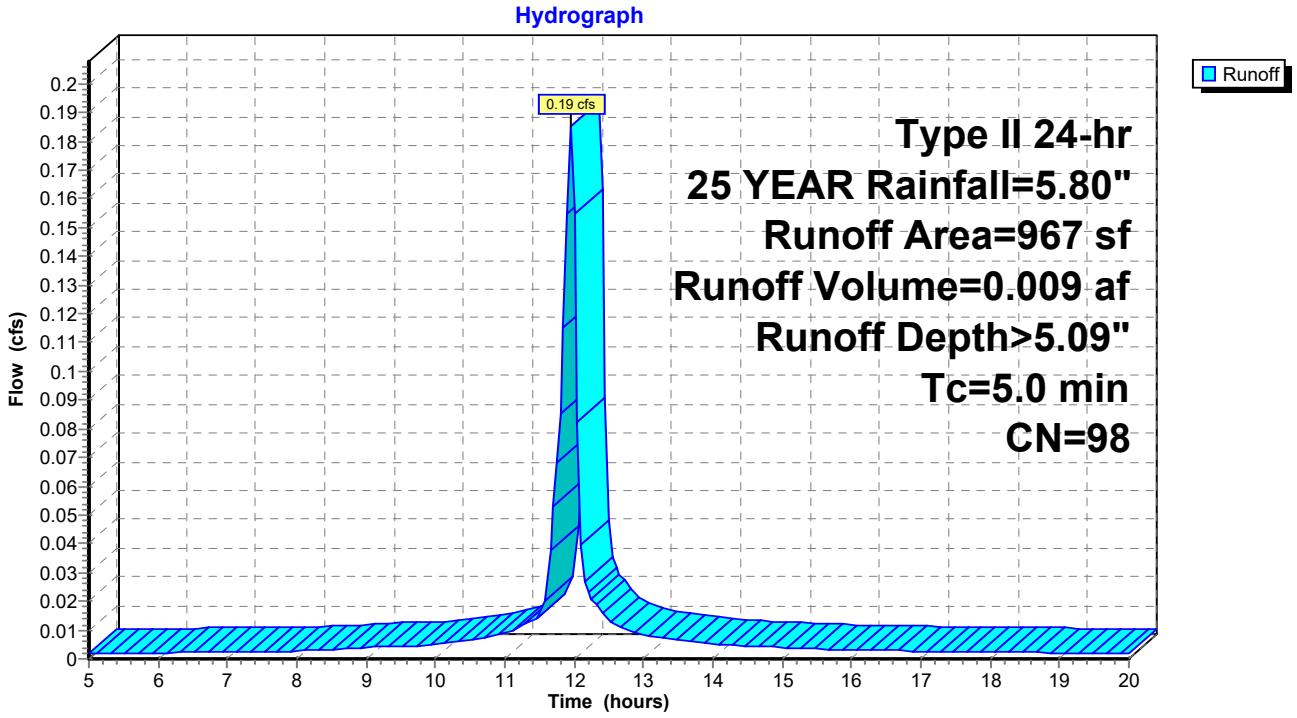
Runoff = 0.19 cfs @ 11.95 hrs, Volume= 0.009 af, Depth> 5.09"
Routed to Pond 8P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	967	98	IMPERVIOUS
	967		100.00% Impervious Area

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

Subcatchment SC 1A: 1A



Summary for Subcatchment SC 1B: 1B

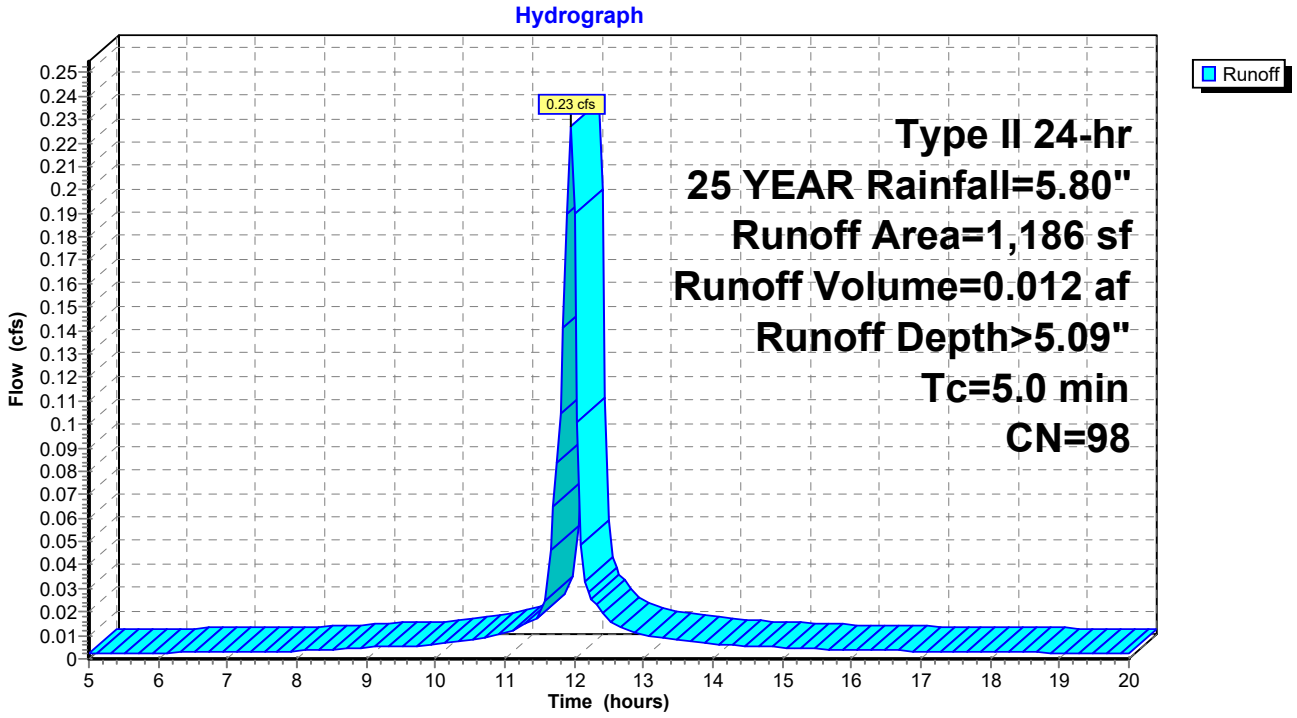
Runoff = 0.23 cfs @ 11.95 hrs, Volume= 0.012 af, Depth> 5.09"
Routed to Pond 9P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	1,186	98	IMPERVIOUS
	1,186		100.00% Impervious Area

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

Subcatchment SC 1B: 1B



Summary for Subcatchment SC 1C: 1C

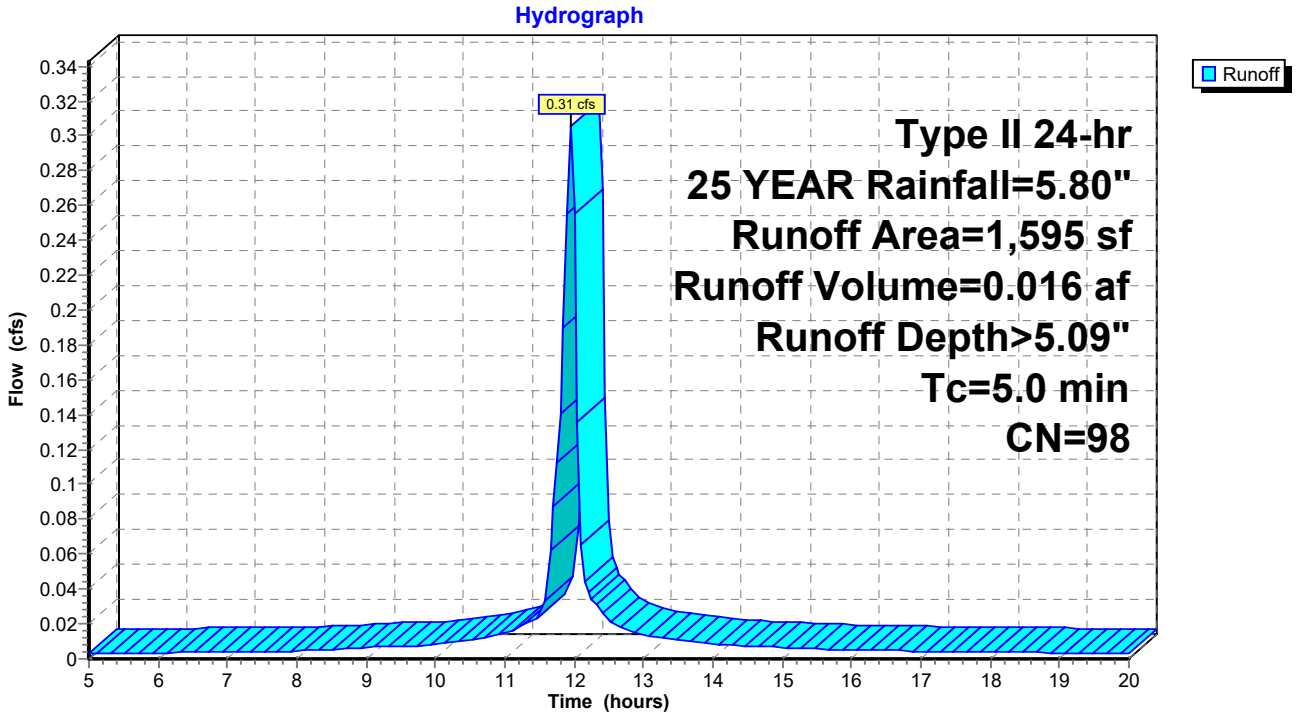
Runoff = 0.31 cfs @ 11.95 hrs, Volume= 0.016 af, Depth> 5.09"
Routed to Pond 10P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	1,595	98	IMPERVIOUS
	1,595		100.00% Impervious Area

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

Subcatchment SC 1C: 1C



Summary for Subcatchment SC 1D: 1D

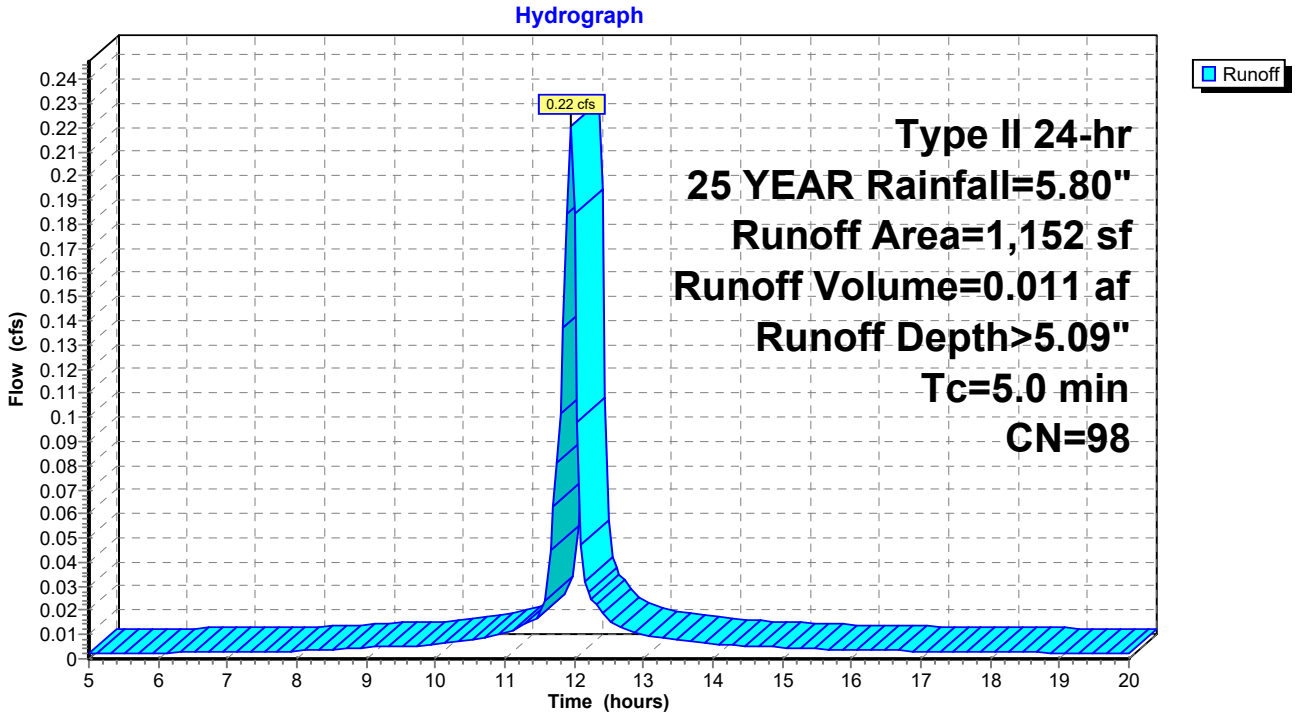
Runoff = 0.22 cfs @ 11.95 hrs, Volume= 0.011 af, Depth> 5.09"
Routed to Pond 11P : DRIP FILTER

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	1,152	98	IMPERVIOUS
	1,152		100.00% Impervious Area

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

Subcatchment SC 1D: 1D



Summary for Subcatchment SC 1E: 1E

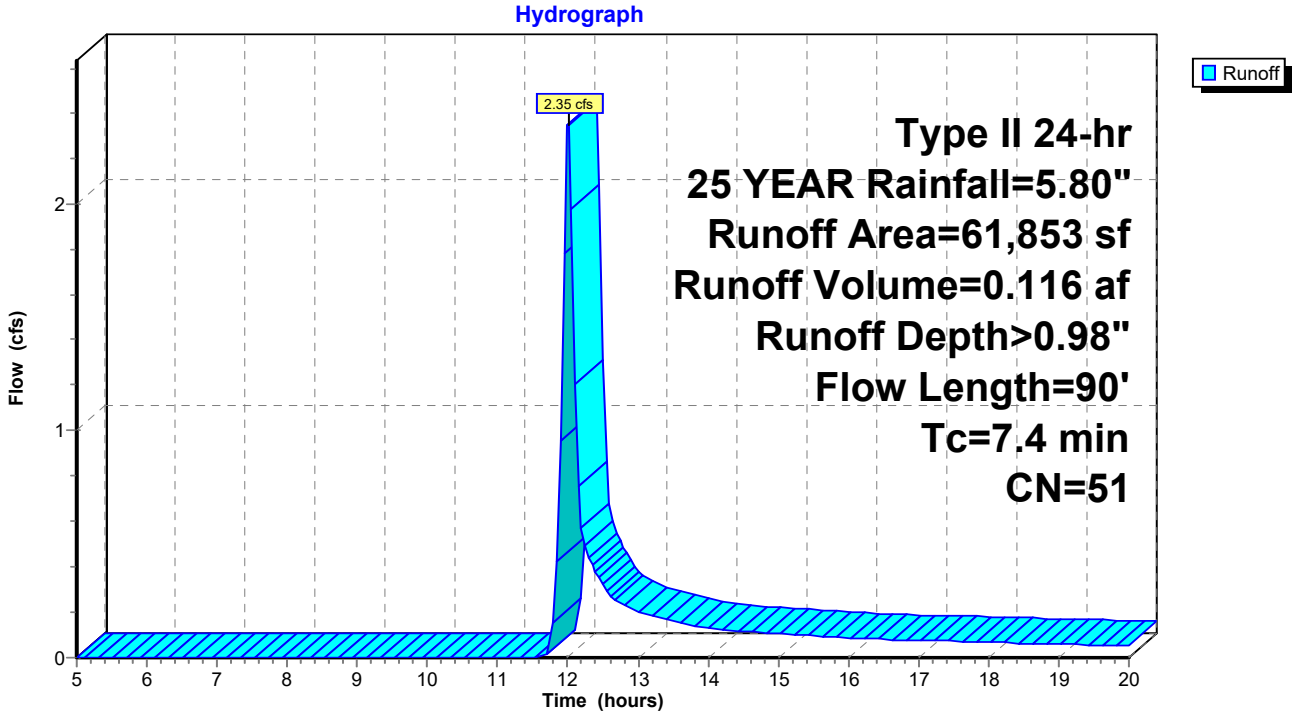
Runoff = 2.35 cfs @ 12.01 hrs, Volume= 0.116 af, Depth> 0.98"
Routed to Reach SP1 : SUMMATION POINT 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

Area (sf)	CN	Description
34,276	36	Woods, Fair, HSG A
21,674	73	Woods, Fair, HSG C
2,952	39	>75% Grass cover, Good, HSG A
2,951	74	>75% Grass cover, Good, HSG C
61,853	51	Weighted Average
61,853		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1200	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.10"
1.3	40	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.4	90	Total			

Subcatchment SC 1E: 1E



Summary for Subcatchment SC 2A: 2A

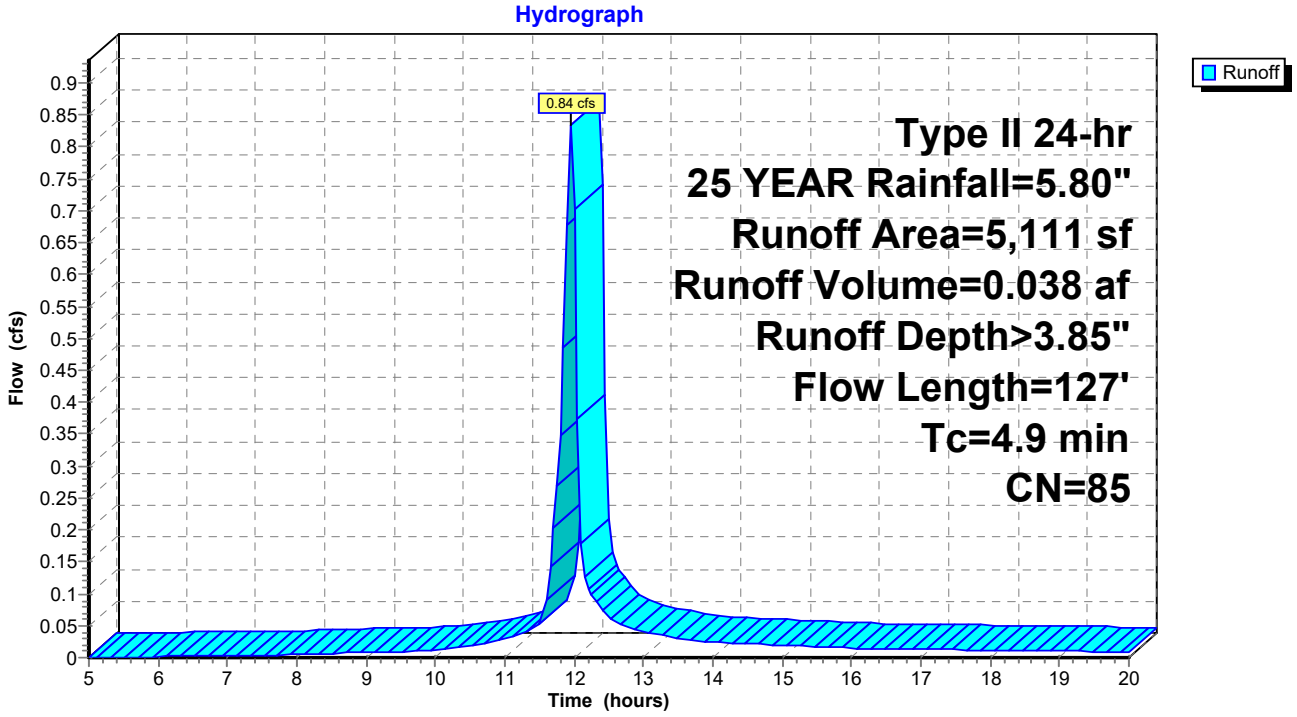
Runoff = 0.84 cfs @ 11.95 hrs, Volume= 0.038 af, Depth> 3.85"
Routed to Pond CB 12 : CB12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	845	39	>75% Grass cover, Good, HSG A
	764	74	>75% Grass cover, Good, HSG C
*	3,502	98	IMPERVIOUS
	5,111	85	Weighted Average
	1,609		31.48% Pervious Area
	3,502		68.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
4.3	35	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	80	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.9	127	Total			

Subcatchment SC 2A: 2A



Summary for Subcatchment SC 2B: 2B

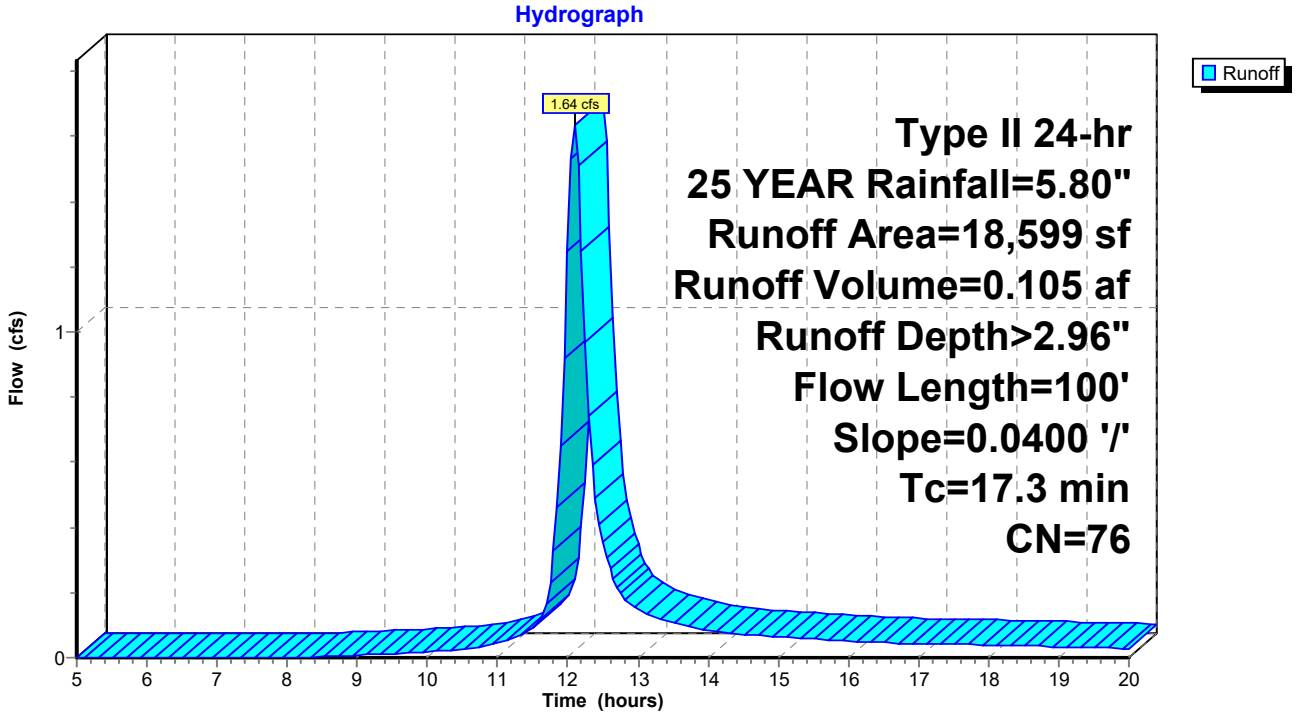
Runoff = 1.64 cfs @ 12.10 hrs, Volume= 0.105 af, Depth> 2.96"
Routed to Pond CB 13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	12,451	73	Woods, Fair, HSG C
	4,024	74	>75% Grass cover, Good, HSG C
*	2,124	98	IMPERVIOUS
	18,599	76	Weighted Average
	16,475		88.58% Pervious Area
	2,124		11.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.3	100	Total			

Subcatchment SC 2B: 2B



Summary for Subcatchment SC 2C: 2C

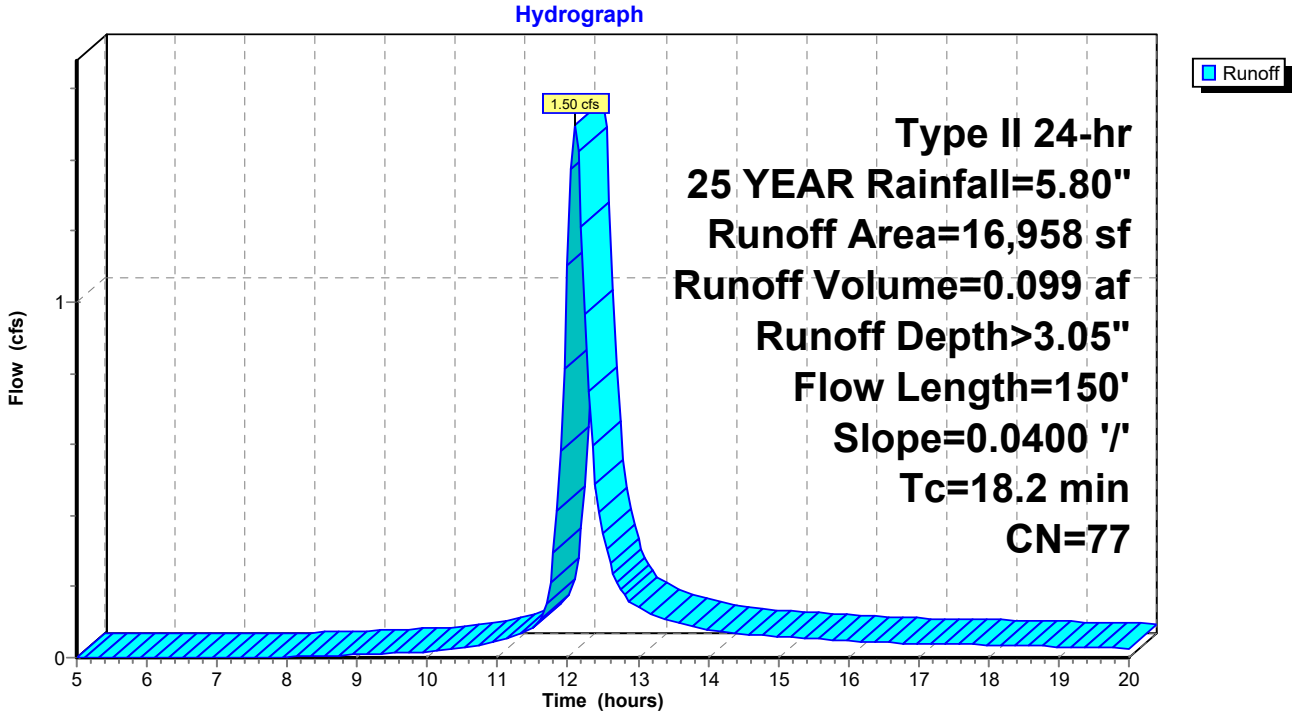
Runoff = 1.50 cfs @ 12.11 hrs, Volume= 0.099 af, Depth> 3.05"
Routed to Pond CB 10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	10,994	73	Woods, Fair, HSG C
	3,426	74	>75% Grass cover, Good, HSG C
*	2,538	98	IMPERVIOUS
	16,958	77	Weighted Average
	14,420		85.03% Pervious Area
	2,538		14.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.5	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
1.7	100	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	150	Total			

Subcatchment SC 2C: 2C



Summary for Subcatchment SC 2D: 2D

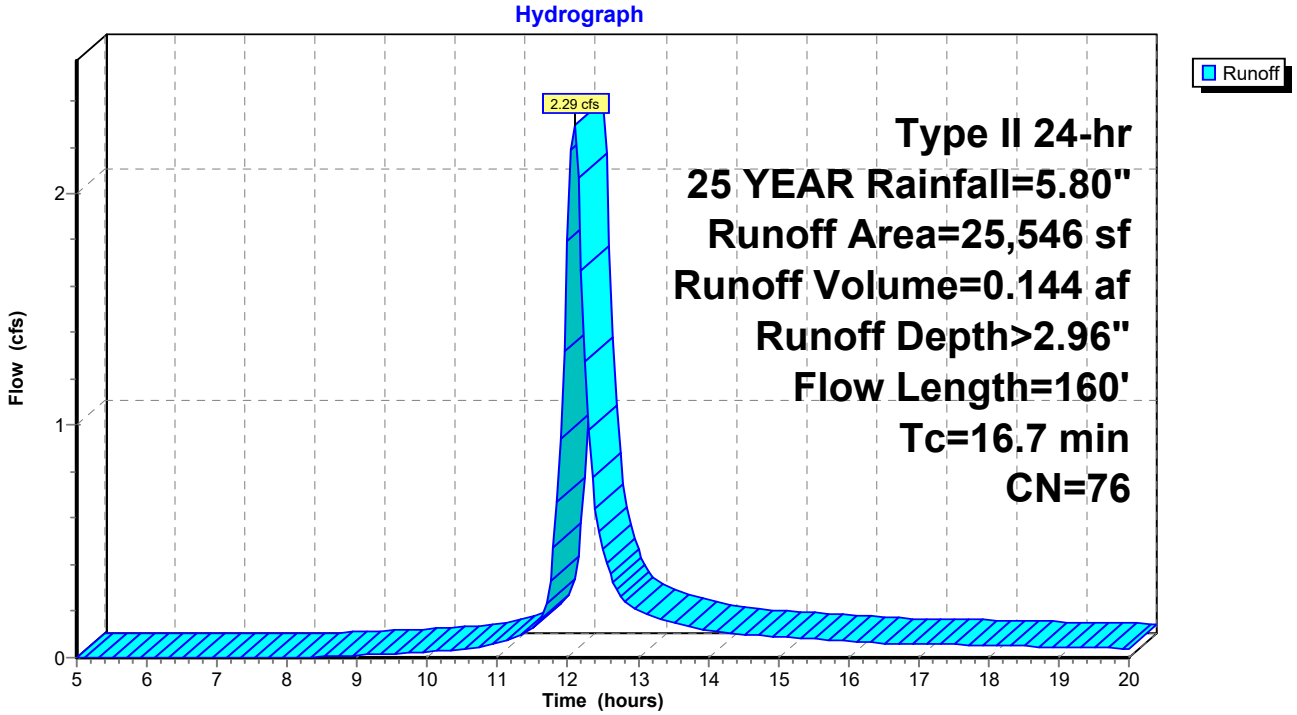
Runoff = 2.29 cfs @ 12.09 hrs, Volume= 0.144 af, Depth> 2.96"
Routed to Reach 6R : 15" SD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	20,100	73	Woods, Fair, HSG C
	2,985	74	>75% Grass cover, Good, HSG C
*	2,461	98	IMPERVIOUS
	25,546	76	Weighted Average
	23,085		90.37% Pervious Area
	2,461		9.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.10"
2.6	110	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.7	160	Total			

Subcatchment SC 2D: 2D



Summary for Subcatchment SC 2E: 2E

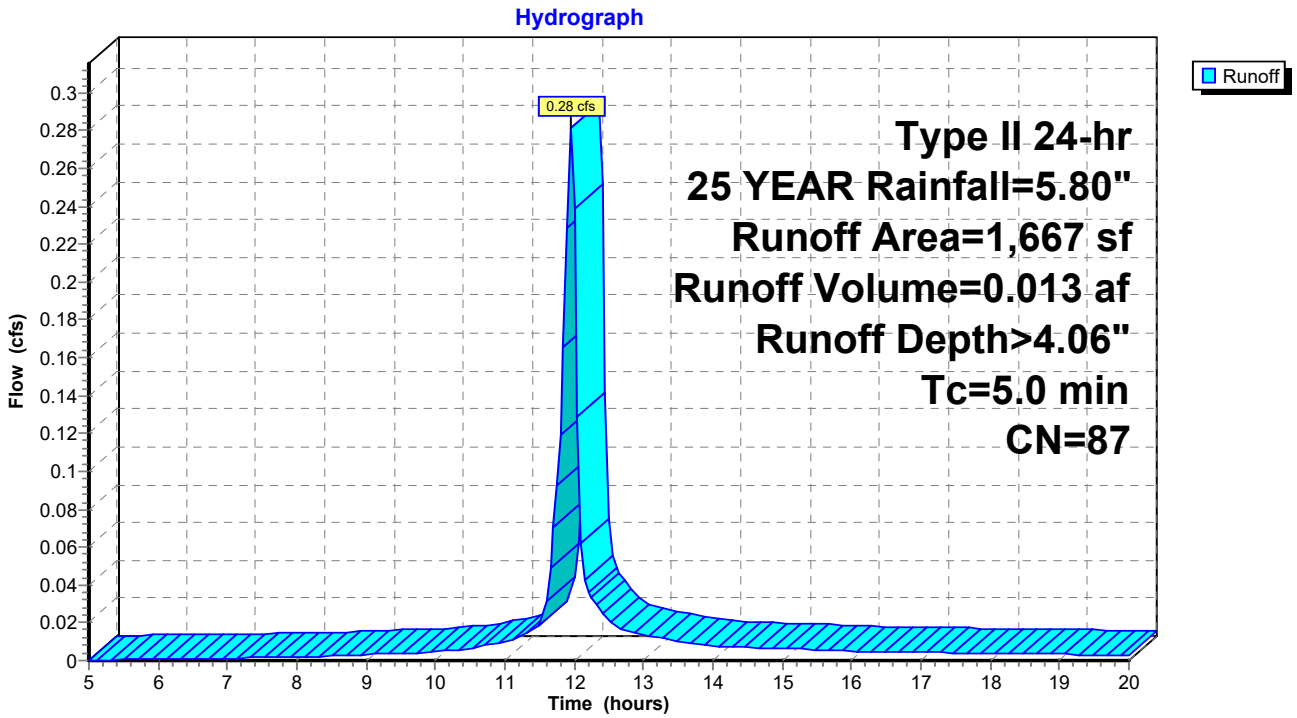
Runoff = 0.28 cfs @ 11.95 hrs, Volume= 0.013 af, Depth> 4.06"
Routed to Pond CB 11 : CB11

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	251	39	>75% Grass cover, Good, HSG A
	121	74	>75% Grass cover, Good, HSG C
*	1,295	98	IMPERVIOUS
	1,667	87	Weighted Average
	372		22.32% Pervious Area
	1,295		77.68% Impervious Area

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

Subcatchment SC 2E: 2E



Summary for Subcatchment SC 2F: 2F

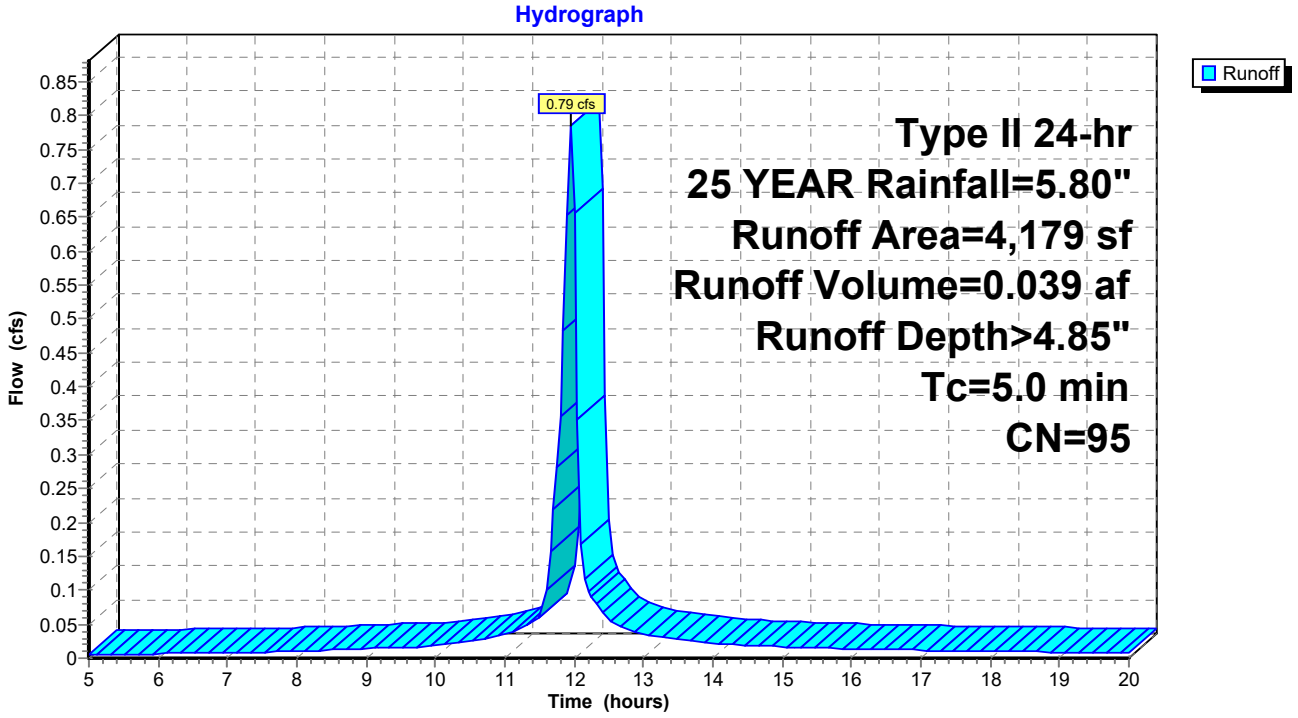
Runoff = 0.79 cfs @ 11.95 hrs, Volume= 0.039 af, Depth> 4.85"
Routed to Pond CB 9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	443	74	>75% Grass cover, Good, HSG C
*	3,736	98	IMPERVIOUS
	4,179	95	Weighted Average
	443		10.60% Pervious Area
	3,736		89.40% Impervious Area

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

Subcatchment SC 2F: 2F



Summary for Subcatchment SC 2G: 2G

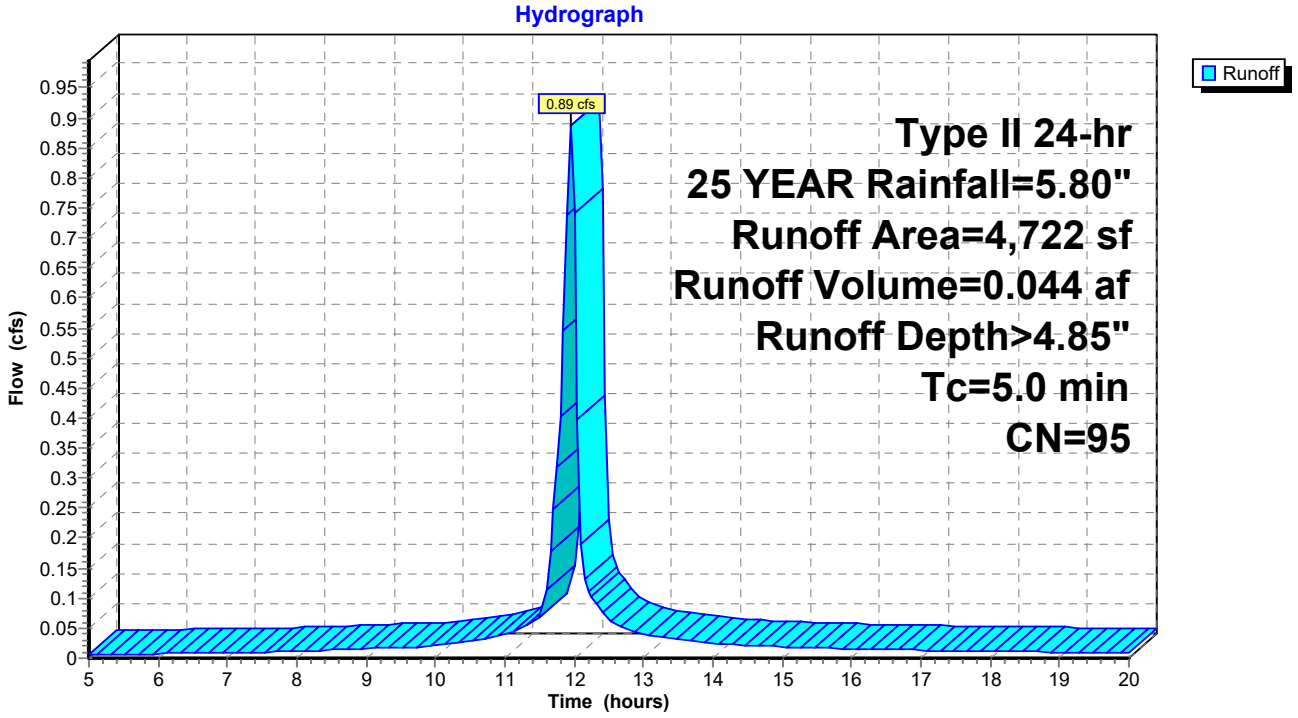
Runoff = 0.89 cfs @ 11.95 hrs, Volume= 0.044 af, Depth> 4.85"
Routed to Pond CB 8 : CB8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	537	74	>75% Grass cover, Good, HSG C
*	4,185	98	IMPERVIOUS
	4,722	95	Weighted Average
	537		11.37% Pervious Area
	4,185		88.63% Impervious Area

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

Subcatchment SC 2G: 2G



Summary for Subcatchment SC 2H: 2H

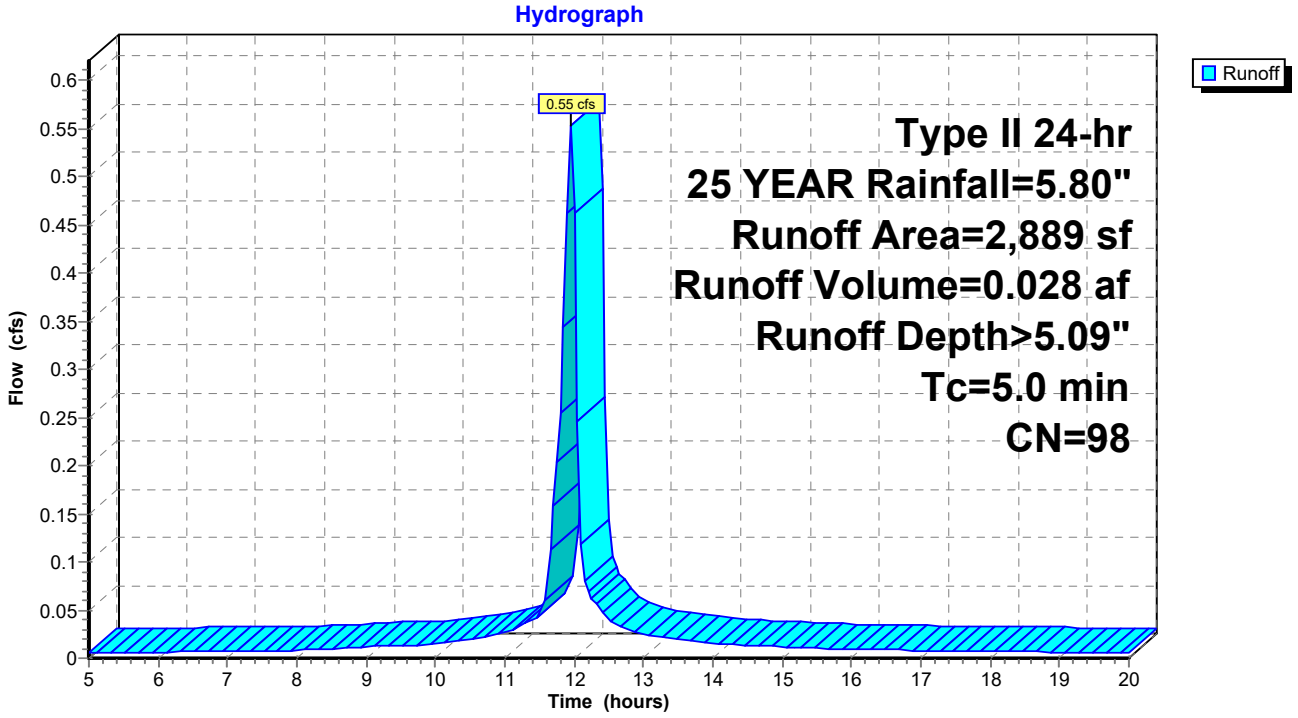
Runoff = 0.55 cfs @ 11.95 hrs, Volume= 0.028 af, Depth> 5.09"
Routed to Pond CB 6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	60	74	>75% Grass cover, Good, HSG C
*	2,829	98	IMPERVIOUS
	2,889	98	Weighted Average
	60		2.08% Pervious Area
	2,829		97.92% Impervious Area

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

Subcatchment SC 2H: 2H



Summary for Subcatchment SC 2I: 2I

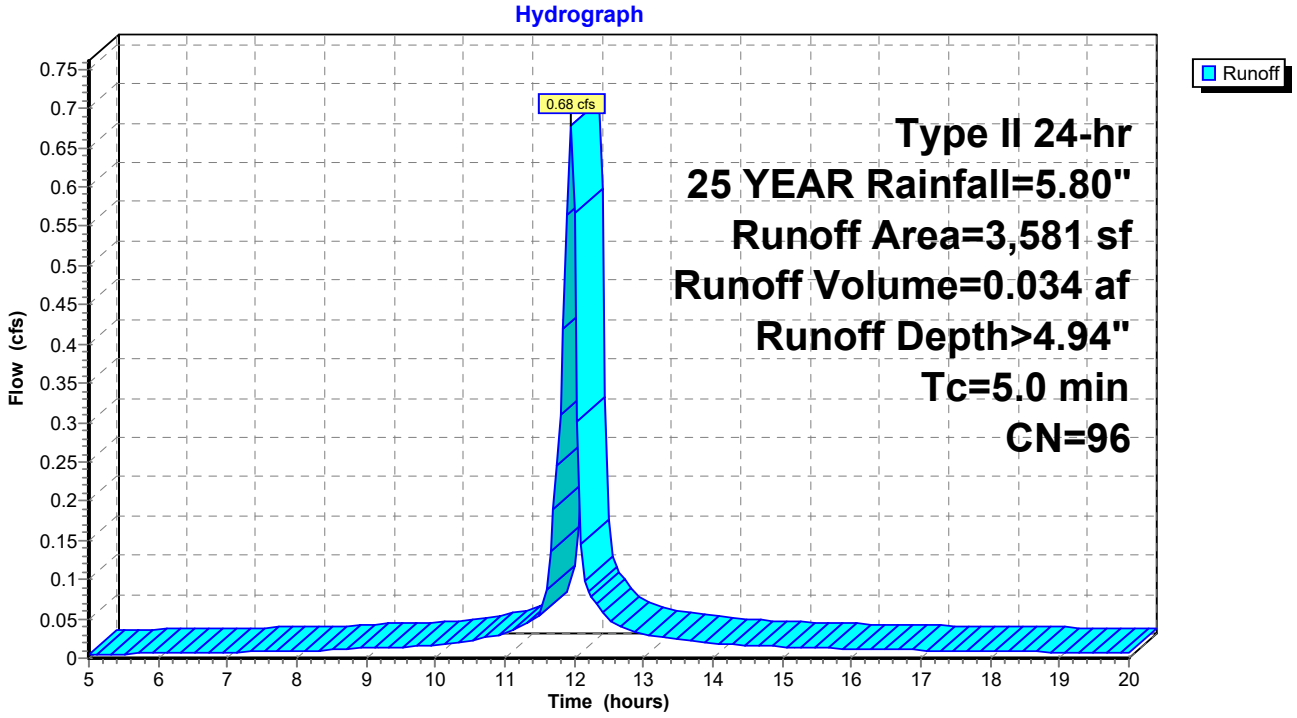
Runoff = 0.68 cfs @ 11.95 hrs, Volume= 0.034 af, Depth> 4.94"
Routed to Pond CB 7 : CB7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	340	74	>75% Grass cover, Good, HSG C
*	3,241	98	IMPERVIOUS
	3,581	96	Weighted Average
	340		9.49% Pervious Area
	3,241		90.51% Impervious Area

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

Subcatchment SC 2I: 2I



Summary for Subcatchment SC 2J: 2J

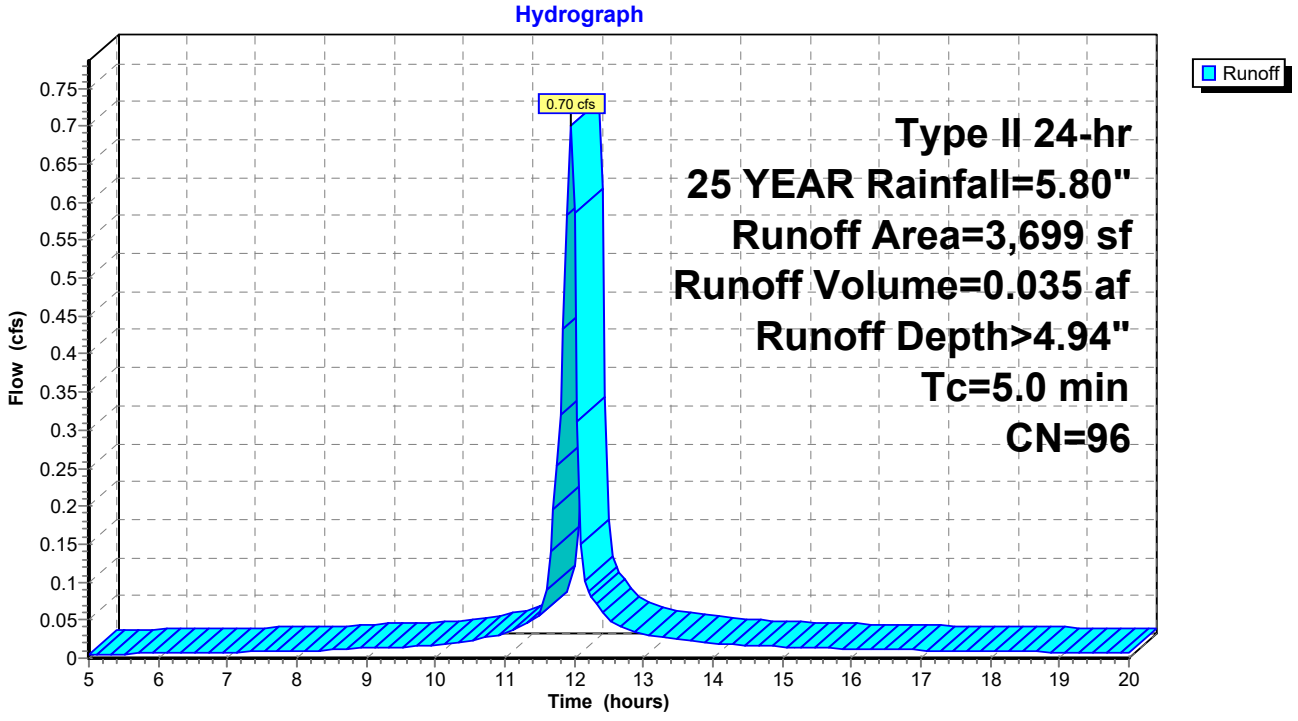
Runoff = 0.70 cfs @ 11.95 hrs, Volume= 0.035 af, Depth> 4.94"
Routed to Pond CB 6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	251	74	>75% Grass cover, Good, HSG C
*	3,448	98	IMPERVIOUS
	3,699	96	Weighted Average
	251		6.79% Pervious Area
	3,448		93.21% Impervious Area

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

Subcatchment SC 2J: 2J



Summary for Subcatchment SC 2K: 2K

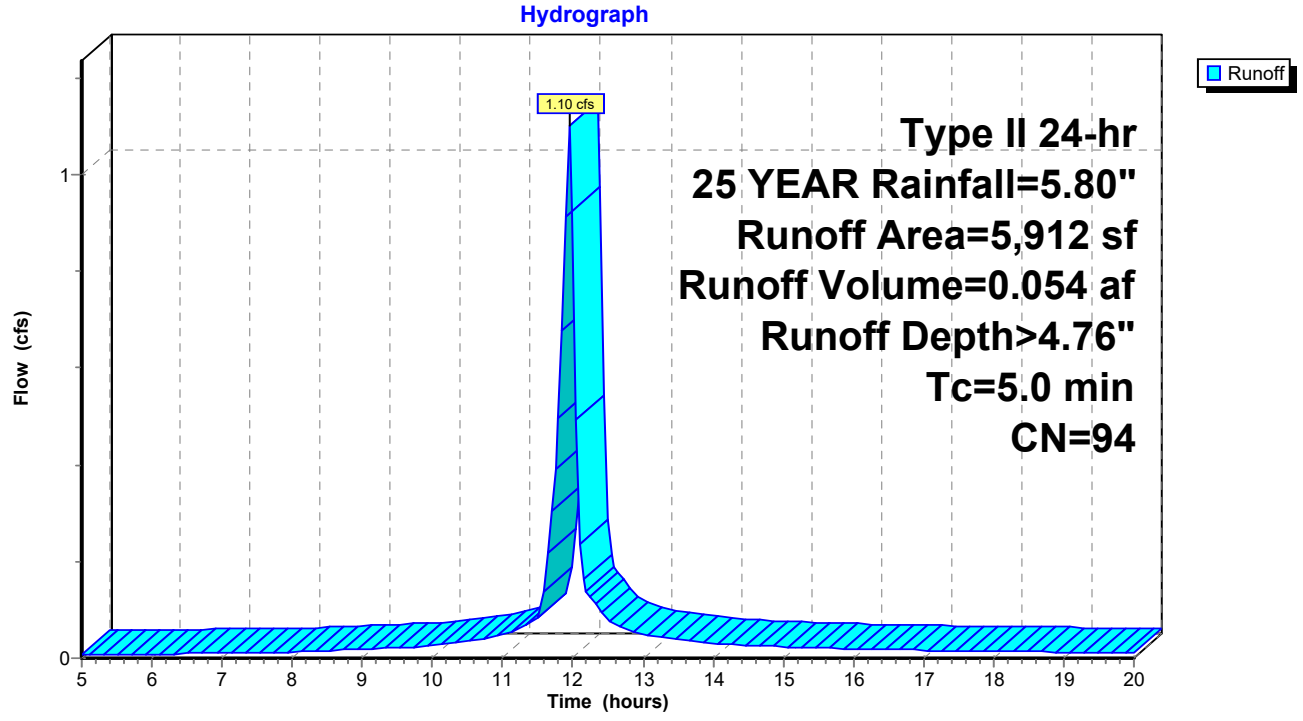
Runoff = 1.10 cfs @ 11.95 hrs, Volume= 0.054 af, Depth> 4.76"
Routed to Pond CB 5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	894	74	>75% Grass cover, Good, HSG C
*	5,018	98	IMPERVIOUS
	5,912	94	Weighted Average
	894		15.12% Pervious Area
	5,018		84.88% Impervious Area

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

Subcatchment SC 2K: 2K



Summary for Subcatchment SC 2L: 2L

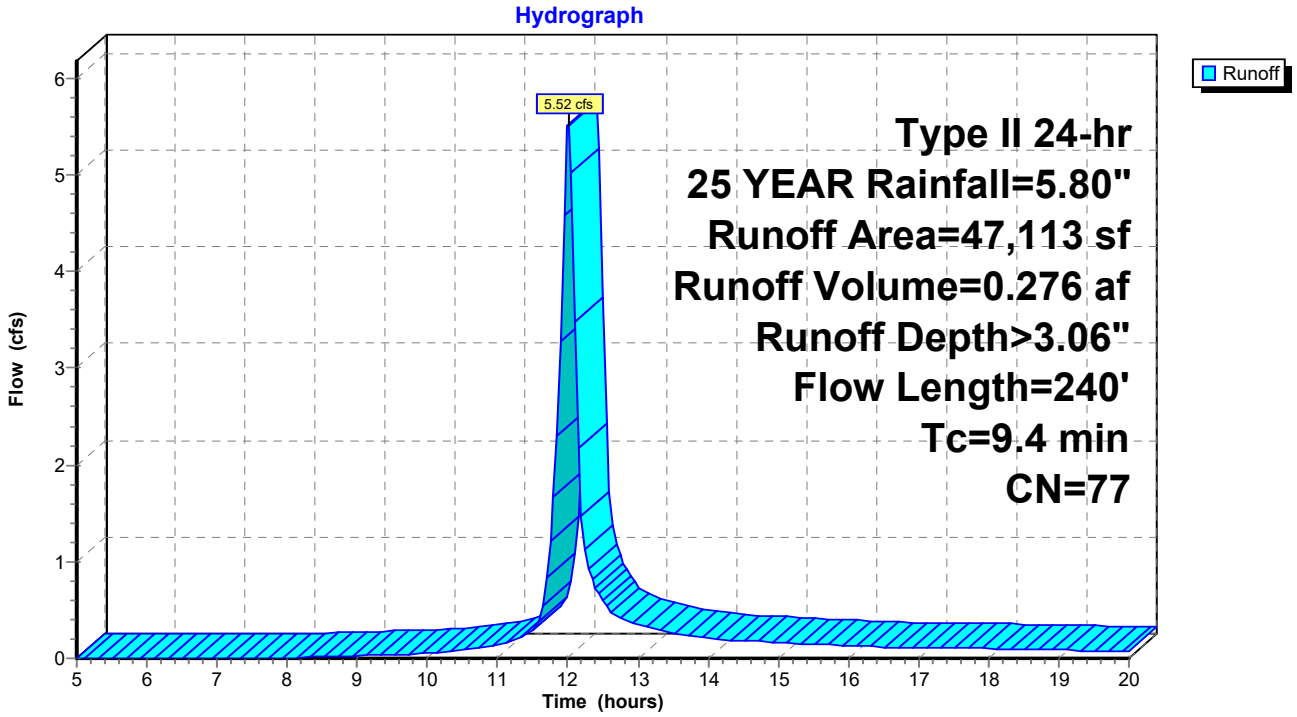
Runoff = 5.52 cfs @ 12.01 hrs, Volume= 0.276 af, Depth> 3.06"
Routed to Pond 3P : WETLAND STORAGE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	965	39	>75% Grass cover, Good, HSG A
	2,059	60	Woods, Fair, HSG B
	2,162	61	>75% Grass cover, Good, HSG B
	12,048	73	Woods, Fair, HSG C
	20,596	74	>75% Grass cover, Good, HSG C
*	9,283	98	IMPERVIOUS
	47,113	77	Weighted Average
	37,830		80.30% Pervious Area
	9,283		19.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.4	90	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.3	100	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	240	Total			

Subcatchment SC 2L: 2L



Summary for Subcatchment SC 3A: 3A

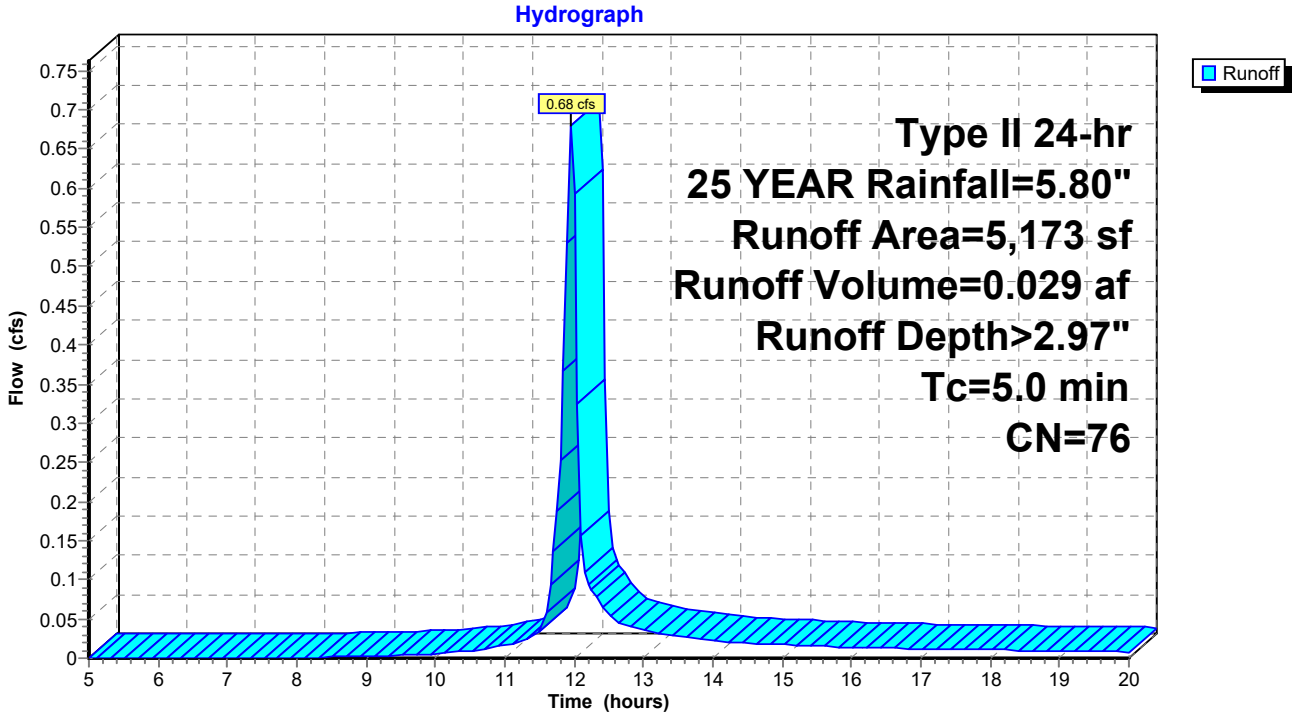
Runoff = 0.68 cfs @ 11.96 hrs, Volume= 0.029 af, Depth> 2.97"
Routed to Pond CB 16 : CB 16

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,952	39	>75% Grass cover, Good, HSG A
*	3,221	98	IMPERVIOUS
	5,173	76	Weighted Average
	1,952		37.73% Pervious Area
	3,221		62.27% Impervious Area

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

Subcatchment SC 3A: 3A



Summary for Subcatchment SC 3B: 3B

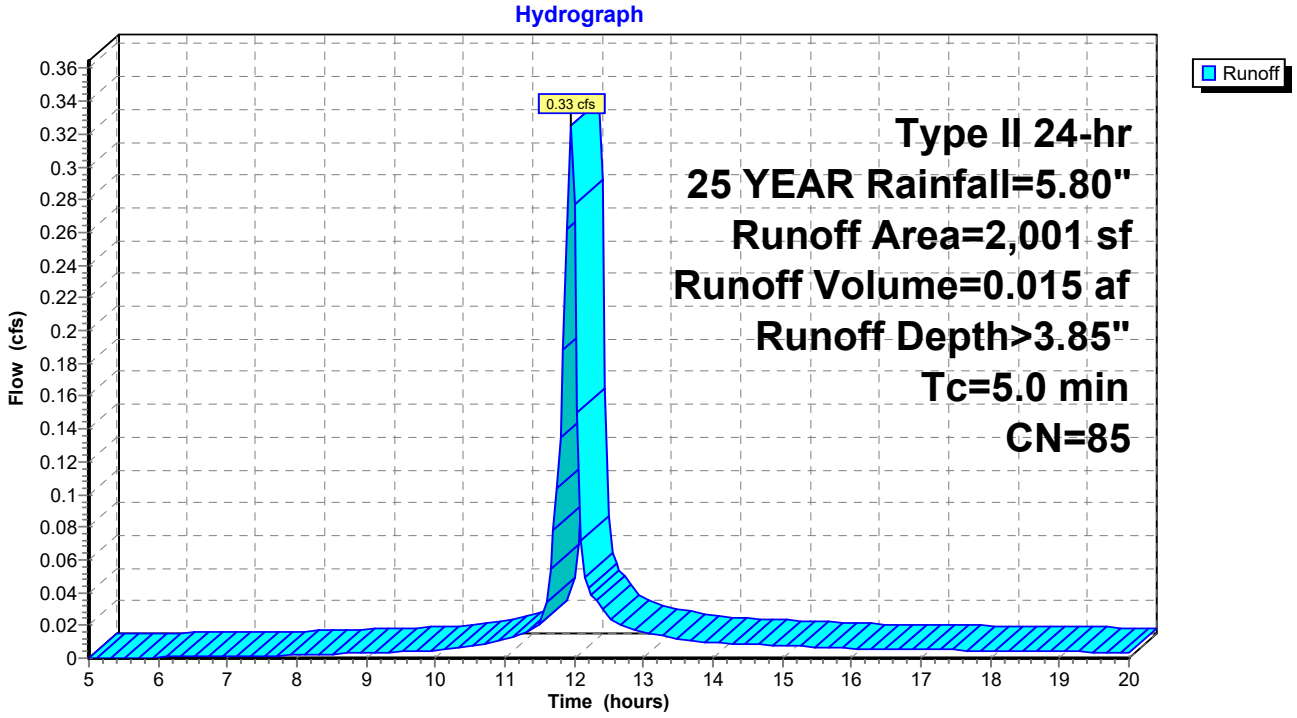
Runoff = 0.33 cfs @ 11.95 hrs, Volume= 0.015 af, Depth> 3.85"
Routed to Pond CB 14 : CB 14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	427	39	>75% Grass cover, Good, HSG A
*	1,574	98	IMPERVIOUS
	2,001	85	Weighted Average
	427		21.34% Pervious Area
	1,574		78.66% Impervious Area

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

Subcatchment SC 3B: 3B



Summary for Subcatchment SC 3C: 3C

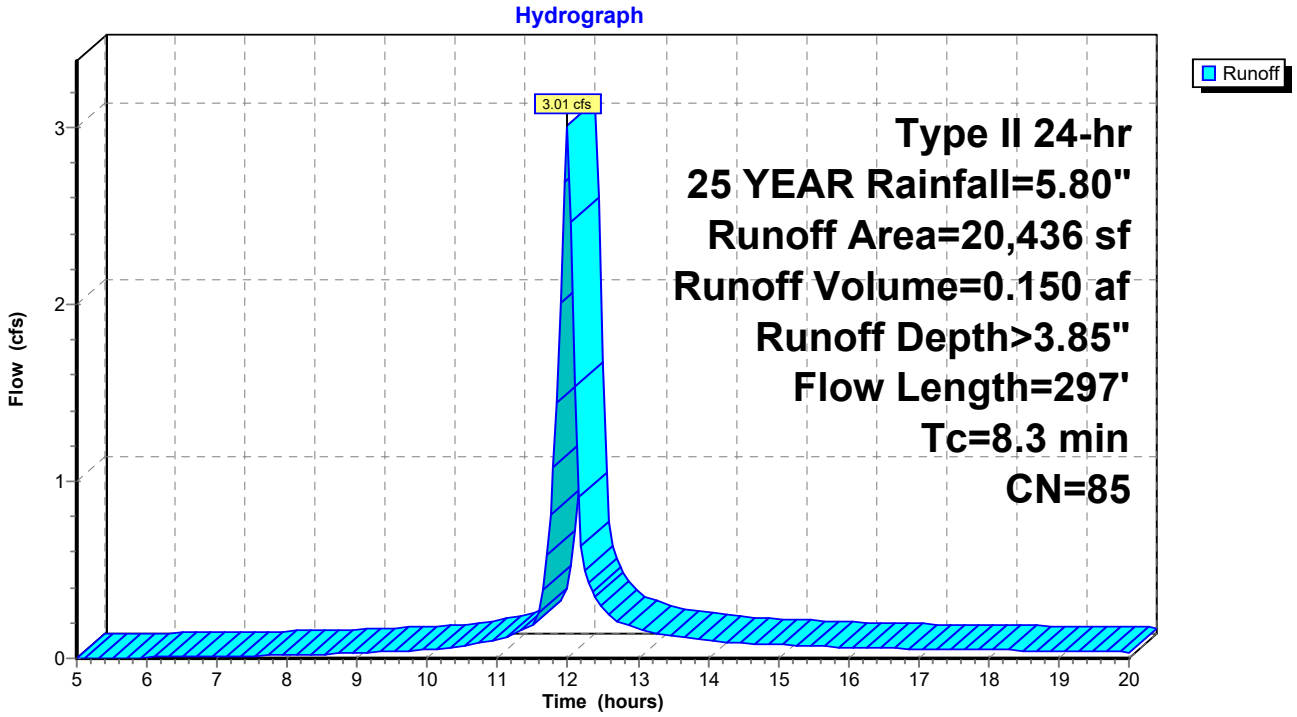
Runoff = 3.01 cfs @ 11.99 hrs, Volume= 0.150 af, Depth> 3.85"
Routed to Pond CB19 : CB19

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,684	39	>75% Grass cover, Good, HSG A
	439	60	Woods, Fair, HSG B
	3,700	61	>75% Grass cover, Good, HSG B
	630	74	>75% Grass cover, Good, HSG C
*	13,983	98	IMPERVIOUS
	20,436	85	Weighted Average
	6,453		31.58% Pervious Area
	13,983		68.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
7.1	65	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
1.1	220	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.3	297	Total			

Subcatchment SC 3C: 3C



Summary for Subcatchment SC 3D: 3D

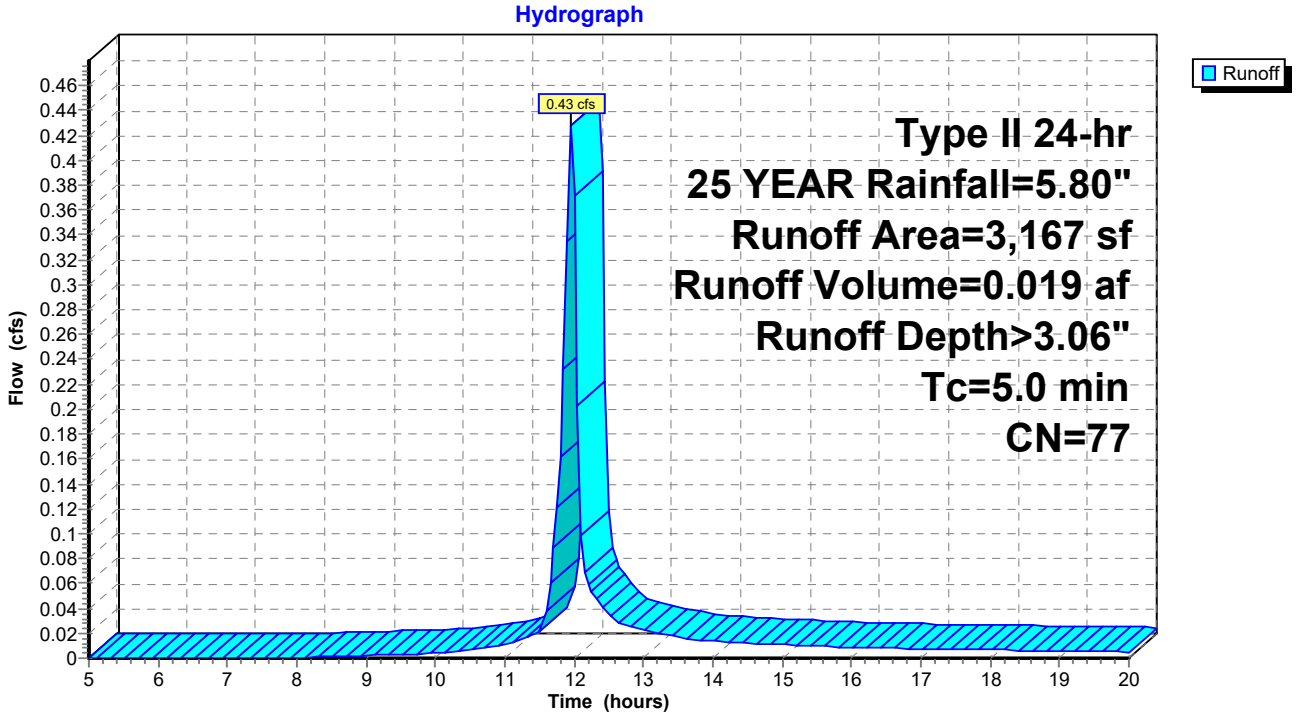
Runoff = 0.43 cfs @ 11.96 hrs, Volume= 0.019 af, Depth> 3.06"
Routed to Pond CB 17 : CB 17

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,148	39	>75% Grass cover, Good, HSG A
*	2,019	98	IMPERVIOUS
	3,167	77	Weighted Average
	1,148		36.25% Pervious Area
	2,019		63.75% Impervious Area

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

Subcatchment SC 3D: 3D



Summary for Subcatchment SC 3E: 3E

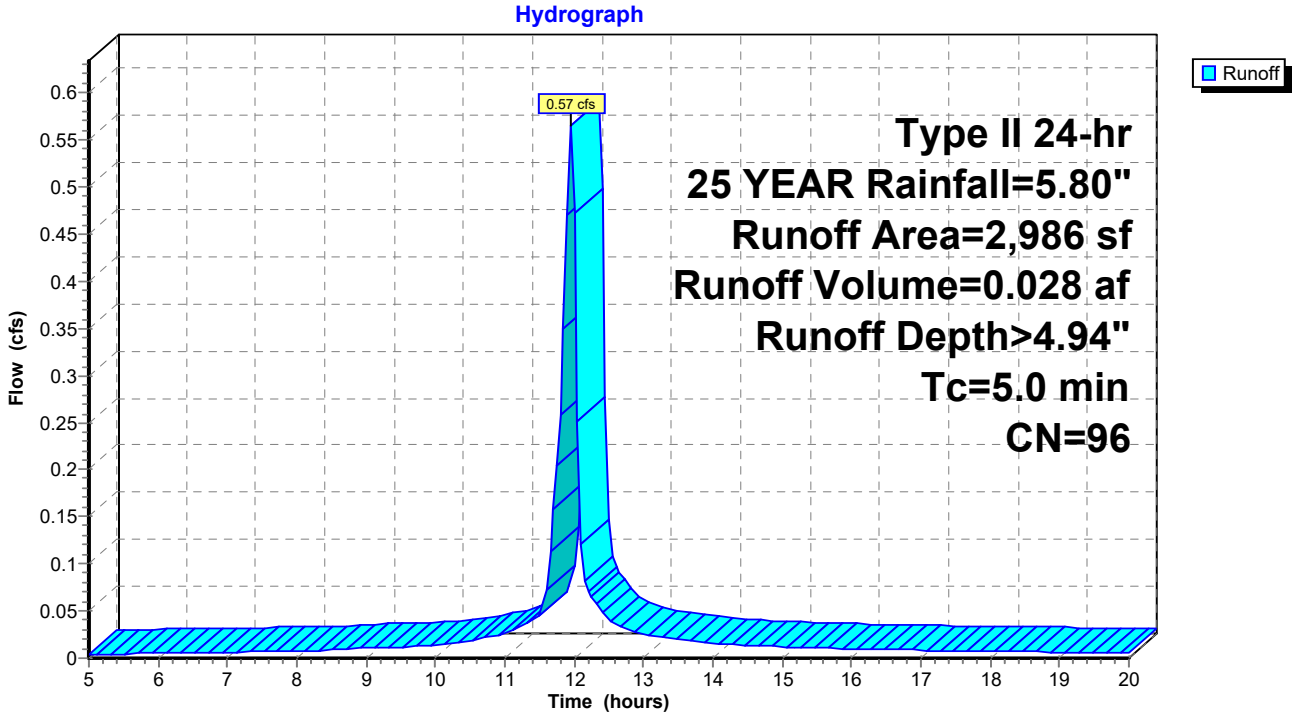
Runoff = 0.57 cfs @ 11.95 hrs, Volume= 0.028 af, Depth> 4.94"
Routed to Pond CB 18 : CB 18

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	90	39	>75% Grass cover, Good, HSG A
*	2,896	98	IMPERVIOUS
	2,986	96	Weighted Average
	90		3.01% Pervious Area
	2,896		96.99% Impervious Area

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

Subcatchment SC 3E: 3E



Summary for Subcatchment SC 3F: 3F

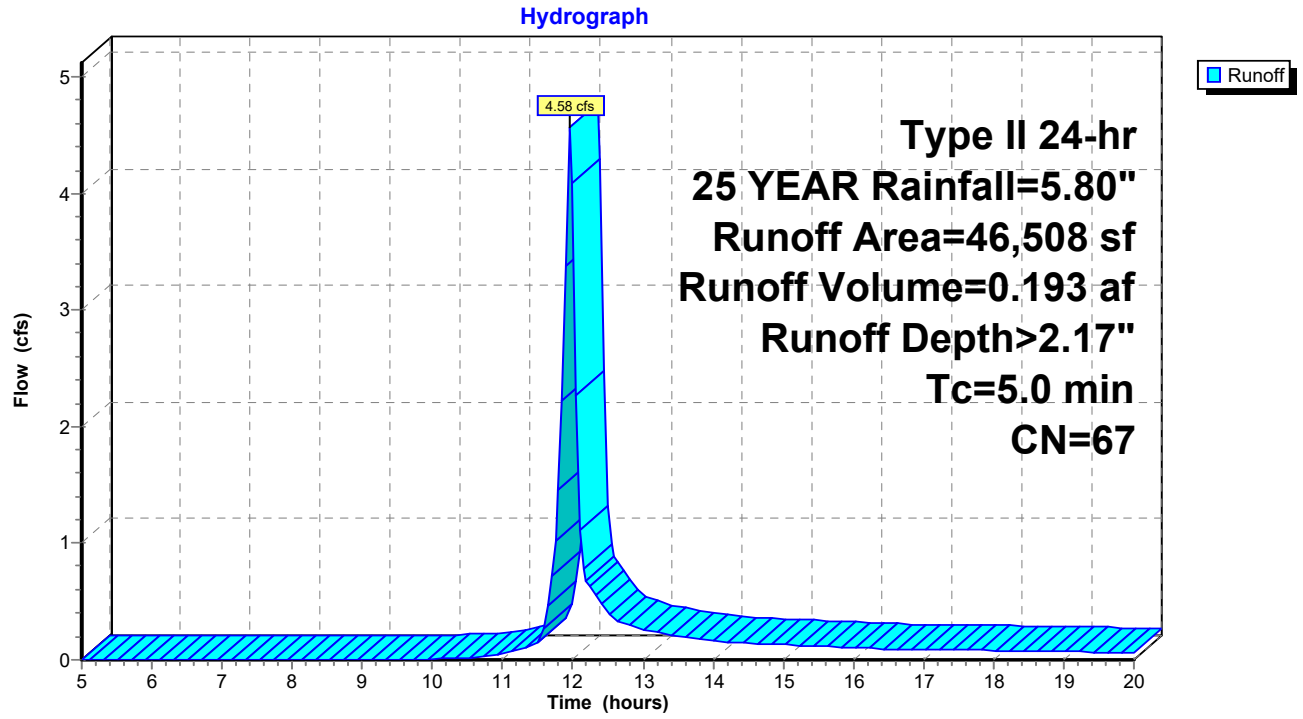
Runoff = 4.58 cfs @ 11.96 hrs, Volume= 0.193 af, Depth> 2.17"
Routed to Pond 1P : WETPOND A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	19,802	39	>75% Grass cover, Good, HSG A
	7,113	61	>75% Grass cover, Good, HSG B
	1,334	74	>75% Grass cover, Good, HSG C
*	18,259	98	IMPERVIOUS
	46,508	67	Weighted Average
	28,249		60.74% Pervious Area
	18,259		39.26% Impervious Area

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

Subcatchment SC 3F: 3F



Summary for Subcatchment SC 4: 4

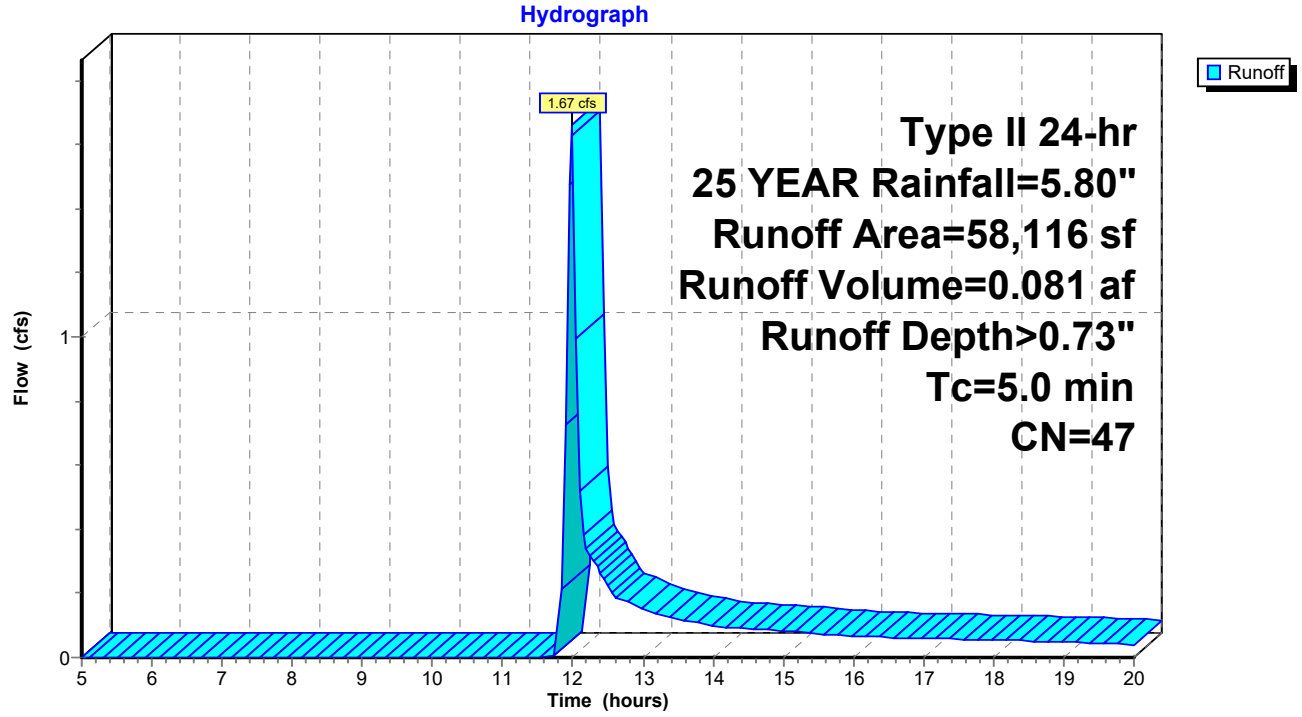
Runoff = 1.67 cfs @ 11.98 hrs, Volume= 0.081 af, Depth> 0.73"
Routed to Reach SP2 : SUMMATION POINT 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	34,054	36	Woods, Fair, HSG A
	7,162	39	>75% Grass cover, Good, HSG A
	10,830	60	Woods, Fair, HSG B
	1,162	61	>75% Grass cover, Good, HSG B
*	4,908	98	IMPERVIOUS
	58,116	47	Weighted Average
	53,208		91.55% Pervious Area
	4,908		8.45% Impervious Area

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

Subcatchment SC 4: 4



Summary for Subcatchment SC 5: 5

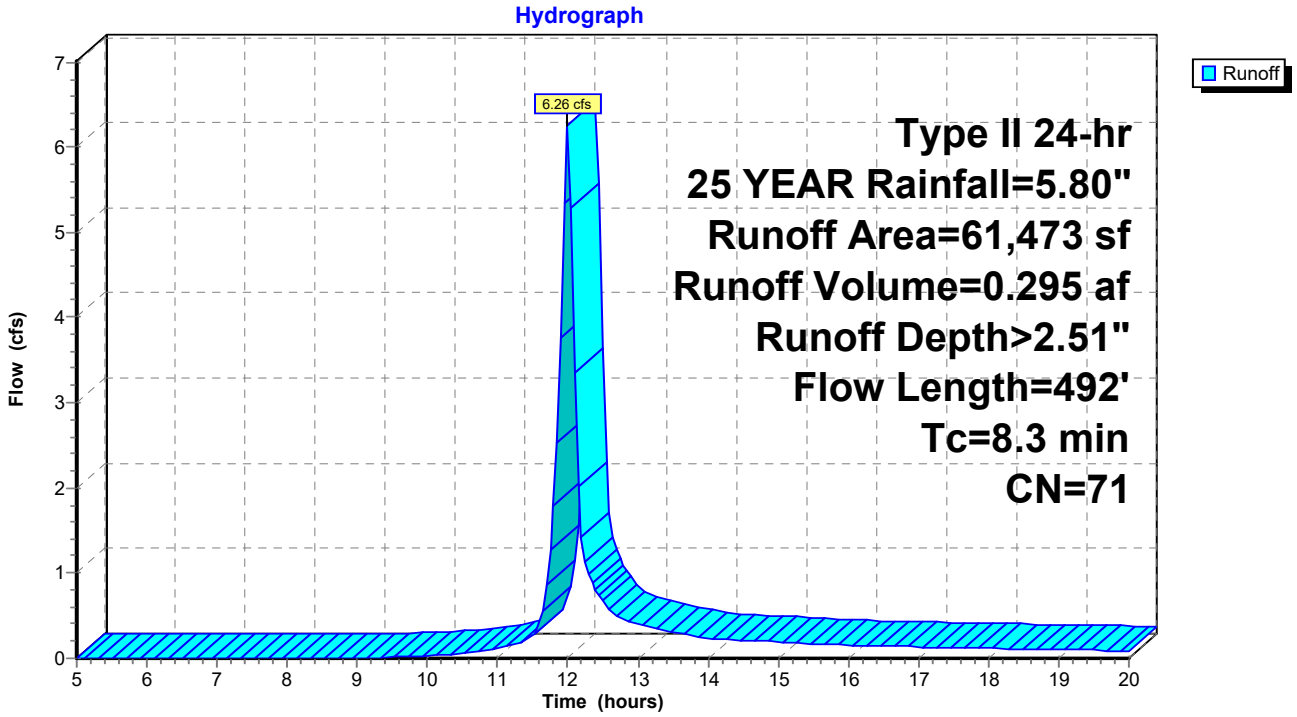
Runoff = 6.26 cfs @ 12.00 hrs, Volume= 0.295 af, Depth> 2.51"
Routed to Pond CB 22 : CB22

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	14,519	60	Woods, Fair, HSG B
	30,033	61	>75% Grass cover, Good, HSG B
	346	74	>75% Grass cover, Good, HSG C
*	16,575	98	IMPERVIOUS
	61,473	71	Weighted Average
	44,898		73.04% Pervious Area
	16,575		26.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	12	0.0580	1.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.10"
2.3	210	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.3	130	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	140	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.3	492	Total			

Subcatchment SC 5: 5



Summary for Subcatchment SC 6A: 6A

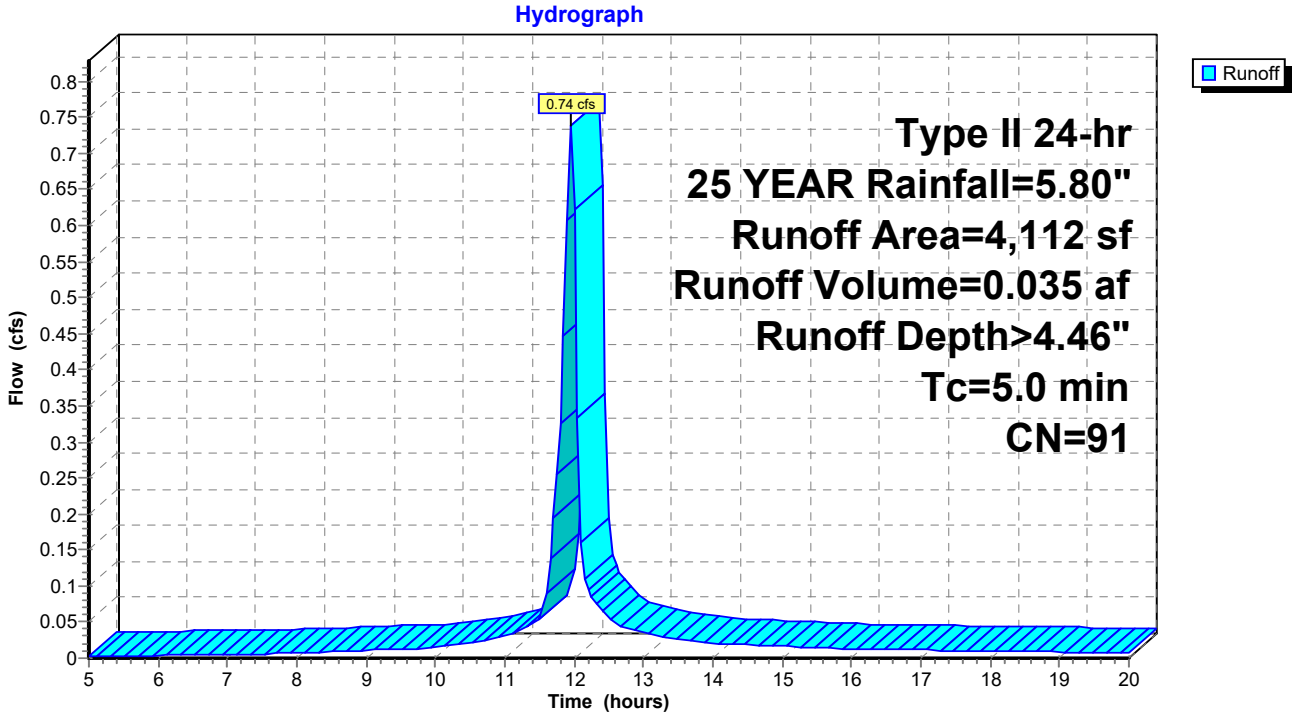
Runoff = 0.74 cfs @ 11.95 hrs, Volume= 0.035 af, Depth> 4.46"
Routed to Pond CB 21 : CB21

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	737	61	>75% Grass cover, Good, HSG B
*	3,375	98	IMPERVIOUS
	4,112	91	Weighted Average
	737		17.92% Pervious Area
	3,375		82.08% Impervious Area

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

Subcatchment SC 6A: 6A



Summary for Subcatchment SC 6B: 6B

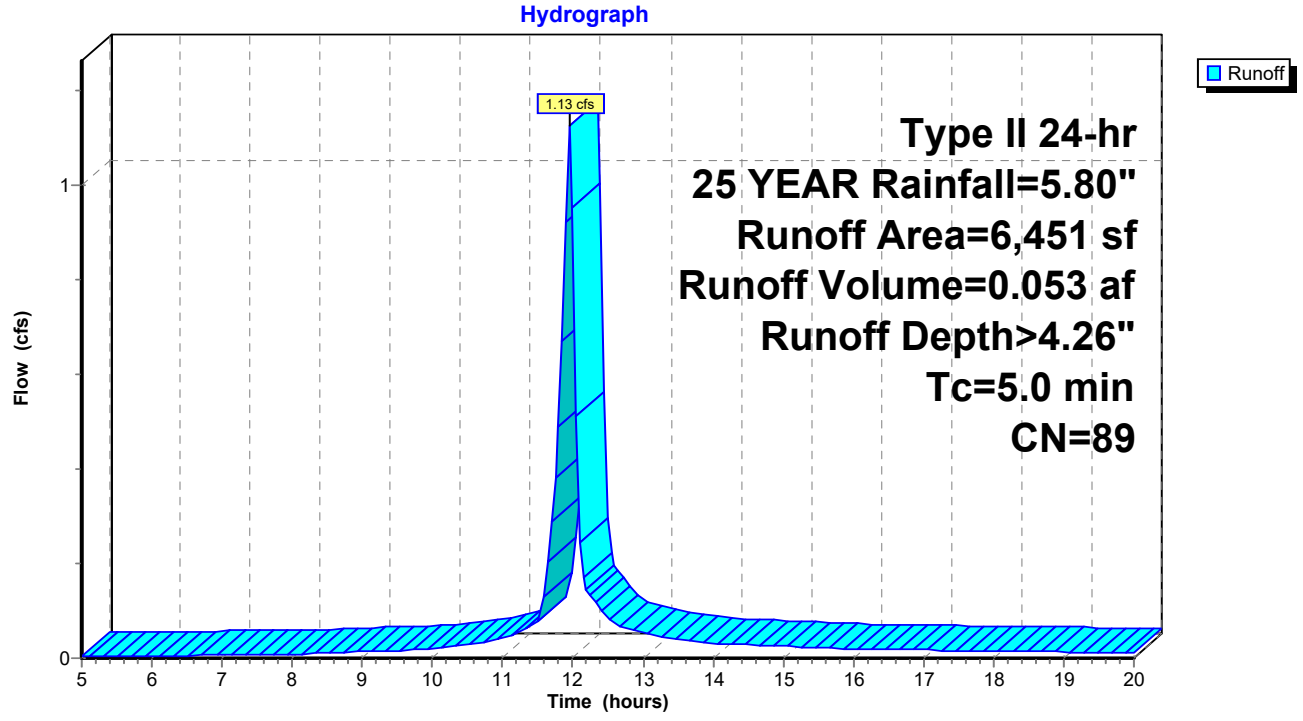
Runoff = 1.13 cfs @ 11.95 hrs, Volume= 0.053 af, Depth> 4.26"
Routed to Pond CB 20 : CB20

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,595	61	>75% Grass cover, Good, HSG B
*	4,856	98	IMPERVIOUS
	6,451	89	Weighted Average
	1,595		24.72% Pervious Area
	4,856		75.28% Impervious Area

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

Subcatchment SC 6B: 6B



Summary for Subcatchment SC 6C: 6C

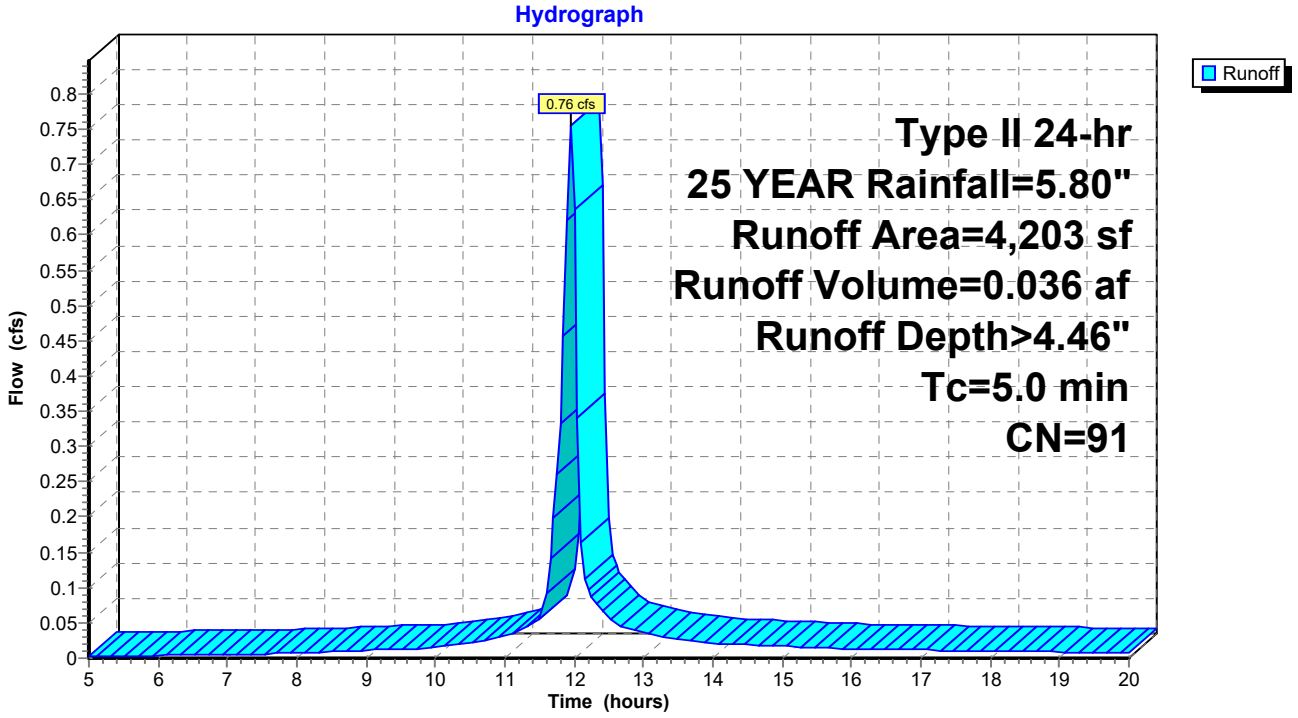
Runoff = 0.76 cfs @ 11.95 hrs, Volume= 0.036 af, Depth> 4.46"
Routed to Pond CB 23 : CB23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	845	61	>75% Grass cover, Good, HSG B
*	3,358	98	IMPERVIOUS
	4,203	91	Weighted Average
	845		20.10% Pervious Area
	3,358		79.90% Impervious Area

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

Subcatchment SC 6C: 6C



Summary for Subcatchment SC 6D: 6D

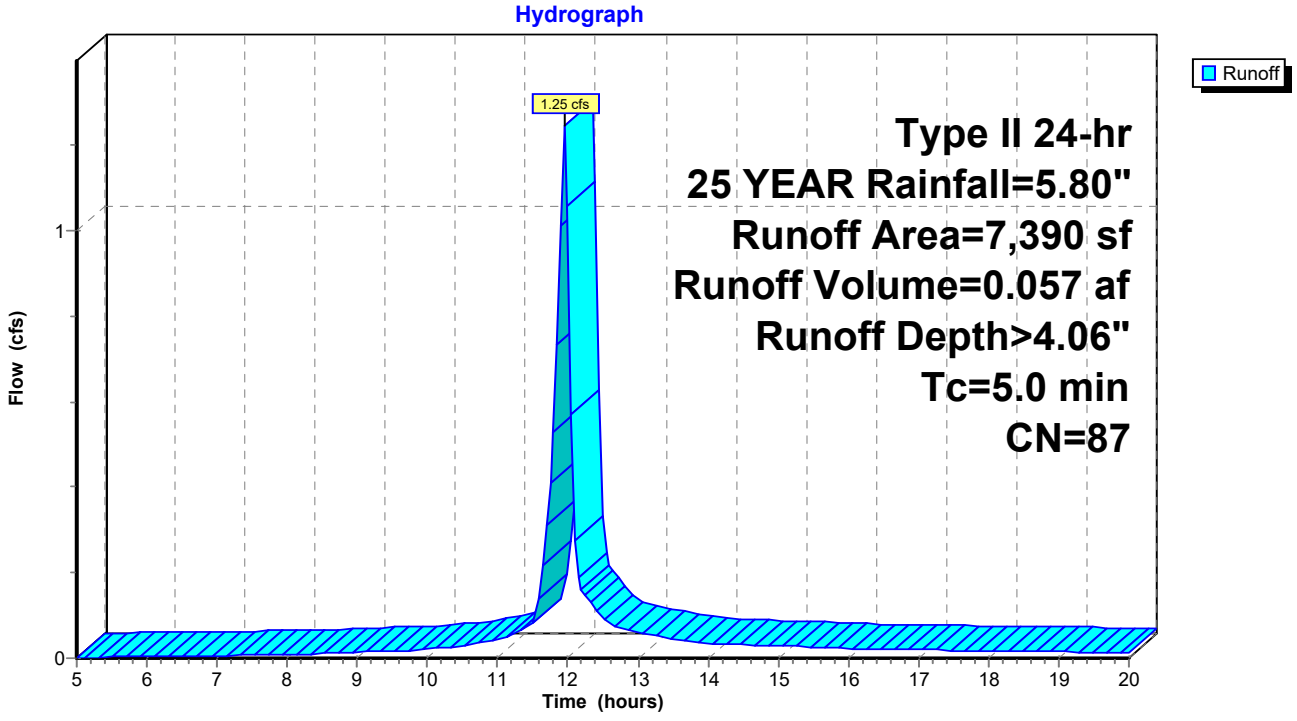
Runoff = 1.25 cfs @ 11.95 hrs, Volume= 0.057 af, Depth> 4.06"
Routed to Pond CB 24 : CB 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	2,199	61	>75% Grass cover, Good, HSG B
*	5,191	98	IMPERVIOUS
	7,390	87	Weighted Average
	2,199		29.76% Pervious Area
	5,191		70.24% Impervious Area

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

Subcatchment SC 6D: 6D



Summary for Subcatchment SC 6E: 6E

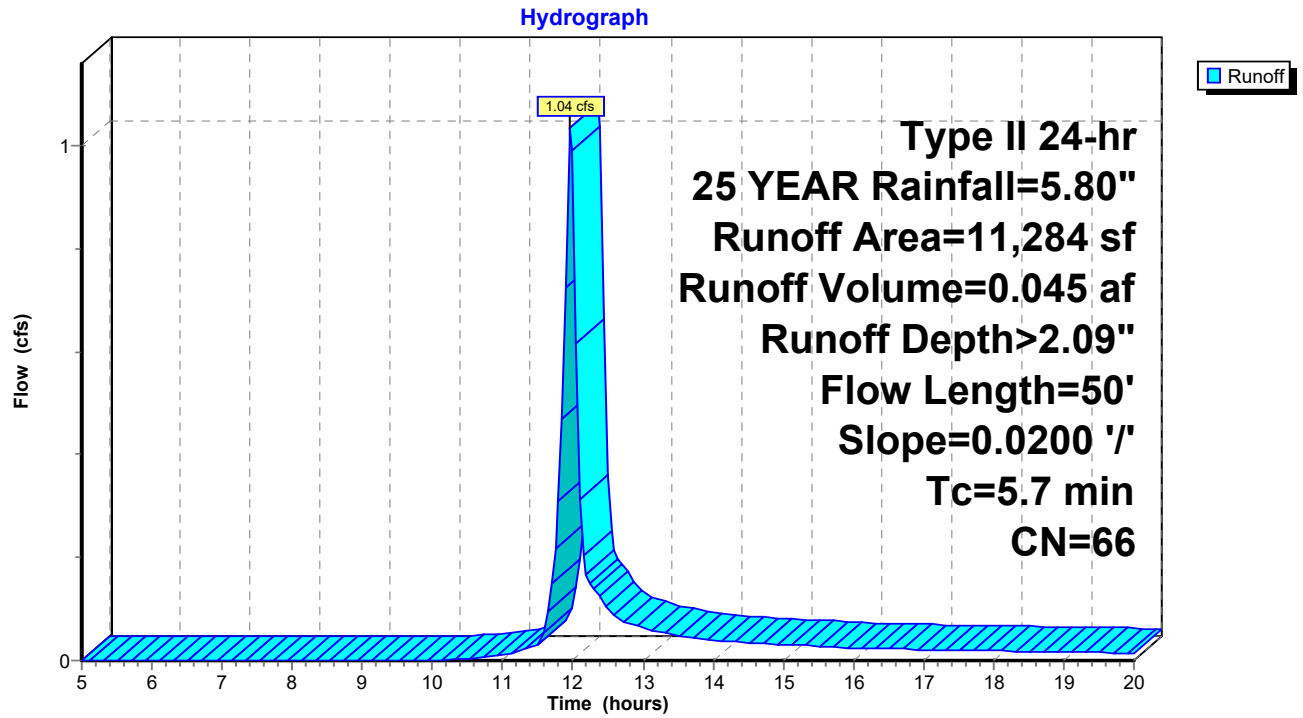
Runoff = 1.04 cfs @ 11.97 hrs, Volume= 0.045 af, Depth> 2.09"
Routed to Pond 2P : WETPOND B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	9,853	61	>75% Grass cover, Good, HSG B
*	1,431	98	IMPERVIOUS
	11,284	66	Weighted Average
	9,853		87.32% Pervious Area
	1,431		12.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0200	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"

Subcatchment SC 6E: 6E



Summary for Subcatchment SC 6F: 6F

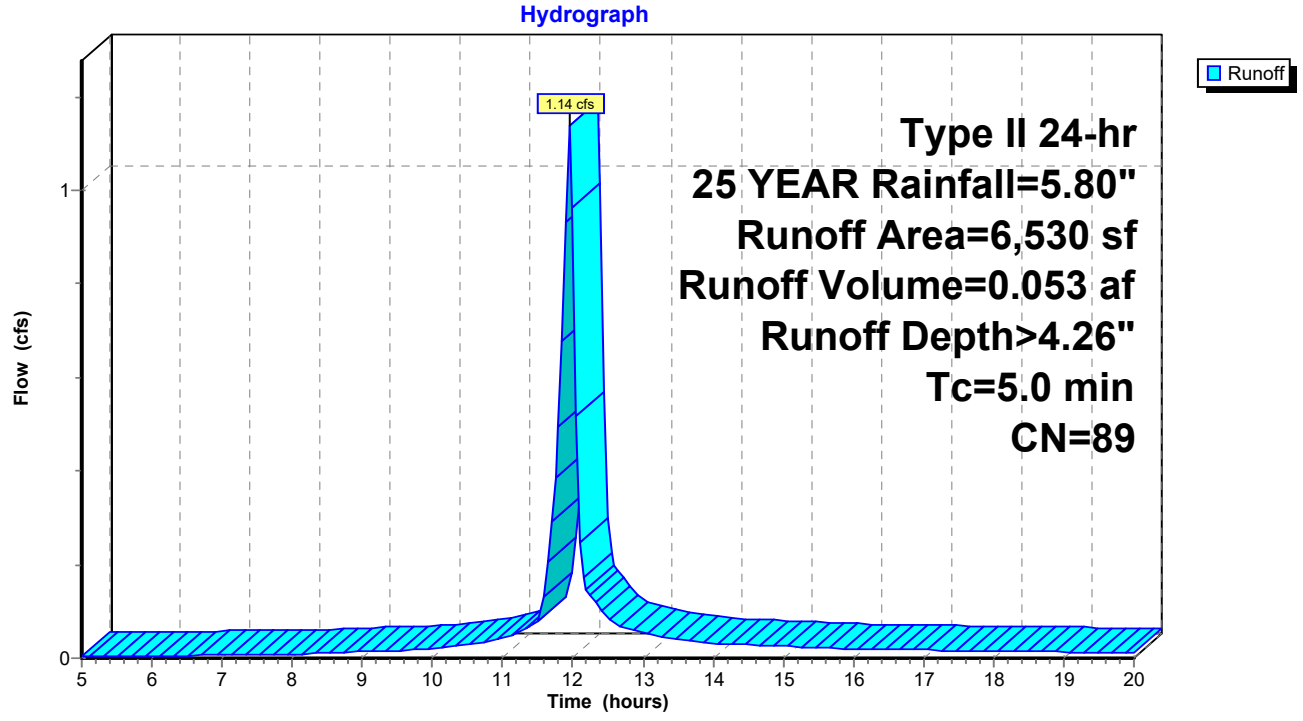
Runoff = 1.14 cfs @ 11.95 hrs, Volume= 0.053 af, Depth> 4.26"
Routed to Pond CB 23 : CB23

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,599	61	>75% Grass cover, Good, HSG B
*	4,931	98	IMPERVIOUS
	6,530	89	Weighted Average
	1,599		24.49% Pervious Area
	4,931		75.51% Impervious Area

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

Subcatchment SC 6F: 6F



Summary for Subcatchment SC 6G: 6G

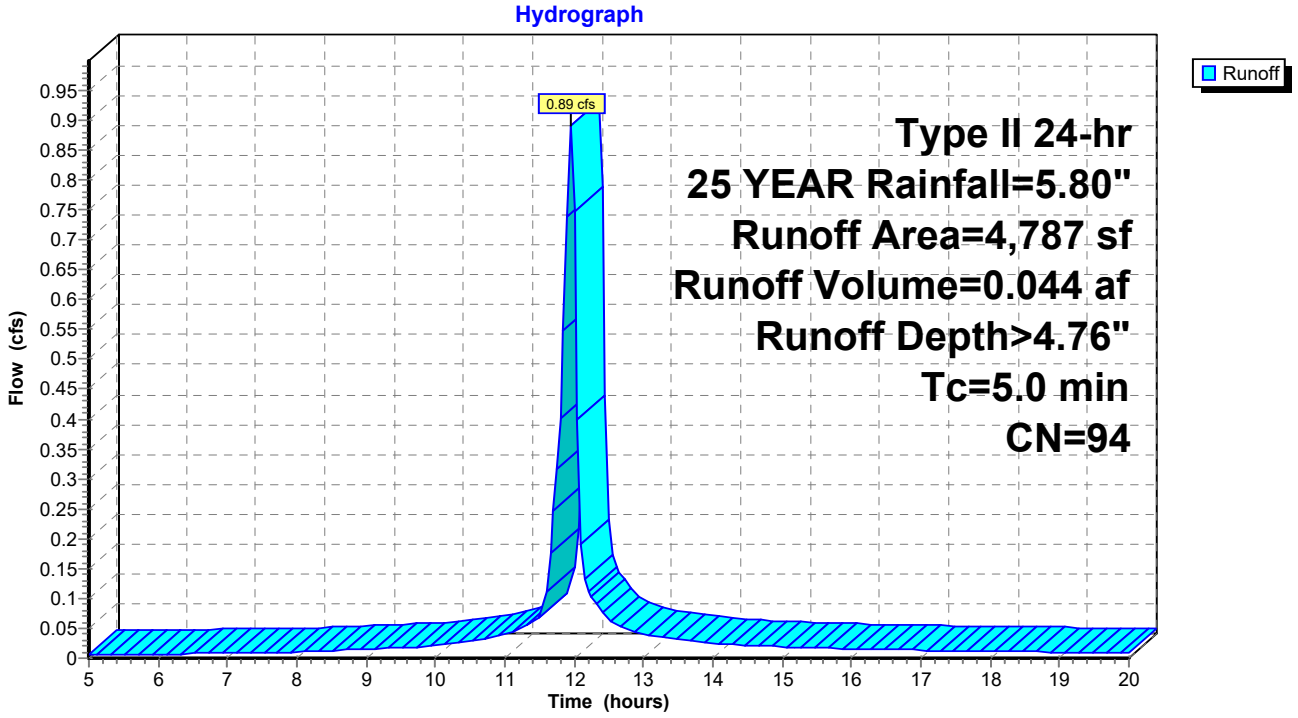
Runoff = 0.89 cfs @ 11.95 hrs, Volume= 0.044 af, Depth> 4.76"
Routed to Pond CB 24 : CB 24

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	478	61	>75% Grass cover, Good, HSG B
*	4,309	98	IMPERVIOUS
	4,787	94	Weighted Average
	478		9.99% Pervious Area
	4,309		90.01% Impervious Area

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

Subcatchment SC 6G: 6G



Summary for Subcatchment SC 6H: 6H

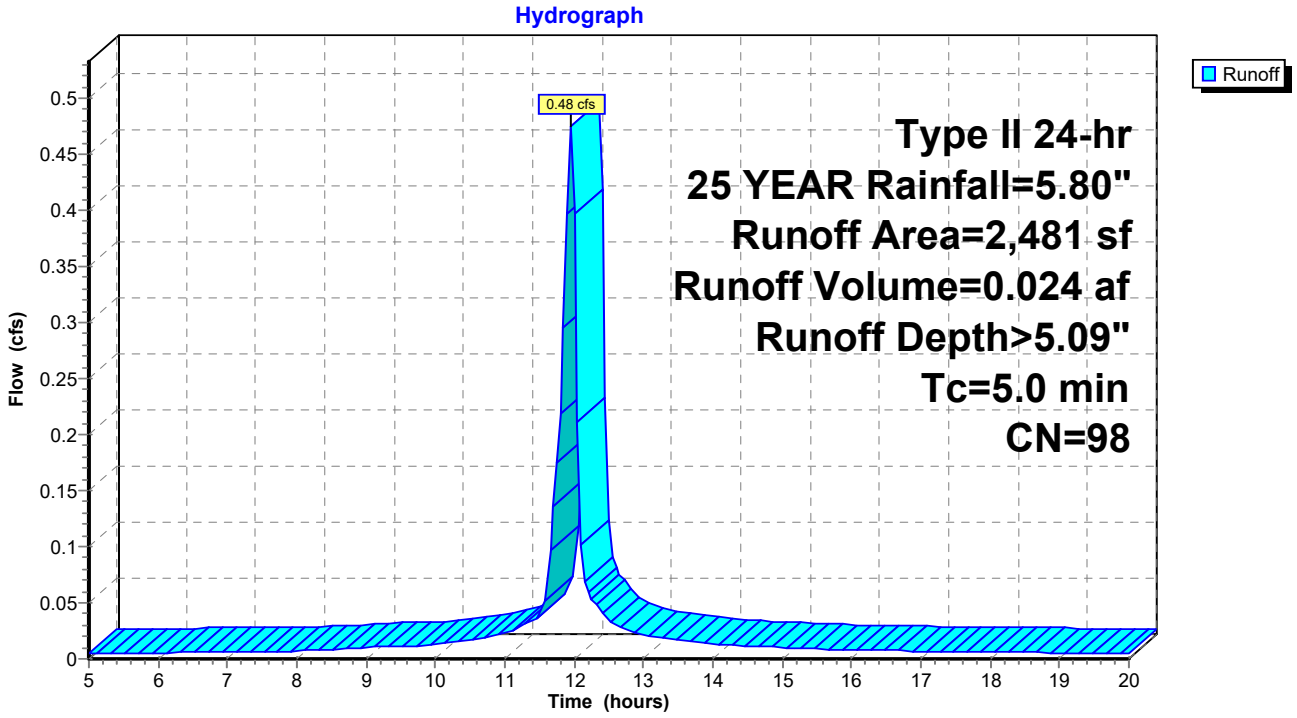
Runoff = 0.48 cfs @ 11.95 hrs, Volume= 0.024 af, Depth> 5.09"
Routed to Pond CB 25 : CB25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
*	2,481	98	IMPERVIOUS
	2,481		100.00% Impervious Area

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

Subcatchment SC 6H: 6H



Summary for Subcatchment SC 6I: 6I

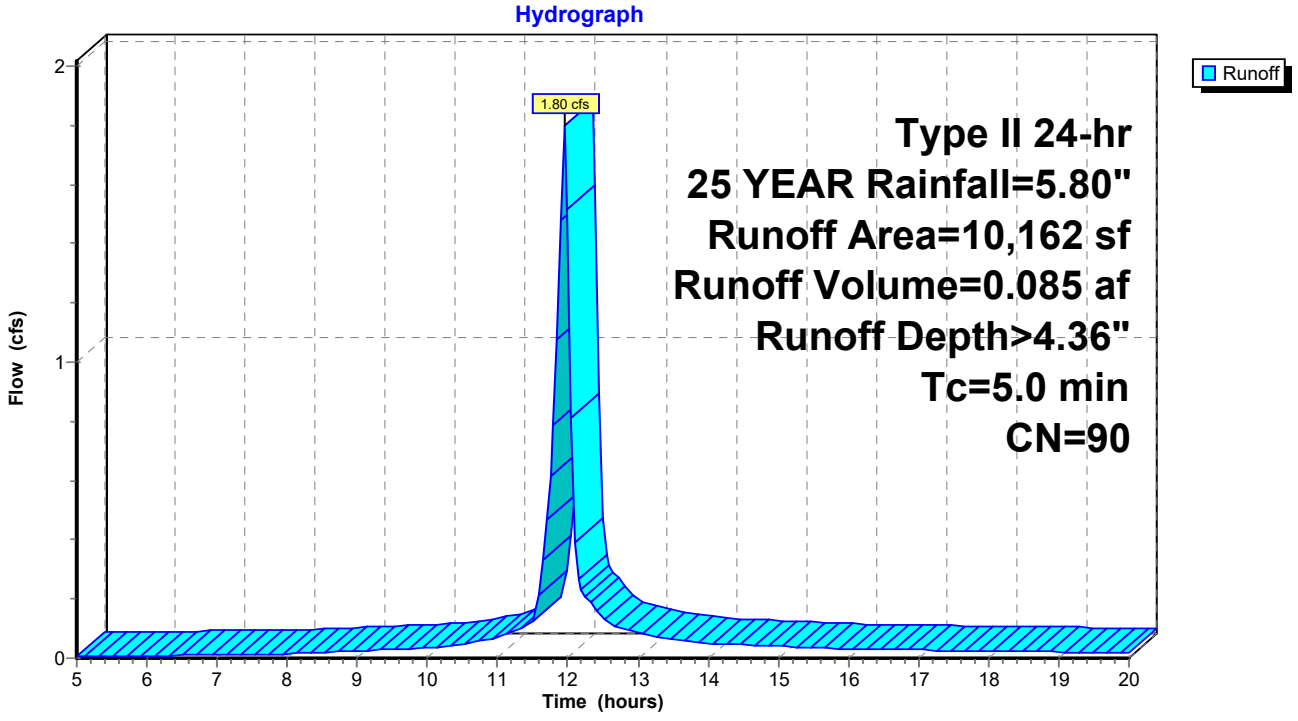
Runoff = 1.80 cfs @ 11.95 hrs, Volume= 0.085 af, Depth> 4.36"
Routed to Pond CB 27 : CB27

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	2,205	61	>75% Grass cover, Good, HSG B
*	7,957	98	IMPERVIOUS
	10,162	90	Weighted Average
	2,205		21.70% Pervious Area
	7,957		78.30% Impervious Area

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

Subcatchment SC 6I: 6I



Summary for Subcatchment SC 6J: 6J

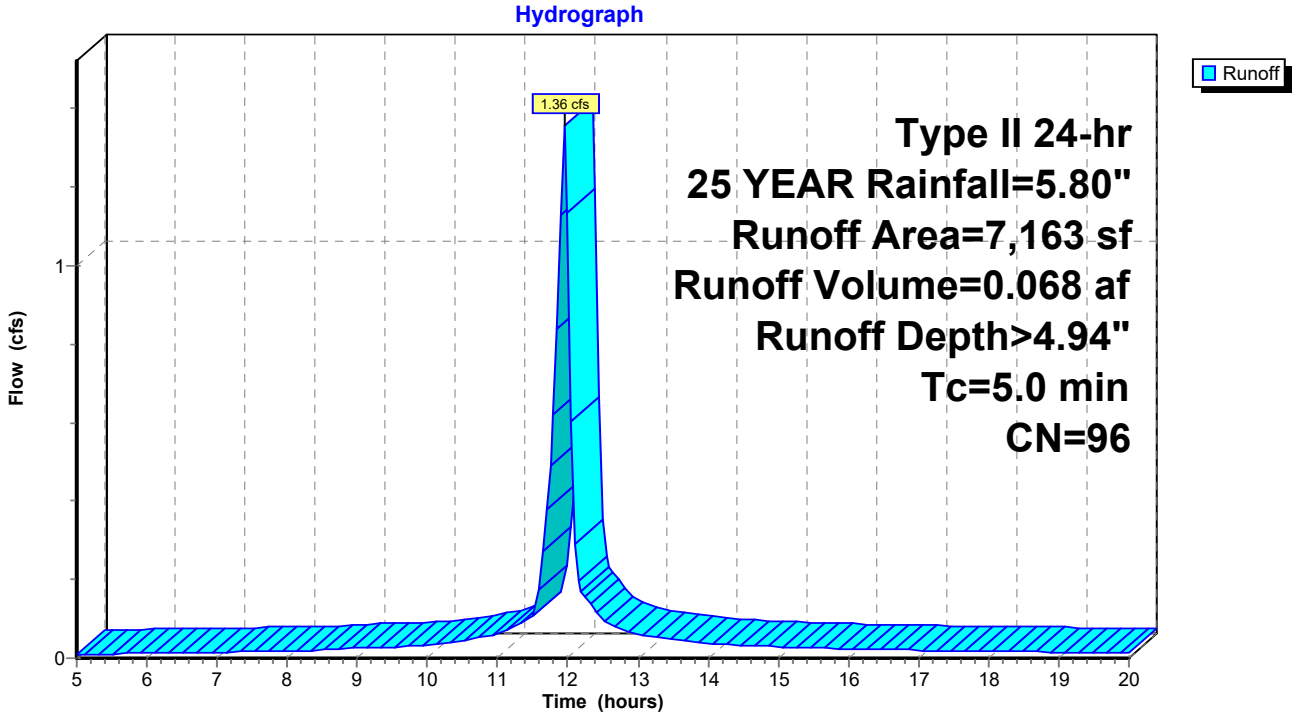
Runoff = 1.36 cfs @ 11.95 hrs, Volume= 0.068 af, Depth> 4.94"
Routed to Pond CB 26 : CB26

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	324	61	>75% Grass cover, Good, HSG B
*	6,839	98	IMPERVIOUS
	7,163	96	Weighted Average
	324		4.52% Pervious Area
	6,839		95.48% Impervious Area

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

Subcatchment SC 6J: 6J



Summary for Subcatchment SC 7: 7

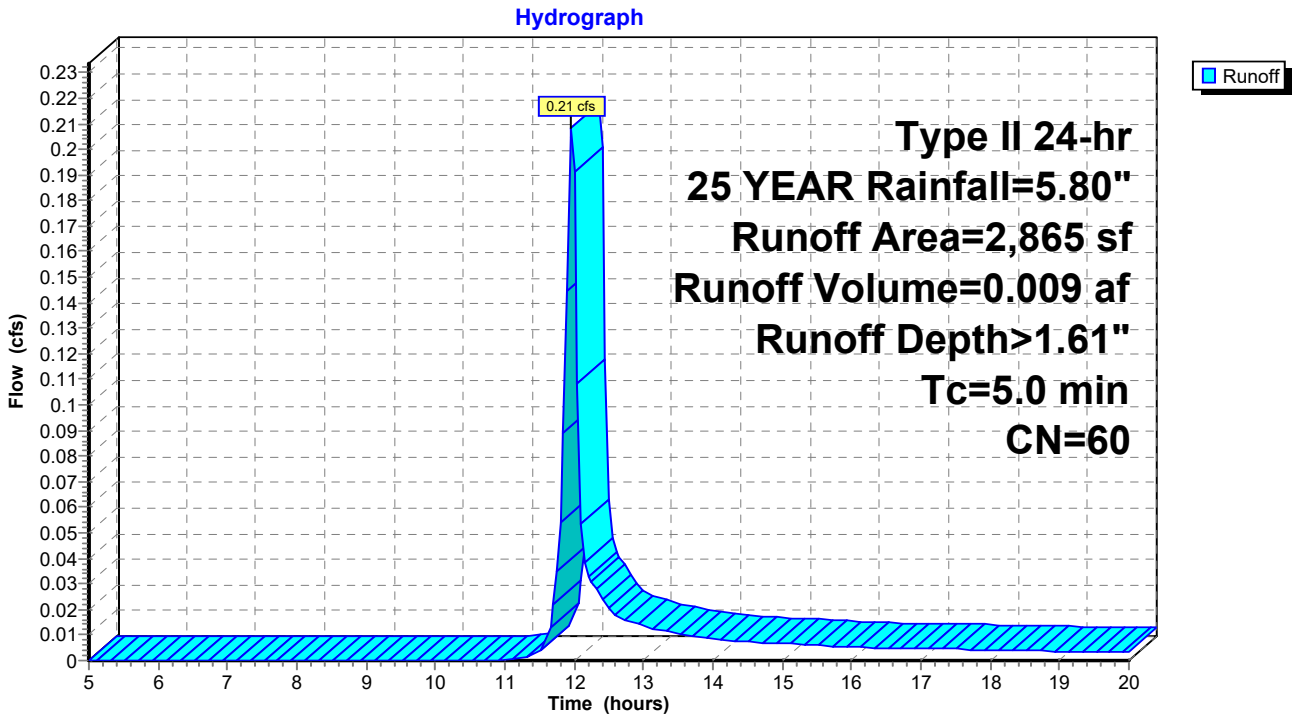
Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.009 af, Depth> 1.61"
Routed to Pond 6P : BIO CELL 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,682	39	>75% Grass cover, Good, HSG A
	273	61	>75% Grass cover, Good, HSG B
*	910	98	IMPERVIOUS
	2,865	60	Weighted Average
	1,955		68.24% Pervious Area
	910		31.76% Impervious Area

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

Subcatchment SC 7: 7



Summary for Subcatchment SC 8: 8

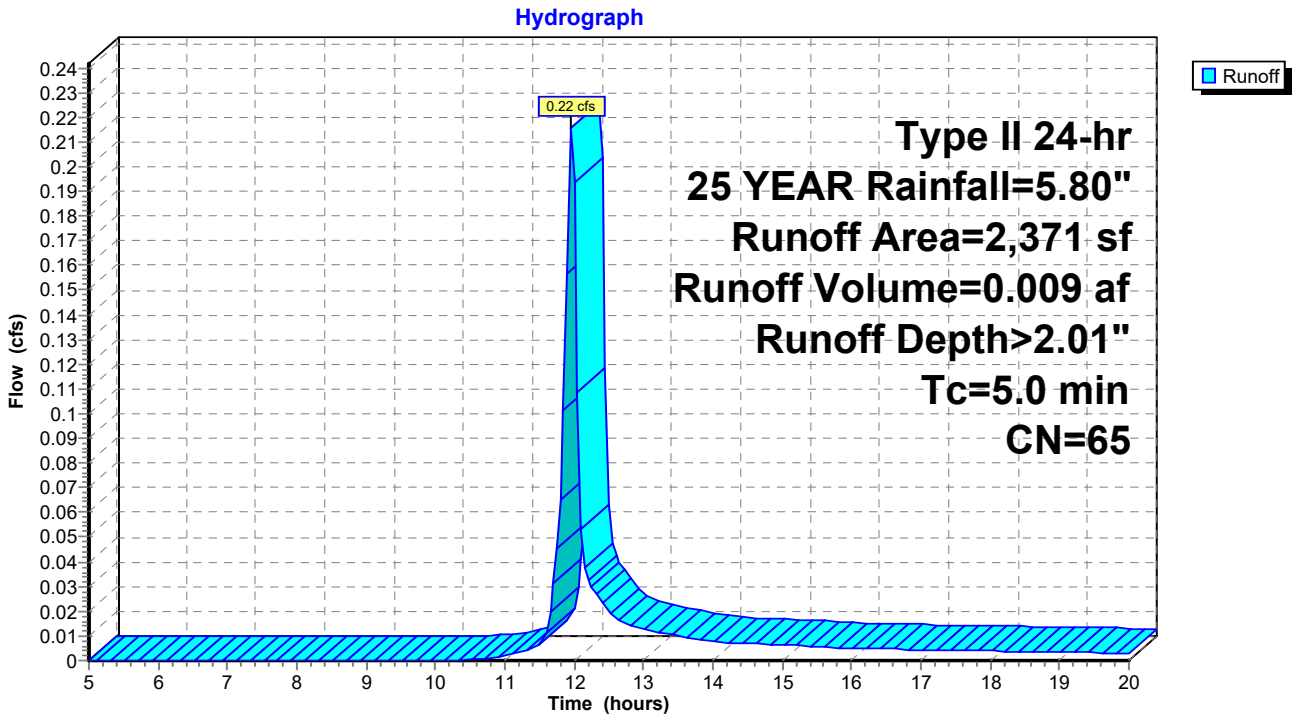
Runoff = 0.22 cfs @ 11.96 hrs, Volume= 0.009 af, Depth> 2.01"
Routed to Pond 7P : BIO CELL 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	1,036	39	>75% Grass cover, Good, HSG A
	481	61	>75% Grass cover, Good, HSG B
*	854	98	IMPERVIOUS
	2,371	65	Weighted Average
	1,517		63.98% Pervious Area
	854		36.02% Impervious Area

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

Subcatchment SC 8: 8



Summary for Subcatchment SC 9: 9

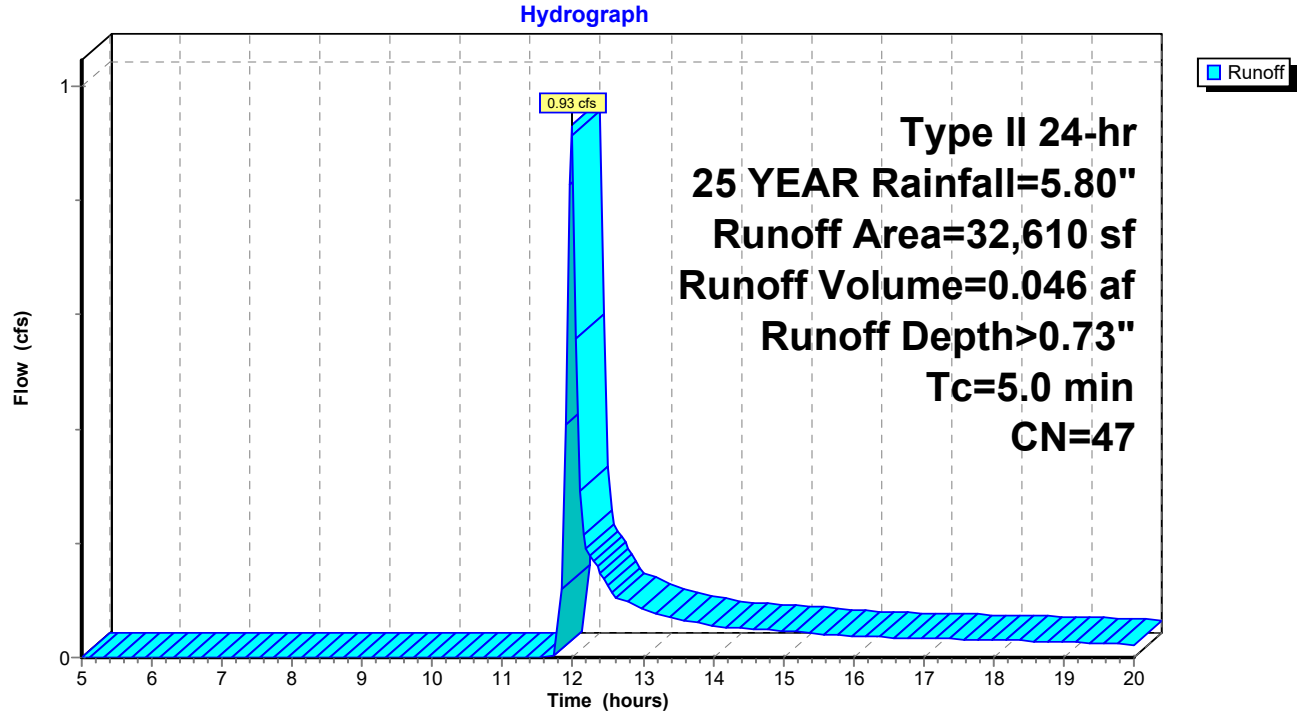
Runoff = 0.93 cfs @ 11.98 hrs, Volume= 0.046 af, Depth> 0.73"
Routed to Reach SP3 : SUMMATION POINT 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 YEAR Rainfall=5.80"

	Area (sf)	CN	Description
	19,552	36	Woods, Fair, HSG A
	2,610	39	>75% Grass cover, Good, HSG A
	7,418	60	Woods, Fair, HSG B
	765	61	>75% Grass cover, Good, HSG B
*	2,265	98	IMPERVIOUS
	32,610	47	Weighted Average
	30,345		93.05% Pervious Area
	2,265		6.95% Impervious Area

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

Subcatchment SC 9: 9

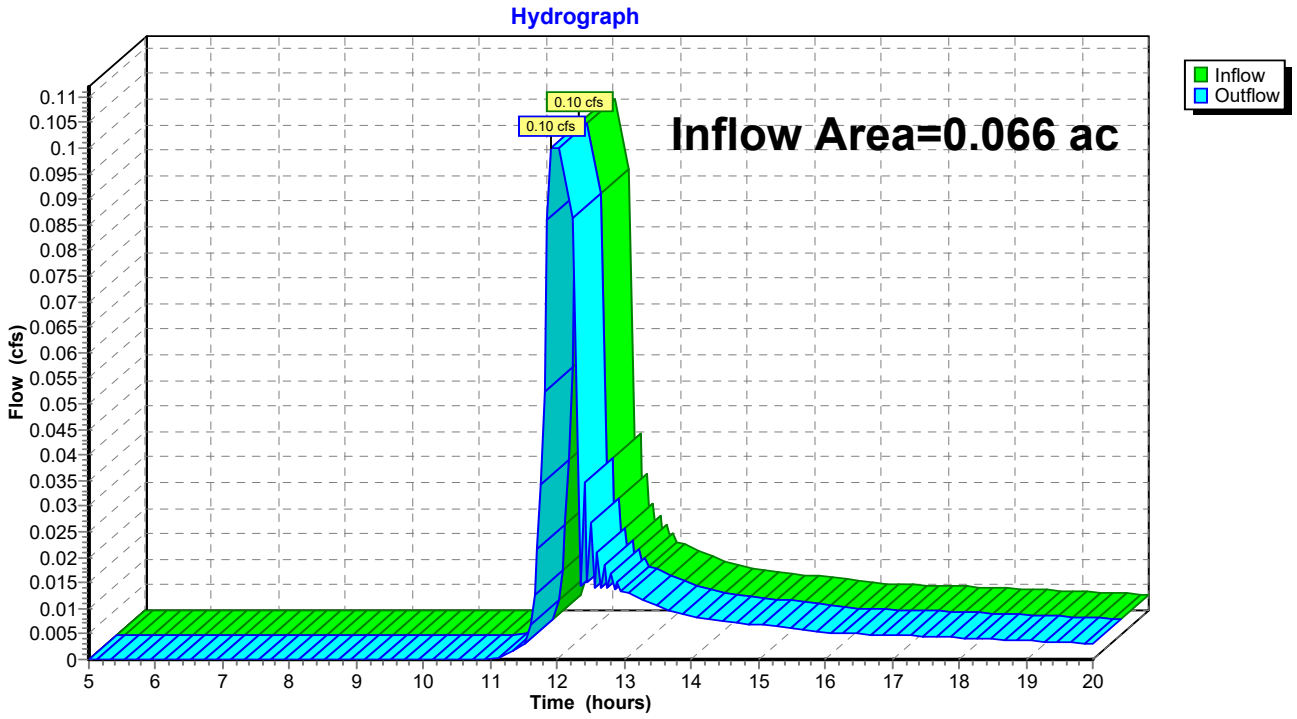


Summary for Reach 1R: REACH 1

Inflow Area = 0.066 ac, 31.76% Impervious, Inflow Depth > 1.61" for 25 YEAR event
Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af
Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Routed to Reach SP3 : SUMMATION POINT 3

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

Reach 1R: REACH 1

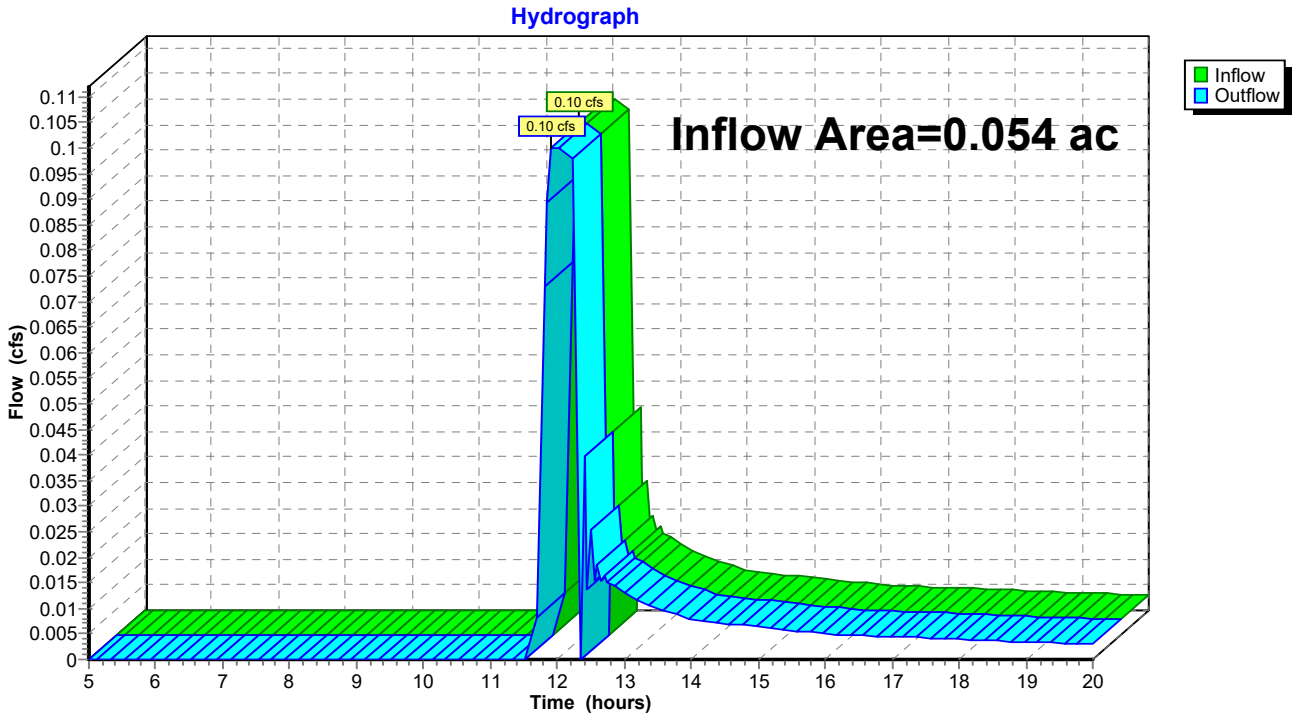


Summary for Reach 2R: REACH 2

Inflow Area = 0.054 ac, 36.02% Impervious, Inflow Depth > 1.90" for 25 YEAR event
Inflow = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af
Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Routed to Reach SP3 : SUMMATION POINT 3

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

Reach 2R: REACH 2



Summary for Reach 3R: REACH 3

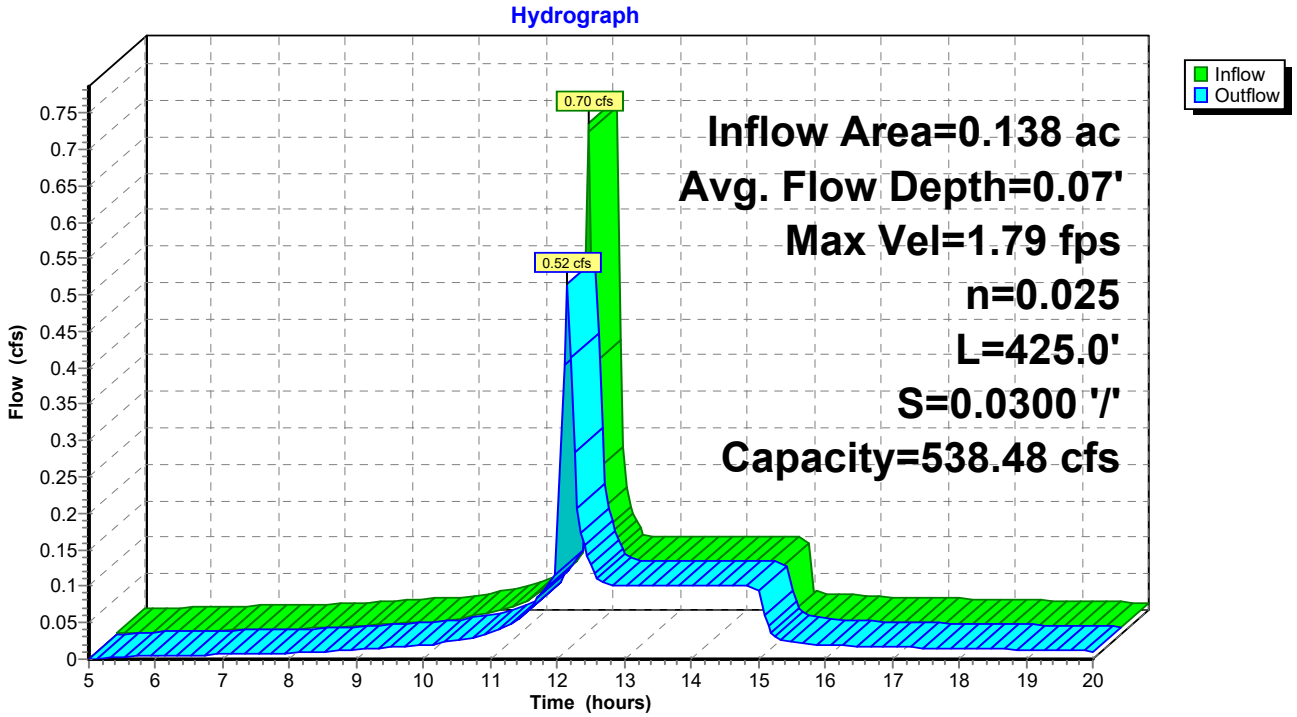
Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 4.36" for 25 YEAR event
Inflow = 0.70 cfs @ 12.04 hrs, Volume= 0.050 af
Outflow = 0.52 cfs @ 12.15 hrs, Volume= 0.050 af, Atten= 27%, Lag= 6.8 min
Routed to Reach 5R : REACH 5

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.79 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.20 fps, Avg. Travel Time= 5.9 min

Peak Storage= 126 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.07' , Surface Width= 4.15'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 538.48 cfs

4.00' x 4.00' deep channel, n= 0.025 Earth, clean & winding
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 425.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -12.75'





Summary for Reach 4R: REACH 4

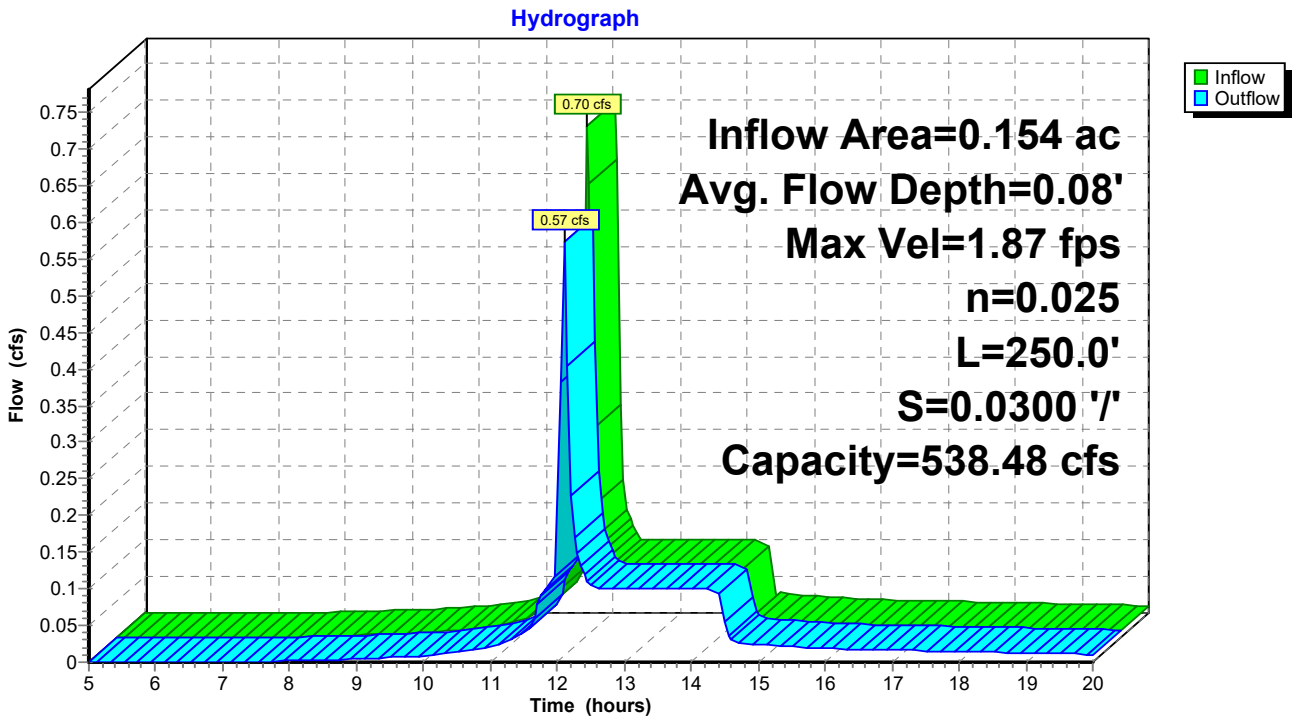
Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 3.16" for 25 YEAR event
Inflow = 0.70 cfs @ 12.02 hrs, Volume= 0.041 af
Outflow = 0.57 cfs @ 12.10 hrs, Volume= 0.040 af, Atten= 18%, Lag= 4.7 min
Routed to Reach 5R : REACH 5

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.87 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.20 fps, Avg. Travel Time= 3.5 min

Peak Storage= 83 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 4.16'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 538.48 cfs

4.00' x 4.00' deep channel, n= 0.025 Earth, clean & winding
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 250.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -7.50'





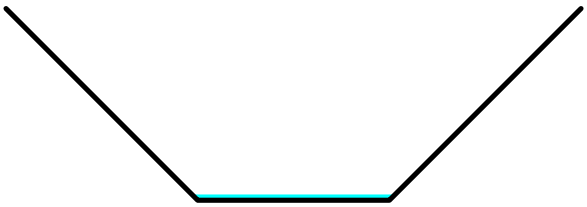
Summary for Reach 5R: REACH 5

Inflow Area = 0.292 ac, 51.59% Impervious, Inflow Depth > 3.72" for 25 YEAR event
Inflow = 1.01 cfs @ 12.12 hrs, Volume= 0.090 af
Outflow = 0.87 cfs @ 12.22 hrs, Volume= 0.090 af, Atten= 15%, Lag= 6.0 min
Routed to Reach SP4 : SUMMATION POINT 4

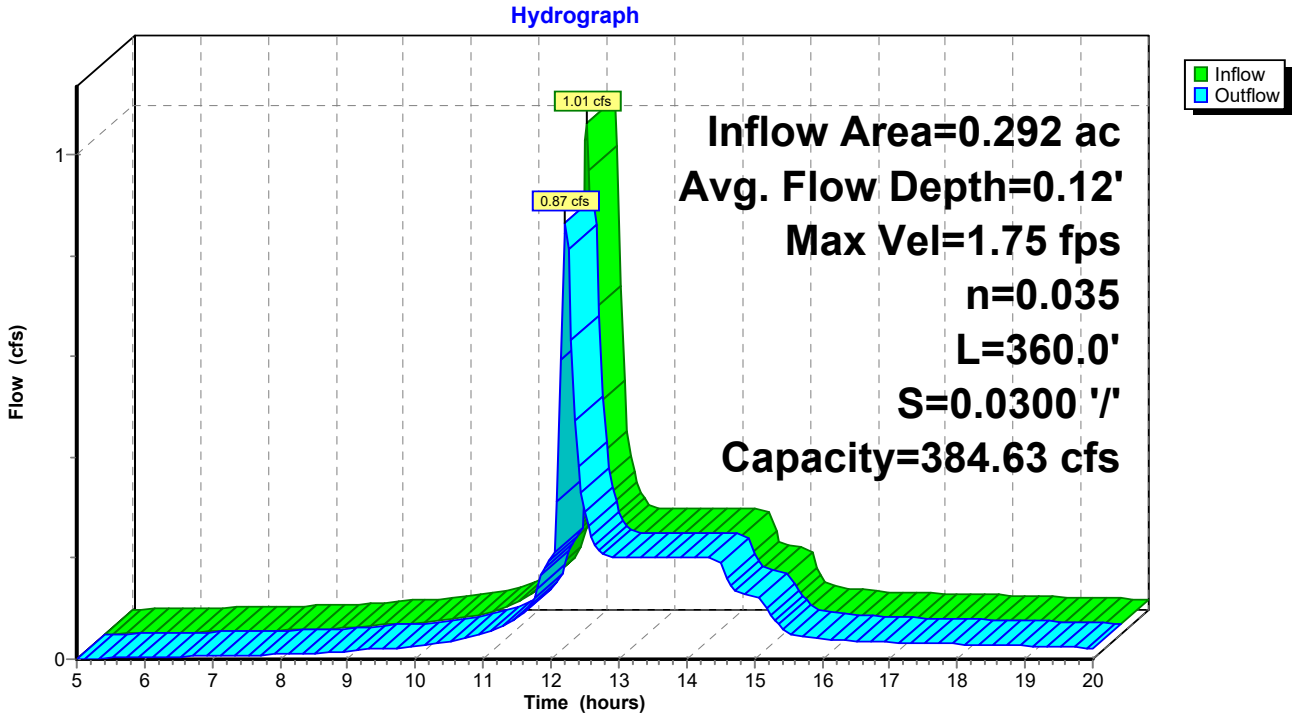
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.75 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.89 fps, Avg. Travel Time= 6.7 min

Peak Storage= 182 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 4.25'
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 384.63 cfs

4.00' x 4.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 12.00'
Length= 360.0' Slope= 0.0300 '/'
Inlet Invert= 0.00', Outlet Invert= -10.80'



Reach 5R: REACH 5



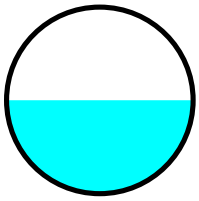
Summary for Reach 6R: 15" SD

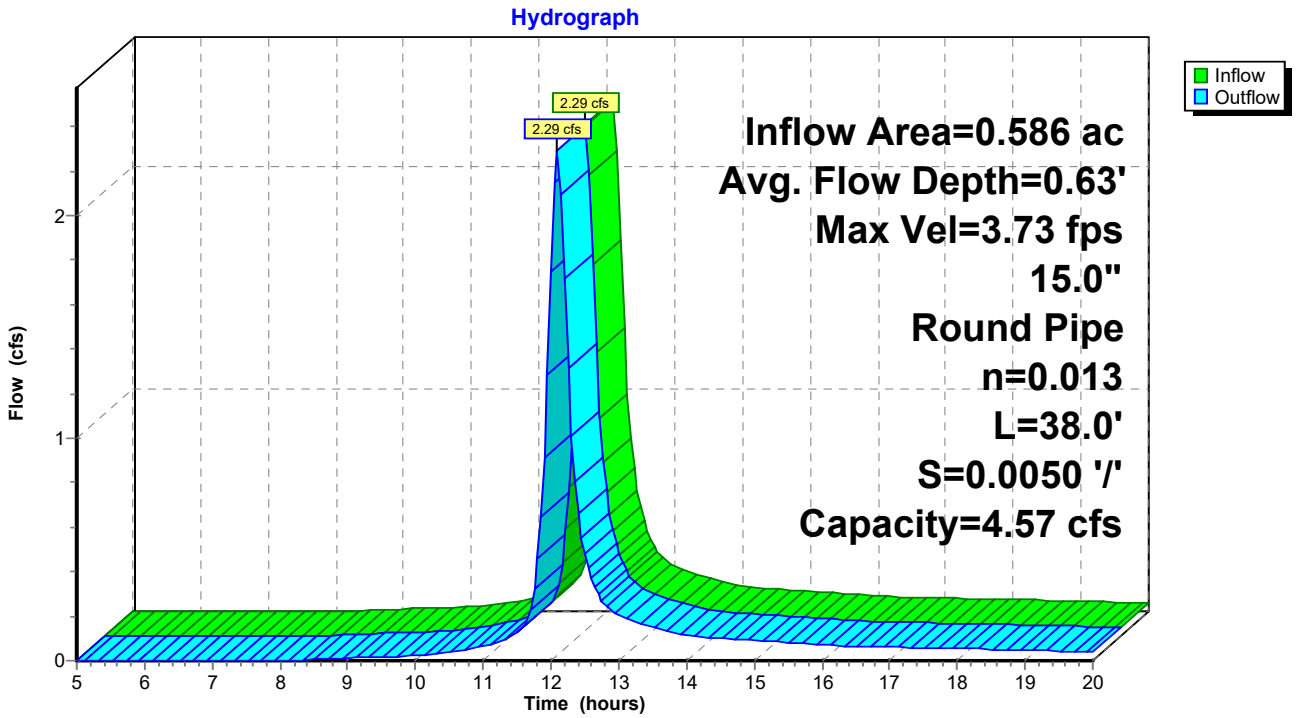
Inflow Area = 0.586 ac, 9.63% Impervious, Inflow Depth > 2.96" for 25 YEAR event
Inflow = 2.29 cfs @ 12.09 hrs, Volume= 0.144 af
Outflow = 2.29 cfs @ 12.10 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.3 min
Routed to Pond CB 6 : CB6

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.73 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.37 fps, Avg. Travel Time= 0.5 min

Peak Storage= 23 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.63' , Surface Width= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 38.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.19'



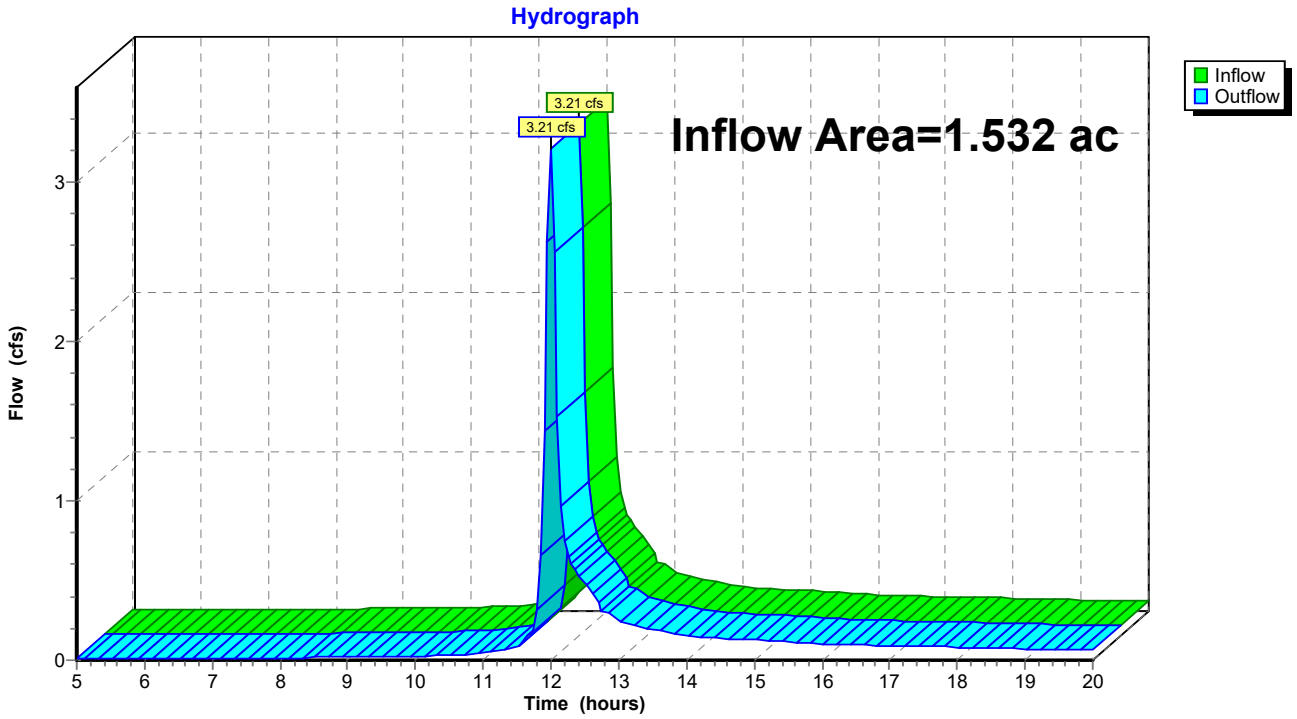


Summary for Reach SP1: SUMMATION POINT 1

Inflow Area = 1.532 ac, 7.34% Impervious, Inflow Depth > 1.28" for 25 YEAR event
Inflow = 3.21 cfs @ 12.00 hrs, Volume= 0.163 af
Outflow = 3.21 cfs @ 12.00 hrs, Volume= 0.163 af, Atten= 0%, Lag= 0.0 min

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

Reach SP1: SUMMATION POINT 1

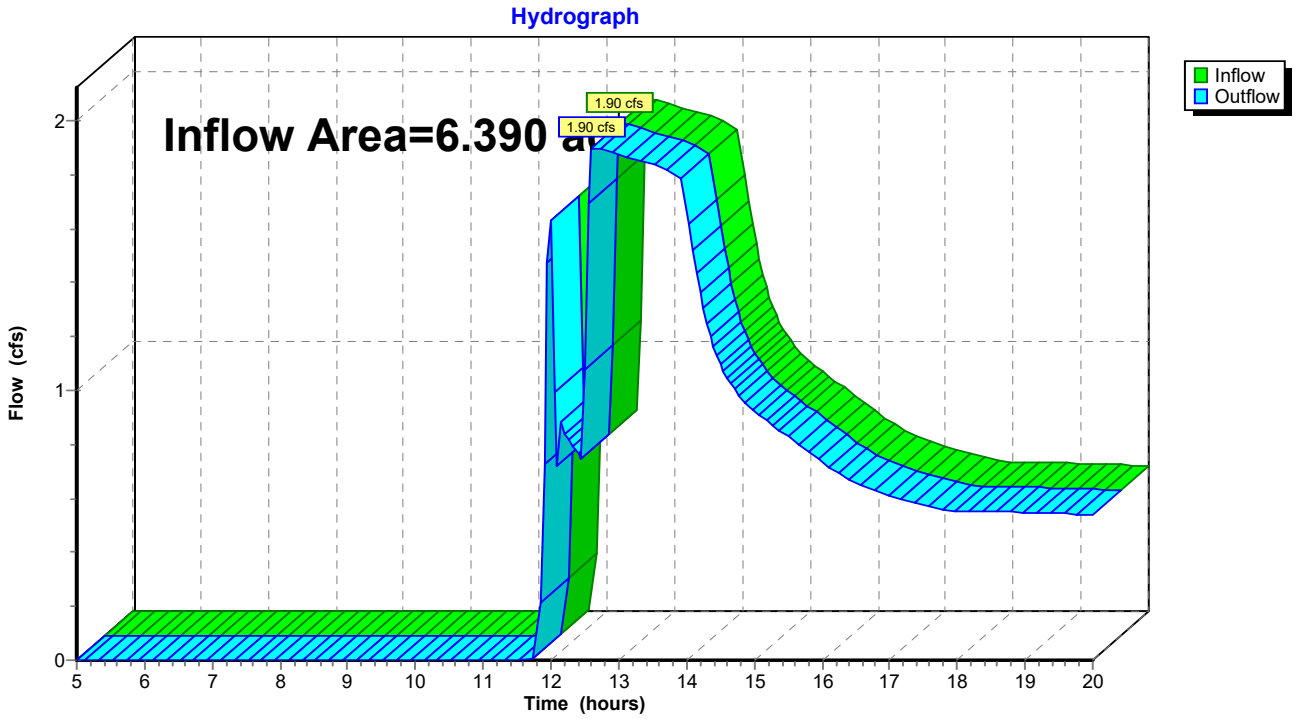


Summary for Reach SP2: SUMMATION POINT 2

Inflow Area = 6.390 ac, 32.52% Impervious, Inflow Depth > 1.20" for 25 YEAR event
Inflow = 1.90 cfs @ 12.60 hrs, Volume= 0.636 af
Outflow = 1.90 cfs @ 12.60 hrs, Volume= 0.636 af, Atten= 0%, Lag= 0.0 min

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

Reach SP2: SUMMATION POINT 2

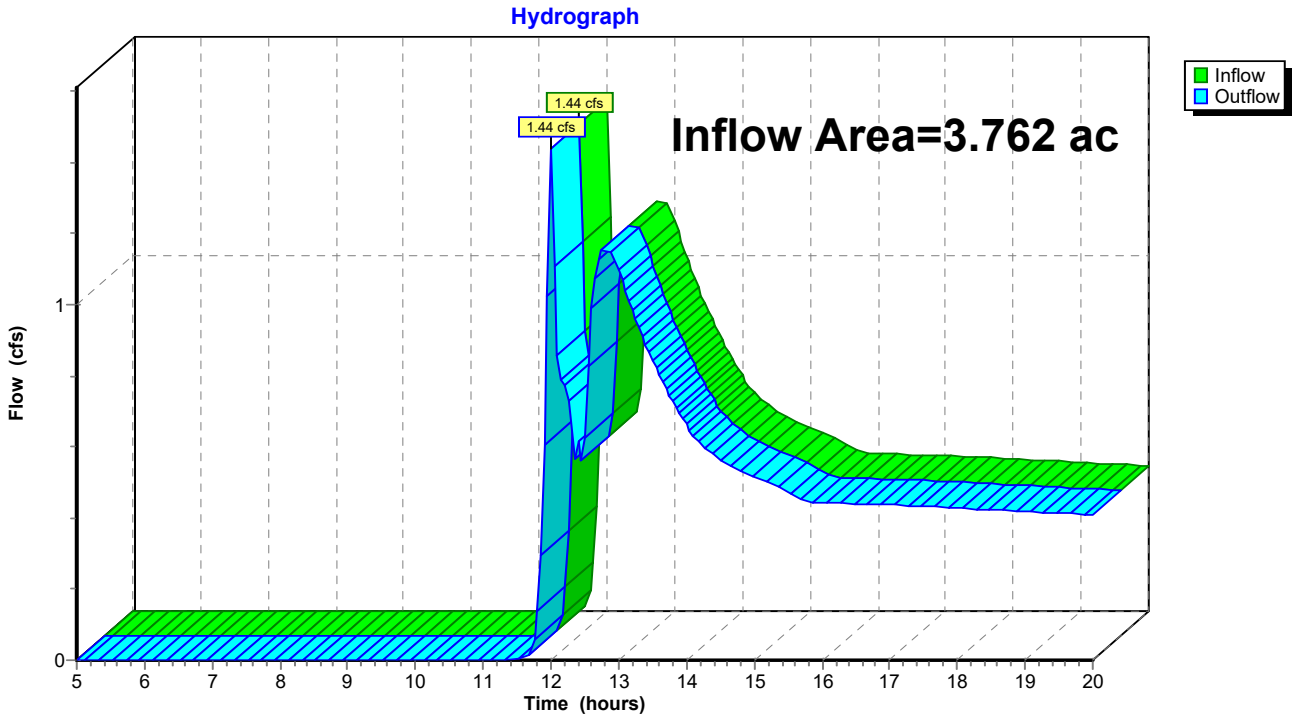


Summary for Reach SP3: SUMMATION POINT 3

Inflow Area = 3.762 ac, 39.87% Impervious, Inflow Depth > 1.24" for 25 YEAR event
Inflow = 1.44 cfs @ 12.00 hrs, Volume= 0.388 af
Outflow = 1.44 cfs @ 12.00 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min

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

Reach SP3: SUMMATION POINT 3

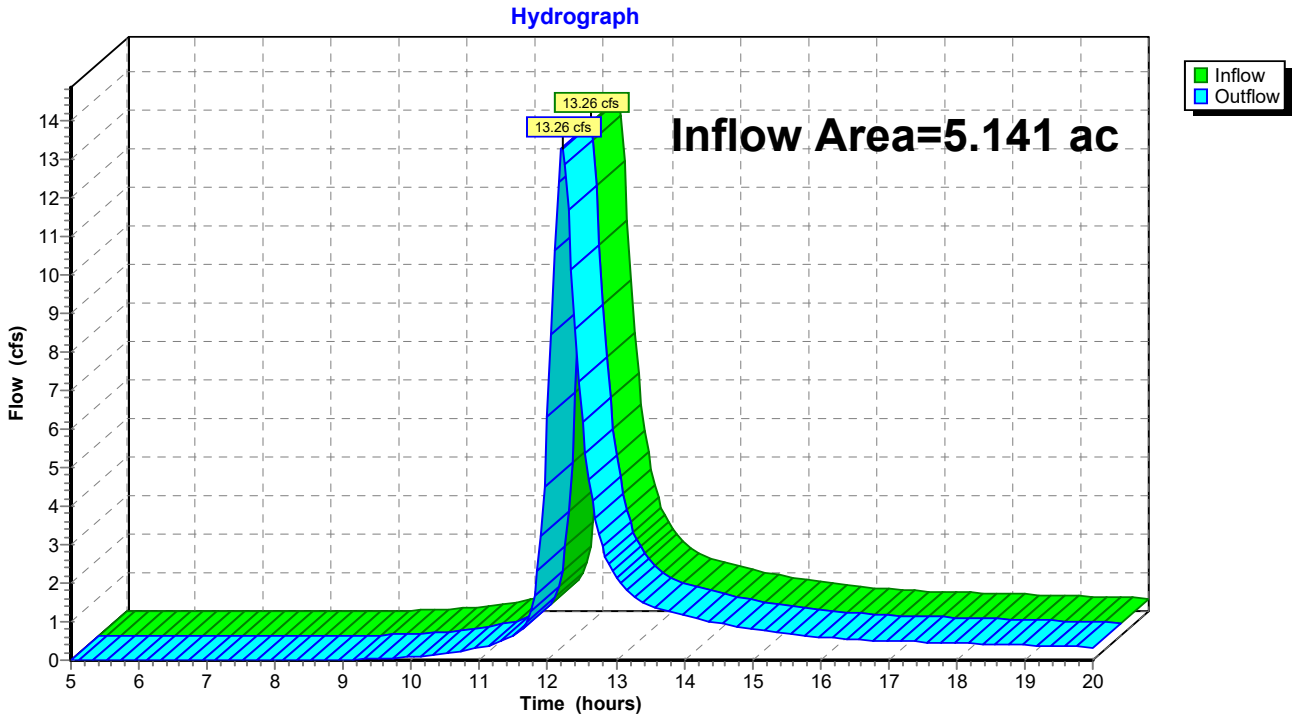


Summary for Reach SP4: SUMMATION POINT 4

Inflow Area = 5.141 ac, 9.37% Impervious, Inflow Depth > 2.56" for 25 YEAR event
Inflow = 13.26 cfs @ 12.21 hrs, Volume= 1.098 af
Outflow = 13.26 cfs @ 12.21 hrs, Volume= 1.098 af, Atten= 0%, Lag= 0.0 min

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

Reach SP4: SUMMATION POINT 4



Summary for Pond 1P: WETPOND A

Inflow Area = 5.056 ac, 38.87% Impervious, Inflow Depth > 3.18" for 25 YEAR event
Inflow = 17.75 cfs @ 11.99 hrs, Volume= 1.340 af
Outflow = 1.73 cfs @ 13.06 hrs, Volume= 0.555 af, Atten= 90%, Lag= 63.8 min
Primary = 1.73 cfs @ 13.06 hrs, Volume= 0.555 af
Routed to Reach SP2 : SUMMATION POINT 2
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach SP2 : SUMMATION POINT 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 76.42' @ 13.06 hrs Surf.Area= 7,204 sf Storage= 37,503 cf

Plug-Flow detention time= 219.2 min calculated for 0.553 af (41% of inflow)
Center-of-Mass det. time= 130.3 min (909.2 - 778.9)

Volume	Invert	Avail.Storage	Storage Description
#1	66.00'	41,844 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

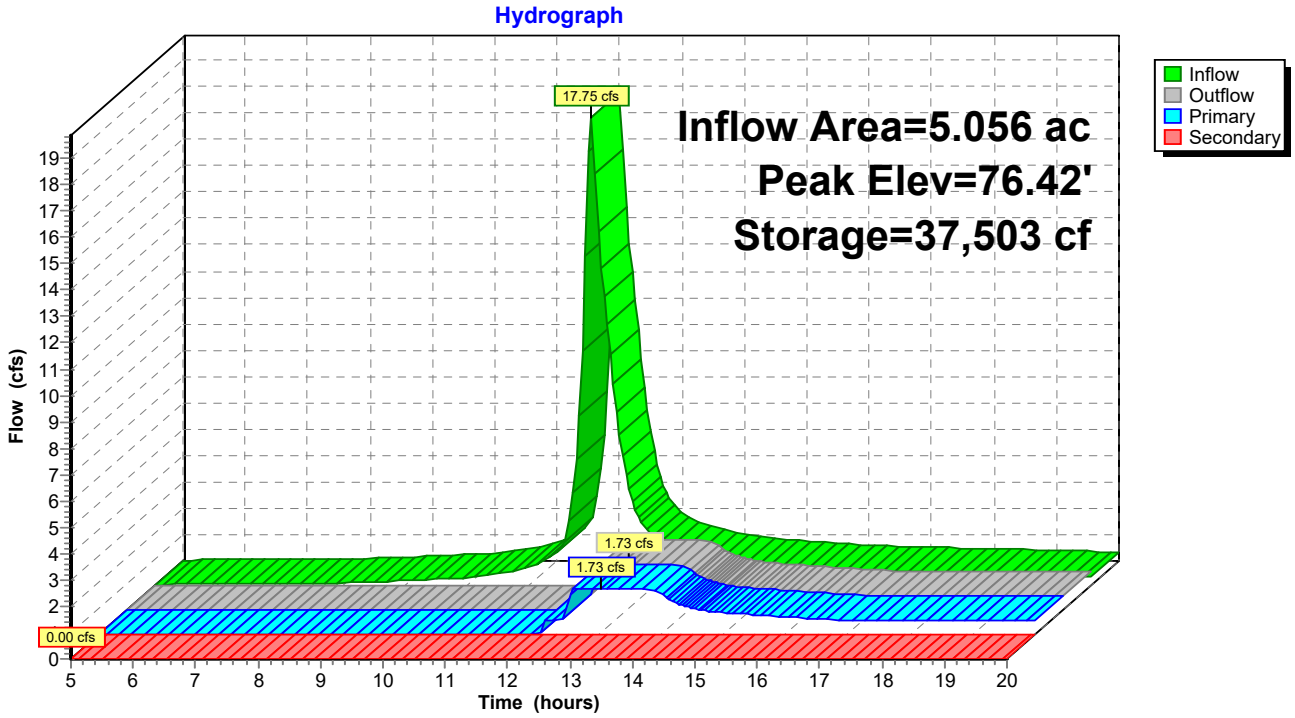
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
66.00	1,128	0	0
67.00	1,476	1,302	1,302
68.00	1,870	1,673	2,975
69.00	2,290	2,080	5,055
70.00	2,747	2,519	7,574
71.00	3,240	2,994	10,567
72.00	3,779	3,510	14,077
73.00	4,356	4,068	18,144
74.00	4,960	4,658	22,802
75.00	5,867	5,414	28,216
76.00	6,838	6,353	34,568
77.00	7,714	7,276	41,844

Device	Routing	Invert	Outlet Devices
#1	Primary	69.14'	**6.0" Round Culvert** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 69.14' / 68.89' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Device 1	74.09'	**0.50 cfs Exfiltration when above 74.09'**
#3	Device 1	76.05'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	76.50'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=1.73 cfs @ 13.06 hrs HW=76.42' (Free Discharge)
└─**1=Culvert** (Barrel Controls 1.73 cfs @ 8.79 fps)
  └─**2=Exfiltration** (Passes < 0.50 cfs potential flow)
  └─**3=Orifice/Grate** (Passes < 4.59 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=66.00' (Free Discharge)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: WETPOND A



Summary for Pond 2P: WETPOND B

Inflow Area = 2.893 ac, 48.64% Impervious, Inflow Depth > 3.30" for 25 YEAR event
Inflow = 16.15 cfs @ 11.97 hrs, Volume= 0.795 af
Outflow = 1.04 cfs @ 12.82 hrs, Volume= 0.325 af, Atten= 94%, Lag= 51.2 min
Primary = 0.40 cfs @ 12.82 hrs, Volume= 0.261 af
Routed to Reach SP3 : SUMMATION POINT 3
Secondary = 0.64 cfs @ 12.82 hrs, Volume= 0.063 af
Routed to Reach SP3 : SUMMATION POINT 3

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 72.59' @ 12.82 hrs Surf.Area= 5,023 sf Storage= 22,801 cf

Plug-Flow detention time= 254.0 min calculated for 0.325 af (41% of inflow)
Center-of-Mass det. time= 162.1 min (928.5 - 766.5)

Volume	Invert	Avail.Storage	Storage Description
#1	65.00'	24,924 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

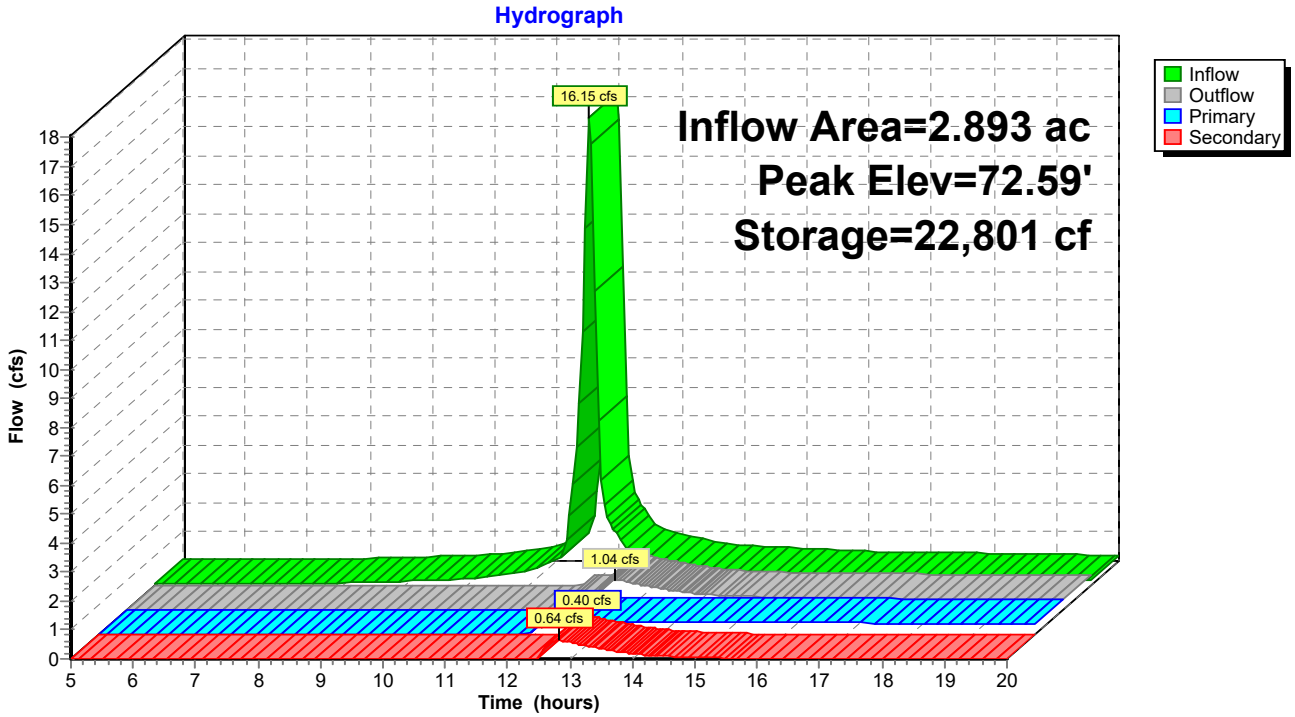
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
65.00	1,409	0	0
66.00	1,752	1,581	1,581
67.00	2,121	1,937	3,517
68.00	2,514	2,318	5,835
69.00	2,933	2,724	8,558
70.00	3,408	3,171	11,729
71.00	4,167	3,788	15,516
72.00	4,698	4,433	19,949
73.00	5,252	4,975	24,924

Device	Routing	Invert	Outlet Devices
#1	Primary	68.26'	**4.0" Round Culvert** L= 85.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 68.26' / 67.84' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Device 1	70.76'	**0.50 cfs Exfiltration when above 70.76'**
#3	Device 1	72.39'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	72.50'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.40 cfs @ 12.82 hrs HW=72.59' (Free Discharge)
└─**1=Culvert** (Barrel Controls 0.40 cfs @ 4.60 fps)
  └─**2=Exfiltration** (Passes < 0.50 cfs potential flow)
  └─**3=Orifice/Grate** (Passes < 1.79 cfs potential flow)

Secondary OutFlow Max=0.60 cfs @ 12.82 hrs HW=72.59' (Free Discharge)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 0.70 fps)

Pond 2P: WETPOND B



Summary for Pond 3P: WETLAND STORAGE

Inflow Area = 3.213 ac, 31.19% Impervious, Inflow Depth > 3.39" for 25 YEAR event
Inflow = 14.50 cfs @ 11.99 hrs, Volume= 0.908 af
Outflow = 10.31 cfs @ 12.10 hrs, Volume= 0.905 af, Atten= 29%, Lag= 6.5 min
Primary = 10.31 cfs @ 12.10 hrs, Volume= 0.905 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 80.83' @ 12.10 hrs Surf.Area= 5,971 sf Storage= 5,580 cf

Plug-Flow detention time= 7.9 min calculated for 0.902 af (99% of inflow)
Center-of-Mass det. time= 6.7 min (778.9 - 772.2)

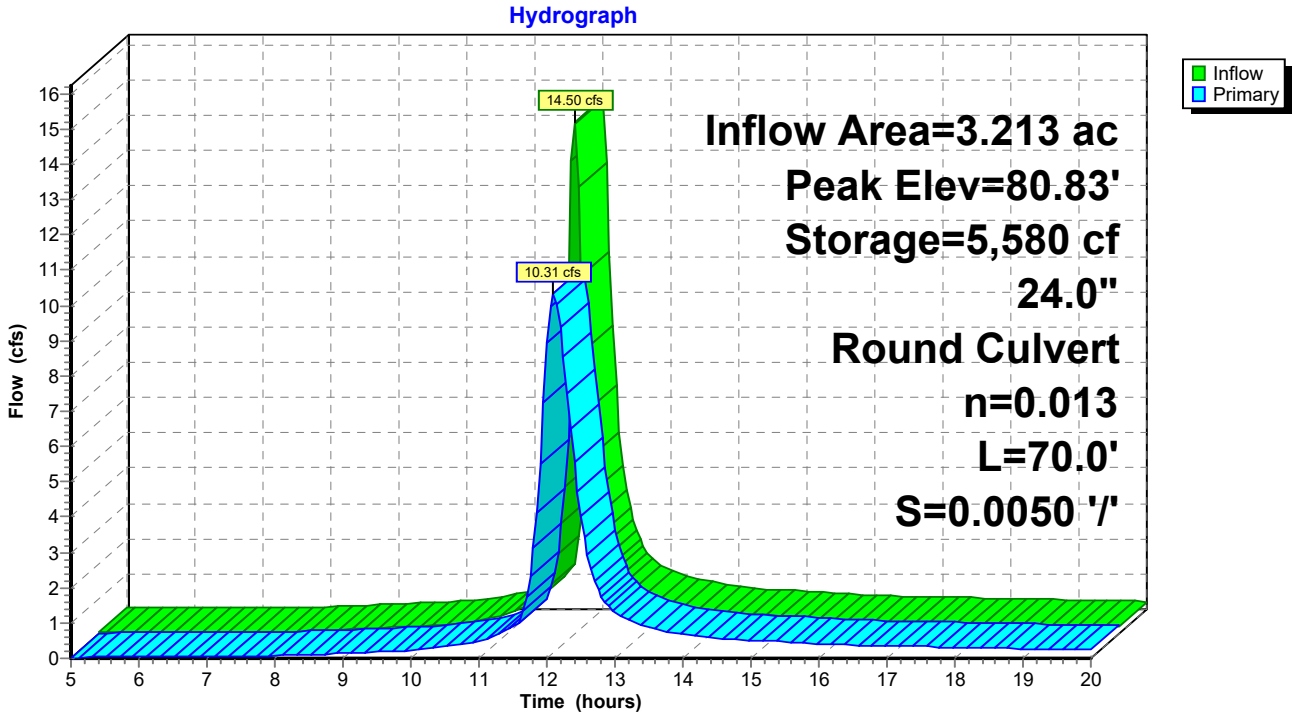
Volume	Invert	Avail.Storage	Storage Description
#1	79.00'	15,212 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
79.00	112	0	0
81.00	6,500	6,612	6,612
82.00	10,700	8,600	15,212

Device	Routing	Invert	Outlet Devices
#1	Primary	79.00'	**24.0" Round Culvert** L= 70.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.00' / 78.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.30 cfs @ 12.10 hrs HW=80.83' (Free Discharge)
1=Culvert (Barrel Controls 10.30 cfs @ 4.47 fps)

Pond 3P: WETLAND STORAGE



Summary for Pond 4P: GUSF 2

Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 3.16" for 25 YEAR event
Inflow = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af
Outflow = 0.70 cfs @ 12.02 hrs, Volume= 0.041 af, Atten= 25%, Lag= 4.1 min
Primary = 0.10 cfs @ 11.65 hrs, Volume= 0.035 af
Routed to Reach 4R : REACH 4
Secondary = 0.60 cfs @ 12.02 hrs, Volume= 0.006 af
Routed to Reach 4R : REACH 4

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 76.89' @ 12.02 hrs Surf.Area= 373 sf Storage= 468 cf

Plug-Flow detention time= 24.0 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 23.8 min (801.1 - 777.3)

Volume	Invert	Avail.Storage	Storage Description
#1	75.23'	1,020 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

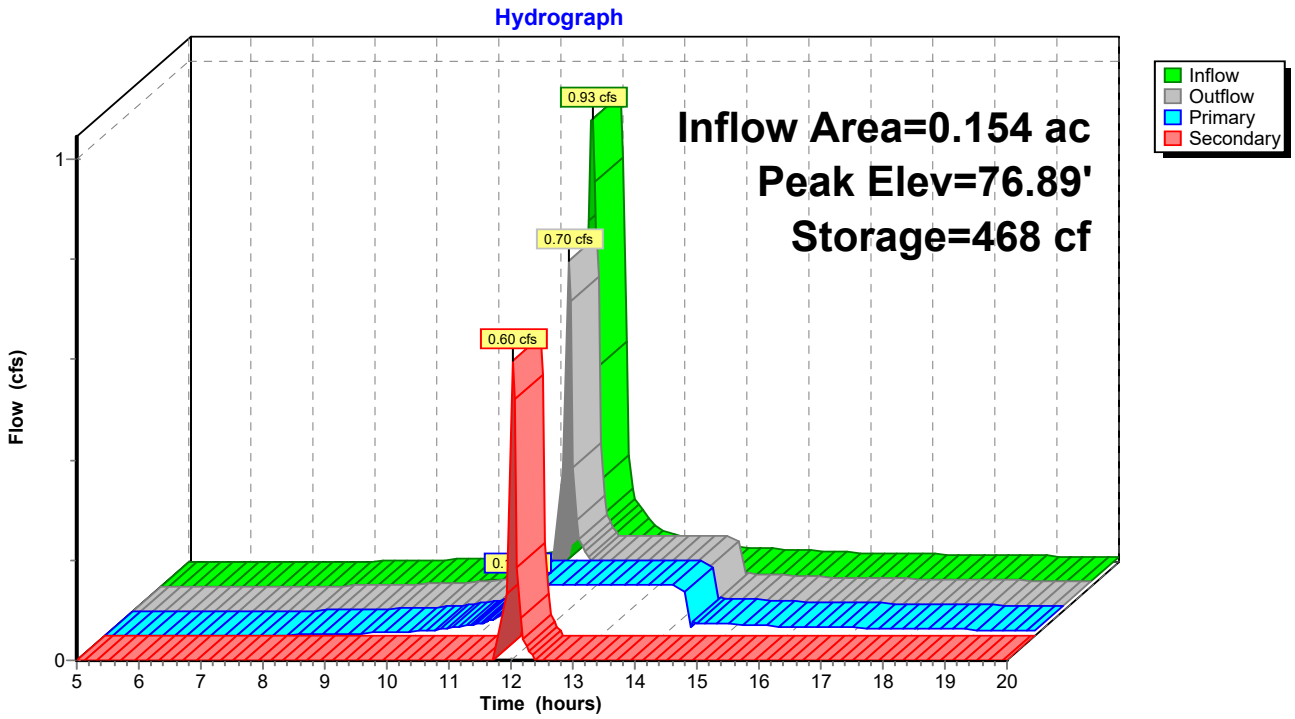
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
75.23	192	0	0
77.00	385	511	511
78.00	634	510	1,020

Device	Routing	Invert	Outlet Devices
#1	Primary	72.98'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 72.98' / 72.88' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	75.23'	**0.10 cfs Exfiltration when above 75.23'**
#3	Secondary	76.73'	**5.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 11.65 hrs HW=75.27' (Free Discharge)
└**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.53 cfs @ 12.02 hrs HW=76.86' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 0.53 cfs @ 0.84 fps)

Pond 4P: GUSF 2



Summary for Pond 5P: GUSF 1

Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 4.36" for 25 YEAR event
Inflow = 1.07 cfs @ 11.95 hrs, Volume= 0.050 af
Outflow = 0.70 cfs @ 12.04 hrs, Volume= 0.050 af, Atten= 34%, Lag= 5.2 min
Primary = 0.10 cfs @ 11.60 hrs, Volume= 0.043 af
Routed to Reach 3R : REACH 3
Secondary = 0.60 cfs @ 12.04 hrs, Volume= 0.007 af
Routed to Reach 3R : REACH 3

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.64' @ 12.04 hrs Surf.Area= 577 sf Storage= 623 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 30.8 min (780.2 - 749.4)

Volume	Invert	Avail.Storage	Storage Description
#1	82.00'	1,228 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

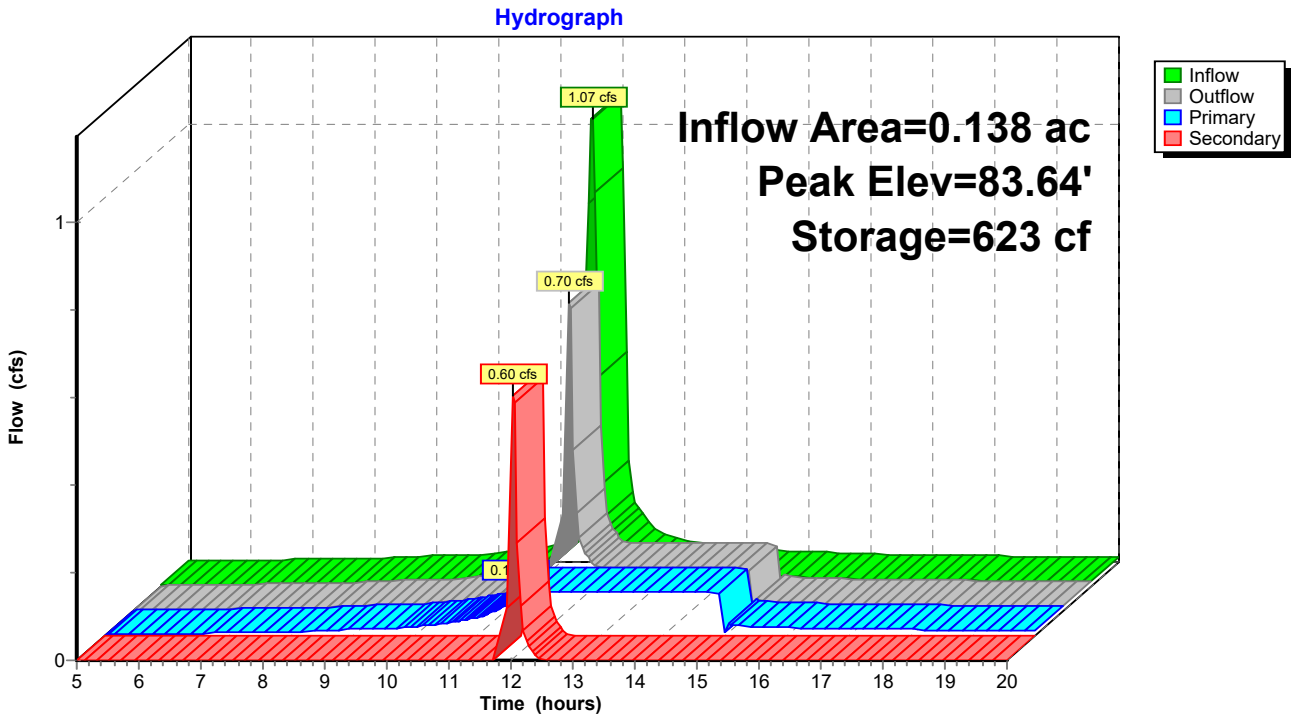
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.00	210	0	0
83.00	408	309	309
84.00	673	541	850
84.50	841	379	1,228

Device	Routing	Invert	Outlet Devices
#1	Primary	79.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 79.75' / 79.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	82.00'	**0.10 cfs Exfiltration when above 82.00'**
#3	Secondary	83.50'	**5.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 11.60 hrs HW=82.03' (Free Discharge)
↑**1=Culvert** (Passes 0.10 cfs of 0.48 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.56 cfs @ 12.04 hrs HW=83.63' (Free Discharge)
↑**3=Broad-Crested Rectangular Weir** (Weir Controls 0.56 cfs @ 0.86 fps)

Pond 5P: GUSF 1



Summary for Pond 6P: BIO CELL 1

Inflow Area = 0.066 ac, 31.76% Impervious, Inflow Depth > 1.61" for 25 YEAR event
Inflow = 0.21 cfs @ 11.97 hrs, Volume= 0.009 af
Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af, Atten= 52%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af
Routed to Reach 1R : REACH 1
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 1R : REACH 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.11' @ 12.06 hrs Surf.Area= 186 sf Storage= 46 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.7 min (811.6 - 809.9)

Volume	Invert	Avail.Storage	Storage Description
#1	78.50'	714 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

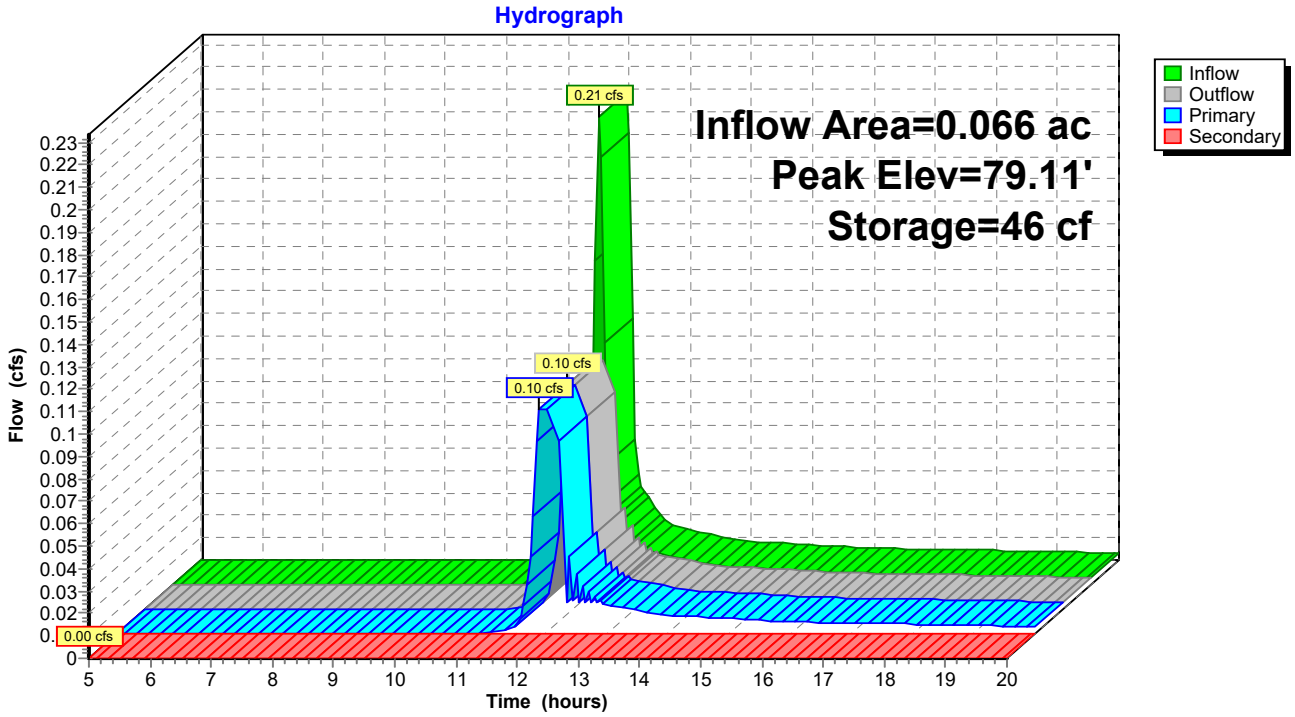
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.50	140	0.0	0	0
79.00	140	40.0	28	28
80.50	775	100.0	686	714

Device	Routing	Invert	Outlet Devices
#1	Primary	76.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.75' / 76.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	78.50'	**0.10 cfs Exfiltration at all elevations**
#3	Secondary	79.50'	**5.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=78.59' (Free Discharge)
1=Culvert (Passes 0.10 cfs of 0.43 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=78.50' (Free Discharge)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 6P: BIO CELL 1



Summary for Pond 7P: BIO CELL 2

Inflow Area = 0.054 ac, 36.02% Impervious, Inflow Depth > 2.01" for 25 YEAR event
Inflow = 0.22 cfs @ 11.96 hrs, Volume= 0.009 af
Outflow = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af, Atten= 54%, Lag= 0.0 min
Primary = 0.10 cfs @ 11.90 hrs, Volume= 0.009 af
Routed to Reach 2R : REACH 2
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach 2R : REACH 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.28' @ 12.06 hrs Surf.Area= 254 sf Storage= 75 cf

Plug-Flow detention time= 29.2 min calculated for 0.009 af (94% of inflow)
Center-of-Mass det. time= 9.0 min (809.7 - 800.7)

Volume	Invert	Avail.Storage	Storage Description
#1	76.50'	748 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

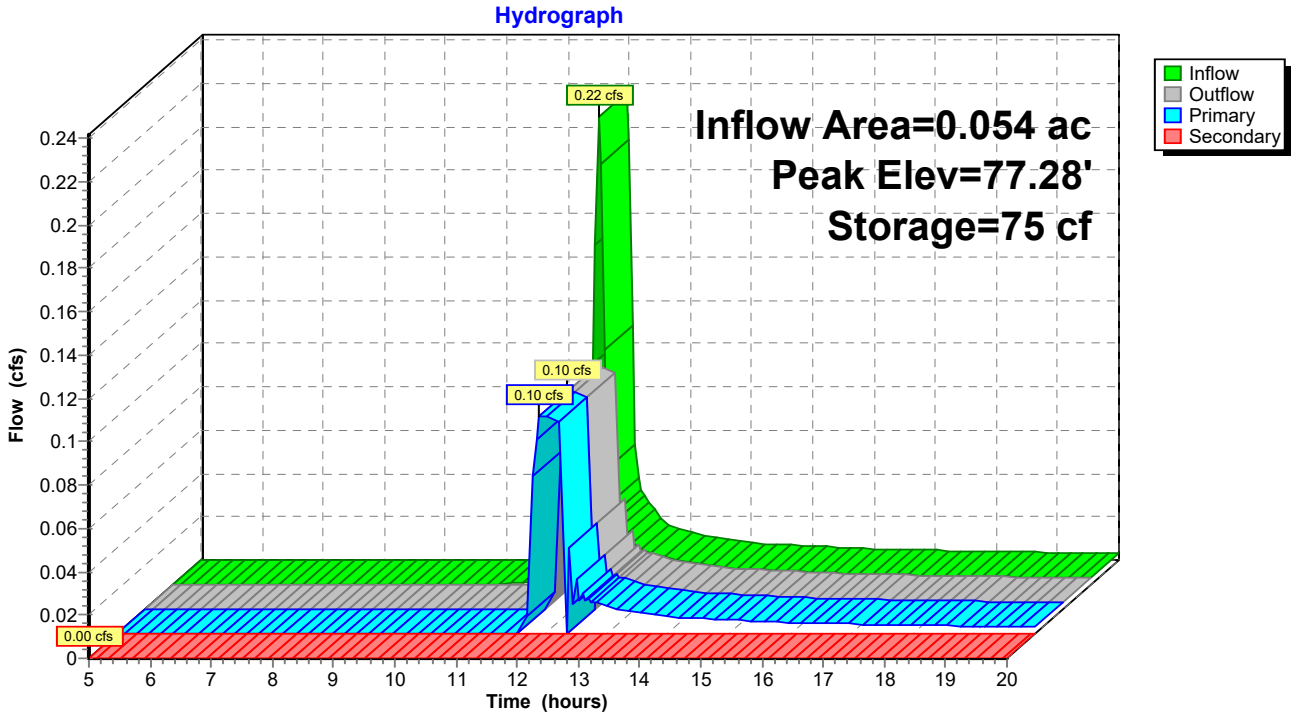
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
76.50	116	0.0	0	0
77.00	116	40.0	23	23
78.50	850	100.0	725	748

Device	Routing	Invert	Outlet Devices
#1	Primary	74.75'	**4.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.75' / 74.65' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	77.00'	**0.10 cfs Exfiltration when above 77.00'**
#3	Secondary	77.50'	**5.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.10 cfs @ 11.90 hrs HW=77.06' (Free Discharge)
1=Culvert (Passes 0.10 cfs of 0.49 cfs potential flow)
2=Exfiltration (Exfiltration Controls 0.10 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=76.50' (Free Discharge)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 7P: BIO CELL 2



Summary for Pond 8P: DRIP FILTER

Inflow Area = 0.022 ac,100.00% Impervious, Inflow Depth > 5.09" for 25 YEAR event
Inflow = 0.19 cfs @ 11.95 hrs, Volume= 0.009 af
Outflow = 0.17 cfs @ 11.99 hrs, Volume= 0.009 af, Atten= 7%, Lag= 2.5 min
Primary = 0.17 cfs @ 11.99 hrs, Volume= 0.009 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.71' @ 11.99 hrs Surf.Area= 200 sf Storage= 57 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.1 min (732.7 - 728.6)

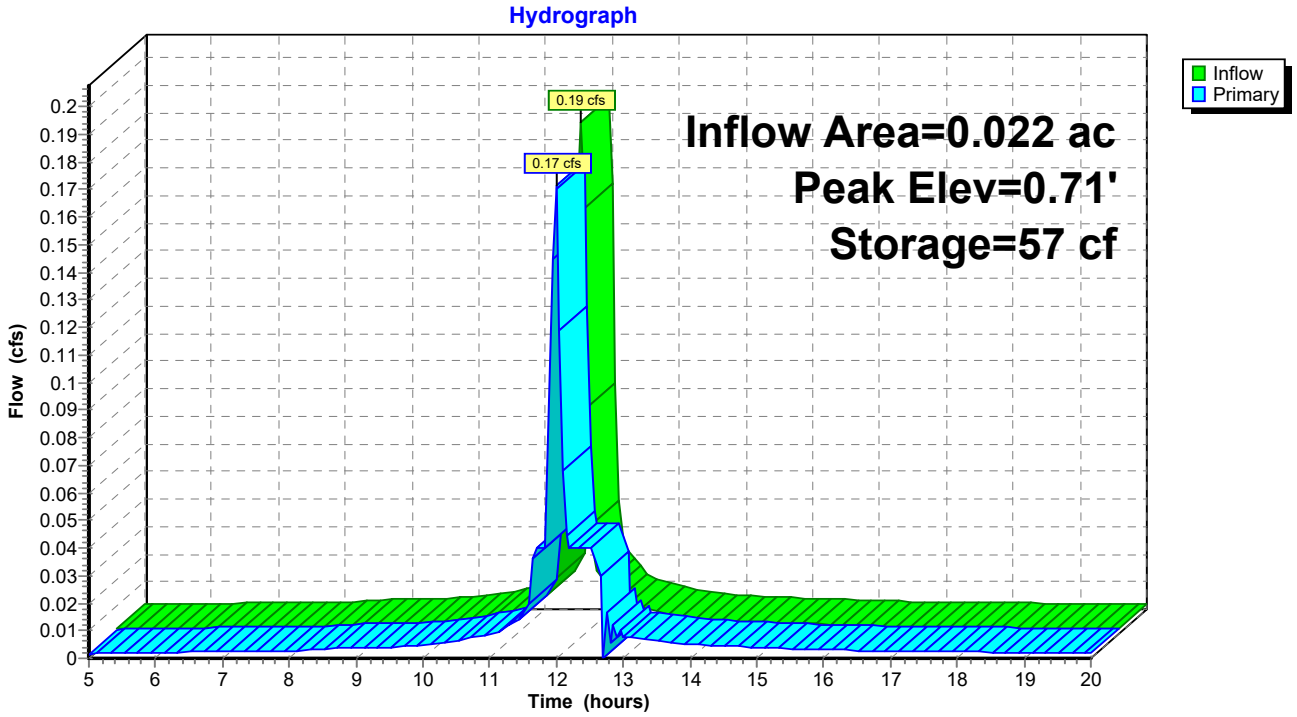
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.17 cfs @ 11.99 hrs HW=0.70' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 0.53 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.04 cfs)
- **3=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 1.25 fps)

Pond 8P: DRIP FILTER



Summary for Pond 9P: DRIP FILTER

Inflow Area = 0.027 ac,100.00% Impervious, Inflow Depth > 5.09" for 25 YEAR event
Inflow = 0.23 cfs @ 11.95 hrs, Volume= 0.012 af
Outflow = 0.22 cfs @ 11.97 hrs, Volume= 0.012 af, Atten= 2%, Lag= 1.4 min
Primary = 0.22 cfs @ 11.97 hrs, Volume= 0.012 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.76' @ 11.97 hrs Surf.Area= 200 sf Storage= 61 cf

Plug-Flow detention time= 4.1 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 4.0 min (732.6 - 728.6)

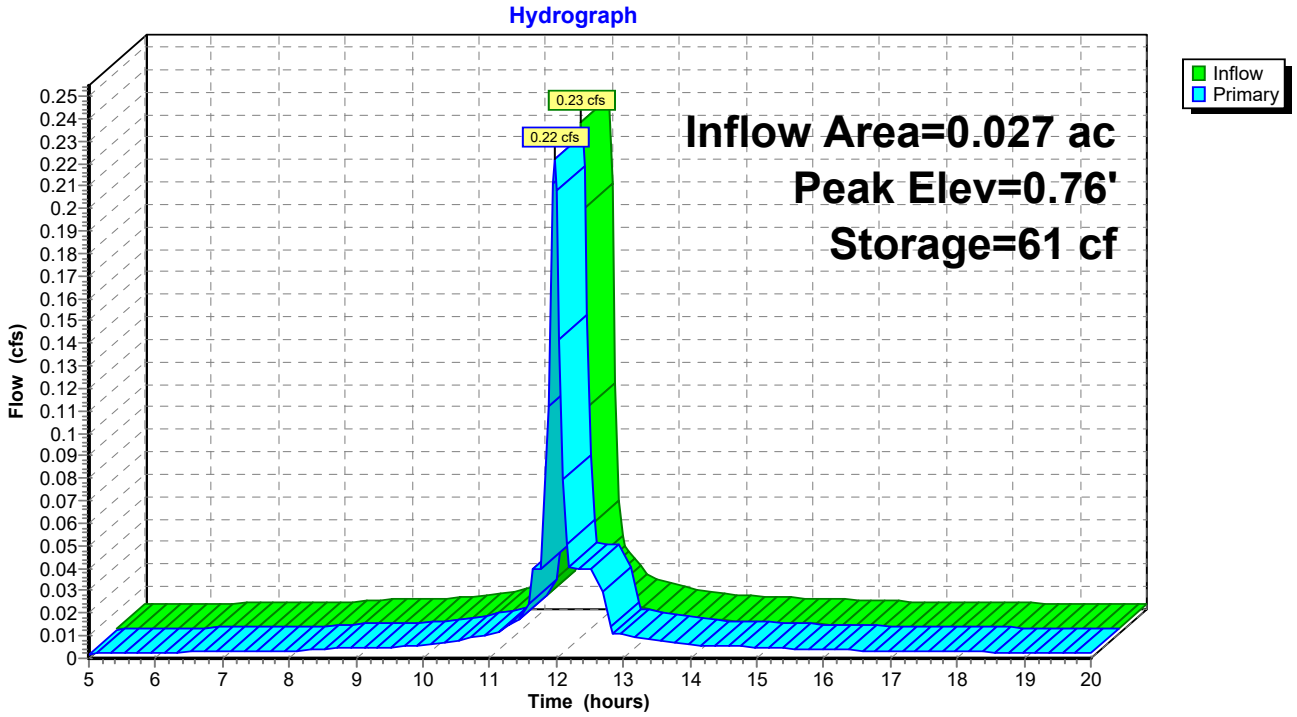
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.21 cfs @ 11.97 hrs HW=0.74' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 0.53 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.04 cfs)
- **3=Broad-Crested Rectangular Weir** (Weir Controls 0.17 cfs @ 1.39 fps)

Pond 9P: DRIP FILTER



Summary for Pond 10P: DRIP FILTER

Inflow Area = 0.037 ac,100.00% Impervious, Inflow Depth > 5.09" for 25 YEAR event
Inflow = 0.31 cfs @ 11.95 hrs, Volume= 0.016 af
Outflow = 0.29 cfs @ 11.97 hrs, Volume= 0.016 af, Atten= 4%, Lag= 1.1 min
Primary = 0.29 cfs @ 11.97 hrs, Volume= 0.016 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.81' @ 11.97 hrs Surf.Area= 200 sf Storage= 65 cf

Plug-Flow detention time= 3.9 min calculated for 0.016 af (100% of inflow)
Center-of-Mass det. time= 3.8 min (732.4 - 728.6)

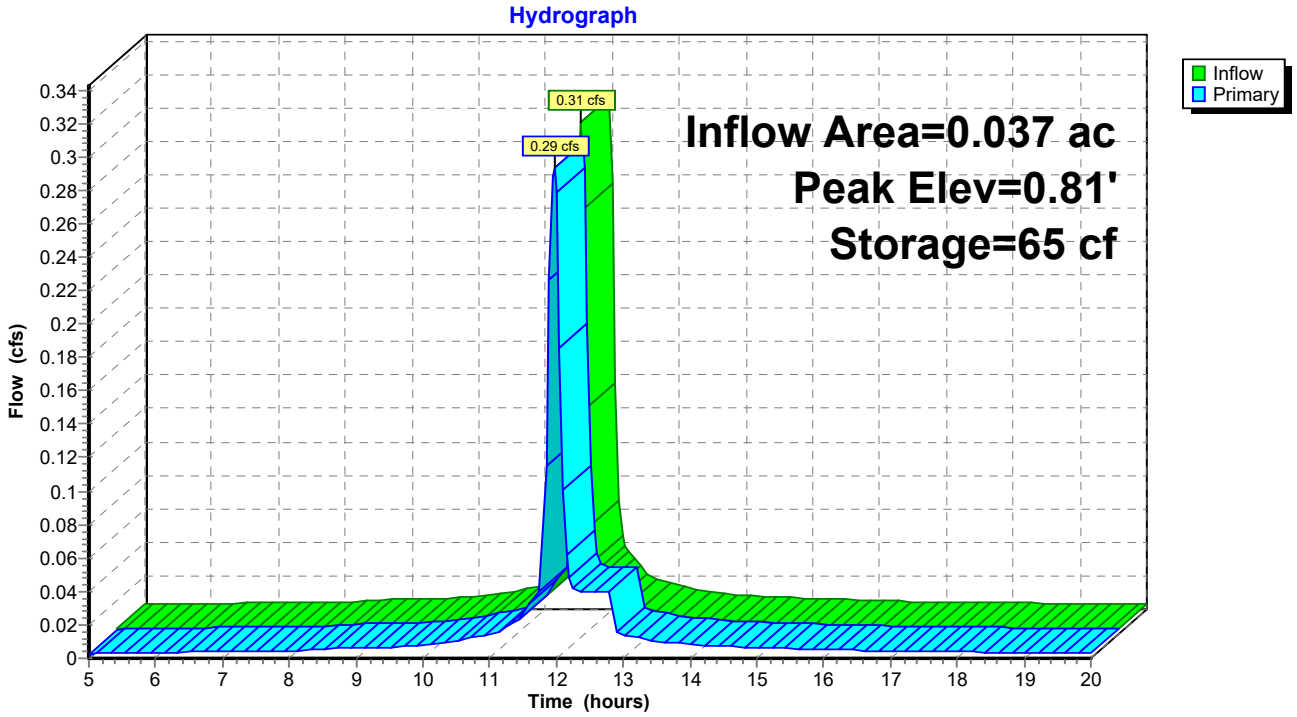
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.28 cfs @ 11.97 hrs HW=0.81' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 0.54 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.04 cfs)
- **3=Broad-Crested Rectangular Weir** (Weir Controls 0.24 cfs @ 1.59 fps)

Pond 10P: DRIP FILTER



Summary for Pond 11P: DRIP FILTER

Inflow Area = 0.026 ac,100.00% Impervious, Inflow Depth > 5.09" for 25 YEAR event
Inflow = 0.22 cfs @ 11.95 hrs, Volume= 0.011 af
Outflow = 0.22 cfs @ 11.97 hrs, Volume= 0.011 af, Atten= 2%, Lag= 1.5 min
Primary = 0.22 cfs @ 11.97 hrs, Volume= 0.011 af
Routed to Reach SP1 : SUMMATION POINT 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.75' @ 11.97 hrs Surf.Area= 200 sf Storage= 60 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.0 min (732.6 - 728.6)

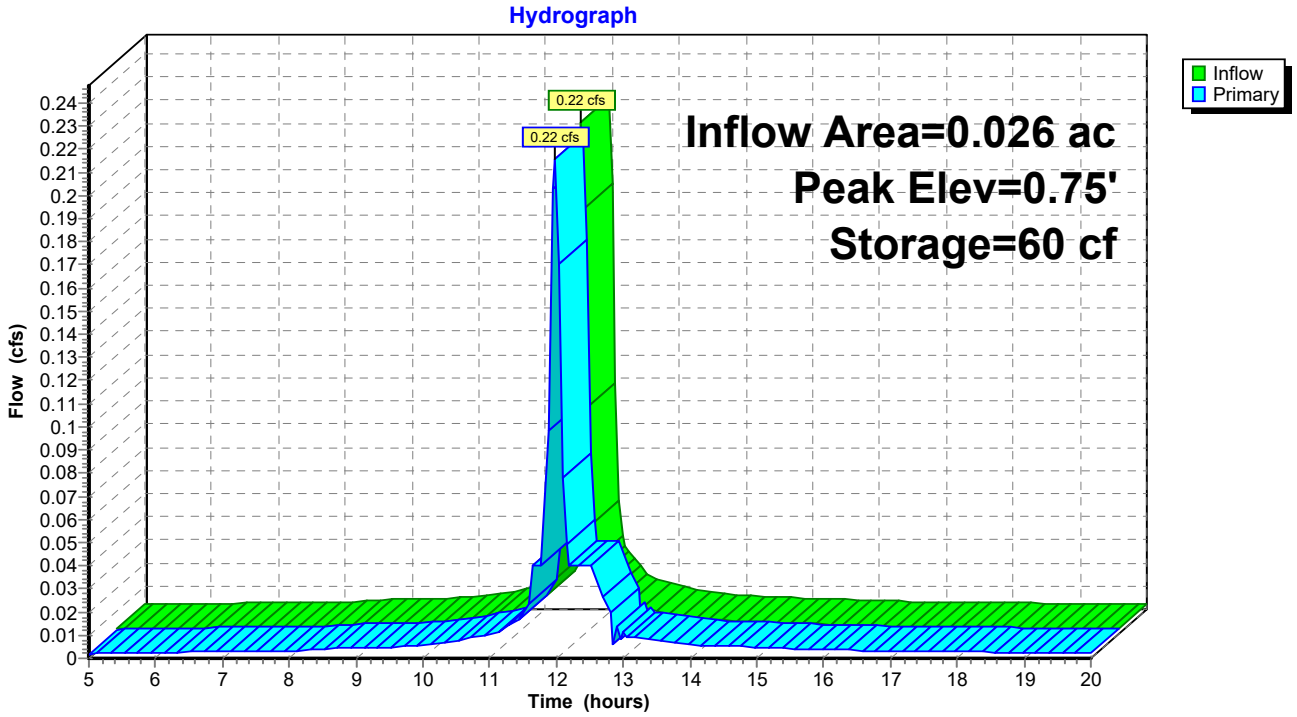
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	80 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 200 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	200	0	0
1.00	200	200	200

Device	Routing	Invert	Outlet Devices
#1	Primary	-2.00'	**4.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= -2.00' / -2.01' S= 0.0010 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf
#2	Device 1	0.00'	**0.04 cfs Exfiltration at all elevations**
#3	Primary	0.50'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.20 cfs @ 11.97 hrs HW=0.74' (Free Discharge)
- **1=Culvert** (Passes 0.04 cfs of 0.53 cfs potential flow)
  - **2=Exfiltration** (Exfiltration Controls 0.04 cfs)
- **3=Broad-Crested Rectangular Weir** (Weir Controls 0.16 cfs @ 1.37 fps)

Pond 11P: DRIP FILTER



Summary for Pond CB 1: CB1

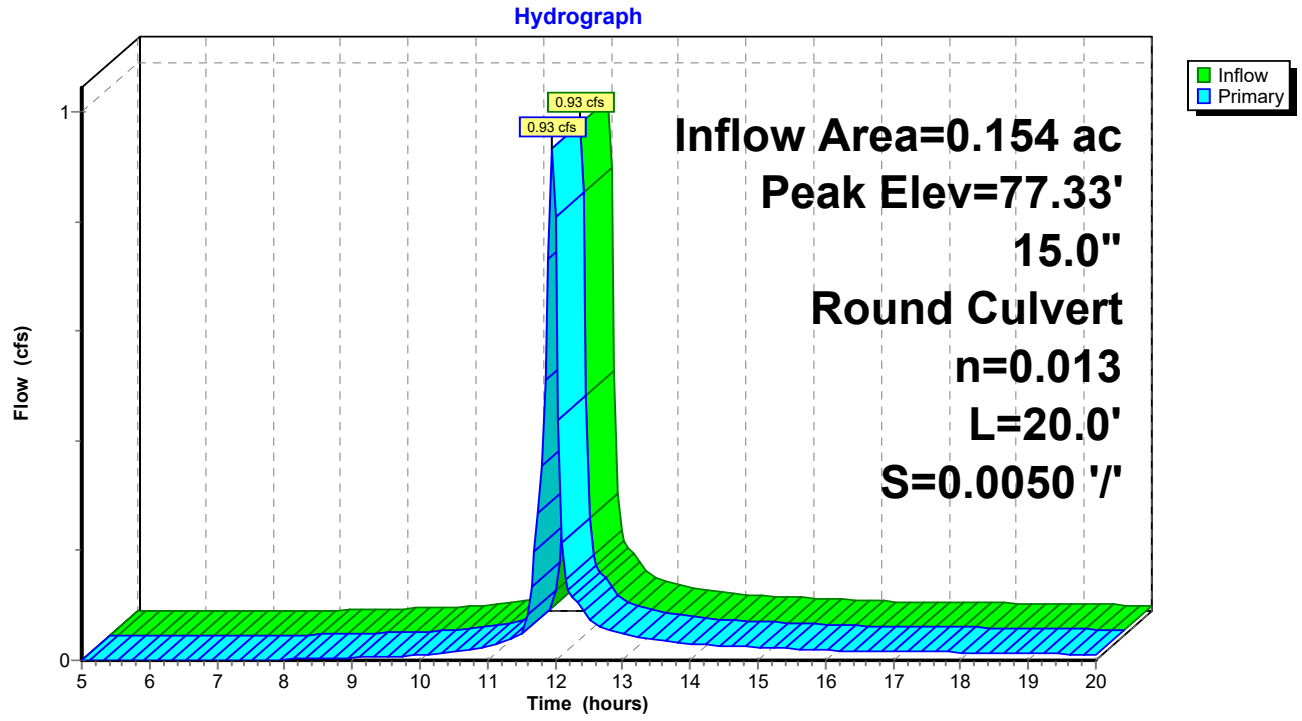
Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 3.16" for 25 YEAR event
Inflow = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af
Outflow = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af
Routed to Pond CB 2 : CB2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.33' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.75'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.75' / 76.65' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.91 cfs @ 11.96 hrs HW=77.32' (Free Discharge)
1=Culvert (Barrel Controls 0.91 cfs @ 2.46 fps)

Pond CB 1: CB1



Summary for Pond CB 10: CB10

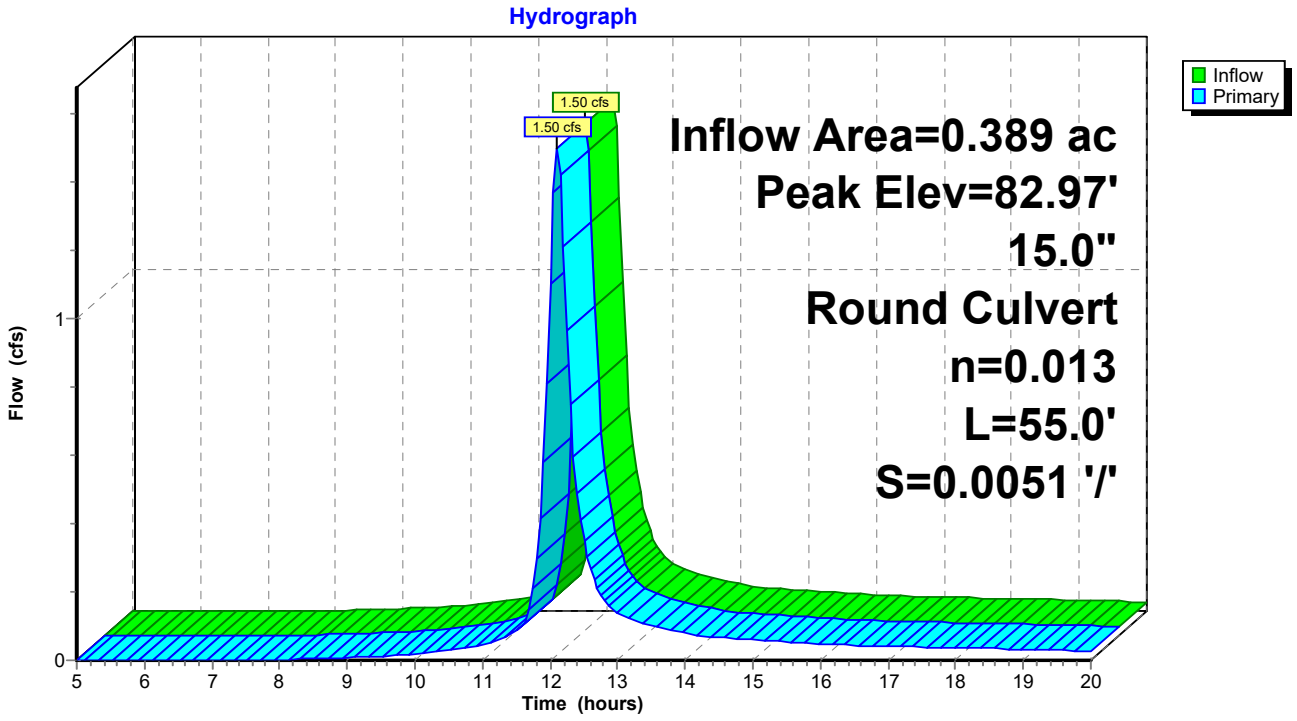
Inflow Area = 0.389 ac, 14.97% Impervious, Inflow Depth > 3.05" for 25 YEAR event
Inflow = 1.50 cfs @ 12.11 hrs, Volume= 0.099 af
Outflow = 1.50 cfs @ 12.11 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min
Primary = 1.50 cfs @ 12.11 hrs, Volume= 0.099 af
Routed to Pond CB 9 : CB9

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.97' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.25'	**15.0" Round Culvert** L= 55.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.25' / 81.97' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.49 cfs @ 12.11 hrs HW=82.97' (Free Discharge)
1=Culvert (Barrel Controls 1.49 cfs @ 2.96 fps)

Pond CB 10: CB10



Summary for Pond CB 11: CB11

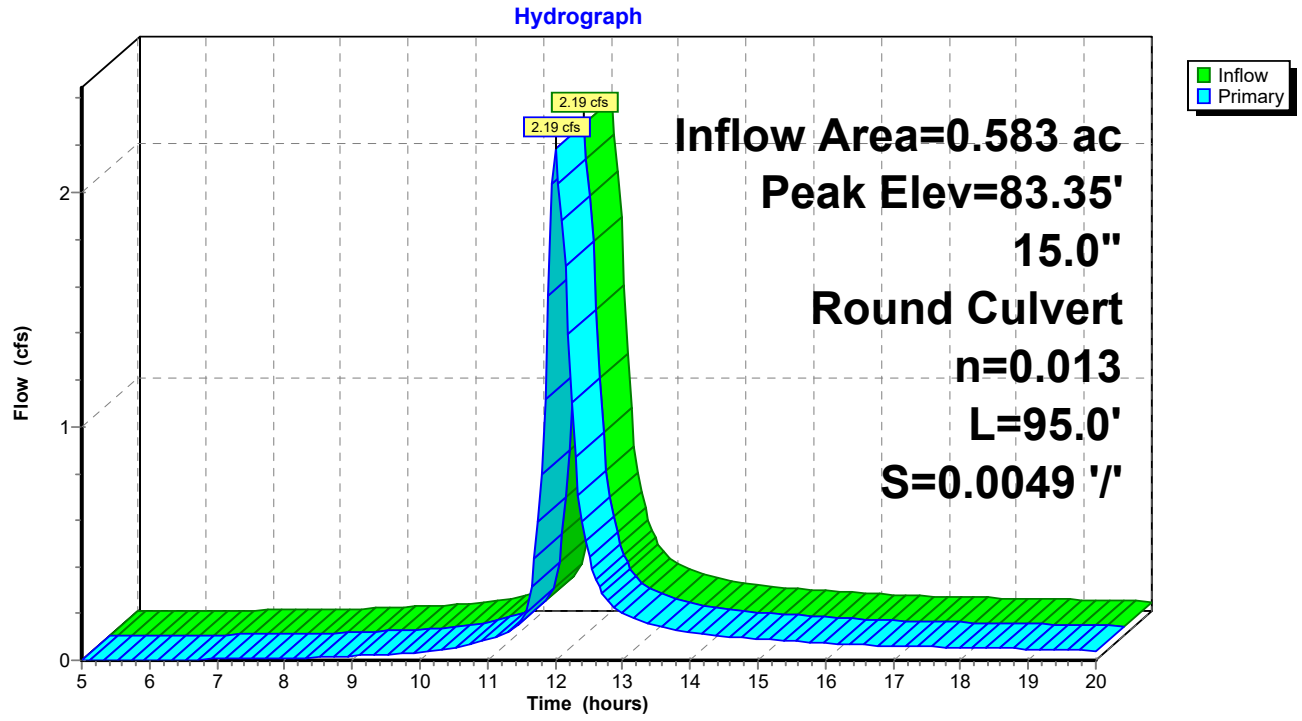
Inflow Area = 0.583 ac, 27.27% Impervious, Inflow Depth > 3.21" for 25 YEAR event
Inflow = 2.19 cfs @ 12.00 hrs, Volume= 0.156 af
Outflow = 2.19 cfs @ 12.00 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min
Primary = 2.19 cfs @ 12.00 hrs, Volume= 0.156 af
Routed to Pond CB 8 : CB8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.35' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.47'	**15.0" Round Culvert** L= 95.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.47' / 82.00' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.19 cfs @ 12.00 hrs HW=83.35' (Free Discharge)
1=Culvert (Barrel Controls 2.19 cfs @ 3.33 fps)

Pond CB 11: CB11



Summary for Pond CB 12: CB12

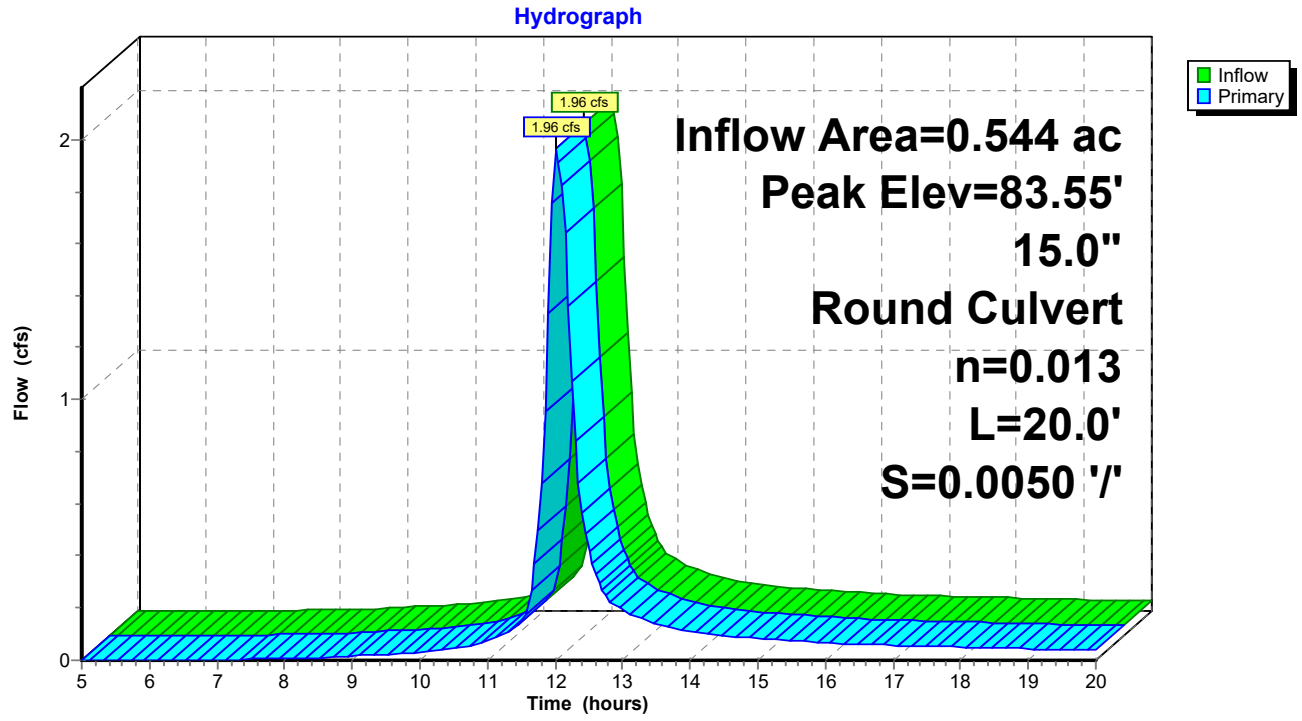
Inflow Area = 0.544 ac, 23.73% Impervious, Inflow Depth > 3.15" for 25 YEAR event
Inflow = 1.96 cfs @ 12.02 hrs, Volume= 0.143 af
Outflow = 1.96 cfs @ 12.02 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min
Primary = 1.96 cfs @ 12.02 hrs, Volume= 0.143 af
Routed to Pond CB 11 : CB11

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.55' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.67'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.67' / 82.57' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.94 cfs @ 12.02 hrs HW=83.55' (Free Discharge)
1=Culvert (Barrel Controls 1.94 cfs @ 2.96 fps)

Pond CB 12: CB12



Summary for Pond CB 13: CB13

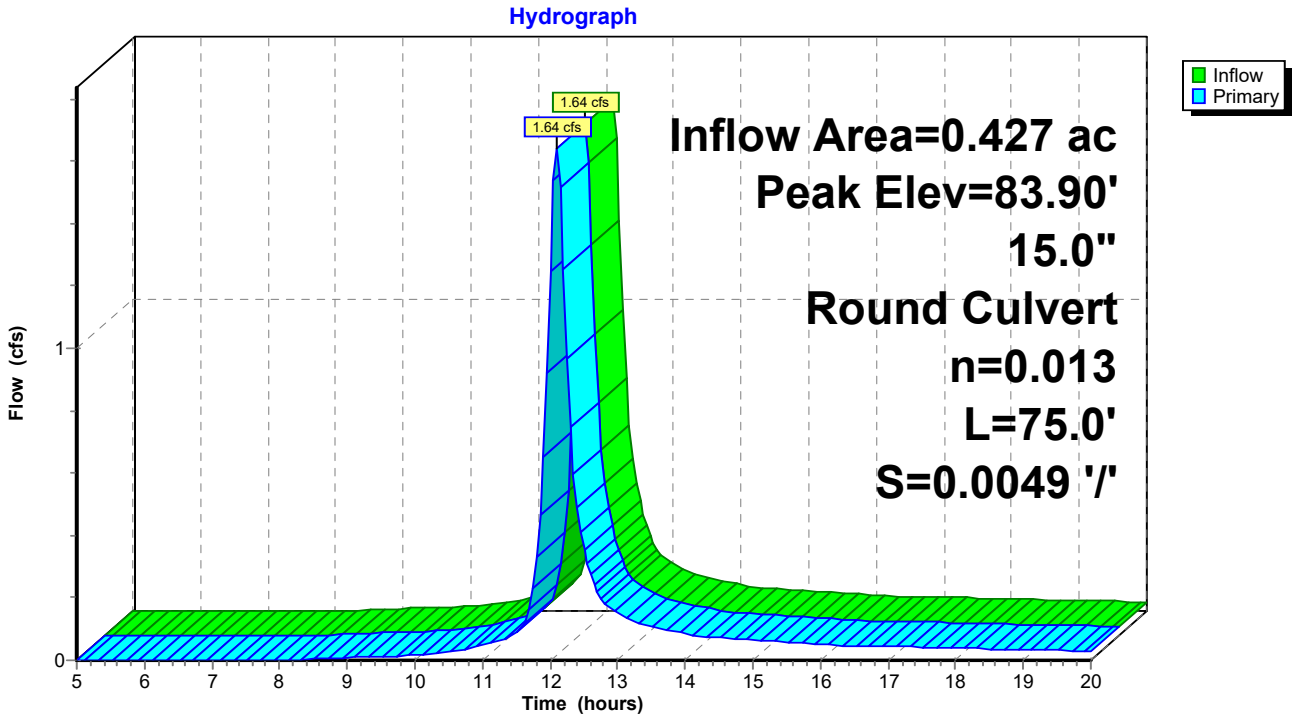
Inflow Area = 0.427 ac, 11.42% Impervious, Inflow Depth > 2.96" for 25 YEAR event
Inflow = 1.64 cfs @ 12.10 hrs, Volume= 0.105 af
Outflow = 1.64 cfs @ 12.10 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min
Primary = 1.64 cfs @ 12.10 hrs, Volume= 0.105 af
Routed to Pond CB 12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.90' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	83.15'	**15.0" Round Culvert** L= 75.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 83.15' / 82.78' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.64 cfs @ 12.10 hrs HW=83.90' (Free Discharge)
1=Culvert (Barrel Controls 1.64 cfs @ 3.06 fps)

Pond CB 13: CB13



Summary for Pond CB 14: CB 14

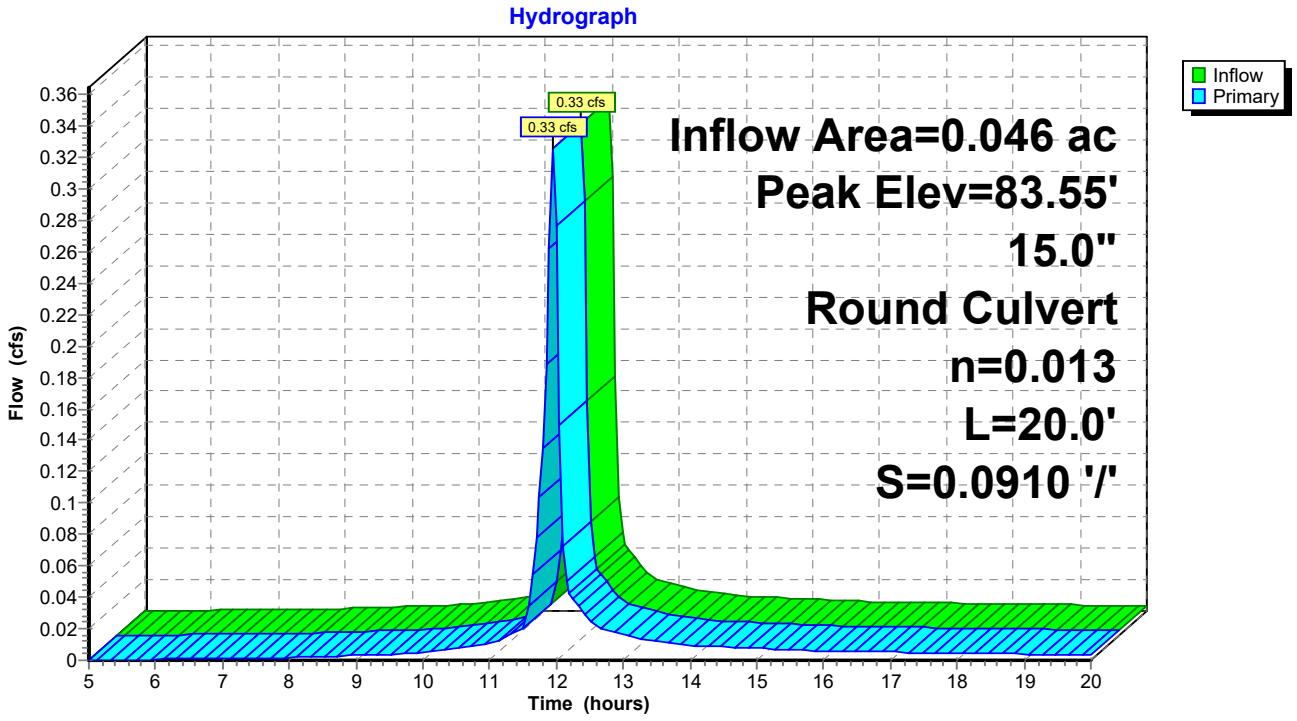
Inflow Area = 0.046 ac, 78.66% Impervious, Inflow Depth > 3.85" for 25 YEAR event
Inflow = 0.33 cfs @ 11.95 hrs, Volume= 0.015 af
Outflow = 0.33 cfs @ 11.95 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 11.95 hrs, Volume= 0.015 af
Routed to Pond CB 15 : CB 15

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.55' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	83.25'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 83.25' / 81.43' S= 0.0910 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.32 cfs @ 11.95 hrs HW=83.54' (Free Discharge)
1=Culvert (Inlet Controls 0.32 cfs @ 1.46 fps)

Pond CB 14: CB 14



Summary for Pond CB 15: CB 15

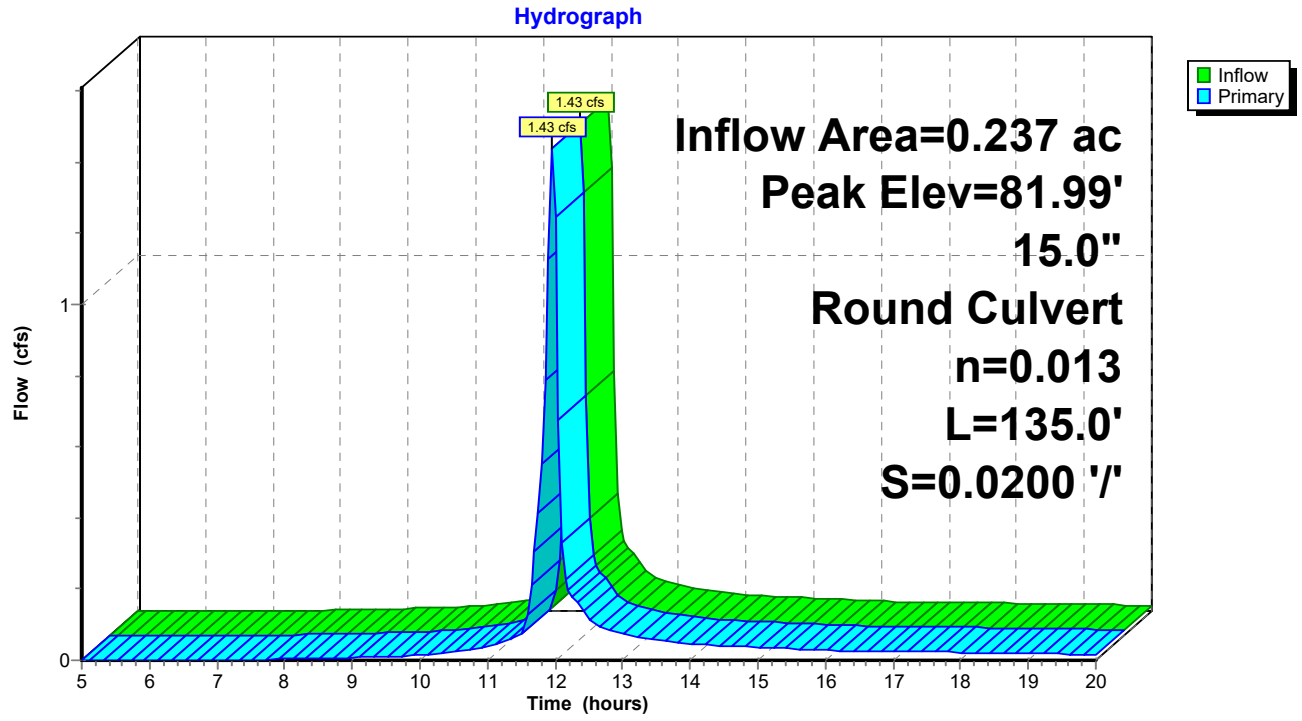
Inflow Area = 0.237 ac, 65.89% Impervious, Inflow Depth > 3.17" for 25 YEAR event
Inflow = 1.43 cfs @ 11.96 hrs, Volume= 0.063 af
Outflow = 1.43 cfs @ 11.96 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min
Primary = 1.43 cfs @ 11.96 hrs, Volume= 0.063 af
Routed to Pond CB 18 : CB 18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 81.99' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.33'	**15.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.33' / 78.63' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.41 cfs @ 11.96 hrs HW=81.98' (Free Discharge)
1=Culvert (Inlet Controls 1.41 cfs @ 2.17 fps)

Pond CB 15: CB 15



Summary for Pond CB 16: CB 16

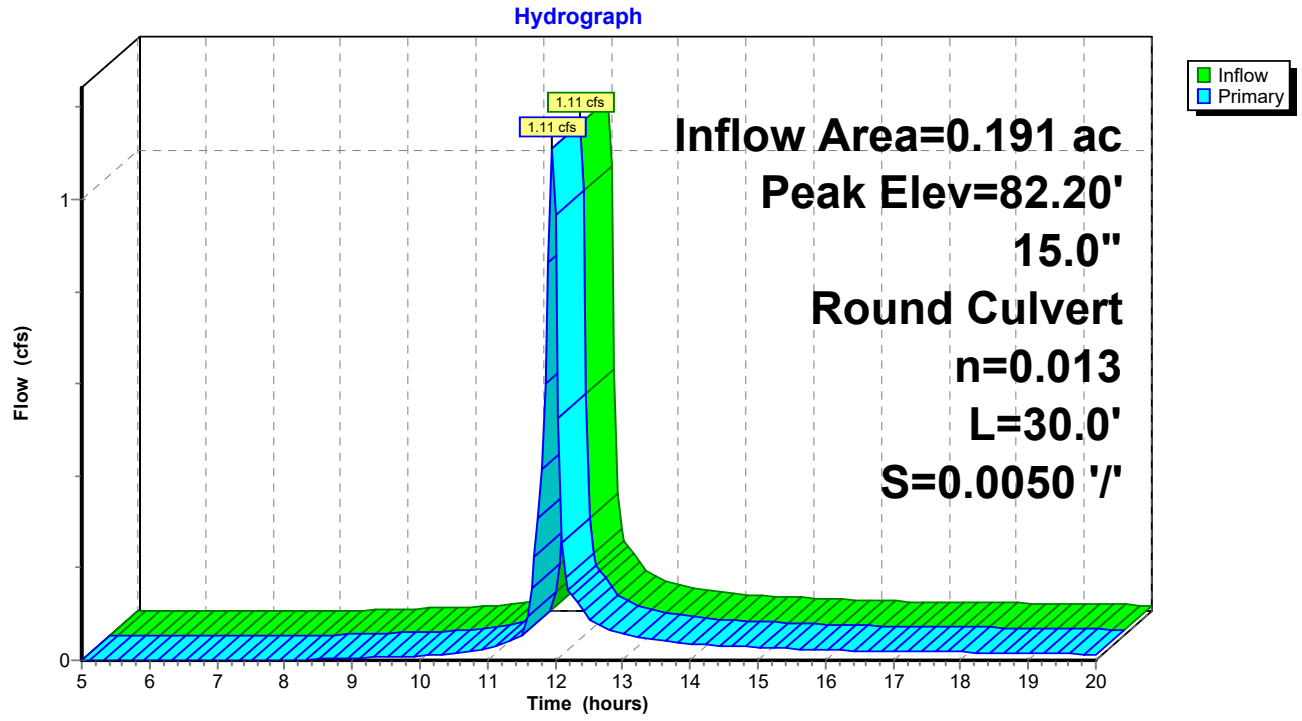
Inflow Area = 0.191 ac, 62.83% Impervious, Inflow Depth > 3.00" for 25 YEAR event
Inflow = 1.11 cfs @ 11.96 hrs, Volume= 0.048 af
Outflow = 1.11 cfs @ 11.96 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
Primary = 1.11 cfs @ 11.96 hrs, Volume= 0.048 af
Routed to Pond CB 15 : CB 15

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.20' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.58'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.58' / 81.43' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.09 cfs @ 11.96 hrs HW=82.20' (Free Discharge)
1=Culvert (Barrel Controls 1.09 cfs @ 2.63 fps)

Pond CB 16: CB 16



Summary for Pond CB 17: CB 17

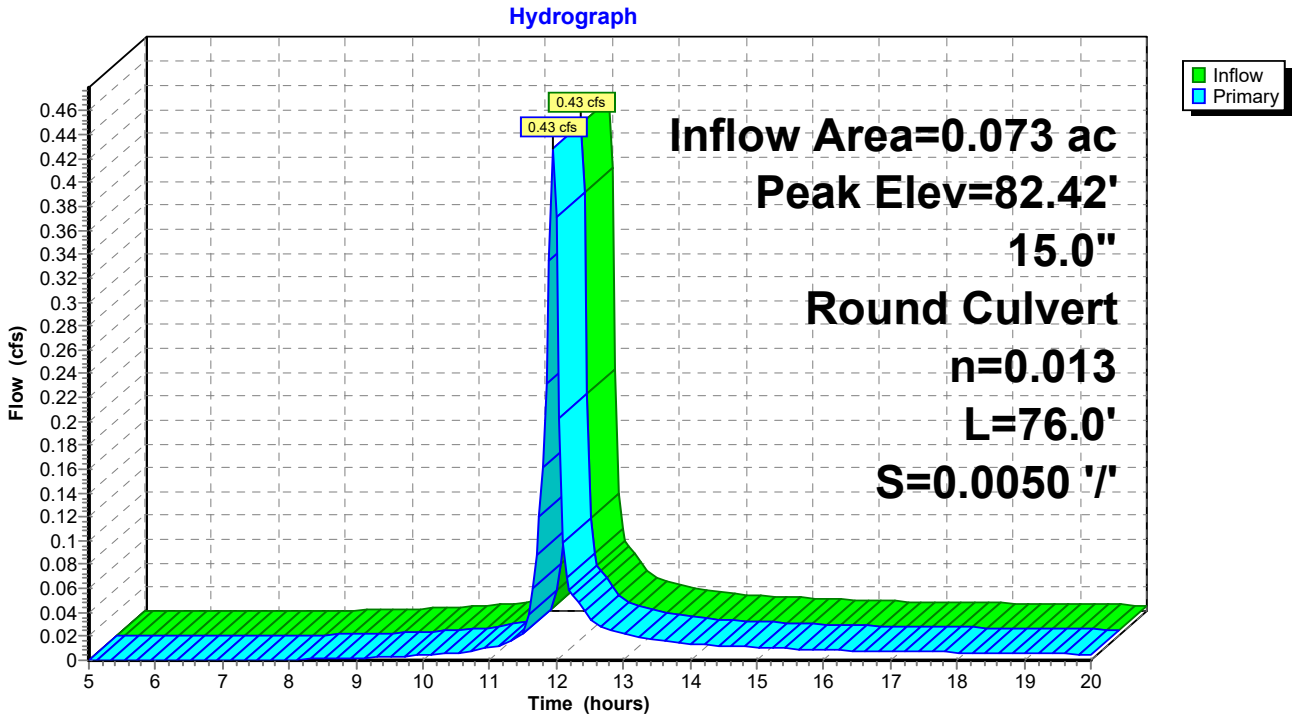
Inflow Area = 0.073 ac, 63.75% Impervious, Inflow Depth > 3.06" for 25 YEAR event
Inflow = 0.43 cfs @ 11.96 hrs, Volume= 0.019 af
Outflow = 0.43 cfs @ 11.96 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min
Primary = 0.43 cfs @ 11.96 hrs, Volume= 0.019 af
Routed to Pond CB 16 : CB 16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.42' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.06'	**15.0" Round Culvert** L= 76.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.06' / 81.68' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.42 cfs @ 11.96 hrs HW=82.41' (Free Discharge)
1=Culvert (Barrel Controls 0.42 cfs @ 2.20 fps)

Pond CB 17: CB 17



Summary for Pond CB 18: CB 18

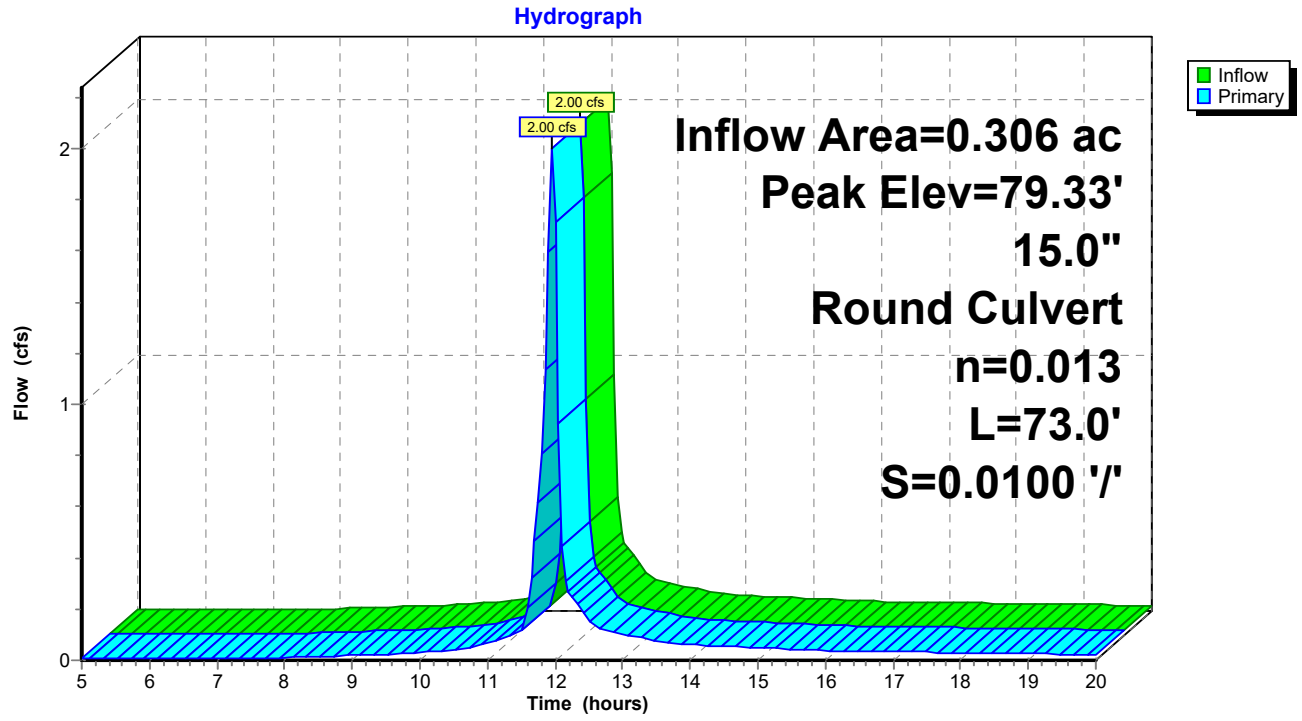
Inflow Area = 0.306 ac, 72.86% Impervious, Inflow Depth > 3.56" for 25 YEAR event
Inflow = 2.00 cfs @ 11.95 hrs, Volume= 0.091 af
Outflow = 2.00 cfs @ 11.95 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min
Primary = 2.00 cfs @ 11.95 hrs, Volume= 0.091 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.33' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.53'	**15.0" Round Culvert** L= 73.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.53' / 77.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.97 cfs @ 11.95 hrs HW=79.32' (Free Discharge)
1=Culvert (Inlet Controls 1.97 cfs @ 2.40 fps)

Pond CB 18: CB 18



Summary for Pond CB 2: CB2

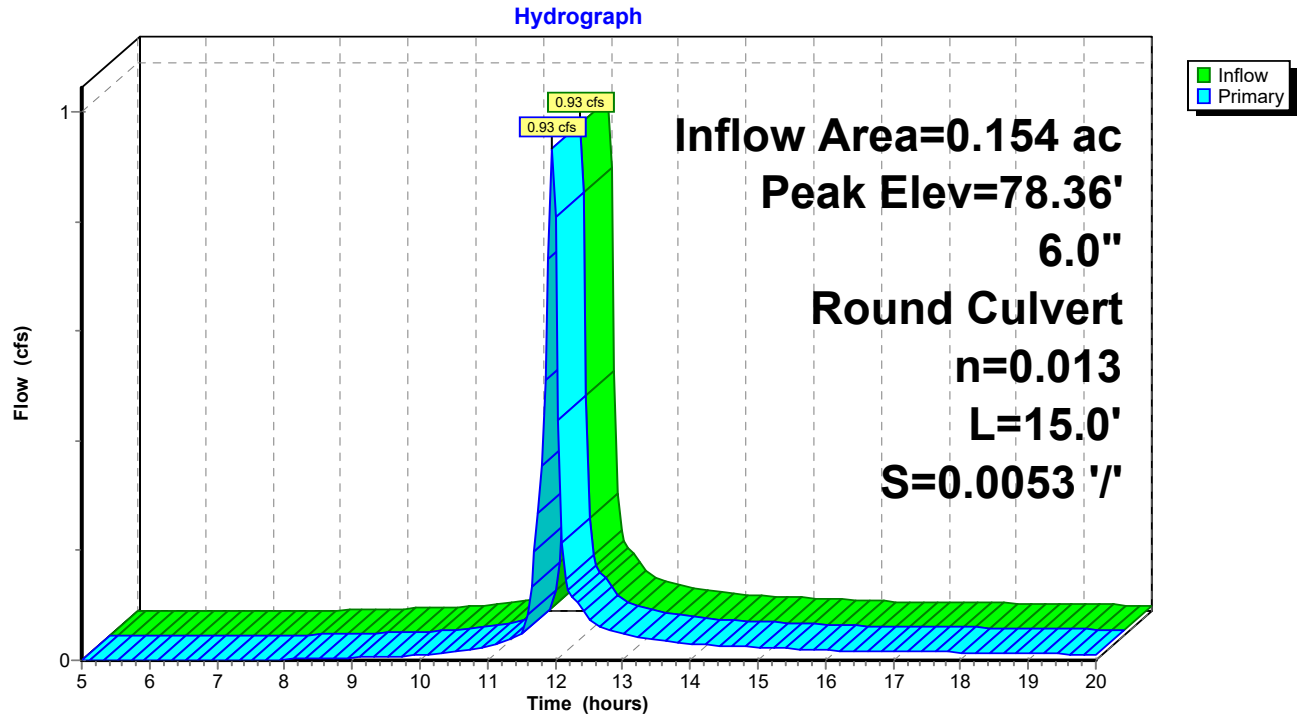
Inflow Area = 0.154 ac, 39.17% Impervious, Inflow Depth > 3.16" for 25 YEAR event
Inflow = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af
Outflow = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 11.96 hrs, Volume= 0.041 af
Routed to Pond 4P : GUSF 2

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 78.36' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.55'	**6.0" Round Culvert** L= 15.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.55' / 76.47' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.92 cfs @ 11.96 hrs HW=78.31' (Free Discharge)
1=Culvert (Inlet Controls 0.92 cfs @ 4.67 fps)

Pond CB 2: CB2



Summary for Pond CB 20: CB20

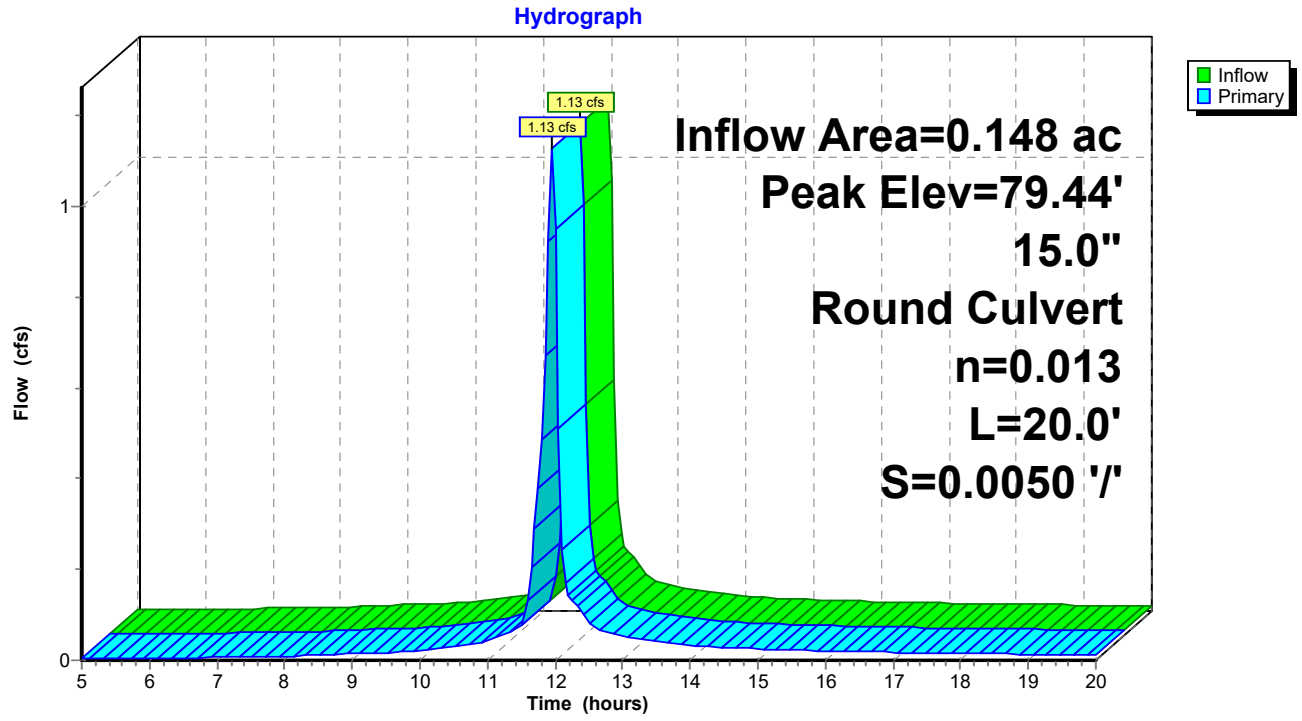
Inflow Area = 0.148 ac, 75.28% Impervious, Inflow Depth > 4.26" for 25 YEAR event
Inflow = 1.13 cfs @ 11.95 hrs, Volume= 0.053 af
Outflow = 1.13 cfs @ 11.95 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 11.95 hrs, Volume= 0.053 af
Routed to Pond CB 21 : CB21

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.44' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.80'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.80' / 78.70' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.12 cfs @ 11.95 hrs HW=79.44' (Free Discharge)
1=Culvert (Barrel Controls 1.12 cfs @ 2.59 fps)

Pond CB 20: CB20



Summary for Pond CB 21: CB21

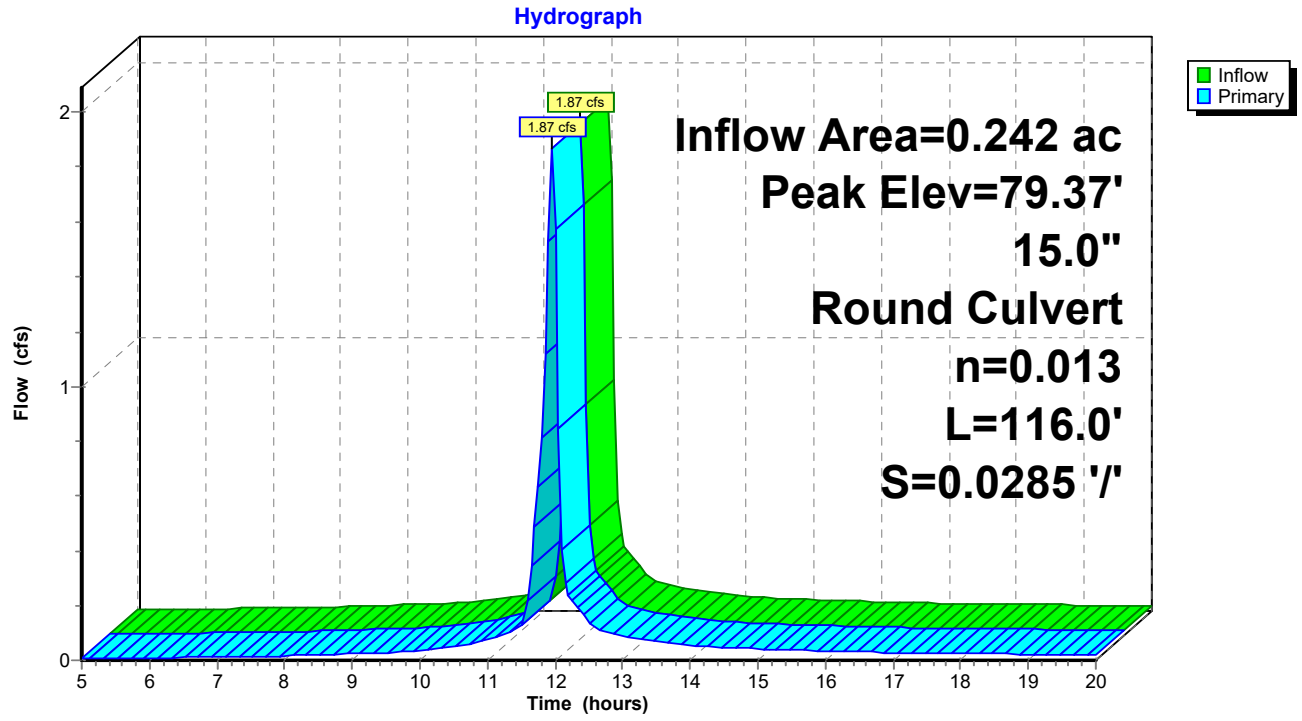
Inflow Area = 0.242 ac, 77.92% Impervious, Inflow Depth > 4.34" for 25 YEAR event
Inflow = 1.87 cfs @ 11.95 hrs, Volume= 0.088 af
Outflow = 1.87 cfs @ 11.95 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min
Primary = 1.87 cfs @ 11.95 hrs, Volume= 0.088 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.37' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.60'	**15.0" Round Culvert** L= 116.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.60' / 75.29' S= 0.0285 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.86 cfs @ 11.95 hrs HW=79.37' (Free Discharge)
1=Culvert (Inlet Controls 1.86 cfs @ 2.35 fps)

Pond CB 21: CB21



Summary for Pond CB 22: CB22

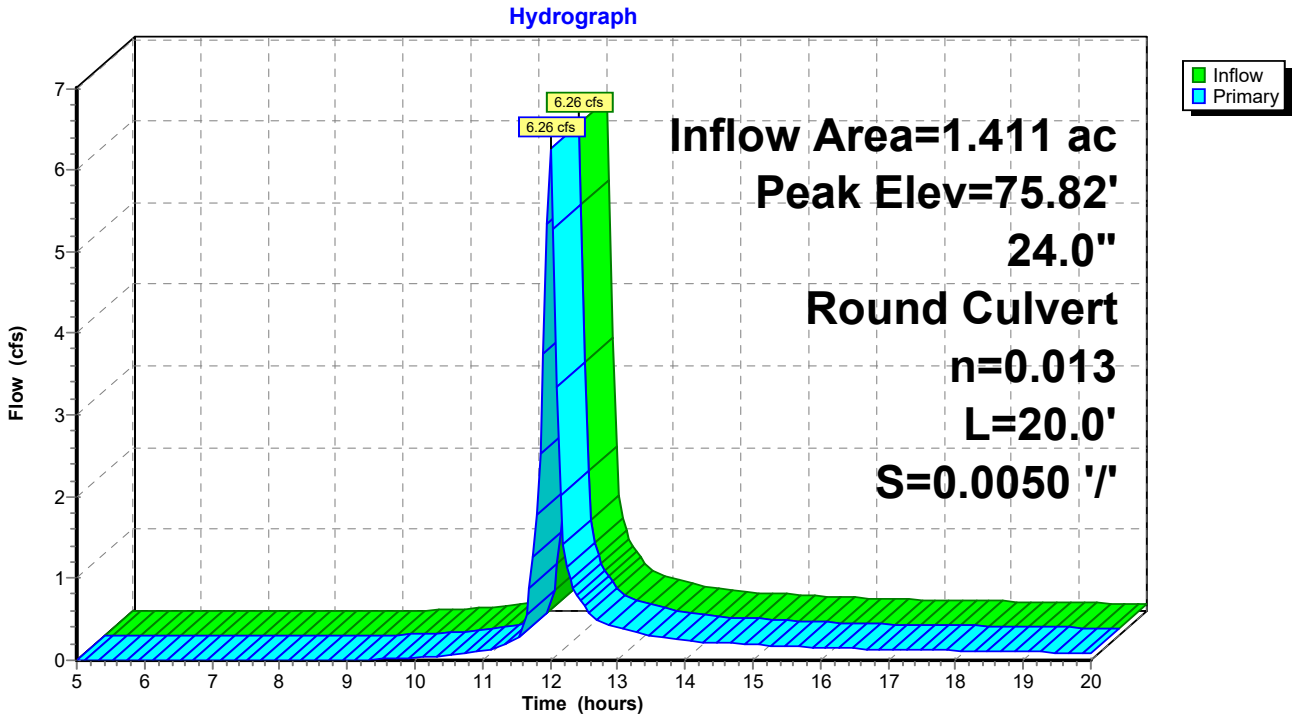
Inflow Area = 1.411 ac, 26.96% Impervious, Inflow Depth > 2.51" for 25 YEAR event
Inflow = 6.26 cfs @ 12.00 hrs, Volume= 0.295 af
Outflow = 6.26 cfs @ 12.00 hrs, Volume= 0.295 af, Atten= 0%, Lag= 0.0 min
Primary = 6.26 cfs @ 12.00 hrs, Volume= 0.295 af
Routed to Pond CB 23 : CB23

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.82' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.40'	**24.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.40' / 74.30' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.25 cfs @ 12.00 hrs HW=75.81' (Free Discharge)
1=Culvert (Barrel Controls 6.25 cfs @ 3.70 fps)

Pond CB 22: CB22



Summary for Pond CB 23: CB23

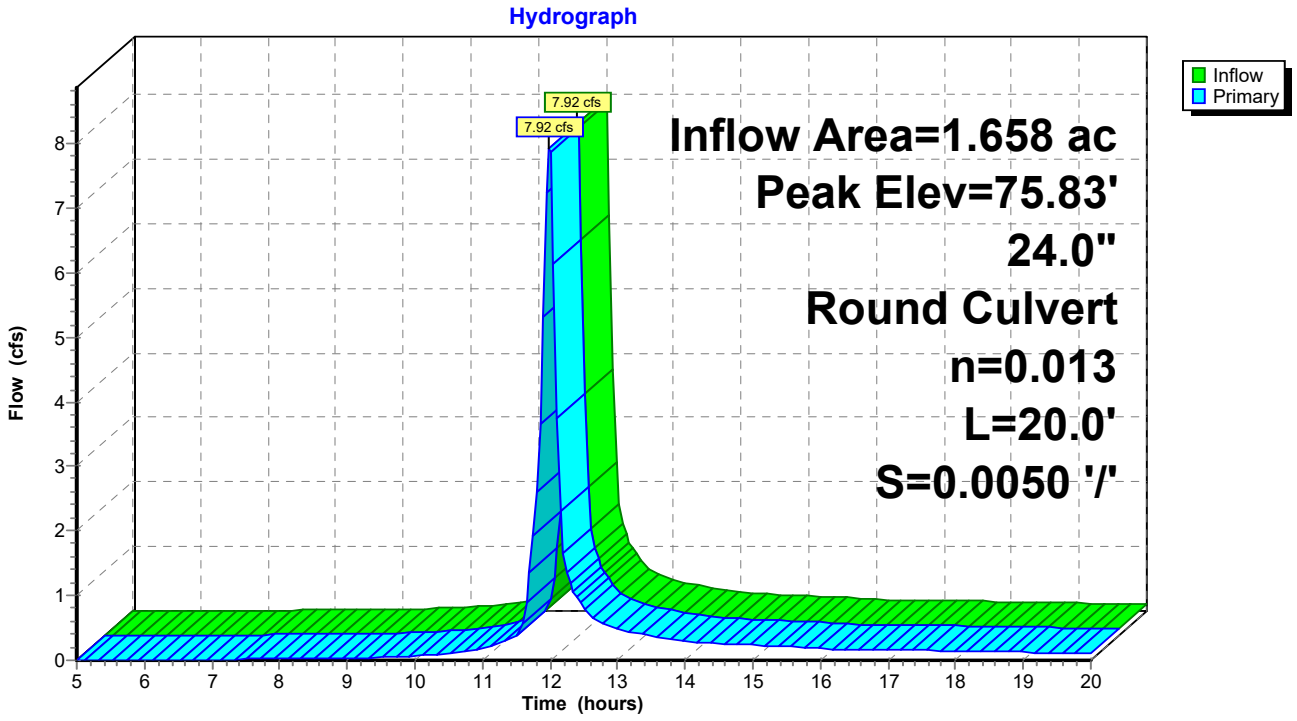
Inflow Area = 1.658 ac, 34.43% Impervious, Inflow Depth > 2.78" for 25 YEAR event
Inflow = 7.92 cfs @ 11.99 hrs, Volume= 0.385 af
Outflow = 7.92 cfs @ 11.99 hrs, Volume= 0.385 af, Atten= 0%, Lag= 0.0 min
Primary = 7.92 cfs @ 11.99 hrs, Volume= 0.385 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 75.83' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.20'	**24.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.20' / 74.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.71 cfs @ 11.99 hrs HW=75.80' (Free Discharge)
1=Culvert (Barrel Controls 7.71 cfs @ 3.91 fps)

Pond CB 23: CB23



Summary for Pond CB 24: CB 24

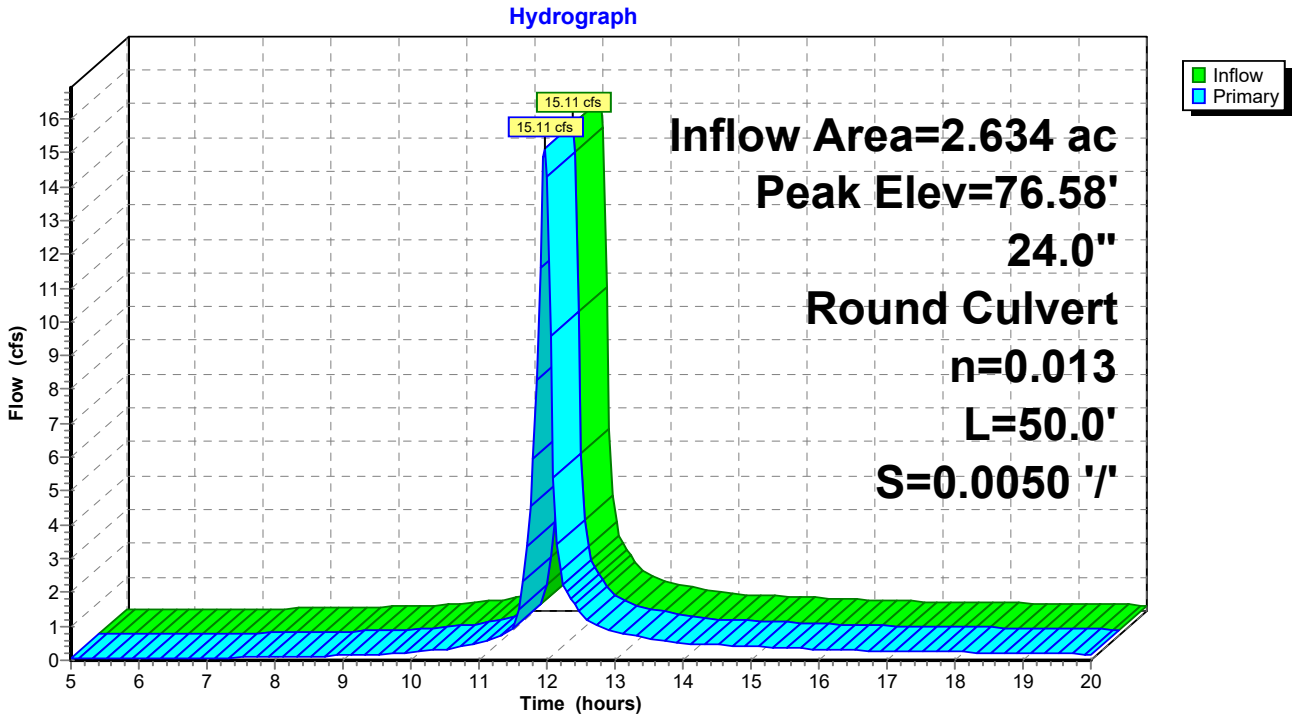
Inflow Area = 2.634 ac, 52.18% Impervious, Inflow Depth > 3.42" for 25 YEAR event
Inflow = 15.11 cfs @ 11.97 hrs, Volume= 0.750 af
Outflow = 15.11 cfs @ 11.97 hrs, Volume= 0.750 af, Atten= 0%, Lag= 0.0 min
Primary = 15.11 cfs @ 11.97 hrs, Volume= 0.750 af
Routed to Pond 2P : WETPOND B

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 76.58' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	74.00'	**24.0" Round Culvert** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 74.00' / 73.75' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=14.68 cfs @ 11.97 hrs HW=76.51' (Free Discharge)
1=Culvert (Inlet Controls 14.68 cfs @ 4.67 fps)

Pond CB 24: CB 24



Summary for Pond CB 25: CB25

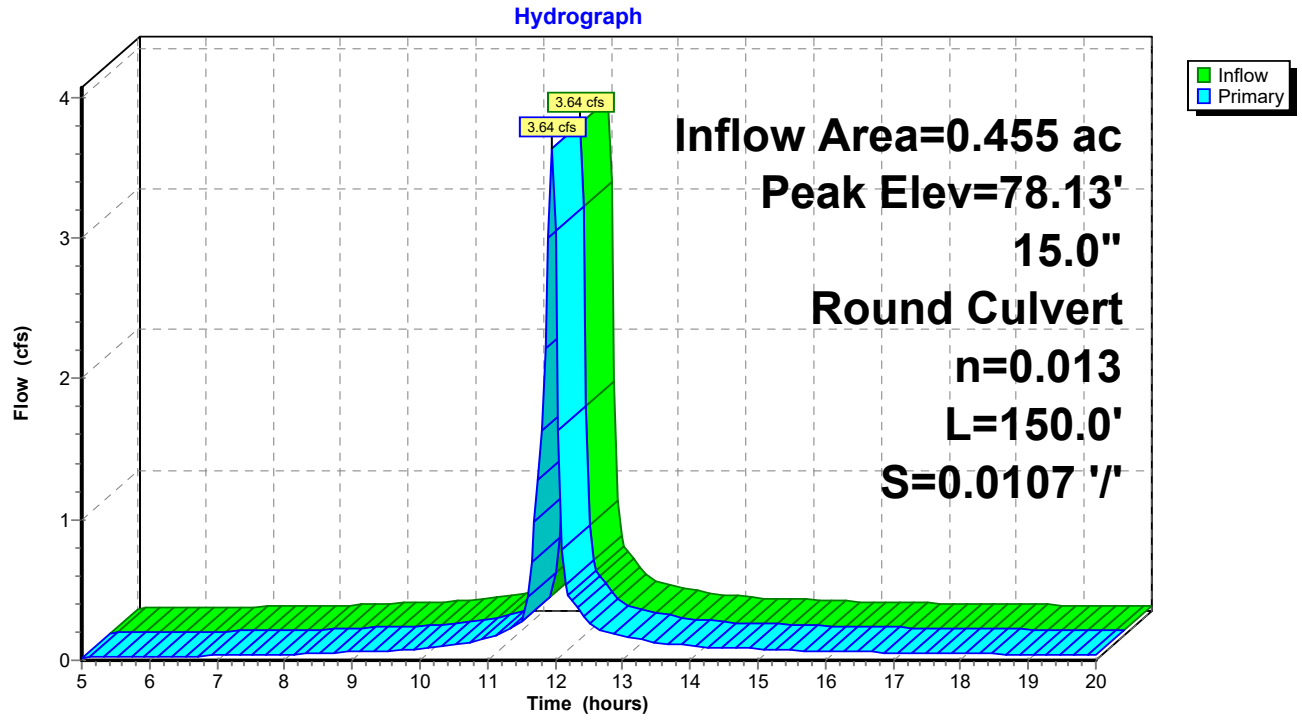
Inflow Area = 0.455 ac, 87.23% Impervious, Inflow Depth > 4.66" for 25 YEAR event
Inflow = 3.64 cfs @ 11.95 hrs, Volume= 0.177 af
Outflow = 3.64 cfs @ 11.95 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 3.64 cfs @ 11.95 hrs, Volume= 0.177 af
Routed to Pond CB 24 : CB 24

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 78.13' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.90'	**15.0" Round Culvert** L= 150.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.90' / 75.29' S= 0.0107 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.63 cfs @ 11.95 hrs HW=78.12' (Free Discharge)
1=Culvert (Inlet Controls 3.63 cfs @ 2.97 fps)

Pond CB 25: CB25



Summary for Pond CB 26: CB26

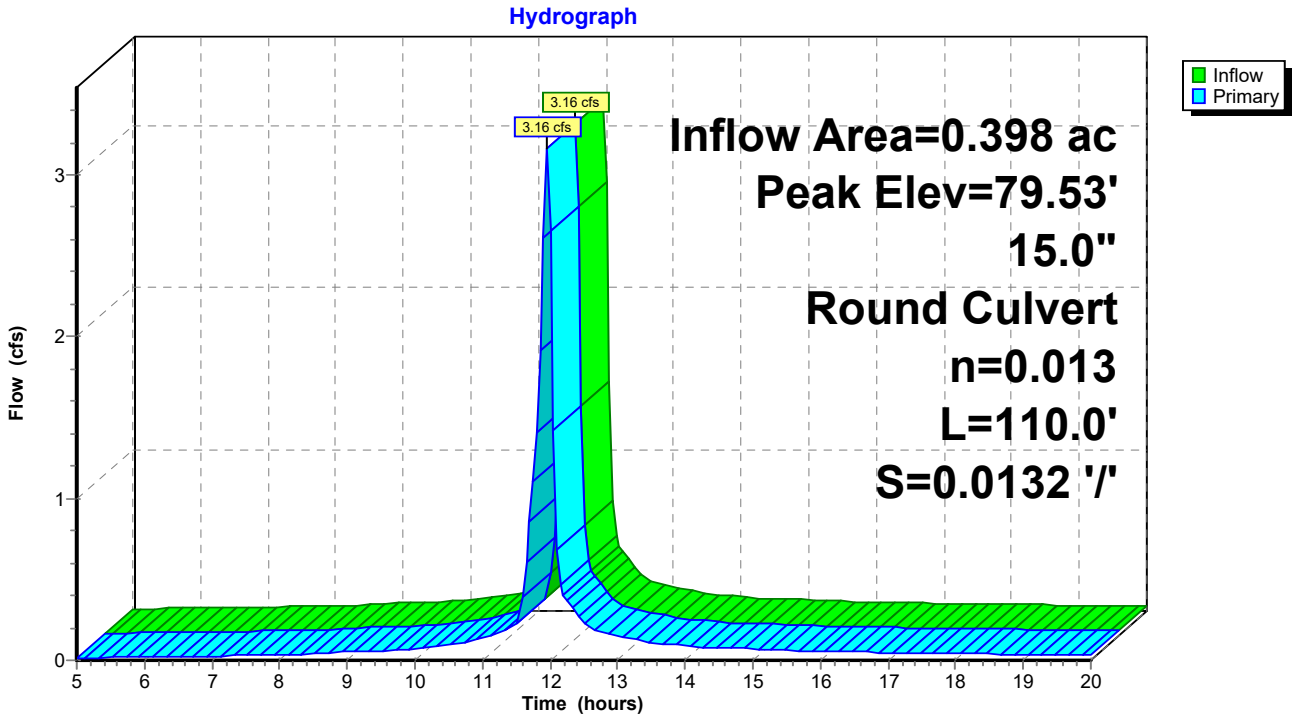
Inflow Area = 0.398 ac, 85.40% Impervious, Inflow Depth > 4.60" for 25 YEAR event
Inflow = 3.16 cfs @ 11.95 hrs, Volume= 0.152 af
Outflow = 3.16 cfs @ 11.95 hrs, Volume= 0.152 af, Atten= 0%, Lag= 0.0 min
Primary = 3.16 cfs @ 11.95 hrs, Volume= 0.152 af
Routed to Pond CB 25 : CB25

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.53' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.45'	**15.0" Round Culvert** L= 110.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.45' / 77.00' S= 0.0132 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.15 cfs @ 11.95 hrs HW=79.53' (Free Discharge)
1=Culvert (Inlet Controls 3.15 cfs @ 2.79 fps)

Pond CB 26: CB26



Summary for Pond CB 27: CB27

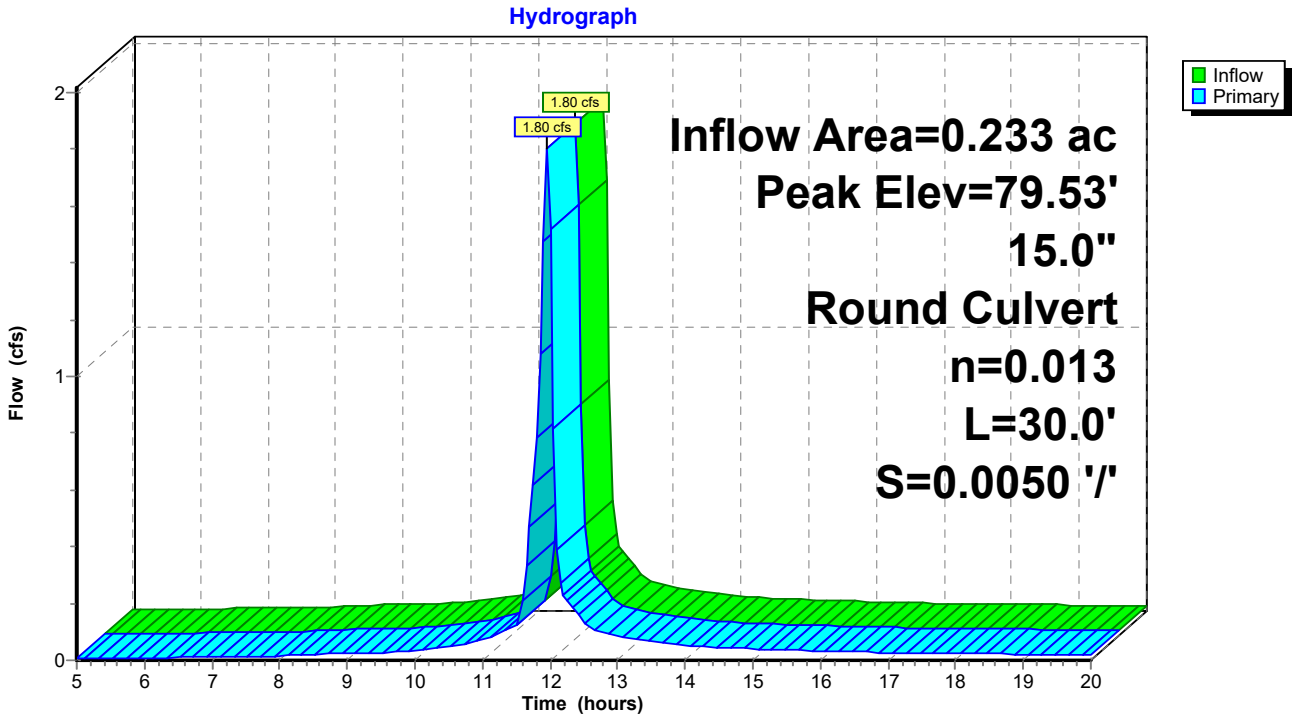
Inflow Area = 0.233 ac, 78.30% Impervious, Inflow Depth > 4.36" for 25 YEAR event
Inflow = 1.80 cfs @ 11.95 hrs, Volume= 0.085 af
Outflow = 1.80 cfs @ 11.95 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min
Primary = 1.80 cfs @ 11.95 hrs, Volume= 0.085 af
Routed to Pond CB 26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 79.53' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	78.70'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 78.70' / 78.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.79 cfs @ 11.95 hrs HW=79.52' (Free Discharge)
1=Culvert (Barrel Controls 1.79 cfs @ 2.97 fps)

Pond CB 27: CB27



Summary for Pond CB 4: CB4

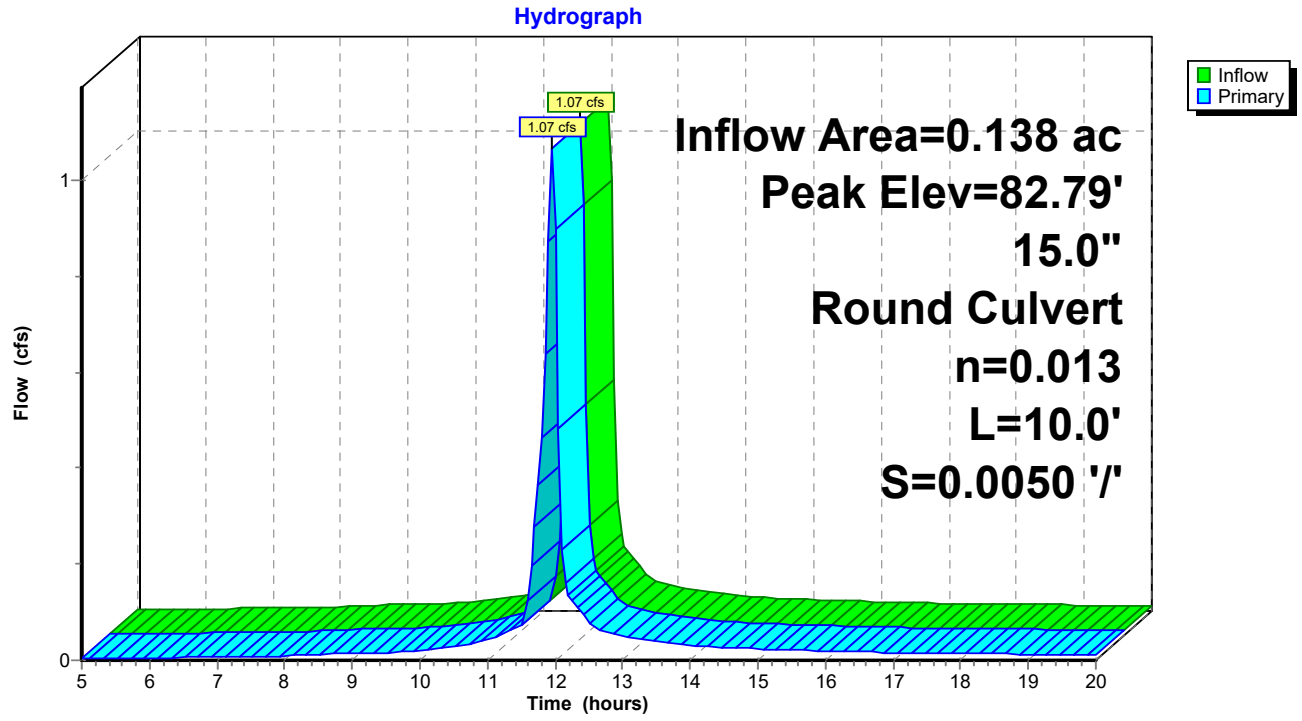
Inflow Area = 0.138 ac, 65.45% Impervious, Inflow Depth > 4.36" for 25 YEAR event
Inflow = 1.07 cfs @ 11.95 hrs, Volume= 0.050 af
Outflow = 1.07 cfs @ 11.95 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 1.07 cfs @ 11.95 hrs, Volume= 0.050 af
Routed to Pond 5P : GUSF 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.79' @ 11.95 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	82.15'	**15.0" Round Culvert** L= 10.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 82.15' / 82.10' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.06 cfs @ 11.95 hrs HW=82.78' (Free Discharge)
1=Culvert (Barrel Controls 1.06 cfs @ 2.47 fps)

Pond CB 4: CB4



Summary for Pond CB 5: CB5

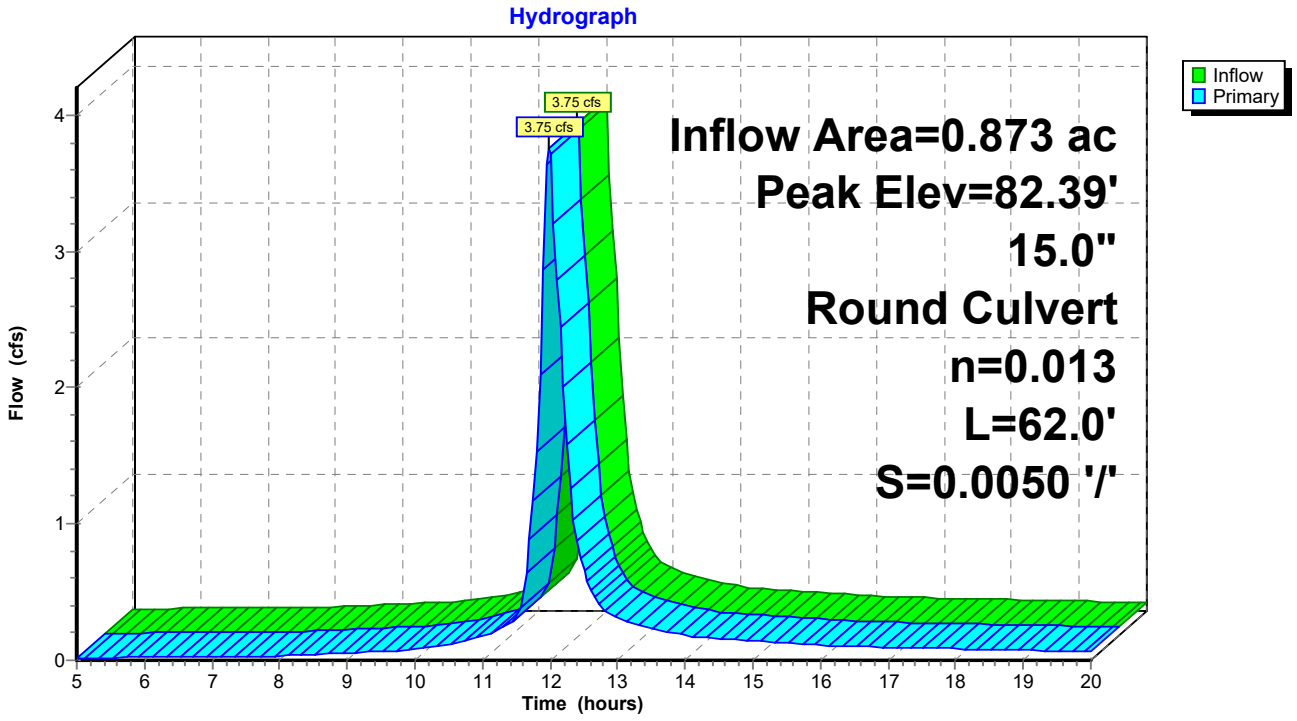
Inflow Area = 0.873 ac, 36.16% Impervious, Inflow Depth > 3.59" for 25 YEAR event
Inflow = 3.75 cfs @ 11.98 hrs, Volume= 0.261 af
Outflow = 3.75 cfs @ 11.98 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min
Primary = 3.75 cfs @ 11.98 hrs, Volume= 0.261 af
Routed to Pond CB 7 : CB7

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.39' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.10'	**15.0" Round Culvert** L= 62.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.10' / 80.79' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.68 cfs @ 11.98 hrs HW=82.37' (Free Discharge)
1=Culvert (Barrel Controls 3.68 cfs @ 3.66 fps)

Pond CB 5: CB5



Summary for Pond CB 6: CB6

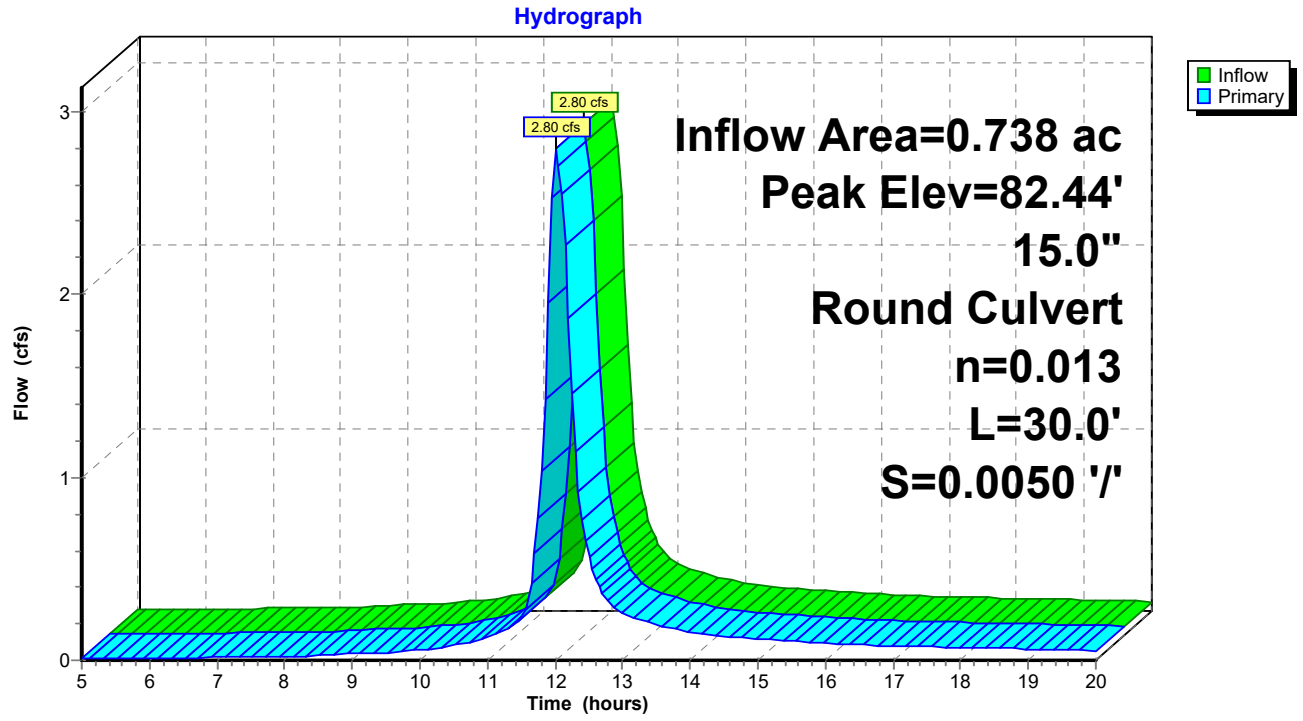
Inflow Area = 0.738 ac, 27.19% Impervious, Inflow Depth > 3.38" for 25 YEAR event
Inflow = 2.80 cfs @ 12.01 hrs, Volume= 0.208 af
Outflow = 2.80 cfs @ 12.01 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min
Primary = 2.80 cfs @ 12.01 hrs, Volume= 0.208 af
Routed to Pond CB 5 : CB5

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.44' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.35'	**15.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.35' / 81.20' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.77 cfs @ 12.01 hrs HW=82.43' (Free Discharge)
1=Culvert (Barrel Controls 2.77 cfs @ 3.30 fps)

Pond CB 6: CB6



Summary for Pond CB 7: CB7

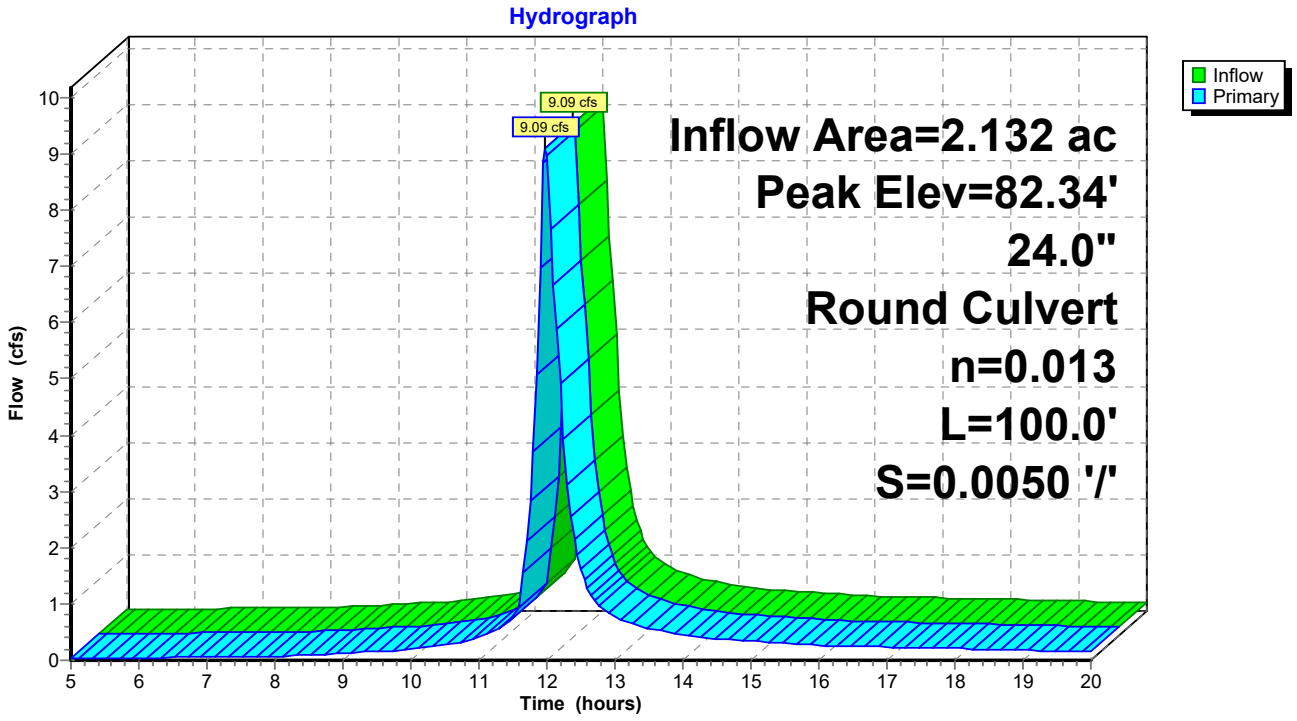
Inflow Area = 2.132 ac, 37.02% Impervious, Inflow Depth > 3.56" for 25 YEAR event
Inflow = 9.09 cfs @ 11.98 hrs, Volume= 0.632 af
Outflow = 9.09 cfs @ 11.98 hrs, Volume= 0.632 af, Atten= 0%, Lag= 0.0 min
Primary = 9.09 cfs @ 11.98 hrs, Volume= 0.632 af
Routed to Pond 3P : WETLAND STORAGE

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.34' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	80.69'	**24.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 80.69' / 80.19' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.92 cfs @ 11.98 hrs HW=82.32' (Free Discharge)
1=Culvert (Barrel Controls 8.92 cfs @ 4.43 fps)

Pond CB 7: CB7



Summary for Pond CB 8: CB8

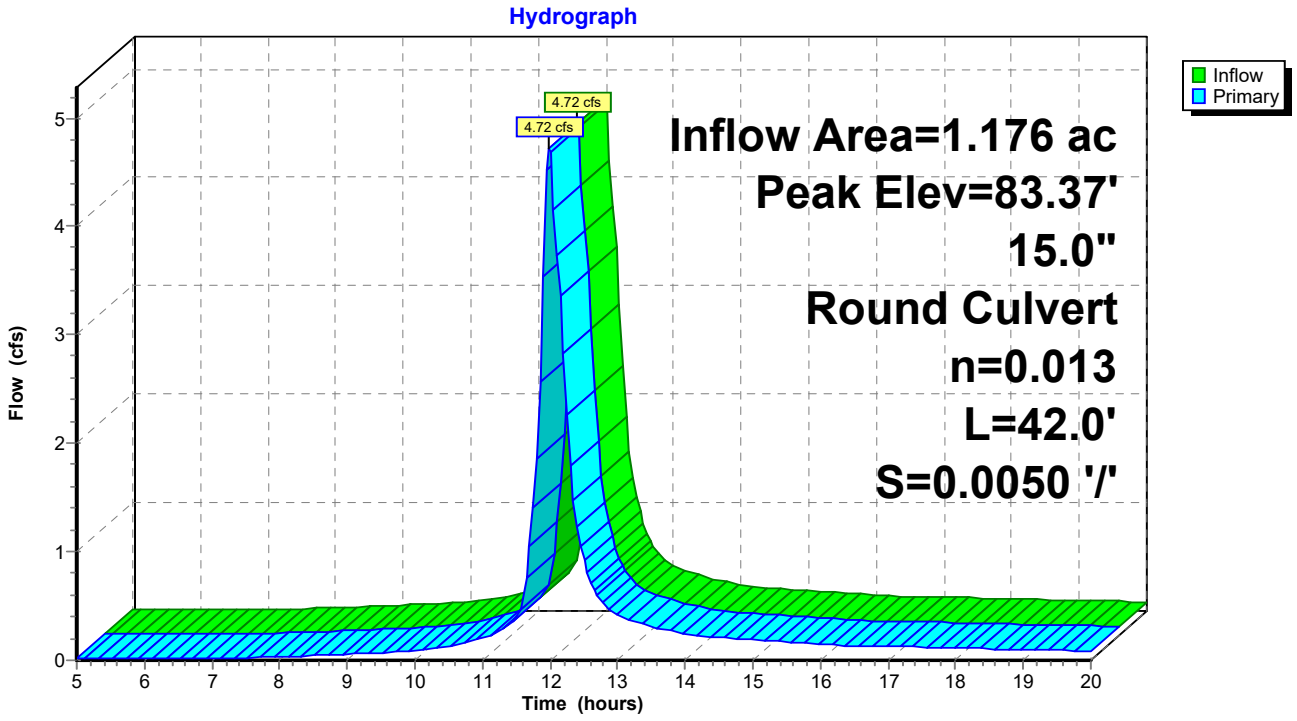
Inflow Area = 1.176 ac, 33.92% Impervious, Inflow Depth > 3.44" for 25 YEAR event
Inflow = 4.72 cfs @ 11.99 hrs, Volume= 0.337 af
Outflow = 4.72 cfs @ 11.99 hrs, Volume= 0.337 af, Atten= 0%, Lag= 0.0 min
Primary = 4.72 cfs @ 11.99 hrs, Volume= 0.337 af
Routed to Pond CB 7 : CB7

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.37' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.67'	**15.0" Round Culvert** L= 42.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.67' / 81.46' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.63 cfs @ 11.99 hrs HW=83.33' (Free Discharge)
1=Culvert (Barrel Controls 4.63 cfs @ 3.77 fps)

Pond CB 8: CB8



Summary for Pond CB 9: CB9

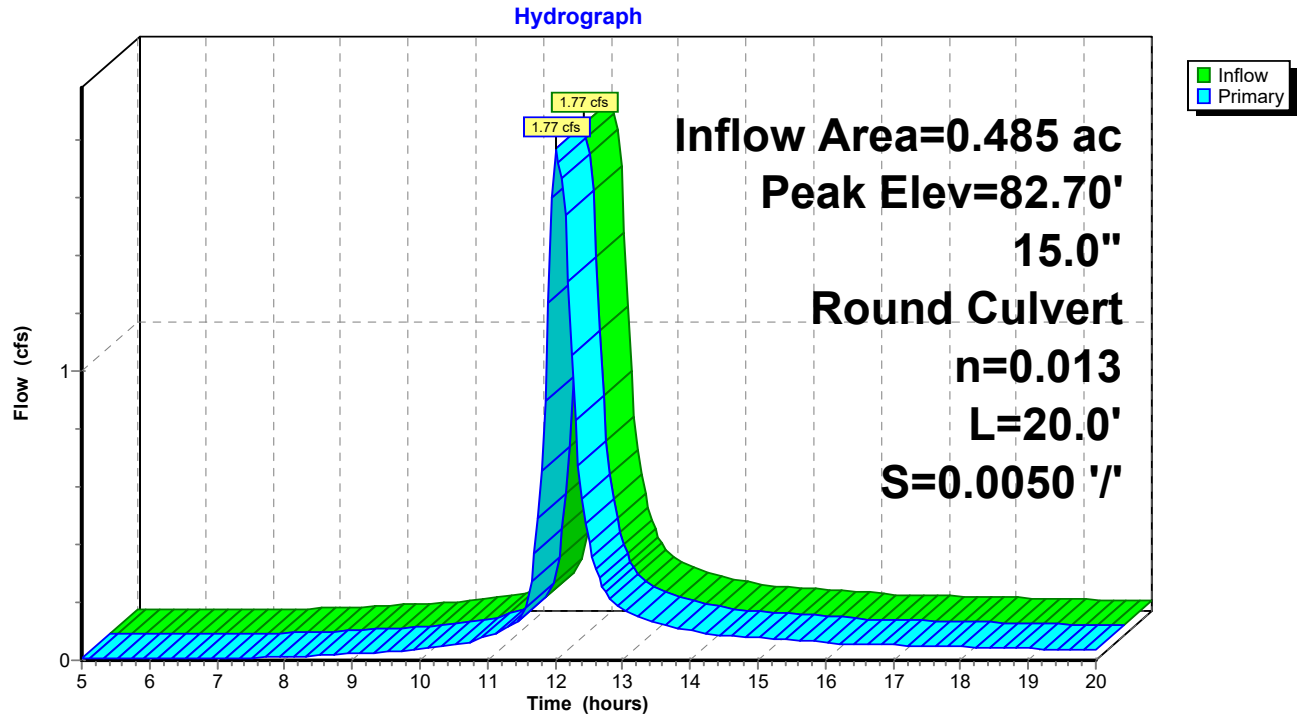
Inflow Area = 0.485 ac, 29.68% Impervious, Inflow Depth > 3.40" for 25 YEAR event
Inflow = 1.77 cfs @ 12.02 hrs, Volume= 0.138 af
Outflow = 1.77 cfs @ 12.02 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min
Primary = 1.77 cfs @ 12.02 hrs, Volume= 0.138 af
Routed to Pond CB 8 : CB8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.70' @ 12.02 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	81.87'	**15.0" Round Culvert** L= 20.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 81.87' / 81.77' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.75 cfs @ 12.02 hrs HW=82.70' (Free Discharge)
1=Culvert (Barrel Controls 1.75 cfs @ 2.89 fps)

Pond CB 9: CB9



Summary for Pond CB19: CB19

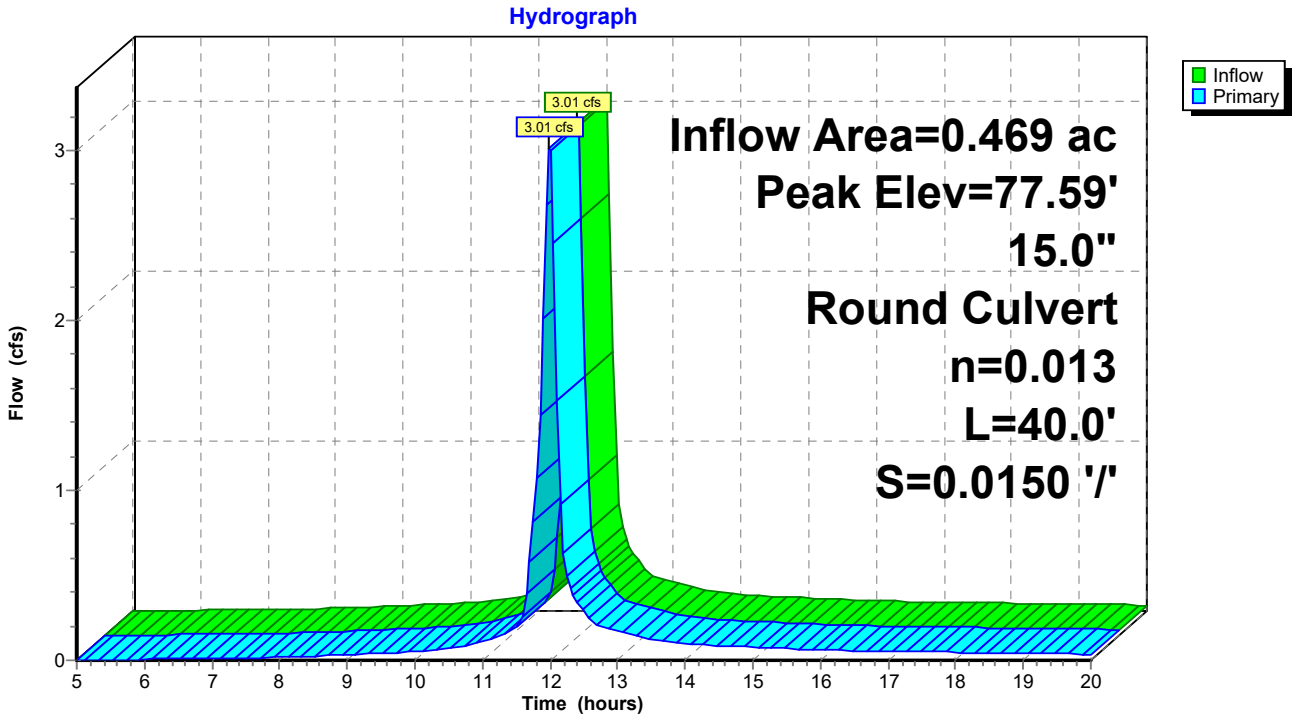
Inflow Area = 0.469 ac, 68.42% Impervious, Inflow Depth > 3.85" for 25 YEAR event
Inflow = 3.01 cfs @ 11.99 hrs, Volume= 0.150 af
Outflow = 3.01 cfs @ 11.99 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 3.01 cfs @ 11.99 hrs, Volume= 0.150 af
Routed to Pond 1P : WETPOND A

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 77.59' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	76.55'	**15.0" Round Culvert** L= 40.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 76.55' / 75.95' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.96 cfs @ 11.99 hrs HW=77.58' (Free Discharge)
1=Culvert (Inlet Controls 2.96 cfs @ 2.73 fps)

Pond CB19: CB19



EROSION AND SEDIMENTATION PLAN

A. Narrative. The proposed construction will require the implementation of temporary and permanent erosion control measures. These measures will be implemented in accordance with the Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual, prior to removal of any on-site vegetation or disturbance of any on-site soil. The general erosion and sediment control specifications and details, as provided within this section, are intended to describe measures to be used by contractors working on the site to maintain compliance with the standards established in the BMPs. These standards include information on temporary and permanent erosion control measures, rates of seeding and applied mulch, slope and soil stabilization, effect of construction schedule, and other details.

   The proposed location and use of erosion control measures on-site are shown on the Proposed Site Plan provided with this application. There are no known existing erosion control concerns with the site. Implementation of proper erosion control measures will be required by site conditions to confine sediment and debris within the limit of soil disturbance. Proper use and maintenance of erosion control measures will provide protection against off-site transport of sediment and discharge of sediment to undisturbed areas of the development.

B. Completion Date. Spring 2024

C. Site Features. For site features please refer to the enclosed plan.

D. Temporary and Permanent Erosion Control Measures. For temporary and permanent erosion control measures please refer to the enclosed plan.

E. Limits of Disturbed Areas. Areas of disturbance will be limited to the proposed work shown on the enclosed plan.

F. Design Drawings and Specifications. For design drawings please refer to the enclosed plan. The following specifications will be utilized by the site contractor during construction of the project.

EROSION CONTROL PLAN SPECIFICATIONS

A. General

1. All work and measures will be as per the Maine Erosion and Sediment Control BMPs manual.

2. The following specifications will be employed.

B. Prior to Construction

1. Prior to beginning of construction, erosion and sedimentation controls shall be in place.

C. During Construction

1. Exposed soil surfaces will be treated immediately if they are to remain ungraded more than 30 days, or if they are at final grades.

2. Drainage ways, either designed or incidental, will have filter barriers installed.

3. All work and materials necessary to minimize sediment loss from the site will be provided.

4. All erosion control measures will be inspected and repaired after every rainfall greater than ½-inch and at least daily during rain events lasting longer than 24 hours.

D. Post Construction

1. Erosion control measures will be maintained until permanent soil stabilization has been achieved with a growth of vegetation greater than 90%.

PART 1 - GENERAL

1.01 Description of Work

A. Provide and maintain devices to control erosion, siltation, sedimentation, and dust that occur during construction operations. Undertake every reasonable precaution and do whatever is necessary to avoid erosion of soil and to prevent silting of wetland areas and drainage ditches.

B. Provide measures to control dust caused whether on or off the project site.

C. Deficiencies in erosion control measures indicated by failures or erosion will be corrected as soon as reasonably possible by providing additional measures or different techniques to correct the situation and prevent subsequent erosion.

D. Exposure of soils on embankments, excavations, and graded areas will be kept as short as possible. Initiate seeding and other erosion control practices as soon as reasonably possible.

1.02 Quality Assurance

A. Conform to all requirements of applicable Federal, State and local permits and conform to the recommendations of the Maine Erosion and Sediment Control BMPs (see Part B below) whether the measures are specifically noted herein, or not.

B. Standards: Maine Erosion and Sediment Control BMPs Manual, hereinafter called Erosion Control Handbook.

PART 2 - PRODUCTS

2.01 Materials: Use the following materials to implement and construct erosion control measures.

A. Hay Bale: Rectangular shaped bales of hay or straw weighting at least 40 pounds per bale; free from noxious weed seeds and rough or woody materials.

B. Mulch: Type and use as specified by the Erosion Control Handbook

1. Long fibered hay or straw in dry condition and which are relatively free of weeds and foreign matter detrimental to plant life.

2. Mulch netting: Plastic or nylon mesh netting with approximate openings of ¼-inch to 1-inch.

C. Permanent Seeding: Cut and fill slopes and disturbed areas will be stabilized as follows:

1. Four inches of loam will be spread over disturbed areas and smoothed to a uniform surface.

2. In lieu of tests, agricultural limestone will be spread at the rate of three tons per acre. 10-20-20 fertilizer will follow at the rate of 800 lbs. per acre. These two soil additives will be incorporated into the soil prior to seeding.

3. Following seed bed preparation, back slopes will be seeded to a mixture of 83% creeping red fescue, and 17% rye grass. Seeding rate is 3 lbs. per 1,000 square feet. Lawn quality sod may be substituted for seed.

4. Hay mulch at the rate of 90 lbs. per 1,000 square feet of a hydro-application of asphalt, wood, or paper fiber will be applied following seeding. A suitable binder such as curason or terrtack will be used on hay mulch for wind control.

5. If final seeding of the disturbed areas is not completed by September 15th of the year of the construction, then on that date these areas will be graded and a cover crop of rye at the rate of 112 lbs/acre or 3 lbs/1,000 sq. ft. will be applied. The rye seeding will be preceded by an application of 3 tons of lime and 800 lbs. of 10-20-20 fertilizer or its equivalent and covered by a layer of jute mat to aide in stabilization.

PART 3 - EXECUTION

3.01 Construction

A. Hay Bales:

1. Install as directed by Erosion Control Handbook, and stake with required stakes.

B. Mulch:

1. Undertake after each area has been properly prepared.

2. When seed for erosion control is sown prior to placing the mulch, place mulch on the seeded areas within 48 hours after seeding.

3. Blowing chopped mulch will be permitted.

4. Hay mulch should cover the ground enough to shade it, but the mulch should not be so thick that a person standing cannot see the ground through the mulch.

5. Remove matted mulch or bunches.

C. Temporary Erosion Control Matting (where necessary):

1. Surface Preparation:
   a. Conform to grades for slopes and ditches shown of the drawings.
   b. Finish to a smooth and even condition with all debris, roots, stones, and lumps raked out and removed.
   c. Loosen soil surface to permit bedding of the matting.
   d. Unless otherwise directed, apply seed prior to placement.

2. Installation:
   a. Place strips lengthwise in the direction of the flow of water.
   b. Where strips are laid parallel or meet as in a tee, overlap at least four inches.
   c. Overlap ends at least six inches in a shingle fashion.
   d. The up-slope end of each strip of the matting will be turned down and buried to a depth of not less than six inches with the soil firmly tamped against it.
   e. Build check slots at right angles to the direction of the flow of water. Space so that one check slot or one end occurs within each 50 feet of slope length. Construct by placing a tight fold of the matting at least six inches vertically into the ground and tamp the same as up-slope ends.
   f. Bury edges of matting around the edges of the catch basins and other structures.
   g. Where determined by the Engineers, additional seed will be spread over matting, particularly at those locations disturbed by building the slots. Matting will then be pressed onto the ground with a light lawn roller or by other satisfactory means.

h. Drive staples vertically into the ground flush with the surface.
i. On slopes flatter than 4:1, space staples not more than three feet and one row, alternately spaced, down the center.
j. On grades 4:1 or steeper, place in the same three rows, but spaced two feet apart.
k. On all overlapping or butting edges, double the number of staples, with the spacing halved; all ends of the matting and all required check slots will likewise have staples spaced every foot.

D. Permanent Seeding:

1. Seed with appropriate seeds and application rates as noted in Section 2.01C.

2. Mulch areas where seeding has been applied. Do not mulch seeded areas where matting will be immediately installed.

E. Topsoil Storage:

1. Topsoil which is stockpiled on the site for use in loam applications will be placed out of natural drainages, in piles that have side slopes of 2:1 to 1.5:1.

2. A trench (depth as required) will be constructed around the base of the pile to prevent eroding soil from washing into drainages.

F. Dust Control: Utilize the application of sprinkled water to reduce the emission of airborne soil particulates from the Project site.

G. Temporary Berms: Construct temporary barriers along the toe of embankments using side drains, as necessary.

H. Temporary Basins: Construct temporary sedimentation basins adequate to avoid siltation of surface water bodies.

I. Other Temporary Measures:

1. Type and use will be as specified in the Erosion Control Handbook.

J. Winter Stabilization Notes

1. At this time, it is not expected that significant soil disturbance will occur during winter months or periods of heavy icing. If construction is performed during

these times, the following construction practices will be followed.

a. All disturbed areas not stabilized with stone or other measures will have approved erosion control matting installed and be dormant seeded.
b. No frozen soil material or material containing significant snow or ice will be used for fill material.
c. All material stockpiles will have silt fence and/or hay bales installed downgradient of piles.
d. Follow general erosion control notes described previously wherever possible and as conditions permit.

3.02 Maintenance

A. Inspect erosion control practices immediately after each rainfall greater than ½-inch and at least daily during rainfall lasting longer than 24 hours or snowmelt for damage. Provide maintenance and make appropriate repairs or replacement.

B. Remove silt from around hay bales when it has reached one foot above grade or prior to expected heavy runoff or siltation.

C. Repair matting if any staples become loosened or raised, or if any matting becomes loose, torn, or undermined, make satisfactory repairs immediately.

3.03 Removal of Temporary Erosion Control

A. Remove temporary materials and devices when permanent soil stabilization has been substantially achieved. For vegetated areas, substantially complete means 95% vegetated cover has been established.

B. Level and grade to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.

C. Remove unsuitable materials from site and dispose of in a lawful manner.

INSPECTION AND MAINTENANCE

The following Maintenance Plan will be employed for this facility. The Homeowners Association will be responsible for all maintenance. Erosion control measures for this site were designed by:

Jon Whitten Jr., P.E.
Haley Ward, Inc.
120 Main Street
Saco, ME 04072
(207) 989-4824
jwhitten@haleyward.com

A Pre- and Post-Construction Maintenance Plan for the stormwater management system and erosion control measures are included in this section.

MAINTENANCE PLAN

The MDEP's Stormwater Management for Maine: Best Management Practices (2006), and the MDEP's Chapter 500: Stormwater Management were used as guidelines in the development of this Maintenance Plan. General maintenance requirements are listed below.

A. DURING CONSTRUCTION

The general contractor will be responsible for the inspection and maintenance of all stormwater management system components during construction.

Inspection: Inspection of disturbed and impervious areas, erosion control measures, materials' storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site will be performed at least once a week as well as before and after a storm event, and prior to completing permanent stabilization measures. Inspections shall be conducted by a person with knowledge of erosion and stormwater control, including the standards and conditions in the permit.

Maintenance: All erosion control measures will be kept in effective operating condition until areas are permanently stabilized. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation will be completed within 7 calendar days and prior to any rainfall event.

Documentation: A log shall be kept summarizing the inspections and any corrective action taken. A copy of the log is provided at the end of this section, and is titled, Construction Inspection Log.

B. POST-CONSTRUCTION

The Owner or their assigns will be responsible for the inspection and maintenance of all stormwater management system components.

Inspection and Corrective Action

1. Vegetated Areas: Inspections and maintenance of vegetated areas will be performed early in the growing season or after significant rainfall to identify any erosion problems. Areas where erosion is evident will be covered with an appropriate lining, or erosive flows will be diverted to an area able to handle the flows. Any bare areas or areas with sparse growth will be replanted.

2. Ditches, Swales, and Culverts: Inspections and maintenance of ditches, culverts, and swales will be performed in the Spring, late Fall, and after rain events greater than 1-inch in depth to remove any obstructions to flow, to remove any accumulated sediments within the structures, and to repair any erosion of channel linings, check dams, inlet protection, or outlet protection. Vegetated ditches and swales must be mowed no more than twice per year and cut no less than 6-inch in height.

3. Inspection: shall be performed by an individual with experience and/or training on the maintenance and functions of these devices.

4. Roadways: Gravel roadways will be graded at least twice per year, if needed, to maintain drainage patterns as designed

5. Stormwater Wet Ponds: Maintenance of the wet ponds built for the treatment of stormwater will at a minimum include the items listed below.
    a. Embankment Inspection and Maintenance: A description will be provided of the yearly inspections of the impoundment embankments to identify excessive settlement, slope erosion, internal piping, and downstream swamping. Actions to be taken will be identified if any problems are found. Semi-annual mowing will be done to prevent the growth of woody vegetation on the embankment.
    b. Outlet Inspection and Clean Out: A description will be provided of the semi-annual inspection of the impoundment's outlet control structure to identify broken seals, obstructed orifices, plugged trash racks, and piping along the outlet barrel. Actions to be taken will be identified if any problems are found. A means of removal and disposal of any sediments and debris within the control structure will be provided.
    c. Sediment Removal and Disposal: Occasional removal and disposal of accumulated sediments within the impoundment will be performed as necessary. The clean out frequency ranges from 5-20 years, depending on the sediment load to the pond or basin.

6. Stormwater Filters: Maintenance of the filters built for the treatment of stormwater will at a minimum include the items listed below.
    a. Embankment Inspection and Maintenance: A description will be provided of the yearly inspections of the impoundment embankments to identify excessive settlement, slope erosion, internal piping, and downstream swamping. Actions to be taken will be identified if any problems are found. Semi-annual mowing will be done to prevent the growth of woody vegetation on the embankment.

b. Outlet Inspection and Clean Out: A description will be provided of the semi-annual inspection of the impoundment's outlet control structure to identify broken seals, obstructed orifices, plugged trash racks, and piping along the outlet barrel. Actions to be taken will be identified if any problems are found. A means of removal and disposal of any sediments and debris within the control structure will be provided.
c. Soil Filter Replacement: The top several inches of the filter can be replaced with fresh material if water is ponding for more than 72 hours, or the basin can be rototilled, seeded and mulched. Once the filter is mature, adding new material (a 1-inch to 2-inch cover of mature compost) can compensate for subsidence.

7. Documentation: A log will be kept summarizing the inspections, maintenance, and any corrective action taken. A copy of the log is provided at the end of this section, and is titled, BMP Inspection Log.

8. Recertification requirement: Within three months of the expiration of each five-year interval from the date of issuance of the permit, the permittee shall certify the following to the department.

   A. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

   B. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the facilities.

   C. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the department, and the maintenance log is being maintained.

HOUSEKEEPING

1. Spill Prevention - During construction, controls will be used to prevent pollutants from being discharged from materials on site, including storage practices to minimize exposure of the materials to stormwater, and appropriate spill prevention, containment, and response planning and implementation.

2. Groundwater Protection - During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater will not be stored or handled in areas of the site draining to an infiltration area. Dikes, berms, sumps, and other forms of 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.

3. Fugitive Sediment and Dust - Actions will be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil will not be used for dust control. Water will be used for dust control during construction.

   Operations during wet months that cause mud to be tracked off the site onto public roads will provide sweeping of the road areas at least once per week and prior to significant storm events.

4. Debris and Other Materials - Litter, construction debris, and chemicals exposed to stormwater will be prevented from becoming a pollutant source. The nature of this development will not cause problems related to debris and other materials.

5. Trench or Foundation De-Watering - If de-watering is necessary, the collected water will be removed from the ponded area and spread through natural wooded buffers or discharged into a construction sedimentation basin. The water will not be allowed to flow over disturbed areas to the site.

GENX CAPITAL PARTNERS, LLC
CONSTRUCTION INSPECTION LOG

Inspection Date	Inspector (Name and Qualifications)	Major Observations	Work Performed

Notes

1) Major Observations include the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major Observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and locations(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.
2) Work Performed will include a description of the corrective action taken, the date the corrective action was taken, and the name and qualifications of the person taking the corrective actions
3) The log must be made accessible to MDEP staff and a copy must be provided upon request.
4) The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

GENX CAPITAL PARTNERS, LLC
BMP INSPECTION LOG

Date	Inspector (Name and Qualifications)	ID Number	BMP Structure	Work Performed	Comments

Notes

1) If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal.
2) BMP structures shall be numbered sequentially and located on attached site map.
3) The log must be made accessible to MDEP staff and a copy must be provided upon request.
4) The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.

INSPECTION AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT STRUCTURES (BMPS)		
	INSPECTION SCHEDULE	**CORRECTIVE ACTIONS**
VEGETATED AREAS	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas of bare soil or with sparse growth
		Armor rill erosion areas with riprap or divert the runoff to a stable area
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Mow vegetation as specified for the area
DITCHES, SWALES AND OPEN STORMWATER CHANNELS	Annually spring and late fall and after heavy rains	Remove obstructions, sediments or debris from ditches, swales and other open channels
		Repair any erosion of the ditch lining
		Mow vegetated ditches
		Remove woody vegetation growing through riprap
		Repair any slumping side slopes
		Repair riprap where underlying filter fabric or gravel is showing or if stones have dislodged
CULVERTS	Spring and late fall and after heavy rains	Remove accumulated sediments and debris at the inlet, outlet, or within the conduit
		Remove any obstruction to flow
		Repair any erosion damage at the culvert's inlet and outlet
CATCHBASINS	Annually in the spring	Remove sediments and debris from the bottom of the basin and inlet grates
		Remove floating debris and oils (using oil absorptive pads) from any trap
ROADWAYS AND PARKING AREAS	Annually in the spring or as needed	Clear and remove accumulated winter sand in parking lots and along roadways
		Sweep pavement to remove sediment
		Grade road shoulders and remove accumulated winter sand
		Grade gravel roads and gravel shoulders
		Clean-out the sediment within water bars or open-top culverts
		Ensure that stormwater runoff is not impeded by false ditches of sediment in the shoulder
RESOURCE AND TREATEMENT BUFFERS	Annually in the spring	Inspect buffers for evidence of erosion, concentrated flow, or encroachment by development
		Manage the buffer's vegetation with the requirements in any deed restrictions
		Repair any sign of erosion within a buffer
		Inspect and repair down-slope of all spreaders and turn-outs for erosion
		Install more level spreaders, or ditch turn-outs if needed for a better distribution of flow
		Clean-out any accumulation of sediment within the spreader bays or turnout pools
		Mow non-wooded buffers no shorter than six inches and less than three times per year
WETPONDS AND DETENTION BASINS	Annually in fall and after heavy rains	Inspect the embankments for settlement, slope erosion, piping, and slumping
		Mow the embankment to control woody vegetation
		Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash racks
		Remove and dispose of sediments and debris within the control structure
		Repair any damage to trash racks or debris guards
		Replace any dislodged stone in riprap spillways
		Remove and dispose of accumulated sediments within the impoundment and forebay
FILTRATION AND INFILTRATION BASINS	Annually in the spring and late fall	Clean the basin of debris, sediment and hydrocarbons
		Provide for the removal and disposal of accumulated sediments within the basin
		Renew the basin media if it fails to drain within 72 hours after a one inch rainfall event
		Till, seed and mulch the basin if vegetation is sparse
		Repair riprap where underlying filter fabric or gravel is showing or where stones have dislodged
PROPRIETARY DEVICES	As specified by manufacturer	Contract with a third-party for inspection and maintenance
		Follow the manufacturer's plan for cleaning of devices
OTHER PRACTICES	As specified for devices	Contact the department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.

Rational Method

Q=CIA

Residential areas	0.3 - 0.75

C= 0.75

i= 2.37 in/hr

A= 20 acres

Q= 35.55 CFS

Summary for Reach 1R: 3 sided box culvet

[65] Warning: Inlet elevation not specified
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow	=	33.60 cfs @	5.00 hrs,	Volume=	41.792 af, Incl. 33.60 cfs Base Flow
Outflow	=	33.60 cfs @	5.10 hrs,	Volume=	41.650 af, Atten= 0%, Lag= 6.0 min

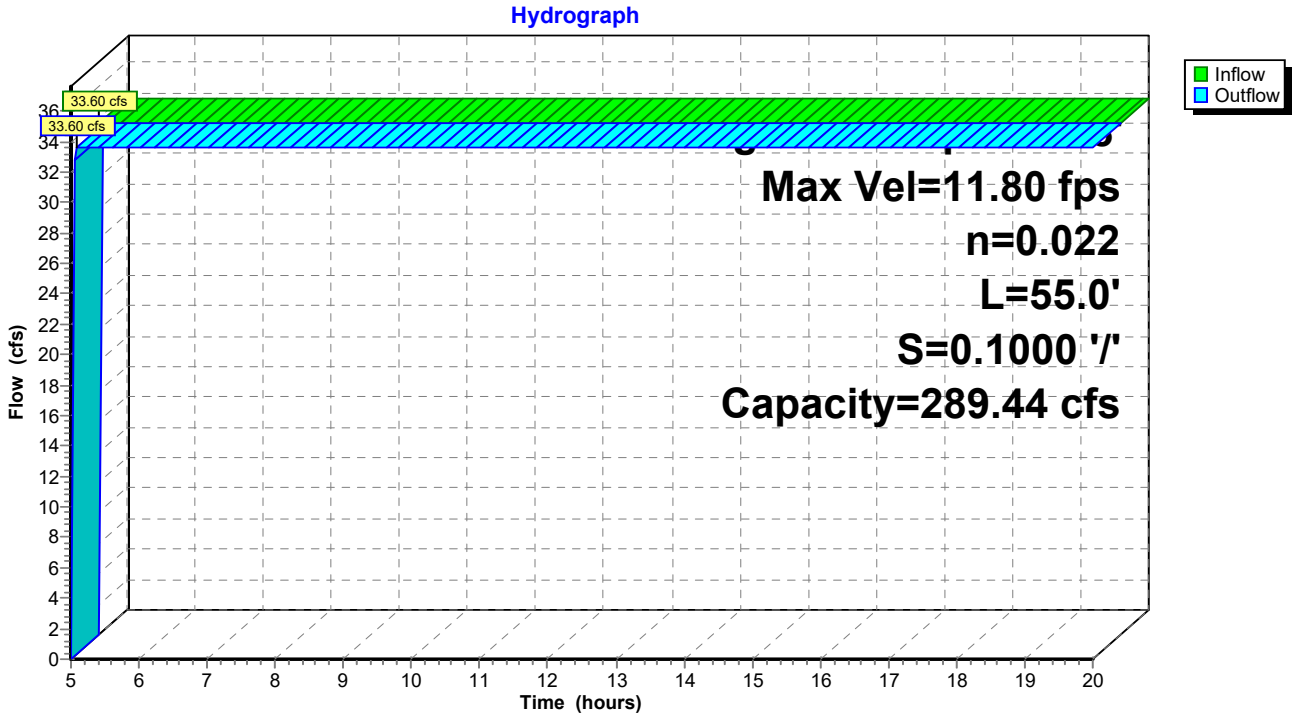
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 9
Max. Velocity= 11.80 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 11.79 fps, Avg. Travel Time= 0.1 min

Peak Storage= 157 cf @ 5.05 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 6.00'
Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 289.44 cfs

6.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
Length= 55.0' Slope= 0.1000 '/'
Inlet Invert= 0.00', Outlet Invert= -5.50'



Reach 1R: 3 sided box culvet



Presumpscot Woods
0 Hope Ave., Portland, Maine
Buffering

The Presumpscot Woods project proposes to maintain a significant amount of natural vegetation in open/common areas which will act as a visual and noise buffer from surrounding properties. Open/common areas will be protected and maintained through the common ownership and management of the development's Condominium Association. These areas are depicted within the Site Plan Set. There are no stormwater treatment buffers proposed for this project.

shinberg CONSULTING

NEIGHBORHOOD MEETING SIGN IN SHEET

JUNE 7, 2023 5 TO 7 PM
EAST END COMMUNITY CENTER, 195 NORTH ST.
PORTLAND, MAINE
RESIDENTIAL CONDOMINIUM DEVELOPMENT LOCATED AT 246 EASTERN PROMENADE AND 15 TURNER STREET

MEMBERS OF THE PUBLIC IN ATTENDANCE

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Presumpscot Woods/Hope Avenue Development

Notes compiled by Drew Olehowski of Haley Ward and Greg Shinberg of Shinberg Consulting

Neighborhood Meeting

May 31, 2023 – Lyman Middle School, Portland, ME

Developer and Consultant Team in Attendance:

- Greg Shinberg – Shinberg Consulting, LLC (“GS”)
- Andrew Peterson - Modular Sales (“AP”)
- Jon Whitten, Jr. – Haley Ward (“JW”)
- Drew Olehowski – Haley Ward (“DO”)

Members of Public in Attendance:

- Approximately 25, see sign-in sheet attached. GS asked members of the public to share their initials when asking questions or making comments. These appear in the notes below.

17:10 – GS begins meeting. Provides project introduction and description.

- 60 units will be for rent, not condos.
- 12 duplexes, 12 triplexes
- 8 affordable, 7 in-lieu fee
- Discussion on Planning Board Schedule.

17:20 – Presentation by JW

- Project description
- Discussed changes from design originally submitted last year, specifically switch to modular homes.
- Brief description of site features, including road length and width, utilities, stream crossing, stormwater management
- Discussion of zoning. R3 zone with PRUD standards
- This will all be 1 lot with 1 owner.
- Roadway designed for emergency access.
- Underground utilities

- Wooded areas to be preserved to extent possible
- Landscape architect to provide design
- Traffic engineer to perform traffic study,
    - Question from abutter – Where will this study look at?
    - Answer from Jon – Impacts on Summit street

17:30 – Presentation by AP

- Modular home description
- Homes designed by Worchester Modular Homes
- Abutter interrupts and says they don't care what homes look like – Andrew's presentation ends.

17:30 – Questions from the audience begin.

MS – Biggest concern is traffic and safety of children.

LB – Lives on Basket Lane. Biggest concern is traffic. Mentioned traffic generated by nearby developments. Concerned with children's safety.

AG – Many people weren't notified of this meeting.

- GS – We followed the city's rules on notices. Notices were provided to those within 500' of the project property.

SC – Can there be another neighborhood meeting where everyone impacted by the project can be notified?

- GS – Yes, this is possible.

RB – Can we put up fliers for another meeting?

SC – Can the meeting be at 6-8 on a Wednesday?

MS2 – Questioned impact of project on already overburdened school system. Questioned why abutters weren't informed of changes in project. Mentioned project was originally supposed to be single family housing, then 55+ housing, etc.

- GS – Not knowledgeable on school system topic

BS – Comment that this is not an appropriate area for low-income rentals. There are no walkable amenities or services. Who will want to live in these units?

GS – Explained affordable housing rules and guidelines. Identified rent will be ~$2100/month.

RH – Comments that there are no undeveloped parcels within the city close to amenities. All undeveloped parcels are towards city limits such as this project is.

CL – Does the Owner have any other rentals in Portland or Maine? What is his reputation on how these rentals are managed?

- GS – Not sure. Does not believe he has any in Portland/

JC – With the current zoning, is this project legal? (are 60 units with duplexes/triplexes allowed in this zone?) If it is illegal, what obstacles would be in our way to make it legal?

- GS – Explained city preapplication meeting where it was confirmed this project was allowed in the R3 zone under PRUD standards. We did not max out the density in order to maximize green space and reduce traffic impacts.

SC – Why did you increase the size of the project?

- GS – We weren't part of the original project. The property has changed owners several times.

SS – Lives on Garsoe, which is a 23' wide street. This street feels very narrow, and the current traffic situation is poor. This road may struggle to accommodate new traffic.

NB – IS the traffic study made public prior to the planning board workshop?

- GS – IT is up to staff on how soon they release information to the public.

MS1 – Teachers won't be able to afford these "affordable" units. Will there be Airbnb restrictions? Will this meeting impact the project?

- GS – This meeting is not a formality, abutters input will be given to the city and the planning board will listen to comments.

GL – Will we be notified of the planning board meeting?

- GS – City will send notice to the same abutters that were notified of this neighborhood meeting. GS explains planning board process.

RB – Recommend this project be paused until the Lombard (spelling?) project is completed to see its impacts before creating new impacts with our project.

GS – Mentions that these meeting notes will be sent to the Planning Dept. and Planning Board

WH – What zone is this in?

- GS – R3
- WH – "Anne Machado says this project is not allowed."
- JW – This is an R3 PRUD, where this type of development is allowed. Explains how PRUD is allowed for certain lots and allowed duplexes/triplexes
- WH – What is the funding source to keep units affordable?
- GS – Explains Green New Deal rules and in-lieu fees that go to a housing fund.
- WH – The city had said previously this lot would be only for single family or 55+ housing.

HS – Can abutters petition the city to expand notice radius? Should let everyone in the neighborhood who will be impacted know of future meetings.

- JW mentions to email planning department with this type of concern.

WH – Could the residents of this project get Section 8 housing? I have a house worth $800-$900k. What will this do to the value of my house?

HS – Is there a way to expand the notification to the entire neighborhood. Everyone should get notes. This will have a huge impact on the traffic and the schools.

HS – Will there be a wooded buffer between this project and Basket Lane?

- JW – Shows buffer distance on site plan. Approx. 120' from Basket Lane to proposed road that will remain wooded.

LB – Question on erosion. Concerned with vegetation removal in ravine area.

- JW – Describes how this project is required to comply with MDEP's erosion standards. Explained limits of disturbance in ravine area. Identified stormwater management and how there will be no increased flows to the ravine as a result of this project. Stormwater analysis has been provided in the application.

MS2 – Were you a part of the Brandy Lane project?

- GS – No.
- MS2 – Brandy Lane project resulted in property damage to a local resident. How will this be handled for this project?
- GS – After receiving approvals, a performance guarantee is required that would cover damage caused during construction. Says he is a non-practicing attorney. This would be a good question for the planning board.

RB – Can you show us on the map where the Presumpscot River is? How far is the project from the river?

- JW – shows on map. Measures distance as 500-600 feet.
- RB – Will the Middle or North Loop be impacted? Will and marked trail be impacted?
- GS – Not sure, will meet with Jamie Parker with Portland Trails.

MS – Can this property be absorbed into the Presumpscot River Preserve? The preference is that this be made single family homes as originally planned. Mentioned increased noise from highway due to clearing from adjacent development. Will there be a noise study or any proposed noise barriers?

- JW – No noise study is planned.

WC – Concerned with safety due to proximity to highway and new access to highway due to clearing. Will undeveloped/open space areas be donated to Portland Trails?

- GS – reducing the size of property could impact space and bulk zoning standards. The city will have to determine if ownership of open space can be changed.

BH – Now that we know these are rentals – Is there an average turnover rate for rentals? Wants to know impacts of moving trucks on local streets. Is there a max load on local roads?

- GS – I don't know.

JP- Commented on pressures on health care system. Who would want to live in these units for these prices? The neighborhood is currently quiet and safe, don't want this to change.

- GS demonstrates integrated nature of affordable units on site plan. Points out that these are duplexes/triplexes.

BC – Developer is only looking to make money off property. The nature of the project doesn't make sense in this location. Aware of housing issue, but worried about kids' safety and traffic. Hard to see community benefit.

RW – Where does burden of over-tapped school systems lie? Schools are already at capacity.

- GS – Not on us to answer. Should be asked at the Planning Board.
- RW – We should wait to see what the impacts of other current projects will be before pursuing this one.

MS1 – Project is just for maximizing profits and not caring for the neighborhood. Can you see the project from the trails?

- JW – We aren't sure. We can do an analysis to determine this.
- GS – Planning Board will likely have a site walk. Explained site walks and the type of questions commonly asked at them.
- MS1 – Question on Property values
- GS – Prices may go up, or down. *Crowd angry at this response*

LB – First to move to Basket Lane. Could only cut trees within 20 feet of house due to erosion. Feel like they are being bamboozled due to all the changes in this project over the years. Feels like abutters are owed transparency on why these changes have happened without telling them.

SS – How to prevent issue of all those impacted by the project not being notified. Why isn't there a city representative at this meeting? They should be at the next meeting if there is one. Fear that City will only hear developers side of the story.

- GS – These meeting notes are sent to the City. All comments included.
- SS – After this project is built, are more units allowed to be built?
- GS – No. What is currently proposed could be built in phases. We are not required to invite city representative to this meeting. Encouraged to email comments to planning board and planning dept.

RH – Should walk the neighborhood to get addresses of all who should be invited to next meetings. Comments on housing shortages across the country. Creating higher end units allows people to "move up" and opens up other low-income housing to the homeless. Emphasized homelessness issue in Portland and how the City wants more housing.

BS – Will take photo of sign-in sheet so that everyone at meeting can be on an email list for this project.

- Greg – mentions how he is required to provide a sign in sheet but not required to sign.

MS2 – Was Brandy Lane already cleared when the City reviewed our project?

- GS – We haven't had the first planning board meeting yet so the City hasn't reviewed anything beyond the preapplication meeting.
- MS2 – Does the owner understand the size/scope of nearby developments? Was it considered?

- GS – I don't know. The owner is aware of the development but not sure if he factored into his plan.

SC – Will all existing Trail access remain? Will the trail still go to the river? Will there be light pollution/wildlife studies? Why isn't the owner building all 15 affordable units?

- JW – Shows on site plan where trail accesses are. Describes how state agencies were contacted for potential impacts to sensitive wildlife/historic areas. Natural resource surveys have been done. Photometric plan was prepared – only lighting is streetlights and porch lights. Will follow Dark Sky standards.
- GS – Owner thought there would be local opposition to full number of affordable units. The Green new Deal is very controversial and didn't want to create opposition. Greg explains how units were integrated in this design.

SC – Why are there no recreation areas or amenities?

JP – "Understand the need for affordable housing in Portland, but this isn't the neighborhood for it." The Lambert project is in a location with a bigger street that can accommodate a large project.

RB – Mentioned he has observed clearing of vegetation on other projects prior to obtaining approvals. Can it be assured this won't happen here?

- GS – No. Portland and MDEP rules would prevent this. MDEP takes this very seriously. Greg has seen this happen on other projects and it has resulted in fines and delays.

HS – Commented that people like to live in the neighborhood because of woods, trails, nature, low traffic – this project is taking that away. This is a large neighborhood to only have 2 traffic entries/exits. Emphasized strain on local schools/services, pre-k, swim lessons, after-care. Strained systems make this unattractive area for future families. The schools could handle the original idea of single family or 55+ housing. Why did this change and abutters were not told? The proposed use has been changed multiple times. The future use of this lot was taken into consideration when her home was purchased on Basket Lane. More comments about how 500' notice wasn't enough. The city portal had no project information on it.

- GS – Asked how far to send for abutters. Again, mentions the planning dept. email to submit comments directly.

LB – When she bought her property it was 55+, expected that here.

SC – Should notify residents on Alice, Curtis, Garsoe, Summit, Basket, Brandy and Hope. "Everyone who uses Garsoe and Curtis roads." Also Lyseff and Lyman school district residents. Mentioned Press Herald article on traffic issues on Summit.

NB – Done lots of Planning meetings. The way to stop this project is for everyone to go to the planning board meeting and reach out to city council.

- JW – There will be signage on the property identify planning board meeting date.
- SS – Can signage be put at Garsoe and Curtis intersections too?
- GS – I will submit all these questions to the owner.

AG – Called City yesterday. Planner says best thing to do is submit email comments to the planning department.

GL – Will these notes be on the city portal? Where do they go?

- GS – We aren't sure. Good question for planning dept.board.
- HS – Probably uploaded to citizen self serve portal. There were no items on this portal 2 weeks ago.

GS – This will be a several planning board meeting process.

AG – Would the developer go back to original plans of single family?

- GS – This property has changed owners several times. It was never the current owner's plan to do single family or 55+.

19:00 – Meeting adjourns

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

MEMO

To: City of Portland | Planning & Urban Development Department

From: Jon Whitten, Jr., PE

Re: 1 Hope Avenue Development | Review Comments Round II
PL-002454-2023

Date: August 29, 2023

Haley Ward, Inc. (Haley Ward) has prepared this memo in response to comments within the City's **Review Comments Round II** letter, dated August 3, 2023, and submitted to us via email on August 9, 2023. Review Comments and Recommendations are in Bold, followed by our responses.

GENERAL REVIEW COMMENTS

DESIGN REVIEW

Design review comments are in the design review memo.
We have prepared a separate response memo for the comments included in the Design Review Memo from the City.

ZONING

- **Zoning still requires building elevations to confirm the heights of the structures.**
  General building elevations with dimensions have been submitted for review. The applicant is currently awaiting more specific architectural plans. See more on this within our response to the City's Design Review Memo.

- **Based on other comments, Zoning staff will continue to review the common open space requirement. Roadways and sidewalks are not considered common open space elements. However, the undeveloped/landscaped internal area does satisfy the 18,000 sq. ft. of common open space required and the required contiguous area of 6,000 sq. ft.**

One Merchants Plaza, Suite 701, Bangor, ME 04401
T: 207.989.4824 | HALEYWARD.COM

Additional information regarding open space and recreational space has been added to the Landscape Plans. Please see our responses to the City's Design Review Memo and RSLLA's responses to the landscaping comments within this memo.

EPLAN/PROJECT DOX

Please be sure to maintain the file naming conventions. Adding 'v2' to the documents just creates more files. If you keep the same file name, Project Dox tracks the files and maintains versioning.

Understood. Sorry for any confusion.

ADDITIONAL SUBMISSIONS REQUESTED:

Building elevations for both the two-unit and three-unit proposed building types.

General building elevations with dimensions have been previously submitted for review. The applicant is currently awaiting more specific architectural plans. See more on this within our response to the Design Review Memo.

14.6.1 TRANSPORTATION STANDARDS

IMPACT ON SURROUNDING STREET SYSTEMS

- **The applicant should provide a traffic calming study on the abutting neighborhood streets that will provide access to the development. The study should document existing vehicle speed conditions and identify strategies to address potential problems. Driveway spacing dimensions shall meet City Standards (Technical Manual)**

  John Q. Adams, PE, with Barton & Loguidice, LLC, is the Traffic Engineer for this project. Mr. Adams recently coordinated a speed study within the Hope Avenue neighborhood and found that the posted speed limits are being adhered to. *Based on the results of the speed study, it does not appear that additional traffic calming elements are required at this time.* Please refer to Mr. Adam's report for more information.

- **Improvements in ROW should be dimensioned on the plan sheets including streets, lanes, sidewalks, esplanades, and driveways as well as roadway width changes.**

  The proposed road is classified as private; therefore, no new rights-of-way (ROW) are proposed for this project. Dimensions to improvements within the ROW on Hope Avenue have been added to the drawing set. Improvements associated with the sewer-upgrade portion of this project will be addressed as that portion of the project progresses.

- **The applicant should submit plans and turning templates that show how emergency vehicle access will be maintained throughout development.**

  An emergency vehicle access plan has been added to the drawing set, Sheet C-102.

ACCESS AND CIRCULATION

- **The applicant should consider adding a sidewalk to the end of the cul-de-sac. Crosswalks shall also be provided for roadway crossings. The sidewalk should extend to serve all residential units on the cul-de-sac.**
  We have added a length of sidewalk adjacent to the cul-de-sac, as requested.

- **The applicant should conduct an evaluation of pedestrian facilities documenting adequate accessibility from the site to the nearest Metro transit stop. The most recent response was general; the evaluation should detail conditions of sidewalks, ADA compliance, signage, crosswalks, and any locations that should be a concern from a safety perspective.**
  The existing sidewalks on either side of Hope Avenue, Alice Street, and Garsoe Drive are five-foot-wide paved sidewalks that are City owned and maintained. It appears that the Garsoe Drive sidewalks were originally constructed circa 2000 and the Hope Avenue sidewalks circa 2005. There are paved sidewalk ramps at roadway intersections. No painted crosswalks or detectable warning strips were witnessed within any of the existing neighborhood streets, including Garsoe, Alice, Hope, Curtis, Longview, Patricia, Panoramic View, Caron, Carter, Crestview, Bonny, Abby, Pamela, Clapboard, etc.

  The existing pavement along Hope Avenue, Alice Street, and Garsoe Drive sidewalks appears to be in good shape. The widths are constant throughout, and the surface is smooth. Occasional cracking of the pavement was observed, but they are narrow and no significant change in elevation was observed. The only cracks that appeared as though they may be, or may become, a tripping hazard were ones created by root growth on the north side of Garsoe, within 50 feet or so of Auburn Street. This section of the sidewalk is shaded by tree growth and tree limbs do appear to constrict the usable width of the sidewalk. The sidewalk on the opposite side of Garsoe is in good shape.

- **Update crosswalk design detail to meet City Standards (Technical Manual)**
  The crosswalk detail has been updated as requested.

- **The applicant should conduct a sidewalk waiver analysis justifying the provision of a sidewalk on only one side of the street.**
  It is our understanding that a PRUD development project does not need to meet the design standards for a public roadway, including the number of sidewalks. Therefore, a waiver is not required for the proposed sidewalk layout.

PUBLIC TRANSIT ACCESS

- **Has the applicant spoken to GP METRO to discuss improvements to the bus route to provide more consistent bus routes to this area? Increased transit to the site and surrounding neighborhood could have positive impacts on traffic and congestion in the area.**

We have reached out to GP METRO for comment on this topic and they have provided a response that we have submitted for review. They indicate that there is a bus stop at/near the Auburn Street and Garsoe Drive intersection. Auburn Street is served by Metro's Route 9 which runs every 30 minutes Monday through Saturday and every 60 minutes on Sunday. Please see the response email message for more information regarding the bus route and the bus stop on Auburn Street.

PARKING

- **One area of on-street parking (on cul-de-sac) does not have a sidewalk for access into and out of the vehicle while abutting a snow storage area - reasonable access to vehicles should be provided.**
  Parking spaces outside of the individual unit garages and driveways are for guest/temporary parking. It is not expected that these parking spaces will be used for daily parking or overnight parking by residents, therefore, constant access to all spaces is not a priority. The parking spaces are proposed to provide temporary parking spots, outside of the emergency access route through the project.

- **Consider shortening the driveway lengths - each driveway should provide enough space for one vehicle as one additional vehicle should be parked in the garage. Shortening driveway lengths will allow for the buildings to be set closer to the road and providing more space for recreation in the rear and potentially moving the tree clearing lines.**
  The majority of driveways are between 20 and 26 feet long and have room to park one vehicle between the garage and edge of roadway or sidewalk. There are a few driveways that ended up close to 36 feet long to maintain the minimum separation between buildings. The intent of each driveway is to allow one vehicle to park off the roadway and outside of the garage. Parked cars will not be allowed to obstruct the travel width of the roadway.

TRANSPORTATION DEMAND MANAGEMENT

Although a TDM is not required, has the applicant considered employing TDM strategies to mitigate traffic and encourage multi-modal transportation?
Although the applicant and our design team have not employed specific TDM strategies, there are existing, lower-volume roadways within the neighborhood that effectively calm traffic to allow for safe use of various modes of transportation. Vehicle traffic from the proposed project will keep traffic volumes low and will not lessen the ability of the system to support various modes of transportation. Additionally, parking is limited, and new communications and power supply lines will support the ability to telework.

ADDITIONAL SUBMISSIONS REQUESTED:

- **Traffic Calming Study on surrounding street context**
- **Emergency Vehicle Turning Templates**
- **Further evaluation of pedestrian facilities**
- **Sidewalk Waiver Analysis**
- **Updated crosswalk design detail**

14.6.2 ENVIRONMENTAL QUALITY STANDARDS

PRESERVATION OF SIGNIFICANT NATURAL FEATURES

Provide an updated letter from Maine IFW on Significant Natural Features in the area of development.

A copy of the updated design drawings, as well as the wetland delineation report, have been sent to MDIFW as requested. We will submit any updated response from MDIFW, when received.

LANDSCAPE PRESERVATION

The applicant shall submit a tree survey to identify trees over 16" DBH and track/quantify trees and removal of trees. See Technical Manual section 4-3.1 for tree surveying requirements on sites with a high density of existing trees.

Owen Haskell and Regina Leonard, RLA are completing a tree survey in accordance with Technical Manual section 4-3.1, as requested. We will submit a copy for review as soon as it is completed.

SITE LANDSCAPING AND BUFFERS

Please see RSLLA's Response to Comments memo for responses to these comments.

- **City Arborist team has observed, in recent years, that the Princeton Elm (though disease resistant) exhibits boor and unsightly branching structure as it matures. This makes it prone to wind and storm damage as it becomes established. The Jefferson cultivar is also disease resistant and exhibits better branching - it is preferred over Princeton where available.**
- **Given the pre-development woodland on the site consists of Pine, Oak, Maple, Birch, and Poplar, City Staff would prefer to see oaks as the street tree along the entry drive to the development. The Pin Oak in particular has proven reliable as a standard, single-leader street tree where overhead space allows.**
- **City Staff encourage more species diversity in small trees where possible other than simple Serviceberry; recommended alternatives include Musclewood, Carpinus caroliniana where appropriate. Where blooms are desired, another alternative could be the American Smoketree.**
- **The proposed trees near the entrance to the Sebago to Sea trail should be species that blend with the native tree canopy of the surrounding forest. The trees shown on this part of the landscape plan are currently unlabeled.**
- **As an alternative to Rhus aromatica 'gro-low', City Staff suggest Diervilla lonicera for a**

spreading/roving groundcover alternative. Where a shorter groundcover is desired, Pru nus pumila var. Depressa (Sand Cherry) has proven durable and attractive.

- **Technical Manual requires at least 50% of proposed trees and shrubs/perennials be native plant species. See Technical Manual section 4.7-3; A few native alternatives to the species currently specified include Pennsylvania Sedge+ Appalachian Sedge (rather than Japanese Sedge), Geranium maculatum (rather than Cranesbill Geranium), and Kalmia latifolia (rather than Hybrid Rhododendron).**
- **Planting strips shown between adjacent driveways appear to be 2' wide or narrower. This narrow strip of vegetation between driveways is unlikely to survive and will revert into a compacted strip of weeds or bare soil. City Staff suggest a minimum of four feet for this strip if a planted buffer is the intention; alternative layouts may remove this feature.**
- **The landscape plan is not clear about where the rain garden mix is being specified and where the conservation seed mix is being proposed. Labels or dedicated hatches/colors would help.**
- **Please provide a plan that includes the surrounding trail network (if possible). The applicant should consider additional connections to external trail network wherever possible and at least a connection on both sides of the development.**
- **Could the applicant consider alternative layouts (homes closer to road, reducing driveway footprints) to increase forested buffers?**

WATER QUALITY, STORMWATER MANAGEMENT AND EROSION CONTROL

- **DPW Water Resources has received and is currently reviewing the preliminary sewer capacity alternatives analysis report provide by the applicant.**

  We have included email responses from DPW regarding the required/preferred method to upgrade the existing Hope Avenue Sewer Lift Station. We have revised the plans to eliminate the proposed holding tank and private lift station within the project limits. The system is now proposed to be a gravity pipe system that will connect into the existing piping within Hope Avenue. We will continue to work with DPW to generate a design scenario that is adequate for permitting approval.

- **There appears to be no design/NRPA permitting information for the proposed box culvert. Design and permitting information for the culvert should be provided for review. The proposed culvert alignment appears to shift the existing stream alignment at the downstream end of the culvert. Provide further information on the impacts of this alignment change.**

  A NRPA Permit by Rule application was submitted to the MDEP for the proposed stream crossing in October 2022. The permit was granted after the 14-day review window had passed, with no comments received from MDEP. The proposed box culvert has been oriented so that the inlet and outlet are both at the low points of the existing stream channel based on topography; therefore, the stream alignment will not be significantly modified. It is noted that the delineated stream, as shown, does not match exactly to the contour lines and therefore, we understand the basis of the review comment.

- **Has the applicant completed a geotechnical analysis to ensure the 1:1 rip-rap slope being proposed at the entrance drive culvert is adequate? The rip-rap slope stabilization detail on sheet C504 depicts a max slope of 2:1.**
  The rip rap stabilization detail on sheet C504 has been revised to correctly show a max slope of 1:1. Field work and access for a geotechnical engineering study of the site is currently being arranged.

- **The applicant's comment response letter indicates that plunge pools or level spreaders will be used at proposed stormwater discharge points to prevent erosion downstream from the site. The plans should be updated to reflect this comment. Construction details and design information on the proposed plunge pools and level spreaders should also be provided.**
  The drawing set has been updated to include information on the stormwater discharge point controls. Level Spreaders and plunge pools have been designed in accordance with the MDEP Erosion Control Design Manual.

- **The applicant's comment response letter indicates that the revised plans depict the required 100' perennial stream setback on sheets C103 and C704. The 100' setback line could not be located on the updated plans. Please provide a plan showing the 100' setback on sheets C103 and C704 so the impacts can be assessed.**
  This 100' setback has been labeled on Sheets C103 and C704.

- **The (engineer) should add a clear limit of work line on sheets C103 and C704 to ensure abutting public land won't be impacted by the proposed grading work at the property lines. The proposed grading for the embankment slope associated with wet pond A extends right up to the property line.**
  A limit of work line has been added, as requested.

- **Grading Plan: The roof drip edge pipe discharge should be clarified. No pipes are shown, but are included in the proposed detail. Similarly, the pipes and structures within the soil filter sand biocells are not shown and will need to be included as part of the overall piping plan.**
  Piping for the proposed stormwater management features has been added to the drawing set.

- **Grading Plan: For both Wetponds A and B, the pipes discharging from the outlet structures are shown discharging directly to the pond slopes without any specific outlet protection shown on the plan. City Staff would suggest sending the discharge pipes to the rip rap spillways for each pond - take advantage of the stabilization that is already proposed for those areas.**
  Wetpond discharge points have been revised, as suggested.

- **Grading Plan: The intent for slope stabilization adjacent to the roadway at the location of the culvert should be clarified. The detail for rip raped slope stabilization is noted for max 2:1 side slopes, and the proposed slopes at this location are 1:1. This is a very steep slope, and an engineered solution for stabilization will likely be required.**
  The riprap slope stabilization detail has been updated to include the correct 1:1 slope. Slopes in this location are proposed to be as steep as possible in order to minimize impacts to surrounding protected natural resources. Guardrail is proposed for the crossing to provide vehicular and pedestrian safety.

- **City Staff recommend that the storm drainage be turned on the utility plan for clarity, similar to how the utility info is included on the grading plan. City Staff note that the proposed transformer out at Hope Avenue may be too close to the proposed drainage.**
  Line types/weights have been updated on the drawing set as requested. The proposed transformer has been shifted to be the required 10' away from drainage.

- **The proposed underground electric is shown very close to the 1:1 sloped edge over the cross culvert. Applicant should confirm with CMP that the proposed layout can be constructed.**
  We are currently attempting to get in touch with someone at CMP to discuss this issue.

- **The project is required to comply with MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 Requirements:**
  - **Basic Standards: Erosion and Sedimentation Control will be required per MaineDEP standards. Some details have been provided, but standard notes and a plan showing proposed locations are necessary. Specific care should be made around the proximity to wetlands and around ESC controls for proposed steep slopes.**
    Standard erosion control notes have been added to the drawing set. A note requiring double rows of erosion controls adjacent to protected natural resources has been added.

  - **General Standards: There is a minor typo on the calculations for Bioretention Cell B - the calculation references the underdrained soil filter area requirements, but the calculation was completed correctly with the larger bioretention area requirements. Just worth noting for the record in case there is ever a review or question on treatment levels.**
    The calculation for Bioretention Cell B has been corrected in the provided updated stormwater report.

  - **General Standards; The calculations for bioretention cells reference an 18" impoundment depth. The detail and notes also shows an 18" depth from filter to emergency spillway. The MaineDEP BMP allows for 6" of depth of storage over the filter media for bioretention cells. Inclusion of 6" of storage in the filter media is also allowed.**

The design drawings, HydroCAD calculations, and Stormwater Report have been revised to reflect the intended 6" storage depth for the proposed bioretention cells.

- **General Standards: An O&M Plan and Stormwater Maintenance Agreements will be required for each of the proposed systems.**
  O&M Plans are included in the Erosion Control Plan that was uploaded with the original submission. Stormwater Maintenance Agreements are currently being prepared and will be provided when available.

- **Flooding Standards: The project is reducing flows at all study point locations except for the first point, which sees a small increase.**
  This is correct. Justification for the increase to Summation Point 1 is included in the Stormwater Management Report.

- **Flooding Standards: City Staff recommend that the applicant review the time of concentration values utilized for the post-development HydroCAD model. Typically a minimum TC value of 5 or 6 minutes (I've seen justification for both) is utilized as the limitations of the software may cause issues when very small TC values are utilized. TC values of 0.1 minutes are used for some subcatchments in this model.**
  The design drawings, HydroCAD calculations, and Stormwater Report have been revised to reflect a minimum TC value of 5 minutes.

- **Flooding Standards: There are a few subcatchments in the post- development model with high time of concentration values that should be re-evaluated. Post subcatchments 10 has a larger TC value than the pre-development subcatchment (1 believe 4) it relates to. Subcatchments 2C and 2D have large TC values as well. City Staff recommend looking at these again to make sure that the post- development values reflecting existing conditions are consistent with pre-development evaluations.**
  The design drawings, HydroCAD calculations, and Stormwater Report have been revised to reflect the revised TC values for the above mentioned subcatchments. The Pre-Development model had inadvertently used the cover type "Woods, light underbrush" while the Post Development model had used "Woods, dense underbrush;" this has been corrected so that the cover types match as intended.

- **Flooding Standards: The post-development figure should label the summation points that are being considered for the evaluation.**
  Sheet C702 has been updated to include the same Summation Points as shown on Sheet C701.

- **Flooding Standards: The grading plan does not include any of the piping associated with the roof drip edges. It should clarify how those are connected and where they discharge to. It is not clear how they discharge to the different summation points being considered for the Flooding Standard evaluation.**
  Piping for the proposed stormwater management features has been added to the drawing set.

ADDITIONAL SUBMISSIONS REQUESTED:

- **Updated letter from Maine IFW**
- **Tree Survey**
- **Updated Landscape Plan**
- **Culvert/Stream Crossing Permits and Design Details (NRPA/Army Corps)**
- **Construction Management Plan and Narrative**
- **Updated ESC/Grading Plans**
- **O&M Plan and Stormwater Maintenance Agreement Drafts**

14.6.3 PUBLIC INFRASTRUCTURE + COMMUNITY SAFETY STANDARDS

PUBLIC SAFETY AND FIRE PREVENTION

- **Provide Turning Templates that demonstrate adequate maneuverability for emergency vehicles throughout the site and, specifically, at the cul-de-sac.**
  Emergency Vehicle access plans have been added to the drawing set, sheet C-102.

- **Has the applicant reached out to DPW to talk about E-911 Addressing? GREG**

Greg Shinberg, of Shinberg Consultants, LLC., the Owner's Representative for this project, has contacted DPW and has verified that Presumpscot Woods is an appropriate name for the project and access roadway.

PUBLIC UTILITIES

The applicant will need to provide an ability to serve from CMP and Portland Water District.

ADDITIONAL SUBMISSIONS REQUESTED

Ability to Serve from CMP and PWD

Ability to serve requests have been sent to CMP and PWD. We recently received the ability to serve letter from CMP via email. We have submitted this email for review. PWD continues their review of the plan set.

14.6.4 SITE DESIGN STANDARDS

SNOW AND ICE LOADING

- **The applicant needs to confirm that the snow storage area in the cul-de-sac will not interfere with emergency vehicle turnarounds.**
  Emergency Vehicle access plans have been added to the drawing set, sheet C-102. As shown, the snow storage area will not interfere with emergency vehicle turnarounds.

- **The applicant will need to provide a narrative outlining how snow will be managed and stored on site.**
  The Homeowners' Association will hire a commercial contractor to displace snow off of traveled areas. Snow will be stored in non-traveled areas until such time that access to any traveled area is limited. At which time, the stored snow will be removed from the site and disposed of in such a way as to comply with local and state regulations. Large snow storage areas are shown on Sheet C102. Traveled areas (that are owned in common) include roadway surfaces, driveways, sidewalks, recreational trails, designated parking spaces, etc.

EXTERIOR LIGHTING

City Staff are still reviewing these submissions.

NOISE AND VIBRATION

The applicant will need to note how HVAC units and exterior utilities will be screened and if any are expected to generate noise.

It is expected that residential sized heat pumps will be utilized for heating and cooling each unit. These units generate very little noise and will be located on the ground, outside the units. They will be placed such that they are not seen from the roadway and/or screened by landscape plantings.

SIGNAGE AND WAYFINDING

Will the applicant be proposing any signage?

The applicant proposes to install a project sign at the project entrance with Hope Avenue. The sign will not be internally illuminated. Other street signs are expected to be installed to help direct people to unit numbers, set an internal speed limit of 15 MPH, depict no parking on the street, etc. These signs will be small in surface area and maintained by the Homeowner's Association.

DESIGN STANDARDS

Comments in design review memo.

Please see our separate response to the Design Review Memo under separate cover.

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

MEMO

To: City of Portland | Planning & Urban Development Department

From: Jon Whitten, Jr., PE

Re: 1 Hope Avenue Development (Presumpscot Woods) | Response to Design Review Memo | PL-002454-2023

Date: August 29, 2023

Haley Ward, Inc. (Haley Ward) has prepared this memo in response to comments within the **City's Design Review Memo**, dated July 24, 2023, and submitted to us via email on August 9, 2023. Review Comments and Recommendations are in Bold, followed by our responses.

STANDARD (1) A. DESIGN RELATIONSHIP TO THE SITE

The proposed placement, orientation and arrangement of buildings types (Duplex and Triplex units) seek to minimize disturbance to the site's natural features, significant wetlands and forested areas. The development plan preserves wetlands within the center of the site for passive recreation use with the preservation of existing trees and includes drainage facilities towards the perimeter of the development area that staff finds appropriate. The proposed internal vehicular circulation includes a single vehicular access drive that loops around with individual driveways for each dwelling unit, staff finds the organization of streets is a response to natural features and topography. Staff finds a variety of driveway lengths that prioritize stacked parked cars over the location of buildings within closer proximity to the proposed streets, and recommends the applicant clarify the intent of this site layout.

Part of our initial design criteria for the positioning of buildings was to have a driveway that was approximately 20 feet from the edge of roadway, or edge of sidewalk, to allow a single vehicle parking spot outside each garage. This distance would help to ensure that no vehicles were encroaching on the 20-foot wide accessway, as that width is mandated for emergency access, and it would limit encroachment of vehicles on the

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sidewalk. As the design progressed it was obvious that some buildings would need to be located further away from the edge of roadway to maintain the minimum separation distance between buildings. At no point was the length of the driveway driven by the desire to park more than one vehicle between the road/sidewalk and the garage.

STANDARD (1) B. INTERNAL DESIGN CHARACTER AND RELATIONSHIP TO THE SURROUNDING NEIGHBORHOOD

Context: The surrounding neighborhood is dominated by single-family residences organized on similar lot sizes that connect to the public street network. The proposed development and multi-family buildings exhibit a cohesive design character and site connectivity to Hope Lane, which is a small neighborhood street. The site context is a wooded forest with existing wetlands, the applicant has proposed a native plant palette that generally transitions the development site into the existing vegetation to remain and forested edges of the property abutting the City of Portland public property.

Architectural character: The surrounding neighborhood context of single-family residences includes traditional lap siding with attached garages and simple roof forms. The architectural character of the proposed building types (Duplex and Triplex) appears to include variations of vinyl siding material at entrances, living spaces and roof eaves. The proposed 2-story building types include shared entrance canopies and window fenestration patterns oriented toward primary circulation routes. The applicant shall submit elevations around the perimeter (front, side and rear) of proposed building types with material selection labeled for staff review.

The applicant has provided/submitted general elevation renderings and a list of interior and exterior finishes based on the modular home packages that they have chosen to utilize for this project. Additionally, the applicant is currently awaiting delivery of the project specific architectural plans for the actual duplex and triplex configurations that are proposed. We will submit the new architectural plans with elevations as soon as they become available to us.

Pedestrian circulation: The proposed pedestrian circulation prioritizes sidewalks in several locations throughout the development but also does not propose sidewalks along many frontages which would require residents to traverse roadways to access pedestrian pathways internal to the site. Staff finds the distribution of sidewalks for residences to be inadequate and the applicant shall provide additional sidewalks as necessary with the intent to preserve existing vegetation to the greatest extent possible and promote greater walkability.

The project is being designed and permitted as a Planned Residential Unit Development (PRUD) project; therefore, the roadway and sidewalks are to be privately owned and maintained and are not required to meet the design criteria for public roadways. The private roadway is 20 feet wide, has limited, but dedicated on-

street parking spaces, and will host a limited number of vehicles per day. Given these factors, it is expected that pedestrians needing to cross the roadway will experience limited resistance from vehicle traffic. The choice to include a single sidewalk for much of the roadway length was a conscious choice to limit impervious area and still provide a dedicated pedestrian pathway within a short distance from any driveway.

STABDARD (1) C. RECREATION AND OPEN SPACE

1. ***External buffers: An effective and permanent screening from neighboring properties and roadways;***

   The proposed development intends to minimize existing vegetation clearing to preserve trees and natural features at the property edges. Staff finds the proposed street trees promote a welcoming buffer into the private property. Staff finds the clearing of vegetation adjacent to the City of Portland's property, known as Presumpscot River Preserve, and the location of development to not be adequately screened and recommends the applicant restrict grading within the trail easement to reduce the amount of existing tree clearing. Staff finds the conservation wildlife mix to be appropriate adjacent to natural features and recommends slope stabilization on slopes greater than 3:1 slope.

   We have limited the disturbance area within the Portland Water District Easement that crosses the southwest corner of the project site. Disturbance is limited to allow for the construction of the nearest building and a new connection to the *Sebago to the Sea Trail* trail, within the easement.

2. ***Internal buffers: Areas planted, maintained and located in such a manner as to provide privacy between units and buildings and paved areas and screening of parking, utilities, roadways, waste collection facilities and storage facilities;***

   The proposed development has indicated internal buffers through shade and ornamental trees located within proximity to each dwelling unit and parking. In addition, planted screening adjacent to existing vegetation and walking trail buffer dwelling units that staff finds meet this design standard.

   No response required.

3. ***Passive recreational open space: Open spaces, designated and improved with such features as gardens, picnic areas, walking trails; benches and lawn and seating areas;***

   The proposed development has indicated proposed walking trails located at the center of the development and a trail connection to the existing Presumpscot River Preserve. Staff finds the proposed play and/or fitness features complement the proposed passive recreational use. Staff finds the location of snow storage over proposed trails to obstruct and recommends the applicant relocate snow storage appropriately to allow for year-

long trail access. Staff finds that additional trail connections at the north would allow for an increase in recreational use to contribute to the overall development of open space as required per *Land Use Code Table 7-B.*

We will modify the areas designated as snow storage to best fit the need for year-round access to the internal walking trails. We are currently working with the applicant and Portland Trails to choose the best location for new connection(s) to the existing *Sebago to the Sea Trail* trail.

4. ***Active recreational open space: Open spaces designated and improved for active recreational use with facilities such as tennis courts, basketball courts, multipurpose game fields, swimming pools, and children's playgrounds; and***

The proposed development has indicated play and/or fitness features to be placed along trail, staff finds that these open space elements contribute more to the passive recreational. Staff requests the applicant provide additional details of proposed recreational elements, size and an open space diagram to indicate the proposed open space as required per *Land Use Code Table 7-B.*

Regina Leonard, RLS, the project's Landscape Architect, has created an Open Space Plan to better depict the size and location of open space and recreational features, as requested.

5. ***Private open spaces: Open spaces designated for the individualized use of unit owners such as yards, decks, and patios;***

The proposed development has indicated private decks at the rear of each dwelling unit, yard space and ornamental tree plantings that staff finds meets this design standard. Staff recommends additional screening (e.g. shrubs, vegetated trellises) to partition private decks from adjacent units and requests the applicant label all recreation and open space on the overall landscape plan.

The Landscape Plans have been updated, as requested.

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING

MEMO

To: City of Portland | Planning & Urban Development Department

From: Jon Whitten, Jr., PE

Re: 1 Hope Avenue Development (Presumpscot Woods) | Response to Review Comments Round III | PL-002454-2023

Date: November 6, 2023

Haley Ward, Inc. (Haley Ward) has prepared this memo in response to comments within the City Staff and Third-Party Peer Reviewers Memo C, dated October 5, 2023. Review Comments and Recommendations are in Bold, followed by our responses.

GENERAL REVIEW COMMENTS

GENERAL

Please provide an updated and reorganized upload to Project Dox. It may be helpful to refer to the 9.12.23 Planning Board Workshop memo for organization. Many applicants organize their uploads based on the site plan standard category (example: Transportation Standards, Environmental Quality Standards). These standards are found in Section 14.6 of the Land Use Code. Files should be combined if possible.

The Project Dox materials have been reuploaded with clarified file name and organization. The materials now include a letter suffix corresponding to the applicable Site Plan/Subdivision checklist item, i.e. General Application Documents have a "G", Environmental items have an "E."

Please submit draft Homeowner's Association Documents for City Staff and Corporation Counsel review.

A copy of the draft Homeowner's Association documents has been provided.

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Please identify how the proposed development is meeting the Subdivision Review Standards of section 15.4.1. The applicant provided documentation speaking to site plan standards and not subdivision standards.

A narrative stating how the Subdivision Review Standards of section 15.4.1 have been met was provided in the file "Site Plan and Subdivision Narrative." The subidivision checklist and required submission items have also been included in previous submission.

STATE/FEDERAL PERMITS

The applicant will also need to provide evidence of any necessary state and federal permits for the proposed disturbance within the state required 75' setback from the stream.

The only disturbance within the 75' stream setback is the proposed stream crossing, for which a NRPA PBR was submitted to the MDEP.

The applicant previously noted that a NRPA Tier 1 Application for wetland impacts was submitted to the DEP. Evidence of approval should be sent to the City upon receipt. DPW notes that the applicant recently uploaded evidence of the NRPA PBR associated with the stream crossing.

The MDEP is currently reviewing this application. Approval has not yet been obtained for the NRPA Tier 1; this will be provided upon receipt from the MDEP.

Please be sure all documentation from MaineDEP and US Army Corps of Engineers is submitted.

Noted. All correspondence has been submitted at this time. Evidence of approvals will be provided upon receipt.

ZONE/DESIGN

City Staff require elevations to confirm heights of the structures. The previous upload contained a variety of now deleted elevations/renderings/floorplans. Please provide documents/drawings that include elevations, floorplans, and renderings of the proposed structure.

Revised architectural drawings have been provided.

Please provide calculations for Minimum Common Recreation Open Space Area on site.

These calculations have been added to the Proposed Site Plan.

More information is needed for: Maximum Structure Height, Maximum Building Length, and Minimum Building Setback from External Subdivision Property Lines.

Revised architectural drawings have been provided containing the requested information.

ADDITIONAL SUBMISSIONS REQUESTED

Updated Elevations, floorplans, and renderings
Minimum Common Recreation Open Space Calculations
Zoning Clarification: Structure Height, Building Length, Building Setback from External Subdivision Property Lines.

14.6.1 TRANSPORTATION STANDARDS
IMPACT ON SURROUNDING STREET SYSTEMS

The applicant collected a limited sample of speed data within the neighborhood. It is requested that speed data be collected over a minimum 48-hour period and that an additional location on Summit Street be included.

A 48-hour speed study will be conducted. The requested traffic information will be provided when available.

Improvements (existing and proposed) in the ROW should be dimensioned on the plan view sheets (in this case the 20 Scale Plan). For example, dimensions for street, lanes, sidewalk, esplanade, driveways, and other improvements should be noted. Please also note the widths and when the widths change.

The drawings have been updated with the requested information.

PUBLIC TRANSIT ACCESS

The applicant conducted a general evaluation of pedestrian facilities. The evaluation shall also include an evaluation of ADA facility compliance between the site and the bus stop.

Field measurements were taken to evaluate ADA facility compliance between the Site and the nearest bus stop (Summit Ave.) The ramps associated with road intersections in this area do not have detectable warning pads and their slopes are in excess of 10%. The steepest area is at the end of Garsoe Drive where the slope of the sidewalk is 8-9% downhill for around 150 feet. At the beginning of Garsoe Drive, the slope is 6-7% uphill. The rest of the sidewalk route is under 5%. Pease see the attached photo-log.

Crosswalks in the ROW shall follow the City Standard detail Figure I-17 Typical Crosswalk Markings (COP Technical Manual)

There are no proposed crosswalks within the ROW.

PARKING

The location of on-street parking spaces is not evenly distributed throughout the site and the applicant should note how parking will be managed so that vehicles do not park in non-pull-out areas.
The site was designed to allow adequate parking for all units, through garage, driveway, and on-street parking. There are no further changes to parking layout proposed.

The five parking spaces at station 6+00 are not abutting a sidewalk and access into and out of vehicles may be difficult as it also abuts a snow storage area.
Noted. We believe the current parking layout adequately meets the needs of the development; no further parking layout changes are proposed.

ADDITIONAL SUBMISSIONS REQUESTED:

Updated speed data
ADA evaluation of pedestrian facilities between the site and bus stop
Response to parking concerns
20 Scale Plan for ROW Improvements

14.6.2 ENVIRONMENTAL QUALITY STANDARDS
LANDSCAPE PRESERVATION

Since any disturbance within the buffer may impact the existing vegetation and allow for invasive species to move in, a robust re-planting plan and invasive species management plan for any areas of disturbance within the set- backs that will be left to naturally revegetate will be required for water resources to support a waiver.

The Landscaping plan is currently being revised and will be submitted when the requested changes have been made.

Could the applicant consider alternative layouts (homes closer to road, reducing driveway footprints) to increase forest buffers? Previous submission does not address this outstanding comment. Please call out reference to the site plan comments and response or indicate on landscaping plan movement of buffer.

Homes have been located to allow adequate space for driveway parking. No further changes to building layouts are proposed.

Because maples currently make up upwards of 30% of the City's urban street tree canopy and are susceptible to the Asian Long-Horned Beetle, the City Arborist is strongly urging against planting any more maples (of any species or variety) as street trees in Portland for the time being. To be resilient to current and future pests, the City's street trees should be as diverse as possible, and maples are currently overrepresented in the City's canopy posing a risk to the City's canopy health and resiliency. Alternative street trees would preferably be native and straight species as they offer greater ecosystem value. If fall color is a driving factor, Betula nigra and its cultivars are native, less susceptible to bronze

birch borer and would contribute to fall color in a similar fashion to maple, albeit yellow instead of red.

The Landscaping plan is currently being revised and will be submitted when the requested changes have been made.

WATER QUALITY, STORMWATER MANAGEMENT AND EROSION CONTROL

The proposed adverse sewer manhole connection angle from SMH-20 into the City's sewer manhole in Hope Avenue is not acceptable. Flow shall not be discharged into the City's sewer manhole against the mainline flow direction.

The sewer layout in this location has been revised.

The applicant notes that a geotechnical study is currently being arranged to assess site conditions including the proposed 1:1 riprap slope located at the driveway entrance stream crossing. The applicant should provide this information for City staff review once completed.

We are continuing to look into this matter and will convey any findings to City staff upon receipt.

The applicant will need to file a waiver request from technical manual standard 8.2.1 for the proposed encroachment into the required 100' perennial stream buffer at several locations.

A waiver request for this standard has been provided.

Hydraulic sizing information for the proposed culvert should be provided for review to ensure that the proposed culvert meets, at a minimum, the Maine DOT In-stream Culvert Sizing methodology.

The proposed culvert was sized using the MDEP's *StreamSmart* guidelines, which are more stringent than the Maine DOT's In-stream Culvert Sizing methodology. The rational method was utilized to calculated the expected flow rate at the culvert inlet for the 100-year storm event. The provided HydroCAD results demonstrate that for this storm event, the proposed culvert will have an acceptable Headwater ratio. The structure has also been sized for the MDOT's bankful width standards.

Outlet protection should be provided for the piped outlet discharge from GUSF-2.

The drawings have been updated to address this comment.

ADDITIONAL SUBMISSIONS REQUESTED

Tree Survey
Alternative Layout Response
Tree Species Response
Updated Sewer Connections
Geotechnical Study response
Waiver Request
Hydraulic Sizing update
Outlet protection

14.6.3 PUBLIC INFRASTRUCTURE + COMMUNITY SAFETY STANDARDS

PUBLIC UTILITIES

The applicant should formally submit a wastewater capacity application to DPW for review and approval. DPW will need to formally approve the design of the required system upgrades and receive assurance that the work will be completed by the applicant, in coordination with the development project, prior to the wastewater capacity authorization being granted. Application forms are located here: https://www.portlandmaine.gov/574/sewer-rules-regulations

This application has been submitted. A Copy of the application, as submitted, has been provided.

ADDITIONAL SUBMISSIONS REQUESTED

Wastewater Capacity Application
Update regarding wastewater system upgrade

14.6.4 SITE DESIGN STANDARDS

SNOW AND ICE LOADING

Please note how snow will be managed unless snow storage areas will be the only form of snow storage/management

Should onsite snow storage prove inadequate, snow will be removed from the site by a licensed contractor.

EXTERIOR LIGHTING

Please provide more information on lighting around the premises and on the proposed structures

Street lighting is proposed along all sidewalk areas. Buildings will be equipped with residential decorative lighting at entryways.

NOISE AND VIBRATION

Please provide more information on how mechanical units/HVAC systems will be screened or where they will be located.

It is expected that buildings will be equipped with heat pump inverters, which will be located on the sides of the buildings. Screening of these units is not necessary or proposed.

DESIGN STANDARDS

Once more documents/drawings are submitted, Staff will follow up with and updated design review memo.

Noted.

PC1

James Macisso <jmacisso@gmail.com>
to planningboard

Good Afternoon,

I am writing to you because I am concerned about the proposed construction on Hope Ave, PL-002454-2023. As a 4th generation Portlander, starting a family of 5th generation Portlanders (Go Bulldogs), I have several concerns I wish to express, and hope that you will take them under advisement.

1. I am very concerned about the size/volume of the development, and how the exponential increase of automobile traffic is going to negatively impact the children in adjoining neighborhoods. The streets of Hope, Alice, & Garsoe all have narrow, 20m-wide standard roads, with the street parking permitted on one side. As you know, these neighborhoods are heavily populated by families with young children. The proposed development would at minimum double, if not quadruple the amount of automobile traffic congestion on these roads. As a parent of two very young children myself, I am very concerned that not enough attention is being given to the supporting infrastructure that will be needed to support 60 units of 2-3 bedrooms (cars) each. There are no traffic lights anywhere past Lyman Moore, and Allens corner. Has an impartial traffic study been conducted at this time? Exiting Garsoe onto Auburn Ave is already very difficult during commuting hours. To increase the volume in traffic so sharply without any supporting infrastructure changes seems unrealistic.

2. I am also concerned about the environmental impact this development is going to have on some of the few remaining unmolested trailheads & wildlife that remain in the city limits. The Presumpscot trails are widely enjoyed by people of all ages. It was so encouraging during the pandemic to see people start to appreciate nature & our local wildlife again. This area is full of wildlife, but it's being slowly but surely curtailed with new developments. Just last year we already saw tens of acres clear cut by the Brandy Lane development. I am very concerned for what this new development seeks to do, further encroaching on the trails, and clear cutting tens of acres more.

3. While a lesser concern, I am a bit perplexed as to why this proposed development was re-zoned for high density, as it stands in contrast to all of the adjoining neighborhoods? I know the city is desperate for housing, but I question if condos are truly the right move for this area? There are so many other housing issues in Portland, such as AirBnB which have made housing so unaffordable. I've also heard that the developer is seeking to rent these as well, which I think is a huge mistake. I am very passionate about Portlanders deserving the opportunity to own their own home. I was initially very excited to hear new housing was coming to our neighborhood, until I heard that the developer was considering a "build to rent" scheme. I can't help but see how 'build-to-rent' does anything but hurt those in the area looking for long term housing. This doesn't seem like a suitable long term solution, nor in the best interest of the city's taxpayers. At the very least, I would implore you to prohibit such use.

I am very much in favor of more homes in the area, especially if that allows Portlanders an opportunity to own their own home. I also have concerns about this specific developer, and have heard numerous stories of corner-cutting, poor quality development, and unethical business practices. (as well as the story about what happened in Cape Elizabeth) I would just ask that you consider if they are the best partner for this development, considering in order to develop, we need to clear cut tens of acres of the few remaining naturally green spaces in the city. If condos are the best solution over single-family homes to help Portlanders own their own home, then so be it. But I will be incredibly disappointed in all of you if this simply turns into more rental units, simply lining the pockets of rich developers off the backs of hard working residents, further pushing the prospect of homeownership away from Americans. Not to mention, it stands in direct opposition to the progressive values that has made Portland such a wonderful place to grow up, and stay in, and raise a family in.

I would please ask that you consider halting this development. Thank you for your consideration.

Best regards,
Jim

Lisa McCafferty <lisamaine19@gmail.com> Sep 14, 2023, 7:56:30 AM (yesterday)
to planning@portlandmaine.gov

Good Morning,

My name is Lisa McCafferty and I live at 36 Caron Street. I attended Tuesday's planning board workshop and am writing to share a few questions and concerns.

As several people from the public stated, I too have traffic concerns. I frequently walk within the neighborhood from Caron to Allen Avenue including most side streets. I've regularly observed people driving well above the speed limit especially on Alice, Carter, Curtis, and Summit. A traffic study that includes the morning and afternoon/early evening commute and school bus times, will provide a more accurate account of the volume and speed of traffic. The Hope Avenue development with 60 units, most likely averaging 2 cars per household, is a concerning amount of added vehicles to the whole neighborhood and not only the streets near the new development. This is an active, outdoors community for people of all ages walking, running, hiking, biking, strollers, etc and the volume of cars presents safety concerns for the entire community.

The Gen X representatives mentioned a landscaping service will manage the retention pond. A concern is how will this be regularly monitored and tested for potential damaging impact to the preserve and are they qualified to do so? This along with entrances leading to Portland Trails and the added impact on the environment, and how this area can be sustained, is worrisome. It was further mentioned that for snow removal there will be snow storage. Will this treated snow go into the preserve adjacent to the property?

Portland is in need of more affordable housing, however, the vast majority of these units will not be affordable and this amount of housing negatively impacts the environment and safety of the overall neighborhood. It was mentioned by Gen X that this is an urban development, however, this is a suburban neighborhood that frankly is unable to again sustain this amount of growth.

Thank you,

Lisa McCafferty

--
Lisa H. McCafferty
36 Caron Street
Portland, Maine 04103

Portland Planning Board
C/O Charles Tettleman
389 Congress St 4th Floor
Portland, ME 04101

Dear Mr Tettleman,

Thank you for receiving our letter. The cosigners below live in North Deering on Hope Lane, Hope Avenue, Basket Lane, Curtis Road, Alice Street, Alice Court, Garsoe Drive and other streets which would be directly and negatively impacted by the proposed development at 1 Hope Avenue (PL-002454-2023).

We are asking for your help in requiring the Applicant to address our concerns via modification to the proposal so that it becomes more reasonable for Portland and our neighborhood. We ask that these concerns be made part of the Public Record for this matter, and we ask for your response to each when you have time to do so. You have our sincere thanks in advance of your response.

- Concern: If approved, this proposed development represents an unreasonable increase in traffic on North Deering streets, some of which are even more narrow than Portland recommends for new construction today. This includes concerns about safety, pollution, noise, congestion, and emergency vehicle access and timely response ability. The streets our homes are on are zoned R2. The Portland Land Use Code defines R2 in part as, “along low traffic corridors with limited additional traffic capacity” and this is certainly the case in our neighborhood. It doesn’t make sense or comply with the Portland Land Use Code to approve a proposal necessitating traffic from an R3 zone to utilize a single ingress/egress point through an R2 zone.

  - We strongly urge the city to require an independent traffic study be conducted to allow all stakeholders to understand from a party with

expertise in this matter what the real projected traffic increase and impact would be if this proposal were to be approved.

- Concern: If approved, this proposed development represents an unreasonable negative impact to the experience of using the Presumpscot Trail of the Portland Trails System. The buildings, which would be 6 bedroom structures each, will be huge, and easily visible when using the Presumpscot Trail. This feels like a degradation of a treasured Portland resource for the profit of an out of town developer.

  - We strongly urge the city to require an independent view study be conducted to allow stakeholders to understand from a party with expertise in this matter what the real aesthetic impact to the Trail System would be if this proposal were to be approved.

- Concern: If approved, this proposed development represents a dangerous environmental risk to the surrounding woodland and Presumpscot River which leads directly to Casco Bay. Being so close to the Preserve and waterway, as well as with

consideration to the unusually steep grade between the proposal parcel and the Preserve and waterway, the proposal poses a significant environmental risk.

  - We strongly urge the city to require an independent environmental impact study to be conducted to allow stakeholders to understand from a party with expertise in this matter what the real environmental impact would be if this proposal were to be approved.

- Concern: If approved, this proposed development represents a dangerous traffic bottleneck at the proposed *single access point* to the development. This is exacerbated by the absence of sufficient parking space in the proposal. What will happen in an emergency if the access point is blocked? A car accident, poorly parked cars leaning into the road, or even regular snow plowing could regularly lead to serious problems. It is also relevant to note that the proposed access street

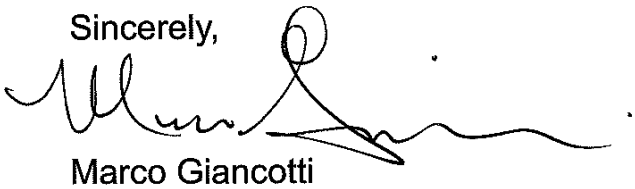
width is only 20 feet, which is more narrow than a development of this size should utilize, further increasing the public safety risk.

- ○ We strongly urge the city to require a second access point to the development, and/or ask for additional parking for residents so that parallel parking does not inevitably contribute to a hazard by choking access to the development.

- ○ We strongly urge the city to require the applicant to increase the width of the streets to the minimum Portland public road standards so that the city retains the ability to take ownership of the road network in the future.

  Thank you, again, for your time and attention, and we look forward to your response and action in light of our noted concerns.

Sincerely,



Marco Giancotti

Kristen Giancotti

Kristen Giancotti
192 Hope Avenue
Portland, Maine 04103

115 Hope Avenue

Portland, ME 04103

February 12, 2024

RE: GenX Capital 1 Hope Avenue Development

Portland Planning Major Site Development Proposal PL-002454-2023

To Members of the Portland Planning Board:

I am writing to express my concern with the 60 unit development proposed by GenX Capital at 1 Hope Avenue in Portland. Although I do not think this property that is located adjacent to the Presumpscot River Preserve is appropriate for residential development, I am writing primarily to express my concern with the scope of the development.

Preliminarily, I would like to note that, as you are probably aware, this developer already has a reputation for poor construction and belligerent behavior. Hope Avenue residents and neighbors have received anonymous email threats for engaging in the public Planning Board process to voice their concerns over the development proposal. The developer also attempted to place an advertisement in the Maine Sunday Telegram bad mouthing the neighborhood residents that was so obnoxious the Maine Sunday Telegram refused to run the advertisement. In addition the developer has recently driven heavy equipment over Portland Trails right of way causing serious damage to the trail.

But as to the scope of the development, here are my main concerns:

1. My greatest concern is with the increased traffic associated with the development. Garsoe Drive and Hope Avenue will be the main

ingress and egress roads for the development. Each are only 30 feet wide, well below city code. Garsoe Drive in particular is very curvy. It already challenging to navigate this street, especially when school buses are using them and on garbage pick up days. **I strongly encourage you and the Planning Board members to do a site visit to Garsoe and Curtis on a Tuesday morning garbage pickup day and personally witness the challenge of navigating these streets; particularly during school pickup and drop off times.**

2. I am also concerned with the intensity of the proposed development. The density of the proposed infrastructure is inappropriate for this fragile landscape. I am a volunteer trail steward for Portland Trails and have traversed this area hundreds of times. Much of the area is often covered with standing water, there are numerous gullies and it is subject to serious erosion. This was even more apparent after the recent storms.
   For a bit of history, I lived in this neighborhood when Hope Avenue was developed. The developer at the time wanted a much larger development and a compromise was reached to save what is now the Presumpscot River Preserve. Part of that compromise was that higher density development would be allowed in the 1 Hope Avenue site. However, the development that was anticipated was about 40 units of 55 year old and older residents. This was to address the concern of traffic congestion on narrow Garsoe and Hope. A development of this magnitude makes much more sense for this location. I strongly urge the Planning Board to consider this in its deliberations.
3. Finally, if the development moves forward at its current configuration, there is the potential for there to be 60-100 children living there. Yet the developer has not reserved one square foot or

area for recreation for these children; no playground, no basketball court, nothing. And yet the nearest playground is nearly 2 miles away. This is simply not responsible development.

Thank you for your consideration in this matter.

Sincerely,
Stephen Champagne
Stephen Champagne

PC5

Zachary Powell <zpowell@portlandmaine.gov>

Hope Avenue PL-002454-2023

Mark Arienti <mtarienti@gmail.com> Mon, Mar 4, 2024 at 10:21 PM
To: zpowell@portlandmaine.gov

Dear Mr. Powell,

I am submitting the attached Traffic Analysis Review pertaining to the above-referenced Hope Avenue development application. This Traffic Review was commissioned by the group of over 100 North Deering Portland neighbors who previously cosigned the Community Letter submitted last fall to voice concerns about the project.

The attached review concurs with the traffic report submitted by the developer's consultant that since the proposed development generates less than 100 peak hour trips, additional analysis including MaineDOT permitting is not required. However, the report does raise the following issues.

- The relative increase in trips from the proposed development via Garsoe Drive or Curtis Street, would represent an increase in traffic of 21 percent on Curtis Street, 185 percent on Hope Avenue, and 77 percent on Garsoe Drive
- A post-development speed study should be required to ensure that additional traffic calming measures are not needed due to the large increase in traffic. The study should include Summit Street and Alice Street to ensure that the neighborhood streets that may be impacted by the proposed residential development are addressed.

I ask that the attached report prepared by VHB be made part of the Public Record for this matter.

Thank you for considering this additional information.

Respectfully,

Mark Arienti, P.E.
110 Alice Street
Portland, Maine

2024.01.25 Hope Avenue Traffic Analysis (3).pdf
572K

Memorandum

To: Kristin Collins, Attorney
Preti, Flaherty & Pachios, Chartered, LLP
45 Memorial Circle #401
PO Box 1058
Augusta, ME 04332-1058

Date: January 25, 2024

Project #: 55741.00

From: Jason Ready, PE, PTOE, PTP

Re: Hope Avenue Traffic Analysis Review, Portland, ME

Introduction

VHB was requested by Preti-Flaherty & Pachios (Client) to provide transportation planning and engineering consulting services on behalf of concerned residents regarding a proposed residential development off Hope Avenue in Portland, ME. The proposed development includes 60 multi-family dwelling units. The following memorandum summarizes a review of the conclusions documented by the developer's traffic consultant including vehicular trip generation, traffic impacts, trip distribution, on-street parking, and traffic calming requirements.

Trip Generation

The trip generation of the proposed development was estimated at 33 weekday AM peak hour trips and 37 weekday PM peak hour trips. Site trip estimates were calculated using the Institute of Transportation Engineers (ITE) publication, Trip Generation, 11th Edition, which is the most recent edition available. The ITE Trip Generation Manual categorizes various land uses and provides weekday daily, weekday morning peak hour, and weekday evening peak hour unadjusted vehicle trip generation estimates for each use. VHB did a review of the trip generation calculations and concur with the trip generation estimates that were most recently submitted.

Since this development generates less than 100 peak hour trips, additional analysis including MaineDOT permitting is not required and discretion for further analysis is determined by the City of Portland.

Traffic Impacts

Speed Study

A speed study was conducted during the evening peak hour during a weekday on Garsoe Drive, Hope Avenue, and Curtis Street. It was concluded that the average speeds recorded on the three roads were below the posted speed limit of 25mph.

Review comments from The City of Portland request that speed data be collected over a minimum 48-hour period and include Summit Street in the analysis. The speed data provided was manually collected for half hour periods. Vehicles traveling to and from the development via Garsoe Drive and Curtis Street may utilize Alice Street to get to Hope Avenue. To ensure additional traffic calming measures are not needed, a post-development speed study should be required to include Summit Street and Alice Street to cover the assumed neighborhood streets that may be impacted by the proposed residential development.

Vehicle Routing

There are multiple routes that lead from Route 26 to Hope Avenue. It is assumed that the peak hour traffic will utilize Alice Street via Garsoe Drive, and Curtis Street via Summit Street to travel to Hope Avenue and the site. A short duration traffic count on Auburn Street shows approximately 608 northbound and 416 southbound (total of 1,024 vehicles) PM peak hour vehicles. The proposed development is forecast to generate 37 PM peak hour trips, an increase of 3.5% in traffic from the baseline at the intersection. With a 50 percent split utilizing both routes in and out of the proposed development during the peak hours, it is unlikely that there will be significant impacts to the roadway network due to the low peak hour volumes at the intersection. Since additional analysis was not required by the City of Portland, a formal trip distribution has not been created.

However, it should be noted that the relative increase in traffic for these routes to and from the proposed development would be more significant. The traffic consultant provided a speed study for some of these routes, the raw results of which were included as a submission to the City of Portland Planning Board as a part of the 9/12/23 agenda packet. These results indicated that there were 90 vehicles on Curtis Street, 10 vehicles on Hope Avenue, and 24 vehicles on Garsoe Drive in the PM peak hour (*total traffic was extrapolated to the full hour based on the limited data collection of less than 1 hour; 45 vehicles, 5 vehicles, and 12 vehicles respectively*). Further, the remarks within the data collection document note that there were "*very few cars observed*". The relative increase in traffic on these roads, assuming a split of the 37 PM Peak hour trips (18 or 19 vehicles entering and exiting) from the proposed development via Garsoe Drive or Curtis Street, would represent an increase in traffic of 21 percent on Curtis Street, 185 percent on Hope Avenue, and 77 percent on Garsoe Drive.

Residential Zoning Purposes

The development area has been re-zoned as R-3 which is defined as the following:

- To provide for medium-density residential development characterized by single-family homes on individual lots and also to provide for planned residential unit developments on substantially sized parcels.

All development traffic entering and exiting will be required to travel through the existing R2 Residential Zoned neighborhood which is defined below.

- To provide for low-density residential development characterized by single-family homes on individual lots in outlying areas of the city and along traffic corridors with limited additional traffic capacity.

In order to minimize the impacts to the R2 zone, the traffic calming measures outlined above should be studied and explored.

Parking

According to the City of Portland, the proposed on-street parking is not evenly distributed throughout the site and the applicant will need to note how proposed on-street parking will be managed so vehicles do not park in non-pull-out areas. Due to the nature of this project, the need of a formal parking study is still under review by the City of Portland.

Portland Planning Board
C/O Zachary Powell
389 Congress St
4th Floor
Portland, ME 04101

April 16, 2024

RE: Hope Avenue PL-002454-2023 (proposed Presumpscot Woods PRUD)

To members of the Planning Board,

I submitted comments in September based on an earlier version (8/29/23) version of the plans for the Presumpscot Woods development. The current comments are based on the plans dated 4/6/24 prepared by Haley Ward. It appears that one of my previous comments on the wet pond design, the one regarding the need to use non-flexible lining to control erosion within the emergency spillway when the grade exceeds 20% has been addressed. However, my comment regarding the need for a geotechnical assessment of subsurface conditions for the wet pond embankment design does not appear to have been addressed. Maine DEP Ch. 500 Appendix E, Section 3(c) specifies that the "*design must include an investigation of the subsurface conditions at the proposed embankment location to evaluate settlement potential, groundwater impacts, and the need for seepage controls. The Department will require the submittal of a geotechnical report from a geotechnical engineer for any embankment over 10 feet in effective height or which the Department determines poses a significant threat to downstream property or life*."

S.W. Cole submitted a geotechnical investigation (dated February 14, 2024) on behalf of the applicant that included borings in the area of the proposed road embankment off of Hope Avenue into the proposed development. This investigation did confirm the presence of soft gray silty clay (Presumpscot Formation) at depth and provided recommendations for construction of the embankment to ensure its stability based on the soils encountered. This information is useful for that location and structure, but the stormwater ponds are over 500 feet away so additional geotechnical investigation should be required at the pond locations to ensure they are structurally sound. In order to meet applicable stormwater requirements, the Applicant needs to conduct a geotechnical analysis of the soils at the pond embankments location.

This is particularly important when one considers the geology of the location at which the development is proposed. The Maine Geologic Society Surficial Geology Map for the Portland West Quadrangle shows that the development site is underlain by Presumpscot Formation Soils that are composed of silt, clay and minor sand deposited on the seafloor at the glacier margin at the end of the last glacial period. Much of Portland and Westbrook is underlain by this formation, but this development is also proposed to be built at the top of a steep slope in close proximity to the River. A 1990 Maine Geologic Society report titled, *Stability of Natural Slopes in the Presumpscot Formation* "Landslides will develop when a slope becomes high and steep enough or is loaded sufficiently to overcome the shear resistance of the soil. With the topographic relief, depth of deposit and shear strength that exists in the Presumpscot Formation of southern and eastern Maine, landslides have occurred in the past at numerous locations." In 2020, such a landslide occurred just a few miles upstream that temporarily blocked the Presumpscot, requiring the Westbrook to declare a state of emergency and damaged water quality with suspended silt and clay particles for the following year. The Applicant should conduct the necessary studies and analysis to ensure that such an incident does not occur.

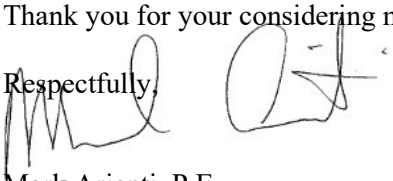
I also have additional comments on the wet design:

- Wet ponds A and B are designed with earthen embankments to detain (dam) stormwater prior to releasing it via an underdrain, an overflow standpipe, during large storms, an emergency spillway that releases water from the pond down a steep slope toward the river. Appendix E, Section 3(c) of Ch. 500, which details the requirements for wet ponds, states that a wet pond's embankment's slopes **may not** be steeper than 3 horizontal to one vertical (3:1). The cross-section on Sheet C505 shows slopes with a grade of 3:1, but this is not consistent with the grades shown on the grading plan (Sheet C103). Sheet C103 shows the proposed embankment outside slope of both wet pond A and Wet Pond B is between 2:1 and 2.5:1, and the interior slope of both embankments is 2:1. These values exceed the limits imposed by DEP rules and pose a risk of failure, particularly in larger storms. Failure could result in a rapid flood of eroding, sediment laden water down to the river. **To minimize this risk, the wet ponds should be redesigned to meet the requirements of Ch. 500.**
- Appendix E of Ch. 500 also has requirements for crest width of the embankment. For an embankment 10 to 15 high, the crest width has to be 8 feet. The plans indicate that the crest width of these ponds is only 6 feet. **Wet Pond A embankment is 11.5 feet high, and therefore the crest width should be increased to 8 feet.**

In summary, the proposed Presumpscot Woods development consists of 60 residential unit that will create 4.05 acres of impervious area and 8.93 acres of total developed area within 500-ft of the Presumpscot River. The developed areas, including buildings, lie at the top of steep deeply eroded drainages slopes down to the Presumpscot river. Stormwater management is a critical and challenging component of such developments particularly when they are located next to an important water resource such as the Presumpscot. The development should be required to be designed conservatively to ensure protection of resources that all of Portland and surrounding communities enjoy. Instead, the developers are proposing to squeeze a large number of housing units into a limited area and in so doing compromise the design of the stormwater management.

Thank you for your considering my concerns.

Respectfully,



Mark Arienti, P.E.
110 Alice Street Portland, ME

Portland Planning Board
C/O Zachary Powell
389 Congress St
4th Floor
Portland, ME 04101

June 4, 2024

RE: Hope Avenue PL-002454-2023 (proposed Presumpscot Woods PRUD)

To members of the Planning Board,

Friends of the Presumpscot River is a non-profit organization founded in 1992 that is supported by donations, grants, and the efforts of our volunteers. Our mission is to work to restore and protect water quality, river habitat and native fisheries in the Presumpscot River through stewardship, advocacy, and education, while creating recreational opportunities and instilling appreciation of the river in all the communities it touches.

For more than 30 years, Friends of the Presumpscot River has worked passionately to restore and protect the vitality of our small but mighty river. Our efforts have improved water quality, restored migratory fish populations, and increased public awareness of both the economic and recreational values of the Presumpscot River.

We offer the following thoughts on the proposed Presumpscot Woods Hope Avenue development. We understand that the proposed project is a 60 unit Planned Residential Unit Development (PRUD) that will create 4.05 acres of impervious area and 8.93 acres of total developed area in very close proximity to the Presumpscot River (within 500 feet). The developed areas, including buildings and roads, lie at the top of steep, deeply eroded drainages that convey stormwater runoff directly to the Presumpscot river. There are several concerns that we have with the proposal including:

- Risk of Presumpscot Formation landslides from loading, heavy equipment operation, and vibration in this landslide-prone area.
- Adverse impact to water quality as a result of the large amount of new impervious and developed area draining directly to the Presumpscot River from converting almost 9 acres of forested land to land occupied by buildings, roads, and other amenities. The existing forested land provides an important buffer to protect river water quality and the resulting habitat for sea run fish.
- Lastly, this project is simply out of character with, and will have a deleterious effect on, the scenic lower Presumpscot gorge and Presumpscot River Preserve. Areas of this quality are unique, in short supply, and should be valued and preserved for future generations.

Thank you for your considering our concerns. Let me know if you have any questions.

Respectfully,

--Will

Will Plumley – Board of Directors
wsplumley@gmail.com
207-595-2134

FRIENDS OF THE PRESUMPSCOT RIVER
PO Box 1474, Westbrook, ME 04098

Portland Planning Board
C/O Zachary Powell
389 Congress St
4th Floor
Portland, ME 04101

October 11, 2024

RE: October 22 Workshop for Hope Avenue PL-002454-2023 (proposed Presumpscot Woods PRUD)

To members of the Planning Board,

Friends of the Presumpscot River (FOPR) has reviewed the soil study for this proposed development. Results of the study confirm and amplify two of the three concerns we expressed in our letter to the Planning Board dated June 4, 2024. FOPR will speak more about this at the October 22 workshop.

To better understand the soil study, FOPR retained the services of geologist Dr. Irwin Novak, asking him for his thoughts on the study. We are submitting Dr. Novak's written findings here in a separate attachment. Importantly, Dr. Novak is an authority on the Presumpscot Formation, often speaks on this topic, and wrote chapter 2, "*Geology of the Presumpscot River Valley of Maine*," for the book **River Voices: Perspectives on the Presumpscot** published by North Country Press in 2020. Dr. Novak also plans to attend the October 22 workshop, share his thoughts, and answer any questions you may have.

Respectfully,

--Will

Will Plumley – Board of Directors
wsplumley@gmail.com
207-595-2134

FRIENDS OF THE PRESUMPSCOT RIVER
PO Box 1474, Westbrook, ME 04098

Irwin Novak, PhD
82 Middle Jam Road
Gorham, Maine 04038

Will Plumley
46 Main St.
Windham, ME 04062

September 29, 2024

Dear Mr. Plumley,

In an email dated September 25, 2024, you contacted me and asked "if I would give a look and share my thoughts" regarding the high intensity soil survey submitted to the Portland Planning Board as part of a subdivision application planned for 1 Hope Avenue. This report and other information may be discussed at a Board Workshop meeting on October 22.

I have read the report prepared for the applicant by Haley Ward, Inc. of Bangor, Maine. The report was completed and signed by Johanna E. Szillery, a Maine Licensed Soil Scientist. I am familiar with Ms. Szillery's work as a Soil Scientist. Full disclosure: we serve together as members of the governor-appointed Maine State Board of Licensure for Geologists and Soil Scientists. She is the chairperson of the board. Because of the limited number of soil scientists and geologist in the state, it is not uncommon to review one another's work – whether in support or not.

Ms. Szillery's characterization and description of the soils on the property are detailed, thorough, and clearly explained and delineated. In sum, the descriptions are of poorly drained soils derived from the Presumpscot Formation - a glacially deposited surficial layer of clayey-silt with occasional admixtures of sand that varies in thickness and land slope. I have no concerns about the quality and thoroughness of the report. Though I am not a Licensed Soil Scientist, I performed essentially the exact same soil characterizations as a Licensed Site Evaluator for septic system design for over 20 years.

The report, in my mind, does point to serious issues regarding these soils and surface water runoff. Specifically, Ms. Szillery points out in Section 5.0 Findings critical issues to the development (*my emphasis in italics*):

> Soils: Limitations exist in the Buxton, Lamoine, Scantic soils series as related to fine textured soils percolating slowly resulting in a relatively high seasonal high-water table. These soils have high potential for frost action and a relatively high seasonal water table. *These limitations are a consideration for the design and construction of roads, underground utilities, foundations, and drainage structures.*

My concerns here are that the soils require a very careful look at how surface and foundation water accumulation will be dealt with. The high seasonal water table may make relying on infiltration and evaporation insufficient to cope with runoff from roads and buildings.

The report continues:

> Limiting conditions are associated with the hydric soil, Scantic, and associated *wetlands.* These areas have been reviewed and mapped as wetlands where the regulatory criteria have been met. *Where limitations associated with wetlands and hydric soils are present, these limitations were mitigated by avoidance and minimization. Where these areas could not be avoided, the applicable permitting has been completed and limitations are overcome with proper design based on the soil's conditions. Additional limiting factors related to soils, such as indications of shallow bedrock, were not identified during our field work.* Additional discussion of use and management considerations associated with these soils series is described in **Appendix** D (Definitions).

Regarding the above: I would seek clarity and detailed specifics about what is meant by "*the applicable permitting has been completed and limitations are overcome with proper design based on the soil's conditions."* Furthermore, depth to bedrock may become a serious issue for foundation work, road sub-surfaces, and the area beneath where detention ponds are proposed.

Also of concern is amount of tree removal. That would likely increase the amount of runoff from the site. Woodlands function in support of soil stabilization and reduce site runoff during rainfall events. Woodlands are generally considered important natural biofilters that protect environments from excessive sedimentation, surface runoff, and erosion.

Overall, drainage mitigation – such as retention ponds – appear to be critical to the project. However, adequate sizing for such mitigation is of particular importance given projected impacts associated with extreme runoff events that accompany climate change. These events can be difficult to predict. Current design criteria for retention systems may not currently be adequate to address climate concerns.

One other factor comes to mind: the uncertainty associated with the landslide-prone Presumpscot Formation. Since 1983, the year of a Gorham landslide along a tributary of the Presumpscot River that destroyed a home and garage, I have devoted many years to research related to this hazard in Maine (see Resume attached). Landslides in the Preumpscot Formation have been associated with human activity such as well-drilling, overloading of mined sand and gravel materials, and over-steepening of slopes during road construction. Landslides occur naturally as a consequence of undercutting slopes by river erosion and wave activity and possibly by the freezing and thawing of the clayey-silt material. I believe consideration of this possibility should be a factor in the amount of tree removal, site preparation, and retention water management.

I am pleased to waive my usual consultant fee in support of this effort.

Respectfully submitted,

Irwin Novak, PhD

ABBREVITED RESUME

Irwin D. Novak

PROFESSIONAL/CONSULTATIVE

Forty-four years teaching geology – University of Southern Maine
Licensed Geologist (no. 82) State of Maine since 1974
Licensed Site Evaluator State of Maine – retired (test pit soil profiling and septic design)
Current Member of the State Board of Certification for Geologists and Soil Scientists
(appointed by Governor King, reappointed by Governor LePage)

FIELDS OF INTEREST

Air photo Interpretation and Remote Sensing analysis, GIS Cartographic Applications especially of Greece and Maine. Quaternary Geology: Geomorphology; Coastal, Fluvial, and Glacial Processes; Sedimentology.

EDUCATION

Cornell University	Ph.D., 1971
University of Florida	M.S., 1968
Hunter College	A.B., 1966

PUBLICATIONS

Refereed Publications (Presumpscot Formation-related highlighted in yellow)

Soulakellis, N., **Novak, I.D.,** Zouros, N., Lowman, P. and Yates, J., 2006, Fusing Landsat-5/TM imagery and shaded relief maps in tectonic and geomorphic mapping: Lesvos Island, Greece: Photogrammetric Engineering and Remote Sensing: . Photogrammetric Engineering & Remote Sensing v.72, no.6, p.693–700.

Novak, I.D., and Soulakellis, N., 2000, Identifying geomorphic features using LANDSAT-5/TM data processing techniques on Lesvos, Greece: Geomorphology, v.34, p.101-109.

Novak, I.D., 1997, Landslides in the Presumpscot Formation in the State of Maine, USA: in Engineering Geology and the Environment, Proceedings of the International Association of Engineering Geology, v. 1, P. Marinos et al, eds., A.A. Balkema Publishing Co., p.931-936 .

Novak, I.D., 1990, Airphoto reconnaissance of slope failures in the Presumpscot Formation, Cumberland County, Maine: Open-File Report No. 90-22, Maine Geological Survey, Augusta.

Novak, I.D., 1987, Inventory and bibliography of landslides in Maine: Open-file Report No. 87-1, Maine Geological Survey, Augusta, 24p.

Books

Geology of the Presumpscot River in Maine in River Voices: Perspectives on the Presumpscot, 2020, compiled by Robert M Sanford and William S Plumley.

Edney, M. and **Novak, I.D**., Editors, 2001, Reading the World: Interdisciplinary perspectives on Peter van den *Keere's Map, "Nova Totius Terrarum Orbis Geographica ac Hydrographica Tabula*" (Amsterdam, 1608/36), Occasional Publication No. 1, Osher Library Associates, University of Southern Maine.

Peer Reviewed Oral and Poster Presentations with Abstracts:

Jones, C., Rich, J., and **Novak, I.D.,** 2006: Mapping sand and gravel mining within the Presumpscot River Watershed, Maine, using remote sensing and other digital data in a G.I.S. environment. Geological Society of America, Abstracts with Programs, v. 38, no. 2, p.25.

Rich, J., Jones, C. and **Novak, I.D.,** 2006: Landslide susceptibility modeling within the glaciomarine Presumpscot formation, southern Maine: Geological Society of America, Abstracts with Programs, v. 38, no. 2, p.80.

Novak, I.D., Zogby, M., Soulakellis, N., Lowman, P., and Yates, J.**,** 2005, Comparing Intra-plate (Maine-Canada) and Active Plate (Aegean) Regions Using Remotely Sensed Geophysical and LANDSAT-5/TM Digital Data: Geological Society of America, Abstracts with Programs, v. 37, no. 7, p.294.

Zogby, M. and **Novak, I.D.,** 2005, Digital magnetic, gravity, and heat flow for Maine and Canada integrated with other digital data in an object-oriented geographical information system: Geological Society of America, Abstracts with Programs, v. 37, no. 1 , p.58.

Novak, I.D., Soulakellis, N., Yates, J., and Lowman, P., 2004, Viewing and intra-plate region by integrating LANDSAT 5-TM images with digital data into an object-oriented geographical information system: Geological Society of America, Abstracts with Programs, v. 35, no. 6, p.260.

Soulakellis, N., **Novak, I.D.,** Yates, J., and Lowman, P., 2002, A Synoptic View of Aegean Tectonics Using MODIS Images and other Digital: Data Geological Society of America, Abstracts with Programs, v. 33, no. 6, p.398.

Novak, I.D., Soulakellis, N., and Zouros, N., 2001, Identifying former centers of volcanic activity on Lesvos Island, Greece: Geological Society of America, Abstracts with Programs, v. 33, no. 6, p.398.

Novak, I.D., Soulakellis, N., and Valiakos, H., 2001, Identifying geologic and geomorphic features of Chios Island, Greece using LANDSAT-5/TM data-processing techniques: American Association of Geographers, 97th Annual Meeting, New York, p.703 of Digital CD Abstract Volume.

Luetje, J. E., and **Novak, I.D.,** 2000, Pebble and cobble morphology on Crescent Beach, Cape Elizabeth, Maine: Geological Society of America, Abstracts with Programs, v. 32, no. 2. (Note: J.E. Luetje is a USM student)

Novak, I. D., 1999, Sealevel change and paleogeography in the vicinity of Lesvos Island, Greece: Geological Society of America, Abstracts with Programs, v. 31, no. 7, p. A52-A53.

Other Presentations:

Novak, I.D., 2001, The meaning of maps to geologists: in Reading the World: Interdisciplinary perspectives on Peter van den *Keere's Map, "Nova Totius Terrarum Orbis Geographica ac Hydrographica Tabula*" (Amsterdam, 1608/36), Matthew Edney and Irwin D. Novak, editors, Occasional Publication No. 1, Osher Library Associates, University of Southern Maine.

Environmental education through Art and Public Service –

Poster Project

Novak, I.D., 2001, Geology of the Presumpscot River Valley: Presumpscot River: A River in Time, a Gift to the Future: Friends of the Presumpscot River Association.

Art Project

Aviva Rahmani and ***Irwin Novak****, Back Cove: Zooming in on IF: part of the "Back Cove - Heart of Portland" USM Area Gallery exhibit, Woodbury Campus Center Portland and USM Art Gallery, Gorham, University of Southern Maine, May10-October 12, 2001*

GRANT AND SCHOLARLY ACTIVITY

USM/NASA-Maine Space Grant Consortium Student Fellowship Program, Principal Investigator. 2007-2008 academic year. $15,000.

USM/NASA-Maine Space Grant Consortium Student Fellowship Program, Principal Investigator. 2006-2007 academic year. $23,500.

USM/NASA-Maine Space Grant Consortium Student Fellowship Program, Principal Investigator (Replacing Sharon Locke). 2006-2007 academic year. $10,000.

NASA-Maine Space Grant Consortium Student Fellowship. $2500 Student Fellowships in each year: 2001-2002, 2001-2002, 2002-2003, 2003-2004 and 2004-2005.

Presumpscot River Watershed Coalition. 2005-2006. $2000 for student research support. Project title: Mapping sand and gravel mining within the Presumpscot River Watershed, Maine, using remote sensing and other digital data in a G.I.S. environment.

TEACHING EXPERIENCE

University of Southern Maine

Professor Emeritus of Geology, 2015 to present
Professor of Geology, September 2007-2015
Associate Professor of Geology 1975-2007
Assistant Professor of Geology, September 1971-1975

Cornell University

Shoals Marine Laboratory, Summer Faculty 1972-1997
Graduate Teaching Fellow, September 1968-June 1971

ADMINISTRATIVE EXPERIENCE

Associate Dean, College of Arts and Sciences, University of Southern Maine, Sept. 1994 to Dec.1997.

Chairman, Department of Geosciences, University of Southern Maine, 2005-2007, 1998-2002, 1992 to 1994; 1982 to 1988.

Chairman, Department of Earth Sciences, Physics and Engineering, University of Southern Maine, 1976 to 1978.

Vice-Chairman, Department of Earth Sciences, Physics and Engineering, University of Southern Maine, January to July l976.

PROFESSIONAL ACTIVITIES

Appointed by Governor Angus King to the Maine Board of Certification for Geologist and Soil Scientists (5-year term beginning March 2000) and continuing to present.
Certified Geologist #82 - State of Maine
Licensed Site Evaluator #104 - State of Maine (retired)
Consulting Geologist: Coastal Processes, Site Development

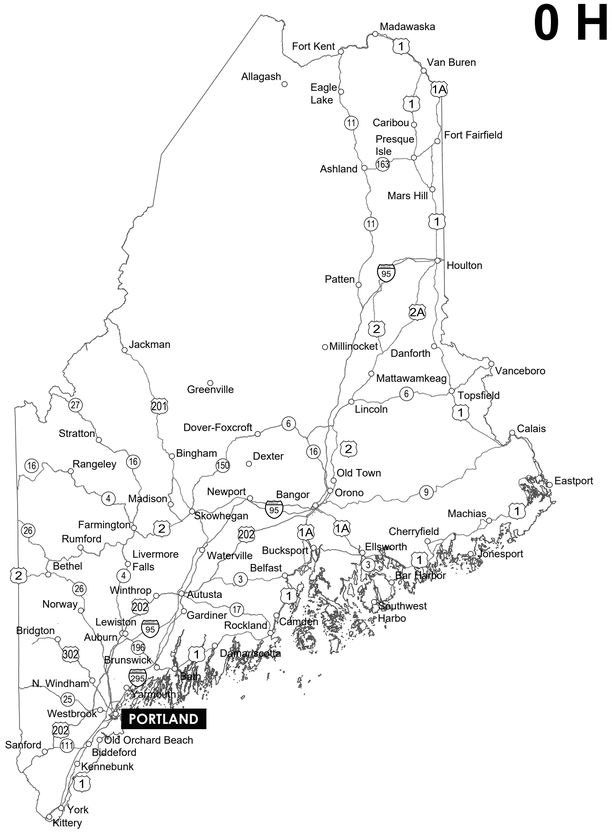
PROFESSIONAL SOCIETIES

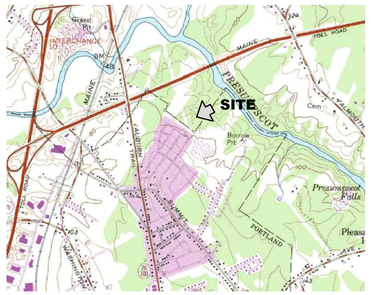
Geological Society of America
Geological Society of Maine
Geological Society of Greece

Revised & abbreviated September 2024

PRESUMPSCOT WOODS SUBDIVISION

0 HOPE AVENUE, PORTLAND, MAINE





LOCATION MAP: USGS QUADRANGLE: PORTLAND WEST
SCALE: 1"=2000'
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REVISION #3
2023.10.27

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shinberg CONSULTING

PROJECT INFORMATION

PROJECT NUMBER:
13773.001

PROJECT ADDRESS:
0 HOPE AVENUE
PORTLAND, MAINE

PROJECT LOCATION:
CUMBERLAND COUNTY

OWNER/APPLICANT
GENX CAPITAL PARTNERS, LLC
2 COTTON STREET
PORTLAND, MAINE 04101

OWNER'S REPRESENTATIVE
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GREG SHINBERG
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RS LEONARD
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SEWER DIVISION
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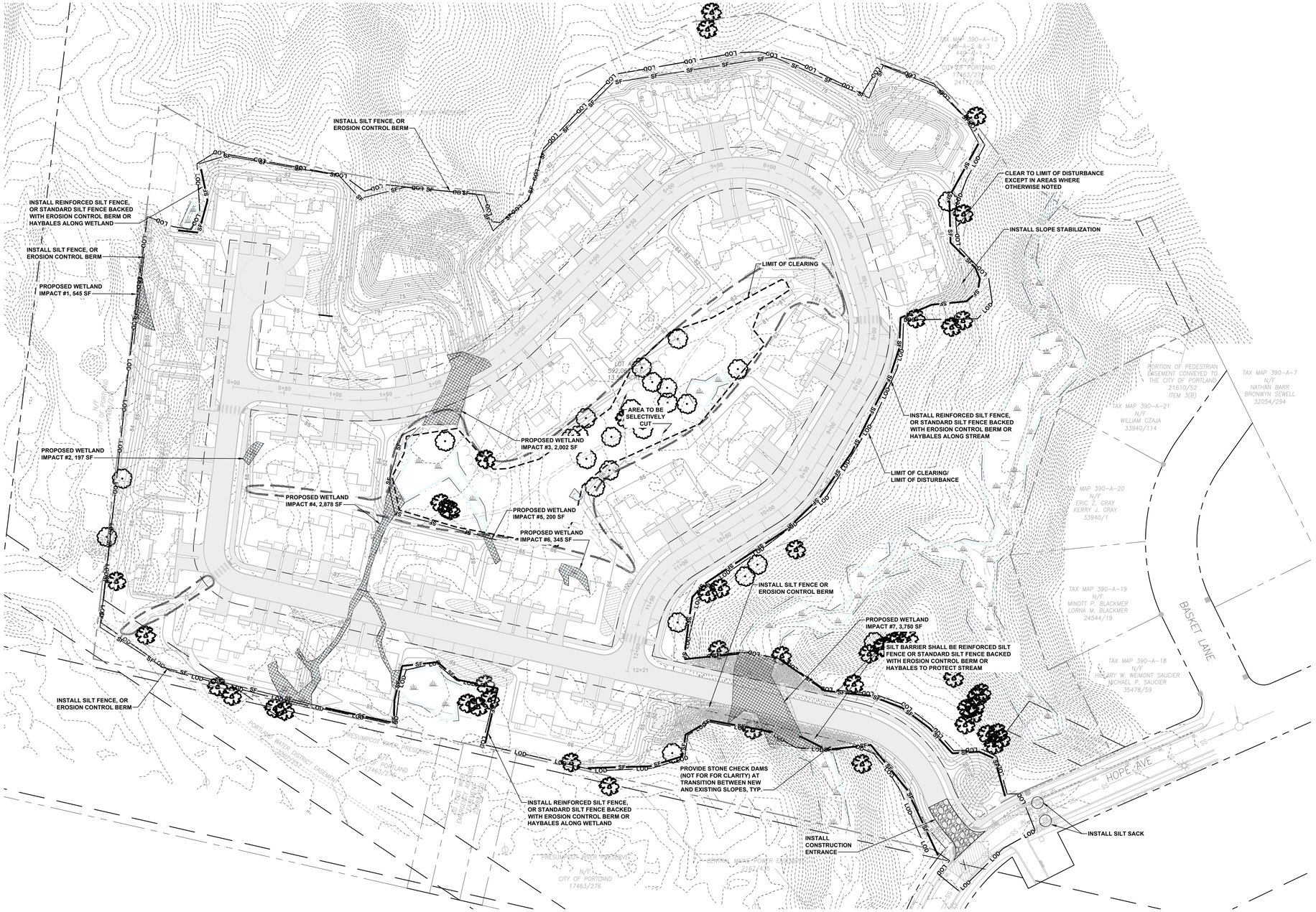

CONSTRUCTION NOTES:

1. REFER TO SHEET LA-100, LANDSCAPE PRESERVATION PLAN FOR TREES TO BE CUT OR PRESERVED.

ABBREVIATIONS

@	AT	GAL	GALLON
		GALV	GALVANIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE		
APPROX.;±	APPROXIMATELY	GPH	GALLONS PER HOUR
		GPM	GALLONS PER MINUTE
BLDG	BUILDING		
		HDPE	HIGH DENSITY POLYETHYLENE
CL	CENTERLINE		
CB	CATCH BASIN		
		ID	INSIDE DIAMETER
		IN.	INCHES
CLR	CLEAR	INT.	INTERSECTION
CMP	CORRUGATED METAL PIPE	INV.	INVERT
CO	CLEANOUT		
CPE	CORRUGATED POLYETHYLENE		
		MAX.	MAXIMUM
		MDOT	MAINE DEPT. OF TRANSPORTATION
DI	DUCTILE IRON	MH	MANHOLE
DIA.	DIAMETER	MIN	MINIMUM
E	EASTING	N	NORTHING
EL	ELEVATION	NE	NORTHEAST
EFM	EXISTING FORCE MAIN	N.T.S.	NOT TO SCALE
EPS	EXTRUDED POLYSTYRENE	NWT	NON WOVEN GEOTEXTILE
FM	FORCEMAIN	OD	OUTSIDE DIAMETER
		O.C.	ON CENTER
		OH	OVERHEAD
		OZ	OUNCES
PERF	PERFORATED		
PSF	POUNDS PER SQUARE FOOT		
PSI	POUNDS PER SQUARE INCH		
PVC	POLYVINYL CHLORIDE		
PL	PROPERTY LINE		
POH	PROPOSED OVERHEAD ELECTRIC		
PUGE	PROPOSED UNDERGROUND ELECTRIC		
R	RADIUS		
S	SLOPE		
SCL	STORMWATER COLLECTION LINE		
SCS	STORMWATER COLLECTION SYSTEM		
SDR	STANDARD DIMENSION RATIO		
SE	SOUTHEAST		
SHT	SHEET		
SQ	SQUARE		
SS	STAINLESS STEEL		
SY	SQUARE YARD		
TBM	TEMPORARY BENCH MARK		
TOC	TOP OF CONCRETE		
TYP	TYPICAL		

LEGEND:

DESCRIPTION	EXISTING	PROPOSED
BENCHMARK		
SURVEY STATION		
MANHOLE		
UTILITY POLE		
SIGN		
CATCH BASIN		
HYDRANT		
WATER VALVE		
GATE VALVE		
PROPERTY LINE		NA
EDGE OF GRAVEL		
EDGE OF PAVEMENT		
CENTERLINE		
MAJOR FOOT CONTOUR	100	100
MINOR FOOT CONTOUR	98	98
TREE LINE		

DESCRIPTION	EXISTING	PROPOSED
WATERLINE	W	W
STORM DRAIN	SD	SD
FORCE MAIN		FM
SANITARY SEWER	SS	SS
UNDERGROUND UTILITIES	UGE	UGU
SEDIMENT CONTROL BARRIER	NA	SF
CHAIN LINK FENCE	NA	X
WETLAND BOUNDARY		
STREAM		
LIMIT OF DISTURBANCE	NA	LOD
PAVED SURFACE		
RIP RAP	NA	
WETLAND IMPACT	NA	
SNOW STORAGE		
WETLAND		

SOURCE NOTES:

1. EXISTING CONDITIONS IS BASED UPON BOUNDARY AND TOPOGRAPHIC SURVEY AT HOPE LAND MADE FOR GENX CAPITAL PARTNERS, 2 COTTON STREET, PORTLAND, ME 04101, BY OWEN HASKELL, INC. PROFESSIONAL LAND SURVEYORS, DATED SEPTEMBER 12, 2022.
2. THIS SURVEY IS ORIENTED TO THE MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
4. THERE MAY BE ADDITIONAL UNDERGROUND WIRES, CABLES, UTILITIES, AND/OR STRUCTURES NOT SHOWN ON THIS PLAN. THE LOCATIONS SHOWN HEREON ARE BASED UPON SURFACE FEATURES VISIBLE AT THE TIME OF THE SURVEY. NO EXCAVATIONS WERE MADE DURING THE COURSE OF THIS SURVEY TO VERIFY AND/OR LOCATE ANY UNDERGROUND STRUCTURES.
5. THE EXISTING TOPOGRAPHY IS A COMBINATION OF SURVEY PERFORMED BY OWEN HASKELL, INC. PROFESSIONAL LAND SURVEYORS AND STATE OF MAINE LIDAR.
6. PROPOSED LAYOUT IS BASED UPON BUILDING FLOOR PLANS FOR PRESUMPSCOT WOODS, PREPARED BY A. MALTESE DESIGN, DATED 07.08.22.
7. NATURAL RESOURCE DATA WAS PROVIDED IN DWG. AND PDF. FORMAT FOR PROJECT GENX CAPITAL PARTNERS, LLC. HOPE AVENUE, PORTLAND, CUMBERLAND COUNTY, MAINE, DELINEATED WETLAND AND WATERCOURSE MAP, PREPARED BY FLYCATCHER, AND DATED JULY 2022.

GRAPHIC SCALE

50 0 25 50 100 150

(IN FEET)
1 inch = 50 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

EROSION CONTROL, CLEARING LIMITS, LEGEND AND NOTES

DATE	SCALE
2022.08.29	1"=50'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C001** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-GN.DWG, 2023.10.27, 2:15 PM

EROSION AND SEDIMENTATION CONTROL NOTES

1. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS)SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OR SOIL DISTURBANCE ACTIVITIES. BMPS SHALL COMPLY WITH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS AND MAINE EROSION AND SEDIMENT CONTROL PRACTICES FIELD GUIDE FOR CONTRACTORS: HTTPS://WWW.MAINE.GOV/DEP/LAND/EROSION/ESCBMPS/ESC_BMP_FIELD.PDF
2. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENTATION CONTROL BEST MANAGEMENT PRACTICES (BMPS), PUBLISHED BY THE BUREAU OF LAND AND WATER QUALITY, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION.
3. ALL SEDIMENT BARRIERS AND EROSION CONTROL MEASURES SHALL BE INSTALLED BEFORE THE START OF CONSTRUCTION AS NOTED IN THE WRITTEN EROSION AND SEDIMENT CONTROL PLAN.
4. EROSION CONTROL MEASURES WITHIN 50 FEET OF PROTECTED NATURAL RESOURCES SHALL HAVE A DOUBLE PERIMETER EROSION CONTROL AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
5. OPEN AREAS THAT ARE STRIPPED OR GRADED SHALL BE LIMITED TO ONE ACRE OR NO LARGER THAN CAN BE MULCHED IN ONE DAY.
6. SEDIMENT BARRIERS SHALL BE PLACED DOWNGRADIENT OF ALL STOCKPILES. STORMWATER RUNOFF SHOULD BE PREVENTED FROM RUNNING INTO STOCKPILES.
7. MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL EROSION CONTROL MEASURES MAY NEED TO BE IMPLEMENTED. ALL AREAS OF INSTABILITY AND EROSION MUST BE REPAIRED IMMEDIATELY DURING CONSTRUCTION AND NEED TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED OR VEGETATION IS ESTABLISHED. A CONSTRUCTION LOG MUST BE MAINTAINED FOR THE EROSION AND SEDIMENTATION CONTROL INSPECTIONS AND MAINTENANCE
8. MINIMIZE DISTURBED AREA AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION.
9. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. 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.
10. PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWN GRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.
11. PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
12. INSTALL SILT FENCES OR SEDIMENT BARRIERS ALONG CONTOUR DIVIDING FLAT AND STEEP SLOPES, AREAS WITH DIFFERENT DISTURBANCE SCHEDULES, AROUND TEMPORARY STOCKPILES OR IN OTHER UNSPECIFIED POSSIBLE CIRCUMSTANCES SHOULD BE CONSIDERED BY THE CONTRACTOR. THE INTENT OF SUCH INTERIOR SILT FENCES IS TO LIMIT SEDIMENT TRANSPORT WITHIN THE SITE TOWARD THE PROTECTED RESOURCES.
13. SILT FENCE AND SEDIMENT BARRIERS WILL BE INSPECTED, REPLACED AND/OR REPAIRED IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL (0.5 INCH OR GREATER) OR SNOW MELT OR LOSS OF SERVICEABILITY DUE TO SEDIMENT ACCUMULATION. AT A MINIMUM, ALL EROSION CONTROL DEVICES WILL BE OBSERVED WEEKLY.
14. EROSION CONTROL MIX BERMS SHALL CONSIST OF A MIX OF SHREDDED WOOD FRAGMENTS AND GRIT THAT MUST BE WELL GRADED WITH AN ORGANIC CONTENT THAT IS BETWEEN 50 AND 100% OF WEIGHT. MINERAL PORTION OF THE MIX SHOULD BE NATURALLY INCLUDED IN THE PRODUCT WITH NO ROCKS GRATER THAN 4-INCHES OR LARGE AMOUNTS OF FINES (SILTS AND CLAYS). MIX SHOULD BE FREE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH.
15. EROSION CONTROL MIX SHALL BE USED ON SLOPES 3:1 OR SHALLOWER. SLOPES BETWEEN 3:1 AND 2:1 SHALL HAVE EROSION CONTROL BLANKET. SLOPES BETWEEN 2:1 AND 1.5:1 SHALL HAVE RIP RAP. SLOPES GREATER THAN 1.5:1 ARE PROHIBITED.
16. HAYBALES MAY BE INSTALLED IN ADDITION TO SILT FENCE OR USED AROUND CATCH BASINS TO PROVIDE ADDITIONAL SEDIMENT CAPTURE AND CONTROL.
17. EROSION CONTROL BLANKETS INTENDED FOR TEMPORARY SLOPE OR CHANNEL STABILIZATION SIMILAR TO NORTH AMERICAN GREEN ERONET BIODEGRADABLE EROSION CONTROL BLANKET OR SIMILAR.
18. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO CONSTRUCTION SITE.
19. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE STABILIZED BY A SUITABLE GROWTH OF GRASS. ONCE A SUITABLE GROWTH OF GRASS HAS BEEN OBTAINED, ALL TEMPORARY EROSION CONTROL ITEMS SHALL BE REMOVED BY THE CONTRACTOR. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THEY ARE REMOVED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, SEEDED, AND MULCHED IMMEDIATELY.
20. A SUITABLE BINDER SUCH AS TERRTACK WILL BE USED ON THE HAY MULCH FOR WIND CONTROL.
21. IF FINAL SEEDING OF DISTURBED AREAS IS NOT COMPLETED BY SEPTEMBER 15TH OF THE YEAR OF CONSTRUCTION, THEN ON THAT DATE THESE AREAS WILL BE GRADED AND SEEDED WITH WINTER RYE AT THE RATE OF 112 POUNDS PER ACRE OR 3 POUNDS PER 1000 SQUARE FEET. THE RYE SEEDING WILL BE PRECEDED BY AN APPLICATION OF 3 TONS OF LIME AND 800 LBS. OF 10-20-20 FERTILIZER OR ITS EQUIVALENT. MULCH WILL BE APPLIED AT A RATE OF 90 POUNDS PER 1000 SQUARE FEET.
22. IF THE RYE SEEDING CANNOT BE COMPLETED BY OCTOBER 1ST OR IF THE RYE DOES NOT MAKE ADEQUATE GROWTH BY DECEMBER 1ST, THEN ON THOSE DATES, HAY MULCH WILL BE APPLIED AT 150 POUNDS PER 1000 SQUARE FEET.
23. ALL CATCH BASINS ARE TO BE PROTECTED BY STRAW BALE OR SILT FENCE IN ACCORDANCE WITH SECTION B-3 STORM DRAIN INLET PROTECTION OF THE MAINE BMP HANDBOOK. SURROUNDING AREAS CAN BE EXCAVATED OR LEFT LOW AS A SEDIMENT TRAP. CURB INLETS SHALL BE PROTECTED BY GUTTERGATORS, OR APPROVED EQUIVALENT.
24. CONTRACTOR TO PROVIDE SEDIMENT SACKS IN ALL EXISTING BASINS PRIOR TO CONSTRUCTION.
25. WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A WETLAND OR WATER BODY WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
26. REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
27. PERMEANT STABILIZATION: IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIP-RAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RE-STABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
    A. SEEDED AREAS: FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
    B. SODDED AREAS: FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
    C. PERMANENT MULCH: FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.
    D. RIPRAP: FOR AREAS STABILIZED WITH RIP-RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP-RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP-RAP. STONE MUST BE SIZED APPROPRIATELY. IT IS RECOMMENDED THAT ANGULAR STONE BE USED.
    E. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED, PROVIDED IT IS FREE OF FINE MATERIALS THAT MAY RUNOFF WITH A RAIN EVENT
    F. DITCHES, CHANNELS, AND SWALES: FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH A 90% COVER OF HEALTHY VEGETATION, WITH A WELL-GRADED RIP-RAP LINING, TURF REINFORCEMENT MAT, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE CHANNEL BANKS, OR DOWN-CUTTING OF THE CHANNEL.
28. ALL DISTURBED AREAS WILL BE SEEDED WITH 2.5 LBS. RED FESCUE AND 0.5 LBS. RYE GRASS PER 1,000 SQUARE FEET AND MULCHED AT A RATE OF 90 LBS. PER 1,000 SQUARE FEET OR EQUIVALENT APPLICATION OF SEED AND MULCH.
29. IF PERMANENT BMP LOCATIONS ARE TO BE USED AS SEDIMENT TRAPS THEN THE AREAS OF THE AREAS OF THE BMPS SHALL BE RESTORED AS NEEDED TO PREPARE FOR LONG TERM USE, SUCH AS BY REMOVAL OF SEDIMENT, REGRADING ELEVATIONS, INSTALLING UNDERDRAINS (WHERE APPROPRIATE) AND STABILIZING THE AREA.
30. WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 15. IF DISTURBED AREAS ARE NOT STABILIZED WITH PERMANENT MEASURES BY NOVEMBER 1 OR NEW SOIL DISTURBANCE OCCURS AFTER NOVEMBER 1, BUT BEFORE APRIL 15, THEN THESE AREAS MUST BE PROTECTED AND RUNOFF FROM THEM MUST BE CONTROLLED BY ADDITIONAL MEASURES AND RESTRICTIONS.
    A. SITE STABILIZATION: FOR WINTER STABILIZATION, HAY MULCH IS APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.
    B. SEDIMENT BARRIERS: ALL AREAS WITHIN 75 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIERS.
    C. DITCH: ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE DEPARTMENT.
    D. SLOPES: MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.
31. STORMWATER CHANNELS: DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE DESIGNED, CONSTRUCTED, AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS MUST BE SIZED TO HANDLE, AT A MINIMUM, THE EXPECTED VOLUME RUN-OFF. EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.
    A. THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDE SLOPES.
    B. WHEN THE WATERSHED DRAINING TO A DITCH OR SWALE IS LESS THAN 1 ACRE OF TOTAL DRAINAGE AND LESS THAN ¼ ACRE OF IMPERVIOUS AREA, DIVERSION OF RUNOFF TO ADJACENT WOODED OR OTHERWISE VEGETATED BUFFER AREAS IS ENCOURAGED WHERE THE OPPORTUNITY EXISTS.
32. SEDIMENT BASINS: SEDIMENT BASINS MUST BE DESIGNED TO PROVIDE STORAGE FOR EITHER THE CALCULATED RUNOFF FROM A 2-YEAR, 24-HOUR STORM OR PROVIDE FOR 3,600 CUBIC FEET OF CAPACITY PER ACRE DRAINING TO THE BASIN. OUTLET STRUCTURES MUST DISCHARGE WATER FROM THE SURFACE OF THE BASIN WHENEVER POSSIBLE. EROSION CONTROLS AND VELOCITY DISSIPATION DEVICES MUST BE USED IF THE DISCHARGING WATERS ARE LIKELY TO CREATE EROSION. ACCUMULATED SEDIMENT MUST BE REMOVED AS NEEDED FROM THE BASIN TO MAINTAIN AT LEAST ½ OF THE DESIGN CAPACITY OF THE BASIN.

    THE USE OF CATIONIC TREATMENT CHEMICALS, SUCH AS POLYMERS, FLOCCULANTS, OR OTHER CHEMICALS THAT CONTAIN AN OVERALL POSITIVE CHARGE DESIGNED TO REDUCE TURBIDITY IN STORMWATER MUST RECEIVE PRIOR APPROVAL FROM THE DEPARTMENT. WHEN REQUESTING APPROVAL TO USE CATIONIC TREATMENT CHEMICALS, YOU MUST DESCRIBE APPROPRIATE CONTROLS AND IMPLEMENTATION PROCEDURES TO ENSURE THE USE WILL NOT LEAD TO A VIOLATION OF WATER QUALITY STANDARDS. IN ADDITION, YOU MUST SPECIFY THE TYPE(S) OF SOIL LIKELY TO BE TREATED ON THE SITE, CHEMICALS TO BE USED AND HOW THEY ARE TO BE APPLIED AND IN WHAT QUANTITY, ANY MANUFACTURER'S RECOMMENDATIONS, AND ANY TRAINING HAD BY PERSONNEL WHO WILL HANDLE AND APPLY THE CHEMICALS.
33. CULVERTS: CULVERTS MUST BE SIZED TO AVOID UNINTENDED FLOODING OF UPSTREAM AREAS OR FREQUENT OVERTOPPING OF ROADWAYS. CULVERT INLETS MUST BE PROTECTED WITH APPROPRIATE MATERIALS FOR THE EXPECTED ENTRANCE VELOCITY, AND PROTECTION MUST EXTEND AT LEAST AS HIGH AS THE EXPECTED MAXIMUM ELEVATION OF STORAGE BEHIND THE CULVERT. CULVERT OUTLET DESIGN MUST INCORPORATE MEASURES, SUCH AS APRONS, TO PREVENT SCOUR OF THE STREAM CHANNEL. OUTLET PROTECTION MEASURES MUST BE DESIGNED TO STAY WITHIN THE CHANNEL LIMITS. THE DESIGN MUST TAKE ACCOUNT OF TAILWATER DEPTH.
34. PARKING AREAS: PARKING AREAS MUST BE CONSTRUCTED TO ENSURE RUNOFF IS DELIVERED TO ADJACENT SWALES, CATCH BASINS, CURB GUTTERS, OR BUFFER AREAS WITHOUT ERODING AREAS DOWNSLOPE. THE PARKING AREA'S SUBBASE COMPACTION AND GRADING MUST BE DONE TO ENSURE RUNOFF IS EVENLY DISTRIBUTED TO ADJACENT BUFFERS OR SIDE SLOPES. CATCH BASINS MUST BE LOCATED AND SET TO PROVIDE ENOUGH STORAGE DEPTH AT THE INLET TO ALLOW INFLOW OF PEAK RUNOFF RATES WITHOUT BY-PASS OF RUNOFF TO OTHER AREAS.
35. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

INSPECTION AND MAINTENANCE

THE FOLLOWING STANDARDS MUST BE MET DURING CONSTRUCTION:

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT (0.5" OR MORE IN A CONSECUTIVE 24-HOUR PERIOD), AND PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS.
2. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (0.5" OR MORE IN A CONSECUTIVE 24-HOUR PERIOD). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
3. KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN.

HOUSEKEEPING

1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.
2. GROUNDWATER PROTECTION: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF 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. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.
3. FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.
4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
5. EXCAVATION DE-WATERING: EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE POND AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.
6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
    (A) DISCHARGES FROM FIREFIGHTING ACTIVITY;
    (B) FIRE HYDRANT FLUSHINGS;
    (C) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
    (D) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
    (E) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
    (F) 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;
    (G) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
    (H) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
    (I) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
    (J) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
    (K) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
    (L) LANDSCAPE IRRIGATION.
7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
    (A) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
    (B) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
    (C) SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
    (D) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

STANDARD DESIGN NOTES ON FILTER BASINS

SOIL FILTER MEDIA

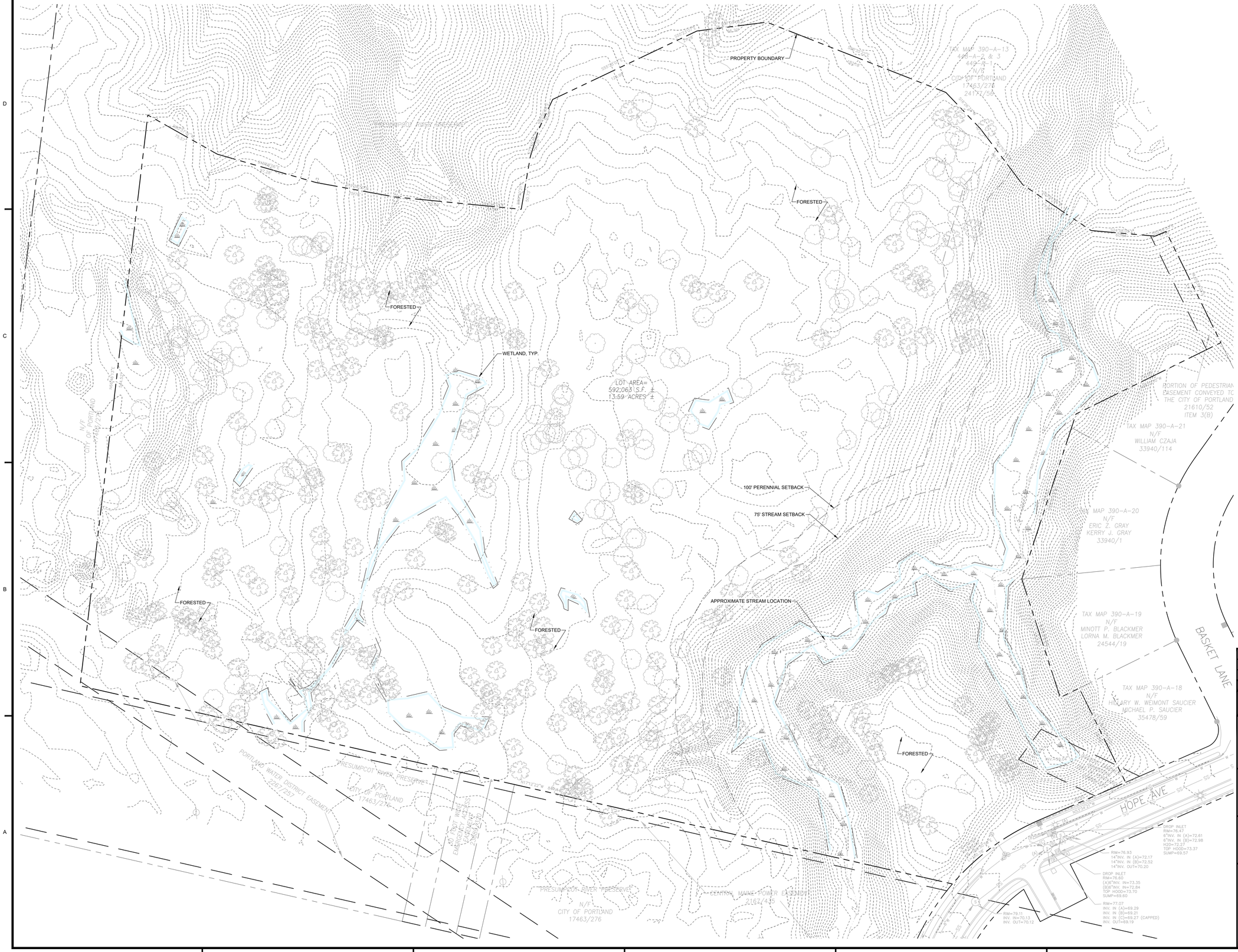
1. THE SOIL FILTER MATERIAL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 2 INCHES. NO OTHER MATERIAL OR SUBSTANCE THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE A HINDRENCE TO THE PLANTING OR MAINTENANCE OPERATION CAN BE MIXED WITH THE FILTER.
2. GRADATION TESTS AND PERMEABILITY TESTING OF THE SOIL FILTER MATERIAL SHALL BE PERFORMED BY A QUALIFIED SOIL TESTING LABORATORY AND SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE PLACEMENT AND COMPACTION.
3. THE MIXTURE SHALL CONTAIN BY VOLUME THE FOLLOWING:
    A. 50% OF SANDY SOIL - MEDOT #703.01 WILL NOT CONTAIN SUFFICIENT FINE AND TOPSOIL/LOAM WILL HAVE TO COMPENSATE THE DEFICIENCY
    B. 20% OF LOAMY TOPSOIL
    C. 30% OF SUPERHUMUS OR EQUIVALENT COMPOSTED WOODY FIBERS AND FINE SHREDDED BARK
4. THE BLENDED SOIL FILTER MIXTURE OF BARK MULCH, SAND AND LOAM SHALL HAVE 8% TO 12% PASSING THE #200 SIEVE. THE MIXTURE SHALL HAVE A CLAY CONTENT OF LESS THAN 2%. THE TESTING OF ALL MATERIALS SHALL BE PERFORMED BY A QUALIFIED LABORATORY AND SUBMITTED TO THE ENGINEER FOR REVIEW.
5. SOIL FILTER MEDIA MIXTURE SHALL HAVE A PERMEABILITY OF 2.4 IN/HR TO 4 IN/HR UPON COMPACTION BETWEEN 90 AND 92% STANDARD PROCTOR (ASTM D698).

UNDERDRAIN BEDDING

1. THE UNDERDRAIN BEDDING MATERIAL (12 INCHES MINIMUM) SHALL BE CLEAN GRAVEL MEETING THE GRADATION MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE C GRADATION MEDOT SPECIFICATIONS 703.22 UNDERDRAIN TYPE B.

TRANSITION LAYER

1. THE TRANSITION LAYER (6 INCH MINIMUM) SHALL MEET THE GRADATION MEDOT SPECIFICATION 703.22 UNDERDRAIN TYPE B. THE SAND SHALL HAVE LESS THAN 5% FINES PASSING THE #200 SIEV



GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

EXISTING CONDITIONS PLAN

DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C101** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-EX.DWG, 2023.10.27, 2:18 PM

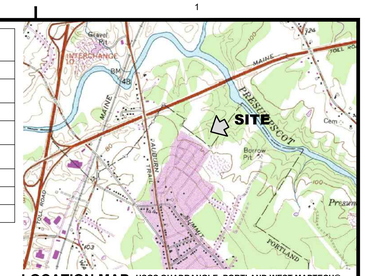
GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

PRUD LAND AREA CALCULATION

TOTAL LAND AREA	592,063 SF
WETLAND & WATERCOURSE AREA	42,951.25 SF
AREA WITH SLOPE >25%	139,230 SF
AREA OF SPECIAL FLOOD HAZARD	N/A
TOTAL NET AREA FOR DEVELOPMENT	409,882 SF
NUMBER OF UNITS	60 UNITS
RESULTING NET AREA/UNIT	6,831 SF
REQUIRED NET AREA/UNIT	6,500 SF



LOCATION MAP
SCALE: 1"=2000'

USGS QUADRANGLE: PORTLAND WEST MAPTECH®
USGS TOPOGRAPHIC SERIES™.
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PARCEL INFORMATION

MAP / LOT:	390/A001, 448/A001001, 449/A002	
LOT AREA:	13.59	ACRES
ZONE OR DISTRICT:	R-3 PRUD	
FLOOD ZONE:	ZONE C (MINIMAL HAZARD)	
WATER:	MUNICIPAL	
SEWER:	MUNICIPAL	

SITE DEVELOPMENT DATA

EXISTING IMPERVIOUS SF / AC:	0	0.00
NEW IMPERVIOUS SF/AC:	176,147	4.04
TOTAL IMPERVIOUS SF / AC:	176,147	4.04
TOTAL DEVELOPED SF / AC:	388,727	8.92
LOT COVERAGE ALLOWED/ PROVIDED:	35%	30%
NEW ROADWAY AND PARKING SF / AC	52,171	1.20
WETLAND IMPACTS SF / AC:	9,916	0.23

DESIGN STANDARDS

	REQUIRED	*PROPOSED*
R.O.W. WIDTH:	50'	N/A
TRAVELED WAY WIDTH:	20'	20'
MINIMUM GRADE:	0.5%	1%
MAXIMUM GRADE:	8%	4%
ROADWAY CROWN:	3% LOCAL / 2% OTHER	2%
MAX GRADE @ INT:	3% FOR 100'	2.46%
BUILDING HEIGHT:	35 FT	25
MINIMUM FRONT SETBACK:	25 FT	340
MINIMUM REAR SETBACK:	25 FT	25
MINIMUM SIDE SETBACK:	25 FT	25
MINIMUM FRONTAGE:	50 FT	191.39
MINIMUM LOT WIDTH:	65 FT	191.39
PARKING REQUIRED	1 PER DWELLING / UNIT	
PARKING PROVIDED	(2) 1 GARAGE / 1 DRIVEWAY	
OPEN SPACE (ACTIVE & PASSIVE) (PRUD W/ WORKFORCE HOUSING)	18,000 SF	43,700 SF

RECORD OWNER:
GENX CAPITAL PARTNERS, LLC
2 COTTON STREET
PORTLAND, MAINE 04101

THIS IS TO CERTIFY THAT AFTER REVIEWING THE SITE PLAN SUBMISSION INFORMATION FOR THE PROJECT SHOWN ON THIS PLAN AND CONSIDERING EACH OF THE CRITERIA SET FORTH IN THE CITY OF PORTLAND'S CODE OF ORDINANCES AND IN ACCORDANCE WITH THE APPLICATION REQUIREMENTS, THE UNDERSIGNED HAVE MADE FINDINGS OF FACT ESTABLISHING THAT THIS PLAN ALONG WITH ITS ADDITIONAL SUBMISSION INFORMATION (IF APPLICABLE) HAS MET ALL THE CRITERIA SET FORTH AND THEREFORE THE SITE PLAN IS APPROVED.

APPROVED BY THE CITY OF PORTLAND PLANNING BOARD ON: _____

CONDITIONS: _____

PLANNING BOARD SIGNED ON: _____

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
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207.989.4824
WWW.HALEYWARD.COM

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

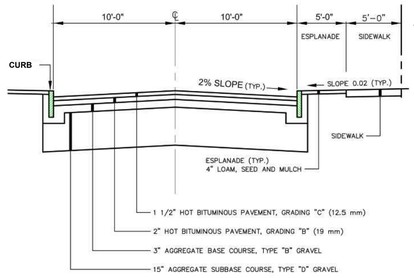
TITLE
PROPOSED SITE PLAN

DATE: 2022.08.29	SCALE: 1"=40'
DRAWN BY: BLQ	DESIGNED BY: BLQ
CHECKED BY: JHW	
PROJECT No.: 13773.001	
DRAWING No.: C102	REV.: 3

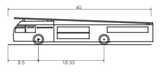
STATE OF MAINE
CUMBERLAND, SS.
REGISTRY OF DEEDS
RECEIVED AND FILED

20 _____
_____ **h** **m** **M.**
Attest _____ **Register**

RECORDED AS MAP FILE: _____



LOCAL STREET CROSS SECTION
NOT TO SCALE



Ladder Truck	
Overall Length	40.000ft
Overall Width	8.330ft
Overall Body Height	7.514ft
Min Body Ground Clearance	0.764ft
Max Track Width	8.330ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-HAYKO-CHD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-SP.DWG, 2023.10.27, 2:17 PM

GENERAL NOTES:

1. DRIP EDGE FILTERS SHALL BE DAYLIGHTED WITH 6" SOLID HDPE PIPE WITH RODENT SCREEN TO REAR OF BUILDINGS, TYP.
2. FOUNDATION DRAINS SHALL BE TIED INTO THE NEAREST CATCH BASIN (BASEMENTS SHALL REQUIRE SUMP PUMPS).
3. CONTRACTOR SHALL USE MEANS AND METHODS NECESSARY TO ENSURE CONSTRUCTION VEHICLES AND ACTIVITIES DO NOT EXTEND BEYOND THE PROPERTY BOUNDARY.

PROPOSED RIP RAP SPILLWAY
OUTLET: 76.65
BIOCELL A REFER TO DETAIL ON SHEET C504
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 6" HDPE PIPE L: 40 LF / S: 0.005
WETPOND A OUTLET STRUCTURE REFER TO DETAIL AND TABLE ON SHEET C505
PROPOSED 2:1 RIP RAP SLOPE AND SPILLWAY
WETPOND A
PROPOSED 15" HDPE L: 69 LF / S: 0.005 INV. IN: 84.08 INV. OUT: 83.74
PROPOSED 15" HDPE SD L: 32 LF / S: 0.015
PROPOSED 15" HDPE SD L: 15 LF / S: 0.007
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE L: 63 LF / S: 0.006 INV. IN: 83.15 INV. OUT: 82.77
PROPOSED 18" HDPE SD L: 92 LF / S: 0.005
PROPOSED 15" HDPE SD L: 51 LF / S: 0.005
PROPOSED 15" HDPE SD L: 38 LF / S: 0.006
PROPOSED 15" HDPE SD L: 70 LF / S: 0.005
PROPOSED 15" HDPE SD L: 128 LF / S: 0.032
PROPOSED 24" HDPE SD L: 93 LF / S: 0.005
PROPOSED 18" HDPE L: 67 LF / S: 0.005 INV. IN: 76.50 INV. OUT: 76.15
PROPOSED 12" HDPE L: 34 LF / S: 0.018 INV. IN: 76.45 INV. OUT: 75.85
PROPOSED 15" HDPE L: 15 LF / S: 0.157 INV. IN: 83.80 INV. OUT: 81.45
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
PROPOSED 15" HDPE SD L: 58 LF / S: 0.005
PROPOSED 15" HDPE SD L: 17 LF / S: 0.005
OUTLET: 79.65
RIP RAP SPILLWAY AND 2:1 SLOPE
PROPOSED GUSF 1 SOIL GROUP: C FILTER SIZE: 10'x20' REFER TO DETAIL AND TABLE ON SHEET C505
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED CONCRETE BOX CULVERT 6' H x 6' W x 72' L
PROPOSED GUSF 2 SOIL GROUP: C FILTER SIZE: 10'x20' REFER TO DETAIL AND TABLE ON SHEET C505
OUTLET: 72.88 W/ OUTLET PROTECTION
PROPOSED RIP RAP SPILLWAY
PROPOSED 15" HDPE SD L: 27 LF / S: 0.002
PROPOSED 15" HDPE SD L: 14 LF / S: 0.005
OUTLET: 74.65
BIOCELL B REFER TO DETAIL ON SHEET C504
PROPOSED 15" HDPE SD L: 115 LF / S: 0.029
PROPOSED 2:1 RIP RAP SLOPE AND SPILLWAY
PROPOSED 4" HDPE PIPE L: 75 LF / S: 0.005
PROPOSED OUTLET PROTECTION
WETPOND B
WETPOND B OUTLET STRUCTURE REFER TO DETAIL AND TABLE ON SHEET C505
PROPOSED 24" HDPE L: 43 LF / S: 0.002 INV. IN: 74.00 INV. OUT: 74.08
PROPOSED 24" HDPE SD L: 15 LF / S: 0.020
PROPOSED 15" HDPE SD L: 143 LF / S: 0.011
PROPOSED BANK STABILIZATION
100' PERENNIAL STREAM SETBACK
PROPOSED 15" HDPE SD L: 110 LF / S: 0.013
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
PROPOSED 18" HDPE SD L: 92 LF / S: 0.005
PROPOSED 15" HDPE SD L: 51 LF / S: 0.005
PROPOSED 15" HDPE SD L: 38 LF / S: 0.006
PROPOSED 15" HDPE SD L: 58 LF / S: 0.005
PROPOSED 15" HDPE SD L: 17 LF / S: 0.005
PROPOSED 15" HDPE SD L: 27 LF / S: 0.002
PROPOSED 15" HDPE SD L: 14 LF / S: 0.005
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
PROPOSED 15" HDPE SD L: 15 LF / S: 0.157 INV. IN: 83.80 INV. OUT: 81.45
PROPOSED 15" HDPE SD L: 17 LF / S: 0.005
PROPOSED 15" HDPE SD L: 27 LF / S: 0.002
PROPOSED 15" HDPE SD L: 14 LF / S: 0.005
PROPOSED 15" HDPE SD L: 14 LF / S: 0.007
PROPOSED 15" HDPE SD L: 24 LF / S: 0.006
CB-01 CB-02 CB-03 CB-04 CB-05 CB-06 CB-07 CB-08 CB-09 CB-10 CB-11 CB-12 CB-13 CB-14 CB-15 CB-16 CB-17 CB-18 CB-19 CB-20 CB-21 CB-22 CB-23 CB-24 CB-25 CB-26 CB-27
SMH-18 SMH-19
DROP INLET RIM=76.93 14"INV. IN (A)=72.17 14"INV. IN (B)=72.52 14"INV. OUT=70.20
DROP INLET RIM=76.60 (A)6"INV. IN=73.35 (B)6"INV. IN=72.84 TOP HOOD=73.70 SUMP=69.60
RIM=77.07 INV. IN (A)=69.29 INV. IN (B)=69.21 INV. IN (C)=69.27 (CAPPED) INV. OUT=69.19
RIM=79.11 INV. IN=70.13 INV. OUT=70.12
DROP INLET RIM=76.47 6"INV. IN (A)=72.61 6"INV. IN (B)=72.98 H20=72.27 TOP HOOD=73.37 SUMP=69.57
HOPE AVE

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

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Bangor, Maine 04401
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PROJECT

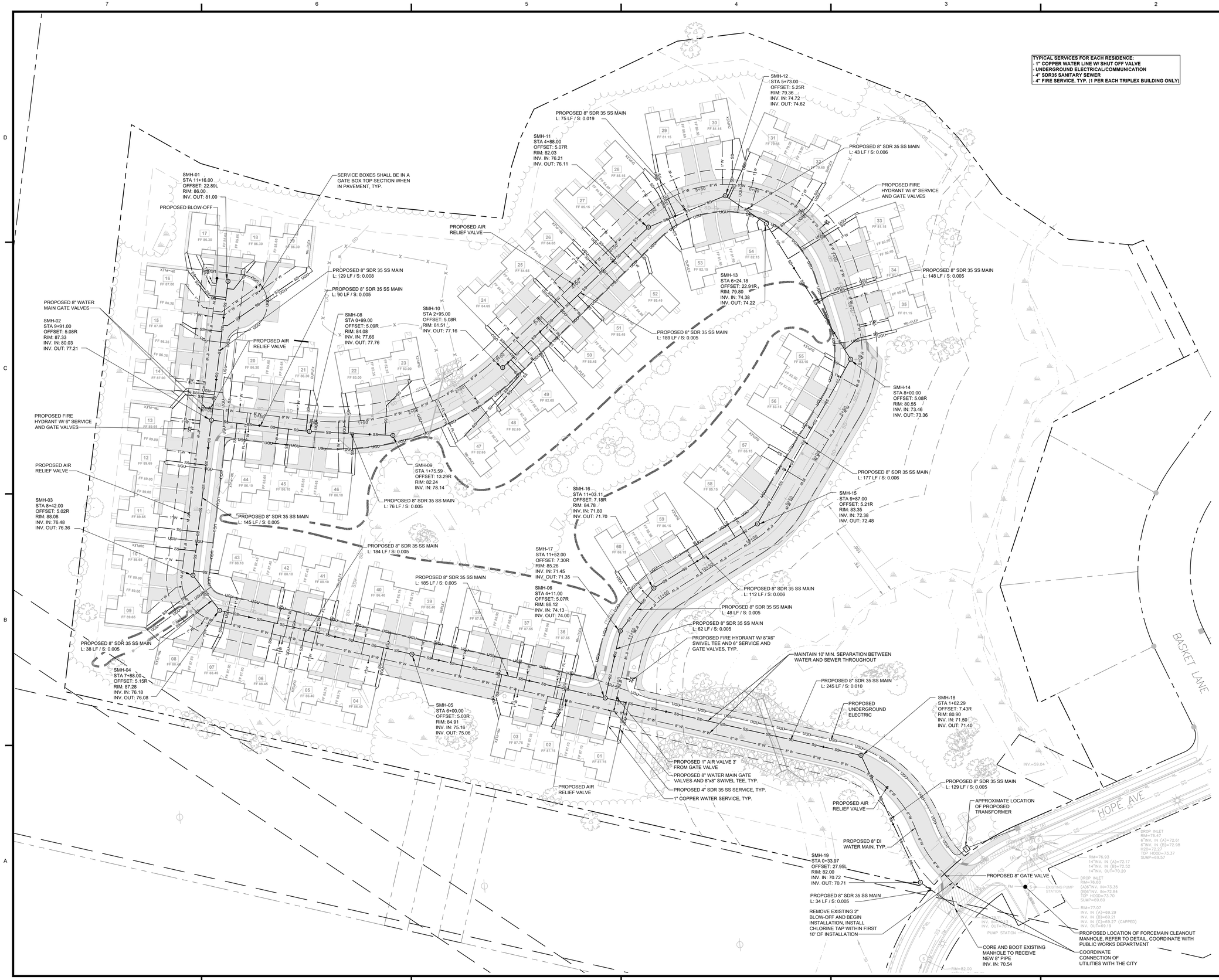
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

PROPOSED GRADING AND DRAINAGE PLAN

DATE	2022.08.29
SCALE	1"=40'
DRAWN BY	BLQ
DESIGNED BY	DSB
CHECKED BY	JHW
PROJECT No.	13773.001
DRAWING No.	C103
REV.	3

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-GR.DWG, 2023.10.27, 2:19 PM



TYPICAL SERVICES FOR EACH RESIDENCE:
- **1" COPPER WATER LINE W/ SHUT OFF VALVE**
- **UNDERGROUND ELECTRICAL/COMMUNICATION**
- **4" SDR35 SANITARY SEWER**
- **4" FIRE SERVICE, TYP. (1 PER EACH TRIPLEX BUILDING ONLY)**

UTILITY NOTES:

1. ALL STORM INFRASTRUCTURE SHALL RECEIVE (1) LAYER OF RIGID STYROFOAM INSULATION BETWEEN CROSSINGS, (2) LAYERS AT CROSSING WHERE PIPE DAYLIGHTS.
2. (1) RESTRAINT JOINT GASKET SHALL BE INSTALLED BEFORE AND AFTER ALL BENDS, IN ADDITION TO T-BLOCKS.
3. ALL HYDRANTS SHALL BE SUPPLIED WITH 8"x6" SWIVEL TEES AND GATE VALVES. FACE OF CURB TO FACE OF 4" PORT SHALL BE 3'.
4. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO THE MAIN AT WHICH THEY ARE CONNECTING TO.
5. CURBSTOPS SHALL BE LOCATED 2.5' FROM FACE OF CURB, UNLESS OTHERWISE SHOWN ON PLAN DUE TO CONFLICTS.
6. THE PROPOSED WATER MAIN SHALL HAVE A MINIMUM OF 5.5' OF COVER.
7. A 40' WIDE EASEMENT BENEFITING THE PORTLAND WATER DISTRICT HAS BEEN PROVIDED AND IS NOTED ON THE SITE PLAN.

WATER MAIN SEPARATION:

THE FOLLOWING MINIMUM SEPARATIONS FROM WATER MAINS SHALL BE OBSERVED AT ALL TIMES UNLESS DIRECTED OTHERWISE BY PWD PERSONNEL:

HORIZONTAL
SANITARY SEWERS: 10'
STORM DRAINS: 3' FACE TO FACE, 2' AT CONTACT POINTS FOR CB'S AND DMH'S
GAS MAINS: 6' FACE TO FACE
UNDERGROUND ELECTRIC/COMM: 6' FACE TO FACE
UTILITY POLES: 6' FACE TO FACE

VERTICAL
SANITARY SEWERS: 12" OVER AND UNDER
STORM DRAINS: 6" OVER AND UNDER
ALL OTHER CROSSINGS: 12" MINIMUM

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

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207.989.4824

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
UTILITIES PLAN

DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	DJO/BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C104** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\00-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-CUT.DWG, 2023.11.15, 2:02 PM

LIGHTING SCHEDULE

TYPE	QTY	CATALOG NUMBER	DESCRIPTION	LAMP	LUMENS	LUMEN MULTIPLIER	LLF	WATTS	MOUNTING HEIGHT
A	22	EPTT01_06DA30_____-120-277V	EVOLVE POST TOP TOWN & COUNTRY	LED	5300.174	1	1	56	14 FEET

NOTE:
EACH RESIDENTIAL UNIT SHALL HAVE AN INDIVIDUAL LIGHT SOURCE AT ENTRYWAYS THAT ARE NOT INCLUDED ON THIS PLAN.



GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

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NOT FOR CONSTRUCTION

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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

LIGHTING PLAN

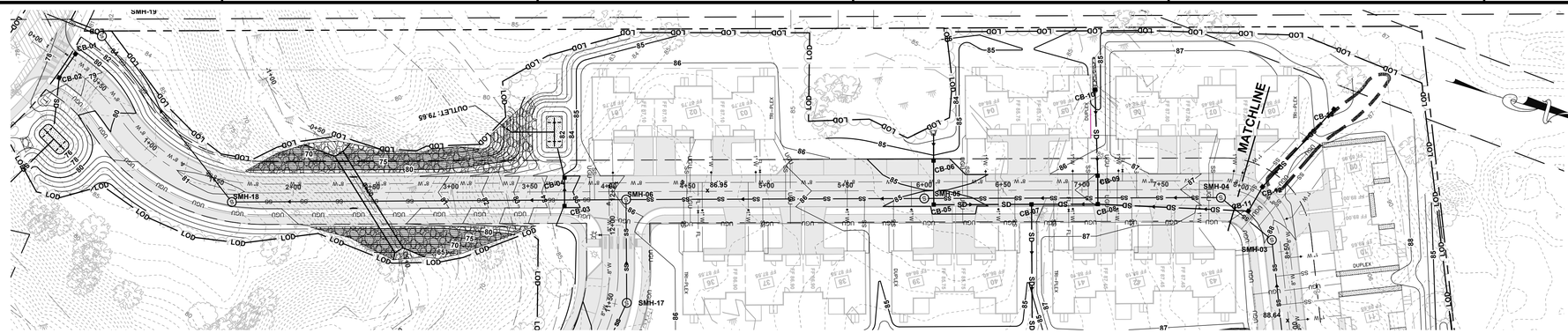
DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	DJO	JHW

PROJECT No. 13773.001

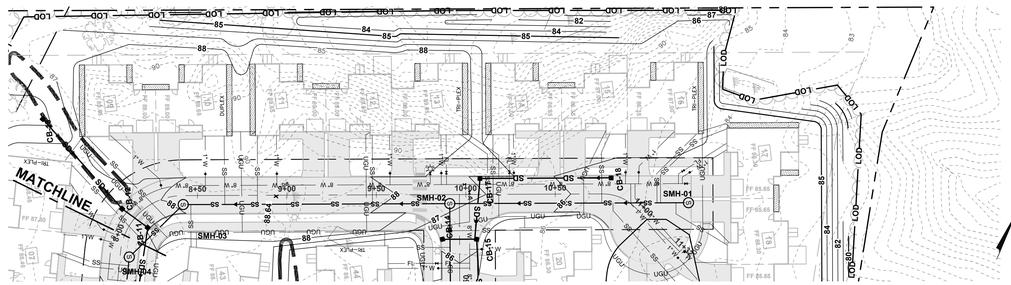
DRAWING No. **C105** REV. **3**

FILE LOCATION: P:\ME\13773-SHNBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-CL-LITES.DWG, 2023.10.27, 2:23 PM



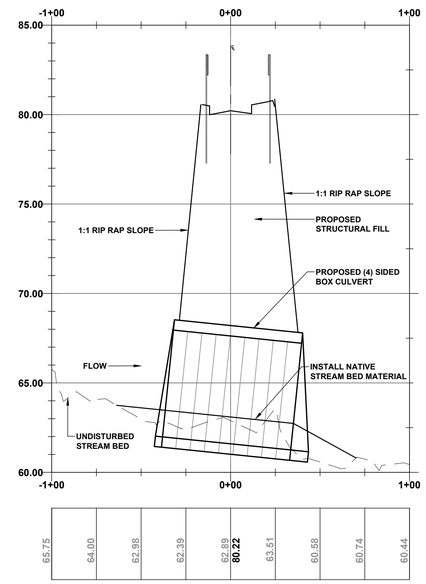
MAIN RD PLAN VIEW STA 0+00 TO 8+00

SCALE: 1"=40'



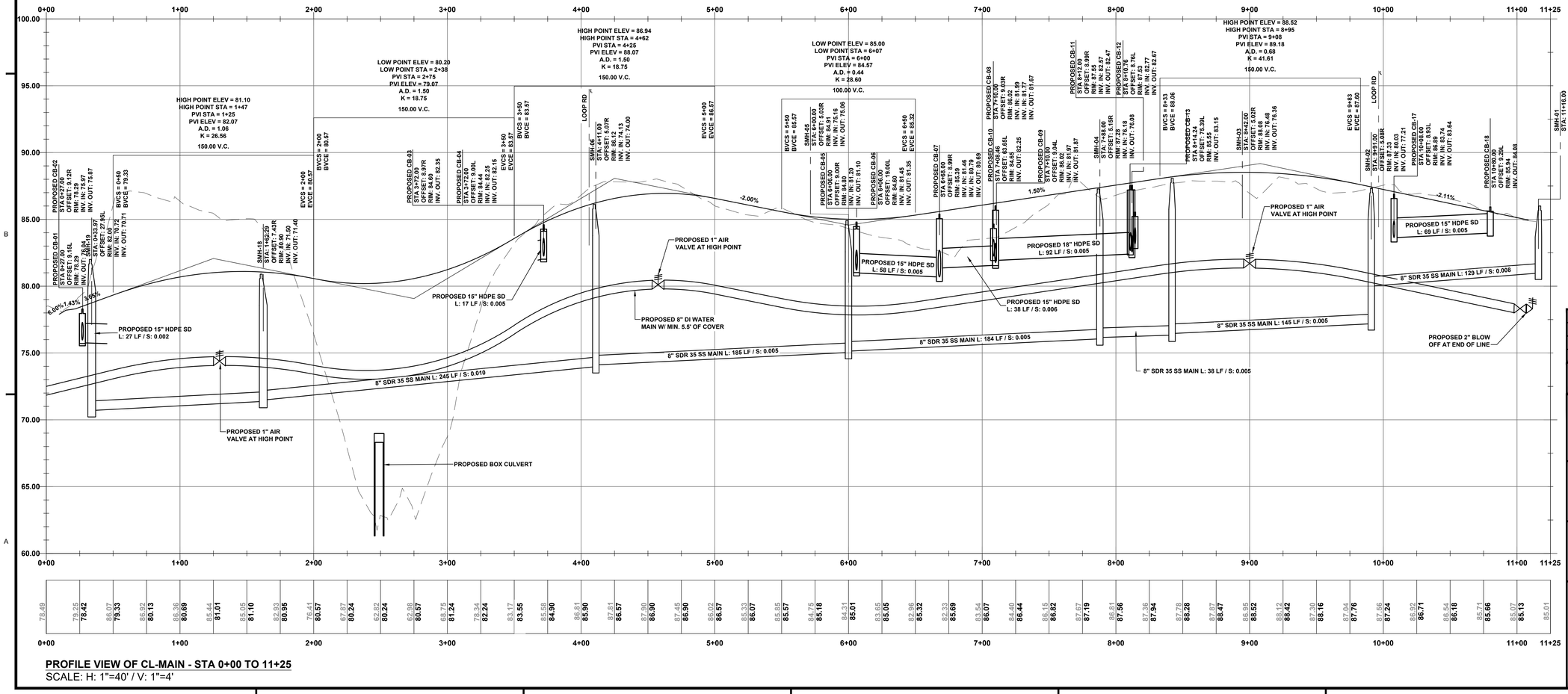
MAIN RD PLAN VIEW STA 8+00 TO 11+09

SCALE: 1"=40'



PROFILE VIEW OF STREAM CROSSING - STA -1+00 TO 1+00

SCALE: H: 1"=40' / V: 1"=4'



PROFILE VIEW OF CL-MAIN - STA 0+00 TO 11+25

SCALE: H: 1"=40' / V: 1"=4'

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

MAIN RD
PLAN AND PROFILE

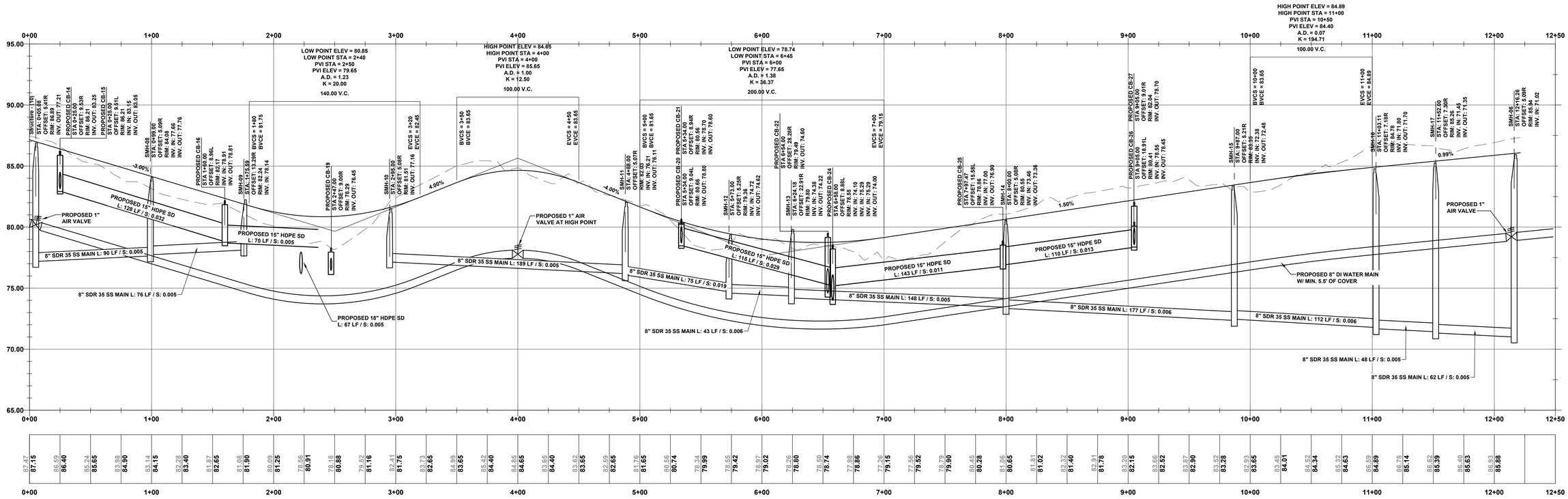
DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

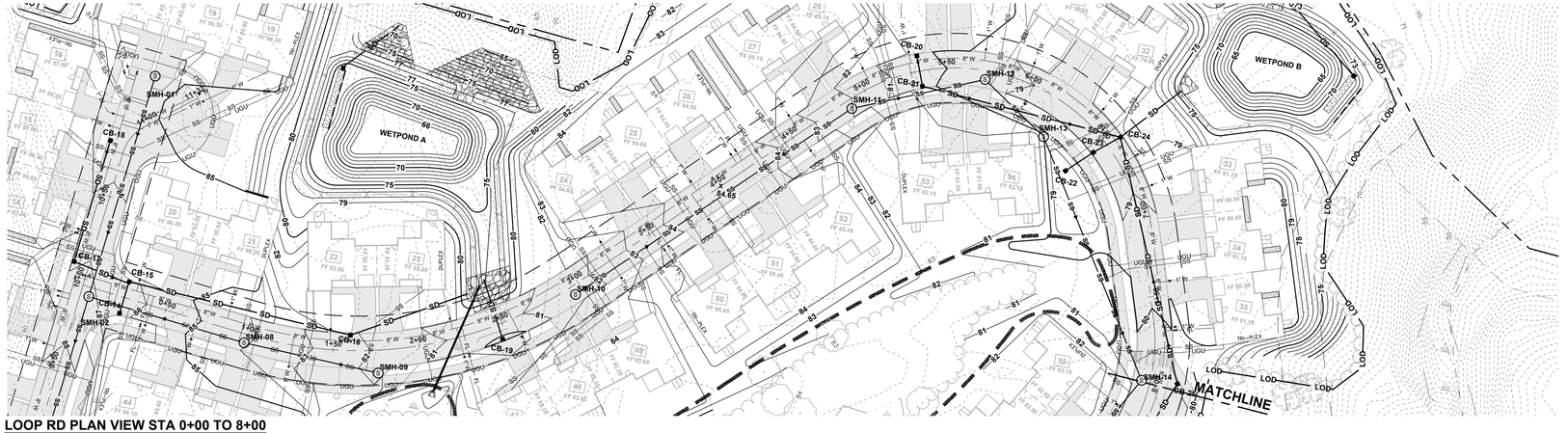
PROJECT No. 13773.001

DRAWING No. **C201** REV. **3**

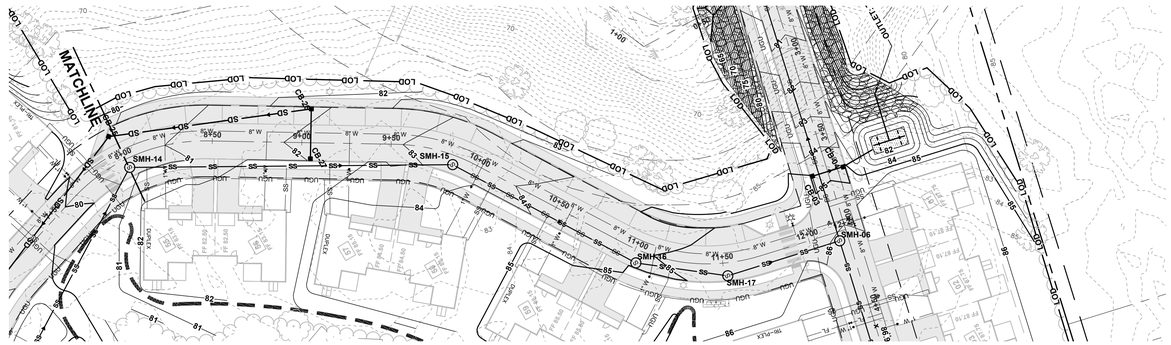
FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JWW\CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-GR.DWG, 2023.10.27, 2:25 PM



PROFILE VIEW OF CL-LOOP - STA 0+00 TO 12+50
SCALE: H: 1"=40' / V: 1"=4'



LOOP RD PLAN VIEW STA 0+00 TO 8+00
SCALE: 1"=40



LOOP RD PLAN VIEW STA 8+00 TO 11+09
SCALE: 1"=40

GRAPHIC SCALE
40 0 20 40 80 120
(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

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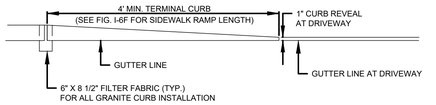
PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

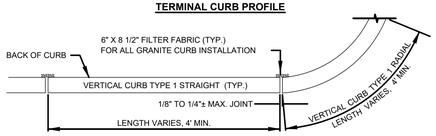
TITLE
LOOP RD PLAN AND PROFILE

DATE	2022.08.29
SCALE	1"=40'
DRAWN BY	BLQ
DESIGNED BY	BLQ
CHECKED BY	JHW
PROJECT No.	13773.001
DRAWING No.	C202
REV.	3

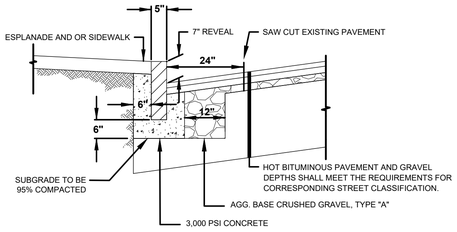
FILE LOCATION: P:\ME\13773-SHIMBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSIGN_DWGS\13773.001-C-GR.DWG, 2023.10.27, 2:25 PM



TERMINAL CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



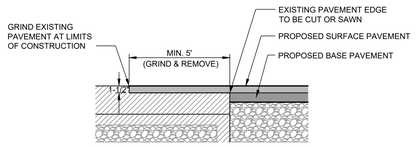
VERTICAL GRANITE CURB CROSS SECTION

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

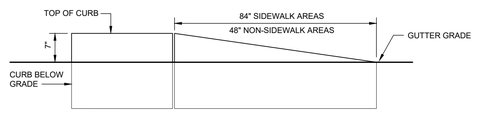
DATE: NOV. 2022	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
REVISED:	**VERTICAL GRANITE CURB**		I-12



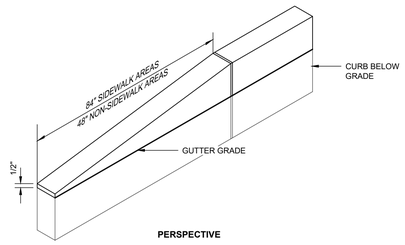
NOTES:
1. EXTEND NEW SURFACE PAVEMENT ACROSS BUTT JOINT IN BASE COURSE.
2. PROVIDE TACK COAT ON ALL SURFACES OF EXISTING PAVEMENT TO BE COVERED.

TYPICAL ASPHALT PAVEMENT GRINDING DETAIL

N.T.S.



ELEVATION



PERSPECTIVE

TYPICAL CURB TERMINATION DETAIL

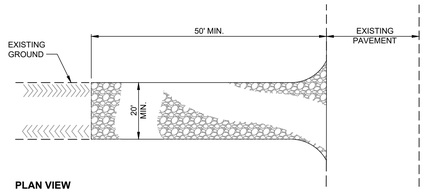
N.T.S.



NOTE:
1. PAYMENT LIMITS SHALL BE 6' WIDE (3' EACH SIDE OF CULVERT)

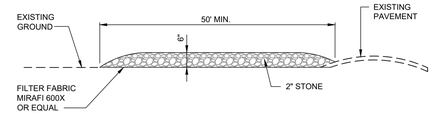
TYPICAL CULVERT TRENCH DETAIL

N.T.S.



PLAN VIEW

NOTE: CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES



SECTION

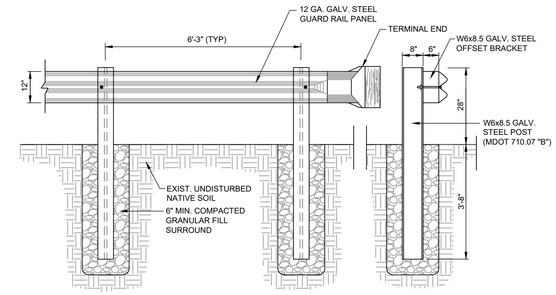
NOTE: VACUUM REMOVAL OF ANY TRACKED SEDIMENTS ONTO ROADWAYS SHALL BE PERFORMED AS NEEDED PRIOR TO A RAIN EVENT.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.

DRIPLINE FILTER BMP DETAIL

N.T.S.



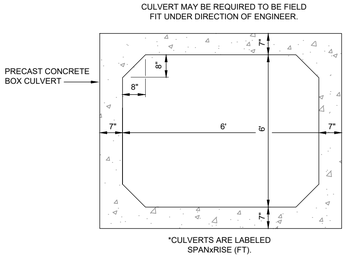
STEEL GUARDRAIL DETAIL

N.T.S.

NOTES:
1. ADJUSTABLE TRUSS ROD AND BRACE RAIL AT CORNER OR END POSTS ONLY, IF REQUIRED PER MANUFACTURER RECOMMENDATION.
2. COLOR SHALL BE BLACK.
3. FENCE SHALL BE ERECTED A MIN. OF 2 FEET FROM INSIDE EDGE OF BERM.

COLORED CHAIN LINK FENCE DETAIL

N.T.S.



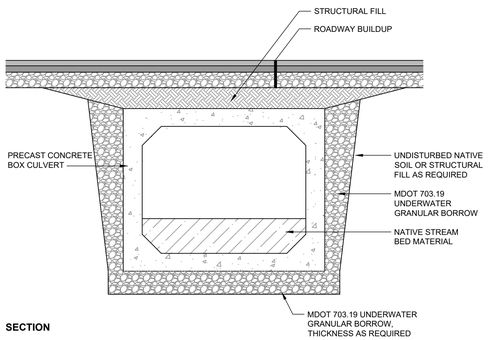
SECTION

GENERAL NOTES:

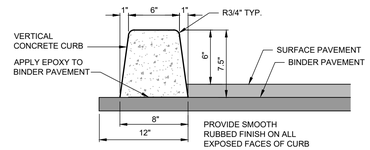
1. WHERE LEDGE IS ENCOUNTERED, CONCRETE SHALL BEAR DIRECTLY ON LEDGE. IN CASES OF PARTIAL LEDGE CONDITIONS, PROVIDE A MINIMUM OF 12 INCHES OF CRUSHED STONE BELOW CONCRETE. IN NO CASE SHALL CONCRETE BEAR PARTIALLY ON LEDGE AND PARTIALLY ON SOIL.
2. PRE-CAST DESIGN SHALL BE BASED ON AN ASSUMED ALLOWABLE BEARING CAPACITY OF 1,500 SF, MODIFIED HL-93.
3. PRE-CAST STRUCTURE SHALL BEAR ON NATURAL UNDISTURBED SOIL OR MDOT 703.19 UNDERWATER GRANULAR BORROW COMPACTED TO 95 PERCENT MAXIMUM DENSITY. LOOSE SOILS SHALL BE OVER-EXCAVATED TO UNDISTURBED SOIL AND REPLACED UNDERWATER GRANULAR SOIL AS SPECIFIED ABOVE. CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.
4. PRE-CAST RETAINING WALL BLOCKS SHALL BE EQUAL TO REDI-ROCK, STANDARD BLOCK, OR AMERICAN CONCRETE INDUSTRIES OR RUGGED ROCK BLOCK.

TYPICAL BOX CULVERT DETAILS

N.T.S.



SECTION



VERTICAL SLIPFORM CONCRETE CURB DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

SITE DETAILS

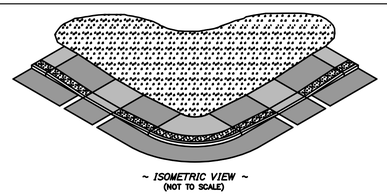
DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C501** REV. **3**

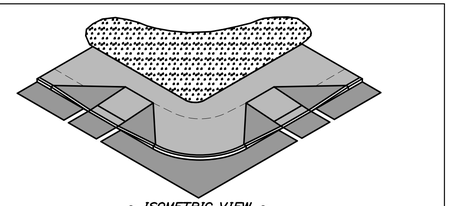
FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JAW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-C-DT.DWG, 2023.10.27, 2:29 PM



NOTES:
1. THIS DESIGN IS THE PREFERED OPTION WHEN THE SIDEWALK & ESPLANADE WIDTH IS LESS 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.

PARALLEL ADA RAMP – SIDEWALK LESS THAN 6.5' WIDE WITH OR WITHOUT ESPLANADE
NOT TO SCALE

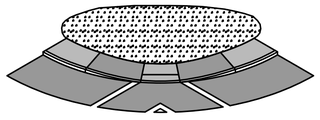
DATE: NOV. 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
	PARALLEL ADA RAMP FOR SIDEWALK LESS THAN 6.5' WIDE		I-6A



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

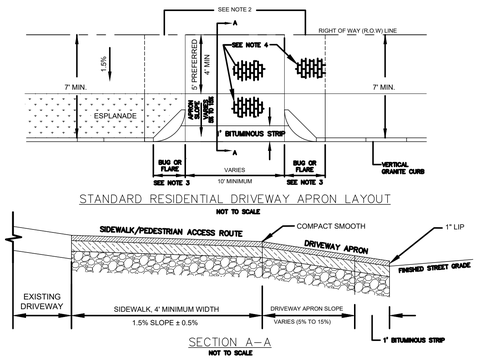
DATE: NOV. 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
	PERPENDICULAR ADA RAMP FOR SIDEWALK GREATER THAN 6.5'		I-6B



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

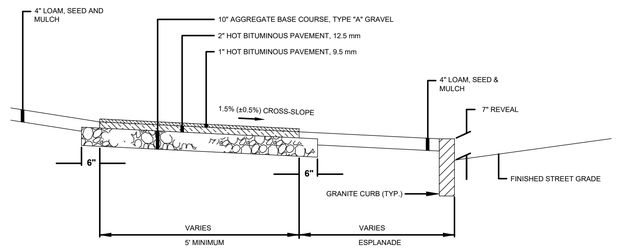
DATE: NOV. 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
	APEX RAMP FOR SIDEWALK LESS THAN 6.5' WIDE		I-6C



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.

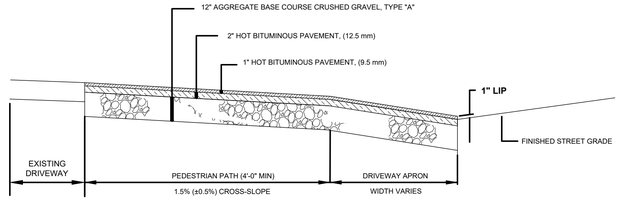
DATE: NOV. 2022 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION DESIGN STANDARDS SECTION I	FIGURE:
	RESIDENTIAL DRIVEWAY APRON		I-9A

DATE: NOV. 2022 REVISED:
CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL
BITUMINOUS SIDEWALK
TRANSPORTATION DESIGN STANDARDS SECTION I
FIGURE: I-11C



BITUMINOUS SIDEWALK
NOT TO SCALE

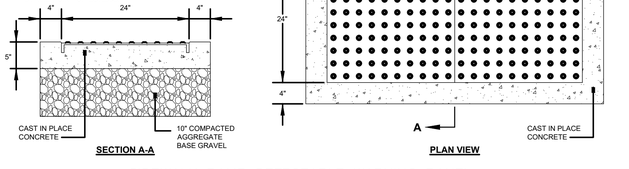
DATE: NOV. 2022 REVISED:
CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL
BITUMINOUS DRIVEWAY APRON
TRANSPORTATION DESIGN STANDARDS SECTION I
FIGURE: I-10C



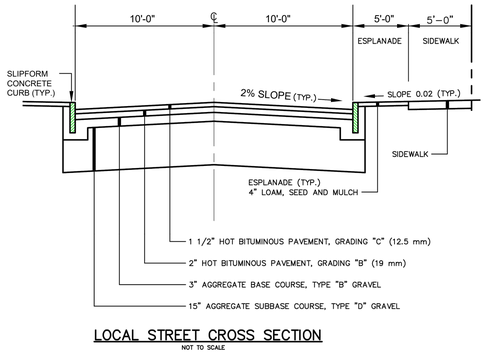
BITUMINOUS DRIVEWAY APRON
NOT TO SCALE

DATE: NOV. 2022 REVISED:
CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL
SIDEWALK RAMP DETECTABLE WARNING PANEL
TRANSPORTATION DESIGN STANDARDS SECTION I
FIGURE: I-7

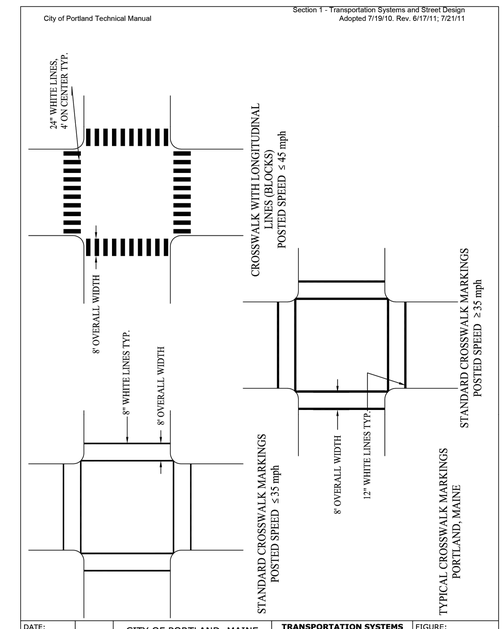
NOTES:
1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS. PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE 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



LOCAL STREET CROSS SECTION
NOT TO SCALE



DATE: AUGUST 2009 REVISED:	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	TRANSPORTATION SYSTEMS AND STREET DESIGN SECTION I	FIGURE:
	TYPICAL CROSSWALK MARKINGS		I-22

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

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WWW.HALEYWARD.COM

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
SITE DETAILS

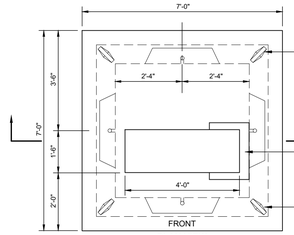
DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

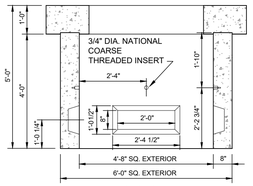
PROJECT No.
13773.001

DRAWING No. **C502** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\0001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-DT.DWG, 2023.10.27, 2:29 PM



PLAN VIEW



SECTION

SITE PREPARATION NOTES:
1.1 PAD SHALL BE SET ON A PROPERLY PREPARED GRAVEL BASE AND ORIENTED SO THE FRONT OF THE TRANSFORMER HAS TRUCK ACCESS AND IS PROTECTED FROM TRAFFIC.
1.2 FINISHED GRADE SHALL BE PREPARED IN SUCH A WAY AS TO SHED WATER AWAY FROM THE PAD.

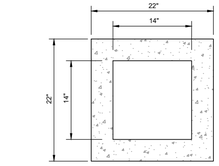
MANUFACTURING NOTES:
2.1 CONCRETE COMPRESSIVE STRENGTH: 4,000 PSI @ 28 DAYS.
2.2 AIR ENTRAINMENT: 4%-6%
2.3 GRADE 60 REINFORCEMENT
2.4 3/4" IDA. NATIONAL COURSE THREADED INSERTS CAST-IN AS SHOWN FOR PULLING EYES

PHYSICAL SPECIFICATIONS
3.1 COVER WEIGHT: 6,290 LBS
3.2 BASE WEIGHT: 8,080 LBS
3.3 TOTAL WEIGHT: 14,370 LBS

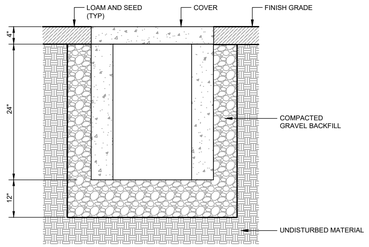
*FRONT DENOTES THE SIDE ON WHICH THE ACCESS DOORS ARE LOCATED

TRANSFORMER PAD DETAIL

N.T.S.

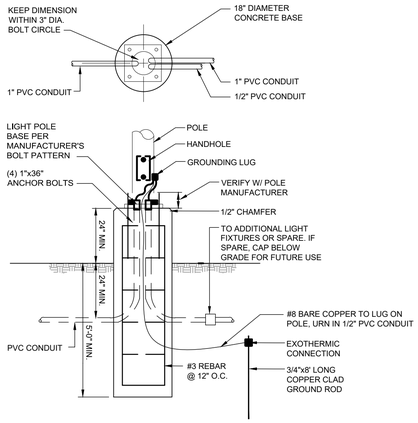


NOTES:
1. CONCRETE: 4000 PSI AT 28 DAYS
2. REINFORCE WITH 6" X 6" 10/10 W.W.M.
3. PROVIDE WITH LIFTING LOOPS
4. END BELL ALL DUCT OPENINGS
5. DUCT SIZES AS SHOWN ON DRAWING
6. INSTALL SO COVER IS AT FINISH GRADE LEVEL
7. "ELECTRIC" IDENTIFICATION ON COVER IN 2" HIGH LETTERS



TYPICAL PULL BOX DETAIL

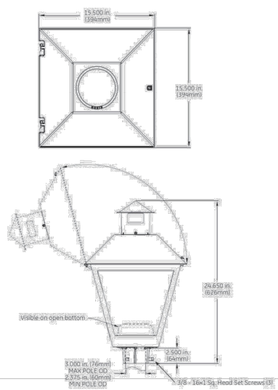
N.T.S.



TYPICAL LIGHT POLE BASE DETAIL

N.T.S.

Town & Country Post Top (EPTT)



LUMINAIRE
GE Evolve LED Post Top Town & Country (EPTT)
Model: EPTT-01-0-06-D-A-30-A-P-BLCKR-R

Die-case aluminum housing with acrylic refractor in white opal.

Pole-mounted, secondary surge protection
Voltage (120 through 277V)
Asymmetric HO, 56 watt
LED 3000K color temperature

LIGHTING POLE
Aluminum, smooth tapered pole with 5/32" thickness (.156").

EPA rating from 4.6 to 6.9 (using 110mph wind speed ratings from AAHTO).

Maximum weight capacity = 75-100 lbs.

Base bolt pattern: 10" diagonal.

DIMENSIONS
Pole Height = 15' max.
Pole Diameter = 6" base tapered to 3"

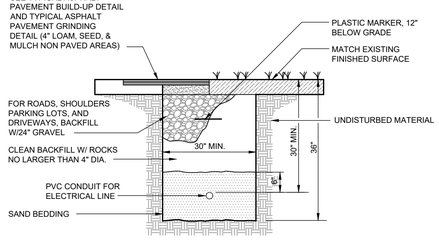
FINISH
Black (standard)

APPLICATION
Standard sidewalk lighting for residential streets not specified for decorative lighting.

Spacing: According to Section 10.2.1

Fixture placed in furnishing zone unless space is limited. Placement on back of sidewalk or private property near sidewalk may be accommodated where space is a constraint.

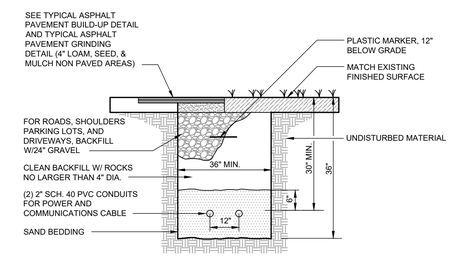
Street & Sidewalk Lighting
STANDARD - RESIDENTIAL



NOTES:
1. SIZE, NUMBER, MATERIAL, AND ARRANGEMENT OF CONDUIT SHALL BE COORDINATED WITH UTILITY COMPANY.
2. ALL ELECTRICAL CONDUIT AND STRUCTURES SHALL BE WATER TIGHT.

TYPICAL UNDERGROUND STREET LIGHTING TRENCH DETAIL

N.T.S.



NOTES:
1. SIZE, NUMBER, MATERIAL, AND ARRANGEMENT OF CONDUIT SHALL BE COORDINATED WITH INDIVIDUAL UTILITIES.
2. ALL ELECTRICAL CONDUIT AND STRUCTURES SHALL BE WATER TIGHT.
3. CONDUITS SHALL EXCLUSIVELY SERVE EITHER POWER OR COMMUNICATIONS.

TYPICAL UNDERGROUND UTILITY TRENCH DETAIL

N.T.S.

NOTES TO A/E:

1. IF THE ACCESSIBLE ROUTE FROM THE CBU(s) CONNECTS WITH A STREET OR OTHER PAVED SURFACE AT A VERTICAL CURB, A CURB RAMP SHOULD BE INSTALLED IN ACCORDANCE WITH RE-4 REQUIREMENTS.

Paved Pedestrian Surface (if available) or Public Street

Detail: CLUSTER BOX UNIT (CBU) ACCESS MANUVERING SPACE - MULTIPLE UNIT	Fac.	Ch.	Sect.	Para.	Detail
	G1	- 2	- 0		e3
CAD File: ...\uspe\library\details\G1-2-0e3.dwg	Scale: 1/4"=1'-0" 0 1/2" 1"			USPS SDL Issued: 10/1/2016 Last Revised: 7/14/2016	

NOTES TO A/E:

NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAYS, CONTAIN 4% MIN. - 6% MAX. AIR ENTRAINMENT AND BE PLACED WITH A 3.50 - 4.50 SLUMP IN ACCORDANCE WITH ACI 301
2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3. EXPANSION BOLTS SHALL BE EQUIVALENT TO THE FOLLOWING PROVIDERS:
   a. HILTI KWIK BOLT (www.us.hilti.com) 5=1/2" DIAMETER x 5=1/2" OVERALL LENGTH
      GALVANIZED, CATALOG #: 000-453-696
      KB 8 1/2=1/2, STAINLESS STEEL, CATALOG #: 000-454-744
      ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 3=1/2".
   b. ITW RAMSET REDHEAD TRUBOLT (www.ramset-redhead.com)
      GALVANIZED, 1/2" DIAMETER x 7" OVERALL LENGTH, CATALOG NUMBER: RS-12700
      ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 6=1/8".
   C. ROMB, STUD (www.romb.com)
      GALVANIZED, 1/2" DIAMETER x 5=1/2" OVERALL LENGTH, CATALOG NUMBER: 7724
      ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 4".
4. A 2 SIDE CONFIGURATION IS DEPICTED. A 3 OR 4 CBU CONFIGURATION MAY BE USED AS LONG AS THEY ARE ARRANGED IN GROUPS SUCH THAT THE OVERALL DIMENSION OF THE CONCRETE BASE DOES NOT EXCEED 16 FEET.

Detail: CLUSTER BOX UNIT (CBU) INSTALLATION - MULTIPLE UNIT	Fac.	Ch.	Sect.	Para.	Detail
	G1	- 2	- 0	e1	
CAD File: ../uspe/library/details/G1-2-0e1	Scale: 1/2" = 1'-0" 0 1" 2"			USPS SDL Issued: 10/1/2016 Last Revised: 10/27/2016	

Date: March, 2019	CITY OF PORTLAND, MAINE TECHNICAL MANUAL	MUNICIPAL STREET LIGHTING STANDARDS SECTION 10	Figure: X-1
Revised Date:	RESIDENTIAL		

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

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PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
SITE DETAILS

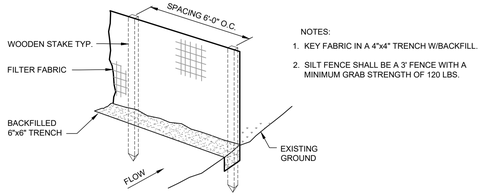
DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

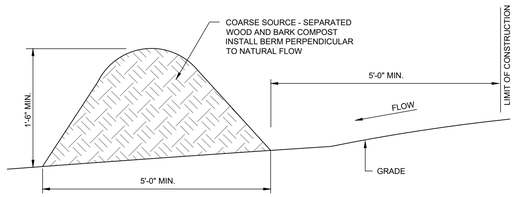
DRAWING No. **C503** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JWW\03-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001 C-DIT.DWG, 2023.10.27, 2:29 PM

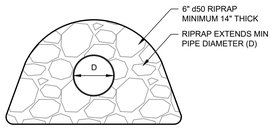


NOTES:
1. KEY FABRIC IN A 4"x4" TRENCH W/BACKFILL.
2. SILT FENCE SHALL BE A 3' FENCE WITH A MINIMUM GRAB STRENGTH OF 120 LBS.

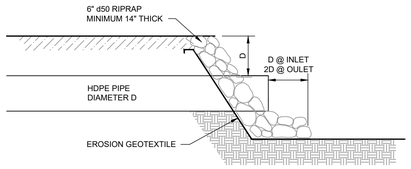
SILT FENCE DETAIL
N.T.S.



EROSION CONTROL BERM DETAIL
N.T.S. (MAY BE USED AS AN ALTERNATIVE TO SILT FENCE, EXCEPT AT THE BASE OF A SLOPE EXCEEDING 8% OR WHERE WATER IS FLOWING WITHOUT ADDITIONAL MEASURES)

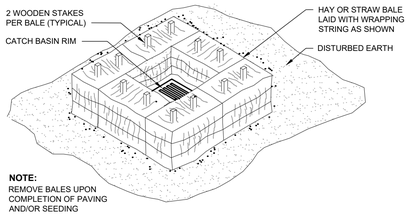


ELEVATION



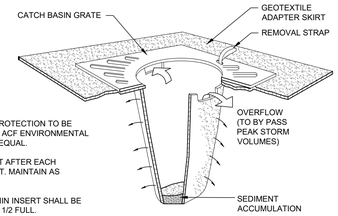
PROFILE VIEW

TYPICAL INLET/OUTLET PROTECTION DETAIL
N.T.S.



NOTE:
REMOVE BALES UPON COMPLETION OF PAVING AND/OR SEEDING

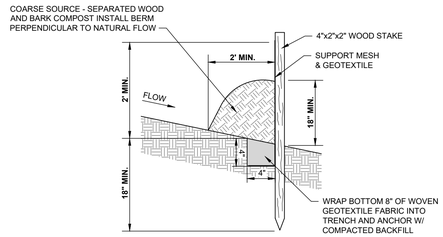
HAYBALES



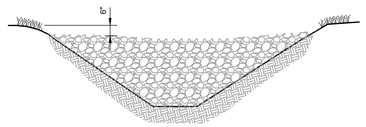
NOTES:
1. CATCH BASIN PROTECTION TO BE "SILTSTACK" BY ACF ENVIRONMENTAL OR APPROVED EQUAL.
2. INSPECT INSERT AFTER EACH RAINFALL EVENT. MAINTAIN AS REQUIRED.
3. SEDIMENT WITHIN INSERT SHALL BE EMPTIED WHEN 1/2 FULL.

SEDIMENT SACK

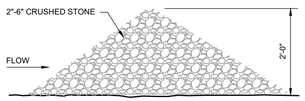
SEDIMENT INLET PROTECTION DETAILS
N.T.S.



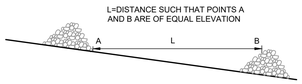
SILT FENCE & EROSION CONTROL MIX BERM DETAIL
N.T.S.



ELEVATION

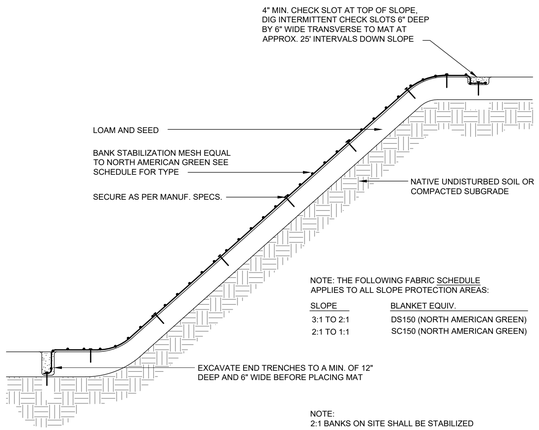


CROSS SECTION



SPACING

STONE CHECK DAM DETAIL
N.T.S.

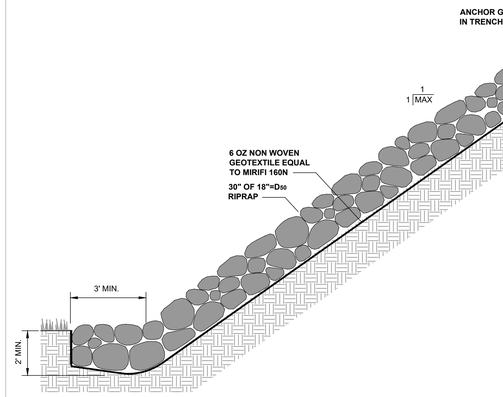


NOTE: THE FOLLOWING FABRIC SCHEDULE APPLIES TO ALL SLOPE PROTECTION AREAS:

SLOPE	BLANKET EQUIV.
3:1 TO 2:1	DS150 (NORTH AMERICAN GREEN)
2:1 TO 1:1	SC150 (NORTH AMERICAN GREEN)

NOTE:
2:1 BANKS ON SITE SHALL BE STABILIZED

BANK STABILIZATION DETAIL
N.T.S.



RIP RAPPED SLOPE STABILIZATION DETAIL
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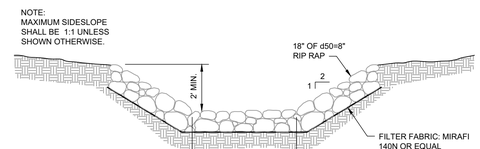
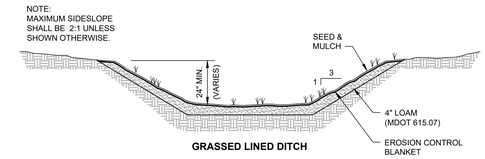


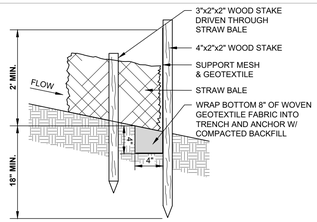
RIPRAP LINED DITCH

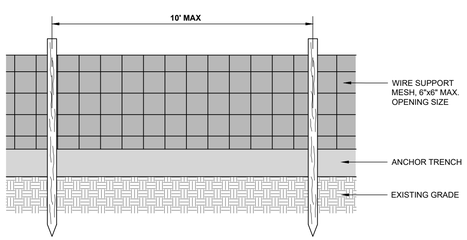


GRASSED LINED DITCH

TYPICAL DITCH DETAILS
N.T.S.

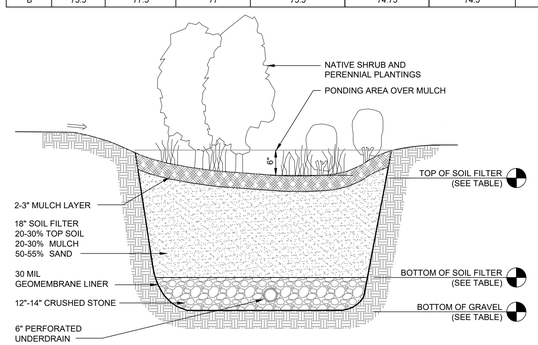
NOTES:
1. THE HEIGHT OF SILT FENCE SHALL NOT EXCEED 36 INCHES.
2. GEOTEXTILE SHALL BE INSTALLED SUCH THAT SEEMS ARE MINIMIZED.
3. SECURE GEOTEXTILE IN 4"x4" TRENCH ON UPSLOPE SIDE OF POSTS.
4. ATTACH WIRE SUPPORT MESH TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES, OR HOG RINGS. EXTEND SUPPORT MESH INTO THE TRENCH A MINIMUM OF 2".
5. ATTACH GEOTEXTILE TO THE FENCE USING STAPLES OR WIRE. BURY THE BOTTOM 8 INCHES OF THE FABRIC IN THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE EXISTING GRADE.





SILT FENCE & STRAW BALES DETAIL
N.T.S.

BIOFILTER ID	EXISTING ELEVATION (+/-) (FT)	EMERGENCY SPILLWAY ELEVATION (FT)	TOP OF SOIL FILTER (FT)	BOTTOM OF SOIL FILTER/TOP OF GRAVEL (FT)	ELEVATON OF PIPE BED (FT)	BOTTOM OF GRAVEL (FT)	TOP OF BERM (FT)	TREATMENT AREA REQ'D/PROVIDED (SF)	TOTAL STORAGE VOLUME REQ'D/PROVIDED (CF)
A	77.5	79.5	79	77.5	76.75	76.5	80.5	122/140	141/151
B	75.5	77.5	77	75.5	74.75	74.5	78.5	105/116	121/142



TYPICAL BIOCELL DETAIL
N.T.S.

LINER
1. NONWOVEN 30MIL GEOMEMBRANE.

PLANT SPECIES
1. PLANT SPECIES SHALL BE CHOSEN IN ACCORDANCE WITH MAINE DEP CHAPTER 500 BMP'S.

UNDERDRAIN LAYOUT
1. PIPES SHALL BE PLACED AT A MAXIMUM OF 15' APART WITH A POSITIVE GRADIENT.

MAINTENANCE
DURING THE FIRST YEAR, THE BASIN WILL BE INSPECTED SEMI-ANNUALLY AND FOLLOWING MAJOR STORM EVENTS.

1. DEBRIS AND SEDIMENT BUILDUP SHALL BE REMOVED FROM THE FOREBAY AND BASIN AS NEEDED. MOWING OF GRASSED BASIN CAN OCCUR SEMI-ANNUALLY TO A HEIGHT OF NO LESS THAN 6 INCHES.
2. ANY BARE AREA OR EROSION RILLS SHALL BE REPAIRED WITH NEW FILTER MEDIA OR SANDY LOAM, SEEDED AND MULCHED OR SODDED.
3. MAINTAINING GOOD GRASS COVER WILL MINIMIZE CLOGGING WITH FINE SEDIMENTS AND IF PONDING EXCEEDS 48 HOURS, THE TOP OF THE FILTER BED MUST BE ROTOTILLED TO REESTABLISH THE SOIL'S FILTRATION CAPACITY.
4. IN BIORETENTION CELLS, RAKING AND REPLACING THE DEGRADED MULCH BETWEEN PLANTS WILL BE NECESSARY ON AN ANNUAL BASIS. PLANTS THAT ARE NOT ESTABLISHED WITH NEED TO BE REPLACED.

CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:
- AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED,
- AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA,
- AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED. BIO-RETENTION CELLS MUST BE STABILIZED PER THE PROVIDED PLANTING SCHEME AND DENSITY FOR THE CANOPY COVERAGE OF 30 AND 50%.
- AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS, AND
- ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

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PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
SITE DETAILS

DATE	SCALE
2022.08.29	AS NOTED

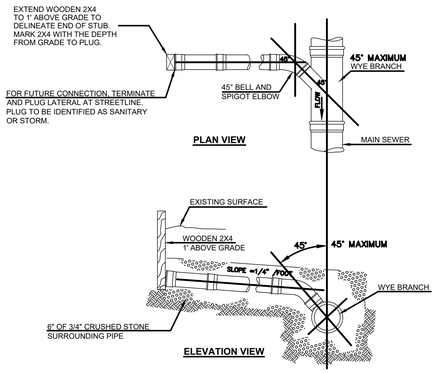
DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C504** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JWV\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-C-DT.DWG, 2023.10.27, 2:29 PM

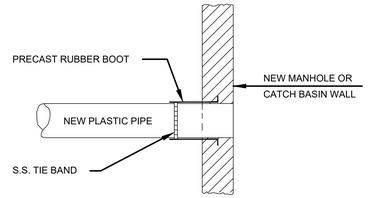
NOTE:
LOCATION / WARNING TAPE SHALL BE INSTALLED OVER CENTERLINE OF PIPE AT A MAXIMUM OF 24 INCHES BELOW FINISH GRADE.



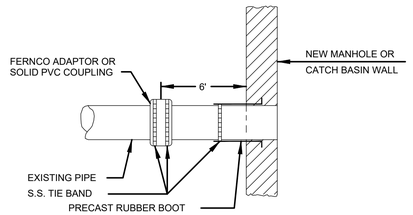
TYPICAL HOUSE LATERAL TEE/WYE CONNECTION

NOT TO SCALE

DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED:	TYPICAL HOUSE LATERAL TEE/WYE CONNECTION		II-17



METHOD 2 - NEW CONSTRUCTION



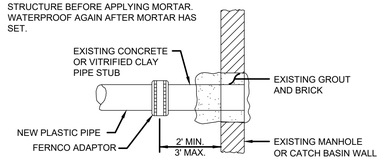
METHOD 1 - EXISTING PIPE INTO NEW STRUCTURE

PLASTIC PIPE CONNECTIONS

NOT TO SCALE

DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED:	PLASTIC PIPE CONNECTION METHODS 1 & 2		II-13

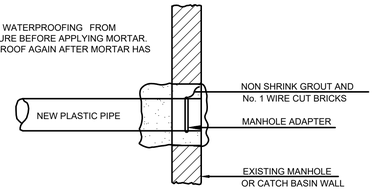
NOTE:
REMOVE WATERPROOFING FROM STRUCTURE BEFORE APPLYING MORTAR. WATERPROOF AGAIN AFTER MORTAR HAS SET.



METHOD 4 - NEW PIPE TO EXISTING STRUCTURE STUB

NOTE: EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY SAW CUT THE STRUCTURE TO CREATE PIPE OPENING. THE NEW OPENING MUST THEN BE SEALED AND WATERTIGHT BOTH INSIDE AND OUTSIDE THE STRUCTURE.

NOTE:
REMOVE WATERPROOFING FROM STRUCTURE BEFORE APPLYING MORTAR. WATERPROOF AGAIN AFTER MORTAR HAS SET.

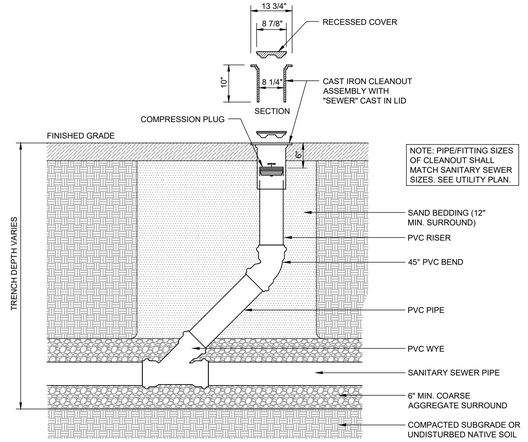


METHOD 3 - NEW PIPE INTO EXISTING STRUCTURE

PLASTIC PIPE CONNECTIONS

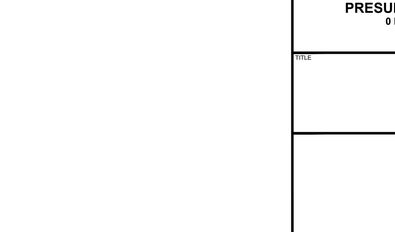
NOT TO SCALE

DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE:
REVISED:	PLASTIC PIPE CONNECTION METHODS 3 & 4		II-14



SANITARY SEWER CLEANOUT DETAIL

N.T.S.



TYPICAL SEWER / WATER SEPARATION DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

SITE DETAILS

DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

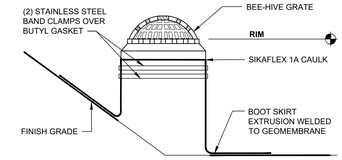
PROJECT No. 13773.001

DRAWING No. **C506** REV. **3**

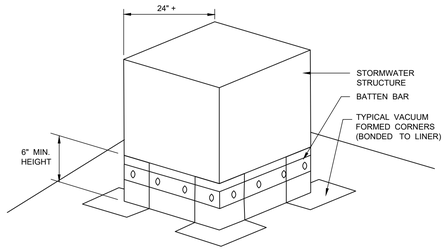
FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\000 HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DESIGN_DWGS\13773.001-LOT DWG, 2023.10.27, 2:29 PM



BATTEN BAR DETAIL

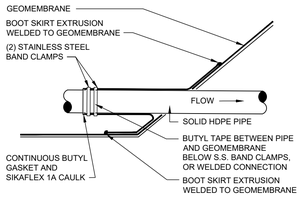


VERTICAL PIPE PENETRATION

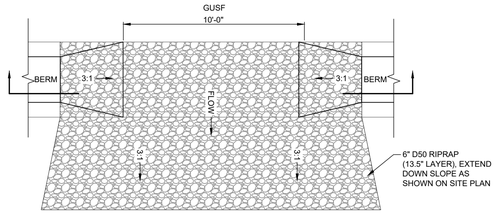


TYPICAL VERTICAL LINER PENETRATION DETAIL

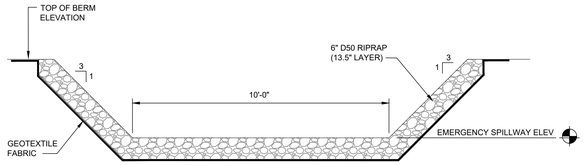
N.T.S.



HORIZONTAL PIPE PENETRATION



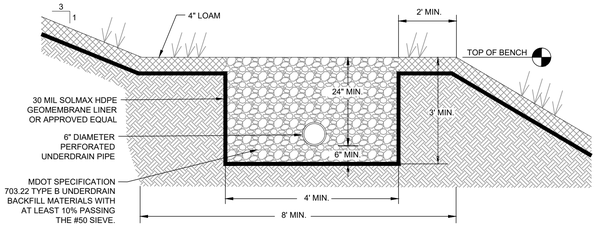
PLAN VIEW



SECTION VIEW

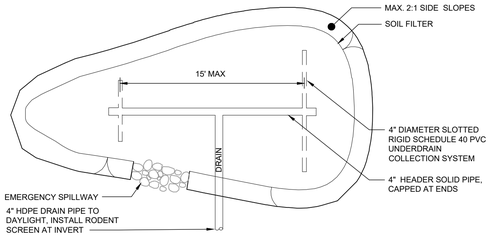
WET POND EMERGENCY SPILLWAY DETAIL

N.T.S.

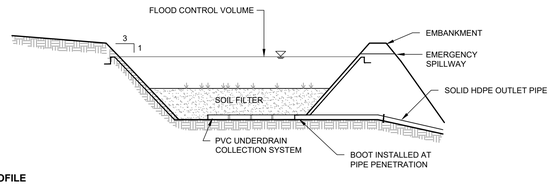


POND BENCH UNDERDRAINED GRAVEL FILTER DETAIL

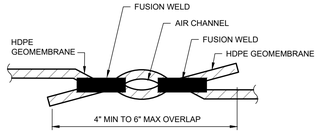
N.T.S.



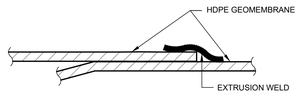
PLAN VIEW



PROFILE



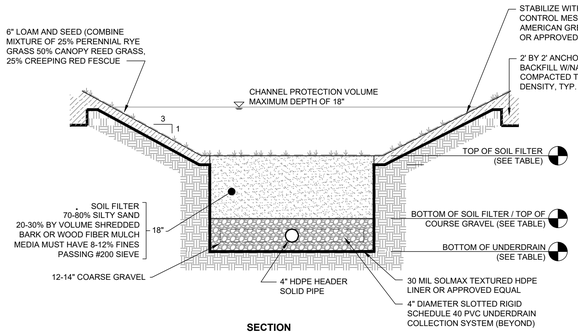
HOT WEDGE DUAL TRACK FUSION WELD DETAIL



FILLET EXTRUSION WELD DETAIL

GEOMEMBRANE WELD DETAILS

NTS



SECTION

USF NO.	EXISTING ELEVATION (+/-) (FT)	EMERGENCY SPILLWAY ELEVATION (FT)	TOP OF SOIL FILTER (FT)	BOTTOM OF SOIL FILTER/TOP OF COARSE GRAVEL (FT)	ELEVATION OF PIPE BED (FT)	BOTTOM OF COARSE GRAVEL (FT)	TOP OF BERM (FT)	TREATMENT AREA REQ'D/PROVIDED (SF)	TOTAL STORAGE VOLUME REQ'D/PROVIDED (CF)
1	82	83.5	82	80.5	79.75	79.5	84.2	208/210	348/546
2	77	76.73	75.23	73.73	72.98	72.73	77.2	183/192	305/512

GRASSED UNDERDRAIN SOIL FILTER DETAILS

N.T.S.

GENERAL NOTES

1. GUSF (INCLUDING FOREBAYS) SHALL NOT BE USED FOR SNOW STORAGE.
2. ALL COMPONENTS, CONSTRUCTION, INSPECTIONS, AND MAINTENANCE SHALL CONFORM TO THE LATEST EDITION OF MAINE DEP CHAPTER 500 STORMWATER MANAGEMENT RULES.

CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:

- AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED,
- AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA,
- AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED. BIO-RETENTION CELLS MUST BE STABILIZED PER THE PROVIDED PLANTING SCHEME AND DENSITY FOR THE CANOPY COVERAGE OF 30 AND 50%,
- AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS, AND
- ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

LINER

1. 30MIL TEXTURED GEOMEMBRANE.

PLANT SPECIES

1. PLANT SPECIES SHALL BE CHOSEN IN ACCORDANCE WITH MAINE DEP CHAPTER 500 BMP'S.

UNDERDRAIN LAYOUT

1. PIPES SHALL BE PLACED AT A MAXIMUM OF 15' APART WITH A POSITIVE GRADIENT.

MAINTENANCE

DURING THE FIRST YEAR, THE BASIN WILL BE INSPECTED SEMI-ANNUALLY AND FOLLOWING MAJOR STORM EVENTS

1. DEBRIS AND SEDIMENT BUILDUP SHALL BE REMOVED FROM THE FOREBAY AND BASIN AS NEEDED. MOWING OF GRASSED BASIN CAN OCCUR SEMI-ANNUALLY TO A HEIGHT OF NO LESS THAN 6 INCHES.
2. ANY BARE AREA OR EROSION RILLS SHALL BE REPAIRED WITH NEW FILTER MEDIA OR SANDY LOAM, SEEDED AND MULCHED OR SODDED.
3. MAINTAINING GOOD GRASS COVER WILL MINIMIZE CLOGGING WITH FINE SEDIMENTS AND IF PONDING EXCEEDS 48 HOURS, THE TOP OF THE FILTER BED MUST BE ROTOTILLED TO REESTABLISH THE SOIL'S FILTRATION CAPACITY.

POND ID	EXISTING ELEVATION (FT)	PERMANENT POOL ELEVATION (FT)	TOP OF LINER / CHANNEL PROTECTION ELEVATION (FT)	25 YEAR FLOOD ELEVATION (FT)	25 YEAR FLOOD ELEVATION W/FAILED OUTLET (FT)	BOTTOM OF POND (FT)	100 YEAR FLOOD ELEVATION	EMERGENCY SPILLWAY ELEVATION (FT)	TOP OF BERM (FT)	SPILLWAY CREST BREADTH/LENGTH (FT)	STRUCTURE RIM (FT)	2" DIA OPENING	OUTLET IN (FT)	OUTLET OUT (FT)
A	79	74.09	76.05	76.52	76.69	66.00	77.29	76.5	77.5	6/10	76.05	N/A	69.14	68.89
B	74	70.76	72.39	72.57	72.62	65.00	73.34	72.5	73.5	6/10	72.39	N/A	68.26	67.84

WET POND SECTION

N.T.S.

SECTION

WET POND OUTLET STRUCTURE DETAIL

N.T.S.

3	2023.10.27	REVISED PER CITY COMMENTS	BLQ / JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ / JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM / JHW
REV.	DATE	DESCRIPTION	BY / CHK

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PROJECT

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TITLE

SITE DETAILS

DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

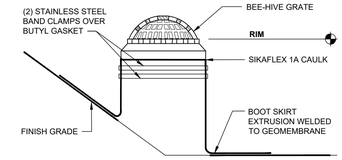
PROJECT No. 13773.001

DRAWING No. **C505** REV. **3**

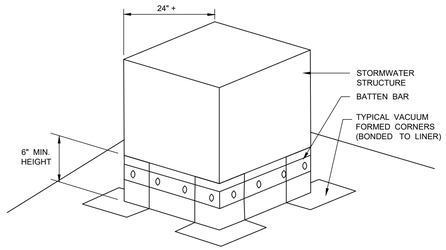
FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\00-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\05SDN_DWGS\13773.001-C-07.DWG, 2023.10.27, 2:30 PM



BATTEN BAR DETAIL

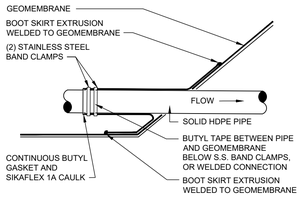


VERTICAL PIPE PENETRATION

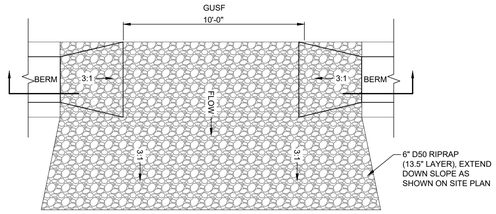


TYPICAL VERTICAL LINER PENETRATION DETAIL

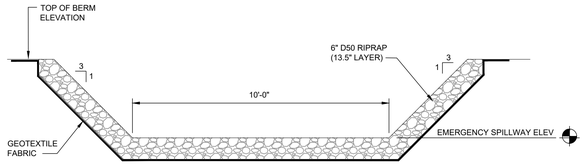
N.T.S.



HORIZONTAL PIPE PENETRATION



PLAN VIEW



SECTION VIEW

WET POND EMERGENCY SPILLWAY DETAIL

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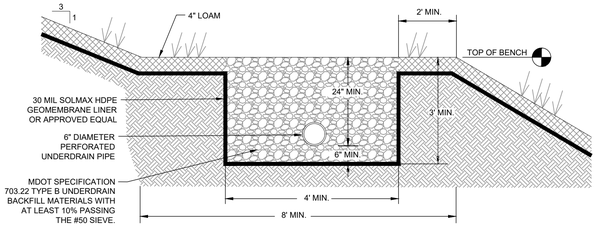
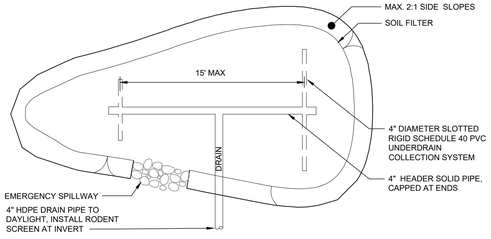
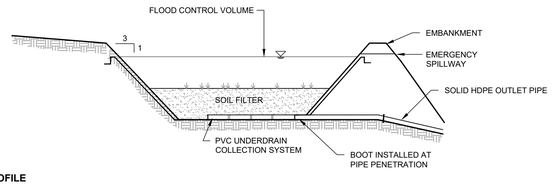


POND BENCH UNDERDRAINED GRAVEL FILTER DETAIL

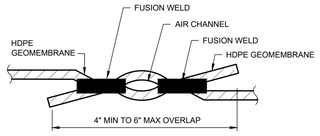
N.T.S.



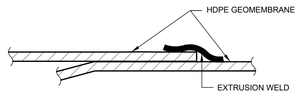
PLAN VIEW



PROFILE



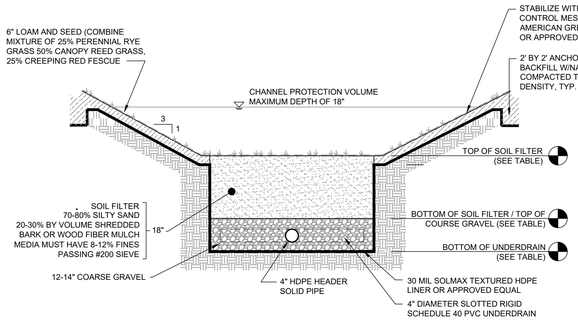
HOT WEDGE DUAL TRACK FUSION WELD DETAIL



FILLET EXTRUSION WELD DETAIL

GEOMEMBRANE WELD DETAILS

NTS



SECTION

USF NO.	EXISTING ELEVATION (+/-) (FT)	EMERGENCY SPILLWAY ELEVATION (FT)	TOP OF SOIL FILTER (FT)	BOTTOM OF SOIL FILTER/TOP OF COARSE GRAVEL (FT)	ELEVATION OF PIPE BED (FT)	BOTTOM OF COARSE GRAVEL (FT)	TOP OF BERM (FT)	TREATMENT AREA REQ'D/PROVIDED (SF)	TOTAL STORAGE VOLUME REQ'D/PROVIDED (CF)
1	82	83.5	82	80.5	79.75	79.5	84.2	208/210	348/546
2	77	76.73	75.23	73.73	72.98	72.73	77.2	183/192	305/512

GRASSED UNDERDRAIN SOIL FILTER DETAILS

N.T.S.

GENERAL NOTES

1. GUSF (INCLUDING FOREBAYS) SHALL NOT BE USED FOR SNOW STORAGE.
2. ALL COMPONENTS, CONSTRUCTION, INSPECTIONS, AND MAINTENANCE SHALL CONFORM TO THE LATEST EDITION OF MAINE DEP CHAPTER 500 STORMWATER MANAGEMENT RULES.

CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:

- AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED,
- AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA,
- AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED. BIO-RETENTION CELLS MUST BE STABILIZED PER THE PROVIDED PLANTING SCHEME AND DENSITY FOR THE CANOPY COVERAGE OF 30 AND 50%,
- AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS, AND
- ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

LINER

1. 30MIL TEXTURED GEOMEMBRANE.

PLANT SPECIES

1. PLANT SPECIES SHALL BE CHOSEN IN ACCORDANCE WITH MAINE DEP CHAPTER 500 BMP'S.

UNDERDRAIN LAYOUT

1. PIPES SHALL BE PLACED AT A MAXIMUM OF 15' APART WITH A POSITIVE GRADIENT.

MAINTENANCE

DURING THE FIRST YEAR, THE BASIN WILL BE INSPECTED SEMI-ANNUALLY AND FOLLOWING MAJOR STORM EVENTS

1. DEBRIS AND SEDIMENT BUILDUP SHALL BE REMOVED FROM THE FOREBAY AND BASIN AS NEEDED. MOWING OF GRASSED BASIN CAN OCCUR SEMI-ANNUALLY TO A HEIGHT OF NO LESS THAN 6 INCHES.
2. ANY BARE AREA OR EROSION RILLS SHALL BE REPAIRED WITH NEW FILTER MEDIA OR SANDY LOAM, SEEDED AND MULCHED OR SODDED.
3. MAINTAINING GOOD GRASS COVER WILL MINIMIZE CLOGGING WITH FINE SEDIMENTS AND IF PONDING EXCEEDS 48 HOURS, THE TOP OF THE FILTER BED MUST BE ROTOTILLED TO REESTABLISH THE SOIL'S FILTRATION CAPACITY.

POND ID	EXISTING ELEVATION (FT)	PERMANENT POOL ELEVATION (FT)	TOP OF LINER / CHANNEL PROTECTION ELEVATION (FT)	25 YEAR FLOOD ELEVATION (FT)	25 YEAR FLOOD ELEVATION W/FAILED OUTLET (FT)	BOTTOM OF POND (FT)	100 YEAR FLOOD ELEVATION	EMERGENCY SPILLWAY ELEVATION (FT)	TOP OF BERM (FT)	SPILLWAY CREST BREADTH/LENGTH (FT)	STRUCTURE RIM (FT)	2" DIA OPENING	OUTLET IN (FT)	OUTLET OUT (FT)
A	79	74.09	76.05	76.52	76.69	66.00	77.29	76.5	77.5	6/10	76.05	N/A	69.14	68.89
B	74	70.76	72.39	72.57	72.62	65.00	73.34	72.5	73.5	6/10	72.39	N/A	68.26	67.84

WET POND SECTION

N.T.S.

SECTION

WET POND OUTLET STRUCTURE DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

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207.989.4824
WWW.HALEYWARD.COM

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

SITE DETAILS

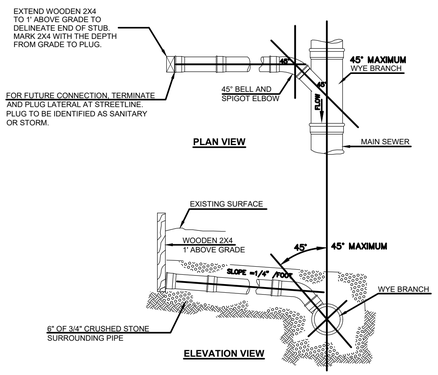
DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C505** REV. **3**

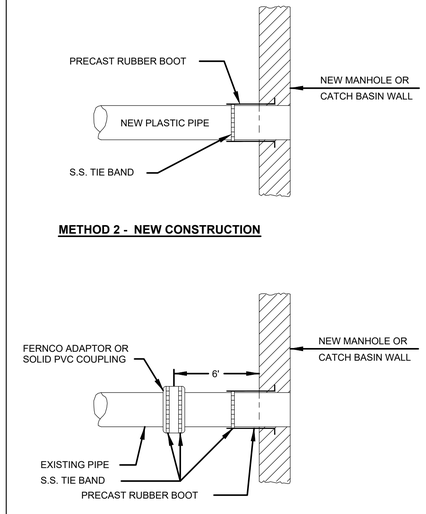
FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\00-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\05SOIL_DWGS\13773.001-C-07.DWG, 2023.10.27, 2:30 PM



TYPICAL HOUSE LATERAL TEE/WYE CONNECTION

NOT TO SCALE

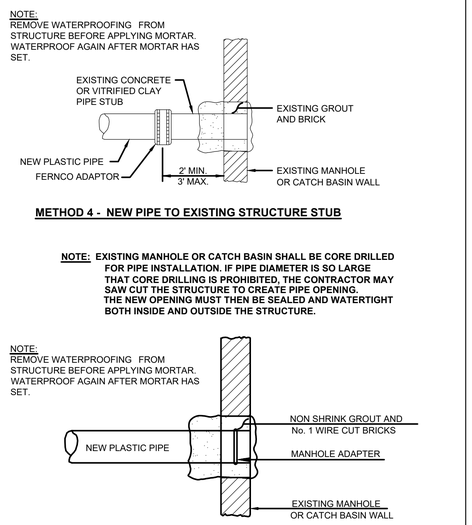
DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-17
REVISED:	TYPICAL HOUSE LATERAL TEE/WYE CONNECTION		



PLASTIC PIPE CONNECTIONS

NOT TO SCALE

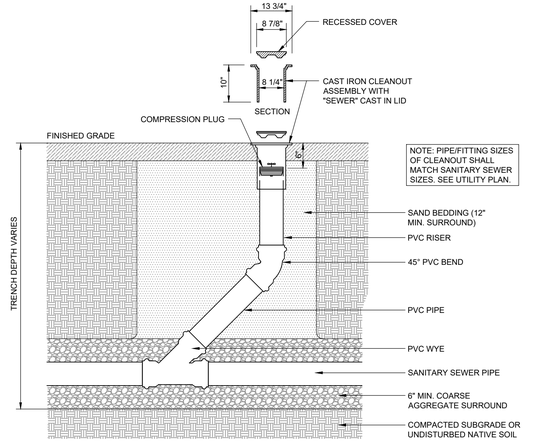
DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-13
REVISED:	PLASTIC PIPE CONNECTION METHODS 1 & 2		



PLASTIC PIPE CONNECTIONS

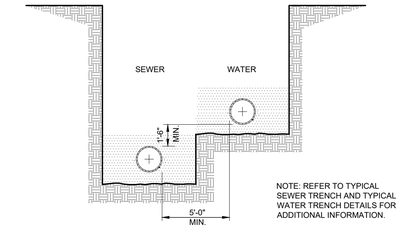
NOT TO SCALE

DATE: AUGUST 2009	CITY OF PORTLAND, MAINE TECHNICAL STANDARDS MANUAL	SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS SECTION II	FIGURE: II-14
REVISED:	PLASTIC PIPE CONNECTION METHODS 3 & 4		



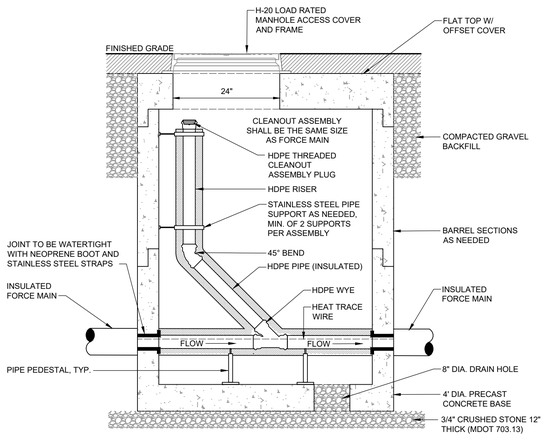
SANITARY SEWER CLEANOUT DETAIL

N.T.S.



TYPICAL SEWER / WATER SEPARATION DETAIL

N.T.S.



NOTES:

1. THROUGH WALL CONNECTIONS SHALL BE MADE WITH PRESS-SEAL OR KOR-N-SEAL GASKETS WITH STAINLESS STEEL STRAPS TO PERMIT LIMITED DIFFERENTIAL SETTLEMENT.
2. ALL BOLTS SHALL BE STAINLESS STEEL TYPE 304L WITH STAINLESS STEEL HARDWARE.
3. ENSURE CONTINUATION OF HEAT TRACE WIRE (IF APPLICABLE).

TYPICAL FORCE MAIN CLEANOUT DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

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One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

SITE DETAILS

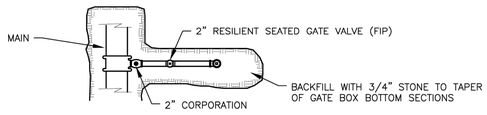
DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

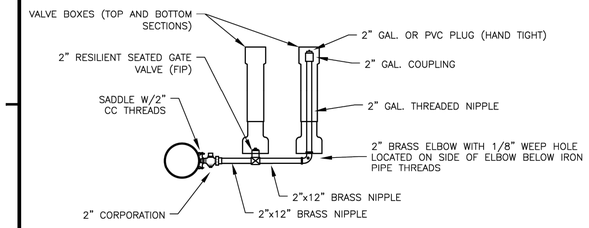
PROJECT No. 13773.001

DRAWING No. **C506** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\000-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-DT DWG, 2023.11.15, 2:40 PM

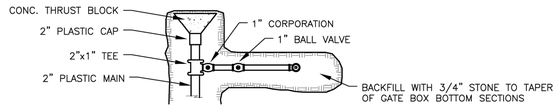


TOP VIEW

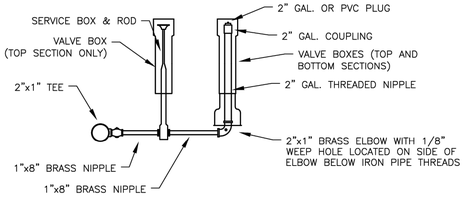


SIDE VIEW

SIDE-ARM BLOW-OFF (4" & LARGER MAINS)



TOP VIEW

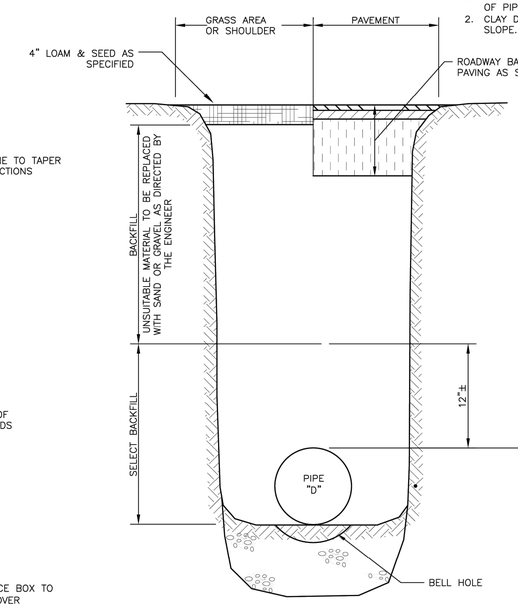


SIDE VIEW

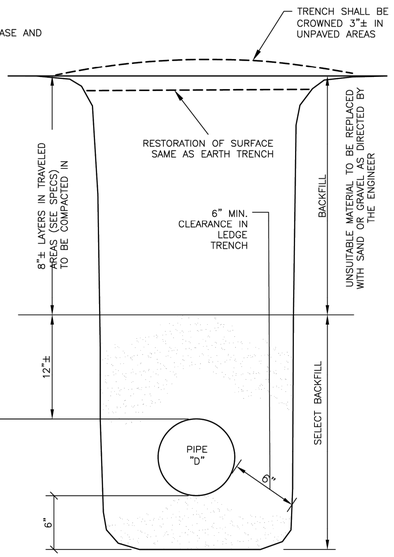
SIDE-ARM BLOW-OFF (2" MAIN)

TRENCH NOTES

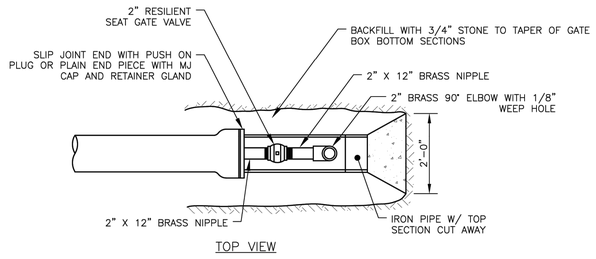
1. MAX PAY LIMITS SHALL BE 1.5 TIMES THE PIPE DIAMETER ON EACH SIDE OF PIPE
2. CLAY DAMS WILL BE INSTALLED EVERY 100'± IN AREAS OF MORE THAN 3% SLOPE.



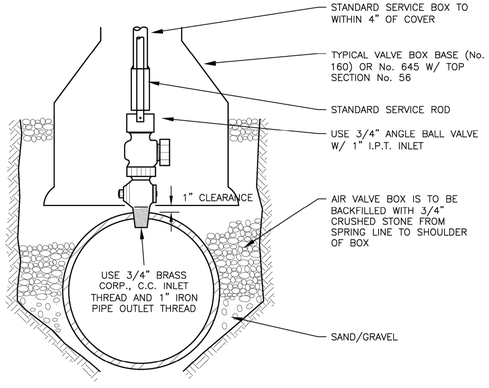
SECTION THRU EARTH TRENCH



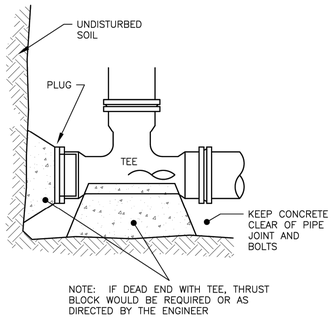
SECTION THRU LEDGE TRENCH



TOP VIEW

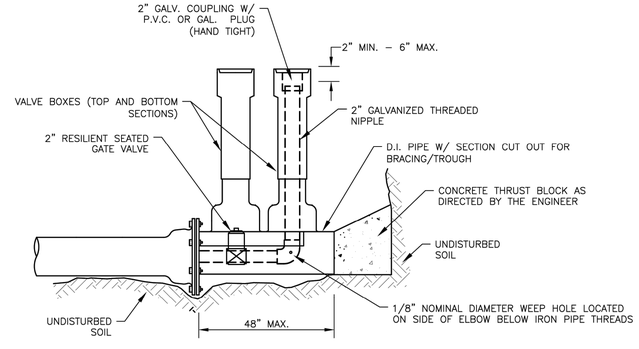


TYPICAL AIR VALVE (1")

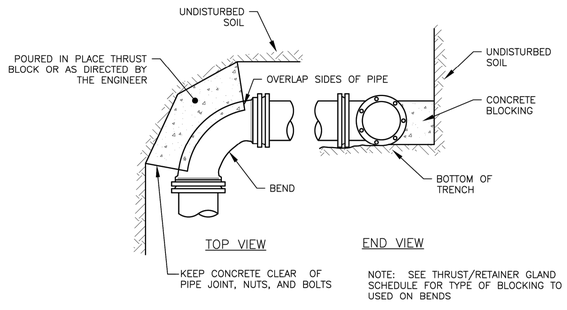


FOR STATE ROADS
SETBACK SHALL CONFORM TO M.D.O.T. POLICY FOR ABOVE GROUND UTILITY LOCATIONS. FOR SPEED LIMITS >35MPH 6.5' FROM EDGE OF SHOULDER OR FACE OF CURB. FOR SPEED LIMITS <35MPH 3' FROM EDGE OF SHOULDER OR 1' FROM FACE OF CURB.

FOR CITY OR TOWN ROADS CHECK WITH MUNICIPALITY FOR REQUIREMENTS



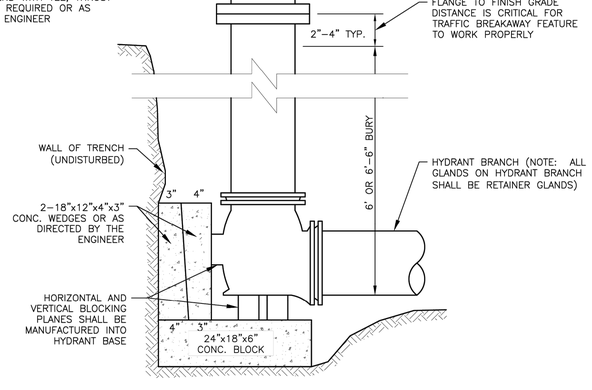
STANDARD 2" BLOW OFF



TOP VIEW END VIEW

NOTE: SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

STANDARD BEND BLOCKING



TYPICAL HYDRANT INSTALLATION DETAIL

3	2023.10.27	REVISED PER CITY COMMENTS	BLQ / JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ / JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM / JHW
REV.	DATE	DESCRIPTION	BY / CHK.

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

SITE DETAILS

DATE	2022.08.29
SCALE	AS NOTED
DRAWN BY	BLQ
DESIGNED BY	BLQ
CHECKED BY	JHW
PROJECT No.	13773.001
DRAWING No.	C507
REV.	3

JOB NO.: 13773.001
DATE: 10/01/2007
SCALE: AS NOTED
SHEET: 1 OF 2

01

PORTLAND WATER DISTRICT

STANDARD DETAILS

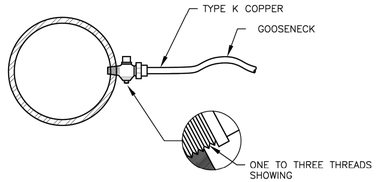
STANDARD WATER DETAILS

REV	DESCRIPTION	DATE
KAW	UPDATED SMALL METER PIT GEOMETRY	12/20
JGH	TYP. OFFSET & CHART ADDED	10/11

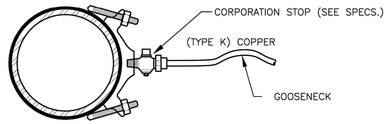
DESIGNED BY:	CHECKED BY: GSJ
DRAWN BY: TAW/KAW	SWD-2021.DWG

Portland Water District
225 DOUGLASS STREET, PORTLAND, MAINE 04104

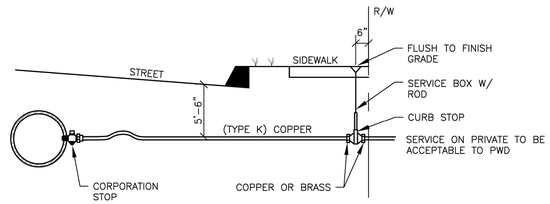
FILE LOCATION: P:\WE\13773-SHINBERG_CONSULTING\0001-HOPE_AVE_DUPLEXES-JAW\02-CAD_DRAWINGS\CIVIL\DGN_DWG\913773001-C-DT.DWG, 2023.10.27, 2:39 PM



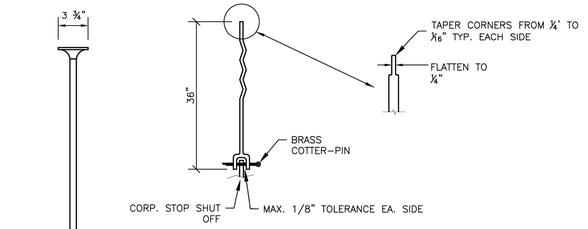
SERVICE TAP
(3/4" AND 1" C.C. THREAD)



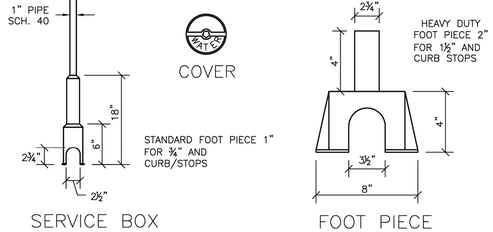
SERVICE SADDLE
(1-1/2" AND 2" C.C. THREAD)



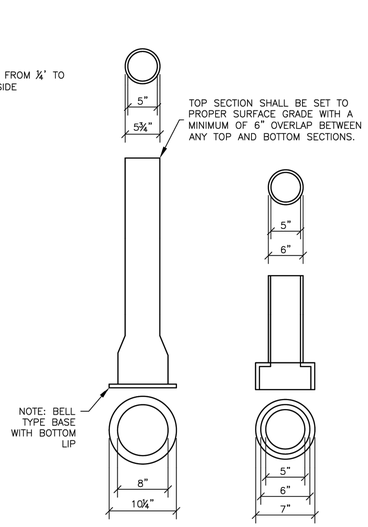
TYPICAL SERVICE CONNECTION

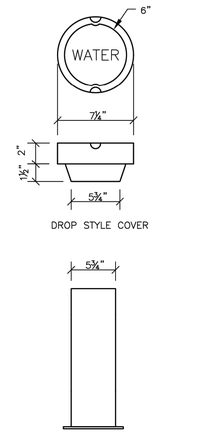


SERVICE ROD



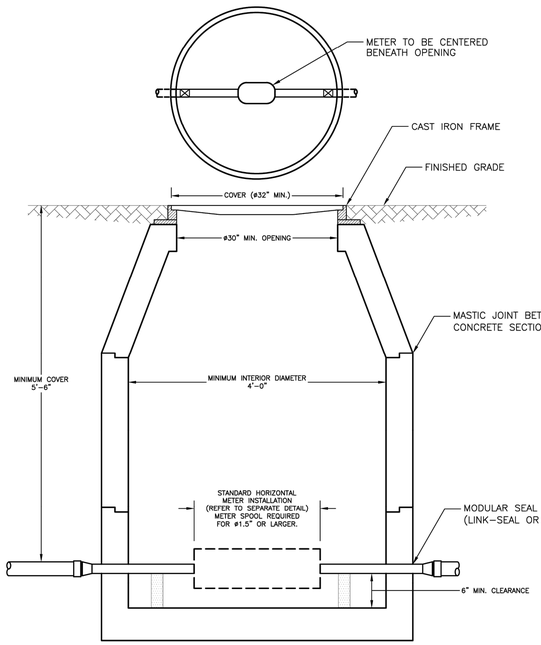
SERVICE BOX FOOT PIECE





VALVE BOX & COVER

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.)



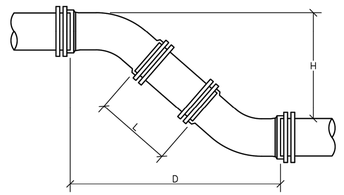
TYPICAL METER PIT – 5/8" TO 2" METER

METER PIT AND COVER

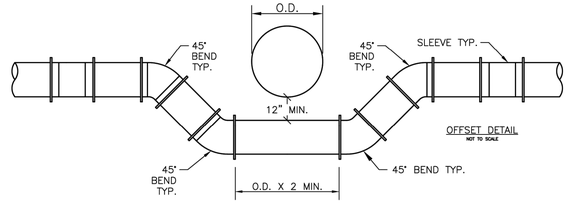
1. SPECIAL APPROVAL BY PWD IS REQUIRED, PRIOR TO CONSTRUCTION, FOR ALL PROPOSED METER PIT INSTALLATIONS.
2. TESTABLE BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN SMALL METER PITS.
3. METER PIT SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM THE PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
4. THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MINIMUM GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
5. 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).
6. METER PIT INTERIOR MUST BE AT LEAST 48" IN DIAMETER. THE OPENING MUST BE AT LEAST 30" IN DIAMETER, WITH A CAST IRON FRAME. THE COVER SHALL BE CAST IRON OR STEEL, 32" MINIMUM IN DIAMETER, AND BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
7. WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT.
8. ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT WILL BE MADE OF COPPER, WITH A MINIMUM OF 6" CLEARANCE FROM THE METER PIT FLOOR. USE BLOCKING AS NEEDED TO SUPPORT THE PIPE.
9. CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC FLOW, IF APPLICABLE.

METER INSTALLATION

10. ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
11. PWD WILL SUPPLY THE METER. ALL OTHER FITTINGS, INCLUDING A METER RESETTER FOR 1" OR SMALLER METERS, SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
12. FOR 1.5" AND 2" METERS, CUSTOMER WILL INSTALL A FLANGED METER SPOOL PIECE, SUPPLIED BY PWD AT NO ADDITIONAL CHARGE, PRIOR TO METER SET. THE METER SPOOL WILL BE MADE AVAILABLE FOR CUSTOMER PICKUP AT PWD CUSTOMER SERVICE, 225 DOUGLASS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.
13. CUSTOMER WILL INSTALL TWO BALL VALVES AT LEAST 24" APART FOR METER INSTALLATION, ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING. THE BALL VALVES SHALL BE SOLDERED IN PLACE.



	6" PIPE		8" PIPE		12" PIPE	
H	D	L	D	L	D	L
12"	1' 6-1/2"	0' 10-1/2"	1' 7-1/2"	0' 9-1/2"	1' 11-1/2"	0' 5-1/2"
13"	1' 7-1/2"	0' 11-7/8"	1' 8-1/2"	0' 10-7/8"	2' 0-1/2"	0' 6-7/8"
14"	1' 8-1/2"	1' 1-5/16"	1' 9-1/2"	1' 0-5/16"	2' 1-1/2"	0' 8-5/16"
15"	1' 9-1/2"	1' 2-11/16"	1' 10-1/2"	1' 1-11/16"	2' 2-1/2"	0' 9-11/16"
16"	1' 10-1/2"	1' 4-1/8"	1' 11-1/2"	1' 3-1/8"	2' 3-1/2"	0' 11-1/16"
17"	1' 11-1/2"	1' 5-9/16"	2' 0-1/2"	1' 4-9/16"	2' 4-1/2"	1' 0-9/16"
18"	2' 0-1/2"	1' 6-15/16"	2' 1-1/2"	1' 5-15/16"	2' 5-1/2"	1' 1-15/16"
19"	2' 1-1/2"	1' 8-3/8"	2' 2-1/2"	1' 7-3/8"	2' 6-1/2"	1' 3-3/8"
20"	2' 2-1/2"	1' 9-13/16"	2' 3-1/2"	1' 8-13/16"	2' 7-1/2"	1' 4-13/16"
21"	2' 3-1/2"	1' 11-3/16"	2' 4-1/2"	1' 10-3/16"	2' 8-1/2"	1' 6-3/16"
22"	2' 4-1/2"	2' 0-5/8"	2' 5-1/2"	1' 11-5/8"	2' 9-1/2"	1' 7-5/8"
23"	2' 5-1/2"	2' 2"	2' 6-1/2"	2' 1"	2' 10-1/2"	1' 9"
24"	2' 6-1/2"	2' 3-7/16"	2' 7-1/2"	2' 2-7/16"	2' 11-1/2"	1' 10-7/16"
25"	2' 7-1/2"	2' 4-7/8"	2' 8-1/2"	2' 3-7/8"	3' 0-1/2"	1' 11-7/8"
26"	2' 8-1/2"	2' 6-1/4"	2' 9-1/2"	2' 5-1/4"	3' 1-1/2"	2' 1-1/4"
27"	2' 9-1/2"	2' 7-11/16"	2' 10-1/2"	2' 6-11/16"	3' 2-1/2"	2' 2-11/16"
28"	2' 10-1/2"	2' 9-1/8"	2' 11-1/2"	2' 8-1/8"	3' 3-1/2"	2' 4-1/8"
29"	2' 11-1/2"	2' 10-1/2"	3' 0-1/2"	2' 9-1/2"	3' 4-1/2"	2' 5-1/2"
30"	3' 0-1/2"	2' 11-15/16"	3' 1-1/2"	2' 10-15/16"	3' 5-1/2"	2' 6-15/16"
31"	3' 1-1/2"	3' 1-5/16"	3' 2-1/2"	3' 0-5/16"	3' 6-1/2"	2' 8-5/16"
32"	3' 2-1/2"	3' 2-3/4"	3' 3-1/2"	3' 1-3/4"	3' 7-1/2"	2' 9-3/4"
33"	3' 3-1/2"	3' 4-3/16"	3' 4-1/2"	3' 3-3/16"	3' 8-1/2"	2' 11-3/16"
34"	3' 4-1/2"	3' 5-9/16"	3' 5-1/2"	3' 4-9/16"	3' 9-1/2"	3' 0-9/16"
35"	3' 5-1/2"	3' 7"	3' 6-1/2"	3' 6"	3' 10-1/2"	3' 2"
36"	3' 6-1/2"	3' 8-7/16"	3' 7-1/2"	3' 7-7/16"	3' 11-1/2"	3' 3-7/16"
37"	3' 7-1/2"	3' 9-13/16"	3' 8-1/2"	3' 8-13/16"	4' 0-1/2"	3' 4-13/16"
38"	3' 8-1/2"	3' 11-1/4"	3' 9-1/2"	3' 10-1/4"	4' 1-1/2"	3' 6-1/4"
39"	3' 9-1/2"	4' 0-11/16"	3' 10-1/2"	3' 11-11/16"	4' 2-1/2"	3' 7-11/16"
40"	3' 10-1/2"	4' 2-1/16"	3' 11-1/2"	4' 1-1/16"	4' 3-1/2"	3' 9-1/16"
41"	3' 11-1/2"	4' 3-1/2"	4' 0-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 1-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 6-5/16"	4' 2-1/2"	4' 5-5/16"	4' 6-1/2"	4' 1-5/16"
44"	4' 2-1/2"	4' 7-3/4"	4' 3-1/2"	4' 6-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 4-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 5-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 6-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 7-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 8-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 9-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-5/8"	4' 10-1/2"	5' 4-5/8"	5' 2-1/2"	5' 0-5/8"
52"	4' 10-1/2"	5' 7-1/16"	4' 11-1/2"	5' 6-1/16"	5' 3-1/2"	5' 2-1/16"
53"	4' 11-1/2"	5' 8-7/16"	5' 0-1/2"	5' 7-7/16"	5' 4-1/2"	5' 3-7/16"
54"	5' 0-1/2"	5' 9-7/8"	5' 1-1/2"	5' 8-7/8"	5' 5-1/2"	5' 4-7/8"
55"	5' 1-1/2"	5' 11-5/16"	5' 2-1/2"	5' 10-5/16"	5' 6-1/2"	5' 6-5/16"



NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

TYPICAL MAIN OFFSET

REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS
ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE
SITE DETAILS

DATE	2022.08.29
SCALE	AS NOTED
DRAWN BY	BLQ
DESIGNED BY	BLQ
CHECKED BY	JHW
PROJECT No.	13773.001
DRAWING No.	C508
REV.	3

02
SHEET: 2 OF 2
SCALE: AS NOTED
DATE: 10/10/2022
JOB NO.:

PORTLAND WATER DISTRICT

STANDARD DETAILS

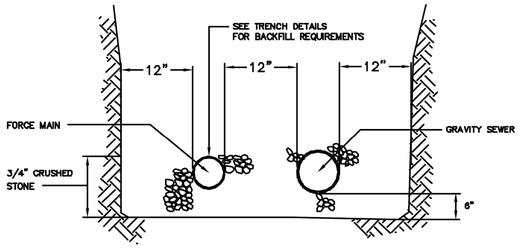
STANDARD WATER DETAILS

GSJ	VALVE BOX COVER NOTE	12/20
GSJ	MAIN OFFSET	12/16
GSJ	METER PIT DETAIL	03/15
JGH	TYP. OFFSET & CHART	10/11
REV	DESCRIPTION	DATE

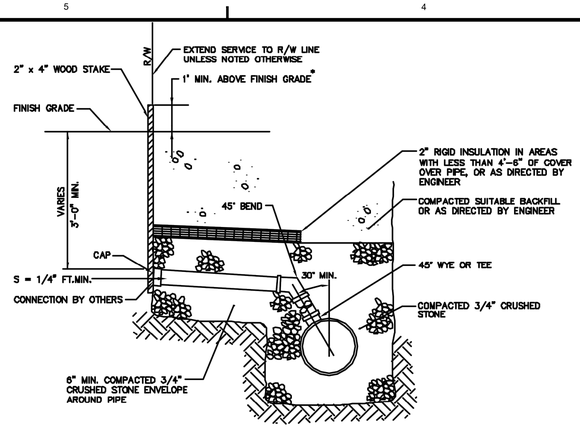
DESIGNED BY:	CHECKED BY: GSJ
DRAWN BY: TAW/KAW	SMD-2021.DWG

Portland Water District
225 DOUGLASS STREET, PORTLAND, MAINE 04104

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\00-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSIGN_DWGS\13773.001-C-07.DWG, 2023.10.27, 2:39 PM



TWO PIPE TRENCH DETAIL

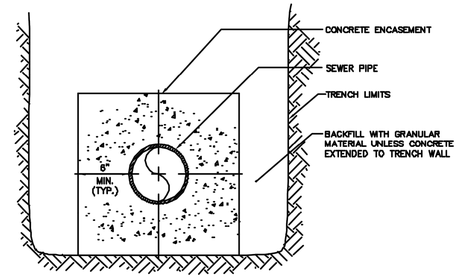


NOTES:

- PIPE DIAMETERS MAY VARY, SEE TYPICAL PIPE TRENCH DETAIL, THIS SHEET.
- WHERE 30° MINIMUM ANGLE BETWEEN SEWER CONNECTION AT THE SEWER MAIN AND THE VERTICAL CANNOT BE MAINTAINED, PROVIDE A PRECAST SEWER CHIMNEY.
- IF STAKE IS CUT OFF FLUSH OR SLIGHTLY BELOW GRADE, PROVIDE MIN. OF TWO 16d. GALV. SPIKES DRIVEN INTO TOP OF 2" x 4" TO PROVIDE METAL DETECTABILITY.

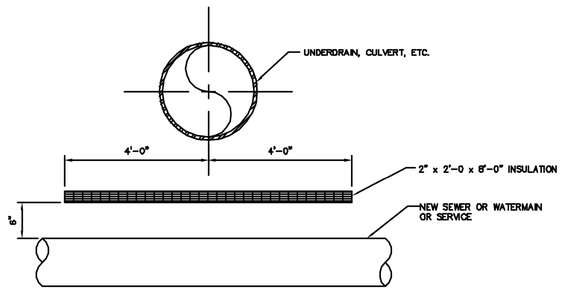
HORIZONTAL SEWER CONNECTION

N.T.S.



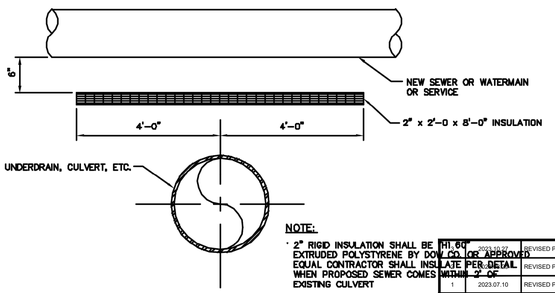
CONCRETE ENCASEMENT FOR SEWER MAINS

N.T.S.



INSULATION DETAIL "A"

N.T.S.

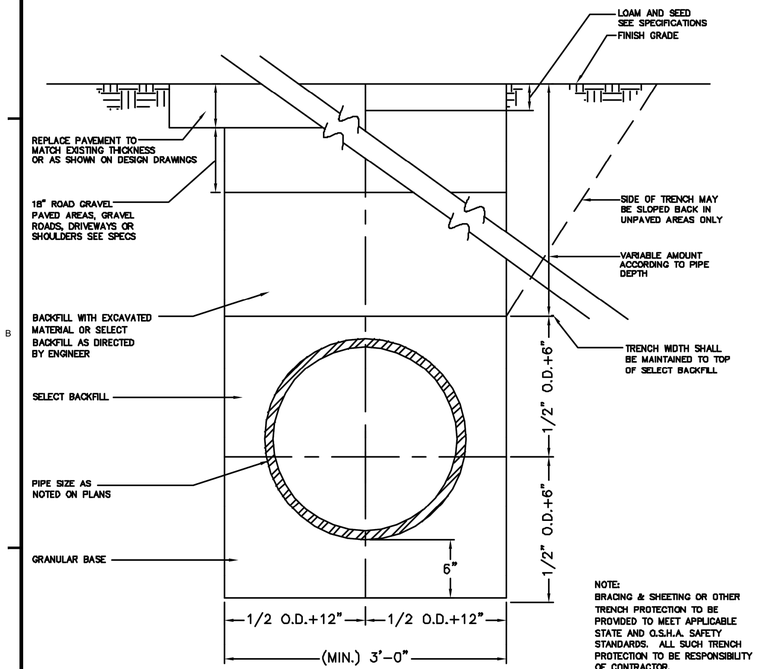


NOTE:

- 2" RIGID INSULATION SHALL BE DOW HI 60 EXTRUDED POLYSTYRENE BY DOW CO. OR APPROVED EQUAL CONTRACTOR SHALL INSULATE PER DETAIL WITHIN 2'-0" WHEN PROPOSED SEWER COMES WITHIN 2'-0" OF EXISTING CULVERT

INSULATION DETAIL "B"

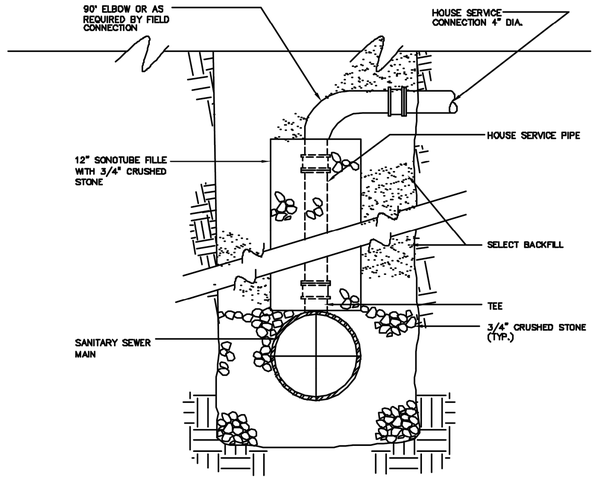
N.T.S.



NOTE:
BRACING & SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE RESPONSIBILITY OF CONTRACTOR.

TRENCH SECTION

N.T.S.



CHIMNEY DETAIL

N.T.S.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW
2	2023.05.22	REVISED PER CITY COMMENTS	BLQ	JHW
1	2022.12.20	REVISED PER CITY COMMENTS	BLQ	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
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207.989.4824
WWW.HALEYWARD.COM

PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

SITE DETAILS

REVISIONS

SEWER TRENCH DETAILS

Portland Water District
ASSET MANAGEMENT & PLANNING DEPT.
225 DOUGLASS STREET P.O. 3553 PORTLAND, MAINE 04104-3553

DESIGN | CHECK

DATE	SCALE
2022.08.29	AS NOTED

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C509** REV. **3**

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-JHW\20-CAD_DRAWINGS\CIVIL\DISGN_DWGS\13773.001-C-DT.DWG, 2023.10.27, 2:39 PM

LEGEND:

- PROPERTY LINE
- WATERSHED BOUNDARY LINE
- 6F — WATERSHED DESIGNATION
- TIME OF CONCENTRATION FLOW PATH
- 50' SF — FLOW PATH DESCRIPTION
- SF — SHEET FLOW
- SC — SHALLOW CONCENTRATED FLOW
- CF — CHANNEL FLOW
- PF — PIPE FLOW
- STORMWATER FLOW DIRECTION
- EmB — SOIL I.D.
- SOILS BOUNDARY

SUMMATION POINT 1
SUMMATION POINT 2
SUMMATION POINT 3
SUMMATION POINT 4
PROPERTY BOUNDARY
75' STREAM SETBACK
APPROXIMATE STREAM LOCATION
WETLAND, TYP.
WOODED
WmD
EmB
BuB
SuE2
Sn
C/D
1
2
3
4

50' SF S: 0.12
40' SC S: 0.01
50' SF S: 0.02
75' SC S: 0.02
80' SC S: 0.15
75' SC S: 0.04
70' SC S: 0.02
70' SC S: 0.15
50' SF S: 0.04
75' SC S: 0.04
60' SC S: 0.175
140' SC S: 0.08
400' SC S: 0.03
190' CF S: 0.07
825' CF S: 0.03

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

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ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

PRE-DEVELOPMENT HYDROLOGY PLAN

DATE	SCALE
2022.08.29	1"=40'

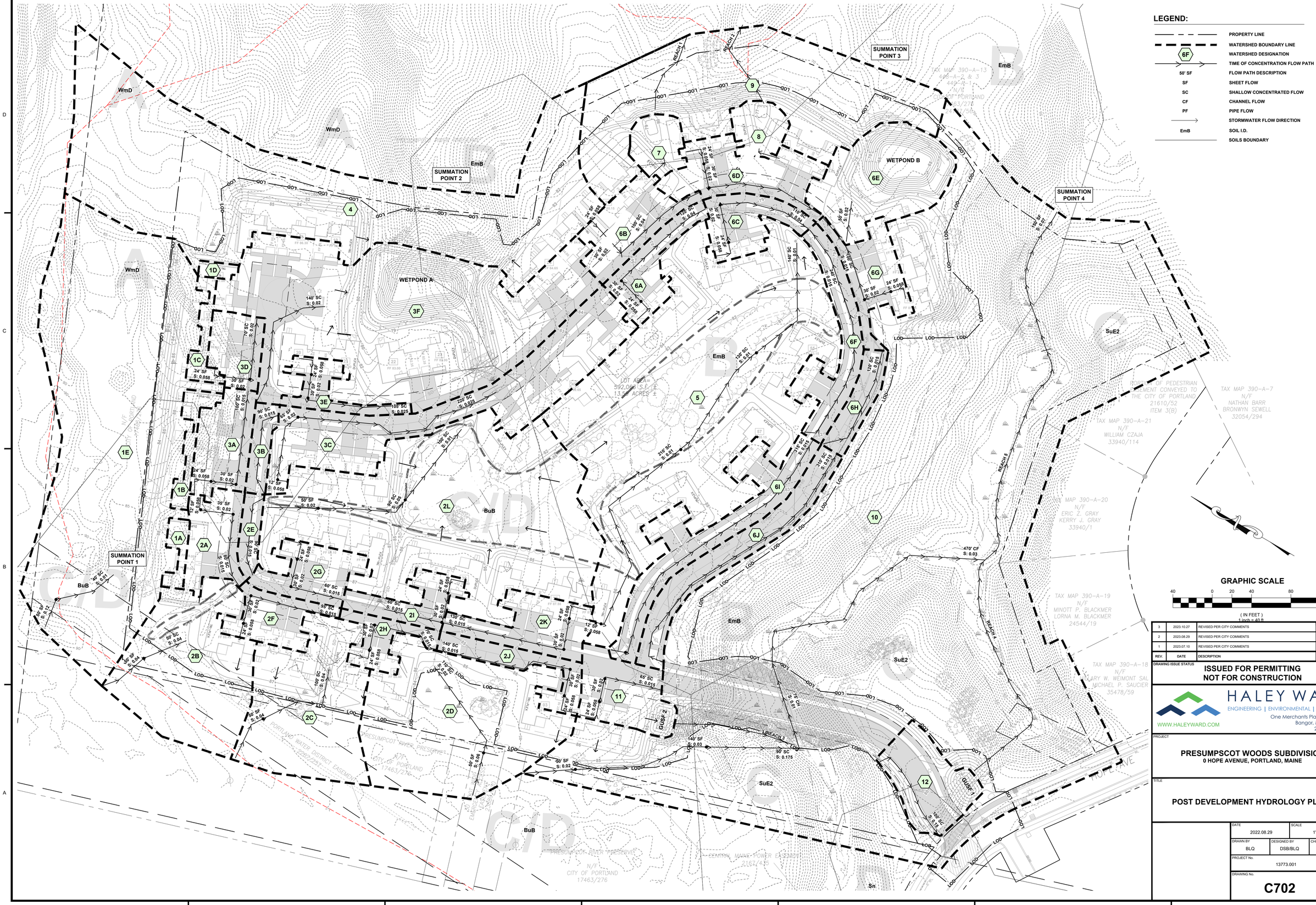
DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	BLQ	JHW

PROJECT No.
13773.001

DRAWING No.
C701

REV.
3

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\00\01-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-PRE_HY.DWG, 2023.10.27, 2:31 PM



REV.	DATE	DESCRIPTION	BY	CHK.
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING NOT FOR CONSTRUCTION

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ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
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PROJECT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

TITLE

POST DEVELOPMENT HYDROLOGY PLAN

DATE	SCALE
2022.08.29	1"=40'

DRAWN BY	DESIGNED BY	CHECKED BY
BLQ	DSB/BLQ	JHW

PROJECT No. 13773.001

DRAWING No. **C702** REV. **3**

FILE LOCATION: P:\ME\13773.SHINBERG_CONSULTING\0001-HOPE_AVE_DUPLEXES-JHW\02-CAD_DRAWINGS\CIVIL\DSGN_DWGS\13773.001-C-POST_HY.DWG, 2023.10.27, 2:34 PM

LEGEND:

- DRAINAGE AREA
- RESTORATION AREA
- DRAINING TO WETPOND A
- DRAINING TO WETPOND B
- DRAINING TO DRIP FILTER BMP
- DRAINING TO GUSF 1
- DRAINING TO GUSF 2

WETPOND A

WETPOND B

GUSF 1

GUSF 2

UNTREATED AREA TO BE RESTORED TO NATURAL CONDITIONS, TYP.

LOT AREA =
592,068 S.F. ±
13.59 ACRES ±

TAX MAP 390-A-13
449-A-2 & 3
449-A-1
N/F
CITY OF PORTLAND
17463/276
24172/58

TAX MAP 390-A-21
N/F
WILLIAM CZAJA
33940/114

PORTION OF PEDESTRIAN EASEMENT CONVEYED TO THE CITY OF PORTLAND 21610/52 ITEM 3(B)

TAX MAP 390-A-20
N/F
ERIC Z. GRAY
KERRY J. GRAY
33940/1

TAX MAP 390-A-19
N/F
MINOTT P. BLACKMER
LORNA M. BLACKMER
24544/19

TAX MAP 390-A-18
N/F
HILARY W. WEIMONT SAUCIER
MICHAEL P. SAUCIER
35478/59

N/F
CITY OF PORTLAND
17463/276

PRESUMPCOT RIVER PRESERVE

PORTLAND WATER DISTRICT EASEMENT
22627/237

CENTRAL MAINE POWER EASEMENT
2162/435

BASKET LANE

HOPE AVE

GRAPHIC SCALE

40 0 20 40 80 120

(IN FEET)
1 inch = 40 ft.

REV.	DATE	DESCRIPTION	BY	CHK
3	2023.10.27	REVISED PER CITY COMMENTS	BLQ	JHW
2	2023.08.29	REVISED PER CITY COMMENTS	BLQ	JHW
1	2023.07.10	REVISED PER CITY COMMENTS	PJM	JHW

DRAWING ISSUE STATUS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

HALEY WARD
ENGINEERING | ENVIRONMENTAL | SURVEYING
One Merchants Plaza, Suite 701
Bangor, Maine 04401
207.989.4824
WWW.HALEYWARD.COM

PROJECT

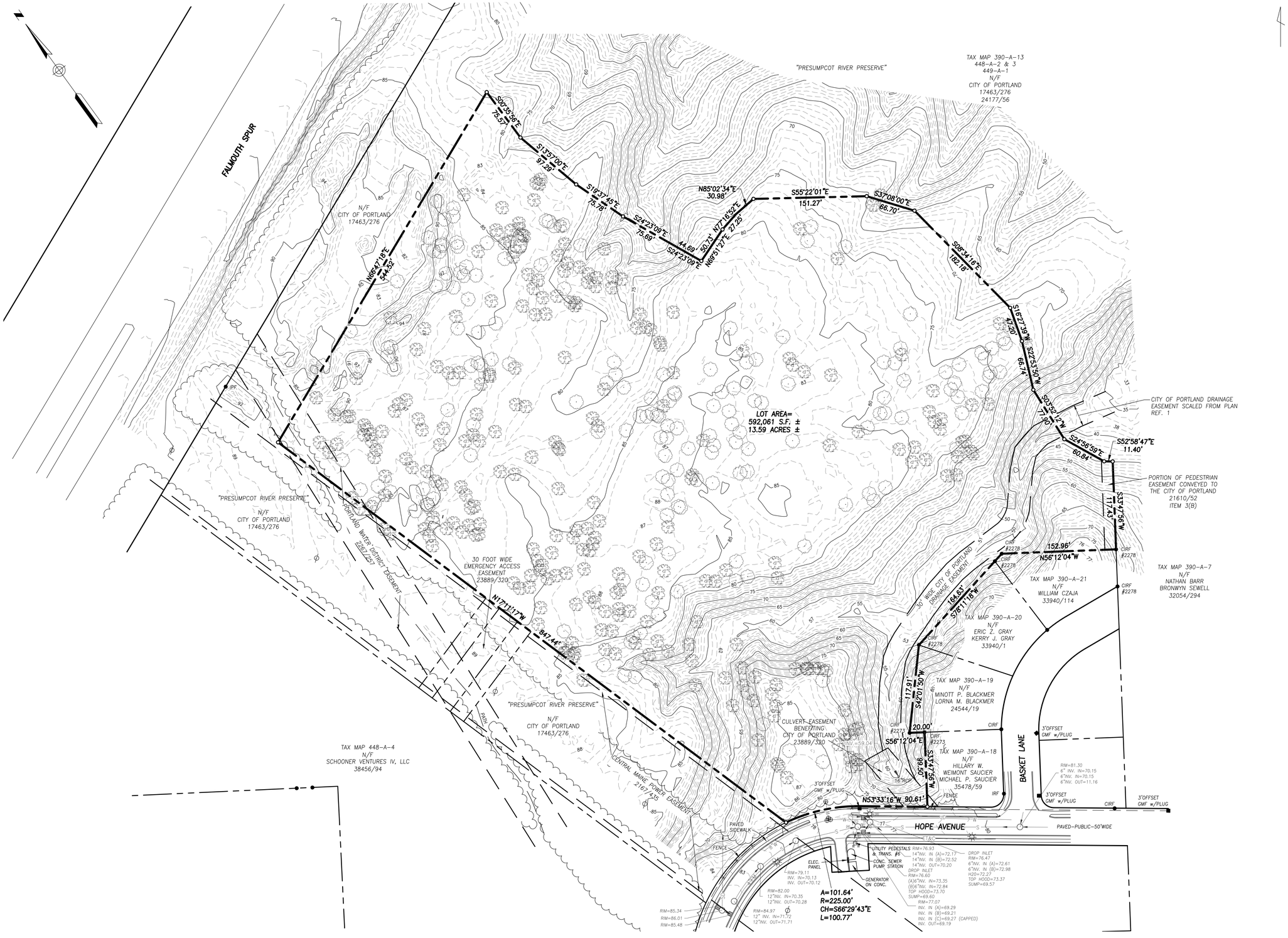
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

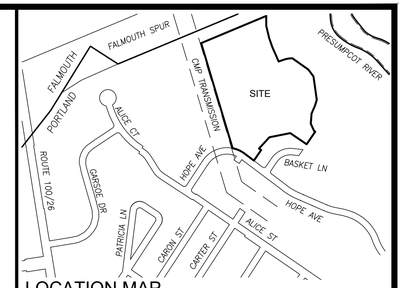
TITLE

STORMWATER TREATMENT PLAN

DATE: 2022.08.29	SCALE: 1"=40'
DRAWN BY: BLQ	DESIGNED BY: DSB/BLQ
CHECKED BY: JHW	
PROJECT No.: 13773.001	
DRAWING No.: C703	REV.: 3

FILE LOCATION: P:\ME\13773-SHINBERG_CONSULTING\001-HOPE_AVE_DUPLEXES-RW\02-CAD_DRAWINGS\CIVIL\DSIGN_DWGS\13773.001-C-TREAT.DWG, 2023.10.27, 2:38 PM





LOCATION MAP N.T.S.

LEGEND

- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- CAPPED IRON ROD TO BE SET
- UTILITY POLE
- MANHOLE
- CATCH BASIN
- LIGHT POLE
- DECIDUOUS TREE
- CONIFEROUS TREE
- FENCE
- GUARDRAIL
- CURB
- 80 — 1' CONTOUR
- IPF/IRF — IRON PIPE/ROD FOUND
- N/F — NOW OR FORMERLY
- 000/000 — DEED BOOK / PAGE

PLAN REFERENCES

1. "RIVERWALK SUBDIVISION PLAN" MADE FOR GORRILL–PALMER DATED OCTOBER 25, 2005 AND REVISED FEBRUARY 24, 2006 AS RECORDED IN PLAN BOOK 206, PAGES 412 & 413.

2. "PLAN OF BRANDY LANE SUBDIVISION PLAT" MADE FOR LBW, LLC DATED JANUARY 15, 2018 AND REVISED THROUGH JUNE 7, 2021 AS RECORDED IN PLAN BOOK 221, PAGE 435.

3. "PLAN OF PROPERTY FOR ROBERT ADAM" MADE BY LAND USE CONSULTANTS DATED AUGUST, 1978 AS RECORDED IN PLAN BOOK 125, PAGES 45 & 46.

4. "PRESUMPSCOT RIVER PLACE III SUBDIVISION PLAN" MADE FOR ROBERT ADAM AND BURT WOLF BY TITCOMB ASSOCIATES DATED DECEMBER 4, 2001 AND REVISED THROUGH OCTOBER 21, 2002 AS RECORDED IN PLAN BOOK 202, PAGE 650.

GENERAL NOTES

1. OWNER OF RECORD: ESTELLE ESTATES, LLC
   TAX MAP: 448 BLOCK A LOT 1
   409 BLOCK A LOT 2
   390 BLOCK A LOT 1
   C.C.R.D. BOOK 35303 PAGE 331

2. BEARINGS ARE BASED ON STATE PLANE COORDINATE SYSTEM, MAINE WEST ZONE, NAD83 PER GPS OBSERVATION.

3. ELEVATIONS ARE BASED ON CITY OF PORTLAND DATUM BASED UPON GPS OBSERVATION. THE ELEVATION BENCHMARK FROM PLAN REFERENCE 2 APPEARS TO BE 0.76 FEET HIGH COMPARED TO THIS SURVEY.

4. CONTOUR INFORMATION IS A COMPOSITE OF GROUND SURVEYING AND 2020 LIDAR DATA AVAILABLE FROM THE MAINE OFFICE OF G.I.S. THE LIDAR DATA HAS BEEN FIELD VERIFIED BY OWEN HASKELL, INC., YIELDING AN OVERALL R.M.S.E. OF 0.09 FEET AT THE SAMPLE POINTS TAKEN AROUND THE SITE. THE CONTOURS IN THE DEVELOPED PORTION OF HOPE AVENUE ARE THE RESULT OF A TOTAL STATION SURVEY.

5. SITE BENCHMARK IS A PLUG IN A GRANITE MONUMENT LOCATED 3 FOOT OFFSET OF THE POINT OF CURVATURE OF THE STREET LINE OF THE SUBJECT PROPERTY. THE ELEVATION IS 77.35 FEET.

6. ALL TREES 16" OR GREATER WITHIN OR NEAR THE AREA PROPOSED TO BE DEVELOPED ARE SHOWN HEREON AND ARE BASED ON A GROUND SURVEY.

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

11/21/23
DATE

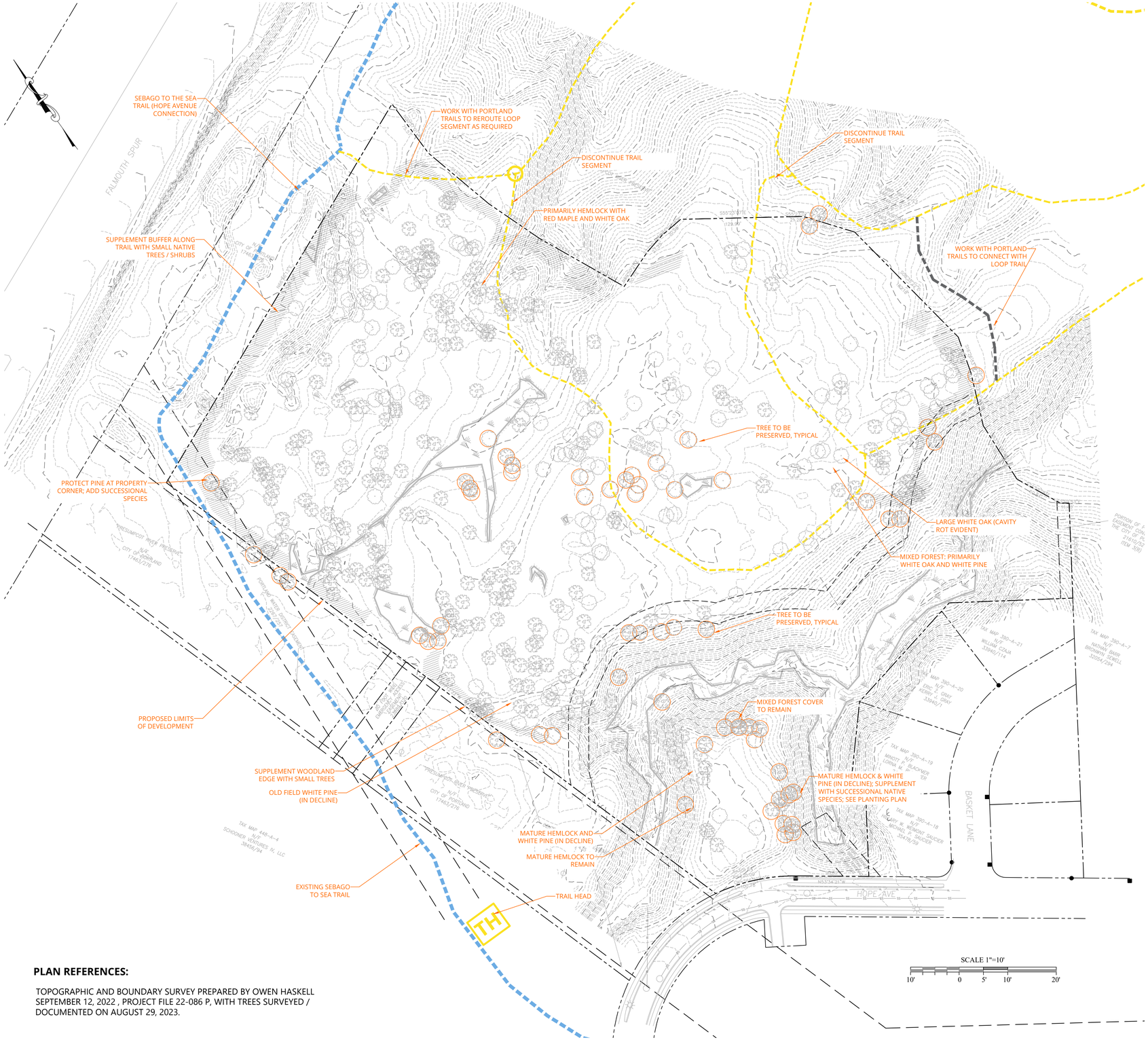
STATE OF MAINE — SAMUEL D. GLIDDEN — 2520 — PROFESSIONAL LAND SURVEYOR

REV. 1	11-27-23	ADD TREES

Boundary and Topographic Survey
On
Hope Avenue, Portland, Maine
Made for
GenX Capital Partners
2 Cotton Street, Portland, ME 04101

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 US ROUTE 1, UNIT 10, FALMOUTH, ME 04105 TEL. 207-774-0424

DRAWN BY: SDG	DATE: SEPT. 12, 2022	JOB NO. 2022-086 P
CHECKED BY: RCJ	SCALE: 1" = 60'	DRWG. NO. 1



EXISTING LAND CHARACTERISTICS

The project site is a forested parcel (13.7 acres) with mix of native hardwood and softwoods. A steep ravine traverses the southern third of the site with mature hemlock, white pine, and white oak. The site abuts the Presumpscot river preserve, conservation land owned by the city of Portland, to the west, north, and east. The Falmouth spur runs west to east north of the property, and traffic noise is evident in the northern third of the site. The Presumpscot River is located to the east. a portion of the Sebago to Sea Trail runs along an existing Portland Water District right-of-way to the west, and a portion of the trail cuts across the northwest corner of the property, and several loop trails are located within the project site.

Hemlock and beech species were documented on site. Future decline of these species is anticipated due to beech bark disease and hemlock woolly adelgid, both of which are widespread along the southern coast (per Maine Forest Service). White pine throughout the site are generally old field pine that are now being shaded out by forest species. Most of the existing pines have evident die back and would be expected to decline further with forest succession.

White oak is the prevalent deciduous species and large, mature trees over 16" caliper are located throughout the site. the largest recorded oak, 30" diameter, is located north of the ravine in the site's interior. this tree is in decline with and a large trunk cavity evident. Other deciduous tree species include ash, white birch, serviceberry, and hornbeam.

There is little understory overall, and past disturbance of the site is evident in the random series of berms and abandoned farm roads, particularly within the western and northern portions of the site.

Flatter land area with several small wetlands is located within the site interior. Most of the mature trees in this area are white pine supplemented with ash, maple, and oak. Successional growth was observed with smaller tree growth and understory in areas with filtered sun.

APPROACH TO LANDSCAPE PRESERVATION

Due to its steep slopes, mature vegetation, and wetland habitat, the ravine should be preserved in its current state to the extent possible. Trees within this area should be preserved, and any trees along the perimeter of the area to be developed should be protected during construction.

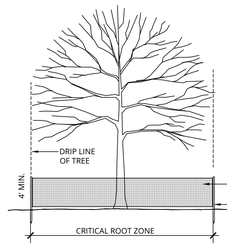
The center of the site, because of its flatter terrain, is more appropriate for development. Wetlands and trees within this area should be preserved, to the extent possible, as open space, and trees-to-remain should be protected during construction. The regulatory wetland setbacks should be supplemented with small successional trees and shrubs to enhance the buffer.

A new trail connection should be extended from the tie-in with the Sebago-to-Sea Trail at the western corner of the site, and a trail with connected central open space and active recreational features should be coordinated with the central open space. On-site smaller loop trails will need to be discontinued and the internal trail network focus on major connection points to the Presumpscot Preserve at the west corner near the trail head and at the east side toward the river. Most of the external trail traffic is anticipated to be via the Sebago-to-Sea trail route along the site's perimeter. The buffer between the trail and subdivision should be enhanced as needed to preserve the character of the trail and to ensure privacy for the homes.

White pine within forested areas would be expected to decline as the canopy becomes denser and sunlight less available. In areas adjacent to clearing, mature pine will benefit from increased sun exposure and should be saved where possible. These trees should be protected during construction, as noted.

Hemlock outside of the development area should be preserved to the extent possible because they provide important habitat despite their threatened status. Hemlock exposed to clearing and construction activities should be removed unless they are properly shaded. Where necessary, vegetated buffers should be enhanced to mitigate clearing/ sunlight impacts to existing trees.

Where possible, oak trees should be preserved and supplemented with additional oaks and native species. the remaining woodland buffer should be further assessed following site preparation activities and supplemented, where needed, with small successional species such as gray birch, serviceberry, white pine, which will help to mitigate clearing impacts on remaining trees.



NOTES:
1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL FENCING TO LIMIT OF CRITICAL ROOT ZONE / DRIP EDGE OF TREE.
3. DO NOT STORE CONSTRUCTION EQUIPMENT, MATERIALS, TOOLS, ETC. WITHIN PROTECTIVE FENCING.
4. MAINTAIN FENCING IN A NEAT AND ORDERLY FASHION THROUGHOUT THE CONSTRUCTION PERIOD.
5. TREE PROTECTION MATERIALS SHALL BE AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR AS APPROVED BY OWNER.
6. LANDSCAPE PRESERVATION / TREE PROTECTION MEASURES SHALL BE IN ACCORDANCE WITH THE CITY OF PORTLAND'S TECHNICAL STANDARDS, SECTION 4.

TREE PROTECTION DETAIL

NOT TO SCALE

PLAN REFERENCES:

TOPOGRAPHIC AND BOUNDARY SURVEY PREPARED BY OWEN HASKELL SEPTEMBER 12, 2022 , PROJECT FILE 22-086 P, WITH TREES SURVEYED / DOCUMENTED ON AUGUST 29, 2023.

RS LEONARD Landscape Architecture

WWW.HALEYWARD.COM

REVISION - DATE - DESCRIPTION - DRAWN BY - CHECKED BY

			RSLLA	BK-HW
1	-	-		
2				
3				
4				
5				
6				
7				

PROJECT & CLIENT

PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

SHEET TITLE:

LANDSCAPE PRESERVATION PLAN

REGINA S. LEONARD 3123 10/26/2023 STATE OF MAINE REGISTERED LANDSCAPE ARCHITECT

SCALE:
AS NOTED

ISSUE DATE:
10/26/2023

DSGN/DRWN	CHECK
RSL	HW

PROJECT NO.
HW-HOPE AVENUE

SHEET 1 OF 3
LA-100



PASSIVE & ACTIVE RECREATION / OPEN SPACE:

1. REQUIREMENTS: 18,000 SF OPEN SPACE FOR ACTIVE & PASSIVE RECREATIONAL ACTIVITIES (PRUD WITH WORKFORCE HOUSING).
2. DESCRIPTION OF PROVISIONS: OVER 1,000 LINEAR FEET OF EXISTING / PROPOSED TRAILS (3,000 SF) THROUGH THE SITE WITH OPEN LAWN AREAS AND WOODS, AS WELL AS PLAY / FITNESS FEATURES AND SEATING PLACED ALONG TRAIL (APPROX. 1,500 SF) MARKED AS A, B, C ON THE PLAN) AT THE CENTER OF THE SITE BETWEEN UNITS 47-54 TO THE NORTH AND UNITS 55-60 TO THE SOUTH.REFERENCE PLAN DETAIL & CUT SHEETS IN SITE PLAN RESPONSE PACKET.
3. FEATURES: A) LOG PLAY STACK, B) ROPE CLIMBER, 3) STEPPING COLUMNS; TIMBERFORM LINE BY COLUMBIA CASCADE OR APPROVED EQUAL.

PLANTING NOTES:

1. ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
2. IN THE CASE OF ANY DISCREPANCIES BETWEEN SPECIES AND QUANTITIES CALLED OUT IN THE PLANTING KEY AND THOSE SHOWN ON THE PLAN, QUANTITIES AND SPECIES SHOWN ON THE PLAN SHALL OVER-RIDE.
3. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES.
4. ALL PLANTS SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTINGS THAT DO NOT CONFORM TO THE DRAWINGS OR SPECIFICATIONS OUTLINED HEREIN.
5. EXISTING TREES TO REMAIN SHALL BE PROTECTED BY PVC FENCING PLACED AT THE DRIP-LINE OR AS SHOWN ON THE PLANS TO PREVENT DAMAGE AND COMPACTION OF THE ROOT SYSTEM. NO GRADING, SOIL DISTURBANCE, OR STORAGE OF MATERIALS OR EQUIPMENT SHALL OCCUR WITHIN THE DRIP-LINE UNLESS OTHERWISE SHOWN ON PLANS. ANY EXCAVATION WITHIN SUCH AREAS SHALL BE PERFORMED BY HAND TO AVOID DAMAGE OF THE ROOT SYSTEM.
6. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED AND APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. FINISH GRADE OF PLANTINGS SHALL MATCH ADJACENT FINISH GRADES UNLESS OTHERWISE NOTED ON DRAWINGS OR DIRECTED AND/OR APPROVED BY THE LANDSCAPE ARCHITECT.
7. PLANTING BEDS CONSIST OF 3 PARTS FERTILE, FRIABLE LOAM AMENDED WITH 1 PART ORGANIC COMPOST: EARTHLIFE BY NEW ENGLAND ORGANICS, FALMOUTH, ME, TEL. 207-781-5011, OR APPROVED EQUAL. THE PREPARED SOIL SHALL BE SPREAD UNIFORMLY, AT A 12 INCH MINIMUM DEPTH IN PLANTING BEDS AND 4" IN AREAS TO BE SEEDED, AS SHOWN ON PLANS
8. LANDSCAPE ARCHITECT SHALL APPROVE FINAL PLACEMENT OF ALL PLANT MATERIALS AND RESERVES THE RIGHT TO MAKE FIELD ADJUSTMENTS TO PLANTINGS AS NECESSARY.
9. ALL PLANTS SHALL BE SET PLUMB UNLESS OTHERWISE SPECIFIED.
10. ALL PLANTINGS SHALL BE TOPPED WITH A MINIMUM OF 3" OF WELL COMPOSTED, DARK PINE BARK MULCH. SEEDED AREAS SHALL BE MULCHED WITH SHREDDED STRAW OR APPROVED MULCH.
11. ALL DISTURBED AREAS NOT OTHERWISE PLANTED SHALL BE SEEDED AS SHOWN ON THE PLANS OR AS APPROVED. SEEDING AREAS SHALL BE LIGHTLY MULCHED WITH A LAYER OF CLEAN, WEED-FREE STRAW.
6. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED AS REQUIRED THEREAFTER TO ENSURE SURVIVAL AND GROWTH THROUGH THE FIRST GROWING SEASON.
7. SEEDED LAWN AREAS SHALL BE WATERED REGULARLY AND MAINTAINED THROUGH ESTABLISHMENT AND/OR FIRST MOWING.
8. PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF INSTALLATION. DURING THE ONE YEAR GUARANTEE, THE CONTRACTOR SHALL REPLACE, IN KIND, ANY DEAD, DISEASED, OR SUBSTANDARD PLANT MATERIAL AT NO COST TO THE OWNER.
9. SATISFACTORY CONSERVATION COVER: AT END OF MAINTENANCE PERIOD, A HEALTHY, WELL-ROOTED, DENSE COVER (90%) OF THE APPROPRIATE SPECIES HAS BEEN ESTABLISHED.
10. THE CONTRACTOR SHALL RECEIVE FINAL ACCEPTANCE FROM THE OWNER FOLLOWING THE ONE YEAR GUARANTEE, PROVIDED THE PROVISIONS OF THE PLANT GUARANTEE HAVE BEEN SATISFACTORILY MET.

PLANTING SCHEDULE - SITE LANDSCAPING

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE/COND.
TREES				
11	CBF	CARPINUS B. 'FASTIGIATA'	UPRIGHT HORNBEAM	2" CAL.
12	CCN	CERCIS C. 'NORTHERN STRAIN'	EASTERN REDBUD	7-8' HT.
8	CVS	CHIONANTHUS V. 'SPRING FLEECING'	WHITE FRINGETREE	7-8' HT.
10	CAL	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	7-8' HT.
8	CXS	CORNUS X 'STELLAR PINK'	RUTGERS HYBRID DOGWOOD	7-8' HT.
11	OSV	OSTRYA VIRGINIANA	AMERICAN HOP HORNBEAM	7-8' HT.
8	PGD	PICEA G. 'DENSATA'	WHITE SPRUCE	5-6' HT.
9	PST	PINUS STROBUS	EASTERN WHITE PINE	5-6' HT.
18	QBR	QUERCUS B. 'REGAL PRINCE'	SWAMP WHITE OAK	2.5" CAL.
21	QR	QUERCUS RUBRA	NORTHERN RED OAK	2.5" CAL.
14	UAJ	ULMUS A. 'JEFFERSON'	AMERICAN ELM HYBRID	2.5" CAL.
14	UPA	ULMUS P. 'ALLEE'	LACEBARK ELM	2.5" CAL.
SHRUBS				
17	AAB	ARONIA A. BRILLIANTISSIMA	RED CHOKEBERRY	#5 POT
18	DIL	DIERVILLA LONICERA	NORTHERN BUSH HONEYSUCKLE	#3 POT
15	IGC	ILEX GLABRA 'COMPACTA'	INKBERRY	#3 POT
19	PJP	PRUNUS 'JADE PARADE'	SPREADING SAND CHERRY	#3 POT
15	VTR	VIBURNUM T. 'REDWING'	AMERICAN CRANBERRYBUSH	#3 POT

NOTE:
REFERENCE SHEET LA-102 FOR TYPICAL UNIT PLANTINGS AND RAIN GARDEN SPECIES LIST

SEED MIXES

LAWN MIX . PREMIUM LAWN MIXTURE, SEEDWAY, WALES, ME; TEL. 207-933-2109. APPLICATION RATE: 8 LBS/SF

CONSERVATION WILDLIFE MIX. ERNST CONSERVATION SEEDS, INC.; TEL. 814-336-2404. APPLICATION RATE: 10 LBS/ACRE WITH 30 LBS/ACRE COVER CROP. SEEDED SLOPES OVER 3:1 SHALL BE STABILIZED WITH BIODEGRADABLE, EROSION CONTROL FABRIC.

PLANTING SCHEDULE - BUFFER PLANTINGS (FIELD PLACED)

APPROACH: THE FOLLOWING SPECIES WILL BE FIELD PLACED WITHIN NOTED BUFFER AREAS - TOTALING APPROXIMATELY 0.4 ACRE - TO SUPPLEMENT THE FORESTED EDGE. QUANTITIES ARE PROVIDED FOR GUIDANCE AND ARE ESTIMATED BASED ON 50% (TREES) / 25% (SHRUBS) COVERAGE (BASED ON EXPECTED MATURE CANOPY SIZE) WITHIN THE TARGETED BUFFER AREAS SHOWN ON PLANS. FINAL QUANTITIES TO BE DETERMINED BASED ON FIELD CONDITIONS.

PLANTS INCLUDE A RANGE OF SIZES FOR IMMEDIATE VISUAL IMPACT AS WELL AS SUCCESSIONAL GROWTH ALONG THE WOODLAND BUFFER. IT IS ASSUMED THAT ALL PLANTS WILL BE MULCHED AND REMAINING BUFFER AREAS SEEDED WITH THE SPECIFIED CONSERVATION WILDLIFE MIX.

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE/COND.
CANOPY LAYER SPECIES				
10		ACER SACCHARUM	SUGAR MAPLE	#7 POT
10		BETULA PAPYRIFERA	PAPER BIRCH	#7 POT
10		PINUS STROBUS	EASTERN WHITE PINE	#7 POT
15		QUERCUS RUBRA	RED OAK	#7 POT
SAPLING / SHRUB LAYER SPECIES				
10		ACER PENSYLVANICUM	STRIPED MAPLE	#3 POT
15		CORYLUS CORNUTA	BEAKED HAZELNUT	#1 POT
15		GAYLUSSACIA BACCATA	BLACK HUCKLEBERRY	#1 POT
20		HAMAMELIS VIRGINIANA	AMERICAN WITCHHAZEL	#1 POT
20		PINUS STROBUS	EASTERN WHITE PINE	#3 POT
10		VIBURNUM ACERIFOLIUM	MAPLELEAVED VIBURNUM	#1 POT

SCALE 1"=40'
40' 0 20' 40' 80'

RS LEONARD Landscape Architecture
WWW.HALEYWARD.COM

REVISION - DATE - DESCRIPTION - DRAWN BY - CHECKED BY								
1	11/20/23	UPDATED PER COMMENTS FROM PEER REVIEW					-	-
2								
3								
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PROJECT & CLIENT
PRESUMPSCOT WOODS SUBDIVISION
1 HOPE AVENUE, PORTLAND, MAINE

SHEET TITLE:
LANDSCAPE PLAN & DETAILS

LICENSED LANDSCAPE ARCHITECT
REGINALD S. LEONARD
3123
10/26/2023
STATE OF MAINE

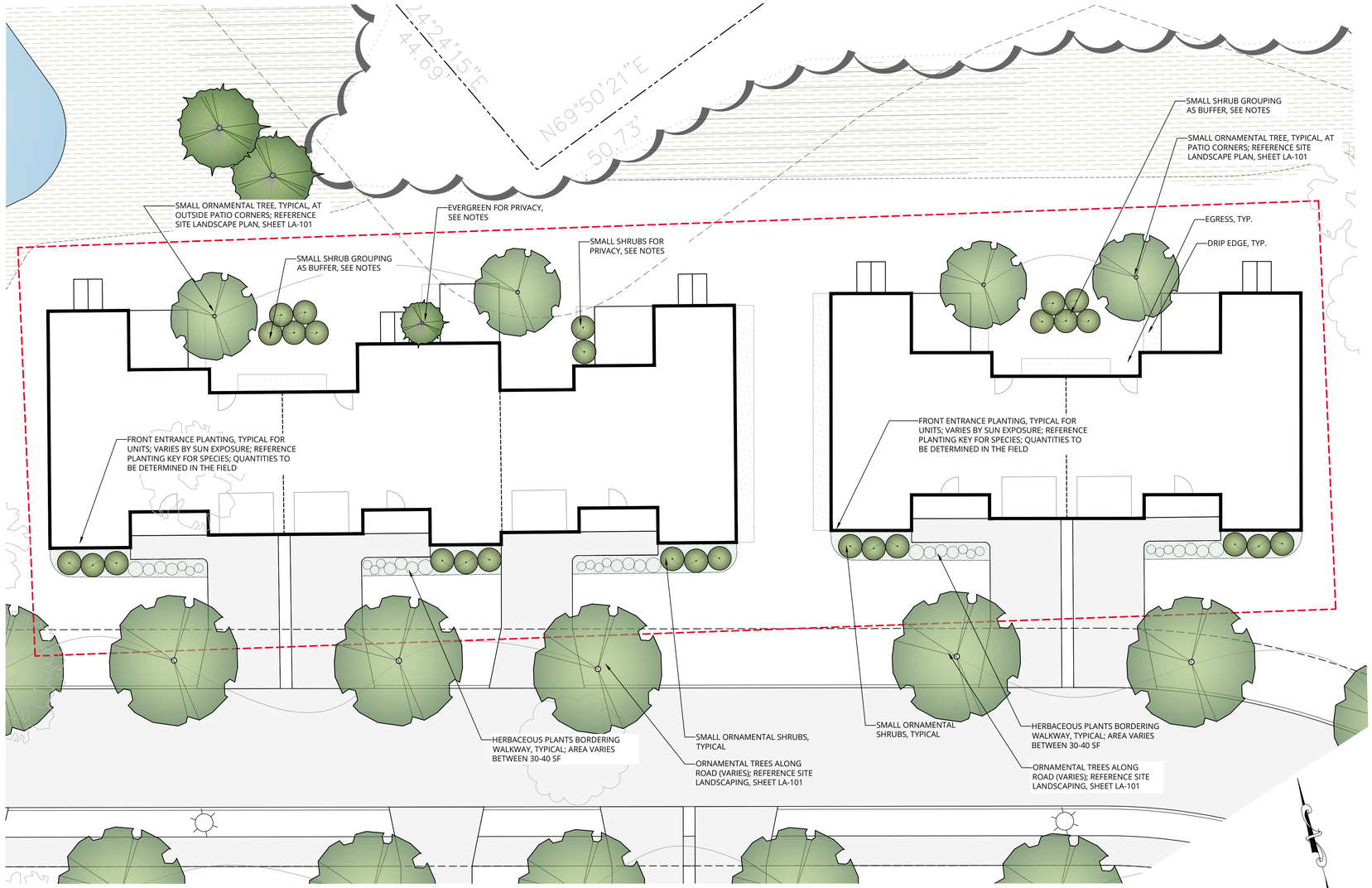
SCALE:
AS NOTED

ISSUE DATE:
6/15/23

DSGN/DRWN: RSL
CHECK: HW

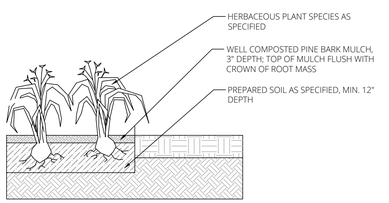
PROJECT NO.
HW-HOPE AVENUE

SHEET 2 OF 3
LA-101

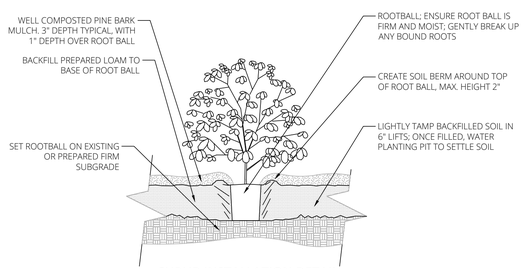


TYPICAL UNIT PLANTINGS, BY BUILDING TYPE

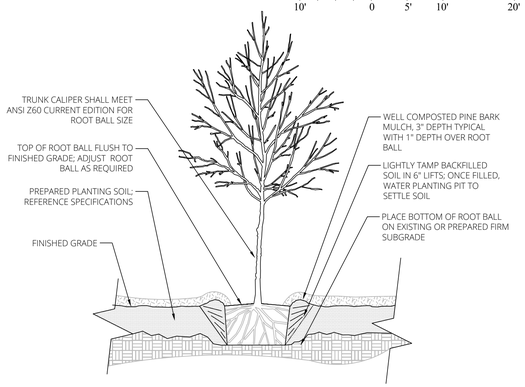
SCALE 1"=10'
10' 0 5' 10' 20'



PERENNIALS INSTALLATION DETAIL
NOT TO SCALE



SHRUB INSTALLATION DETAIL
NOT TO SCALE



TREE INSTALLATION DETAIL - BALL & BURLAP
NOT TO SCALE

PLANTING LIST - UNITS (FRONT YARDS)

BOTANICAL NAME	COMMON NAME	SIZE/COND.
FULL SUN PLANTINGS		
GROUP SELECTION #1:		
CARYOPTERIS X 'DARK KNIGHT'	BLUE MIST SPIREA	#5 POT
DESCHAMPSIA CESPITOSA	TUFTED HAIR GRASS	#3 POT
COREPOSIS V. 'ZESTY ZINGER'	THREADLEAF COREOPSIS	#3 POT
GROUP SELECTION #2:		
SPIRAEA X 'ANTHONY WATERER'	BUMALD SPIREA	#5 POT
PENNISETUM A. 'HAMELN'	DWARF FOUNTAIN GRASS	#3 POT
COREOPSIS V. 'MOONBEAM'	THREADLEAF COREOPSIS	#3 POT
PARTIAL SHADE PLANTINGS		
GROUP SELECTION #1:		
HYDRANGEA P. 'LITTLE QUICKFIRE'	DWARF QUICKFIRE HYDRANGEA	#5 POT
CAREX O. 'EVERCOLOR EVERSHEEN'	JAPANESE SEDGE	#3 POT
GERANIUM X. 'ROZANNE'	CRANESBILL GERANIUM	#3 POT
GROUP SELECTION #2:		
RHODODENDRON X 'MARDI GRAS'	HYBRID DWARF RHODODENDRON	#5 POT
HAKONECHLOA M. 'AUREOLA'	JAPANESE HAKONE GRASS	#3 POT
DICENTRA X. 'KING OF HEARTS'	FRINGED BLEEDING HEART	#3 POT

PLANTING LIST - UNITS (BACK YARDS)

BOTANICAL NAME	COMMON NAME	SIZE/COND.
SMALL SHRUBS (SPECIES SELECTION): *GROUPINGS OF (5): 24* *GROUPINGS OF (2): 14*		
CLETHRA A. 'VANILLA SPICE'	VANILLA SPICE SUMMERSWEET	#3 POT
CLETHRA A. 'RUBY SPICE'	RUBY SPICE SUMMERSWEET	#3 POT
FOTHERGILLA X. 'BLUE SHADOW'	BLUE SHADOW FOTHERGILLA	#3 POT
HYDRANGEA A. 'ANNABELLE'	ANNABELLE HYDRANGEA	#3 POT
HYDRANGEA A. 'INVINCIBELLE RUBY'	INVINCIBELLE RUBY HYDRANGEA	#3 POT
VIBURNUM D. 'BLUE MUFFIN'	BLUE MUFFIN ARROWWOOD	#3 POT
EVERGREENS *(9) TOTAL*		
THUJA O. 'SMARAGD'	EASTERN ARBORVITAE	5-6' HT.

UNIT PLANTINGS NOTES:

1. UNIT PLANTINGS ARE SHOWN TO DEMONSTRATE INTENT ONLY. ACTUAL PLANTINGS WILL VARY DEPENDING ON FIELD CONDITIONS, INCLUDING AVAILABLE SPACE, SOILS, AND SUN EXPOSURE.
2. SPECIES FOR UNIT PLANTINGS SHALL BE SELECTED FROM THE UNIT PLANTINGS KEY SHOWN IN THE DRAWINGS. QUANTITIES TO BE DETERMINED.
3. QUANTITIES FOR UNIT PLANTINGS ARE ESTIMATED AS SHOWN IN THE TYPICAL EXAMPLE.
4. ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
5. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES.
6. PROPOSED SUBSTITUTIONS TO THE LISTED UNIT PLANTINGS SPECIES LIST HEREIN SHALL BE APPROVED BY LANDSCAPE ARCHITECT.
7. LANDSCAPE ARCHITECT SHALL APPROVE FINAL PLACEMENT OF ALL PLANT MATERIALS AND RESERVES THE RIGHT TO MAKE FIELD ADJUSTMENTS TO PLANTINGS AS NECESSARY.
8. PLANT MATERIALS AND PLANTING METHODS SHALL CONFORM TO THE PLANTING NOTES/SPECIFICATIONS OUTLINED ON SHEET LA-101.

PLANTING LIST - RAIN GARDENS

BOTANICAL NAME	COMMON NAME	SIZE/COND.
PERENNIAL SPECIES		
AQUILEGIA CANADENSIS	COLUMBINE	PLUG
ASCLEPIAS INCARNATA	SWAMP MILKWEED	PLUG
ASTER NOVAE ANGLIAE	NEW ENGLAND ASTER	PLUG.
CHELONE GLABA	WHITE TURTLEHEAD	PLUG
EUTROCHIUM PURPUREUM	JOE PYE WEED	PLUG.
LOBELIA CARDINALIS	HELENS FLOWER	PLUG.
MONARDA FISTULOSA	WILD BERGAMOT	PLUG
PENSTEMON DIGITALIS	FOXGLOVE BEARDTONGUE	PLUG
RUDBECKIA FULGIDA	BLACK EYED SUSAN	PLUG
VERBENA HASTATA	BLUE VERVAIN	PLUG
GRASS SPECIES		
CAREX STRICTA	TUSSOCK SEDGE	PLUG
JUNCUS EFFUSUS	COMMON RUSH	PLUG
PANICUM V. 'HANS HELMS'	SWITCH GRASS	PLUG.
PANICUM V. 'NORTHWIND'	SWITCH GRASS	PLUG
SHRUB SPECIES		
CLETHRA ALNIFOLIA	SUMMERSWEET	SEEDLING
CORNUS RACEMOSA	GRAY DOGWOOD	SEEDLING
ILEX VERTICILLATA	WINTERBERRY	SEEDLING
VIBURNUM DENTATUM	ARROWWOOD VIRBURNUM	SEEDLING

RAIN GARDEN NOTES:

1. REFERENCE CIVIL DRAWINGS FOR RAIN GARDEN FILTER MEDIA SPECIFICATIONS AND DETAILS.
2. RAIN GARDEN SPECIES LIST TO DEMONSTRATE INTENT. SPECIES, IF SUBSTITUTED, SHALL BE SELECTED BASED ON NATIVE ORIGIN, BENEFICIAL VALUES TO WILDLIFE, AND/OR CULTURAL REQUIREMENTS.
3. PLANT MATERIALS, INCLUDING SPECIES AND CONDITIONS TO BE DETERMINED BASED ON FIELD CONDITIONS.
4. RAIN GARDEN INSTALLATION SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS AS WELL AS ALL LOCAL AND ENVIRONMENTAL REGULATORY REQUIREMENTS.
5. PLANTINGS / RAIN GARDEN ESTABLISHMENT (90 PERCENT COVERAGE OR AS REQUIRED BY REGULATORY AGENCIES) SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF INSTALLATION.

RS LEONARD
Landscape Architecture
WWW.HALEYWARD.COM

REVISION - DATE - DESCRIPTION - DRAWN BY - CHECKED BY

1	5/20/22	PLANTING ADJUSTMENTS	RSLLA	BK-HW
2				
3				
4				
5				
6				
7				

PROJECT & CLIENT
PRESUMPSCOT WOODS SUBDIVISION
0 HOPE AVENUE, PORTLAND, MAINE

SHEET TITLE:
LANDSCAPE DETAILS

LICENSED LANDSCAPE ARCHITECT
REGINA S. LEONARD
3123
10/26/2023
STATE OF MAINE

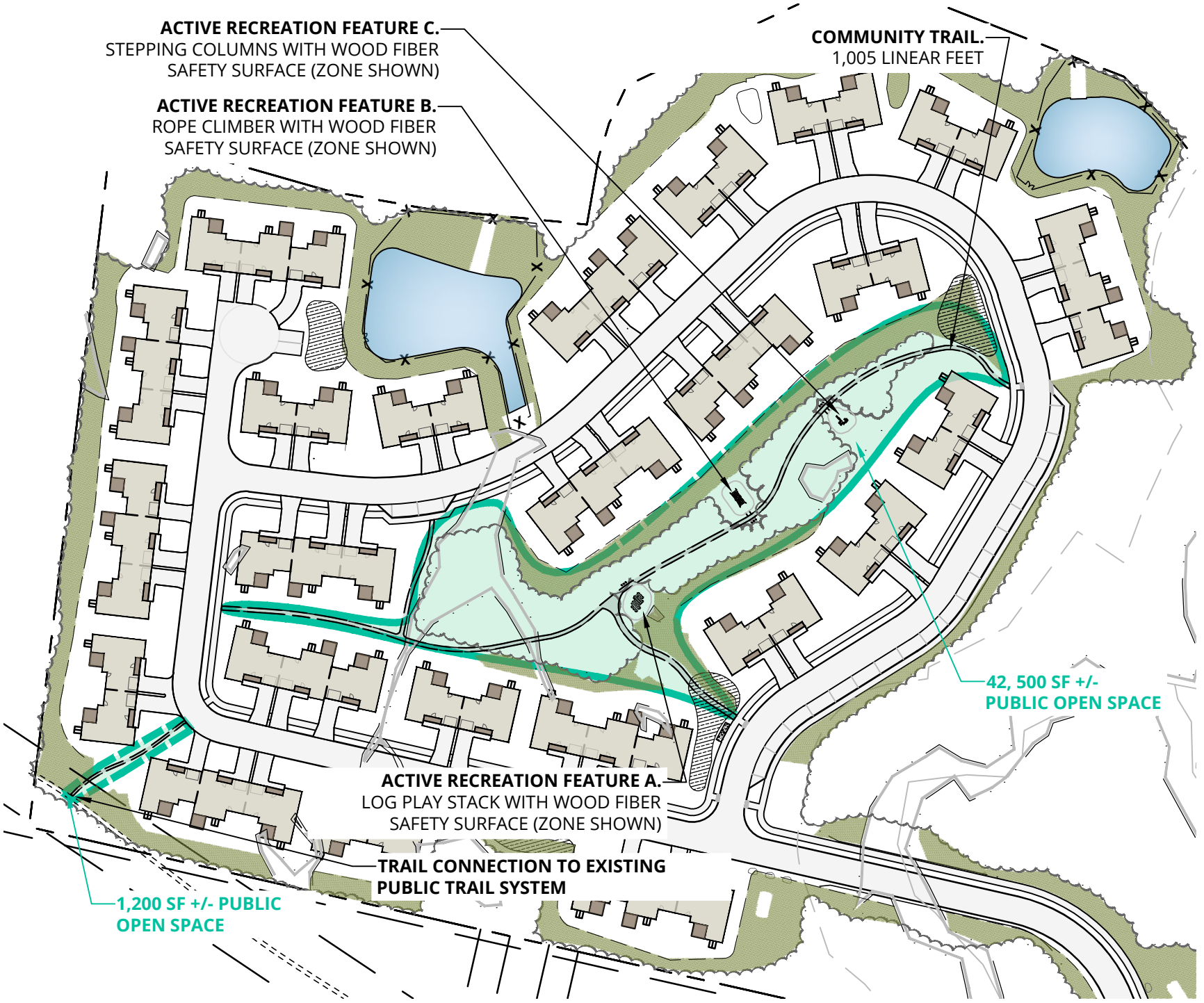
SCALE:
AS NOTED

ISSUE DATE:
6/15/2023

DSGN/DRWN: RSL
CHECK: HW

PROJECT NO.
HW-HOPE AVENUE

SHEET 3 OF 3
LA-102



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PROJECT & CLIENT
PRESUMPSCOT WOODS SUBDIVISION
1 Hope Ave., Portland, ME

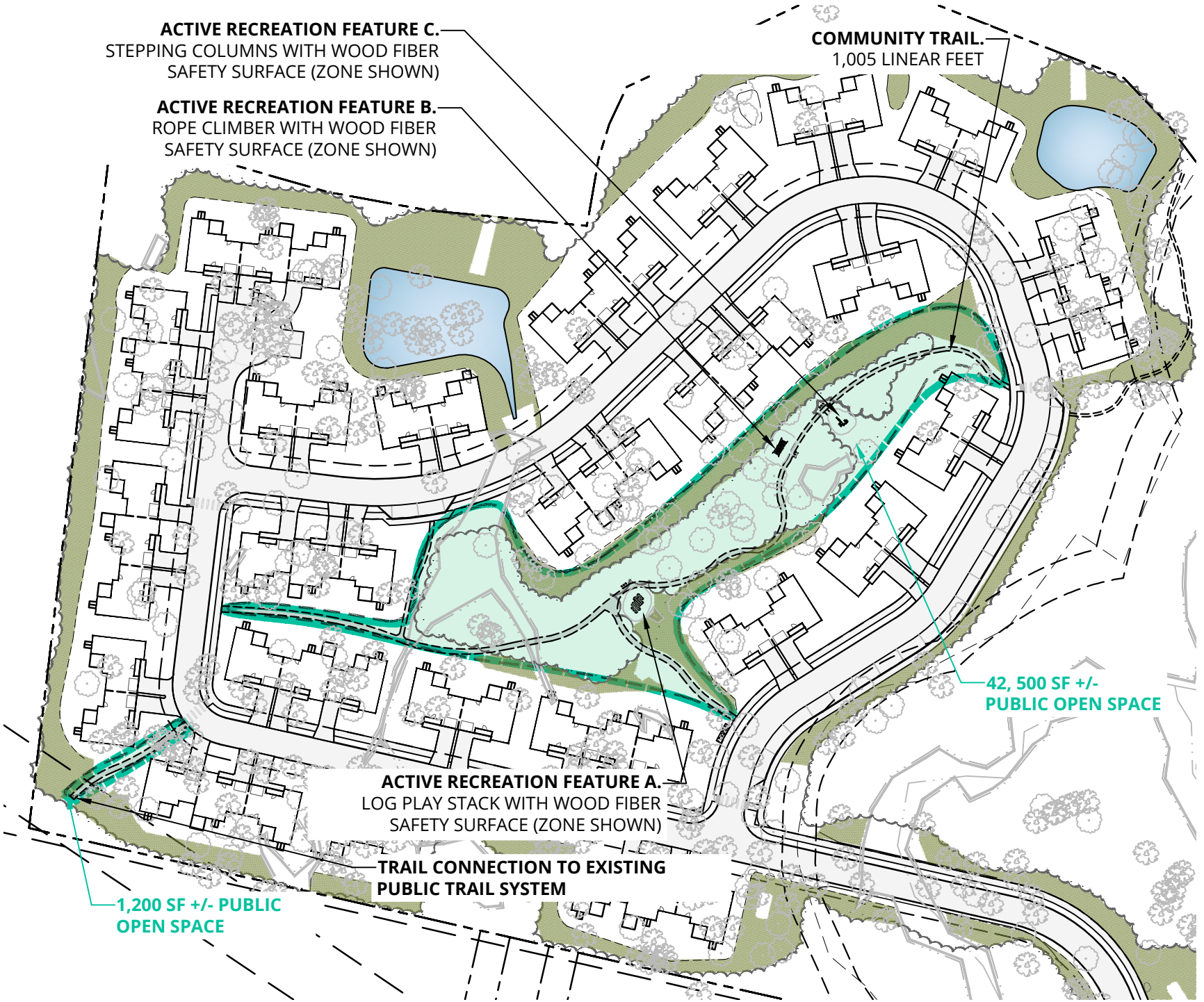
SHEET TITLE:
PUBLIC OPEN SPACE AREA

SCALE:
AS NOTED

ISSUE DATE:
8/18/23

DSGN/DRWN
RSLLA

SHEET 1 OF 1
LA-B



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RS LEONARD Landscape Architecture

PROJECT & CLIENT
PRESUMPSCOT WOODS SUBDIVISION
1 Hope Ave., Portland, ME

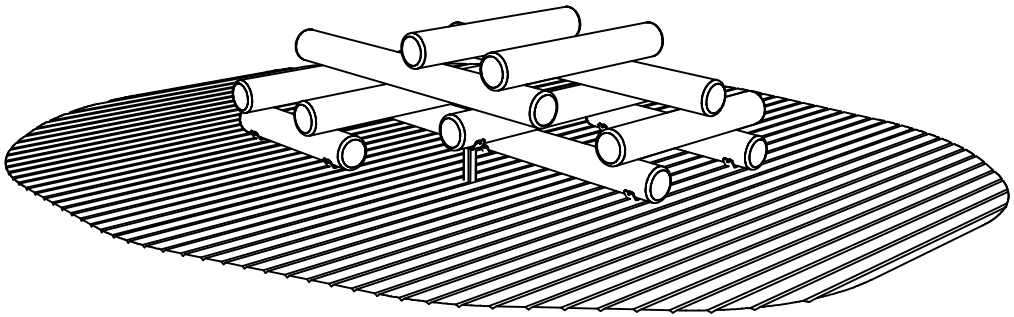
SHEET TITLE:
PUBLIC OPEN SPACE AREA

SCALE:
AS NOTED

ISSUE DATE:
8/18/23; REV 11/20/23

DSGN/DRWN
RSLLA

SHEET 1 OF 1
LA-B



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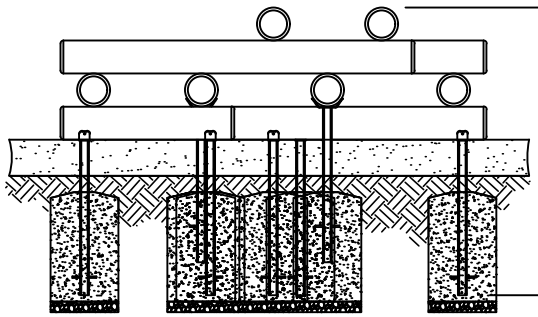

FRONT VIEW
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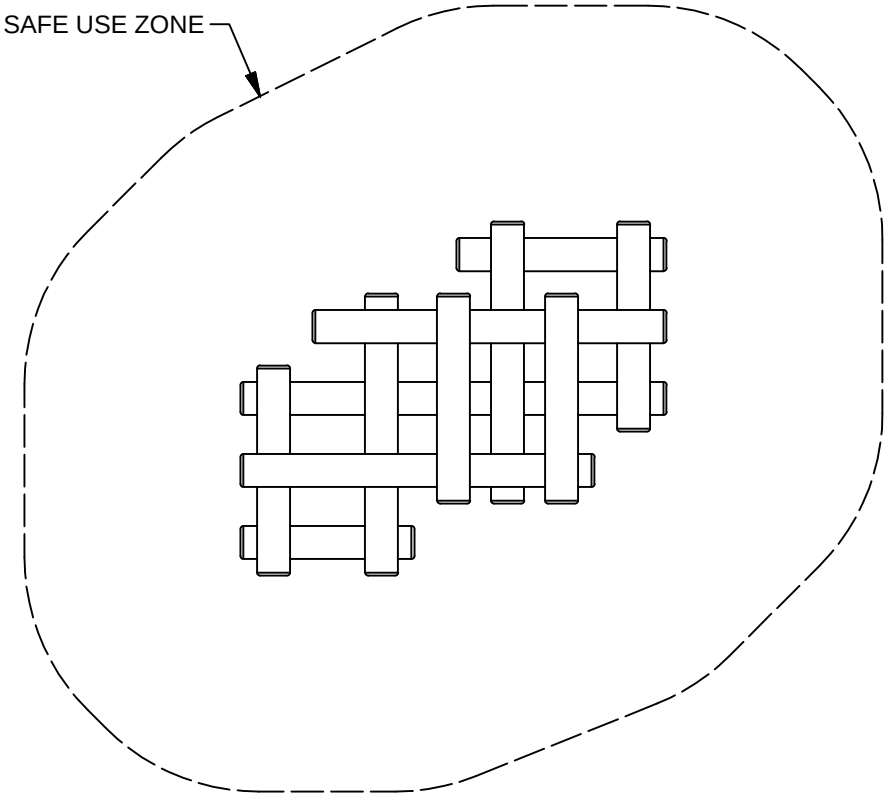

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MINIMUM SAFE USE ZONE:
23'-10" x 21'-10" (7.3m x 6.7m)

PLAN VIEW WITH USE ZONE
SCALE 3/16"=1'-0"

0' 2' 4' 6' 8' 10'

NOTE:
CONCRETE FOOTING AND NO. 4 REBAR (BY OTHERS) PER LOCAL SOIL CONDITIONS. CONSULT PROJECT ENGINEER FOR EXACT REQUIREMENTS.

Date	Revision	By
△		
△		
△		
△		

Scale: NOTED
Drawn by: DGR 03-30-18
Ck'd by: CL 03-30-18

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PLAY STACK

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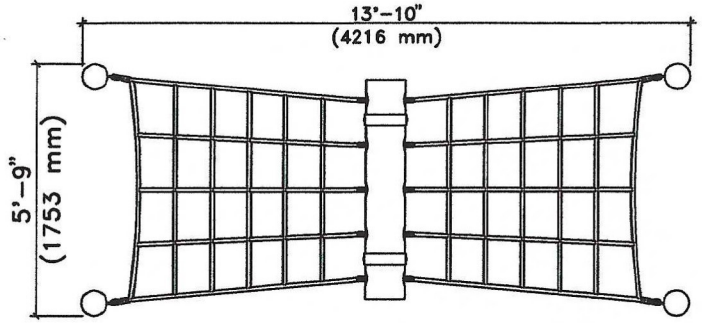
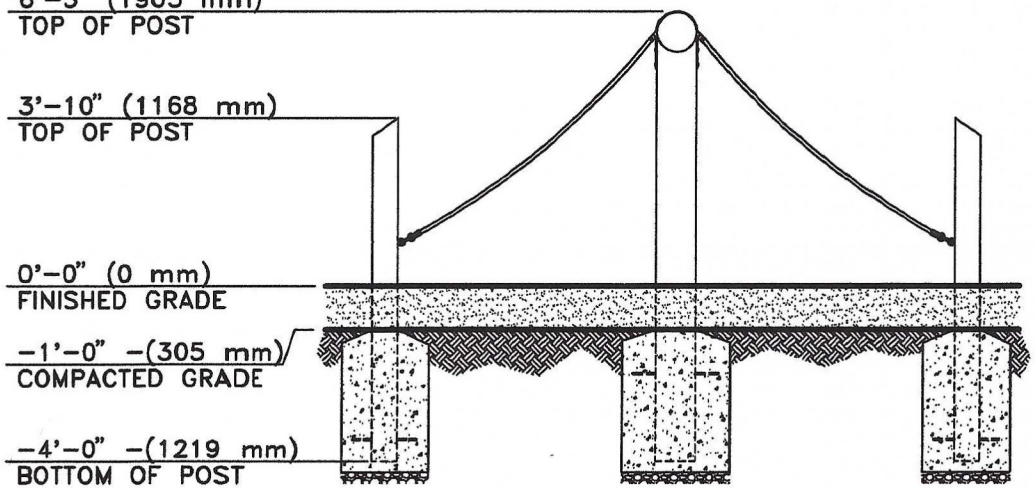


TOP VIEW
SCALE: 1/4"=1'-0"



FRONT VIEW
SCALE: 1/4"=1'-0"

NOTE:
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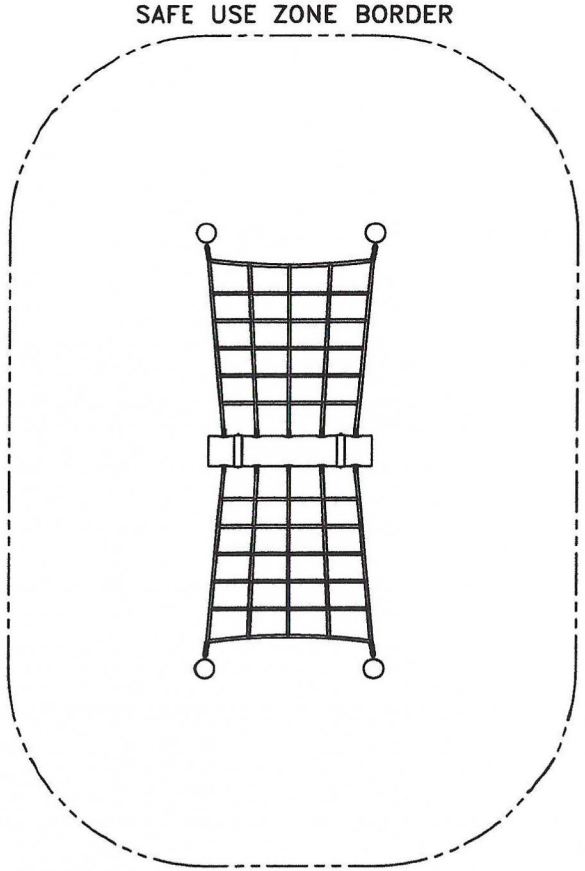

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6' x 14' (1.8m x 4.3m)

MINIMUM SAFE USE ZONE:
18' x 26' (5.5m x 7.9m)

PLAN VIEW WITH USE ZONE
SCALE: 3/16"=1'-0"

0' 2' 4' 6' 8'

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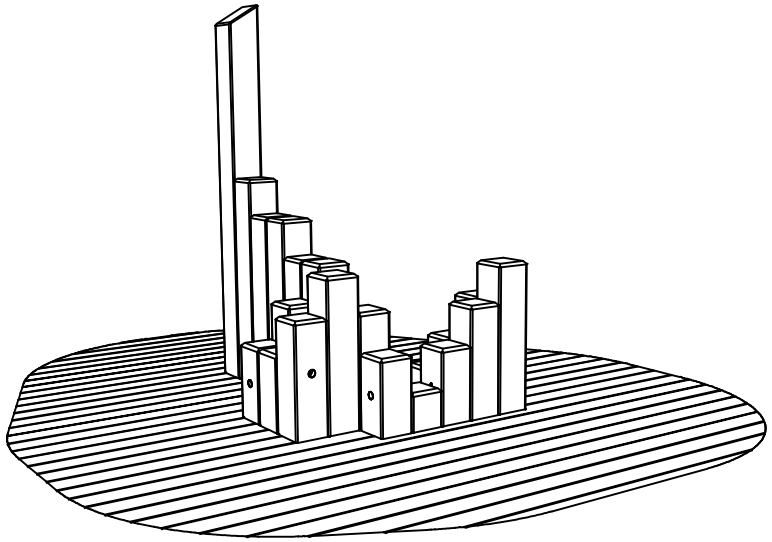
ROPE NET CLIMBER

Drawing No. W-4500-021

Sheet 1 of 1



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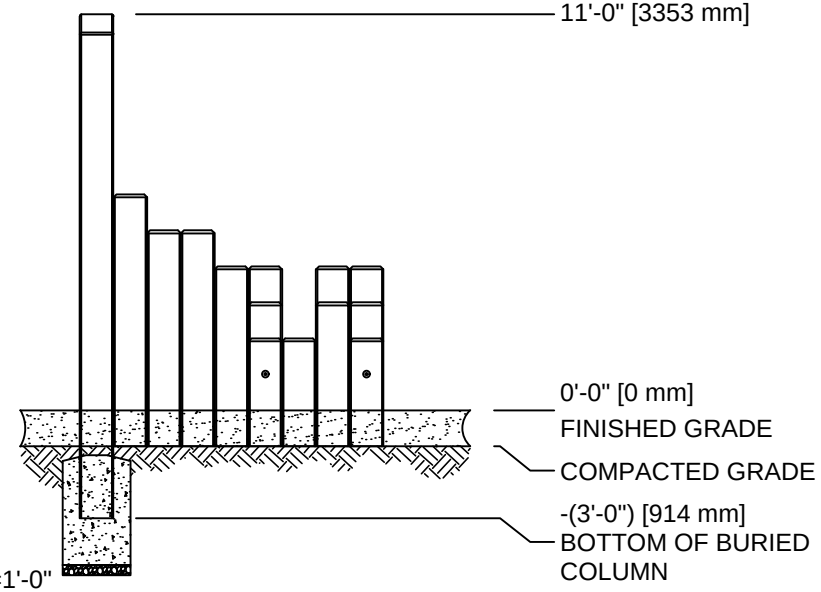

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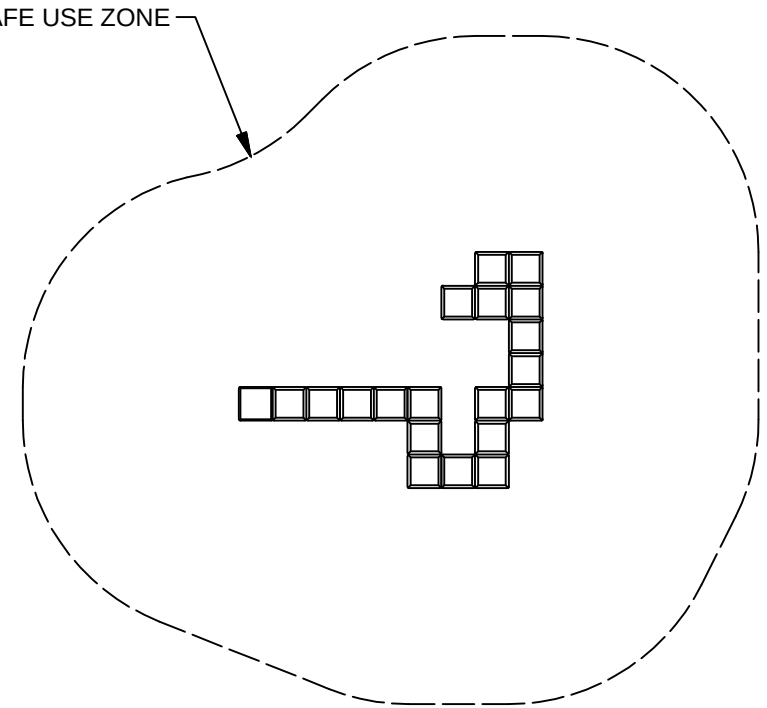

EQUIPMENT ONLY:
8'-6" x 6'-7" (2.7m x 2m)

MINIMUM SAFE USE ZONE:
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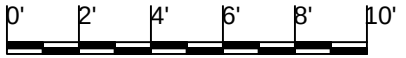
PLAN VIEW WITH USE ZONE
SCALE 3/16"=1'-0"



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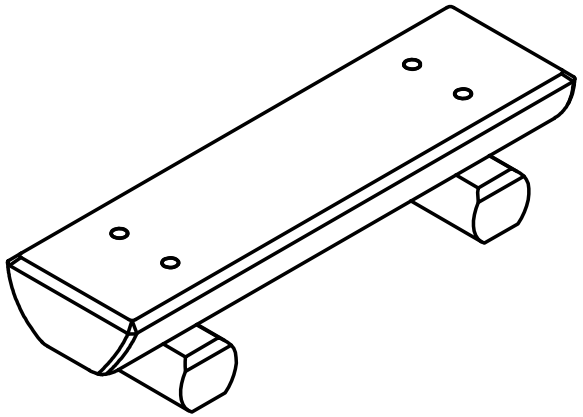
STEPPING COLUMNS

Drawing No.: W-4500-515
Sheet: 1 of 1



PLAN VIEW



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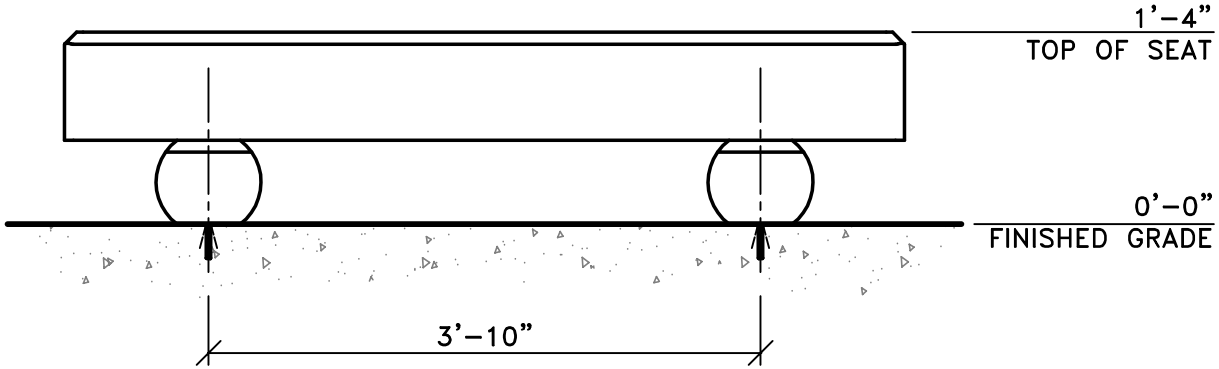
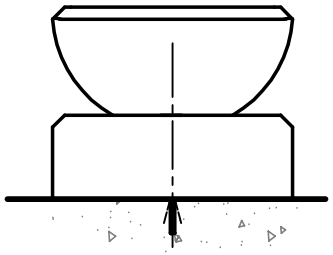


ELEVATION VIEW



END VIEW

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TIMBERCRAFT
MODEL NO. 2215-6
HALF ROUND LOG SEAT

Drawing No.	Sheet
W-2215-6	1 of 1



PROJECT TITLE: **PRESUMPSCOT WOODS SUBDIVISION HOPE AVENUE, PORTLAND, MAINE**	DWG: **FIGURE 1**	BY: BLQ	HALEY WARD ENGINEERING | ENVIRONMENTAL | SURVEYING
		DATE: 2023.11.15	
SHEET TITLE: **FORCEMAIN CLEANING FIGURE**	JN: 13773.001	APPROVED BY:	
	SCALE: N.T.S.	CHECKED BY:	

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

October 23, 2024

Daniel Brennan
Executive Director
Maine State Housing Authority
353 Water Street
Augusta, ME 04330

Dear Daniel Brennan:

The City of Portland Planning Board is writing to respectfully request that the Maine State Housing Authority (MSHA) reconsider its funding stipulation for the affordable housing development at 622 Auburn Street, known as Lambert Woods North, which requires that the applicant provide 28 additional off-street parking spaces in order to achieve a minimum parking ratio of 0.75 parking spaces per residential unit.

As you may know, the Planning Board approved the initial site plan for this project on February 28, 2023, with full confidence that the development was aligned with both the City of Portland Land Use Code (Ch. 14 in the City of Portland Code of Ordinances) and broader planning objectives of the City. Notably, this application proposed to take undeveloped and underutilized City-owned property located immediately adjacent to fixed transit stops for METRO Routes 9A and 9B, and establish 162 much-needed affordable housing units.

This site plan application was reviewed for compliance with the City's Transportation Site Plan Standards (Ch. 14, Article 14, Sec. 14.6.1) by Thomas Errico, an experienced professional traffic engineer with T.Y. Lin International, who found that the proposed development complied with all applicable review standards. The availability of existing public transportation made the development eligible for the City's transit-proximate off-street parking exemption (Ch. 14, Article 19, Table 19-B), which enables new development within a quarter mile of fixed public transit, to provide no off-street parking, subject to the provision of a transportation demand management (TDM) plan, developed in accordance with Section 17 of the City of Portland Technical Manual.

The additional parking requirement as requested by MSHA is not mandated by the City's Land Use Code, and conflicts with multiple City land-use policies. Specifically, the addition of 28 parking spaces requires additional grading work, the removal of numerous mature trees and likely impacts to on-site wetlands, within an area of the site that was intended to remain forested. While this expansion of parking is not strictly prohibited by

Portland's Land Use Code, it does substantially impact key natural resources. Additionally, the City has worked diligently to prioritize sustainable transportation options, including public transportation, biking, and walking. Requiring more parking spaces encourages greater reliance on personal vehicles, which is at odds with the City's vision to reduce traffic congestion, lower carbon emissions, and foster a more walkable and transit-oriented community.

Given these factors, the Board kindly requests that MSHA reconsider the additional parking requirement for the Lambert Woods development. Portland has adopted several policies to promote smart growth, reduce the environmental impact of new development, and encourage the use of public transit. Upholding these goals is paramount, and we believe that waiving this funding requirement would contribute positively to these efforts.

Thank you for your attention to this matter. We look forward to seeing your response.

Sincerely,

Brandon Mazer, Chair
Portland Planning Board

Attachments:

1. Public Hearing Report (PL-002995-2024) – September 24, 2024
2. Planning Board Approval Letter – PL-002995-2024
3. Public Hearing Report (PL-002078-2022) – February 28, 2023
4. Planning Board Approval Letter – PL-002078-2022

400 Commercial Street
Major Site Plan Application
PL-002826-2024
400 Commercial, LLC Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Ameriz Gamez
Public Hearing Date:	October 22, 2024	**Date:**	October 18, 2024

I. INTRODUCTION

The Trillium Engineering Group has submitted a Major Site Plan application for the demolition of an existing 613-square foot shed, a portion of an existing office building (300 SF) and the replacement of the existing 2,775 square foot storage boating with a new 21,000 square foot boat storage structure. The site is located at 400 Commercial Street in the Waterfront Central Zone. 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.

The Planning and Urban Development Department mailed 226 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the October 12, 2024 and October 15, 2024 edition of the Portland Press Herald.

Applicant: 400 Commercial, LLC
Applicant Representatives: Trillium Engineering Group

II. REQUIRED REVIEWS

Review	*Applicable Standards*
Site Plan	Section 14.6

PROJECT DATA

Existing Zoning	Waterfront Central Zone (WCZ)
Property Size	24,403 SF
Existing Use	Boat Storage
Proposed Development Program	21,000 SF Boat Storage Structure

Waver Requests	Applicable Standards
1. The applicant is requesting that the two-way parking lot drive aisle width be reduced to 22 feet.	Technical Manual Section **1.10.3:** *Minimum two-way drive aisle width is 24 feet for right-angle parking.* Staff are supportive.

III. EXISTING CONDITIONS AND SURROUNDING AREA

The existing site is located off of Commercial Street, in close proximity to Becky's Diner, the Gulf of Maine Reseach Institute, is centrally located within Portland's iconic working waterfront, with many of the surrounding piers and wharves serving the commercial fishing and lobstering industry. The site currently features three existing buildings, with the site being almost entirely impervious, with the lot containing a mixture of bituminous pavement and concrete, along with concrete piers. The existing building near the piers edges measures 2,775 square feet and is proposed to be removed and replaced with the proposed structure.



Figure 2: The existing site

IV. PROPOSED DEVELOPMENT

The proposed development is located at 400 Commercial Street and involves the partial or complete demolition of three existing buildings, including a 2,775 square foot boat storage building, a 613 square foot shed, and a portion of the office building that is on site. The applicant is proposing to construct a new 21,000 square foot boat storage structure and a 22-foot-wide bituminous pavement drive on the developed wharf.

The project also involves the restriping of existing off-street parking, and the construction of a sidewalk along the property's Commercial Street frontage, which will improve conditions for pedestrians and better define the property's driveway entrance. This application will upgrade existing utilities servicing the property and will provide additional stormwater detention and treatment facilities to meet the City's stormwater requirements.

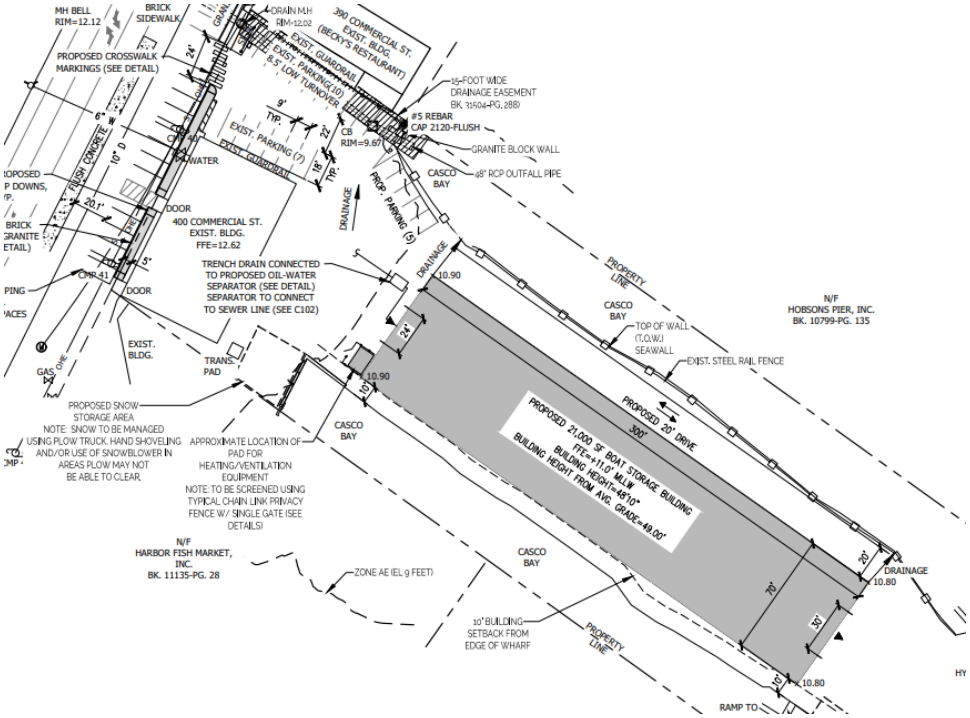


Figure 3: Site Plan

V. RIGHT, TITLE, & INTEREST

The applicant has submitted the deed showing ownership of the property by 400 Commercial, LLC, which demonstrates right, title, and interest to complete the project.

VI. FINANCIAL & TECHNICAL CAPACITY

A letter of support has been submitted confirming that 400 Commercial, LLC has the required financial support from Gorham Savings Bank.

VII. ZONING ANALYSIS

The subject properties lie within the Waterfront Central Zone (WCZ) the proposed use is a use that is permitted by right within the WCZ. Relevant sections of the WCZ purpose statements include:

- **WCZ:** *The Waterfront Central Zone was created to protect and nurture water-dependent and marine-related support uses so that they may grow and prosper in the present and into the future in an environment and area dedicated to this purpose.*

	Required	Proposed
Lot Size	None	130,199 SF
Minimum Frontage	75 ft.	176 SF
Maximum Height (ft)	50 ft.	48’10”
Lot Coverage	100%	55%
Minimum Street Frontage	75 ft.	175

A. WATERFRONT CENTRAL ZONE PERFORMANCE STANDARDS

1. Outdoor storage of materials
   The proposed development will involve the storage of vessels, which will be housed within the proposed structure. Given the constraints of this site, exterior storage is not anticipated, as any exterior areas of the property are dedicated for site circulation.

   Staff consider this standard to be met.

2. Noise
   Noise levels associated with this use and development are expected to fall well beneath 75 decibels on the A scale at the boundaries of the lot. Noise generating activity will include the movement of vessels across the site and into the storage facility, along with the operation of building mechanical systems, such as HVAC equipment.

   Staff consider this standard to be met.

3. Vibration
   Vibration levels associated with this use and development are expected to be minimal, and imperceptible without instruments at the lot boundaries. Vibration generation will be intermittent, and limited largely to the movement of vessels across the site. Aside from this activity, there may be minimal vibration resulting from building operating equipment, typical of most other new development found across the City.

   Staff consider this standard to be met.

4. Discharges into harbor areas
   The proposed development will not result in any discharge of pollutants into the harbor.

   Staff consider this standard to be met.

5. Storage of vehicles
   The project as proposed would involve the storage of marine vessels within an enclosed structure. The storage of automobiles for periods of greater than 60 days is not proposed.

   Staff consider this standard to be met.

6. Landfill of docking and berthing areas
   No landfill of docking or berthing areas is proposed as part of this application.

   Staff consider this standard to be met.

7. Off-street parking and loading

No new or additional off-street parking is being required by the City of Portland to service this development. The applicant is proposing to restripe existing spaces and add additional off-street parking to service their development.

Staff consider this standard to be met.

8. Lighting

All proposed lighting conforms to the City of Portland's Technical Standards for site lighting, with all lights being full cutoff, meeting illumination and color temperature requirements. The positioning of the proposed lighting is not expected to interfere with vessels transiting the harbor, or have an unreasonable impact on adjacent residential zones.

Staff consider this standard to be met.

9. Storage of pollutants and oily wastes

Pollutants and oily wastes will not be stored on-site for periods of time exceeding 45 days.

Staff consider this standard to be met.

10. Urban design

The proposed building is located further than 35 feet from the edge of the commercial street right of way, and is therefore not subject to this requirement.

Staff consider this standard to be not applicable.

11. Pier and wharf expansions

This application does not involve the expansion of the existing pier.

Staff consider this standard to be not applicable.

12. Public view protection

Views of the proposed building from Commercial Street are shielded from three sides by existing buildings, and will not substantially impact public views from the one potential vantage point, where the existing driveway to the wharf interfaces with Commercial Street. The extent of this view will decrease, as the proposed building extends further to the north and east as compared with the existing building, however the design as proposed will maintain views of the water from this vantage point.

Staff consider this standard to be met.

13. Operations and access management plan

The applicant has provided a detailed overview of how the project complies with the Operations and Access Management Plan requirement for development in the WCZ. The site plan and accompanying narrative detail how the entirety of the wharf will continue to function for all users of the property, following completion of

the project. The property is divided, with the Berlin Mills Office Building at the head of the wharf, with associated parking located in close proximity. This building serves a variety of tenants, including marine compatible, and non-marine users. Access through to the proposed boat storage facility, and vessel berthing is maintained via an existing driveway, that will become better defined as a result of this application, with adequate space for maneuvering and site circulation. The application notes that greater than 55% of off-street parking is to be allocated for marine uses on-site in accordance with this requirement.

Staff consider this standard to be met.

VIII. SITE PLAN STANDARDS (Section 14.6)

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

1. **Transportation Standards (Section 14.6.1**

A. Impact on surrounding street systems

The vehicle access to the site is proposed to remain essentially unchanged, though the inclusion of a sidewalk will better define the vehicular access point to the site. Along the property's frontage, there are several on-street parking spaces, which are to be converted to public parking as part of this application. The development is not expected to generate significant additional traffic.
Staff consider this standard to be met.

B. Access and circulation

There is an existing entrance to the site off Commercial Street. Internal circulation is to be provided via a 22-foot-wide access drive around the proposed structure.
Staff have requested that the applicant provide a sidewalk along the property's Commercial Street frontage, which has now been added to the updated site plan for the project. Finalization of this sidewalk design is proposed as a condition of approval, to allow time for the applicant to coordinate with the Department of Public Works and the City's Traffic consultant around the exact design specification.

Staff consider this standard to be met.

C. Public transit access

Public transportation is adequate within the site's region of Portland and the site is accessible on foot and/or by public parking options and bus stops. There are no METRO routes along this portion of Commercial Street, therefore there are no requirements for a shelter.

Staff consider this standard to be met.

D. Parking

The City's third-party traffic engineer has noted that the pull-in parking spaces along Commercial Street will be converted to public spaces given that the spaces are actually in the public right-of-way. Following a meeting between the applicant and staff, the City

noted that staff would recommend a condition of approval for the Planning Board's consideration to finalize the design of the proposed sidewalk, along with configuration of the on-street parking spaces, and specific use permissions for these public parking spaces.

In addition, the City's third party traffic engineer recommended that the applicant provide the following waiver request.

WAIVER REQUESTS

The applicant is seeking one waiver.

I. *Driveway Aisle Width:* The Technical Manual standard 1.10.3 states that the minimum two-way drive aisle width is 24 feet for standard. The applicant is requesting a reduction to the minimum two-way drive aisle width from 24 feet to 22 feet due to the existing site parking operations. The existing parking spaces on-site are typically used by employees and are low turnover spaces which generates low traffic.

Staff consider this standard to be met and is in support of this waiver due to the constraints of the site.

E. Transportation demand management (TDM)

This application does not exceed 50,000 square feet of total floor area and thus does not require a TDM plan.

Staff finding: Not applicable.

2. **Environmental Quality Standards (Section 14.6.2)**

A. Preservation of significant natural features

There are no known significant natural features on this site.

Staff consider this standard to be met.

B. Landscape preservation

The existing landscaping shall remain preserved and will not be disturbed by the project.

Staff consider this standard to be met.

C. Site landscaping and buffers

The applicant is not proposing to provide any new plantings to this site; and is proposing to instead pay the fee in lieu for the required street trees. The subject property's frontage along Commercial Street totals approximately 180 feet, and Sec. 4.6.3 of the City's Technical Manual requires that commercial development provide one tree for every 25 – 35 feet of frontage, which would equate to a requirements of five street trees.

Aside from street trees, the applicant has not requested a waiver of other aspects of the City's site landscaping and buffering requirements. Given the design of the building, and the fact that the building is largely shielded from public view by existing buildings, staff consider the buffering requirement to be met. Regarding site landscaping and parking lot

landscaping requirements, staff would either recommend that the applicant update their site plan to include required site and parking lot landscaping, or seek a waiver of these requirements. Requests for a waiver should be provided in writing to the Planning Authority.

Staff do not consider this standard to be met. Staff have drafted a condition of approval that would require the applicant to update their site plan to include required site landscaping for review and approval by the Planning Authority. Additionally, staff have included a condition of approval that the applicant pay a fee in-lieu of providing five street trees, which would equate to a $2,000 contribution ($400 per tree).

D. Water quality/storm water management/erosion control

This application does not increase or decrease the on-site impervious area. The structure currently has internal trench drains along with a catch basin closest to the piers. The trench drain is connected to a water-oil separator in order to capture and remove oils, before draining into an existing on-site basin. The applicant has provided the necessary information on the proposed erosion and sedimentation control approach that has been approved by the City's Stormwater Engineer.

Staff consider this standard to be met.

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

A. Consistency with City Master Plans

This site plan is consistent with the City's Comprehensive Plan.

Staff consider this standard to be met.

B. Public safety and fire prevention

Emergency vehicles will be able to access the site by entering through Commercial Street. The site does not cause issues regarding the public safety or fire prevention.

Staff consider this standard to be met.

C. Availability and capacity of public utilities

The site will continue utilizing the existing utilities as previously provided. The sewer line in this section of Commercial Street is Portland Water District 48" interceptor sewer line. The applicant has been coordinating the Department of Public Works for this connection. The applicant has been coordinating with DPW for the revocable license agreement from the City in order to run the proposed sewer lateral in the alignment currently shown in the utility plan that is provided.

Staff consider this standard to be met, subject to a condition of approval, that the applicant enter into a revocable license agreement with the City for the proposed sewer lateral

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

The proposed building is 48’10” in height from the surrounding grade which meets the allowable height of 50 feet within the WCZ zone. Based upon the building’s size and location there are no anticipated impacts with respect to the building massing, ventilation, or wind.

Staff finding: Met.

B. Shadows

No adverse shadow impacts are anticipated with this application. While the proposed building is greater than 45 feet in height, it is not proximate to any public open spaces, and therefore this standard is not applicable.

Staff consider this standard to be met.

C. Snow and ice loading

The proposed building is not anticipated to create snow or ice loading impacts on abutting properties or rights-of-way. The applicant has detailed snow storage locations on included plans.

Staff consider this standard to be met.

D. View corridors

This standard is not applicable to this application.

Staff finding: Not applicable.

E. Historic resources

The proposed building does not lie within a historic district and is not subject to any Historic Preservation reviews.

Staff finding: Not applicable.

F. Exterior lighting

The proposed development shall provide mounted lights on the new proposed structure as well as a pole mounted light along the existing piers. The site plan notes the there will be building bonded lighting, in addition the applicant has provided the photometric plans to show the exact location and the description of the LED lights proposed for this site.

Staff consider this standard to be met.

G. Noise and vibration

The project is not expected to have any adverse impact related to noise and vibration, and all proposed equipment meets state and federal emission requirements. on the current noise and vibration levels. The location of the pad for heating/ventilation is on the side of the building and is proposed to be properly screened.

Staff finding: Met

H. Signage and wayfinding

There is no new wayfinding signage proposed as part of this application.
The Parking Director has requested the applicant remove the towing signs in front of the building and had requested that the spaces have a 2 hour time limit as opposed to being unregulated.

Staff finding: Met

IX. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting on May 7, 2024 at 6:00 Pm. The in-person meeting was held at 400 Commercial Street. One member of the public was in attendance.

A full sign-in sheet and meeting invitation are included as an attachment.

As of the writing of this report, no written public comment has been received on this application.

X. STAFF RECOMMENDATION

Subject to the proposed motions and conditions of approval listed below, the Planning & Urban Development Department staff recommends that the Planning Board find that the proposed 21,000 square foot boat storage structure at 400 Commercial Street (PL-002826-2024) meets the applicable standards of Portland's Land Use Code.

XI. 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 October 22, 2024 for application PL-002826-2024 at 400 Commercial 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) Drive aisle width

The Planning Board **[finds/does not find]** based upon the consulting traffic engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with the Technical Manual standard Section 1.10.3 which requires a minimum two-way drive aisle width of 24 feet for standard right-angle parking, 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]** Technical Manual standard Section 1.10.3 to allow for a two-way drive aisle width 0f 22 feet.

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 October 22, 2024 for application # PL-002826-2024 at 400 Commercial relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board

[**finds/does not find**] that the plan is in conformance with the site plan standards of the land use code, subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall submit an updated site plan, detail specifications, and signage package to the Planning Authority, providing a public sidewalk along the property's Commercial Street frontage, public on-street parking, and information on parking restrictions for this on-street parking. Updated plans and materials shall be reviewed and approved by the Planning Authority and Department of Public Works.
2. The applicant shall submit an updated site plan demonstrating compliance with the City's site landscaping requirements as listed under Sec. 14.6.2. C. in the City of Portland Land Use Code, and in Sec. 4 of the City of Portland Technical Manual. Updated plans shall be reviewed and approved by the Planning Authority and the City Arborist.
3. The applicant shall enter into a revocable license agreement with the City to extend the proposed private sewer lateral within City property.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

4. The applicant shall submit a fee in-lieu of providing five street trees along the property's Commercial Street frontage, for a total contribution of $2,000 into the City's Tree Fund.

PLANNING BOARD DECISION

On the basis of the findings, conclusions and recommendations contained in the Planning Board report for the public hearing on October 22, 2023 related to application PL-0027826-2022 for 400 Commercial 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-002826-2022, and authorizes the Planning Board Chair to sign the approval letter as drafted.

ATTACHMENTS

Public Comment

As of the writing of this report, no written public comment has been received on this application.

Staff Materials

1. 400 Commercial Site Plan Review Worksheet

Applicants Submittal

A. Site Photometrists
B. Stormwater Narrative Updated
C. Street Elevation
D. Covenant
E. Deed
F. Financial Capacity
G. Major Site Plan Checklist

H. Neighborhood Meeting Certification
I. Neighborhood Meeting Invitation
J. Neighborhood Meeting Sign-in Sheet
K. New Response to City Comments
L. OSQ Series Wall Mount Spec Sheet
M. Project Narrative
N. Project Narrative Updated
O. Response to City Comments
P. Response to City Comments
Q. Sprinkler Ability to Serve
R. Technical Capability
S. Waiver Table
T. Wastewater Capacity Application Form
U. Wastewater Capacity Application
V. Wastewater Capacity Application Updated
W. Zoning Analysis Table
X. Zoning Analysis Table Updated

Plans

1. 23-188-C100-C0
2. 23-188-C100-C100
3. 23-188-C100-C101
4. 23-188-C200-C200
5. 23-188-C200-C300
6. Commercial Boundary Survey
7. Construction Management and E&S Plan – C103
8. Cover Page
9. Cover Sheet
10. Erosion Control Details -C300
11. Erosion Control Details
12. Existing Site Plan – C100
13. Existing Site Plan
14. Proposed Sewer Connection Profile-C104
15. Proposed Site & Utilities Plan
16. Proposed Site Plan – C101
17. Proposed Utilities -C102
18. Site Details-C200
19. Site Details
20. Vehicle Turning Movement Plan-C105

City Staff and Third-Party Peer Reviewers have completed the latest review of this application based on the most recent submissions. Comments below have been provided to the Planning & Urban Development Department from the Department of Public Works, Water Resources, Zoning, and Third-Party Consulting Engineers (Stormwater + Traffic).

Please submit a written response to the comments below and upload the response, revised submissions, and new material to Project Dox (make sure all submissions maintain the same file naming format to allow for versioning). Once uploaded, please send an email to agamez@portlandmaine.gov notifying the planner of the resubmission.

Be advised that additional comments may be forthcoming and other changes may still be required if the comments are not addressed adequately. If you have any questions, please do not hesitate to ask.

Green signifies the standard is being met; yellow signifies there are outstanding comments, blue signifies the status of the comments that are required to be addressed.

Site Plan Review Standards (Sec. 14.6)

Transportation Standards (Sec. 14.6.1)

Standard	***Discussion***	***Finding***
Impact on Surrounding Street Systems	**Overview:** This site currently has pull-in parking spaces along Commercial Street. Commercial street is a public right-of-way, staff will be required to conduct further review on this condition. **Updates Requested** ● Site plan should note the driveway conditions at Commercial Street and whether these conditions meet the city standards. o The driveway is not defined and parked vehicles tend to dictate the western edge of the driveway. staff would suggest that vehicle turning templates be provided for determining the layout and design of the driveway entrance. o A driveway opening will need to be defined by the sidewalk.	Not Met
Access and Circulation	**Overview:** There is an existing entrance to the site off of Commercial Street. Internal circulation is to be provided via a 22 ft wide access drive that is around the proposed structure. Due to the use of the site remaining the same, no additional traffic is predicted. **Updates Requested** ● A sidewalk is required for this project, if there is the request to waive this requirement the applicant shall submit a formal request based upon the sidewalk/curbing waiver criteria. o A sidewalk waiver analysis has not been provided, due to the complication of the City's request for a sidewalk and the applicant needing to provide parking spaces	Not Met

	staff will conduct a meeting to find a solution for this request and demand without the encroachment on traffic. ● The applicant shall label or provide spot grades and slopes at grade breaks for any proposed / existing improvements in the right of way such as sidewalks, accessible ramps, driveways and at the end of the limits of the proposed o The applicant has provided grade points on the ***existing*** conditions plan, there are no proposed changes to be made.	
Public Transit Access	**Overview:** Public transportation is adequate within the site's region of Portland, ME and the site is accessible on foot and/or by public parking options and bus stops. **Updates Requested**	Met
Parking	**Overview:** Parking spaces must comply with the dimensional requirements that can be found in the Technical Manual 1.10 Parking Lot and Parking Space Design and are required to be shown on the site plan**. The pull-in parking spaces along Commercial Street appear to be located in the public right-of-way. Further review of this condition is to be done by City staff.** **Updates Requested:** ● Site plan shall include dimensions for parking lot aisle widths and parking space dimensions for the entire site. o All parking spaces and aisle widths shall be dimensioned. For example, the proposed five additional parking spaces are not dimensioned. Also, if the parking spaces/lot do not meet City Standards, you will need to provide information in support of a waiver.The applicant has provided feedback to this comment stating that the existing parking spaces on the plan meet the City Standard of 9x18 ● According to the City Parking Director, the pull-in parking spaces along Commercial Street shall be converted to public spaces given that they are in the public right-of-way. The city will provide information on the recommended parking regulations to be implemented by the applicant.This shall be discussed and resolved during the meeting with staff and the applicant.	Not met
Transportation Demand Management	**Overview:** A Transportation Demand Management Plan is not required for this site. **Updates Requested**	Met
Environmental Quality Standards (Sec. 14.6.2)		
Standard	***Discussion***	***Finding***
Preservation of Significant Natural Features	**Overview:** There are no significant features on the site that are to be impacted by the proposed project. **Updates Requested**	Met

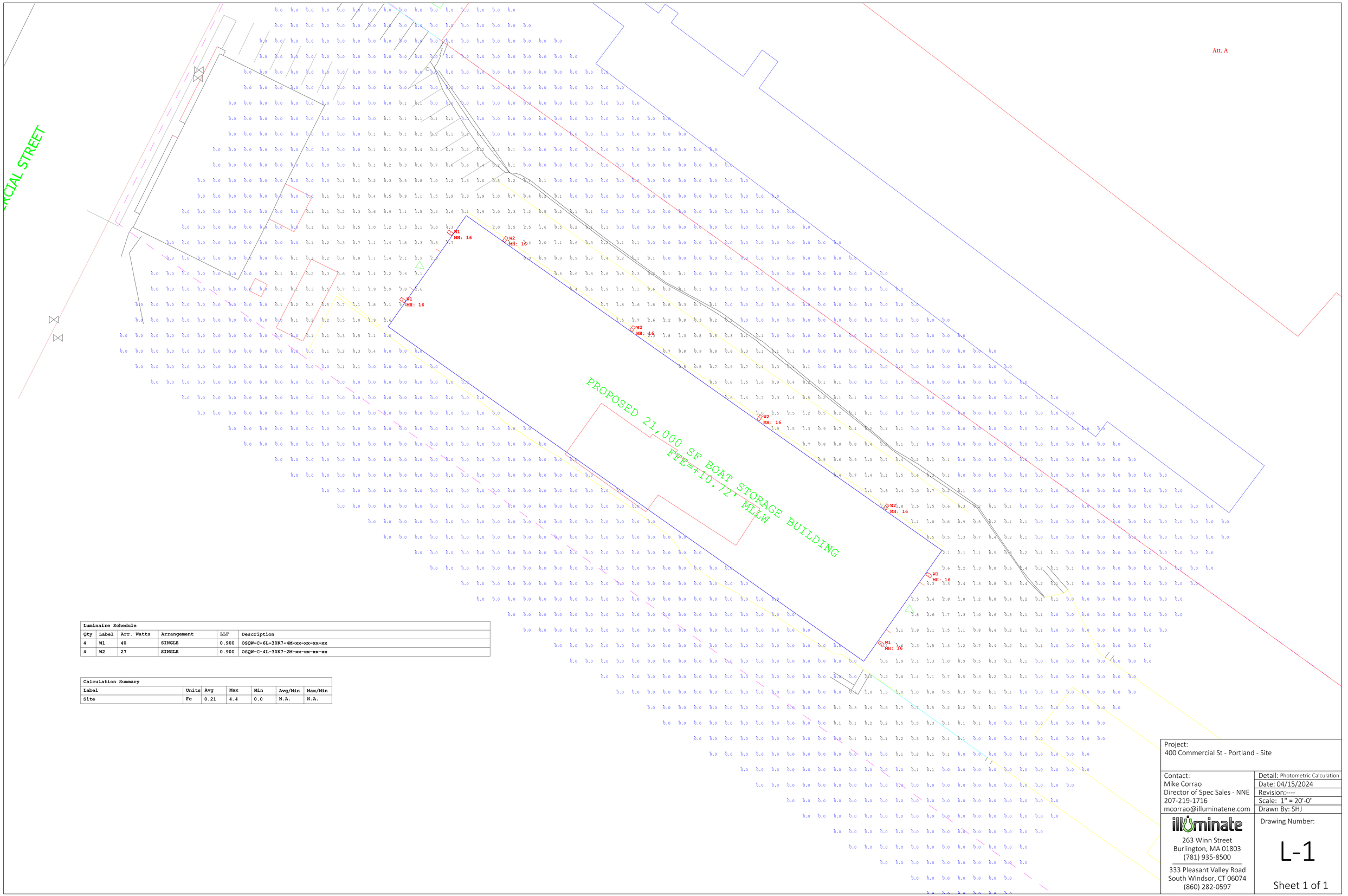
Landscape Preservation	**Overview:** Existing site landscaping shall remain preserved and will not be disturbed by the proposed project. **Updates Requested**	Met
Site Landscaping and Buffers	**Overview:** The plans do not indicate any new planting to take place at this site. Staff is requesting that with the development of the new parking and potential sidewalk that the applicant provide the appropriate amount of street trees or provide a fee in lieu. **Updates Requested** ● Provide confirmation on whether or not you are choosing to provide street trees or pay the fee in lieu.	Not Met
Water Quality, Stormwater Management and Erosion Control	**Overview:** The Applicant has provided a proposed site and utilities plan. The applicant has provided the adequate information in regard to the proposed erosion and sedimentation control approach, staff has no further comment on this. **Updates Requested**	Met
Public Infrastructure and Community Safety Standards (Sec. 14.6.3)		
Standard	***Discussion***	***Finding***
Consistency with City Master Plans	**Overview:** This site plan is consistent with the City Master Plan and is suitable with easements, rights, and improvements to infrastructure. **Updates Requested**	Met
Public Safety and Fire Prevention	**Overview:** The proposed design allows for emergency vehicle access. There are no issues regarding the public safety or fire prevention for this site. **Updates Requested**.	Met
Public Utilities	**Overview:** The site plan provided is not clear and requires more information. The existing utilities need to be shown on the plan, as well as the surface material that is to be repaired due to the utility connection and information about the sizing. Please be aware that the only sewer line in this section of Commercial Street is Portland Water District 48" interceptor sewer line. Coordination with DPW will be required for this connection. The City owns and maintains a 48" separated storm drain line running across the easterly end of the site. attached is the GIS map and record plan of the City sewer and storm drain lines in this area. ● The applicant would need to be granted a revocable license agreement from the City to run the proposed sewer lateral in the alignment currently being shown on the utility plan. DPW is concerned with the proximity of an existing storm drain line in Commercial Street adjacent to the proposed 6" sewer lateral that is not currently depicted on the plans. The applicant should locate this line on the plan set and provide further information on its proximity to the proposed sewer lateral. Alternatively, it may be worth exploring directly connecting into the 48" sewer interceptor utilizing a chimney/core and connect approach. PWD would need to weigh in on this. ● The City's Technical Manual has been recently updated and approved. The applicant shall update all proposed details (Site, Sewer, Stormwater, Landscape, …. details) to meet the requirements of the recently approved technical manual update or add a note to each to the proposed details that states the City standard detail (figure # and name)shall be followed.	Not Met Updates required

Site Design Standards (Sec. 14.6.4)		
Standard	***Discussion***	***Finding***
Massing, Ventilation and Wind Impact	**Overview:** The design is not predicted to have any impacts on wind or ventilation on surrounding structures or any public spaces. **Updates Requested** ● The proposed height of the new structure is said to be 24ft, please provide dimensioned building elevations for staff's review to confirm the building's compliance with zoning dimensional requirements. o It appears that elevation drawings for the building are not provided. On the revised proposed site plan (Sheet C101) it states that the height will be 49.15 from the average grade. The maximum height allowed in the CZ zone is 50'. Please provide confirmation that the height will not exceed 50'.	More information Requested.
Shadow	**Overview:** The proposed structure will not create any shadows on public spaces, therefore a shadow analysis is not required. **Updates Requested**	Met
Snow and Ice Loading	**Overview:** The applicant indicates that the proposed design will cause a change to the current snow maintenance plan. The structure is set back from the public way, all snow that is to accumulate will be managed with plowing or other snow management methods. **Updates Requested** ● Applicants must provide clarification as to what the other "snow management methods" are and please provide it on the site plan as well. o Code requires that the location of the snow storage is to be shown on the plans.	More information requested.
View Corridors	**Overview:** The proposed project will not have any impacts on corridors. **Updates Requested**	Met
Historic Resources	**Overview:** The proposal is not within a historical district. **Updates Requested**	Met
Exterior Lighting	**Overview:** The site plan notes that there will be building bounded lighting. The location of these lights need to be provided on the site plan in order to prove compliance. **Updates Requested** ● Provide the height and plan view location for the lights that will be provided. ● The OSQ Spec sheet provides the product descriptions of the LED however a photometric plan is still required to be submitted.	Not Met
Noise and Vibration	**Overview:** The project is not predicted to have any impact on the current noise and vibration levels. Location of the pad is shown in the site plan and is to be properly screened. **Updates Requested** ● Provide information on how the pad is to be properly screened.	More information needed

Signage and Wayfinding	**Overview:** There are no new signs proposed for this site, however all existing signs are to remain the same. **Updates Requested**	Met
Design Standards	**Overview:** **Updates Requested**	Met

Applicant: Jay Hibbard **Date:** September 26, 2024 **Address**: 400 Commercial Street
CBL: 042 E001 **Type**: Site Plan **Class:** Major Site Plan Development

Standard	***Requirements***	***Proposed***	***Notes***	***Finding***
Lot Size	6,500 FT	130,199SF		***Yes***
Min. Street Frontage	75FT	176FT		***Yes***
Side Street Setback	10 ft First Fl	157’		***NA***
Max Lot Coverage	100%	55%		***Yes***
Min Lot Width	65FT	106FT		***Yes***
Max Height	50	49.15ft	The revised site plan (Sheet C101) states that the height will be 49.15 ft from the average grade.	***Yes***
Open Space	55% Marine Use	72%		***Not Applicable***
Max Impervious Area	100%	55%		***Not Applicable***
Floor Area Ration	55% Marine Use	78%		***Not Applicable***
Off Street Parking	None	25		***Yes***



Luminaire Schedule					
Qty	Label	Arr. Watts	Arrangement	LLF	Description
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4	W2	27	SINGLE	0.900	OSQW-C-4L-30K7-2M-xx-xx-xx-xx

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	Fc	0.21	4.4	0.0	N.A.	N.A.

Project:
400 Commercial St - Portland - Site

Contact:
Mike Corrao
Director of Spec Sales - NNE
207-219-1716
mcorrao@illuminatene.com

Detail: Photometric Calculation
Date: 04/15/2024
Revision:----
Scale: 1" = 20'-0"
Drawn By: SHJ

illuminate
263 Winn Street
Burlington, MA 01803
(781) 935-8500

333 Pleasant Valley Road
South Windsor, CT 06074
(860) 282-0597

Drawing Number:

L-1

Sheet 1 of 1

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

February 17, 2024

City of Portland
389 Congress Street
Portland, ME 04101

Re: **400 Commercial St. – Proposed Site Alterations**
Basic Stormwater Management Narrative

Dear Planning:

Trillium Engineering Group is providing this basic stormwater management narrative for the proposed site alterations at 400 Commercial St. in Portland, ME. This project proposes the demolition of an existing 2,775 SF building to provide a new 21,000 SF boat storage building along with the removal of the existing (613 SF) shed and a (300 SF) portion of the office building.

As the proposed project does not increase nor decrease the on-site impervious area, it is our professional opinion that the existing stormwater management practices/infrastructure shall be sufficient and continue to provide adequate stormwater management at the site. The proposed boat storage structure will be built over existing impervious area, area in which has an existing concrete surface and building. The structure will have internal trench drains along with a catch basin in front of the entrance (nearest the piers) connected to the trench drains, allowing for any water/soap/oil/etc. that accumulates from the boats to be captured and collected. The trench drain is connected to a water-oil separator to remove and capture oils before draining into an existing on-site catch basin.

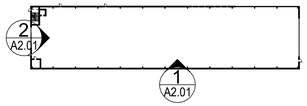
During the construction process, erosion control methods are to be implemented to ensure that stormwater runoff will not notably impact the surrounding environment. See attached C300 for erosion and sedimentation control details.

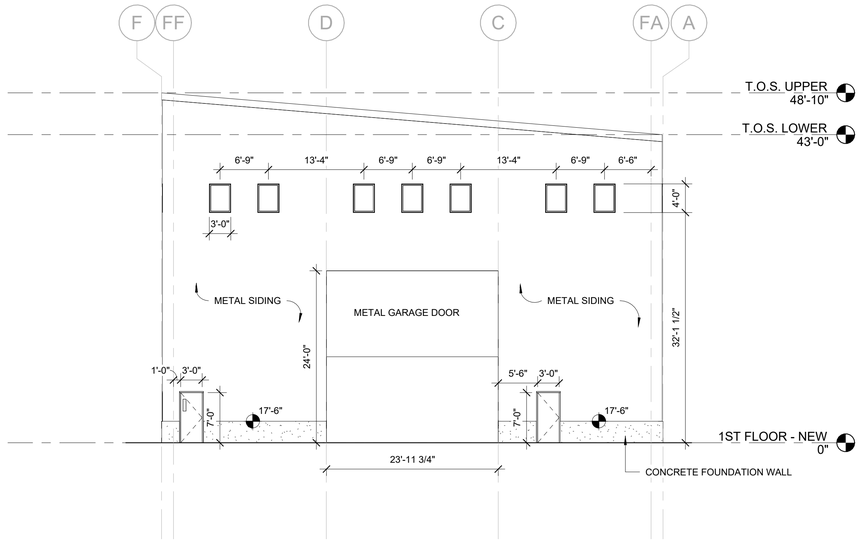
Thank you for taking the time to review this. Should you have any further questions or require any additional information, please do not hesitate to ask.

Sincerely,

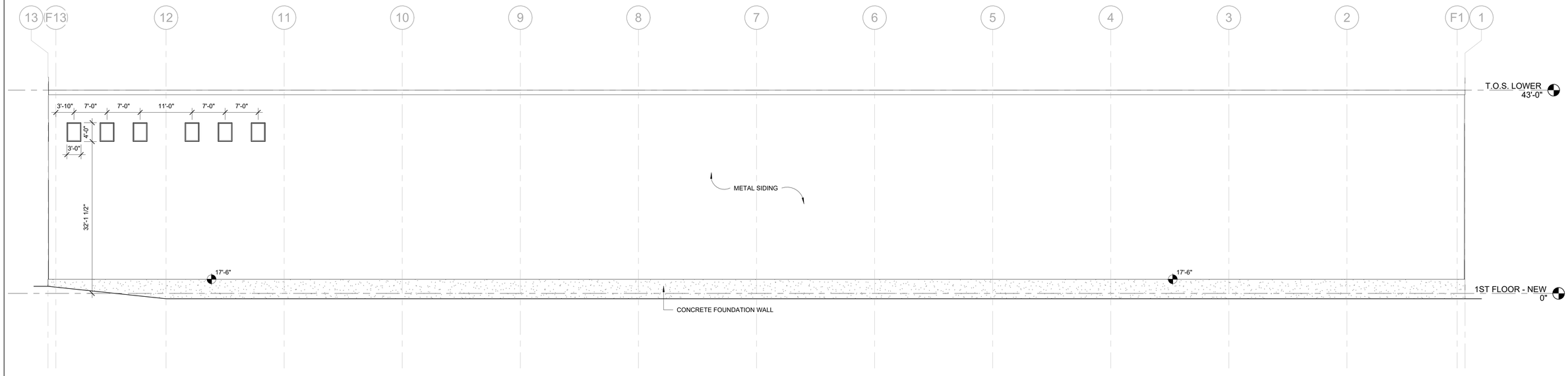
Kyle Berwick
Project Engineer
Trillium Engineering Group

Att. C





2 WEST BUILDING ELEVATION
1" = 10'-0"



1 SOUTH BUILDING ELEVATION
1" = 10'-0"

Prepared For:

Address
City, State

Consultant:

Architect:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
207.772.6022 archetype@archetypepa.com

Project:
400 Commercial
Portland, ME

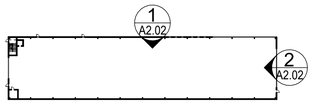
Revisions:

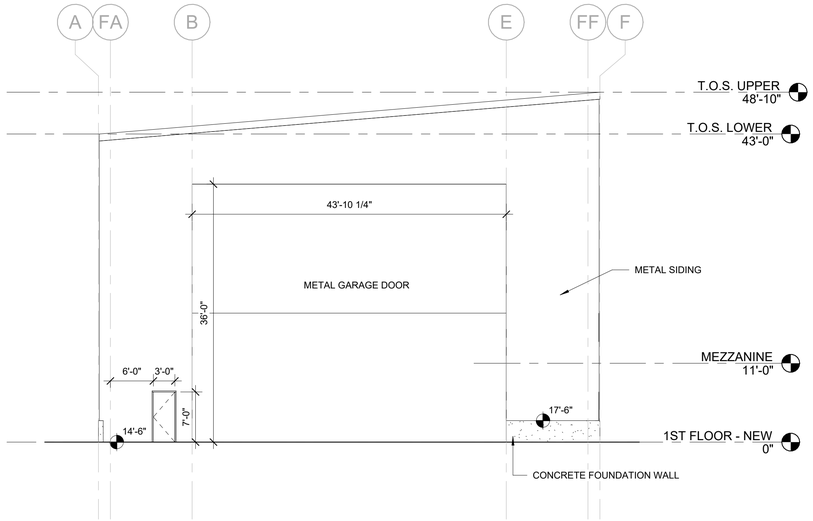
Scale:
As indicated

Date:
09-26-2024

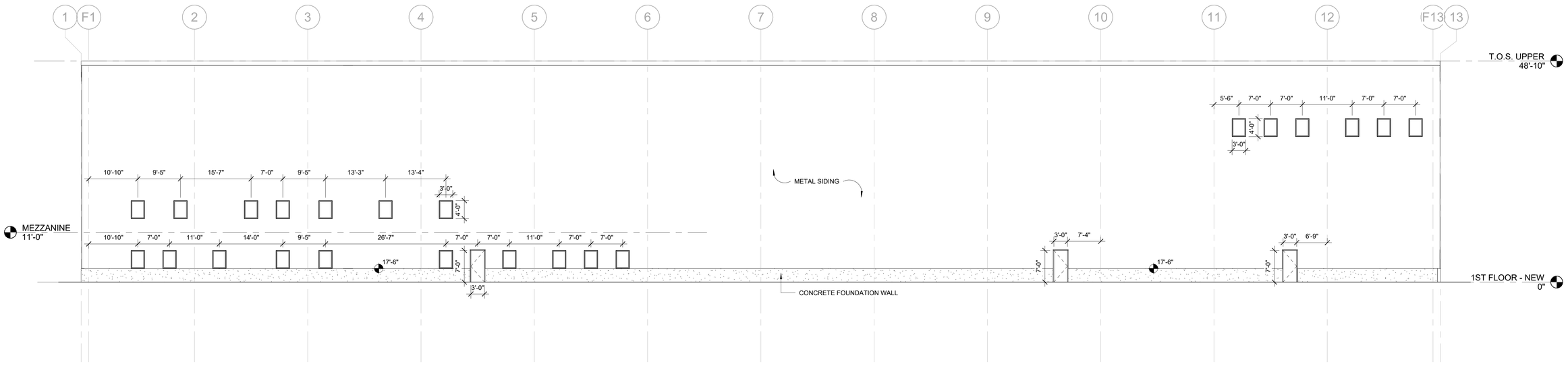
Building Elevations

A2.01





2 EAST BUILDING ELEVATION
1" = 10'-0"



1 NORTH BUILDING ELEVATION
3/32" = 1'-0"

Prepared For:

Address
City, State

Consultant:

Architect:
ARCHETYPE ARCHITECTS
48 Union Wharf Portland, Maine 04101
207.772.6022 archetype@archetypepa.com

Project:
400 Commercial
Portland, ME

Revisions:

Scale:
As indicated

Date:
09-26-2024

Building Elevations

A2.02

Att. D

MEMORANDUM OF COVENANTS AND RESTRICTIONS

THIS MEMORANDUM OF COVENANTS AND RESTRICTIONS is made as of the 3rd day of August, 2018 by and between The Berlin Mills, LLC ("Property Owner"), a Maine limited liability company, and Portland Yacht Services, Inc. ("Tenant"), a Maine corporation.

WHEREAS, the Property Owner and Tenant entered into that certain Lease dated October 22, 2013, as amended (the "Lease"), for premises located on Berlin Mills Wharf, 400 Commercial Street, Portland, Maine as more particularly described and recorded in Cumberland County Registry of Deeds at Book 34363, Page 110 (the "Property"); and,

WHEREAS, the parties entered into a LEASE TERMINATION, COVENANT AND RESTRICTION AGREEMENT ("Agreement") on the 3rd day of August, 2018. The Agreement contains, inter alia, covenants and restrictions. The parties prepare this Memorandum for recording to evidence the covenants and restrictions set forth therein.

THEREFORE, under the terms of the Agreement, the parties have agreed as follows:

1. **Covenants and Restrictions on Use of Property**. Property Owner hereby covenants and agrees that from and after the date Tenant vacates the Property, the Property shall not be used by the Property Owner, any successor owner of the Property, nor any tenant, subtenant, occupant, agent, employee or other person or party, for a term of seven (7) years, as a boat yard, which is intended to mean: boat yard maintenance and repair services; maintenance and repairs of boats or other marine vessels; and hauling of boats or other marine vessels. This provision is not intended to preclude the contracting of necessary maintenance and repair services for commercial vessels that have long term berthing leases at the Property and which are directly contracted for by the vessel operator or Property Owner.

2. **Real Covenants and Restrictions**. The covenants and use restrictions contained in paragraph 1 above, are intended to be real covenants, the burdens of which shall run with the Property for a term of seven (7) years, ending on November 30, 2025 and be binding on, and enforceable against the Property Owner and any future owner, lessee or occupant of the Property, their respective heirs, successors, administrators, executors and assigns,

in law and equity. The covenants and restrictions shall automatically expire and be automatically released upon the running of said seven (7) year term on November 30, 2025 without further action by either party. The terms of this Agreement shall be binding on and inure to the benefit of, and be enforceable by, the Tenant, its successors and assigns, in law and equity.

3. This Memorandum is for notice purposes only and is intended to identify only the Covenants and Restrictions set forth in the Agreement and no other provisions.

IN WITNESS WHEREOF, The Berlin Mills, LLC has caused this instrument to be executed by Joseph M. Schmader, its Manager, thereunto duly authorized, this 3 day of August, 2018.

PROPERTY OWNER:
The Berlin Mills, LLC

Patricia Hensley
Witness

By: _____
Joseph M. Schmader, its Managing Member

_____
Witness

TENANT
Portland Yacht Services, Inc.

By: _____

Its _____

STATE OF ~~MAINE~~ FL.
Martin Co, ss.

August 3, 2018

Personally appeared the above-named Joseph M. Schmader, Managing Member of The Berlin Mills, LLC, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said limited liability company.

Before me,

Patricia Hensley
Print Name: PATRICIA HENSLEY
Notary Public
Notary Commission Expires: 07/09/2022

PATRICIA HENSLEY
State of Florida-Notary Public
Commission # GG 236248
My Commission Expires
July 09, 2022

in law and equity. The covenants and restrictions shall automatically expire and be automatically released upon the running of said seven (7) year term on November 30, 2025 without further action by either party. The terms of this Agreement shall be binding on and inure to the benefit of, and be enforceable by, the Tenant, its successors and assigns, in law and equity.

3. This Memorandum is for notice purposes only and is intended to identify only the Covenants and Restrictions set forth in the Agreement and no other provisions.

IN WITNESS WHEREOF, The Berlin Mills, LLC has caused this instrument to be executed by Joseph M. Schmader, its Manager, thereunto duly authorized, this 3rd day of August, 2018.

PROPERTY OWNER:
The Berlin Mills, LLC

_____
Witness

By: _____
Joseph M. Schmader, its Managing Member

_____
Witness

TENANT
Portland Yacht Services, Inc.

By: _____
Phineas Sprague, Jr.
Its President

STATE OF MAINE
_____, ss.

August _____, 2018

Personally appeared the above-named Joseph M. Schmader, Managing Member of The Berlin Mills, LLC, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said limited liability company.

Before me,

_____
Print Name:
Notary Public
Notary Commission Expires:

Doc#: 25871 Bk:35723 Pg: 321

DLN: 1001940060882

MAINE REAL ESTATE TAX PAID

SHORT FORM QUITCLAIM DEED

THE BERLIN MILLS LLC, a Maine limited liability company with a principal place of business in Portland, Maine, (the "Grantor"), FOR CONSIDERATION PAID, grants to 400 COMMERCIAL LLC, a Maine limited liability company with a mailing address of One Long Wharf, Portland, Maine 04101 (the "Grantee"), with QUITCLAIM COVENANT, certain real property, together with any improvements thereon, located at 400 Commercial Street, City of Portland, County of Cumberland and State of Maine, more particularly described as follows:

A certain lot or parcel of land with the buildings thereon situated in the City of Portland, County of Cumberland and State of Maine, bounded and described as follows:

Beginning at an iron pipe on the southeasterly side of Commercial Street, which iron pipe is located approximately one hundred forty-two (142) feet southwesterly of the intersection of the southeasterly prolongation of the southwesterly side of High Street with the southeasterly side of Commercial Street;

thence on an azimuth 305° 38' (due South, being 00° 00') a distance of seven hundred forty-six and twenty-five hundredths (746.25) feet to the U.S. Harbor line;

thence on an azimuth 222° 0', one hundred seventy-four and ninety-four hundredths (174.94) feet along the U.S. Harbor line;

thence on an azimuth 125° 38', a distance of seven hundred ninety-four and fifty-four hundredths (794.54) feet to the southeast line of Commercial Street;

thence on an azimuth 26° 28', a distance of one hundred seventy-three and ninety-two hundredths (173.92) feet along the southeast line of Commercial Street;

thence on a azimuth 29° 18', along the southeast line of Commercial Street, a distance of two and thirty-three hundredths (2.33) feet to the point of beginning.

Said azimuths based on U.S. Army Engineers, Portland Harbor Base, surveys.

Meaning and intending to describe the same premises set forth in Quitclaim Deed granted by Berlin Mills Wharf to The Berlin Mills LLC dated October 3, 2017 and recorded in the Cumberland County Registry of Deeds in Book 34363, Page 110.

Also conveying all Grantor's right, title and interest in Submerged Lands Lease No. 0829-L-34 by and between the State of Maine and Berlin Mills Wharf, LLC dated December 27, 2006, as affected by Amendments to Submerged Lands Lease dated June 20, 2007 and October 10, 2017

by Bureau of Parks and Lands, as evidenced by a Memorandum of Lease recorded in the said Registry of Deeds in Book 34384, Page 76.

The above described premises is also subject to the following:

1. Rights and easements granted by Berlin Mills Wharf to Central Maine Power Company and New England Telephone and Telegraph Company by instrument dated July 14, 1986 and recorded at Cumberland County Registry of Deeds in Book 7369, Page 34.

2. Rights and easements granted by The Berlin Mills LLC to City of Portland by instrument dated May 7, 2014 and recorded at Cumberland County Registry of Deeds in Book 31504, Page 288.

3. Memorandum of Covenants and Restrictions by and between The Berlin Mills, LLC and Portland Yacht Services, Inc., dated August 3, 2018 and recorded in Book 35053, Page 236.

IN WITNESS WHEREOF, Berlin Mills Wharf has caused this instrument to be executed by Joseph M. Schmader, its Sole Managing Member thereunto duly authorized, this 17th day of June, 2019.

WITNESS:

Name:

THE BERLIN MILLS LLC

By: _____
Joseph M. Schmader, Sole Managing Member

State of Maine
County of Cumberland, ss. June 17, 2019

PERSONALLY APPEARED the above-named Joseph M. Schmader, Sole Managing Member, of The Berlin Mills LLC, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of said limited liability company.

Before me,

_____
Notary Public/Attorney at Law
Print Name: Suzanne Braselos Lowell
Commission Expires: BBO 4630

Received
Recorded Register of Deeds
Jun 18,2019 09:21:30A
Cumberland County
Nancy A. Lane

Gorham Savings Bank

December 21, 2023

RE: 400 Commercial LLC Project

To Whom It May Concern:

400 Commercial LLC and sponsor Chris DiMillo are well established and high value customers of Gorham Savings Bank. We believe they have the financial capacity and resources to successfully complete the proposed project improvements at 400 Commercial Street, Portland, Maine and look forward to working with them.

Should you need further assistance please contact me at 222-1493.

Sincerely,

Matthew W. Early
Senior Vice President

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

Neighborhood Meeting Certification

I, Kyle Berwick, hereby certify that a neighborhood meeting was held on May 7th, 2024 at 400 Commercial St. at 6:00PM for the proposed project located at 400 Commercial St. Portland, ME.

I also certify that on April 30th notices were mailed to the following:

1. All addresses on the mailing list provided by the Planning Division which includes property owners within 500 feet of the proposed development (1,000 feet for subdivisions within an industrial zone or industrial zone changes).

2. Residents on the "interested parties" list.

Signed,



May 13, 2024

Attachments (separate documents)
1. Copy of the notice sent
2. Sign-in sheet
3. Record of feedback

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

Neighborhood Meeting Invitation

400 Commercial St. – Site Alteration Project

April 29, 2024

Dear Neighbor:

Please join us for a neighborhood meeting to discuss our plans for a site alteration project located at 400 Commercial St. Portland, ME 04101. The site alterations include the proposal of a new 21,000 SF boat storage building along with the demolition of existing structures and a portion of the existing office building.

Meeting Location:
400 Commercial St.
Portland, ME
04101

Meeting Date:
May 7th, 2024

Meeting Time:
6:00 PM

(The 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) 307-0872.

Signed,



April 29th, 2024

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.

Neighborhood Meeting Sign-In Sheet
400 Commercial St.

May 7th, 2024
400 Commercial St.
Portland, ME 04101
400 Commercial St. Project

Members of the Public in Attendance:

Name	Email
Frank & Sharon Reilly	jsreilly@aol.com

Developer and Consultant Team in Attendance:

Name	Email
Eric Dube, P.E.	ericd@trilliumeg.com
Kyle Berwick	kyleb@trilliumeg.com
Jay Hibbard	

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

October 10, 2024

City of Portland
389 Congress Street
Portland, ME 04101

Re: **400 Commercial St. – Proposed Site Alterations**
Major Site Plan Application Revisions – Response to City Comments

Dear Planning:

Trillium Engineering Group is providing this response as additional information for City comments originally received from Ameriz Gamez dated September 27, 2024. Please see all updated documents, plans, etc. uploaded to ProjectDox and below responses to the received comments.

14.6.1: Transportation Standards

Review Section: *Impact on Surrounding Street Systems*
Overview: *This site currently has pull-in parking spaces along Commercial Street. Commercial street is a public right-of-way, staff will be required to conduct further review on this condition.*
Requested Update #1:

- *Site plan should note the driveway conditions at Commercial Street and whether these conditions meet the city standards.*

Response: See Site Plan C101 for driveway which is defined by the proposed sidewalk and existing sidewalk in front of Becky's Diner. Driveway meets City Standards at 24' in width.
Requested Update #2:

- *The driveway is not defined and parked vehicles tend to dictate the western edge of the driveway. I would suggest that vehicle turning templates be provided for determining the layout and design of the driveway entrance (note: if a sidewalk is required, that will define the driveway opening).*

Response: See Site Plan C101 for driveway, defined by the proposed sidewalk and existing sidewalk in front of Becky's Diner. See Site Plan C105 for turning template.
Requested Update #3:

- *A driveway opening will need to be defined by the sidewalk*

Response: See Site Plan C101 for defined driveway opening and proposed sidewalk.

Review Section: *Access and Circulation*
Overview: *There is an existing entrance to the site off of Commercial Street. Internal circulation is to be provided via a 22ft wide access drive that is around the proposed structure. Due to the use of the site remaining the same, no additional traffic is predicted.*
Requested Update #1:

- *A sidewalk is required for this project, if there is the request to waive this requirement the applicant shall submit a formal request based upon the sidewalk/curbing waiver criteria.*

Response: Based on comments from City during 10/8 meeting, a sidewalk is now proposed and can be seen on C101. No waiver is required.
Requested Update #2:

- *The applicant shall label or provide spot grades and slopes at grade breaks for any proposed / existing improvements in the right of way such as sidewalks, accessible ramps, driveways and at the end of the limits of the proposed*

Response: Spot grades will be added to the Site Plan for the proposed sidewalk once survey

is conducted at the front of the site.

Review Section: *Parking*
Overview: *Parking spaces must comply with the dimensional requirements that can be found in the Technical Manual 1.10 Parking Lot and Parking Space Design and are required to be shown on the site plan. The pull-in parking spaces along Commercial Street appear to be located in the public right-of-way. Further review of this condition is to be done by City staff.*
Requested Update #1:

- *Site plan shall include dimensions for parking lot aisle widths and parking space dimensions for the entire site.*

Response: See Site Plans (C100 & C101) for parking related dimensions.
Requested Update #2:

- *All parking spaces and aisle widths shall be dimensioned. For example, the proposed five additional parking spaces are not dimensioned. Also if the parking spaces/lot do not meet City Standards, you will need to provide information in support of a waiver. The applicant has provided feedback to this comment stating that the existing parking spaces on the plan meet City Standard of 9x18.*

Response: See Site Plans (C100 & C101) for dimensions of existing and proposed striping. The "proposed five additional parking spaces" are not proposed parking spaces, there are 7 existing parking spaces and as site plan C100 notes, there are 2 existing spots to be removed – leaving the 5 spaces. This is due to the needed width along that corner of the building for vehicles to access the proposed 20' drive safely.
Requested Update #3:

- *According to the City Parking Director, the pull-in parking spaces along Commercial Street shall be converted to public spaces given that they are in the public right-of-way. The city will provide information on the recommended parking regulations to be implemented by the applicant. This shall be discussed and resolved during the meeting with the staff and the applicant.*

Response: To be determined/resolved by City and owner.

Review Section: Site Landscaping and Buffers
Overview: The plans do not indicate any new planting to take place at this site. Staff is requesting that with the development of the new parking and potential sidewalk that the applicant provide the appropriate amount of street trees or provide a fee in lieu.
Requested Update #1: *Provide confirmation on whether or not you are choosing to provide street trees or pay the fee in lieu.*
Response: The applicant is confirming that they will pay the fee in lieu. No landscaping is proposed.

Review Section: Public Utilities
Overview: The site plan provided is not clear and requires more information. The existing utilities need to be shown on the plan, as well as the surface material that is to be repaired due to the utility connection and information about sizing. Please be aware that the only sewer line in this section of Commercial Street is Portland Water District 48" interceptor sewer line. Coordination with DPW will be required for this connection. The City owns and maintains a 48" separated storm drain line running across the easterly end of the site. Attached is the GIS map and record plan of the City sewer and storm drain lines in this area.
Requested Update #1: *The applicant would need to be granted a revocable license agreement from the City to run the proposed sewer lateral in the alignment currently being*

shown on the utility plan. DPW is concerned with the proximity of an existing storm drain line in the Commercial Street adjacent to the proposed 6" sewer lateral that is not currently depicted on the plans. The applicant should locate this line on the plan set and provide further information on its proximity to the proposed sewer lateral. Alternatively, it may be worth exploring directly connecting into the sewer interceptor utilizing a chimney/core and connect approach. PWD would need to weigh in on this.
Response: Applicant will coordinate with City in regard to the revocable license agreement. See C102 for distance between existing 10" storm line drain and the proposed 6" sewer lateral.
Requested Update #2: The City's Technical Manual has been recently updated and approved. The applicant shall update all proposed details (Site, Sewer, Stormwater, Landscape, …. Details) to meet the requirements of the recently approved technical manual update or add a a note to each to the proposed details that states the City standard detail (figure # and name) shall be followed.
Response: Updates now reflect this change to applicable details, see C200 with notes added to details that were affected by the updated City Technical Manual,

Review Section: *Massing, Ventilation and Wind Impact*
Overview: *The design is not predicted to have any impacts on wind or ventilation on surrounding structures or any public spaces.*
Requested Update #1:

- *The proposed height of the structure is said to be 24ft, please provide dimensioned building elevations for staff's review to confirm the building's compliance with zoning dimensional requirements..*

Response: Architectural building height plan has been submitted to the ProjectDox portal, please refer to drawing for building height.
Requested Update #2:

- *It appears that elevation drawings for the building are not provided. On the revised proposed site plan (Sheet C101) it states that the height will be 49.15 from the averape grade. The maximum height allowed in the CZ zone is 50'. Please provide confirmation that the height will not exceed 50'.*

Response: The height of building is 48'10" and the height from surrounding grade is 49.00', meeting the 50' maximum heigh requirement. Elevations have been provided, see ProjectDox document folder for building elevations from architect. See elevation based on average surrounding grade on Site Plan C101.

Review Section: *Snow and Ice Loading*
Overview: *The applicant indicates that the proposed design will cause a change to the current snow maintenance plan. The structure is set back from the public way, all snow that is to accumulate will be managed with plowing or other snow management methods.*
Requested Update #1:

- *Applicant must provide clarification as to what the other "snow management methods" are and please provide it on the site plan as well.*

Response: To clarify, "other snow management methods", means other ways of clearing snow besides plowing such as hand shoveling and/or the use of a snowblower in areas that a plow may not be able to clear. A note has been added on the Site Plan (C101).
Requested Update #2:

- *Code requires that the location of the snow storage is to be shown on the plans.*

Response: Snow storage areas have been added onto the Site Plan (C101).

189 Main Street, Suite 200
Yarmouth, ME 04096

Review Section: *Exterior Lighting*
Overview: *The site plan notes that there will be building bonded lighting. The location these lights need to be provided on the site plan in order to prove compliance.*
Requested Update #1:

- *Provide height and plan view location for the lights that will be provided.*

Response: See photometric plan (uploaded to ProjectDox in documents folder) for plan view locations, height is also noted on this photometric plan.
Requested Update #2:

- *The OSQ Spec sheet provides the product descriptions of the LED however a photometric plan is still required to be submitted.*

Response: See photometric plan (uploaded to ProjectDox in documents folder)

Review Section: *Noise and Vibration*
Overview: *The project is not predicted to have any impact on the current noise and vibration levels. Location of the pad is shown in the site plan and is to be properly screened.*
Requested Update #1:

- *Provide information on how the pad is to be properly screened.*

Response: The pad will be screened with a typical chain-link fence with privacy screen. See typical detail on C200 and location of fencing on Site Plan C101.

Thank you for taking the time to review this. Should you have any further questions or require any additional information, please do not hesitate to ask.

Sincerely,



Kyle Berwick
Trillium Engineering Group

OSQ Series

OSQW™ LED Wall Mount Luminaire featuring Patented NanoComfort™ Technology

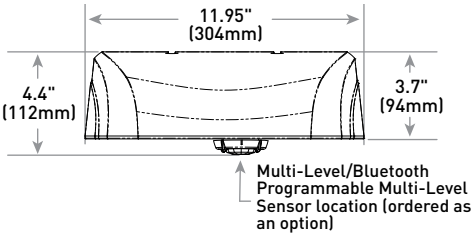
Rev. Date: V2 01/04/2024

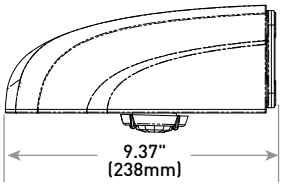
Product Description

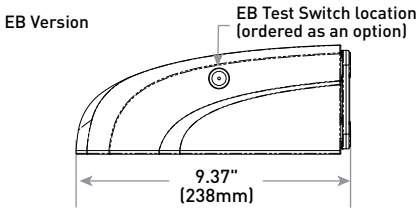
The OSQW™ LED wall mount luminaire has a slim, low profile design intended for outdoor wall mounted applications. The rugged lightweight aluminum housing and mounting box are designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes. The luminaire allows for through-wired or conduit entry from the top, bottom, sides and rear. The housing design is intended specifically for LED technology including a weathertight LED driver compartment and thermal management. Optic design features industry-leading NanoComfort Technology which provides superior glare reduction and visual comfort with high-efficiency illumination delivered precisely where it is needed.

Applications: General area and security lighting









Performance Summary

Utilizes Patented NanoComfort™ Technology

Utilizes Cree TrueWhite® Technology on 5000K Luminaires

Assembled in the USA by Cree Lighting from US and imported parts

Initial Delivered Lumens: Up to 8,600

Input Power: 16 - 55 watts

Efficacy: Up to 159 LPW

CRI: Minimum 70 CRI (2700K, 3000K, 4000K & 5700K); 90 CRI (5000K)

CCT: 2700K, 3000K, 4000K, 5000K, 5700K

Limited Warranty†: 10 years for luminaire/10 years for Colorfast DeltaGuard® finish/up to 5 years for Synapse® accessories/1 year for accessories

Limited Warranty Emergency Back Up (EB) Battery: 1 year for Battery Back Up. Test regularly in accordance with local code

† See http://creelighting.com/warranty for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

Luminaire	Weight
Standard	9.0 lbs. (4.1kg)
Emergency	10.0 lbs. (4.5kg)

Accessories

Field-Installed

Beauty Plate
WM-PLT12** - 12" (305mm) Square
WM-PLT14** - 14" (356mm) Square
- Covers holes left by incumbent wall packs

Synapse® SimplySnap 10V Interface
DIM10-220F
- 120V-277V
- Requires either Synapse Central Base Station or On-Site Controller
- Refer to DIM10-220F spec sheet for details

Synapse SimplySNAP Central Base Station
CBSSW-450-002
- Includes On-Site Controller (SS450-002) and 5-button switch
- Indoor and Outdoor rated
- Refer to CBSSW-450-002 spec sheet for details

Synapse SimplySNAP On-Site Controller
SS450-002
- Verizon® LTE-enabled
- Designed for indoor applications
- Refer to SS450-002 spec sheet for details

Synapse Building Management System (BMS) Gateway
BMS-GW-002
- Required for BACnet integration
- Refer to BMS-GW-002 spec sheet for details

Synapse Wireless Sensor
WSN-DPM
- Motion and light sensor
- Control multiple zones
- Refer to WSN-DPM spec sheet for details

** Must specify color

Ordering Information

Example: OSQW-C-2L-27K7-2M-UL-WM-BK

OSQW	C								
Family	**Series**	**Lumen Package***	**CCT/CRI**	**Optic**	**Voltage**	**Mounting**	**Finish**	**Controls****	**Options**
OSQW	**C**	**2L** 2,550 lumens - Available only with UL voltage **4L** 4,020 lumens **6L** 6,075 lumens **8L** 8,600 lumens	**27K7** 2700K, 70 CRI **30K7** 3000K, 70 CRI **40K7** 4000K, 70 CRI **50K9** 5000K, 90 CRI **57K7** 5700K, 70 CRI	**2M** Type II Mid **3M** Type III Mid **4M** Type IV Mid	**UL** Universal 120-277V **UH** Universal 347-480V - Not available with 2L lumen package, controls options, or EB option **34** 347V - Available only with P control - Not available with 2L lumen package, BML or ML controls, or EB option	**WM** Wall	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**BML Bluetooth® Technology Enabled Multi-Level Sensor** - Available only with UL voltage - Utilizes a multifunction sensor - Refer to BML spec sheet for details - 8-20' sensor lens installed on luminaire; 20-40' sensor lens and aisle shrouds included - Not available with other controls or EB option **ML Multi-Level** - Refer to ML spec sheet for details - Available only with UL voltage - Not available with other controls or EB option **P Button Photocell** - Available with UL and 34 voltages only - Not available with other controls or EB option	**20KV 20kV/10kA Surge Suppression** - Replaces standard 10kV/5kA surge protection **EB Emergency Battery Back-Up** - Provides 90 minutes and 7W of power in emergency mode - Available only with UL voltage - Not available with BML, ML or P controls

* Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT selection. Refer to Initial Delivered Lumen tables for specific lumen values.
** Luminaire comes standard with 0-10V dimming. Controls by others.

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

Product Specifications

CREE LIGHTING NANOCOMFORT™ TECHNOLOGY

Cree Lighting's NanoComfort™ Technology ends the trade-offs in outdoor lighting by providing superior glare reduction and visual comfort in high-efficiency illumination delivered precisely where it is needed. The basic building block of NanoComfort™Technology is a compact 4x4 array of LEDs. Each of the 16 LEDs in a module is in contact with its own acrylic polymer lens to capture and precisely direct light. With NanoComfort™ Technology, the acrylic optics are cut and sculpted into facets that relieve the glare and harshness while improving visual comfort – all while retaining superb efficacy and control.

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Slim, low profile design
- Luminaire housing specifically designed for LED applications with advanced LED thermal management and driver
- Acrylic optic w/clear tempered glass lens
- Some versions are provided with full circuit board, but not fully populated with LEDs or optics to scale back lumen package
- Luminaire mounting box designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes
- Luminaire can also be direct mounted to a wall and surface wired
- Includes (4) 3/16" mounting holes for customer supplied hardware. Select hardware appropriate for mounting surface
- Conduit entry from top, bottom, sides, and rear
- Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, black, white and bronze are available
- **Weight:** Standard - 9.0 lbs. (4.1kg); Emergency - 10.0 lbs. (4.5kg)

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV/5kA surge suppression protection standard; 20kV/10kA surge suppression protection optional
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Designed with 0-10V dimming capabilities. Dims to 10%. Controls by others
- 0-10V ANSI C137.1-2019 (8-Volt)
- **Maximum 10V Source Current:** 1 mA
- Refer to Dimming spec sheet for details
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - +122˚F); Minimum operating temperature with EB option: -20˚C (-4˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Designed for downlight applications only
- UL924 (EB Option) Maximum mounting height: 20.0'(6.1m)
- Enclosure rated IP66 per IEC 60598
- ANSI C136.2 10kV/5kA (standard) and 20kV/10kA (optional) surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Lens meets IK09 requirements per IEC 60068-2
- Assembled in the USA by Cree Lighting from US and imported parts
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- DarkSky Approved when ordered with 27K7 or 30K7 CCTs. (Pending) Please refer to https://darksky.org/what-we-do/darksky-approved/products-companies/#!/~/search/keyword=cree for most current information
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

Lumen Package	System Watts 120-480V**	System Watts						EB System Watts 120-277V	Total Current (A)			
		120V	208V	240V	277V	347V**	480V**		120V	208V	240V	277V
2L	16	0.13	0.08	0.07	0.06	N/A	N/A	19	0.16	0.09	0.08	0.07
4L	27	0.22	0.13	0.11	0.10	0.08	0.06	30	0.24	0.14	0.12	0.11
6L	40	0.34	0.19	0.17	0.14	0.12	0.08	43	0.36	0.21	0.18	0.16
8L	55	0.47	0.27	0.23	0.20	0.16	0.12	58	0.49	0.28	0.24	0.21

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347- 480V +/- 10%.
** 2L lumen package is only available with 120-277V.

OSQW Series Ambient Adjusted Lumen Maintenance Factors[1]

Ambient	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Reported[2] LMF	100K hr Reported[2] LMF
5˚C	1.02	0.99	0.93	0.88	0.83
10˚C	1.02	0.98	0.93	0.87	0.82
15˚C	1.01	0.98	0.92	0.87	0.82
20˚C	1.01	0.97	0.92	0.86	0.81
25˚C	1.00	0.97	0.91	0.86	0.81
30˚C	0.99	0.96	0.90	0.85	0.80
35˚C	0.99	0.95	0.90	0.85	0.80
40˚C	0.98	0.95	0.89	0.84	0.79
45˚C	0.98	0.94	0.89	0.84	0.79
50˚C	0.97	0.94	0.88	0.83	0.78

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.

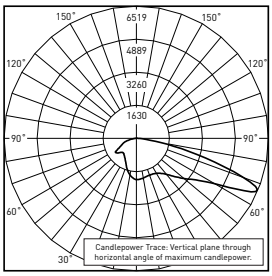
Delivered Emergency Lumens

Lumen Package	CCT/CRI			
	2700K/3000K, 70 CRI	4000K, 70 CRI	5000K, 90 CRI	5700K, 70 CRI
2L	1,070	1,120	810	1,120
4L	1,000	1,040	760	1,040
6L	1,020	1,060	780	1,060
8L	1,110	1,160	800	1,160

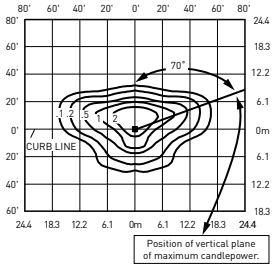
Photometry

All published luminaire photometric testing performed to IES LM-79 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/wall-mount/xsp-series-wall

2M



RESTL Test Report #: PL18035-001A
OSQW-C-8L-30K7-2M-UL-WM-WH
Initial Delivered Lumens: 8,577

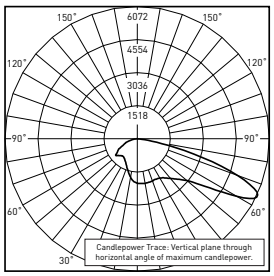


OSQW-C-4L-40K7-2M-Ux-WM-xx-xx
Mounting Height: 15' (4.6) A.F.G.
Initial Delivered Lumens: 4,020
Initial FC at grade

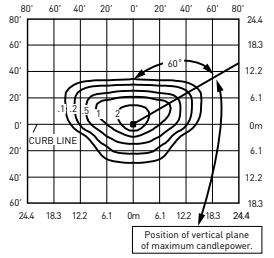
Type II Mid Distribution								
Lumen Package	2700K/3000K, 70CRI		4000K, 70CRI		5000K, 90CRI		5700K, 70CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20
2L	2,450	B1 U0 G1	2,550	B1 U0 G1	1,860	B1 U0 G1	2,550	B1 U0 G1
4L	3,870	B1 U0 G1	4,020	B1 U0 G1	2,940	B1 U0 G1	4,020	B1 U0 G1
6L	5,825	B1 U0 G1	6,075	B1 U0 G1	4,430	B1 U0 G1	6,075	B1 U0 G1
8L	8,250	B2 U0 G2	8,600	B2 U0 G2	6,275	B1 U0 G1	8,600	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens.
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf.

3M



RESTL Test Report #: PL18036-001A
OSQW-C-8L-30K7-3M-UL-WM-WH
Initial Delivered Lumens: 8,543



OSQW-C-4L-40K7-3M-Ux-WM-xx-xx
Mounting Height: 15' (4.6) A.F.G.
Initial Delivered Lumens: 4,020
Initial FC at grade

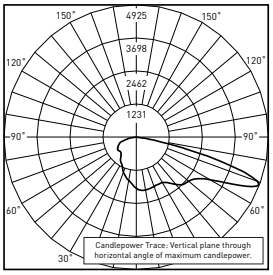
Type III Mid Distribution								
Lumen Package	2700K/3000K, 70CRI		4000K, 70CRI		5000K, 90CRI		5700K, 70CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20
2L	2,450	B1 U0 G1	2,550	B1 U0 G1	1,860	B1 U0 G1	2,550	B1 U0 G1
4L	3,870	B1 U0 G1	4,020	B1 U0 G1	2,940	B1 U0 G1	4,020	B1 U0 G1
6L	5,825	B1 U0 G1	6,075	B1 U0 G1	4,430	B1 U0 G1	6,075	B1 U0 G1
8L	8,250	B2 U0 G2	8,600	B2 U0 G2	6,275	B1 U0 G1	8,600	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens.
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf.

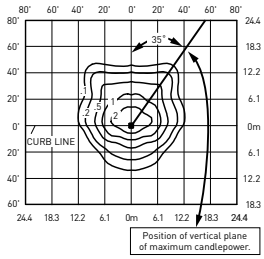
Photometry

All published luminaire photometric testing performed to IES LM-79 standards. To obtain an IES file specific to your project consult:
http://creelighting.com/products/outdoor/wall-mount/xsp-series-wall

4M



RESTL Test Report #: PL18037-001A
OSQW-C-8L-30K7-4M-UL-WM-WH
Initial Delivered Lumens: 8,441



OSQW-C-4L-40K7-4M-Ux-WM-xx-xx
Mounting Height: 15' (4.6) A.F.G.
Initial Delivered Lumens: 4,020
Initial FC at grade

Type IV Mid Distribution								
Lumen Package	2700K/3000K, 70CRI		4000K, 70CRI		5000K, 90CRI		5700K, 70CRI	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20	Initial Delivered Lumens*	BUG Ratings** Per TM-15-20
2L	2,450	B1 U0 G1	2,550	B1 U0 G1	1,860	B1 U0 G1	2,550	B1 U0 G1
4L	3,870	B1 U0 G1	4,020	B1 U0 G1	2,940	B1 U0 G1	4,020	B1 U0 G1
6L	5,825	B1 U0 G1	6,075	B1 U0 G1	4,430	B1 U0 G1	6,075	B1 U0 G1
8L	8,250	B2 U0 G2	8,600	B2 U0 G2	6,275	B1 U0 G1	8,600	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens.
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf.

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US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

February 17, 2024

City of Portland
389 Congress Street
Portland, ME 04101

Re: **400 Commercial St. – Proposed Site Alterations**
Major Site Plan Application

Dear Planning:

Trillium Engineering Group is providing this project narrative for the proposed project located at 400 Commercial St. (Tax map 42, Lot E-1). The project proposes a new 21,000 SF boat storage structure and a 22' wide bituminous pavement drive on an existing developed wharf.

The existing site is a developed wharf and currently features three existing buildings of varying square footage, the lot has both bituminous pavement and concrete along with concrete piers. The existing site has a breakdown of impervious area as follows:

Bituminous Pavement/Concrete: 61,896 SF
Buildings: 9,748 SF

The existing (2,775 SF) building nearest the piers is to be removed with the new 21,000 square foot boat storage structure to be built in that area. Additional demolition includes the removal of the existing (613 SF) shed and a (300 SF) portion of the office building.

The proposed project will ultimately result in neither a loss nor gain of overall impervious area. Stormwater is intended to be managed by using the existing stormwater infrastructure and grading. Please see attached stormwater narrative for further analysis along with erosion and sedimentation control methods to be used during construction.

Please see the plans, application, and below responses to the City of Portland Major Site Plan Application Checklist for further information.

1. *Project Description*

Response: A project description has been provided above.

2. *Completed checklist*

Response: A completed checklist has been provided, see attached documents.

3. *Evidence of Right, Title, and Interest*

Response: A deed to the property has been provided, see attached documents.

4. *Evidence of State or Federal Approvals*

Response: This section is non-applicable, as the project will not require state or federal approval.

5. *Zoning Assessment*

Response: The zoning assessment table has been included in the application.

6. *Site Plan Standards Assessment*

Response: This project meets all the relevant standards outlined in Section 14.6 of the City of Portland Land Use Code. Due to the nature of the work in question not changing the overall use/existing scheme of the lot (marine use/office use), this project will not have a notable effect on the

surrounding transportation, public transit access, or environmental quality. This site meets the necessary off-street parking, public infrastructure, and site design requirements.

7. Summary of existing and/or proposed easements or covenants

Response: There is an existing "quitclaim covenant" set forth in Quitclaim Deed granted by Berlin Mills Wharf to The Berlin Mills LLC dated October 3, 2017, Book: 34363, Page 110.

8. Waiver requests

Response: This section is non-applicable as Trillium Engineering Group is not requesting any waivers at this point.

9. Evidence of financial and technical capacity

Response: Letters of financial and technical capacity have been included in this application, see attached.

Transportation

Response: Vehicle access to the site shall remain as existing site provided, including the required off-street parking and any/all ADA access as the use of the proposed structure does not require any additional off-street parking per zoning requirements. Regarding circulation, internal circulation will be provided via a 22' wide access drive around the proposed boat storage structure. As the use of this site will not change and no increase in traffic volume is to be expected, it will not have an impact on the surrounding street systems. Public transportation is adequate within the site's region of Portland, ME and the site is accessible on foot and/or by public parking options and bus stops.

Environmental

Response: Existing site landscaping shall remain preserved and will not be disturbed by the proposed project. Further landscaping is not required in this zone.

No significant natural features will be impacted by the proposed project. Please see the attached stormwater narrative for drainage information along with erosion and sedimentation control methods to be used during construction to ensure Casco Bay is not impacted by this proposed project.

Public Infrastructure and Safety

Response: This project is consistent with the City's Master Plan. The design allows for emergency vehicle access and continues to take all public safety standards into account. Any public utilities used for the proposed project will be tapped off of the existing public utilities.

Site Design

Response:

Massing, Ventilations and Wind Impact: The proposed design will not have wind and/or ventilation impacts on surrounding structures or public spaces nor should the height of the proposed building (24') have an impact on those either.

Shadows: The proposed design will not create shadows that will impact publicly open spaces.

Snow and Ice Loading: The proposed design will change the existing snow maintenance plan of the site but shall not cause an impedance on adjacent properties or public ways. As the structure is set back from the public way, all snow that accumulates from the roof on to the access drive or portion of the property will be managed with plowing or other snow management methods.

View corridors: The proposed design will not have any impact on designated view corridors. The site is outside of any historic districts, landmarks, and landscapes. The proposed design will not impede on the visualization of the "most recognizable landmarks, important symbols of the City and its institutions" which are as follows: Portland City Hall, Custom House, Cathedral of the Immaculate Conception, Munjoy Hill Observatory and First Parish Church (this list and reference was taken from

189 Main Street, Suite 200
Yarmouth, ME 04096

the City of Portland Design Manual). The proposed design will not have any impact on the "Gateways to Portland" nor should it impede the visualization of Casco Bay as the proposed building's height is 24' from the surrounding grade and is offset behind the existing building which is situated at the front of the lot, abutting Commercial Street.
Historic Resources: The proposed design will not impact any historic resource.
Exterior Lighting: Exterior lighting will be provided via building mounted lights on the proposed structure as well as additional pole mounted lights near the existing piers.
Noise and Vibration: The proposed design will not have any impact on the current noise and vibration levels.
Signage and Wayfinding: Existing signage and wayfinding will remain.
Zone-Related Design Standards: All relevant zone-related (WCZ) design standards have been taken into account with the proposed design.

Thank you for taking the time to review this. Should you have any further questions or require any additional information, please do not hesitate to ask.

Sincerely,



Kyle Berwick
Project Engineer
Trillium Engineering Group

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

May 8, 2024

City of Portland
389 Congress Street
Portland, ME 04101

Re: **400 Commercial St. – Proposed Site Alterations**
Major Site Plan Application

Dear Planning:

Trillium Engineering Group is providing this project narrative for the proposed project located at 400 Commercial St. (Tax map 42, Lot E-1). The project proposes a new 21,000 SF boat storage structure and a 22' wide bituminous pavement drive on an existing developed wharf.

The existing site is a developed wharf and currently features three existing buildings of varying square footage, the lot has both bituminous pavement and concrete along with concrete piers. The existing site has a breakdown of impervious area as follows:

Bituminous Pavement/Concrete: 61,896 SF
Buildings: 9,748 SF

The existing (2,775 SF) building nearest the piers is to be removed with the new 21,000 square foot boat storage structure to be built in that area. Additional demolition includes the removal of the existing (613 SF) shed and a (300 SF) portion of the office building.

The proposed project will ultimately result in neither a loss nor gain of overall impervious area. Stormwater is intended to be managed by using the existing stormwater infrastructure and grading. Please see attached stormwater narrative for further analysis along with erosion and sedimentation control methods to be used during construction.

Please see the plans, application, and below responses to the City of Portland Major Site Plan Application Checklist for further information.

1. *Project Description*

Response: A project description has been provided above.

2. *Completed checklist*

Response: A completed checklist has been provided, see attached documents.

3. *Evidence of Right, Title, and Interest*

Response: A deed to the property has been provided, see attached documents.

4. *Evidence of State or Federal Approvals*

Response: This section is non-applicable, as the project will not require state or federal approval.

5. *Zoning Assessment*

Response: The zoning assessment table has been included in the application.

6. *Site Plan Standards Assessment*

Response: This project meets all the relevant standards outlined in Section 14.6 of the City of Portland Land Use Code. Due to the nature of the work in question not changing the overall use/existing scheme of the lot (marine use/office use), this project will not have a notable effect on the

surrounding transportation, public transit access, or environmental quality. This site meets the necessary off-street parking, public infrastructure, and site design requirements.

7. Summary of existing and/or proposed easements or covenants

Response: There is an existing "quitclaim covenant" set forth in Quitclaim Deed granted by Berlin Mills Wharf to The Berlin Mills LLC dated October 3, 2017, Book: 34363, Page 110.

8. Waiver requests

Response: This section is non-applicable as Trillium Engineering Group is not requesting any waivers at this point.

9. Evidence of financial and technical capacity

Response: Letters of financial and technical capacity have been included in this application, see attached.

Transportation

Response: Vehicle access to the site shall remain as existing site provided, including the required off-street parking and any/all ADA access as the use of the proposed structure does not require any additional off-street parking per zoning requirements. Regarding circulation, internal circulation will be provided via a 22' wide access drive around the proposed boat storage structure. As the use of this site will not change and no increase in traffic volume is to be expected, it will not have an impact on the surrounding street systems. Public transportation is adequate within the site's region of Portland, ME and the site is accessible on foot and/or by public parking options and bus stops.

Environmental

Response: Existing site landscaping shall remain preserved and will not be disturbed by the proposed project. Further landscaping is not required in this zone.

No significant natural features will be impacted by the proposed project. Please see the attached stormwater narrative for drainage information along with erosion and sedimentation control methods to be used during construction to ensure Casco Bay is not impacted by this proposed project.

Public Infrastructure and Safety

Response: This project is consistent with the City's Master Plan. The design allows for emergency vehicle access and continues to take all public safety standards into account. Any public utilities used for the proposed project will be tapped off of the existing public utilities.

Site Design

Response:

Massing, Ventilations and Wind Impact: The proposed design will not have wind and/or ventilation impacts on surrounding structures or public spaces nor should the height of the proposed building (49') have an impact on those either.

Shadows: The proposed design will not create shadows that will impact publicly open spaces.

Snow and Ice Loading: The proposed design will change the existing snow maintenance plan of the site but shall not cause an impedance on adjacent properties or public ways. As the structure is set back from the public way, all snow that accumulates from the roof on to the access drive or portion of the property will be managed with plowing or other snow management methods.

View corridors: The proposed design will not have any impact on designated view corridors. The site is outside of any historic districts, landmarks, and landscapes. The proposed design will not impede on the visualization of the "most recognizable landmarks, important symbols of the City and its institutions" which are as follows: Portland City Hall, Custom House, Cathedral of the Immaculate Conception, Munjoy Hill Observatory and First Parish Church (this list and reference was taken from

the City of Portland Design Manual). The proposed design will not have any impact on the "Gateways to Portland" nor should it impede the visualization of Casco Bay.
Historic Resources: The proposed design will not impact any historic resource.
Exterior Lighting: Exterior lighting will be provided via building mounted lights on the proposed structure as well as additional pole mounted lights near the existing piers.
Noise and Vibration: The proposed design will not have any impact on the current noise and vibration levels.
Signage and Wayfinding: Existing signage and wayfinding will remain.
Zone-Related Design Standards: All relevant zone-related (WCZ) design standards have been taken into account with the proposed design.

Section 10.3.9.M Operations and Access Management Plan Narrative

1. *Any new development, including changes of use or expansion of uses in the Waterfront Central Zone, shall submit a scaled plan and accompanying narrative that demonstrates waterfront access and functional accommodation for water dependent uses. In accordance with Portland's Plan 2030, the plan shall demonstrate consistency with the hierarchy of waterfront uses, as further detailed in Subsection 10.3.1, with nonmarine and marine-related uses being subordinate in placement and disposition to water-dependent uses, and designed so as not to impede access to the pier edge and vessel berthing nor interfere with marine operations.*
2. *The plan shall, at a minimum, illustrate the following information:*
    a. *Location of all existing and proposed structures, right-of-way, common circulation drives as defined in Subsection 10.3.2, access-ways, sidewalks, pier edges, floats, and docks, showing the entire lot in the context of its respective pier.*
        i. Response: See Plans
    b. *Existing and proposed off-street parking, labeled with associated uses.*
        i. Response: See Plans
    c. *Facilities for the loading and unloading of goods and materials.*
        i. Response: The project proposes the construction of a marine vessel storage facility, the facility is not to be used for loading and unloading goods/materials, this section is N/A.
    d. *Regularly occurring exterior activities including but not limited to the storage of material, equipment and vehicles, yard area, outdoor seating, and on-site waste management.*
        i. Response: See plans for the proposed building which will be storing marine vessels, the lower portion of the pier (closest to Casco Bay) will be used for any equipment used in moving the vessels and the proposed access way will be used for access to and from this portion of the lot.
    e. *Signage showing parking use, wayfinding, and posted operational restrictions.*
        i. Response: Existing site signage to remain.
    f. *Plan narrative detailing how the standards listed below are achieved, tenant/landlord communication protocols, private enforcement actions to be employed to ensure plan compliance, and the responsible parties representing the property owner.*
        i. Response: Refer to site plan for applicable information
3. *The operations and access management plan shall be reviewed by the Planning Authority.*
4. *In addition to the information above, the plan shall demonstrate compliance with the following standards:*
    a. *Off-street parking is subject to the limitations described in Subsection 10.3.7 (A) ("55% Rule"). Off-street parking spaces intended for use by water-dependent uses shall be sited as close as reasonable possible to associated vessels and/or ground-floor lease area.*

   i. Response: There is ample existing off-street parking for the use of the lot, the proposed project does not intend to conflict with the existing off-street parking capability of the site.

b. *Proposals for new non-marine parking, accessory to an otherwise permitted use in the WCZ, shall submit a parking analysis for all uses on the subject lot, justifying the number of non-marine spaces based upon the proposed use and demonstrating sufficient parking supply for marine uses. If sufficient parking is not available to marine uses, off-street parking for non-marine uses shall not be permitted.*
   i. Response: As previously stated, there is ample existing off-street parking, because of this there will be no proposed new non-marine parking.

c. *Off-street parking, loading facilities, and access ways designated for water dependent uses shall be exclusive to such uses, except that, if not being occupied by water-dependent tenants, such parking may be made available to non-marine uses between the hours of 5:00 p.m. and 2:00 a.m. Any such shared parking arrangements shall be documented in the operations and access management narrative described above, and clearly signed on-site.*
   i. Response: Any water dependent off-street parking, loading facilities, and access ways will be used for marine use only.

d. *All properties providing commercial berthing shall demonstrate reasonable opportunities to load and unload vessels from the subject lot.*
   i. Response: The existing site offers ample space for mooring boats of varying sizes along the docks.

e. *Facilities for the loading and unloading of goods shall account for the frequency of use and vehicle type and, to the extent possible, minimize impacts to pedestrian and vehicle circulation patterns.*
   i. Response: The project proposes the construction of a marine vessel storage facility, the facility is not to be used for loading and unloading goods, this section is N/A.

f. *Provisions for the storage and movement of goods and materials shall be designed into all pier edge development. Circulation routes must be maintained or otherwise provided as an element of all development. The siting, design, and circulation of nonmarine uses, particularly those allowed on first floors, shall accommodate reasonable access for pedestrians, vehicles, and freight transfer to and from berthed vessels.*
   i. Response: The site offers sufficient circulation for pedestrians and vehicular/equipment access and movement with the 22' proposed access drive.

g. *Non-marine uses shall provide a dedicated pedestrian route between the proposed use and Commercial Street and shall seek to minimize conflict with vehicle traffic.*
   i. Response: The non-marine use of the lot (office building) is situated in the front of the lot, directly abutting Commercial St. with the access of the building being directly on the existing sidewalk and path of travel for pedestrians and vehicles to park – causing no conflict with the marine-use portion of the site, located farther within the site.

189 Main Street, Suite 200
Yarmouth, ME 04096

Thank you for taking the time to review this. Should you have any further questions or require any additional information, please do not hesitate to ask.

Sincerely,



Kyle Berwick
Project Engineer
Trillium Engineering Group

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

August 26, 2024

City of Portland
389 Congress Street
Portland, ME 04101

Re: **400 Commercial St. – Proposed Site Alterations**
Major Site Plan Application Revisions – Response to City Comments

Dear Planning:

Trillium Engineering Group is providing this response as additional information for City comments originally received from Ameriz Gamez via email on June 11th, 2024. Please see all updated documents, plans, etc. uploaded to ProjectDox and below responses to the received comments.

14.6.1: Transportation Standards

Review Section: *Impact on Surrounding Street Systems*
Overview: *This site currently has pull-in parking spaces along Commercial Street. Commercial street is a public right-of-way, staff will be required to conduct further review on this condition.*
Comment #1:

- *Site plan should note the driveway conditions at Commercial Street and whether these conditions meet the city standards.*

Response: See Site Plan (C100) for note stating the driveway conditions meet requirements of city standards and is in good condition.
Comment #2:

- *Proposed improvements and existing conditions in the City ROW shall be identified and dimensioned on the plan view sheets. For example ROW, street, lanes sidewalk, esplanade driveways (and other improvements) widths as well as when a width changes.*

Response: See Site Plan (C102) for hatching and identification labels. Minimal work is proposed within the City ROW to connect to city utilities, the approximate overall proposed disturbance within the ROW is 1,341 SF.

Review Section: *Access and Circulation*
Overview: *There is an existing entrance to the site off of Commercial Street. Internal circulation is to be provided via a 22ft wide access drive that is around the proposed structure. Due to the use of the site remaining the same, no additional traffic is predicted.*
Comment #1:

- *The project shall review and provide a waiver analysis for provision of a sidewalk along Commercial Street.*

Response: Applicant is not proposing a new sidewalk along Commercial Street. Existing pedestrian path to remain as existing.
Comment #2:

- *The applicant shall label or provide spot grades and slopes at grade breaks for any proposed / existing improvements in the right of way such as sidewalks, accessible ramps, driveways and at the end of the limits of the proposed*

Response: Repair of disturbance to City ROW will be repaired to match existing conditions, including existing grade conditions.
Comment #3:

- *Confirm the extent of work that will impact Casco Bay*

Response: The proposed project will not directly impact Casco Bay as no work is to be done outside of the limits of the wharf, additionally, all erosion and sedimentation requirements are to be followed to minimize/eliminate the flow of sediment/debris into Casco Bay during construction. See Site Plan C103 for erosion and sedimentation control and C300 for details.

Review Section: *Parking*
Overview: *Parking spaces must comply with the dimensional requirements that can be found in the Technical Manual 1.10 Parking Lot and Parking Space Design and are required to be shown on the site plan. The pull-in parking spaces along Commercial Street appear to be located in the public right-of-way. Further review of this condition is to be done by City staff.*
Comment #1:

- *Site plan shall include dimensions for parking lot aisle widths and parking space dimensions for the entire site.*

Response: See Site Plans (C100 & C101) for parking related dimensions.
Comment #2:

- *Show any proposed improvements and the existing conditions in the City right-of-way, be sure to identify and provide the dimensions on the plan.*

Response: Applicant is proposing changes within the City ROW with a disturbance area of approximately 1,314 SF, see Site Plan C102, existing conditions can be found on Site Plan C100.

Review Section: *Water Quality, Stormwater Management and Erosion Control*
Overview: *The Applicant has provided a proposed site and utilities plan. The plan shows locations of proposed utility services from the proposed building, but does not include pipe sizes or show how they connect to existing utility mains in Commercial Street. The plans should show these connections and coordinate with the appropriate utilities on how the connections will be made. The required sawcut and paving within Commercial Street should be shown. In addition, confirmation of utility ability to serve will be required. Likely as part of this review process, the utilities will weigh in on how the connections are made in Commercial Street.*
Comment #1:

- *With work in such close proximity to Casco Bay, which is considered a protected natural resource, the Applicant should confirm if any Natural Resource Protection Act permit or permit by rule may be required for the proposed work.*

Response: It is the applicant's understanding that this proposed project does not require DEP permitting.
Comment #2:

- *The Applicant should provide more information on erosion and sedimentation control including details for measures that are more site-appropriate. Perimeter erosion control will be required. With work in such close proximity to the water's edge, the Applicant should consider whether turbidity curtains may be necessary.*

Response: See Site Plan C103 & C300 for updated erosion and sedimentation control details. It is our professional opinion that turbidity curtains are not necessary as the sediment and debris is to be contained and managed on the wharf and not impact Casco Bay.
Comment #3:

- *The Applicant has shown proposed stormwater connections from the building, but it is not clear what the catch basins located east and west of the building connect to. The plans should show how the project will connect to existing infrastructure. If the project proposes to discharge directly through an outfall, a permit from the MaineDEP will be required.*

Response: The project does not propose altering existing stormwater flow, existing flow to be maintained for proposed development condition. The proposed inner trench drain and oil water separator is to be connected to the sewer line per comments.

Comment #4:

- *A single water connection is shown. The Applicant should confirm if separate domestic and fire services are required.*

Response: A 6" fire and 1 ½" domestic is proposed, see updated Site Plan C102 showing locations and connections.

Review Section: *Public Utilities*

Overview: *The site plan provided is not clear and requires more information. The existing utilities need to be shown on the plan, as well as the surface material that is to be repaired due to the utility connection and information about the sizing. Please be aware that the only sewer line in this section of Commercial Street is Portland Water District 48" interceptor sewer line. Coordination with DPW will be required for this connection. The City owns and maintains a 48" separated storm drain line running across the easterly end of the site. attached is the GIS map and record plan of the City sewer and storm drain lines in this area. The applicant's surveyor needs to update the existing conditions plan to show the City's storm drain infrastructure and the City's 15' wide easement (CCRD Book 31504 PG 288) on this site. (See attached documents from DPW).*

Comment #1:

- *Please assure that the surveyor updates the existing conditions plan to match the City's easements..*

Response: Previous submitted survey was updated to show the drainage easement, it has been attached to this package for review.

Comment #2:

- *Show the existing sewer line in Commercial Street and indicate where and how you are planning to make the connection.*

Response: See Site Plan C104 for proposed connection profile. See C102 for location of existing sewer line and proposed connection to the existing manhole per comments received from Robert Bartels at PWD.

Comment #3:

- *Submission of a Wastewater Capacity Application to the City and DPW is required.*

Response: See attached ability to serve application documents submitted to Portland DPW. (Waiting on review of application, application has been submitted).

Comment #4:

- *Note that any internal floor drainage systems within the warehouse should be directed through an oil-water separator and directed to the municipal sewer system. However, any external storm drain should be connected to the on-site external storm drain system, including the external catch basin at the south end of the warehouse.*

Response: See updated Site Plans showing that no external storm drainage is proposed. C102 showing location and connection of oil-water separator.

Comment #5:

- *Update the existing conditions plan to better depict location of the existing on-site drainage system.*

Response: See C100 for updated existing conditions. A note has been added explaining existing drainage/stormwater flow is to be maintained.

Comment #6:

- *If new utility connections are needed for the project, they should be clearly identified on the plans. The proposed trenches shall be repaired per the Minor Excavation*

Pavement Repair Details (prior to paving the finished surface) found in the Rules and Regulations for Excavation Activity.

Response: See Site Plan C102 for new utility connection locations. All proposed trenches will be repaired per the Minor Excavation Pavement Repair Details – see detail sheet C200.

Comment #7:

- *The proposed gas line connection may create a lot of disturbance within the ROW and may conflict with other utilities. The applicant shall identify all existing utilities and explore other options for the proposed gas line.*

Response: See site plan (C102) for updated connection location.

Review Section: *Massing, Ventilation and Wind Impact*
Overview: *The design is not predicted to have any impacts on wind or ventilation on surrounding structures or any public spaces.*
Comment #1:

- *The proposed height of the structure is said to be 24ft, please provide building articulation for staff's review and confirmation.*

Response: The corrected building height is 49' (just under the max allowable per zoning requirements). Building height based on average grade is 49.15' (see Site Plan C101 for calculation). All nearby structures and public spaces of the lot are not to be impacted as there are currently buildings within the area at a similar height to the proposed height of this structure. Additionally, as the structure will be set back form the City ROW there is to be no interference to public spaces.

Review Section: *Snow and Ice Loading*
Overview: *The applicant indicates that the proposed design will cause a change to the current snow maintenance plan. The structure is set back from the public way, all snow that is to accumulate will be managed with plowing or other snow management methods.*
Comment #1:

- *Applicant must provide clarification as to what the other "snow management methods" are and please provide it on the site plan as well.*

Response: To clarify, "other snow management methods", means other ways of clearing snow besides plowing such as hand shoveling and/or the use of a snowblower in areas that a plow may not be able to clear.

Review Section: *Exterior Lighting*
Overview: *The site plan notes that there will be building bonded lighting. The location these lights need to be provided on the site plan in order to prove compliance.*
Comment #1:

- *Provide height and plan view location for the lights that will be provided.*

Response: See photometric plan for plan view locations, height is also noted on this plan.
Comment #2:

- *A spec sheet for the lights to confirm compliance with Sec. 12 of the Technical Manual and the WCZ performance standards.*

Response: See lighting spec sheets and photometric plan.

Review Section: *Noise and Vibration*
Overview: *The project is not predicted to have any impact on the current noise and vibration levels.*
Comment #1:

- *Please provide confirmation if there is to be any heating, ventilation, or air conditioning*

equipment, if there is please show the location of this location on the plans.
Response: Heating and ventilation equipment for the proposed building will be located on the west side of the building, see Site Plan C101 for approximate pad location,

Review Section: *Design Standards*
Overview: *The building elevations have been provided in Energov, however they lack average grade information. These elevations should identify the post development grade at the corners of the building to calculate average grade and should also identify the height of the building based upon the provided information.*
Comment #1:

- *Section 10.3.6 D.4 requires a minimum first floor setback from the pier edge. The proposed building is not currently meeting that standard.*

Response: See updated Site Plans for 10' setback, meeting requirements.
Comment #2:

- *Provide a plan that shows the proposed building elevations along with each of the requested requirements.*

Response: See all updated Site Plans.
Comment #3:

- *Section 12.4.5 G.1 requires that the lowest floor be elevated to at least two feet above the base floor elevation or flood proofed to at least two feet above the base flood elevation. The site plan gives the finished floor elevation as 10'. It needs to be a minimum of 11'. Please provide an elevation certificate when you apply for the building permit after the site plan is approved.*

Response: See updated Site Plans showing the increase in elevation to the finished floor from 10' to 11'.
Comment #4;

- *The proposed location of the new building is within the AE Special Flood Hazard Area, with a base flood elevation of 9'. The AE flood zone line needs to be located on the site plan. You also need to provide the existing and proposed grades around the building.*

Response: See updated Site Plans showing the AE flood zone line at an elevation of 9' and the FFE of the building which is proposed at 11.0'.
Comment #5:

- *The floodplain ordinance is Article 12 of Chapter 14. Section 12.4.2 outlines the requirement for development in the flood zone. The site plan should include the applicable requirements of subsections D & E.*

Response: Applicable Floodplain requirements have been added as requested.
Comment #6:

- *Section 10.3.6.D.4 requires a minimum first floor setback from the pier edge. The proposed building is not meeting this requirement.*

Response: See updated Site Plan C101 showing the updated setback, meeting the requirement of 10'.
Comment #7:

- *Provide information of how the demolition of the back office and building will impact the adjoining business.*

Response: The demolition of the back office and building will not impact the adjoining business.

Thank you for taking the time to review this. Should you have any further questions or require any additional information, please do not hesitate to ask.

189 Main Street, Suite 200
Yarmouth, ME 04096

Sincerely,



Kyle Berwick
Trillium Engineering Group

TRILLIUM ENGINEERING GROUP

189 Main Street, Suite 200
Yarmouth, ME 04096

October 7, 2024

City of Portland
389 Congress Street
Portland, ME 04101

Re: **400 Commercial St. – Proposed Site Alterations**
Major Site Plan Application Revisions – Response to City Comments

Dear Planning:

Trillium Engineering Group is providing this response as additional information for City comments originally received from Ameriz Gamez dated September 27, 2024. Please see all updated documents, plans, etc. uploaded to ProjectDox and below responses to the received comments.

14.6.1: Transportation Standards

Review Section: *Impact on Surrounding Street Systems*
Overview: *This site currently has pull-in parking spaces along Commercial Street. Commercial street is a public right-of-way, staff will be required to conduct further review on this condition.*
Requested Update #1:

- *Site plan should note the driveway conditions at Commercial Street and whether these conditions meet the city standards.*

Response: See Site Plan (C100) for note. Stating the driveway conditions meet requirements of city standards and is in good condition.
Requested Update #2:

- *The driveway is not defined and parked vehicles tend to dictate the western edge of the driveway. I would suggest that vehicle turning templates be provided for determining the layout and design of the driveway entrance (note: if a sidewalk is required, that will define the driveway opening).*

Response: See Site Plan (C100) for the existing driveway width dimensions (driveway is not proposed to change) and C105 for turning templates.
Requested Update #3:

- *A driveway opening will need to be defined by the sidewalk*

Response: The existing driveway has been measured (30') can be seen on C100.

Review Section: *Access and Circulation*
Overview: *There is an existing entrance to the site off of Commercial Street. Internal circulation is to be provided via a 22ft wide access drive that is around the proposed structure. Due to the use of the site remaining the same, no additional traffic is predicted.*
Requested Update #1:

- *A sidewalk is required for this project, if there is the request to waive this requirement the applicant shall submit a formal request based upon the sidewalk/curbing waiver criteria.*

Response: Applicant will discuss with staff during meeting (10/8) regarding sidewalk requirements for this project.
Requested Update #2:

- *The applicant shall label or provide spot grades and slopes at grade breaks for any proposed / existing improvements in the right of way such as sidewalks, accessible ramps, driveways and at the end of the limits of the proposed*

Response: As stated in the comments from the City, grades have been provided on the

existing conditions plan along with drainage arrows showing existing runoff. Additionally, spot grades at the corners of the proposed building have also been provided on C101 along with slope.

Review Section: *Parking*
Overview: *Parking spaces must comply with the dimensional requirements that can be found in the Technical Manual 1.10 Parking Lot and Parking Space Design and are required to be shown on the site plan. The pull-in parking spaces along Commercial Street appear to be located in the public right-of-way. Further review of this condition is to be done by City staff.*
Requested Update #1:

- *Site plan shall include dimensions for parking lot aisle widths and parking space dimensions for the entire site.*

Response: See Site Plans (C100 & C101) for parking related dimensions.
Requested Update #2:

- *All parking spaces and aisle widths shall be dimensioned. For example, the proposed five additional parking spaces are not dimensioned. Also if the parking spaces/lot do not meet City Standards, you will need to provide information in support of a waiver. The applicant has provided feedback to this comment stating that the existing parking spaces on the plan meet City Standard of 9x18.*

Response: As stated, the existing parking spaces meet the City Standard of 9x18. The "proposed five additional parking spaces" are not proposed parking spaces, there are 7 existing parking spaces and as site plan C100 notes, there are 2 existing spots to be removed – leaving the 5 spaces. This is due to the needed width along that corner of the building for vehicles to access the proposed 20' drive safely.
Requested Update #3:

- *According to the City Parking Director, the pull-in parking spaces along Commercial Street shall be converted to public spaces given that they are in the public right-of-way. The city will provide information on the recommended parking regulations to be implemented by the applicant. This shall be discussed and resolved during the meeting with the staff and the applicant.*

Response: Applicant will discuss with staff during meeting (10/8) regarding public space requirements for this project.

Review Section: Site Landscaping and Buffers
Overview: The plans do not indicate any new planting to take place at this site. Staff is requesting that with the development of the new parking and potential sidewalk that the applicant provide the appropriate amount of street trees or provide a fee in lieu.
Requested Update #1: *Provide confirmation on whether or not you are choosing to provide street trees or pay the fee in lieu.*
Response: The applicant is confirming that they will pay the fee in lieu. No landscaping is proposed.

Review Section: Public Utilities
Overview: The site plan provided is not clear and requires more information. The existing utilities need to be shown on the plan, as well as the surface material that is to be repaired due to the utility connection and information about sizing. Please be aware that the only sewer line in this section of Commercial Street is Portland Water District 48" interceptor sewer line. Coordination with DPW will be required for this connection. The City owns and maintains a 48" separated storm drain line running across the easterly end of the site. Attached is the GIS map

and record plan of the City sewer and storm drain lines in this area.
Requested Update #1: *The applicant would need to be granted a revocable license agreement from the City to run the proposed sewer lateral in the alignment currently being shown on the utility plan. DPW is concerned with the proximity of an existing storm drain line in the Commercial Street adjacent to the proposed 6" sewer lateral that is not currently depicted on the plans. The applicant should locate this line on the plan set and provide further information on its proximity to the proposed sewer lateral. Alternatively, it may be worth exploring directly connecting into the sewer interceptor utilizing a chimney/core and connect approach. PWD would need to weigh in on this.*
Response: Applicant will coordinate with City in regard to the revocable license agreement. See C102 for distance between existing 10" storm line drain and the proposed 6" sewer lateral.
Requested Update #2: The City's Technical Manual has been recently updated and approved. The applicant shall update all proposed details (Site, Sewer, Stormwater, Landscape, …. Details) to meet the requirements of the recently approved technical manual update or add a a note to each to the proposed details that states the City standard detail (figure # and name) shall be followed.
Response: Updates now reflect this change to applicable details, see C200 with notes added to details that were affected by the updated City Technical Manual,

Review Section: *Massing, Ventilation and Wind Impact*
Overview: *The design is not predicted to have any impacts on wind or ventilation on surrounding structures or any public spaces.*
Requested Update #1:

- *The proposed height of the structure is said to be 24ft, please provide dimensioned building elevations for staff's review to confirm the building's compliance with zoning dimensional requirements..*

Response: Architectural building height plan has been submitted to the ProjectDox portal, please refer to drawing for building height.
Requested Update #2:

- *It appears that elevation drawings for the building are not provided. On the revised proposed site plan (Sheet C101) it states that the height will be 49.15 from the averape grade. The maximum height allowed in the CZ zone is 50'. Please provide confirmation that the height will not exceed 50'.*

Response: The height of building is 48'10" and the height from surrounding grade is 49.00', meeting the 50' maximum heigh requirement. Elevations have been provided, see ProjectDox document folder for building elevations from architect. See elevation based on average surrounding grade on C101.

Review Section: *Snow and Ice Loading*
Overview: *The applicant indicates that the proposed design will cause a change to the current snow maintenance plan. The structure is set back from the public way, all snow that is to accumulate will be managed with plowing or other snow management methods.*
Requested Update #1:

- *Applicant must provide clarification as to what the other "snow management methods" are and please provide it on the site plan as well.*

Response: To clarify, "other snow management methods", means other ways of clearing snow besides plowing such as hand shoveling and/or the use of a snowblower in areas that a plow may not be able to clear. A note has been added on the site plan (C101).
Requested Update #2:

- *Code requires that the location of the snow storage is to be shown on the plans.*

189 Main Street, Suite 200
Yarmouth, ME 04096

Response: Snow storage areas have been added onto the site plan (C101).

Review Section: *Exterior Lighting*
Overview: *The site plan notes that there will be building bonded lighting. The location these lights need to be provided on the site plan in order to prove compliance.*
Requested Update #1:

- *Provide height and plan view location for the lights that will be provided.*

Response: See photometric plan (uploaded to ProjectDox in documents folder) for plan view locations, height is also noted on this photometric plan.
Requested Update #2:

- *The OSQ Spec sheet provides the product descriptions of the LED however a photometric plan is still required to be submitted.*

Response: See photometric plan (uploaded to ProjectDox in documents folder)

Review Section: *Noise and Vibration*
Overview: *The project is not predicted to have any impact on the current noise and vibration levels. Location of the pad is shown in the site plan and is to be properly screened.*
Requested Update #1:

- *Provide information on how the pad is to be properly screened.*

Response: The pad will be screened with a typical chain-link fence with privacy screen. See typical detail on C200 and location of fencing on C101.

Thank you for taking the time to review this. Should you have any further questions or require any additional information, please do not hesitate to ask.

Sincerely,

Kyle Berwick
Trillium Engineering Group

Sprinkler Systems, Inc.

P.O. Box 1285
Lewiston, Maine 04243-1285
Ph. (207) 782-0104 Fax (207) 783-4865
Fire Protection Professionals Since 1973

To: Portland Water District
225 Douglass Street
Portland, Maine 04104

Date: June 24, 2024

Attn: Means Department

Re: Two Buildings
400 Commercial Street
Portland, Maine

To Whom It May Concern,

The aforementioned project will have two NFPA #13 Wet sprinkler systems installed throughout each building. The anticipated sprinkler flow demand for the existing Office building will be approximately 200 GPM at a pressure of 50 psi for the existing sprinkler system layout (predominantly NFPA #13 Light Hazard). Please add another 100 GPM hose stream at the connection between the existing 6" sprinkler water line for the building and the existing street water main in front of the property. The anticipated sprinkler flow demand for the new proposed Boat Storage building will be approximately 400 GPM at a pressure of 60 psi for the new sprinkler system layout (predominantly NFPA #13 Ordinary Hazard Group 2). Please add another 250 GPM hose stream at the connection between the new 6" sprinkler water line for this new building and the existing 6" underground sprinkler water line feeding the existing Office building, to be carried out to the connection at the existing street water main in front of the property.

The total flow of the two buildings combined would be approximately 600 GPM at 60 psi, with 350 GPM of hose stream added at the first hydrant on the city supply street main after the point of connection of the existing 6" underground service to the city supply street main. Based on the current water supply pressure and flow available in the municipal water mains and the sprinkler system requirements for the two buildings, it appears that the water supply is adequate and sufficient to supply both of these systems through the existing and new extension of the 6" water service line currently located on the property at 400 Commercial Street.

Please feel free to contact me with any further questions.

Sincerely,

Scott E. Garland, SET, RMS
Project Manager

01.05.2023

400 Commercial, LLC - Letter of Technical Capability

The principal development team of 400 Commercial Street, LLC consists of Christopher DiMillo, owner of Berlin Mills Wharf (400 Commercial Street), and Jay Hibbard, of King Tide Development Company.

Chris is the Founder and President of DiMillo's Yacht Sales, DiMillo's Marina, and DiMillo's on the Chesapeake as well as several other business enterprises. Chris' real estate holdings include waterfront properties in Maine, Maryland, and New York State. Chris retains a variety of commercial, residential, mixed use and industrial properties throughout the region.

Jay Hibbard, Principal of King Tide Development Company is a seasoned Developer and Construction Manager with years of experience in commercial, residential, mixed use, and industrial projects in the Greater Portland area. Jay has contributed to numerous redevelopment and construction projects including York Street Apartments, the Historic Grand Trunk Railroad Building, renovation of the Gosnell Memorial Hospice House, and CHOM Village Centre in Brewer, as well as countless other multi-unit residential, retail and hospitality projects in Portland and beyond.

Other key members of the team include:

David Fitzpatrick, Principal of Irishpan Industries, Inc. a well-known and established industrial building contractor whose projects include waterfront buildings on Commercial Street, buildings for the Air National Guard as well as countless Municipal Buildings throughout the region.

Matt Roundy, NS Giles Foundations, Inc., the region's premier concrete foundation contractor. N.S. Giles has provided foundation and concrete services for projects including the Canopy Hotel, Hobson's Landing, Colby College, and Maine Medical Center.

Chris Wilson, President of Les Wilson Excavation, whose excavation projects include work for the Portland International Marine Terminal, Portland Sea Dogs, Portland Press Herald, Maine Medical Center, Maine Turnpike Authority and Portland Housing Department.

Eric Dube, PE, President of Trillium Engineering Group in Yarmouth, ME

Kyle Berwick, Project Engineer of Trillium Engineering Group in Yarmouth, ME

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.
Standard 1.10.3	The minimum two-way drive aisle width is 24 feet for standard, right-angle parking...	The applicant is requesting a two-way parking lot drive aisle width of 22'	The existing parking spaces on-site are typically used by employees and are low turnover spaces. The drive aisle, on average, generates a low traffic volume.

CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Portland Dept. of Public Works -
Water Resources
212 Canco Road
Portland, Maine 04103

Date: August 21, 2024

Bradley Roland, P.E.
Water Resources Division
Department of Public Works
212 Canco Road
Portland, ME 04103

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

Site Address: 400 Commercial St.

Chart Block Lot Number: 42 / E1

Proposed Use: Office & Marine
Previous Use: Office & Marine
Existing Sanitary Flows: _____GPD
Existing Process Flows: _____GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.
Sewer interceptor on Commercial St. that runs parallel to 400 Commercial lot

Site Category

Commercial *(see part 4 below)*	
Industrial *(complete part 5 below)*	
Governmental	
Residential	
Other *(specify)* (Marine & Office)	X

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

2. Please, Submit Contact Information.

City Planner's Name: Ameriz Gamez/Matt Grooms Phone: (207) 874-8699
Owner/Developer Name: 400 Commercial LLC
Owner/Developer Address: 400 Commercial St. Portland, ME 04101
Phone: _____ Fax: _____ E-mail: _____
Engineering Consultant Name: Trillium Engineering Group (TEG)
Engineering Consultant Address: 189 Main St. Suite 200 Yarmouth, ME 04096
Phone: (207) 307-0872 Fax: _____ E-mail: kyleb@trilliumeg.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: 240 GPD
Peaking Factor/ Peak Times: Typical business hours
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, __ Other (specify)*
_____

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

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: _____

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Oil-water separator: 300 GPD (see estimate calcs on other form)

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

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: _____ GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

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

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

Anticipated Wastewater Flow:

Estimate of Anticipated Design Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
Employees at place of employment with no showers	# Employees	-	12 GPD/Employee	-
Vacant				0
Proposed flow				
Employees at place of employment with no showers	# Employees	20	12 GPD/Employee	240 + 300 GPD for oil-water separator
Employees at place of employment with showers	# Employees		20 GPD/Employee	
Multiple Family Dwelling Units	Studio		120	
Multiple Family Dwelling Units	1-Bedroom		120	
Multiple Family Dwelling Units	2-Bedroom		180	
Multiple Family Dwelling Units	3-Bedroom		270	
Multiple Family Dwelling Units	4-Bedroom		360	
			Net Change	+ 540
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Oil water separator daily proposed flow estimation: ~300 gallons per day (see estimates below)

2-3 gallons per minute for pressure washer
20 minutes per boat wash-down = 60 gallons per boat
estimated 5 boats per day = ~300 gallons per day.

Department of Public Works
Mike Murray
Director

Date: September 23, 2024
Re: Wastewater Capacity Authorization
Address: 400 Commercial Street
Applicant: 400 Commercial LLC
Planner: Ameriz Gamez

Estimate of Anticipated Wastewater Flows				
Development	**Unit Size**	**Number of Units**	**Gallons per Day per Unit**	**Total Gallons per Day**
Proposed flow				
Employees at place of employment with no showers	# Employees	20	12 GPD/Employee	240
Warehouse – Indoor Boat Wash – Oil/Water Separator	See provided calculations			300
Net Change				**+ 540**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Comments:
The Department of Public Works, which includes the Water Resource Division, have reviewed and determined that the downstream sewers from the project address have the capacity to convey the estimated dry weather wastewater flows which will be generated from this development.

You are also reminded that new connections into the combined sewer system shall be equipped with backflow prevention in accordance with Section 2.6.10 of the City's Technical Manual.

If the City can be of further assistance, please contact me at 207-874-8840 or brad@portlandmaine.gov
Sincerely,

Bradley A. Roland, P.E.,
Senior Project Engineer

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) WCZ

All Projects:

	Required	Proposed
Lot Size	None	130,199 sf
Area Per Dwelling Unit	N/A	-
Minimum Street Frontage	75'	176'
Front Yard Minimum	None	-
Front Yard Maximum	None	-
Rear Yard	None	-
Yard Right	None	-
Yard Left	None	-
Side Street Setback	10' first floor	157'
Step Back	None	-
Maximum Lot Coverage	100%	55%
Minimum Lot Coverage	None	-
Maximum Height	50'	24'
Open Space	55% marine use	72%
Maximum Impervious Area	100%	55%
Pavement Setback	None	-
Floor Area Ratio	55% marine use	78%
Off Street Parking Spaces	None	25
Loading Bays	-	-
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) WCZ

All Projects:

	Required	Proposed
Lot Size	None	130,199 sf
Area Per Dwelling Unit	N/A	-
Minimum Street Frontage	75'	176'
Front Yard Minimum	None	-
Front Yard Maximum	None	-
Rear Yard	None	-
Yard Right	None	-
Yard Left	None	-
Side Street Setback	10' first floor	157'
Step Back	None	-
Maximum Lot Coverage	100%	55%
Minimum Lot Coverage	None	-
Maximum Height	50'	24'
Open Space	55% marine use	72%
Maximum Impervious Area	100%	55%
Pavement Setback	None	-
Floor Area Ratio	55% marine use	78%
Off Street Parking Spaces	None	25
Loading Bays	-	-
Other 1		
Other 2		
Other 3		

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

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

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

October 18, 2024

Jay Hibbard
King Tide Development Company
400 Commercial St
Portland, Maine 04101

Kyle Berwick
Trillium Engineering, Inc.
189 Main Street, STE 200
Yarmouth, Maine 041096

Project Name: 400 Commercial Street
Address: 400 Commercial Street

Project ID:PL-002826-2024
CBL: 042 E001001

Applicant: Trillium Engineering, Inc.
Planner: Ameriz Gamez

Dear Jay Hibbard and Kyle Berwick:

On October 22, 2024 the Planning Board approved a major site plan application for the replacement of the existing 2,775 square foot building with a new 21,000 square foot boat storage structure. The project would involve the demolition multiple structures. The buildings being demolition include a 613 square foot shed, a portion on the office building and a 2,775 square foot building which is to be replaced with the proposed structure. The Planning Board reviewed the proposal for conformance with the standards of the Site Plan Ordinance, Ch. 14, Article 14, Section 14.6. 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 adopted the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing on October 22, 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 (X-X) to approve the application with the following conditions as presented below.

Site Plan Review

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 Section IX of the Planning Board Report for the public hearing on October 22, 2024, which is attached hereto and incorporated herein by reference. The Planning Board voted (X-X) to find that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall submit an updated site plan, detail specifications, and signage package to the Planning Authority, providing a public sidewalk along the property's Commercial Street frontage, public on-street parking, and information on parking restrictions for this on-street parking. Updated plans and materials shall be reviewed and approved by the Planning Authority and Department of Public Works.
2. The applicant shall submit an updated site plan demonstrating compliance with the City's site landscaping requirements as listed under Sec. 14.6.2. C. in the City of Portland Land Use Code, and in Sec. 4 of the City of Portland Technical Manual. Updated plans shall be reviewed and approved by the Planning Authority and the City Arborist.
3. The applicant shall enter into a revocable license agreement with the City to extend the proposed private sewer lateral within City property.

PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY

4. The applicant shall submit a fee in-lieu of providing five street trees along the property's Commercial Street frontage, for a total contribution of $2,000 into the City's Tree Fund.

The approval is based on the submitted plans and findings related to site plan review, as contained in the Planning Board report dated October 22, 2024 for application #PL 0028262024 which is attached.

Standard Procedures

Note: The following standard procedures and requirements apply to all approved site plans:

1. Subdivision Recording Plat A final recording plat, listing all conditions of subdivision approval, must be submitted to the Planning and Urban Development Department for review. Once approved, the plat shall be signed by the Planning Board. A performance guarantee must be issued prior to release of the recording plat for recording at the Cumberland County Registry of Deeds. One mylar copy of

the recording plat with signatures and the recorded book and page must be returned to the Planning and Urban Development Department.

2. Subdivision Waivers Pursuant to 30-A MRSA section 4406(B)(1), any waiver must be specified on the subdivision plan or outlined in a notice. The plan or notice must be recorded in the Cumberland County Registry of Deeds within two (2) years of the final subdivision approval.

3. Site Plan Expiration The site plan approval will be deemed to have expired unless work has commenced within one (1) year of the approval or within a time period up to three (3) years from the approval date as agreed upon in writing by the City and the applicant. Requests to extend approvals must be received before the one (1) year expiration date.

4. Subdivision Expiration Subdivision approval is valid for up to three (3) years from the date of Planning Board approval.

5. 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.

6. 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.

7. Construction Management Plans The applicant, contractor and subcontractors are required to conform to the approved Construction Management Plan, and all conditions contained within the project's approval, for the entire duration of the project. Any amendments to the approved Construction Management Plan shall be reviewed and approved by the Department of Public Works prior to the execution. The Planning Authority and the Department of Public Works have the right to seek revisions to an approved Construction Management Plan. The applicant shall coordinate the project's construction schedule with the timing of nearby construction activities to avoid cumulative impacts on a neighborhood and prevent unsafe vehicle and pedestrian movements. Accordingly, nearby construction activities could involve a delay in the commencement of construction.

8. 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.

9. Department of Public Works Permits If work or obstructions will occur within the public 389 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.)

10. 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.

11. 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.

12. 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.

13. Defect Guarantee A defect guarantee, consisting of 10% of the performance guarantee, must be posted before the performance guarantee will be released.

14. 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.

15. 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.

16. 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)874-8901 or DRC@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 Ameriz Gamez at (207) 874-8632 or via Agamez@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

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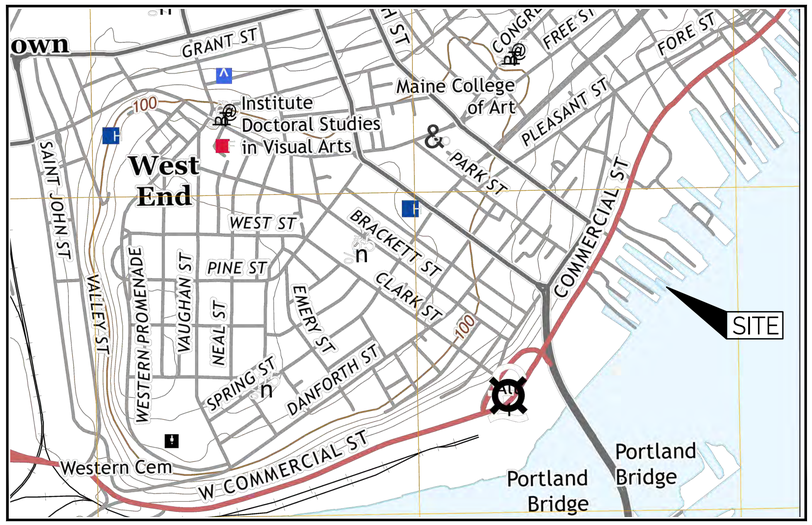
400 COMMERCIAL ST.

PORTLAND, ME

FEBRUARY 2024



LOCUS MAP
NOT TO SCALE

DRAWING LIST

C100	EXISTING SITE PLAN
C101	PROPOSED SITE & UTILITIES PLAN
C200	SITE DETAILS
C300	EROSION CONTROL DETAILS

OWNER:

400 COMMERCIAL LLC
400 COMMERCIAL ST.
PORTLAND, ME 04101

CONSULTANTS:

TRILLIUM ENGINEERING GROUP
189 MAIN STREET
YARMOUTH, ME 04096

ARCHETYPE
48 UNION WHARF
PORTLAND, ME 04101

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

CLIENT:
400 COMMERCIAL LLC

PORTLAND, MAINE

PRELIMINARY
NOT FOR CONSTRUCTION

400 COMMERCIAL ST.
COMMERCIAL ST. PORTLAND, MAINE

PROPOSED SITE ALTERATIONS

ISSUED

No.	DESCRIPTION	DR BY	CHD BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24

SHEET TITLE:

COVER SHEET

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

Co

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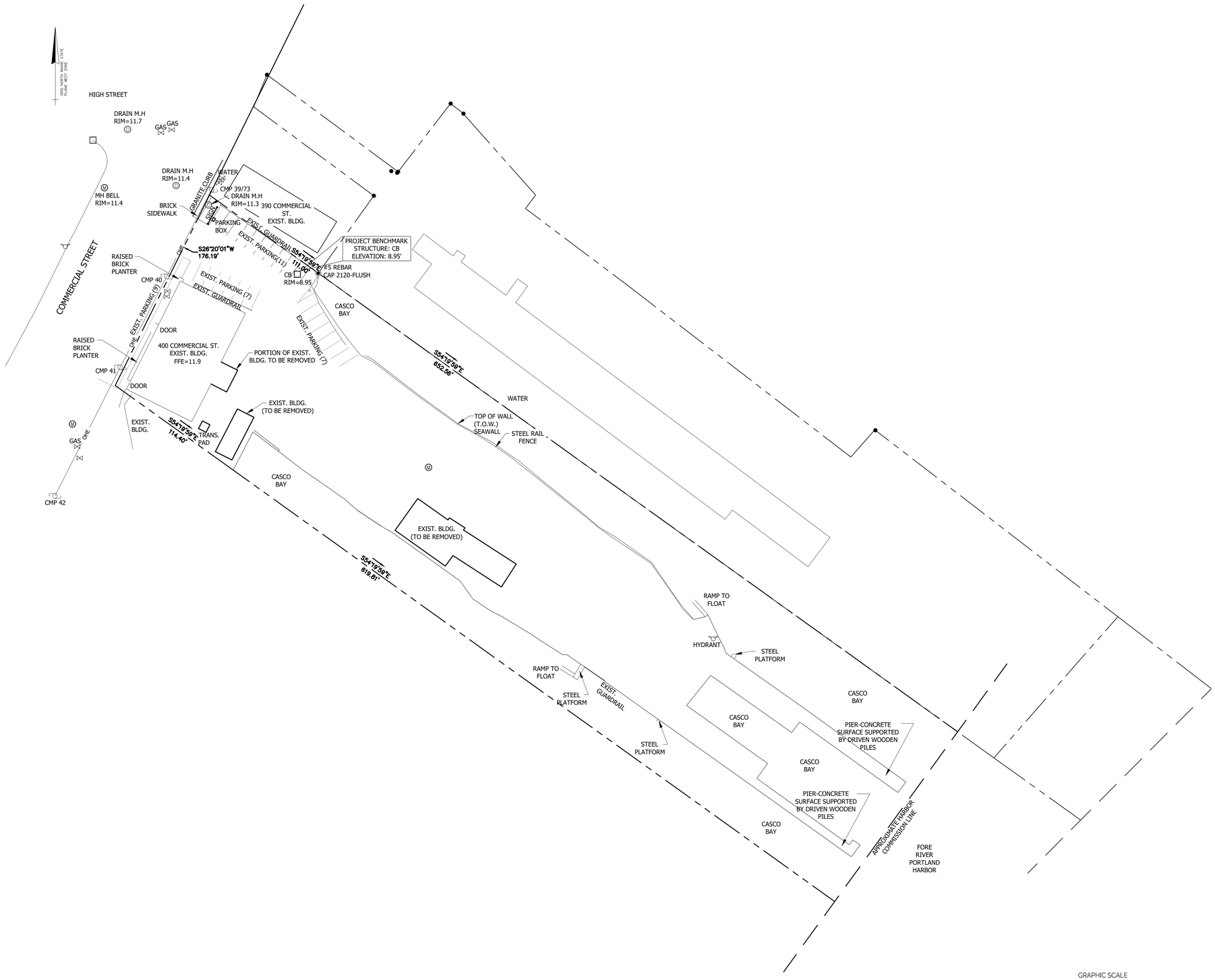

GRAPHIC SCALE

40 0 40 80

1 inch = 40 ft.

GENERAL NOTES

1) BOUNDARY AND TOPOGRAPHY INFO. TAKEN FROM **ART COLVIN – TRILLIUM ENGINEERING GROUP** DATED **DATE.**

2) THE CONTRACT WORK TO BE PERFORMED ON THIS PROJECT CONSISTS OF FURNISHING ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, IMPLEMENTS, PARTS AND SUPPLIES NECESSARY FOR OR APPURTENANT TO, THE INSTALLATION OF CONSTRUCTION IMPROVEMENTS IN ACCORDANCE WITH THESE DRAWINGS AND AS FURTHER ELABORATED IN ANY ACCOMPANYING SPECIFICATIONS.

3) THE WORK SHALL BE PERFORMED IN A THOROUGH WORKMANLIKE MANNER. ALL CONTRACTORS TO CONFORM TO ALL APPLICABLE OSHA STANDARDS. ANY REFERENCE TO A SPECIFICATION OR DESIGNATION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, FEDERAL SPECIFICATIONS, OR OTHER STANDARDS, CODES OR ORDERS, REFERS TO THE MOST RECENT OR LATEST SPECIFICATION OR DESIGNATION.

4) ALL CONSTRUCTION WITHIN THE TOWN RIGHT OF WAY SHALL COMPLY WITH TOWN PUBLIC WORKS STANDARDS. ALL CONSTRUCTION WITHIN A STATE RIGHT OF WAY SHALL COMPLY WITH MAINE D.O.T. STANDARDS. ALL UTILITY CONSTRUCTION SHALL CONFORM TO RESPECTIVE UTILITY STANDARDS.

5) THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY THE TOWN PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE TOWN REQUIRED TO PERFORM ALL THE WORK (STREET OPENINGS, BUILDING PERMIT, ETC.). THE CONTRACTOR SHALL POST ALL BONDS AS REQUIRED, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.

6) PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR IS TO INFORM ALL AREA UTILITY COMPANIES AND GOVERNMENTAL AGENCIES OF PLANNED CONSTRUCTION. THE SITE CONTRACTOR IS REQUIRED TO CONTACT DIG-SAFE (1-800-225-4977) AT LEAST 3 BUSINESS DAYS PRIOR TO ANY EXCAVATION TO VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.

7) THE PROJECT DRAWINGS ARE GENERALLY SCHEMATIC AND INDICATE THE POSSIBLE LOCATION OF EXISTING UNDERGROUND UTILITIES. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY MAPS, MUNICIPAL RECORD MAPS, AND FIELD SURVEY. IT IS NOT GUARANTEED TO BE CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES, WHEN THOSE SERVICES ARE TO BE LEFT IN PLACE. THE CONTRACTOR IS TO PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING THE EXCAVATING AND BACKFILLING OPERATIONS. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE FOUND, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH THE WORK IN THIS AREA.

8) OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOISTS, ETC. WITHIN TEN FEET (10') OF ANY ELECTRIC LINE. IF THE CONTRACTOR MUST OPERATE CLOSER THAN 10', THE CONTRACTOR MUST CONTACT THE POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS BEFORE ENCROACHING ON THIS REQUIREMENT.

9) IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLANS, APPROVALS, AND DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE SITE CONDITIONS IN THE FIELD AND CONTACT THE DESIGN ENGINEER IF THERE ARE ANY DISCREPANCIES REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT AN APPROPRIATE REVISION CAN BE MADE PRIOR TO BIDDING.

10) THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF THE BUILDING AREA. BUILDING AND DRIVEWAYS SHOWN ARE CONCEPTUAL. ALL SITE DIMENSIONS ARE REFERENCED TO PROPERTY LINES, THE FACE OF CURBS, OUTSIDE FACE OF WALLS, OR EDGE OF PAVING UNLESS OTHERWISE NOTED.

11) ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED IN WRITING BY THE OWNER, DESIGN ENGINEER, AND APPROPRIATE GOVERNMENTAL AGENCY PRIOR TO INSTALLATION.

12) THE CONTRACTOR SHALL RESTORE ALL UTILITY STRUCTURES, PIPE, UTILITIES, PAVEMENT, CURBS, SIDEWALKS, AND LANDSCAPED AREAS DISTURBED BY CONSTRUCTION TO AS GOOD AS BEFORE BEING DISTURBED AS DETERMINED BY CITY CODE ENFORCEMENT OFFICIALS. ANY DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

13) ALL EXCAVATION SHALL BE BACKFILLED TO EXISTING GRADE BEFORE THE END OF THE DAY OR ADEQUATELY PROTECTED FROM DANGER TO HUMANS AND ANIMALS.

14) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE OWNER WILL PROVIDE A BENCH MARK AT THE CONSTRUCTION SITE FROM WHICH TO BEGIN LAYOUT.

15) THE CONTRACTOR SHALL GUARANTEE THE FAITHFUL REMEDY OF ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND GUARANTEES PAYMENT FOR ANY RESULTING DAMAGE WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

16) THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.

17) A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, DESIGNERS, TOWN OFFICIALS AND CONTRACTOR SHALL BE REQUIRED BEFORE ANY CONSTRUCTION OCCURS ON THE PROJECT. DURING CONSTRUCTION THERE SHALL BE WEEKLY PROGRESS MEETINGS WITH THE OWNER (ON SITE OR TELECONFERENCE) UNTIL PROJECT COMPLETION.

18) PROPER IMPLEMENTATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE OF PARAMOUNT IMPORTANCE FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR STATE/LOCAL/ FEDERAL INSPECTORS AT NO ADDITIONAL COST TO THE OWNER.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
□	GRANITE MONUMENT – 3" OFFSET	■
IPF	IRON PIN FOUND/SET	IPS
IRF	IRON ROD FOUND	
CIRF	CAPPED IRON ROD FOUND	
DHF	DRILL HOLE FOUND	
MON	GRANITE MONUMENT FOUND	
	STREET LINE	
	LOT SETBACKS	
	PROPERTY LINE	
	ABUTTER LINE	
	"NO CUT" BUFFER	
	WETLANDS	
	EDGE OF ROAD/TRAVELED WAY	
TP 69	SOIL TEST PIT	TP 69
101	CONTOUR	101
327x60 x 327.6	SPOT GRADE	327x60 x 327.6
GAS	GAS SHUT-OFF	
UP	UTILITY POLE	
OE	OVERHEAD ELECTRICAL	OE
UE&T	UNDERGROUND ELECTRICAL	UE&T
T	ELECTRICAL TRANSFORMER	T
	FIRE HYDRANT	
8"-W 8" W	WATER LINE	8"-W 8" W
WG	WATER GATE	
12" S	SEWER LINE	12" S
SMH	SEWER MANHOLE	SMH-1
DMH	DRAINAGE MANHOLE	DMH-1
CB	CATCH BASIN	CB-1
UD/SD	UNDERDRAIN/STORMDRAIN	UD/SD
UD	UNDERDRAIN	UD
	SILT FENCE	SF
	TEMP. STONE CHECK DAM	
	GRADING AND FLOW DIRECTION	
	HAY BALES	
	EROSION CONTROL BLANKET	
	STORMWATER BOUNDARY	
	STORMWATER FLOW (T_c)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
	TREE LINE	
	SITE LIGHTING (BAYSIDE FIXTURE)	
	STONE WALL	

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

CLIENT:

400 COMMERCIAL LLC

PORTLAND, MAINE

PRELIMINARY
NOT FOR CONSTRUCTION

400 COMMERCIAL ST.
COMMERCIAL ST. PORTLAND, MAINE

PROPOSED SITE ALTERATIONS

ISSUED

No.	DESCRIPTION	DR BY	CHD BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24

SHEET TITLE:

EXISTING SITE PLAN

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C100

EXISTING SITE PLAN

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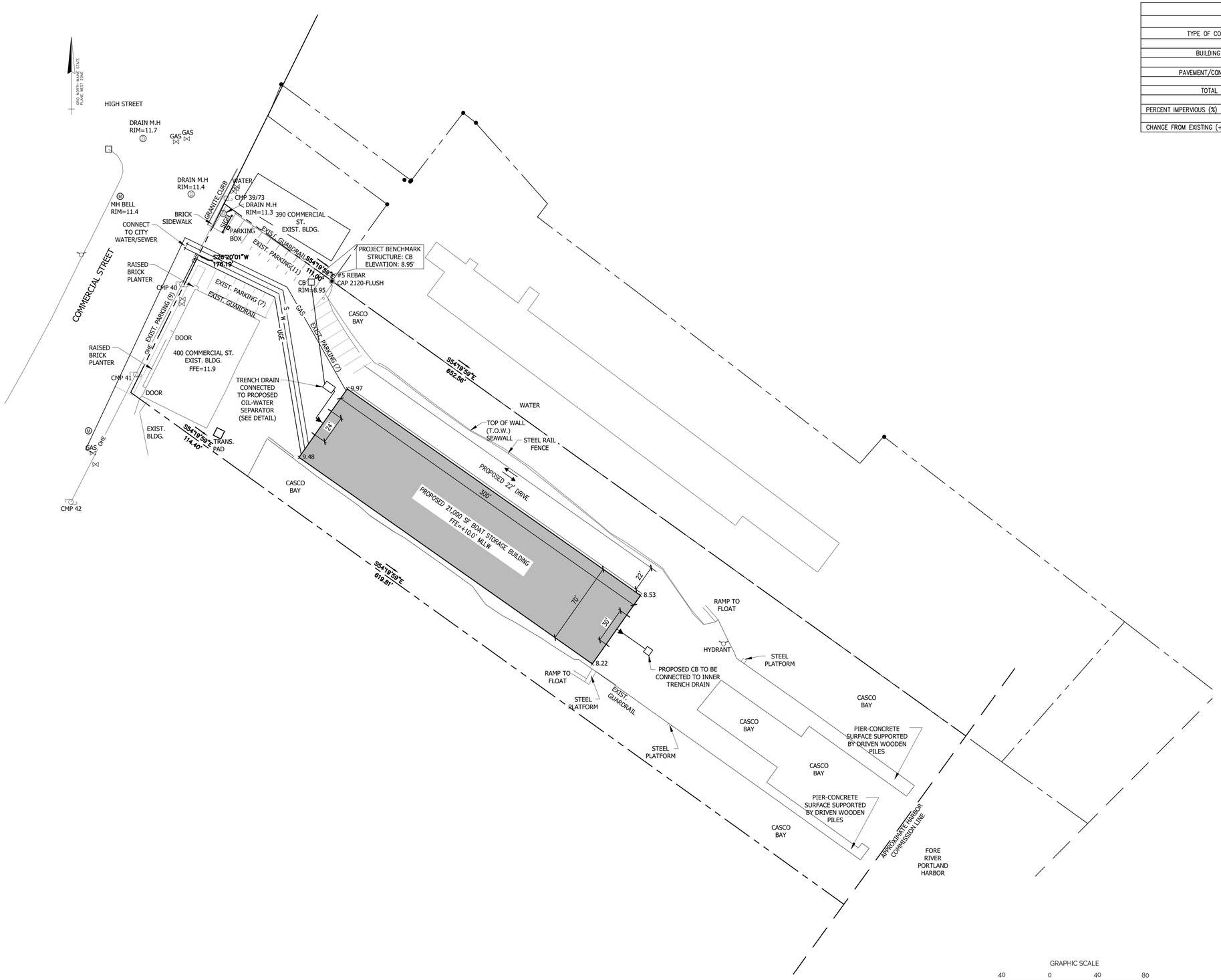
IMPERVIOUS AREA TABLE		
LOT AREA: 130,199 SF		
TYPE OF COVER	EXISTING IMP. AREA (SF)	PROPOSED IMP. AREA (SF)
BUILDING	9,748	27,059
PAVEMENT/CONCRETE	61,896	44,585
TOTAL	71,644	71,644
PERCENT IMPERVIOUS (%)	55%	55%
CHANGE FROM EXISTING (+/–)	–	0



GRAPHIC SCALE

40 0 40 80

1 inch = 40 ft.

LEGEND		
EXISTING	DESCRIPTION	PROPOSED
□	GRANITE MONUMENT – 3" OFFSET	■
○ IPF	IRON PIN FOUND/SET	○ IPS
○ IRF	IRON ROD FOUND	
☼ CIRF	CAPPED IRON ROD FOUND	
◉ DHF	DRILL HOLE FOUND	
□ MON	GRANITE MONUMENT FOUND	
	STREET LINE	
	LOT SETBACKS	
	PROPERTY LINE	
	ABUTTER LINE	
	"NO CUT" BUFFER	
	WETLANDS	
	EDGE OF ROAD/TRAVELED WAY	
TP 69	SOIL TEST PIT	TP 69
101	CONTOUR	101
327x60 x 327.6	SPOT GRADE	327x60 x 327.6
GAS	GAS SHUT-OFF	
UP UP	UTILITY POLE	
OE	OVERHEAD ELECTRICAL	OE
UE&T	UNDERGROUND ELECTRICAL	UE&T
T	ELECTRICAL TRANSFORMER	T
	FIRE HYDRANT	
8"-W 8" W	WATER LINE	8"-W 8" W
WG	WATER GATE	
12" S	SEWER LINE	12" S
SMH	SEWER MANHOLE	SMH-1
DMH	DRAINAGE MANHOLE	DMH-1
CB	CATCH BASIN	CB-1
UD/SD	UNDERDRAIN/STORMDRAIN	UD/SD
UD	UNDERDRAIN	UD
	SILT FENCE	SF
	TEMP. STONE CHECK DAM	
	GRADING AND FLOW DIRECTION	
	HAY BALES	
	EROSION CONTROL BLANKET	
	STORMWATER BOUNDARY	
	STORMWATER FLOW (Tc)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
	TREE LINE	
	SITE LIGHTING (BAYSIDE FIXTURE)	
	STONE WALL	

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ISSUED

SHEET TITLE:

PROPOSED SITE & UTILITIES PLAN

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C101

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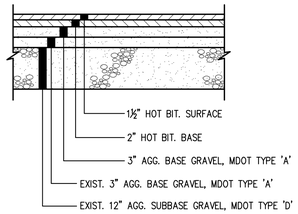
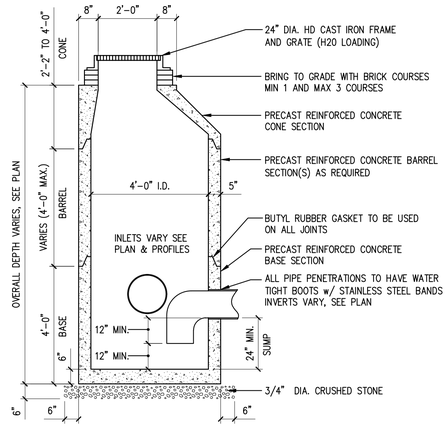


TYPICAL PAVED SECTION

SCALE: NTS

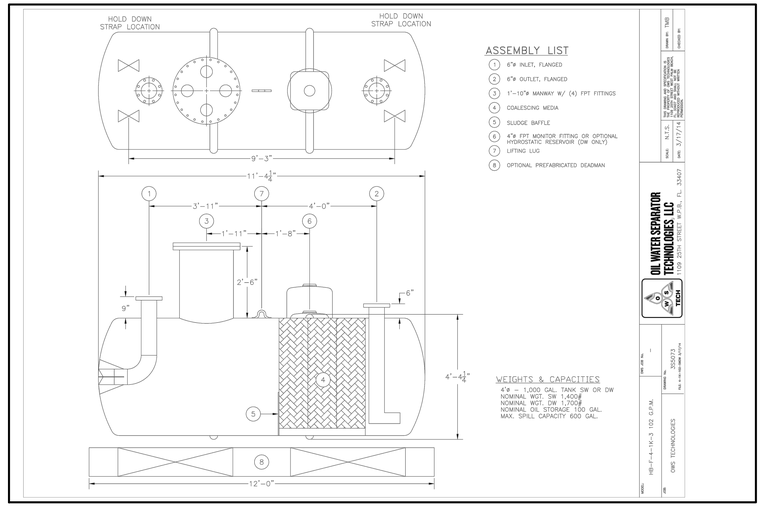


NOTES:
1. CONCRETE 4000 PSI AFTER 28 DAYS.
2. REINFORCING H-20 LOADING 4x4 / 4x4 WWM. SLAB TOP - NO. 5 BARS.
3. EACH CASTING TO HAVE LIFTING HOLES TO BE FILLED WITH NON-SHINK MORTAR.

OFFSET CONE STREET BASIN, W/ CASCO TRAP

CATCH BASIN DETAIL

SCALE: NTS



EXAMPLE OF POTENTIAL OIL WATER SEPARATOR DETAIL

SCALE: NTS

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SHEET TITLE:

SITE DETAILS

DESIGNED:	ED
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DATE:	OCT 2023
PROJECT NUMBER:	23-188

C200

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EROSION AND SEDIMENTATION NOTES

1. THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR DEALING WITH SOIL EROSION AND SEDIMENTATION DURING AND AFTER PROJECT CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARD AND SPECIFICATIONS FOR EROSION PREVENTION AS CONTAINED IN THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: "MAINE EROSION AND SEDIMENT CONTROL BMPs" PUBLISHED BY THE MAINE DEP, LATEST EDITION.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES

1. EROSION/SEDIMENT CONTROL DEVICES
   THE FOLLOWING EROSION SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

1.1 SILT FENCE: SILT FENCE WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE IS STABILIZED. IN AREAS WHERE STORMWATER DISCHARGES THE SILT FENCE WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SILT FENCE AND TO PROVIDE ADDITIONAL TREATMENT.

1.2 HAY BALES TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE HAY BALES IN FLOWING WATER OR STREAMS.

1.3 RIPRAP: PROVIDE RIPRAP IN AREAS WHERE CULVERTS DISCHARGE OR AS SHOWN ON THE PLANS.

1.4 LOAM, SEED, & MULCH: ALL DISTURBED AREAS, WHICH ARE NOT OTHERWISE TREATED, SHALL RECEIVE PERMANENT SEEDING AND MULCH TO STABILIZE THE DISTURBED AREAS. THE DISTURBED AREAS WILL BE REVEGETATED WITHIN 5 DAYS OF FINAL GRADING. SEEDING REQUIREMENTS ARE PROVIDED AT THE END OF THIS SPECIFICATION.

1.5 STRAW AND HAY MULCH; USED TO COVER DENUDED AREAS UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. ALL OTHER SLOPES MUST BE COVERED WITH JUTE MESH OVER MULCH, OR CURLEX II OR EXCELSIOR MAY BE USED IN PLACE OF JUTE MESH AND MULCH OVER LOAM AND SEED.

1.6 MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.

2. TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES
   PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION OF THE DEVELOPMENT:

2.1 SILTATION FENCE ALONG THE DOWNGRADIENT SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SILTATION FENCE WILL REMAIN IN PLACE UNTIL THE SITE IS 85% REVEGETATED.

2.2 HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SILT FENCE.

2.3 PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION AS FOLLOWS:

A. SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
B. AVOID PLACING TEMPORARY STOCKPILES IN AREAS WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES. SEE ITEM 3 IN CONSTRUCTION PHASE NOTES BELOW.
C. STABILIZE STOCKPILES WITHIN 15 DAYS BY TEMPORARILY SEEDING WITH A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.
D. SURROUND STOCKPILE SOIL WITH SILTATION FENCE AT BASE OF PILE.

2.4 ALL DENUDED AREAS WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE BUILDING PAD, OR PARKING AND DRIVEWAY SUBBASE AREA SHALL RECEIVE MULCH WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL OR WITHIN 15 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOD WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED.

2.5 IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.

2.6 TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

3. PERMANENT EROSION CONTROL MEASURES
   THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/SEDIMENTATION CONTROL PLAN:

3.1 ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

3.2 SLOPES GREATER THAN 2:1 WILL RECEIVE RIPRAP.

CONSTRUCTION PHASE

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

1. ONLY THOSE AREAS UNDER ACTIVE CONSTRUCTION WILL BE CLEARED AND LEFT IN AN UNTREATED OR UNVEGETATED CONDITION. IF FINAL GRADING, LOAMING AND SEEDING WILL NOT OCCUR WITHIN 15 DAYS, SEE ITEM NO. 4.
2. PRIOR TO THE START OF CONSTRUCTION IN A SPECIFIC AREA, SILT FENCING AND/OR HAY BALES WILL BE INSTALLED AT THE TOE OF SLOPE AND IN AREAS AS LOCATED ON THE PLANS TO PROTECT AGAINST ANY CONSTRUCTION RELATED EROSION. IMMEDIATELY FOLLOWING CONSTRUCTION OF CULVERTS AND SWALES, RIP RAP APRONS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
3. TOPSOIL WILL BE STOCKPILED WHEN NECESSARY IN AREAS WHICH HAVE MINIMUM POTENTIAL FOR EROSION AND WILL BE KEPT AS FAR AS POSSIBLE FROM THE EXISTING DRAINAGE COURSE. NO STOCKPILE SHALL BE CLOSER THEN 100' OF A RESOURCE INCLUDING, BUT NOT LIMITED TO, WETLANDS, STREAMS, AND OPEN WATER BODIES. ALL STOCKPILES SHALL HAVE A SILTATION FENCE BELOW THEM REGARDLESS OF TIME OF PRESENCE. ALL STOCKPILES EXPECTED TO REMAIN LONGER THAN 15 DAYS SHALL BE:
   A. TREATED WITH ANCHORED MULCH (WITHIN 5 DAYS OF THE LAST DEPOSIT OF STOCKPILED SOIL).
   B. SEEDED WITH CONSERVATION MIX AND MULCHED IMMEDIATELY.
   C. INSTALL SILT FENCE AROUND STOCKPILE AT BASE OF PILE.
   STOCKPILES TO HAVE SILT FENCE INSTALLED AT TIME OF ESTABLISHMENT AT BASE OF PILE.
4. ALL DISTURBED AREAS EXPECTED TO REMAIN LONGER THAN 30 DAYS SHALL BE EITHER:
   A. TREATED WITH ANCHORED MULCH IMMEDIATELY, OR
   B. SEEDED WITH CONSERVATION MIX OF ANNUAL RYE GRASS (0.9 LBS/1000 SQ. FT) AND MULCHED IMMEDIATELY.
5. ALL GRADING WILL BE HELD TO A MAXIMUM 2:1 SLOPE WHERE PRACTICAL. ALL SLOPES WILL BE STABILIZED WITH PERMANENT SEEDING, OR WITH STONE, WITHIN 5 DAYS AFTER FINAL GRADING IS COMPLETE. (SEE POST-CONSTRUCTION REVEGETATION FOR SEEDING SPECIFICATION.)
6. ALL CULVERTS WILL BE PROTECTED WITH STONE RIPRAP (D50 = 6" UNLESS OTHERWISE SPECIFIED) AT INLETS AND OUTLETS.

POST-CONSTRUCTION REVEGETATION

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION AS SOON AS AN AREA IS READY TO UNDERGO FINAL GRADING.

1. A MINIMUM OF 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND GRADED TO A UNIFORM DEPTH AND NATURAL APPEARANCE, OR STONE WILL BE PLACED ON SLOPES TO STABILIZE SURFACES.
2. IF FINAL GRADING IS REACHED DURING THE NORMAL GROWING SEASON (4/15 TO 9/15), PERMANENT SEEDING WILL BE DONE AS SPECIFIED BELOW. PRIOR TO SEEDING, LIMESTONE SHALL BE APPLIED AT A RATE OF 138 LBS/1000 SQ. FT. AND 10:20:20 FERTILIZER AT A RATE OF 18.4 LBS/1000 SQ.FT WILL BE APPLIED. BROADCAST SEEDING AT THE FOLLOWING RATES:

LAWNS	SWALES
KENTUCKY BLUEGRASS 0.46 LBS/1000 SF.	RED TOP 0.05 LBS/1000 SF.
CREEPING RED FESCUE 0.46 LBS/1000 SF.	TALL FESCUE 0.46 LBS/1000 SF.
PERENNIAL RYE GRASS 0.11 LB/1000 SF.	

3. AN AREA SHALL BE MULCHED IMMEDIATELY AFTER IS HAS BEEN SEEDED. MULCHING SHALL CONSIST OF HAY MULCH, HYDRO-MULCH, JUTE NET OVER MULCH, PRE-MANUFACTURED EROSION MATS OR ANY SUITABLE SUBSTITUTE DEEMED ACCEPTABLE BY THE DESIGNER.
   A. HAY MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. HAY MULCH SHALL BE SECURED BY EITHER: (NOTE: SOIL SHALL NOT BE VISIBLE)
      I. BEING DRIVEN OVER BY TRACKED CONSTRUCTION EQUIPMENT ON GRADES OF 5% AND LESS.
      II. BLANKETED BY TACKED PHOTODEGRADABLE/BIODEGRADABLE NETTING, OR WITH SPRAY, ON GRADES GREATER THAN 5%.
      III. SEE NOTE 6, GENERAL NOTES, AND NOTE 8, WINTER CONSTRUCTION.
   B. HYDRO-MULCH SHALL CONSIST OF A MIXTURE OF EITHER ASPHALT, WOOD FIBER OR PAPER FIBER AND WATER SPRAYED OVER A SEEDED AREA. HYDRO-MULCH SHALL NOT BE USED BETWEEN 9/15 AND 4/15.
4. CONSTRUCTION SHALL BE PLANNED TO ELIMINATE THE NEED FOR SEEDING BETWEEN SEPTEMBER 15 AND APRIL 15. SHOULD SEEDING BE NECESSARY BETWEEN SEPTEMBER 15 AND APRIL 15 THE FOLLOWING PROCEDURE SHALL BE FOLLOWED. ALSO REFER TO NOTE 9 OF WINTER CONSTRUCTION.
   A. ONLY UNFROZEN LOAM SHALL BE USED.
   B. LOAMING, SEEDING AND MULCHING WILL NOT BE DONE OVER SNOW OR ICE COVER. IF SNOW EXISTS, IT MUST BE REMOVED PRIOR TO PLACEMENT OF SEED.
   C. WHERE PERMANENT SEEDING IS NECESSARY, ANNUAL WINTER RYE (1.2 LBS/1000 SQ.FT) SHALL BE ADDED TO THE PREVIOUSLY NOTED AREAS.
   D. WHERE TEMPORARY SEEDING IS REQUIRED, ANNUAL WINTER RYE (2.6 LBS/1000 SQ. FT.) SHALL BE SOWN INSTEAD OF THE PREVIOUSLY NOTED SEEDING RATE.
   E. FERTILIZING, SEEDING AND MULCHING SHALL BE APPLIED TO LOAM THE DAY THE LOAM IS SPREAD BY MACHINERY.
   F. ALTERNATIVE HAY MULCH SHALL BE SECURED WITH PHOTODEGRADABLE/BIODEGRADABLE NETTING. TRACKING BY MACHINERY ALONE WILL NOT SUFFICE.
5. FOLLOWING FINAL SEEDING, THE SITE WILL BE INSPECTED EVERY 30 DAYS UNTIL 85% COVER HAS BEEN ESTABLISHED. RESEEDING WILL BE CARRIED OUT BY THE CONTRACTOR WITHIN 10 DAYS OF NOTIFICATION BY THE ENGINEER THAT THE EXISTING CATCH IS INADEQUATE.

MONITORING SCHEDULE

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING, MONITORING, MAINTAINING, REPAIRING, REPLACING AND REMOVING ALL OF THE EROSION AND SEDIMENTATION CONTROLS OR APPOINTING A QUALIFIED SUBCONTRACTOR TO DO SO.

MAINTENANCE MEASURES WILL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL. A VISUAL INSPECTION WILL BE MADE OF ALL EROSION AND SEDIMENTATION CONTROLS AS FOLLOWS:

1. HAY BALE BARRIERS, SILT FENCE, AND STONE CHECK DAMS SHALL BE INSPECTED AND REPAIRED ONCE A WEEK OR IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL. SEDIMENT TRAPPED BEHIND THESE BARRIERS SHALL BE EXCAVATED WHEN IT REACHES A DEPTH OF 6" AND REDISTRIBUTED TO AREAS UNDERGOING FINAL GRADING. SHOULD THE HAY BALE BARRIERS PROVE TO BE INEFFECTIVE, THE CONTRACTOR SHALL INSTALL SILT FENCE BEHIND THE HAY BALES.
2. VISUALLY INSPECT RIPRAP ONCE A WEEK OR AFTER EACH SIGNIFICANT RAINFALL AND REPAIR AS NEEDED. REMOVE SEDIMENT TRAPPED BEHIND THESE DEVICES ONCE IT ATTAINS A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE DAM OR RISER. DISTRIBUTE REMOVED SEDIMENT OFF-SITE OR TO AN AREA UNDERGOING FINAL GRADING.
3. REVEGETATION OF DISTURBED AREAS WITHIN 25' OF DRAINAGE-COURSE/STREAM WILL BE SEEDED WITH THE "WILDFLOW AREA MIX" AND INSPECTED ON A WEEKLY BASIS OR AFTER EACH SIGNIFICANT RAINFALL AND RESEEDED AS NEEDED. EXPOSED AREAS WILL BE RESEEDED AS NEEDED UNTIL THE AREA HAS OBTAINED 100% GROWTH RATE. PROVIDE PERMANENT RIPRAP FOR SLOPES IN EXCESS OF 3:1 AND WITHIN 25' OF DRAINAGE COURSE.

EROSION CONTROL DURING WINTER CONSTRUCTION

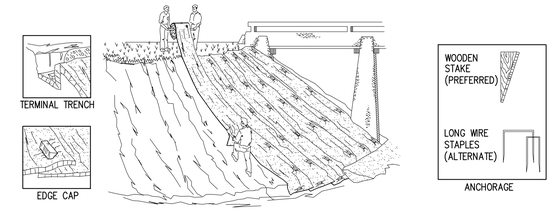
1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AT THE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1000 S.F. (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH. NOTE: AN AREA IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH GRAVEL (PARKING LOTS) OR STRUCTURAL SAND.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES 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 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW, DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SILT FENCE OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHOULD NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS BELOW 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.
8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1 THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
9. BETWEEN THE DATES OF OCTOBER 15 TO NOVEMBER 1, WINTER RYE IS RECOMMENDED FOR STABILIZATION. AFTER NOVEMBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
10. IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

SITE INSPECTION AND MAINTENANCE

1. WEEKLY INSPECTIONS, AS WELL AS ROUTINE INSPECTIONS FOLLOWING RAIN FALLS, SHALL BE CONDUCTED BY THE GENERAL CONTRACTOR OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES UNTIL FINAL ACCEPTANCE OF THE PROJECT (85% GRASS CATCH). NECESSARY REPAIRS SHALL BE MADE TO CORRECT UNDERMINING OR DETERIORATION. FINAL ACCEPTANCE SHALL INCLUDE A SITE INSPECTION TO VERIFY THE STABILITY OF ALL DISTURBED AREAS AND SLOPES. UNTIL FINAL INSPECTION, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL IMMEDIATELY BE CLEANED, AND REPAIRED BY THE GENERAL CONTRACTOR AS REQUIRED. DISPOSAL OF ALL TEMPORARY EROSION AND CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
   IT IS RECOMMENDED THAT THE OWNER HIRE THE SERVICES OF THE DESIGN ENGINEER TO PROVIDE COMPLIANCE INSPECTIONS (DURING ACTIVE CONSTRUCTION) RELATIVE TO IMPLEMENTATION OF THE STORMWATER AND EROSION CONTROL PLANS. SUCH INSPECTIONS SHOULD BE LIMITED TO ONCE A WEEK OR AS NECESSARY AND BE REPORTABLE TO THE OWNER, TOWN AND DEP.
2. SHORT-TERM SEDIMENTATION MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT ALL SWALES AND STRUCTURES PRIOR TO TURNING PROJECT OVER TO THE CITY.

MAINTENANCE AFTER CONSTRUCTION

1. LONG-TERM PROVISIONS FOR PERMANENT MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL FACILITIES AFTER ACCEPTANCE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER OR THEIR DESIGNEE. SUCH RESPONSIBILITIES INCLUDE BUT ARE NOT LIMITED TO THOSE DETAILED AS FOLLOWS:
   A. PARKING LOT SHALL BE MECHANICALLY SWEPT TWCE PER YEAR. THE FIRST SHALL TAKE PLACE IN THE MID WINTER (JANUARY THAW) TO REMOVE ACCUMULATED SANDS FROM WINTER SANDING TO THIS POINT. THE SECOND SWEEPING SHALL TAKE PLACE AFTER WINTER SANDING OPERATIONS TERMINATE BUT PRIOR TO MAY 1.
   B. INSPECTION OF STORMWATER OUTLET STRUCTURE SHOULD BE CONDUCTED TWCE PER YEAR. ACCESS TO THE STRUCTURE IS THROUGH THE TOP. THE OIL/WATER SEPARATOR UNIT SHALL BE PUMPED DOWN AND THE SEDIMENT AND TRASH SHALL BE REMOVED AT THE TIME OF THE INSPECTION. THE REMOVAL OF ALL SEDIMENT AND TRASH WILL HELP MINIMIZE VOLUME LOSS.
2. THE OWNER SHALL FILE A YEARLY MAINTENANCE REPORT TO THE CITY DOCUMENTING THE REQUIRED MAINTENANCE FOR THE STORMWATER SYSTEM.

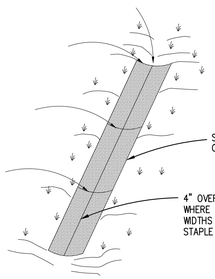


- UNROLL MAT ONTO GROUND IN DIRECTION OF WATER FLOW.
- MAT SHOULD LIE FLAT. DO NOT STRETCH MAT OVER GROUND. STRETCHING MAY CAUSE MAT TO BRIDGE DEPRESSIONS IN THE SURFACE AND ALLOW EROSION UNDERNEATH.
- BURY TRANSVERSE TERMINAL ENDS OF MAT TO SECURE AND PREVENT EROSIVE FLOW UNDERNEATH.
- SECURE MAT SNUGLY INTO ALL TRANSVERSE CHECK SLOTS.
- BACKFILL AND COMPACT TRENCHES AND CHECK SLOTS AFTER STAKING THE MAT IN BOTTOM OF TRENCH.
- OVERLAP ROLL ENDS BY THREE (3) FEET (MIN.) WITH UPSLOPE MAT ON TOP TO PREVENT UPLIFT OF MAT END BY WATER FLOW. IF INSTALLING IN THE DIRECTION OF A CONCENTRATED WATER FLOW, START NEW ROLLS IN A TRANSVERSE DITCH.
- OVERLAP ADJACENT EDGES OF MAT BY THREE (3) INCHES (MIN.) AND STAKE.
- WOOD STAKES ARE RECOMMENDED FOR PINNING MAT TO THE GROUND SURFACE. STAKES SHOULD BE 1" X 2" NOMINAL STOCK CUT IN A TRIANGULAR SHAPE. STAKES SHOULD BE 12" TO 18" LONG, DEPENDING ON SOIL DENSITY.
- DRIVE WOODEN STAKES TO WITHIN THREE (3) INCHES OF GROUND SURFACE. DO NOT DRIVE FLUSH TO SURFACE.
- IN ALL TRANSVERSE TERMINAL TRENCHES AND CHECK SLOTS, STAKE EACH MAT AT ITS CENTER AND OVERLAP EDGES BEFORE BACKFILLING AND COMPACTING.
- STAKE OVERLAPS LONGITUDINALLY AT THREE (3) TO FIVE (5) FOOT INTERVALS.
- FOLOW COLORED DOT PATTERNS BY MANUFACTURER

REQUIRED ON ALL SLOPES > 8% (WINTER CONSTRUCTION)
REQUIRED ON ALL SLOPES > 15% (SUMMER CONSTRUCTION)

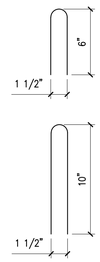
EROSION CONTROL BLANKET
GENERAL INSTALLATION GUIDELINES ON SLOPES

NTS



CONSTRUCTION NOTES:

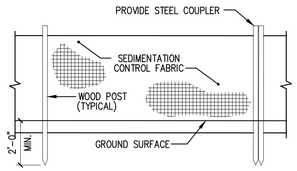
A. BURY THE TOP OF THE NETTING IN A TRENCH 6" OR MORE DEEP
B. TAM TRENCH FULL OF SOIL. SECURE WITH ROW OF STAPLES, 12" SPACING, 4" DOWN FROM THE TRENCH
C. OVERLAP- BURY UPPER END OF LOWER STRIP AS IN "A" & "B". OVERLAP END OF TOP STRIP 4" AND STAPLE
D. CHECK SLOT- FOLD OF NETTING BURIED IN SLIT TRENCH AND TAMPED; DOUBLE ROW OF STAPLES AT 12" SPACING. USE CHECK SLOTS AT 15' SPACING IN DITCHES OR STEEP SLOPES.

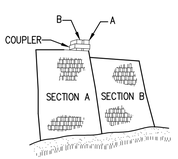


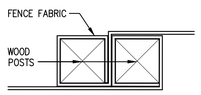
TYPICAL STAPLES NO. 11 GAUGE WIRE

EROSION CONTROL BLANKET
REQUIRED IN ALL DITCHES > 3%

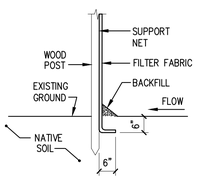
NOTE: GRADING PLAN GOVERNS IN ALL LOCATIONS





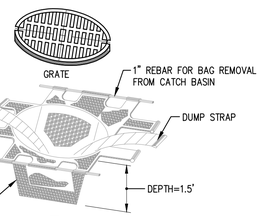


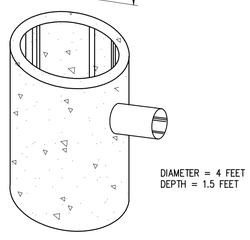
NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND

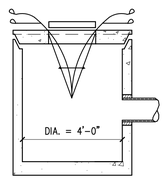


SILTATION FENCE DETAIL

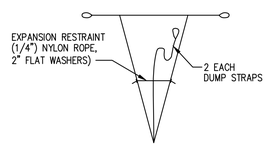
NTS







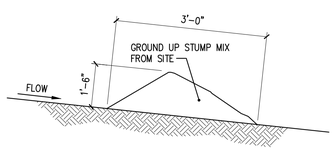
INSTALLATION DETAIL



BAG DETAIL

"SILTSACK" INSTALLATION INSTRUCTION

1. REMOVE THE CATCH BASIN GRATE AND PLACE THE SACK INTO THE OPENING. HOLD OUT APPROXIMATELY SIX (6) INCHES OF THE SACK BEYOND THE BASIN FRAME TO ALLOW ACCESS TO THE "SILTSACK" LIFTING STRAPS. REPLACING THE GRATE BACK INSIDE OF ITS FRAME WILL HOLD THE SACK IN PLACE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING THIS SEDIMENT CONTROL DEVICE. THE SACK IS CONSIDERED FULL AND READY TO EMPTY WHEN THE THE "RESTRAINT CORD" IS NO LONGER VISIBLE.
3. THE "SILTSACK" IS REMOVED BY PLACING TWO (2) PIECES IF 1 INCH DIAMETER REBAR THROUGH THE LIFTING LOOPS LOCATED ON EACH SIDE OF THE SACK AND LIFTING WITH AN APPROPRIATE PIECE OF CONSTRUCTION EQUIPMENT. THE LIFTING STRAPS ARE CONNECTED TO THE BOTTOM OF THE SACK AND THE LIFTING ACTION WILL CAUSE THE SACK TO TURN INSIDE OUT, AND EMPTYING THE CONTENTS. THE SACK SHOULD THEN BE CLEANED, RINSED AND RETURNED TO ITS ORIGINAL SHAPE AND PLACED BACK IN THE BASIN.
4. THE "SILTSACK" IS REUSABLE, THEREFORE, ONCE THE CONSTRUCTION CYCLE IS COMPLETE, REMOVE THE SACK FROM THE BASIN, CLEAN AND STORE OUT OF DIRECT SUNLIGHT UNTIL ITS NEXT USE.
5. THE "SILTSACK" SEDIMENT CONTROL DEVICE IS MANUFACTURED BY: ACF ENVIRONMENTAL



MAY BE USED IN LIEU OF SILT FENCE

EROSION CONTROL MIX DETAIL

N.T.S.

SILTATION FENCE INSTALLATION

1. EXCAVATE A 6"x6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM. JOIN SECTION AS SHOWN ABOVE.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPLISHED BY AN INTERCEPTION DITCH.
5. BARRIER SHALL BE MIRAFI SILT FENCE OR APPROVED EQUAL.

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

CLIENT:
400 COMMERCIAL LLC

PORTLAND, MAINE

PRELIMINARY
NOT FOR CONSTRUCTION

400 COMMERCIAL ST.
COMMERCIAL ST. PORTLAND, MAINE

PROPOSED SITE ALTERATIONS

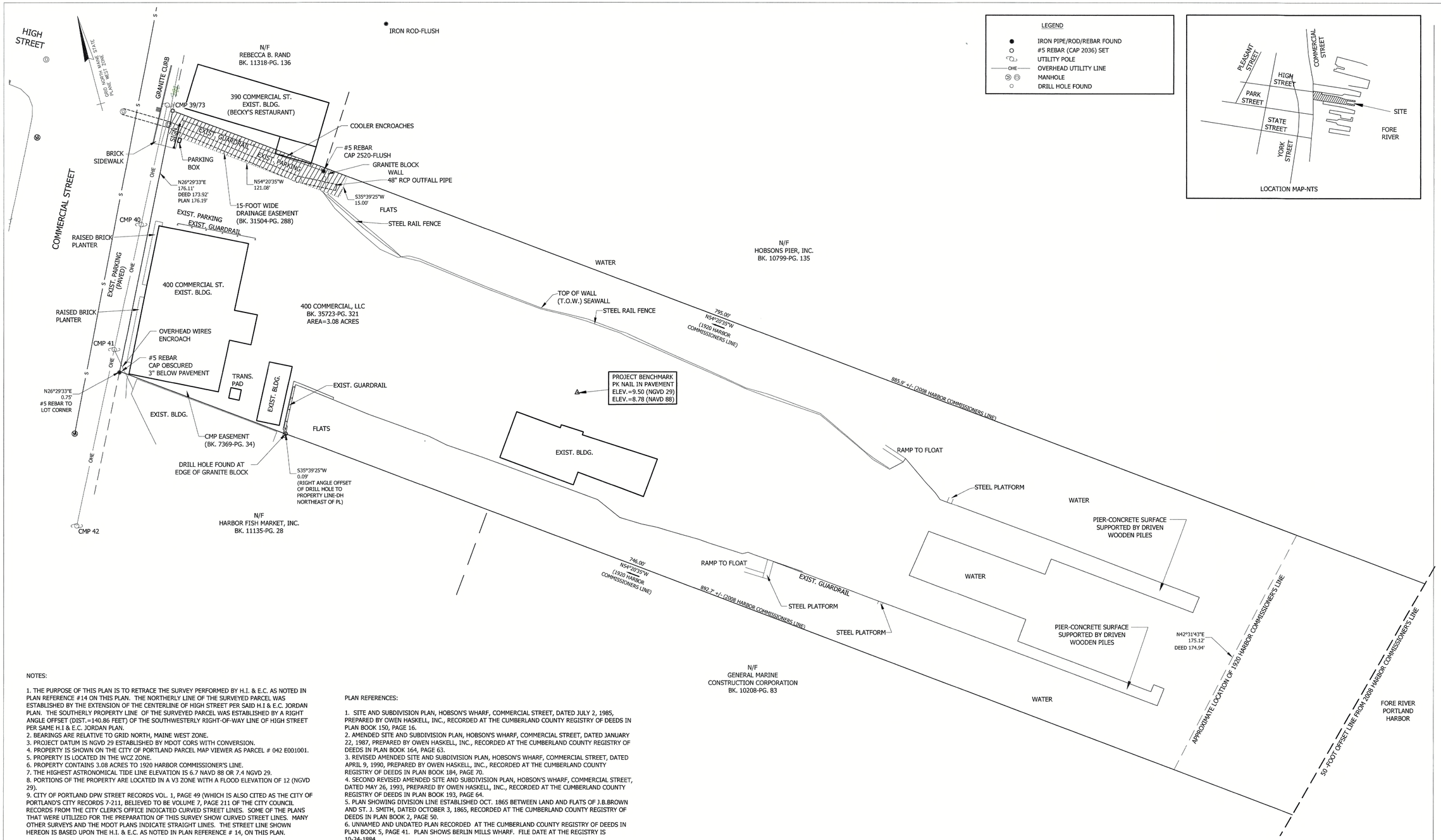
No.	DESCRIPTION	DR. BY	CKD. BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24

ISSUED

SHEET TITLE:
EROSION CONTROL DETAILS

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C300



LEGEND

- IRON PIPE/ROD/REBAR FOUND
- #5 REBAR (CAP 2036) SET
- UTILITY POLE
- OHE — OVERHEAD UTILITY LINE
- MANHOLE
- DRILL HOLE FOUND

LOCATION MAP-NTS

NOTES:

1. THE PURPOSE OF THIS PLAN IS TO RETRACE THE SURVEY PERFORMED BY H.I. & E.C. AS NOTED IN PLAN REFERENCE #14 ON THIS PLAN. THE NORTHERLY LINE OF THE SURVEYED PARCEL WAS ESTABLISHED BY THE EXTENSION OF THE CENTERLINE OF HIGH STREET PER SAID H.I & E.C. JORDAN PLAN. THE SOUTHERLY PROPERTY LINE OF THE SURVEYED PARCEL WAS ESTABLISHED BY A RIGHT ANGLE OFFSET (DIST.=140.86 FEET) OF THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF HIGH STREET PER SAME H.I & E.C. JORDAN PLAN.
2. BEARINGS ARE RELATIVE TO GRID NORTH, MAINE WEST ZONE.
3. PROJECT DATUM IS NGVD 29 ESTABLISHED BY MDOT CORS WITH CONVERSION.
4. PROPERTY IS SHOWN ON THE CITY OF PORTLAND PARCEL MAP VIEWER AS PARCEL # 042 E001001.
5. PROPERTY IS LOCATED IN THE WCZ ZONE.
6. PROPERTY CONTAINS 3.08 ACRES TO 1920 HARBOR COMMISSIONER'S LINE.
7. THE HIGHEST ASTRONOMICAL TIDE LINE ELEVATION IS 6.7 NAVD 88 OR 7.4 NGVD 29.
8. PORTIONS OF THE PROPERTY ARE LOCATED IN A V3 ZONE WITH A FLOOD ELEVATION OF 12 (NGVD 29).
9. CITY OF PORTLAND DPW STREET RECORDS VOL. 1, PAGE 49 (WHICH IS ALSO CITED AS THE CITY OF PORTLAND'S CITY RECORDS 7-211, BELIEVED TO BE VOLUME 7, PAGE 211 OF THE CITY COUNCIL RECORDS FROM THE CITY CLERK'S OFFICE INDICATED CURVED STREET LINES. SOME OF THE PLANS THAT WERE UTILIZED FOR THE PREPARATION OF THIS SURVEY SHOW CURVED STREET LINES. MANY OTHER SURVEYS AND THE MDOT PLANS INDICATE STRAIGHT LINES. THE STREET LINE SHOWN HEREON IS BASED UPON THE H.I. & E.C. AS NOTED IN PLAN REFERENCE # 14, ON THIS PLAN.

EASEMENTS OF RECORD:

1. 15-FOOT WIDE DRAINAGE EASEMENT FOR THE BENEFIT OF THE CITY OF PORTLAND (BOOK 31504-PG. 288).
2. TEMPORARY CONSTRUCTION EASEMENT FOR THE BENEFIT OF THE CITY OF PORTLAND. STATUS OF THE EASEMENT IS UNKNOWN.
3. CMP EASEMENT, BOOK 7369-PAGE 34.
4. CMP EASEMENT, BOOK 2553-PAGE 61 (POLE # 39.1 WAS REMOVED, STATUS OF EASEMENT IS UNKNOWN).
5. 15 FOOT RIGHT OF WAY AS DESCRIBED IN BOOK 2576-PAGE 239.
6. RIGHT OF WAY AROUND AND ADJACENT TO BUILDING #2 AS DESCRIBED IN BOOK 2576-PAGE 239.
7. UTILITY EASEMENT AS DESCRIBED IN BOOK 2576-PAGE 239.

PLAN REFERENCES:

1. SITE AND SUBDIVISION PLAN, HOBSON'S WHARF, COMMERCIAL STREET, DATED JULY 2, 1985, PREPARED BY OWEN HASKELL, INC., RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 150, PAGE 16.
2. AMENDED SITE AND SUBDIVISION PLAN, HOBSON'S WHARF, COMMERCIAL STREET, DATED JANUARY 22, 1987, PREPARED BY OWEN HASKELL, INC., RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 164, PAGE 63.
3. REVISED AMENDED SITE AND SUBDIVISION PLAN, HOBSON'S WHARF, COMMERCIAL STREET, DATED APRIL 9, 1990, PREPARED BY OWEN HASKELL, INC., RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 184, PAGE 70.
4. SECOND REVISED AMENDED SITE AND SUBDIVISION PLAN, HOBSON'S WHARF, COMMERCIAL STREET, DATED MAY 26, 1993, PREPARED BY OWEN HASKELL, INC., RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 193, PAGE 64.
5. PLAN SHOWING DIVISION LINE ESTABLISHED OCT. 1865 BETWEEN LAND AND FLATS OF J.B.BROWN AND ST. J. SMITH, DATED OCTOBER 3, 1865, RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 2, PAGE 50.
6. UNNAMED AND UNDATED PLAN RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 5, PAGE 41. PLAN SHOWS BERLIN MILLS WHARF. FILE DATE AT THE REGISTRY IS 10-24-1884.
7. UNNAMED PLAN RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 5, PAGE 42. PLAN SHOWS HOBSONS WHARF. FILE DATE AT THE REGISTRY IS 10-24-1884.
8. HIGH STREET STORM DRAIN OUTFALL EASEMENT PLAN, DATED 2-20-2015, PREPARED BY THE CITY OF PORTLAND.
9. BOUNDARY SURVEY AT BERLIN MILLS WHARF, DATED 10-17-2006, PREPARED BY OWEN HASKELL, INC.
10. SURVEY FOR: GENERAL PROPERTIES, INC., 390 COMMERCIAL STREET, DATED 1-24-44(SHOULD SAY 84), PREPARED BY LARRY SLAUGHTER.
11. PLAN SHOWING THE POSITION AND MANNER OF MARKING AND SECURING THE AWARD OF JUDGE BARROWS IN THE CASE OF REFERENCE BETWEEN JOSEPH HOBSON AND BOSTON AND MAINE RAILROAD CO., PLAN IS NOT DATED, PLAN WAS RECORDED MARCH 7, 1877, PLAN IS RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 4, PAGE 3.
12. GREATER PORTLAND PUBLIC DEVELOPMENT COMMISSION, DATED 4-11-68, PREPARED BY JOHN P. MCGONIGLE, JR.
13. ALTA/NSPS LAND TITLE SURVEY, 390 COMMERCIAL STREET, MADE FOR I.S.F. TRADING COMPANY, INC., DATED 4-16-2020, PREPARED BY OWEN HASKELL, INC.
14. PLAN OF PROPERTY IN PORTLAND MAINE MADE FOR BERLIN MILLS WHARF, DATED JUNE 1983, PREPARED BY H.I. AND E.C. JORDAN.

CERTIFICATION:

To the best of my knowledge, information, and belief, and in my professional opinion, this survey conforms to the Standards of Practice promulgated by the Maine Board of Licensure for Professional Land Surveyors.

STATE OF MAINE, CUMBERLAND SS.
REGISTRY OF DEEDS

RECEIVED_____, 20_____

AT_____H_____M_____M AND RECORDED IN

PLAN BOOK_____ PAGE_____

ATTEST_____
REGISTER

GRAPHIC SCALE
30 0 30 60
1 inch = 30 ft.

TRILLIUM
ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

OWNER:
400 COMMERCIAL, LLC
400 COMMERCIAL STREET, SUITE 10
PORTLAND, ME 04101

PROPERTY ADDRESS:
400 COMMERCIAL STREET
PORTLAND, ME 04101
CUMBERLAND COUNTY

PLAN NOT VALID WITHOUT SIGNATURE

STATE OF MAINE · ARTHUR COLVIN JR. #2036 · PROFESSIONAL LAND SURVEYOR

400 COMMERCIAL, LLC
400 COMMERCIAL STREEPORTLAND, MAINE CUMBERLAND COUNTY

RETRACEMENT BOUNDARY SURVEY

ISSUED

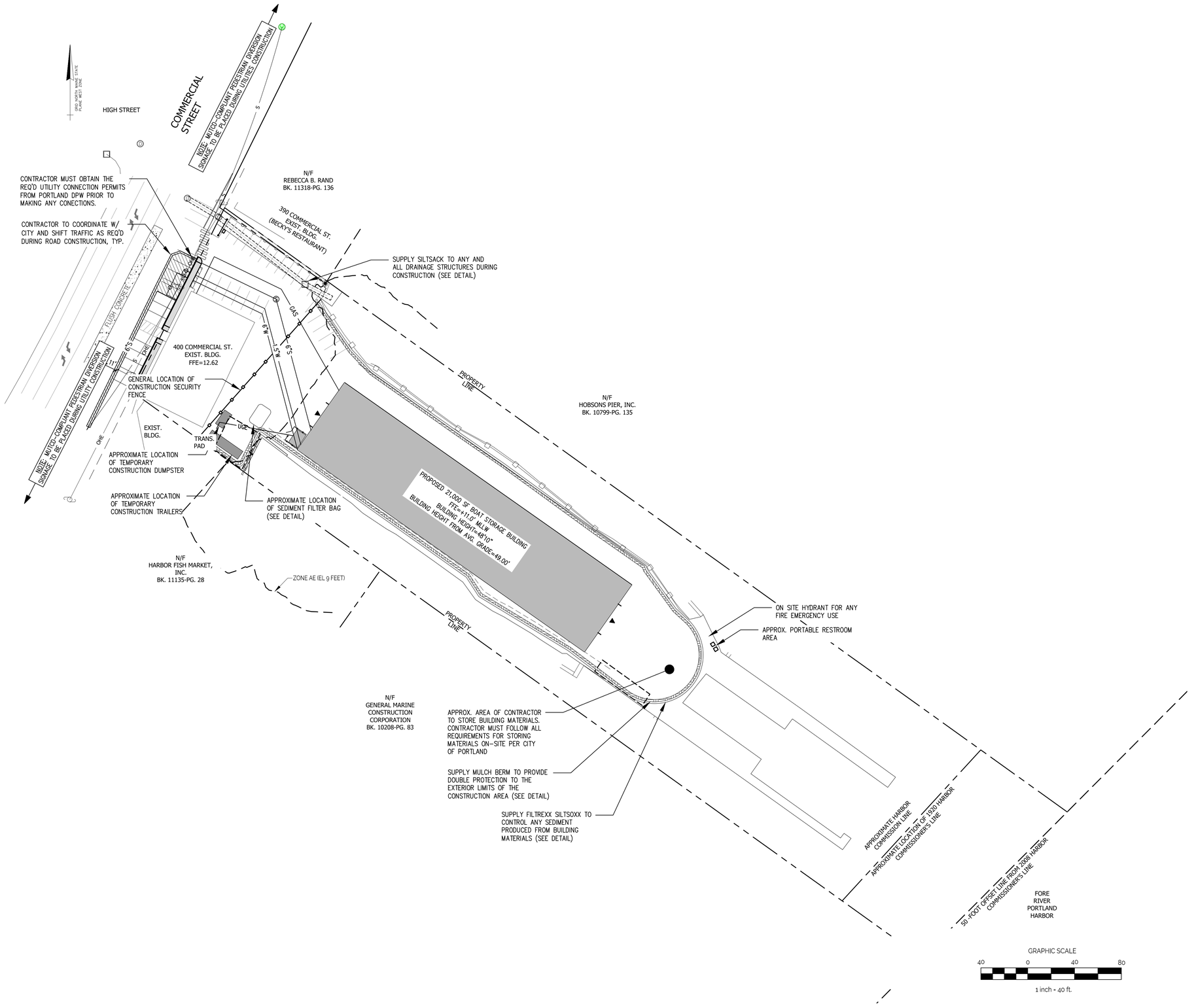
No.	DESCRIPTION	DR. BY	CK'D. BY	DATE

SHEET TITLE:
RETRACEMENT BOUNDARY SURVEY

DESIGNED:	N/A
DRAWN:	AJC
DATE:	3-28-24
PROJECT NUMBER:	23-188

S-1

Z:\01 - Projects\2023\23-188C 400 Commercial - Civil\03 - Dwg\23-188 400 Commercial Survey.dwg, 5/7/2024 11:44:01 AM



LEGEND		
EXISTING	DESCRIPTION	PROPOSED
□	GRANITE MONUMENT - 3' OFFSET	■
○ IPF	IRON PIN FOUND/SET	○ IPS
○ IRF	IRON ROD FOUND	
☼ CIRF	CAPPED IRON ROD FOUND	
⊙ DHF	DRILL HOLE FOUND	
□ MON	GRANITE MONUMENT FOUND	
	STREET LINE	
	LOT SETBACKS	
	PROPERTY LINE	
	ABUTTER LINE	
	"NO CUT" BUFFER	
	WETLANDS	
	EDGE OF ROAD/TRAVELED WAY	
TP 69	SOIL TEST PIT	TP 69
101	CONTOUR	101
327x60 x 327.6	SPOT GRADE	327x60 x 327.6
GAS	GAS SHUT-OFF	
UP	UTILITY POLE	
OE	OVERHEAD ELECTRICAL	OE
UE&T	UNDERGROUND ELECTRICAL	UE&T
T	ELECTRICAL TRANSFORMER	T
	FIRE HYDRANT	
8"-W 8" W	WATER LINE	8"-W 8" W
WG	WATER GATE	
12" S	SEWER LINE	12" S
SMH	SEWER MANHOLE	SMH-1
DMH	DRAINAGE MANHOLE	DMH-1
CB	CATCH BASIN	CB-1
UD/SD	UNDERDRAIN/STORMDRAIN	UD/SD
UD	UNDERDRAIN	UD
	SILT FENCE	SF
	TEMP. STONE CHECK DAM	
	GRADING AND FLOW DIRECTION	
	HAY BALES	
	EROSION CONTROL BLANKET	
	STORMWATER BOUNDARY	
	STORMWATER FLOW (Tc)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
	TREE LINE	
	SITE LIGHTING (BAYSIDE FIXTURE)	
	STONE WALL	

CONSTRUCTION MANAGEMENT AND EROSION & SEDIMENTATION PLAN

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

CLIENT:
400 COMMERCIAL LLC

PORTLAND, MAINE

PRELIMINARY
NOT FOR CONSTRUCTION

400 COMMERCIAL ST.
COMMERCIAL ST. PORTLAND, MAINE

PROPOSED SITE ALTERATIONS

ISSUED

No.	DESCRIPTION	DR BY	CKD BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24
B	RE-ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	4-15-24
C	ISSUED FOR PORTLAND WATER DISTRICT REVIEW	KB	ED	8-16-24
D	RESPONSE TO CITY COMMENTS	KB	ED	8-26-24
E	RESPONSE TO CITY COMMENTS	KB	ED	10-07-24
F	RESUBMISSION TO CITY W/ UPDATES	KB	ED	10-10-24

SHEET TITLE:
CONSTRUCTION MANAGEMENT AND E&S PLAN

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C103

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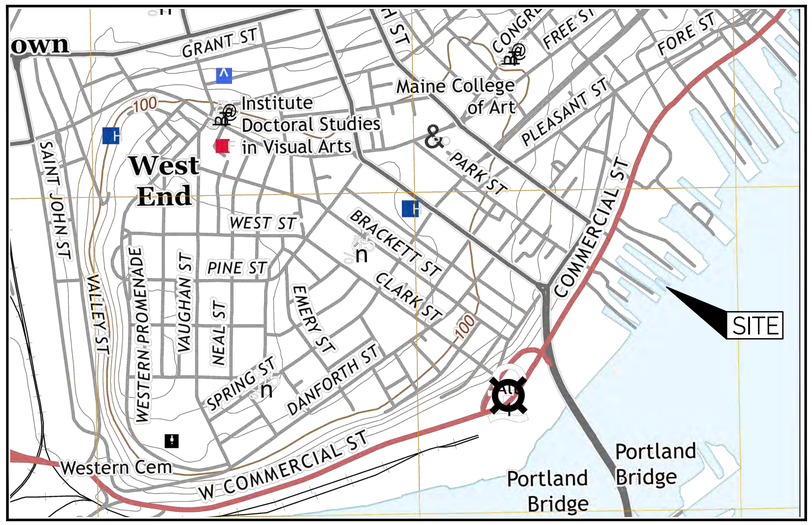
400 COMMERCIAL ST.

PORTLAND, ME

FEBRUARY 2024



LOCUS MAP
NOT TO SCALE

DRAWING LIST

C100	EXISTING SITE PLAN
C101	PROPOSED SITE & UTILITIES PLAN
C200	SITE DETAILS
C300	EROSION CONTROL DETAILS

OWNER:

400 COMMERCIAL LLC
400 COMMERCIAL ST.
PORTLAND, ME 04101

CONSULTANTS:

TRILLIUM ENGINEERING GROUP
189 MAIN STREET
YARMOUTH, ME 04096

ARCHETYPE
48 UNION WHARF
PORTLAND, ME 04101

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

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PROPOSED SITE ALTERATIONS

ISSUED

No.	DESCRIPTION	DR BY	CHD BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24

SHEET TITLE:

COVER SHEET

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

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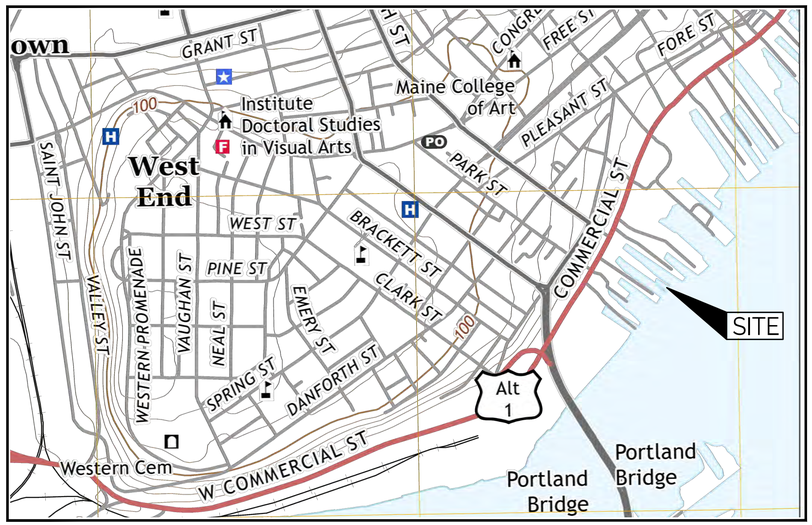
400 COMMERCIAL ST.

PORTLAND, ME

OCTOBER 2024



LOCUS MAP

NOT TO SCALE

DRAWING LIST

C100	EXISTING SITE PLAN
C101	PROPOSED SITE PLAN
C102	PROPOSED UTILITIES PLAN
C103	CONSTRUCTION MANAGEMENT AND EROSION & SEDIMENTATION PLAN
C104	PROPOSED SEWER CONNECTION PROFILE
C105	VEHICLE TURNING MOVEMENT PLAN
C200	SITE DETAILS
C201	SITE DETAILS
C300	EROSION CONTROL DETAILS

OWNER:

400 COMMERCIAL LLC
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PORTLAND, ME 04101

CONSULTANTS:

TRILLIUM ENGINEERING GROUP
189 MAIN STREET
YARMOUTH, ME 04096

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SHEET TITLE:

COVER SHEET

DESIGNED:	ED
DRAWN:	KB
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Co

EROSION AND SEDIMENTATION NOTES

1. THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR DEALING WITH SOIL EROSION AND SEDIMENTATION DURING AND AFTER PROJECT CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARD AND SPECIFICATIONS FOR EROSION PREVENTION AS CONTAINED IN THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: "MAINE EROSION AND SEDIMENT CONTROL BMPs" PUBLISHED BY THE MAINE DEP, LATEST EDITION.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES

1. EROSION/SEDIMENT CONTROL DEVICES
   THE FOLLOWING EROSION SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

1.1 SILT FENCE: SILT FENCE WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE IS STABILIZED. IN AREAS WHERE STORMWATER DISCHARGES THE SILT FENCE WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SILT FENCE AND TO PROVIDE ADDITIONAL TREATMENT.

1.2 HAY BALES TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE HAY BALES IN FLOWING WATER OR STREAMS.

1.3 RIPRAP: PROVIDE RIPRAP IN AREAS WHERE CULVERTS DISCHARGE OR AS SHOWN ON THE PLANS.

1.4 LOAM, SEED, & MULCH: ALL DISTURBED AREAS, WHICH ARE NOT OTHERWISE TREATED, SHALL RECEIVE PERMANENT SEEDING AND MULCH TO STABILIZE THE DISTURBED AREAS. THE DISTURBED AREAS WILL BE REVEGETATED WITHIN 5 DAYS OF FINAL GRADING. SEEDING REQUIREMENTS ARE PROVIDED AT THE END OF THIS SPECIFICATION.

1.5 STRAW AND HAY MULCH; USED TO COVER DENUDED AREAS UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. ALL OTHER SLOPES MUST BE COVERED WITH JUTE MESH OVER MULCH, OR CURLEX II OR EXCELSIOR MAY BE USED IN PLACE OF JUTE MESH AND MULCH OVER LOAM AND SEED.

1.6 MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.

2. TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES
   PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION OF THE DEVELOPMENT:

2.1 SILTATION FENCE ALONG THE DOWNGRADIENT SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SILTATION FENCE WILL REMAIN IN PLACE UNTIL THE SITE IS 85% REVEGETATED.

2.2 HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SILT FENCE.

2.3 PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION AS FOLLOWS:

A. SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
B. AVOID PLACING TEMPORARY STOCKPILES IN AREAS WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES. SEE ITEM 3 IN CONSTRUCTION PHASE NOTES BELOW.
C. STABILIZE STOCKPILES WITHIN 15 DAYS BY TEMPORARILY SEEDING WITH A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.
D. SURROUND STOCKPILE SOIL WITH SILTATION FENCE AT BASE OF PILE.

2.4 ALL DENUDED AREAS WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE BUILDING PAD, OR PARKING AND DRIVEWAY SUBBASE AREA SHALL RECEIVE MULCH WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL OR WITHIN 15 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOD WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED.

2.5 IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.

2.6 TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

3. PERMANENT EROSION CONTROL MEASURES
   THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/SEDIMENTATION CONTROL PLAN:

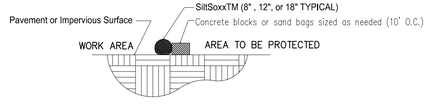
3.1 ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

3.2 SLOPES GREATER THAN 2:1 WILL RECEIVE RIPRAP.

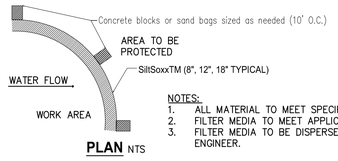
CONSTRUCTION PHASE

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

1. ONLY THOSE AREAS UNDER ACTIVE CONSTRUCTION WILL BE CLEARED AND LEFT IN AN UNTREATED OR UNVEGETATED CONDITION. IF FINAL GRADING, LOAMING AND SEEDING WILL NOT OCCUR WITHIN 15 DAYS, SEE ITEM NO. 4.
2. PRIOR TO THE START OF CONSTRUCTION IN A SPECIFIC AREA, SILT FENCING AND/OR HAY BALES WILL BE INSTALLED AT THE TOE OF SLOPE AND IN AREAS AS LOCATED ON THE PLANS TO PROTECT AGAINST ANY CONSTRUCTION RELATED EROSION. IMMEDIATELY FOLLOWING CONSTRUCTION OF CULVERTS AND SWALES, RIP RAP APRONS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
3. TOPSOIL WILL BE STOCKPILED WHEN NECESSARY IN AREAS WHICH HAVE MINIMUM POTENTIAL FOR EROSION AND WILL BE KEPT AS FAR AS POSSIBLE FROM THE EXISTING DRAINAGE COURSE. NO STOCKPILE SHALL BE CLOSER THEN 100' OF A RESOURCE INCLUDING, BUT NOT LIMITED TO, WETLANDS, STREAMS, AND OPEN WATER BODIES. ALL STOCKPILES SHALL HAVE A SILTATION FENCE BELOW THEM REGARDLESS OF TIME OF PRESENCE. ALL STOCKPILES EXPECTED TO REMAIN LONGER THAN 15 DAYS SHALL BE:
   A. TREATED WITH ANCHORED MULCH (WITHIN 5 DAYS OF THE LAST DEPOSIT OF STOCKPILED SOIL).
   B. SEEDED WITH CONSERVATION MIX AND MULCHED IMMEDIATELY.
   C. INSTALL SILT FENCE AROUND STOCKPILE AT BASE OF PILE.
   STOCKPILES TO HAVE SILT FENCE INSTALLED AT TIME OF ESTABLISHMENT AT BASE OF PILE.
4. ALL DISTURBED AREAS EXPECTED TO REMAIN LONGER THAN 30 DAYS SHALL BE EITHER:
   A. TREATED WITH ANCHORED MULCH IMMEDIATELY, OR
   B. SEEDED WITH CONSERVATION MIX OF ANNUAL RYE GRASS (0.9 LBS/1000 SQ. FT) AND MULCHED IMMEDIATELY.
5. ALL GRADING WILL BE HELD TO A MAXIMUM 2:1 SLOPE WHERE PRACTICAL. ALL SLOPES WILL BE STABILIZED WITH PERMANENT SEEDING, OR WITH STONE, WITHIN 5 DAYS AFTER FINAL GRADING IS COMPLETE. (SEE POST-CONSTRUCTION REVEGETATION FOR SEEDING SPECIFICATION.)
6. ALL CULVERTS WILL BE PROTECTED WITH STONE RIPRAP (D50 = 6" UNLESS OTHERWISE SPECIFIED) AT INLETS AND OUTLETS.



SECTION
NTS



NOTES:
1. ALL MATERIAL TO MEET SPECIFICATIONS.
2. FILTER MEDIA TO MEET APPLICATION REQUIREMENTS.
3. FILTER MEDIA TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

PLAN NTS

SiltSoxxTM for Sediment Control on Pavement
NTS

POST-CONSTRUCTION REVEGETATION

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION AS SOON AS AN AREA IS READY TO UNDERGO FINAL GRADING.

1. A MINIMUM OF 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND GRADED TO A UNIFORM DEPTH AND NATURAL APPEARANCE, OR STONE WILL BE PLACED ON SLOPES TO STABILIZE SURFACES.
2. IF FINAL GRADING IS REACHED DURING THE NORMAL GROWING SEASON (4/15 TO 9/15), PERMANENT SEEDING WILL BE DONE AS SPECIFIED BELOW. PRIOR TO SEEDING, LIMESTONE SHALL BE APPLIED AT A RATE OF 138 LBS/1000 SQ. FT. AND 10:20:20 FERTILIZER AT A RATE OF 18.4 LBS/1000 SQ.FT WILL BE APPLIED. BROADCAST SEEDING AT THE FOLLOWING RATES:

LAWNS	SWALES
KENTUCKY BLUEGRASS 0.46 LBS/1000 SF.	RED TOP 0.05 LBS/1000 SF.
CREEPING RED FESCUE 0.46 LBS/1000 SF.	TALL FESCUE 0.46 LBS/1000 SF.
PERENNIAL RYE GRASS 0.11 LB/1000 SF.	

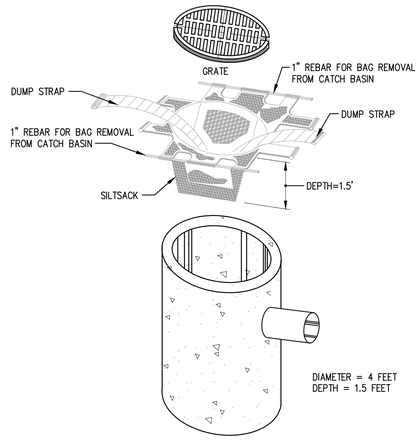
3. AN AREA SHALL BE MULCHED IMMEDIATELY AFTER IS HAS BEEN SEEDED. MULCHING SHALL CONSIST OF HAY MULCH, HYDRO-MULCH, JUTE NET OVER MULCH, PRE-MANUFACTURED EROSION MATS OR ANY SUITABLE SUBSTITUTE DEEMED ACCEPTABLE BY THE DESIGNER.
   A. HAY MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. HAY MULCH SHALL BE SECURED BY EITHER: (NOTE: SOIL SHALL NOT BE VISIBLE)
      I. BEING DRIVEN OVER BY TRACKED CONSTRUCTION EQUIPMENT ON GRADES OF 5% AND LESS.
      II. BLANKETED BY TACKED PHOTODEGRADABLE/BIODEGRADABLE NETTING, OR WITH SPRAY, ON GRADES GREATER THAN 5%
      III. SEE NOTE 6, GENERAL NOTES, AND NOTE 8, WINTER CONSTRUCTION.
   B. HYDRO-MULCH SHALL CONSIST OF A MIXTURE OF EITHER ASPHALT, WOOD FIBER OR PAPER FIBER AND WATER SPRAYED OVER A SEEDED AREA. HYDRO-MULCH SHALL NOT BE USED BETWEEN 9/15 AND 4/15.
4. CONSTRUCTION SHALL BE PLANNED TO ELIMINATE THE NEED FOR SEEDING BETWEEN SEPTEMBER 15 AND APRIL 15. SHOULD SEEDING BE NECESSARY BETWEEN SEPTEMBER 15 AND APRIL 15 THE FOLLOWING PROCEDURE SHALL BE FOLLOWED. ALSO REFER TO NOTE 9 OF WINTER CONSTRUCTION.
   A. ONLY UNFROZEN LOAM SHALL BE USED.
   B. LOAMING, SEEDING AND MULCHING WILL NOT BE DONE OVER SNOW OR ICE COVER. IF SNOW EXISTS, IT MUST BE REMOVED PRIOR TO PLACEMENT OF SEED.
   C. WHERE PERMANENT SEEDING IS NECESSARY, ANNUAL WINTER RYE (1.2 LBS/1000 SQ.FT) SHALL BE ADDED TO THE PREVIOUSLY NOTED AREAS.
   D. WHERE TEMPORARY SEEDING IS REQUIRED, ANNUAL WINTER RYE (2.6 LBS/1000 SQ. FT.) SHALL BE SOWN INSTEAD OF THE PREVIOUSLY NOTED SEEDING RATE.
   E. FERTILIZING, SEEDING AND MULCHING SHALL BE APPLIED TO LOAM THE DAY THE LOAM IS SPREAD BY MACHINERY.
   F. ALTERNATIVE HAY MULCH SHALL BE SECURED WITH PHOTODEGRADABLE/BIODEGRADABLE NETTING. TRACKING BY MACHINERY ALONE WILL NOT SUFFICE.
5. FOLLOWING FINAL SEEDING, THE SITE WILL BE INSPECTED EVERY 30 DAYS UNTIL 85% COVER HAS BEEN ESTABLISHED. RESEEDING WILL BE CARRIED OUT BY THE CONTRACTOR WITHIN 10 DAYS OF NOTIFICATION BY THE ENGINEER THAT THE EXISTING CATCH IS INADEQUATE.

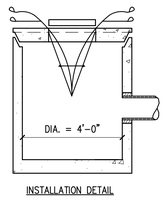
MONITORING SCHEDULE

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING, MONITORING, MAINTAINING, REPAIRING, REPLACING AND REMOVING ALL OF THE EROSION AND SEDIMENTATION CONTROLS OR APPOINTING A QUALIFIED SUBCONTRACTOR TO DO SO.

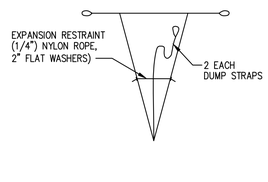
MAINTENANCE MEASURES WILL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL, A VISUAL INSPECTION WILL BE MADE OF ALL EROSION AND SEDIMENTATION CONTROLS AS FOLLOWS:

1. HAY BALE BARRIERS, SILT FENCE, AND STONE CHECK DAMS SHALL BE INSPECTED AND REPAIRED ONCE A WEEK OR IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL. SEDIMENT TRAPPED BEHIND THESE BARRIERS SHALL BE EXCAVATED WHEN IT REACHES A DEPTH OF 6" AND REDISTRIBUTED TO AREAS UNDERGOING FINAL GRADING. SHOULD THE HAY BALE BARRIERS PROVE TO BE INEFFECTIVE, THE CONTRACTOR SHALL INSTALL SILT FENCE BEHIND THE HAY BALES.
2. VISUALLY INSPECT RIPRAP ONCE A WEEK OR AFTER EACH SIGNIFICANT RAINFALL AND REPAIR AS NEEDED. REMOVE SEDIMENT TRAPPED BEHIND THESE DEVICES ONCE IT ATTAINS A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE DAM OR RISER. DISTRIBUTE REMOVED SEDIMENT OFF-SITE OR TO AN AREA UNDERGOING FINAL GRADING.
3. REVEGETATION OF DISTURBED AREAS WITHIN 25' OF DRAINAGE-COURSE/STREAM WILL BE SEEDED WITH THE "MEADOW AREA MIX" AND INSPECTED ON A WEEKLY BASIS OR AFTER EACH SIGNIFICANT RAINFALL AND RESEEDED AS NEEDED. EXPOSED AREAS WILL BE RESEEDED AS NEEDED UNTIL THE AREA HAS OBTAINED 100% GROWTH RATE. PROVIDE PERMANENT RIPRAP FOR SLOPES IN EXCESS OF 3:1 AND WITHIN 25' OF DRAINAGE COURSE.





INSTALLATION DETAIL



BAG DETAIL

"SILTSACK" INSTALLATION INSTRUCTION

1. REMOVE THE CATCH BASIN GRATE AND PLACE THE SACK INTO THE OPENING. HOLD OUT APPROXIMATELY SIX (6) INCHES OF THE SACK BEYOND THE BASIN FRAME TO ALLOW ACCESS TO THE "SILTSACK" LIFTING STRAPS. REPLACING THE GRATE BACK INSIDE OF ITS FRAME WILL HOLD THE SACK IN PLACE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING THIS SEDIMENT CONTROL DEVICE. THE SACK IS CONSIDERED FULL AND READY TO EMPTY WHEN THE THE "RESTRAINT CORD" IS NO LONGER VISIBLE.
3. THE "SILTSACK" IS REMOVED BY PLACING TWO (2) PIECES IF 1 INCH DIAMETER REBAR THROUGH THE LIFTING LOOPS LOCATED ON EACH SIDE OF THE SACK AND LIFTING WITH AN APPROPRIATE PIECE OF CONSTRUCTION EQUIPMENT. THE LIFTING STRAPS ARE CONNECTED TO THE BOTTOM OF THE SACK AND THE LIFTING ACTION WILL CAUSE THE SACK TO TURN INSIDE OUT, AND EMPTYING THE CONTENTS. THE SACK SHOULD THEN BE CLEANED, RINSED AND RETURNED TO ITS ORIGINAL SHAPE AND PLACED BACK IN THE BASIN.
4. THE "SILTSACK" IS REUSABLE, THEREFORE, ONCE THE CONSTRUCTION CYCLE IS COMPLETE, REMOVE THE SACK FROM THE BASIN, CLEAN AND STORE OUT OF DIRECT SUNLIGHT UNTIL ITS NEXT USE.
5. THE "SILTSACK" SEDIMENT CONTROL DEVICE IS MANUFACTURED BY: ACF ENVIRONMENTAL

EROSION CONTROL DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AT THE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1000 S.F. (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH. NOTE: AN AREA IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH GRAVEL (PARKING LOTS) OR STRUCTURAL SAND.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES 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 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW, DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SILT FENCE OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHOULD NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS BELOW 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.
8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1 THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
9. BETWEEN THE DATES OF OCTOBER 15 TO NOVEMBER 1, WINTER RYE IS RECOMMENDED FOR STABILIZATION. AFTER NOVEMBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
10. IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

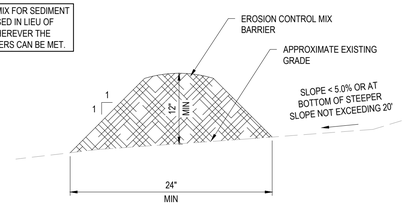
SITE INSPECTION AND MAINTENANCE

1. WEEKLY INSPECTIONS, AS WELL AS ROUTINE INSPECTIONS FOLLOWING RAIN FALLS, SHALL BE CONDUCTED BY THE GENERAL CONTRACTOR OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES UNTIL FINAL ACCEPTANCE OF THE PROJECT (85% GRASS CATCH). NECESSARY REPAIRS SHALL BE MADE TO CORRECT UNDERMINING OR DETERIORATION. FINAL ACCEPTANCE SHALL INCLUDE A SITE INSPECTION TO VERIFY THE STABILITY OF ALL DISTURBED AREAS AND SLOPES. UNTIL FINAL INSPECTION, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL IMMEDIATELY BE CLEANED, AND REPAIRED BY THE GENERAL CONTRACTOR AS REQUIRED. DISPOSAL OF ALL TEMPORARY EROSION AND CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
   IT IS RECOMMENDED THAT THE OWNER HIRE THE SERVICES OF THE DESIGN ENGINEER TO PROVIDE COMPLIANCE INSPECTIONS (DURING ACTIVE CONSTRUCTION) RELATIVE TO IMPLEMENTATION OF THE STORMWATER AND EROSION CONTROL PLANS. SUCH INSPECTIONS SHOULD BE LIMITED TO ONCE A WEEK OR AS NECESSARY AND BE REPORTABLE TO THE OWNER, TOWN AND DEP.
2. SHORT-TERM SEDIMENTATION MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT ALL SWALES AND STRUCTURES PRIOR TO TURNING PROJECT OVER TO THE CITY.

MAINTENANCE AFTER CONSTRUCTION

1. LONG-TERM PROVISIONS FOR PERMANENT MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL FACILITIES AFTER ACCEPTANCE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER OR THEIR DESIGNEE. SUCH RESPONSIBILITIES INCLUDE BUT ARE NOT LIMITED TO THOSE DETAILED AS FOLLOWS:
   A. PARKING LOT SHALL BE MECHANICALLY SWEPT TWCE PER YEAR. THE FIRST SHALL TAKE PLACE IN THE MID WINTER (JANUARY THAW) TO REMOVE ACCUMULATED SANDS FROM WINTER SANDING TO THIS POINT. THE SECOND SWEEPING SHALL TAKE PLACE AFTER WINTER SANDING OPERATIONS TERMINATE BUT PRIOR TO MAY 1.
   B. INSPECTION OF STORMWATER OUTLET STRUCTURE SHOULD BE CONDUCTED TWCE PER YEAR. ACCESS TO THE STRUCTURE IS THROUGH THE TOP. THE OIL/WATER SEPARATOR UNIT SHALL BE PUMPED DOWN AND THE SEDIMENT AND TRASH SHALL BE REMOVED AT THE TIME OF THE INSPECTION. THE REMOVAL OF ALL SEDIMENT AND TRASH WILL HELP MINIMIZE VOLUME LOSS.
2. THE OWNER SHALL FILE A YEARLY MAINTENANCE REPORT TO THE CITY DOCUMENTING THE REQUIRED MAINTENANCE FOR THE STORMWATER SYSTEM.

EROSION CONTROL MIX FOR SEDIMENT BARRIERS CAN BE USED IN LIEU OF SILTATION FENCE WHEREVER THE SPECIFIED PARAMETERS CAN BE MET.



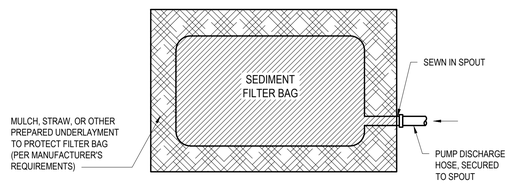
NOTES:

MIX COMPOSITION REQUIREMENTS:
THE ORGANIC MATTER CONTENT IS BETWEEN 80 AND 100%, DRY WEIGHT BASIS.
PARTICLE SIZE BY WEIGHT IS 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 IS LESS THAN 4.0 MMHOS/CM.
THE PH SHOULD FALL BETWEEN 5.0 AND 8.0

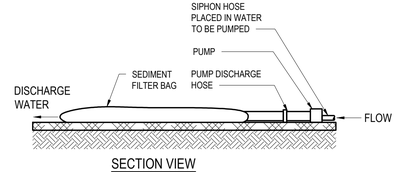
INSTALLATION REQUIREMENTS:
THE CONTRIBUTING DRAINAGE AREA MAY NOT EXCEED 0.25 ACRES PER 100 FT. OF BARRIER LENGTH; THE MAXIMUM LENGTH OF SLOPE ABOVE THE BARRIER IS 100 FEET; AND THE MAXIMUM GRADIENT BEHIND THE BARRIER IS 50 PERCENT (2:1). EROSION CONTROL MIX BARRIERS CANNOT BE USED IN AREAS OF CONCENTRATED FLOWS.

MAINTENANCE REQUIREMENTS:
SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. OTHER MAINTENANCE AND INSPECTION REQUIREMENTS SHALL BE IDENTICAL TO THOSE SPECIFIED FOR SILTATION FENCE.

EROSION CONTROL MIX FOR SEDIMENT BARRIER DETAIL
NTS



PLAN VIEW



SECTION VIEW

SEDIMENT FILTER BAG
NTS

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

CLIENT:
400 COMMERCIAL LLC

PORTLAND, MAINE

PRELIMINARY
NOT FOR CONSTRUCTION

400 COMMERCIAL ST.
COMMERCIAL ST.
PORTLAND, MAINE

PROPOSED SITE ALTERATIONS

ISSUED

No.	DESCRIPTION	DR. BY	CHK'D BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24
B	RESPONSE TO CITY COMMENTS	KB	ED	8-26-24
C	RESPONSE TO CITY COMMENTS	KB	ED	10-07-24
D	RESUBMISSION TO CITY W/ UPDATES	KB	ED	10-10-24

SHEET TITLE:
EROSION CONTROL DETAILS

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C300

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EROSION AND SEDIMENTATION NOTES

1. THIS PLAN HAS BEEN DEVELOPED TO PROVIDE A STRATEGY FOR DEALING WITH SOIL EROSION AND SEDIMENTATION DURING AND AFTER PROJECT CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARD AND SPECIFICATIONS FOR EROSION PREVENTION AS CONTAINED IN THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: "MAINE EROSION AND SEDIMENT CONTROL BMPs" PUBLISHED BY THE MAINE DEP, LATEST EDITION.

GENERAL EROSION AND SEDIMENTATION CONTROL PRACTICES

1. EROSION/SEDIMENT CONTROL DEVICES
   THE FOLLOWING EROSION SEDIMENTATION CONTROL DEVICES ARE PROPOSED FOR CONSTRUCTION ON THIS PROJECT. INSTALL THESE DEVICES AS INDICATED ON THE PLANS.

1.1 SILT FENCE: SILT FENCE WILL BE INSTALLED ALONG THE DOWN GRADING EDGES OF DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL THE SITE IS STABILIZED. IN AREAS WHERE STORMWATER DISCHARGES THE SILT FENCE WILL BE REINFORCED WITH HAY BALES TO HELP MAINTAIN THE INTEGRITY OF THE SILT FENCE AND TO PROVIDE ADDITIONAL TREATMENT.

1.2 HAY BALES TO BE PLACED IN LOW FLOW DRAINAGE SWALES AND PATHS TO TRAP SEDIMENTS AND REDUCE RUNOFF VELOCITIES. DO NOT PLACE HAY BALES IN FLOWING WATER OR STREAMS.

1.3 RIPRAP: PROVIDE RIPRAP IN AREAS WHERE CULVERTS DISCHARGE OR AS SHOWN ON THE PLANS.

1.4 LOAM, SEED, & MULCH: ALL DISTURBED AREAS, WHICH ARE NOT OTHERWISE TREATED, SHALL RECEIVE PERMANENT SEEDING AND MULCH TO STABILIZE THE DISTURBED AREAS. THE DISTURBED AREAS WILL BE REVEGETATED WITHIN 5 DAYS OF FINAL GRADING. SEEDING REQUIREMENTS ARE PROVIDED AT THE END OF THIS SPECIFICATION.

1.5 STRAW AND HAY MULCH; USED TO COVER DENUDED AREAS UNTIL PERMANENT SEED OR EROSION CONTROL MEASURES ARE IN PLACE. MULCH BY ITSELF CAN BE USED ON SLOPES LESS THAN 15% IN SUMMER AND 8% IN WINTER. ALL OTHER SLOPES MUST BE COVERED WITH JUTE MESH OVER MULCH, OR CURLEX II OR EXCELSIOR MAY BE USED IN PLACE OF JUTE MESH AND MULCH OVER LOAM AND SEED.

1.6 MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.

2. TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES
   PROVIDE THE FOLLOWING TEMPORARY EROSION/SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION OF THE DEVELOPMENT:

2.1 SILTATION FENCE ALONG THE DOWNGRADIENT SIDE OF THE PARKING AREAS AND OF ALL FILL SECTIONS. THE SILTATION FENCE WILL REMAIN IN PLACE UNTIL THE SITE IS 85% REVEGETATED.

2.2 HAY BALES PLACED AT KEY LOCATIONS TO SUPPLEMENT THE SILT FENCE.

2.3 PROTECT TEMPORARY STOCKPILES OF STUMPS, GRUBBINGS, OR COMMON EXCAVATION AS FOLLOWS:

A. SOIL STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.
B. AVOID PLACING TEMPORARY STOCKPILES IN AREAS WITH SLOPES OVER 10 PERCENT, OR NEAR DRAINAGE SWALES. SEE ITEM 3 IN CONSTRUCTION PHASE NOTES BELOW.
C. STABILIZE STOCKPILES WITHIN 15 DAYS BY TEMPORARILY SEEDING WITH A HYDROSEED METHOD CONTAINING AN EMULSIFIED MULCH TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH.
D. SURROUND STOCKPILE SOIL WITH SILTATION FENCE AT BASE OF PILE.

2.4 ALL DENUDED AREAS WHICH HAVE BEEN ROUGH GRADED AND ARE NOT LOCATED WITHIN THE BUILDING PAD, OR PARKING AND DRIVEWAY SUBBASE AREA SHALL RECEIVE MULCH WITHIN 30 DAYS OF INITIAL DISTURBANCE OF SOIL OR WITHIN 15 DAYS AFTER COMPLETING THE ROUGH GRADING OPERATIONS. IN THE EVENT THE CONTRACTOR COMPLETES FINAL GRADING AND INSTALLATION OF LOAM AND SOD WITHIN THE TIME PERIODS PRESENTED ABOVE, INSTALLATION OF MULCH AND NETTING, WHERE APPLICABLE, IS NOT REQUIRED.

2.5 IF WORK IS CONDUCTED BETWEEN OCTOBER 15 AND APRIL 15, ALL DENUDED AREAS ARE TO BE COVERED WITH HAY MULCH, APPLIED AT TWCE THE NORMAL APPLICATION RATE, AND ANCHORED WITH FABRIC NETTING. THE PERIOD BETWEEN FINAL GRADING AND MULCHING SHALL BE REDUCED TO A 15 DAY MAXIMUM.

2.6 TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE HAS BEEN STABILIZED OR IN AREAS WHERE PERMANENT EROSION CONTROL MEASURES HAVE BEEN INSTALLED.

3. PERMANENT EROSION CONTROL MEASURES
   THE FOLLOWING PERMANENT CONTROL MEASURES ARE REQUIRED BY THIS EROSION/SEDIMENTATION CONTROL PLAN:

3.1 ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.), WILL BE LOAMED, LIMED, FERTILIZED AND SEEDED. NATIVE TOPSOIL SHALL BE STOCKPILED AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

3.2 SLOPES GREATER THAN 2:1 WILL RECEIVE RIPRAP.

CONSTRUCTION PHASE

THE FOLLOWING GENERAL PRACTICES WILL BE USED TO PREVENT EROSION DURING CONSTRUCTION OF THIS PROJECT.

1. ONLY THOSE AREAS UNDER ACTIVE CONSTRUCTION WILL BE CLEARED AND LEFT IN AN UNTREATED OR UNVEGETATED CONDITION. IF FINAL GRADING, LOAMING AND SEEDING WILL NOT OCCUR WITHIN 15 DAYS, SEE ITEM NO. 4.
2. PRIOR TO THE START OF CONSTRUCTION IN A SPECIFIC AREA, SILT FENCING AND/OR HAY BALES WILL BE INSTALLED AT THE TOE OF SLOPE AND IN AREAS AS LOCATED ON THE PLANS TO PROTECT AGAINST ANY CONSTRUCTION RELATED EROSION. IMMEDIATELY FOLLOWING CONSTRUCTION OF CULVERTS AND SWALES, RIP RAP APRONS SHALL BE INSTALLED, AS SHOWN ON THE PLANS.
3. TOPSOIL WILL BE STOCKPILED WHEN NECESSARY IN AREAS WHICH HAVE MINIMUM POTENTIAL FOR EROSION AND WILL BE KEPT AS FAR AS POSSIBLE FROM THE EXISTING DRAINAGE COURSE. NO STOCKPILE SHALL BE CLOSER THEN 100' OF A RESOURCE INCLUDING, BUT NOT LIMITED TO, WETLANDS, STREAMS, AND OPEN WATER BODIES. ALL STOCKPILES SHALL HAVE A SILTATION FENCE BELOW THEM REGARDLESS OF TIME OF PRESENCE. ALL STOCKPILES EXPECTED TO REMAIN LONGER THAN 15 DAYS SHALL BE:
   A. TREATED WITH ANCHORED MULCH (WITHIN 5 DAYS OF THE LAST DEPOSIT OF STOCKPILED SOIL).
   B. SEEDED WITH CONSERVATION MIX AND MULCHED IMMEDIATELY.
   C. INSTALL SILT FENCE AROUND STOCKPILE AT BASE OF PILE.
   STOCKPILES TO HAVE SILT FENCE INSTALLED AT TIME OF ESTABLISHMENT AT BASE OF PILE.
4. ALL DISTURBED AREAS EXPECTED TO REMAIN LONGER THAN 30 DAYS SHALL BE EITHER:
   A. TREATED WITH ANCHORED MULCH IMMEDIATELY, OR
   B. SEEDED WITH CONSERVATION MIX OF ANNUAL RYE GRASS (0.9 LBS/1000 SQ. FT) AND MULCHED IMMEDIATELY.
5. ALL GRADING WILL BE HELD TO A MAXIMUM 2:1 SLOPE WHERE PRACTICAL. ALL SLOPES WILL BE STABILIZED WITH PERMANENT SEEDING, OR WITH STONE, WITHIN 5 DAYS AFTER FINAL GRADING IS COMPLETE. (SEE POST-CONSTRUCTION REVEGETATION FOR SEEDING SPECIFICATION.)
6. ALL CULVERTS WILL BE PROTECTED WITH STONE RIPRAP (D50 = 6" UNLESS OTHERWSE SPECIFIED) AT INLETS AND OUTLETS.

POST-CONSTRUCTION REVEGETATION

THE FOLLOWMNG GENERAL PRACTICES WILL BE USED TO PREVENT EROSION AS SOON AS AN AREA IS READY TO UNDERGO FINAL GRADING.

1. A MINIMUM OF 4" OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND GRADED TO A UNIFORM DEPTH AND NATURAL APPEARANCE, OR STONE WILL BE PLACED ON SLOPES TO STABILIZE SURFACES.
2. IF FINAL GRADING IS REACHED DURING THE NORMAL GROWING SEASON (4/15 TO 9/15), PERMANENT SEEDING WILL BE DONE AS SPECIFIED BELOW. PRIOR TO SEEDING, LIMESTONE SHALL BE APPLIED AT A RATE OF 138 LBS/1000 SQ. FT. AND 10:20:20 FERTILIZER AT A RATE OF 18.4 LBS/1000 SQ.FT WILL BE APPLIED. BROADCAST SEEDING AT THE FOLLOWING RATES:

LAWNS	SWALES
KENTUCKY BLUEGRASS 0.46 LBS/1000 SF.	RED TOP 0.05 LBS/1000 SF.
CREEPING RED FESCUE 0.46 LBS/1000 SF.	TALL FESCUE 0.46 LBS/1000 SF.
PERENNIAL RYE GRASS 0.11 LB/1000 SF.	

3. AN AREA SHALL BE MULCHED IMMEDIATELY AFTER IS HAS BEEN SEEDED. MULCHING SHALL CONSIST OF HAY MULCH, HYDRO-MULCH, JUTE NET OVER MULCH, PRE-MANUFACTURED EROSION MATS OR ANY SUITABLE SUBSTITUTE DEEMED ACCEPTABLE BY THE DESIGNER.
   A. HAY MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. HAY MULCH SHALL BE SECURED BY EITHER: (NOTE: SOIL SHALL NOT BE VISIBLE)
      I. BEING DRIVEN OVER BY TRACKED CONSTRUCTION EQUIPMENT ON GRADES OF 5% AND LESS.
      II. BLANKETED BY TACKED PHOTODEGRADABLE/BIODEGRADABLE NETTING, OR WITH SPRAY, ON GRADES GREATER THAN 5%.
      III. SEE NOTE 6, GENERAL NOTES, AND NOTE 8, WINTER CONSTRUCTION.
   B. HYDRO-MULCH SHALL CONSIST OF A MIXTURE OF EITHER ASPHALT, WOOD FIBER OR PAPER FIBER AND WATER SPRAYED OVER A SEEDED AREA. HYDRO-MULCH SHALL NOT BE USED BETWEEN 9/15 AND 4/15.
4. CONSTRUCTION SHALL BE PLANNED TO ELIMINATE THE NEED FOR SEEDING BETWEEN SEPTEMBER 15 AND APRIL 15. SHOULD SEEDING BE NECESSARY BETWEEN SEPTEMBER 15 AND APRIL 15 THE FOLLOWING PROCEDURE SHALL BE FOLLOWED. ALSO REFER TO NOTE 9 OF WINTER CONSTRUCTION.
   A. ONLY UNFROZEN LOAM SHALL BE USED.
   B. LOAMING, SEEDING AND MULCHING WILL NOT BE DONE OVER SNOW OR ICE COVER. IF SNOW EXISTS, IT MUST BE REMOVED PRIOR TO PLACEMENT OF SEED.
   C. WHERE PERMANENT SEEDING IS NECESSARY, ANNUAL WINTER RYE (1.2 LBS/1000 SQ.FT) SHALL BE ADDED TO THE PREVIOUSLY NOTED AREAS.
   D. WHERE TEMPORARY SEEDING IS REQUIRED, ANNUAL WINTER RYE (2.6 LBS/1000 SQ. FT.) SHALL BE SOWN INSTEAD OF THE PREVIOUSLY NOTED SEEDING RATE.
   E. FERTILIZING, SEEDING AND MULCHING SHALL BE APPLIED TO LOAM THE DAY THE LOAM IS SPREAD BY MACHINERY.
   F. ALTERNATIVE HAY MULCH SHALL BE SECURED WITH PHOTODEGRADABLE/BIODEGRADABLE NETTING. TRACKING BY MACHINERY ALONE WILL NOT SUFFICE.
5. FOLLOWING FINAL SEEDING, THE SITE WILL BE INSPECTED EVERY 30 DAYS UNTIL 85% COVER HAS BEEN ESTABLISHED. RESEEDING WILL BE CARRIED OUT BY THE CONTRACTOR WITHIN 10 DAYS OF NOTIFICATION BY THE ENGINEER THAT THE EXISTING CATCH IS INADEQUATE.

MONITORING SCHEDULE

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING, MONITORING, MAINTAINING, REPAIRING, REPLACING AND REMOVING ALL OF THE EROSION AND SEDIMENTATION CONTROLS OR APPOINTING A QUALIFIED SUBCONTRACTOR TO DO SO.

MAINTENANCE MEASURES WILL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. AFTER EACH RAINFALL. A VISUAL INSPECTION WILL BE MADE OF ALL EROSION AND SEDIMENTATION CONTROLS AS FOLLOWS:

1. HAY BALE BARRIERS, SILT FENCE, AND STONE CHECK DAMS SHALL BE INSPECTED AND REPAIRED ONCE A WEEK OR IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL. SEDIMENT TRAPPED BEHIND THESE BARRIERS SHALL BE EXCAVATED WHEN IT REACHES A DEPTH OF 6" AND REDISTRIBUTED TO AREAS UNDERGOING FINAL GRADING. SHOULD THE HAY BALE BARRIERS PROVE TO BE INEFFECTIVE, THE CONTRACTOR SHALL INSTALL SILT FENCE BEHIND THE HAY BALES.
2. VISUALLY INSPECT RIPRAP ONCE A WEEK OR AFTER EACH SIGNIFICANT RAINFALL AND REPAIR AS NEEDED. REMOVE SEDIMENT TRAPPED BEHIND THESE DEVICES ONCE IT ATTAINS A DEPTH EQUAL TO 1/2 THE HEIGHT OF THE DAM OR RISER. DISTRIBUTE REMOVED SEDIMENT OFF-SITE OR TO AN AREA UNDERGOING FINAL GRADING.
3. REVEGETATION OF DISTURBED AREAS WITHIN 25' OF DRAINAGE-COURSE/STREAM WILL BE SEEDED WITH THE "WILDFLOW AREA MIX" AND INSPECTED ON A WEEKLY BASIS OR AFTER EACH SIGNIFICANT RAINFALL AND RESEEDED AS NEEDED. EXPOSED AREAS WILL BE RESEEDED AS NEEDED UNTIL THE AREA HAS OBTAINED 100% GROWTH RATE. PROVIDE PERMANENT RIPRAP FOR SLOPES IN EXCESS OF 3:1 AND WITHIN 25' OF DRAINAGE COURSE.

EROSION CONTROL DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHALL BE LIMITED TO THOSE AREAS TO BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AT THE END OF EACH WORK WEEK NO AREAS MAY BE LEFT UNSTABILIZED OVER THE WEEKEND.
4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED, SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 150 LB. PER 1000 S.F. (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ANCHORED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH. NOTE: AN AREA IS ALSO CONSIDERED STABLE IF SODDED, COVERED WITH GRAVEL (PARKING LOTS) OR STRUCTURAL SAND.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES 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 1 AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW, DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY, SILT FENCE OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS SHOWN ON THE DESIGN DRAWINGS. NOTE: DORMANT SEEDING SHOULD NOT BE ATTEMPTED UNLESS SOIL TEMPERATURE REMAINS BELOW 50 DEGREES AND DAY TIME TEMPERATURES REMAIN IN THE 30'S.
7. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%. VEGETATED DRAINAGE SWALES SHALL BE LINED WITH EXCELSIOR OR CURLEX.
8. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1 THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
9. BETWEEN THE DATES OF OCTOBER 15 TO NOVEMBER 1, WINTER RYE IS RECOMMENDED FOR STABILIZATION. AFTER NOVEMBER 1, WINTER RYE IS NOT EFFECTIVE. AROUND NOVEMBER 15 OR LATER, ONCE TEMPERATURES OF THE AIR AND SOIL PERMIT, DORMANT SEEDING IS EFFECTIVE.
10. IN THE EVENT OF SNOWFALL (FRESH OR CUMULATIVE) GREATER THAN 1 INCH DURING WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM THE AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

SITE INSPECTION AND MAINTENANCE

1. WEEKLY INSPECTIONS, AS WELL AS ROUTINE INSPECTIONS FOLLOWING RAIN FALLS, SHALL BE CONDUCTED BY THE GENERAL CONTRACTOR OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES UNTIL FINAL ACCEPTANCE OF THE PROJECT (85% GRASS CATCH). NECESSARY REPAIRS SHALL BE MADE TO CORRECT UNDERMINING OR DETERIORATION. FINAL ACCEPTANCE SHALL INCLUDE A SITE INSPECTION TO VERIFY THE STABILITY OF ALL DISTURBED AREAS AND SLOPES. UNTIL FINAL INSPECTION, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL IMMEDIATELY BE CLEANED, AND REPAIRED BY THE GENERAL CONTRACTOR AS REQUIRED. DISPOSAL OF ALL TEMPORARY EROSION AND CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
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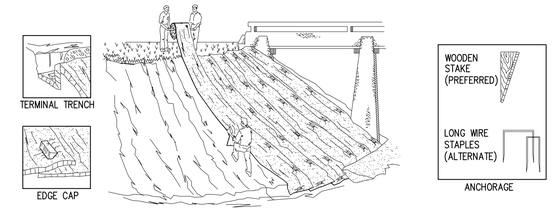
2. SHORT-TERM SEDIMENTATION MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT ALL SWALES AND STRUCTURES PRIOR TO TURNING PROJECT OVER TO THE CITY.

MAINTENANCE AFTER CONSTRUCTION

1. LONG-TERM PROVISIONS FOR PERMANENT MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL FACILITIES AFTER ACCEPTANCE OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE OWNER OR THEIR DESIGNEE. SUCH RESPONSIBILITIES INCLUDE BUT ARE NOT LIMITED TO THOSE DETAILED AS FOLLOWS:
   A. PARKING LOT SHALL BE MECHANICALLY SWEPT TWCE PER YEAR. THE FIRST SHALL TAKE PLACE IN THE MID WINTER (JANUARY THAW) TO REMOVE ACCUMULATED SANDS FROM WINTER SANDING TO THIS POINT. THE SECOND SWEEPING SHALL TAKE PLACE AFTER WINTER SANDING OPERATIONS TERMINATE BUT PRIOR TO MAY 1.
   B. INSPECTION OF STORMWATER OUTLET STRUCTURE SHOULD BE CONDUCTED TWCE PER YEAR. ACCESS TO THE STRUCTURE IS THROUGH THE TOP. THE OIL/WATER SEPARATOR UNIT SHALL BE PUMPED DOWN AND THE SEDIMENT AND TRASH SHALL BE REMOVED AT THE TIME OF THE INSPECTION. THE REMOVAL OF ALL SEDIMENT AND TRASH WILL HELP MINIMIZE VOLUME LOSS.
2. THE OWNER SHALL FILE A YEARLY MAINTENANCE REPORT TO THE CITY DOCUMENTING THE REQUIRED MAINTENANCE FOR THE STORMWATER SYSTEM.

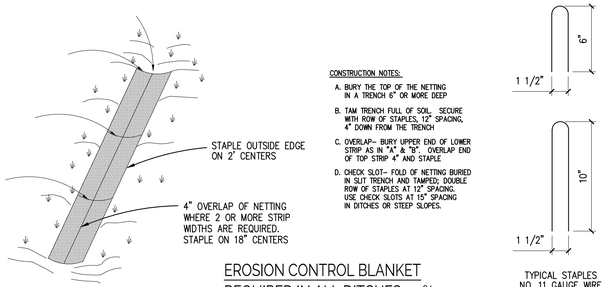


- UNROLL MAT ONTO GROUND IN DIRECTION OF WATER FLOW.
- MAT SHOULD LIE FLAT. DO NOT STRETCH MAT OVER GROUND. STRETCHING MAY CAUSE MAT TO BRIDGE DEPRESSIONS IN THE SURFACE AND ALLOW EROSION UNDERNEATH.
- BURY TRANSVERSE TERMINAL ENDS OF MAT TO SECURE AND PREVENT EROSIVE FLOW UNDERNEATH.
- SECURE MAT SNUGLY INTO ALL TRANSVERSE CHECK SLOTS.
- BACKFILL AND COMPACT TRENCHES AND CHECK SLOTS AFTER STAKING THE MAT IN BOTTOM OF TRENCH.
- OVERLAP ROLL ENDS BY THREE (3) FEET (MIN.) WITH UPSLOPE MAT ON TOP TO PREVENT UPLIFT OF MAT END BY WATER FLOW. IF INSTALLING IN THE DIRECTION OF A CONCENTRATED WATER FLOW, START NEW ROLLS IN A TRANSVERSE DITCH.
- OVERLAP ADJACENT EDGES OF MAT BY THREE (3) INCHES (MIN.) AND STAKE.
- WOOD STAKES ARE RECOMMENDED FOR PINNING MAT TO THE GROUND SURFACE. STAKES SHOULD BE 1" X 2" NOMINAL STOCK CUT IN A TRIANGULAR SHAPE. STAKES SHOULD BE 12" TO 18" LONG, DEPENDING ON SOIL DENSITY.
- DRIVE WOODEN STAKES TO WITHIN THREE (3) INCHES OF GROUND SURFACE. DO NOT DRIVE FLUSH TO SURFACE.
- IN ALL TRANSVERSE TERMINAL TRENCHES AND CHECK SLOTS, STAKE EACH MAT AT ITS CENTER AND OVERLAP EDGES BEFORE BACKFILLING AND COMPACTING.
- STAKE OVERLAPS LONGITUDINALLY AT THREE (3) TO FIVE (5) FOOT INTERVALS.
- FOLOW COLORED DOT PATTERNS BY MANUFACTURER

REQUIRED ON ALL SLOPES > 8% (WINTER CONSTRUCTION)
REQUIRED ON ALL SLOPES > 15% (SUMMER CONSTRUCTION)

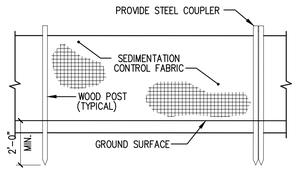
EROSION CONTROL BLANKET
GENERAL INSTALLATION GUIDELINES ON SLOPES

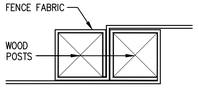
NTS



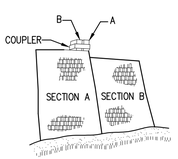
EROSION CONTROL BLANKET
REQUIRED IN ALL DITCHES > 3%

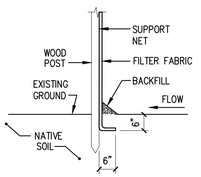
NOTE: GRADING PLAN GOVERNS IN ALL LOCATIONS





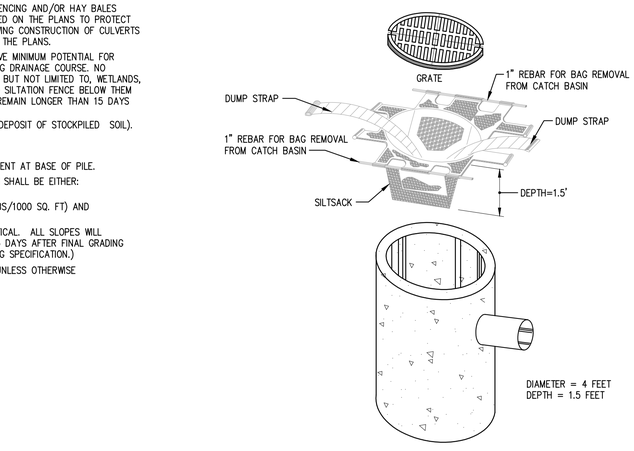
NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND

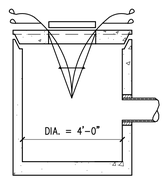




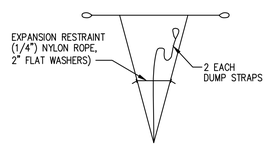
SILTATION FENCE DETAIL

NTS





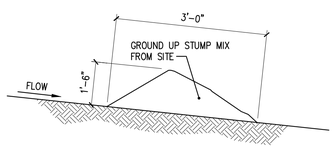
INSTALLATION DETAIL



BAG DETAIL

"SILTSACK" INSTALLATION INSTRUCTION

1. REMOVE THE CATCH BASIN GRATE AND PLACE THE SACK INTO THE OPENING. HOLD OUT APPROXIMATELY SIX (6) INCHES OF THE SACK BEYOND THE BASIN FRAME TO ALLOW ACCESS TO THE "SILTSACK" LIFTING STRAPS. REPLACING THE GRATE BACK INSIDE OF ITS FRAME WILL HOLD THE SACK IN PLACE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING THIS SEDIMENT CONTROL DEVICE. THE SACK IS CONSIDERED FULL AND READY TO EMPTY WHEN THE THE "RESTRAINT CORD" IS NO LONGER VISIBLE.
3. THE "SILTSACK" IS REMOVED BY PLACING TWO (2) PIECES IF 1 INCH DIAMETER REBAR THROUGH THE LIFTING LOOPS LOCATED ON EACH SIDE OF THE SACK AND LIFTING WITH AN APPROPRIATE PIECE OF CONSTRUCTION EQUIPMENT. THE LIFTING STRAPS ARE CONNECTED TO THE BOTTOM OF THE SACK AND THE LIFTING ACTION WILL CAUSE THE SACK TO TURN INSIDE OUT, AND EMPTYING THE CONTENTS. THE SACK SHOULD THEN BE CLEANED, RINSED AND RETURNED TO ITS ORIGINAL SHAPE AND PLACED BACK IN THE BASIN.
4. THE "SILTSACK" IS REUSABLE, THEREFORE, ONCE THE CONSTRUCTION CYCLE IS COMPLETE, REMOVE THE SACK FROM THE BASIN, CLEAN AND STORE OUT OF DIRECT SUNLIGHT UNTIL ITS NEXT USE.
5. THE "SILTSACK" SEDIMENT CONTROL DEVICE IS MANUFACTURED BY: ACF ENVIRONMENTAL



MAY BE USED IN LIEU OF SILT FENCE

EROSION CONTROL MIX DETAIL

N.T.S.

SILTATION FENCE INSTALLATION

1. EXCAVATE A 6"x6" TRENCH ALONG THE LINE OF PLACEMENT FOR THE FILTER BARRIER.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH.
3. DRIVE POSTS INTO THE GROUND UNTIL APPROXIMATELY 2" OF FABRIC IS LYING ON THE TRENCH BOTTOM. JOIN SECTION AS SHOWN ABOVE.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING THE FABRIC FLAP ON UNDISTURBED GROUND AND PILING AND TAMPING FILL AT THE BASE, BUT MUST BE ACCOMPLISHED BY AN INTERCEPTION DITCH.
5. BARRIER SHALL BE MIRAFI SILT FENCE OR APPROVED EQUAL.

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PROPOSED SITE ALTERATIONS

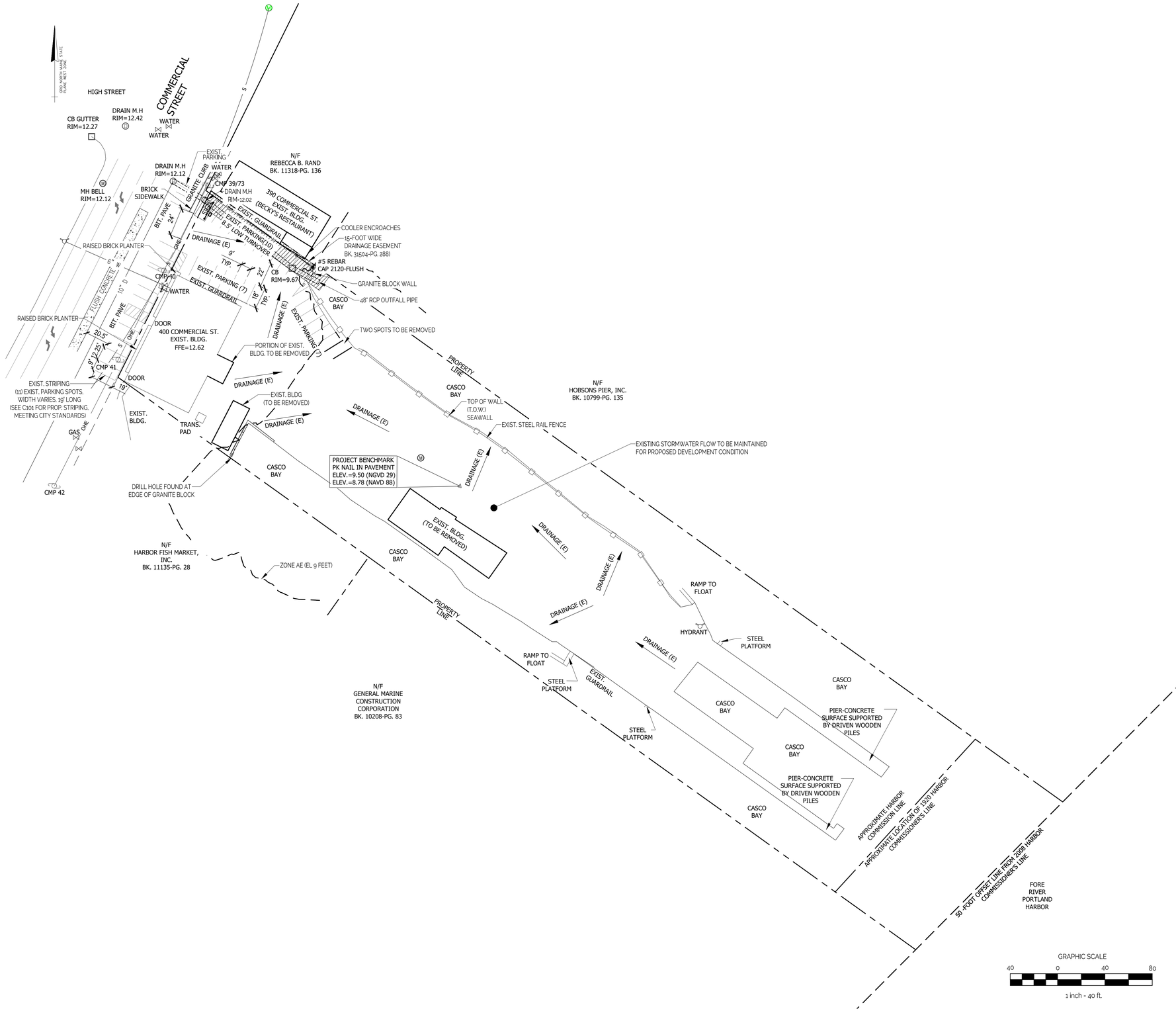
No.	DESCRIPTION	DR. BY	CKD BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24

ISSUED

SHEET TITLE:
EROSION CONTROL DETAILS

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C300



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LEGEND

EXISTING	DESCRIPTION	PROPOSED
□	GRANITE MONUMENT – 3' OFFSET	■
○ IPF	IRON PIN FOUND/SET	○ IPS
○ IRF	IRON ROD FOUND	
☼ CIRF	CAPPED IRON ROD FOUND	
◉ DHF	DRILL HOLE FOUND	
□ MON	GRANITE MONUMENT FOUND	
	STREET LINE	
	LOT SETBACKS	
	PROPERTY LINE	
	ABUTTER LINE	
	"NO CUT" BUFFER	
	WETLANDS	
	EDGE OF ROAD/TRAVELED WAY	
TP 69	SOIL TEST PIT	TP 69
101	CONTOUR	101
327x60 x 327.6	SPOT GRADE	327x60 x 327.6
GAS	GAS SHUT-OFF	
UP UP	UTILITY POLE	
OE	OVERHEAD ELECTRICAL	OE
UE&T	UNDERGROUND ELECTRICAL	UE&T
T	ELECTRICAL TRANSFORMER	T
	FIRE HYDRANT	
8"-W 8" W	WATER LINE	8"-W 8" W
WG	WATER GATE	
12" S	SEWER LINE	12" S
SMH	SEWER MANHOLE	● SMH-1
DMH	DRAINAGE MANHOLE	● DMH-1
CB	CATCH BASIN	■ CB-1
UD/SD	UNDERDRAIN/STORMDRAIN	UD/SD
UD	UNDERDRAIN	UD
	SILT FENCE	SF
	TEMP. STONE CHECK DAM	
	GRADING AND FLOW DIRECTION	
	HAY BALES	
	EROSION CONTROL BLANKET	
	STORMWATER BOUNDARY	
	STORMWATER FLOW (Tc)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
	TREE LINE	
	SITE LIGHTING (BAYSIDE FIXTURE)	
	STONE WALL	

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No.	DESCRIPTION	DR. BY	CK'D BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24
B	RE-ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	4-15-24
C	ISSUED FOR PORTLAND WATER DISTRICT REVIEW	KB	ED	8-16-24
D	RESPONSE TO CITY COMMENTS	KB	ED	8-26-24
E	RESPONSE TO CITY COMMENTS	KB	ED	10-07-24
F	RESUBMISSION TO CITY W/ UPDATES	KB	ED	10-10-24

SHEET TITLE:
EXISTING SITE PLAN

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C100

EXISTING SITE PLAN

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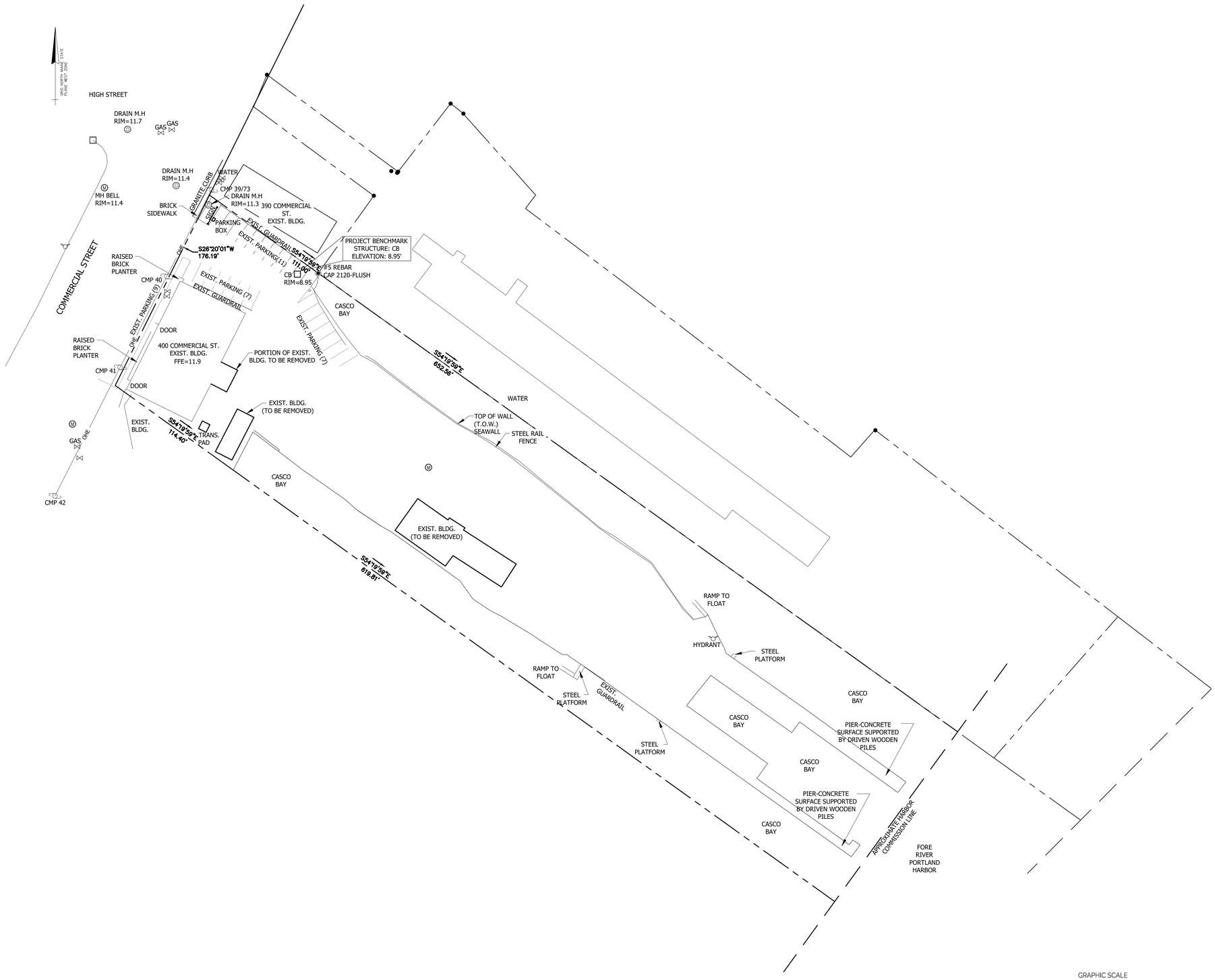

GRAPHIC SCALE

40 0 40 80

1 inch = 40 ft.

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8"-W 8" W	WATER LINE	8"-W 8" W
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COMMERCIAL ST. PORTLAND, MAINE

PROPOSED SITE ALTERATIONS

ISSUED

No.	DESCRIPTION	DR BY	CHD BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24

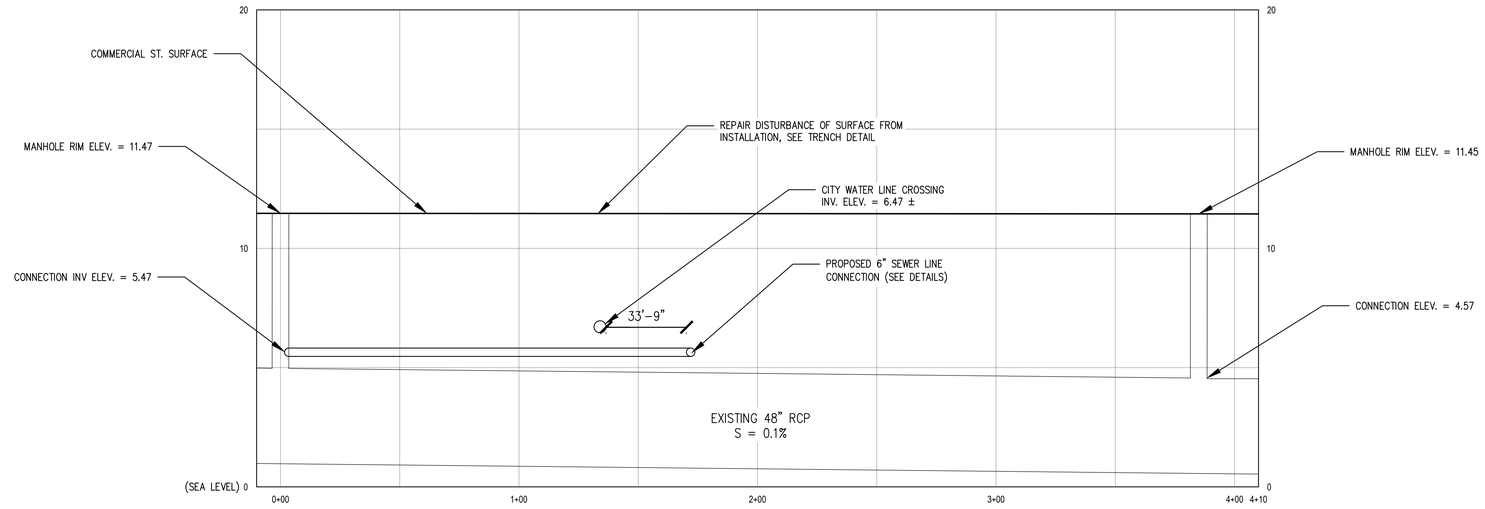
SHEET TITLE:

EXISTING SITE PLAN

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C100

EXISTING SITE PLAN



PROPOSED SEWER CONNECTION PROFILE

TRILLIUM ENGINEERING GROUP
189 MAIN STREET SUITE 200
YARMOUTH, ME 04096

CLIENT:

400 COMMERCIAL LLC

PORTLAND, MAINE

PRELIMINARY
NOT FOR CONSTRUCTION

400 COMMERCIAL ST.
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B	RE-ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	4-15-24
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D	RESPONSE TO CITY COMMENTS	KB	ED	8-26-24
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C104

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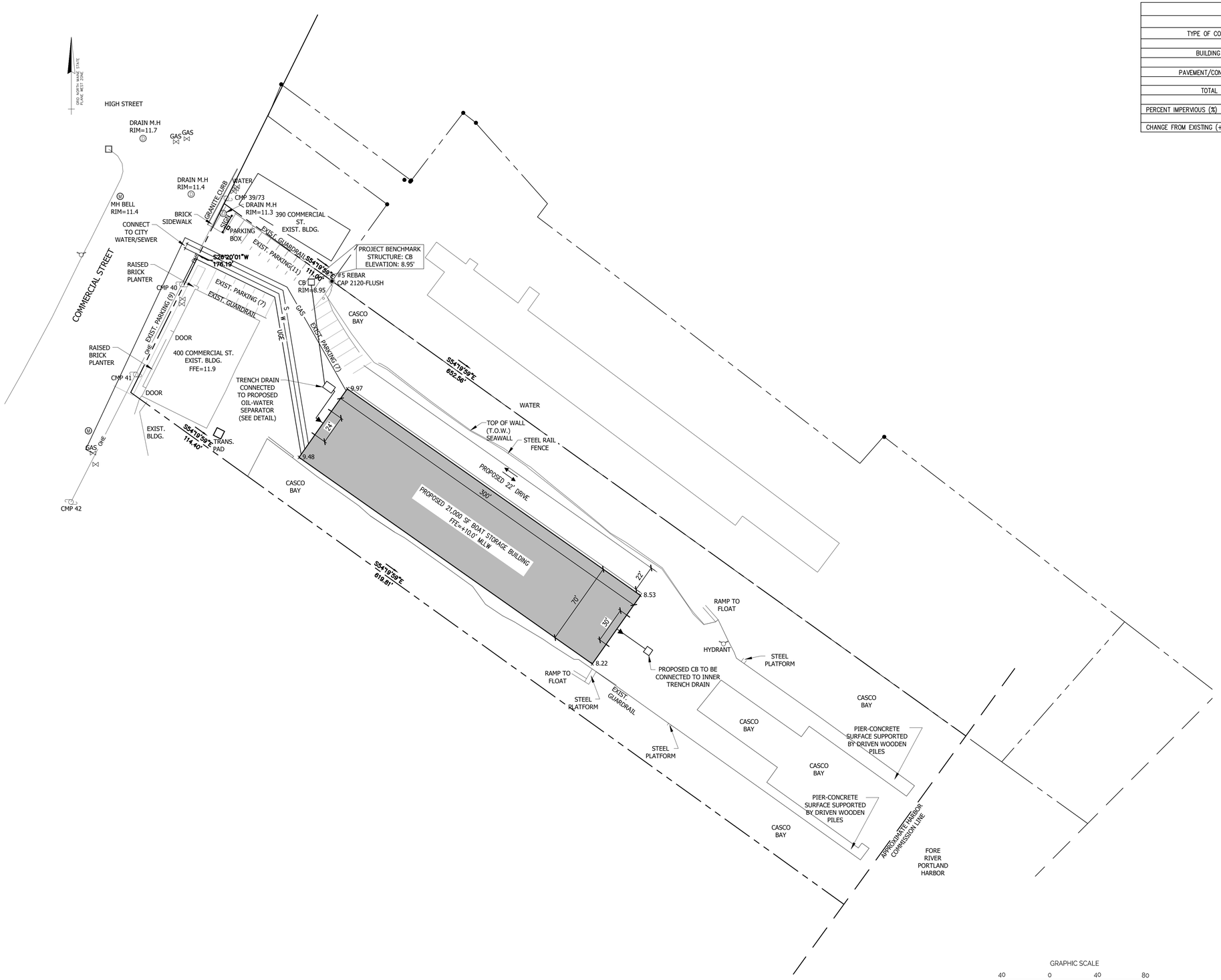

GRAPHIC SCALE

40 0 40 80

1 inch = 40 ft.

IMPERVIOUS AREA TABLE		
LOT AREA: 130,199 SF		
TYPE OF COVER	EXISTING IMP. AREA (SF)	PROPOSED IMP. AREA (SF)
BUILDING	9,748	27,059
PAVEMENT/CONCRETE	61,896	44,585
TOTAL	71,644	71,644
PERCENT IMPERVIOUS (%)	55%	55%
CHANGE FROM EXISTING (+/–)	–	0

LEGEND

EXISTING	DESCRIPTION	PROPOSED
□	GRANITE MONUMENT – 3" OFFSET	■
IPF	IRON PIN FOUND/SET	IPS
IRF	IRON ROD FOUND	
CIRF	CAPPED IRON ROD FOUND	
DHF	DRILL HOLE FOUND	
MON	GRANITE MONUMENT FOUND	
	STREET LINE	
	LOT SETBACKS	
	PROPERTY LINE	
	ABUTTER LINE	
	"NO CUT" BUFFER	
	WETLANDS	
	EDGE OF ROAD/TRAVELED WAY	
SP 69	SOIL TEST PIT	SP 69
101	CONTOUR	101
327x60 x 327.6	SPOT GRADE	327x60 x 327.6
GAS	GAS SHUT-OFF	
UP	UTILITY POLE	
OE	OVERHEAD ELECTRICAL	OE
UE&T	UNDERGROUND ELECTRICAL	UE&T
T	ELECTRICAL TRANSFORMER	T
	FIRE HYDRANT	
8"-W 8" W	WATER LINE	8"-W 8" W
WG	WATER GATE	
12" S	SEWER LINE	12" S
SMH	SEWER MANHOLE	SMH-1
DMH	DRAINAGE MANHOLE	DMH-1
CB	CATCH BASIN	CB-1
UD/SD	UNDERDRAIN/STORMDRAIN	UD/SD
UD	UNDERDRAIN	UD
	SILT FENCE	SF
	TEMP. STONE CHECK DAM	
	GRADING AND FLOW DIRECTION	
	HAY BALES	
	EROSION CONTROL BLANKET	
	STORMWATER BOUNDARY	
	STORMWATER FLOW (Tc)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
	TREE LINE	
	SITE LIGHTING (BAYSIDE FIXTURE)	
	STONE WALL	

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PROPOSED SITE & UTILITIES PLAN

DESIGNED:	ED
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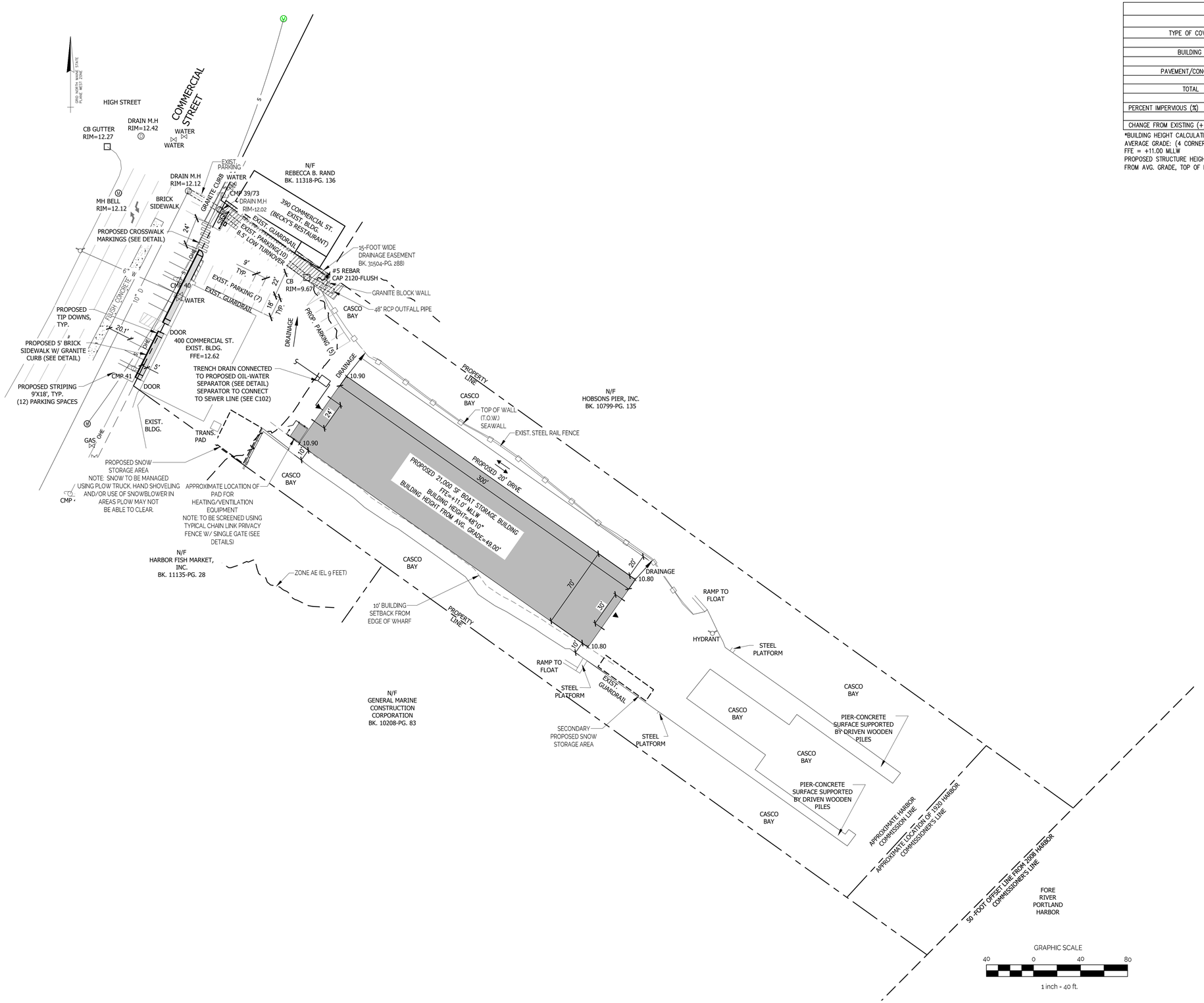
C101



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CHANGE FROM EXISTING (+/–)	–	0

*BUILDING HEIGHT CALCULATION:
AVERAGE GRADE: (4 CORNER SPOT GRADES)/4 = 10.85'
FFE = +11.00 MLLW
PROPOSED STRUCTURE HEIGHT = 48'10"
FROM AVG. GRADE, TOP OF BUILDING = (11.00'–10.85')+48'10" = 49.00'

LEGEND

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TP 69	SOIL TEST PIT	TP 69
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327x60 x 327.6	SPOT GRADE	327x60 x 327.6
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UE&T	UNDERGROUND ELECTRICAL	UE&T
T	ELECTRICAL TRANSFORMER	T
	FIRE HYDRANT	
8"-W 8" W	WATER LINE	8"-W 8" W
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UD/SD	UNDERDRAIN/STORMDRAIN	UD/SD
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	TEMP. STONE CHECK DAM	
	GRADING AND FLOW DIRECTION	
	HAY BALES	
	EROSION CONTROL BLANKET	
	STORMWATER BOUNDARY	
	STORMWATER FLOW (Tc)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
	TREE LINE	
	SITE LIGHTING (BAYSIDE FIXTURE)	
	STONE WALL	

PROPOSED SITE & UTILITIES PLAN

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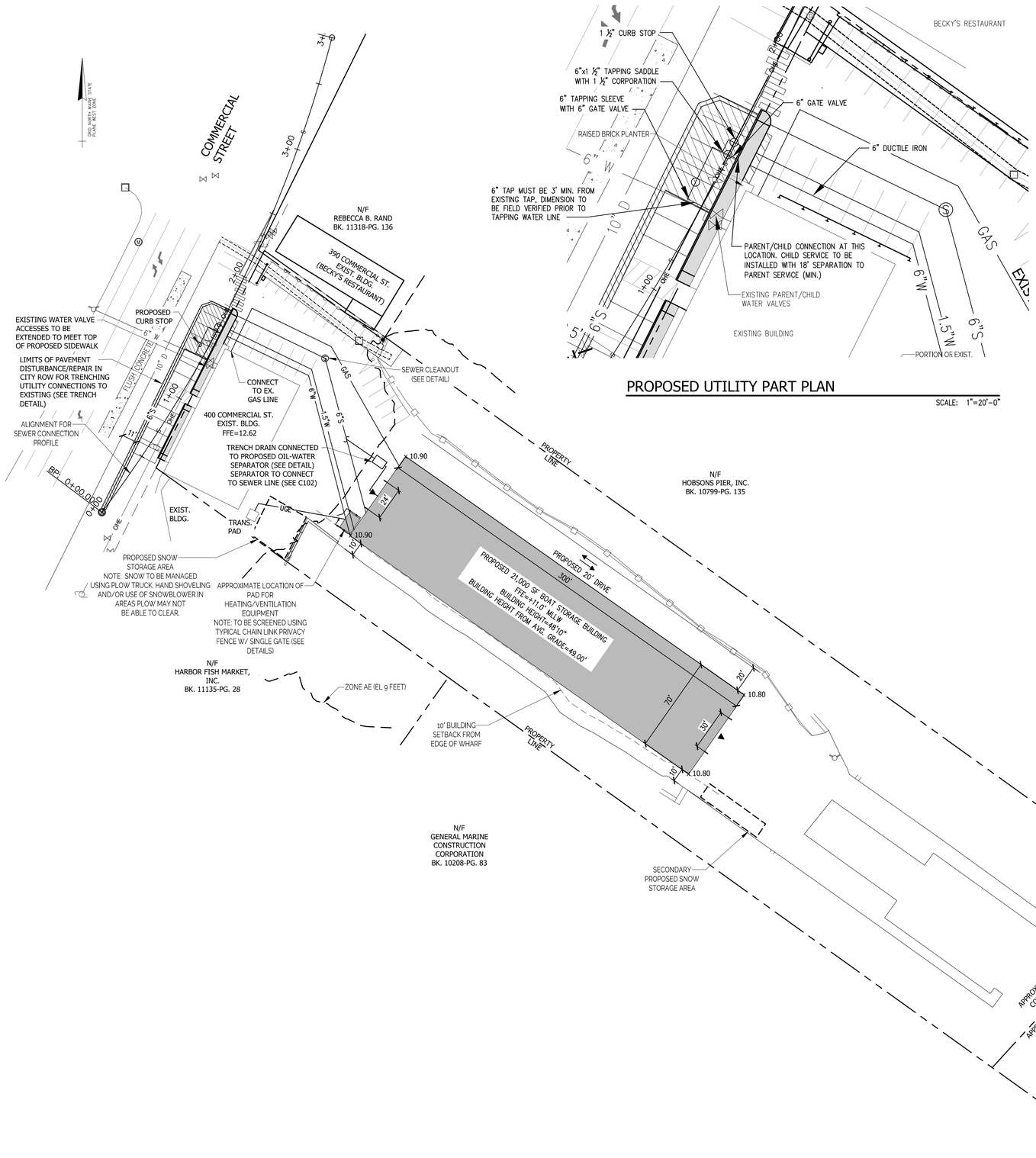

PROPOSED UTILITY PART PLAN

SCALE: 1"=20'-0"

PROPOSED UTILITIES PLAN

SCALE: 1"=40'-0"

GRAPHIC SCALE

40 0 40 80

1 inch = 40 ft.

LEGEND

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T	ELECTRICAL TRANSFORMER	T
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8"–W 8" W	WATER LINE	8"–W 8" W
WG	WATER GATE	
12" S	SEWER LINE	12" S
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	SILT FENCE	SF
	TEMP. STONE CHECK DAM	
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	HAY BALES	
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	STORMWATER BOUNDARY	
	STORMWATER FLOW (Tc)	
	FACE OF LEDGE OUTCROP	
	BIRCH	
	MAPLE	
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SHEET TITLE:

PROPOSED UTILITIES PLAN

DESIGNED:	ED
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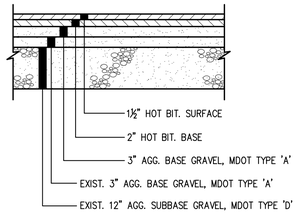
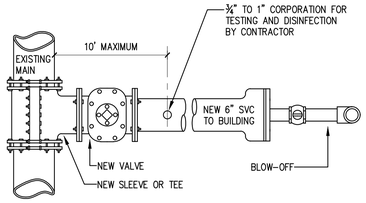
PROJECT NUMBER:	23-188

C102



TYPICAL PAVED SECTION

SCALE: NTS



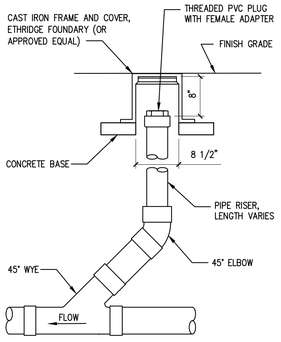
PLAN VIEW

PROCEDURES:

1. NEW VALVE TO REMAIN SHUT AND ONLY OPERATED BY DISTRICT FOR FLUSHING, TESTING, DISINFECTING, ETC.
2. THE TESTING CORPORATION LOCATION MUST BE ACCESSIBLE BY:
   A. LEAVING THE EXCAVATION OPEN DURING TESTING – DISINFECTION PERIOD, OR BY:
   B. INSTALLING A "JUMPER LINE" TO THE GROUND SURFACE WITH THE CORPORATION BEING AN ANGLE VALVE IN A VALVE BOX, OR BY USING A SERVICE BOX AND ROD. AFTER COMPLETION OF THE HYDROSTATIC TEST AND THE DISINFECTION PROCEDURE:
      (1) THE ANGLE VALVE IS SHUT,
      (2) THE "JUMPER LINE" IS CUT OFF BELOW THE GROUND, AND
      (3) THE BOX IS PULLED.

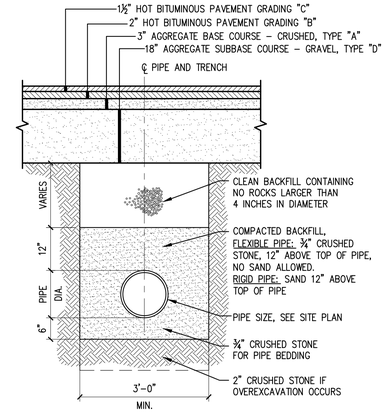
NEW WATER CONNECTION TO EXISTING MAIN

SCALE: NTS



TYPICAL SEWER CLEAN-OUT DETAIL

SCALE: NTS

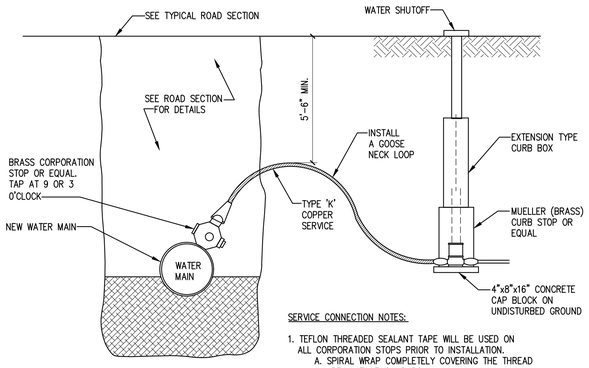


NOTE:
ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED BY THE CITY.

TYPICAL UNDERGROUND PIPE TRENCH SECTION

SCALE: NTS

NOTE: TYPICAL PIPE TRENCH INSTALLATION AND NOTES - FIG. II-12 SHALL BE FOLLOWED



SERVICE CONNECTION NOTES:

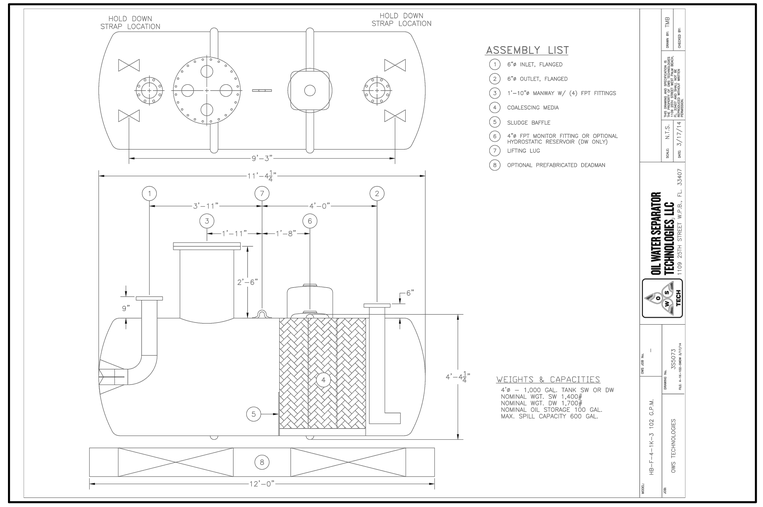
1. TEFLON THREADED SEALANT TAPE WILL BE USED ON ALL CORPORATION STOPS PRIOR TO INSTALLATION.
   A. SPIRAL WRAP COMPLETELY COVERING THE THREAD AREA WITH TWO WRAPS.
   B. PIPE DOPE OR OTHER LIQUID THREAD SEALANTS ARE NOT ACCEPTABLE.
2. LEAVE UP TO THREE THREADS SHOWING OUTSIDE OF PIPE. A TORQUE OF 35 POUNDS IS RECOMMENDED.

TYPICAL SERVICE CONNECTION
NTS

GENERAL NOTES
1. CONTRACTOR SHALL CONFIRM ALL PIPE SIZES WITH THE CITY WATER DISTRICT.
2. WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY WATER DISTRICT STANDARDS.
3. CONTRACTOR SHALL STUB NEW SERVICES AT THE EDGE OF THE R.O.W. IN THE MIDDLE OF EACH LOT, UNLESS OTHERWISE NOTED ON THE PLAN/PROFILES.
4. FINAL LOCATION OF ALL BLOW OFF VALVES, SHUT OFF VALVES, STREET BOXES AND HYDRANT VALVES SHALL BE IN ACCORDANCE WITH THE CITY WATER DISTRICT.

TYPICAL SERVICE CONNECTION DETAIL

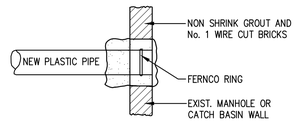
SCALE: NTS



EXAMPLE OF POTENTIAL OIL WATER SEPARATOR DETAIL

SCALE: NTS

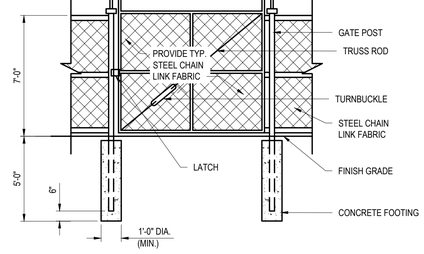
NOTE:
EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY USE ANY COMBINATION OF JACK HAMMERING AND SAW CUTTING THE STRUCTURE TO CREATE PIPE OPENING. THE NEW OPENING MUST THEN BE SEALED AND WATERTIGHT BOTH INSIDE AND OUTSIDE THE STRUCTURE.



PIPE CONNECTION TO EXISTING STRUCTURE DETAIL

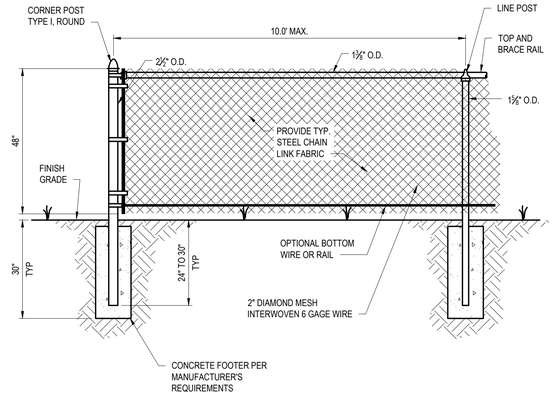
SCALE: NTS

NOTE: PLASTIC PIPE CONNECTION METHOD 3 - FIG. II-14 SHALL BE FOLLOWED



SINGLE SWING GATE DETAIL

SCALE: NTS



PRIVACY CHAIN LINK FENCE DETAIL

SCALE: NTS

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SHEET TITLE:

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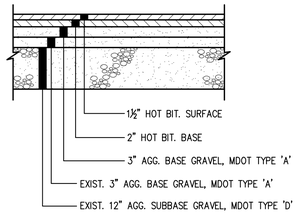

TYPICAL PAVED SECTION

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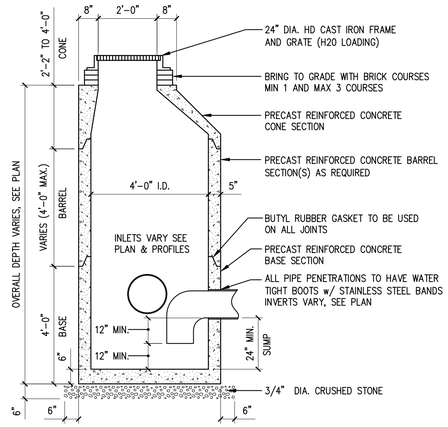
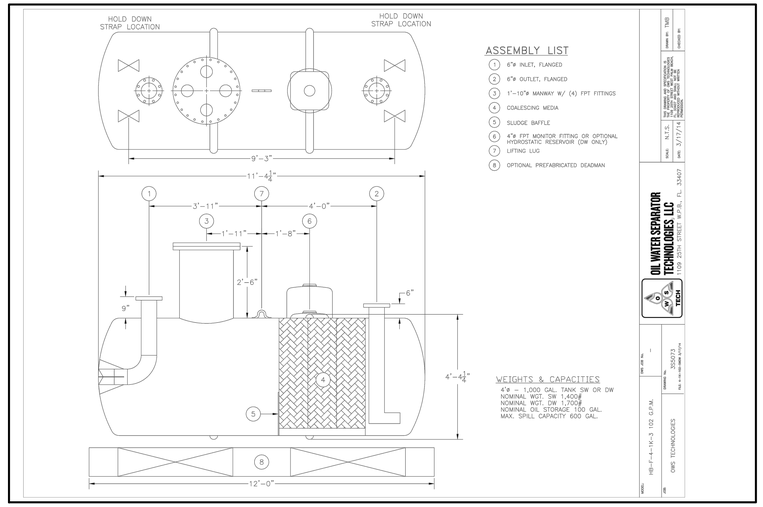


NOTES:
1. CONCRETE 4000 PSI AFTER 28 DAYS.
2. REINFORCING H-20 LOADING 4x4 / 4x4 WWM. SLAB TOP - NO. 5 BARS.
3. EACH CASTING TO HAVE LIFTING HOLES TO BE FILLED WITH NON-SHINK MORTAR.

OFFSET CONE STREET BASIN, W/ CASCO TRAP

CATCH BASIN DETAIL

SCALE: NTS



EXAMPLE OF POTENTIAL OIL WATER SEPARATOR DETAIL

SCALE: NTS

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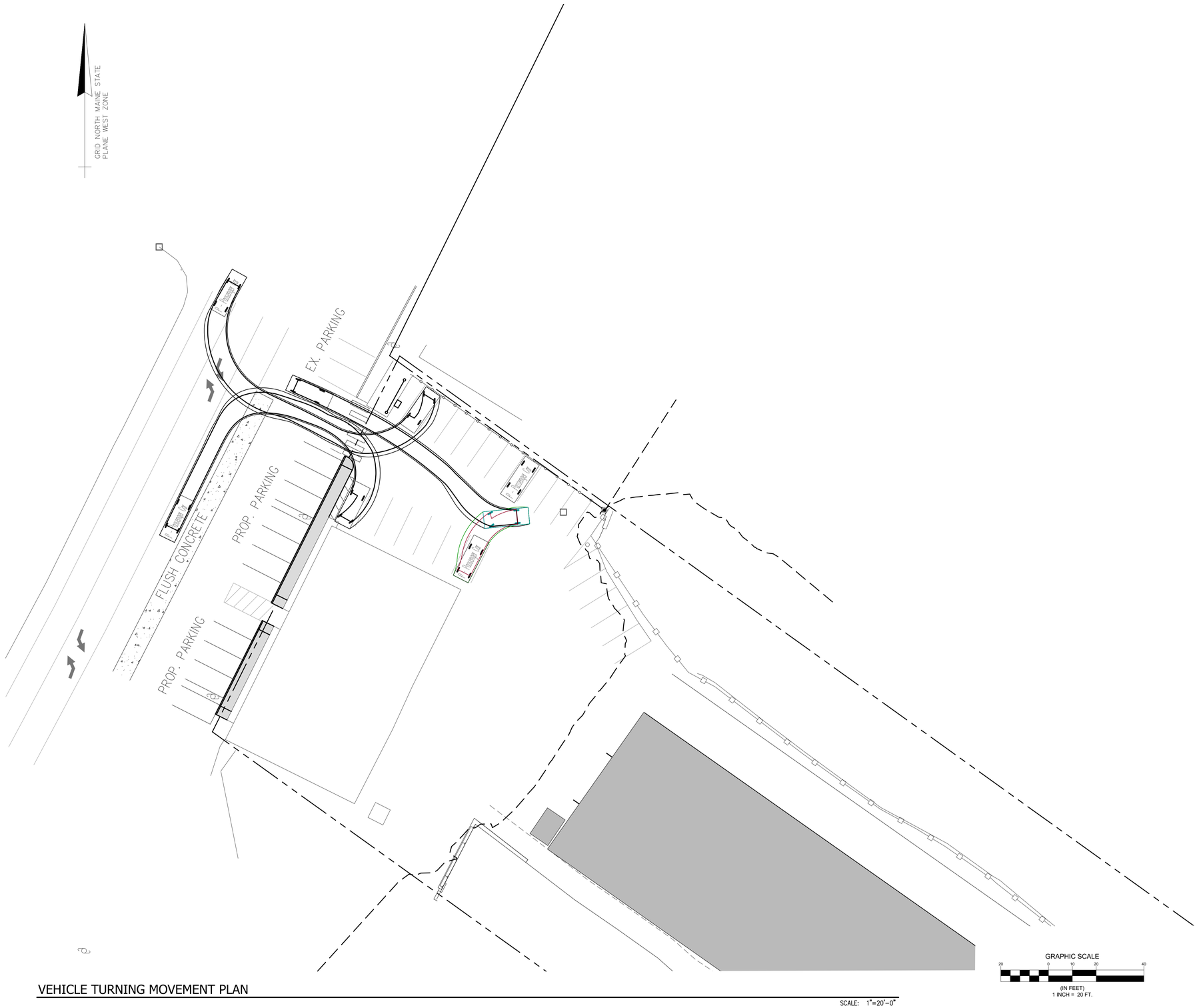

VEHICLE TURNING MOVEMENT PLAN

SCALE: 1"=20'-0"



P – Passenger Car

Overall Length	19.000ft
Overall Width	7.000ft
Overall Body Height	4.300ft
Min Body Ground Clearance	1.150ft
Track Width	6.000ft
Lock-to-lock time	4.00s
Max Steering Angle (Virtual)	31.60°

VEHICLE DIMENSIONS

LEGEND		
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No.	DESCRIPTION	DR. BY	CK'D BY	DATE
A	ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	2-16-24
B	RE-ISSUED FOR PRELIMINARY CITY REVIEW	KB	ED	4-15-24
C	ISSUED FOR PORTLAND WATER DISTRICT REVIEW	KB	ED	8-16-24
D	RESPONSE TO CITY COMMENTS	KB	ED	8-26-24
	RESPONSE TO CITY COMMENTS	KB	ED	10-07-24
E	RESUBMISSION TO CITY W/ UPDATES	KB	ED	10-10-24
F				

SHEET TITLE:
VEHICLE TURNING MOVEMENT PLAN

DESIGNED:	ED
DRAWN:	KB
DATE:	OCT 2023
PROJECT NUMBER:	23-188

C105

Planning Board Report
Planning and Urban Development Department

Riverton Park Redevelopment and Rehabilitation
2 Riverton Drive
Major Site Amendment Application (PL-003053-2024)
Portland Housing Authority, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Sean King, Urban Designer
Public Hearing Date:	October 22, 2024	**Date:**	October 18, 2024

I. INTRODUCTION AND PROPOSED AMENDMENT

The Portland Housing Development Corporation (PHDC) & Portland Housing Authority (PHA) have submitted a Major Site Plan Amendment to amend the previous application (PL-002319-2022) approved on May 23, 2023 by the Planning Board. The original site plan as approved would facilitate the construction of a new four-story multifamily building with 59 residential units, retail, clinic and office space; a new Neighborhood Center building with social services, office and meeting spaces for residents; a new maintenance building; rehabilitation of the 123 existing 2-story residential townhomes; and site work improvements throughout the property.

The amendment proposes the inclusion of five additional residential units within Circle 1 Building for a total number of 64 residential units while maintaining the overall proposed residential unit count, the renovation of the existing Administration Building and Building 5 to accommodate community-oriented services, the removal of maintenance facility upgrades and revisions to the stormwater treatment system, paving material, site lighting, landscaping throughout the property.

This application is considered a major amendment under subsection 14.14.3 as changes exceed the limited criteria for a minor amendment under subsection 14.14.2 that include an increase in the residential density, substantial changes to access and circulation to the site and new waiver requests.

The Planning and Urban Development Department mailed 261 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the October 12 and 15, 2024 editions of the Portland Press Herald.

Applicant:	Tyler Plante, Portland Housing Development Corporation
Applicant	Matthew Phillips, Carroll Associates
Representatives:	Keegan Carmichael, CWS Architects
Architect:	Andy Johnston, Atlantic Resources Consultants
Engineer:	

II. REQUIRED REVIEWS

The proposed amendment would reduce the development plan by withdrawing the previously approved conditional use for a place of assembly greater to 10,000 square feet along with the reduction of associated site improvements. The scope of the Planning Board's review is limited to only those standards

impacted by the amendment. Where not specifically referenced in the report, the associated Planning Board approval dated May 23, 2024 (PL-002319-2022) would remain applicable.

Review	*Applicable Standards*
Site Plan Review Standards	Section 14.6

Waiver Requests	*Applicable Standards*
Request: To install less than 50% EV- ready parking spaces to meet the minimum requirement of 15 due to financial hardship.	Technical Manual, Section 1.14. Electric Vehicle Infrastructure: New surface parking lots of five or more spaces shall include energized electrical outlets or installed chargers capable of providing Level 2 EV charging or higher to 20% of parking spaces (rounded down to the nearest whole number). An additional 50% of spaces must be made EV-ready, meaning that they are served by sufficient conduit and electrical service to allow for future installation of electric vehicle supply equipment at every space.

III. PROJECT DATA

Existing Zoning	B-2 Community Business; R-5a Residential
Property Size	17.72 acres
Existing Use	Residential (Planned Residential Unit Developments)
Proposed Use	Residential (Multi-family dwellings); Institutional (Clinics); Commercial / Service (General offices <5,000 Square feet

	Existing	*Proposed*	*Required*	*Net Change*
Dwelling Units	141 units	182 units	n/a	+41 units
Building Footprint	83,780 SF **(12,000 SF Demolished)**	**Approximately 18,600 SF**	**n/a**	**+6,600 SF**
Building Floor Area	158,755 SF	**Approximately 209,155 SF**	**n/a**	**+50,400 SF**
Off-street parking spaces	194	**224**	**207**	**+30**
Bicycle parking	0	**78**	**33**	**+78**
EV Charging Stations	0	**8**	**6**	**+8**

IV. 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

The City's consulting Traffic Engineer has reviewed the amended plans and has found that the increase in one parking space at the Circle 1 Building and the preservation of the existing parking area in front of the Administration building will not substantially increase vehicle traffic or result in unsafe conditions.

Staff consider this standard to be met.

B. Access and circulation

The applicant has amended public right-of-way improvements to reduce the previously approved locations for new curbing and sidewalk in several locations where the existing curbing is to remain. In addition, the applicant has amended the raised pedestrian crossing across Riverton Drive and has provided new crosswalks to the existing Administration building that the City's consulting Traffic Engineer has noted would result in a safer condition for pedestrians.

Staff consider this standard to be met.

C. Public transit access

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

D. Parking

The City's Consulting Traffic Engineer finds the parking supply increase for one additional ADA parking space at Circle 1 building to be reasonable and anticipates minimal increases to traffic.

The applicant has requested a waiver relevant to the number of Electric Vehicle (EV) infrastructure for the new parking lot at Circle 1 building:

Technical Manual Section 1.14 – Electric Vehicle (EV) Infrastructure

The applicant is meeting the requirement for Level 2 charging stations with a proposed quantity of eight within the Circle 1 building parking lot. The applicant has requested a waiver for the EV-ready conduit which requires 50% of the additional 30 off-street parking spaces be served by sufficient conduit and electrical service to allow for future installation of electric vehicle supply equipment at every space. The applicant has provided additional justification for waiving the standard explaining:

> *Electrical conduit and wiring of EV chargers are very expensive. The project has undergone significant scope reduction and cannot afford to wire the additional parking spaces and build in that extra transformer capacity.*

E. Transportation demand management (TDM)

The applicant has provided a supplemental amendment to the approved TDM plan to reflect the reduction in building program and new parking space count.

Staff consider this standard to be met.

2. Environmental Quality Standards (Section 14.6.2)

A. Preservation of significant natural features

The amendment reduces the development area with the existing Administration building to remain.

Staff consider this standard to be met.

B. Landscape preservation

The amendment reduces the development area and associated tree removals with the existing Administration building to remain.

Staff consider this standard to be met.

C. Site landscaping and buffers

The amendment reduces the development area with the existing Administration building to remain. The applicant proposed to amend the approved plans at the Circle 1 Building with additional landscaping and paved open space adjacent to the front entry. The applicant proposes to amend the arrangement and increase the number of residential units by five, for a total of 64 residential units, in the Circle 1 Building. The five additional residential units require either planting five additional street trees or an acceptable alternative under Technical Manual section 4.6.4 above the 59 street trees previously approved. Staff consider the new street trees visible from the right-of-way within 20 feet of the property line at Riverton Drive and Springbrook Way as an acceptable street tree alternative.

D. Water quality/storm water management/erosion control

The amendment reduces the stormwater treatment area with the amended plans and the existing Administration building to remain.

Staff consider this standard to be met.

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

A. Consistency with City Master Plans

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

B. Public safety and fire prevention

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

C. Availability and capacity of public utilities

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

B. Shadows

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

C. Snow and ice loading

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

D. View corridors

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

E. Historic resources

The development is not located in or within 100 feet of a historic district or historic landmark. This standard is not applicable.

F. Exterior lighting

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

G. Noise and vibration

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

H. Signage and wayfinding

The amendment does not impact the previously approved plans.

Staff consider this standard to be met.

I. Zoning-related design standards

The amendment proposes several modifications to the approved architectural plans to amend the Circle 1 building with removal of retail bays that faced Riverton Drive for an articulated primary entry, revisions to simplify the exterior façade materials with the removal of the vertical banding that Staff finds appropriate and consistent with the previously approved plans.

V. 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 held on October 22, 2024 for application PL-003053-2024 relevant to the Site Plan Standards of the

Land Use Code and Portland's Technical and Design Standards, and other regulations, and testimony presented at the Planning Board public hearing:

1. Electrical Vehicle Infrastructure
   The Planning Board [finds/does not find] based upon the Consulting Traffic Engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1.14, which requires 50% of spaces must be made EV-ready conduit and electrical service. That substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] Technical Manual Section 1.14 to allow no EV-ready conduit and electrical service within the proposed Circle 1 parking lot.

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 October 22, 2024 for application # PL-003053-2024 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 subject to the following conditions of approval:

PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY

1. The applicant shall provide a sidewalk easement for sections that extend outside the City's right-of-way to the Planning Authority.

2. The applicant shall provide sewer easements for the area surrounding the existing municipal sewer pump station facility and roadway culverts at Riverton Drive and Springbrook Way to the Planning Authority.

C. PLANNING BOARD DECISION

On the basis of the findings, conclusions and recommendations contained in the Planning Board report for the public hearing on October 22, 2024 related to application PL-003053-2024 for 2 Riverton Drive, which is attached to the draft approval letter as drafted and incorporated therein, the Planning Board [adopts/does not adopt] the approval letter as drafted as the Planning Board's decision for application PL-003053-2024, and authorizes the Planning Board Chair to sign the approval letter as drafted.

VI. ATTACHMENTS

REPORT ATTACHMENTS

Att. 1 Approval letter PL-002319-2022
Att. 2 City consulting Traffic Engineer comments 09-18-2024
Att. 3 Department of Public Works comments 09-18-2024
Att. 4 Housing Program Manager comments 10-16-2024
Att. 5 Draft approval letter PL-003053-2024

APPLICANT SUBMITTAL

A. Statement of proposed amendments
B. Project description
C. Major or minor amendments to approved site plans
D. Major Site Plan checklist
E. B-2 zoning analysis table
F. R-5a zoning analysis table
G. Zoning provisions
H. Site Plan standards
I. Waivers
J. Access and circulation
K. Off-street parking
L. TDM Plan Amendment
M. Preservation of significant natural features
N. Stormwater report
O. Erosion and sediment control report
P. Consistency with City master plans
Q. Public safety and fire prevention
R. Snow and ice loading
S. Exterior lighting
T. Noise and vibration
U. Signage and wayfinding
V. Zone-related design standards
W. Turning movements
X. Additional permits
Y. Rehab unit scope summary
Z. Response letter of outstanding concerns

PLANS AND DRAWINGS

Plan 1. Cover
Plan 2. Survey
Plan 3. Survey
Plan 4. Demolition Plan
Plan 5. Demolition Plan
Plan 6. Demolition Plan
Plan 7. Site Plan
Plan 8. Site Plan
Plan 9. Site Plan
Plan 10. Site plan enlargement
Plan 11. Grading and Drainage Plan
Plan 12. Grading and Drainage Plan
Plan 13. Grading and Drainage Plan
Plan 14. Grading and Drainage Plan
Plan 15. Utility Plan
Plan 16. Utility Plan
Plan 17. Utility Plan

Plan 18. Erosion Control Plan
Plan 19. Erosion Control Plan
Plan 20. Erosion Control Plan
Plan 21. Erosion Control Notes
Plan 22. Erosion Control Details
Plan 23. Site Civil Details
Plan 24. Site Civil Details
Plan 25. Site Civil Details
Plan 26. Site Civil Details
Plan 27. Site Civil Details
Plan 28. Site Civil Details
Plan 29. Landscape Master Plan
Plan 30. Landscape Plan Enlargement
Plan 31. Landscape Plan Enlargement
Plan 32. Landscape Details
Plan 33. Landscape Details
Plan 34. Landscape Details
Plan 35. Landscape Details
Plan 36. Photometric Plan
Plan 37. Master Plan
Plan 38. Circle 1 Building first floor plan
Plan 39. Circle 1 Building second floor plan
Plan 40. Circle 1 Building third floor plan
Plan 41. Circle 1 Building fourth floor plan
Plan 42. Circle 1 Building elevations
Plan 43. Circle 1 Building elevations
Plan 44. Circle 1 Building elevations
Plan 45. Circle 1 Building elevations
Plan 46. Circle 1 Building signage
Plan 47. Circle 1 Building signage
Plan 48. Circle 1 Building rendering
Plan 49. Administration building floor plan
Plan 50. Administration building elevation
Plan 51. Building 5 First floor plan
Plan 52. Building 5 Second floor plan
Plan 53. Building 5 Signage
Plan 54. Building 5 Elevations
Plan 55. Townhome rehabilitation first floor plan building 10
Plan 56. Townhome rehabilitation second floor plan building 10
Plan 57. Townhome rehabilitation first floor plan building 16
Plan 58. Townhome rehabilitation second floor plan building 16
Plan 59. Townhome rehabilitation first floor plan building 21
Plan 60. Townhome rehabilitation second floor plan building 21
Plan 61. Townhome rehabilitation first floor plan building 23
Plan 62. Townhome rehabilitation second floor plan building 23
Plan 63. Rehabilitation building signage
Plan 64. Rehabilitation elevations building 10

Plan 65. Rehabilitation elevations building 16
Plan 66. Rehabilitation elevations building 21
Plan 67. Rehabilitation elevations building 23
Plan 68. Rehabilitation exterior renderings
Plan 69. Rehabilitation Locations site plan

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

May 25, 2023

Portland Housing Development Corporation,
Portland Housing Authority
14 Baxter Boulevard
Portland, Maine 04101

Carroll Associates
217 Commercial Street, Suite 200
Portland, Maine 04101

Project Name:	Riverton Park	**Project ID:**	PL-002319-2022
Address:	2 Riverton Drive	**CBL:**	327 B012001
Applicant:	Portland Housing Development Corporation, Portland Housing Authority		
Planner:	Sean King, Urban Designer		

Dear Tyler Plante:

On May 23, 2023, the Planning Board approved a major site plan and conditional use application for Riverton Park redevelopment to create a new 59 residential units building with ground floor retail and office uses in the B-2 zone and rehabilitation project to renovate 123 existing residential townhouse apartments and create a new Neighborhood Center building in the R-5a. 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 Conditional Use Review for Inclusionary Zoning, Conditional Use Review for Place of Assembly greater than 10,000 square feet, and Site Plan Ordinance. The Planning Board voted 6-0 to approve the application with the following waiver(s) and condition(s) as presented below.

Conditional Use

The Planning Board voted 6-0 to find the proposed conditional use for a place of assembly greater than 10,000 square feet does meet the standards of Land Use Code Section 6.5.2 and Section 6.5.6(F).

Conditional Use

The Planning Board voted 6-0 to find the proposed conditional use for workforce housing does meet the standards of Land Use Code Section 18.2.3(c) with the following condition(s):

PRIOR TO ISSUANCE OF A BUILDING PERMIT

1. Should the designated units identified as restricted to households earning at or below 60% AMI fail to retain their affordability restrictions then the Applicant and the City shall enter into an

Affordable Housing Agreement (AHA) for workforce housing units to ensure a minimum of 25% of units are designated Workforce Units.

PRIOR TO ISSUANCE OF CERTIFCATE OF OCCUPANCY

2. Should the applicant and the City enter into an Affordable Housing Agreement (AHA) then the AHA shall be filed as covenant to the 2 Riverton Drive property's deed with the Cumberland County Registry of Deeds.

Waivers

The Planning Board waives the Technical Standard, Section 1.10.3; Section 1.10.2.1; Section 1 Figure I-12:

1. Parking Lot Drive Aisle Width
   The Planning Board finds based upon the Consulting Traffic Engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1.10.3, which requires parking lot layouts provide a minimum drive aisle width of 24 feet, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board waives Technical Manual Section 1.10.3 to allow a reduced drive aisle width of 22 feet.

2. Compact Parking Spaces
   The Planning Board finds based upon the Consulting Traffic Engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1.10.2.1, which allows up to 20% of parking spaces within any parking lot of five or more spaces to be compact parking spaces, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board waives Technical Manual Section 1.10.2.1 to allow 25% compact parking spaces for Building 1.

3. Granite Curbing
   The Planning Board finds based upon the Department of Public Work's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1, Figure I-12, which requires the use of granite curbing, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board waives Technical Manual Section 1, , Figure I-12 to allow granite curbing at corners and driveways only, and slip-form concrete curbing in all other locations within the right-of-way.

Site Plan Review

The Planning Board finds that the plan is in conformance with the site plan standards of the Land Use Code, subject to the following condition(s) of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall update the site plan to indicate the location of grease traps for the community kitchen at the Neighborhood Center for review and approval by the Department of Public Works.

2. The applicant shall provide a letter from the Portland Water District and Central Maine Power demonstrating their ability to serve this development.

3. The applicant shall provide final design of stormwater and sewer connection into City sewer manhole structures for Department of Public Works review and approval.

4. The applicant shall provide proposed utility easements for Department of Public Works review and approval.

5. The applicant shall provide NRPA permit by rule record to the Planning Authority.

AFTER ISSUANCE OF A CERTIFICATE OF OCCUPANCY

6. The applicant shall perform a traffic safety evaluation at the Forest Avenue/Riverton Drive intersection. This evaluation shall include a review of crash data for the most recent three-year period and identify if there are any correctable patterns. If problems are identified, the applicant will work with the Department of Public Works to identify potential improvements to mitigate the identified safety problems and submit any necessary improvements for review and approval by the Department of Public Works and the Planning Authority.

The approval is based on the submitted plans and findings related to site plan review as contained in the Planning Board report dated May 19, 2023 for application PL-002319-2022, CU-002325-2023 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 (207)874-9699. 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,



Brandon Mazor, Chair

Attachments:

1. Planning Board Report
2. Portland City Code: Chapter 32
3. Sample Stormwater Maintenance Agreement [if applicable]
4. Performance Guarantee Packet

Planning Board Report
Planning and Urban Development Department

Riverton Park Redevelopment and Rehabilitation
2 Riverton Drive
Major Site Plan Application (PL-002319-2022, CU-002325-2023)
Portland Housing Authority, Applicant

Submitted to:	Portland Planning Board	**Prepared By:**	Sean King, Urban Designer
Public Hearing Date:	May 23, 2023	**Date:**	May 19, 2023

I. INTRODUCTION

The Portland Housing Development Corporation (PHDC) & Portland Housing Authority (PHA) have submitted a Major Site Plan, Conditional Use and Inclusionary Zoning Conditional Use application to redevelop PHA's Riverton Park community, with a proposal to construct a new 4-story multifamily building with 59 residential units, retail, clinic and office space; a new Neighborhood Center building with social services, office and meeting spaces for residents; a new maintenance building; rehabilitation of the 123 existing 2-story residential townhomes; and site work improvements throughout the property.



Figure 1: Vicinity Map (applicant's property outlined)

This application is being referred to the Planning Board for compliance with the City of Portland's Land Use Code Conditional Uses Standard, Section 6.5.1; Site Plan Standards, Section 14.6; and Inclusionary Zoning Conditional Use Standards, Section 18.2.3.

The Planning and Urban Development Department mailed 99 notices advertising this meeting to property owners within 500 feet of the site. A legal advertisement ran in the May 12, 2023 and May 13, 2023 editions of the *Portland Press Herald*.

Applicant:	Tyler Plante, Portland Housing Development Corporation
Applicant Representatives:	Matthew Phillips, Carroll Associates Keegan Carmichael, CWS Architects
Architect:	Andy Johnston, Atlantic Resources Consultants;
Engineer:	Randy Loubier, Owen Haskell Inc

II. REQUIRED REVIEWS

Review	*Applicable Standards*
Site Plan Review Standards	Section 14.6
Inclusionary zoning conditional use	Section 18.2.3

General conditional use	Section 6.5.2
Supplemental use-specific conditional use	Section 6.5.6.F (Place of Assembly)
Design Standards	City of Portland Design Manual, section (d) B-2 ; (h) Planned Residential Unit Developments (PRUDS) in the R-5a Residential Zone

Waiver Requests	*Applicable Standards*
Request: To reduce drive aisle width from 24 feet to 22 feet. Staff Recommendation: City's Consulting Traffic Engineer supports specific waiver request	Technical Manual, Section 1.10.3: Drive aisle and parking lot layout shall provide a minimum drive aisle of 24 feet.
Request: To increase the amount of compact parking spaces (18 proposed at 25% of total) in new Building 1 parking lot. Staff Recommendation: City's Consulting Traffic Engineer supports specific waiver request	Technical Manual, Section 1.10.2.1,: Parking lots with greater than 5 spaces may be comprised of up to 20% compact parking spaces.
Request: To reduce the amount of granite curb within the right-of-way. Staff Recommendation: Department of Public Works staff is supportive of the concrete curb installation	Technical Manual, Section 1: Granite curb (I-12) shall be installed in right-of-way.

III. PROJECT DATA

Existing Zoning	B-2 Community Business; R-5a Residential
Property Size	17.72 acres
Existing Use	Residential (Planned Residential Unit Developments)
Proposed Use	• Residential (Multi-family dwellings), Institutional (Clinics), Commercial / Service (General offices <5,000sf & Retail <5,000 SF) in the B-2 Commercial Business Zone. • Institutional (Place of Assembly >10,000 SF) in the R-5a Residential Zone.

	Existing	*Proposed*	*Required*	*Net Change*
Dwelling Units	*141 units*	*182 units*	*n/a*	*+41 units*
Building Footprint	80,845 SF (14,935 SF Demolished)	32,733 SF	n/a	+17,798 SF
Building Floor Area	158,755 SF	227,478 SF	n/a	+68,723 SF
Off-street parking spaces	194	228	207	+34
Bicycle parking	0	82	35	+82
EV Charging Stations	0	16	16	+16

IV. BACKGROUND

Built in 1972, the Riverton Park property includes 25 existing townhouse apartment style buildings with 141 residential units and several administrative offices that serve residents.

On June 22, 2022, the City Council approved a zoning map amendment to rezone the Riverton Park campus and surrounding parcels from R-5 Residential into two zones (R-5a and B-2) along with a text amendment to the R-5a zone to allow Places of Assembly uses greater than 10,000 square feet in size, as a conditional use.

V. EXISTING CONDITIONS AND SURROUNDING AREA

The proposed redevelopment and rehabilitation application are within the Riverton Park development (Chart 327, Block B, Lot 12, 2 Riverton Drive), with Riverton Drive providing public street access between the site and Forest Avenue. The Riverton Park property is 17.72 acres and abuts the Terrace Pond Apartments to the West. Businesses within the area include a grocery store, a gas station, auto repair, convenience stores, and breweries. Riverton Trolley Park is located across Riverside Street. To the east, inbound Forest Avenue extends toward Portland's peninsula, and the remaining section of outbound Forest Avenue continues into Westbrook. Nearby, Riverside Street includes a mixture of light, medium, and heavy industrial zones and the newly constructed Homeless Service Center.

VI. PROPOSED DEVELOPMENT

The applicant has provided an Overall Development Scheme (Plan 31) to illustrate the entire scope of the project. The newly proposed mixed-use building, located in the B-2 zone, would include 59 residential units, PHA Management offices, a new Greater Portland Health (GPH) clinic, two small neighborhood retail bays and associated site improvements. The applicant would replace the twenty-four affordable units being demolished and maintain the same bedroom count to be constructed within the new Building 1. In addition, fifty-one percent of net new units would be affordable (17 of 35 net new units) distributed within the new Building 1.



Figure 2: Rendering of Building 1

The new neighborhood center, located in the R-5a zone, would include spaces for the Boys & Girls Club (B&GC), PHA study center, teen center, a multipurpose recreational gymnasium, community kitchen, food

and clothing pantry, conference room, resident service coordination (RSC) office, and community policing liaison office. According to the applicant, the building's design and programming were based on extensive conversations and multiple meetings with residents and service partners over the past four years.



Figure 3: Rendering of Neighborhood Center

The rehabilitation of 21 residential buildings with 123 affordable residential units would include exterior upgrades to the roofs, windows, and accessible entries and interior upgrades for insulation, boiler replacement, new ventilation systems, and new fixtures. The applicant would create new accessible units and improve building accessibility.

The total redevelopment and rehabilitation would contain eight studio units, 13 1BR units, 36 2BR units, 69 3BR units, 30 4BR units, 20 5BR units, and 6 6BR units with all apartments being for rent. According to the Affordable Housing Tax Increment Financing (AHTIF) and HOME application, the development would preserve all of the existing larger units and would set aside 19 apartments for families and individuals experiencing homelessness. Ninety percent of all Riverton Park apartments (165 of 182 units) would be affordable for households earning at or below 50 percent and 60 percent of the Area Median Income (AMI); and 10 percent would be market-rate rentals.

The applicant would construct a new maintenance garage building to replace the existing administration building that would be demolished. Additional site improvements include the replacement of curbing, sidewalks and pathways; improvements to pedestrian and bicycle infrastructure; the replacement of obsolete utility lines; improvements to site accessibility for persons with disabilities; resurface paved areas; regrade to direct drainage away from buildings; enhancement of site landscaping; the addition of community gardens at each townhouse apartment building grouping; and improvements to site lighting. New open space would include a new recreational field, playground area, performance stage and seating areas and rehabilitate the existing basketball court.



Figure 4: Overall Development Scheme (blue outlines B-2 Community Business zone, red outlines PRUD in R-5a Residential zone)

VII. PREVIOUS WORKSHOPS

The Planning Board held a workshop on March 28, 2023. During Board clarifying questions, the Board requested clarification on a number of items including the configuration and layout of Building 1, clarification on emergency vehicular access at the proposed fire lane and pedestrian plaza, and the replacement of residential units to match bedroom mix within the new Building 1. Furthermore, the Board requested clarification of recreation and playground amenities to function for families with variety for many age groups and ability levels.

During deliberation, the Board recommended that the applicant incorporate fencing and an enhanced landscape buffer at the proposed play field to minimize interaction with the Building 1 parking lot.

VIII. RIGHT, TITLE, & INTEREST

The applicant submitted a deed transferring the Riverton Park parcel from F.D. Rich Housing Corp. to the Portland Housing Authority dated August 9, 1972 (Attachment 3-3.4).

IX. FINANCIAL & TECHNICAL CAPACITY

The applicant has submitted a letter of financial capacity to self-certify Portland Housing Development Corporation (PHDC) to secure financing to complete the redevelopment and rehabilitation of Riverton Park. PHDC seeks to utilize Low Income Housing Tax Credits (LIHTC) and has submitted an application to

MaineHousing for a 4% LIHTC allocation to assist with funding of the project. MaineHousing has agreed to act as the construction lender and would provide permanent financing for this redevelopment.

The Riverton Park Community currently operates as Public Housing, and utilizes funds by HUD's Section 18 Demolition & Disposition program. Riverton Park will convert to a Section 8 Project Based Voucher (PBV) funding platform at construction loan closing. (Attachment 9).

The applicant has assembled a highly qualified team of professionals for the preparation of this project, with significant experience with this type of project. All representatives of the applicant have proven experience working on projects located in the City of Portland.

X. ZONING ANALYSIS

The subject property is located in the B-2 Community Business zone and R-5a Residential zone.

The proposed redevelopment includes 59 residential units, offices and retail in the B-2 Community Business zone, which are listed as permitted uses within the B-2 zone per Article 6, Table 6-C.

The proposed rehabilitation includes a maintenance building and renovations to 21 existing townhouse apartment buildings in the R-5a Residential zone that is permitted by Land Use Code Table 6-A. The proposed Neighborhood Center is considered a place of assembly greater than 10,000 sf which is a conditional use per Article 6, Table 6-C, requiring review by the Planning Board under Section 6.5.2.

B-2 dimensional standards under Table 7-E below:

B-2 Community Business	*Permitted*	*Proposed*
Lot Area (min.)	N/A	1.52 acres
Lot area per dwelling unit (min.)	1,000 sq. feet	1,122 sq. feet
Street Frontage (min.)	20 feet	>20 feet
Front Setback (max.)	10 feet	**>10 feet**[1]
Rear Setback (min.)	10 feet	>10 feet
Side Setback (min.)	N/A	N/A
Stepbacks (above 35 feet when property line abuts a residential zone)	Side: 5 feet Rear: 15 feet	>5 feet >15 feet
Length of building wall at maximum setback (min.)	N/A	N/A
Length of undifferentiated blank wall along publicly accessible way (max.)	N/A	N/A
Floor area (max.)	N/A	N/A
Structure Height	50 feet[2]	49 feet
Lot coverage (max.)	N/A	N/A
Impervious surface ratio (max.)	Residential: None Other uses: 80%	<80%

[1] *Where setbacks exceed 10 feet, a continuous, attractive, and pedestrian-scaled edge treatment shall be constructed along the street, consisting of street trees spaced at no more than 15 feet on center, approved by the City arborist, and a combination of landscaping no less than four feet deep, ornamental brick or stone walls, or ornamental fencing listed under Land Use Code Section 7.5.5.F.*

[2] *Structure height (max.) is 50 ft. if first floor is in commercial use under Land Use Code Table 7-E.*

R-5a PRUD dimensional standards under Table 7-B below:

R-5a Residential Zone	*Permitted*	*PRUD Dimensional Bonus Applied*[1]	*Proposed*
Street Frontage (min.)	50 feet	N/A	>50 feet
Lot Width (min.)	65 feet	N/A	>65 feet
Front Setback (min.)	25 feet	10 feet	>10 feet[2]
Rear Setback (min.)	25 feet	10 feet	>20 feet
Right Side Setback (min.)	14-16 feet (varies)	10 feet	>16 feet
Left Side Setback (min.)	14-16 feet (varies)	10 feet	>16 feet
Stepbacks	N/A	N/A	N/A
Lot Coverage (max.)	30%	N/A	>30%
Lot Area (min.)	2 acres	N/A	16.20 acres
Net land area per dwelling unit (min.)	1,600 sq. feet.	N/A	5,737 sq. feet.
Units per building (max)	N/A	N/A	N/A
Average number of units per building (max.)	N/A	N/A	N/A
Structure Height (max.)	55 feet	N/A	<55 feet
Building length (max.)	N/A	N/A	N/A
Length of accessory garage structure (max.)	N/A	N/A	N/A
Bldg setback from external subdivision property lines (min.) Bldg. length >100 ft.	35 feet	N/A	>35 feet
Distance between detached PRUD dwelling units (min.)	N/A	N/A	N/A
Common recreation open space area (min.)	200 sq.feet./D.U	N/A	>200 sq. feet / D.U.

The Riverton Park redevelopment project provides more than 50% of the units as low-income or workforce units for rent or for sale and therefore is eligible to utilize dimensional bonuses available to PRUD developments under Section 18.2.4.B of the City's Land Use Code. Staff analyzed the proposal and found that the project meets the affordability requirement and may utilize affordable housing dimensional bonuses, listed below:

1. Minimum lot area per dwelling unit is reduced by 50%.
2. Maximum number of units and maximum length of buildings do not apply but may be set through site plan review.
3. Minimum building setbacks may be reduced to 10 feet.
4. The PRUD may cross public rights of way provided that the right of way does not count towards the minimum lot size nor towards any open space requirements.

[1] Planned Residential Unit Developments (PRUD) developments with more than 50% of the units as low-income or workforce units for rent or for sale may utilize dimensional bonuses and changes listed under Land Use Code Section 18.2.4.B.

[2] Planned Residential Unit Developments (PRUD) may cross public rights of way provided that the right of way does not count towards the minimum lot size nor towards any open space requirements under Land Use Code Section 18.2.4.B.

5. Minimum recreation open space area is reduced to 200 square feet per dwelling unit of common area designated for recreational purposes by the residents. Minimum contiguous size and setbacks do not apply and shall be set through site plan review.
6. The Planning Board's Design Manual, design standards, and guidelines with respect to PRUDs shall apply in full to PRUDs utilizing this subsection.

XI. GENERAL CONDITIONAL USE – PLACE OF ASSEMBLY >10,000 SF (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 reviewed associated with projects that are otherwise before the Planning Board. 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 City's Consulting Traffic Engineer has reviewed the application materials to find minimal increase in vehicular traffic generated with the majority of use for Riverton Park residents.

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 Neighborhood Center will not create unsanitary or harmful conditions based upon the building's internal program to include recreation, office and meeting space, and trash collection associated with communal kitchen around regular hours of operations from 8AM to 6 PM. Furthermore, all proposed underground utilities for sewage disposal would connect to City's system and stormwater management for compliance with current standards as reviewed by the City's Consulting Stormwater Reviewer.

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 Neighborhood Center will not create substantial impact on surrounding properties based upon sufficient landscape screening from adjacent properties, satisfactory strategies for on-site waste storage and removal, and loading and deliveries provided at dedicated 15-minute parking spaces to not occupy Riverton Drive on-street parking.

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 Neighborhood Center is a place of assembly for the residents at Riverton Park, and subject to the Institutional Uses conditional use standards, listed under Section 6.5.6.F.

XII. SUPPLEMENTAL CONDITIONAL USE – PLACE OF ASSEMBLY >10,000 SF (Section 6.5.6.F)

As required under Section 6.5.6 of the City's Land Use Code, in addition to the general conditional use standards, the following applicable standards shall apply to specific conditional use:

F. Institutional uses (excluding preschools):

1. The Planning Board shall be the review authority.

2. In the case of expansion of existing institutional uses onto land other than the lot on which the principal use is located, it shall be demonstrated that the proposed use cannot reasonably be accommodated on the existing site through more efficient utilization of land or buildings, and will not cause significant physical encroachment into established residential areas.

City staff finds the proposed Neighborhood Center demonstrates a reasonable placement on the existing site with no significant physical encroachment into established residential areas.

3. The proposed use shall not cause significant displacement or conversion of residential uses existing as of June 1, 1983, or July 15, 1985 in the IR-1 and IR-2 zones, or thereafter.

City staff finds this is not applicable as the proposed Neighborhood Center is within the R-5a Residential zone.

4. In the case of a use or use expansion which constitutes a combination of the conditional institutional uses with capacity for concurrent operations, the applicable minimum lot sizes shall be cumulative.

City staff finds the applicable minimum lot size is being met.

XIII. INCLUSIONARY ZONING CONDITIONAL USE (Section 18.2.3)

As required by Section 18.2.3 of the City's Land Use Code, the City's Inclusionary Zoning Ordinance, residential developments with ten or more units are required to provide a minimum of twenty-five percent of the dwelling units as Workforce Housing units for sale or for rent. The ordinance under Section 18.2.3 C (5) also requires that the number of bedrooms across all IZ units be a minimum of 10% of the total number of bedrooms within the development. This project proposes 41 net new residential units, which triggers IZ conditional use review.

In order to satisfy IZ requirements, the applicant is required to provide a minimum of 11 workforce housing units (25% at 80% AMI) pursuant to the Inclusionary Zoning requirements (Section 18.2.3). The term of affordability for the workforce units provided shall be defined as set forth in Table 18-B. As the number of workforce housing units being provided totals 25% of the total number of dwelling units being proposed, the minimum term of affordability would be thirty years.

As stated previously, four existing buildings with a total of 24 residential units are proposed to be demolished under this application. These 24 units would be replaced as part of the new Building 1 mixed-

use building, which would also include 18 affordable units (at or below 100% AMI) and 17 market rate units. All dwelling units are proposed for rent under the affordable housing requirement.

The Affordable Housing Agreement will outline the details of the affordability restrictions placed on the Workforce Units and will be filed as a covenant to the property deed with the Cumberland County Registry of Deeds before a Certificate of Occupancy may be issued.

XIV. 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

The proposed redevelopment is located off of Riverton Drive, a local street, which connects to Forest Avenue, a principle arterial and priority corridor identified in the City's Comprehensive Plan.

The applicant has proposed public right-of-way improvements to include new curbing, sidewalk, drainage, a raised pedestrian crossing across Riverton Drive at the new Neighborhood Center, street trees and municipal lighting.

The application included a new trip generation and was reviewed by the City's Consulting Traffic Engineer. The City's Consulting Traffic Engineer finds a traffic movement permit is not required based on the proposed 82 vehicle trips generated at peak PM hour. However, the City's Consulting Traffic Engineer requests the applicant perform a traffic safety evaluation to review crash data upon certificate of occupancy over a three-year period at the Forest Avenue and Riverton Drive intersection to identify any correctible patterns. If traffic safety problems are identified, the applicant shall implement improvements to mitigate the identified safety problem as a condition of approval.

B. Access and circulation

The site circulation plan for Building 1 includes a new driveway for accessing the rear parking lot. Emergency access is provided south of Building 1 across a concrete paver plaza and raised concrete apron at Riverton Drive. The application also includes new pathways to each unit and sidewalk throughout the development.

Additionally, the applicant is requesting a waiver of the following technical manual standard related to required curbing within a public right-of-way.

Technical Manual Section 1, Figure I-12 – Granite curb

The applicant is requesting to use granite curb at corners and driveways only, and slip-form concrete curb in all other locations within the right-of-way. Section 1 (Figure I-1 & I-17) of the City's Technical Manual requires installation of granite curb within the right-of-way. The applicant has provided additional justification for waiving the standard explaining:

Cost savings as applicant is proposing to reconstruct all curbs and sidewalks within right-of-way. The Department of Public Works staff supports the concrete curb detail within the right-of-way.

C. Public transit access

METRO transit routes near the site include the Greater Portland METRO Local service Route 2 and the Lakes Region Bus route. The nearest transit stops to the applicant's site are along Forest Avenue near the intersection of Riverton Drive and Forest Avenue. The development at 1884 Forest Avenue included a new METRO shelter on Forest Avenue near its intersection with Riverton Drive, and easily accessible to residents of the development. Therefore, this standard is not applicable.

D. Parking

In general, a residential development is required to provide one parking space per dwelling unit unless a project is eligible for parking exceptions as listed in Table 19-B of the Land Use Code, no exceptions are being sought for this application. The redevelopment project in the B-2 zone meets the minimum parking requirement for 71 parking stalls based on the proposed uses. A proposed parking lot with 6 spaces for employees is located at the Neighborhood Center, the City's Consulting Traffic Engineer has reviewed the turning template and finds vehicle maneuvering within this area to be sufficient with the proposed striping to remain unobstructed. Additionally, a reduction of 10 parking spaces is proposed as part of the rehabilitation project for existing buildings within the R-5a PRUD.

The applicant is also requesting a waiver of the following technical manual standards related to off-street parking design:

Technical Manual Section 1.10.3 – Parking lot drive aisle width

The applicant is requesting to reduce the minimum drive aisle width from the required 24 feet to 22 feet, a two-foot reduction. Section 1.10.3 of the City's Technical Manual requires a minimum drive aisle width of 24 feet. The applicant has provided additional justification for waiving the standard explaining:

Due to the low speed, low volume of traffic, user (staff) and familiarity of users we feel that the reduced parking lot aisle width is an acceptable request. We are looking to maximize landscape + snow storage areas while adding a sidewalk. The City's Consulting Traffic Engineers supports the proposed waiver request due to the expectation of low turnover spaces for the 5 parking stalls dedicated for PHA.

Technical Manual Section 1.10.2.1 – Compact parking spaces

The applicant is requesting to provide more than 20% compact spaces (applicant propose 18 compact parking spaces). Section 1.10.2.1 of the City's Technical Manual states parking lots with greater than five spaces may be comprised of up to 20% compact parking spaces. The applicant has provided additional justification for waiving the standard explaining:

Due to the changing dynamic of vehicle size, general greater acceptance of use of smaller parking stalls, and familiarity of residents with the parking configuration this reduction appears to be warranted. The City's Consulting Traffic Engineers supports the proposed waiver request to allow compact parking spaces greater than 20% of total parking spaces given the low turnover nature of vehicles.

In addition, on-street parking spaces remain within the public right-of-way on a first come basis, which are to be available to the public.

E. Transportation demand management (TDM)

Mixed-use developments exceeding 50,000 square feet or more of floor area are required to submit a TDM. The applicant has submitted a TDM plan to promote additional affordable housing, safe

connection to transit with new sidewalks, shared mobility improvements for loading zones and bicycle repair stations, and expansion of community and recreational spaces on site. City staff has reviewed and find it in compliance with this standard.

2. Environmental Quality Standards (Section 14.6.2)

A. Preservation of significant natural features

The site is currently developed with several forested edges along the property boundaries along with several wetlands that are considered significant due to period of establishment. The contiguity of wetlands is proposed to be preserved to the greatest extent, and the development includes minimal disturbance with proposed grading and site improvements.

B. Landscape preservation

The applicant has provided a revised demolition plan that includes a tree removal schedule and replacement of trees greater than 16" Diameter at breast height (DBH) throughout the site that City Staff find to meet this standard.

C. Site landscaping and buffers

The applicant submitted revised planting plans (Plans 25-26) to include locations and quantities for tree, shrub, groundcover and the select preservation of existing trees. Existing trees loosely buffer all sides of the property. The City's Parks department is supportive of the revised landscape plans that include native planting and buffers on site.

The creation of 59 residential units requires either planting a total of 59 street trees or an acceptable alternative under Technical Manual section 4.6.4. The applicant has provided approximately 12 new street trees within or directly adjacent to the right-of-way, and acceptable street tree alternative for 16 new street trees visible from the right-of-way within twenty feet of the property line. The remaining 31 new street trees are located on private property along Riverton Drive within 20 feet of the right of way as an acceptable street tree alternative for compliance with this standard.

D. Water quality/storm water management/erosion control

The applicant has submitted a Stormwater Management Report and Erosion and Sedimentation Control Report, which has been reviewed by the City's Consulting Stormwater Reviewer for compliance with this standard. A draft condition of approval is being recommended which would require the applicant provide evidence of a NRPA permit by rule for the City's record.

Water Resources has requested the installation of grease traps for the proposed communal kitchen located in the Neighborhood Center.

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

A. Consistency with City Master Plans

Portland's Plan 2030 Comprehensive Plan goals and policies (state and local) relevant to the proposed development aligns with these vision statements and goals, by creating a new opportunity for an affordable, and well-connected new housing development accessible to public transit supporting the Plans goal of *increasing, preserving, and modifying the overall supply of housing city-wide*.

B. Public safety and fire prevention

Based on the City's Fire Marshall review of the revised application materials, the proposed plan meets this standard.

C. Availability and capacity of public utilities

The applicant provided ability to serve letters for the City's wastewater division and natural gas provider. The applicant shall provide ability to serve letters from respective electrical utility and water district providers.

4. Site Design Standards (Section 14.6.4)

A. Massing, ventilation, and wind impact

The proposed 4-story Building 1 and Neighborhood Center are set back significantly from abutting properties and therefore, the bulk, location and/or height of the proposed structures will not adversely impact abutting structures or property. The applicant's plans provide landscape buffers and preservation of several existing trees to mitigate visual and wind impacts.

B. Shadows

A shadow study has not been submitted, as any shadows cast by the buildings at the site will not affect adjacent properties or City-owned parkland.

C. Snow and ice loading

The applicant plans indicate snow and ice storage throughout the redevelopment and reconfiguration of existing parking lots that City staff find in compliance with this standard.

D. View corridors

There are no designated view corridors within the project vicinity. This standard is not applicable.

E. Historic resources

The proposed development is not located in or within 100 feet of a historic district or historic landmark. This standard is not applicable.

F. Exterior lighting

The applicant has submitted a photometric lighting plan and proposed lighting fixture cut sheets that City staff find in compliance with this standard and meets Technical Manual, Section 12 site lighting standards. In addition, existing municipal lighting will remain within right-of-way.

G. Noise and vibration

The proposed HVAC and/or other equipment for noise and vibration would be mostly internal to each unit and common space. Building 1 outdoor mechanical units would include interior energy recovery ventilators (ERV), the Neighborhood Center would include interior EVR and heat pumps, and rehabilitated townhouse apartments would include mechanical units internal to each unit to reduce unwanted outside noise.

H. Signage and wayfinding

The applicant plans indicate new wayfinding signage reviewed by City's Consulting Traffic Engineer in compliance with this standard.

I. Zoning-related design standards

The redevelopment project for Building 1 is subject to design standards under Section (d) B-2 Community Business zone & (i) Multi-family of the City's Design Manual. The rehabilitation project for the new neighborhood center, maintenance building and associated site is subject to design standards under Section (h) PRUD in the R-5a Residential Zone design standards of the City's Design Manual. The applicant has submitted renderings, elevations and floor plans with accompanying architectural narratives that identify the programming of each building to support the residents of Riverton Park. The City's Urban Designer generally finds the proposed building types, placement and materiality to be consistent with the PRUD design standards that support the neighborhood character the applicant has submitted.

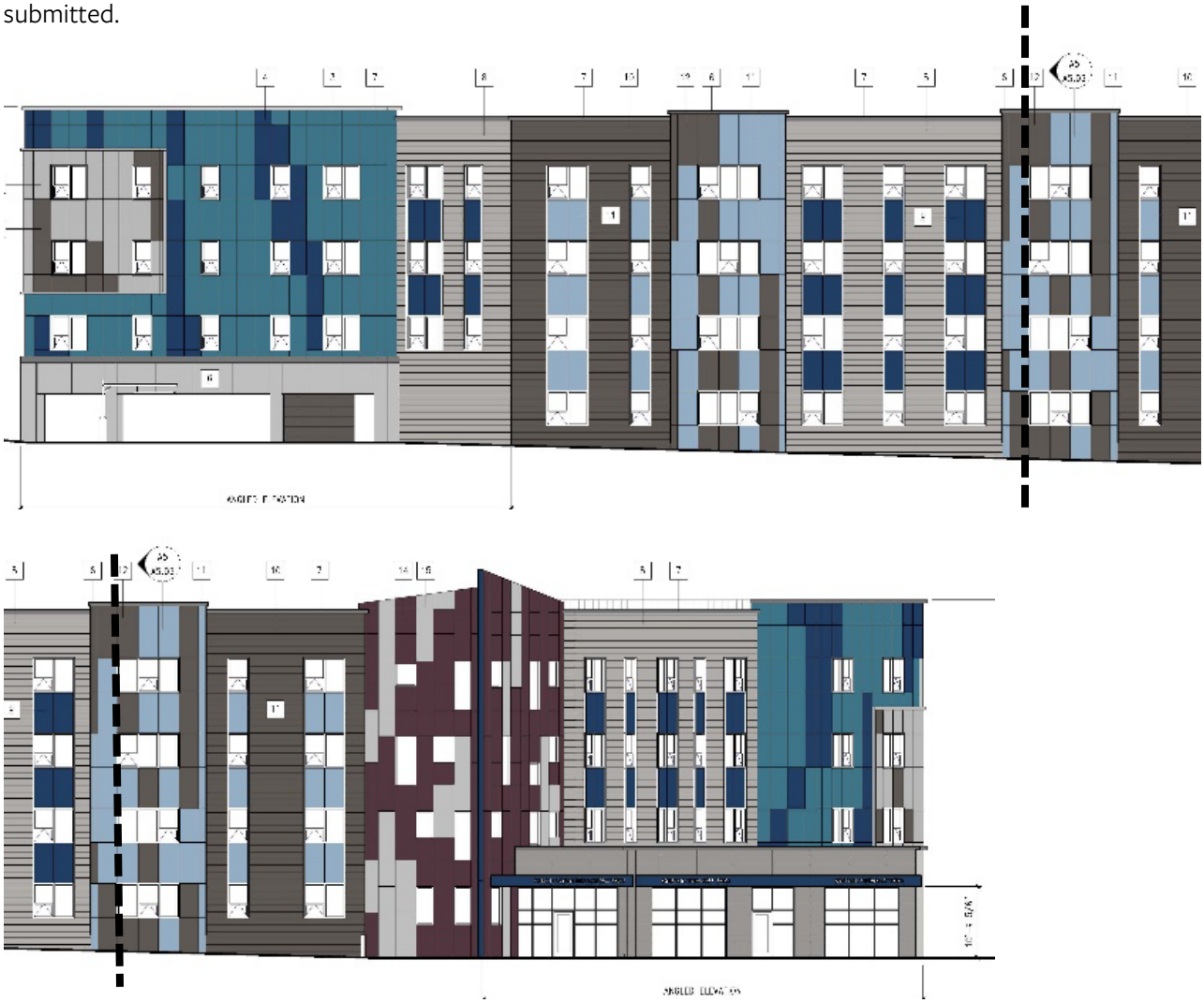

Figure 5: Building 1 front elevation (dashed line indicates matchline)

XV. NEIGHBORHOOD MEETING & PUBLIC COMMENT

The applicant held a neighborhood meeting on Wednesday, February 22, 2023 (Attachment FF). Invitations for the in-person meeting were sent to properties within 500 feet of the proposed development and residents on the "interested parties" list. Attendees of the meeting inquired about the relocation of existing residents during phased construction and PHA's goal to return residents to subsequent renovation phase, vacant on-site townhouse apartments or newly renovated residential units.

XVI. 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 held on May 23, 2023 for application PL-002319-2022 relevant to the Site Plan Standards of the Land Use Code and Portland's Technical and Design Standards, and other regulations, and testimony presented at the Planning Board public hearing:

1. Parking Lot Drive Aisle Width

The Planning Board [finds/does not find] based upon the Consulting Traffic Engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1.10.3, which requires parking lot layouts provide a minimum drive aisle width of 24 feet, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] Technical Manual Section 1.10.3 to allow a reduced drive aisle width of 22 feet.

2. Compact Parking Spaces

The Planning Board [finds/does not find] based upon the Consulting Traffic Engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1.10.2.1, which allows up to 20% of parking spaces within any parking lot of five or more spaces to be compact parking spaces, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] Technical Manual Section 1.10.2.1 to allow 25% compact parking spaces for Building 1.

3. Granite Curbing

The Planning Board [finds/does not find] based upon the Department of Public Work's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1, Figure I-12, which requires the use of granite curbing, that substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] Technical Manual Section 1, , Figure I-12 to allow granite curbing at corners and driveways only, and slip-form concrete curbing in all other locations within the right-of-way.

B. CONDITIONAL USE – INCLUSIONARY ZONING

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 May 23, 2023 for application # PL-002319-2022 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 workforce housing meets the standards of Section 18.2 with the following conditions:

PRIOR TO ISSUANCE OF A BUILDING PERMIT

1. The Applicant and the City shall enter into an Affordable Housing Agreement (AHA) for workforce housing units to reflect the addition of 41 residential units.

PRIOR TO ISSUANCE OF CERTIFCATE OF OCCUPANCY

2. The Affordable Housing Agreement (AHA) shall be filed as covenant to the 2 Riverton Drive property's deed with the Cumberland County Registry of Deeds.

C. CONDITIONAL USE – PLACE OF ASSEMBLY

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 May 23, 2023 for application # PL-002319-2022 relevant to the Land Use Code Section 6.5.2 and Section 6.5.6(F) and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with the conditional use standards of the Land Use Code.

D. 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 May 23, 2023 for application # PL-002319-2022 relevant to the site plan regulations; and the testimony presented at the Planning Board hearing, the Planning Board [finds/does not find] that the plan is in conformance with the site plan standards of the Land Use Code subject to the following conditions of approval:

PRIOR TO APPLYING FOR A BUILDING PERMIT

1. The applicant shall update the site plan to indicate the location of grease traps for the community kitchen at the Neighborhood Center for review and approval by the Department of Public Works.

2. The applicant shall provide a letter from the Portland Water District and Central Maine Power demonstrating their ability to serve this development.

3. The applicant shall provide final design of stormwater and sewer connection into City sewer manhole structures for Department of Public Works review and approval.

4. The applicant shall provide proposed utility easements for Department of Public Works review and approval.

5. The applicant shall provide NRPA permit by rule record to the Planning Authority.

PRIOR TO RELEASE OF PERFORMANCE GAURANTEE

6. The applicant shall perform a traffic safety evaluation at the Forest Avenue/Riverton Street intersection. This evaluation shall include a review of crash data for the most recent three-year period and identify if there are any correctable patterns. If problems are identified, the applicant shall implement improvements to mitigate the identified safety problems and submit for review and approval by the Department of Public Works and the Planning Authority.

XVII. ATTACHMENTS

REPORT ATTACHMENTS

- Att. 1 City Council order 259-21_22
- Att. 2 Wastewater capacity authorization 04-11-2023
- Att. 3 Consulting Traffic Engineer comments 05-18-2023
- Att. 4 Public Works comments 05-17-2023
- Att. 5 Urban Designer memo 05-19-2023

APPLICANT SUBMITTAL

- A. Project description
- B. Response letter design review-04-26-2023
- C. Response letter workshop-04-26-2023
- D. Response letter-03-22-2023
- E. Notice
- F. Major Site Plan checklist
- G. Conditional Use checklist
- H. Right, Title & Interest
- I. Deed document
- J. Deed document
- K. Deed document
- L. Deed document
- M. Evidence of State or Federal approvals
- N. B-2 Zoning analysis
- O. R-5a Zoning analysis
- P. Zoning provisions
- Q. Site Plan standards
- R. Conditional use standards
- S. Easements
- T. Easements
- U. Easements
- V. Easements
- W. Waivers
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STORMWATER DRAINAGE SYSTEM
MAINTENANCE AGREEMENT

For SITE PLANS (THAT ARE NOT SUBDIVISIONS)

IN CONSIDERATION OF the site plan approval granted by the Planning Board/Planning Authority of the City of Portland to the proposed _____ (*name of development and project number)*), and the associated Grading, Drainage & Erosion Control Plan (*insert correct name of plan)* (Exhibit A) submitted by_____, prepared by _____ (*engineer/agent*) of _____(address) dated _____, and pursuant to a condition thereof, _____ (*name of owner*) a Maine limited liability company with a principal place of business in Portland, Maine, and having a mailing address of _____, the owner of the subject premises, does hereby agree, for itself, its successors and assigns (the "Owner"), as follows:

Maintenance Agreement

That it, its successors and assigns, will, at its own cost and expense and at all times in perpetuity, maintain in good repair and in proper working order the _____ (*details of the system such as underdrained subsurface sand filter BMP system, rain gardens, storm drain pipes, underdrain pipes, catch basins*), (hereinafter collectively referred to as the "stormwater system"), as shown on the _____Plan in Exhibit A and in strict compliance with the approved Stormwater Maintenance and Inspection Agreement (*insert correct name of document)* prepared for the Owner by _____ (copy attached at Exhibit B) and Chapter 32 of the Portland City Code.

Owner of the subject premises further agrees, at its own cost, to keep a Stormwater Maintenance Log. Such log shall be made available for inspection by the City of Portland upon reasonable notice and request.

Said agreement is for the benefit of the said City of Portland and all persons in lawful possession of said premises and abutters thereto; further, that the said City of Portland and said persons in lawful possession may enforce this Agreement by an action at law or in equity in any court of competent jurisdiction; further, that after giving the Owner written notice and a stated time to perform, the said City of Portland, by its authorized agents or representatives, may, but is not obligated to, enter upon said premises to maintain, repair, or replace said stormwater system in the event of any failure or neglect thereof, the cost and expense thereof to be reimbursed in full to the said City of Portland by the Owner upon written demand. Any funds owed to the City under this paragraph shall be secured by a lien on the property.

This Agreement shall also not be construed to allow any change or deviation from the requirements of the site plan most recently and formally approved by the Planning Board/Planning Authority of the City of Portland.

This agreement shall bind the undersigned only so long as it retains any interest in said premises, and shall run with the land and be binding upon the Owner's successors and assigns as their interests may from time to time appear.

The Owner agrees to record a copy of this Agreement in the Cumberland County Registry of Deeds within thirty (30) days of final execution of this Agreement. The Owner further agrees to provide a copy of this Agreement to any Condominium Association or management company, and to any successor or assign and to forward to the City an Addendum signed by any successor or assign in which the successor or assign states that the successor or assign has read the Agreement, agrees to all its terms and conditions and the successor or assign will obtain and forward to the City's Department of Public Services and Department of Planning and Urban Development a similar Addendum from any other successor or assign.

For the purpose of this agreement and release "Owner" is any person or entity who is a successor or assign and has a legal interest in part, or all, of the real estate and any building. The real estate shown by chart, block and lot number in the records on file in the City Assessor's office shall constitute "the property" that may be entered by the City and liened if the City is not paid all of its costs and charges following the mailing of a written demand for payment to the owner pursuant to the process and with the same force and effect as that established by 36 M.R.S.A. §§ 942 and 943 for real estate tax liens.

Any written notices or demands required by the agreement shall be complete on the date the notice is attached to one or more doors providing entry to any buildings and mailed by certified mail, return receipt requested or ordinary mail or both to the owner of record as shown on the tax roles on file in the City Assessor's Office.

If the property has more than one owner on the tax rolls, service shall be complete by mailing it to only the first listed owner. The failure to receive any written notice required by this agreement shall not prevent the City from entering the property and performing maintenance or repairs on the stormwater system, or any component thereof, or liening it or create a cause of action against the City.

Dated at Portland, Maine this _____ day of _____, 2014.

_____
(*name of company*)

_____
(*representative of owner, name and title*)

STATE OF MAINE
CUMBERLAND, ss. Date: _____

Personally appeared the above-named _____(*name and title*), and acknowledged the foregoing instrument to be his free act and deed in his said capacity.

Before me,

_____
Notary Public/Attorney at Law

Print name: _____

Exhibit A: Approved Grading and Drainage Plan *(name of the plan showing the Stormwater System in detail)*

Exhibit B: Approved Stormwater Maintenance and Inspection Agreement

CHAPTER 32 STORM WATER

Art. I. Prohibited Discharges, §§ 32-1--32-15
Art. II. Prohibited Discharges, §§ 32-16--32-35
Art. III. Post-Construction Stormwater Management, §§32-36—32-40

ARTICLE I. IN GENERAL

Sec. 32-1. Definitions.

For the purposes of this article, the terms listed below are defined as follows:

Applicant. "Applicant" means a person with requisite right, title or interest or an agent for such person who has filed an application for a development project that requires a post-construction stormwater management plan under this article.

Best management practices ("BMP"). "Best management practices" or "BMPs" means schedules or activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Clean Water Act. "Clean Water Act" means the federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*, also known as the "Clean Water Act"), and any subsequent amendments thereto.

Discharge. "Discharge" means any spilling, leaking, pumping, pouring, emptying, dumping, disposing or other addition of pollutants to "waters of the state." "Direct discharge" or "point source" means any discernable, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

Enforcement authority. "Enforcement authority" means the person(s) or department authorized under section 32-3 of this article to administer and enforce this article.

Exempt person or discharge. "Exempt person or discharge" means any person who is subject to a multi-sector general permit for industrial activities, a general permit for construction activity, a general permit for the discharge of storm water from the Maine department of transportation and the Maine turnpike authority

municipal separate storm sewer systems, or a general permit for the discharge of storm water from state or federally owned authority municipal separate storm sewer system facilities; and any non-storm water discharge permitted under a NPDES permit, waiver, or waste discharge license or order issued to the discharger and administered under the authority of the U.S. environmental protection agency ("EPA") or the Maine department of environmental protection ("DEP").City of Portland

Municipality. "Municipality" means the city of Portland.

Municipal separate storm sewer system, or MS4. "Municipal separate storm sewer system" or "MS4," means conveyances for storm water, including, but not limited to, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels or storm drains (other than publicly owned treatment works and combined sewers) owned or operated by any municipality, sewer or sewage district, fire district, state agency or federal agency or other public entity that discharges directly to surface waters of the state.

National pollutant discharge elimination system (NPDES) storm water discharge permit. "National pollutant discharge elimination system (NPDES) storm water discharge permit" means a permit issued by the EPA or by the DEP that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-storm water discharge. "Non-storm water discharge" means any discharge to an MS4 that is not composed entirely of storm water.

Person. "Person" means any individual, firm, corporation, municipality, quasi-municipal corporation, state agency or federal agency or other legal entity which creates, initiates, originates or maintains a discharge of storm water or a non-storm water discharge.

Pollutant. "Pollutant" means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or by-products, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

Post-construction stormwater management plan. "Post-construction stormwater management plan" means BMPs employed by a development project to meet the stormwater standards of Section V of the department of planning and urban development's Technical and Design Standards and Guidelines.

Premises. "Premises" means any building, lot, parcel of land, or portion of land, whether improved or unimproved, including adjacent sidewalks and parking strips, located within the municipality from which discharges into the storm drainage system are or may be created, initiated, originated or maintained.

Qualified post-construction stormwater inspector. "Qualified post-construction stormwater inspector" means a person 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.

Regulated small MS4. "Regulated small MS4" means any small MS4 regulated by the State of Maine "general permit for the discharge of storm water from small municipal separate storm sewer systems" dated July 1, 2008 ("general permit") or the general permits for the discharge of storm water from the Maine department of transportation and Maine turnpike authority small MS4s or state or federally owned or operated small MS4s, including all those located partially or entirely within an urbanized area (UA).

Small municipal separate storm sewer system, or small MS4. "Small municipal separate storm sewer system", or "small MS4," means any MS4 that is not already covered by the phase I MS4 storm water program including municipally owned or operated storm sewer systems, state or federally-owned systems, such as colleges, universities, prisons, Maine department of transportation and Maine turnpike authority road systems and facilities, and military bases and facilities.

Storm drainage system. "Storm drainage system" means the City of Portland's regulated small MS4 and other conveyances for storm water located in areas outside the UA that drain into the regulated small MS4.

Storm water. "Storm water" means any storm water runoff, snowmelt runoff, and surface runoff and drainage; "Stormwater" has the same meaning as "storm water".

Urbanized area ("UA"). "Urbanized area" or "UA" means the areas of the State of Maine so defined by the latest decennial (2000) census by the U.S. Bureau of Census.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-2. Reserved.
Sec. 32-3. Reserved.

Sec. 32-4. Reserved.

Sec. 32-5. Reserved.
Sec. 32-6. Reserved.
Sec. 32-7. Reserved.
Sec. 32-8. Reserved.
Sec. 32-9. Reserved.
Sec. 32-10. Reserved.
Sec. 32-11. Reserved.
Sec. 32-12. Reserved.
Sec. 32-13. Reserved.
Sec. 32-14. Reserved.
Sec. 32-15. Reserved.

ARICLE II. PROHIBITED DISCHARGES

Sec. 32-16. Applicability.

This Article shall apply to all persons discharging storm water and/or non-storm water discharges from any premises into the storm drainage system.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-17. Responsibility for administration.

The department of public services is the enforcement authority who shall administer, implement, and enforce the provisions of this article.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10; 8-17-09)

Sec. 32-18. Prohibition of non-storm water discharges.

(a) *General prohibition.* Except as allowed or exempted herein, no person shall create, initiate, originate or maintain a non-storm water discharge to the storm drainage system. Such non-storm water discharges are prohibited notwithstanding the fact that the city may have approved the connections, drains or conveyances by which a person discharges un-allowed non-storm water discharges to the storm drainage system.

(b) *Allowed non-storm water discharges.* The creation, initiation, origination and maintenance of the following non-storm water discharges to the storm drainage system is allowed:

(1) Landscape irrigation; diverted stream flows; rising ground waters; uncontaminated flows from foundation drains; air conditioning and compressor condensate; irrigation water; flows from uncontaminated springs; uncontaminated water from crawl space pumps; uncontaminated flows from footing drains; lawn watering runoff; flows from riparian habitats and wetlands; residual street wash water (where spills/leaks of toxic or hazardous materials have not

occurred, unless all spilled material has been removed and detergents are not used); hydrant flushing and fire fighting activity runoff; water line flushing and discharges from potable water sources; individual residential car washing; and de-chlorinated swimming pool discharges.

(2) Discharges specified in writing by the enforcement authority as being necessary to protect public health and safety.

(3) Dye testing, with verbal notification to the enforcement authority prior to the time of the test.

(c) *Exempt person or discharge.* This article shall not apply to an exempt person or discharge, except that the enforcement authority may request from exempt persons and persons with exempt discharges copies of permits, notices of intent, licenses and orders from the EPA or DEP that authorize the discharge(s).
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-19. Suspension of access to the city's small MS4.

The enforcement authority may, without prior notice, physically suspend discharge access to the storm drainage system to a person when such suspension is necessary to stop an actual or threatened non-storm water discharge to the storm drainage system which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the storm drainage system, or which may cause the city to violate the terms of its environmental permits. Such suspension may include, but is not limited to, blocking pipes, constructing dams or taking other measures, on public ways or public property, to physically block the discharge to prevent or minimize a non-storm water discharge to the storm drainage system. If a person fails to comply with a suspension order issued in an emergency, the enforcement authority may take such steps as deemed necessary to prevent or minimize damage to the storm drainage system, or to minimize danger to persons.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-20. Monitoring of discharges.

In order to determine compliance with this article, the enforcement authority may enter upon and inspect premises subject to this article at reasonable hours to inspect the premises and connections thereon to the storm drainage system; and to conduct monitoring, sampling and testing of the discharge to the storm drainage system.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-21. Enforcement.

It shall be unlawful for any person to violate any provision of or to fail to comply with any of the requirements of this article. Whenever the enforcement authority believes that a person has violated this article, the enforcement authority may enforce this article in accordance with 30-A M.R.S.A. § 4452.

(a) *Notice of violation.* Whenever the enforcement authority believes that a person has violated this article, the enforcement authority may order compliance with this article by written notice of violation to that person indicating the nature of the violation and ordering the action necessary to correct it, including, without limitation:

(1) The elimination of non-storm water discharges to the storm drainage system, including, but not limited to, disconnection of the premises from the MS4.

(2) The cessation of discharges, practices, or operations in violation of this article.

(3) At the Person's expense, the abatement or remediation (in accordance with best management practices in DEP rules and regulations) of non-storm water discharges to the storm drainage system and the restoration of any affected property; and/or

(4) The payment of fines, of the city's remediation costs and of the city's reasonable administrative costs and attorneys' fees and costs. If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such abatement or restoration must be completed.

(b) *Penalties/fines/injunctive relief.* In addition to the imposition of any other costs or penalties provided for herein, any person who violates this section shall be subject to fines, penalties and orders for injunctive relief and shall be responsible for the city's attorney's fees and costs, all in accordance with 30-A M.R.S.A. § 4452. Each day such violation continues shall constitute a separate violation. Moreover, any person who violates this section also shall be responsible for any and all fines, penalties, damages and costs, including, but not limited to attorneys' fees and costs, incurred by the city for violation of federal and State environmental laws and

regulations caused by or related to that person's violation of this article; this responsibility shall be in addition to any penalties, fines or injunctive relief imposed under this section.

(c) *Consent agreement.* The enforcement authority may, with the approval of the city manager, enter into a written consent agreement with the violator to address timely abatement of the violation(s) of this article for the purposes of eliminating violations of this article and of recovering fines, costs and fees without court action.

(d) *Appeal of notice of violation.* Any person receiving a notice of violation or suspension notice may appeal the determination of the enforcement authority to the city manager or his or her designee. The notice of appeal must be received within 30 days from the date of receipt of the notice of violation. The city manager shall hold a hearing on the appeal within 30 days from the date of receipt of the notice of appeal, except that such hearing may be delayed by agreement of the city manager and the appellant. The city manager may affirm, reverse or modify the decision of the enforcement authority. A suspension under Section 32-5 of this article remains in place unless or until lifted by the city manager or by a reviewing court. A party aggrieved by the decision of the city manager may appeal that decision to the Maine superior court within 45 days of the date of the city manager's decision pursuant to Rule 80B of the Maine Rules of Civil Procedure.

(e) *Enforcement measures.* If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal to the city manager, within 45 days of a decision of the city manager affirming the enforcement authority's decision, then the enforcement authority may recommend that the corporation counsel's office file an enforcement action in a Maine court of competent jurisdiction under Rule 80K of the Maine Rules of Civil Procedure.

(f) *Ultimate responsibility of discharger.* The standards set forth herein are minimum standards; therefore this article does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants into waters of the U.S. caused by said person. This article shall not create liability on the part of the city, or any officer agent or employee thereof for any damages that

result from any person's reliance on this article or any administrative decision lawfully made hereunder.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-22. Severability.

The provisions of this article are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this article or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions, clauses, sentences, or paragraphs or application of this article.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-23. Reserved.
Sec. 32-24. Reserved.
Sec. 32-25. Reserved.
Sec. 32-26. Reserved.
Sec. 32-27. Reserved.
Sec. 32-28. Reserved.
Sec. 32-29. Reserved.
Sec. 32-30. Reserved.
Sec. 32-31. Reserved.
Sec. 32-32. Reserved.
Sec. 32-33. Reserved.
Sec. 32-34. Reserved.
Sec. 32-35. Reserved.

ARTICLE III. POST-CONSTRUCTION STORMWATER MANAGEMENT.

Sec. 32-36. Applicability.

This article applies to all development projects that require a stormwater management plan pursuant to section V of the department of planning and urban development's Technical and Design Standards and Guidelines.
(Ord. No. 35-09/10, 8-17-09)

Sec. 32-37. Post-construction stormwater management plan approval.

Notwithstanding any ordinance provision to the contrary, no applicant for a development project to which this article is applicable shall receive approval for that development project unless the applicant also receives approval for its post-construction stormwater management plan and for the best management practices ("BMPs") for that development project.
(Ord. No. 35-09/10, 9-17-09)

Sec. 32-38. Post-construction stormwater management plan compliance.

Any person owning, operating, or otherwise having control over a BMP required by a post construction stormwater management plan shall maintain the BMPs in accordance with the approved plan and shall demonstrate compliance with that plan as follows:

(a) *Inspections.* The owner or operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.

(b) *Maintenance and repair.* If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action(s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action(s) to the department of public services ("DPS") in the annual report.

(c) *Annual report.* The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPS in a form provided by DPS, certifying that the person has inspected the BMP(s) and that the yare adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective action(s) taken.

(d) *Filing fee.* Any persons required to file and annual certification under this section shall include with the annual certification a filing fee established by DPS to pay the administrative and technical costs of review of the annual certification.

(e) *Right of entry.* In order to determine compliance with this article and with the post-construction stormwater management plan, DPS may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs.

Sec. 32-39. Enforcement.

It shall be unlawful for any person to violate any provision of or to fail to comply with any of the requirements of this article or of the post-construction stormwater management plan. Whenever the enforcement authority believes that a person has violated this article, DPS may enforce this article in accordance with 30-A M.R.S.A. § 4452. Each day on which a violation exists shall constitute a separate violation for purposes of this section.

(a) *Notice of violation.* Whenever DPS believes that a person has violated this article or the post-construction stormwater management plan, DPS may order compliance by written notice of violation to that person indicating the nature of the violation and ordering eh action necessary to correct it, including, without limitation:

(1) The abatement of violations, and the cessation of practices or operations in violation of this article or of the post-construction stormwater management plan;

(2) At the person's expense, compliance with BMPs required as a condition of approval of the development project, the repair of BMPs and/or the restoration of any affected property; and/or

(3) The payment of fines, of the City's remediation costs and of the City's reasonable administrative costs and attorneys' fees and costs.

(4) If abatement of a violation, compliance with BMPs, repair of BMPs and/or restoration of affected property is required, the notice shall set forth a deadline within which such abatement, compliance, repair and/or restoration must be completed.

(b) *Penalties/fines/injunctive relief.* In addition to the imposition of any other costs or penalties provided for herein, any person who violates this section shall be subject to fines, penalties and orders for injunctive relief and shall be responsible for the city's attorney's fees and costs, all in accordance with 30-A M.R.S.A. § 4452. Each day such violation continues shall constitute a separate violation. Moreover, any person who violates this section also shall be responsible for any and all fines, penalties, damages and costs, including, but not limited to

attorneys' fees and costs, incurred b y the city for violation of federal and state environmental laws and regulations caused by or related to that person's violation of this article; this responsibility shall be in addition to any penalties, fines or injunctive relief imposed under this section.

(c) *Consent agreement.* The enforcement authority may, without approval of the city manager, enter into a written consent agreement with the violator to address timely abatement of the violation(s) of this article for the purposes of eliminating violations of this article and of recovering fines, costs and fees without court action.

(d) *Appeal of notice of violation.* Any person receiving a notice of violation or suspension notice may appeal the determination of the enforcement authority to the city manager or his or her designee. The notice of appeal must be received within 30 days from the date of receipt of the notice of violation. The city manager shall hold a hearing on the appeal within 30 days from the date of receipt of the notice of appeal, except that such hearing may be delayed by agreement of the city manager and the appellant. The city manager may affirm, reverse or modify the decision of the DPS. A party aggrieved by the decision of the city manager may appeal that decision to the Maine superior court within forty-five (45) days of the date of the city manager's decision pursuant to Rule 80B of the Maine Rules of Civil Procedure.

(e) *Enforcement measures.* If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or , in the event of an appeal to the city manger, within forty-five (45) days of a decision of the city manager affirming the enforcement authority's decision, then the enforcement authority may recommend that the corporation counsel's office file an enforcement action in a Maine court of competent jurisdiction under Rule 80K of the Maine Rules of Civil Procedure.

(Ord. No. 35-09/10, 8-17-09)

Sec. 32-40. Severability.

The provisions of this article are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this article or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions, clauses, sentences, or paragraphs or application of this article.

(Ord. No. 35-09/10, 8-17-09)

Performance Guarantee, Inspection Fee, and Infrastructure Financial Contribution Packet Portland, Maine

Planning and Urban Development Department

A. Site Plan/Subdivision Performance Guarantees Requirement

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 is a downloadable excel spreadsheet that can be downloaded from the website here: https://www.portlandmaine.gov/467/Performance-Guarantee

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 listed below, with NO exceptions.

1. 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 in full and every aspect of the proposed development is in compliance with the City of Portland Code, as determined by the Development Review Coordinator in the Planning and Urban Development Department.

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.

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.

Infrastructure Financial Contribution Form

F. Administrative Process for Submitting a 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 performance guarantee templates listed above, inputting project specific information (refer to last page of this document for a help guide) into blank and bracketed areas, and submit to the Planning Office for final approval. Submit a draft to planning@portlandmaine.gov to ensure fields are correctly entered. Once staff approves 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 to the Planning Division. The Planning Office 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 Once the cost estimate is approved, all Performance Guarantees and Infrastructure Contributions can be submitted by mail to:

City of Portland
Planning and Urban Development Department
389 Congress Street, 4th Floor
Portland, ME 04101

Guide for Determining Performance Guarantee Fields

[Please note: While drafting, the tracking feature should remain enabled]

Fields	What to Use
Address of Project, Portland, Maine	Reference Application Approval Letter
Amount of Performance Guarantee	Reference Grand Total on the Approved Cost Estimate Form
Application ID #	Reference Project's Approval Letter
Approval Date	See First Sentence of the Approval Letter which contains the Date of Approval. *(Note: If any amendments occurred following the approval, please list, "and amended on [add amendment date]"*
Date	The Date of the Agreement Indicates the Effective Start Date of the Agreement
Date one year from the date of this Letter of Credit [or] Escrow Account	The Expiration Date of the Agreement will be at least One-year from the Effective Date of the Agreement *[**Note**: If the one-year expiration date falls between October 30th and April 15th, the expiration should default to April 15th]*
Name of Applicant	Reference Entity Listed on Application Approval Letter *(Note: The entity eligible to post the Performance Guarantee must be the Applicant/Developer listed on the Approval Letter)*
subdivision and/ or site plan	Reference Application Approval Letter for Applicable Type of Approval. *(Ex. If pertaining to both, the text would read, "subdivision and site plan,")*

Additional Fields on Financial Institution Templates

(i.e. Letter of Credit or Escrow Account with Financial Institution)

Account Number	Any Number the Financial Institution Chooses to Assign the Agreement
Name of Bank/Credit Union	The Name of Financial Institution (i.e. the Surety) posting funds for the Applicant/Developer
Address of Financial Institution	Address of Financial Institution's Office Managing Letter of Credit and/or Escrow Accounts
Name	The Name of the Financial Institution's Authorized Signatory
Title	Title of Authorized Signatory

Sean King <sking@portlandmaine.gov>

PL-003053-2024 2 Riverton Drive DPW Comments

Tom Errico <thomas.errico@tylin.com> Wed, Sep 18, 2024 at 2:54 PM
To: Sean King <sking@portlandmaine.gov>

Hi Sean – the changes proposed will not have a significant impact to traffic mobility. I'm fine with the waivers proposed. I do have one question. The intersection next to the basketball court should have ADA crosswalks. I would suggest one across the stem and one to get to the internal part of the site. Maybe that was part of the original project. Also, I don't like the painted walkway to the Admin. Building within the staff parking area. Let me know if you want to discuss.

Thanks

Tom Errico, P.E.
NE TRAFFIC ENG. DIRECTOR
T +1 207.347.4354
M +1 207.400.0719

TYLin

From: Sean King <sking@portlandmaine.gov>
Sent: Wednesday, September 18, 2024 2:26 PM
To: Tom Errico <thomas.errico@tylin.com>
Subject: Re: PL-003053-2024 2 Riverton Drive DPW Comments

Hello Tom,

Do you have any comments based on the waiver requests, reshuffling of residential units (propose an increase of 5 units in Bldg 1), removal of large community center to keep existing admin bldg and service row bldg 5.

Thank you, Sean

Sean King, PLA

Urban Designer

389 Congress Street, 4th Floor
Portland, Maine 04101

(207) 874-8901

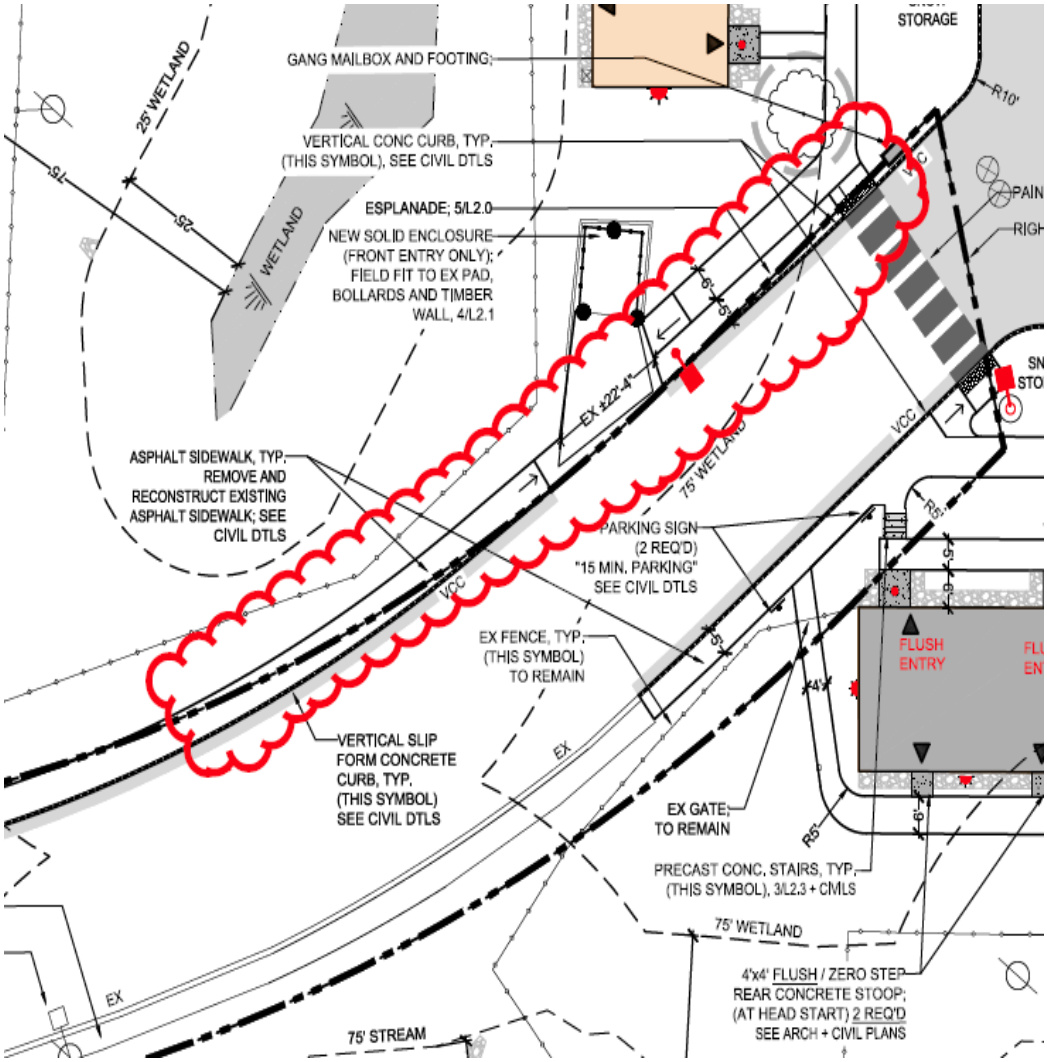
Sean King <sking@portlandmaine.gov>

PL-003053-2024 2 Riverton Drive DPW Comments

Kristoffer DeVolder <kdevolder@portlandmaine.gov> Wed, Sep 18, 2024 at 10:35 AM
To: Sean King <sking@portlandmaine.gov>
Cc: Keith Gray <kgray@portlandmaine.gov>, "thomas.errico@tylin.com" <Thomas.Errico@tylin.com>, Benjamin Pearson <bnp@portlandmaine.gov>, Justin Pellerin <jrp@portlandmaine.gov>, Lauren Swett <lswett@woodardcurran.com>

Hello Sean,

Below are DPW's comments for PL-003053-2024 2 Riverton Drive. Let me know if you have any questions.

- **PL-003053-2024** 2 Riverton Drive Major Site Plan Amendment
  - Comments for Review
  - DPW Transportation
    - Sheets 1 and 2 per the cover page: "ALTA/NSPS Land Title Survey" need to be submitted. These sheets are needed in order to review existing and/or proposed easements in addition to fulfilling the stamped boundary survey requirement.
    - Sidewalk easement is necessary for sections where the public sidewalk extends outside the bounds of the ROW. See Below.
    - 

  - DPW Water Resources

- The applicant should confirm this site plan amendment doesn't require an updated wastewater capacity authorization from DPW.
- Private storm drain pipes are not permitted to connect into public catch basins in the street per tech manual standard 2.8.7. The roof drain outlet pipe out of DMH-1.11 should be connected into the mainline storm drain in the street with a manhole.
- The 6" sewer lateral connection from building 15 should be connected directly into the City's 10" sewer line just downstream of the manhole.
- The 6" sewer lateral connections from buildings 5, 14, 10, 25 and 22 should connect to the existing 8" street sewer just upstream of the existing manhole.
- The proposed 8" private sewer connection for building 1 must be connected to the City's sewer main with the use of a manhole.
- DPW is requesting that the applicant take another look at the proposed outlet protection design for the new storm drain outfalls being proposed to discharge into the stream/ravine embankment. We are worried about possible erosion occurring downstream of the outlet protection rip-rap that may result in sedimentation of the downstream wetlands and stream channel and localized destabilization of the embankment. It appears the "redistribution of stormwater" chapter 500 standard would be applicable for the new outfalls being proposed downstream of CB's 6.5, 4.6, and 3.2 to protect the existing stream embankments and downstream stream channels.
- The stormdrain outfall line from CB #4.6 should be realigned to direct flow more inline with the stream channel. The current alignment directs the outfall towards the existing roadway culvert, which could cause score and erosion around the culvert.
- 100' and 75' perennial stream buffers should be plotted on the grading plan and ESC plans.
- DPW is still seeking a formal sewer easement for the area surrounding the existing municipal sewer pump station facility and roadway culverts at Springbrook Way and Riverton Drive.

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



Sean King <sking@portlandmaine.gov>

2 Riverton Drive

Victoria Volent <vvolent@portlandmaine.gov> Wed, Oct 16, 2024 at 12:05 PM
To: Sean King <sking@portlandmaine.gov>
Cc: Matt Grooms <mgrooms@portlandmaine.gov>

Hi Sean,

2 Riverton Drive is exempt from Inclusionary Zoning per 18.2.3 B as it received approval from the City Council to receive both HOME and local housing program funding, and received approval from MaineHousing for tax increment financing, and LIHTC funding.

Due to the exemption, the developer and city do not need to enter into an Affordable Housing Agreement.

Thank you,

Victoria

Victoria Volent
Housing Program Manager
City of Portland
389 Congress Street
Phone: 207-482-5028
www.portlandmaine.gov

CITY OF PORTLAND, MAINE

PLANNING BOARD

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

October 22, 2024

Portland Housing Development Corporation,
Portland Housing Authority
14 Baxter Boulevard
Portland, Maine 04101

Carroll Associates
217 Commercial Street, Suite 200
Portland, Maine 04101

Project Name:	Riverton Park	**Project ID:**	PL-003053-2024
Address:	2 Riverton Drive	**CBL:**	327 B012001
Applicant:	Portland Housing Development Corporation, Portland Housing Authority		
Planner:	Sean King, Urban Designer		

Dear Tyler Plante:

On October 22, 2024, the Planning Board approved a major site plan amendment at 2 Riverton Drive to include five additional residential units within Circle 1 Building for a total number of 64 residential units while maintaining the overall proposed residential unit count, the renovation of the existing Administration Building and Building 5 to accommodate community-oriented services, the removal of maintenance facility upgrades and revisions to the stormwater treatment system, paving material, site lighting, landscaping throughout the property. 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 adopts)** the findings, conclusions and recommendations contained in the Planning Board Report for the public hearing on October 22, 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 X-**X** to approve the application with the following conditions as presented below.

Waivers

The Planning Board waives the Technical Standard, Section 1.10.3; Section 1.10.2.1; Section 1 Figure I-12:

> 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 held on October 22, 2024 for application PL-003053-2024 relevant to the Site Plan Standards of the Land Use Code and Portland's Technical and Design Standards, and other regulations, and testimony presented at the Planning Board public hearing:

1. Electrical Vehicle Infrastructure
   The Planning Board [finds/does not find] based upon the Consulting Traffic Engineer's review, that extraordinary conditions exist or undue hardship may result from strict compliance with Technical Manual Section 1.14, which requires 50% of spaces must be made EV-ready conduit and electrical service. That substantial justice and the public interest are secured with the proposed variation in this standard, and that the variation is consistent with the intent of the ordinance. The Planning Board [waives/does not waive] Technical Manual Section 1.14 to allow no EV-ready conduit and electrical service within the proposed Circle 1 parking lot.

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 October 22, 2024 for application # PL-003053-2024 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 subject to the following conditions of approval:

PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY

1. The applicant shall provide a sidewalk easement for sections that extend outside the City's right-of-way to the Planning Authority.

2. The applicant shall provide sewer easements for the area surrounding the existing municipal sewer pump station facility and roadway culverts at Riverton Drive and Springbrook Way to the Planning Authority.

The approval is based on the submitted plans and findings related to site plan review as contained in the Planning Board report dated October 22, 2024 for application PL-003053-2024 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. 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 (207)874-9699. 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,

Brandon Mazor, Planning Board Chair

Attachments:
1. Planning Board Report

0. Statement of Proposed Amendments

Circle 1 Building:

Reference attached drawings for more info.

Site:

C1.0 Master Plan
C3.1 Site Plan
C3.4 Site Plan Enlargement
C4.1 Grading + Drainage Plan
C4.1A Grading + Drainage Plan
C5.1 Utility Plan
L1.0 Landscape Master Plan
L1.1 Landscape Enlargements
L3.0 Photometric Master Plan

Architectural:

A1.10 First Floor Plan
A1.20 Second Floor Plan
A1.30 Third Floor Plan
A1.40 Fourth Floor Plan
A3.00C Exterior Elevations Color
A3.01C Exterior Elevations Color
A3.02C Exterior Elevations Color
A3.03C Exterior Elevations Color
A3.50 Signage Details
A3.51 Signage Details
Renderings

Site Scopes:

- Reconfigure Circle 1 Building front plaza
- Remove concrete benches & stage; replace with stock benches
- Add permeable paver stormwater system at plaza
- Reduce quantity of handicap and adaptable parking spaces (paved area to remain roughly the same)
- Add focal point stormwater device & landscaping
- Relocate transformer and reconfigure underground electric, water and storm drain
- Revise EV parking space approach at parking lot. Proposing 8 EV Charger parking spaces (4 dual plug units) and 10 EV-Ready parking spaces (waiver request).
- No changes to recreational field and fire access road

Building Scopes:

- Overall residential unit mix changes:

CIRCLE 1 BUILDING UNIT MIX CHANGE SUMMARY					
	0-BR	1-BR	2-BR	3-BR	TOTAL
PREVIOUS	8	13	16	22	59
REVISED, CURRENT	8	20	17	19	64

- Overall building area changes:

CIRCLE 1 BUILDING FLOOR AREA CHANGES (in Square feet)									
	1ST FLOOR					2ND FLOOR	3RD FLOOR	4TH FLOOR	TOTAL
	PHA Office	GPH Clinic	Covered parking	Residential & Common	1st FL subtotal				
PREVIOUS	19,782					18,082	18,082	18,082	74,028
REVISED, CURRENT	1,230	2,243	3,829	11,492	18,794	18,150	18,150	18,150	73,244

- First floor program/layout revisions:
  - Eliminate (2) single-story retail suites along Riverton Drive, at pedestrian plaza
  - Reduce PHA office suite and shared toilet facilities, and enter separately from exterior as shown on plans.
  - Reduce building envelope at former retail area, and simplify geometry as shown on plans.
  - Eliminate dropped concrete slab on grade at former retail area
  - Add (1) 1-BR unit and (1) 2-BR unit at first floor at reduced/former PHA office space footprint.
  - Enlarged (2) 0-BR unit footprints ~24” at bump-outs

- Upper floor layouts:
  - Enlarged (2) 0-BR unit footprints ~24” at bump-outs
  - Revised upper floor unit mix as follows:

CIRCLE 1 BUILDING UPPER FLOOR UNIT MIX CHANGE SUMMARY					
	0-BR	1-BR	2-BR	3-BR	TOTAL
PREVIOUS	2	3	5	7	17
REVISED, CURRENT	2	5	5	6	18

- Building Envelope:
  - Reduce and simplified building footprint (see above) at removed retail, and adjacent residential entry vestibule.
  - Remove built-out window surrounds at two end volumes of building
  - Reduce quantity and increased spacing of panel joint layouts on first floor

- Provide lap siding at select first floor wall areas where panel siding was previously indicated
- Reduce quantity of storefront appropriate for PHA office.
- Reduce extent of custom painted panel colors (see elevations for revised color selections)
- Remove continuous built-out horizontal band at second floor level, replace with simplified flashing transition detail.

Neighborhood Center:

- Remove proposed building and associated sitework from project. Admin Building to remain.

Admin Building:

Reference attached drawings for more info.

Site:

C1.0 Master Plan
C3.1 Site Plan
C3.4 Site Plan Enlargement
C4.1 Grading + Drainage Plan
C5.1 Utility Plan
L1.0 Landscape Master Plan
L1.1 Landscape Enlargements
L3.0 Photometric Master Plan

Architectural:

A1.10 New Work Floor Plan
A3.01 Exterior Elevations

- Remove proposed Neighborhood Center and associated new sitework, including transformer and pad from project. Remove new utility connections, including new sewer, gas, grease trap
- Retain existing administration building, parking lot, and utilities

Site Scopes:

- Retain existing utility poles, and lights along Riverton Drive
- Reconfigure front plaza, site amenities, and landscaping
- Remove concrete benches and central seat wall; replace with stock benches
- Add permeable paver stormwater system at plaza
- Add storage shed
- Add generator (if funding allows)
- Add sidewalk along end of existing parking lot

Building 5 ("Service Row"):

Reference attached drawings for more info.

Site:

C1.0 Master Plan
C3.1 Site Plan
C3.4 Site Plan Enlargement
C4.1 Grading + Drainage Plan
C5.1 Utility Plan
L1.0 Landscape Master Plan
L1.1 Landscape Enlargements
L3.0 Photometric Master Plan

Architectural:

A1.05.1 First Floor New Work Plan
A1.05.2 Second Floor New Work Plan
A3.00 Exterior Signage
A3.05 Exterior Elevation

- Remove all residential dwelling units from Building 5 scope. Building 5 "Service Row" will continue to house resident service providers. Renovate interior and exterior, including front and rear stoops for community programming needs.

Site Scopes

- Reconfigure front and rear stoop locations.
- Reconfigure retaining wall, walkway, and landscaping along front of building
- Add playground area at back of building
- Remove new stair, walkway, and lighting from Circle 2 through to Circle 1 (existing to remain)

Townhome Rehabilitation:

Reference attached drawings for more info.

Site:

C1.0 Master Plan
C3.2 Site Plan
C3.3 Site Plan
C4.2 Grading + Drainage Plan
C4.3 Grading + Drainage Plan
C5.2 Utility Plan
C5.3 Utility Plan
L1.0 Landscape Master Plan
L1.1 Landscape Enlargements
L1.2 Landscape Enlargements
L3.0 Photometric Master Plan

Architectural:

Unit Scope Summary
G1.00 Unit Locations Site Plan
A1.10.1 First Floor New Work Plan Building 10
A1.10.2 Second Floor New Work Plan Building 10
A3.10 Building 10 Exterior Elevations
A1.16.1 First Floor New Work Plan Building 16
A1.16.2 Second Floor New Work Plan Building 16
A3.16 Building 16 Exterior Elevations
A1.21.1 First Floor New Work Plan Building 21
A1.21.2 Second Floor New Work Plan Building 21
A3.21 Building 21 Exterior Elevations
A1.23.1 First Floor New Work Plan Building 23
A1.23.2 Second Floor New Work Plan Building 23
A3.23 Building 23 Exterior Elevations
A3.00 Exterior Signage

Site Scopes:

- Retain existing utility poles and lights along Riverton Drive
- Remove basketball court improvements (resurfacing, hoops, lights, fencing, etc.) and maintain existing
- Retain approximately 660 LF of existing sidewalk and curb on Springbrook Way and Riverton Drive from Circle 3 to Circle 6
- Reduce quantity of handicap/accessible dwelling units by 3 (6 extra accessible units added to Circle 1 Building), and reconfigure building stoops and walks to coordinate
- Slightly reduce landscaping throughout
- Remove sidewalk at end of Circle 4 parking lot
- Remove rear stoops, privacy fences between units and clotheslines

Building Scopes:

- Remove Building 5 from Rehab scope (see Building 5 above.)
- Remove accessible and non-accessible flat unit designs at buildings/units listed below, includes revisions to mechanical room layouts. Revised plans for the below buildings are included for reference.
    - **10**: 115 & 117 Riverton Drive
    - **16**: 17 & 19 Pinewood Drive
    - **21**: 29 & 31 Springbrook Way
    - **23**: 30 & 32 Springbrook Way
- Reference attached Unit Scope Summary – Riverton Park Rehabilitation and sheet G1.00 – Unit locations Site Plan for unit type distribution and guide to sample unit plans
- Reference Attached Schedule of Alternates, Riverton Park Rehabilitation for alternate scopes.

Maintenance Garage:

- Remove proposed garage and associated sitework from project.

Unit Scope Summary

ISSUED FOR MSHA PRE-APP PRICING06/21/2024

PROJECT:
Riverton Park Rehabilitation
Riverton Park
Portland, Maine 04103

OWNER:
Riverton Park, LP
270 Baxter Blvd
Portland, Maine 04101

Unit Size	2 BR	3 BR		4 BR		5 BR					6 BR	
Accessibility	Non-Accessible	Non-Accessible	Non-Accessible Communications Unit	ANSI 117.1 Type C	ANSI 117.1 Type C Unit with Communications Features	Non-Accessible	Non-Accessible Communications Unit	ANSI 117.1 Type B	ANSI 117.1 Type B Unit with Communications Features	ANSI 117.1 Type A / ADAAG 2010 Accessible	Non-Accessible	ANSI 117.1 Type A / ADAAG 2010 Accessible
Description	1; 2	1; 2	1; 2; 3	4	3; 4	4	3; 4	5	3; 5	5	4	5
Sample Unit Reference	Bldg 16: 13 Pinewood Drive	Bldg 16: 15 Pinewood Drive	Bldg 16: 15 Pinewood Drive	Bldg 10: 111 Riverton Drive	Bldg 10: 111 Riverton Drive	Bldg 16: 17 Pinewood Drive	Bldg 16: 17 Pinewood Drive	Bldg 10: 117 Riverton Drive	Bldg 10: 117 Riverton Drive	Bldg 10: 117 Riverton Drive	Bldg 21: 29 Springbrook Way	Bldg 21: 31 Springbrook Way
Building 6				4		1	1					
Building 7		6										
Building 8				4				1	1			
Building 9		6										
Building 10				4		1				1		
Building 11		6										
Building 12		4		1	1							
Building 13	2	2				1		1				
Building 14				2		1		1				
Building 15	2	2				2						
Building 16	2	2				1				1		
Building 17		4		2								
Building 18	2	2				2						
Building 19				4		1		1				
Building 20		5	1									
Building 21	4										1	1
Building 22	4										2	
Building 23	4										2	
Building 24				4		1		1				
Building 25		4		2								
Sub-Total	**20**	**43**	**1**	**27**	**1**	**11**	**1**	**5**	**1**	**2**	**5**	**1**
Total	**118**											

Keyed notes:
1) No substantial changes from previous pricing set
2) Typical scope: replace-in-kind, with varying minor first floor alterations for construction of new mechanical rooms (IEBC 2015 Alteration Level 2 where applicable)
3) Communications unit features
4) Typical scope: minor reconfiguration (IEBC 2015 Alteration Level 2) for improved accessibility within unit, plus typical replace in-kind scope throughout unit
5) Typical scope: minor reconfiguration (IEBC 2015 Alteration Level 2) to provide accessible unit, plus typical replace in-kind scope throughout unit; accessible cabinetry where required

Commissioners
Kristin Blum, Chair
Monique Mutumwinka, Vice Chair
Christian MilNeil, Commissioner
Shirley Peterson, Commissioner
Thomas Valleau, Commissioner
Joan White, Commissioner
Robert Dunfey, Commissioner

PORTLAND HOUSING AUTHORITY

Brian Frost
Executive Director
14 Baxter Blvd.
Portland, Maine 04101
Office: 207-773-4753
Fax: 207-761-5886
www.porthouse.org

December 20, 2022 (REVISED August 2024)

Kevin Kraft, Director of Planning & Urban Development
Matthew Grooms, Development Review Services Manager
Sean King, Urban Designer
City of Portland
389 Congress Street, 4th Floor
Portland, Maine 04101

RE: Project Description
Riverton Park Redevelopment & Rehabilitation
2 Riverton Drive, Portland, ME 04103
Tax Map 327-B-012

Dear Kevin, Matt and Sean,

On behalf of Applicant, Riverton Park, LP c/o Portland Housing Development Corporation (PHDC), and Owner, Portland Housing Authority (PHA), we are pleased to submit this Major Site Plan and Conditional Use application for new development and renovation of affordable housing at Riverton Park.

The Riverton Park Redevelopment & Rehabilitation project is a bold opportunity for the City to help preserve 118 existing affordable rental homes and add 64 new affordable and market-rate apartments. It will expand on-site resident services that better meet the needs of low-income families. It envisions a new Greater Portland Health Center to improve the health and wellbeing of the Riverton community. The project will improve pedestrian and bike infrastructure, social gathering spaces, recreational facilities, and accessibility for persons with disabilities at Riverton Park.

The applicant seeks approvals for Major Site Plan, and a Planned Residential Unit Development (PRUD) in the R-5a zone.

Riverton Park in Context: Existing Site, Conditions & Challenges
The site is located at 2 Riverton Drive in the Riverton neighborhood along outer Forest Avenue. It is currently zoned R-5A and B-2 following Map and Text Amendment approval earlier this year. Built in 1972, Riverton Park contains 25 residential buildings with 141 townhome apartments and a small administration building. The existing improvements are general located in six cul-de-sacs. Riverton Drive is the sole road into the ±17.72-acre property. The property is served by various utilities via Riverton Drive, Springbrook Way and Pinewood Drive. There is METRO bus stop along Forest Ave just paces from Riverton Drive.

This occupied Public Housing community faces a long backlog of capital improvements due to chronic HUD underfunding, normal wear-and-tear from large families, and five-decades without a significant renovation. Major building systems, including building exteriors and mechanical, have reached the end of their useful life and necessitate replacement. Finishes, fixtures and millwork in units are old and worn.

Accessibility upgrades are needed to better accommodate those with disabilities. Frequent maintenance issues contribute to high property operating expenses. Though reasonably maintained by dedicated maintenance staff, only renovation will ensure these homes remain healthy, safe, accessible, energy-efficient and affordable for the long-term.

Riverton Park serves many low-income and immigrant families. Nearly a dozen languages are spoken. PHA has developed close partnerships with Boys & Girls Club (B&GC), Opportunity Alliance, Greater Portland Health Center (GPH), and many more to offer on-site services. However, there is insufficient space for resident service delivery. For instance, while there are over 300 youth under 18 years living at Riverton Park today, the after-school program spaces are extremely undersized. There is also no active outdoor field or indoor recreational space at the property. As a result, service providers cannot always serve everyone seeking to participate. The small GPH clinic currently operating at Riverton Park cannot attend to all persons seeking preventative and basic medical care due to lack of capacity. There is no dedicated pantry for distributing food and clothing donations, on which many of our families rely.

This Public Housing community was built during urban renewal as an isolated, cul-de-sac community on the outskirts of Portland. Riverton Park has been underserved and underinvested in for decades. PHA hears from our partners and residents daily that more educational, healthcare, economic and youth development services will help families secure their basic needs and boost self-sufficiency. It is clear investment in improved community spaces at Riverton Park is warranted.

When envisioning major changes to Riverton Park, PHA and our highly experienced team of design and construction professionals contemplate all features and factors of the property. Notable among them are the numerous steep slopes, forests and wetlands that reduce the site's developable land by over 5 acres. The property's irregular shape and surrounding uses, such as Route 95, are also minded. As an affordable housing project utilizing private and public dollars, efficient use of limited funds is imperative, especially during these times of rapidly escalating construction costs. The project as currently proposed is the maximum scope of work achievable due to strict MaineHousing cost caps, per their "Total Development Cost Index" – any additional scope incurred risks financial infeasibility.

The project we propose below centers our residents and considers potential impacts to them. PHA is committed to evaluating resident needs, notifying tenants in advance about all plans and relocations, securing temporary housing options, paying for reasonable moving expenses and temporary housing, accommodating special needs, minimizing impacts to families, and complying with all applicable relocation laws and regulations. During construction, PHA will temporarily house as many families in on-site in vacant units as possible. All tenants will have the right to occupy a home at Riverton Park following completion.

Proposed Development Program

The Riverton Park Redevelopment & Rehabilitation project aims to preserve and expand Portland's stock of affordable homes, enhance resident services, and better connect Riverton Park with surrounding neighborhoods. The project program includes:

A. Demolition of 4 existing buildings with 24 units closest to Forest Avenue, and redevelopment with a single, 4-story multifamily building with 64 units ("Circle 1 Building"). Its ground-floor will house PHA Management offices and a new GPH clinic. This building aims to achieve Passive House Certification, the world's most energy-efficient building standard.

B. Rehabilitation of 20 residential buildings with approximately 118 two-story residential townhomes. The proposed scope of work will resolve all existing building issues noted above. The rehabilitation scope includes but not limited to: upgrade building envelopes; install continuous exterior insulation; replace roofs and windows; replace old boilers; install new ventilation system; create new accessible units; improve sitework and handicap ramps; renovate unit interiors with new finishes, flooring, fixtures, cabinets and paint; convert all gas ranges to electric; install new energy-efficient and water-efficient fixtures; and replace front stoops.
C. Renovation of the existing administration building. A community room and community kitchen will be provided to accommodate service delivery and social gatherings.
D. Building 5 "Service Row" will be renovated and continue to house these services B&GC, PHA Study Center, Resident Service Coordination (RSC) office, and community policing liaison office. Its design and programming have been based on extensive conversations and multiple meetings with residents and service partners.
E. Site work improvements throughout the property include but not limited to: replace curbing, sidewalks and pathways; improve pedestrian and bicycle infrastructure; replace obsolete utility lines; improve site accessibility for persons with disabilities; repave parking lots; improve water drainage away from buildings; enhance landscaping; maintain community gardens; and improve site lighting. To promote active lifestyles, a new recreational field and playground are proposed as well. To promote social interaction and community solidarity, an outdoor plaza is located adjacent to the Circle 1 Building.

The new Building 1 (Item A) will be located in the B-2 zone. Items B-D will be located within the R-5A zone.

One Hundred percent (100%) of all Riverton Park apartments will be affordable for households earning at or below 80% of Area Median Income (AMI) (182 of 182 units). All net new units will be affordable (35 of 35 net new units).

The project will contain 8 studios, 20 1BR units, 37 2BR units, 63 3BR units, 28 4BR units, 20 5BR units, and 6 6BR units. No larger 4+ bedroom units for families will be lost due to demolition – the new construction will replace existing bedrooms sizes and add new, smaller ones to diversify offerings. Five 3BR units will be lost on net due to demolition. We anticipate 19 apartments will be set aside for families and individuals experiencing homelessness and residing in a Portland shelter as part of an Affordable Housing Tax Increment Financing (AHTIF) and HOME funding application.

The redevelopment and rehabilitation of Riverton Park will strengthen City efforts to alleviate severe affordable housing shortages regionally and improve quality of life for Riverton Park families. We welcome the opportunity to discuss plans with Planning Staff and the Planning Board, and look forward to working closely with you as this important project advances. Please contact us if you have questions or need additional information.

Sincerely,

Tyler Plante
Development Officer
PHA & PHDC

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.**

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.

EXHIBIT	GENERAL APPLICATION DOCUMENTS	
1	Yes NA	**Project Description** • Cover letter with detailed project description
2.0+2.1	Yes NA	**Completed Checklist** (this document)
3	Yes NA	**Evidence of Right, Title, and Interest** • Deeds, leases, or purchase and sales agreements
4	Yes NA	**Evidence of State or Federal Approvals** • Permits or letters of non-jurisdiction, if applicable
5	Yes NA	**Zoning Assessment** (see Zoning Assessment Table) Summary of compliance with use and dimensional standards of the land use code
6	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
7	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
8	Yes NA	**Waiver Requests** (see Waiver Table) • Written request for waiver describing request and compliance with applicable waiver standards
9	Yes NA	**Financial Capability** • Letter or evidence from a financial institution or third party verifying financial capacity to undertake project
10	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.

EXHIBIT			
	TRANSPORTATION		
11	**Yes**	**NA**	**Impact on Surrounding Street Systems (14-14.6.1(A))** ● Describe incremental volume of traffic impacts and mitigation measures. If needed
12	**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)
13	**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
14	**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
15	**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

EXHIBIT	ENVIRONMENTAL	
16	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
17	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
18	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
19	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

EXHIBIT		
	PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY	
20	**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
21	**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)
22	**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	
23	**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
24	**Yes** **NA**	**Shadows (14-14.6.4(B)), if applicable** ● Provide shadow analysis of impacts on publicly accessible open space (Technical Manual, Section 11)
25	**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

EXHIBIT	Yes	NA	
26			**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
27			**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
28			**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
29			**Zone-Related Design Standards (14-14.6.4(I))** ● Address any applicable design review standards by zone, including compliance with Design Manual

ADDITIONAL EXHIBITS

0	Yes	**Statement of Proposed Amendments**
31	Yes	**Turning Movement Diagram** : **Aerial Ladder Truck + Bus**
33	Yes	Additional Permits (Maine Construction General Permit)

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

Portland, Maine — Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) B-2 Community Business

All Projects:

	Required	Proposed
Lot Size	n/a	+/-1.52 ac
Area Per Dwelling Unit	1,000 (400*)	1034sf/du(64du)
Minimum Street Frontage	20 ft	+/-380 ft
Front Yard Minimum	0 ft	0 ft
Front Yard Maximum	10 ft	varies**
Rear Yard	10 ft	min.10 ft*
Yard Right	0 ft	min.10 ft*
Yard Left	0 ft	min.10 ft*
Side Street Setback	n/a	n/a
Step Back	side 5ft, rear 15ft	see arch plans
Maximum Lot Coverage	n/a	n/a
Minimum Lot Coverage	n/a	n/a
Maximum Height	45ft (70ft*)	52-7"
Open Space		
Maximum Impervious Area	***	<80%
Pavement Setback	n/a	
Floor Area Ratio		
Off Street Parking Spaces	resi: 1 ps/du	72 ps
Loading Bays	n/a	n/a
Other 1		
Other 2		
Other 3		

Bldg 1 - Off St Parking
64 residential
6 clinic
0 office (all at Circle 2 + Admin. bldg)
2 HC residential (B5)
72 PS

* 18.2.4 (B)
density + dimensional bonuses and reductions

** 7.5.5.F.3 (B+F)
Maximum front setbacks

*** Impervious surface (max)

residential: none
other: 80%

1

Planned Residential Unit Developments (PRUD) Requirements

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

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height	increase	70'	52'-7"
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):			

Portland, Maine Yes. Life's good here.

Planning & Urban Development Department

ZONING ANALYSIS Relevant Zone(s) B-2 Community Business

All Projects:

	Required	Proposed
Lot Size	n/a	+/-1.52 ac
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Front Yard Maximum	10 ft	varies**
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Side Street Setback	n/a	n/a
Step Back	side 5ft, rear 15ft	see arch plans
Maximum Lot Coverage	n/a	n/a
Minimum Lot Coverage	n/a	n/a
Maximum Height	45ft (70ft*)	52-7"
Open Space		
Maximum Impervious Area	***	<80%
Pavement Setback	n/a	
Floor Area Ratio		
Off Street Parking Spaces	resi: 1 ps/du	72 ps
Loading Bays	n/a	n/a
Other 1		
Other 2		
Other 3		

17.72 AC TOTAL LOT / 16.20AC R5A ZONE

* residential = min. 6,000 sf
places of assembly >10,000 sf = min. 1ac

** 18.2.4 (B)
density + dimensional bonuses and reductions

Planned Residential Unit Developments (PRUD) Requirements

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

17.72 AC TOTAL LOT / 16.20AC R5A ZONE

Affordable Housing Density Bonuses (if applicable)

	Bonus Increase or Decrease	Maximum Allowable With Bonus	Proposed
Density			
Height	increase	70'	52'-7"
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):			

5.1 Zoning Provisions

Land Use Code, Section 7.5.5 Setbacks,
subsection **Maximum front setbacks**,

The applicant is requesting the Planning Authority and Planning Board to authorize use of a greater than 10' max. front setback for the new mixed-use building that fronts on Riverton Drive that is located in the B-2 zone.

Item B
The Planning Board or Planning Authority can approve a different front setback for irregularly shaped lots or lots with frontage greater than 40 feet in width provided the front setback is met to the maximum extent practicable.
Justification
The new Circle 1 Building is proposed to be located on a section of the right-of-way that is along a broad curve. With the building being approximately 285' in length, the maximum 10' setback cannot be met for the building entirety. The building has been designed using standard construction angles that improve construction efficiency and avoid unusable interior spaces. The residential wing, offices and clinic are greater than 10' from the right-of-way. The applicant and design team strongly believe that ground-floor residential units benefit from the greater separation from the street edge to provide more privacy, which make them better, more livable and more leasable units. They also feel that the greater setback allows for a significant community gathering space (plaza) in front of the building to which promote a sense of place and community.

The lot has greater than 40' of road frontage.

Item F
Where setbacks exceed 10 feet, a continuous, attractive, and pedestrian scaled edge treatment shall be constructed along the street, consisting of street trees spaced at no more than 15 feet on center, approved by the City arborist, and a combination of landscaping no less or stone walls, or ornamental fencing.
Justification
For the proposed section of the new building that is not within the max. 10' front setback the following is proposed to create a pedestrian scale edge:

- **13 street trees spaced 15' on-center**
- **8' wide landscape bed**
- **Active pedestrian plaza**

6. Site Plan Standards Assessment

14.6 SITE PLAN REVIEW STANDARDS The reviewing authority shall not approve a site plan application unless the development proposal meets applicable standards of the City of Portland Technical Manual and the City of Portland Design Manual and the criteria below.

14.6.1 Transportation Standards

A. *Impact on surrounding street systems* **NA**
B. *Access and circulation* **Exhibit #12**
C. *Public transit access* **NA**
D. *Parking* **Exhibit #14**
E. *Transportation Demand Management (TDM)* **Exhibit #15**

14.6.2 Environmental Quality Standards

A. *Preservation of Significant Natural Features* **Exhibit #16**
B. *Landscape Preservation* **NA**
C. *Site Landscaping and Buffers* **NA**
D. *Water Quality, Stormwater Management and Erosion Control* **Exhibit #19.1+19.2**

14.6.3 Public Infrastructure and Community Safety Standards

A. *Consistency with City Master Plans* **Exhibit #20**
B. *Public Safety and Fire Prevention* **Exhibit #21**
C. *Public Utilities* **NA**

14.6.4 Site Design Standards

A. *Massing, Ventilation and Wind Impacts* **NA**
B. *Shadows* **NA**
C. *Snow and Ice Loading* **Exhibit #25**
D. *View Corridors* **Not applicable**
E. *Historic Resources* **Not applicable**
F. *Exterior Lighting* **Exhibit #26**
G. *Noises and Vibration* **Exhibit #27**
H. *Signage and Wayfinding* **Exhibit #28**
I. *Zone Related Design Standards* **Exhibit #29**

To the best of our knowledge this project meets the current Site Plan standards. See exhibits 12-33 for specifics regarding individual Site Plan sections.

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.
Technical Manual Section 4.6.1 Residential Development and Section 4.6.3 Commercial, Industrial and Institutional Developments Circle 1 Building	4.6.1 - Multi-family residential: Multi-family residential developments shall provide a minimum of one tree per unit, planted in the City right of way unless otherwise approved and spaced thirty (30) to forty five (45) on center.	Requesting to be allowed to count all news trees planted in the R.O.W. or that are visible from the R.O.W. to count towards the trees req'd for 64 DUs, offices and clinic in the Circle 1 Building.	There is not enough room in the adjacent R.O.W. to fit the required number of trees but there is room throughout the site; plus more than enough trees to cover the requirement are proposed.
Technical Manual Section 1.14 Electrical Vehicle Infrastructure Circle 1 Building	1.14 - New structured and surface parking lots of five or more spaces shall include energized electrical outlets or installed chargers capable of providing Level 2 EV charging or higher to 20% of parking spaces (rounded down to the nearest whole number). An	Requesting to install >20% (4 for 8 PS) dual plug EV charging stations than required (3 for 6 PS) and less than 50% EV ready parking spaces (10 PS) than required (15 PS).	Electrical conduit and wiring of EV chargers are very expensive. The project has undergone significant scope reduction and cannot afford to wire the additional parking spaces and build in that extra transformer capacity.

12. Access and Circulation

14.6 SITE PLAN REVIEW STANDARDS The reviewing authority shall not approve a site plan application unless the development proposal meets applicable standards of the City of Portland Technical Manual and the City of Portland Design Manual and the criteria below.

B. Access and circulation

1. In general

a. All development subject to this article shall provide safe and reasonable access and internal circulation for all users of the site and shall comply with the transportation systems and street design standards of the Technical Manual.

Response: Driveway widths, parking stall size, and parking lot aisles will all comply with City standards unless specifically noted and a waiver requested. A waiver is being asked to allow the use of slip-form concrete curb in lieu of granite curb within the City right-of-way except at driveways and corners.

b. Continuous internal walkways shall be provided between existing or planned public sidewalks adjacent to the site, transit stops and street crossings, and building entrances on the site.

Response: Sidewalks exist along all the surrounding City streets on at least one side and usually both. Internal sidewalks will connect the parking areas to the adjacent buildings and to existing City sidewalks. The majority of the sidewalks within the City right-of-way will be redone as part of this project; however, there is approximately 700 LF on Riverton Drive and Springbrook Way that will remain due to being in acceptable condition. PHA walked the site with DPW on 5/24/2024 to review this stretch and got their sign off on these to remain.

c. Points of access and egress shall be located to avoid conflicts with turning movements and traffic flows.

Response: Access to the Administration Building and Circles 2-6 will continue to be from existing driveways off of City streets. Access to Circle 1 Building will be from a new driveway off Riverton Drive and will be in compliance with the standards in the Technical Manual.

d. The site must have stacking capacity for vehicles waiting to use these service features without impeding onsite vehicular circulation or creating hazards to vehicular circulation on adjoining streets.

Response: The individual Circles' parking lots do provide for stacking capacity at the street intersections. Access to the Administration Building parking area have smaller stacking capacity but vehicle turnover will not be high due to the fact the bulk of the parking in this lots will be for employees only of PHA and service providers. Access to Circle 1 Building will also have smaller stacking capacity than Circles 2-6 but that is typical of urban design. Dedicated parking for the Greater Portland Health Clinic, as well as the vast number of general public on-street parking spaces will help to alleviate any queuing issues. The volume of traffic within the project is low and speeds are slow so circulation to/from the facilities and residential areas will not create or worsen traffic or flow on the adjacent streets.

2. Loading and servicing.

All developments served by delivery or other service vehicles shall provide access that permits safe turning and backing for all vehicles that would service the development. Loading and servicing access shall not impede vehicle circulation, bicycle or pedestrian movements, or parking.

Response: Although no frequent delivery vehicles are anticipated, all circles have been designed to accommodate larger delivery/emergency type vehicles through turning circles or can accommodate safe backing movements as well as dedicated "service only" parking spaces to eliminate serving access for Resident Service providers and PHA Maintenance vehicles. It is anticipated that any delivery/emergency type vehicles visiting the Administration Building will use the front loop. Weekly private trash pickup can and will continue to be able to safely service all dumpsters.

3. Curb and sidewalks

a. All development shall provide curb and sidewalks along all frontages, installed to specifications as described in the transportation systems and street design standards of the Technical Manual.

Response: Sidewalks exist along all the surrounding City streets on at least one side and usually both. New curbing is proposed along all City Streets. New sidewalks are proposed at all existing sidewalk locations and where it is physically possible to connect the project to Forest Ave on the applicant's parcel. A section of approximately 700 LF on Riverton Drive and Springbrook way will remain and not be replaced due to acceptable condition.

The applicant and two DPW staff performed a May 2024 site visit at Riverton Park regarding this 700 LF section. DPW confirmed on 5/31/24 that maintaining these 700 LF of sidewalk is acceptable.

A waiver is being asked to allow the use of slip-form concrete curb in lieu of granite curb within the right-of-ways. All sidewalks will be City standard asphalt.

b. Where sidewalks already exist but are in substandard condition, they shall be repaired or replaced in conformance with Chapter 25 of the City of Portland Code of Ordinances and the transportation systems and street design standards of the Technical Manual.

Response: All sidewalks and curbing within the project (including within City rights-of-ways) will be replaced – except those sidewalks specified in the 3.a response. Such extensive replacement is completed at a great expense to the applicant as part of this affordable housing project. That is one of the reasons a waiver of granite curb is being requested.

c. An applicant may request a waiver from sidewalk installation requirements if they meet two or more applicable waiver criteria as listed below:

Response: Not applicable. No waiver of sidewalk installation is being requested.

i. There is no reasonable expectation for pedestrian usage coming from, going to, and traversing the site.

ii. There is no sidewalk in existence or expected within 1000 feet and the construction of sidewalks does not contribute to the development of pedestrian oriented infrastructure.

iii. A safe alternative walking route is reasonably available, for example, by way of a sidewalk on the other side of the street that is lightly traveled.

iv. The reconstruction of the street is specifically identified and approved in the first or second year of the current Capital Improvement Program (CIP) or has been funded through an earlier CIP or through other sources.

v. The street has been constructed or reconstructed without sidewalks within the last 24 months.

vi. Strict adherence to the sidewalk requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of a greater public value.

d. An applicant may request a waiver from curb installation requirements if they meet two or more applicable waiver criteria as listed below:

Response: A waiver is being asked to allow the use of slip-form concrete curb in lieu of granite curb within the right-of-ways. See Exhibit 8 Waivers.

i. The cost to construct the curbing, including any applicable street opening fees, is in excess of 5% of the overall project cost.

ii. The reconstruction of the street is specifically identified and approved in the first or second year of the current CIP or has been funded through an earlier CIP or through other sources.

iii. The street has been rehabilitated without curbing in the last 60 months.

iv. Strict adherence to the curb requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of a greater public value.

v. Runoff from the development site or within the street does not require curbing for stormwater management.

14. Off-Street Parking

14.6 SITE PLAN REVIEW STANDARDS The reviewing authority shall not approve a site plan application unless the development proposal meets applicable standards of the City of Portland Technical Manual and the City of Portland Design Manual and the criteria below.

D. *Off-street parking*

1. Vehicular parking

a. All developments shall provide off-street parking in accordance with the parking requirements of this Land Use Code.

Response: All off-street parking spaces meet City standards in terms of size, type, location, orientation and quantity. Within the Land Use Code, Table 19-B provides for a categorical exception to off-street parking minimums (no-off street parking is required within 1/4 mile of fixed route transit service) which this project qualifies for with the Metro bus stops on Forest Ave.

b. Where a parking study is required, the City encourages Transportation Demand Management (TDM) strategies to be employed.
Response: No parking study is required; however, a TDM report has been prepared.

c. Developments proposing to exceed minimum parking requirements by 10% or more must demonstrate through a parking study that the amount of parking is appropriate for the proposed use of the site.
Response: Not applicable.

d. Parking spaces and aisles shall meet applicable dimensional standards as detailed in the transportation systems and street design standards of the Technical Manual.
Response: Parking stalls, access aisles and driveway width all meet the City standard, or a waiver is requested.

2. Bicycle parking

a. All development shall provide secure bicycle parking in accordance with the parking requirements of this Land Use Code and the transportation systems and street design standards of the Technical Manual.
Response: No increase in dwelling units will occur at Circles 2-6; however, parking for a minimum of 8 bikes will be provided at each Circle through open-air bike parking. At each circle a bike repair station is being proposed adjacent to the open-air bike parking.

Bike parking at the Administration Building is provided for 6 bikes. Bike parking at Circle 1 Building is provided for 28 bikes and a bike repair station will be provided.

b. Waiver: The review authority may reduce the required number of bicycle parking spaces if it is determined, based on evidence submitted by the applicant, that the proposed development is expected to generate reduced demand for bicycle parking due to particular site characteristics or proposed uses.
Response: Not applicable. Proposed bike parking exceeds required net total standards.

3. Snow storage

a. All developments shall include areas for snow storage or provide an acceptable snow removal plan.
Response: For Circles 2-6 and the existing Administration Building snow storage is located along the edges of all parking areas, in end islands and/or center islands.

Snow storage for the Administration Building and Building 1 are located along the edges of parking areas and in end islands. These areas are occasionally tight on storage space and the owner understands that there may be times when snow storage may exceed capacity and it becomes necessary to be removed and hauled off-site.

b. Snow storage areas may not encroach on areas designed to meet minimum parking requirements or on pedestrian walkways and shall not be located where they would adversely impact the functionality of stormwater management systems. Landscaping in designated snow storage areas shall be such that it can withstand the snow pile.
Response: Snow storage is separate from these areas and/or landscapes have been designed with selected vegetation to handle the snow load.

4. Electric Vehicle (EV) charging

a. All development shall adhere to applicable EV standards as provided in Section 1 of the Technical Manual.

New structured and surface parking lots of five or more spaces shall include energized electrical outlets or installed chargers capable of providing Level 2 EV charging or higher to 20% of parking spaces (rounded down to the nearest whole number). Remaining spaces must be served by sufficient conduit, wiring, and electrical service to allow for future installation of electric vehicle supply equipment.

Response: Electric vehicle (EV) charging stations are being proposed as following:

Building 1:

Within parking lot – 4 EV Dual-Plug Charging Stations to serve 8 vehicles (Technical Manual 1.14 requires 20% parking spaces, or 6 "EV Chargers") and 5 junction boxes with conduit to serve 5 future dual-plug chargers and 10 vehicles in future, as necessary (Technical Manual 1.14 requires 50%, or 15 vehicles). Applicant requests a waiver from "EV Ready" standard.

In lieu of adding required EV-Ready spaces, Applicant proposes installing 2 additional EV charging stations. This boosts the quantity of EV Chargers installed during construction by 33%. This will have a significant impact on encouraging Riverton Park tenants to purchase EV vehicles. Installing these 2 additional EV Chargers demonstrates PHA's commitment to sustainability and reducing carbon emissions. Also, having more chargers readily available reduces future installation need, which may never occur given the project is affordable housing and relies on federal congressional appropriations, which could be cut/defunded in any given budget, at which point the chance that the property could affordable to install additional EV chargers drops drastically. As the saying goes, a bird in hand is worth two in the bush.

Circles 2-6 (Rehab only):

Not required for rehab.

Administration Building (Rehab only):

Not required for existing Admin Building rehab.

Riverton Park Redevelopment

Transportation Demand Management Plan

Att. L

November 7, 2022

Cushman Transportation Consulting, LLC (CTC) provides this Transportation Demand Management (TDM) Plan for the Portland Housing Authority (PHA) and Portland Housing Development Corporation's (PHDC) redevelopment and renovation of the Riverton Park mixed-use site. CTC specializes in TDM and transportation equity efforts locally and the firm's work is also informed by TDM and mobility justice research and programs across North America.

TDM Plan Summary

The Riverton Park TDM Plan centers the transportation needs and barriers of residents working multiple jobs and varied shifts and carrying significant family caregiving responsibilities – as well as juggling other challenges, such as fewer financial resources, limited English proficiency, physical disabilities, and managing large households, among others. The plan also names the specific difficulties presented by the site's more suburban location and the funding and capacity limitations of PHA, a public affordable housing agency. Nevertheless, the plan works to encourage as many multimodal trips to and from the site as possible, reduce parking demand, and benefit the local transportation system. This includes offering significant on-site amenities; providing leases exclusive of parking for market rate units; and supporting transportation alternatives such as walking, bicycling and using public transportation. It also entails monitoring and reporting on individual TDM trend indicators, *see examples at right.*

TDM Trend Indicators

The plan sets individual TDM trend indicators for monitoring after Riverton Park is fully occupied (more on page 20). These markers will be reassessed after the first year of full occupancy. Examples of indicators include:

- METRO Riverton Park stop data
- Number of children riding school-sponsored transportation
- Quarterly bike rack utilization survey
- Maximum 1.3 parking ratio

TDM Coordination

Until Certificate of Occupancy:
Tyler Plante, Development Officer
Portland Housing Authority (PHA)
tplante@porthouse.org, 207-221-8028

Following Certificate of Occupancy:
PHA Property Manager for Riverton Park

Site Overview

Riverton Park is located on a17.72-acre parcel at 2 Riverton Drive, off of outer Forest Avenue. This mixed-use project is a key further infill opportunity to produce more affordable housing in the City of Portland for people who are employed locally, have children, are disabled, and/or are retired. The project includes the rehabilitation of 123 existing residential units, motor vehicle and bicycle parking areas. In addition, it involves the construction of a new Neighborhood Center, four-story multi-use building with 59 new residences (Building 1), and a separate maintenance building. As currently proposed, over 90% of the dwelling units will be for affordable housing, with the remainder being market-rate. PHA will continue to manage the property long-term.

- *Residential housing*: a total of approximately 180,000 square feet and 182 dwelling units:
  - 123 renovated units in 21 two-story townhouse buildings and 59 new units in a four-story multi-use building
  - 141 units for people with a total household income not exceeding 50% of Area Median Income (AMI) and 24 units dedicated to those with up to 60% of AMI. Seventeen (17) market rate units.
- *Community spaces:* Approximately 18,000 total square feet: Neighborhood Center, Greater Portland Health Clinic, Head Start pre-school, Boys & Girls Club, community policing center, small retail
- *Maintenance Building* – Small building with garage and workshop for repairs and storage
- *Parking*: 231 off-street surface parking spaces, as currently proposed

COVID-19 Note Regarding TDM Efforts: *Site occupancy is forecast for 2025 or 2026 and, while COVID-19 variants continue to be disruptive, we have learned much in the past two and half years regarding managing the virus' impact on daily life. Transportation alternatives that were deemed less viable during the early wave of the pandemic - such as transit and carpooling – are anticipated to continue to make significant recoveries in the next year or so, with marketing and other efforts. COVID-related parking demand increases due to driving alone are also expected to decline. In addition, TDM efforts will likely be supported by long-term cultural changes in telework, teleservices, and walking and bicycle commuting.*

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Cushman Transportation Consulting, LLC, 94 Beckett Street, 2nd Floor, Portland, ME 04101
(207) 200-1910 sarah@sarahcushman.com sarahcushman.com



A. Property Description & Transportation Context

Located in Portland's Riverton Neighborhood, near the Portland/Westbrook city line, Riverton Park is just off busy Forest Avenue (U.S. Route 302), a block from where it intersects with Riverside Street. Route 302 is a Priority Transit Corridor of the Portland Area Comprehensive Transportation System (PACTS) and Riverton is a priority Transit Center (see graphic at right). The Forest Avenue-Riverside Street intersection is also a "Priority Node" according to *Portland's Plan 2030* (2017 Comprehensive Plan). The development sits close to the terminus of METRO Route 2 that runs between Pride's Corner and downtown Portland and at the beginning of Route 3 to downtown Westbrook and the Maine Mall.

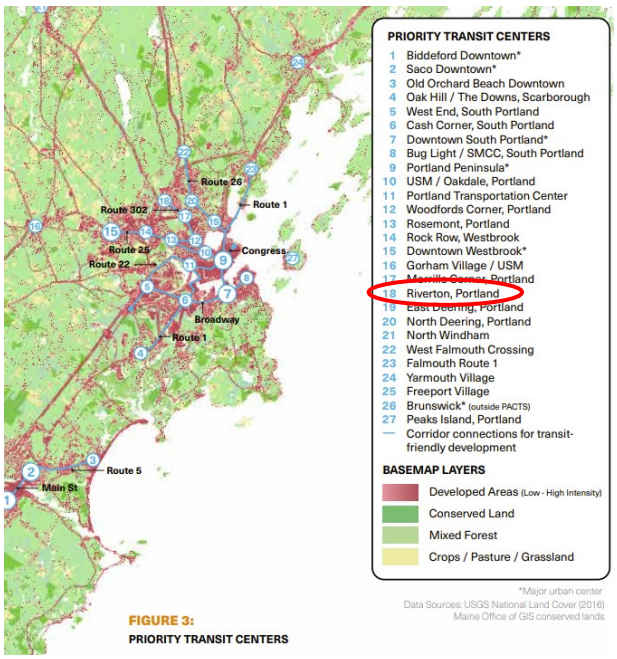


FIGURE 3:
PRIORITY TRANSIT CENTERS

Riverton Park has been rezoned as R-5a Residential and B-2 Community Business along with a text amendment to the R-5a Residential zone to allow Places of Assembly as a conditional use. The map amendment also includes the rezoning of the R-5a Residential zone north of Forest Avenue into B-2 Community Business. These new designations of the full redevelopment area fit in well with the uses identified by the City and adopted in the recent ReCode effort:

R-5a	To provide for moderate-density residential development in off-peninsula locations that can provide a unique residential living experience with a high degree of natural site amenities; and to provide areas of the city in the general proximity of the peninsula that have the capability for adequate municipal services, including traffic corridors with adequate traffic capacity, that can appropriately accommodate a more intensive use of land than other lower-density zoned land and be compatible with surrounding neighborhoods; and to increase affordable housing opportunities in off-peninsula locations by providing a moderate-density zone.
B-2	To provide appropriate locations for the development and operation of community centers offering a mixture of commercial uses, housing, and services serving the adjoining neighborhoods and the larger community. The variety, sites, and intensity of the permitted commercial uses in the B-2 zone are intended to be greater than those permitted in the B-1/B-1b zones. The zone provides a broad range of goods and services with a mixture of large and small buildings, such as grocery stores, shops and services located in major shopping centers and along arterial streets. Such establishments should be readily accessible by automobile, by pedestrians and by bicycle. Development in the B-2 zone should relate to the surrounding neighborhoods by design, orientation, and circulation patterns. The zone should provide locations for moderate to high-density housing in urban neighborhoods along arterials.

Consisting of approximately 17.70 acres, about 2.8 acres of Riverton Park are wetlands (1.34 AC) or slopes exceeding 25% (1.46 AC). The remaining 14.90 acres of the site are theoretically (re)developable. However, the most feasible, flat and accessible locations have already been built upon and all developable areas are irregularly shaped. Following the proposed project, conservatively, this will result in a residential density of no less than 12.36 units per acre. The front of the site closest to Forest Ave will have the highest residential density. In terms of encouraging less driving, this is a very beneficial improvement to the existing land use pattern. For comparison, see the following table from Portland and South Portland's *One Climate Future* plan. Furthermore – and perhaps counter intuitively – research has shown that the greatest VMT reductions can actually happen at the level of lowest density. (Holtzclaw, 1994)

How does density relate to how much we drive?

Research has shown that people who live in denser areas drive fewer miles, on average, resulting in lower vehicle miles traveled (VMT) per capita in areas with higher densities (persons per square mile, or ppsm). For reference, much of Portland's East End reaches densities over 10,000 ppsm, while Ferry Village (South Portland), Thornton Heights (South Portland), and North Deering (Portland) fall in the 2,000 – 3,999 ppsm range.

Table 3. Vehicle miles traveled (VMT) forecasts by Census Tract Density

Persons per Square Mile (ppsm)	Approximate dwelling units per acre	2005 VMT	VMT Compared to < 500 ppsm	2035 VMT	VMT Compared to < 500 ppsm
0-499	< 0.6	11,422	0.0%	13,798	0.0%
500-1,999	0.6-2.5	10,083	-11.7%	12,196	-11.6%
2,000-3,999	2.5-5	9,345	-18.2%	11,345	-17.8%
4,000-9,999	5-12	7,986	-30.1%	9,792	-29.1%
10,000+	> 12	4,437	-61.2%	5,651	-59.0%

Table adapted from Cambridge Systematics. (2013).[82] Dwelling units per acre conversions are gross densities estimated at roughly 50% residential land per tract.

One Climate Future: charting a course for Portland and South Portland, 2021





From a U.S. census data perspective, the existing neighborhood context does not show strong current multimodal use. However, recent site visits demonstrate that - despite the current car-dominated infrastructure - local people do walk, bicycle, and take public transportation regularly on Forest Avenue. And perhaps surprisingly, with the more suburban feel of this location, the site has a:

- Compact Neighborhood Score of 7.4 out of 10. This scoring is based on a natural logarithm of household density, provided through the Housing + Transportation Affordability (HTA) Index using census data
- Job Access Score of 8.2 out of 10. This is based on employment location and the variety of employment types, similarly provided through the HTA
- Housing + Transportation Index rate of 38% - that is, housing (19%) and transportation (19%) costs combined are 38% of household income. This meets the definition of affordability, which is considered to be combined housing and transportation costs equaling 45% or less of income. For comparison, the average Cumberland County household spends 52% of income on housing and transportation and the average Maine household spends 58% - both of which are well over what is considered within one's means.



Riverton Park rendering



Residential Housing at Riverton Park

Infill redevelopment of any kind contributes to single-occupancy automobile trip reduction. Drive alone trips are reduced further in the case of affordable Portland-based housing, which is closest to the largest pool of jobs in the state and most supported by transit, bicycle and pedestrian networks – as compared to other municipalities.

In direct support of increasing housing stock and people's ability to afford to live in Portland, 77% of units will be designated for people with a total household income not exceeding 50% percent of Area Median Income (AMI) and 13% of units will be dedicated to those earning up to 60% of AMI. The remaining 10% of units will be market rate. This ensures that almost all of the dwelling units remain permanently affordable for future residents.

A total of approximately 180,000 square feet in residential housing – 182 dwelling units - are proposed for Riverton Park. This will consist of 123 renovated units in 21 two-story townhouse buildings and 59 new units in a four-story multi-use building. PHA will continue its long-term management of the site.

Focused on serving Portland families, the breakdown of dwelling units by number of bedrooms will be:

- 8 studios
- 13 one-bedrooms
- 38 two-bedrooms
- 71 three-bedrooms
- 26 four-bedrooms
- 20 five-bedrooms
- 6 six-bedrooms

Redevelopment of residential sites like Riverton Park also provide real opportunity to help meet the City's general goals for population growth. In Portland's comprehensive plan, analysis showed the number of people both living and working in the city decreased between 2002 and 2014. The Comprehensive Plan "supports the principle that all who work in Portland should have the option of living in Portland." The city set a 10-year population goal of 75% of its approximate daytime population of 96,000.



Site Amenities

As a mixed-use site, Riverton Park currently offers a significant number of services and amenities, that will expand even further as part of the redevelopment. These features encourage the use of alternate transportation and telework/teleservices and discourage unnecessary vehicle trips. They include:



- bicycle parking and bike repair stations
- package delivery and storage locations
- laundry facilities
- Neighborhood Center bus loop with weather awning for students
- indoor and outdoor recreation areas, including recreation field, basketball court, playground and walking paths
- community gardens
- other community spaces that tenants can reserve, including a community room, community kitchen, and recreation hall
- two new small retail spaces
- TDM kiosk with diverse transportation options information and contact information for the site
- new fulltime Resident Service Coordinator to assist residents with:
    - applying for reduced fare transit passes
    - accessing transportation-related benefits through various state and local programs, such as transportation coaching and bus passes for families who are working or going to school
    - connecting with employers and encouraging employers to provide transit passes
    - exploring opportunities for informal carpooling among residents
- hardwired infrastructure for broadband and wireless internet; PHA is also exploring the possibility of free basic internet access in all units and community areas
- weekly Portland Public Library Bookmobile stop











- Head Start pre-school, all-ages Study Center, Portland Adult Education classes, and expanded Boys & Girls Club, as well as other PHA partnerships with local non-profit service providers and City agencies
- new and expanded Greater Portland Health Clinic space to serve the greater Riverton neighborhood
- new food and clothing pantry
- community policing office

The site's TDM efforts will be further supported by new immediately-adjacent features, such as:

- the Queen Bee Mart convenience store currently under construction at the top of Riverton Drive
- the bus shelter being constructed as part of the same project, which is the primary Riverton Park bus stop (photos below)

Finally, behavioral research illuminates an additional and significant reason for vehicle trip reduction with increased housing development. When people move from one specific residence to another, this disrupts their habitual daily living and travel patterns. This provides a key opportunity and critical juncture at which to help them understand their transportation choices and the benefits of using public transportation, walking and bicycling, carpooling and telecommuting. (Kirkman, 2019; Thøgersen, 2012; Verplanken, Walker, Davis & Jurasek, 2008; Bamberg, 2006; Fujii, Gärling & Kitamura, 2001)

...One of the more interesting studies found in reviewing the literature was a 2003 German social science experiment conducted by three researchers (Bamberg, Rolle and Weber) where an individualized marketing intervention was used at a time of what they called a "changed decision" context, meaning immediately after relocation. The research found that if, when in a new situation, people received personally relevant and persuasive information, they were more likely to use it for making new behavioral decisions.

Portland Oregon SmartTrips Welcome Program, Tools of Change Landmark Case Study, 2012





Parking

In its efforts to maximize the amount of buildable housing at Riverton Park - and given the limitations due to wetlands, slope and irregularly shaped parcels - PHA will continue to provide off-street parking. However, it is limiting the supply by providing fewer spaces than previously required under the City's former land use ordinance (pre-*ReCode*). In addition, the development will reduce its overall off-street parking-to-dwelling-unit ratio. The current ratio is 1.37; that is, 194 off-street spaces for 141 units. After project completion this ratio will be 1.26, or 231 spaces for 182 units. This further supports the recently amended *ReCode*, Article 19, Table 19-A: Off-Street Parking Minimums, which lowers the requirement for motor vehicle parking to one space per dwelling unit for all zones, for single, two- and multi-family units. Projected parking demand for the fully redeveloped project is anticipated to be even lower than this (see more in Section C - Site Transportation Projections & TDM Trend Indicators starting on page 20).

The provision of this TDM Plan is also offered to assist with general parking reduction. In addition, it reinforces the goals of the *ReCode's* Table 19-B: Categorical Exceptions to Off-Street Parking Minimums, "No off-street parking shall be required within ¼ mile of fixed route transit service. New uses or changes of use of more than 10,000 SF taking advantage of this exception shall be required to provide a Transportation Demand Management Plan if they use this provision in lieu of parking requirements."

In terms of on-street parking, all of the development's streets are city-owned and managed. There are approximately 43-49 year-round public on-street spaces. From April to November there are a total of approximately 87-98 on-street spots, when parking is permitted on both sides of Riverton Drive.

Strategic parking management is another important strategy to discourage drive-alone trips and encourage the use of alternate transportation. Off-street parking for residents will be managed by PHA and all residential leases at Riverton Park will be exclusive of parking. Market rate units are proposed to be charged a rate per parking space, subject to change due to governmental financing regulations and restrictions. Under the affordable housing financing regulations, tenants with limited incomes are not permitted to be charged for parking. However, simply unbundling parking from market-rate tenant leases is of benefit to site TDM efforts.





Resident Demographics

PHA anticipates Riverton Park will continue to attract a variety of tenants, including people employed locally, who are caregivers, who are disabled, and/or are retired. Robust existing demographic data that PHA has collected for people who currently live in the community assists greatly with Riverton Park's TDM and other efforts. This data can be extrapolated generally regarding the future use of the site. In addition, PHA staff have developed strong relationships over the years with residents. Community engagement with people living in Riverton Park and the sharing of their lived experience also helps inform this planning process.

Families: Of particular note, Riverton Park does a great job offering housing and building community for local families. For example, currently:

- One quarter of households consist of 6-13 people and half of households have 3-5 members
- 73% of households are headed by women
- There are over 300 youth and teens living at Riverton Park (58% of all residents) and the under-18 population is expected to grow in the future

This redevelopment process is adding more apartments and expanded amenities to further support them.

Income: In general, current residents represent diverse and traditionally underserved populations. For example, regarding household income:

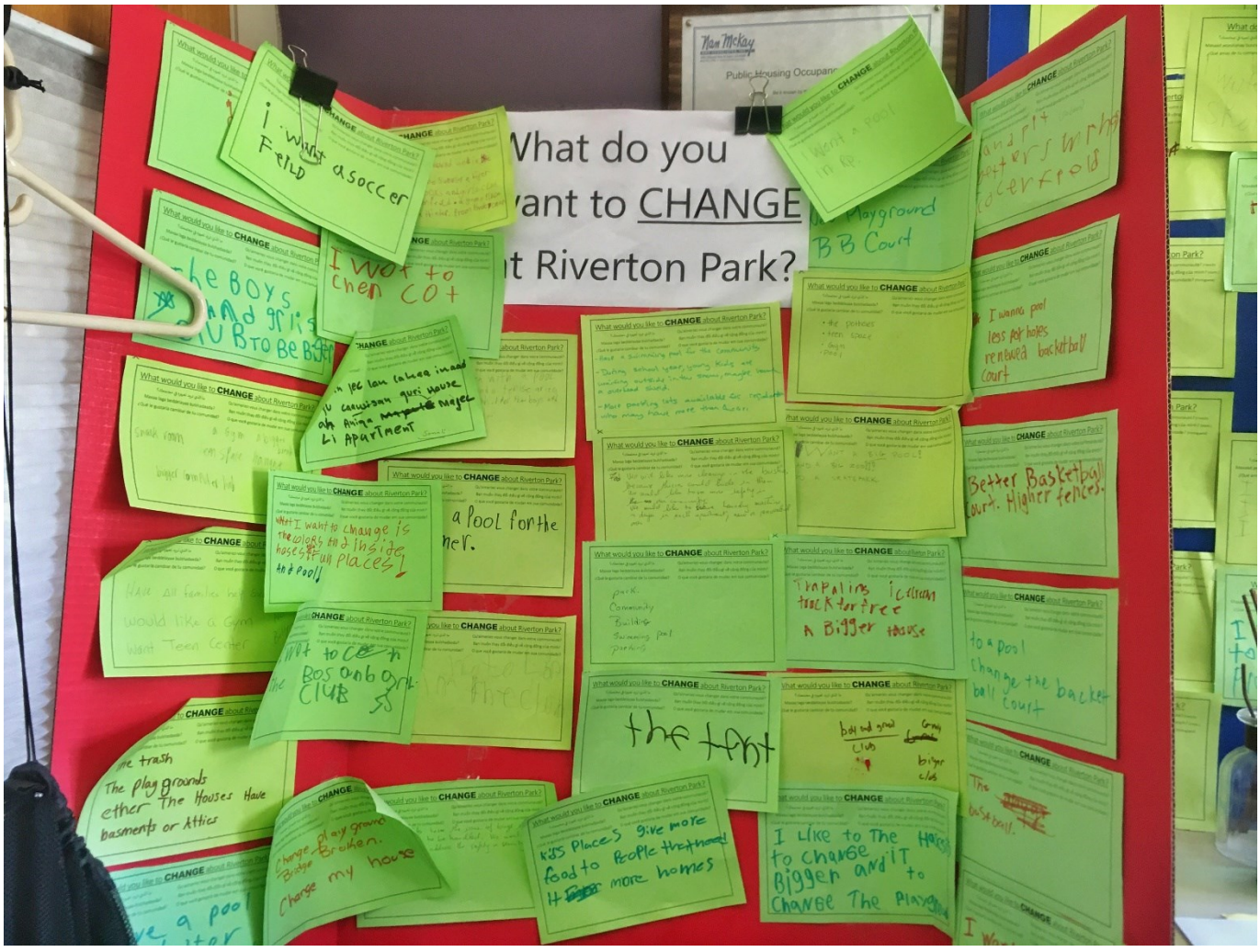
- 50% of households are currently "extremely low income" by the standards of the U.S. Department of Housing and Urban Development; that is, they make 30% or less of Area Median Income (AMI) – for reference, this is a family of five living on a total annual income of $32,350

- An additional 25% of households are currently "very low income", making up to 50% of AMI – for reference, this is a five-person household living on $54,486 per year
- An additional 20% of households are currently "low income", making between 50-80% of AMI
- Only 0.5% have an income above 80% of AMI

PHA is proposing the 17 new market-rate units to increase economic diversity at the property. These units are typically smaller and will be targeted at more moderate-to-high income households.

Other indicators of people who have been traditionally underrepresented and/or underserved in terms of both housing and also transportation – and some of these identities may be intersectional - include:

- 12% of residents at Riverton Park are over 50
- About 15% percent of people are disabled
- 65% of residents identify as Black, 28% White, 7% Asian and 2% Latino
- 50% of people are eligible non-citizens and 50% are U.S. citizens; families from the Somali, Sudanese, Iraqi, Vietnamese, Cambodian, Congolese and Angolan communities are strongly represented in the development



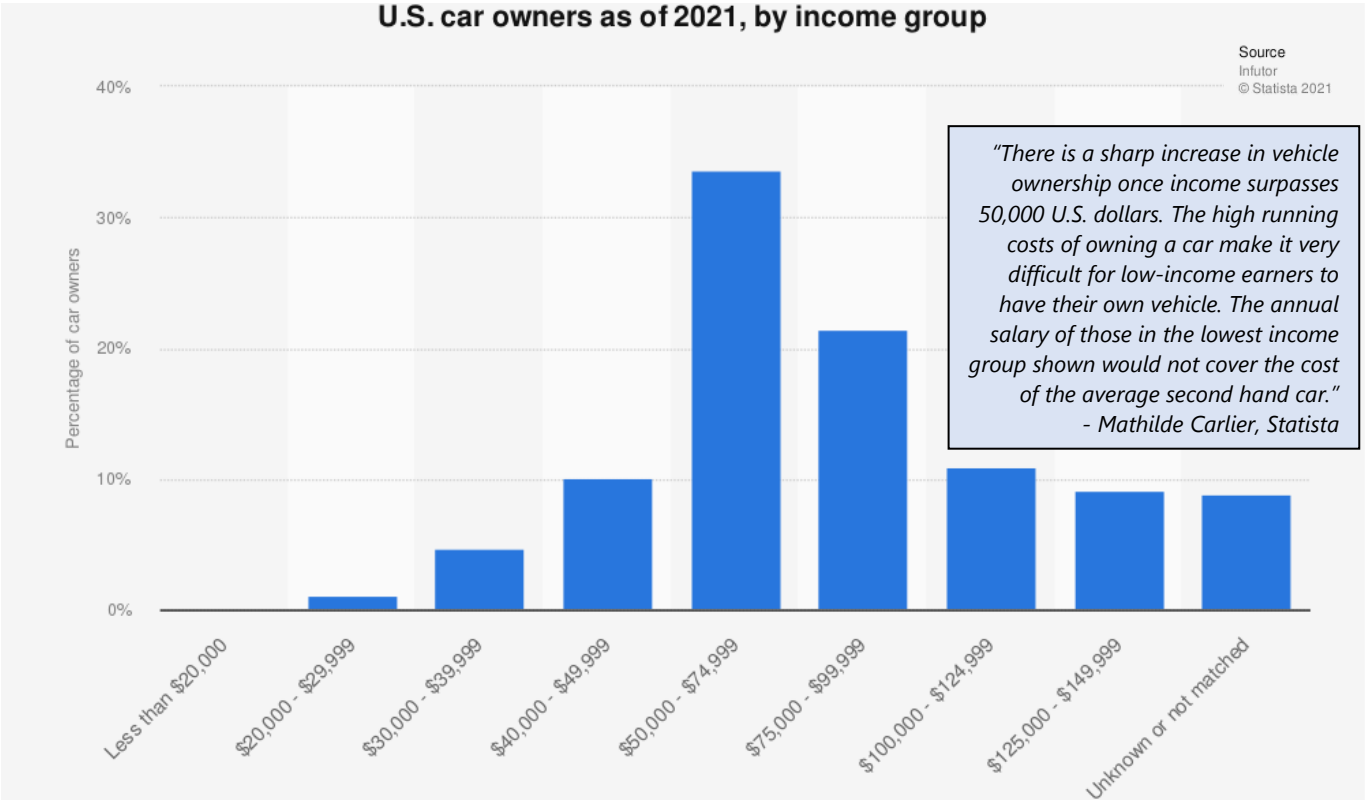


The above site-specific demographic data, informal tenant sharing with PHA staff, and national demographic data offer the following particular insights regarding transportation behavior at Riverton Park:

- *Caregiving & Encumbered Travel:*
    - When people – more often women - are in a caregiving role and stage of life – a larger percentage of their travel is trip chaining (combining multiple destinations in one trip) and/or "encumbered travel", that is traveling with children or something else heavy and difficult to maneuver. They generally are not as able to do what they need to for their families via transit, biking, or carpooling with other households. On the other hand, their use of private vehicles is generally not for drive-alone trips.
    - In addition, with the new regional UMO electronic transit passes, families have to purchase an individual pass for all adults and children over the age of five. Moreover, reduced fare passes can be difficult to acquire with language barriers and the need to provide photos and identification, etc. A family pass option would be a priority for Riverton Park residents.
- *Varied Occupations and Work Shifts:* From anecdotal sharing by current residents with Riverton Park property management staff, it can be a challenge for lower-income earners to use public transit or carpool, because they often need to travel quickly between multiple jobs - and/or they work off-peak shifts outside of public transportation run times. Even if only working one job, people living in a more suburban context such as Riverton Park often need to transfer between transit routes to access their place of employment. Alternately, they need to travel to work sites that aren't necessarily served by public transportation. On the flip side, varied tenant occupations and timing of work shifts also mean that drive alone travel is often outside the peak weekday morning and late-afternoon commute hours.
- *Safety Concerns about Cold Temperatures:* Residents originally from tropical regions of the world express concerns about the health and safety of being outdoors traveling in colder weather. It is

also more difficult for people with fewer resources and/or larger families to adequately outfit their households with the clothing necessary to be safe and comfortable in cold and wet conditions.

- *Transit Pass Subsidy:* Based on the above caregiving and work contexts, only a handful of current households operate without a private vehicle and instead regularly use transit, carpool, bike or walk. However, there was interest in and regular use of a transit pass subsidy offered by PHA in the past, before the advent of the electronic UMO pass and subsequent difficulties local service organizations have had purchasing bulk passes for their clients.
- *Youth Travel:* Unlike adult workers and caregivers, young people are more likely to use transit, bike and walk. The Portland Public Schools provides bus transportation for elementary school students and middle school students who live more than two miles campus. Of multimodal benefit to youths at Riverton Park, Talbot Community School is just one mile away and Lincoln Middle is only 2.6 miles – which makes both also within walking and bicycling distance for students and families. All high school students receive a METRO bus pass and they are well served to attend any of the three Portland high schools. Some Riverton Park youth also attend Waynflete and are picked up by a Waynflete bus. Post-secondary education opportunities such as at the University of Southern Maine, University of New England, Maine College of Art and Portland Adult Education are also readily accessible from the site by bicycle and via public transportation. Overall, from a transportation behavior perspective, this familiarity with different ways of getting around will facilitate these tenants' participation in the Riverton Park TDM program.
- *Incomes and Private Vehicle Ownership:* Despite the above stated need for workers and caregivers to have access to private vehicles, the number of vehicles a household can support is generally lower for people with more limited incomes (see following graph).



Larger Transportation Setting

Riverton Park and its TDM initiatives support a number of housing and transportation goals from several recent and historically important Portland (and regional) planning efforts. These include:

- *A Time of Change: Portland Transportation Plan* (1993)
- *Green Spaces Blue Edges* (2001)
- *Housing, Sustaining Portland's Future* (2002)
- *Sustainable Portland* (2009)
- Comprehensive Plan, *Portland's Plan 2030* (2017)
- *Getting There from Here: an active transportation plan* for the region (Greater Portland Council of Governments (GPCOG) and PACTS, 2018)
- *Cultural Plan Update* (2018)
- *Transit Tomorrow* (PACTS and GPCOG, 2021)
- *One Climate Future: charting a course for Portland and South Portland* (2021)
- *Connect 2045* (update to PACTS Long-Range Transportation Plan, expected 2022)
- *Transit Together* (GPCOG, expected 2022)

For example, the development of this site addresses several of the Future Land Use principles outlined in *Portland's Plan*, described further as:

- One Portland – "all areas can expect appropriate City services and amenities"
- Priority Nodes and Corridors – "areas that would be appropriate for new development to provide needed housing, business and services proximate to transit"
- Complete Neighborhoods – "where all residents regardless of age, ability, or income have access to the basic necessities of daily life - high quality and affordable housing, schools and other civic functions, food, open space, other amenities and services - within a walkable, bikeable distance"
- Connect the Chain – "physically integrated transportation systems and open spaces"



LOCAL GOALS

WE WILL:

Increase, preserve, and modify the overall supply of housing city-wide to meet the needs, preferences and financial capabilities of all Portland residents.

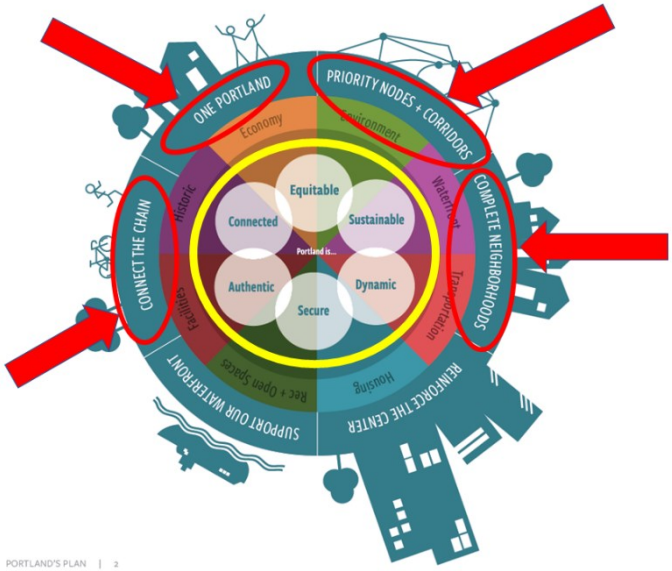
Encourage additional contextually appropriate housing density in and proximate to neighborhood centers, concentrations of services, and transit nodes and corridors as a means of supporting complete neighborhoods.

Pursue policies to enable people who work in Portland to have the option to live in Portland.

Collaborate with surrounding communities on regional housing solutions.

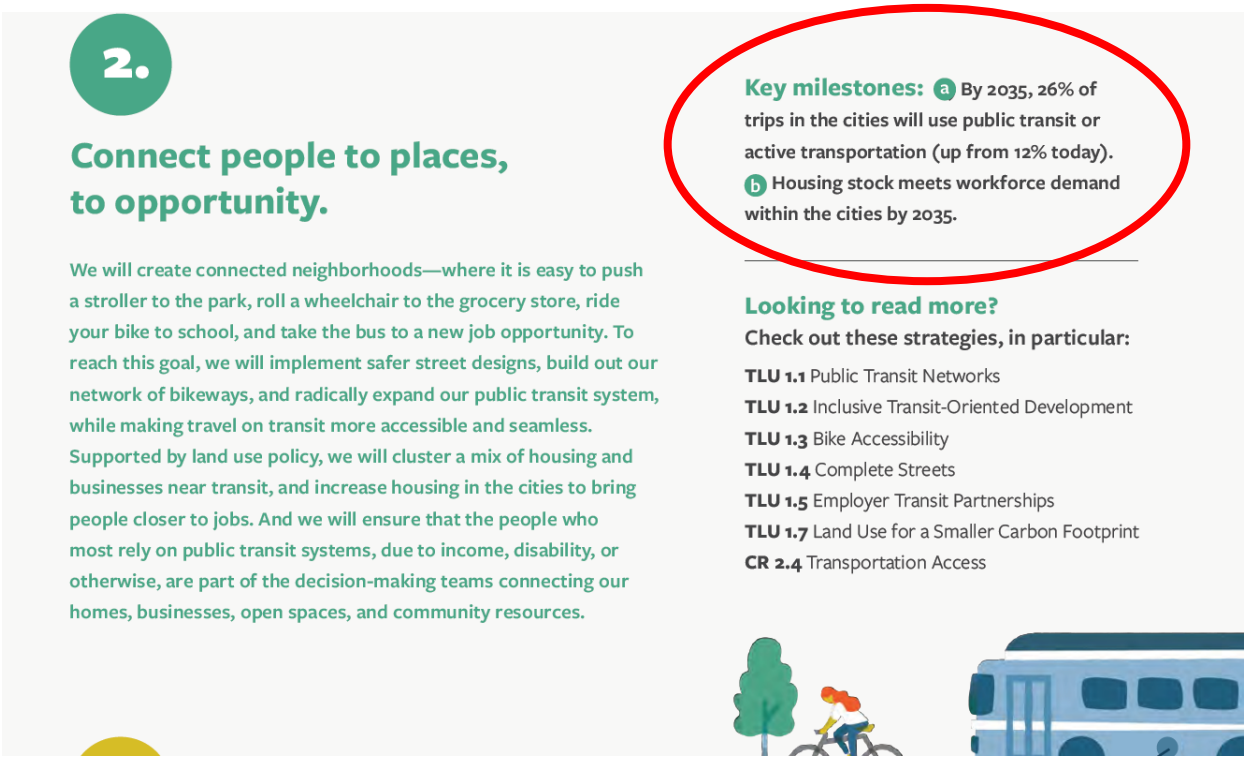
Encourage quality, sustainable design in new housing development.

Portland's Plan 2030 (2017 Comprehensive Plan)



In addition, TDM efforts are part of several aspects of Portland and South Portland's *One Climate Future* plan – including #2 of its Six Big Moves, "Connecting people to places, to opportunity". Two key pieces of this are:

- The overarching multimodal target the plan has set: "By 2035, 26% of trips in the cities will use public transit or active transportation (up from 12% today)."
- As well as the milestone: "Housing stock meets workforce demand within the cities by 2035".



2.

Connect people to places, to opportunity.

We will create connected neighborhoods—where it is easy to push a stroller to the park, roll a wheelchair to the grocery store, ride your bike to school, and take the bus to a new job opportunity. To reach this goal, we will implement safer street designs, build out our network of bikeways, and radically expand our public transit system, while making travel on transit more accessible and seamless. Supported by land use policy, we will cluster a mix of housing and businesses near transit, and increase housing in the cities to bring people closer to jobs. And we will ensure that the people who most rely on public transit systems, due to income, disability, or otherwise, are part of the decision-making teams connecting our homes, businesses, open spaces, and community resources.

Key milestones: (a) By 2035, 26% of trips in the cities will use public transit or active transportation (up from 12% today). (b) Housing stock meets workforce demand within the cities by 2035.

Looking to read more?

Check out these strategies, in particular:

TLU 1.1 Public Transit Networks
TLU 1.2 Inclusive Transit-Oriented Development
TLU 1.3 Bike Accessibility
TLU 1.4 Complete Streets
TLU 1.5 Employer Transit Partnerships
TLU 1.7 Land Use for a Smaller Carbon Footprint
CR 2.4 Transportation Access

The above commute multimodal goal is achievable as an average across the Portland and South Portland landscape. However, the following table breaks out Journey to Work travel data specifically for Riverton Park's US Census Block Group and shows the challenges present in the existing neighborhood context, in terms of meeting anything approaching that goal at the site level. That is, the average commute multimodal rate across both municipalities is currently 12%, whereas the rate for the Riverton Park area is approximately 5%.

2016-2020 - Journey to Work Data for Riverton Park Census Block Group	
Mode of Travel	**Rate (% of Total Trips to Work)**
Drive to Work (includes any carpooling)	94.53% or higher
Walk	2.17% to 5.62%
Work from Home	0.06% or less
Bicycle	0.05% or less
Transit	0.03% or less

Data source: Policy Map, utilizing 2016-2020 American Community Survey/US Census data

Bicycle & Pedestrian Access



An important consideration of the data in the previous table and the multimodal goal mentioned above, however, is that these numbers reference trips to the workplace. Work travel generally represents only about 30% of total vehicle trips. In addition, a greater percentage of non-commute-related trips are typically taken by walking and bicycling. Therefore, U.S. census data – a.k.a. Journey to Work data - does not paint a complete picture of the amount of walking and bicycling that occurs on a daily basis in the Riverton neighborhood.

Similarly, and as mentioned in Section A, Riverton Park's location has a Compact Neighborhood Score (CNS) of 7.4 out of 10. The CNS is a measure of walkability. None of the nearby streets are multi-lane motor vehicle corridors and there is a relatively robust sidewalk and crossing network along Forest Avenue and on side roads. Moreover, the City has worked consistently to improve these conditions over the years. For example, the Department of Public Works prioritized the installation of a mid-block Rectangular Rapid Flashing Beacon crossing from Riverton Park to the bus stop on the north side of Forest Avenue. In addition, the city is exploring a possible pedestrian connection from the new Queen Bee Mart to one of the adjacent Riverton Park cul de sacs, enabling a shorter walk for residents who otherwise would need to use Riverton Drive.



Riverton Park sits in close proximity to the following existing and proposed bicycle and pedestrian facilities and programming:

- Forest Avenue bicycle lanes and sidewalks
- Portland Walkways designated and prioritized Safe Route to School (Portland Public Health, Public Works, and Planning Division)
- Portland Trails' next phase of its "Neighborhoods Project" is centered in the Riverton neighborhood. The goal is to help create safe, welcoming, and community-oriented trails and outdoor spaces for residents. "It's a recognition that simply having trail access is not enough - people need to feel comfortable and safe to use the trails in their neighborhoods. Next month, we'll be hiring an Inclusion Coordinator who will bring capacities outside of our current staff team, and guide us into how we can enhance the outdoor spaces in Riverton to be more relevant to the many different people that live there." (*Portland Trails Newsletter*, June 2022) In a more recent update from Portland Trails (PT), staff shared that PT will be collaborating with In Her Presence (IHP) in this work, including a number of women and families actively involved with IHP, many of whom live in Riverton.
- Planned on-road bikeways on Riverside Street and Warren Avenue (from the *Portland Bicycle & Pedestrian Network* map on following page)
- Planned sections of the Portland Neighborhood Byway network – e.g., Harris-Newton-Wirt-Verrill



Significant area amenities and recreational facilities also provide people with a full-service living environment. This further encourages individuals to walk or bike instead of choosing to drive. Those features within walking and bicycling distance of Riverton Park include:

- Markets and convenience stores such as the Hannaford, 7-Eleven and new Queen Bee Mart (under construction) – all within a 1 block radius of the entrance to Riverton Park
- Services such as the Hannaford pharmacy, the Riverton Branch of the Portland Public Library, cPort Credit Union, garden supply store, insurance services, local fitness center with exercise classes, etc.
- Recreational spaces such as the Presumpscot River Trail (along both the east and west sides of the river, south of Forest Avenue), Riverton Trolley Park, and Sebago to the Sea Trail; small boat launch at Presumpscot River and Forest Avenue; Spare Time bowling alley; Riverside Golf Course with winter access for sledding, ice skating and skiing; Talbot Community School campus playground, basketball court and fields and trail; Riverton Community Center Pool, etc.
- Food and beverage locations such as Tortilla Flat, Allagash and Foundation breweries, Dunkin Donuts, Corsetti's, Noble Barbeque, etc.





Public Transportation Access

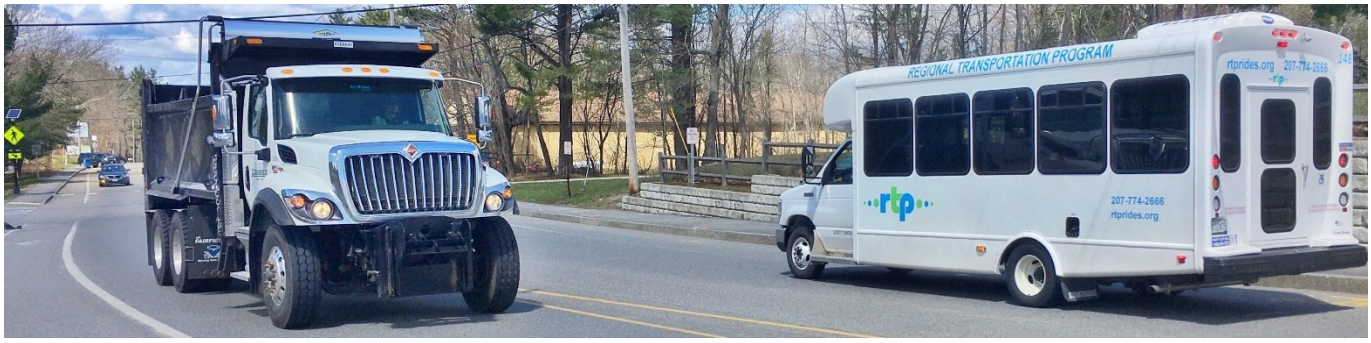
Despite the more suburban context of the site, Riverton Park does have multiple transit service options for residents and visitors, as described in the following table:

METRO Route 2 service on Forest Avenue/US Route 302, between Pride's Corner in Westbrook and downtown Portland		
	Service Span	**Frequencies**
Weekdays	6:10am-10:40pm	Every 30 minutes until 7:30pm, then hourly
Saturdays	6:50am-9:40pm	Hourly
Sundays	8:50am-3:20pm	Hourly
Transfers	*Other METRO Routes:* Route 2 also connects with all other local and express routes and area transit providers, via downtown points and the METRO Route 9A/9B	
	Lakes Region Explorer: At Pride's Corner, residents can connect with the Regional Transportation Program (RTP) Lakes Region Explorer with Route 302 service to Windham, Raymond, Casco, Naples and Bridgton	
METRO Route 3 with service to downtown Westbrook and the Maine Mall		
	Service Span	**Frequencies**
Weekdays	6:25am-10:15pm	45 minutes until 7pm, then roughly hourly
Saturdays	6:35am-10:10pm	Hourly
Sundays	9:15am-5:30pm	90 minutes
Transfers	*METRO Husky Line:* in Westbrook, riders can transfer to the METRO Husky Line with express service to Gorham	
	BSOOB Transit: at the Maine Mall, riders can connect with Biddeford Saco Old Orchard Beach (BSOOB) Transit – with service to Scarborough, Old Orchard Beach, Saco and Biddeford	

To increase transit frequencies to downtown Portland, PHA will also explore the possibility of Riverton Park residents being able to utilize the shuttle that will be run between the new City Shelter on Riverside Street and downtown.

As mentioned previously, in terms of supportive transit infrastructure, a bus shelter is being constructed as part of the new Queen Bee Mart, for the bus stop immediately adjacent to the entrance to Riverton Drive. METRO, RTP and BSOOB provide real-time arrival information for riders, through their websites and various smartphone apps. All local and express buses are also equipped with bicycle racks with space for 2-3 bikes. In addition, the above transit providers offer free Wi-Fi access and some buses have in-seat USB ports.

METRO, Biddeford Saco Old Orchard Beach Transit, and South Portland Bus Service all use the new electronic fare system, DiriGo Pass, by UMO Mobility. The Moving Maine Network, Greater Portland Council of Governments, and local service organizations have been in dialogue with area transit providers regarding barriers to using the pass that have come to light. Those affected include families, and people who are low-income, disabled and/or have limited English language proficiency. For example, as mentioned in the Occupant Demographics section above, families have to purchase an individual pass for all children over the age of five and reduced fare passes can be difficult to acquire with language barriers and the need for photos and identification, etc. Benefits of the electronic system that do encourage ridership include that the DiriGo Pass is available via either a smartphone application or smart card - and the system caps fares so that riders never pay more than a certain amount each day and each month; once they hit the cap, they ride free for the rest of that time period.



Shared Mobility Access

With the end of UhaulCarshare service in Portland in February 2020, PHA and other developers have been exploring new carshare possibilities for diverse sites across the city. A promising opportunity may be with Mobility Development, a nonprofit that helps set up equity-focused, all-electric carsharing programs. For example, they have a new program in Boston called Good2Go. Mobility Development has recently entered into a contract with the U.S. Department of Energy to start more partnerships with affordable housing providers, and it seems to think that Portland could be a promising market. If a local organization, such as PHA, could feasibly partner with other developers to set up a carshare program at various locations, PHA would explore offering an off-street parking space to the carshare program, coordinate with the City to provide an on-street parking space to the carshare program, and/or potentially provide a discount for resident carshare vehicle use for the first year of a resident's tenancy.

In terms of ride-hailing, the use of transportation network companies (TNCs), such as Uber and Lyft, has grown substantially in recent years – although there have been setbacks to sharing rides and also driver availability during the pandemic. A TNC trip does not reduce traffic congestion, unless users are carpooling; however, it does reduce parking demand.

For the past decade, the City of Portland has persisted in exploring various bikeshare possibilities. The city has just launched a pilot bikeshare program in August 2022 via an agreement with Tandem Mobility, a company with national experience. The systems of bikes are located primarily on and just off the Peninsula (e.g., at University of Southern Maine). PHA will explore with the municipality whether bikeshare might eventually be an option for Riverton Park residents, if and when the system is expanded further. This would include encouragement for the city to consider cargo bikeshare options for area families.



B. Riverton Park TDM Coordination

Riverton Park's more suburban location and occupant demographics complicate the development's ability to reduce a significant number of vehicle trips. However, the housing authority is committed to lowering resident automobile trips as is possible, supporting multimodal access, and easing the development's parking demand through its site design and TDM efforts.

PHA has a long history of in-fill development and redevelopment projects and encouraging and supporting residents' mobility. Examples include bus pass subsidies, shared-use parking, and TDM implementation at sites like the Bayside Anchor project. PHA sees this TDM program as part of its larger sustainability and neighborhood development mission. The organization's Strategic Vision Plan sets an intention to "Establish better connections to neighborhoods and breaking down physical and social isolation."

Tyler Plante will serve as the Interim TDM Coordinator for the project development phase until the Certificate of Occupancy for the site is secured. His contact information is: Tyler Plante, Development Officer, Portland Housing Authority (PHA), tplante@porthouse.org, 207-221-8028.

The Riverton Park TDM Coordinator is responsible for:

- Ensuring strategic parking management and monitoring parking usage
- Coordinating tenant TDM policies and incentives
- Connecting tenants with nearby transportation resources
- Encouraging greater use of preferred modes – walking, bicycling, carpooling, taking the bus, and telecommuting/ teleservices - through transportation kiosk and site-wide promotion
- Gathering TDM trend indicators data
- Filing annual reports and updating the plan with the City, as needed
- Exploration of additional TDM strategies, as needed

Following receipt of the Certificate of Occupancy, the Property Manager for Riverton Park will be the TDM Coordinator. Acknowledging that roles and responsibilities change over time in any position, PHA and the Property Manager will use the first year of TDM implementation to enumerate the TDM Coordinator's responsibilities in detail for any future staff to uphold the responsibility of the position. PHA will provide the TDM Coordinator with remuneration to support the work of leading the site's ongoing TDM efforts.

Highly successful TDM programs share three vital characteristics – they are:

1. Dynamic - piloting strategies, assessing impacts, and modifying tactics as needed;
2. Rigorously supported and monitored by local governing bodies, in this case, the City of Portland;
3. Managed by committed and enthusiastic staff who are responsible for overseeing, promoting, and sustaining the program.

Day-to-day operations and monitoring of the TDM plan will be conducted in-house by the TDM Coordinator long-term. The TDM Plan and contact information for the TDM Coordinator and City transportation program will be posted at the TDM Kiosk in the community building, for resident education and access. PHA will notify the City within 60 days whenever there is a change in the TDM Coordinator. If necessary, PHA will retain the services of a TDM consultant to review initiatives, problem-solve and develop new strategies.



C. Site Transportation Projections & TDM Trend Indicators

As mentioned on the initial summary page of the plan, Cushman Transportation Consulting, LLC specializes in TDM and transportation equity efforts locally. The firm's work is also informed by TDM and mobility justice research and programs across North America. This includes aspects of setting and managing TDM targets and/or trend indicators.

Context for Setting TDM Trend Indicators

As mentioned in the Occupant Demographics section, Riverton Park faces significant challenges to reducing motor vehicle trips and parking demand given:

- the site's suburban context and isolated parcel location, with limited access to a larger street grid
- the range of potential tenants and tenant needs, including that of caregiving travel
- residents' commutes to multiple jobs, night work shifts, and places of employment that do not have access to public transit
- financing (and ethical) restrictions to charging affordable housing tenants for parking
- current inflation and financial constraints and PHA's limited resources to offer ongoing subsidies

These are items that either cannot, or are unlikely to, change in the near or mid-term. They also operate independently of any site-based TDM efforts.

On the other hand, the following list of resident demographics and site characteristics are generally supportive of TDM initiatives.

- generally lower vehicle ownership rate of households with more limited financial resources
- school transit and public transportation use (and bicycling and walking) by the 300+ residents who are age 18 or younger
- substantial on-site services and near-site grocery and pharmacy options

To be very clear, however, lower household incomes are not something that this plan or any other public process should exacerbate or perpetuate further.

In view of the above contexts, Riverton Park is not a viable candidate for aggressive vehicle trip and parking reductions. In addition, and **based on extensive consultation with the City, this plan proposes TDM trend indicators as the most achievable and tangible gauge of program success** (more details about these on the following page), in contrast with the vehicle trip and parking reduction goals traditionally utilized under the city's original TDM ordinance. (Moreover, standard trip and parking counts done by a transportation firm to verify on-the-ground numbers and track reductions would cost PHA several thousand dollars per year; in a recent example for a comparable project, the quote given was for approximately $6,000.)

Required Trip Generation and Parking Demand Assessments

Because trip generation and parking demand projections for the site are still required as part of the TDM Plan in the City's *Technical Manual*, the development team did subcontract with Barton & Laguidice for this work. The firm has utilized the latest data from the Institute for Transportation Engineers (ITE) *Trip Generation Manual (*11th Edition) and the ITE *Parking Generation Manual* (5th Edition).

TDM Trend Indicators

The TDM Plan sets the following TDM trend indicators:

- METRO Riverton Park stop data (available by request)
- School bus ridership count
- Late summer, winter, and spring surveys of bike rack utilization
- Property management records of tenant parking space usage
- GO MAINE membership (location-specific data available by request, with members kept anonymous)
- Number of PHA interactions with residents regarding transportation-related information and assistance
- Usage numbers for any future carshare and/or bikeshare installations

The following Table 3.1 shows the traffic assessment summary of projected *net new* trips to be generated at full occupancy of the redeveloped residential housing and community services at Riverton Park:

Table 3.1 ITE Trip Generation Summary			
	Net New Trips - Trip Generation Summary		
Time Period	**Trips Generated**	**Enter**	**Exit**
AM Weekday Peak Hour (Generator)	62 (107 total, when including existing uses)	28	32
PM Weekday Peak Hour (Generator)	86 (149 total)	43	40

In the subsequent Table 1.1, see the parking demand projection assessment for Riverton Park's complete redevelopment of housing and community service locations:

Table 1.1 ITE Parking Generation Calculations			
Land Use	**Parking Demand for All Site Uses**		
Time Period		**Parking Demand**	
Weekday		224 (190 specifically for residential uses)	
Saturday		171 (152 residential)	
Sunday		188 (184 residential)	

This indicates a maximum projected parking-space-per-dwelling-unit ratio of 1.04 for the residential site uses, which is lower than the parking ratio provided by on-site parking (1.26).

Specific TDM Trend Indicators

In light of the above detailed constraints and in lengthy consultation with the City, this plan sets the following individual TDM trend indicators for monitoring after Riverton Park is fully occupied. These markers will be reassessed for efficaciousness after the first year of full occupancy.

- METRO Riverton Park stop data (available by request)
- School bus ridership count
- Late summer, winter, and spring surveys of bike rack utilization
- Property management records of tenant parking space usage
- GO MAINE membership (location specific data available by request, with members kept anonymous)
- Number of PHA interactions with residents regarding transportation-related information and assistance
- Usage numbers for any future carshare and/or bikeshare installations



D. Trip and Parking Reduction Strategies

In the table beginning on the following page, PHA proposes a number of motor vehicle parking and trip reduction strategies for the Riverton Park TDM Plan that respond to the larger transportation context, current and likely new residents and their transportation needs, and the potential usefulness of various TDM efforts. These tactics are also put forward within the previously mentioned resident demographic contexts, current economic inflation and financing, and funding and capacity limitations of a public affordable housing agency.

A critical component for the success of the Riverton Park TDM Plan is a carefully thought-out promotion strategy that engages tenants from when they first move in regarding preferred modes of transportation, and provides easily accessible information and subsidies. As shared by Portland, Oregon's SmartTrips Welcome program, a residential move is a unique and powerful opportunity for experimentation and change. This also builds the site's TDM culture and the sense of multimodal travel as a social norm.

Finally, the region recently reexamined the need for a Transportation Management Association (TMA) to benefit sites like Riverton Park - and this is now a recommendation in the Portland Area Comprehensive Transportation System's *Transit Tomorrow Plan*. TMAs are public-private entities that assist sites with TDM implementation, outreach, and monitoring; advocate for improved transit; and act as brokers for services such as shuttles. PHA plans to support the development of a local TMA and participate as a member for its various locations operating under TDM plans.

...When a person changes residence, everything changes: the way to the store, the way to work, even the steps to the fridge.

This time of change offers a unique opportunity to create new neural pathways or reinforce old ones that haven't been used for a while and make these stronger than habitual pathways.

Andrew Pelsma, SmartTrips Program Specialist, Portland, Oregon

...To us, this represents a significant number of people with an immediate gap in knowledge about their local travel options.

Linda Ginenthal, SmartTrips Program Manager

Infrastructure	
Reduced Parking/ Remote Parking	*Reduced parking:* Riverton Park is limiting parking supply by providing fewer spaces than previously required under the City's former land use ordinance (pre-*ReCode*). In addition, the current off-street parking-to-unit ratio is 1.37 (194 off-street spaces for 141 units); upon project completion, this will be reduced to 1.26 (231 spaces for 182 units).
Affordable Housing	Far beyond the current City standard for workforce housing, 91% of Riverton Park's dwelling units will be considered affordable housing. 78% of units will be dedicated for people with a total household income not exceeding 50% percent of Area Median Income (AMI); 13% of units will be dedicated to those with up to 60% of AMI. Affordable housing units at a lower AMI generate fewer vehicle trips and less parking demand than higher AMI or market-rate housing units.
Transit & Other TDM Access	*TDM kiosk:* Bulletin board or monitor with slides will be placed in Community Neighborhood Center. Kiosk will include multimodal map with transit routes, bicycle routes and trails, and walk and bike distances/times; information on the Southern Maine Transit Tracker; listing of bicycle facilities on site; carshare locations and membership information, if applicable; information on GO MAINE ride-matching, rewards and Emergency Ride Home benefit for all alternate modes of transportation - materials regarding GO MAINE services and benefits are available from the state program (More at gomaine.org and by contacting the Go Maine Program Team, rides@gomaine.org, 1-800-280-RIDE, 254 Commercial Street, Suite 245, Portland, ME 04101; all TDM benefits available for residents; contact information for TDM Coordinator.
	Bus turn-around and weather awning: Construction of bus-turnaround at the Neighborhood Center will allow improved school bus access to the site and building awning will provide cover for waiting students.
	Possible collaboration with City Shelter shuttle: To increase transit frequencies to downtown Portland, PHA will explore the possibility of Riverton Park residents being able to utilize the shuttle that will be run between the new City Shelter on Riverside Street and downtown.
Pedestrian, Bicycle and Carpool Access	*Sidewalks/Paths:* Reconstruction and/or new construction of selected street sidewalk segments and paths through the site
	ADA-accessible pedestrian amenities: This will include, but not be limited to: new sidewalks, pathways and parking lots with improved grading that offer slopes/pitches that meet accessibility code where feasible or required; ramps and zero-step entries into units where feasible or required; and accessible routes to project amenities where feasible or required
	Crosswalks: Striping improvements, as required, for existing or proposed crosswalks to improve pedestrian safety, subject to City approval when in the municipal right of way
	Lighting: Street and building lighting to improve sidewalk illumination
	Benches and weather awning protection at Neighborhood Center
	Bicycle parking near residential buildings: A total of at least 88 spaces on bicycle racks on concrete pads spread across the development. This will entail approximately two-to-four racks in each cul-de-sac and also at the new multifamily Building 1, with associated lighting.
	Off-street bicycle racks at the new Neighborhood Center: At least 8 bicycle parking spaces on concrete pads will be placed in front of the Neighborhood Center.

Shared Mobility	*Bicycle repair stations: S*ix bicycle repair stations will be located across the development in each housing cul de sac and in other visible locations
	Flexible passenger loading curb space(s): To facilitate resident and visitor pick-up, drop-off and carpooling
	Explore Carshare: PHA to explore possibility of partnering with other developers to set up a carshare program at various sites. If feasible, PHA will explore offering an off-street parking space to the carshare program, coordinate with the City to provide an on-street parking space to the carshare program, and/or potentially provide a discount for resident carshare vehicle use for the first year of a resident's tenancy.
	Explore Bikeshare: PHA to explore with the City the possible eventual expansion of Portland's electric bikeshare to Riverton Park and other off-peninsula sites, in coordination with City efforts. This would likely include encouragement for the City to consider cargo bikeshare options for families at Riverton Park.
On-Site/Adjacent-to-Site Amenities	*Community space:* Ample community spaces that tenants can reserve, including a community/conference room, community kitchen, recreation hall, etc. This encourages on-site community-building and facilitates group projects.
	PHA Study Center for youth and teens: Afterschool homework assistance, early evening teen time, and other youth development / social activities. In daytime, space may be used for adult groups, classes and other activities.
	On-site Boys & Girls Club (ages 5-13): Homework assistance, arts programming, recreational activities and daily snack
	On-site Opportunity Alliance Head Start pre-school: The non-profit organization serves Greater Portland families, including Riverton Park families, with children ages 3-5 who are income eligible. This on-site pre-school removes the need for transporting children to and from school for many Riverton Park families.
	Greater Portland Health Clinic: General health services available to Riverton Park residents and the public. New clinic will be substantially larger and able to increase capacity of health services provided to the Riverton community.
	Broadband access: Free and accessible WiFi will be made available at all community buildings. PHA is exploring the same service for all residential units as well. At a minimum, all units will have hardwired infrastructure for broadband and WiFi.
	Laundry facilities: On-site laundry space with washers and dryers available for all tenants
	Convenience Store: New Queen Bee Mart at the head of Riverton Drive will increase walking convenience to purchase simple grocery items like eggs and milk. Other grocery or pharmaceutical items can be purchased right across Forest Avenue at the Hannaford.
	Other retail options: Two new retail spaces will exist at the new multifamily Building 1, potentially enabling walking for other errands; each ~1,200 sq. ft.
	Fitness/recreation areas: The site will include indoor and outdoor recreation areas, which help reduce vehicle trips for these activities and improve residents' physical fitness for active transportation

Delivery Supportive Amenities	PHA will facilitate delivery services by providing an area for temporary storage for packages and other deliveries. For residents living in the new Building 1, there will be a centralized mail and package room on the 1st floor of the building. For residents of the townhomes/cul de sacs, there will be a centralized mail and package room at the Neighborhood Center.
General Contribution to Area Transportation Improvements	Per Chapter 14 of the City of Portland Code, the property is contributing to transportation impact fees for the net new residential units. These fees will assist with transportation improvements in Portland.
Incentives	
Parking Pricing/Incentives	*Unbundled parking:* Market rate tenants may be charged for parking via a separate lease from the unit rental, subject to change due to governmental financing regulations and restrictions.
Transit Subsidies	*Transit passes:* PHA will explore feasibility to provide transit subsidy for residents. A former PHA transit pass program became impossible to continue with the new DiriGo electronic pass program. METRO will need to cooperate with PHA to facilitate this effort. A family pass option will also be a priority for PHA residents.
Information	
Education for Travel Choice & Promotion of Alternate Modes	*Webpage:* Maintain active web page on property management website for residents and property management employees. Page to include same information as orientation packet below and also copy of TDM Plan on file with the City.
	TDM orientation packets: As part of the larger orientation after (re)occupancy of the site, new residents will be provided with orientation packets regarding the site's TDM program and access to site by various travel modes. Includes: (1) Residential Services Coordinator as a transportation resource person (2) Map of area, showing site, major streets, nearby landmarks and time to walk/bike to them, closest bus stops and walking times, recommended cycling and walking routes, carshare if applicable, etc. (3) Information about transit service frequency, fares, first and last runs, and schedules; phone numbers and web addresses for transit service providers and taxi companies. (4) How to reach major transportation terminals (bus and train stations, airport, ferry terminal, etc.) (5) Access arrangements for people with disabilities; (6) Availability of bicycle parking and bikeshare, if available; (7) Bicycle maintenance options and bicycle safety courses; (8) Encouragement for residents to become members of GO MAINE and access rewards system, carpool matching and Emergency Ride Home Benefit; (9) carshare information, if available, and automobile parking availability and price; (10) Info on TDM program and how to contact the TDM Coordinator.Coordinator.
	New Resident TDM Engagement & Acknowledgement: TDM Coordinator will engage with each new tenant household to share about the Riverton Park TDM program. They will be asked to sign an acknowledgement of the site TDM goals.
	Residential Services Coordinator Assistance: The redeveloped site will have full-time Residential Services Coordinator (RSC) who can assist residents with applying for reduced-fare transit passes and accessing transportation-related benefits through various state and local programs, such as transportation coaching and bus passes for families who are working or going to school. PHA will explore the possibility of engaging with the Greater Portland Council of Government's *Travel Helpers Training* program to train the RSC.

Education for Travel Choice & Promotion of Alternate Modes (continued)	*Transportation fairs/tabling:* Explore tabling event at least one time per year - likely tied to other Riverton Park events such as the pancake breakfasts and block parties - to engage residents in conversation about their transportation choices
	Experiment with offering on-site bicycle safety class: PHA will offer one annual class on either bicycle safety or maintenance through the Bicycle Coalition of Maine, Portland Police Department, or another organization
	TDM Data Collection: As PHA staff collect data on Trend Indicators such as bike rack utilization, these processes will also serve as an education and promotion tool in communicating with residents – *see more in Section E*



E. Plan for Monitoring, Data Collection and Reporting

Traditional TDM surveying processes (e.g., like those of employees at a large employer) would be a significant burden for Riverton Park residents – who are time constrained from carrying multiple job and diverse caregiving responsibilities, and many of whom also have limited English language proficiency. In addition, conducting surveys with people with language barriers requires a tremendous expenditure of staff capacity and hours for a public housing agency. For example, the City has recent experience with another TDM plan for a similar affordable housing site, where the agency is having to do one-on-one interviews with tenants with the assistance of an interpreter and also expending considerable time and cost to reach every household.

Data Collection

Given the surveying restraints above and in consultation with the City regarding this TDM Plan, the TDM Coordinator will collect quantitative data each year on the following individual trend indicators to help track and inform the site's TDM efforts:

- METRO Riverton Park stop data (available by request)
- School bus ridership count
- Late summer, winter, and spring surveys of bike rack utilization
- Property management records of tenant parking space usage
- GO MAINE membership (location specific data available by request, with members kept anonymous (contact GO MAINE Program Team, rides@gomaine.org, 1-800-280-RIDE, 254 Commercial Street, Suite 245, Portland, Maine 04101)
- Number of PHA interactions with residents regarding transportation-related information and assistance
- Usage numbers for any future carshare and/or bikeshare installations (available upon request of carshare or bikeshare operator)

This approach is much less burdensome to both residents and PHA and allows the housing authority more flexibility to meet the evolving transportation needs of Riverton Park's residents.

In addition, the Coordinator will share staff's broader perceptions of resident multimodal interests and needs, as well as the general utility of the site's TDM programming. The TDM Coordinator and PHA staff will also utilize this information to assess their efforts and plan for any TDM program modifications and improvements.

Note: the school bus and bike rack surveys will also assist PHA with its TDM education efforts. That is, the actions themselves help people take notice and think differently about their transportation behavior. Conversations with residents during the surveys can also provide a reminder of the TDM online/on-site information center and the TDM Coordinator for more information about options.



Annual Report

The TDM Coordinator will then produce an annual TDM Report to meet the City's monitoring requirements. This will be due every year on May 15, beginning within the first year after Certificate of Occupancy and full occupancy for all buildings. The City has created a reporting template for consistency of site reports and PHA will utilize the most recent version of this template when beginning its reporting process. For now, it is recommended that the report include:

a. the above TDM trend indicators data;
b. percent of units occupied;
c. how the data directly relate to the site's TDM trends;
d. overview of that year's TDM operations – including management, strategies, marketing, description of transportation-related interactions with residents, and any new infrastructure development;
e. lessons learned and any changes in the TDM plan during the year;
f. plans for the following year.



PORTLAND HOUSING DEVELOPMENT CORPORATION

TDM Plan Amendment for Riverton Park

2 Riverton Dr, Portland, ME 04103

Portland Housing Authority and Portland Housing Development Corporation – co-applicants on the Riverton Park Site Plan Amendment application (PL-003053-2024) to amend the previous application (PL-002319-2022, CU-002325-2023) approved on May 23, 2023 – provide this amendment to the Riverton Park TDM Plan. As part of this amendment, we have documented below the proposed project changes, which suggest little-to-no impact on the 2023 TDM Plan for this property. If anything, proposed changes likely reduce the number of private vehicle trips to Riverton Park from outside the community.

Item	2023 Plans	2024 Plan Amendments
Total Number of Residential Units *Townhome Rehab Units* *Circle 1 Building New Units*	182 *123* *59*	182 *118* *64*
Off Street Parking Spaces	231	224
Retail Space	Yes (±1,200 sq. ft.)	None
Community/Resident Service Space	Build new Neighborhood Center (±12,000 sq. ft.)	Reuse existing Admin Building (±2,900 sq. ft.) and Building 5 "Service Row"
PHA Maintenance Space	Build new Maintenance Garage	Reuse existing Maintenance workshop space in existing Admin Building

From a transportation and transit perspective, the TDM Plan, dated 11/7/2022, remains appropriate for this Site Plan Amendment. Overall unit count, amenities, services and uses at Riverton Park are either materially comparable to before or will reduce transportation demand.

PORTLAND HOUSING DEVELOPMENT CORPORATION

8/1/2024

Bruce Hyman
Transportation Program Manager
City of Portland
Department of Planning and Urban Development
389 Congress Street, 4th Floor
Portland, Maine 04101

Re: TDM Plan Amendment Addendum
Riverton Park, 2 Riverton Dr, Portland, ME 04103

Dear Bruce,

Portland Housing proposes amendments to the Riverton Park Site Plan, which received Planning Board approval in May 2023. As part of this amendment, we have documented below the proposed project changes, which suggest little-to-no impact on the 2023 TDM Plan for this property. If anything, proposed changes likely reduce the number of private vehicle trips to Riverton Park from outside the community.

Item	2023 Plans	2024 Plan Amendments
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PHA Maintenance Space	Build new Maintenance Garage	Reuse existing Maintenance workshop space in existing Admin Building

From a transportation and transit perspective, we feel the current TDM is appropriate for this Site Plan Amendment. Overall unit count, amenities, services and uses at Riverton Park are either materially comparable to before or will reduce transportation demand. Please contact me if any additional information is required.

Sincerely,
Tyler Plante

970 Baxter Boulevard, Portland, Maine 04103 | Phone: 207-773-4753 | Fax: 207-761-5886

16. Preservation of Significant Natural Features

The project site is a previously developed dense suburban site. It is comprised of six cul-de-sacs ("circles") that each contain 3-5 buildings that house 18-30 apartment units per circle, plus associated parking lots and associated site improvements/facilities. There are two public roads that run through the project: Riverton Drive and Springbrook Way. Pinewood Drive was vacated in 1997 and remains a private road. There are no known significant plant species, communities, or specimens within the site.

The only natural features to note on the site are a stream and associated wetland complex. It is a goal of the project to respect these systems as much as possible. There are a few locations where proposed items will encroach into a portion of the resource setback and will require a Permit-by-Rule (PBR) from the Maine Department of Environmental Protection (MDEP). They are: minor site work associated with building rehabilitations, work within City right-of-way for new curbs/sidewalk and routine playground maintenance.

All individual projects will use current best management practices to minimize any impacts to the stream/wetland buffers.

RIVERTON PARK IMPROVEMENTS

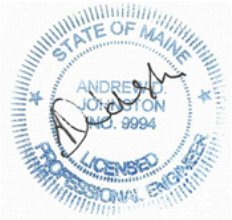
STORMWATER MANAGEMENT REPORT

Prepared for:
Portland Housing Authority
Portland, Maine

Prepared by:

Atlantic Resource Consultants
Engineering Strategies and Solutions

Revision 1 – July 2024



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PROJECT SUMMARY

Atlantic Resource Consultants (ARC) has prepared the following stormwater management report for improvements to the Portland Housing Authority site at Riverton Park in the City of Portland, Maine. The project site is located on Riverton Drive, which extends from the south side of Forest Avenue approximately 1,000 feet west of the Maine Turnpike overpass. The total site area is just under twenty acres and is home to a residential community consisting of six "circles", each of which houses multi-family residential housing units and the associated access, parking and utility infrastructure. There are two public streets within the existing development. Riverton Drive is the main access street that connects to Forest Avenue and serves three circles. Springbrook Way extends off Riverton Drive to serve the remaining three circles.

The project comprises maintenance and rehabilitation of the multi-family residential buildings, paved areas, utility and drainage infrastructure in five of the six "circles" at the facility. Major redevelopment is proposed at the location of existing Circle 1 to construct a new 4-story mixed use residential and commercial building with a footprint area of 14,860sf+/-, and the associated access, parking utility and stormwater infrastructure. Previously proposed redevelopment of the Community Center and construction of a new Maintenance Facility have been removed from the project.

The total area of redevelopment is approximately 1.86 acres, and the project will result in a net increase of approximately 0.23 acres (10,000sf+/-).

The target start of construction is Spring of 2025, once permit approvals have been received. The project will be phased to minimize the disruption to residents during the construction.

EXISTING CONDITIONS

The project site is described as Lot 12, Block B of Tax Map 327 on the City of Portland tax maps and is located on the south side of Forest Avenue approximately 1,000 feet west of the Turnpike. Access to the facility is provided via Riverton Drive, and Springbrook Way, both of which are city streets.

The site was originally developed circa 1971 and provides multi-family housing units in a series of six "circles" throughout the property. Each circle has a central parking area, with pedestrian sidewalks leading to each unit. The facility is served by a private water distribution network that is connected to the Portland Water District public system at the entrance to the site. A gravity sewer system drains to a central pump station that is owned and operated by the City of Portland. A six-inch force main conveys sewage off-site to Forest Avenue, where it discharges to the municipal gravity system. Underground gas and overhead three-phase power services are provided within the on-site city streets and are served from Forest Avenue.

There is a shallow central valley that runs approximately east-west through the center of the property. A stream and associated wetland area convey surface runoff from both on-site and off-site areas through the site before discharging to the Presumpscot River approximately 1,800 feet to the west. The existing topography of the site

slopes gently towards the central valley and drainage feature from all directions. An existing piped storm drain system extends through the property and discharges at several locations to the main and tributary drainageways. There are currently no stormwater treatment or detention Best Management Practices (BMPs) at the site.

Predominant surface soil types are mapped by the Natural Resource Conservation Service (NRCS) Web Soil Survey as Windsor loamy sands, and Scantic and Buxton series silt loams. However, test pits and borings undertaken on the site in the areas mapped as Windsor soils contradict this mapping. It appears from these site-specific investigations that soils in this area are more consistent with the Buxton/Lamoine series map unit. These soils are finer grained and hence more poorly drained than the generalized NRCS mapping would suggest. Similarly, the on-site investigations do not appear to identify the Scantic series silt loams, mapped in a belt crossing the center of the site. The more accurate, site-specific soils mapping has been used in runoff modeling for the site, with all soils within the redevelopment areas assumed to be Buxton/Lamoine series silt loams, which are classified as Hydrologic Type C.

Natural resource mapping on the site was undertaken in March of 2022, to support the proposed development planning for the property. A jurisdictional stream and associated wetland were identified in the central valley that runs through the project site. There will be no impacts to on-site streams or freshwater wetlands.

Receiving Waters

The developed area of the site drains to an unnamed tributary of the Presumpscot River which drains to Casco Bay.

Historical Flooding

The wetland area downstream of the twin culverts under Springbrook Way site is located in Flood Zone X (areas of minimal flooding) according to the FEMA Flood Insurance Rate Map for the City of Portland (Community Panel Number 23005c0679F), dated December 6/20/2024.

Alterations to Natural Drainageways

The project will not result in any alteration of natural drainageways.

STORMWATER MANAGEMENT

The proposed rehabilitation and maintenance improvements to "Circles" 2-6 are limited to building maintenance work, replacement of existing failing utility and storm drain infrastructure, replacement of curbing, minor re-grading of deteriorated/inaccessible walkways, paved parking and landscaped areas, and the installation of new drip edges to protect replacement building siding. In all cases the existing drainage patterns and runoff patterns will be maintained and the work will result in a reduction in the overall impervious area at the site. This scope of work is considered "routine maintenance".

There is one area of the site where the proposed work meets the definition of "redevelopment" under State of Maine Stormwater Law. The area of redevelopment includes Circle 1 and extends across the street to the new sidewalk adjacent to the Community Center building. The four existing multi-family units in Circle 1 will be demolished to construct a the new 14,860sf (footprint) mixed-used residential building and the associated access, parking, utility and stormwater infrastructure. There is also some new streetscaping and utility in the portion pf Riverton Drive alongside the new building.

Redevelopment pollutant ranking calculations have been undertaken for these areas under the pre-development post-development conditions, in accordance with the requirements of State of Maine Chapter 500 Stormwater Law. The pre-development pollutant ranking per acre is calculated to be 2.43. This value increases to 2.45 in the post-development condition, an increase of 0.02. A difference in the pollutant ranking per acre of between 0 and 1 requires treatment of 60% of the developed area. This project proposes treatment of 61% of the redeveloped area.

Section 5 of the City of Portland Technical Manual requires treatment of 50% of the redeveloped impervious area. This project proposes treatment of 56.2% of the redeveloped impervious.

Water quality treatment in all redeveloped areas will be provided by low impact development BMPs. Bioretention cells are proposed to treat the parking lot runoff from the new multi-use residential building in Circle 1. These are supplemented by a Focal Point Unit adjacent to the driveway entrance to the new parking area off Riverton Drive, and two areas of pervious pavers in the pedestrian plazas on either side of the street. All stormwater BMP's have been designed to provide stormwater quality and quantity control in accordance with State of Maine Chapter 500 Stormwater Law standards. Stormwater BMP designs and details can be found in the accompanying project plan set.

Proposed BMPS

Stormwater runoff from the redeveloped areas of the project will be captured and treated in a series of new Best Management Practices (BMPs). These include six bioretention cells, and one roof dripline filter.

- Bioretention Cells – Bioretention cells consist of shallow depressions filled with filter soil media and planted with a variety of grasses and shrubs. These are designed to enhance the general landscape design for the site. Runoff directed to the BMPs is detained temporarily and passes slowly through the soil media and the root zone of the planted material before draining into an underdrain system that discharges to an outlet

culvert. The soil media and root zone activity provide water quality treatment for the runoff by removing suspended particles, and through uptake and binding of dissolved pollutants and nutrients. Although primarily designed for quality treatment, these BMPs also provide significant detention storage and hence a reduction in the peak runoff rate to downstream receiving areas. The slow discharge through the underdrain system and via infiltration to the underlying soils provides extended base flows and protects downstream receiving waters from erosive peak flows after storm events. In each case, dedicated overflow discharge structures are provided to allow excess flows to pass through the system without causing damage, during severe storm events.

- Focal Point Unit – The Focal Point Unit is a proprietary device that is approved for use by Maine DEP for stormwater treatment under Chapter 500. This is essentially a compact unit bioretention cell that provides the required water quality treatment within a condensed footprint by using specialized soil media with a high infiltration rate. The unit has a bypass overflow grate that allows excess flow to exit the structure via a piped outlet that is connected to the storm drain system
- Pervious Pavers – Pervious pavers are used in the new pedestrian plaza areas on either side of Riverton Drive. These provide capture and treatment of stormwater is a pervious stone and gravel section set below the pavers. Surface water drains through joints in the pavers and into the stone reservoir below. There is a filtering sand layer below the reservoir layer that runoff passes through before entering the underdrain backfill layer and draining via the perforated underdrain pipe into the storm drain system.
- Roof Dripline Filters - The roof dripline filters consist of a cover layer of pea stone underlain by a filtration layer of fine sandy material. Flow entering the drip strip lands on the cover layer and drains through the filter media into the soil below. The drip strip filters also provide a degree of runoff detention through storage in the stone backfill material.

METHODOLOGY AND MODELING ASSUMPTIONS

Runoff and routing calculations have been performed for the watershed areas affected by the proposed redevelopment under predevelopment and postdevelopment condition scenarios. Time of concentration and runoff curve number calculations have been performed using the method described in Natural Resource Conservation Service (NRCS) Technical Release 55 (TR-55) – Urban Hydrology for Small Watersheds. The TR-20 based HydroCAD modeling software has been utilized to perform the more complex runoff and routing calculations, some of which are beyond the scope of the TR-55 method. Time of concentration calculations have been amended where the value given by the TR-55 method is less than six minutes (0.1hr). In these cases, a standard minimum value of six minutes has been used to keep this parameter within the acceptable working range of the model and prevent computational errors. Design rainfall events have been modeled using the SCS Type III Hydrograph for 24-hour duration storms. The rainfall depth for each return period is taken from Maine Department of Environmental Protection Chapter 500 Stormwater Management, Appendix H (Cumberland County SE). The rainfall depth values for standard design storm frequencies are shown in the table below.

TABLE 1 - 24-Hr Rainfall Depths for Cumberland County SE at Design Storm Frequencies

Maine Chapter 500: Stormwater Management, Appendix H			
Frequency	2-Year	10-Year	25-Year
Rainfall Depth	3.1 in	4.6 in	5.8 in

Predominant surface soil types are mapped by the Natural Resource Conservation Service (NRCS) Web Soil Survey as Windsor loamy sands, and Scantic and Buxton series silt loams. However, test pits and borings undertaken on the site in the areas mapped as Windsor soils contradict this mapping. It appears from these site-specific investigations that soils in this area are more consistent with the Buxton/Lamoine series map unit. These soils are finer grained and hence more poorly drained than the generalized NRCS mapping would suggest. Similarly, the on-site investigations do not appear to identify the Scantic series silt loams, mapped in a belt crossing the center of the site. The more accurate, site-specific soils mapping has been used in runoff modeling for the site, with all soils within the redevelopment areas assumed to be Buxton/Lamoine series silt loams, which are classified as Hydrologic Type C.

NRCS Code 378, the Stormwater Management for Maine: Best Management Practices (MDEP, 2016) and the Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers (October 2016) have been used as guidelines in the design of the stormwater system.

STORMWATER QUANTITY ANALYSIS

Pre-development Conditions

Under the predevelopment condition, the primary area of redevelopment is represented by a single subcatchment area. The majority of Subcatchment 101 drains via the existing storm drain system to an eighteen-inch diameter outfall, located between the existing Maintenance Garage and the basketball court. This discharges to the drainageway and stream that runs through the property and is tributary to the Presumpscot River. The remainder of the area drains via overland flow to the property boundary, and hence to the same drainageway.

A summary of the pre-development subcatchment characteristics is given in the table below.

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT	AREA (ac)	CN	Tc (mins)
101	4.43	84	14.5

Full details of predevelopment subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in Attachment D of this report. A Predevelopment Conditions Watershed Plan is included in Attachment B of this report.

Post-development Conditions

Under the post-development conditions, each of the main pre-development subcatchments is divided to model the effect of localized storage and treatment BMPs. The outflow from these is combined with runoff from uncaptured areas at the same analysis point used in the pre-development model. In this way the total peak runoff from each of the analyzed areas can be directly compared ion the pre-development and post-development conditions.

Subcatchment 201A represents the area of existing and proposed development that drains uncaptured to the existing storm drain system and discharges via the existing eighteen-inch culvert towards the central drainageway. Subcatchments 201B to 201F 10 drain to the individual BMPs described in the preceding section of this report. The post-development model routes each of these subcatchment areas through the associated BMPs, and combines the outflows of all the post development subcatchments at Design Point 1. In this manner, the pre-development and post-development peak runoff at each storm event can be compared at the common discharge location

A full listing of the postdevelopment areas is shown in the following table. Full details of the postdevelopment subcatchment areas, cover conditions and time of concentration flow paths are described in detail in the supporting HydroCAD documentation included in Attachment D of this report. A Postdevelopment Conditions Watershed Plan is included in Attachment B of this report.

POST-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT	AREA (ac)	CN	Tc (mins)
201A	3.43	84	14.5
201B	0.34	91	6
201C	0.40	87	6
201D	0.10	90	6
201E	0.08	94	6
201F	0.07	88	6
TOTAL AREA - 201	4.42		

Water Quantity Analysis Summary

The table below summarizes the peak runoff values for predevelopment and postdevelopment conditions during each of the analyzed design storm events. The analysis demonstrates that there will be no increase in peak runoff at either point of analysis during the 2-yr, 10-yr and 25-yr design storm events.

PRE-DEVELOPMENT AND POST-DEVELOPMENT PEAK RUNOFF VALUES		
Storm Return Period	Peak Q at Design Point 1 (cfs)	
	Pre-Dev	Post-Dev
2-Year	6.32	5.37
10-Year	11.47	10.45
25-Year	15.70	14.67

STORMWATER QUALITY ANALYSIS

Redevelopment Standards

The proposed rehabilitation and maintenance improvements to "Circles" 2-6 are limited to building maintenance work, replacement of existing failing utility and storm drain infrastructure, replacement of curbing, minor re-grading of deteriorated/inaccessible walkways, paved parking and landscaped areas, and the installation of new drip edges to protect replacement building siding. In all cases the existing drainage patterns and runoff patterns will be maintained and the work will result in a reduction in the overall impervious area at the site. This scope of work is considered "routine maintenance".

There is one area of the site where the proposed work meets the definition of "redevelopment" under State of Maine Stormwater Law. The redevelopment area includes Circle 1 and the adjacent streetscape area. The four existing multi-family units in Circle 1 will be demolished to construct a the new 14,860sf (footprint) mixed-used residential building and the associated access, parking, utility and stormwater infrastructure.

Redevelopment pollutant ranking calculations have been undertaken for these areas under the pre-development post-development conditions, in accordance with the requirements of State of Maine Chapter 500 Stormwater Law. The pre-development pollutant ranking per acre is calculated to be 2.43. This value increases to 2.45 in the post-development condition, an increase of 0.02. A difference in the pollutant ranking per acre of between 0 and 1 requires treatment of 60% of the developed area. This project proposes treatment of 61% of the redeveloped area.

Redevelopment treatment calculations and treatment maps can be found in Attachment A of this report.

Water Quality Treatment Measures

Water quality treatment BMPs have been designed to capture and treat runoff from the redeveloped areas of the site, with the highest priority given to treating contributing paved parking lots, which have the highest pollutant ranking.

The redevelopment area will include two bioretention cells, one Focal Point unit and two areas of pervious pavers. These are designed in accordance with the latest version of the Maine Department of Environmental Protection BMPs Technical Design Manual. The following table summarizes the water quality treatment calculations.

Riverton Park Water Quality Treatment Summary								
Subcatchment Area	Impervious Area	Landscaped Area	Developed Area	Water Quality Volume Required	Water Quality Volume Provided	BMP	Min. Area Reqd	Area Provd
TREATED AREAS								
201B	10556	4415	14971	1027	1425	Bio Cell 11	871	995
201C	9336	8127	17463	1049	2432	Bio Cell 12	897	1705
201D	2855	1301	4156	281	1920	Focal Point	239	1321
201E	3010	647	3657	272	2327	Pervious	230	1621
201F	1628	1210	2838	176	444	Pervious	150	307
TOTAL TREATED	27385	15700	43085					
UNTREATED AREAS								
201A* (within re-development area)	21348	6415	27763					
TOTAL UNTREATED	21348	6415	27763					
TREATMENT %	56.19%	70.99%	60.81%					
1. WQV is calculated as 1" over the contributing impervious area plus 0.4" over the contributing landscaped area								
2. Minimum area requirements are calculated as 7% contributing impervious area plus 3% contributing landscaped area for bioretention cell and 5% contributing impervious area plus 2% contributing landscaped area for underdrained soil filter.								

SOIL EROSION AND SEDIMENT CONTROL

A comprehensive Soil Erosion and Sediment Control (SESC) narrative has been prepared that includes Best Management Practices (BMPs) associated with the proposed construction activities. The location of SESC BMPs is shown on the accompanying plans. These are further described on the details and notes sheets in the accompanying plan set.

The Erosion and Sediment Control Report outlines the required construction measures and techniques that will reduce potential degradation of the water quality at downstream locations. Temporary erosion control measures will be incorporated during construction, and long-term surface stabilization practices have been designed as part of the site development, thus minimizing the potential for erosion and sediment transport. These measures include the constructed BMPs for filtration of runoff from smaller storm events, riprap, permanent seeding and other vegetative stabilization measures. Detailed information on the specific erosion and sedimentation control practices that are to be used on the site are provided on the following plan sheet, which will be included as part of the construction documents for the project.

STORMWATER MAINTENANCE PLAN

The effectiveness of water quality management provisions and other components of the stormwater management system are dependent on their design, upkeep, and maintenance to assure they meet their intended function over an extended period of time. It is critical that the stormwater management facilities are regularly inspected, and that maintenance is performed on an as-needed basis.

After construction is complete, Portland Housing Authority will own and maintain the entire stormwater system. A Stormwater Management Inspection and Maintenance Manual has been prepared specifically for the project and is included in Attachment F of this section.

CONCLUSIONS

The stormwater management system designed for this project will mitigate impacts of development on stormwater runoff peak discharge rates and provide treatment of non-point source pollutants in the runoff in accordance with Maine's Stormwater Management Act and Regulations. Based on the analysis described herein, it is expected that runoff from the proposed development will not cause adverse impacts to downstream properties.

Limitations

This analysis is based on the information available to the engineer on site conditions and has been conducted using standard industry software designed to analyze *comparative* changes in land cover conditions. The accuracy of the runoff and routing calculations is limited by the methodology used in the software and the results should be viewed as suitable for comparative studies only.

References

1. NRCS TR-378
2. Stormwater Management for Maine BMPs Design Manual
3. Maine Erosion and Sediment Control Best Management Practices (BMPs): Manual for Designers and Engineers (October 2016)

FIGURES AND ATTACHMENTS

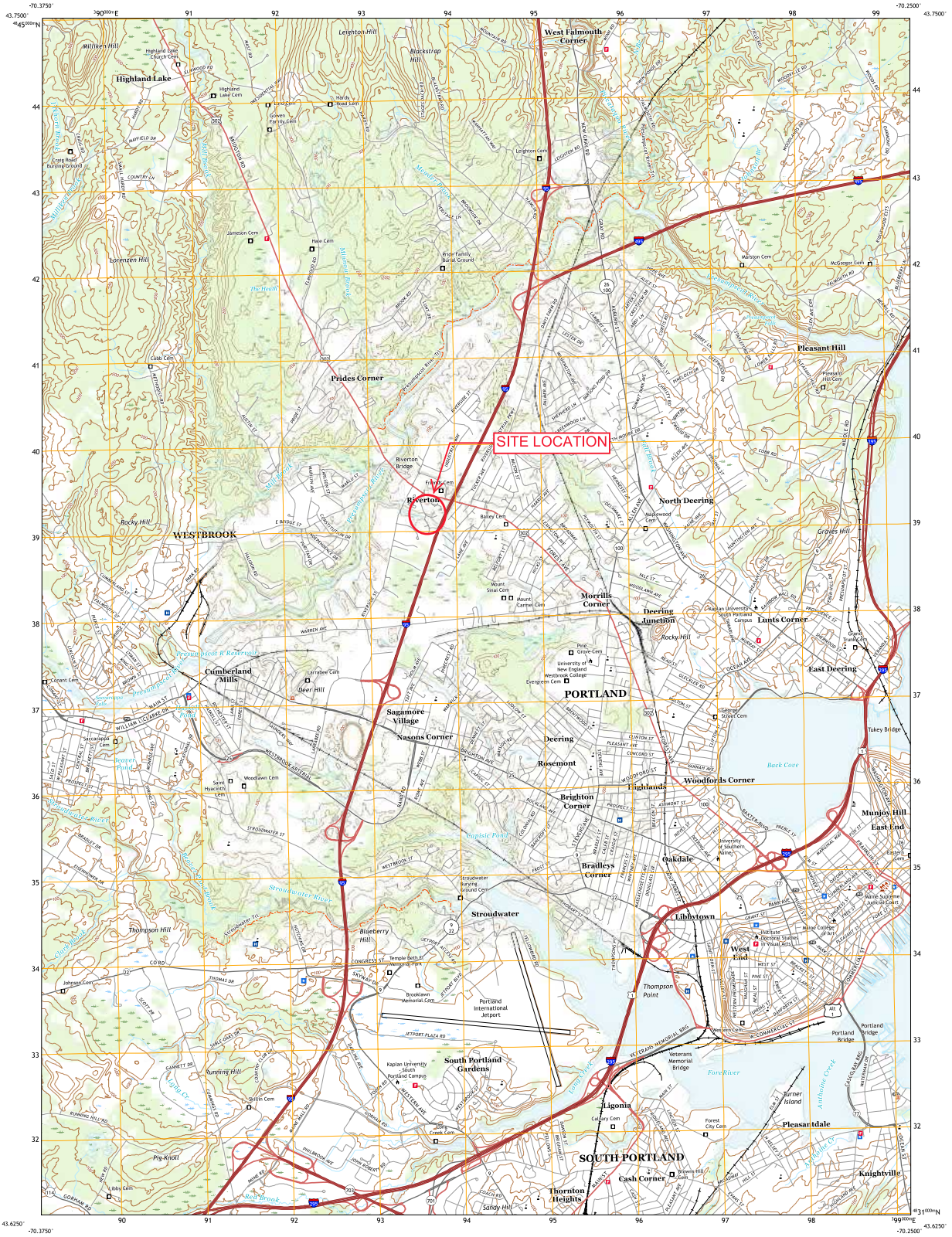
1. Figure 1 USGS Location Map
2. Figure 2 FEMA Flood Map
3. Attachment A Redevelopment Treatment Maps and Calculations
4. Attachment B Pre-development & Post-development Watershed Maps
5. Attachment C Water Quality Calculations
6. Attachment D TR-20 Computations (HydroCAD)
    i. Pre-development Model
    ii. Post-development Model
7. Attachment E Soil Evaluation Report
8. Attachment F Stormwater Operations and Maintenance Manual

FIGURES

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

PORTLAND WEST QUADRANGLE
MAINE - CUMBERLAND COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid:Universal Transverse Mercator, Zone 19T
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, September 2018
Roads.....U.S. Census Bureau, 2017
Names.....GNIS, 1980 - 2020
Hydrography.....National Hydrography Dataset, 2003 - 2019
Contours.....National Elevation Dataset, 2005 - 2012
Boundaries.....Multiple sources; see metadata file 2018 - 2019

Wetlands.....FWS National Wetlands Inventory 2001 - 2004

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
CJ
Grid Zone Designation
19T

SCALE 1:24 000

KILOMETERS
METERS
MILES
FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

QUADRANGLE LOCATION

1 North Windham
2 Cumberland Center
3 Yarmouth
4 Gorham
5 Portland East
6 Old Orchard Beach
7 Prouts Neck
8 Cape Elizabeth

ADJOINING QUADRANGLES

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

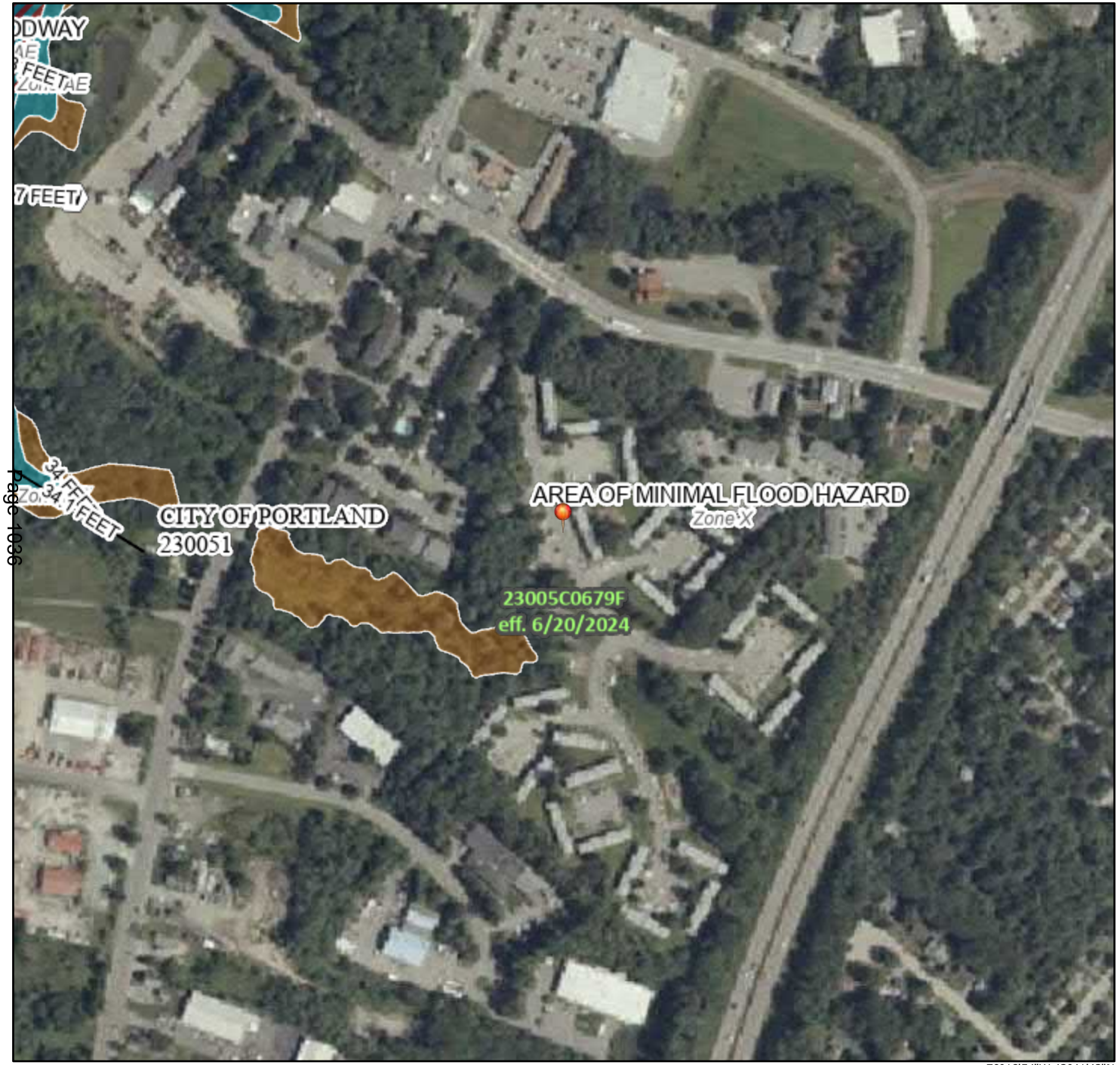
PORTLAND WEST, ME
2021

NSN 7643016340412
NGA REF NO. USGS X24K0612

National Flood Hazard Layer FIRMette

FEMA

70°19'31"W 43°42'9"N



70°18'54"W 43°41'42"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

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*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

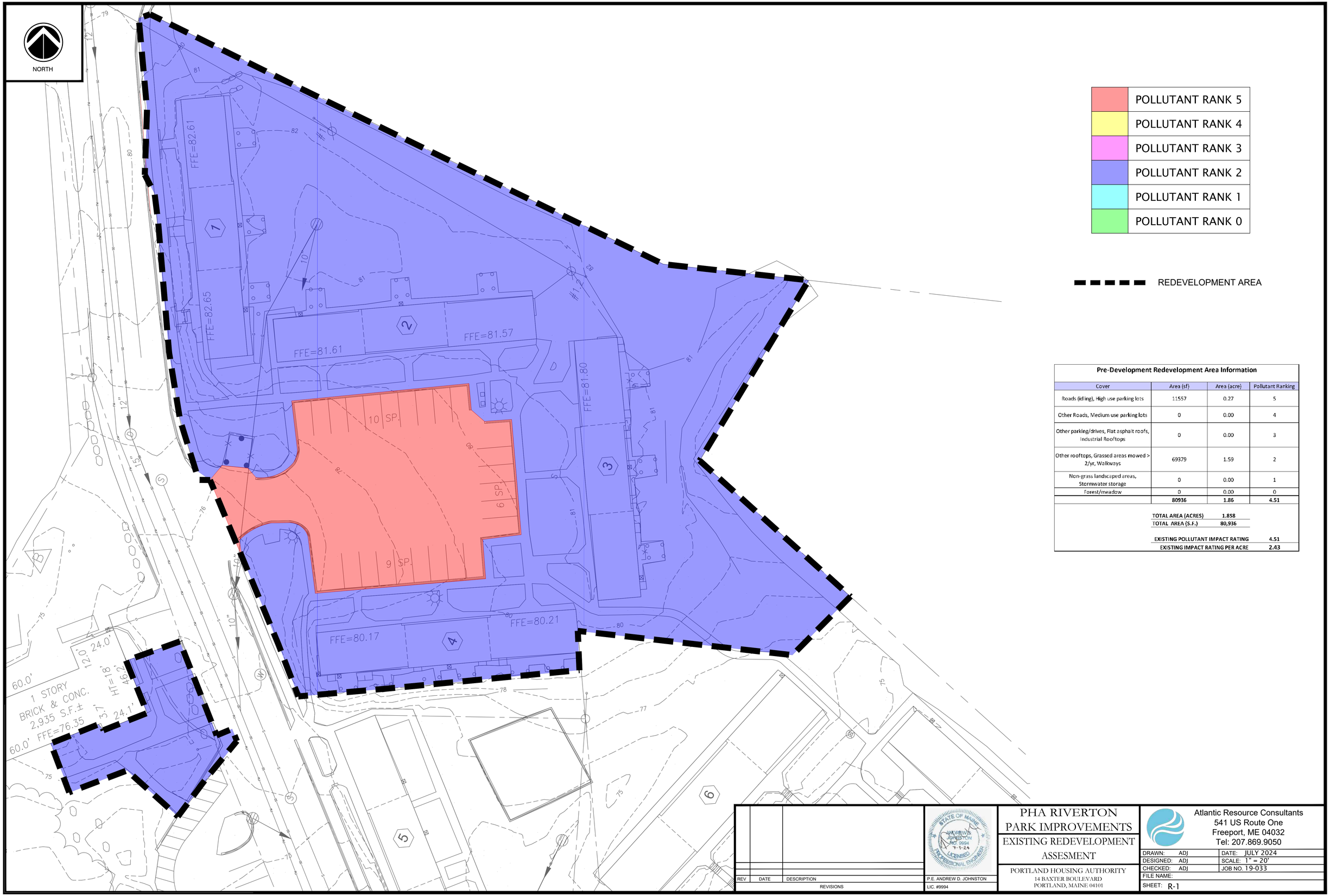
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/15/2024 at 10:40 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ATTACHMENT A - REDEVELOPMENT TREATMENT MAPS & CALCULATIONS



Pre-Development Redevelopment Area Information

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads (idling), High use parking lots	11557	0.27	5
Other Roads, Medium use parking lots	0	0.00	4
Other parking/drives, Flat asphalt roofs, Industrial Rooftops	0	0.00	3
Other rooftops, Grassed areas mowed > 2/yr, Walkways	69379	1.59	2
Non-grass landscaped areas, Stormwater storage	0	0.00	1
Forest/meadow	0	0.00	0
	80936	**1.86**	**4.51**

TOTAL AREA (ACRES)	**1.858**
TOTAL AREA (S.F.)	**80,936**
EXISTING POLLUTANT IMPACT RATING	**4.51**
EXISTING IMPACT RATING PER ACRE	**2.43**

REV	DATE	DESCRIPTION
		REVISIONS

P.E. ANDREW D. JOHNSTON
LIC. #9994

PHA RIVERTON PARK IMPROVEMENTS

EXISTING REDEVELOPMENT ASSESMENT

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE 04101

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN:	ADJ	DATE:	JULY 2024
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FILE NAME:			
SHEET:	R-1		

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NORTH

	POLLUTANT RANK 5
	POLLUTANT RANK 4
	POLLUTANT RANK 3
	POLLUTANT RANK 2
	POLLUTANT RANK 1
	POLLUTANT RANK 0

REDEVELOPMENT AREA

Post-Development Redevelopment Area Information

Cover	Area (sf)	Area (acre)	Pollutant Ranking
Roads (idling), High use parking lots	21048	0.48	5
Other Roads, Medium use parking lots	0	0.00	4
Other parking/drives, Flat asphalt roofs, Industrial Rooftops	0	0.00	3
Other rooftops, Grassed areas mowed > 2/yr, Walkways	33409	0.77	2
Non-grass landscaped areas, Stormwater storage	26626	0.61	1
Forest/meadow	0	0.00	0
	81083	**1.86**	**4.56**
	TOTAL AREA (ACRES)	**1.861**	
	TOTAL AREA (S.F.)	**81,083**	

POST POLLUTANT IMPACT RATING	**4.56**
POST DEVELOPMENT IMPACT RATING PER ACRE	**2.45**
PRE-DEVELOPMENT IMPACT RATING PER ACRE	**2.43**
RANKED IMPACT CHANGE DUE TO DEVELOPMENT	**0.02**

Per Chapter 500 a ranked impact change of 0.02 equates to 60% developed area treatment
See Chapter 500 Table 3 below.

Table 3
Treatment Levels for Redevelopment Projects

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

REV	DATE	DESCRIPTION

REVISIONS

STATE OF MAINE — ANDREW D. JOHNSTON — REG. 9994 — 7-1-24 — LICENSED PROFESSIONAL ENGINEER

P.E. ANDREW D. JOHNSTON
LIC. #9994

PHA RIVERTON PARK IMPROVEMENTS

REDEVELOPMENT PROPOSED ASSESMENT

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE 04101

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

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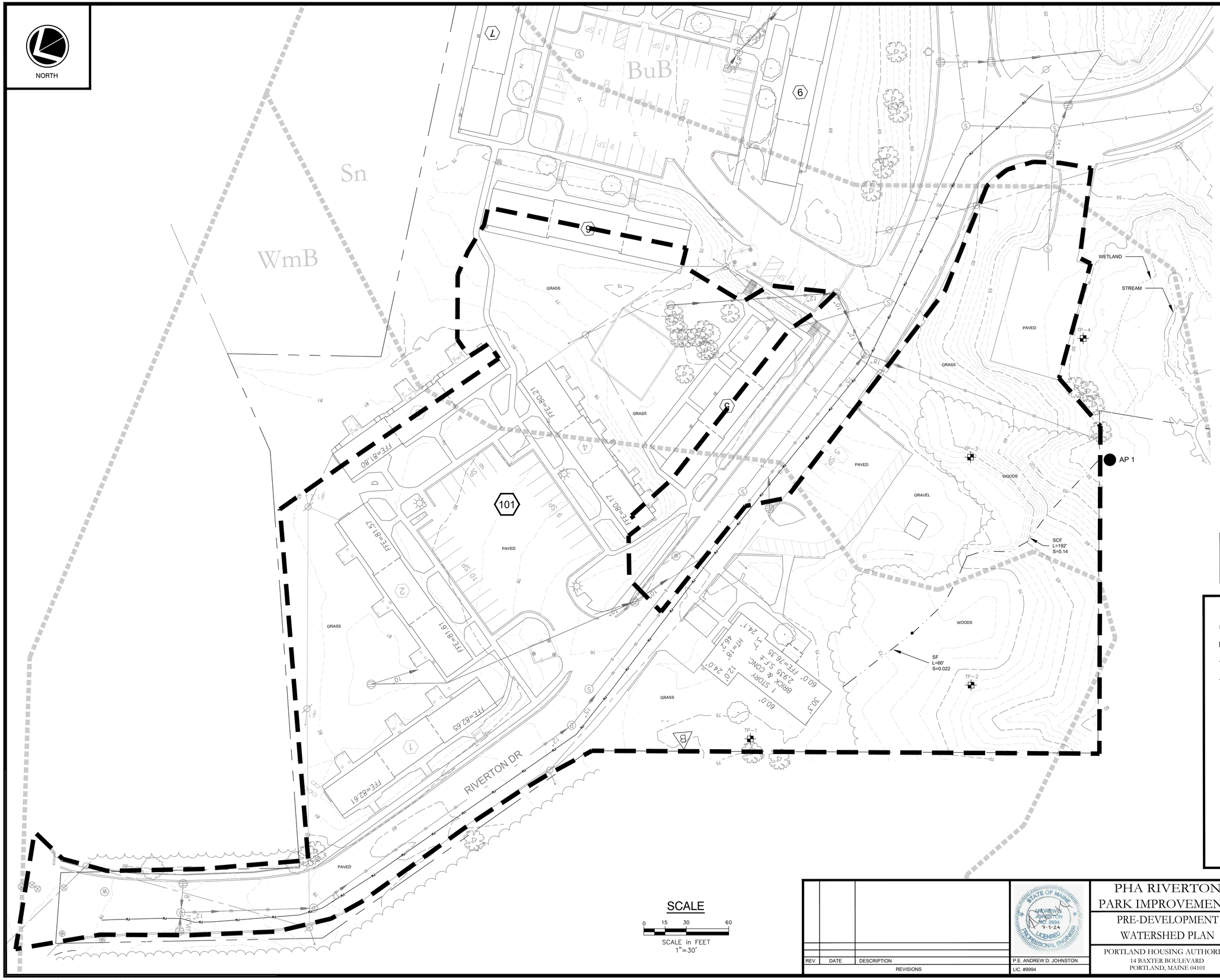
ATTACHMENT B – WATERSHED MAPS

NORTH



PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT	AREA (ac)	CN	Tc (mins)
101	4.43	84	18
TOTAL AREA	**4.43**		

NRCS SOILS LEGEND

SYMBOL	NAME	HSG
BuB	Lamoine silt loam	C/D
Sn	Scantic silt loam	D
WmB	Windsor loamy sand	A

TEST PIT SOILS LEGEND

TEST PIT	NAME	HSG
TP-1	Buxton Mud	C
TP-2	Buxton Mud	C
TP-3	Buxton	C
TP-4	Filled Land	C

* Note that on-site soil test pit and boring investigations indicate that areas mapped as Windsor series loamy sands on the NRCS Web Soil Survey are more accurately depicted as Buxton/Lamoine Series silt loams - see test pit logs from Hampton Associates and boring logs from RW Gillespie. The site-specific soil mapping (Buxton/Lamoine) has been used to model stormwater runoff from these areas.

WATERSHED LEGEND

- SOIL BOUNDRY
- WATERSHED BOUNDARY
- WATERSHED FLOW PATH (TC)
- REACH FLOW PATH
- 999 — SUBCATCHMENT
- R — REACH
- SF — SHEET FLOW
- SCF — SHALLOW CONCENTRATED FLOW
- CF — CHANNEL FLOW
- CC — CIRCULAR CHANNEL
- AP — POINT OF ANALYSIS
- 1P — POND
- TP-1 — SOIL TEST PIT

SCALE

0 15 30 60

SCALE in FEET
1"=30'

REV	DATE	DESCRIPTION

REVISIONS

STATE OF MAINE — ANDREW D. JOHNSTON — LIC. 9994 — LICENSED PROFESSIONAL ENGINEER — 9-1-24

P.E. ANDREW D. JOHNSTON
LIC. #9994

PHA RIVERTON PARK IMPROVEMENTS

PRE-DEVELOPMENT WATERSHED PLAN

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE 04101

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN:	ADJ	DATE:	JULY 2024
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NORTH

Riverton Park
Water Quality Treatment Summary

Subcatchment Area	Impervious Area	Landscaped Area	Developed Area	Water Quality Volume Required	Water Quality Volume Provided	BMP	Min. Area Reqd	Area Provd
TREATED AREAS								
201B	10556	4415	14971	1027	1425	Bio Cell 11	**871**	**995**
201C	9336	8127	17463	1049	2432	Bio Cell 12	**897**	**1705**
201D	2855	1301	4156	281	1920	Focal Point	**239**	**1321**
201E	3010	647	3657	272	2327	Pervious	**230**	**1621**
201F	1628	1210	2838	176	444	Pervious	**150**	**307**
TOTAL TREATED	**27385**	**15700**	**43085**					
UNTREATED AREAS								
201A* (within re-development area)	21348	6415	27763					
TOTAL UNTREATED	**21348**	**6415**	**27763**					
TREATMENT %	**56.19%**	**70.99%**	**60.81%**					

1. WQV is calculated as 1" over the contributing impervious area plus 0.4" over the contributing landscaped area

2. Minimum area requirements are calculated as 7% contributing impervious area plus 3% contributing landscaped area for bioretention cell and 5% contributing impervious area plus 2% contributing landscaped area for underdrained soil filter.

PRE-DEVELOPMENT AND POST-DEVELOPMENT PEAK RUNOFF VALUES		
Storm Return Period	Pre-Dev Peak Q at Design Point 1 (cfs)	Post-Dev
2-Year	6.32	5.37
10-Year	11.47	10.45
25-Year	15.70	14.67

NRCS SOILS LEGEND		
SYMBOL	NAME	HSG
BuB	Lamoine silt loam	C/D
Sn	Scantic silt loam	D
WmB	Windsor loamy sand	A

TEST PIT SOILS LEGEND		
TEST PIT	NAME	HSG
TP-1	Buxton Mud	C
TP-2	Buxton Mud	C
TP-3	Buxton	C
TP-4	Filled Land	C

* Note that on-site soil test pit and boring investigations indicate that areas mapped as Windsor series loamy sands on the NRCS Web Soil Survey are more accurately depicted as Buxton/Lamoine Series silt loams - see test pit logs from Hampton Associates and boring logs from RW Gillespie. The site-specific soil mapping (Buxton/Lamoine) has been used to model stormwater runoff from these areas.

WATERSHED LEGEND

- SOIL BOUNDRY
- WATERSHED BOUNDARY
- WATERSHED FLOW PATH (TC)
- REACH FLOW PATH
- 999 — SUBCATCHMENT
- R — REACH
- SF — SHEET FLOW
- SCF — SHALLOW CONCENTRATED FLOW
- CF — CHANNEL FLOW
- CC — CIRCULAR CHANNEL
- AP — POINT OF ANALYSIS
- 1P — POND
- TP–1 — SOIL TEST PIT

REV	DATE	DESCRIPTION
		REVISIONS

STATE OF MAINE — ANDREW D. JOHNSTON — No. 9994 — 7-1-24 — LICENSED PROFESSIONAL ENGINEER

P.E. ANDREW D. JOHNSTON
LIC. #9994

PHA RIVERTON PARK IMPROVEMENTS

POST-DEVELOPMENT WATERSHED PLAN

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE 04101

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

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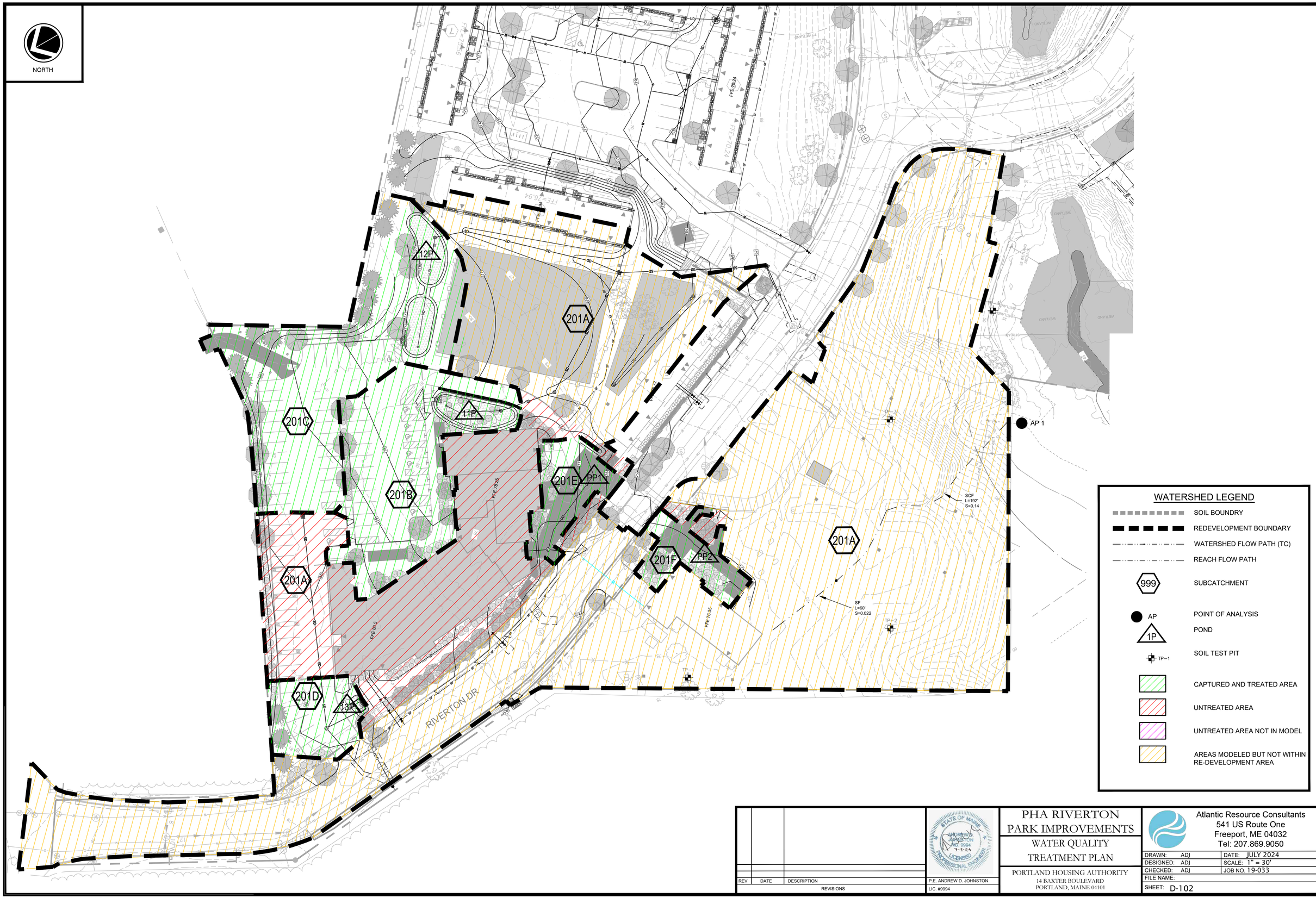

REV	DATE	DESCRIPTION

REVISIONS

STATE OF MAINE
ANDREW D. JOHNSTON
NO. 9994
7-1-24
LICENSED
PROFESSIONAL ENGINEER

P.E. ANDREW D. JOHNSTON
LIC. #9994

PHA RIVERTON PARK IMPROVEMENTS

WATER QUALITY TREATMENT PLAN

PORTLAND HOUSING AUTHORITY
14 BAXTER BOULEVARD
PORTLAND, MAINE 04101

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN:	ADJ	DATE:	JULY 2024
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FILE NAME:			
SHEET:	D-102		

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ATTACHMENT C - WATER QUALITY CALCULATIONS

- Stormwater Area Summary
- WQ Calculation Summary
- BMP Orifice Sizing Calculations
- Stage Storage Tables

Riverton Park Stormwater Areas Summary

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT	AREA (ac)	CN	Tc (mins)
101	4.43	84	14.5
TOTAL AREA	4.43		

SOILS LEGEND	
Bub/BuC	Lamoine/Buxton Silt Loam
Sc	Scantic Silt Loam

POST-DEVELOPMENT WATERSHED CHARACTERISTICS			
SUBCATCHMENT	AREA (ac)	CN	Tc (mins)
201A	3.43	84	14.5
201B	0.34	91	6
201C	0.40	87	6
201D	0.10	90	6
201E	0.08	94	6
201F	0.07	88	6
TOTAL AREA - 201	4.42		

PRE-DEVELOPMENT AND POST-DEVELOPMENT PEAK RUNOFF VALUES		
Storm Return Period	Pre-Dev	Post-Dev
	Peak Q at Design Point 1 (cfs)	
2-Year	6.32	5.37
10-Year	11.47	10.45
25-Year	15.70	14.67

Subcatchment Area Information

PRE-DEVELOPMENT

Subcatchment 10

Cover	Soil Unit	Description	Hydrologic Soil Group	Curve Number	Area (sf)	Area (acre)
Impervious roofs and pavement			C	98	79817	1.83
Gravel			C	96	2578	0.06
Woods			C	70	33318	0.76
Grass			C	74	77079	1.77
		SUBCATCHMENT TOTALS		84	192792	4.43

Subcatchment Area Information - Post Development Conditions

Subcatchment 201A - UNCAPTURED

Cover	Soil Unit	Description	HSG	CN	Area (sf)	Area (ac)
Existing Impervious roofs and pavement			C	98	41514	0.95
New Impervious roofs and pavement		New building roof = 14,860sf, fire access drive and walkways = 6144sf	C	98	21004	0.48
Gravel		Existing area by dumpster	C	96	2578	0.06
Landscaped			D	74	51146	1.17
Woods			C	70	33318	0.76
		SUBCATCHMENT TOTAL		84	149560	3.43

Subcatchment 201B - to B-11

Cover	Soil Unit	Description	HSG	CN	Area (sf)	Area (ac)
Pavement			C	98	10556	0.24
Landscaped			C	74	4415	0.10
		SUBCATCHMENT TOTAL		91	14971	0.34
		WATER QUALITY VOLUME REQUIRED	1027	CU.FT		

Subcatchment 201C - to B-12

Cover	Soil Unit	Description	HSG	CN	Area (sf)	Area (ac)
Pavement			C	98	9336	0.21
Landscaped			C	74	8127	0.19
		SUBCATCHMENT TOTAL		87	17463	0.40
		WATER QUALITY VOLUME REQUIRED	1049	CU.FT		

Subcatchment 201D - to FOCAL POINT

Cover	Soil Unit	Description	HSG	CN	Area (sf)	Area (ac)
Pavement			C	98	2855	0.07
Landscaped			C	74	1301	0.03
		SUBCATCHMENT TOTAL		90	4156	0.10
		WATER QUALITY VOLUME REQUIRED	281	CU.FT		

Subcatchment 201E - to PERVIOUS PAVEMENT

Cover	Soil Unit	Description	HSG	CN	Area (sf)	Area (ac)
Pavers			C	98	3010	0.07
Landscaped			C	74	647	0.01
		SUBCATCHMENT TOTAL		94	3657	0.08
		WATER QUALITY VOLUME REQUIRED	251	CU.FT		

Subcatchment 201F - TO PERVIOUS PAVEMENT

Cover	Soil Unit	Description	HSG	CN	Area (sf)	Area (ac)
Pavement			C	98	1628	0.04
Landscaped			C	74	1210	0.03
		SUBCATCHMENT TOTAL		88	2838	0.07
		WATER QUALITY VOLUME REQUIRED	136	CU.FT		

TOTAL AREA SUBCATCHMENT	192645	4.42
TOTAL NEW IMPERVIOUS	89903	2.06

Riverton Park
Water Quality Treatment Summary

Subcatchment Area	Impervious Area	Landscaped Area	Developed Area	Water Quality Volume Required	Water Quality Volume Provided	BMP	Min. Area Reqd	Area Provd
TREATED AREAS								
201B	10556	4415	14971	1027	1425	Bio Cell 11	871	995
201C	9336	8127	17463	1049	2432	Bio Cell 12	897	1705
201D	2855	1301	4156	281	1920	Focal Point	239	1321
201E	3010	647	3657	272	2327	Pervious	230	1621
201F	1628	1210	2838	176	444	Pervious	150	307
TOTAL TREATED	27385	15700	43085					
UNTREATED AREAS								
201A* (within re-development area)	21348	6415	27763					
TOTAL UNTREATED	21348	6415	27763					
TREATMENT %	56.19%	70.99%	60.81%					

1. WQV is calculated as 1" over the contributing impervious area plus 0.4" over the contributing landscaped area

2. Minimum area requirements are calculated as 7% contributing impervious area plus 3% contributing landscaped area for bioretention cell and 5% contributing impervious area plus 2% contributing landscaped area for underdrained soil filter.

Stage-Area-Storage for Pond 11P: BIO-11

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
72.50	995	0
72.55	995	20
72.60	995	40
72.65	995	60
72.70	995	80
72.75	995	100
72.80	995	119
72.85	995	139
72.90	995	159
72.95	995	179
73.00	995	199
73.05	995	219
73.10	995	239
73.15	995	259
73.20	995	279
73.25	995	299
73.30	995	318
73.35	995	338
73.40	995	358
73.45	995	378
73.50	995	398
73.55	995	414
73.60	995	431
73.65	995	447
73.70	995	464
73.75	995	480
73.80	995	497
73.85	995	513
73.90	995	529
73.95	995	546
74.00	995	562
74.05	995	579
74.10	995	595
74.15	995	611
74.20	995	628
74.25	995	644
74.30	995	661
74.35	995	677
74.40	995	694
74.45	995	710
74.50	995	726
74.55	995	743
74.60	995	759
74.65	995	776
74.70	995	792
74.75	995	808
74.80	995	825
74.85	995	841
74.90	995	858
74.95	995	874
75.00	995	891
75.05	1,010	941
75.10	1,024	991
75.15	1,039	1,043
75.20	1,053	1,095
75.25	1,068	1,148
75.30	1,083	1,202
75.35	1,097	1,257
75.40	1,112	1,312
75.45	1,126	1,368
75.50	1,141	1,425
75.55	1,156	1,482
75.60	1,170	1,540
75.65	1,185	1,599
75.70	1,199	1,659
75.75	1,214	1,719
75.80	1,229	1,780
75.85	1,243	1,842
75.90	1,258	1,904
75.95	1,272	1,968
76.00	**1,287**	**2,032**

Stage-Area-Storage for Pond 12P: BIO-12

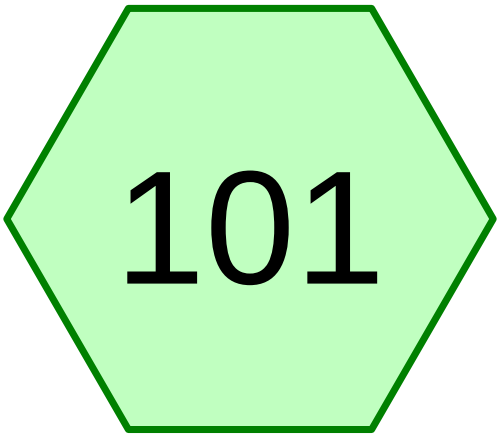
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
73.50	1,705	0
73.55	1,705	34
73.60	1,705	68
73.65	1,705	102
73.70	1,705	136
73.75	1,705	171
73.80	1,705	205
73.85	1,705	239
73.90	1,705	273
73.95	1,705	307
74.00	1,705	341
74.05	1,705	375
74.10	1,705	409
74.15	1,705	443
74.20	1,705	477
74.25	1,705	512
74.30	1,705	546
74.35	1,705	580
74.40	1,705	614
74.45	1,705	648
74.50	1,705	682
74.55	1,705	710
74.60	1,705	738
74.65	1,705	766
74.70	1,705	795
74.75	1,705	823
74.80	1,705	851
74.85	1,705	879
74.90	1,705	907
74.95	1,705	935
75.00	1,705	963
75.05	1,705	991
75.10	1,705	1,020
75.15	1,705	1,048
75.20	1,705	1,076
75.25	1,705	1,104
75.30	1,705	1,132
75.35	1,705	1,160
75.40	1,705	1,188
75.45	1,705	1,217
75.50	1,705	1,245
75.55	1,705	1,273
75.60	1,705	1,301
75.65	1,705	1,329
75.70	1,705	1,357
75.75	1,705	1,385
75.80	1,705	1,413
75.85	1,705	1,442
75.90	1,705	1,470
75.95	1,705	1,498
76.00	1,705	1,526
76.05	1,726	1,612
76.10	1,748	1,699
76.15	1,769	1,787
76.20	1,791	1,876
76.25	1,812	1,966
76.30	1,833	2,057
76.35	1,855	2,149
76.40	1,876	2,242
76.45	1,898	2,337
76.50	1,919	2,432
76.55	1,940	2,528
76.60	1,962	2,626
76.65	1,983	2,725
76.70	2,005	2,824
76.75	2,026	2,925
76.80	2,047	3,027
76.85	2,069	3,130
76.90	2,090	3,234
76.95	2,112	3,339
77.00	2,133	3,445
77.05	2,155	3,552
77.10	2,177	3,660
77.15	2,200	3,770
77.20	2,222	3,880
77.25	**2,244**	**3,992**

Orifice Sizing 11P		Units
Calculate Orifice from Filter Area		
Y=0.035x^0.4599 (decimal)		0.8371
x= Filter surface area in square feet	995	
Y=Orifice diameter (inches)		13/16
Calculate Orifice from Water Quality Volume		
Y=0.0137x^0.5372		0
x= Water quality volume in cubic feet		
Y=Orifice diameter (inches)		0

Orifice Sizing 12P		Units
Calculate Orifice from Filter Area		
Y=0.035x^0.4599 (decimal)		1.0724
x= Filter surface area in square feet	1705	
Y=Orifice diameter (inches)		1 1/16
Calculate Orifice from Water Quality Volume		
Y=0.0137x^0.5372		0
x= Water quality volume in cubic feet		
Y=Orifice diameter (inches)		0

ATTACHMENT D - HYDROCAD RUNOFF AND ROUTING CALCULATIONS

ATTACHMENT D (I) -PREDEVELOPMENT MODEL RESULTS



Subcatchment 101

Subcat Reach Pond Link

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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 101: Subcatchment 101 Runoff Area=192,792 sf 41.40% Impervious Runoff Depth=1.60"
Flow Length=252' Tc=14.5 min CN=84 Runoff=6.32 cfs 0.590 af

Total Runoff Area = 4.426 ac Runoff Volume = 0.590 af Average Runoff Depth = 1.60"
58.60% Pervious = 2.594 ac 41.40% Impervious = 1.832 ac

Summary for Subcatchment 101: Subcatchment 101

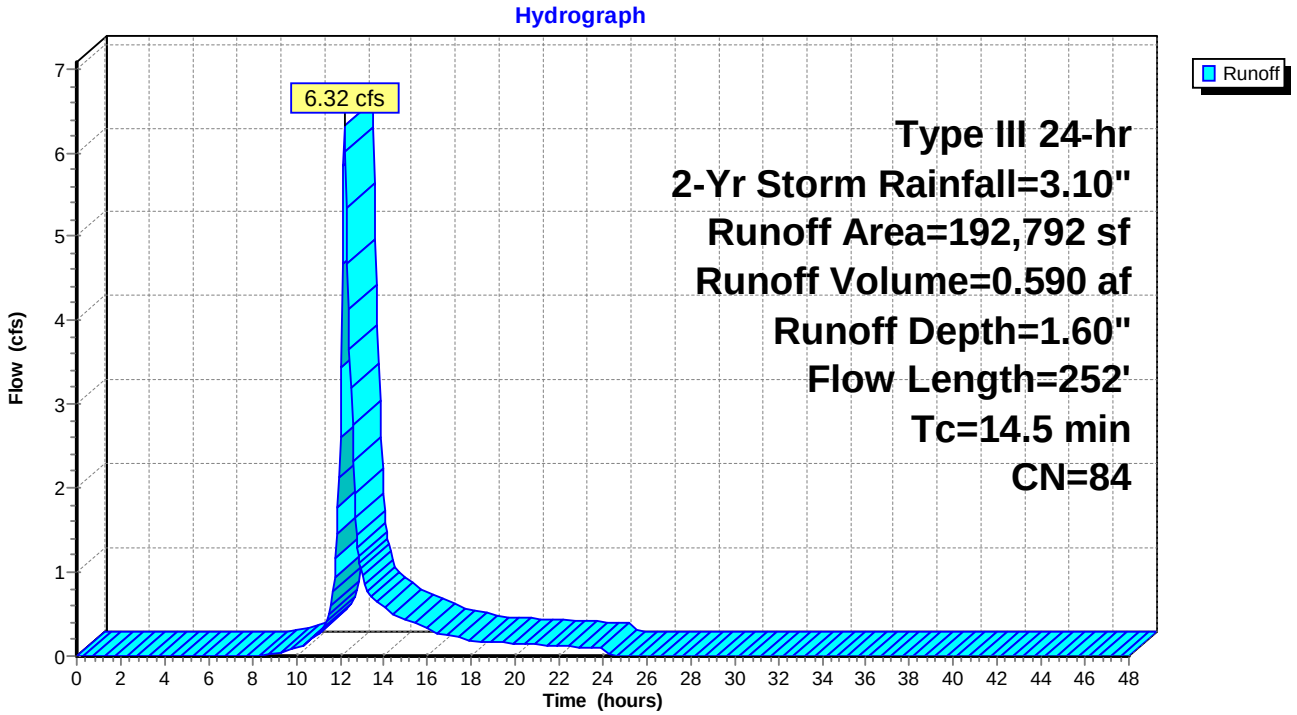
Runoff = 6.32 cfs @ 12.21 hrs, Volume= 0.590 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	79,817	98	Impervious Roofs and Pavement
	2,578	96	Gravel surface, HSG C
	33,318	70	Woods, Good, HSG C
	77,079	74	>75% Grass cover, Good, HSG C
	192,792	84	Weighted Average
	112,975		58.60% Pervious Area
	79,817		41.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	60	0.0220	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	192	0.1400	6.02		**Shallow Concentrated Flow, Woods/Grass** Unpaved Kv= 16.1 fps
14.5	252	Total			

Subcatchment 101: Subcatchment 101



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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 101: Subcatchment 101 Runoff Area=192,792 sf 41.40% Impervious Runoff Depth=2.91"
Flow Length=252' Tc=14.5 min CN=84 Runoff=11.47 cfs 1.072 af

Total Runoff Area = 4.426 ac Runoff Volume = 1.072 af Average Runoff Depth = 2.91"
58.60% Pervious = 2.594 ac 41.40% Impervious = 1.832 ac

Summary for Subcatchment 101: Subcatchment 101

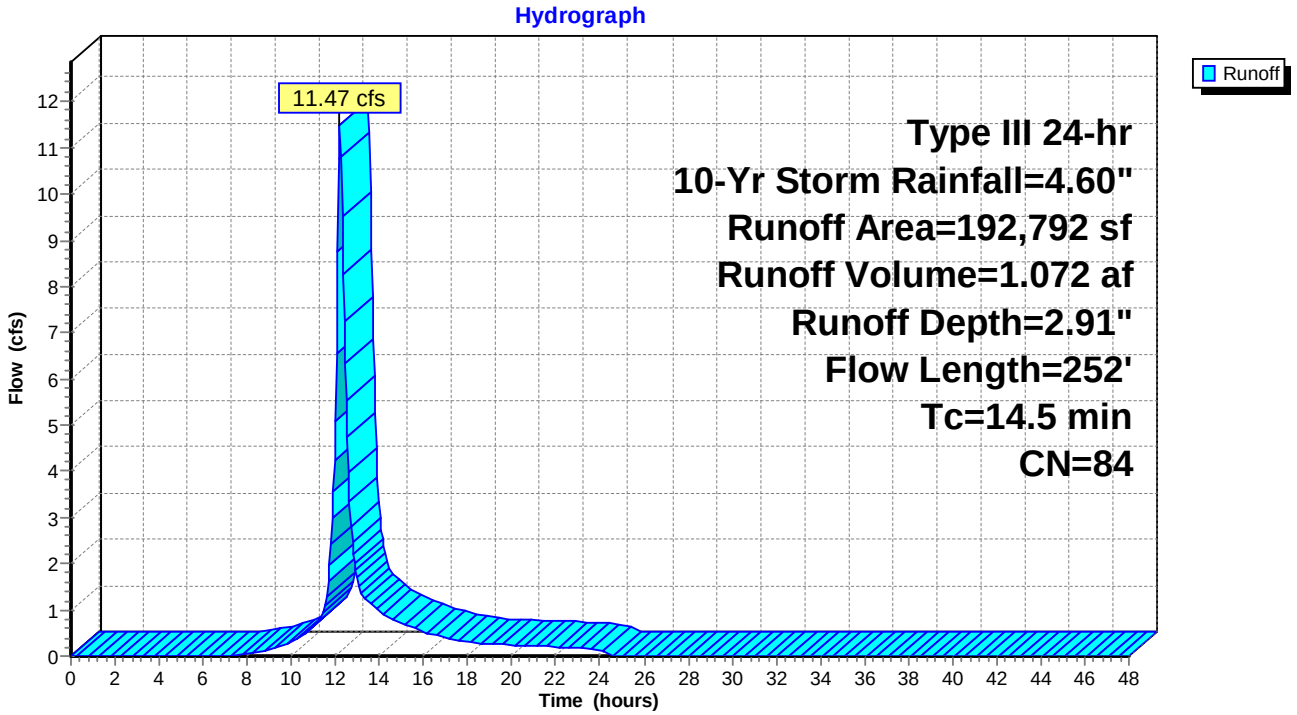
Runoff = 11.47 cfs @ 12.20 hrs, Volume= 1.072 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Yr Storm Rainfall=4.60"

	Area (sf)	CN	Description
*	79,817	98	Impervious Roofs and Pavement
	2,578	96	Gravel surface, HSG C
	33,318	70	Woods, Good, HSG C
	77,079	74	>75% Grass cover, Good, HSG C
	192,792	84	Weighted Average
	112,975		58.60% Pervious Area
	79,817		41.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	60	0.0220	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	192	0.1400	6.02		**Shallow Concentrated Flow, Woods/Grass** Unpaved Kv= 16.1 fps
14.5	252	Total			

Subcatchment 101: Subcatchment 101



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 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 101: Subcatchment 101 Runoff Area=192,792 sf 41.40% Impervious Runoff Depth=4.01"
Flow Length=252' Tc=14.5 min CN=84 Runoff=15.70 cfs 1.479 af

Total Runoff Area = 4.426 ac Runoff Volume = 1.479 af Average Runoff Depth = 4.01"
58.60% Pervious = 2.594 ac 41.40% Impervious = 1.832 ac

Summary for Subcatchment 101: Subcatchment 101

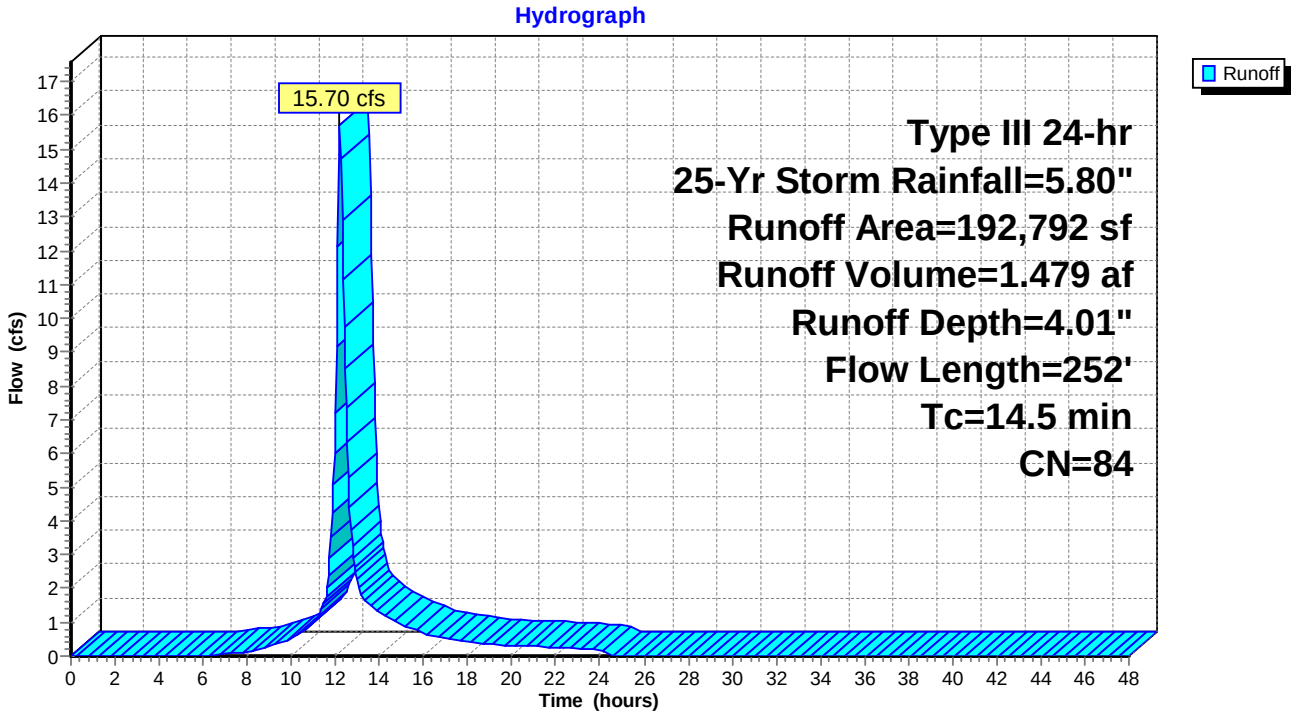
Runoff = 15.70 cfs @ 12.20 hrs, Volume= 1.479 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Yr Storm Rainfall=5.80"

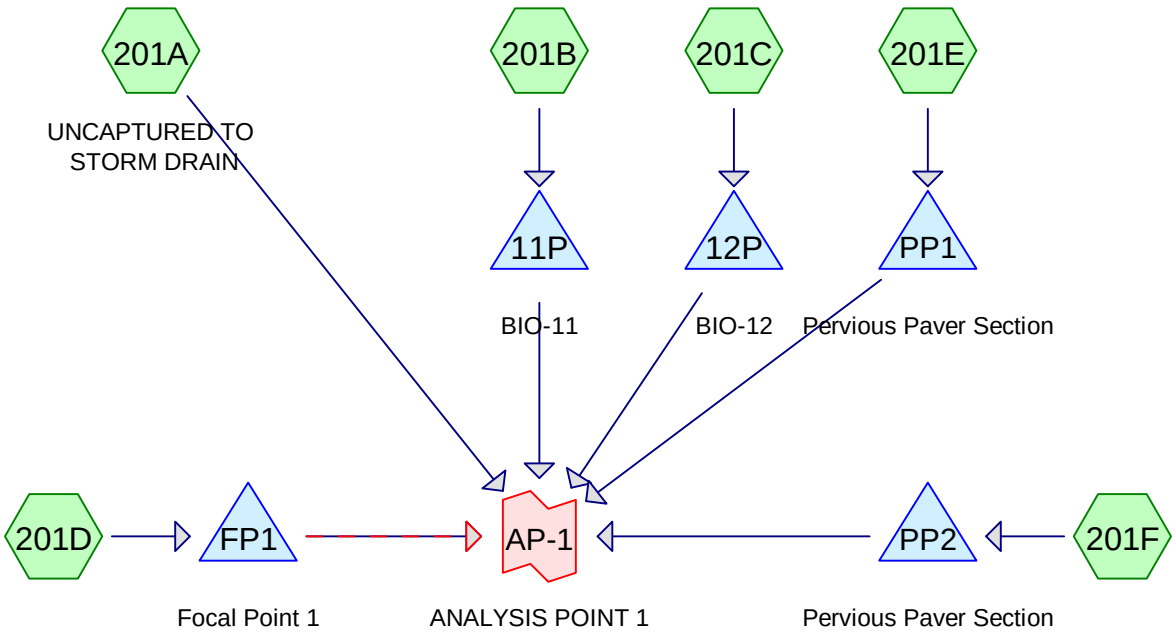
	Area (sf)	CN	Description
*	79,817	98	Impervious Roofs and Pavement
	2,578	96	Gravel surface, HSG C
	33,318	70	Woods, Good, HSG C
	77,079	74	>75% Grass cover, Good, HSG C
	192,792	84	Weighted Average
	112,975		58.60% Pervious Area
	79,817		41.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	60	0.0220	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	192	0.1400	6.02		**Shallow Concentrated Flow, Woods/Grass** Unpaved Kv= 16.1 fps
14.5	252	Total			

Subcatchment 101: Subcatchment 101



ATTACHMENT D (II) -POSTDEVELOPMENT MODEL RESULTS



Subcat Reach Pond Link

Routing Diagram for 19-033 Riverton Park POST-DEV-2024
Prepared by Atlantic Resource Consultants, Printed 7/18/2024
HydroCAD® 10.00-22 s/n 08018 © 2018 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 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 201A: UNCAPTURED TO Runoff Area=149,560 sf 41.80% Impervious Runoff Depth=1.60"
Flow Length=252' Tc=14.5 min CN=84 Runoff=4.92 cfs 0.457 af

Subcatchment 201B: Runoff Area=14,971 sf 70.51% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=91 Runoff=0.86 cfs 0.062 af

Subcatchment 201C: Runoff Area=17,463 sf 53.46% Impervious Runoff Depth=1.83"
Tc=6.0 min CN=87 Runoff=0.86 cfs 0.061 af

Subcatchment 201D: Runoff Area=4,156 sf 68.70% Impervious Runoff Depth=2.08"
Tc=6.0 min CN=90 Runoff=0.23 cfs 0.017 af

Subcatchment 201E: Runoff Area=3,657 sf 82.31% Impervious Runoff Depth=2.45"
Tc=6.0 min CN=94 Runoff=0.23 cfs 0.017 af

Subcatchment 201F: Runoff Area=2,838 sf 57.36% Impervious Runoff Depth=1.91"
Tc=6.0 min CN=88 Runoff=0.15 cfs 0.010 af

Pond 11P: BIO-11 Peak Elev=75.52' Storage=1,445 cf Inflow=0.86 cfs 0.062 af
Outflow=0.08 cfs 0.062 af

Pond 12P: BIO-12 Peak Elev=76.02' Storage=1,566 cf Inflow=0.86 cfs 0.061 af
Outflow=0.04 cfs 0.061 af

Pond FP1: Focal Point 1 Peak Elev=78.89' Storage=53 cf Inflow=0.23 cfs 0.017 af
Primary=0.05 cfs 0.014 af Secondary=0.18 cfs 0.003 af Outflow=0.23 cfs 0.017 af

Pond PP1: Pervious Paver Section Peak Elev=73.65' Storage=131 cf Inflow=0.23 cfs 0.017 af
Outflow=0.15 cfs 0.017 af

Pond PP2: Pervious Paver Section Peak Elev=72.06' Storage=96 cf Inflow=0.15 cfs 0.010 af
Outflow=0.09 cfs 0.010 af

Link AP-1: ANALYSIS POINT 1 Inflow=5.37 cfs 0.624 af
Primary=5.37 cfs 0.624 af

Total Runoff Area = 4.423 ac Runoff Volume = 0.624 af Average Runoff Depth = 1.69"
53.33% Pervious = 2.359 ac 46.67% Impervious = 2.064 ac

Summary for Subcatchment 201A: UNCAPTURED TO STORM DRAIN

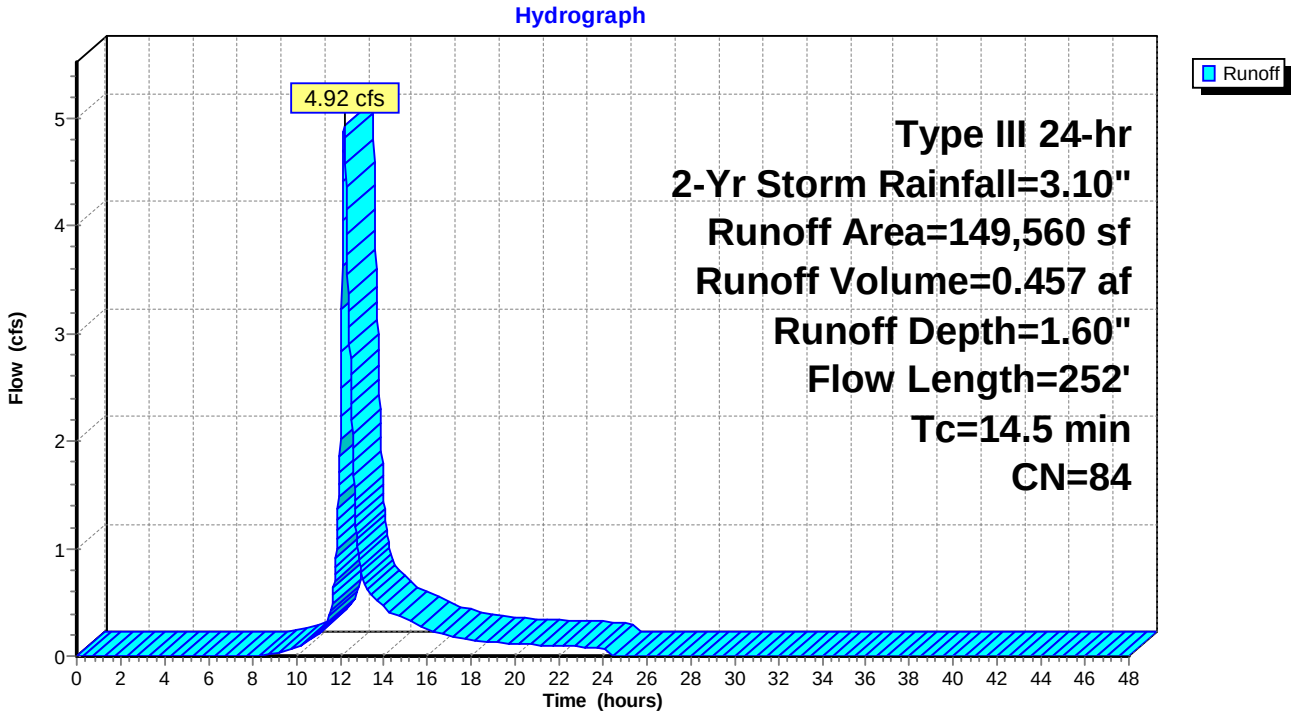
Runoff = 4.92 cfs @ 12.20 hrs, Volume= 0.457 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	62,518	98	Impervious
	2,578	96	Gravel surface, HSG C
	51,146	74	>75% Grass cover, Good, HSG C
	33,318	70	Woods, Good, HSG C
	149,560	84	Weighted Average
	87,042		58.20% Pervious Area
	62,518		41.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	60	0.0220	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.10"
0.5	192	0.1400	6.02		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
14.5	252	Total			

Subcatchment 201A: UNCAPTURED TO STORM DRAIN



Summary for Subcatchment 201B:

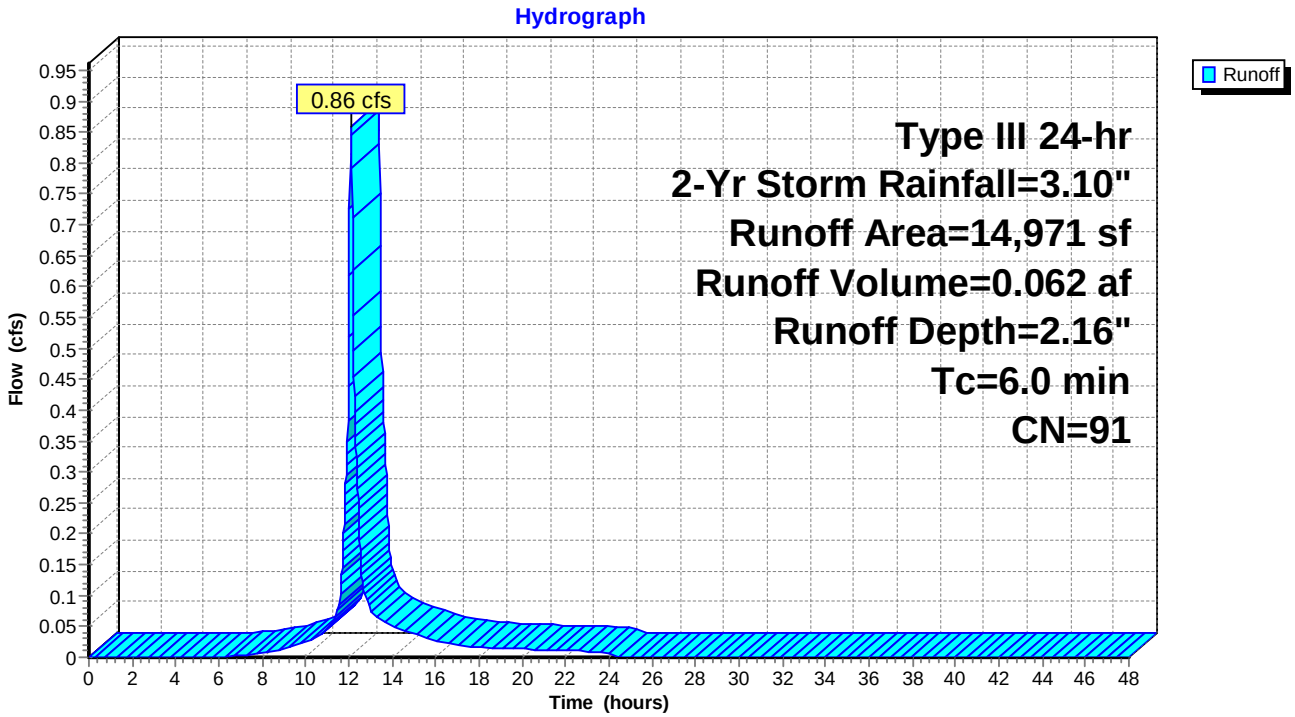
Runoff = 0.86 cfs @ 12.09 hrs, Volume= 0.062 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	10,556	98	Impervious
	4,415	74	>75% Grass cover, Good, HSG C
	14,971	91	Weighted Average
	4,415		29.49% Pervious Area
	10,556		70.51% Impervious Area

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

Subcatchment 201B:



Summary for Subcatchment 201C:

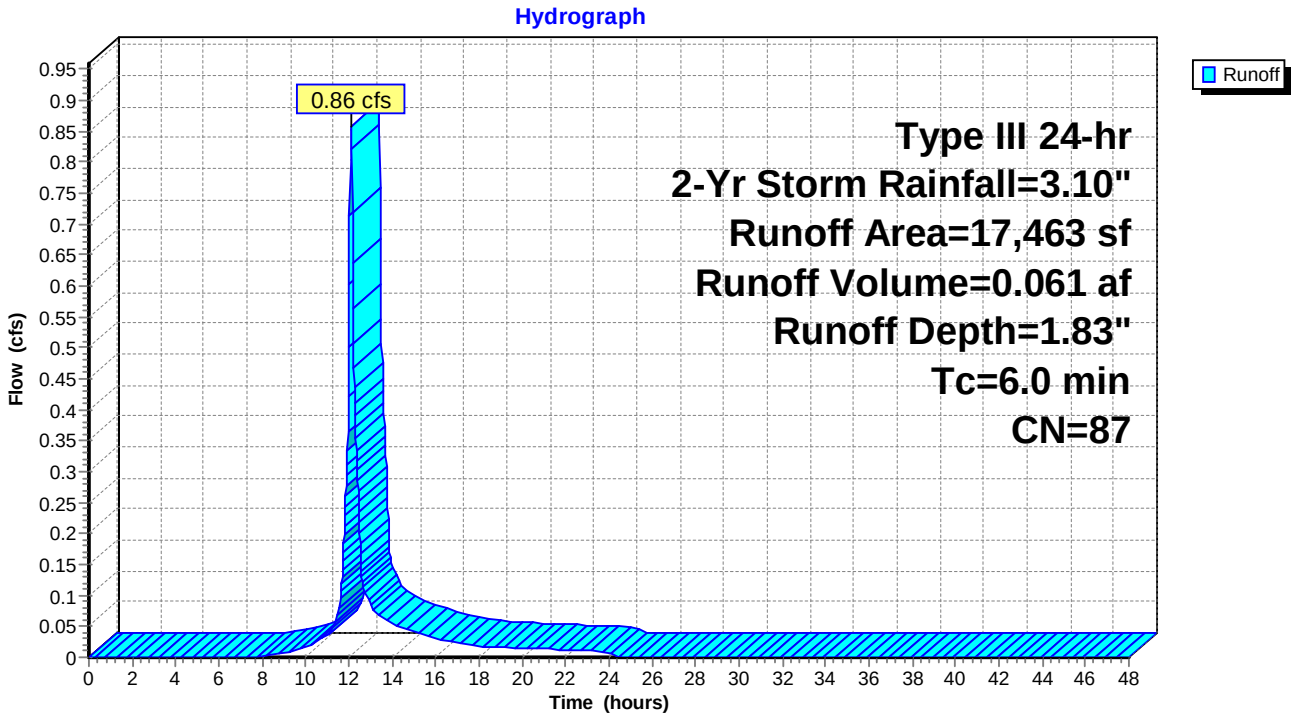
Runoff = 0.86 cfs @ 12.09 hrs, Volume= 0.061 af, Depth= 1.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	9,336	98	Impervious
	8,127	74	>75% Grass cover, Good, HSG C
	17,463	87	Weighted Average
	8,127		46.54% Pervious Area
	9,336		53.46% Impervious Area

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

Subcatchment 201C:



Summary for Subcatchment 201D:

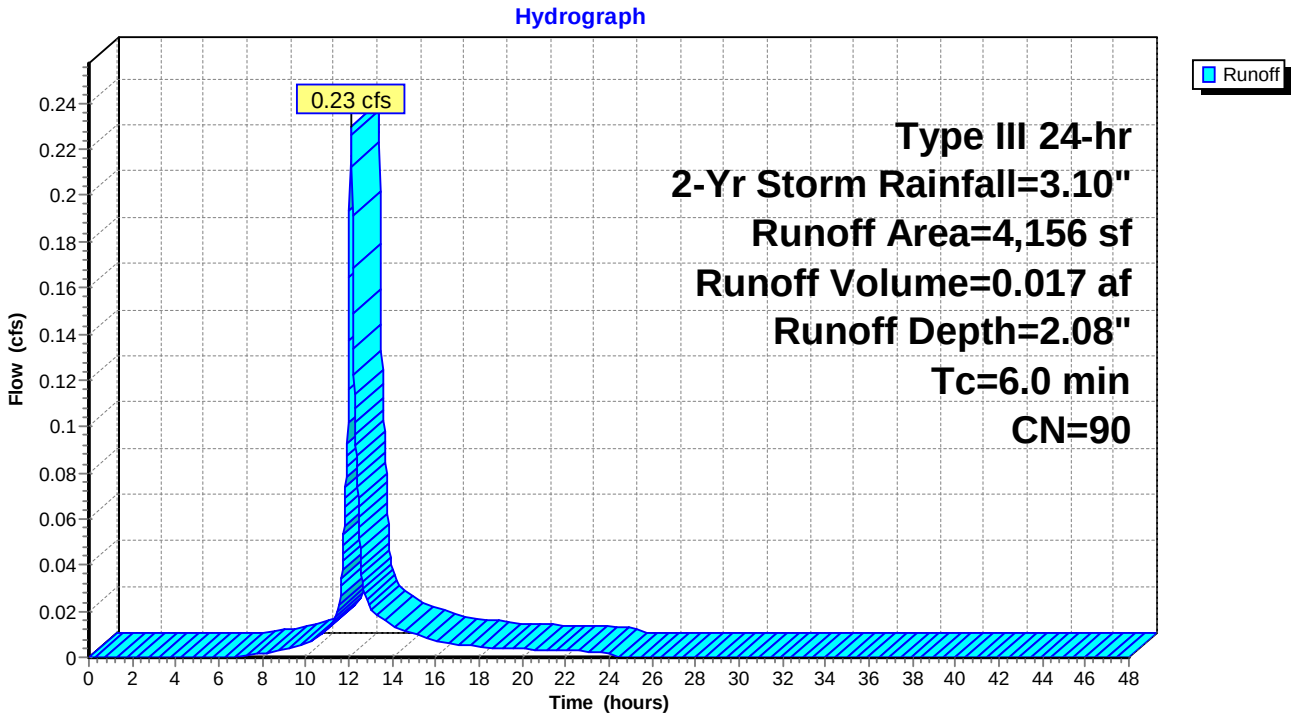
Runoff = 0.23 cfs @ 12.09 hrs, Volume= 0.017 af, Depth= 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	2,855	98	Paved Walkways and Parking
	1,301	74	>75% Grass cover, Good, HSG C
	4,156	90	Weighted Average
	1,301		31.30% Pervious Area
	2,855		68.70% Impervious Area

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

Subcatchment 201D:



Summary for Subcatchment 201E:

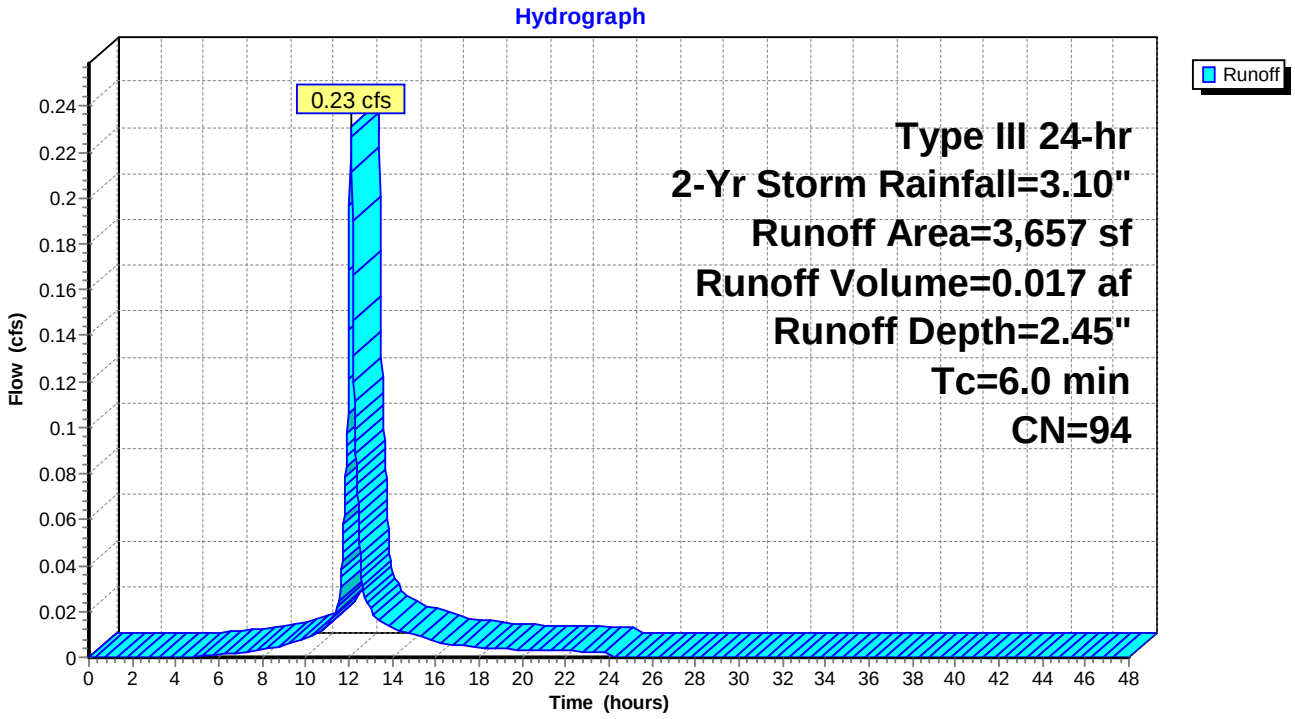
Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	3,010	98	Paver Plaza, HSG C
*	647	74	Landscaped
	3,657	94	Weighted Average
	647		17.69% Pervious Area
	3,010		82.31% Impervious Area

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

Subcatchment 201E:



Summary for Subcatchment 201F:

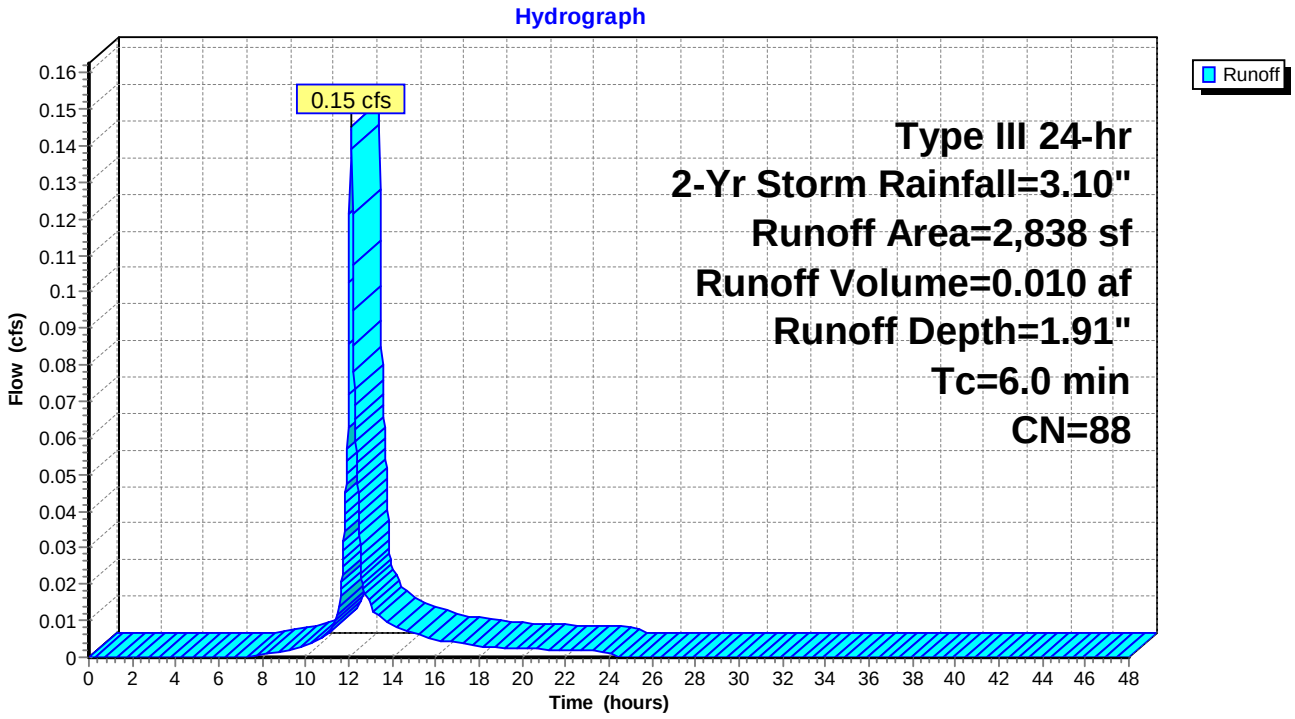
Runoff = 0.15 cfs @ 12.09 hrs, Volume= 0.010 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Yr Storm Rainfall=3.10"

	Area (sf)	CN	Description
*	1,628	98	Paver plaza and walkways
*	1,210	74	Landscaped area
	2,838	88	Weighted Average
	1,210		42.64% Pervious Area
	1,628		57.36% Impervious Area

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

Subcatchment 201F:



Summary for Pond 11P: BIO-11

Inflow Area = 0.344 ac, 70.51% Impervious, Inflow Depth = 2.16" for 2-Yr Storm event
Inflow = 0.86 cfs @ 12.09 hrs, Volume= 0.062 af
Outflow = 0.08 cfs @ 13.03 hrs, Volume= 0.062 af, Atten= 91%, Lag= 56.5 min
Primary = 0.08 cfs @ 13.03 hrs, Volume= 0.062 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 75.52' @ 13.03 hrs Surf.Area= 1,146 sf Storage= 1,445 cf

Plug-Flow detention time= 360.1 min calculated for 0.062 af (100% of inflow)
Center-of-Mass det. time= 360.0 min (1,163.7 - 803.7)

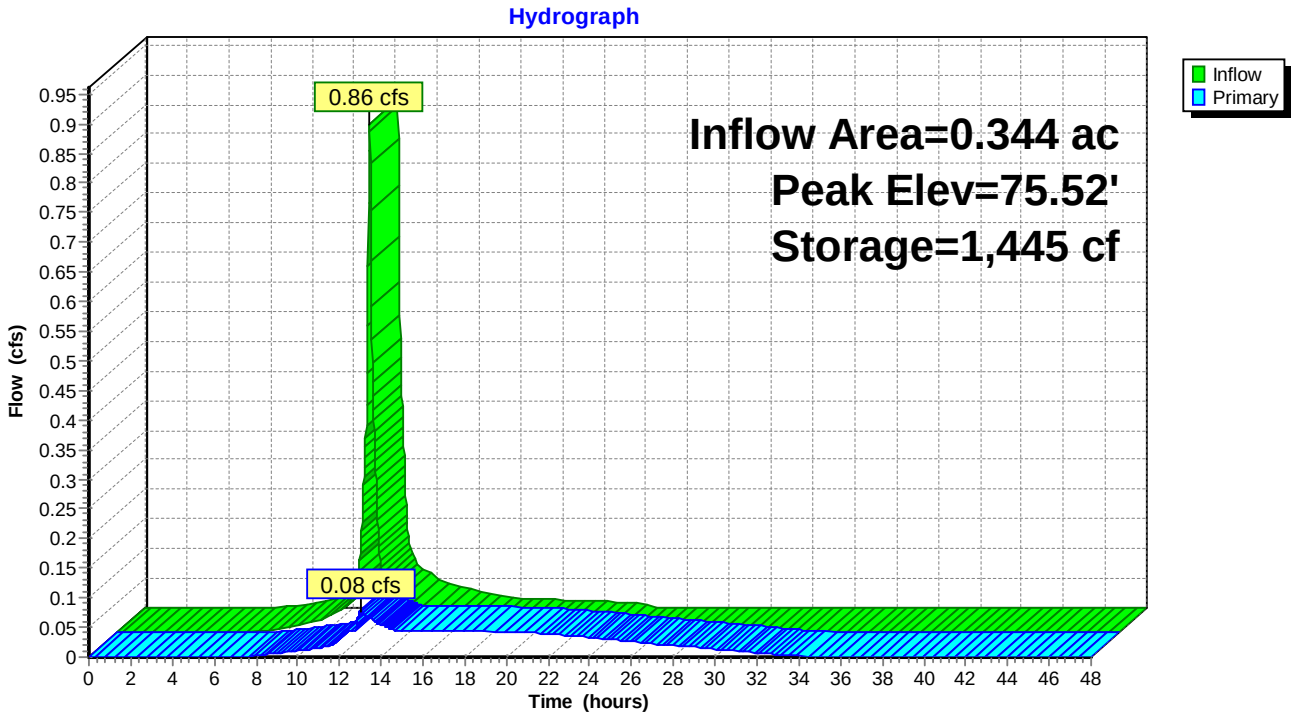
Volume	Invert	Avail.Storage	Storage Description
#1	72.50'	2,032 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
72.50	995	0.0	0	0
73.00	995	40.0	199	199
73.50	995	40.0	199	398
74.00	995	33.0	164	562
74.50	995	33.0	164	726
75.00	995	33.0	164	891
76.00	1,287	100.0	1,141	2,032

Device	Routing	Invert	Outlet Devices
#1	Primary	72.50'	**8.0" Round Culvert** L= 44.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 72.50' / 72.06' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	72.50'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	75.50'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 13.03 hrs HW=75.52' (Free Discharge)
└**1=Culvert** (Passes 0.07 cfs of 2.17 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 8.31 fps)
  └**3=Orifice/Grate** (Weir Controls 0.03 cfs @ 0.44 fps)

Pond 11P: BIO-11



Summary for Pond 12P: BIO-12

Inflow Area = 0.401 ac, 53.46% Impervious, Inflow Depth = 1.83" for 2-Yr Storm event
Inflow = 0.86 cfs @ 12.09 hrs, Volume= 0.061 af
Outflow = 0.04 cfs @ 14.97 hrs, Volume= 0.061 af, Atten= 95%, Lag= 172.7 min
Primary = 0.04 cfs @ 14.97 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 76.02' @ 14.97 hrs Surf.Area= 1,715 sf Storage= 1,566 cf

Plug-Flow detention time= 490.1 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 489.4 min (1,309.6 - 820.2)

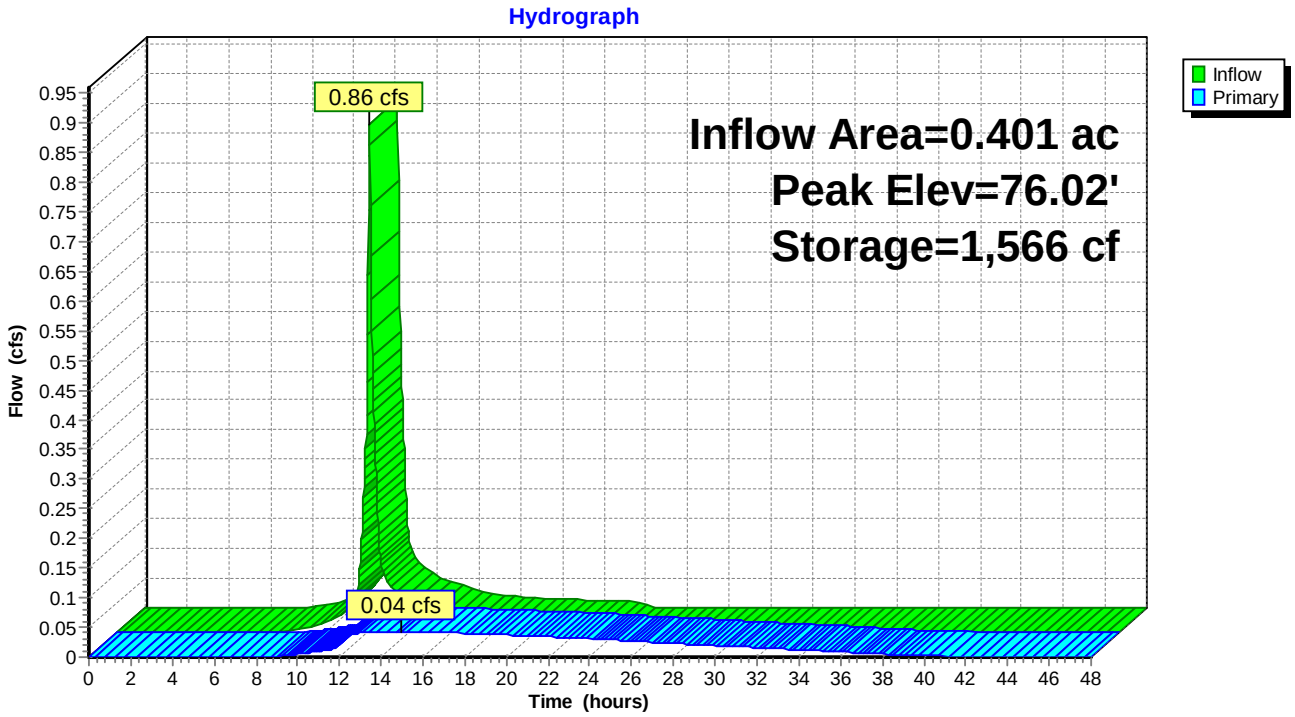
Volume	Invert	Avail.Storage	Storage Description
#1	73.50'	3,992 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.50	1,705	0.0	0	0
74.00	1,705	40.0	341	341
74.50	1,705	40.0	341	682
75.00	1,705	33.0	281	963
75.50	1,705	33.0	281	1,245
76.00	1,705	33.0	281	1,526
77.00	2,133	100.0	1,919	3,445
77.25	2,244	100.0	547	3,992

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	**8.0" Round Culvert** L= 142.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 73.50' / 70.05' S= 0.0243 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.35 sf
#2	Device 1	73.50'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	76.50'	**8.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 14.97 hrs HW=76.02' (Free Discharge)
└**1=Culvert** (Passes 0.04 cfs of 1.96 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.59 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 12P: BIO-12



Summary for Pond FP1: Focal Point 1

Inflow Area = 0.095 ac, 68.70% Impervious, Inflow Depth = 2.08" for 2-Yr Storm event
Inflow = 0.23 cfs @ 12.09 hrs, Volume= 0.017 af
Outflow = 0.23 cfs @ 12.10 hrs, Volume= 0.017 af, Atten= 1%, Lag= 0.5 min
Primary = 0.05 cfs @ 11.76 hrs, Volume= 0.014 af
Secondary = 0.18 cfs @ 12.10 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 78.89' @ 12.10 hrs Surf.Area= 21 sf Storage= 53 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.7 min (811.8 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1	76.25'	9 cf	**3.00'W x 7.00'L x 2.25'H Focal Point 1** 47 cf Overall x 20.0% Voids
#2	78.50'	60 cf	**surface bowl (Prismatic)** Listed below (Recalc) -Impervious
		70 cf	Total Available Storage

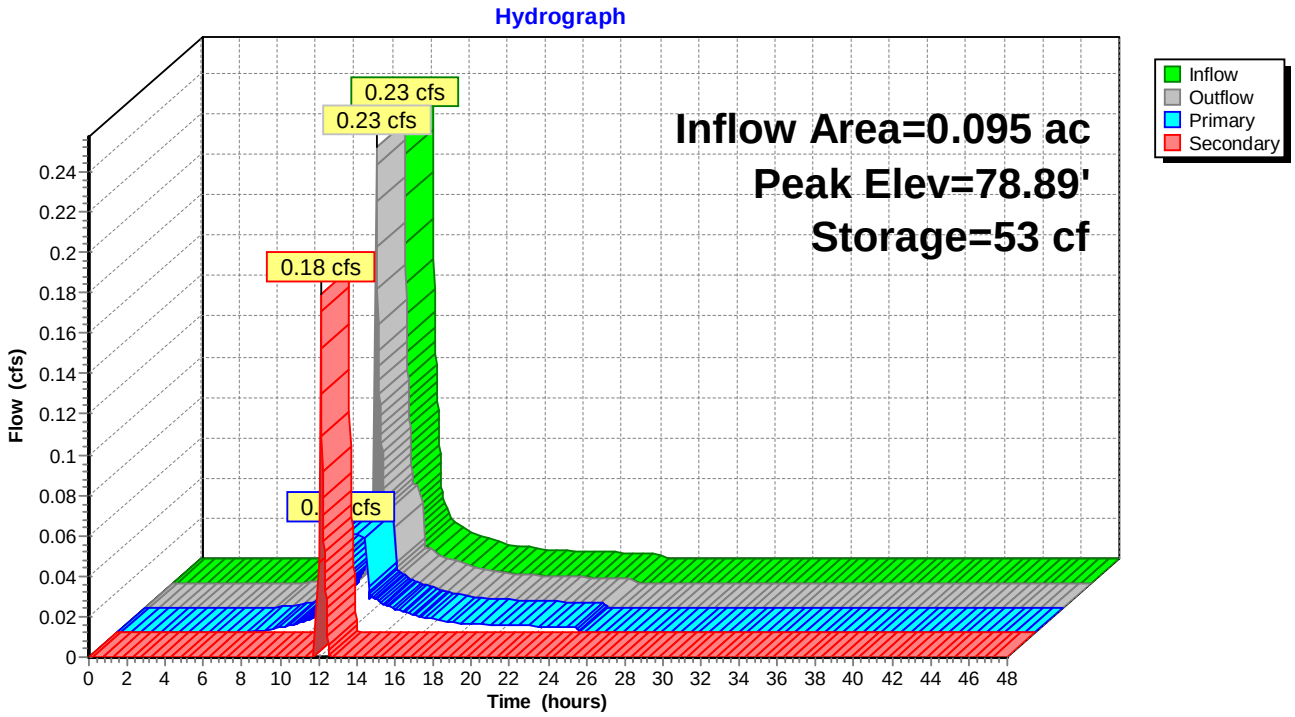
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.50	88	0	0
79.00	153	60	60

Device	Routing	Invert	Outlet Devices
#1	Primary	76.25'	**100.000 in/hr Exfiltration FP over Surface area** Phase-In= 0.10'
#2	Device 3	78.83'	**15.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	74.00'	**8.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 74.00' / 73.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.05 cfs @ 11.76 hrs HW=76.40' (Free Discharge)
└**1=Exfiltration FP** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.18 cfs @ 12.10 hrs HW=78.89' (Free Discharge)
└**3=Culvert** (Passes 0.18 cfs of 3.59 cfs potential flow)
└**2=Orifice/Grate** (Weir Controls 0.18 cfs @ 0.78 fps)

Pond FP1: Focal Point 1



Summary for Pond PP1: Pervious Paver Section

Inflow Area = 0.084 ac, 82.31% Impervious, Inflow Depth = 2.45" for 2-Yr Storm event
Inflow = 0.23 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.15 cfs @ 12.18 hrs, Volume= 0.017 af, Atten= 35%, Lag= 5.5 min
Primary = 0.15 cfs @ 12.18 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 73.65' @ 12.18 hrs Surf.Area= 1,350 sf Storage= 131 cf

Plug-Flow detention time= 37.1 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 36.9 min (825.1 - 788.2)

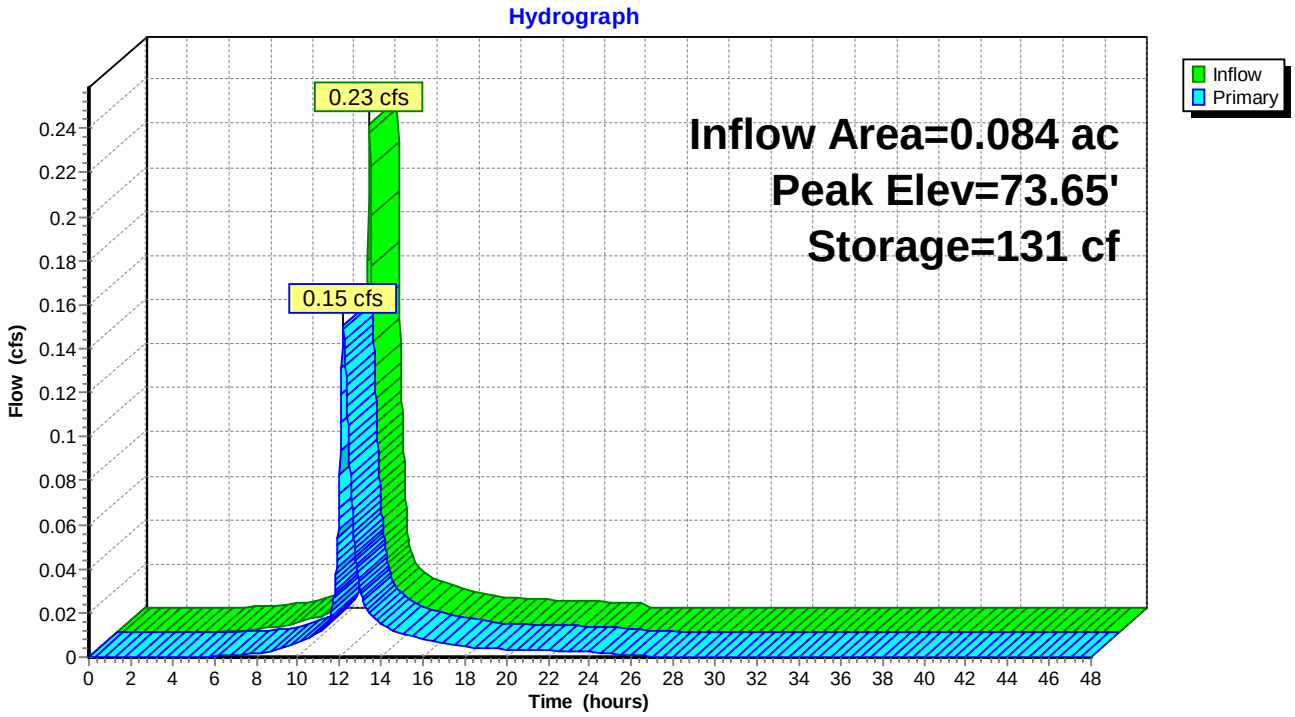
Volume	Invert	Avail.Storage	Storage Description
#1	73.35'	1,391 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
73.35	1,350	0.0	0	0
73.94	1,350	33.0	263	263
74.27	1,350	15.0	67	330
74.60	1,350	33.0	147	477
76.00	1,350	33.0	624	1,100
76.30	1,350	5.0	20	1,121
76.50	1,350	100.0	270	1,391

Device	Routing	Invert	Outlet Devices
#1	Primary	73.35'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.15 cfs @ 12.18 hrs HW=73.64' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.15 cfs @ 1.85 fps)

Pond PP1: Pervious Paver Section



Summary for Pond PP2: Pervious Paver Section

Inflow Area = 0.065 ac, 57.36% Impervious, Inflow Depth = 1.91" for 2-Yr Storm event
Inflow = 0.15 cfs @ 12.09 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.20 hrs, Volume= 0.010 af, Atten= 40%, Lag= 6.6 min
Primary = 0.09 cfs @ 12.20 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 72.06' @ 12.20 hrs Surf.Area= 1,410 sf Storage= 96 cf

Plug-Flow detention time= 46.0 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 45.8 min (862.1 - 816.4)

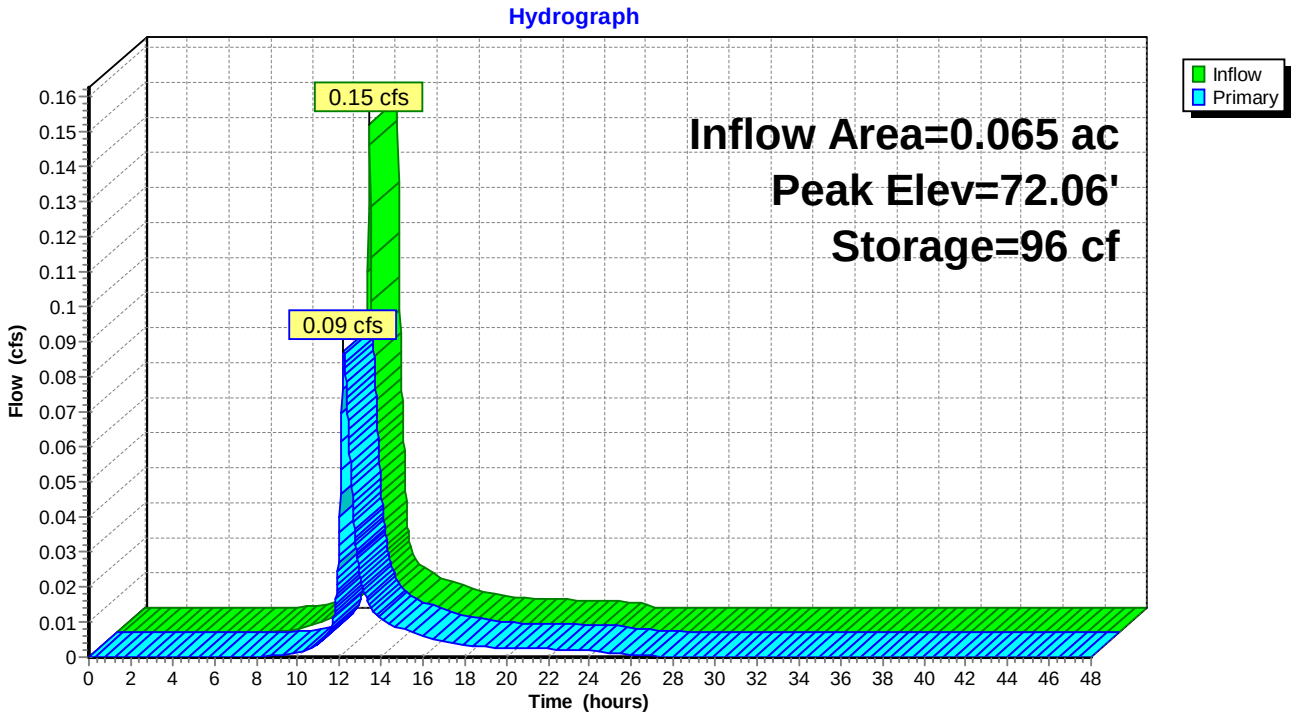
Volume	Invert	Avail.Storage	Storage Description
#1	71.85'	1,452 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
71.85	1,410	0.0	0	0
72.44	1,410	33.0	275	275
72.77	1,410	15.0	70	344
73.10	1,410	33.0	154	498
74.50	1,410	33.0	651	1,149
74.80	1,410	5.0	21	1,170
75.00	1,410	100.0	282	1,452

Device	Routing	Invert	Outlet Devices
#1	Primary	71.85'	**4.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.09 cfs @ 12.20 hrs HW=72.06' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.09 cfs @ 1.54 fps)

Pond PP2: Pervious Paver Section

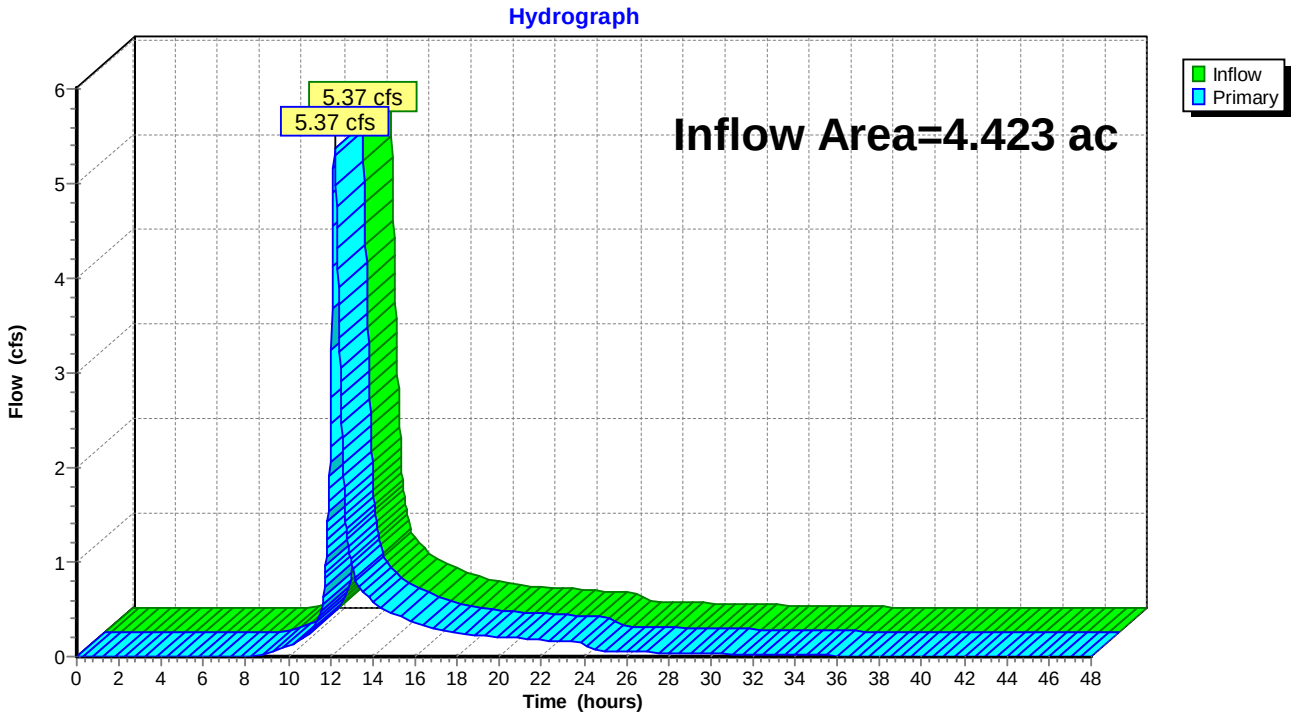


Summary for Link AP-1: ANALYSIS POINT 1

Inflow Area = 4.423 ac, 46.67% Impervious, Inflow Depth = 1.69" for 2-Yr Storm event
Inflow = 5.37 cfs @ 12.20 hrs, Volume= 0.624 af
Primary = 5.37 cfs @ 12.20 hrs, Volume= 0.624 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link AP-1: ANALYSIS POINT 1



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 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 201A: UNCAPTURED TO Runoff Area=149,560 sf 41.80% Impervious Runoff Depth=2.91"
Flow Length=252' Tc=14.5 min CN=84 Runoff=8.95 cfs 0.832 af

Subcatchment 201B: Runoff Area=14,971 sf 70.51% Impervious Runoff Depth=3.59"
Tc=6.0 min CN=91 Runoff=1.39 cfs 0.103 af

Subcatchment 201C: Runoff Area=17,463 sf 53.46% Impervious Runoff Depth=3.19"
Tc=6.0 min CN=87 Runoff=1.48 cfs 0.107 af

Subcatchment 201D: Runoff Area=4,156 sf 68.70% Impervious Runoff Depth=3.49"
Tc=6.0 min CN=90 Runoff=0.38 cfs 0.028 af

Subcatchment 201E: Runoff Area=3,657 sf 82.31% Impervious Runoff Depth=3.91"
Tc=6.0 min CN=94 Runoff=0.36 cfs 0.027 af

Subcatchment 201F: Runoff Area=2,838 sf 57.36% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=88 Runoff=0.25 cfs 0.018 af

Pond 11P: BIO-11 Peak Elev=75.68' Storage=1,640 cf Inflow=1.39 cfs 0.103 af
Outflow=0.86 cfs 0.103 af

Pond 12P: BIO-12 Peak Elev=76.56' Storage=2,555 cf Inflow=1.48 cfs 0.107 af
Outflow=0.16 cfs 0.106 af

Pond FP1: Focal Point 1 Peak Elev=78.92' Storage=57 cf Inflow=0.38 cfs 0.028 af
Primary=0.05 cfs 0.020 af Secondary=0.33 cfs 0.008 af Outflow=0.38 cfs 0.028 af

Pond PP1: Pervious Paver Section Peak Elev=73.79' Storage=194 cf Inflow=0.36 cfs 0.027 af
Outflow=0.22 cfs 0.027 af

Pond PP2: Pervious Paver Section Peak Elev=72.16' Storage=142 cf Inflow=0.25 cfs 0.018 af
Outflow=0.16 cfs 0.018 af

Link AP-1: ANALYSIS POINT 1 Inflow=10.45 cfs 1.114 af
Primary=10.45 cfs 1.114 af

Total Runoff Area = 4.423 ac Runoff Volume = 1.114 af Average Runoff Depth = 3.02"
53.33% Pervious = 2.359 ac 46.67% Impervious = 2.064 ac

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 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 201A: UNCAPTURED TO Runoff Area=149,560 sf 41.80% Impervious Runoff Depth=4.01"
Flow Length=252' Tc=14.5 min CN=84 Runoff=12.24 cfs 1.147 af

Subcatchment 201B: Runoff Area=14,971 sf 70.51% Impervious Runoff Depth=4.76"
Tc=6.0 min CN=91 Runoff=1.82 cfs 0.136 af

Subcatchment 201C: Runoff Area=17,463 sf 53.46% Impervious Runoff Depth=4.33"
Tc=6.0 min CN=87 Runoff=1.98 cfs 0.145 af

Subcatchment 201D: Runoff Area=4,156 sf 68.70% Impervious Runoff Depth=4.65"
Tc=6.0 min CN=90 Runoff=0.50 cfs 0.037 af

Subcatchment 201E: Runoff Area=3,657 sf 82.31% Impervious Runoff Depth=5.10"
Tc=6.0 min CN=94 Runoff=0.46 cfs 0.036 af

Subcatchment 201F: Runoff Area=2,838 sf 57.36% Impervious Runoff Depth=4.43"
Tc=6.0 min CN=88 Runoff=0.33 cfs 0.024 af

Pond 11P: BIO-11 Peak Elev=75.78' Storage=1,760 cf Inflow=1.82 cfs 0.136 af
Outflow=1.60 cfs 0.136 af

Pond 12P: BIO-12 Peak Elev=76.71' Storage=2,841 cf Inflow=1.98 cfs 0.145 af
Outflow=0.70 cfs 0.144 af

Pond FP1: Focal Point 1 Peak Elev=78.94' Storage=60 cf Inflow=0.50 cfs 0.037 af
Primary=0.05 cfs 0.025 af Secondary=0.45 cfs 0.012 af Outflow=0.49 cfs 0.037 af

Pond PP1: Pervious Paver Section Peak Elev=73.91' Storage=249 cf Inflow=0.46 cfs 0.036 af
Outflow=0.26 cfs 0.036 af

Pond PP2: Pervious Paver Section Peak Elev=72.24' Storage=182 cf Inflow=0.33 cfs 0.024 af
Outflow=0.20 cfs 0.024 af

Link AP-1: ANALYSIS POINT 1 Inflow=14.67 cfs 1.524 af
Primary=14.67 cfs 1.524 af

Total Runoff Area = 4.423 ac Runoff Volume = 1.525 af Average Runoff Depth = 4.14"
53.33% Pervious = 2.359 ac 46.67% Impervious = 2.064 ac

ATTACHMENT E – SOIL EVALUATION REPORT

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

6204

August 3, 2020

Mr. Erik Wiberg
R. W. Gillespie & Associates, Inc.
20 Pomerleau Street Suite 100
Biddeford, ME 04005

Re: Soil Evaluation, Proposed Stormwater Locations, Riverton Park, Portland, ME

Dear Erik,

I completed a soil evaluation for the proposed stormwater locations at Riverton Park Portland ME. The soil evaluation was conducted in accordance with Section 7.D.4 of the Stormwater Management Rules. I evaluated four backhoe excavated soil test pits at the staked locations. The soils found on the parcel consisted of fine sandy loam to silty clay loam soils. No seasonal high groundwater watertable was observed. The soil test pit log descriptions are attached.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton L.S.E., C.S.S.
Licensed Site Evaluator #263
Certified Soil Scientist #216

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Riverton Park	R. W. Gillespie & Associates, Inc.	Portland

Exploration Symbol # TP-1 ☒ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	fine sandy loam	friable	dark brown	
10–20	silt loam	friable	brown	
20–50	silty clay loam	firm	olive gray	common distinct
50–80	Limit of Excavation — no water observed			

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
B	C	2	20"	☐	☒	☐

Soil Series/Phase Name: Buxton mud Hydric: ☐ Non-hydric: ☒ Hydrologic Soil Group: C

Exploration Symbol # TP-2 ☒ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	fine sandy loam	friable	dark brown	
10–20	fine sandy loam	friable	brown	
20–40	silty clay loam	firm	olive gray	common distinct
40–90				no water observed
90	Limit of Excavation			

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
B	C	2	18"	☐	☒	☐

Soil Series/Phase Name: Buxton mud Hydric: ☐ Non-hydric: ☒ Hydrologic Soil Group: C

Exploration Symbol # TP-3 ☒ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	fine sandy loam	friable	dark brown	
10–20	fine sandy loam	friable	brown	
20–50	silty clay loam	firm	gray	common distinct
86	Limit of Excavation			

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
B	C	4	24"	☐	☒	☐

Soil Series/Phase Name: Buxton Hydric: ☐ Non-hydric: ☒ Hydrologic Soil Group: C

Exploration Symbol # TP-4 ☒ Test Pit ☐ Boring ☐ Probe

___" Organic horizon thickness Ground surface elev. ___

___" Depth of exploration or to refusal

Depth below mineral soil surface (inches)

	Texture	Consistency	Color	Redox Features
0–10	sandy loam	friable	varies	
10–20	fill asphalt & rocks			
20–40	fine sandy loam	friable	dark brown	
40–50	silty clay loam	firm	gray	common distinct
99	Limit of Excavation			

Soil Details by S.E. ▸▸ / S.S. ▸▸

Soil Classification: Profile	Condition	Slope: Percent	Limiting Factor: Depth	Groundwater	Restrictive Layer	Bedrock
				☐	☐	☐

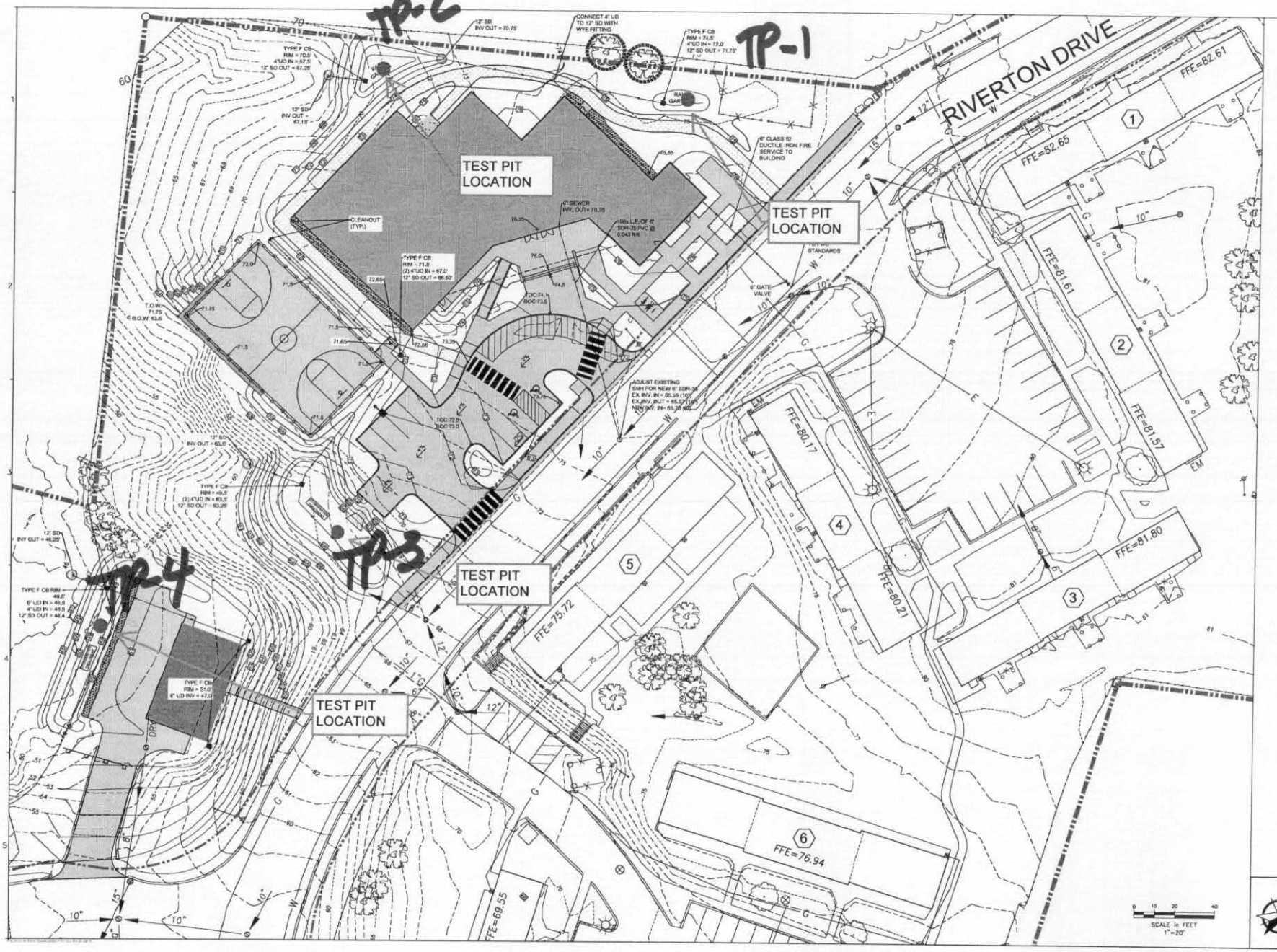
Soil Series/Phase Name: Filled land Hydric: ☒ Non-hydric: ☐ Hydrologic Soil Group: C

INVESTIGATOR INFORMATION AND SIGNATURE

Signature	Date
Mark J. Hampton	July 30, 2020
Name Printed Mark J. Hampton	**Cert/Lic/Reg. #** 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

affix professional seal



CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN

DESIGNER: CWS ARCHITECTS

OWNER: RIVERTON PARK, LP

PROJECT: RIVERTON PARK COMMUNITY CENTER – MAINTENANCE BUILDING

DRAWING: GRADING PLAN COMMUNITY CENTER

REVISIONS

DRAWING NUMBER
C2.1
SCALE: 1" = 20'
DATE: 1/16/2020

ATTACHMENT F - STORMWATER MAINTENANCE MANUAL

RIVERTON PARK
STORMWATER MAINTENANCE PLAN

Maintenance Responsibilities

During construction activities, the maintenance of all stormwater measures will be the direct responsibility of the Contractor. After acceptance by the Owner, the maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book will be the responsibility of Portland Housing Authority. The current contact for facilities maintenance at Portland Housing Authority is:

Richard Biggs, Director of Maintenance,
117 Anderson Street
Portland, Maine 0101
Phone: 207-221-8098
Email: rbiggs@porthouse.org

Notwithstanding any other schedule noted below, general inspections should be conducted quarterly. All post-construction inspections shall be undertaken by a person with post-construction inspection and maintenance documents shall be retained and made available for review by City of Portland upon request. Regular inspection and maintenance of stormwater management BMPs shall be undertaken as follows:

Ditches, Swales, and Riprap Aprons

Open swales and ditches shall be inspected on a monthly basis or after a major rainfall event to assure that debris and/or sediments do not reduce the effectiveness of the system. Debris shall be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper function. Maintenance shall include, but not be limited to, mowing, trimming and removal vegetation in the ditches as required to prevent vegetation from blocking or diverting storm flows, replacement of riprap channel lining to prevent scour of the channel invert, removing vegetation and debris from the culverts.

Vegetated ditches should be mowed at least three times during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be reseeded and mulched immediately.

Riprap ditches and aprons where stone is displaced should be replaced and chinked to assure stability. With time, additional riprap may be added. Vegetation growing through riprap and accumulated sediments and debris should be removed on a bi-annual basis.

Catch Basins

Catch basins should be inspected at a minimum on a bi-annual basis. One inspection should be undertaken as soon as possible after the last snow event of the winter/spring season. Sediment accumulation should be assessed by inspection or measured using a rod to determine the elevation below the outlet pipe. When sediment has accumulated to within one foot of the pipe invert, catch basin cleaning should be scheduled with a licensed contractor.

Drainage Pipes and Culverts

Culverts and piped drainage systems shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to

repair any erosion damage at the pipe inlet and outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments into the detention/infiltration pond areas as this will reduce the ponds capacity and ability to infiltrate runoff and will hasten the time when the pond must be cleaned/rehabilitated.

Driveways, Walkways and Parking Lots

Accumulations of winter sand along paved surfaces shall be cleared at least once a year, preferably in the spring, to minimize transportation of sediment during rainfall events. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Grading of gravel roads or grading of the gravel shoulders of gravel or paved roads, must be routinely performed to ensure that stormwater drains immediately off the road surface to adjacent buffer areas or stable ditches, and is not impeded by accumulations of graded material on the road shoulder or by excavation of false ditches in the shoulder.

Filtering Drip Strips

Inspections of the filtering drip strips shall be undertaken on a quarterly basis and following significant rainfall events.

The surface stone should be inspected for evidence of displacement, or erosion. Any accumulated debris, leaves, or loose vegetative matter should be removed from the surface to prevent clogging of the void space. The areas adjacent to the filtering drip strips should be inspected for erosion or bare soil that could migrate into the stone or filter media.

Evidence of standing water, or poorly draining media should be noted as this may indicate the need for replacement of the materials.

Bioretention Cells

Inspections of the bioretention cells and underdrained filter shall be conducted on a semi-annual basis and following significant rainfall events. Delayed or poor maintenance practices can result in loss of treatment capacity. Records should be kept of all maintenance operations to help plan future work and identify problem areas.

The basin embankments should be maintained to preserve their integrity including, but not limited to, vegetation maintenance (mowing, control of woody vegetation), rodent control, erosion control and repair, and outlet control structure maintenance and repair. The embankment should be inspected annually for erosion or destabilization of side slopes, embankment settling and other signs of overtop structural failure.

Basin plantings and vegetation should be maintained on a quarterly basis. Regular maintenance activities should include cutting back shrub plantings where necessary to prevent excessive woody growth, removal of dead vegetation and re-planting to maintain good cover and root spread. Shrub or grass clippings should be removed to minimize the amount of organic material accumulation in the basin.

Sediment and debris should be removed from the sediment forebay at least annually, where applicable.

Bioretention cells and underdrained filters shall not be used for snow storage area. Snow storage should be sited so that snow melt flows to a pretreatment BMP before reaching the infiltration area.

Vehicular equipment used to maintain or rehabilitate the basins should work from the cell perimeter and not enter the basin floor area, as this would compact the soil surface and reduce infiltration.

The surface of the basins may clog with fine sediments over time. Maintenance of good plant or grass cover should minimize this; however, if ponded runoff does not infiltrate within 48 hours, rototilling the top of the soil bed may be required to reestablish the soils infiltration capacity.

Pervious Pavers

During construction, vehicles with muddy wheels should be prevented from accessing onto areas intended for pervious pavement. Frequent inspections should be undertaken during the first few months following construction of the pervious pavers to ensure that they are functioning correctly. Inspections shall be made after significant storm events to check for surface ponding that could indicate failure due to clogging. After the initial period, the system shall be inspected routinely on an annual basis. Measure should be taken to prevent sedimentation of the surface due to the erosion of areas upgradient the pervious pavement structures. The pervious paver area should be swept, vacuumed and/or pressure washed twice annually at a minimum. Limit salt use for deicing, and do not use sand. Leaves and organic debris shall be removed from the surface in the spring and fall. Measures should be taken to ensure that an area designed to be porous does not receive a future overlay of conventional non-porous paving. Non-routine maintenance may require reconstruction of the surface treatment, and possibly the filter and reservoir layers, to relieve major clogging.

Focal Point Unit

These BMPs are considered proprietary treatment devices and shall be inspected and maintained on an annual basis by a suitably qualified approved vendor. PHA will enter into a legal agreement with an approved maintenance operator that will identify the responsible inspector, all inspection and maintenance tasks, and all financial obligations. Cleaning of the pretreatment device should be performed as identified by the entity holding the maintenance contractual agreement.
The filter should be draining within 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 may need to be modified if already present. The pretreatment structure must be cleaned when necessary.

Maine DEP Five-Year Recertification

The Maine DEP Chapter 500 Recertification requirement will apply to this project. This requires all inspection, and maintenance tasks to be completed and the five-year recertification form to be completed, certified and submitted to Maine DEP. For full details of the requirements see: https://www.maine.gov/dep/land/stormwater/stormwaterbmps/five-year-recertification.html.

Stormwater Inspection and Maintenance Log

Site Name **Riverton Park** **Location** **Portland** **Date of Inspection**

BMP	Inspection tasks	Completed	Notes	Maintenance Required	Maintenance Complete
Ditches, swales and open channels	Inspect for debris and channel blockages Check vegetation for overgrowth Inspect for evidence of erosion				
Catch Basins	Check sediment level in sumps Inspect grates, frames and structures				
Pipe Inlet and Outlet	Inspect riprap aprons Look for evidence of erosion				
Bioretention Cells	Check plantings/grass cover Inspect soil bed Inspect underdrain outlets Evidence of high water level Verify structure is draining Inspect inlet grate and outlet structure Look for evidence of sedimentation Check stability of side slopes				
Paved areas, walkways	Check for sand and salt accumulation Check integrity of surfaces and edges				
Culverts	Inspect structural integrity Look for joint displacement Inspect inlet and outlet structures Check for sediment accumulation				
Pervious Pavers*	Check surface for evidence of ponding Check joints for evidence of clogging Observe drainage time after storm event				
Focal Point*	Check inlet for sediment and debris Check focal point bed Inspect overflow structure				

* Note that these BMPs are considered proprietary treatment devices and regular maintenance shall be undertaken by an approved and suitably qualified vendor.

SECTION 14 BASIC STANDARDS
SOIL EROSION AND SEDIMENTATION CONTROL

INTRODUCTION

Atlantic Resource Consultants, LLC (ARC) has prepared the following soil erosion and sediment control plan for the proposed renovations and improvements to the Portland Housing Authority Riverton Park complex.

The project comprises maintenance and rehabilitation of paved areas, utility and drainage infrastructure in five of the six "circles" of housing units at the facility. Major redevelopment is proposed at the location of existing Circle 1 to construct a new 4-story mixed use residential and commercial building, and the associated access, parking utility and stormwater infrastructure.

The project site is located on Riverton Drive, which extends from the south side of Forest Avenue approximately 1,000 feet west of the Maine Turnpike overpass. The total site area is just under twenty acres. The project will be phased to minimize the disruption to residents during the construction.

SITE HISTORY AND EXISTING SITE CONDITIONS

The project site is described as Lot 12, Block B of Tax Map 327 on the City of Portland tax maps and is located on the south side of Forest Avenue approximately 1,000 feet west of the Turnpike. Access to the facility is provided via Riverton Drive, and Springbrook Way, both of which are city streets.

The site was originally developed circa 1971 and provides multi-family housing units in a series of six "circles" throughout the property. Each circle has a central parking area, with pedestrian sidewalks leading to each unit. The facility is served by a private water distribution network that is connected to the Portland Water District public system at the entrance to the site. A gravity sewer system drains to a central pump station that is owned and operated by the City of Portland. A six-inch force main conveys sewage off-site to Forest Avenue, where it discharges to the municipal gravity system. Underground gas and overhead three-phase power services are provided within the on-site city streets and are served from Forest Avenue.

There is a shallow central valley that runs approximately east-west through the center of the property. A stream and associated wetland area convey surface runoff from both on-site and off-site areas through the site before discharging to the Presumpscot River approximately 1,800 feet to the west. The existing topography of the site slopes gently towards the central valley and drainage feature from all directions. An existing piped storm drain system extends through the property and discharges at several locations to the main and tributary drainageways.

Predominant surface soil types are mapped by the Natural Resource Conservation Service (NRCS) Web Soil Survey as Windsor loamy sands, and Scantic and Buxton series silt loams. However, test pits and borings undertaken on the site in the areas mapped as Windsor soils contradict this mapping. It appears from these site-specific investigations that soils in this area are more consistent with the Buxton series map unit. These soils are finer grained and hence more poorly drained than the generalized NRCS mapping would suggest.

Natural resource mapping on the site was undertaken in March of 2022, to support the proposed development planning for the property. A jurisdictional stream and associated wetland were identified in

the central valley that runs through the project site. There will be no impacts to on-site streams or freshwater wetlands.

EXISTING EROSION PROBLEMS

There are no existing erosion problems evident at the site.

CRITICAL AREAS

The critical areas in the proximity of the site are the delineated freshwater wetlands, drainage channels and stream. Wetlands and streams were delineated by ARC in March 2022 and are shown on the drawings that accompany this submission.

SOIL EROSION AND SEDIMENTATION CONTROL PLAN AIMS AND OBJECTIVES

The primary goals of the Erosion and Sediment Control Plan for the project are to minimize exposure of native soil materials during construction, to prevent soil erosion and sediment transport to downstream areas, receiving waters and natural resources. Measures will also be taken to ensure sediment is not tracked onto adjacent streets and that stockpiles of imported construction materials are protected from potential contamination. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. The "K" value is frequently used with the universal soil loss equation. The higher values are indicative of the more erodible soils. The relative K values of the mapped soils within the development area of the site are as follows:

Soil Name	Soil Description	K Value
Windsor Series*	Loamy sand	0.15
Scantic Series	Silt loam	0.28
Buxton/Lamoine Series	Silt loam	0.37

* Note that on-site investigations indicate that area mapped as Windsor are more accurately depicted as Buxton Series silt loams

Based on a review of the K values, the onsite soils in the area exhibit moderate susceptibility to erosion. This is due to the predominantly fine-grained, silty nature of the native material.

The primary emphasis of the Erosion and Sedimentation Control Plan to be implemented for this project is as follows:

- Construction Schedule – Major earth moving activities at the site will be scheduled for the late Spring and early Summer and will be started when a suitable weather window has been identified. This will minimize the potential for exposure of bare soil to inclement weather.
- Temporary Measures – Planning the project to have erosion resistant measures in place with measures to prevent erosion from occurring. The plan includes measures to intercept and convey runoff to temporary sediment control devices as the construction of the project occurs.
- Stabilization of areas denuded to underlying parent material to minimize the period of soil exposure.
- Stabilization of drainage paths to avoid rill and gully erosion.
- The use of on-site measures to capture sediment (hay bales/silt fence, erosion berms, etc.) before it is conveyed to sediment sumps.

DESCRIPTION AND LOCATION OF LIMITS OF ALL PROPOSED EARTH MOVEMENTS

The proposed project will require some stripping and grubbing for the construction in the redevelopment areas. There will be no significant tree cutting associated with the project, but some minor clearing may

be required around the new stormwater outfall locations. The native silt loam soils are not suitable for re-use, except possibly within landscaped areas of the site and then only if protected from excess moisture. We anticipate that the development will result in some net overall export of material from the areas under the new buildings and parking lots. If replacement fill is required in these areas, imported granular material, meeting the Maine DOT specification for Granular Borrow will be used.

SOIL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES

Construction Schedule

The primary and most proactive Best Management Practice for soil erosion and sediment control at the site is careful planning and phasing of construction tasks. The major earthwork activities have been broken into manageable phases in order to efficiently accomplish the necessary work while minimizing the risks associated with exposure of native fine-grained soils. The installation of Best Management Practices is integrated into the individual phases to ensure that effective diversion, cover and perimeter control measures are in place to protect the work area, limit soil exposure times and prevent transport of sediment to downstream areas.

It is anticipated that work on the site will begin in the Summer of 2023. This will allow for the major earthwork associated with the new building construction to be undertaken in the mid-summer months, when the risk of inclement weather is significantly lower.

Scheduling of the field work will be critical to minimizing potential soil erosion impacts. The Contractor will be responsible for selecting an appropriate weather window in which to commence the work to minimize erosion and sediment transport risk.

Temporary Erosion/Sediment Control Measures

As part of the site development, the Contractor will be obligated to implement the following erosion and sediment control devices. These devices shall be installed as indicated on the plans or as described within this report. For further reference on these devices, see the *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers, Maine DEP, October 2016.*
The following are planned as temporary erosion/sedimentation control measures during construction:

1. Crushed stone stabilized construction entrances will be placed at any construction access points from adjacent streets, and at interior locations shown on the phasing plans. The locations of the construction entrances shown on the drawings should be considered illustrative and will need to be adjusted as appropriate and located at any area where there is the potential for tracking of mud and debris onto existing roads or streets. Stone stabilized construction entrances will require the stone to be removed and replaced, as it becomes covered or filled with mud and material tracked by vehicles exiting the site.
2. Silt fence shall be installed down slope of any disturbed areas to trap runoff borne sediments. The silt fence shall be installed per the detail provided in the plan set and inspected immediately after each rainfall, and at least weekly in the absence of significant rainfall. The Contractor shall make repairs immediately if there are any signs of erosion or sedimentation below the fence line. If such erosion is observed, the Contractor shall take proactive action to identify the cause of the erosion and take action to avoid its reoccurrence. Proper placement of stakes and keying the bottom of the fabric into the ground is critical to the fence's effectiveness. If there are signs of undercutting at the center or the edges or impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam and measures taken to avoid the concentration of flows not intended to be directed to the silt fence. Wood chips from clearing can be used in front of the silt fence to provide an extra margin of safety and security for the silt fence. This practice is encouraged, provided the chips are removed when the fence is removed. Silt fencing with a maximum stake spacing of 6 feet should be used, unless the fence is supported

by wire fence reinforcement of minimum 14 gauge and with a maximum mesh spacing of 6 inches, in which case stakes may be spaced a maximum of 10 feet apart. The bottom of the fence should be properly anchored a minimum of 6" per the plan detail and backfilled. Silt fence shall be installed along the downgradient side of construction work areas, with locations being adjusted along with the construction phasing areas. The Contractor may use erosion mix in place of single row silt fence barrier.

3. Twin rows of siltation fence with hay bales shall be installed at the foot of steep slopes and adjacent to protected natural resources (wetland areas).
4. Erosion Control Mix - Erosion control mix is a dense, processed mixture of intertwining shredded wood fragments and grit that will stabilize a site immediately without vegetation. This product may be used in place of silt fence to protect downstream areas not adjacent to natural resources. Erosion control mix consists primarily of organic material and may include: shredded bark, stump grindings, or partially composted wood products and shall be placed to form berms in accordance with the detail on the plan set. Care shall be taken to ensure berms are level and provide an even depth of protection throughout the length of the berm. The Contractor shall make repairs immediately if there are any signs of erosion or breaches in the berm, and supplement berms with additional material if settlement is observed.
5. Stone check dams, silt logs, or hay bale barriers will be installed at any evident concentrated flow discharge points during construction and earthwork operations.
6. All slopes steeper than 4:1 shall receive erosion control blankets, or temporary riprap stabilization. Where temporary riprap is used, slopes shall be stabilized with loam, seed and erosion control blanket, or sod when the riprap is removed for final stabilization. Slope stabilization fabric shall be a fully biodegradable double net, coir fiber blanket, anchored in accordance with manufacturers recommendations.
7. Areas of visible erosion and the temporary sediment sumps shall be stabilized with crushed stone. The size of the stone shall be determined by the Contractor's designated representative in consultation with the Owner.
8. Temporary sediment sumps and sediment basins will provide sedimentation control for stormwater runoff from disturbed areas during construction until stabilization has been achieved. The sides and floors of sediment basins shall be stabilized with geotextile fabric laid over prepared subgrade materials. Outlets shall be as shown on the construction drawings and shall include sand filters around all risers and outlet pipes.
9. Dirtbags™ will be required to be on site and available for construction dewatering. The Contractor will be required to provide four Dirtbags™ with one prepared for operation prior to commencing any trenching operations.
10. Silt logs may be used in areas where sheet flow drains off impervious surfaces to spread and filter the flow. Silt logs should be anchored in accordance with manufacturer recommendations.

Special Measures for Summer Construction

The summer period is generally optimum for construction in Maine, but it is also the period when intense short duration storms are most common, making denuded areas very susceptible to erosion, when dust control needs to be the most stringent, and when the potential to establish vegetation is often restricted by moisture deficit. Dust control is particularly critical at this site due to the excessively drained nature of the no-site soils and the proximity of neighbors to the site. During these periods, the Contractor must:

1. Implement a program to apply dust control measures on a daily basis except those days where precipitation is sufficient to suppress dust formation. This program shall extend to and include adjacent streets.
2. Spray any mulches with water after anchoring to dampen the soil and encourage early growth. Spraying may be required several times. Temporary seed may be required until the late summer seeding season.

3. Cover stockpiles of fine-grained materials, or excavated soils which are susceptible to erosion. To protect from the intense, short-duration storms which are more prevalent in the summer months.
4. Take additional steps needed, including watering, or covering excavated materials to control fugitive dust emissions to minimize reductions in visibility and the airborne disbursement of fine-grained soils. This is particularly important given the potential presence of soil contaminants, and the proximity of along the adjacent streets and properties.
5. These measures may also be required in the spring and fall during the drier periods of these seasons.

Special Measures for Winter Construction

The winter construction season runs from November 1st through April 15th, however little or no vegetation growth can be anticipated after October 15th. Additional stabilization measures should be provided in the Fall (by November 15th) in preparation for winter conditions and permanent seeding should occur at least 45 days before the first killing frost. More frequent site inspections and BMP maintenance should be scheduled at the site towards the end of winter in preparation for the Spring thaw. The following additional winter measures should be taken:

- **Overwinter Hay Mulch** should be applied at double the normal rate (150 pounds per 1000 square feet or 3 tons/acre) and should be anchored with netting (peg and twine) or a tackifier to prevent mulch displacement before freezing conditions. No soil should be visible through the mulch. Hay mulch cannot be applied over snow.
- **Dormant Seeding and Mulch** should be applied at 3 times the specified amount after the first killing frost. All dormant seeding beds should be covered with overwinter mulch or an anchored erosion control blanket.
- **Temporary vegetation** should be applied by October 1st (to prepare for winter conditions) with winter rye at 3 pounds per 1000 square feet5 and mulched with anchored hay at 75 pounds per 1000 square feet or with erosion control blanket. If the rye fails to grow at least three inches and have 75% coverage by November 1st, the area should be stabilized for overwinter protection.
- **Erosion control mix** is the best overwinter cover, but is not recommended for slopes steeper than 1:1 or in areas with flowing water.
- **Erosion Control Blankets** should be used on slopes where hay would be disturbed by wind or water. The matting should be installed, anchored and stapled in accordance with the manufacturer's recommendations. Full contact between the blanket and the soil is critical for an effective erosion control cover.
- **Riprap** should be properly sized and installed to ensure long-term stability. In the winter, newly constructed ditches and channels should be stabilized with riprap. Widening of the channel may be required to accommodate placement of stones. Angular riprap is preferred to round stone.
- **Sod** may be used for late-season stabilization (after October 1st), but it is not recommended for slopes steeper than 3:1 or in areas with groundwater seeps. Follow the supplier's instructions.

A brief Winter Construction Risk Analysis is included below:

Overwinter Construction Risk Analysis		
Subject	**Risk**	**Mitigation**
Increased precipitation with no vegetation uptake or evaporation	More surface runoff that can be directed to erosion control measures	Observation and frequent maintenance of BMPs, temporary dewatering deployment
Frozen Grounds	The soil loses it capacity to retain water and cause more surface runoff and potential erosion	Prompt cover and stabilization of exposed soils, maintenance of fill embankments and high traffic areas
Vegetative Ground Cover	Cannot be established outside of growing season.	Seed areas at least 45 days before first frost
Runoff Diversion	Snow or icing may clog diversion structures.	Observation, maintenance and clearing of snow from BMPs where practical
Sedimentation Basins	Can be overwhelmed by spring flows.	Install before ground is frozen, stabilize upstream areas prior to Spring thaw
Silt Fence	Difficult to install on frozen ground. Often fails during spring melt	Use erosion control mix berms if required during winter conditions
Erosion Control Blankets	Cannot be anchored on frozen ground	Install prior to frost, or replace with temporary riprap stabilization over winter
Hydro-seeding	Stabilizers are ineffective in cold temperatures	Install prior to winter
Vegetated Swales	Cannot be established outside of growing season	Establish and seed 45 days prior to first frost, stabilize with temporary riprap
Impervious Stabilization	Base gravel on driving/parking areas. Pavement cannot be installed in winter.	Install sacrificial surface where necessary, frequent winter maintenance of gravel surfaces
Mud Season	Spring thaw	Frequent preventative maintenance of BMPs, focus on stabilization prior to onset of thaw

Permanent Erosion Control Measures

The following permanent erosion control measures have been designed as part of the Erosion/Sedimentation Control Plan:

1. The drainage conveyance systems have been designed to intercept and convey the 25-year storm.
2. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.), will be loamed, limed, fertilized, mulched, and seeded. Fabric netting, anchored with staples, shall be placed over the mulch in areas where the finish grade slope is greater than 10 percent. Native topsoil shall be stockpiled and temporarily stabilized with seed and mulch and reused for final restoration when it is of sufficient quality.

3. Catch basins shall be provided with sediment sumps for all outlet pipes that are 12" in diameter or greater or where winter sand use is contemplated. A sediment collection bag shall be installed in all basins.

Timing and Sequence of Erosion/Sedimentation Control Measures

The following construction sequence shall be required to ensure the effectiveness of the erosion and sedimentation control measures is optimized.

Note that this project may be constructed in several phases to limit potential impacts to residents. The following construction sequence is required for each phase.

1. Install construction entrances.
2. Install safety and construction fence to secure the site for demolition.
3. Install all perimeter siltation fence and erosion control barriers. Particular attention shall be paid to areas upstream of protected natural resources and in the vicinity of the streams at the project site. Signs shall be erected periodically along these perimeter barriers indicating that the downstream areas are off limits to all construction activities.
4. Conduct site clearing and grubbing and/or demolition activities in accordance with project drawings and specifications.
5. Construct activities on the site to optimize the handling of materials and restrict the denuded areas to the time stipulated.
6. Stormwater BMPs may be excavated while construction is ongoing provided that no underdrain sand, filter soil material, or permanent outlet is installed. The excavations may be used as temporary sediment basins as long as protected, temporary outlets are installed per the project drawings
7. Construct and maintain stabilized pads for foundation and building and road construction. Do not allow subbase, or base gravels to be contaminated with fine material, silt, or construction debris
8. Maintain stabilized site access and working areas during building construction.
9. Install binder pavement and stabilized surface materials as soon as practical.
10. Grade, topsoil, seed and stabilize perimeter slopes as soon as possible after major earth moving activities are complete.
11. Maintain access roads, laydown pads and entrances while building work is completed.
12. Landscape (loam and seed) exterior areas of the site.
13. Install curbing and surface pavement materials.
14. Install underdrain sand and filter soil materials and permanent outlet structures in stormwater BMPs as soon as all upstream contributing areas are stabilized.
15. Install striping, signage, and miscellaneous site improvements.
16. Review and punch the site.
17. Remove any temporary erosion control measures.

PERMIT REQUIREMENTS

This project will require review and approval by Federal, State and Local Regulatory Authorities. Permit approvals from these bodies may include specific conditions related to soil erosion and sediment control in addition to the standards described below. The Owner and Contractor will be responsible for review of, and adherence to any and all specific permit conditions applicable to the project, and these will become part of the Contract Documents for the project.

The scale and nature of the project will require coverage under the Maine Pollutant Discharge Elimination System (MPDES) General Permit - Construction Activity. The following procedures will be required to meet the minimum regulatory standards associated with this permit:

Preconstruction Conference

Prior to any construction at the site, representatives of the Contractor, the Project Engineer, the Owner, Regulatory Agency Representatives and the City of Portland shall meet to discuss the scheduling of the site construction and the designation of the responsible parties for implementing the plan. The Contractor shall be responsible for scheduling the meeting. Prior to the meeting, the Contractor will prepare a detailed schedule and a marked-up site plan indicating areas and components of the work and key dates showing date of disturbance and completion of the work. The Contractor shall conduct a meeting with employees and sub-contractors to review the erosion control plan, the construction techniques which will be employed to implement the plan and provide a list of attendees and items discussed at the meeting to the Owner. Three copies of the schedule, the Contractor's meeting minutes, and marked-up site plan shall be provided to the Owner.

Inspection of Soil Erosion and Sediment Control Measures

The Contractor shall prepare a list and designate by name, address and telephone number all individuals who will be responsible for implementation, inspection, and maintenance of all erosion control measures identified within this section and as contained in the Erosion and Sedimentation Control Plan of the contract drawings. Specific responsibilities of the inspector(s) will include:

- A weekly certification stating compliance, any deviations, and corrective measures necessary to comply with the erosion control requirements of this section shall be prepared and signed by the inspector(s).

Inspection of the project work site shall include:

1. Identification of proper erosion control measure installation in accordance with the erosion control detail sheet or as specified in this section.
2. Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
3. Identify areas which appear vulnerable to erosion and determine additional erosion control measures which should be used to improve conditions.
4. Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 90 percent is required prior to removal of erosion control measures.
5. All erosion controls shall be removed within 30 days of permanent stabilization except for mulch and netting not detrimental to the project. Removals shall include but not be limited to all silt fence, hay bales, inlet protection, and stone check dams.
6. Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.
7. Silt sacks should be removed and replaced at least every three months and at any time where the weekly inspection reveals that siltation has significantly retarded the rate of flow through the silt sack.
8. If inspection of the site indicates a change should be made to the erosion control plan, to either improve effectiveness or correct a site-specific deficiency, the inspector shall immediately implement the corrective measure and notify the Owner of the change.

A summary of standard Erosion Control Inspections is given in the table below. It is anticipated that inspection and maintenance tasks will be adapted throughout the project to reflect field conditions and construction progress:

EROSION AND SEDIMENT CONTROL MEASURES AND ACTIVITY	INSPECTION FREQUENCY		
	Weekly	Before & After a Storm	After Construction
SEDIMENT BARRIERS			
Sediment barriers are installed prior to soil disturbances	X	X	
Silt fences are keyed in and tight	X	X	
Barriers are repaired and replaced as necessary	X	X	
Barriers are removed when the site is stabilized - Silt fence should be cut at the ground surface			X
TEMPORARY STABILIZATION			
Areas are stabilized if idle for 14 days or more	X	X	
Daily stabilization within 100 ft of a natural resource	X	X	
MULCH			
Seed and mulch within 7 days of final grading. Ground is not visible	X	X	
Erosion control mix is 4-6 inch thick	X	X	
Erosion control blankets or hay mulch are anchored	X	X	
VEGETATION			
Vegetation provides 90% soil cover	X		X
Loam or soil amendment were provided	X		X
New seeded areas are mulched and protected from vehicle, foot traffic and runoff	X	X	X
Areas that will remain unworked for more than 1 year are vegetated with grass	X		
SLOPES AND EMBANKMENTS			
Final graded slopes and embankments are stabilized	X	X	X
Diversions are provided for areas with rill erosion	X	X	X
Areas steeper than 2:1 are riprapped	X		
Stones are angular, durable and various in size	X		
Riprap is underlain with a gravel layer or filter fabric	X		
STORMWATER CHANNELS AND CULVERTS			
Ditches and swales are permanently stabilized– channels that will be riprapped have been over-excavated	X	X	X
Ditches are clear of obstructions, accumulated sediments or debris	X	X	X
Ditch lining/bottoms are free of erosion	X	X	X
Check dams are spaced correctly to slow flow velocity	X		
Underlying filter fabric or gravel is not visible	X	X	X
Culvert aprons and plunge pools are sized for expected flows volume and velocity	X		
Stones are angular, durable and various in size	X		
Culverts are sized to avoid upgradient flooding	X	X	
Culvert protection extends to the maximum flow elevation within the ditch	X	X	X
Culvert is embedded, not hanging	X	X	X
CATCH BASIN SYSTEMS			
Catch basins are built properly	X		

EROSION AND SEDIMENT CONTROL MEASURES AND ACTIVITY	INSPECTION FREQUENCY		
	Weekly	**Before & After a Storm**	**After Construction**
Accumulated sediments and debris are removed from sump, grate and collection area		X	X
Floating debris and floating oils are removed from trap			X
ROADWAYS AND PARKING SURFACES			
The gravel pad at the construction entrance is clear from sediments	X	X	
Roads are crowned		X	X
Cross drainage (culvert) is provided	X		
False ditches (from winter sand) are graded		X	X
BUFFERS			
Buffers are free of erosion or concentrated flows		X	X
The downgradient of spreaders and turnouts is stable		X	X
Level spreaders are on the contour			X
The number of spreaders and ditch turnouts is adequate for flow distribution		X	X
Any sediment accumulation is removed from within spreader or turnouts		X	X
STORMWATER BASINS AND TRAPS			
Embankments are free of settlement, slope erosion, internal piping, and downstream swamping		X	X
All flow control structure or orifices are operational and clear of debris or sediments		X	X
Any pre-treatment structure that collects sediment or hydrocarbons is clean or maintained		X	X
Vegetated filters and infiltration basins have adequate grass growth			X
Any impoundment or forebay is free of sediment		X	X
WINTER CONSTRUCTION (November 1st-April15th)			
Final graded areas are mulched daily at twice the normal rate with hay, and anchor (not on snow)	Daily		
A double row of sediment barrier is provided for all areas within 100 ft of a sensitive resource (use erosion control mix on frozen ground)	Daily		
Newly constructed ditches are riprapped	Daily		
Slopes greater than 8% are covered with an erosion control blanket or a 4-inch layer of erosion control mix	Daily		
HOUSEKEEPING PUNCH LIST			
All disturbed areas are permanently stabilized, and plantings are established (grass seeds have germinated with 90% vegetative cover)			X
All trash, sediments, debris or any solid waste have been removed from stormwater channels, catch basins, detention structures, discharge points, etc.			X
All ESC devices have been removed: (silt fence and posts, diversions and sediment structures, etc.)			X
All deliverables (certifications, survey information, as-built plans, reports, notice of termination (NOT), etc.) in accordance with all permit requirements have been submitted to town, Maine DEP, association, owner, etc.			X

Maintenance of Soil Erosion and Sediment Control Measures

The following general maintenance requirements shall apply to the installed erosion control BMPs. Additional maintenance may be required based on field conditions, or at the recommendation of the Project Engineer, Third Party Inspector, Owners Representative, or regulatory authorities:

1. Stabilized Construction Entrances - Stone stabilized construction entrances will require the stone to be removed and replaced, as it becomes covered or filled with mud and material tracked by vehicles exiting the site.
2. The surface of the Runoff Diversion Trench shall be inspected on a weekly basis and cleared of any accumulating surface debris that could reduce the capacity of the BMP to divert surface water. The outlets should be inspected to ensure that groundwater flows are being adequately conveyed around the construction area.
3. The upgradient (diversion) silt fence barrier shall be repaired or replaced immediately if any breaches are found, or there are signs of undercutting. Sediment and debris shall be removed from the upstream side of the barrier periodically. The downstream ends of the barrier should be checked for any erosion caused by concentrated flows running along the barrier. These areas should be repaired immediately with stone check dams to prevent further damage.
4. Inlets and outlets of bypass culverts shall be cleared of accumulating debris and any signs of erosion shall be repaired immediately with riprap.
5. Riprap plunge pool outlets shall be cleared of debris and monitored for sediment accumulation. If sediment reaches a depth of six inches, it shall be removed, and the plunge pool repaired or re-constructed.
6. Silt Fence Barriers - The Contractor shall make repairs immediately if there are any signs of erosion or sedimentation below the fence line. If such erosion is observed, the Contractor shall take proactive action to identify the cause of the erosion and take action to avoid its reoccurrence. If there are signs of undercutting at the center or the edges or impounding of large volumes of water behind the fence, the barrier shall be replaced with a stone check dam and measures taken to avoid the concentration of flows not intended to be directed to the silt fence.
7. Silt Fence Haybale Barriers – The Contractor shall maintain the silt fence as described above. Should the central haybale barrier deteriorate, or show signs of contamination, the material shall be removed and replaced.
8. Erosion Control Mix – The Contractor shall maintain erosion control berms to ensure they remain level and continue to provide an even depth of protection throughout the length of the berm. The Contractor shall make repairs immediately if there are any signs of erosion or breaches in the berm, and supplement berms with additional material if settlement is observed.
9. Stone check dams, silt logs, or hay bale barriers installed at concentrated flow discharge points shall be inspected and cleared of accumulated debris periodically. If sediment accumulation is observed, this shall be removed when it reaches a depth of not more than six inches.
10. Slopes stabilized with erosion control blankets, or temporary riprap stabilization shall be inspected and repaired if any signs of rill erosion or stone displacement are observed. Sloughing of slopes or evidence of slip, rotational or base failure shall be reported immediately to the project engineer for design of remedial actions.
11. Any open graded areas of visible erosion and the temporary sediment sumps shall be stabilized with crushed stone. The size of the stone shall be determined by the contractor's designated representative in consultation with the Owner.
12. Temporary sediment sumps and sediment basins shall be inspected on a weekly basis. Routine maintenance shall include the removal of debris around inlets and outlets, repair of any uneven areas on basin berms, repair of any observed rill erosion in embankments and replacement of bench and outlet control filter material when slow drainage is observed.

13. Anchoring of silt logs shall be checked on a weekly basis. These shall be removed and replaced when clogged with sediment.
14. Mulched areas shall be repaired when ground is visible through the mulch layer. Anchoring of erosion control blankets and hay mulch shall be repaired is any evidence of separation is observed.
15. Vegetated areas shall be over-seeded and stabilized where 90% cover is not achieved.

Reporting Requirements

In addition to the weekly certifications, the inspector(s) shall maintain written reports recording construction activities on site which include:

1. Dates when major grading activities occur in a particular areas of the site.
2. Dates when major construction activities cease in a particular area, either temporarily or permanently.
3. Dates when an area is stabilized.
4. Inspection of the project work site on a weekly basis and after each significant rainfall event (0.25 inch or more within any consecutive 24-hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized.
5. A log (report) must be kept summarizing the scope of the inspection, name(s) and qualifications of the personnel making the inspection, the date(s) of the inspection, and major observations relating to operation of erosion and sedimentation controls and pollution prevention measures. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

Record Keeping

1. All certifications, inspection forms, and written reports prepared by the inspector(s) shall be filed with the Owner, and the Permit File contained on the project site, and available for inspection and review upon request. All written certifications, inspection forms, and written reports must be filed within one (1) week of the inspection date.
2. Inspections Reports and Logs must be made accessible to regulatory agency staff and a copy must be provided upon request.
3. Copies of all reports must be kept on file and available upon request for a period of at least three years from the completion of permanent stabilization.

CONSTRUCTION PROCUREMENT AND ADMINISTRATION

The project will be constructed by a General Contractor under contract to the Owner/Applicant. The Contractor will submit a detailed schedule for the completion of the work, broken into specific tasks, with anticipated milestones and completion dates, at the start of construction. The project schedule will be reviewed at regular bi-weekly project meetings, with updates and amendments to be recorded in the project file.

The work will be conducted in sections which will limit the amount of exposed area to those areas in which work is expected to be undertaken during the next 30 days. Exposed areas will be covered and stabilized as rapidly as practical. All areas will be permanently stabilized within 7 days of final grading and temporarily stabilized within 7 days of initial disturbance or before a predicted storm event of over ½" of rain. The area of denuded, non-stabilized construction shall be limited to the minimum area practicable. An area shall be considered to be denuded until the subbase gravel is installed in parking areas, or the areas of future loam and seed have been loamed, seeded, and mulched, or stabilized with erosion control blanket.

The Contractor must maintain an accurate set of record drawings indicating the date when an area is first denuded, the date of temporary stabilization, and the date of final stabilization. On October 1 of any calendar year, the Contractor shall submit a detailed plan for stabilizing the site for the winter and a description of what activities are planned during the winter.

The Contractor must install any added measures which may be necessary to control erosion/sedimentation and fugitive dust emissions from the site, with adjustments made dependent upon forecasted and actual site and weather conditions.

The Contractor has sole responsibility for complying with the erosion/sediment control report, including control of fugitive dust, and shall be responsible for any monetary penalties resulting from failure to comply with these standards.

Once construction has been completed, long-term maintenance of the stormwater management system will be the responsibility of the applicant. Operations & Maintenance items with a list of maintenance requirements and frequency are listed in the Stormwater Maintenance Plan produced for this project.

Attachments

Attachment A – Sample Erosion Control Compliance Certification and Inspection Forms

ATTACHMENT A

Sample Erosion Control Compliance Certification and Inspection Forms

Soil Erosion and Sedimentation Control
WEEKLY INSPECTION REPORT

Sheet ___ of ___

Project Name:_____
File No._____

Inspection Date:_____ Time:_____ Inspected by:_____

STAGE OF CONSTRUCTION

___ Pre-Construction Conference ___ Rough Grading ___ Finish Grading
___ Clearing and Grubbing ___ Building Construction ___ Final Stabilization

==========

INSPECTION CHECKLIST

Yes	No	NA	
[ ]	[ ]	[ ]	Have Soil Erosion and Sediment Control BMPs been installed in accordance with the plans and/or specifications?
[ ]	[ ]	[ ]	Are SESC measures operating effectively?
[ ]	[ ]	[ ]	Have all SESC control repairs and sediment removal been performed?
[ ]	[ ]	[ ]	Are properties and waterways downstream from development adequately protected from erosion and sediment deposition
[ ]	[ ]	[ ]	Are soil and mud kept off public roadways at intersections with site access roads?
[ ]	[ ]	[ ]	Have all exposed areas requiring temporary or permanent stabilization been stabilized?
[ ]	[ ]	[ ]	Are soil stock piles adequately stabilized with seeding and/or sediment trapping measures?
[ ]	[ ]	[ ]	Is there evidence of scouring velocities in runoff from construction areas?
[ ]	[ ]	[ ]	Are sediment basins installed and operating where needed?
[ ]	[ ]	[ ]	Are finished cut and fill slopes adequately stabilized?
[ ]	[ ]	[ ]	Are on-site channels, inlets and outlets adequately stabilized?
[ ]	[ ]	[ ]	Do all operational storm sewer inlets have adequate inlet protection?
[ ]	[ ]	[ ]	Are storm water conveyance channels adequately stabilized with channel lining and/or outlet protection?
[ ]	[ ]	[ ]	Are utility trenches stabilized properly?
[ ]	[ ]	[ ]	Is there evidence of siltation, or sediment transport in receiving waterways?
[ ]	[ ]	[ ]	Have all temporary control structures that are no longer needed been removed?

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Report Date Sheet of

Comments:_____

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Verbal/Written notification given to:

Name	Organisation	Email Address	Sent

Report by: _____Date:_____

POST-RAINFALL INSPECTION REPORT

Sheet ___ of ___

Project Name:_____

File No._____

Inspection Date:_____ Time:_____ Inspected by:_____

Total Rainfall Received:_____ Duration Of Storm Event:_____

STAGE OF CONSTRUCTION

___ Pre-Construction Conference ___ Rough Grading ___ Finish Grading
___ Clearing and Grubbing ___ Building Construction ___ Final Stabilization

==========

INSPECTION CHECKLIST

Yes	No	NA	
[ ]	[ ]	[ ]	Have Soil Erosion and Sediment Control BMPs been installed in accordance with the plans and/or specifications?
[ ]	[ ]	[ ]	Are SESC measures operating effectively?
[ ]	[ ]	[ ]	Have all SESC control repairs and sediment removal been performed?
[ ]	[ ]	[ ]	Are properties and waterways downstream from development adequately protected from erosion and sediment deposition
[ ]	[ ]	[ ]	Are soil and mud kept off public roadways at intersections with site access roads?
[ ]	[ ]	[ ]	Have all exposed areas requiring temporary or permanent stabilization been stabilized?
[ ]	[ ]	[ ]	Are soil stock piles adequately stabilized with seeding and/or sediment trapping measures?
[ ]	[ ]	[ ]	Is there evidence of scouring velocities in runoff from construction areas?
[ ]	[ ]	[ ]	Are sediment basins installed and operating where needed?
[ ]	[ ]	[ ]	Are finished cut and fill slopes adequately stabilized?
[ ]	[ ]	[ ]	Are on-site channels, inlets and outlets adequately stabilized?
[ ]	[ ]	[ ]	Do all operational storm sewer inlets have adequate inlet protection?
[ ]	[ ]	[ ]	Are storm water conveyance channels adequately stabilized with channel lining and/or outlet protection?
[ ]	[ ]	[ ]	Are utility trenches stabilized properly?
[ ]	[ ]	[ ]	Is there evidence of siltation, or sediment transport in receiving waterways?
[ ]	[ ]	[ ]	Have all temporary control structures that are no longer needed been removed?

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Report Date_____ Sheet ___ of

Comments:_____

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Verbal/Written notification given to:

Name	Organization	Email Address	Sent

Report by: _____Date:_____

20. Consistency with City Master Plans

All portions of the proposed Site Plan have, to the best of our knowledge, have been designed to be consistent / compliant with City related Master Plans, the current Comprehensive Plan / Portland's Plan 2030, as well as with off premises infrastructure, including sewer and stormwater, streets, trails, pedestrian and bicycle network, environmental management or other public facilities.

The Project is consistent with and complements the following Goals as outlined in the Portland Plan 2030:

Policy Guide: Environment

7. Support Sustainable Land Use & Transportation Policies

- *"Continue to develop land use policies which support complete neighborhoods."* **The project will provide Riverton Park with more affordable units, higher quality housing stock, community gathering places and plazas, community healthcare clinic, convenient resident service delivery spaces, recreation and green spaces, and improved pedestrian infrastructure. The project will allow more families to live close to services and transit (a METRO bus stop is located within 100 feet of the property along Forest Ave). Together, the Riverton Park Redevelopment and Rehabilitation project will support greater resident health and wellbeing, environmental sustainability, energy-efficiency, green energy production, community connectivity and walkability, youth development and education, entrepreneurialism, community services, accessibility, aging-in-place, and – last but certainly not least – affordability.**

Policy Guide: Housing

3. Remove Housing Barriers

- *"Evaluate whether current zoning allows for new development consistent with historic patterns of form, density, and/or use, as well as whether it allows for priority growth areas."* **Riverton Park currently contains multifamily rental apartments and associated services. The project proposes to modestly increase the overall number of rental units available to 182 units from 141, while also expanding services. The majority of these net new units and services will be in the area closest to the Forest Avenue corridor and the Forest/Riverside intersection, a priority growth node for evaluation in Portland's Plan 2030.**

4. Promote Sustainability

- *"Encourage energy efficiency in new construction and rehabilitation of our housing stock."* **The rehabilitation will significantly improve the energy-efficiency of existing buildings through new and upgraded windows, doors, roofing, continuous exterior insulation, air**

sealing, and mechanical/heating equipment. The new multifamily building, Building 1, will be significantly more efficient than a code-built building and aims to achieve Passive House certification, the world's leading standard in energy-efficient construction. The project will add rooftop solar photovoltaic (PV) panels to generate clean, renewable energy for the property. It will also include Electric Vehicle (EV) charging stations and low- or no-VOC materials.

8. Support Age-Friendly Housing Options

- *"Create, promote, and facilitate safe, affordable, and practical housing solutions that will meet the evolving needs of Portland residents as they age."* **The project will create approximately 19 accessible units for persons with a physical disability. At least 2% of units will serve persons with a sight- or hearing-impairment. To facilitate aging in place, the new multifamily building will be elevatored and include a diversity of unit sizes, ranging from studios to three-bedroom units. Sitework will improve accessible routes throughout the site. Many resident services offered and community events at Riverton Park will be intergenerational and assist with aging-in-place. A full-time Resident Services Coordination (RSC) will also be available to assist older adults, including connecting them to local service providers as their needs evolve.**

9. Adapt Affordable Housing

- *"Assess the capacity of existing affordable housing developments, many of which were built over four decades ago, to adapt to current best practices by improving energy efficiency and physical and social connections to surrounding neighborhoods."*
  The project will contribute to the physical revitalization of this deeply affordable multifamily community built in the early-70's, which will significantly improve building energy-efficiency. The project will improve neighborhood connectivity to surrounding neighborhoods through the potential road extension of Pinewood Drive to Waldron Way. This will help reduce Riverton Park's isolation caused by suburban-style cul-de-sacs in the short-term and, over the long-term, speculatively, help lay the foundation for potential street grid interventions.

"Pursue new opportunities for increased energy efficiency, increased densities, mixed incomes, and greater connectivity to surrounding neighborhoods." **The project will increase energy-efficiency of the community (see "4. Promote Sustainability" above). The project will increase residential densities of the community to approximately 182 units from 141 units currently. The project will turn Riverton Park into a one hundred percent (100%) affordable community for households earning at or below 80% of Area Median Income (AMI) (182 of 182 units). All net new units will be affordable (35 of 35 net new units).**

Policy Guide: Recreation & Open Space

4. Ensure Equity

- *"Pursue opportunities, in collaboration with partners, to create new open spaces in areas that are currently underserved."* **The project will create a new community plaza, recreation field, and playground space at Riverton Park. Our on-site resident service partners will also utilize these spaces, including the Boys & Girls Club, Opportunity Alliance and others.**

- *"Distribute community gardens, playgrounds, fields, public art, historic resources, and other program elements where the demand and need are greatest, and periodically assess demands and needs."* **The project proposes to create, a new recreation field, a new community plaza, playground space, and upgrade the existing playground at Riverton Park.**

Future Land Use

Priority Nodes & Corridors

"Priority nodes and corridors indicate areas that would be appropriate for new development to provide needed housing, businesses, and services proximate to transit, or areas that otherwise warrant some examination of potential for positive change in form and/or function." **The project is located off of Forest Avenue, a Priority Corridor, and very close to the Forest Avenue/Riverside Drive intersection, a Priority Node. A METRO Transit Stop is located on Forest Avenue within 100 feet of the Riverton property**

21. Public Safety and Fire Prevention

Natural Surveillance: Site plans shall be designed so that they create formal and informal natural surveillance networks on the site to increase on-site visibility and the safety of legitimate users and to deter potential offenders.

a. Physical Features – The placement and design of physical features shall maximize visibility to allow for surveillance opportunities to and from site features such as entrances and exits, walkways, assembly areas, corridors, stairways, windows, parking lots, landscaping, fences or walls, and any other physical attributes. **To the best extent possible the site has been designed to allow for clear sightlines and adequate surveillance. Due to the clustered configuration of existing Riverton Park buildings, the number of occupants and staff, and its adjacent location to two public streets (Riverton Drive and Springbrook Way), there are lots of "eyes" (i.e. casual surveillance) throughout this property. Sidewalks are set back from the perimeter of the building to allow for clear lines of sight for pedestrians and avoid blind corners. All pedestrian paths are clearly marked and will be lit with a combination of street lighting and building mounted lights. All entries and exits to the building are clearly marked, and these all egress into an open public area void of any hiding spots. For the existing townhome buildings, front porches will encourage interaction between neighbors and a sense of ownership. Common areas, such as the pedestrian plazas in front of the Circle 1 and Administration buildings, will encourage socializing and activity support. There will be clear sightlines to the basketball court from multiple directions.**

b. Lighting – The lighting of the site and building shall meet the City's technical standards for site lighting, as detailed in Section 12 of this manual, and enable users to observe movement and activities on the site during the day and at night. Motion sensor activated lighting is permitted to provide adequate illumination of the site at night while still complying with applicable lighting curfew standards of Section 12 of the Technical Manual. Specifically, the lighting plan should satisfy the following criteria:

i. Create nighttime illumination of pedestrian travel paths and gathering areas, entrances and exits, and parking lots and garages by achieving the following: **The site lighting has been designed to meet the City standard.**

• Provide a clear view of an area from a distance and enable anyone moving in or immediately around it to be easily seen. **Provided. All spaces + entry/exit points of the site/building are clearly delineated and visible from the parking areas, building and streets. All access points to buildings will have canopy lighting in addition to general site lighting.**

• Deny potential hiding spaces adjacent to existing and proposed pedestrian travel routes. **Provided / accomplished. Any of these potential areas are lit.**

• Permit facial identification at a distance of at least 30' and create the perception of being identified. **Provided. Lighting to meet City standards should provide this.**

c. Mechanical Surveillance Systems – If necessary, mechanical surveillance systems such as CCTV may be installed to monitor areas not easily observed such as parking lots and garages. **Riverton Park currently has a security camera system that is approximately three years old. The redevelopment and rehabilitation project will upgrade and expand this system. New buildings will also have an updated security camera system to surveil public entries, egress points, building perimeter and general pedestrian circulation. Cameras may also be installed to monitor areas not easily observed such as parking lots and drive-under parking. Exact camera locations have yet to be determined. The property will continue to have a license plate reader, which has already assisted Portland Police Department in identifying perpetrators, and will help deter unwanted activity in the future.**

Access Management: Site plans shall be designed to provide visible pathways and to offer proper guidance for legitimate users to access the site and to discourage unauthorized use of the site. **All pathways are visible from the street and or buildings. Public entry points are clearly labeled well-lit and monitored by surveillance cameras. All exit egress points discharge into an open public space will have a night exit function preventing any re-entry from outside without required credentials or keyed access.**

a. Orientation and Wayfinding – The site shall be designed so that the layout, features and/or signage clearly guide the movement of vehicles and pedestrians along safe and predictable paths both during the daytime and nighttime. Specifically, the site plan shall satisfy the following criteria:

• Placement of signage, lighting fixtures, landmarks, and landscape design features shall clearly guide users to and from the facility. **Provided. Lighting is located at building entry points and along parking areas/walkways and other gathering locations. Landscaping is along edges and designed to stay low and prevent blocking of visibility. Building signage will be illuminated from dusk until dawn.**

• Site features shall be designed to avoid the creation of entrapment zones that afford users no opportunity to escape or retreat from an approaching hazard. **None provided. Entrapment zones have been prevented by building and site design layouts.**

b. Mechanical Access Control – If necessary, mechanical access control systems may be implemented such as assigning personnel at key building entry points or establishing other

procedures such as mechanical auto closing devices, key cards, gates and other locking devices. **Secure access to the building is provided to residents and staff only.**

Territorial Reinforcement: Proposed developments shall be designed to clearly delineate private, semi-private, and public space. **Provided. Sidewalks are public; parking lots and front stoops are semi-private; and resident rear yards are private. Care has been taken to provide separation of public and private spaces through site design and signage; building entry delineation by lighting and signage; and porches and stoops scaled for individual or dual unit entry.**

FIRE HYDRANT STANDARDS

All development constructed within the limits of the City of Portland shall have a hydrant within five hundred (500') feet of all structures. **There are existing hydrants within the project boundary: two hydrants on Riverton Drive and two hydrants on Springbrook Way. Plus, one hydrant on Forest Avenue across from the project entrance.**

All hydrants, private and public, shall comply with city code Chapter 10 and Portland Water District standards. **To the best of our knowledge the hydrant meets District standards.**

Private hydrants shall be maintained by the property owner. A maintenance agreement, or other documentation if deemed acceptable by the Reviewing Authority, shall be required for all private hydrants. A follow-up will be conducted and a financial penalty will be levied for non-compliance. All compliances shall meet city code Chapter 10, which adopts by reference National For Protection Association (NFPA) #1 and #101. **Not applicable.**

6 ft. clear space shall be maintained around the circumference of fire hydrants, private or public, except as otherwise required or approved. **This standard will be met, see plans.**

SITE ACCESS STANDARDS

Every dead-end roadway more than one hundred fifty (150') feet in length shall provide a turnaround at the closed end. Turnarounds shall be designed to facilitate future street connectivity and shall always be designed to the right (refer to Figure I5). **Not applicable.**

Where possible, developments shall provide access for Fire Department vehicles to at least two sides of all structures. Access may be from streets, access roads, emergency access lanes, or parking areas. **Provided. Fire and emergency vehicles can access at least two sides of the new Circle 1 building. Circles 2-6 and Administration Building are existing and the rehab does not**

include new fire access. The existing level of access at these existing buildings slated for rehabilitation will be maintained.

Building setbacks, where required by zoning, shall be adequate to allow for emergency vehicle access and related emergency response activities and shall be evaluated based on the following factors: **All new buildings will meet this standard. The Administration Building, Building 5 and all buildings in Circles 2-6 are existing.**

- Building Height.
- Building Occupancy.
- Construction Type.
- Impediments to the Structures.
- Safety Features Provided.

Fire Dept. access roads shall extend to within 50' of an exterior door providing access to the interior of the structure. **Provided for new Circle 1 Building. Fire and emergency vehicles can gain access to within 50' of multiple doors of the building. The Administration Building, Building 5 and all buildings in Circles 2-6 are existing and have front doors that are typically within 50' of the parking lot, so access is good.**

Site access shall provide a minimum of nine (9) feet clearance height to accommodate ambulance access. **The only location on the site that has an overhead component that requires drive under is the Circle 1 building, which is 7'-4" clear. However, the rear of the building and parking lot can be accessed from the 12' wide access way between it and Building 5 or from the emergency access way from the adjacent 1884 Forest Avenue retail development. It is assumed that emergency access for ambulances will be through the main entrance, which is off the pedestrian plaza and has immediate access to the elevator.**

Elevators shall be sized to accommodate an 84 x 24-inch stretcher. **Understood.**

Street name and street numbering shall be determined during development / subdivision review and shall comply with Portland's 911 numbering system. **Understood.**

All structures are required to display the assigned street number. Numbers shall be clearly visible from the public right of way. **Understood. See Architectural Plans.**

STANDARDS FOR EMERGENCY ACCESS LANES AND GATES

No inside turning radius shall be less than twenty-five (25') feet. **See Exhibit #32.**

No outside turning radius shall be less than one hundred (100') feet. **See Exhibit #32.**

New emergency access lanes shall be a minimum of sixteen (16') feet wide but may be required to be up to twenty (20') feet wide where one or more of the following conditions occur:

At a meeting with Portland Fire on 12.2.2022 they approved a 12' wide access lane as depicted on the plans as long the ladder truck could maneuver it. See Exhibit #32.

- The access is likely to be used by Fire Department ladder trucks to set up for buildings adjacent to the lane or;

- The access lane is likely to be used by Fire Department Engine companies to set up pumping operations to fight a fire at buildings adjacent to the lane. **Signage for access lane to be mounted on sign posts.**

Access lanes shall be engineered and maintained to support the weight of emergency vehicles during all weather conditions. **Provided on south sides of Circle 1 building, see Site Plan.**

Appropriate "No Parking" signs shall be posted in accordance with instructions from the Fire Department having jurisdiction, and a method of enforcing such provisions shall be provided. **Provided, see Site Plan.**

All gates shall be located a minimum of thirty (30') feet from the public right-of way and shall open inward to the site. **Not applicable.**

Fire department personnel shall have ready access to locking mechanisms on any gate restricting access to a fire lane. Proposed changes to access shall be preapproved by the Reviewing Authority. **Not applicable.**

The clear opening provided through all gates shall be two (2') feet wider than the traveled way. **Existing on adjacent property.**

Blockading of any emergency lane shall be done by gates which are secured by chain and padlock. Padlocks shall be a "Knox" lock. **Existing on adjacent property.**

Emergency lanes shall be maintained and made accessible for emergency use at all times. No parking of vehicles or other use that might obstruct the emergency access lane shall be permitted. An access maintenance agreement or other suitable document acceptable to the

Reviewing Authority shall be required (please refer to attached model access maintenance agreement at the end of this section).

The use of automatic gates such as the “Click2enter” systems requires prior approval from the Reviewing Authority. **Not applicable.**

25. Snow and Ice Loading

All existing residential townhome buildings will undergo an envelope upgrade including new flat roofs over all entries to prevent ice and snow from entering into the residences.

The Circle 1 building will have a flat roof with internal drains and parapets to control snow drift.

26. Exterior Lighting

Street Lighting

There are existing City Street lights along Riverton Drive and Springbrook Way; which are to remain.

Circles 2-6

The existing parking lots light fixtures will be replaced with new retrofit LED heads. The base and pole will remain in most cases. If a few locations new base, pole + LED fixtures will supplement the existing parking lot lights for additional safety and convenience. Each building within the circles will be fully rehabbed and will include new building mounted lighting at front stoop and along the ends/backs of buildings.

Circle 1 Building and Administration Building

These sites will have all new lighting: including pole and building mounted lights.

Site lighting summary (new lights)

- **Viper Strike (single + twin) by Beacon Lighting – Pole lights used throughout site**

See attached cut sheet of the lights and enclosed Photometric Plan.

Building lighting summary (new lights)

- **Sling Slender wall pack by Hubble Lighting – Rehab buildings: ends + rear**
- **Geopack Trapezoid wall pack by Hubble Lighting – Circle 1 Building**
- **Cypher Accent light by Architectural Area Lighting – Circle 1 Building + Admin Building**
- **Recessed Light by Prescolite – Rehab buildings: front stoops**
- **Aquas Series Recessed Strip Light by Forum Lighting - Circle 1 Building**

See attached cut sheet of the lights and enclosed Photometric Plan.

27. Noise + Vibration

A. Circle 1 Building

100 KW emergency generator with sound attenuating enclosure

See C3.1 Site Plan for location

B. Administration Building

50 KW emergency generator with sound attenuating enclosure

See C3.1 Site Plan for location

Once specific units have been determined, cut sheets of make/mode indicating sound level of units (in compliance with City noise level ordinance) and plan view showing units/location will be submitted.

28. Signage and Wayfinding

For the existing residential townhome buildings, all building signage will have a building and street number on them. All existing public street signs are to remain.

The Circle 1 building will have building mounted signage above the front entry. All building signage will be in accordance with the City of Portland design standards Section 20. PHA Management Office and Greater Portland Health clinic signage will be surface applied on glass entry vestibule, which is on the south end of the building adjacent to the parking lot.

All building mounted signage sheets have been attached for review.

The Riverton Park property entry sign at the corner of Forest Ave and Riverton Drive and the Administration Building sign along Riverton Drive will be replaced in their current locations and within its approximate current footprint.

See the following sheets for signage details + locations:

Circle 1 Building:	A3.00-A3.02 Exterior Elevations
	A3.50 + A3.51 Signage Details
Rehab:	A3.00 Building Signage
	A3.02+A3.09 Exterior Elevations

29. Zone Related Design Standards

The proposed redevelopment and rehabilitation of Riverton Park shall comply with the following Zone Related Design Standards as outlined in the City's Design Manual:

- **(D.) B-2 Commercial Business Zones**
- **(H.) Planned Residential Unit Development (PRUDS) in the R5-A Residential Zone**
- **(Appendix) Development in the B-1, B-1b, B-2, B-2b shall meet the following guidelines in order to meet the Site Plan Standards**

(D.) B-2 Commercial Business Zones

(1) **STANDARDS.** Development located in the B-1, B-1b, B-2, and B-2b zones shall meet the following additional standards.

a. Urban Street Wall: In the B-1, B-1b, and B-2b zone it shall be required that buildings shall be located to create and preserve an urban street wall.
Building 1: The front façade is located outside of the max. 10' front setback as allowed by provisions *7.5.5.F.3 (B+F) maximum front setbacks.* Where the front façade is outside of the max. 10' front setback an urban wall will be created by a continuous pedestrian scaled edge treatment outlined in the above provision.

b. Mixed Uses: In B-1b zone buildings shall be multi-storied with mixed uses.
Not applicable

c. Building Entrances: In the B-1 and B-2b zone building entrances shall be oriented toward, located adjacent to, and directly accessible from, a sidewalk in a public right-of-way.
All building entrances are oriented to, located adjacent to and are directly accessible to a sidewalk at the right-of-way.

The main residential entries are set back from pedestrian paths to create a delineation of public/private space. The main entry façade design provides hierarchy to the entry in relation to the rest of the building. A separate entry to the health clinic is provided at the rear of the building directly adjacent to reserved parking, and secluded from heavy trafficked pedestrian plaza to provide privacy to patients. Further discussion regarding building entry coordination with the pedestrian plaza is provided under section E. Façade Character.

d. Windows: In the B-1, B-1b, B-2, and B-2b zones windows shall be required along the street frontage of a building. Windows shall be transparent (with a visible transmittance (VT) of .7 or greater) and installed at a height to allow views into the building by passersby.

Main entry windows are full height storefront glazing for ample visibility from street. Residential windows on first floor (while clear glazed) have a landscape buffer for resident privacy.

e. Facade Character: In the B-1, B-1b, B-2, B-2b zones, active and public portions of buildings (e.g. doors, windows, entries, retail displays) shall be oriented to and, where possible, be located adjacent to the public sidewalk to create an active presence along the sidewalk.
The façade is marked with canopies and a change in material and form on the Riverton drive elevation. The Circle 1 building form is bookended with similar materials allowing visual concentration on the entry as a focal point.

1. Where building facades situated along a public way have no interactive use or function, such facades shall be designed to provide sufficient architectural and graphic amenities to provide visual interest along the street and relate the building, and its use, to passersby.
Building signage is limited to the canopies at the main entry portions of a building. Signage will be a powder coated raised metal lettering 12" in height, in a contrasting color to the canopy, which allows for visibility from across the street as well as the pedestrian and vehicle approach of the front entry. The text height is 10'-10" from grade allowing not only visibility but a tamperproof location as well. The adjacent pedestrian plaza provides additional activity along Riverton Drive where the south volume of the building receded from the street.

f. Building Design: B-1, B-1b, B-2, and B-2b commercial buildings shall be designed to be compatible with their residential and commercial neighbors. In the B-1 and B-1b zones building scale, roof pitch, and fenestration shall be designed to complement surrounding residential structures.
The Circle 1 building is designed with exterior colors and materials to be consistent with the resident rehab buildings.

g. Building Materials: Facade materials of buildings located in the B-1, B-1b, B-2, and B-2b zones shall be compatible with those materials of surrounding residential and commercial uses.
The entire site will be undergoing an envelope upgrade. As a result, all exteriors will have fiber cement siding with a similar color scheme. The Circle 1 building and the Administration Building will have similar color aspects, but be unique application of the same materials.

h. Building Scale: In the B-1 and B-1b zones building scale must relate and be compatible with surrounding residential structures.
The Circle 1 building will be 4 stories, but the drop in site elevation will mask the scale of the building, as it will appear to align with the existing tree line. The roof height of the Circle 1 building will be consistent with the mixed-use project along Forest Ave (adjacent parcel). All building heights comply with the B-2 zoning requirements.

i. Landscaping and buffers: In the B-1, B- 1b, B-2 and B-2b zones buildings and associated parking areas must be screened to buffer abutting properties. A densely planted landscape buffer and/or fencing will be required to protect neighboring properties from the impacts associated with the development, including lighting, parking, traffic, noise, odor, smoke, or other incompatible uses. Where buildings are setback from the street, a landscaped area must be planted along the front yard street line.
Landscape buffers and fence will screen the parking lot from the adjacent properties. A continuous landscape edge treatment will occur at the front right-of-way line to provide screening and a street edge.

GUIDELINES.
Please refer to Appendix 2 of this manual, The B-1, B-1b, B-2, B-2b Design Guidelines, for applicable design guidelines for the B-1 and B-2 zones. In addition, the following design guidelines shall also apply:

1) Buildings located in the B-2 zone are specifically encouraged to adhere to the design guidelines contained in *the B-1, B-1b, B-2, B-2b Design Guidelines* (Appendix 2) of this section concerning the creation and preservation of an urban street wall.
The building will be located outside of the 10' front setback so the provision to allow a greater setback by creating an urban wall through plantings will be utilized.

2) In the B-1b and B-2 zones, buildings are specifically encouraged to adhere to the guidelines contained in *the B-1, B-1b, B-2, B-2b Design Guidelines* (Appendix 2) of this section concerning building entrances.

The office, clinic and residential portions of the building comply with all B-2 standards including signage and canopy constraints. The building footprint steps back to adhere to the CPTED (crime prevention through environmental design) constraints by creating a buffer between public and private spaces.

(H.) Planned Residential Unit Development (PRUDS) in the R5-A Residential Zone

(1) **STANDARDS.** Planned residential unit developments (PRUDS) in the R-3, R-5 or R-5A residential zones and manufactured housing parks in any zone shall meet the following standards:

a. Design relationship to site: The layout and design of buildings, roadways, parking areas, open space, recreation amenities, landscaping, drainage facilities and control mechanisms and other site improvements are organized to complement and accentuate the natural topography, vegetation, streams, water features, and other existing features of the site, and the solar orientation provides natural light within dwelling units, in outdoor open space and in recreation areas.
All buildings are existing and only being rehabilitated.

b. Internal design character and relationship to surrounding neighborhood: The design and layout of the development and buildings exhibit a cohesive design character and complement existing development in the surrounding neighborhood by virtue of such features as architectural style, height, scale and massing, character of exterior facades and roofs, circulation, open space, landscaping, and the transition of scale and massing with the surrounding neighborhood. Buildings with more than two (2) dwelling units or greater than forty (40) feet in length shall provide variation in roof and facade character through changes in facade setback, roof configuration, and projecting or recessed building elements.
There are 21 existing residential buildings to undergo a deep energy retrofit. The existing roof slopes are being simplified to allow for photovoltaic array installations and the facades will be updated to match the new neighborhood character. This will solidify a cohesive neighborhood aesthetic, including relating to the new Circle 1 Building.

c. Recreation and open space: All open spaces on the site shall be integrated into the development and designated on the site plan. Each development shall have the following features:

1. External buffers: An effective and permanent screening from neighboring properties and roadways;
The majority of the project site is fortunate to benefit from existing, significant wooded buffers and fencing. Where the buffers are lacking, they will be supplemented.

2. Internal buffers: Areas planted, maintained and located in such a manner as to provide privacy between units and buildings and paved areas and screening of parking, utilities, roadways, waste collection facilities and storage facilities;
The existing buildings in Circles 2-6 and the Administration building are being rehabilitated and are not required to meet this standard.
Although building, identity and site design both seek to improve existing individual dwelling privacy considerations between units.

3. Passive recreational open space: Open spaces, designated and improved with such features as gardens, picnic areas, walking trails; benches and lawn and seating areas;
The full project will benefit from numerous common open spaces including: community gardens, and gathering/event spaces.

4. Active recreational open space: Open spaces designated and improved for active recreational use with facilities such as tennis courts, basketball courts, multipurpose game fields, swimming pools, and children's playgrounds; and
The full project will benefit from numerous common open spaces including: basketball court, recreational field, and playgrounds/area.

5. Private open spaces: Open spaces designated for the individualized use of unit owners such as yards, decks and patios;

The full project will benefit from numerous private open spaces including: yard spaces, and front stoops.

Appendix: Development in the B-1, B-1b, B-2, B-2b shall meet the following guidelines in order to meet the Site Plan Standards

1. Building Location and Form
Buildings shall be located near the street so as to create an urban street wall.
An urban street wall is created by a pattern of buildings which line the street in a consistent manner, thereby establishing a desirable spatial relationship between the building in the commercial district and the major object. Location is one of several related factors defining the street environment.
Building 1: The building is located outside the required max. 10' front setback as allowed by provisions *7.5.5.F.3 (B+F) maximum front setbacks.* Where the front façade is outside of the max. 10' front setback an urban wall will be created by a continuous pedestrian scaled edge treatment outlined in the above provision.

Building Form, including height, bulk, and massing, contribute to the development of a street wall.
The desired condition is to have the building frame and enclose the street, which is achieved by providing building height that is proportionate to the width of the adjoining major street. A ratio of building height to street width of one-to-two creates a strong "room-like" street, while a one to-three ratio provides good street definition and proportion. Shorter buildings of one story facing broad streets will not achieve the desired relationship.

With the Circle 1 building and the Administration Building renovation, the new plaza between the two buildings will create a meeting place similar to a downtown space. Given that the 21 existing rehabs will not have any expansion of the building footprints the adjacent exterior character will be limited to Riverton Drive. While the 21 existing residential rehabs are in the adjacent R5-A zone. The first rehab building, building 5 abuts the plaza and addresses Riverton Drive with site and building elements intended to address the streetscape similar to the B-2 zone, while addressing the Crime Prevention Through Environmental Design guidelines.

In the B-2b zone, buildings adjacent to streets should approach 1:2 height to street width, with a minimum of 1:3.
For a fifty-foot street right-of-way, therefore, a minimum height of 15' is required, with 25' height preferred. An eighty-foot right-of-way requires about 27' to achieve the 1:3 proportion., with 40'-height preferred. Obviously, buildings located as close as possible to the street right-of way will provide better definition and proportion than buildings set further back.
Building height above grade at the north end is 49'-1" from the pedestrian right of way and 16'-11" above grade at the south end abutting the pedestrian plaza reinforcing the planned pedestrian activity zone.

2. Building Function
An urban street and business district requires a substantial intensity and variety of uses.
It is beneficial to have mixed uses within portions of buildings situated near the street. For example, a retail first floor might have office or residential on the second or third floors. This provides both the scale of building height desired, as well as the economic vitality of the business district.
Building 1: will be comprised of medical clinic, office space and residential.
In addition to the ground floor mixed use, Circle 1 building and the Administration Building also creates a pedestrian plaza for gathering. This plaza encourages foot traffic which will create a more walkable site and encourage community engagement. A separate entry to the health clinic is provided at the rear of the building directly adjacent to reserved parking, and secluded from heavy trafficked pedestrian plaza to provide privacy to patients. Further discussion regarding building entry coordination with the pedestrian plaza is provided under section E. Façade Character.

3. Orientation of Buildings and their Entrances to the Street
Major building entries shall be designed and located to provide the primary building access oriented to the public street and sidewalk.
Doorways should be prominent and obvious in appearance, so as to attract the users toward the entry. Major entry features should primarily address the street, with entry courts, display windows, signage, lights, walkways, and vestibules, as appropriate. Major entries should be adjacent to, or very close to, the street and public sidewalk.

All building entrances are oriented to, located adjacent to and are directly accessible to a sidewalk at the right-of-way. Entrances are also clearly marked with signage, and will be construction out of storefront for public visibility and community interaction. Main building entry is set back slightly for a delineation of public/private space with a landscape buffer.

4. Windows

Windows shall be located in all building facades visible from the public way, especially on building facades along the major public street.

Retail uses with store fronts are the most desirable feature for locations adjacent to the public sidewalk; and active, transparent (minimum visible transmittance (VT) of .7 or greater), and interesting windows contribute the maximum value. Limitations on transparency, such as dark or reflective glass, or interior coverings, should be avoided. Where uses (such as office) are not conducive to transparent viewing from the public way, windows can still convey a sense of activity and presence along the street. Even these more private windows can convey occupancy and habitation when lighted from within, as during evening hours, even if the interior is screened from view.

Clear visibility from the street and canopy lighting will create a destination along Riverton Drive. The residential portion of the building will have a vegetative buffer in compliance with CPTED standards, and have window shades for resident privacy at night.

5. Building Character, Detail, Scale, and Graphic Qualities

Building design will include various architectural and graphic amenities to provide a strong presence along a street and relate a building to its community.

Awnings, canopies, and flags may be utilized to highlight entryways and to further identify the activity and identity of a use.

Canopies along with recessed lighting and signage mark the main entries.

Facade lighting may be used to highlight entryways or to provide visual interest along an otherwise, blank façade.

Exterior sconces clearly mark pedestrian paths, and wall pack lights which illuminate the entire perimeter of the building, with zoning-defined light level limits.

Building scale, roof pitch, architectural detail, and fenestration shall be designed to complement and be compatible with surrounding residential and commercial buildings.

All the buildings on site will be either new construction or have an envelope upgrade if existing. The materials and color schemes will complement each other and create a sense cohesion throughout the site.

6. Signage and Building Entrances

Building entrances and building signage in the B-1, B-1b, and B-2b zones will be designed and constructed at the pedestrian scale.

Building signage location and size of signage was selected with pedestrian needs in mind. Signage is large enough to be seen from far away, yet still nearly align with the horizon for easy pedestrian visibility.

7. Development Relationship to Street

Building facades and site amenities shall form a cohesive wall of enclosure along a street.

Where buildings are not located at the street line, site amenities, including masonry walls, fences, and landscaping, shall be placed along the street to provide a sense of enclosure or definition.

Building 1 is >10' from the right-of-way line but will still have the urban street wall feel as a result of the required pedestrian edge treatment outlined in *7.5.5.F.3 (F)*

8. Parking Lots

Parking Lots shall be screened from view of the public way.

Landscaping or fencing shall be used to screen parking lots from public ways and residential neighbors. Where parking is located within the front yard (or side yard of a corner lot), a landscaped buffer or fence shall be placed along the street line to distinguish the private space from the public space and to help define the street wall.

The bulk of the parking lot will be screened from the public way by the building. Any portion of it not screened by the building will be buffered through plantings or fencing.

Parking lots shall be screened from neighboring properties.

A densely planted landscape buffer or fencing shall be installed to protect neighboring properties from the impacts associated with the parking lot and the use it serves.

The parking lot will share a common buffer with the adjacent retail development along Forest Avenue. A combination of landscape and fencing along with the adjacent screening treatment will provide a respectable/efficient buffer.

Crosswalks shall be provided within parking lots and across entrance driveways, directing pedestrians to building entrances.

Crosswalks will be located as necessary to help identify building entrances.

Street trees shall be planted along property street frontage 25ft. on center.

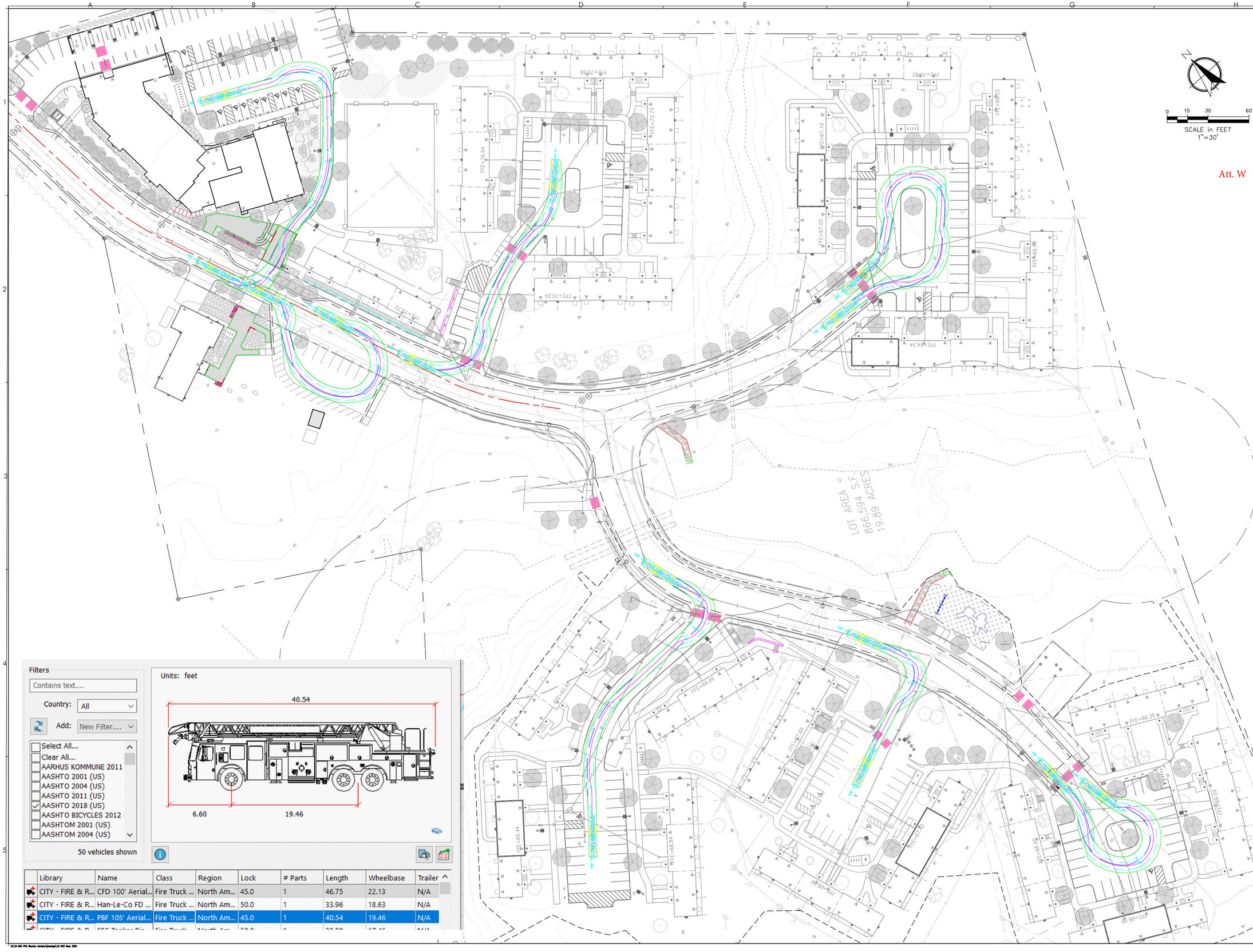
This requirement or greater is proposed along the building frontage. Where the front façade is >10' from the front setback line trees will be planted 15' on center to meet the standard outlined in provision *7.5.5.F.3 (F)*

9. Transit Connections

Development proposed along established transit corridors must design uninterrupted access from the proposed development to the transit stop.

An easement to place a transit shelter may be requested for development located along a transit corridor.

A sidewalk from Building 1 and the greater site out to the new bus shelter/stop on Forest Ave currently exists and will be maintained/improved along PHA adjacent property only.



CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN
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DESIGNER

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LICENSED
PROFESSIONAL ENGINEER

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LANDSCAPE ARCHITECTS
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207.772.1552 V. F. 207.772.0712

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

AUTOTURN
FIGURE

CVS PROJECT NUMBER: 15.021

REVISIONS

1	FOR SCHEMATIC DESIGN/PRICING	01.17.2022
2	MAJOR SITE PLAN	12.22.2022
3	ISSUED FOR 50% PRICING (REHAB)	02.16.2023
4	MAJOR SITE PLAN REVIEW REVISIONS	04.26.2023
5	ISSUED FOR 90% REVIEW	11.03.2023
6	ISSUED FOR MSHA PRE-APP PRICING	07.01.2024
7	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
CX.1

SCALE: AS SHOWN
DATE: 1/12/2019

Att. X

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO COMPLY
MAINE CONSTRUCTION GENERAL PERMIT

APPLICANT INFORMATION (Owner)		AGENT INFORMATION (If Applying on Behalf of Owner)	
Name:	Portland Housing Development Corporat	Name:	Atlantic Resource Consultants, LLC
Mailing Address:	14 Baxter Blvd	Mailing Address:	541 US Route One, Suite 21
Mailing Address:		Mailing Address:	
Town/State/Zip:	Portland, ME 04101	Town/State/Zip:	Freeport, ME 04032
Daytime Phone #:	(207) 221-8028 Ext:	Daytime Phone #:	(207) 869-9050 Ext:
Email Address:		Email Address:	andyj@arc-maine.com

PROJECT INFORMATION

Project Town:	Portland	UTM Northing & Easting (if known):	43°41'54.3"N 70°19'12.	Tax Map and Lot Number:	327/12		
Size of disturbed area proposed:	80,900 SF	Part of a larger project?	☑ Yes ☐ No	Creating a common plan of development or sale?	☐ Yes ☑ No	After the Fact?	☐ Yes ☑ No
Name of waterbody(ies) to which disturbed area would drain (or municipality if area drains to MS4):	unnamed stream/emergent wetland/ Lower Presumpscot River	Does the site drain to an Impaired Waterbody? If so, provide name:	No				
Brief Project Description:	Redevelopment and maintenance of the existing Riverton Park housing development. Includes earthwork and general improvements to the site. See attached project description/plans.						
Project Location & Brief Directions to Site:	Located to southeast of Route 302 and Riverside Street intersection. Access to the site is off of Forest Avenue.						

NOTICE OF INTENT (NOI) FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS AND FEE

I am filing notice of my intent to carry out work that meets the requirements of the Construction General Permit (effective July 21, 2006). I have a copy of the Construction General Permit and have read and will comply with all of the standards. I have attached all the required submittals.

- ☑ ***Attach*** a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.
- ☑ ***Attach*** a drawing or site plan of the proposed activity.
- ☑ ***Attach*** an erosion and sedimentation control (ESC) plan.
- ☑ ***Attach*** photos of the project site that show existing character and topography of the area proposed for development.
- ☑ ***Attach*** if this form is not being signed by the property owner or lessee, documentation showing authorization to sign.
- ☐ ***Attach*** if any construction activity will occur in essential habitat, written approval from the Dept. of Inland Fisheries & Wildlife.
- ☑ ***Attach*** if the applicant is a corporation, LLC, or other legal entity, proof of legal name. Provide a copy of Secretary of State's *registration information* (available at http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x). Individuals and municipalities are not required to provide any proof of identity.

FEE: Pay by credit card at the **Payment Portal**. The MCGP fee may be found here https://www.maine.gov/dep/feeschedule.pdf.
☑ ***Attach*** payment confirmation from the Payment Portal when filing this notification form.

Signature & Certification:

- I authorize staff of the Departments of Environmental Protection to access the project site for the purpose of determining compliance with the Construction General Permit**.**
- I understand coverage under the Construction General Permit becomes effective 14 calendar days after receipt by the Department of this completed form, the required submissions, and fee, *unless the Department approves or denies the NOI prior to that date.*

By signing this Notice of Intent, I represent that the project meets all the requirements for coverage under the Construction General Permit and that the project will be completed in compliance with the Construction General Permit. I also represent that the applicant has sufficient title, right, or interest in the property where the construction activity will place.

Signature of Applicant or Agent (may be typed):		Date:	08/20/2024

***Keep a copy as a record of permit*.** Email this completed form with attachments to DEP at: DEP.PBRNotification@maine.gov. This email account is used to receive PBRs and NOIs. No further authorization will be issued by DEP after receipt of this notice.
Work carried out in violation of the Construction General Permit is subject to enforcement.

Unit Scope Summary

ISSUED FOR: MAJOR SITE PLAN AMENDMENT 08/12/2024

PROJECT:
Riverton Park Rehabilitation
Riverton Park
Portland, Maine 04103

OWNER:
Riverton Park, LP
270 Baxter Blvd
Portland, Maine 04101

Unit Size	2 BR	3 BR		4 BR		5 BR					6 BR	
Accessibility	Non-Accessible	Non-Accessible	Non-Accessible Communications Unit	ANSI 117.1 Type C	ANSI 117.1 Type C Unit with Communications Features	Non-Accessible	Non-Accessible Communications Unit	ANSI 117.1 Type B	ANSI 117.1 Type B Unit with Communications Features	ANSI 117.1 Type A / ADAAG 2010 Accessible	Non-Accessible	ANSI 117.1 Type A / ADAAG 2010 Accessible
Description	1; 2	1; 2	1; 2; 3	4	3; 4	4	3; 4	5	3; 5	5	4	5
Sample Unit Reference	Bldg 16: 13 Pinewood Drive	Bldg 16: 15 Pinewood Drive	Bldg 16: 15 Pinewood Drive	Bldg 10: 111 Riverton Drive	Bldg 10: 111 Riverton Drive	Bldg 16: 17 Pinewood Drive	Bldg 16: 17 Pinewood Drive	Bldg 10: 117 Riverton Drive	Bldg 10: 117 Riverton Drive	Bldg 10: 117 Riverton Drive	Bldg 21: 29 Springbrook Way	Bldg 21: 31 Springbrook Way
Building 6				4		1	1					
7		6										
8				4				1	1			
9		6										
10				4		1				1		
11		6										
12		4		1	1							
13	2	2				1		1				
14				2		1		1				
15	2	2				2						
16	2	2				1				1		
17		4		2								
18	2	2				2						
19				4		1		1				
20		5	1									
21	4										1	1
22	4										2	
23	4										2	
24				4		1		1				
25		4		2								
Sub-Total	**20**	**43**	**1**	**27**	**1**	**11**	**1**	**5**	**1**	**2**	**5**	**1**
	20	**44**		**28**		**20**					**6**	
Total	**118**											

Keyed notes:
1) No substantial changes from previous pricing set
2) Typical scope: replace-in-kind, with varying minor first floor alterations for construction of new mechanical rooms (IEBC 2015 Alteration Level 2 where applicable)
3) Communications unit features
4) Typical scope: minor reconfiguration (IEBC 2015 Alteration Level 2) for improved accessibility within unit, plus typical replace in-kind scope throughout unit
5) Typical scope: minor reconfiguration (IEBC 2015 Alteration Level 2) to provide accessible unit, plus typical replace in-kind scope throughout unit; accessible cabinetry where required

October 2, 2024

Mr. Kevin Kraft, Director of Planning & Urban Development
Mr. Matthew Grooms, Development Review Services Manager
Mr. Sean King, Urban Designer
City of Portland Planning Department
4th Floor, City Hall
389 Congress Street
Portland, ME 04101

RE: Response to Project Review Letter
Riverton Park Redevelopment and Rehabilitation
2 Riverton Drive, Portland ME 04103
PL-003053-2024

Dear Kevin, Matt and Sean,

On behalf of Applicant, Riverton Park, LP c/o Portland Housing Development Corporation (PHDC), and Owner, Portland Housing Authority (PHA), we are pleased to submit this this response letter to the Project Review Letter, dated 09/20/2024. Below are the comments taken from the Staff Review *(in italics)* along with responses from the applicant **(in bold)**.

Site Plan Review Standards (Section 14.6)

Transportation Standards (Section 14.6.1)
Impact on Surrounding Street Systems

• Sheets 1 and 2 per the cover page: "ALTA/NSPS Land Title Survey" need to be submitted. These sheets are needed in order to review existing and/or proposed easements in addition to fulfilling the stamped boundary survey requirement.
Response: Uploaded to ProjectDox.

• Sidewalk easement is necessary for sections where the public sidewalk extends outside the bounds of the ROW.
Response: Applicant (Portland Housing) is comfortable executing easement agreements with the City for this. It is not feasible for these easements to be finalized before the 10/22/24 Planning Board hearing. We kindly request that City Corporate Counsel draft their preferred language and send them to Portland Housing c/o Tyler Plante. Portland Housing requests easements become a condition prior to issuance of a building permit in our Site Plan Approval Letter. Portland Housing commits to reaching an agreement with the City on this easement and having it executed/recorded before permit issuance.

Access and Circulation

• The City's Consulting Traffic Engineer requests an ADA crosswalk at the intersection next to the basketball court, one across the stem and one to get to the internal part of the site.
Response: The Site Plans have been updated to show ADA compliant curb ramps and crosswalks across Riverton Drive and Springbrook Way. A single curb ramp is proposed for the corner of Riverton Drive and Springbrook Way (basketball court side of road). It will be located at the apex of the curve due to existing utility pole/street light along Riverton Drive, see Technical Manual figure I-6C. In our opinion the proposed configuration is more user friendly and more intuitive.

We are working with the Wastewater Department to coordinate final curb ramp locations with the pump station design.

• The painted walkway to the Admin. Building within the staff parking area is not appropriate for pedestrian circulation, observing that the existing conditions is not satisfactory to current Technical Manual details. The Applicant is requested to submit their approach to pedestrian circulation within the existing parking area to meet current standards.
Response: The Site Plans have been updated to show new ADA complaint sidewalk and curb ramps from Riverton Drive. around the back of the existing parking lot to the Administration Building entry plaza.

Transportation Demand Management

• The applicant shall resubmit to address the following comments below and markup attachment from the City's Transportation Program Manager:
  - o Edit the cover to reflect the date that the Amendment page as shown
  - o Format the letter requesting an amendment in the form of the actual amendment as shown.
  - o Create a new PDF with the Prior approved plan with the edited cover and the one-page amendment as the last page.

Response: TDM Plan was revised on 9/26/2024 to reflect comments of City's Transportation Program Manager. TPD Plan Amendment is uploaded to ProjectDox.

Environmental Quality Standards (Section 14.6.2)
Water Quality, Stormwater Management
The project is required to comply with MaineDEP Chapter 500 and City of Portland Technical Manual Section 5 standards for stormwater management. Much of the project area is considered routine maintenance, with a portion of the work qualifying as redevelopment.

• Basic Standards – The Applicant has provided detailed erosion control plans in accordance with the Basic Standards. The plans should be updated to include sediment barrier around all disturbances. The area that was specifically noted that needs revision is at the southern end of the site as shown on sheet C6.2. There are underdrain and stormdrain installations proposed beyond the extents of the silt fence.
Response: Response: The drawings have been revised to show erosion barriers downstream of all areas of proposed disturbance, including replacement storm drain piping and outfalls.

• General/Redevelopment Standards – The Applicant has evaluated the requirement for stormwater treatment using the MaineDEP thresholds. The Applicant should also address the City of Portland threshold, which requires treatment of 50% of all non-roof redeveloped impervious area – it appears this will be met, but the information should be included for record.
Response: The project will treat over 95% of the non-roof redevelopment impervious area. There are two small paved areas (approximately 900sf) that will not be treated by the proposed stormwater system.

• Flooding Standards – The project will be reducing flows for the modeled study point as required by the Flooding Standards. We concur with City staff, that a targeted evaluation of outlet points on the site should be considered to ensure that there are not localized stormwater changes that could result in erosion or impact to downstream resources. It appears that some minor adjustments may help address potential concerns.
Response: Several of the storm drain outlet locations shown on the drawings are actually existing outfalls, where replacement of existing piping is proposed. We have inspected these locations and none appear to be eroding excessively. However, we are proposing new riprap outlet aprons at each location. After discussions with DPW staff, we have updated our typical outlet apron detail to incorporate a dissipating berm that rises to one third of the pipe diameter at the end of the apron. This will aid in dissipating flow velocity and spreading the outflow across a larger area.

• DPW is requesting that the applicant take another look at the proposed outlet protection design for the new storm drain outfalls being proposed to discharge into the stream/ravine embankment. We are worried about possible erosion occurring downstream of the outlet protection rip-rap that may result in sedimentation of the downstream wetlands and stream channel and localized destabilization of the embankment. It appears the "redistribution of stormwater" chapter 500 standard would be applicable for the new outfalls being proposed downstream of CB's 6.5, 4.6, and 3.2 to protect the existing stream embankments and downstream stream channels.
Response: Please see response above.

• The stormdrain outfall line from CB #4.6 should be realigned to direct flow more inline with the stream channel. The current alignment directs the outfall towards the existing roadway culvert, which could cause score and erosion around the culvert.
Response: The outfall from CB #4.6 is an existing storm drain outfall where pipe replacement is proposed. We will be incorporating improved flow dissipation at this outlet, as described in the response above.

• 100' and 75' perennial stream buffers should be plotted on the grading plan and ESC plans.
Response: The setback lines have been added to the revised drawings.

Public Infrastructure and Community Safety Standards (Section 14.6.3)
Public Utilities

• The applicant should confirm this site plan amendment doesn't require an updated wastewater capacity authorization from DPW.
Response: The amended application does not propose any changes to the future resident population and therefore the sewer flow demand will remain unchanged from the previous submission. We assume that no additional authorization is required to discharge the previously approved wastewater volume to the city system at the same location.

• Private storm drain pipes are not permitted to connect into public catch basins in the street per tech manual standard 2.9.7. The roof drain outlet pipe out of DMH-1.11 should be connected into the mainline storm drain in the street with a manhole.
Response: The drawings have been revised to show a new drain connection in the street with a manhole at the connection point.

• The 6" sewer lateral connection from building 15 should be connected directly into the City's 10" sewer line just downstream of the manhole.
Response: The new pipe shown entering the system at this manhole is replacing an existing 6" pipe that currently enters the structure. We respectfully request that this configuration is retained to avoid additional work both to the manhole structure (to abandon the existing inlet) and in the street.

• The 6" sewer lateral connections from buildings 5, 14, 10, 25 and 22 should connect to the existing 8" street sewer just upstream of the existing manhole.
Response: The "new" pipes entering the system from Building 5 and Building 14 are replacing existing pipes that currently enter the respective structures. We request that these be retained for the reasons explained in the previous response. The drawings have been revised to show the services from Buildings 10, 22 and 25 connecting to the system upstream of the respective manholes, as requested.

• The proposed 8" private sewer connection for building 1 must be connected to the City's sewer main with the use of a manhole.
Response: The drawings have been revised to show a new manhole at this connection.

• DPW is still seeking a formal sewer easement for the area surrounding the existing municipal sewer pump station facility and roadway culverts at Springbrook Way and Riverton Drive.
Response: Applicant (Portland Housing) is comfortable executing easement agreements with the City for this. It is not feasible for these easements to be finalized before the 10/22/24 Planning Board hearing. We kindly request that City Corporate Counsel draft their preferred language and send them to Portland Housing c/o Tyler Plante. Portland Housing requests easements become a condition prior to issuance of a building permit in our Site Plan Approval Letter. Portland Housing commits to reaching an agreement with the City on this easement and having it executed/recorded before permit issuance.

We look forward to working with you, Staff and the Planning Board in the final review of this project. Please feel free to contact me to discuss any questions or concerns you may have regarding the attached application materials.

Sincerely,
CARROLL ASSOCIATES

Matthew A. Phillips
Maine Licensed Landscape Architect

Consultants:

OWNER:
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Portland, ME 04101
(207) 773.4753

APPLICANT:
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DEVELOPMENT CORPORATION
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CONSULTANTS
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SURVEYOR:
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390 US Route One, Unit 10
Falmouth, ME 04105
(207) 774.0424

CONTRACTOR:
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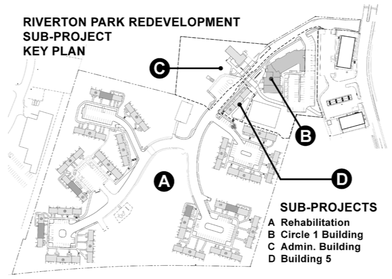
1185 US Route One, PO Box J
Freeport, ME 04032
(207) 869.6104

RIVERTON PARK REDEVELOPMENT AND REHABILITATION

2 RIVERTON DRIVE
PORTLAND, ME

TAX MAP 327, BLOCK B, LOT 12





rehab circle: perspective



circle 1 building: perspective

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-	EXTERIOR RENDERINGS

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

ISSUE DATE: AUGUST 16, 2024

Legend

●	IRON PIPE OR ROD FOUND	CIRF	CAPPED IRON ROD FOUND
■	MONUMENT FOUND	N/F	NOW OR FORMERLY
∅	UTILITY POLE	000/000	DEED BOOK / PAGE
◯	MANHOLE	CONC.	CONCRETE
⊠EM/GM	ELECTRIC/GAS METER	CLF	CHAIN LINK FENCE
⊠	TELEPHONE BOX		
	SIGN	MB	MAILBOX
▤ ◎	CATCH BASIN	EM	ELECTRIC METER
◇	HYDRANT	GM	GAS METER
⊗	WATER VALVE OR SHUTOFF	TB	TELEPHONE BOX
⊗	GAS VALVE		
☼	LIGHT POLE	CMF	CONCRETE MONUMENT FOUND
SD	SATELLITE DISH	GMF	GRANITE MONUMENT FOUND
(1)	BUILDING NUMBER		
○	CAPPED IRON ROD TO BE SET		
	DECIDUOUS TREE		
	CONIFEROUS TREE		
×—×—×	CHAIN LINK FENCE		
═══	CURB		
—OHW—	OVERHEAD WIRES		
70	1' CONTOUR		

LINE	BEARING	DISTANCE
L1	S04°59'08"E	168.30'
L2	S21°39'09"E	250.05'
L3	S24°39'09"E	93.56'
L4	S35°59'09"E	49.52'
L5	S56°29'09"E	64.00'
L6	S88°27'09"E	64.38'
L7	S28°27'21"W	56.07'
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L21	N23°50'44"W	50.00'
L22	N66°09'16"E	70.47'
L23	S89°10'04"E	105.57'
L24	N12°20'51"E	46.16'
L25	N33°27'21"E	20.91'
L26	N35°59'09"W	64.48'
L27	N24°39'09"W	99.84'
L28	N21°39'09"W	251.35'
L29	S77°04'43"W	4.36'
L30	N05°09'09"W	2.00'
L31	N34°59'09"W	41.92'

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	298.88'	86.07'	S13°24'09"E	85.77'
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C3	315.00'	175.74'	S72°28'08"E	173.47'
C4	365.00'	197.16'	N72°58'37"W	194.77'
C5	34.32'	53.34'	S77°58'49"W	48.13'
C6	70.00'	57.83'	S11°19'07"E	56.20'
C7	498.00'	215.87'	S22°34'03"E	214.19'
C8	498.00'	51.80'	S01°24'42"E	51.82'
C9	448.00'	285.84'	N16°42'27"W	281.02'
C10	120.00'	80.38'	N06°50'50"W	78.88'
C11	74.52'	90.33'	N01°15'50"W	84.89'
C12	348.88'	53.16'	N17°17'13"W	53.11'
C13	120.00'	18.76'	N30°30'31"W	18.74'

Utility Note

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. CALL 1-888-DIGSAFE AT LEAST THREE BUSINESS DAYS BEFORE PERFORMING ANY CONSTRUCTION. DUE TO OSHA CONFINED SPACE REQUIREMENTS, ALL INVERTS AND PIPE SIZES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.

Zoning Information

NONE PROVIDED

Legal Description

A CERTAIN LOT OR PARCEL OF LAND, WITH THE BUILDINGS THEREON, SITUATED ON THE SOUTHWESTERLY SIDE OF FOREST AVENUE IN THE CITY OF PORTLAND, COUNTY OF CUMBERLAND AND STATE OF MAINE, BEING BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE SOUTHWESTERLY SIDE OF SAID FOREST AVENUE, WHICH POINT IS 386.56 FEET SOUTHEASTERLY, ON A CURVE OF S 39° 06' 30" E, FROM THE INTERSECTION OF THE SOUTHWESTERLY SIDE LINE OF FOREST AVENUE WITH THE SOUTHEASTERLY SIDE LINE OF RIVERSIDE STREET AND 50.21 FEET NORTHWESTERLY ALONG FOREST AVENUE FROM AN IRON PIN AT THE MOST NORTHERLY CORNER OF LAND OF THE CORNERSTONE MASONIC CORPORATION; THENCE S 45° 35' W, ALONG LAND OF THIS GRANTOR 188.75 FEET TO A POINT; THENCE S 11° 35' W, 230 FEET TO A POINT; THENCE S 47° W, 360 FEET TO A POINT; THENCE S 43° E, 242 FEET TO A POINT; THENCE S 56° 07' 30" W, 413.61 FEET TO A POINT; AND LAND CONVEYED BY NEAL D. LUNT TO MARY J. FIELD, ET AL, BY DEED DATED OCTOBER 30, 1905 AND RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS, BOOK 776, PAGE 165; THENCE S 30° 53' 30" E, ALONG SAID FIELD LAND, PART OF WHICH IS NOW OR FORMERLY OWNED BY CHARLES V. KAATZ, 885.13 FEET TO A MONUMENT AT THE WESTERLY CORNER OF LAND CONVEYED BY ELLIE K. HAWES TO MAINE TURNPIKE AUTHORITY BY DEED DATED OCTOBER 5, 1954 AND RECORDED IN SAID REGISTRY OF DEEDS, IN BOOK 2195, PAGE 453; THENCE NORTHEASTERLY ALONG SAID MAINE TURNPIKE AUTHORITY LAND 750.40 FEET TO A MONUMENT; THENCE N 42° 41' 30" E, ALONG SAID TURNPIKE LAND, 226.06 FEET TO AN IRON PIN AND THE SOUTHWESTERLY SIDE LINE OF LAND CONVEYED BY JOSEPH HAWKES TO ALEXANDER BAILEY BY DEED DATED FEBRUARY 26, 1868, RECORDED IN SAID REGISTRY OF DEEDS, IN BOOK 360, PAGE 337, AND NOW OR FORMERLY OWNED BY WALTER F. HAWKES; THENCE N 31° 13' 30" W, ALONG SAID HAWKES LAND 656.92 FEET TO A MONUMENT; THENCE N 47° 52' E, ALONG SAID HAWKES LAND 108.55 FEET TO AN IRON PIN AND LAND OF CORNERSTONE MASONIC CORPORATION; THENCE N 66° 56' 30" W, ALONG SAID CORPORATION LAND 75.27 FEET TO AN IRON PIN; THENCE N 47° 17' 30" W, 295.21 FEET TO A MONUMENT AT THE NORTHWESTERLY CORNER OF SAID CORPORATION LAND; THENCE N 45° 35' E, ALONG SAID CORPORATION LAND 168.81 FEET TO THE SAID IRON PIN ON THE SOUTHWESTERLY SIDE OF FOREST AVENUE AT THE MOST NORTHERLY CORNER OF SAID CORPORATION LAND; THENCE NORTHWESTERLY ALONG SAID FOREST AVENUE 50.21 FEET TO THE POINT OF BEGINNING.

Plan References

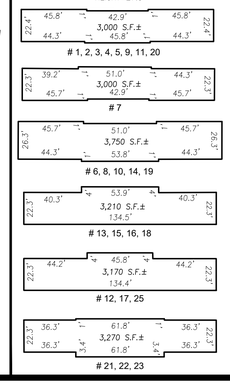
1. *"PLAN OF LAND IN PORTLAND, MAINE FOR F.D. RICH COMPANY" DEC. 31, 1968, REV. 3 3-9-70 BY OWEN HASKELL, INC.*
2. *"SITE PLAN, FAMILY TURNKEY HOUSING FOR PORTLAND HOUSING AUTHORITY, PORTLAND, MAINE" JAN. 14, 1971 BY LEASURE, TUTTLE & LEE ARCHITECTS & ENGINEERS.*
3. *"CITY OF PORTLAND, MAINE DEPARTMENT OF PUBLIC WORKS, RIVERTON DRIVE, PINEWOOD ROAD & SPRINGBROOK WAY" NOVEMBER 6, 1973.*
4. *"AMENDED SUBDIVISION PLAN ON FOREST AVENUE, PORTLAND, MAINE MADE FOR OWNER: WELLESLEY ESTATES, LLC" OCT. 8, 2002 REV. 4 7-15-03 BY OWEN HASKELL, INC.*
5. *"RECORDING PLAT OF: SAWYER INDUSTRIAL PARK, RIVERSIDE STREET, PORTLAND, MAINE DEVELOPED BY: SAWYER GROUP OF COMPANIES" MARCH 6, 1989 BY SEBAGO TECHNICS, INC. RECORDED IN CUMBERLAND COUNTY REGISTRY OF DEEDS IN PLAN BOOK 178, PAGE 50.*
6. *"EXISTING CONDITIONS PLAN OF: TRITON FOODMART / GAS STATION, 1884 FOREST AVENUE, PORTLAND, MAINE FOR: JOHN CHAU, SHEET 2 OF 9" AUGUST 2011 REV. D 3/19/12 BY SEBAGO TECHNICS.*

General Notes

1. *OWNER OF RECORD: PORTLAND HOUSING AUTHORITY, 14 BAXTER BOULEVARD, PORTLAND, MAINE C.C.R.D. BOOK 3280 PAGE 329 C.C.R.D. BOOK 4549 PAGE 293*
2. *LOCUS IS SHOWN AS LOT 12 BLOCK B ON TAX MAP 327.*
3. *BEARINGS ARE BASED ON MAINE STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 83 PER POST PROCESS GPS OBSERVATIONS.*
4. *ELEVATIONS BASED ON NGVD 29 PER POST PROCESS GPS OBSERVATIONS.*
5. *NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, BUILDING ADDITIONS, OR RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS WAS OBSERVED.*
6. *NO PROPOSED CHANGES IN STREET LINES IS KNOWN BY THIS SURVEYOR.*
7. *STATE OF MAINE LIDAR DATA WAS USED TO GENERATE CONTOURS WITHIN THE GULLIES.*
8. *THIS SURVEY WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE COMMITMENT.*
9. *PINEWOOD DRIVE WAS OFFICIALLY VACATED BY THE CITY OF PORTLAND IN DEED BOOK 13326, PAGE 19. FEE OWNERSHIP IS WITH PORTLAND HOUSING AUTHORITY.*

Building Detail

2 STORY BRICK & WOOD HEIGHT=27.5'



Flood Zone Note

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE X, AREAS OF MINIMAL FLOODING, ON THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 0006C, WHICH BEARS AN EFFECTIVE DATE OF DECEMBER 8, 1998.

SCALE : 1" = 50'

0' 25' 50' 100'

ALTA / NSPS Land Title Survey

Riverton Park
Forest Avenue
Portland, Cumberland County, Maine
Made For
Portland Housing Authority
14 Baxter Boulevard, Portland, Maine

Surveyor's Certification

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 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(A), 11, 13, 14, 16, 17, 19 AND 21 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON APRIL 23, 2019 AND FEBRUARY 25, 2022.

RANDY R. LOUBIER
PROFESSIONAL LAND SURVEYOR NO. 2407
DATE OF PLAT OR MAP: APRIL 30, 2019
DATE OF LAST REVISION: SEPT. 27, 2023

STATE OF MAINE — RANDY R. LOUBIER 2407 — PROFESSIONAL LAND SURVEYOR

OWEN HASKELL, INC.
PROFESSIONAL LAND SURVEYORS
390 U.S. ROUTE ONE, UNIT 10, FALMOUTH, ME 04105 207-774-0424

DRAWN BY: RS / JLW	FIELD BOOK: FILE	JOB NO. 2019-042 P	
CHECKED BY: RRL	SCALE: 1" = 50'	DRWG. NO. 1	

Legend

- IRON PIPE OR ROD FOUND
- MONUMENT FOUND
- UTILITY POLE
- MANHOLE
- EM/GM — ELECTRIC/GAS METER
- TELEPHONE BOX
- SIGN
- CATCH BASIN
- HYDRANT
- WATER VALVE OR SHUTOFF
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- CONIFEROUS TREE
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- CURB
- OHW — OVERHEAD WIRES
- E
- W
- G
- T
- SD — STORM DRAIN
- SS — SANITARY SEWER
- CIRF — CAPPED IRON ROD FOUND
- N/F — NOW OR FORMERLY
- 000/000 — DEED BOOK / PAGE
- CONC. — CONCRETE
- MB — MAILBOX
- SD — SATELLITE DISH
- (1) — BUILDING NUMBER

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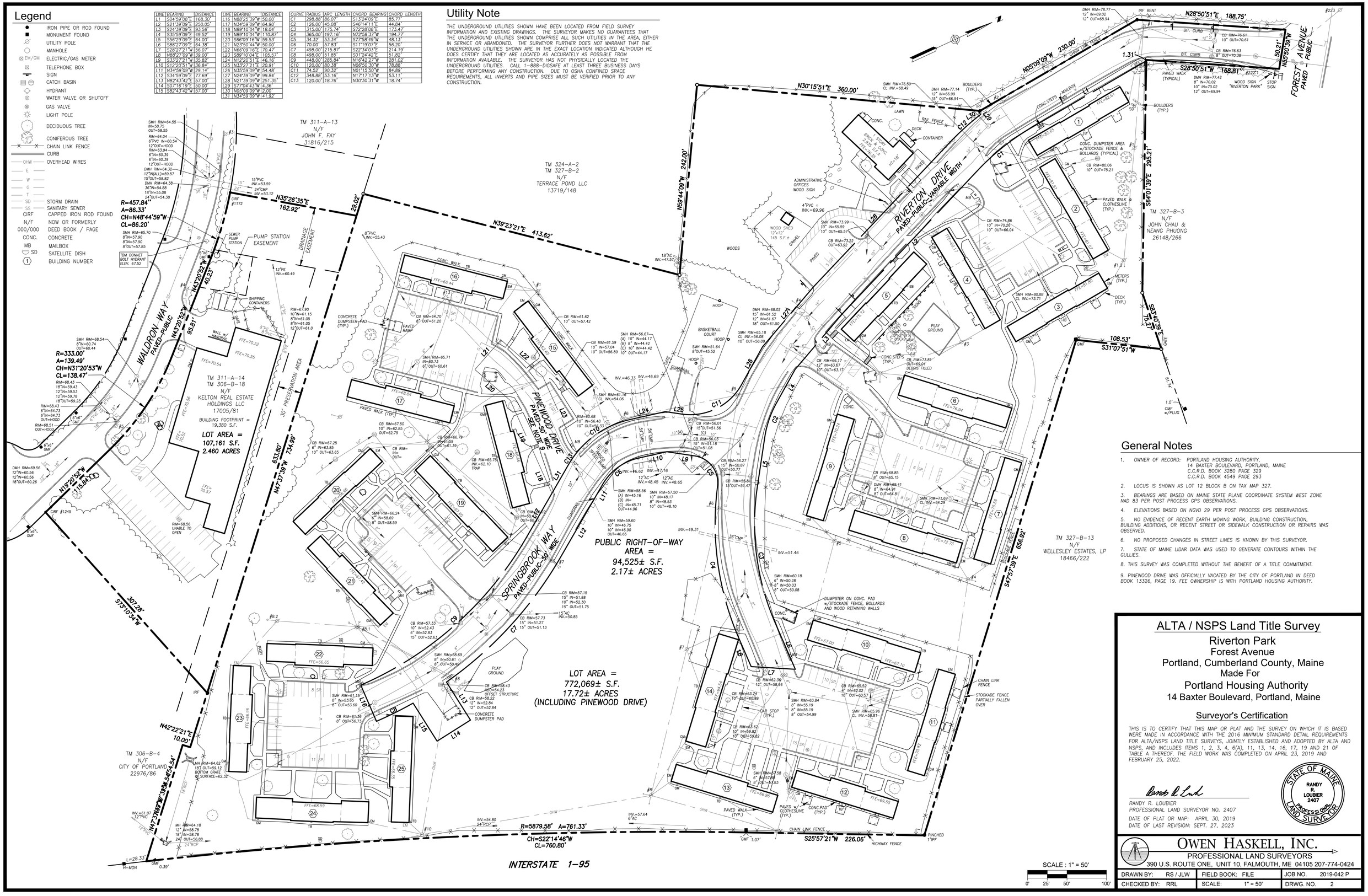

SCALE : 1" = 50'

0' 25' 50' 100'

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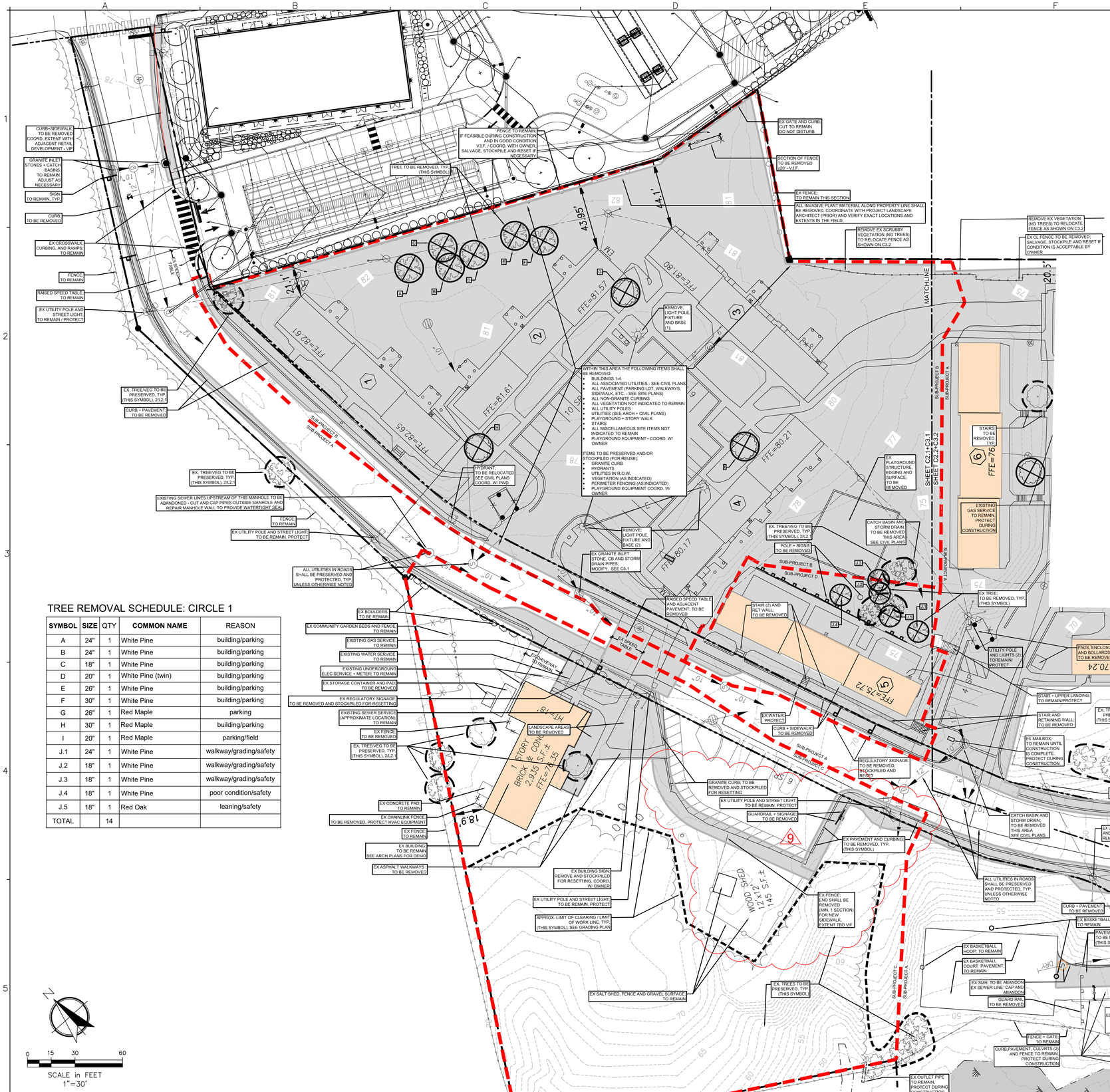
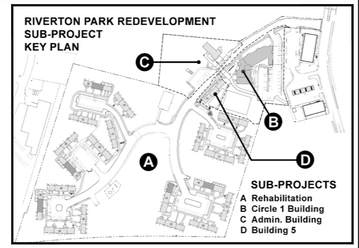
DRAWN BY: RS / JLW	FIELD BOOK: FILE		JOB NO. 2019-042 P
CHECKED BY: RRL	SCALE: 1" = 50'		DRWG. NO. 2



LEGEND: EXISTING

- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
- UTILITY POLE
- LIGHT
- SIGN
- WATER VALVE/SHUTOFF
- GAS VALVE
- FENCE
- OHW OVERHEAD WIRES
- E UNDERGROUND POWER
- W WATER LINE
- PPG GAS LINE
- T TELEPHONE
- SD STORM DRAIN
- SS SANITARY SEWER
- C COMMUNICATIONS
- 70 CONTOUR LINE
- IRON PIPE / ROD FOUND
- MONUMENT FOUND

RIVERTON PARK REDEVELOPMENT
SUB-PROJECT KEY PLAN



SUB-PROJECTS
A Rehabilitation
B Circle 1 Building
C Admin. Building
D Building 5

TREE REPLACEMENT CHART (PROJECT WIDE)

LOCATION	REMOVAL SIZE (DBH)	REMOVAL SIZE (DBH)	REQ'D REPLACEMENT @1:1	REQ'D REPLACEMENT @ 2:1	REQ'D (NEW) BY USE	PROPOSED
	0"-16"	+16"				
CIRCLE 1	0	14	0	28	MULTI-FAMILY RESIDENTIAL 40 (1:1 NEW DU)	
CIRCLE 2	2	0	2	0	0	
CIRCLE 3	1	0	1	0	0	
CIRCLE 4	3	3	3	6	0	
CIRCLE 5	0	0	0	0	0	
CIRCLE 6	0	0	0	0	0	
SUBTOTALS	6	17	6	34	40	
TOTAL	23		80			152

TREE REMOVAL SCHEDULE: CIRCLE 1

SYMBOL	SIZE	QTY	COMMON NAME	REASON
A	24"	1	White Pine	building/parking
B	24"	1	White Pine	building/parking
C	18"	1	White Pine	building/parking
D	20"	1	White Pine (twin)	building/parking
E	26"	1	White Pine	building/parking
F	30"	1	White Pine	building/parking
G	26"	1	Red Maple	parking
H	30"	1	Red Maple	building/parking
I	20"	1	Red Maple	parking/field
J.1	24"	1	White Pine	walkway/grading/safety
J.2	18"	1	White Pine	walkway/grading/safety
J.3	18"	1	White Pine	walkway/grading/safety
J.4	18"	1	White Pine	poor condition/safety
J.5	18"	1	Red Oak	leaning/safety
TOTAL		14		

SITE PREP + DEMOLITION NOTES

1. EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. CALL DIG-SAFE PRIOR TO BEGINNING WORK (1-800-225-4977).
2. ALL TREES TO BE PRESERVED SHALL BE PROTECTED WITHIN APPROVED FENCING OR BARRIERS AT THE EXISTING DRIP LINE, SEE DETAIL ON SHEET L2.1
3. NO EQUIPMENT OR MATERIALS SHALL BE PLACED OR STORED WITHIN THE PROTECTED DRIP LINE AREA OF PRESERVED TREES
4. ALL TREES TO BE PRESERVED SHALL BE MONITORED ON A REGULAR BASIS FOR SIGNS OF STRESS OR OTHER IMPACT DUE TO CONSTRUCTION AND APPROPRIATE. IF SIGNS OF STRESS ARE IDENTIFY IT SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY AND TREE CARE SHALL BE INITIATED.
5. THE CONTRACTOR IS ADVISED THAT ANY UNFORESEEN SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COURSE OF WORK SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY AND ANY UNAUTHORIZED REMOVALS SHALL BE DONE SO AT NO EXTRA EXPENSE TO THE OWNER.
6. REFER TO THE CIVIL PLANS FOR ADDITIONAL SPECIFICS AND DETAILS.
7. ANY GRANITE CURB REMOVED FROM THE PUBLIC RIGHT-OF-WAY AND NOT REUSED WITHIN THE RIGHT-OF-WAY IS TO REMAIN THE PROPERTY OF THE CITY AND SHALL BE TRANSPORTED BY THE DEVELOPER TO A LOCATION DESIGNATED BY THE PUBLIC WORKS DEPT.
8. THE CONTRACTOR SHALL OBTAIN NECESSARY DEMOLITION AND REMOVAL PERMITS FROM THE CITY OF SOUTH PORTLAND, MAINE AND COORDINATE WITH NECESSARY UTILITIES, INCLUDING CABLE, ELECTRIC, WATER, SEWER.
9. THE CONTRACTOR SHALL PROVIDE AND SET UP NECESSARY ENVIRONMENTAL AND ENGINEERING CONTROLS TO CONTAIN POTENTIALLY HAZARDOUS DUSTS FROM IMPACTING THE PUBLIC, WORKERS AT THE SITE, OR OCCUPANTS OF ADJACENT PROPERTIES.
10. PROPERLY TRANSPORT AND DISPOSE OF ALL DEMOLITION DEBRIS IN ACCORDANCE WITH STATE OF MAINE AND FEDERAL GUIDELINES, AND PROVIDE DOCUMENTATION OF PROPER HANDLING, TRANSPORT, AND DISPOSAL OF CONSTRUCTION AND DEMOLITION DEBRIS TO THE ENGINEER FOLLOWING THE COMPLETION OF DEMOLITION ACTIVITIES.
11. EXISTING UTILITIES, VEGETATION AND OTHER SITE IMPROVEMENT SHALL REMAIN UNLESS NOTED FOR REMOVAL OR OTHERWISE. SEE SITE PLAN, CIVIL AND ARCHITECTURAL DRAWINGS.''

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OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
DEMOLITION PLAN: CIRCLE 1, BUILDING 5 AND ADMIN BUILDING
CWS PROJECT NUMBER: 15.021

REVISIONS

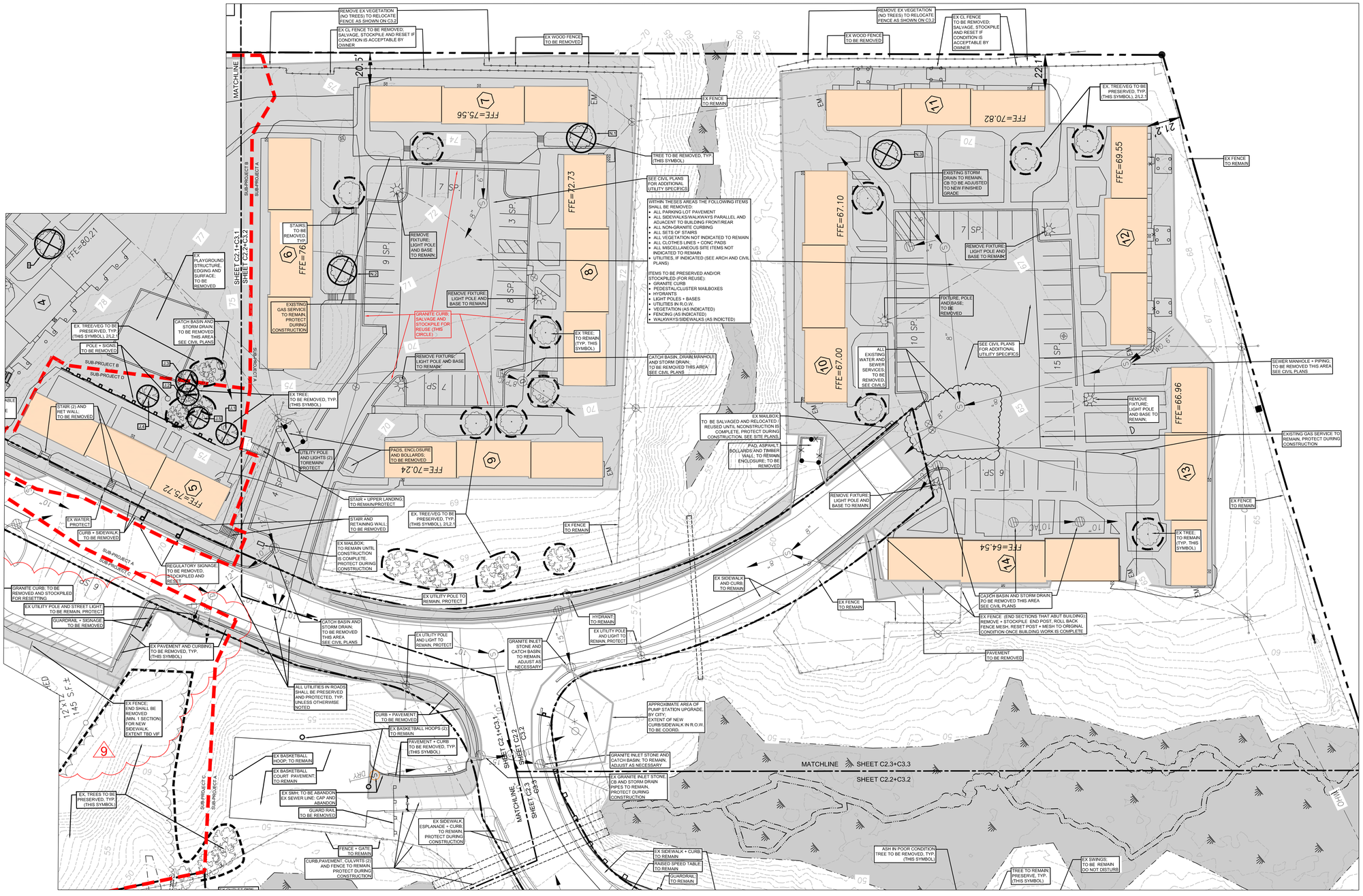
1	ISSUED FOR MAINE HOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINE HOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS	09.18.2024

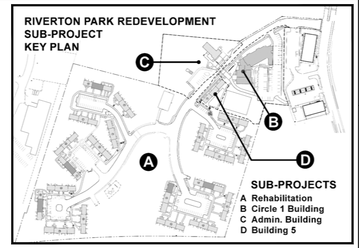
DRAWING NUMBER
C2.1

SCALE: AS SHOWN
DATE: 07/08/2024

TREE REMOVAL SCHEDULE: CIRCLE 2+3

SYMBOL	SIZE	QTY	COMMON NAME	REASON
N.1	16"	1	Red Maple	new front stoop / safety
N.2	16"	1	Red Maple	grading/stair / safety
N.3	16"	1	Red Maple	grading/stair / safety
TOTAL		3		





LEGEND: EXISTING

- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
- UTILITY POLE
- LIGHT
- SIGN
- WATER VALVE/SHUTOFF
- GAS VALVE
- FENCE
- OHW OVERHEAD WIRES
- E UNDERGROUND POWER
- W WATER LINE
- PPG GAS LINE
- T TELEPHONE
- SD STORM DRAIN
- SS SANITARY SEWER
- C COMMUNICATIONS
- 70 CONTOUR LINE
- IRON PIPE / ROD FOUND
- MONUMENT FOUND

SCALE in FEET
1"=30'

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DESIGNER

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PORTLAND, MAINE 04101

APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS

DEMOLITION PLAN:
REHABILITATION
CIRCLES 2+3

CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR: 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS 2	

DRAWING NUMBER
C2.2

SCALE: AS SHOWN
DATE: 07/08/2024

MATCHLINE SHEET C2.3+C3.3

SHEET C2.2+C3.2

SHEET C2.3+C3.3

MATCHLINE SHEET C2.3+C3.3

MATCHLINE SHEET C2.1+C3.1

EX BASKETBALL HOOP, TO REMAIN

EX BASKETBALL COURT PAVEMENT, TO REMAIN

EX SMH, TO BE ABANDON; EX SEWER LINE, CAP AND ABANDON

GUARD RAIL TO BE REMOVED

FENCE + GATE TO REMAIN

CURB,PAVEMENT, CULVERTS (2) AND FENCE TO REMAIN, PROTECT DURING CONSTRUCTION

EX SIDEWALK, ESPLANADE + CURB TO REMAIN PROTECT DURING CONSTRUCTION

EX OUTLET PIPE TO REMAIN, PROTECT DURING CONSTRUCTION

EX SIDEWALK, ESPLANADE AND CURB (±10' LF) TO REMAIN, PROTECT DURING CONSTRUCTION

EX MAILBOX, TO REMAIN UNTIL CONSTRUCTION IS COMPLETE, PROTECT DURING CONSTRUCTION

UTILITIES TO REMAIN

SAWCUT AT EX JOINT

EX SIDEWALK + CURB TO REMAIN

RAISED SPEED TABLE TO REMAIN

GUARDRAIL TO REMAIN

EX SPEED TABLE

STAIRS; TO BE REMOVED, TYP.

EX UTILITY POLE TO REMAIN

CURB TO BE REMOVED

GRANITE INLET STONE AND CATCH BASIN; TO REMAIN, ADJUST AS NECESSARY

EX GRANITE INLET STONE; CB AND STORM DRAIN PIPES TO REMAIN, PROTECT DURING CONSTRUCTION

ASH IN POOR CONDITION; TREE TO BE REMOVED, TYP (THIS SYMBOL)

TREE TO REMAIN; PRESERVE, TYP. (THIS SYMBOL)

EX SWINGS; TO BE REMAIN DO NOT DISTURB

EX PLAYGROUND STRUCTURE; TO REMAIN, DO NOT DISTURB

EX OLD WOOD CHIP SURFACE; TO BE REMOVED AND DISPOSED

EX CURB AND SIDEWALK; TO REMAIN

EX CATCH BASIN AND STORDRAIN; TO REMAIN

APPROXIMATE LIMIT OF WORK LINE, TYP. (THIS SYMBOL); SEE GRADING PLAN

EX PAD, ENCLOSURE AND BOLLARDS; TO REMAIN

EX TREES; TO REMAIN (TYP, THIS SYMBOL)

SUB-PROJECT A

SUB-PROJECT B

SUB-PROJECT C

DRAIN INLETS AND STORM DRAINS; TO BE REMOVED THIS AREA SEE CIVIL PLANS

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

TREE TO BE REMOVED, TYP. (THIS SYMBOL)

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

EXISTING GAS SERVICE TO REMAIN, PROTECT DURING CONSTRUCTION

GRANITE STEPS; TO BE REMOVED AND SALVAGED FOR REUSE AT PLAYGROUND

EX TREE TO REMAIN (TYP. THIS SYMBOL)

TIRES (3) TO BE REMOVED

EX UTILITY POLES (2) TO REMAIN, PROTECT

CATCH BASIN TO REMAIN, SEE CIVIL PLANS

HYDRANT TO REMAIN

CURB TO BE REMOVED

PAD AND BOLLARDS; TO REMAIN ENCLOSURE TO BE REMOVED

GRANITE STEPS; TO BE REMOVED AND SALVAGED FOR REUSE AT PLAYGROUND

EXISTING GAS SERVICE TO REMAIN, PROTECT DURING CONSTRUCTION

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

EX PERIMETER SIDEWALK, PARKING LOT, ESPLANADE AND CURB, TO REMAIN

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

REMOVE CATCH BASIN AND STORM DRAIN; SEE CIVIL PLANS

SEE CIVIL PLANS FOR ADDITIONAL UTILITY SPECIFICS

REMOVE FIXTURE, SALVAGE LIGHT POLE / BASE AND RELOCATE; SEE SITE PLAN

FIXTURE, POLE AND BASE; TO BE REMOVED

FIXTURE, POLE AND BASE; TO BE REMOVED

EX MAILBOX; TO BE SALVAGED AND RELOCATED / REUSED UNTIL CONSTRUCTION IS COMPLETE. PROTECT DURING CONSTRUCTION. SEE SITE PLANS FOR TEMPORARY LOCATION

PAD AND BOLLARDS; TO REMAIN ENCLOSURE, TO BE REMOVED

SEE CIVIL PLANS FOR ADDITIONAL UTILITY SPECIFICS

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

REMOVE MANHOLE; SEE CIVIL PLANS

EX TREE; TO REMAIN (TYP. THIS SYMBOL)

CATCH BASIN AND STORM DRAIN; TO BE REMOVED THIS AREA SEE CIVIL PLANS

REMOVE FIXTURE, LIGHT POLE AND BASE TO REMAIN.

REMOVE EXISTING WATER SERVICES, SEE CIVIL PLANS

EXISTING GAS SERVICE TO REMAIN, PROTECT DURING CONSTRUCTION

WITHIN THIS AREA THE FOLLOWING ITEMS SHALL BE REMOVED:
- ALL PARKING LOT PAVEMENT
- ALL SIDEWALKS/WALKWAYS PARALLEL AND ADJACENT TO BUILDING FRONT/REAR
- ALL NON-GRANITE CURBING
- ALL SETS OF STAIRS
- ALL VEGETATION NOT INDICATED TO REMAIN
- ALL CLOTHES LINES + CONC PADS
- ALL MISCELLANEOUS SITE ITEMS NOT INDICATED TO REMAIN
- UTILITIES, IF INDICATED (SEE ARCH AND CIVIL PLANS)

ITEMS TO BE PRESERVED AND/OR STOCKPILED (FOR REUSE):
- GRANITE CURB
- PEDESTAL/CLUSTER MAILBOXES
- HYDRANTS
- LIGHT POLES + BASES (AS INDICATED)
- UTILITIES IN R.O.W.
- VEGETATION (AS INDICATED)
- FENCING (AS INDICATED)
- WALKWAYS/SIDEWALKS (AS INDICTED)

WITHIN THIS AREA THE FOLLOWING ITEMS SHALL BE REMOVED:
- ALL SIDEWALKS/WALKWAYS PARALLEL AND ADJACENT TO BUILDING FRONT/REAR
- ALL SETS OF STAIRS
- ALL VEGETATION NOT INDICATED TO REMAIN
- ALL CLOTHES LINES + CONC PADS
- ALL MISCELLANEOUS SITE ITEMS NOT INDICATED TO REMAIN
- UTILITIES, IF INDICATED (SEE ARCH AND CIVIL PLANS)

ITEMS TO BE PRESERVED AND/OR STOCKPILED (FOR REUSE):
- PEDESTAL/CLUSTER MAILBOXES
- GRANITE STEPS
- GRANITE CURB
- VEGETATION (AS INDICATED)
- WALKWAYS/SIDEWALKS (AS INDICTED)
- LIGHT POLES + BASES

WITHIN THIS AREA THE FOLLOWING ITEMS SHALL BE REMOVED:
- ALL PARKING LOT PAVEMENT
- ALL SIDEWALKS/WALKWAYS PARALLEL AND ADJACENT TO BUILDING FRONT/REAR
- ALL NON-GRANITE CURBING
- ALL SETS OF STAIRS
- ALL VEGETATION NOT INDICATED TO REMAIN
- ALL CLOTHES LINES + CONC PADS
- ALL MISCELLANEOUS SITE ITEMS NOT INDICATED TO REMAIN
- UTILITIES, IF INDICATED (SEE ARCH AND CIVIL PLANS)

ITEMS TO BE PRESERVED AND/OR STOCKPILED (FOR REUSE):
- GRANITE CURB
- HYDRANTS
- PEDESTAL/CLUSTER MAILBOXES
- LIGHT POLES+ BASES (AS INDICATED)
- UTILITIES IN R.O.W.
- VEGETATION (AS INDICATED)
- FENCING (AS INDICATED)
- WALKWAYS/SIDEWALKS (AS INDICTED)
- PLAYGROUND EQUIPMENT

TREE REMOVAL SCHEDULE: CIRCLE 4 AND PLAYGROUND

SYMBOL	SIZE	QTY	COMMON NAME	REASON
O	30"	1	Red Maple	stormdrain line, grading and safety
P	13"	1	Red Maple	grading
Q.1	24"	1	White Pine	parking, grading + safety
Q.2	10"	1	Red Maple	parking, grading + safety
Q.3	14"	1	Red Maple	parking, grading + safety
R	20"	1	Ash	emerald ash borer
TOTAL		5		

SCALE in FEET
1"=30'

RIVERTON PARK REDEVELOPMENT SUB-PROJECT KEY PLAN

SUB-PROJECTS
- **A Rehabilitation**
- **B Circle 1 Building**
- **C Admin. Building**
- **D Building 5**

LEGEND: EXISTING
- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
- UTILITY POLE
- LIGHT
- SIGN
- WATER VALVE/SHUTOFF
- GAS VALVE
- FENCE
- OHW OVERHEAD WIRES
- E UNDERGROUND POWER
- W WATER LINE
- PPG GAS LINE
- T TELEPHONE
- SD STORM DRAIN
- SS SANITARY SEWER
- C COMMUNICATIONS
- 70 CONTOUR LINE
- IRON PIPE / ROD FOUND
- MONUMENT FOUND

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RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
DEMOLITION PLAN: REHABILITATION CIRCLES 4-5-6
CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

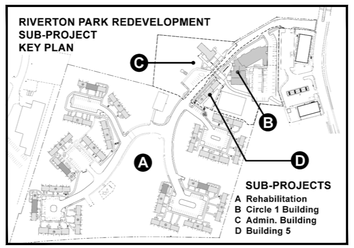
DRAWING NUMBER
C2.3

SCALE: AS SHOWN
DATE: 07/08/2024

CURB LEGEND

VGC	VERTICAL GRANITE CURB	
SGC	SLOPED GRANITE CURB	
MGC	MOUNTABLE GRANITE CURB	
VCC	VERTICAL CONCRETE CURB	
SCC	SLOPED CONCRETE CURB	

RIVERTON PARK REDEVELOPMENT
SUB-PROJECT
KEY PLAN



SUB-PROJECTS
A Rehabilitation
B Circle 1 Building
C Admin. Building
D Building 5

GENERAL NOTES

1. TOTAL SITE AREA: ±17.72 ACRES (±772,069 SF)

2. ZONING DISTRICT(S): R-5A RESIDENTIAL ±16.20 AC
B-2 COMMUNITY BUSINESS ±1.52 AC

3. OWNER: PORTLAND HOUSING AUTHORITY
14 BAXTER BLVD.
PORTLAND, ME 04101
(207) 773.4753

APPLICANT: RIVERTON PARK, LP
C/O PORTLAND HOUSING
DEVELOPMENT CORPORATION
14 BAXTER BLVD.
PORTLAND, ME 04101
(207) 773.4753

4. TAX MAP: TAX MAP 327, BLOCK B, LOT 12

5. BOOK AND PAGE: CCRD BOOK 3280, PAGE 329
CCRD BOOK 4549, PAGE 293

6. PROJECT ADDRESS: 2 RIVERTON DRIVE

7. BOUNDARY, TOPOGRAPHY, AND EXISTING CONDITIONS INFORMATION TAKEN FROM A PLAN TITLED: "ALTA / NSPS LAND TITLE SURVEY", RIVERTON PARK, FOREST AVENUE, PORTLAND, CUMBERLAND COUNTY, MAINE. MADE FOR PORTLAND HOUSING AUTHORITY, 14 BAXTER BLVD., PORTLAND, MAINE 04101. DATED APRIL 30, 2019, WITH LATEST REVISION DATED SEPTEMBER 6, 2022. PREPARED BY OWEN HASKELL, INC. 390 US ROUTE ONE, FALMOUTH, ME 04105, TELEPHONE 207.774.0424

8. BEARINGS ARE BASED ON MAINE STATE PLAN COORDINATE SYSTEM, MAINE WEST NAD 83 PER POST PROCESS GPS OBSERVATIONS.

9. ELEVATIONS BASED ON NGVD 29 PER POST PROCESS GPS OBSERVATIONS.

10. PINEWOOD DRIVE WAS OFFICIALLY VACATED BY THE CITY OF PORTLAND IN DEED BOOK 13326, PAGE 19. FEE OWNERSHIP IS WITH PORTLAND HOUSING AUTHORITY.

11. STATE OF MAIN LIDAR DATA WAS USED TO GENERATE CONTOURS WITHIN THE GULLIES.

12. BY GEOGRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE X, AREAS OF MINIMAL FLOODING, ON THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 230051 0006C WHICH BEARS AN EFFECTIVE DATE OF DECEMBER 8, 1998.

13. WETLAND DELINEATION WAS PERFORMED BY ATLANTIC RESOURCE CONSULTANTS ON IN MARCH 2022. WETLAND BOUNDARIES WERE FLAGGED AND LOCATED BY GPS WITH SUBMETER ACCURACY.

0 15 30 60
SCALE in FEET
1"=30'

GENERAL NOTES (CONTINUED)

14. SPACE AND BULK: B-2 + R-5A + PRUD

USE + SQUARE FOOTAGE:

EX ADMINISTRATION BUILDING	2,912 SF
EX BUILDING 5 (SERVICE ROW)	1st fl. 2,844 SF 2nd fl. 3,212 SF
CLINIC (GPH)	2,243 SF
OFFICE (PHA)	913 SF
RESIDENTIAL (BLDG 1)	64 DU
RESIDENTIAL (REHAB)	118 DU

A.) B-2 ZONE

	B-2 REQ	PROPOSED
MIN. LOT SIZE	N/A	TOTAL LOT 17.72 AC (B-2 ±1.52 AC)
AREA PER DWELLING UNIT	1,000 SF/DU (400 SF/DU**)	1,122 SF/DU (59 DU)
MIN. STREET FRONTAGE	20 FT	±380 FT.
FRONT YARD (MAX.)	10 FT	VARIES*
MIN. REAR YARD	10 FT.	>10 FT
MIN. SIDE YARD	NONE	>10 FT
MAX. LOT COVERAGE	NA	NA
MAX. STRUCTURE HT.	45 FT (70 FT**)	52'-4"
MAX. IMPERVIOUS	RESI. NA, OTHER 80%	<80%
OFF-STREET PARKING	RESI. 1PS/DU (64)	64 PS***
	CLINIC 1PS/500 SF (5)	6 PS
	OFFICE 1PS/400 SF (3)	5 @ CIRCLE 2
	BUILDING 5	2 HC
	(72 REQ'D)	72 PS PROP
BIKE PARKING	RESI. 2PS/5DU (26)	26 PS
	CLINIC 2PS/10 CARS (2)	2 PS
	OFFICE 2PS/10 CARS (2)	2 PS
	(30 REQ'D)	28 PROP @ B1 6 PROP @ ADMIN BLDG

B.) R-5A ZONE

	R-5A PRUD REQ	PROPOSED
MIN. LOT SIZE	RESI. 6,000 SF PLACE OF ASSEMBLY 1AC	TOTAL LOT 17.72 AC (R-5A ±16.20 AC)
AREA PER DWELLING UNIT	1,600 SF/DU	5,737 SF/DU (123 DU)
MIN. STREET FRONTAGE	50 FT	>50 FT.
LOT WIDTH	60 FT	>60 FT
MIN. FRONT YARD	25 FT	10 FT**
MIN. REAR YARD	25 FT.	10 FT**
MIN. SIDE YARD	16 FT.	10 FT**
MAX. LOT COVERAGE	30%	<30%
MAX. STRUCTURE HT.	35 FT.	31'-8" **
OFF-STREET PARKING	RESI. (REHAB) 1 PS/D.U. (118)	144 PS
	ADMIN BLDG 1PS/1000 SF (3)	8 PS
	(121 REQ'D)	152 PS PROP
BIKE PARKING	RESI (REHAB) N/A (0)	40 PS
	ADMIN BLDG 2PS/10 CARS (2)	6 PS
	(3 REQ'D)	46 PROP

C.)

	PRUD (R-5A)	PROPOSED
MIN. LOT SIZE	2 AC	TOTAL LOT 17.72 AC (R-5A DIST. ±16.20 AC)
AREA PER DWELLING UNIT	1,600 SF/DU	5,737 SF/DU (123 DU)
MAX. STRUCTURE HT.	55 FT.	31'-8" **
BLDG SETBACK FROM P.L.	25 FT	MIN. 10 FT**
REC. OPEN SPACE	200 SF/DU	217 SF/DU (26,736 SF)

* 7.5.5.F.3(B+F) B2 FRONT YARD SETBACK
** 18.2.4 (B) AFFORDABLE HOUSING DENSITY AND DIMENSIONAL BONUSES AND REDUCTIONS
*** TABLE 19-B: CATEGORICAL EXCEPTIONS TO OFF-STREET PARKING MINIMUMS
(NO-OFF STREET PARKING REQ'D WITHIN ¼ MILE OF FIXED ROUTE TRANSIT SERVICE)

15. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES IN THE FIELD AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES.

16. ALL DIMENSIONS SHOWN ARE TO FACE OF ALL WALLS, BUILDINGS, CURBS, AND OTHER SITE ELEMENTS UNLESS OTHERWISE NOTED.

17. EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. CALL DIG-SAFE PRIOR TO BEGINNING WORK (1-800-225-4977).

18. ALL EXISTING VEGETATION TO BE PRESERVED AS SHOWN ON PLANS. PROVIDE A SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING. AREAS NOT REQUIRING GRADING SHALL BE LEFT UNDISTURBED.

19. STORAGE OR PARKING WILL NOT BE ALLOWED OVER THE ROOTS OF VEGETATION WHICH ARE TO BE PRESERVED. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS REQUIRED FOR THE WORK ON THESE PLANS.

20. ALL WORK SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

21. ALL AREAS DISTURBED OR WORK REQUIRED WITHIN TEMPORARY CONSTRUCTION AREAS ON PROPERTY SHALL BE REPAIRED BY RE-PAVING OR LOAM/SEEDING AS REQUIRED TO RETURN THE SITE TO PRE-CONSTRUCTION CONDITIONS.

22. ALL WORK WITHIN THE RIGHT-OF-WAY MUST BE COORDINATED WITH THE DEPARTMENT OF PUBLIC SERVICES.

22. ALL EXTERIOR MECHANICAL EQUIPMENT WILL BE SCREENED FROM PUBLIC STREETS AND ADJACENT SITES BY STRUCTURE WALLS, EVERGREEN LANDSCAPING, FENCING, MASONRY WALLS OR A COMBINATION THEREOF.

23. SNOW MAY BE STORED WITHIN THE TEMPORARY SNOW STORAGE AREAS ONLY. ANY SNOW THAT CANNOT BE STORED ON-SITE SHALL BE PHYSICALLY REMOVED AND TRANSPORTED OFF-SITE WITHIN 24-48 HOURS FOLLOWING A STORM. SNOW TRANSPORTED OFF-SITE SHALL BE BROUGHT TO A MAINE DEP APPROVED "SNOW DUMP" OR MEET THE EXEMPTION REQUIREMENT SPECIFIED WITHIN CHAPTER 573 WHEN THE ABOVE REQUIREMENTS CANNOT BE MET DUE TO AN ABUNDANCE OF SNOW. THE SNOW CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO VEGETATION, LANDSCAPING, CURBING, LIGHTING, FENCING, ETC. RESULTING FROM THEIR ACTIVITIES. THE SNOW CONTRACTOR SHALL USE SALT OR CHLORIDE SUBSTITUTE TO DEICE THE PARKING LOT. THE BUILDING OWNER / ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL BEING UNDERTAKEN IN A TIMELY FASHION.

24. WAIVERS GRANTED
THE PLANNING BOARD WAIVES THE TECHNICAL STANDARD, SECTION 1.10.3; SECTION 1.10.2.1; SECTION 1 FIGURE I-12:

A. PARKING LOT DRIVE AISLE WIDTH
THE PLANNING BOARD FINDS BASED UPON THE CONSULTING ENGINEER'S REVIEW, THAT EXTRAORDINARY CONDITIONS EXIST OR UNDUE HARDSHIP MAY RESULT FROM STRICT COMPLIANCE WITH TECHNICAL MANUAL SECTION 1.10.3, WHICH REQUIRES PARKING LOT LAYOUTS PROVIDE A MINIMUM DRIVE AISLE WIDTH OF 24 FEET, THAT SUBSTANTIAL JUSTICE AND THE PUBLIC INTEREST ARE SECURED WITH THE PROPOSED VARIATION IN THIS STANDARD, AND THAT THE VARIATION IS CONSISTENT WITH THE INTENT OF THE ORDINANCE. THE PLANNING BOARD WAIVES TECHNICAL MANUAL SECTION 1.10.2.1 TO ALLOW A REDUCED DRIVE AISLE WIDTH OF 22 FEET.

B. COMPACT PARKING SPACES
THE PLANNING BOARD FINDS BASED UPON THE CONSULTING TRAFFIC ENGINEER'S REVIEW, THAT EXTRAORDINARY CONDITIONS EXIST OR UNDUE HARDSHIP MAY RESULT FROM STRICT COMPLIANCE WITH TECHNICAL MANUAL SECTION 1.10.2.1, WHICH ALLOWS UP TO 20% OF PARKING SPACES WITHIN ANY PARKING LOT OF FIVE OR MORE SPACES TO BE COMPACT PARKING SPACES, THAT SUBSTANTIAL JUSTICE AND THE PUBLIC INTEREST ARE SECURED WITH THE PROPOSED VARIATION IN THIS STANDARD, AND THAT THE VARIATION IS CONSISTENT WITH THE INTENT OF THE ORDINANCE. THE PLANNING BOARD WAIVES TECHNICAL MANUAL SECTION 1.10.3 TO ALLOW 25% COMPACT PARKING SPACES FOR BUILDING 1.

C. GRANITE CURBING
THE PLANNING BOARD FINDS BASED UPON THE DEPARTMENT OF PUBLIC WORK'S REVIEW, THAT EXTRAORDINARY CONDITIONS EXIST OR UNDUE HARDSHIP MAY RESULT FROM STRICT COMPLIANCE WITH TECHNICAL MANUAL SECTION 1, FIGURE I-12, WHICH REQUIRES THE USE OF GRANITE CURBING, THAT SUBSTANTIAL JUSTICE AND THE PUBLIC INTEREST ARE SECURED WITH THE PROPOSED VARIATION IN THIS STANDARD, AND THAT THE VARIATION IS CONSISTENT WITH THE INTENT OF THE ORDINANCE. THE PLANNING BOARD WAIVES TECHNICAL MANUAL SECTION 1, , FIGURE I-12 TO ALLOW GRANITE CURBING AT CORNERS AND DRIVEWAYS ONLY, AND SLIP-FORM CONCRETE CURBING IN ALL OTHER LOCATIONS WITHIN THE RIGHT-OF-WAY.

LEGEND: EXISTING
- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
- UTILITY POLE
- LIGHT
- SIGN
- WATER VALVE/SHUTOFF
- GAS VALVE
- FENCE
- OHW OVERHEAD WIRES
- E UNDERGROUND POWER
- W WATER LINE
- PPG GAS LINE
- T TELEPHONE
- SD STORM DRAIN
- SS SANITARY SEWER
- C COMMUNICATIONS
- 70 CONTOUR LINE
- IRON PIPE / ROD FOUND
- MONUMENT FOUND

LEGEND: PROPOSED
- SUB-PROJECT LINE
- DECIDUOUS TREE
- SHRUBS
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- EDGE OF PAVING
- LIGHTS
- SIGNAGE
- TRANSFORMER
- BUILDING ENTRY POINTS
- FENCE
- CROSS WALK
- BIKE RACKS
- BIKE REPAIR STATION
- DRIP EDGE / RIP-RAP

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OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
SITE PLAN:
CIRCLE 1, BUILDING 5
AND ADMIN BUILDING
CWS PROJECT NUMBER: 15.021

REVISIONS

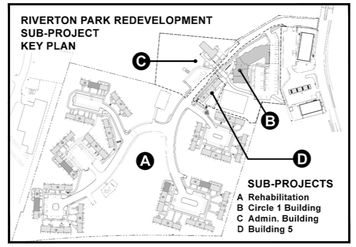
1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.09.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR: 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS	09.19.2024

DRAWING NUMBER
C3.1
SCALE: AS SHOWN
DATE: 07/08/2024

CURB LEGEND

VGC	VERTICAL GRANITE CURB	
SGC	SLOPED GRANITE CURB	
MGC	MOUNTABLE GRANITE CURB	
VCC	VERTICAL CONCRETE CURB	
SCC	SLOPED CONCRETE CURB	

RIVERTON PARK REDEVELOPMENT SUB-PROJECT KEY PLAN



SUB-PROJECTS
- A Rehabilitation
- B Circle 1 Building
- C Admin. Building
- D Building 5

LEGEND: EXISTING
- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
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- C COMMUNICATIONS
- 70 CONTOUR LINE
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- MONUMENT FOUND

LEGEND: PROPOSED
- SUB-PROJECT LINE
- DECIDUOUS TREE
- SHRUBS
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- EDGE OF PAVING
- LIGHTS
- SIGNAGE
- TRANSFORMER
- BUILDING ENTRY POINTS
- FENCE
- CROSS WALK
- BIKE RACKS
- BIKE REPAIR STATION
- DRIP EDGE / RIP-RAP

0 15 30 60
SCALE in FEET
1"=30'

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APPLICANT

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

SITE PLAN:
REHABILITATION
CIRCLES 2+3

CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS (3)	

DRAWING NUMBER
C3.2

SCALE: AS SHOWN
DATE: 07/08/2024

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PROJECT

RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS

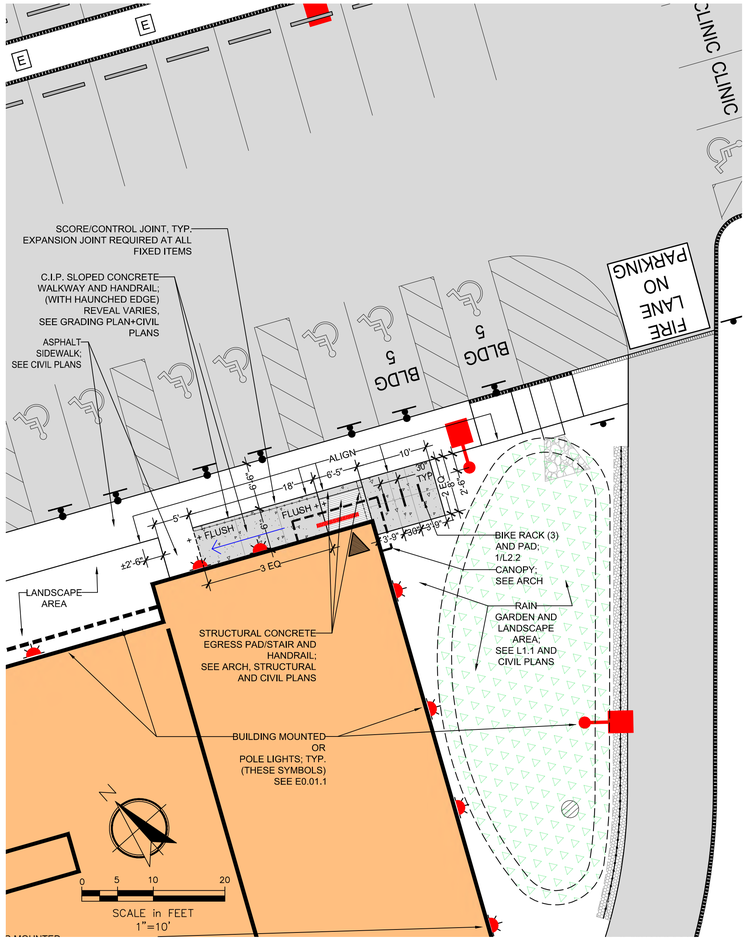
CWS PROJECT NUMBER: 15.021

REVISIONS

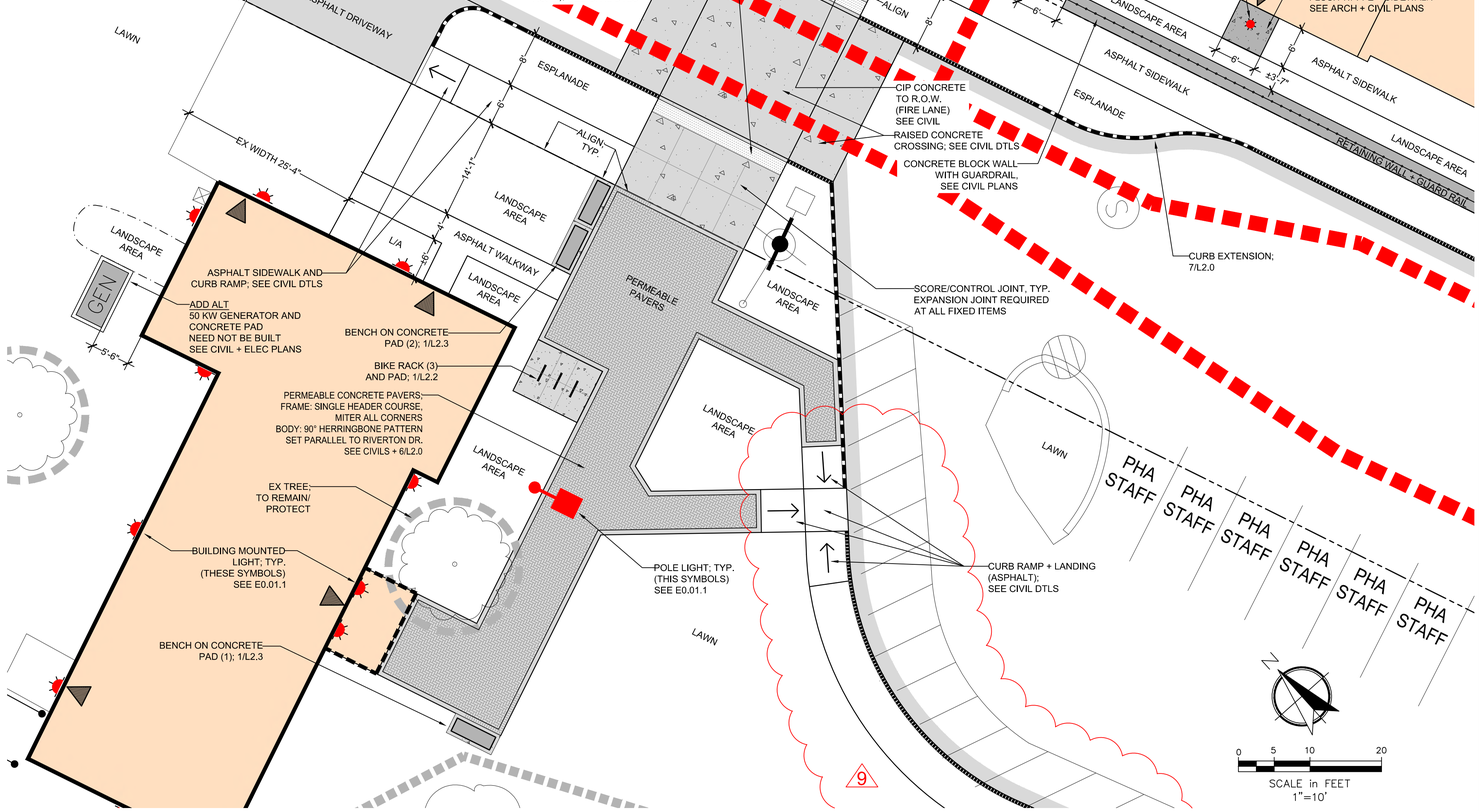
1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
C3.3

SCALE: AS SHOWN
DATE: 07/08/2024



1 CIRCLE 1 BUILDING CLINIC ENTRY
SCALE: AS SHOWN



2 ADMINISTRATION BUILDING AND CIRCLE 1 BUILDING PLAZAS
SCALE: AS SHOWN

LEGEND: EXISTING

- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
- UTILITY POLE
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- WATER VALVE/SHUTOFF
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- T TELEPHONE
- SD STORM DRAIN
- SS SANITARY SEWER
- C COMMUNICATIONS
- 70 CONTOUR LINE
- IRON PIPE / ROD FOUND
- MONUMENT FOUND

LEGEND: PROPOSED

- SUB-PROJECT LINE
- DECIDUOUS TREE
- SHRUBS
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- EDGE OF PAVING
- LIGHTS
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- T TRANSFORMER
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- FENCE
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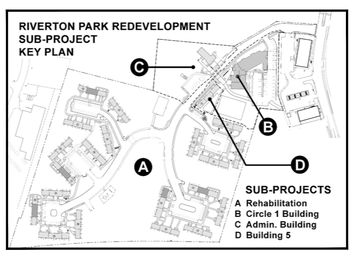
- BIKE REPAIR STATION
- DRIP EDGE / RIP-RAP



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OWNER
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14 BAXTER BLVD
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APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS
SITE PLAN ENLARGEMENT: CIRCLE 1 AND ADMIN BUILDING
CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS 9	

DRAWING NUMBER
C3.4
SCALE: AS SHOWN
DATE: 07/08/2024

LIMITS OF SUB-PROJECT B CONTRACT

LIMIT OF SUB-PROJECT A CONTRACT

MATCHLINE SHEETS C4.1, CS.1, CS.1

MATCHLINE SHEETS C4.2, CS.2, CS.2

8" HDPE L= 164, S=2.0%

TYPE F CB1.6 RIM = 79.35 INV OUT = 74.5

8" HDPE L= 49', S=2.0%

DMH 1.7 RIM = 79.70 INV IN = 71.22 INV. IN (RD) = 75.05 INV IN (FP) = 74.5 INV OUT = 71.12

DROP WYE CONNECTION TO EXISTING STORM DRAIN EX. INV =68.24+/-

TRENCH CAP OVER NEW TRENCH (TYPICAL)

BLDG ROOF DRAIN - RE: ARCH INV. OUT = 76.00

FFE 80.5

RAINGUARDIAN FOXHOLE AND FOCAL POINT UNIT

4FT CURB BREAK AND STONE SPILLOFF - 10" DEEP RIPRAP STONE D_{50}= 4"

RAINGUARDIAN FOXHOLE PRETREATMENT UNIT

BIORETENTION 12 - SEE DETAIL 10" OUTLET RIM = 76.50 U/D INV.IN = 73.50 8" INV. OUT = 73.50

WOOD GUARDRAIL AND PEASTONE FILTER - SEE DETAIL

BIORETENTION 11 - SEE DETAIL 12" OUTLET RIM = 75.50 U/D INV. = 72.50 8" INV. OUT = 72.50

8" HDPE L= 142, S=2.1%

CB 1.1 RIM = 74.25 INV IN = 70.05 INV IN =70.05 INV OUT = 66.0

FFE 76.94

FFE 78.25

BLDG ROOF DRAIN - RE: ARCH INV. OUT = 71.50

CONNECT UNDERDRAIN AND ROOF DRAIN WITH MANUFACTURED WYE FITTING INV. = 71.21

8" HDPE L= 44, S=1.0%

12" IN-LINE DRAIN RIM = 75.5 INV = 72.06

8" HDPE, L= 110, S=1.8%

12" IN-LINE DRAIN RIM = 74.90 INV = 70.75

6" PERFORATED PVC UNDERDRAIN L= 92, S=2.0%

10" HDPE L= 112, S=3.53%

DROP WYE CONNECTION TO STORM DRAIN

8" HDPE, L= 40', S=1.8%

4FT CURB BREAK AND STONE SPILLOFF - 10" DEEP RIPRAP D_{50} = 4"

NEW DMH 1.11 (DOGHOUSE MH) RIM = 76.10 8" INV. IN = 70.49 EX 15" INV = 65.19+/-

MODIFY CB - REINSTALL CURB INLET TO MATCH NEW CURBING

FFE 75.72

12" IN-LINE DRAIN RIM = 74.20 INV = 68.91

FFE 76.35

MODIFY CB FOR NEW PIPE MATCH INV (61.67)

CB 1.2 RIM = 66.75 INV IN = 63.25 INV OUT = 63.15

STORM DRAINAGE AND RESTORATION ONLY AS PART OF SUB-PROJECT B CONTRACT

10" HDPE L= 44, S=3.36%

FFE 70.24

LIMIT OF SUB-PROJECT A CONTRACT

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

0 15 30 60

SCALE in FEET 1"=30'

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OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK, CIRCLE 1 BUILDING, MAINTENANCE BUILDING AND REHABILITATION
2 RIVERTON DRIVE, PORTLAND, MAINE 04103

DRAWING

GRADING & DRAINAGE PLAN CIRCLE 1

CWS PROJECT NUMBER: 15.021

REVISIONS

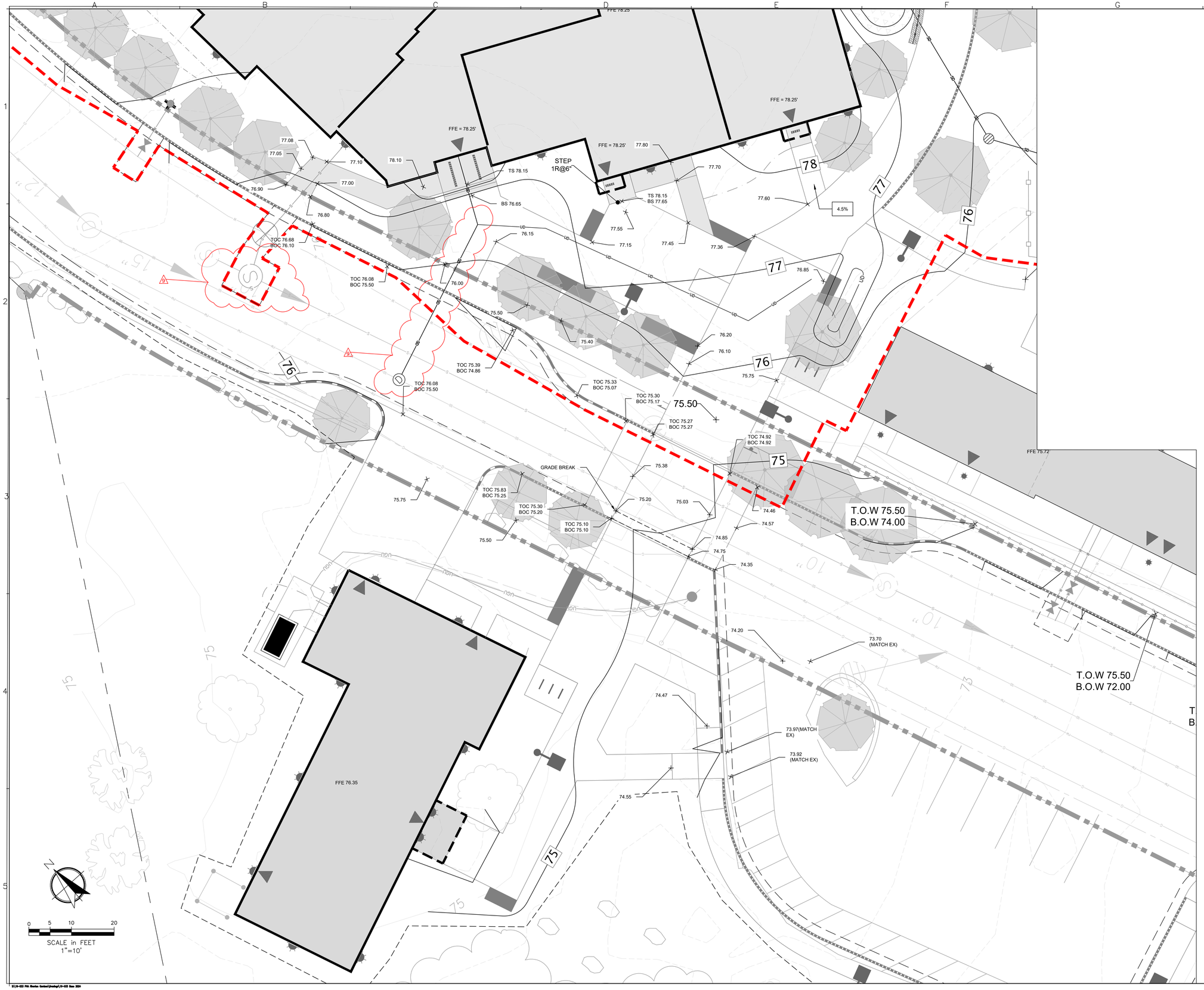
7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER

C4.1

SCALE: AS SHOWN

DATE: 1/12/2019



ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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DESIGNER

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No. 3994
10-1-24
LICENSED PROFESSIONAL ENGINEER

CARROLL ASSOCIATES
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207.772.1552 V. F. 207.772.0712

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

GRADING &
DRAINAGE PLAN
CIRCLE 1- 10 SCALE

CWS PROJECT NUMBER: 15.021

REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER
C4.1A

SCALE: AS SHOWN
DATE: 1/12/2019

LIMITS OF SUB-PROJECT B CONTRACT

LIMIT OF SUB-PROJECT A CONTRACT

MATCHLINE SHEETS C4.1, C5.1, C6.1

MATCHLINE SHEETS C4.2, C5.2, C6.2

UNDERDRAINED DRIP STRIP TYP. SEE DETAIL

INSTALL CLEANOUT ON UNDERDRAIN - BRING TO GRADE (TYPICAL ALL LOCATIONS SHOWN)

NEW UNDERDRAIN OUTLET INV.=65.00' INSTALL RIP RAP OUTLET PROTECTION

NEW UNDERDRAIN TO CONNECT TO STORM DRAIN WITH WYE CONNECTION - INVERT TBC

EXISTING CATCH BASIN AND STORM DRAIN TO REMAIN - ADJUST GRATE TO NEW GRADE - RIM = 66.15

UNDERDRAINED DRIP STRIP TYP. SEE DETAIL

NEW UNDERDRAIN OUTLET INV.=67.50' INSTALL RIP RAP OUTLET PROTECTION

REMOVE EXISTING CB, DMH AND STORM DRAIN LOCATED IN THIS AREA

12" HDPE, L=48 S=0.016

12" HDPE, L=53 S=0.016

12" HDPE L=50 S=0.01

NEW12" SD OUTLET (2) NEW 6" UD OUTLET INV.=62.53 -INSTALL RIP RAP OUTLET PROTECTION

NEW CB 2.1 RIM=68.85 INV.OUT=64.85

NEW CB 2.2 RIM=68.85 INV IN = 64.35 INV.OUT=64.25

NEW CB 2.3 RIM=68.85 12" INV IN = 63.48 6INV IN (2) = 63.98 INV.OUT=63.38

STORM DRAINAGE AND RESTORATION ONLY AS PART OF SUB-PROJECT B CONTRACT

UNDERDRAINED DRIP STRIP TYP. SEE DETAIL

NEW CB 3.1 RIM=62.95 INV IN = 59.25 INV.OUT=58.75

12" HDPE L=32 S=0.01

REMOVE EX CB AND STORM DRAIN

NEW CB 3.2 RIM=62.65 INV IN = 58.43 INV IN = 58.45 INV.OUT=58.33

UNDERDRAINED DRIP STRIP TYP. SEE DETAIL

CONNECT UNDERDRAIN OUTLET TO STORM DRAIN WITH WYE FITTING INV.=57.50'+/-

REPLACE EXISTING STORM DRAIN WITH NEW 12" HDPE PIPE L=150', S= 0.01 INSTALL RIPRAP OUTLET APRON

NEW12" SD OUTLET INV.=56.83 -INSTALL RIP RAP OUTLET PROTECTION

UNDERDRAINED DRIP STRIP TYP. SEE DETAIL

INSTALL NEW TYPE F CATCH BASIN AT END OF UNDERDRAIN INV. OUT = 64.50'

CONNECT NEW UNDERDRAINS USING WYE FITTING

6" PERFORATED PVC UNDERDRAIN PIPE L=365', S= 2.0%

CONNECT NEW UNDERDRAINS USING WYE FITTING

REMOVE EXISTING CBS AND STORM DRAIN LOCATED IN THIS AREA

NEW TYPE F CB 3.4 RIM=63.85 INV.IN = 59.95 INV.OUT=59.85

NEW 6" UNDERDRAIN OUTLET INV.=57.25' INSTALL RIP RAP OUTLET PROTECTION

12" HDPE L=64 S=0.01

NEW CB 3.3 RIM=63.85 12" INV IN = 59.29 6" INV IN = 59.79 INV.OUT = 59.09

12" HDPE L=56 S=0.01

NEW INLINE DRAIN- 12" FLAT GRATE RIM =63.85

FFE = 75.56'

FFE = 70.82'

FFE = 69.55'

FFE = 67.00'

FFE = 72.73'

FFE 76.94

FFE 75.72

FFE 70.24

FFE = 64.54'

FFE = 66.96'

WETLAND

LIMIT OF SUB-PROJECT A CONTRACT

MATCHLINE SHEETS C4.2, C5.2, C6.2

MATCHLINE SHEETS C4.3, C5.3, C6.3

0 15 30 60

SCALE in FEET
1" = 30'

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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DESIGNER

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PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING, MAINTENANCE BUILDING AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
GRADING & DRAINAGE PLAN CIRCLES 2+3
CWS PROJECT NUMBER: 15.021

REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER
C4.2

SCALE: AS SHOWN
DATE: 1/12/2019

S:\15-021 PVA Riverton Gardens\Drawings\15-021 Base 2024

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DESIGNER

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CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS
217 COMMERCIAL STREET, STE 200
PORTLAND, MAINE 04101
207.772.1552 V. F. 207.772.0712

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS

GRADING & DRAINAGE PLAN CIRCLES 4,5+6

CWS PROJECT NUMBER: 15.021

REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER

C4.3

SCALE: AS SHOWN
DATE: 1/12/2019

GENERAL NOTES

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2. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR SERVICE TO IDENTIFY AND MAP THE LOCATIONS OF ALL EXISTING UTILITIES. THIS INFORMATION SHALL BE PROVIDED TO THE OWNER AND THE DESIGN TEAM IN ORDER TO COORDINATE FINAL UTILITY DESIGN AND LOCATION.

UTILITY NOTES

1. SIZING OF BUILDING UTILITY SERVICE CONNECTIONS ARE PRELIMINARY AND WILL NEED TO BE COORDINATED WITH INTERNAL DESIGN PLANS. THE SIZES AND LOCATIONS OF NEW SERVICES HAVE BEEN ASSUMED BASED ON THE AVAILABLE INFORMATION AND ARE SUBJECT TO REVIEW AND APPROVAL BY GOVERNING AUTHORITIES.
2. ALL UTILITY COVERS, VALVE BOXES AND CLEANOUTS TO REMAIN SHALL BE ADJUSTED TO CONFORM TO PROPOSED FINISHED GRADES. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT PRICE.
3. ALL UTILITY MAINS AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING UTILITY.
4. CONNECTIONS TO EXISTING MAINS AND/OR OPERATION OF VALVES ON THE WATER SYSTEM SHALL BE COORDINATED WITH THE OWNER. PORTLAND WATER DISTRICT SHALL BE INFORMED OF ANY WORK OCCURRING ON SITE THAT COULD IMPACT THE SAFETY AND OPERATION OF THE PUBLIC WATER SYSTEM.
5. REPLACEMENT OF WATER MAINS AND/OR SERVICES MAY REQUIRE INSTALLATION OF TEMPORARY WATER - COORDINATE WORK WITH OWNER.
6. NEW 4" BRANCH MAINS MAY BE CLASS 52 DUCTILE IRON TO AWWA C151, OR DIPS DR11 HDPE TO AWWA C906, PE 4710.
7. ALL WORK ON SEWERS ON OR AROUND THE PROJECT SITE SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PORTLAND ENGINEERING DEPARTMENT. ALL WORK ON SEWER MAINS SHALL BE PRE-ARRANGED WITH CITY OF PORTLAND ENGINEERING.
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8. UNDERGROUND CONDUITS AND WIRING FOR SITE LIGHTING NOT SHOWN ON THESE DRAWINGS - REFER TO SITE ELECTRICAL PLANS..

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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DESIGNER

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14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK,
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
UTILITY PLAN
CIRCLE 1
CWS PROJECT NUMBER: 15.021

REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER
C5.1

SCALE: AS SHOWN
DATE: 1/12/2019

S:\15-021 PVA Riverton Center\Drawings\15-021 Base 2024

GENERAL NOTES
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LIMIT OF SUB-PROJECT A CONTRACT

NEW 6" SDR35 PVC BUILDING SEWER - INV TBC

EXISTING WATER AND SEWER LINES IN CIRCLE 2 TO BE ABANDONED - REMOVE WHERE IN CONFLICT WITH NEW WORK

INSTALL 2" PE WATER SERVICE TO BUILDING - PROVIDE CURB STOP AT BACK OF SIDEWALK

6" SDR35 PVC MANUFACTURED WYE FITTING

6" SDR35 PVC L= 113', S= 0.039

6" SDR35 PVC BUILDING SEWER - INV TBC

NEW SMH 2.2
RIM =68.3
INV IN = 60.59
INV. OUT = 60.49

8" SDR35 PVC L= 83', S= 0.045

NEW 4" BRANCH MAIN -SEE NOTES

INSTALL 4" TAP ON EXISTING MAIN AND 4" GATE VALVE ON BRANCH MAIN

6" SDR35 PVC BUILDING SEWER - INV TBC

INSTALL 2" PE WATER SERVICE TO BUILDING - PROVIDE CURB STOP AT BACK OF SIDEWALK

CONTRACTOR TO EXCAVATE TEST PITS EITHER SIDE OF MAIN JUNCTION TO EXPOSE VALVES SHOWN ON RECORD PLANS. IF FOUND, VALVES SHALL BE BROUGHT TO FINISHED PAVEMENT GRADE

MODIFY EXISTING SEWER MANHOLE TO ACCEPT NEW 8" PIPE - INV. IN = 56.75
6" PIPE - INV. IN = 56.75

ABANDON EXISTING 2 2" WATER LINE TO CIRCLE 2 - CUT AND REMOVE PIPE BEHIND CORPORATION STOP

ABANDON EXISTING SEWER MANHOLE, CAP AND ABANDON SEWER LINE

LIMIT OF SUB-PROJECT A CONTRACT

NEW 6" SDR35 PVC BUILDING SEWER - INV TBC

INSTALL 2" PE WATER SERVICE TO BUILDING - PROVIDE CURB STOP AT BACK OF SIDEWALK

NEW SMH 2.1
RIM =71.8
INV IN = 65.1
INV. OUT = 65.0

INSTALL 4"MJ CAP AND 2" BLOWOFF ASSEMBLY

INSTALL 2" PE WATER SERVICE TO BUILDING - PROVIDE CURB STOP AT BACK OF SIDEWALK

INSTALL 8"MJ CAP AND 2" BLOWOFF ASSEMBLY

INSTALL 8"-4" TEE FITTING AND 4" GV ON BRANCH MAIN.

CUT EXISTING 8" DI WATER MAIN. INSTALL 11.25 BEND AND EXTEND PIPE IN DIRECTION SHOWN.

6" SDR35 PVC BUILDING SEWER - INV TBC - INSTALL CLEANOUT 5FT FROM BUILDING

CONTRACTOR TO EXCAVATE TEST PITON EXISTING MAIN AT END OF RIGHT OF WAY TO CONFIRM SIZE, DEPTH AND ALIGNMENT OF PIPE

CONNECT 6" SERVICE TO 8" MAIN WITH WYE FITTING INV = 51.50+/-

TRENCH CAP OVER NEW UTILITY LINE (TYPICAL)

MODIFY EXISTING SEWER MANHOLE TO ACCEPT NEW PIPES
6" INV. IN = 50.28
8" INV IN = 50.18

8" SDR35 PVC L= 136', S= 0.035

NEW 6" SDR35 PVC BUILDING SEWER - INV TBC

EXISTING WATER AND SEWER LINES IN CIRCLE 3 TO BE ABANDONED - REMOVE WHERE IN CONFLICT WITH NEW WORK

INSTALL 2" PE WATER SERVICE TO BUILDING - PROVIDE CURB STOP AT BACK OF SIDEWALK

6" SDR35 PVC L= 171', S= 0.038

6" SDR35 PVC BUILDING SEWER - INV TBC

NEW SMH 3.1
RIM =67.25
INV IN = 57.88
INV. OUT = 57.83

8" SDR35 PVC L= 105', S= 0.025

NEW SMH 3.2
RIM =64.1
INV IN = 55.80 (2)
INV. OUT = 55.00

INSTALL 4" MJ CAP AND 2" BLOWOFF ASSEMBLY

INSTALL 2" PE WATER SERVICE TO BUILDING - PROVIDE CURB STOP AT BACK OF SIDEWALK

MODIFY CB TO

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

0 15 30 60
SCALE in FEET
1"=30'

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OWNER
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14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING, MAINTENANCE BUILDING AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

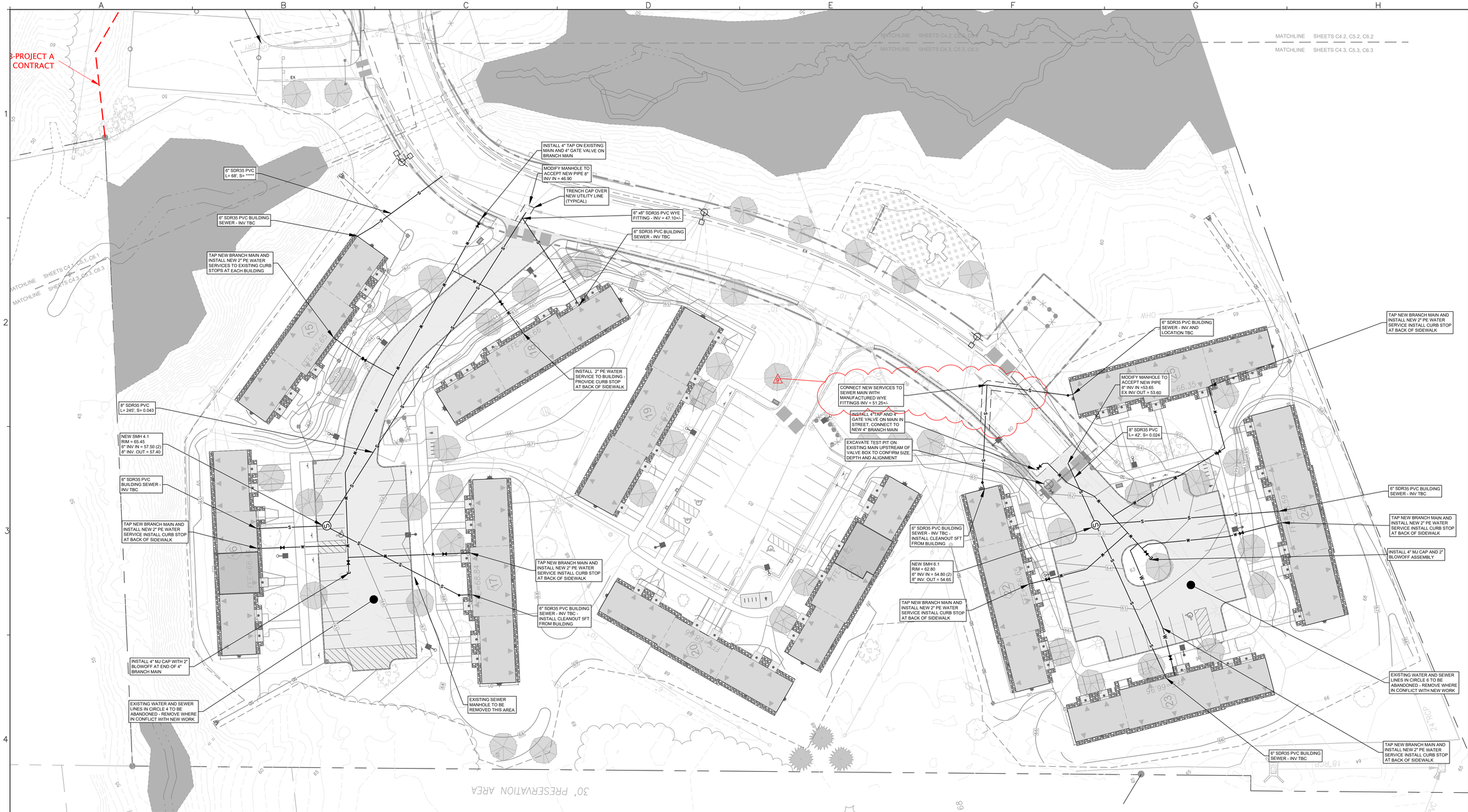
DRAWING
UTILITY PLAN
CIRCLES 2+3
CWS PROJECT NUMBER: 15.021

REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 80% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER
C5.2
SCALE: AS SHOWN
DATE: 1/12/2019

S:\15-023 Pitt Stanton Gardens\Drawings\15-023 Base 2024



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0 15 30 60
SCALE in FEET
1"=30'

CWS ARCHITECTS
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Scarborough ME 04074
OFFICE: 207 774 4441 CWSARCH.COM

DESIGNER
STATE OF MAINE ANDREW D. JOHNSTON No. 9994 10-1-24 LICENSED PROFESSIONAL ENGINEER
CARROLL ASSOCIATES
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OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING, MAINTENANCE BUILDING AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
UTILITY PLAN
CIRCLES 4,5+6
CWS PROJECT NUMBER: 15.021

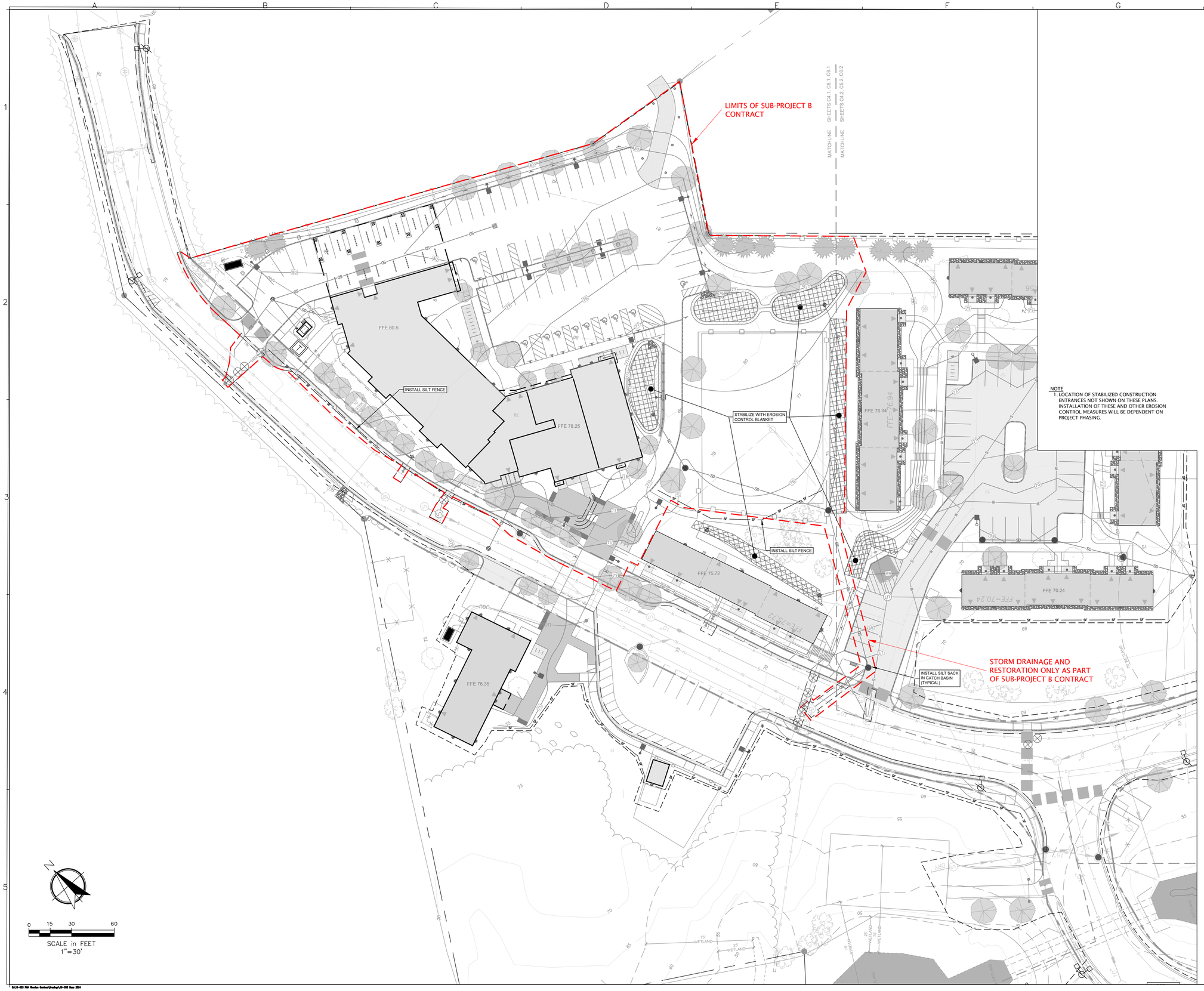
REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

DRAWING NUMBER
C5.3

SCALE: AS SHOWN
DATE: 1/12/2019

S:\15-021 Pitt Stanton Gardner\Drawings\15-021 Base 2024



NOTE
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OWNER

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PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

EROSION CONTROL PLAN CIRCLE 1

CWS PROJECT NUMBER: 15.021

REVISIONS

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DRAWING NUMBER
C6.1

SCALE: AS SHOWN
DATE: 1/12/2019

LIMITS OF SUB-PROJECT B CONTRACT

LIMIT OF SUB-PROJECT A CONTRACT

MATCHLINE SHEETS C4.1, C5.1, C6.1

MATCHLINE SHEETS C4.2, C5.2, C6.2

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RIPRAP OUTLET PROTECTION

INSTALL SILT FENCE

RIPRAP OUTLET PROTECTION

INSTALL SILT SACKS IN CATCH BASINS (TYPICAL)

RIPRAP OUTLET PROTECTION

INSTALL SILT FENCE

STORM DRAINAGE AND RESTORATION ONLY AS PART OF SUB-PROJECT B CONTRACT

INSTALL SILT SACKS IN CATCH BASINS (TYPICAL)

RIPRAP OUTLET PROTECTION

INSTALL DOUBLE ROW OF SILT FENCE THIS AREA

RIPRAP OUTLET PROTECTION

LIMIT OF SUB-PROJECT A CONTRACT

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DRAWING
EROSION
CONTROL PLAN
CIRCLES 2+3
CWS PROJECT NUMBER: 15.021

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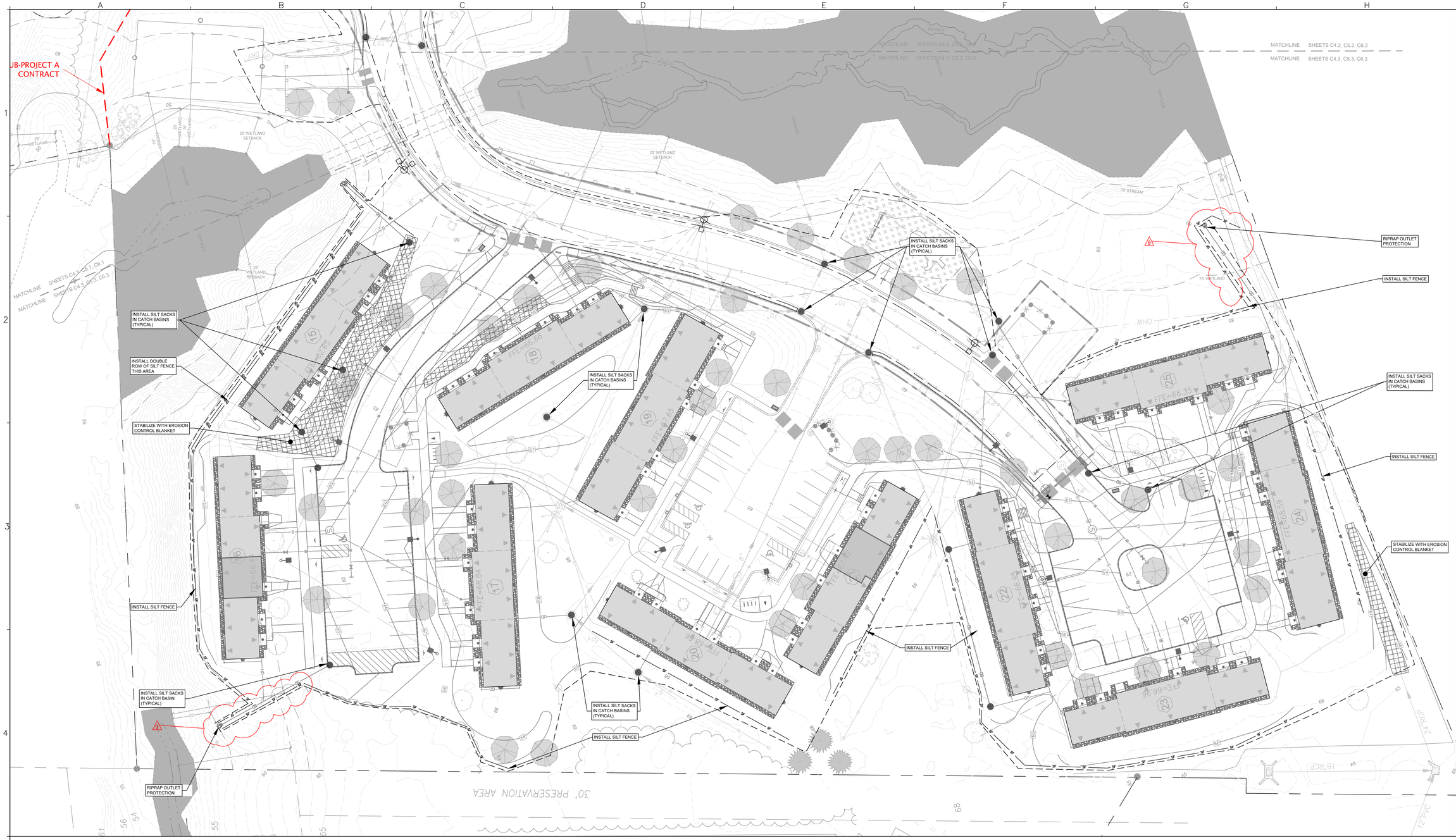

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PROJECT

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CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

EROSION CONTROL PLAN CIRCLES 4,5+6

CWS PROJECT NUMBER: 15.021

REVISIONS

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DRAWING NUMBER
C6.3

SCALE: AS SHOWN
DATE: 1/12/2019

A. SOIL EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, SILTATION FENCE, EROSION CONTROL MIX, STONE CHECK DAMS, HAY BALE BARRIERS, CATCH BASIN SEDIMENT COLLECTION BAGS, EROSION CONTROL BLANKET, AND TEMPORARY SEEDING AND MULCHING AS REQUIRED. PERMANENT DEVICES INCLUDE THE USE OF RIP RAP AT EXPOSED STORM DRAIN AND CULVERT INLETS AND OUTLETS, AND PERMANENT VEGETATION.

A. GENERAL

1. IT IS ANTICIPATED THAT CONSTRUCTION MAY BEGIN AS SOON AS POSSIBLE FOLLOWING RECEIPT OF NECESSARY PERMITS.

2. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION & SEDIMENT CONTROL BMPS - MANUAL FOR DESIGNERS AND ENGINEERS (2016), OR AS CURRENTLY REVISED OR U.S. ENVIRONMENTAL PROTECTION AGENCY PUBLICATION 832/R-92-005 (SEPTEMBER, 1992) STORM WATER MANAGEMENT FOR CONSTRUCTION, CHAPTER 3, WHICHEVER IS MORE STRINGENT.

3. ANY ADDITIONAL EROSION AND SEDIMENTATION CONTROL DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERSONNEL AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.

4. 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.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION, REPAIR/ REPLACEMENT/ MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF ACCEPTABLE PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:

a.a. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

a.b. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

a.c. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.

a.d. FOR AREAS STABILIZED WITH RIP RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP RAP. STONE MUST BE SIZED APPROPRIATELY.

a.e. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.

a.f. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIP RAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN CUTTING OF THE CHANNEL.

B. EROSION AND SEDIMENTATION CONTROL MEASURES

1. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE TEMPORARY SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE, OR ENGINEER. SILT FENCE SHALL BE INSTALLED ALONG THE DOWNGRADIENT SIDE OF CONSTRUCTION WORK AREAS, WITH LOCATIONS BEING ADJUSTED ALONG WITH THE CONSTRUCTION PHASING AREAS. THE CONTRACTOR MAY USE EROSION MIX IN PLACE OF SINGLE SILT FENCE BARRIER.

2. THE SILT FENCE SHALL BE INSTALLED PER THE DETAIL PROVIDED IN THE PLAN SET AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST WEEKLY IN THE ABSENCE OF SIGNIFICANT RAINFALL. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE SILT BARRIERS. THIS SEDIMENT WILL BE SPREAD AND STABILIZED IN AREAS OF THE SITE NOT SUBJECT TO EROSION. THE CONTRACTOR SHALL MAKE REPAIRS IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE. IF SUCH EROSION IS OBSERVED, THE CONTRACTOR SHALL TAKE PROACTIVE ACTION TO IDENTIFY THE CAUSE OF THE EROSION AND TAKE ACTION TO AVOID ITS REOCCURRENCE. PROPER PLACEMENT OF STAKES AND KEYING THE BOTTOM OF THE FABRIC INTO THE GROUND IS CRITICAL TO THE FENCE'S EFFECTIVENESS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM AND MEASURES TAKEN TO AVOID THE CONCENTRATION OF FLOWS NOT INTENDED TO BE DIRECTED TO THE SILT FENCE. SILT FENCE SHALL BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION.

3. EROSION CONTROL BERMS MAY BE USED IN PLACE OF SILT FENCE IN THE AREA ADJACENT TO THE DRAINAGEWAY AT THE NORTHWEST CORNER OF THE PROPERTY.

4. TEMPORARY SEDIMENT SUMPS WILL PROVIDE SEDIMENTATION CONTROL FOR STORMWATER RUNOFF FROM DISTURBED AREAS DURING CONSTRUCTION UNTIL STABILIZATION HAS BEEN ACHIEVED.

5. A CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED AT ALL ACCESS POINTS ONTO THE SITE TO PREVENT TRACKING OF SOIL ONTO ADJACENT LOCAL ROADS AND STREETS.

6. SILTSACKS ™ WILL BE UTILIZED IN CATCH BASINS IN OR NEAR WORK AREAS AT RISK FROM RECEIVING TRANSPORTED SEDIMENT.

7. ALL CATCH BASINS AND FIELD INLETS, NEW OR EXISTING, THAT MAY RECEIVE RUNOFF FROM DISTURBED AREAS MUST BE PROTECTED DURING CONSTRUCTION.

8. REMOVAL OF SOD, TREES, BUSHES AND OTHER VEGETATION AND SOIL DISTURBANCE WILL BE KEPT TO A MINIMUM WHILE ALLOWING PROPER SITE DEVELOPMENT.

9. GRUBBINGS AND ANY UNUSABLE TOPSOIL SHALL BE STRIPPED AND REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN AN APPROVED MANNER.

10. ANY SUITABLE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR REUSE IN FINAL GRADING. TOPSOIL WILL BE STOCKPILED IN A MANNER SUCH THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE WILL RESULT. IF A STOCKPILE IS NECESSARY, THE SIDE SLOPES OF THE TOPSOIL STOCKPILE WILL NOT EXCEED 2:1. TOPSOIL STOCKPILES WILL BE TEMPORARILY SEEDED WITH AROOSTOOK RYE, ANNUAL OR PERENNIAL RYE GRASS WITHIN 7 DAYS OF FORMATION, OR TEMPORARILY MULCHED IF SEEDING CANNOT BE DONE WITHIN THE RECOMMENDED SEEDING DATES. SEDIMENT BARRIERS SHALL BE INSTALLED DOWNSTREAM OF STOCKPILES. STORMWATER SHALL BE DIVERTED AROUND STOCKPILE AREAS.

11. TEMPORARY DIVERSION BERMS AND DRAINAGE SWALES SHALL BE CONSTRUCTED AS NECESSARY TO PREVENT OFF-SITE DRAINAGE FROM ENTERING THE WORK AREA.

12. TEMPORARY STABILIZATION SHALL BE CONSTRUCTED WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOILS, PRIOR TO ANY RAIN EVENT, AND PRIOR TO ANY WORK SHUT DOWN LASTING MORE THAN ONE DAY. TEMPORARY STABILIZATION INCLUDES SEED, MULCH, OR OTHER NON-ERODABLE COVER.

13. TEMPORARY SEEDING SPECIFICATIONS: WHERE SEEDBED HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME, AND SEED. APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND 10-10-10 (N-P205-K20) FERTILIZER AT A RATE OF 600 LBS PER ACRE (13.8 LB. PER 1,000 SQUARE FEET). UNIFORMLY APPLY SEED AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY. RECOMMENDED TEMPORARY SEEDING DATES AND APPLICATION RATES ARE AS FOLLOWS:

AROOSTOOK RYE: RECOMMENDED SEEDING DATES: 8/15 -10/1 APPLICATION RATE: 112 LBS/ACRE
ANNUAL RYE GRASS: RECOMMENDED SEEDING DATES: 4/1 - 7/1 APPLICATION RATE: 40 LBS/ACRE
PERENNIAL RYE GRASS: RECOMMENDED SEEDING DATES: 8/15 - 9/15 APPLICATION RATE: 40 LBS/ACRE

15. PERMANENT SEEDING SPECIFICATION. IF A LANDSCAPE PLAN HAS BEEN PREPARED FOR THE PROJECT, SOIL PREPARATION AND SEED SPECIFICATIONS OF THAT PLAN SHALL SUPERSEDE THESE GENERAL PERMANENT SEEDING REQUIREMENTS. IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND JUNE 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 1SHALL BE SEEDED WITH AROOSTOOK RYE OR MULCHED AT RATES PREVIOUSLY SPECIFIED. SEE WINTER CONDITIONS NOTES FOR SEEDING STABILIZATION AFTER NOVEMBER 1.

a. APPLY TOPSOIL TO A MINIMUM DEPTH OF 4 INCHES. MIX TOPSOIL WITH THE SUBSOIL TO A MINIMUM DEPTH OF 6 INCHES.
b. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND GRANULAR, COMMERCIAL-GRADE, 10-10-10 (N-P2O5-K2O) FERTILIZER AT A RATE OF 800 LBS PER ACRE (18.4 LBS PER1,000 SQUARE FEET).
c. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY.
d. THE SEED MIXTURE FOR LAWN AND FILTRATION BASIN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
30% CREEPING RED FESCUE
50% KENTUCKY BLUEGRASS
20% ITALIAN/PERENNIAL RYE GRASS
NOTE: SEED MIXTURE SHALL CONSIST OF AT LEAST TWO VARIETIES OF EACH TYPE OF GRASS. WHEN USED IN A FILTER BASIN, STORMWATER SHALL NOT BE DIRECTED TO THE BASIN UNTIL THE GRASS IS ESTABLISHED.

16. MULCH ALL AREAS SEEDED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE.

17. DITCH LININGS, STONE CHECK DAMS, AND RIP RAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF CULVERT.

18. RIP RAP REQUIRED AT CULVERTS AND STORM DRAIN INLETS AND OUTLETS SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE.

19. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 20%, IN THE BASE OF DITCHES NOT OTHERWISE PROTECTED, AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (E.G. WETLANDS AND WATER BODIES). EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

20. TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

C. SPECIAL MEASURES FOR SUMMER CONSTRUCTION

DURING DRY SUMMER CONDITIONS, THE CONTRACTOR SHALL:
1. IMPLEMENT A PROGRAM TO APPLY DUST CONTROL MEASURES ON A DAILY BASIS EXCEPT THOSE DAYS WHERE PRECIPITATION IS SUFFICIENT TO SUPPRESS DUST FORMATION. THIS PROGRAM SHALL EXTEND TO AND INCLUDE SWEEPING OF ADJACENT STREETS.
2. SPRAY ANY MULCHES WITH WATER AFTER ANCHORING TO DAMPEN THE SOIL AND ENCOURAGE EARLY GROWTH. SPRAYING MAY BE REQUIRED SEVERAL TIMES. TEMPORARY SEED MAY BE REQUIRED UNTIL THE LATE SUMMER SEEDING SEASON.
3. COVER STOCKPILES OF FINE-GRAINED MATERIALS, OR EXCAVATED SOILS WHICH ARE SUSCEPTIBLE TO EROSION TO PROTECT FROM THE INTENSE, SHORT-DURATION STORMS WHICH ARE MORE PREVALENT IN THE SUMMER MONTHS.
4. TAKE ADDITIONAL STEPS NEEDED, INCLUDING WATERING, OR COVERING EXCAVATED MATERIALS TO CONTROL FUGITIVE DUST EMISSIONS TO MINIMIZE REDUCTIONS IN VISIBILITY AND THE AIRBORNE DISBURSEMENT OF FINE-GRAINED SOILS. THIS IS PARTICULARLY IMPORTANT GIVEN THE POTENTIAL PRESENCE OF SOIL CONTAMINANTS, AND THEIR PROXIMITY ALONG THE ADJACENT STREETS AND PROPERTIES.
5. THESE MEASURES MAY ALSO BE REQUIRED IN THE SPRING AND FALL DURING THE DRIER PERIODS OF THESE SEASONS.

D. WINTER CONDITIONS

1. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1ST THROUGH APRIL 15TH. IF AREAS WITHIN THE CONSTRUCTION ACTIVITY ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15TH, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.
2. SILT FENCE: IN LIEU OF PROVIDING THE 6" X 6" TRENCH, FOR FROZEN GROUND, STONY SOIL, THE PRESENCE OF LARGE ROOTS, OR OTHER PROHIBITIVE CONDITIONS, THE BOTTOM 8" TO 12" OF THE FABRIC MAY BE LAID ON EXISTING GRADE AND BACK FILLED WITH STONE ANCHORING MATERIAL, AS SHOWN ON THE DRAWINGS.
3. HAY MULCH SHALL BE APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.
4. AFTER NOVEMBER 1ST OR THE FIRST KILLING FROST FOR THE REGION AND BEFORE SNOW FALL, ALL EXPOSED AND DISTURBED AREAS NOT TO UNDERGO FURTHER DISTURBANCE ARE TO HAVE DORMANT SEEDING. THE DORMANT SEEDING METHOD: PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED PERMANENT SEED MIXTURE AT DOUBLE THE REGULAR SEEDING RATE, AND MULCH AND ANCHOR. DORMANT SEEDINGS NEED TO BE ANCHORED EXTREMELY WELL ON SLOPES, DITCH BASES AND AREAS OF CONCENTRATED FLOWS. DORMANT SEEDING REQUIRES INSPECTION AND RESEEDING AS NEEDED IN THE SPRING. ALL AREAS WHERE COVER IS INADEQUATE MUST BE IMMEDIATELY RESEEDED AND MULCHED AS SOON AS POSSIBLE.
5. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1ST, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
6. MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

E. HOUSEKEEPING

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON-SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORM WATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS, ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF 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.

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

5. EXCAVATION DE-WATERING. EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
- DISCHARGES FROM FIREFIGHTING ACTIVITY;
- FIRE HYDRANT FLUSHINGS;
- VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
- DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
- ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
- 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;
- UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
- UNCONTAMINATED GROUNDWATER OR SPRING WATER;
- FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED; UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5));
- POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND LANDSCAPE IRRIGATION.

7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON_STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
- WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
- FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
- SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.

F. INSPECTION AND MAINTENANCE

5. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORM WATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AND BEFORE AND AFTER A STORM EVENT, PRIOR TO COMPLETION OF PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORM WATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT AND ANY DEP OR MUNICIPAL COMPANION DOCUMENTS, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE MODIFIED OF IF ADDITIONAL BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (0.5IN OR GREATER IN 24-HOUR PERIOD). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

6. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME AND QUALIFICATIONS OF THE PERSON PERFORMING THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES.

7. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:
a. IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET.
b. DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS PROPERLY OPERATING. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.
c. IDENTIFY AREAS WHICH APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES WHICH SHOULD BE USED TO IMPROVE CONDITIONS.
d. INSPECT AREAS OF RECENT SEEDING TO DETERMINE PERCENT CATCH OF GRASS. A MINIMUM CATCH OF 90 PERCENT IS REQUIRED PRIOR TO REMOVAL OF EROSION CONTROL MEASURES.

4. IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, TO EITHER IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.

5. ALL CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS PREPARED BY THE INSPECTOR(S) SHALL BE FILED WITH THE OWNER, AND THE PERMIT FILE CONTAINED ON THE PROJECT SITE. ALL WRITTEN CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS MUST BE FILED WITHIN ONE (1) WEEK OF THE INSPECTION DATE AND RECORDS MUST BE RETAINED FOR THREE YEARS FROM THE TIME PERMANENT STABILIZATION IS ACHIEVED.

6. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION/SEDIMENT CONTROL REPORT, INCLUDING CONTROL OF FUGITIVE DUST, AND SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

G. CONSTRUCTION SCHEDULE & SEQUENCE (TIMELINES ARE APPROXIMATE AND WILL BE DEPENDENT ON WEATHER AND SITE CONDITIONS).

1. PRE-CONSTRUCTION CONFERENCE: PRIOR TO ANY CONSTRUCTION AT THE SITE, REPRESENTATIVES OF THE CONTRACTOR, THE ARCHITECT, THE OWNER, AND THE SITE DESIGN ENGINEER SHALL MEET TO DISCUSS THE SCHEDULING OF THE SITE CONSTRUCTION AND THE DESIGNATION OF THE RESPONSIBLE PARTIES FOR IMPLEMENTING THE PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE MEETING. PRIOR TO THE MEETING, THE CONTRACTOR WILL PREPARE A DETAILED SCHEDULE AND A MARKED-UP SITE PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL CONDUCT A MEETING WITH EMPLOYEES AND SUB-CONTRACTORS TO REVIEW THE EROSION CONTROL PLAN, THE CONSTRUCTION TECHNIQUES WHICH WILL BE EMPLOYED TO IMPLEMENT THE PLAN, AND PROVIDE A LIST OF ATTENDEES AND ITEMS DISCUSSED AT THE MEETING TO THE OWNER. THREE COPIES OF THE SCHEDULE, THE CONTRACTOR'S MEETING MINUTES, AND MARKED-UP SITE PLAN SHALL BE PROVIDED TO THE OWNER.

2. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES IS OPTIMIZED.
a. INSTALL SAFETY AND CONSTRUCTION FENCE TO SECURE THE SITE FOR CONSTRUCTION.
b. INSTALL ALL PERIMETER SILTATION FENCE AND EROSION CONTROL BARRIERS. PARTICULAR ATTENTION SHALL BE PAID TO AREAS UPSTREAM OF PROTECTED NATURAL RESOURCES. PROJECT LIMITS OF DISTURBANCE ARE CLEARLY DELINEATED ON THE DRAWINGS - NO ACTIVITY IS ALLOWED OUTSIDE THESE LIMITS. SIGNS SHALL BE ERECTED INDICATING THAT THE DOWNSTREAM AREAS ARE OFF LIMITS TO ALL CONSTRUCTION ACTIVITIES.
c. INSTALL CONSTRUCTION ENTRANCES.
d. CLEAR AND GRUB THE CONSTRUCTION AREA, REMOVE AND STOCKPILE UNSUITABLE FILL MATERIAL.
e. CONSTRUCT ACTIVITIES ON THE SITE TO OPTIMIZE THE HANDLING OF MATERIALS AND RESTRICT THE DENUDED AREAS TO THE TIME STIPULATED.
f. UNDERTAKE MAJOR EARTHWORK ACTIVITY TO ROUGH GRADE THE SITE
g. INSTALL UTILITIES AND CONSTRUCT STABILIZED PADS IN BUILDING AREAS.
h. INSTALL AND COMPACT NEW PAVEMENT BASE GRAVEL MATERIALS AND INSTALL BINDER PAVEMENT.
i. LANDSCAPE (LOAM AND SEED).
j. INSTALL STRIPING, SIGNAGE, AND MISCELLANEOUS SITE IMPROVEMENTS.
k. REVIEW SITEWORK WITH ENGINEER AND OWNER AND COMPLETE ANY PUNCH LIST ITEMS.
l. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES.
3. THE CONTRACTOR MUST MAINTAIN AN ACCURATE SET OF RECORD DRAWINGS INDICATING THE DATE WHEN AN AREA IS FIRST DENUDED, THE DATE OF TEMPORARY STABILIZATION, AND THE DATE OF FINAL STABILIZATION. ON OCTOBER 1 OF ANY CALENDAR YEAR, THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR STABILIZING THE SITE FOR THE WINTER AND A DESCRIPTION OF WHAT ACTIVITIES ARE PLANNED DURING THE WINTER.

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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Scarborough ME 04074
OFFICE: 207 774 4441 CWSARCH.COM

DESIGNER

STATE OF MAINE
ANDREW D. JOHNSTON
No. 9894
8–1–24
PROFESSIONAL ENGINEER
LICENSED

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS
217 COMMERCIAL STREET, STE 200
PORTLAND, MAINE 04101
207.772.1552 V. F. 207.772.0712

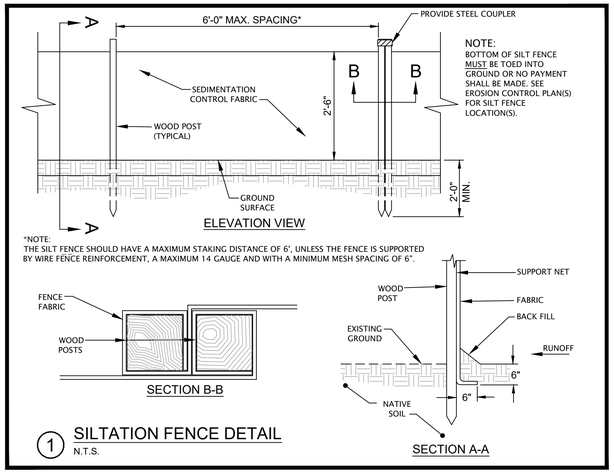
OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE,
PORTLAND, MAINE 04103

DRAWINGS
EROSION CONTROL NOTES
CWS PROJECT NUMBER: 15.021

REVISIONS

1	FOR SCHEMATIC DESIG



1 SILTATION FENCE DETAIL
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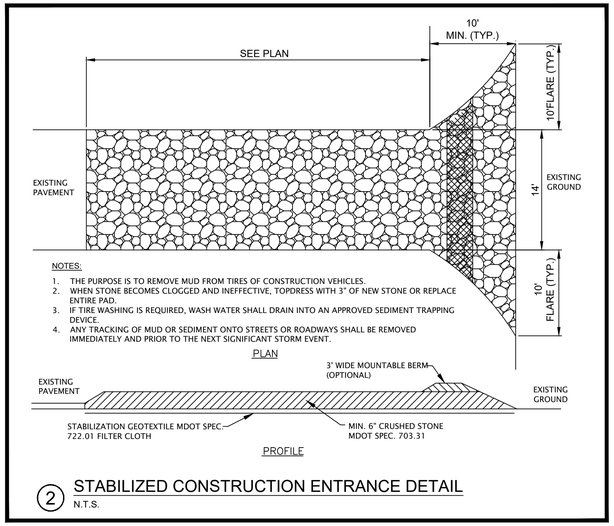

2 STABILIZED CONSTRUCTION ENTRANCE DETAIL
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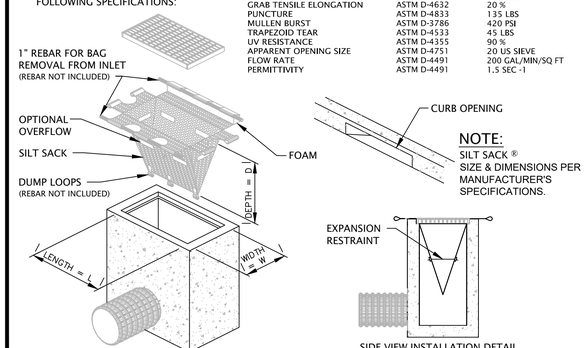

3 SILT SACK ® DETAIL & SPECIFICATIONS
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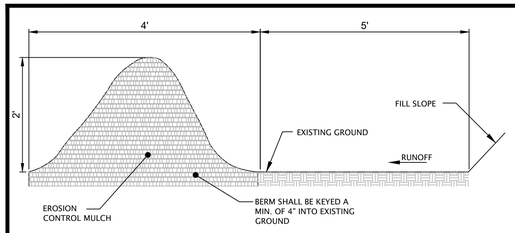

4 EROSION CONTROL MIX BERM SEDIMENT BARRIER
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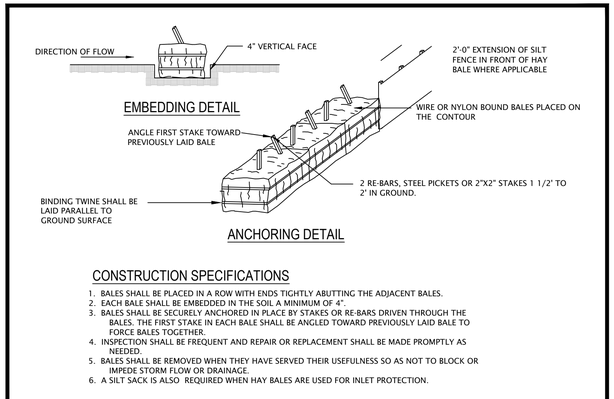

5 STRAW OR HAY BALE BARRIER
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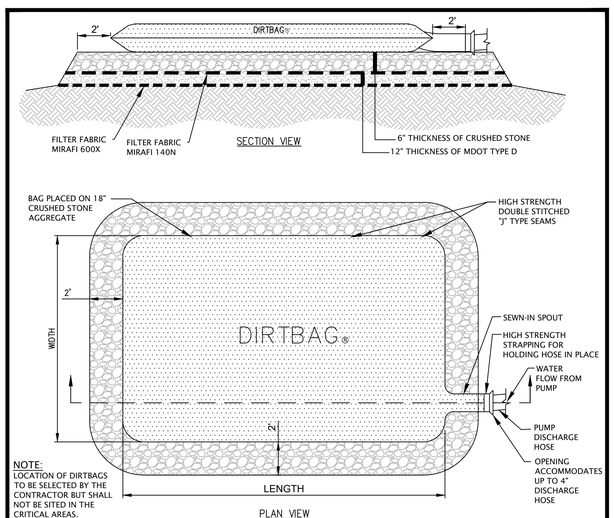

6 DIRTBAG / SPECIFICATIONS FOR DEWATERING DETAIL
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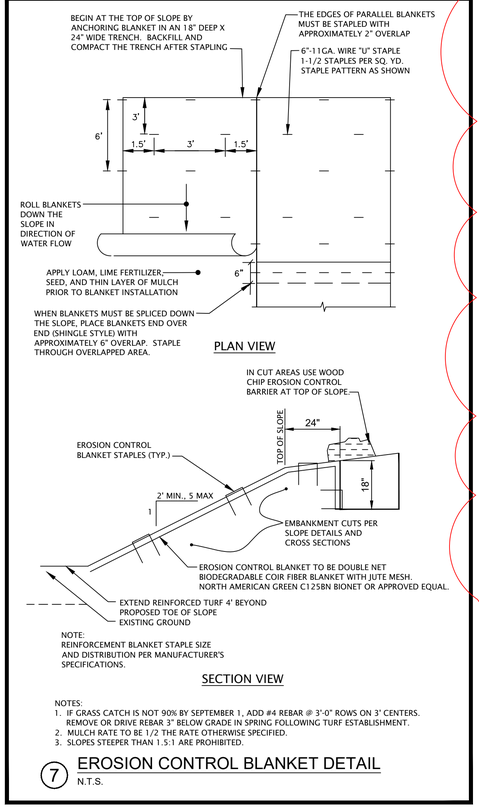

7 EROSION CONTROL BLANKET DETAIL
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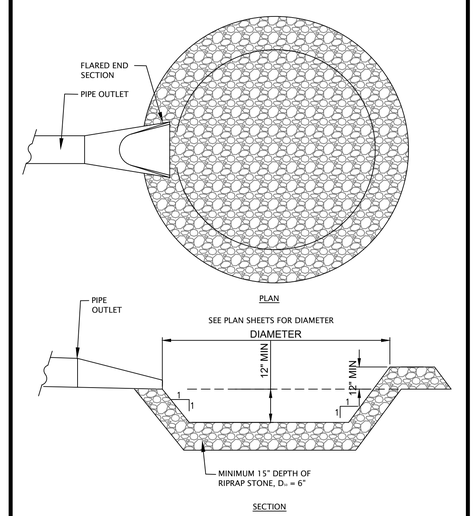

8 FOREBAY DETAIL
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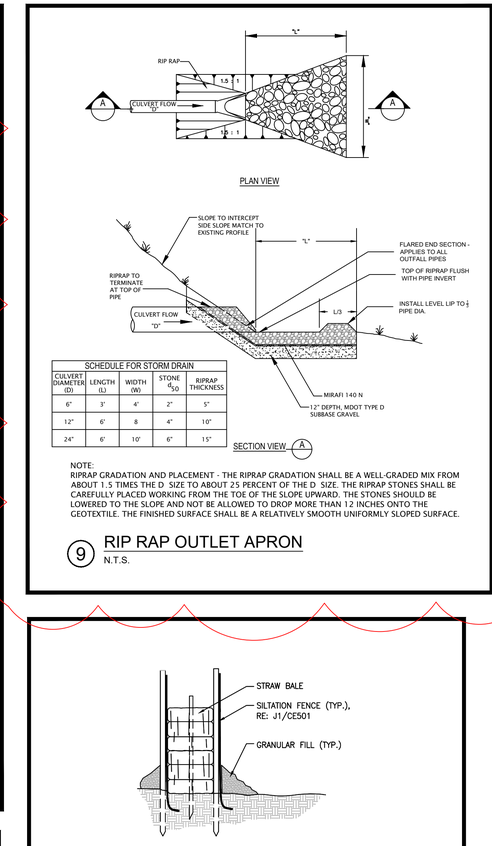

9 RIP RAP OUTLET APRON
N.T.S.

10 SILT FENCE: M/B BARRIER DETAIL
N.T.S.

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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PROJECT: RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

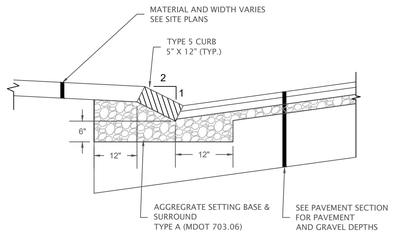
DRAWINGS: EROSION CONTROL DETAILS
CWS PROJECT NUMBER: 15.021

REVISIONS

7	MAJOR SITE PLAN AMENDMENT	08.16.2024
8	ISSUED FOR 50% MSHA REVIEW	09.18.2024
9	PER CITY REVIEW COMMENTS	10.01.2024

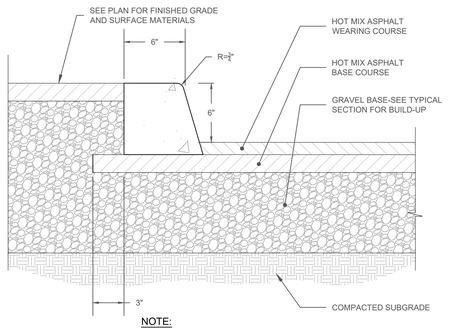
DRAWING NUMBER
C7.2
SCALE: AS SHOWN
DATE: 1/12/2019

S:\19-023 PVA Riverton Garden\Drawings\19-023 2023 DETAILS



A SLOPED GRANITE CURB DETAIL

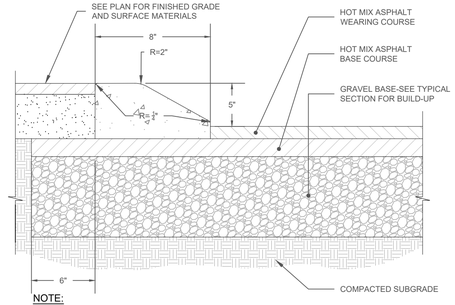
N.T.S.



NOTE:
SEE TYPICAL PAVEMENT SECTION ON THIS SHEET FOR BASE & WEARING COURSE THICKNESS.

B PARKING LOT SLIPFORM CONCRETE CURB DETAIL

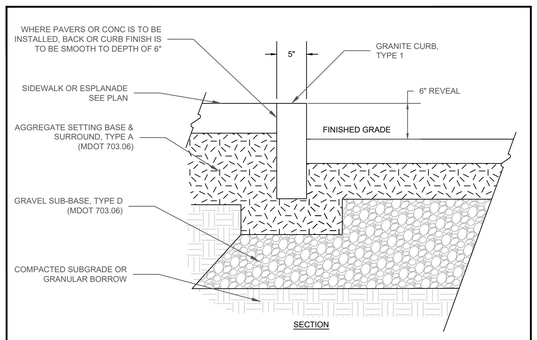
N.T.S.



NOTE:
SEE TYPICAL PAVEMENT SECTIONS ON THIS SHEET FOR BASE & WEARING COURSE THICKNESS.

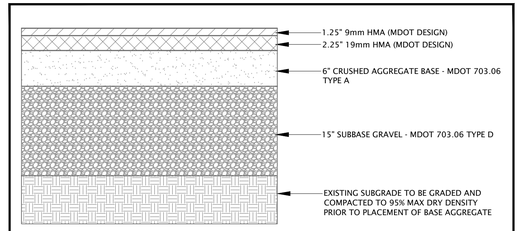
C PARKING LOT SLIPFORM CAPE COD BERM DETAIL

N.T.S.



D PARKING LOT VERTICAL GRANITE CURB DETAIL

N.T.S.



E HEAVY DUTY PAVEMENT DETAIL

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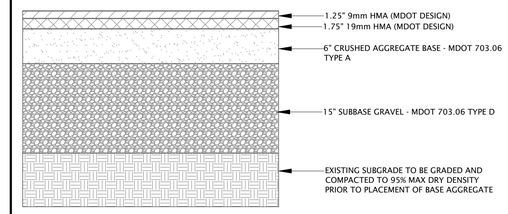
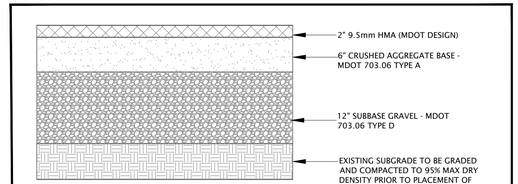


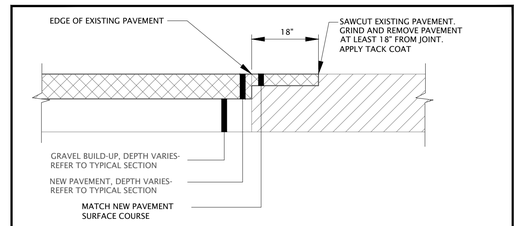
F LIGHT DUTY PAVEMENT DETAIL

N.T.S.



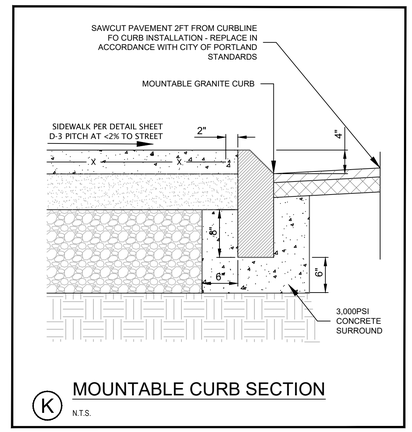
G NEW BITUMINOUS SIDEWALK DETAIL

APPLIES OUTSIDE CITY RIGHT-OF-WAY



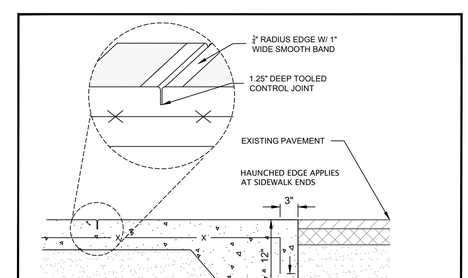
J PAVEMENT BUTT-JOINT DETAIL

N.T.S.



K MOUNTABLE CURB SECTION

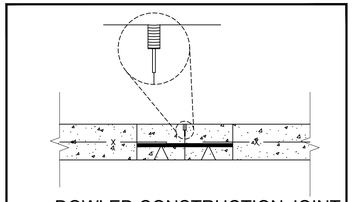
N.T.S.



NOTES:
1. PROVIDE ISOLATION JOINT W/ SELF-LEVELING SEALER WHERE WALK ABUTS ANY VERTICAL SURFACE.
2. DEPTH OF CONTROL JOINT MUST BE MIN. 1.25" FOR ACCEPTANCE OF WORK. SAWCUT JOINTS ¼" WIDE.
3. UNLESS SHOWN OR NOTED OTHERWISE, BROOM PERPENDICULAR TO DIRECTION OF TRAVEL.
4. APPLY SALTGUARD SEALANT TO ALL EXPOSED SURFACES

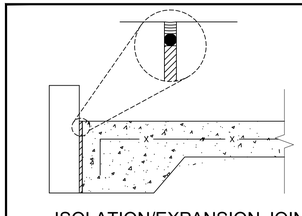
K CONCRETE SIDEWALK END & JOINT DETAILS

N.T.S.



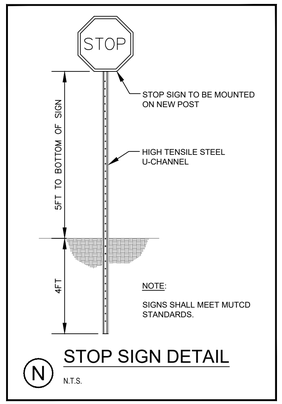
L DOWLED CONSTRUCTION JOINT

N.T.S.



M ISOLATION/EXPANSION JOINT

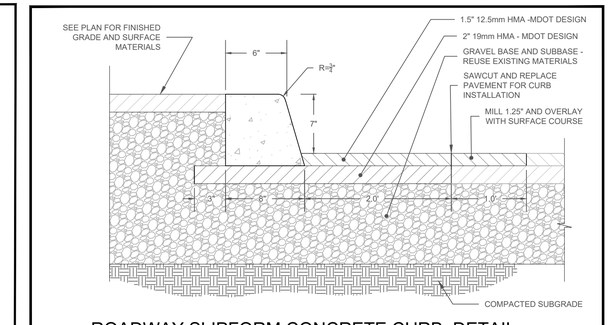
N.T.S.



NOTE:
SIGNS SHALL MEET MUTCD STANDARDS.

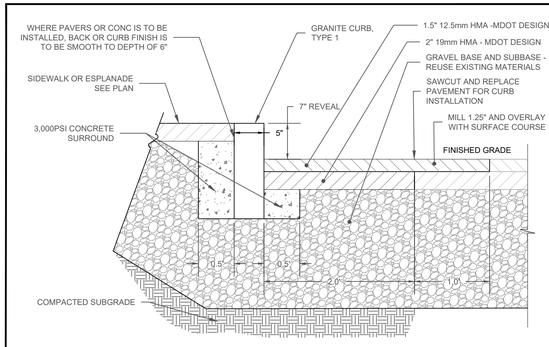
N STOP SIGN DETAIL

N.T.S.



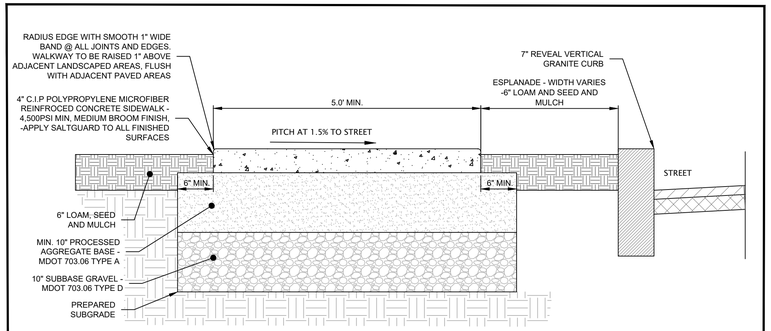
O ROADWAY SLIPFORM CONCRETE CURB DETAIL

N.T.S.



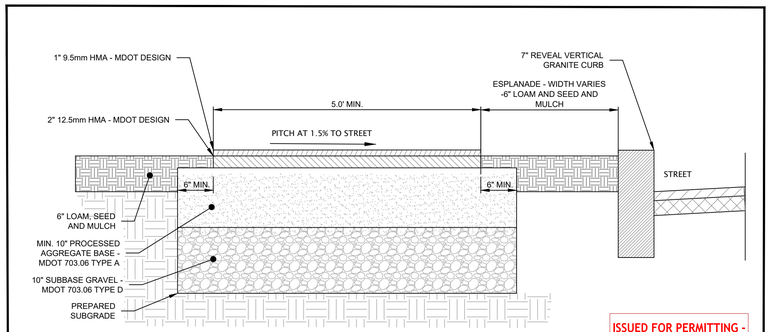
P ROADWAY VERTICAL GRANITE CURB DETAIL

(REFER TO CITY OF PORTLAND TECHNICAL MANUAL, TRANSPORTATION DESIGN STANDARDS FIGURE I-12)



Q CONCRETE SIDEWALK SECTION IN CITY RIGHT-OF-WAY

REFER TO PORTLAND TECHNICAL MANUAL DETAIL I-11B



R BITUMINOUS SIDEWALK SECTION IN CITY RIGHT-OF-WAY

REFER TO PORTLAND TECHNICAL MANUAL DETAIL I-11C

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

CWS ARCHITECTS
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STATE OF MAINE — ANDREW D. JOHNSTON — NO. 3994 — 8–1–24 — LICENSED PROFESSIONAL ENGINEER
CARROLL ASSOCIATES
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OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

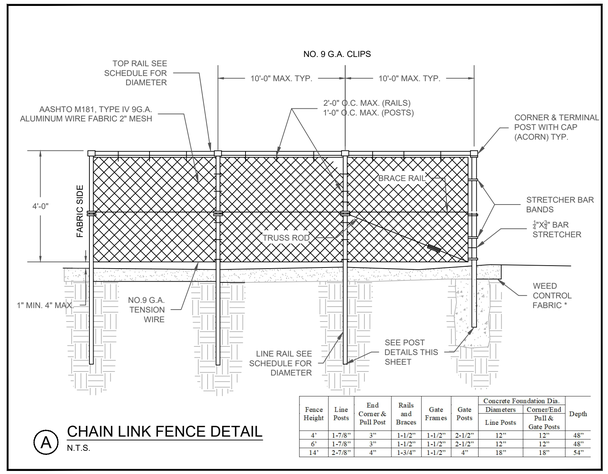
PROJECT
RIVERTON PARK, CIRCLE 1 BUILDING, MAINTENANCE BUILDING AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS
SITE/CIVIL DETAILS 1
CWS PROJECT NUMBER: 15.021

REVISIONS

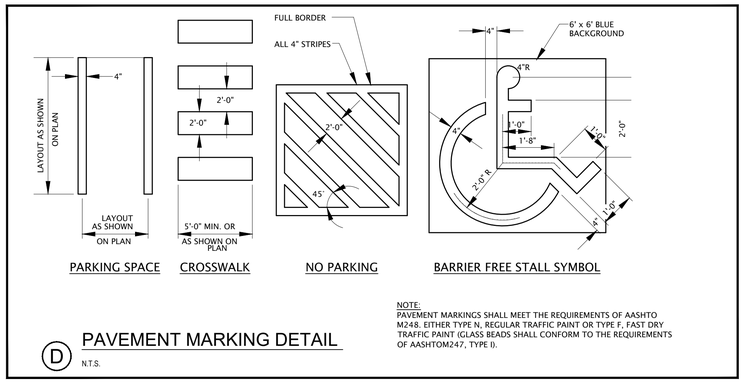
1	FOR SCHEMATIC DESIGN/PRICING	01.17.2022
2	MAJOR SITE PLAN	12.22.2022
3	ISSUED FOR 50% PRICING (REHAB).	02.16.2023
4	MAJOR SITE PLAN REVIEW REVISIONS	04.26.2023
5	ISSUED FOR 90% REVIEW	11.03.2023
6	ISSUED FOR MSHA PRE-APP PRICING	07.01.2024
7	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
C7.3
SCALE: AS SHOWN
DATE: 1/12/2019



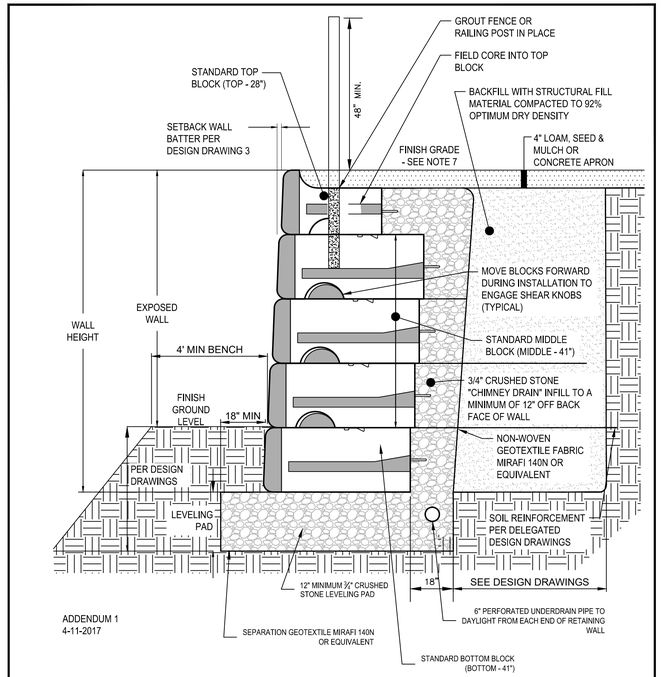
Fence Height	Line Posts	End Corner & Pull Post	Rails and Braces	Gate Frames	Gate Posts	Concrete Foundation Dia. Line Posts	Corner/End Pull & Gate Posts	Depth
4'	1-7/8"	3"	1-1/2"	1-1/2"	2-1/2"	12"	12"	48"
6'	1-7/8"	3"	1-1/2"	1-1/2"	2-1/2"	12"	12"	48"
14'	2-7/8"	4"	1-3/4"	1-1/2"	4"	18"	18"	54"

A CHAIN LINK FENCE DETAIL
N.T.S.



NOTE:
PAVEMENT MARKINGS SHALL MEET THE REQUIREMENTS OF AASHTO M248. EITHER TYPE N, REGULAR TRAFFIC PAINT OR TYPE F, FAST DRY TRAFFIC PAINT (GLASS BEADS SHALL CONFORM TO THE REQUIREMENTS OF AASHTOM247, TYPE I).

D PAVEMENT MARKING DETAIL
N.T.S.

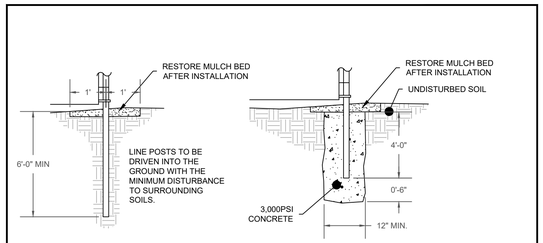


ADDENDUM 1
4-11-2017

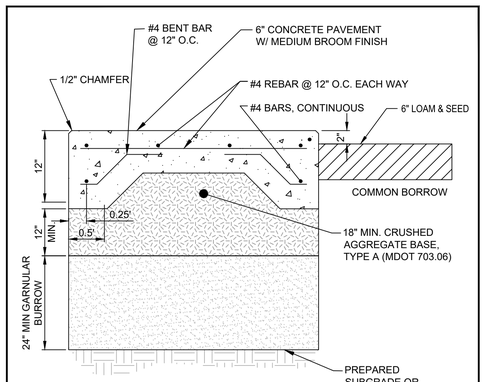
NOTES:

1. RETAINING WALL MATERIAL SHALL BE REDI-ROCK LARGE BLOCK SEGMENTAL CONCRETE UNIT MASONRY RETAINING WALL SYSTEM WITH LIMESTONE TEXTURED FINISH, OR APPROVED EQUAL. ONLY WET CAST BLOCKS WILL BE ACCEPTED.
2. LARGE BLOCK SEGMENTAL CONCRETE UNIT MASONRY RETAINING WALLS REQUIRE UNDERDRAIN, CRUSHED STONE INFILL AND GRANULAR BORROW BACKFILL.
3. ALL BLOCKS AT THE ENDS OF THE WALL(S) MUST BE FINISHED ON THREE SIDES: THE FRONT, THE TOP AND THE EXPOSED END. BLOCKS WITH EXPOSED SURFACES AT THE ENDS AND TOP OF THE WALL MUST BE MANUFACTURED FOR THIS PURPOSE AND MUST BE FINISHED TO MATCH THE FACE OF THE BLOCKS.
4. PIPED DRAINAGE SHALL BE INCLUDED IN THE DESIGN OF THE WALLS.
5. THE FACE QUALITY OF PRECAST CONCRETE BLOCK WALL WILL BE APPROVED BY THE OWNER'S REPRESENTATIVE.
6. RECOMMENDED SOIL PARAMETERS FOR USE IN DESIGN OF MODULAR BLOCK RETAINING WALLS AT THE SITE ARE LISTED IN THE PROJECT GEOTECHNICAL REPORT.
7. TOP OF WALL HEIGHT MAY BE ABOVE FINISHED GRADE AT SOME LOCATIONS TO PROVIDE BENCH SEATING - SEE GRADING PLANS FOR TOP OF WALL AND BOTTOM OF WALL GRADES.
8. A MINIMUM 4-FOOT WIDE HORIZONTAL BENCH SHALL BE PROVIDED IN FRONT OF WALLS FOUNDED ON SLOPES.
9. THE CONTRACTOR SHALL PROVIDE DESIGN DRAWINGS, PREPARED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF MAINE, FOR ALL RETAINING WALLS. FOR MORE INFORMATION SEE GEOTECHNICAL REPORT.

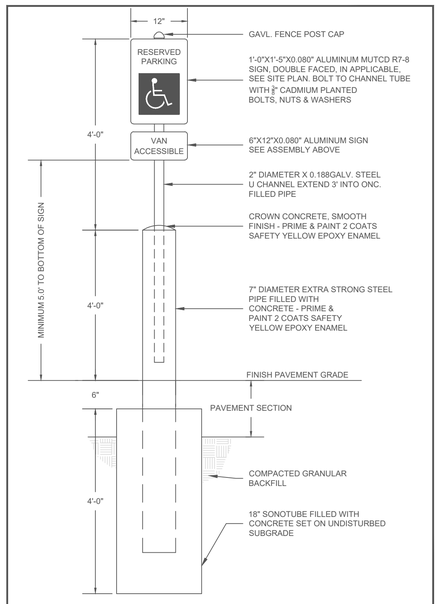
J LARGE BLOCK RETAINING WALL TYPICAL SECTION & NOTES
N.T.S.



B CHAIN LINK FENCE POST DETAILS
N.T.S.



E CONCRETE PAD DETAIL
N.T.S.
NOTE: SEE PLAN FOR DIMENSIONS.



G BARRIER FREE PARKING SIGN DETAIL
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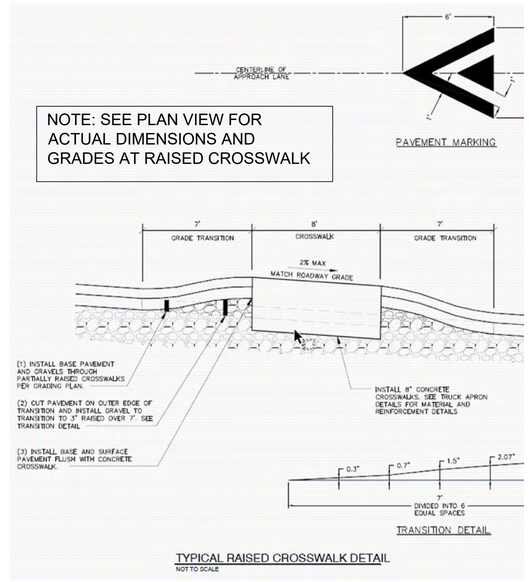
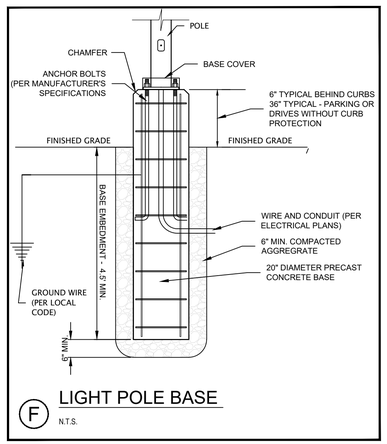
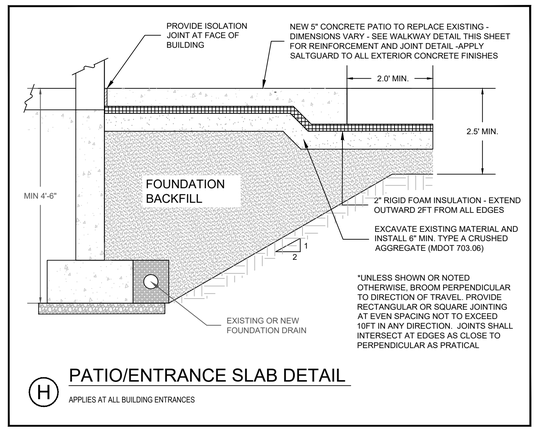


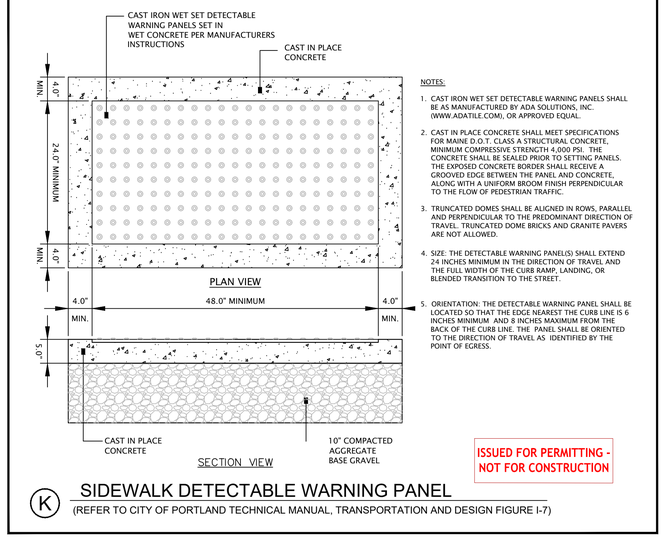
TYPICAL RAISED CROSSWALK DETAIL
NOT TO SCALE



F LIGHT POLE BASE
N.T.S.



H PATIO/ENTRANCE SLAB DETAIL
APPLIES AT ALL BUILDING ENTRANCES



NOTES:

1. CAST IRON WET SET DETECTABLE WARNING PANELS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MAINE D.O.T. CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A GROOVED EDGE BETWEEN THE PANEL AND CONCRETE, ALONG WITH A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PANEL(S) SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
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 BACK OF THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

K SIDEWALK DETECTABLE WARNING PANEL
(REFER TO CITY OF PORTLAND TECHNICAL MANUAL, TRANSPORTATION AND DESIGN FIGURE I-7)

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264 US Route One, Suite 100–2A
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DESIGNER



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OWNER
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14 BAXTER BLVD
PORTLAND, MAINE 04101

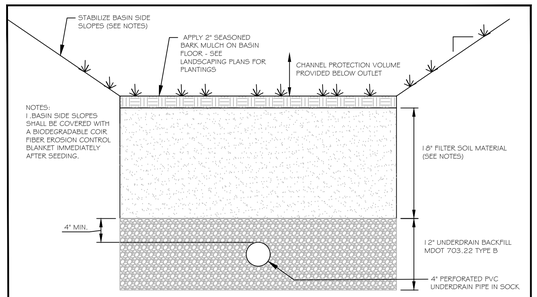
PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS
SITE/CIVIL
DETAILS 2
CWS PROJECT NUMBER: 15.021

REVISIONS

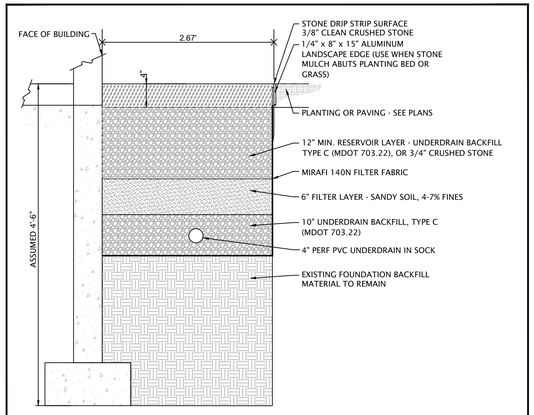
1	FOR SCHEMATIC DESIGN/PRICING	01.17.2022
2	MAJOR SITE PLAN	12.22.2022
3	ISSUED FOR 50% PRICING (REHAB)	02.16.2023
4	MAJOR SITE PLAN REVIEW REVISIONS	04.26.2023
5	ISSUED FOR 90% REVIEW	11.03.2023
6	ISSUED FOR MSHA PRE-APP PRICING	07.01.2024
7	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
C7.4
SCALE: AS SHOWN
DATE: 1/12/2019



A CROSS-SECTION THROUGH BIORETENTION CELL

N.T.S.



B SHALLOW FILTERING DRIP EDGE DETAIL

APPLIES AT BUILDING REHAB LOCATIONS ONLY

BIORETENTION CELL, UNDREDRAINED FILTER AND ROOF DRIP EDGE FILTER CONSTRUCTION NOTES

CONSTRUCTION OVERSIGHT
THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE CONSTRUCTION PLANS FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY THE DEPARTMENT IN WRITING WITHIN 30 DAYS TO STATE THAT THE BMP HAS BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT, AND INCLUDE ANY TESTING DATA OR SIEVE ANALYSIS DATA OF EVERY MINERAL SOIL AND SOIL MEDIA SPECIFIED IN THE PLANS AND USED ON SITE.

BASIC STANDARDS - EROSION CONTROL MEASURES
MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL EROSION CONTROL MEASURES MAY NEED TO BE IMPLEMENTED. ALL AREAS OF INSTABILITY AND EROSION MUST BE REPAIRED IMMEDIATELY DURING CONSTRUCTION AND NEED TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED OR VEGETATION IS ESTABLISHED. A CONSTRUCTION LOG MUST BE MAINTAINED FOR THE EROSION AND SEDIMENTATION CONTROL INSPECTIONS AND MAINTENANCE

BIORETENTION AND UNDERDRAINED FILTER NOTES

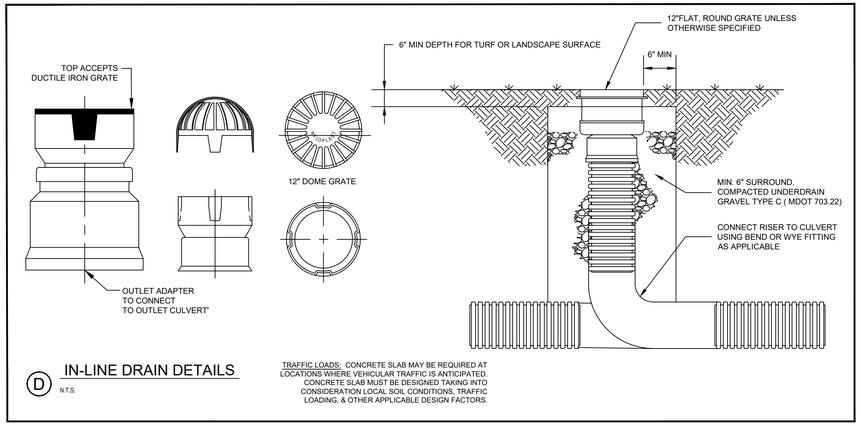
1. FILTER SOIL MATERIAL FOR UNDERDRAINED SOIL FILTERS AND BIORETENTION AREAS SHALL COMPRISE A SILTY SAND OR SOIL MIXTURE COMBINED WITH AN ORGANIC SOIL AMENDMENT MATERIAL TO 20%-25% BY VOLUME. THE RESULTING MIXTURE SHALL HAVE BETWEEN 8% AND 12% PASSING THE #200 SEIVE, AND A CLAY CONTENT OF LESS THAN 2%.
   A. FILTER SOIL MATERIAL SHALL BE PLACED IN 12-INCH LIFTS USING LGP EQUIPMENT OR BY HAND. LGP EQUIPMENT SHALL EXERT A GROUND PRESSURE OF LESS THAN 5 PSI, AS STATED IN THE EQUIPMENT SPECIFICATION FROM THE MANUFACTURER. MATERIAL SHALL BE GRADED TO PROVIDE AN EVEN SURFACE, SEEDED AND COVERED WITH EROSION CONTROL BLANKET.
   B. UNDERDRAIN GRAVELS SHALL MEET THE SPECIFICATION REQUIREMENTS GIVE IN MDOT SPECIFICATION 703.22.
   C. SOIL FILTER MEDIA SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
2. IMPERMEABLE LINERS FOR BIORETENTION CELLS, AND UNDERDRAINED FILTERS SHALL BE A 30MIL IMPERMEABLE LINER.

Table 7.1.2 - Sandy Loam to Fine Sandy Loam Specifications

Seive #	% Passing by Weight
No. 4	75-95
No. 10	60-90
No. 40	35-85
No. 200	20-70
200 (clay size)	<2.0

Table 7.1.3 - Loamy Coarse Sand Specifications

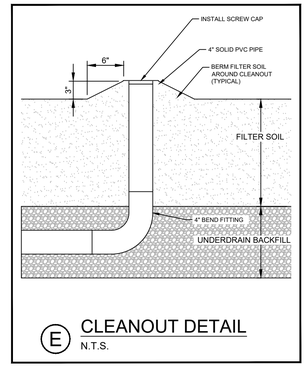
Seive #	% Passing by Weight
No. 10	85-100
No. 200	70-100
No. 60	15-40
No. 200	8-15
200 (clay size)	<2.0



D IN-LINE DRAIN DETAILS

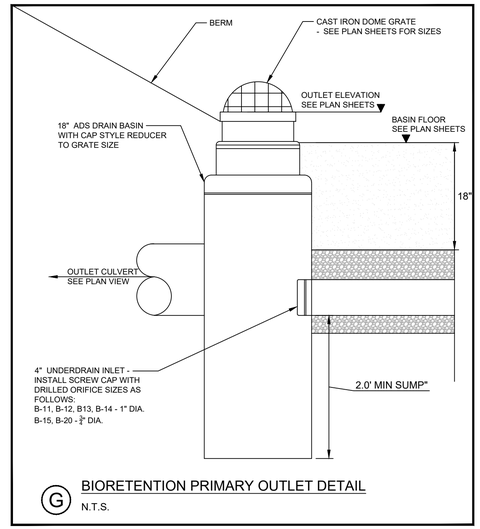
N.T.S.

TRAFFIC LOADS: CONCRETE SLAB MAY BE REQUIRED AT LOCATIONS WHERE VEHICULAR TRAFFIC IS ANTICIPATED. CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.



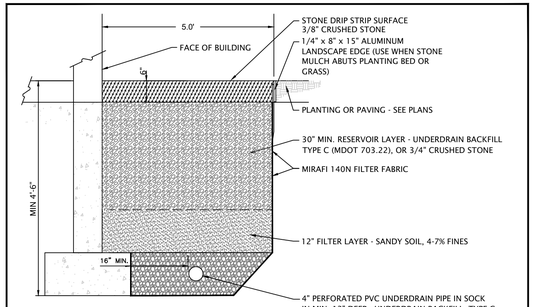
E CLEANOUT DETAIL

N.T.S.



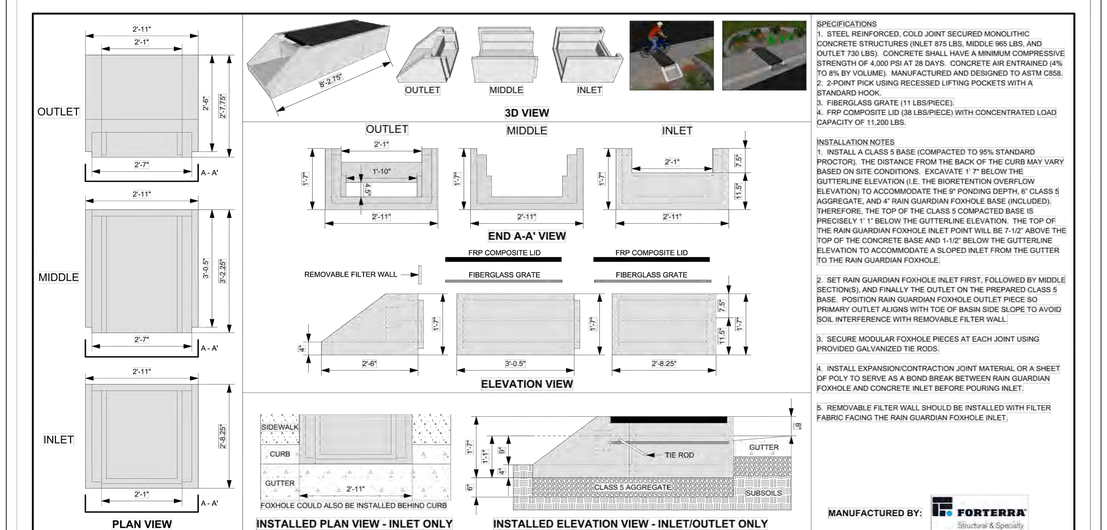
G BIORETENTION PRIMARY OUTLET DETAIL

N.T.S.



H STONE DRIP EDGE FILTER DETAIL

APPLIES AT NEW MAINTENANCE GARAGE



SPECIFICATIONS
1. STEEL REINFORCED, COLD JOINT SECURED MONOLITHIC CONCRETE STRUCTURES (INLET 875 LBS, MIDDLE 965 LBS, AND OUTLET 730 LBS). CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. CONCRETE AIR ENTRAINED (4% TO 8% BY VOLUME). MANUFACTURED AND DESIGNED TO ASTM C858.
2. 2-POINT PICK USING RECESSED LIFTING POCKETS WITH A STANDARD HOOK.
3. FIBERGLASS GRATE (11 LBS/PIECE).
4. FRP COMPOSITE LID (38 LBS/PIECE) WITH CONCENTRATED LOAD CAPACITY OF 11,200 LBS.

INSTALLATION NOTES
1. INSTALL A CLASS 5 BASE (COMPACTED TO 95% STANDARD PROCTOR). THE DISTANCE FROM THE BACK OF THE CURB MAY VARY BASED ON SITE CONDITIONS. EXCAVATE 1' 7" BELOW THE GUTTERLINE ELEVATION (I.E. THE BIORETENTION OVERFLOW ELEVATION) TO ACCOMMODATE THE 9" PONDING DEPTH, 6" CLASS 5 AGGREGATE, AND 4" RAIN GUARDIAN FOXHOLE BASE (INCLUDED). THEREFORE, THE TOP OF THE CLASS 5 COMPACTED BASE IS PRECISELY 1' 1" BELOW THE GUTTERLINE ELEVATION. THE TOP OF THE RAIN GUARDIAN FOXHOLE INLET POINT WILL BE 7-1/2" ABOVE THE TOP OF THE CONCRETE BASE AND 1-1/2" BELOW THE GUTTERLINE ELEVATION TO ACCOMMODATE A SLOPED INLET FROM THE GUTTER TO THE RAIN GUARDIAN FOXHOLE.
2. SET RAIN GUARDIAN FOXHOLE INLET FIRST, FOLLOWED BY MIDDLE SECTION(S), AND FINALLY THE OUTLET ON THE PREPARED CLASS 5 BASE. POSITION RAIN GUARDIAN FOXHOLE OUTLET PIECE SO PRIMARY OUTLET ALIGNS WITH TOE OF BASIN SIDE SLOPE TO AVOID SOIL INTERFERENCE WITH REMOVABLE FILTER WALL.
3. SECURE MODULAR FOXHOLE PIECES AT EACH JOINT USING PROVIDED GALVANIZED TIE RODS.
4. INSTALL EXPANSION/CONTRACTION JOINT MATERIAL OR A SHEET OF POLY TO SERVE AS A BOND BREAK BETWEEN RAIN GUARDIAN FOXHOLE AND CONCRETE INLET BEFORE POURING INLET.
5. REMOVABLE FILTER WALL SHOULD BE INSTALLED WITH FILTER FABRIC FACING THE RAIN GUARDIAN FOXHOLE INLET.

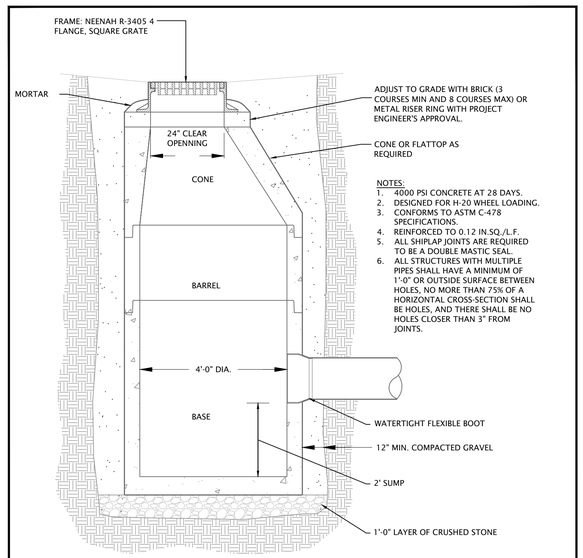
MANUFACTURED BY: FORTERRA Structural & Specialty

RAIN GUARDIAN U.S. PATENTED SURFACE
PRETREATMENT FOR BIORETENTION
Rain Gardens • Swales • Filtration Basins • Infiltration Basins

RAIN GUARDIAN FOXHOLE
MODULAR PRETREATMENT CHAMBER
BIORETENTION PONDING DEPTH: 9"
TYPICAL DETAIL

REVISION HISTORY			
REV	BY	DATE	DESCRIPTION
8	MDH	8/1/18	MODULAR FOXHOLE
SCALE		VARIABLE	
U.S. PATENT NOS.		8,501,016 AND 8,858,804	

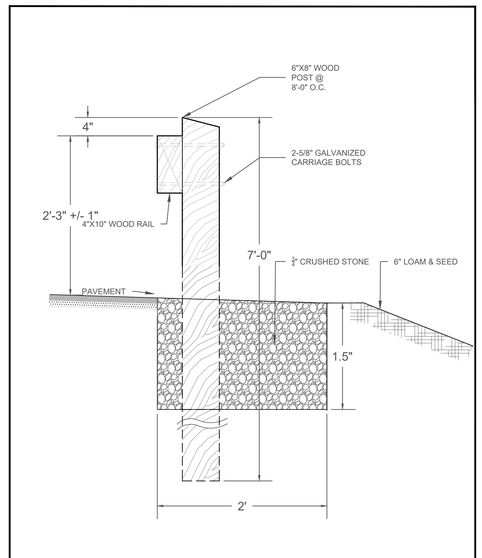
ANOKA CONSERVATION DISTRICT
Anoka Conservation District
1318 McKay Dr. NE, Suite 300
Ham Lake, MN 55304
763-434-2030



NOTES:
1. 4000 PSI CONCRETE AT 28 DAYS.
2. DESIGNED FOR H-20 WHEEL LOADING.
3. CONFORMS TO ASTM C-478 SPECIFICATIONS.
4. REINFORCED TO 0.12 IN.SQ./L.F.
5. ALL SHIPLAP JOINTS ARE REQUIRED TO BE A DOUBLE MASTIC SEAL.
6. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 1'-0" OR OUTSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" FROM JOINTS.

F PRECAST CATCH BASIN DETAIL

N.T.S.



J WOOD GUARDRAIL & PAVEMENT EDGE DETAIL

N.T.S.

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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DESIGNER
STATE OF MAINE ANDREW D. JOHNSTON No. 9694 8-1-24 LICENSED PROFESSIONAL ENGINEER

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OWNER
RIVERTON PARK, LP
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PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE,
PORTLAND, MAINE 04103

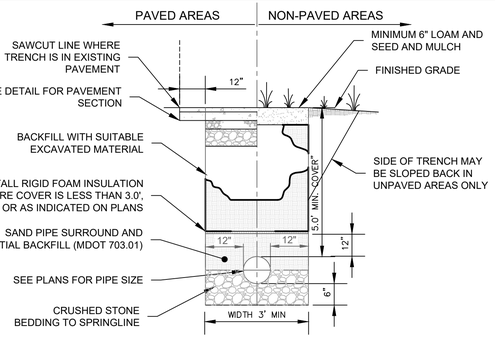
DRAWINGS
SITE/CIVIL
DETAILS 3
CWS PROJECT NUMBER: 15.021

REVISIONS

1	FOR SCHEMATIC DESIGN/PRICING	01.17.2022
2	MAJOR SITE PLAN	12.22.2022
3	ISSUED FOR 50% PRICING (REHAB)	02.16.2023
4	MAJOR SITE PLAN REVIEW REVISIONS	04.26.2023
5	ISSUED FOR 90% REVIEW	11.03.2023
6	ISSUED FOR MSHA PRE-APP PRICING	07.01.2024
7	MAJOR SITE PLAN AMENDMENT	08.16.2024

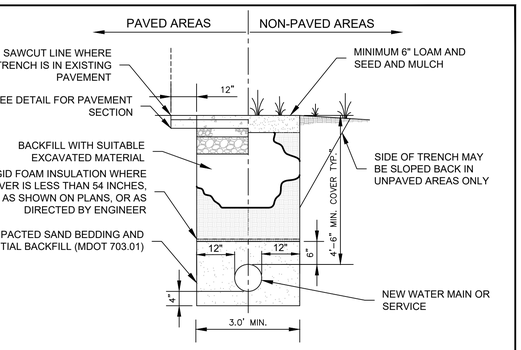
DRAWING NUMBER
C7.5

SCALE: AS SHOWN
DATE: 1/12/2019



NOTE:
BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

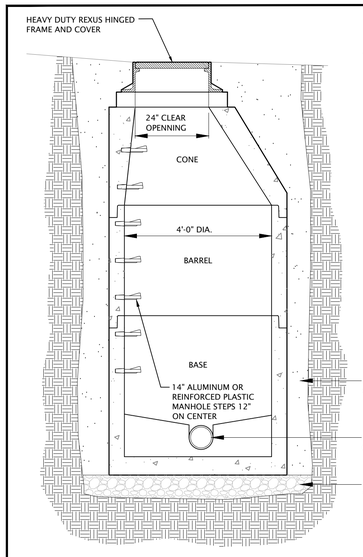
Ⓐ TYPICAL SEWER AND STORM DRAIN TRENCH DETAIL
N.T.S. (REFER TO CITY OF PORTLAND TECHNICAL MANUAL SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS FIGURE II-12)



NOTE:

1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

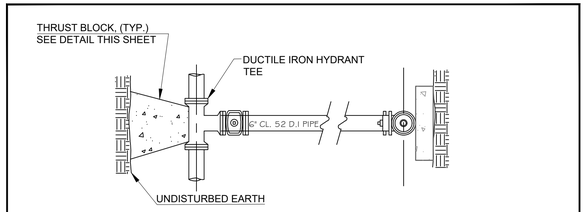
Ⓑ WATER PIPE TRENCH DETAIL
APPLIES TO BRANCH MAINS AND SERVICES OUTSIDE THE R.O.W



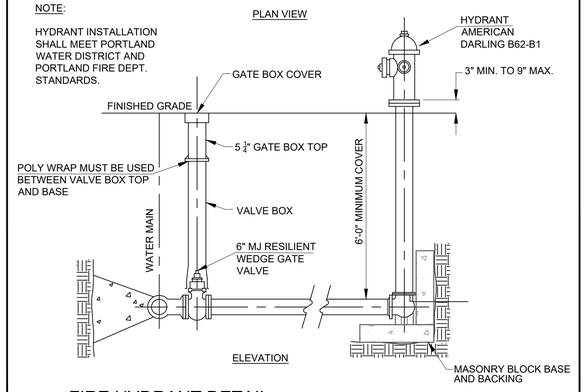
NOTES:

1. 4000 PSI CONCRETE AT 28 DAYS.
2. DESIGNED FOR H-20 WHEEL LOADING.
3. CONFORMS TO ASTM C-478 SPECIFICATIONS.
4. REINFORCED TO 0.12 IN.SQ./L.F.
5. SHIPLAP JOINTS SEALED WITH BUTYL RUBBER.
6. EXTERIOR COATED WITH ASPHALTIC PROTECTIVE DAMPROOFING.
7. ALL CONNECTIONS INTO MANHOLE SHALL BE WATER-TIGHT BY EITHER PRECAST FLEXIBLE BOOT OR KOR-N-SEAL CONNECTOR INSTALLED IN CORED HOLE.
8. ALL SHIPLAP JOINTS ARE REQUIRED TO BE DOUBLE MASTIC SEALED.
9. ADJUST TO GRADE WITH BRICK (2 COURSES MIN. AND 4 COURSES MAX.) .

Ⓒ PRECAST SEWER MANHOLE DETAIL
N.T.S. (REFER TO CITY OF PORTLAND TECHNICAL MANUAL SANITARY SEWER AND STORM DRAIN DESIGN STANDARDS FIGURE II-2)



NOTE:
HYDRANT INSTALLATION SHALL MEET PORTLAND WATER DISTRICT AND PORTLAND FIRE DEPT. STANDARDS.



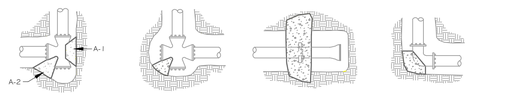
Ⓓ FIRE HYDRANT DETAIL
N.T.S.

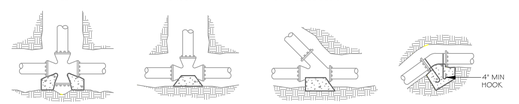
Ⓔ TYPICAL WATER SERVICE
N.T.S.

Ⓕ GAS PIPING TRENCH DETAIL
SUBJECT TO UNITIL REVIEW AND APPROVAL

(HORIZONTAL) BEARING AREA OF THRUST BLOCKS IN SQUARE FEET									(VERTICAL) VOLUME OF THRUST BLOCK IN CUBIC YARDS			
FITTING SIZE	TEE, WYE, DEAD END AND HYDRANT	STRADDLE BLOCK	90D BEND PLUGGED CROSS	TEE PLUGGED ON RUN A-1	TEE PLUGGED ON RUN A-2	45D BEND	22-1/2D BEND	11-1/4D BEND	90D BEND	45D BEND	22-1/2D BEND	11-1/4D BEND
4	1.0	1.6	1.4	1.9	1.4	1.0	---	---	---	---	---	---
6	2.1	3.7	3.0	4.3	3.0	1.6	1.0	---	1.3	---	---	---
8	3.8	6.5	5.3	7.6	5.4	2.9	1.5	1.0	2.3	1.1	---	---

NOTES:
1. ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 POUNDS PER SQUARE FOOT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION:
BEARING AREA = (TEST PRESSURE / 150) x (2000 / SOIL BEARING STRESS) x (TABLE VALUE)
2. ABOVE VOLUMES BASED ON TEST PRESSURE OF 150 PSI AND THE WEIGHT OF CONCRETE = 4050 POUNDS PER CUBIC YARD. TO COMPUTE FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION:
VOLUME = (TEST PRESSURE / 150) x (TABLE VALUE)

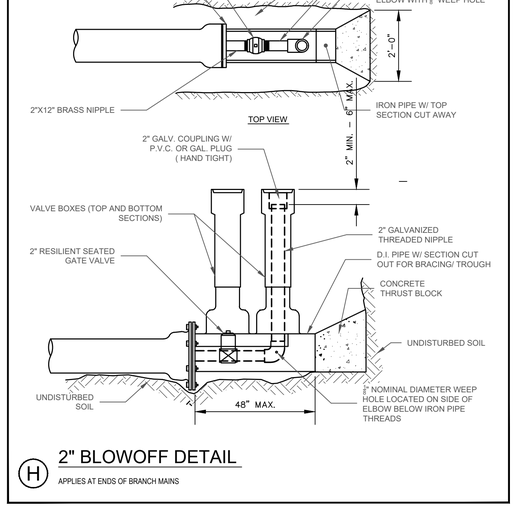




NOTES:
1. CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. ALL CONCRETE TO BE CLASS 2400 MINIMUM.
3. INSTALL ISOLATION MATERIAL BETWEEN PIPE AND/OR FITTINGS BEFORE POURING CONCRETE BLOCKING.
4. CONCRETE SHALL BE KEPT CLEAR OF ALL JOINTS AND ACCESSORIES.
5. TIE RODS SHALL BE DEFORMED GALVANIZED COLD ROLLED STEEL, 40000 PSI TENSILE STRENGTH.

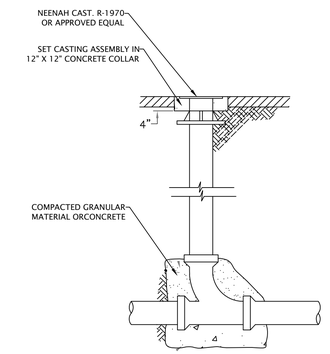
RODS FOR VERTICAL BENDS		
FITTING SIZE	ROD SIZE	EMBEDMENT
12" AND LESS	#6	30"
14"-16"	#8	36"

Ⓖ THRUST BLOCKING DETAIL
N.T.S.



Ⓗ 2" BLOWOFF DETAIL
APPLIES AT ENDS OF BRANCH MAINS

NOTE:
CLEANOUT TOP SHALL BE ENCLOSED IN CASTING AND/OR FABRICATED COVER ASSEMBLY



IN LINE CLEANOUT

Ⓘ SEWER CLEANOUT DETAIL
N.T.S.

THRUST RESTRAINT REQUIREMENTS

All tees, Bends, Reducers and End Caps should be restrained using thrust blocks, mega-lugs, mechanical joint fittings, field-lok gaskets, fusion joints, a combination of these methods, or other restraint fittings as sepcifically approved by The Engineer for use on the project. A certain number of joints before and after a restrained fitting may also require joint restraints as set forth in Tables below. Below Tables establish values for the minimum length of pipe ("L") within which other joints must be restrained. Values in feet are based on 150 PSI line pressure, 24" cover, Sandy-Clay type soil and a safety factor of 2. For other line pressures, multiply the "L" values by the actual pressure and divide by 150.

Pipe-Pipe Restraints for IPS & DPS pipe… minimum restrained length ("L") in feet										
Pipe Size	Pipe OD IPS	Pipe OD DPS	Bends				Step Reduction			Dead End	Gate Valve
			11	22	45	90	1	2	3		
4"	4.5	4.8	2	5	11	24	17	24	37	54	28
6"	6.63	6.9	4	7	16	35	36	48	64	76	37
8"	8.63	9.05	5	10	18	46	40	66	76	90	46
10"	10.75	11.1	6	11	23	54	43	67	90	115	58
12"	12.75	13.2	6	12	25	64	46	72	100	134	67
14"		15.3	7	13	29	70	48	74	103	156	74
16"		17.4	7	16	32	78	50	77	106	175	88
18"		19.5	8	17	35	83	53	84	108	194	97
20"		21.6	10	18	38	91	55	96	110	214	107
24"		25.8	11	22	44	106	76	108	137	251	126

Based on 150 PSI pressure and 20 - foot length of pipe (for shorter pipe lengths, use table above)

Pipe-Pipe Restraints											
Table below shows the number of adjacent joints to restrain…based on 20 foot length											
Pipe Size	Pipe OD IPS	Pipe OD DPS	Bends				Step Reduction			Dead End	Gate Valve
			11	22	45	90	1	2	3		
4"	4.5	4.8	0	0	0	1	0	1	1	2	1
6"	6.63	6.9	0	0	0	1	1	2	3	3	1
8"	8.63	9.05	0	0	0	2	1	3	3	4	2
10"	10.75	11.1	0	0	1	2	2	3	4	5	2
12"	12.75	13.2	0	0	1	3	2	3	4	6	3
14"		15.3	0	0	1	3	2	3	5	7	3
16"		17.4	0	0	1	3	2	3	5	8	4
18"		19.5	0	0	1	4	2	4	5	9	4
20"		21.6	0	0	1	4	2	4	5	10	5
24"		25.8	0	1	2	5	3	5	6	12	6

Bend:	Requires restraints on both ends. Other joints on both sides may require restraints (See Tables).
Reducers:	Must be restrained on both ends. Additional joints on the larger end are required. (See Tables)
Standard Tee:	Requires restraint on branch side only. Use 90-degree bend for additional joints. (See Tables)
Reducing Tee:	Requires restraints on all three sides. (See Tables)
Dead End:	Adjacent joint restraints are required on upstream joints. (See Tables)

Ⓙ WATER MAIN THRUST RESTRAINT REQUIREMENTS
THESE STANDARDS APPLY IN ADDITION TO THRUST BLOCKING

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

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DESIGNER
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OWNER
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14 BAXTER BLVD
PORTLAND, MAINE 04101

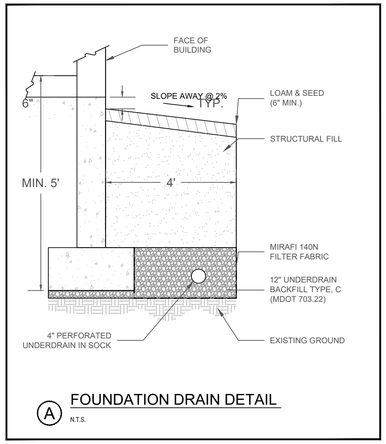
PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
SITE/CIVIL
DETAILS 4
CWS PROJECT NUMBER: 15.021

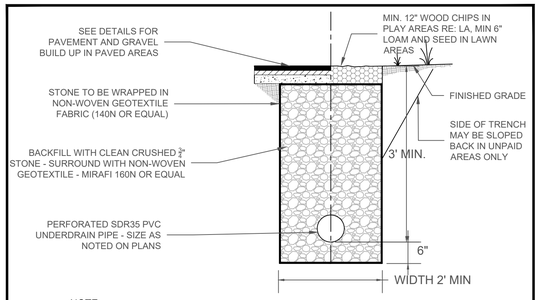
REVISIONS

1	FOR SCHEMATIC DESIGN/PRICING	01.17.2022
2	MAJOR SITE PLAN	12.22.2022
3	ISSUED FOR 50% PRICING (REHAB)	02.16.2023
4	MAJOR SITE PLAN REVIEW REVISIONS	04.26.2023
5	ISSUED FOR 90% REVIEW	11.03.2023
6	ISSUED FOR MSHA PRE-APP PRICING	07.01.2024
7	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
C7.6
SCALE: AS SHOWN
DATE: 1/12/2019

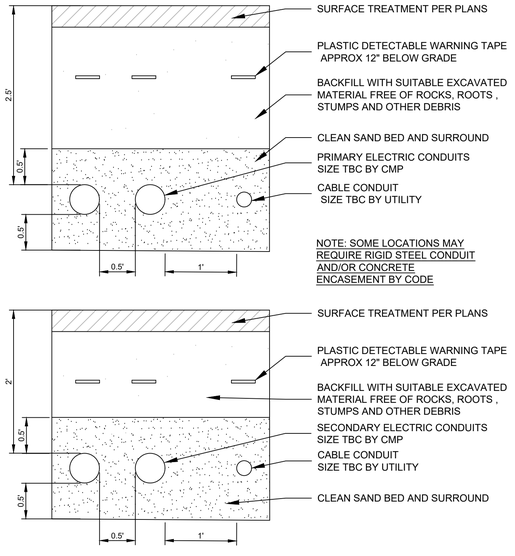


A FOUNDATION DRAIN DETAIL
N.T.S.

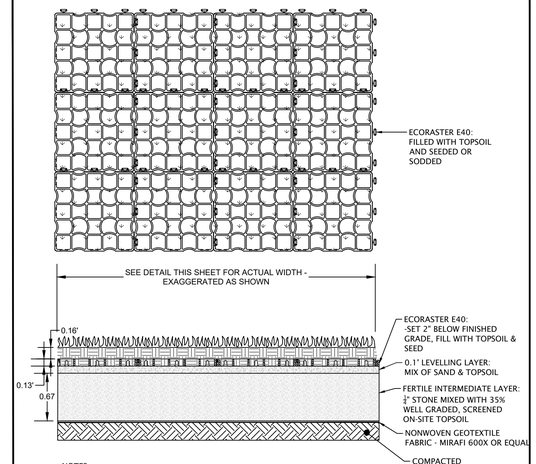


NOTE:
BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

D UNDERDRAIN DETAIL
N.T.S.

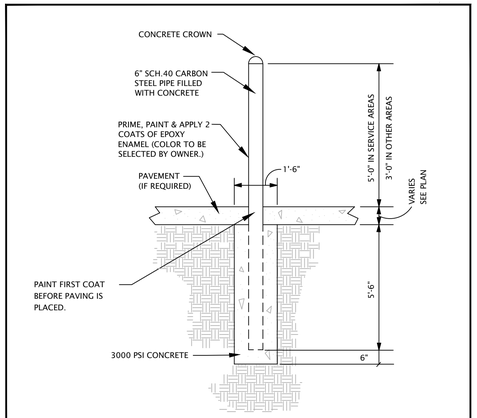


G POWER AND COMMS TRENCH DETAILS
N.T.S. - SUBJECT TO REVIEW AND APPROVAL BY CMP

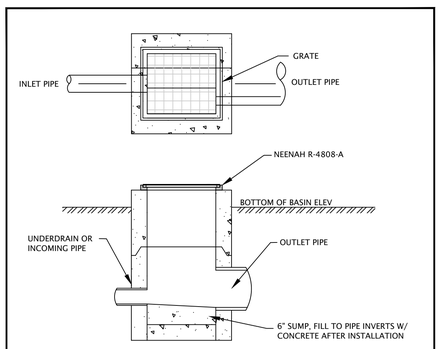


NOTES:
1. TYPICAL SEED MIX:
- 45% CREEPING RED FESCUE,
- 20% TALL FESCUE,
- 15% PERENNIAL RYE GRASS, AND
- 20% KENTUCKY BLUE GRASS, WITH
- LONG TERM FERTILIZER.
SEED MIX SHOULD BE MODIFIED TO SUIT LOCAL CONDITIONS.
3. SEE ECORASTER GREEN INSTALLATION MANUAL FOR FURTHER INFORMATION ON LAYERS.
4. ALL DIMENSIONS CONVERTED TO INCHES FROM MANUFACTURERS SPECIFICATIONS IN mm.
5. CONTRACTOR TO SUBMIT SHOP DRAWINGS AND MATERIALS GRADATIONS PRIOR TO INSTALLATION.

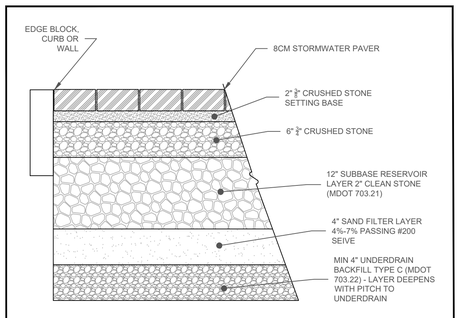
J REINFORCED TURF PAVEMENT DETAIL
N.T.S.



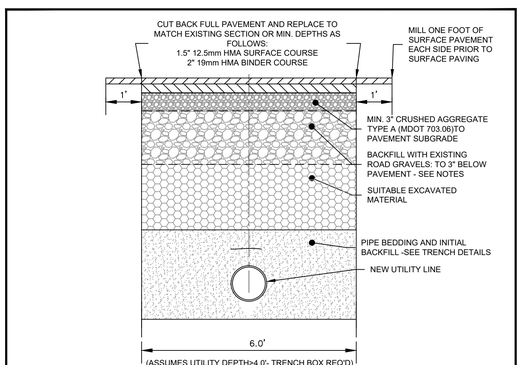
B POST BOLLARD DETAIL
N.T.S.



E TYPE "F" CATCH BASIN DETAIL
N.T.S.

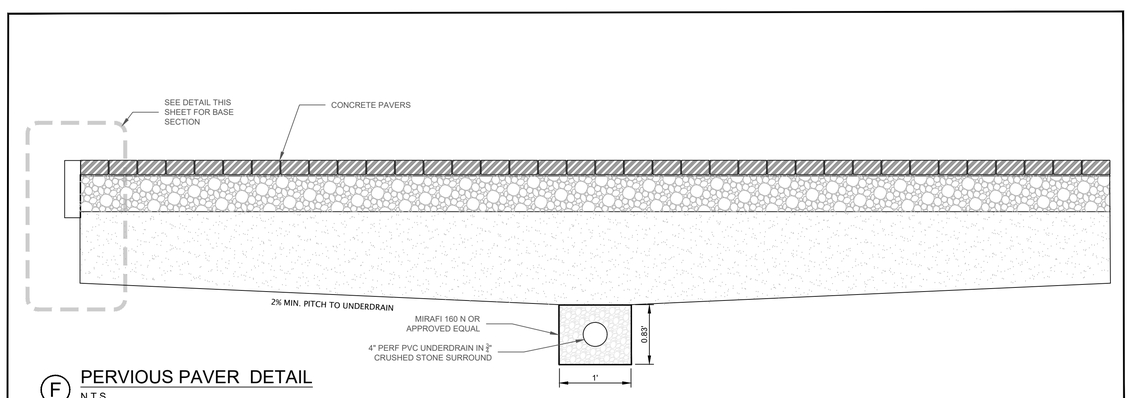


H PERVIOUS PAVER BASE & SETTING DETAIL



NOTES:
1. PAVEMENT REPAIR SHALL CONFORM TO CITY OF PORTLAND ROAD STANDARDS AS APPLICABLE TO THIS PROJECT.
2. EXCAVATED ROAD BASE MATERIALS MAY ONLY BE RE-USED IF KEPT SEPARATE FROM OTHER NON-PROCESSED EXCAVATED MATERIALS.

C ROADWAY TRENCH CAP DETAIL
C



F PERVIOUS PAVER DETAIL
N.T.S.

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION

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OWNER
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14 BAXTER BLVD
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PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING, MAINTENANCE BUILDING AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS
SITE/CIVIL DETAILS 5
CWS PROJECT NUMBER: 15.021

REVISIONS

1	FOR SCHEMATIC DESIGN/PRICING	01.17.2022
2	MAJOR SITE PLAN	12.22.2022
3	ISSUED FOR 50% PRICING (REHAB)	02.16.2023
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5	ISSUED FOR 90% REVIEW	11.03.2023
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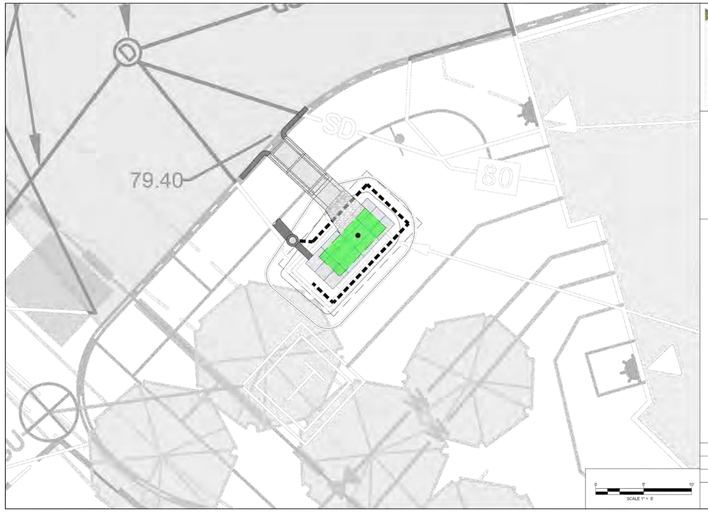
7	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
C7.7
SCALE: AS SHOWN
DATE: 1/12/2019

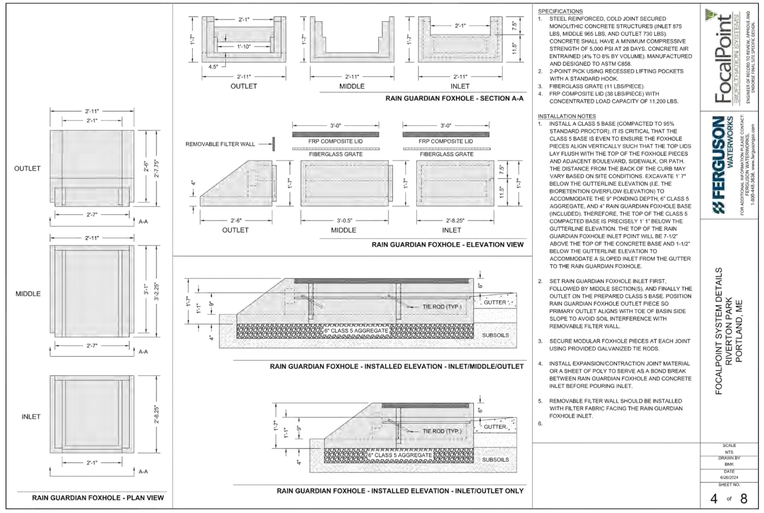
S:\15-021 Pitt Stanley Center\Drawings\15-021 2023 DETAILS



FOCALPOINT SYSTEM OVERLAY
RIVERTON PARK
PORTLAND, ME

SCALE 1" = 8'

SCALE: 1" = 0"
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 1 of 8



SPECIFICATIONS

1. STEEL REINFORCED, COLD JOINT SECURED MONOLITHIC CONCRETE STRUCTURES (INLET 875 LBS, MIDDLE 955 LBS, AND OUTLET 730 LBS). CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. CONCRETE AIR ENTRAINED (4% TO 6% BY VOLUME). MANUFACTURED AND DESIGNED TO ASTM C858.
2. 2-POINT PICK USING RECESSED LIFTING POCKETS WITH A STANDARD HOOK.
3. FIBERGLASS GRATE (11 LBS/PIECE).
4. FRP COMPOSITE LID (30 LBS/PIECE) WITH CONCENTRATED LOAD CAPACITY OF 11,200 LBS.

INSTALLATION NOTES

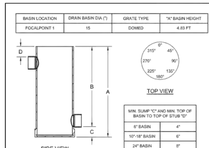
1. INSTALL A CLASS 5 BASE (COMPACTED TO 95% STANDARD PROCTOR). IT IS CRITICAL THAT THE CLASS 5 BASE IS EVEN TO ENSURE THE FOXHOLE PIECES ALIGN VERTICALLY SUCH THAT THE TOP LIDS LAY FLUSH WITH THE TOP OF THE FOXHOLE PIECES AND ADJACENT BOULEVARD, SIDEWALK, OR PATH. THE DISTANCE FROM THE BACK OF THE CURB MAY VARY BASED ON SITE CONDITIONS. EXCAVATE 1' 7" BELOW THE GUTTERLINE ELEVATION (I.E. THE BIORETENTION OVERFLOW ELEVATION) TO ACCOMMODATE THE 9" PONDING DEPTH, 6" CLASS 5 AGGREGATE, AND 4" RAIN GUARDIAN FOXHOLE BASE (INCLUDED). THEREFORE, THE TOP OF THE CLASS 5 COMPACTED BASE IS PRECISELY 1' 1" BELOW THE GUTTERLINE ELEVATION. THE TOP OF THE RAIN GUARDIAN FOXHOLE INLET POINT WILL BE 7-1/2" ABOVE THE TOP OF THE CONCRETE BASE AND 1-1/2" BELOW THE GUTTERLINE ELEVATION TO ACCOMMODATE A SLOPED INLET FROM THE GUTTER TO THE RAIN GUARDIAN FOXHOLE.
2. SET RAIN GUARDIAN FOXHOLE INLET FIRST, FOLLOWED BY MIDDLE SECTION(S), AND FINALLY THE OUTLET ON THE PREPARED CLASS 5 BASE. POSITION RAIN GUARDIAN FOXHOLE OUTLET PIECE SO PRIMARY OUTLET ALIGNS WITH TOE OF BASIN SIDE SLOPE TO AVOID SOIL INTERFERENCE WITH REMOVABLE FILTER WALL.
3. SECURE MODULAR FOXHOLE PIECES AT EACH JOINT USING PROVIDED GALVANIZED TIE RODS.
4. INSTALL EXPANSION/CONTRACTION JOINT MATERIAL OR A SHEET OF POLY TO SERVE AS A BOND BREAK BETWEEN RAIN GUARDIAN FOXHOLE AND CONCRETE INLET BEFORE POURING INLET.
5. REMOVABLE FILTER WALL SHOULD BE INSTALLED WITH FILTER FABRIC FACING THE RAIN GUARDIAN FOXHOLE INLET.
6.

FOCALPOINT SYSTEM DETAILS
RIVERTON PARK
PORTLAND, ME

SCALE: NTS
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 4 of 8

NOTE: DRAWINGS NOT PLOTTED TO SCALE. FOR FULL DETAILS OF FOCAL POINT SYSTEM -SEE STORM DRAIN SPECIFICATIONS AND VENDOR MATERIALS

BASIN LOCATION	DRAIN BASIN DIA (")	GRATE TYPE	"A" BASIN HEIGHT
FOCALPOINT 1	15	DOMED	4.83 FT

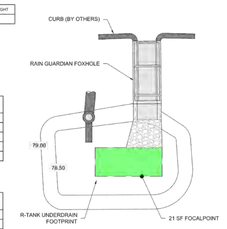


Min. SUMP "C" AND MIN. TOP OF BASIN TO TOP OF STUB "D"
6" BASIN: 4"
10"-18" BASIN: 6"
24" BASIN: 9"
30" BASIN: 10"
36" BASIN: 14"

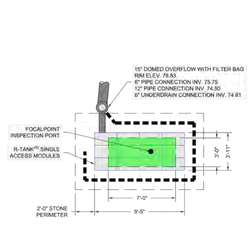
NOTES:
A - OVERALL DRAIN BASIN HEIGHT
B - TOP OF BASIN TO INVERT OF STUB (FLOW LINE)
C - SUMP - REFER TO CHART FOR MINIMUMS
D - TOP OF BASIN TO TOP OF STUB - REFER TO CHART FOR MINIMUMS

	STUB DIA. (IN.)	LOCATION (DEGREES)	"B" INVERT HEIGHT	TYPE OF PIPE	PIPE MANUFACTURER
STUB #1	6	0	3.08 FT	TSD	PLEASE VERIFY
STUB #2	12	165	4.33 FT	TSD	PLEASE VERIFY
STUB #3	6	315	4.62 FT	TSD	PLEASE VERIFY

DRAIN BASIN STUB DETAIL



FOCALPOINT LAYOUT



R-TANK UNDERDRAIN LAYOUT

FOCALPOINT SYSTEM LAYOUT
RIVERTON PARK
PORTLAND, ME

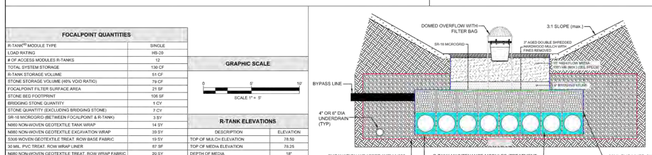
SCALE: 1" = 9'
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 2 of 8

FOCALPOINT QUANTITIES	
R-TANK® MODULE TYPE	SINGLE
LOAD RATING	HS-20
# OF ACCESS MODULES R-TANKS	12
TOTAL SYSTEM STORAGE	139 CF
R-TANK STORAGE VOLUME	91 CF
STONE STORAGE VOLUME (40% VOID RATIO)	79 CF
FOCALPOINT FILTER SURFACE AREA	21 SF
STONE BED FOOTPRINT	106 SF
BRIDGING STONE QUANTITY	1 CY
STONE QUANTITY (EXCLUDING BRIDGING STONE)	7 CY
6F-10 NICROFELT BETWEEN FOCALPOINT & R-TANKS	3 SY
N60 NON-WOVEN GEOTEXTILE TANK WRAP	14 SY
N060 NON-WOVEN GEOTEXTILE EXCAVATION WRAP	33 SY
N60 WOVEN GEOTEXTILE TREAT. ROW BASE FABRIC	19 SY
30 MIL. PVC TREAT. ROW WRAP LINER	67 SF
N60 NON-WOVEN GEOTEXTILE TREAT. ROW WRAP FABRIC	39 SY
8" FOCALPOINT INSPECTION PORT	1
GEOTEXTILE PIPE BOOTS (3")	2
30 MIL. PVC PIPE BOOTS (3")	1
NOTE: STONE QUANTITY INCLUDES 9" OF COVER AND 3" OF BASE.	
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 10% WASTE FACTOR.	

GRAPHIC SCALE

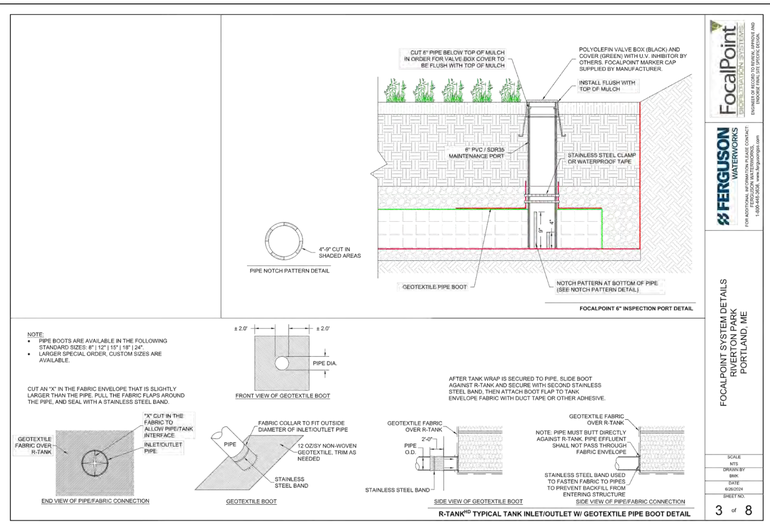
SCALE 1" = 9'

R-TANK ELEVATIONS	
DESCRIPTION	ELEVATION
TOP OF WALL/CI ELEVATION	79.50
TOP OF MEDIA ELEVATION	79.25
DEPTH OF MEDIA	18"
TOP OF BRIDGING STONE ELEVATION	75.75
TOP OF STONE (EXPANDED R-TANKS)	77.25
TOP OF R-TANK UNDERDRAIN ELEV.	76.25
R-TANK UNDERDRAIN INVERT	74.81
INVERT OF STONE BASE (3")	74.56



FOCALPOINT SYSTEM LAYOUT
TREATMENT ROW
RIVERTON PARK
PORTLAND, ME

SCALE: 1" = 9'
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 2 of 8



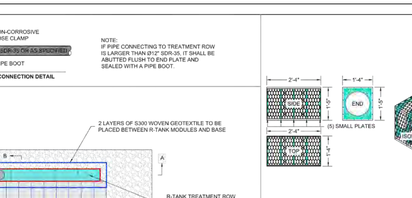
FOCALPOINT 6" INSPECTION PORT DETAIL

NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24".
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

R-TANK® TYPICAL TANK INLET/OUTLET w/ GEOTEXTILE PIPE BOOT DETAIL

FOCALPOINT SYSTEM DETAILS
RIVERTON PARK
PORTLAND, ME

SCALE: NTS
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 3 of 8

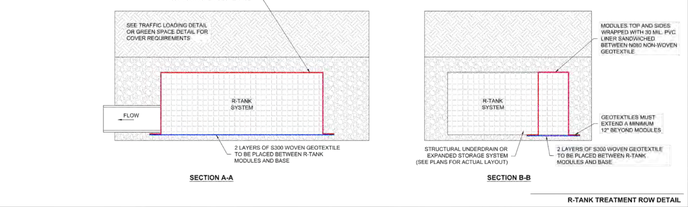


TYPICAL FOCALPOINT SECTION WITH OVERFLOW STRUCTURE

NOTES:
1. MATERIAL:
   A) SUPPORT FLANGE: ALUMINUM ALLOY PLATE, 5000 SERIES
   B) STORMSOK: WOVEN POLYPROPYLENE GEOTEXTILE
   C) EXPANSION RING: ALUMINUM ALLOY CHANNEL, 6000 SERIES
   D) HARDWARE: STAINLESS STEEL
2. RECOMMENDED MINIMUM VAULT DEPTH: 2-IN BELOW STORMSOK
3. USE ONLY WITH FABCO REPLACEABLE STORMSOK

GENERAL INSTALLATION:
ADJUST THE TURNBUCKLE DOWN TO GIVE THE SMALLEST RING DIAMETER AND LOCATE THE EXPANSION RING INTO THE HARCO STRUCTURE MINIMUM OF 6-IN DOWN FROM THE TOP OPENING AS SHOWN. BEGIN OPENING THE TURNBUCKLE UNTIL THE EXPANSION RING IS SELF SUPPORTING, THEN VERIFY THE RING IS LEVEL AND PLUMB TO THE HARCO STRUCTURE. USING A CALIBRATED TORQUE WRENCH, CONTINUE TO OPEN THE TURNBUCKLE TO GIVEN TORQUE (MODEL-SPECIFIC). DO NOT OVER TIGHTEN. INSTALL THE STORMSACK ASSEMBLY DIRECTLY ON THE SUPPORT RING.

STRUCTURE DIA. (IN.)	DEBRIS CAPACITY (CU. FT.)	FILTERED FLOWRATE (CFS)	BYPASS FLOWRATE (CFS)
12	0.66	1.70	1.00
15	1.00	2.10	1.30
18	1.20	2.30	1.40
24	2.80	3.90	2.20
30	2.80	3.90	2.22



FABCO BEEHIVE STANDARD OVERFLOW FILTER STRUCTURE

FOCALPOINT OVERFLOW STRUCTURE DETAILS
RIVERTON PARK
PORTLAND, ME

SCALE: NTS
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 5 of 8

FOCALPOINT INLET STRUCTURE DETAILS
RIVERTON PARK
PORTLAND, ME

SCALE: NTS
DRAWN BY: BMK
DATE: 6/26/2024
SHEET NO.: 6 of 8

ISSUED FORPERMITTING - NOT FOR CONSTRUCTION

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OWNER
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PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING,
MAINTENANCE BUILDING
AND REHABILITATION
2 RIVERTON DRIVE
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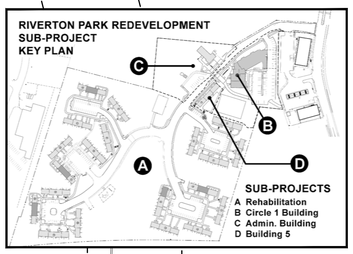
DRAWINGS
SITE/CIVIL DETAILS 5

CWS PROJECT NUMBER: 15.021

DRAWING NUMBER
C7.8

SCALE: AS SHOWN
DATE: 1/12/2019



0 25 50 100
SCALE in FEET
1"=50'

LEGEND: EXISTING

- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- EM/GM ELEC / GAS METER
- UTILITY POLE
- LIGHT
- SIGN
- WATER VALVE/SHUTOFF
- GAS VALVE
- FENCE
- OHW OVERHEAD WIRES
- E UNDERGROUND POWER
- W WATER LINE
- PPG GAS LINE
- T TELEPHONE
- SD STORM DRAIN
- SS SANITARY SEWER
- C COMMUNICATIONS
- 70 CONTOUR LINE
- IRON PIPE / ROD FOUND
- MONUMENT FOUND

LEGEND: PROPOSED

- SUB-PROJECT LINE
- DECIDUOUS TREE
- SHRUBS
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- EDGE OF PAVING
- LIGHTS
- SIGNAGE
- TRANSFORMER
- BUILDING ENTRY POINTS
- FENCE
- CROSS WALK
- BIKE RACKS
- BIKE REPAIR STATION
- DRIP EDGE / RIP-RAP

PLANTING NOTES

1. CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL FINAL ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS OF WATERING AND MAINTENANCE.
2. CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE WORK SHOWN ON THE PLAN. ANY DISCREPANCY BETWEEN THE QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED ON THE PLAN SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL RENUMERATION, ANY DISCREPANCIES SHALL BE CLARIFIED WITH THE LANDSCAPE ARCHITECT PRIOR TO ORDERING PLANT MATERIAL.
3. ALL MATERIALS SHALL CONFORM TO SPECIFICATIONS OF THE AMERICAN STANDARDS FOR NURSERY STOCK (LATEST EDITION) AS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS THE ORIGINAL GRADES BEFORE DIGGING.
5. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF SUBSTANTIAL COMPLETION,
6. ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT AT THE NURSERY AND AT THE SITE.
7. ALL PLANT BEDS SHALL MEET MINIMUM TOPSOIL REQUIREMENTS (SEE SPECIFICATIONS).
8. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRUBBING, BED PREPARATION, AND FINISH GRADING HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
9. ALL PLANT BEDS AND TREE WELLS SHALL HAVE A MINIMUM OF 3" OF UNIFORMLY DISTRIBUTED, DARK, SHREDDED BARK MULCH,
10. CONTRACTOR SHALL SUBMIT SOIL SAMPLE AND TEST OF TOPSOIL TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. SOIL ADMIXTURE SHALL BE ADDED TO EXISTING SOIL (BY CONTRACTOR) IF DEEMED NECESSARY BY SOIL TEST RESULTS.
11. ROUGH GRADING AND BED PREPARATION SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANT INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT 48 HOURS PRIOR TO REQUIRED SITE VISIT.
12. ALL PLANTS SHALL BE BALLED AND WRAPPED OR CONTAINER GROWN AS SPECIFIED. ALL ROOT WRAPPING AND CONTAINER MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED AT THE TIME OF PLANTING.
13. ALL BROAD LEAF EVERGREEN PLANTS SHALL BE SPRAYED WITH AN ANTI-DESSICANT AT THE BEGINNING OF THEIR FIRST WINTER.
14. ALL PLANTS SHALL BE INSTALLED AS PER DETAILS AND THE CONTRACT SPECIFICATIONS. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE CONTRACT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
15. CONTRACTOR SHALL STAKE TREES IF DEEMED NECESSARY BY LANDSCAPE ARCHITECT.
16. THE LANDSCAPE CONTRACTOR SHALL PROVIDE LOAM FILL AS PER THE CONTRACT SPECIFICATIONS.
17. ALL PLANTS SHALL BE WATERED BY THE CONTRACTOR, AS NECESSARY TO INSURE HEALTH UNTIL FINAL ACCEPTANCE.
18. THE LANDSCAPE CONTRACTOR SHALL REFER TO THE PLANT LIST AND PLANTING SPECIFICATIONS FOR SEASONAL REQUIREMENTS AND OTHER RESTRICTIONS RELATED TO THE TIME AND SEASON OF PLANTING.
19. PLANTING SOIL MIX: 1 PART COMPOST, 8 PARTS TOPSOIL, 3 PARTS HUMUS.

TOPSOIL: FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMY CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL, FREE FROM CLAY, LUMPS, COARSE SANDS, STONES, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIALS GREATER THAN 1" IN ANY DIMENSION, PH RANGE 5.0-7.0 , AND SHALL CONTAIN NOT LESS THAN 6% ORGANIC MATTER BY WEIGHT.
SANDY LOAM OR LOAM SOIL AS DEFINED BY THE USDA SOIL CONSERVATION SERVICE, AND HAVE THE FOLLOWING MECHANICAL ANALYSIS:

TEXTURAL CLASS	% OF TOTAL WEIGHT	AVERAGE %
SAND (0.05- 2.0 MM)	45 TO 75%	60%
SILT (0.002- 0.05 MM)	15 TO 35%	25%
CLAY (< 0.002 MM)	5 TO 25%	15%

PLANTING SCHEDULE

	QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	NATIVE
TREES	4	AC	*Amelanchier canadensis*	Shadbush	8-10' ht.	B+B, MULTI STEM	X
	11	AF	*Acer x freemanii 'Sienna Glen'*	Maple Hybrid	2"-2.5" cal.	B+B	X
	5	AL	*Amelanchier laevis 'Cumulus' or 'Spring Flurry'*	Allegheny Serviceberry	2"-2.5" cal.	B+B, TREE FORM, ALL MATCHING	X
	24	AR	*Acer rubrum 'Karpick' or 'Bowhall'*	Red Maple	2"-2.5" cal.	B+B, ALL MATCHING	X
	3	BN	*Betula nigra 'Heritage'*	River Birch	2"-2.5" cal.	B+B, SINGLE STEM TREE FORM	X
	6	CC	*Carpinus caroliniana 'Palisade' or 'Uxbridge'*	American Hornbeam	2"-2.5" cal.	B+B, ALL MATCHING	X
	5	CK	*Cladrastis kentukea*	Yellowwood	2"-2.5" cal.	B+B	
	11	GT	*Gleditsia triacanthos 'Street Keeper'*	Honeylocust	2"-2.5" cal.	B+B	
	7	LT	*Liriodendron tulipifera 'Little Volunteer' or 'Emerald City'*	Tulip Tree	2"-2.5" cal.	B+B, ALL MATCHING	
	5	MA	*Maackia amurensis 'Starburst'*	Maackia	2"-2.5" cal.	B+B	
	7	NS	*Nyssa slyvatica 'Firestarter'*	Tupelo	2"-2.5" cal.	B+B	X
	7	OV	*Ostrya virginiana 'Autumn Treasure'*	Hop-Hornbeam	2"-2.5" cal.	B+B	X
	3	PA	*Platanus x acerfolia 'Exclamation'*	Planetree	2"-2.5" cal.	B+B	
	11	PG	*Picea glauca*	White Spruce	8'-10' ht.	B+B	X
	19	PS	*Prunus sargentii 'First Blush' or 'Columnaris'*	Sargent Cherry	2"-2.5" cal.	B+B, ALL MATCHING	
	2	PSF	*Pinus strobus 'Fastigiata'*	White Pine	8-10' ht.	B+B	X
	9	QB	*Quercus bicolor*	Swamp White Oak	2"-2.5" cal.	B+B	X
	7	UA	*Ulmus americana 'Princeton'*	American Elm	2"-2.5" cal.	B+B	X
	5	ZS	*Zelkova serrata 'Musashino'*	Zelkova	2"-2.5" cal.	B+B	

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CARROLL ASSOCIATES
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207.772.1552 V. F. 207.772.0712

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
LANDSCAPE MASTER PLAN
CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS (2)	09.18.2024

DRAWING NUMBER
L1.0
SCALE: AS SHOWN
DATE: 07/08/2024

BUILDING 1

ADMINISTRATION BUILDING

CIRCLE 2

CIRCLE 3

STORMWATER AREA FOCAL POINT UNIT:

STORMWATER AREA BIO-RETENTION CELL:

STORMWATER AREA BIO-RETENTION CELL:

SUB-PROJECT A

SUB-PROJECT B

SUB-PROJECT C

0 15 30 60
SCALE in FEET
1"=30'

1 LANDSCAPE PLAN: ADMIN BUILDING, BUILDING 1+5 AND CIRCLE 2
SCALE: AS SHOWN

0 15 30 60
SCALE in FEET
1"=30'

2 LANDSCAPE PLAN: CIRCLE 3
SCALE: AS SHOWN

SEE SHEET L1.2 FOR LANDSCAPE SCHEDULE

LEGEND: EXISTING

- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
- BUILDING OUTLINE
- CATCH BASIN
- FIRE HYDRANT
- MANHOLE
- ELEC / GAS METER
- UTILITY POLE
- LIGHT
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- WATER VALVE/SHUTOFF
- GAS VALVE
- FENCE
- OHW — OVERHEAD WIRES
- E — UNDERGROUND POWER
- W — WATER LINE
- PPG — GAS LINE
- T — TELEPHONE
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- SUB-PROJECT LINE
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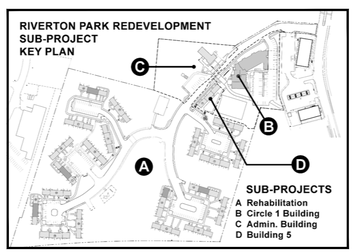
RIVERTON PARK REDEVELOPMENT SUB-PROJECT KEY PLAN



SUB-PROJECTS
A Rehabilitation
B Circle 1 Building
C Admin. Building
D Building 5

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PROJECT
RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE,
PORTLAND, MAINE 04103

DRAWING
LANDSCAPE PLAN:
ENLARGEMENTS
CWS PROJECT NUMBER: 15.021

REVISIONS

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4	ISSUED FOR: 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS	09.18.2024

DRAWING NUMBER
L1.1

SCALE: AS SHOWN
DATE: 07/08/2024

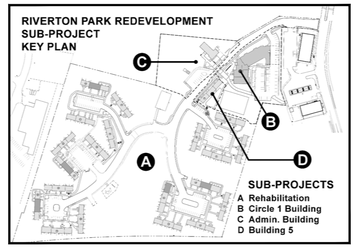
SHRUBS, GRASSES + PERENNIALS

QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	NATIVE
41	AM	*Aronia melanocarpa 'Morton'*	Black Chokeberry	24" / #5		X
36	AMG	*Aronia melanocarpa 'Ground Hug'*	Black Chokeberry	#5		X
16	DL	*Diervilla lonicera*	Northern Bush Honeysuckle	24" / #5		X
34	FM	*Fothergilla 'Mt. Airy'*	Bottlebrush Bush	2.5'-3' / #7		
39	JC	*Juniperus communis 'Blueberry Delight'*	Common Juniper	#5		X
18	JV	*Juniperus virginiana 'Grey Owl'*	Juniper	2.5'-3' / #5		X
36	MD	*Microbiota decussata 'Prides'*	Siberian Carpet Cypress	#5		
19	MP1	*Myrica pensylvanica*	Northern Bayberry	3-4' / #7		X
13	MP2	*Myrica pensylvanica 'Bobee'*	Northern Bayberry	2'-2.5' / #5		X
39	PVN	*Panicum virgatum 'Northwind'*	Switchgrass	#3		X
18	PVR	*Panicum virgatum 'Ruby Ribbons'*	Switchgrass	#3		X
93	RA	*Rhus aromatica 'Gro-Low'*	Fragrant Sumac	#5		
6	RM	*Rhododendron maximum 'Roseum'*	Rosebay Rhododendron	2.5'-3'	B+B, matching	X
20	SB	*Spiraea tomentosa*	Spirea	2' / #3		X
48	TOS	*Thuja occidentalis 'Smaragd'*	Emerald Green Arborvitae	5' HT	B+B, matching	X
24	V	*Viburnum carlesii 'Cayuga' or 'Spice Baby'*	Mayflower Viburnum	3-4'HT	B+B, matching	

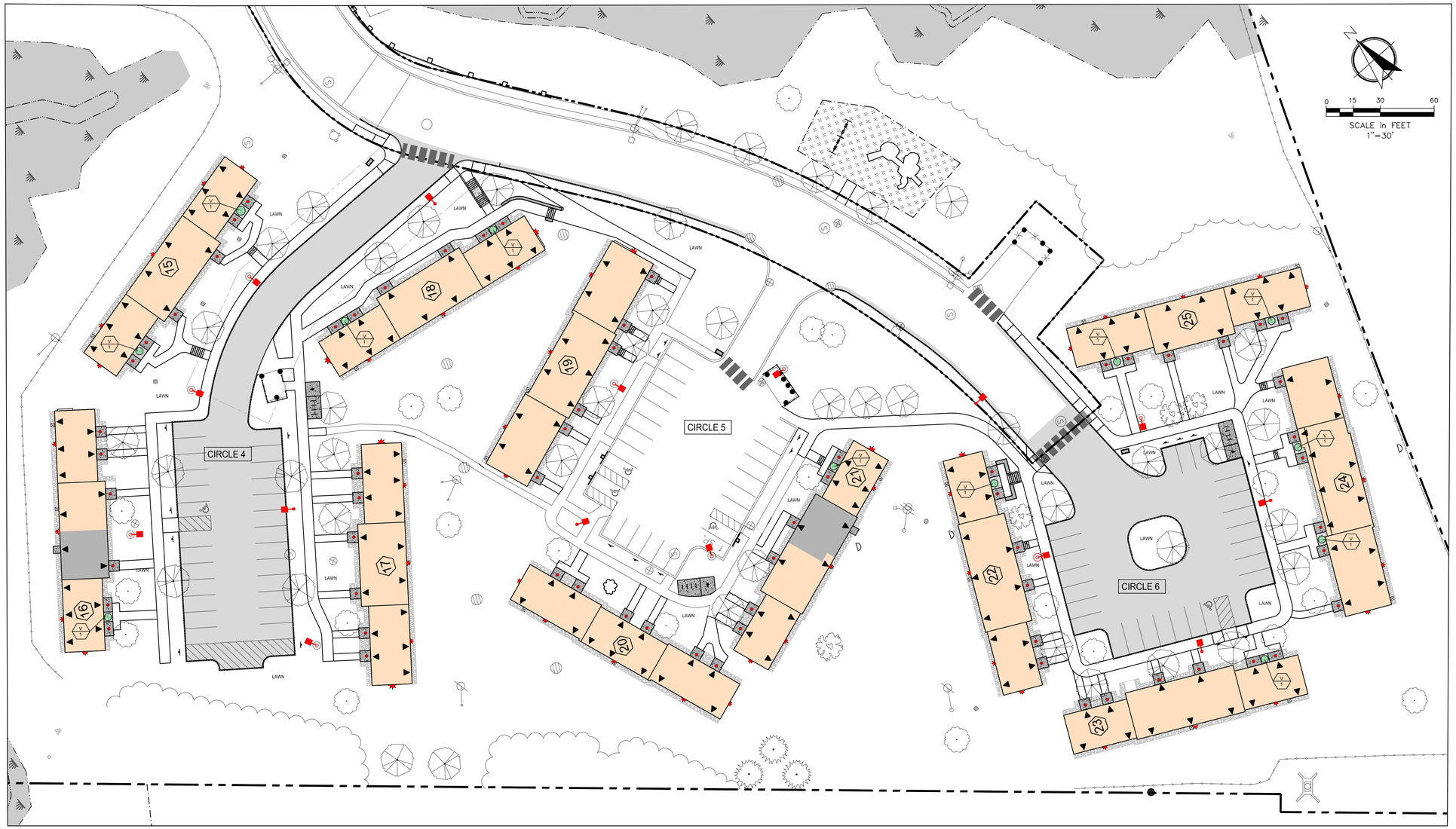
BIO-RETENTION AREAS

QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	NATIVE
7	CO	*Cephalanthus occidentalis 'Sugar Shack'*	Buttonbush	#7	cont	X
27	CK	*Cornus sericea 'Kelseyi'*	Red Twig Dogwood	#5	cont	
3	CS	*Clethra alnifolia 'Hummingbird'*	Summersweet	#7	cont	X
2	IVJ	*Ilex verticillata 'Jim Dandy'*	Winterberry (male)	#5	cont	X
10	IVS	*Ilex verticillata 'Red Sprite'*	Winterberry (female)	#5	cont	X
91	IV	*Iris versicolor*	Blue Flag Iris	#2	cont	X
42	LS	*Liatris spicata*	Blazing Star	#2	cont	X
26	PVS	*Panicum virgatum 'Shenandoah'*	Switchgrass	#2	cont	X
2225 SF	S	-	New England Conservation / Wildlife Mix by New England Wetland Plants, Inc. or approved equal	25 lbs/acre (1750 sf/lbs)	seed	X

RIVERTON PARK REDEVELOPMENT SUB-PROJECT KEY PLAN



SUB-PROJECTS
- **A Rehabilitation**
- **B Circle 1 Building**
- **C Admin. Building**
- **D Building 5**



LEGEND: EXISTING
- PROPERTY LINE
- TREE (TO REMAIN)
- TREE (TO BE REMOVED)
- CURB
- EDGE OF PAVING
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- FENCE
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- BIKE RACKS
- BIKE REPAIR STATION
- DRIP EDGE / RIP-RAP

1 LANDSCAPE PLAN: CIRCLE 4-5-6
SCALE: AS SHOWN

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DESIGNER

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PORTLAND, MAINE 04101

APPLICANT
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PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE,
PORTLAND, MAINE 04103

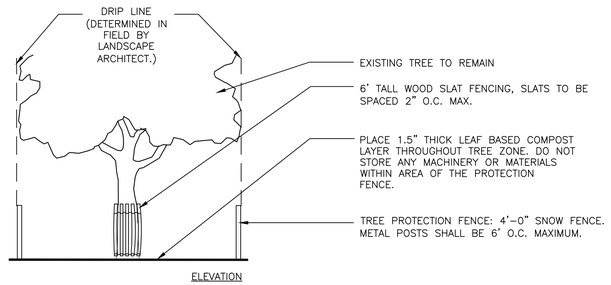
DRAWING
LANDSCAPE PLAN:
ENLARGEMENTS
CWS PROJECT NUMBER: 15.021

REVISIONS

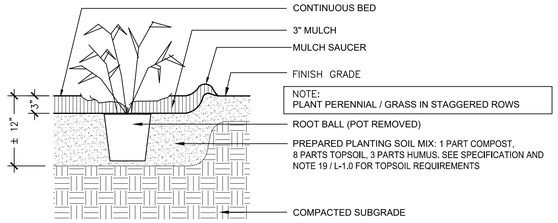
1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
L1.2

SCALE: AS SHOWN
DATE: 07/08/2024



1 TREE PROTECTION
SCALE: NTS



4 PERENNIAL + ORNAMENTAL GRASS PLANTING
SCALE: NTS

TOPSOIL: FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMY CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL, FREE FROM CLAY, LUMPS, COARSE SANDS, STONES, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIALS GREATER THAN 1" IN ANY DIMENSION, PH RANGE 5.0–7.0 , AND SHALL CONTAIN NOT LESS THAN 6% ORGANIC MATTER BY WEIGHT. SANDY LOAM OR LOAM SOIL AS DEFINED BY THE USDA SOIL CONSERVATION SERVICE, AND HAVE THE FOLLOWING MECHANICAL ANALYSIS:

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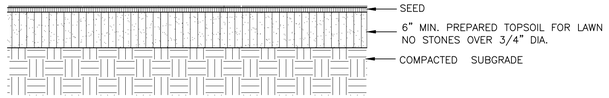
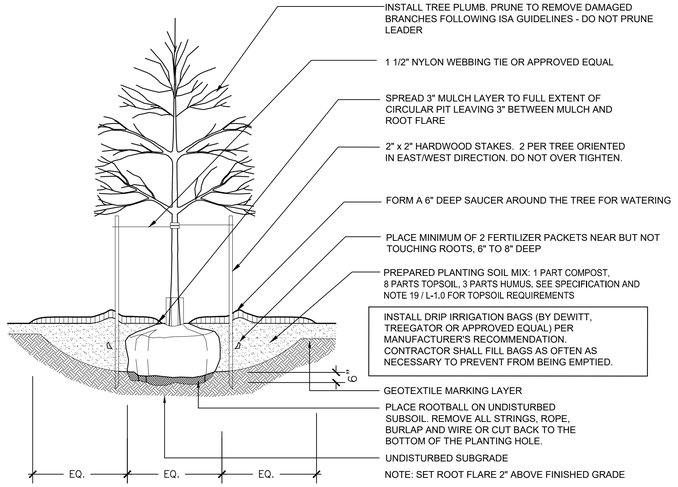
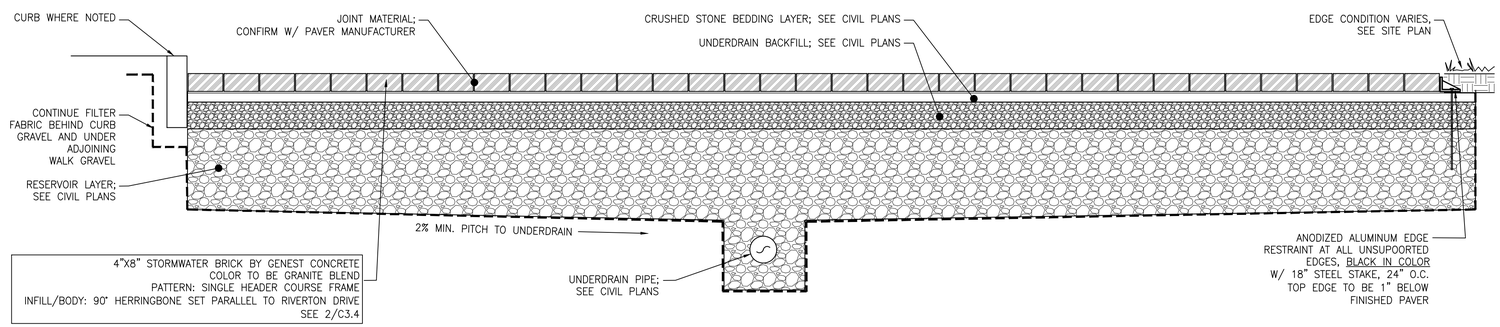


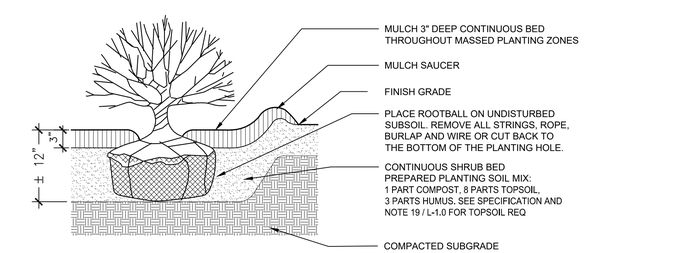
5 LAWN PLANTING
SCALE: NTS



2 TREE PLANTING
SCALE: NTS



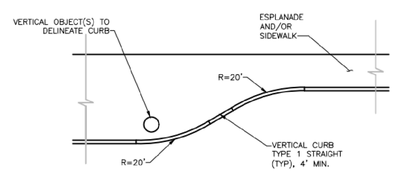
6 PERMEABLE PAVER SECTION
SCALE: NTS



3 SHRUB PLANTING
SCALE: NTS

NOTES:

1. CURB EXTENSIONS SHOULD NOT IMPEDE THE WIDTH OF THE ADJACENT VEHICLE TRAVEL LANE OR BICYCLE LANE.
2. PROPOSED MATERIALS SHALL BE CONSISTENT WITH THE CITY SIDEWALK MATERIAL POLICY.
3. DRAINAGE MODIFICATIONS SHALL BE MADE SO THAT CURB EXTENSIONS DO NOT IMPEDE STORMWATER FLOW.
4. CURB EXTENSIONS SHALL BE DESIGNED TO FACILITATE SNOW REMOVAL OPERATIONS WHILE MINIMIZING IMPACTS TO DRAINAGE AND ON-STREET PARKING.
5. ALL CURB EXTENSIONS SHALL BE REVIEWED AND APPROVED BY THE CITY ENGINEER.
6. THE POTENTIAL IMPLEMENTATION OF GREEN INFRASTRUCTURE FOR STORMWATER MANAGEMENT SHALL BE CONSIDERED AT EACH CURB EXTENSION LOCATION AND IMPLEMENTED IF FEASIBLE. THE WATER RESOURCES DIVISION OF PUBLIC WORKS MUST REVIEW AND APPROVE GREEN INFRASTRUCTURE SYSTEMS BEFORE BEING INSTALLED WITHIN CITY STREETS.



TYPICAL CURB EXTENSION
NOT TO SCALE

7 CURB EXTENSION (CITY OF PORTLAND)
SCALE: NTS

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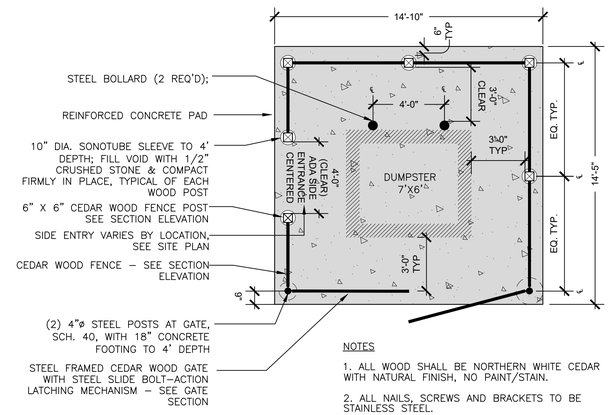
PROJECT
RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
LANDSCAPE DETAILS
CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
L2.0
SCALE: AS SHOWN
DATE: 07/08/2024



NOTES

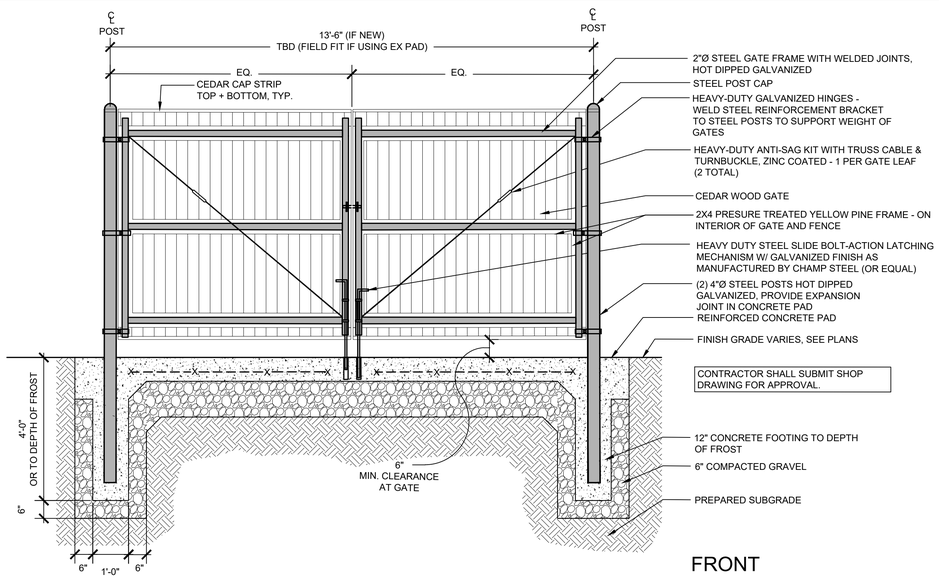
1. ALL WOOD SHALL BE NORTHERN WHITE CEDAR WITH NATURAL FINISH, NO PAINT/STAIN.

2. ALL NAILS, SCREWS AND BRACKETS TO BE STAINLESS STEEL.

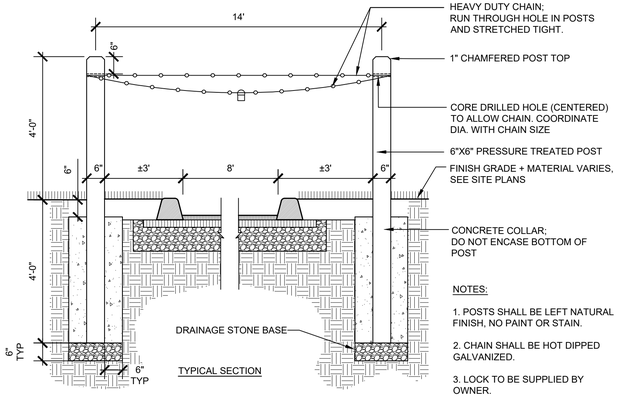
3. CONTRACTOR SHALL SUBMIT SHOP DRAWING FOR APPROVAL.

4. PAD AND ENCLOSURE SHALL BE FIELD FIT PER EXISTING CONDITIONS FOR REHAB. VERIFY DIMENSIONS IN THE FIELD.

1 DUMPSTER ENCLOSURE + GATE
SCALE: NTS



FRONT



NOTES:

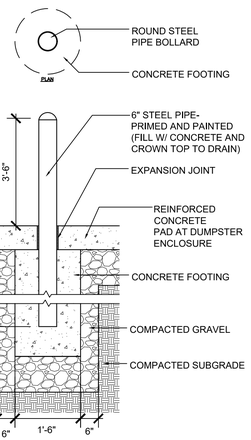
1. POSTS SHALL BE LEFT NATURAL FINISH, NO PAINT OR STAIN.

2. CHAIN SHALL BE HOT DIPPED GALVANIZED.

3. LOCK TO BE SUPPLIED BY OWNER.

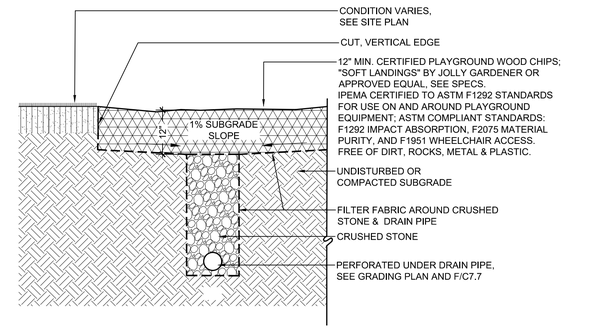
TYPICAL SECTION

5 POST + CHAIN GATE
SCALE: NTS



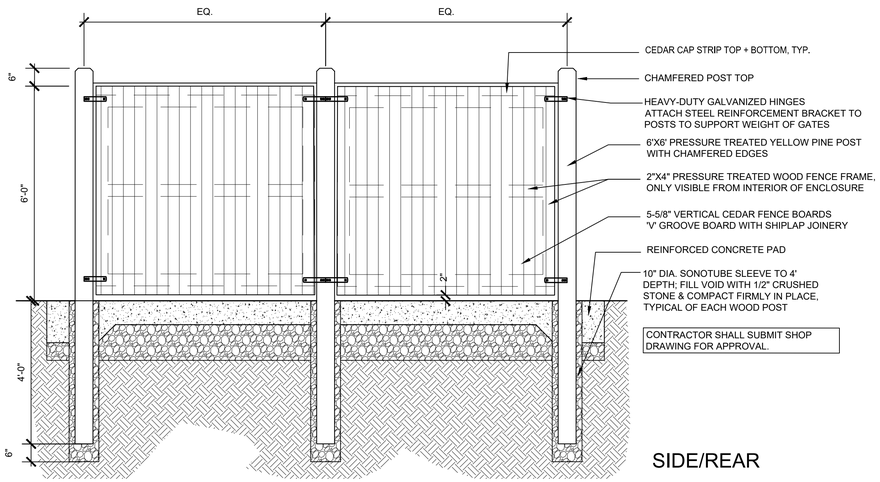
2 DUMPSTER BOLLARD
SCALE: NTS

SIDE



6 PLAY GROUND SURFACING
SCALE: NTS

3 DUMPSTER PAD
SCALE: NTS



SIDE/REAR

4 DUMPSTER SURROUND
SCALE: NTS

CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN
264 US Route One, Suite 100–2A
Scarborough ME 04074
OFFICE: 207 774 4441 CWSARCH.COM

DESIGNER

NOT FOR CONSTRUCTION

CARROLL ASSOCIATES
LANDSCAPE ARCHITECTS
217 COMMERCIAL STREET, STE 200
PORTLAND, MAINE 04101
207.772.1552 V. F. 207.772.0712

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

APPLICANT

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE,
PORTLAND, MAINE 04103

DRAWINGS

LANDSCAPE DETAILS

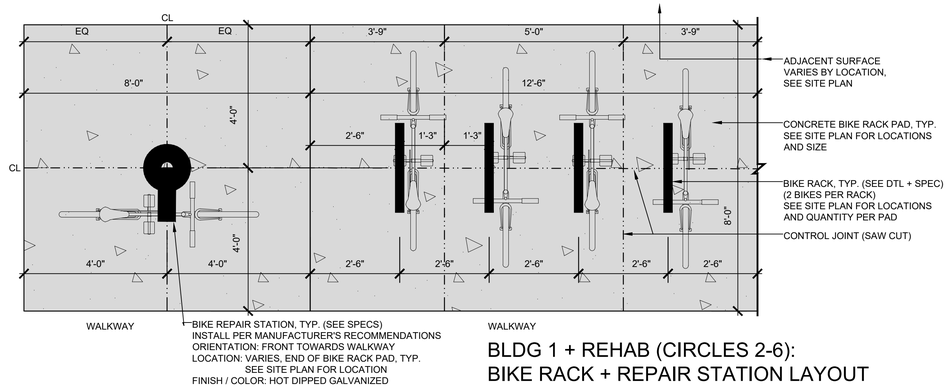
CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.09.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

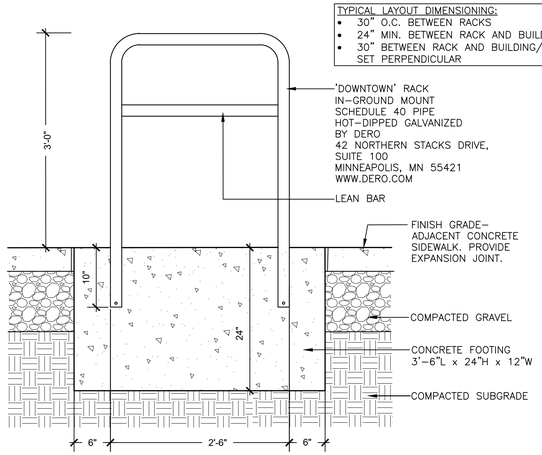
DRAWING NUMBER
L2.1

SCALE: AS SHOWN
DATE: 07/08/2024

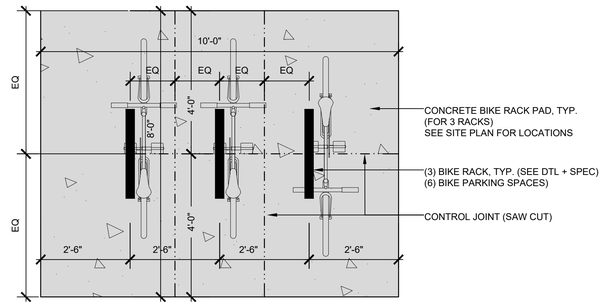


BLDG 1 + REHAB (CIRCLES 2-6):
BIKE RACK + REPAIR STATION LAYOUT

TYPICAL LAYOUT DIMENSIONING:
- 30" O.C. BETWEEN RACKS
- 24" MIN. BETWEEN RACK AND BUILDING WHEN SET PARALLEL
- 30" BETWEEN RACK AND BUILDING/EDGE OF PAVEMENT WHEN SET PERPENDICULAR



1 BIKE RACK + REPAIR STATION - ALT 13 (AT REHABS)
SCALE: NTS



CIRCLE 1 + ADMIN BUILDING:
TYPICAL 3 RACK LAYOUT

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PORTLAND, MAINE 04101

APPLICANT
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14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE,
PORTLAND, MAINE 04103

DRAWING SHEET
LANDSCAPE DETAILS
CWS PROJECT NUMBER: 15.021

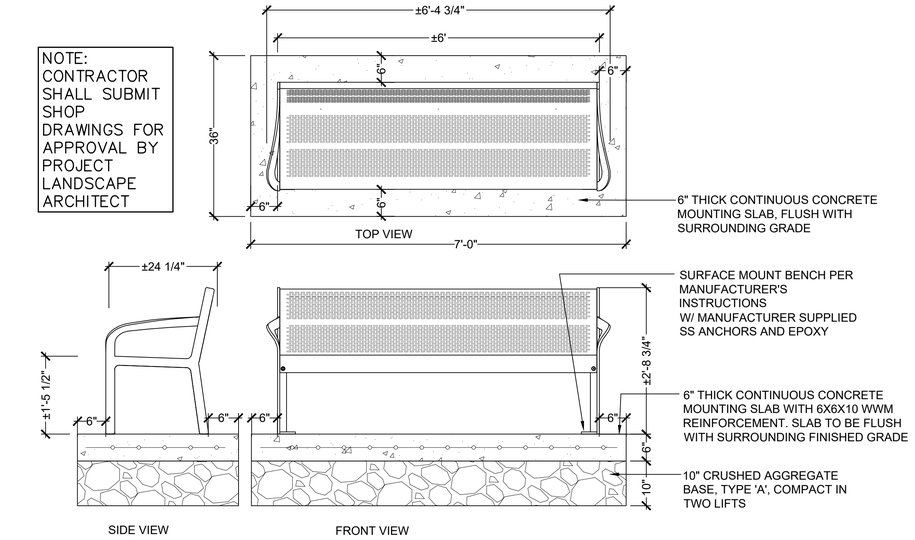
REVISIONS

1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
L2.2

SCALE: AS SHOWN
DATE: 07/08/2024

NOTE:
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY PROJECT LANDSCAPE ARCHITECT

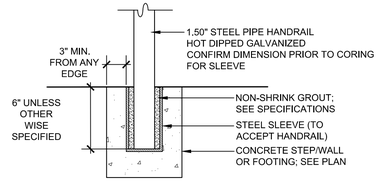


1 BENCH AND PAD
SCALE: NTS

BENCH SPEC

SALES REPRESENTATIVE: FORMS+SURFACE
DIRECT NUMBER:1.800.451.0410
EMAIL: SALES@FORMS-SURFACES.COM

1. "RATIO" BENCH :
   6' LENGTH, STANDALONE W/ SEAT BACK AND WITH INTEGRAL END ARMRESTS, SURFACE MOUNT;
   BY FORMS+SURFACES, 30 PINE STREET, PITTSBURGH, PA15223
2. FRAME: SHALL BE POWDER COATED SOLID ALUMINUM, COLOR TO BE DETERMINED BY OWNER
3. SEAT: PERFORATED STAINLESS STEEL W/ SATIN FINISH
4. BENCH SHALL BE SURFACE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS WITH MANUFACTURER SUPPLIED STAINLESS STEEL HARDWARE TO FLUSH CONCRETE BASE AS SHOWN IN DETAIL.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF BENCH AND ATTACHMENT FOR APPROVAL.

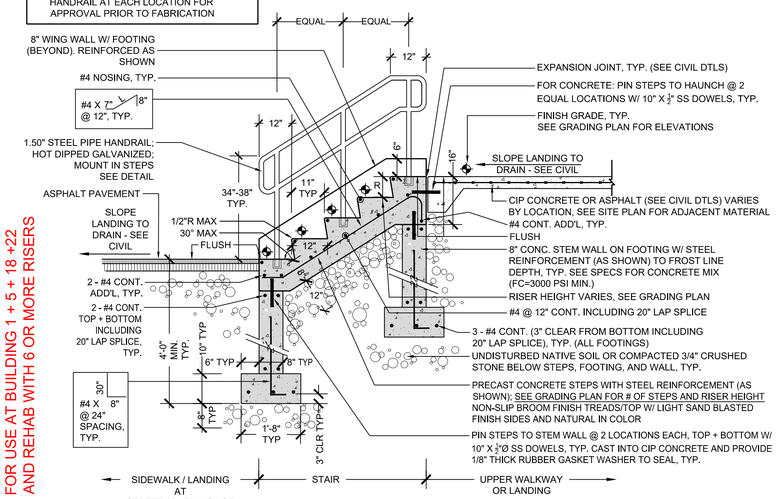


NOTES:

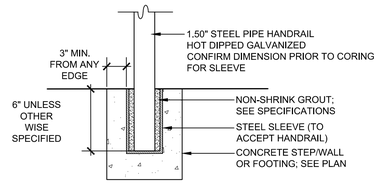
1. SLEEVE TO BE METAL W/ WELDED END; OPENING TO BE 1" LARGER THAN POST DIAMETER OR WIDTH
2. TOP OF POST SLEEVE TO BE FLUSH OR SLIGHTLY BELOW CONCRETE SURFACE
3. GROUT COLOR TO BE MATCH CONCRETE (TYP)
4. HANDRAIL INSTALLATION SHALL CONFORM TO ALL A.D.A. & LOCAL BLDG. CODES

- SEE GRADING PLAN FOR: RISER HEIGHT AND # RISERS / TREADS
- SUBMIT SHOP DRAWING OF STEPS AND HANDRAIL AT EACH LOCATION FOR APPROVAL PRIOR TO FABRICATION

FOR USE AT BUILDING 1 + 5 + 18 +22 AND REHAB WITH 6 OR MORE RISERS



2 CONCRETE STAIRS @ BUILDING 1 + 5 + 18 + 22
SCALE: NTS

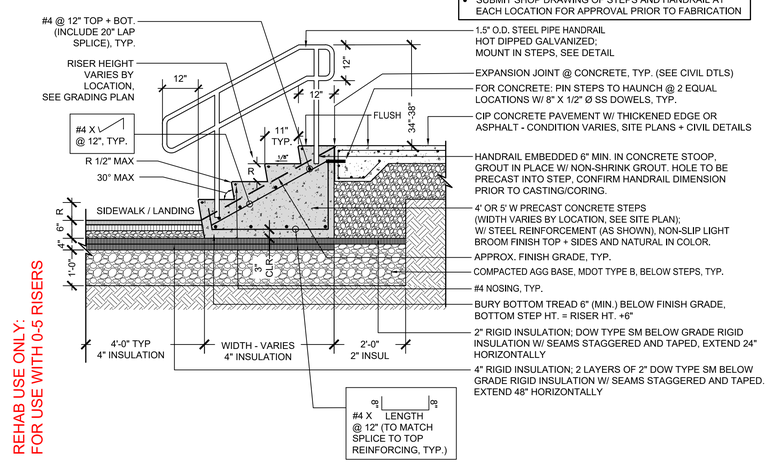


NOTES:

1. SLEEVE TO BE METAL W/ WELDED END; OPENING TO BE 1" LARGER THAN POST DIAMETER OR WIDTH
2. TOP OF POST SLEEVE TO BE FLUSH OR SLIGHTLY BELOW CONCRETE SURFACE
3. GROUT COLOR TO BE MATCH CONCRETE (TYP)
4. HANDRAIL INSTALLATION SHALL CONFORM TO ALL A.D.A. & LOCAL BLDG. CODES

- SEE GRADING PLAN FOR: RISER HT + # RISERS / TREADS
- SUBMIT SHOP DRAWING OF STEPS AND HANDRAIL AT EACH LOCATION FOR APPROVAL PRIOR TO FABRICATION

REHAB USE ONLY:
FOR USE WITH 0-5 RISERS



3 CONCRETE STAIRS @ REHAB UNITS (CIRCLES 2-6)
SCALE: NTS

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DESIGNER

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14 BAXTER BLVD
PORTLAND, MAINE 04101

APPLICANT
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REDEVELOPMENT AND REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
LANDSCAPE DETAILS
CWS PROJECT NUMBER: 15.021

REVISIONS

1	ISSUED FOR MANEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MANEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024

DRAWING NUMBER
L2.3

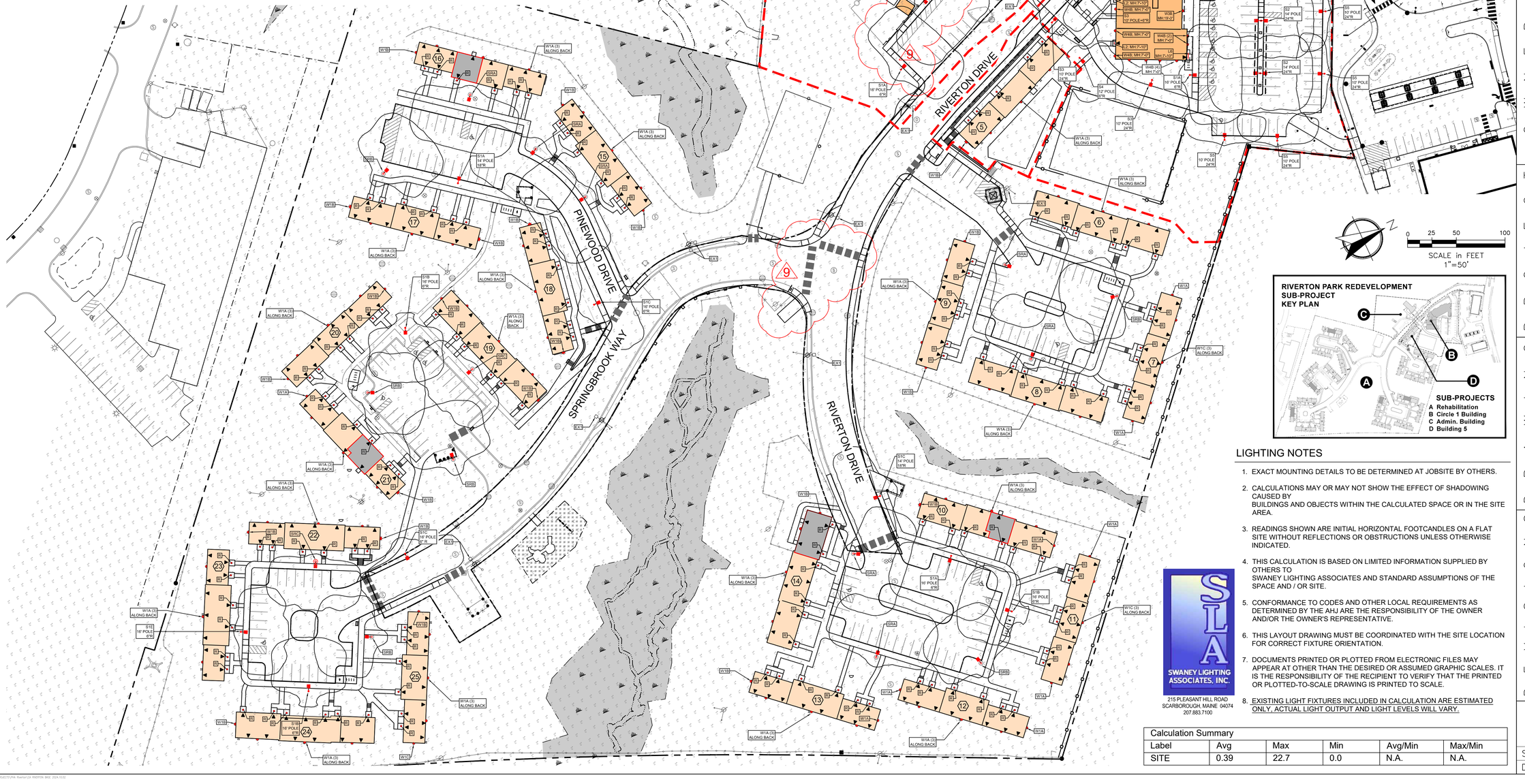
SCALE: AS SHOWN
DATE: 07/08/2024

LIGHTING SCHEDULE

QTY	SYM	LABEL	DESCRIPTION	MANUFACTURER	LAMP	POLE HT	POLE	BASE REVEAL	MOUNTING HEIGHT	NOTES	DESCRIPTION	LOCATION / BUILDING
-		EX1	EX UNKNOWN CITY / CMP LIGHT	UNKNOWN	ESTIMATED 31 WATTS	N/A	-	-	ESTIMATED +/-26'	-	ESTIMATED	CITY STREETS
3		L2	AQUAS SERIES RECESSED SERIES STRIP LIGHT	FORUM LIGHTING	27 WATT LED	N/A	N/A	N/A	VARIES, SEE PLAN	3000K	AQR-F-X3-43LED-40-SAT X 2'-WH (C1-4)	CIRCLE 1 BUILDING
4		L6	AQUAS SERIES RECESSED SERIES STRIP LIGHT	FORUM LIGHTING	41 WATT LED	N/A	N/A	N/A	VARIES, SEE PLAN	3000K	AQR-F-X3-43LED30-SAT X 6'-WH PRORATED (C1-4)	CIRCLE 1 BUILDING
16		L8	AQUAS SERIES RECESSED SERIES STRIP LIGHT	FORUM LIGHTING	41 WATT LED	N/A	N/A	N/A	VARIES, SEE PLAN	3000K	AQR-F-X3-43LEDX-SAT X 8'-WH-X	CIRCLE 1 BUILDING
5		S1A	VIPER STRIKE	BEACON LIGHTING	55 WATT LED	VARIES	4" ROUND	VARIES*	VARIES, SEE PLAN	3000K, *SEE PLANS FOR BASE REVEAL	VP-ST-1-36L-55-3K7-4W	SITE WIDE
4		S1B	VIPER STRIKE	BEACON LIGHTING	55 WATT LED	VARIES	4" ROUND	VARIES*	VARIES, SEE PLAN	3000K, *SEE PLANS FOR BASE REVEAL	VP-ST-1-36L-55-3K7-4F	SITE WIDE
3		S1C	VIPER STRIKE	BEACON LIGHTING	55 WATT LED	VARIES	4" ROUND	VARIES*	VARIES, SEE PLAN	3000K, *SEE PLANS FOR BASE REVEAL	VP-ST-1-36L-55-3K7-3	SITE WIDE
1		S1E	VIPER STRIKE	BEACON LIGHTING	55 WATT	16'	4" ROUND	6"	16'-6"	3000K, *SEE PLANS FOR BASE REVEAL	VP-ST-1-36L-55-3K7-4W-BC	CIRCLE 6
2		S2	TWIN VIPER STRIKE	BEACON LIGHTING	55 WATT LED	14'	5" ROUND	24"	16'	3000K	TWIN-VP-ST-1-36L-55-3K7-4F	CIRCLE 1 BUILDING PARKING LOT
4		S3	VIPER STRIKE	BEACON LIGHTING	39 WATT LED	VARIES	4" ROUND	VARIES*	VARIES, SEE PLAN	3000K, *SEE PLANS FOR BASE REVEAL	VP-ST-1-36L-39-3K7-3	SITE WIDE
1		S4	VIPER STRIKE	BEACON LIGHTING	39 WATT LED	VARIES	4" ROUND	VARIES*	VARIES, SEE PLAN	3000K, *SEE PLANS FOR BASE REVEAL	VP-ST-1-36L-39-3K7-4F	SITE WIDE
4		S5	VIPER STRIKE	BEACON LIGHTING	55 WATT LED	10'	4" ROUND	24"	12'	3000K	VP-ST-1-36L-55-3K7-3-BC	CIRCLE 1 BUILDING
7		SRA	VIPER STRIKE RETROFIT HEAD	BEACON LIGHTING	55 WATT LED	EX	EX	EX	ESTIMATED +/-18'	NEW FIXTURE ON EX POLE, 3000K	VP-ST-1-36L-55-3K7-4W RETROFIT HEAD	SITE WIDE
6		SRB	VIPER STRIKE RETROFIT HEAD	BEACON LIGHTING	55 WATT LED	EX	EX	EX	ESTIMATED +/-18'	NEW FIXTURE ON EX POLE, 3000K	VP-ST-1-36L-55-3K7-4F RETROFIT HEAD	SITE WIDE
2		SRC	VIPER STRIKE RETROFIT HEAD	BEACON LIGHTING	55 WATT LED	EX	EX	EX	ESTIMATED +/- 18'	NEW FIXTURE ON EX POLE, 3000K	VP-ST-1-36L-55-3K7-4W-BC RETROFIT HEAD	CIRCLE 5+6

LIGHTING SCHEDULE

QTY	SYM	LABEL	DESCRIPTION	MANUFACTURER	LAMP	POLE HEIG HT	POLE	BASE REVEAL	MOUNTING HEIGHT	NOTES	DESCRIPTION	LOCATION / BUILDING
66		W1A	SLING SLENDER WALL PACK	HUBBLE LIGHTING	20 WATT LED	N/A	N/A	N/A	10'-0"	3000K	SG1-20-3K7-FT	REHAB: BUILDINGS
22		W1B	SLING SLENDER WALL PACK	HUBBLE LIGHTING	40 WATT LED	N/A	N/A	N/A	18'-0"	3000K	SG1-40-3K	REHAB: BUILDINGS
7		W1C	SLING SLENDER WALL PACK	HUBBLE LIGHTING	10 WATT LED	N/A	N/A	N/A	10'-0"	3000K	SG1-10-3K	REHAB: BUILDINGS
11		W3B	GEOPACK TRAPEZOID WALL PACK	HUBBLE LIGHTING	20 WATT LED	N/A	N/A	N/A	VARIES, SEE PLAN	3000K	GEO1-24L-20-3K7-4-UNV-DBT	CIRCLE 1 BUILDING
20		W4B	CY1 CYPHER ACCENT SCALE	ARCHITECTURAL AREA LIGHTING	25 WATT LED	N/A	N/A	N/A	VARIES, SEE PLAN	3000K	CY1-25-3K7-1-4-R	CIRCLE 1 BUILDING ADMIN BUILDING
125		R	6" SQUARE LITEBOX	PRESCOLITE	13 WATT LED	N/A	N/A	N/A	8'-0"	3000K, TRIM COLOR TBD, ADD DAYLIGHT SENSOR	LBSE-6SQD-30K8	REHAB: FRONT STOOPS



RIVERTON PARK REDEVELOPMENT
SUB-PROJECT
KEY PLAN

SUB-PROJECTS
A Rehabilitation
B Circle 1 Building
C Admin. Building
D Building 5

LIGHTING NOTES

1. EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
2. CALCULATIONS MAY OR MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
3. READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
4. THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND / OR SITE.
5. CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
6. THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
7. DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.
8. EXISTING LIGHT FIXTURES INCLUDED IN CALCULATION ARE ESTIMATED ONLY, ACTUAL LIGHT OUTPUT AND LIGHT LEVELS WILL VARY.

SWANEY LIGHTING ASSOCIATES, INC.
215 PLEASANT HILL ROAD
SCARBOROUGH, MAINE 04074
207.883.7100

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
SITE	0.39	22.7	0.0	N.A.	N.A.

CWS ARCHITECTS
ARCHITECTURE | INTERIOR DESIGN
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PROJECT

RIVERTON PARK
REDEVELOPMENT
AND
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWINGS

PHOTOMETRIC
MASTER PLAN

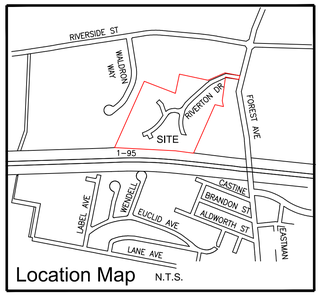
CWS PROJECT NUMBER: 15.021

REVISIONS

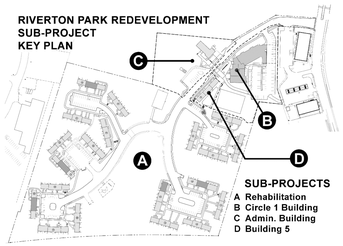
1	ISSUED FOR MAINEHOUSING PRE-APP PRICING	07.01.2024
2	ISSUED FOR MAINEHOUSING PRE-APP	07.08.2024
3	MAJOR SITE PLAN AMENDMENT	08.16.2024
4	ISSUED FOR: 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS	3

DRAWING NUMBER
L3.0

SCALE: AS SHOWN
DATE: 07/08/2024



Location Map N.T.S.



B2 ZONING DISTRICT (±1.52 AC)

R-5A ZONING DISTRICT (±16.20 AC)

ADMIN BLDG SUB-PROJECT C

BUILDING 1 SUB-PROJECT B

FOREST AVENUE

WALDRON WAY

RIVERTON DRIVE

PINEWOOD DRIVE

SPRINGBROOK WAY

CIRCLE 4 SUB-PROJECT A

CIRCLE 5 SUB-PROJECT A

CIRCLE 6 SUB-PROJECT A

CIRCLE 2 SUB-PROJECT A

CIRCLE 3 SUB-PROJECT A

SUB-PROJECT A

SUB-PROJECT B

SUB-PROJECT D

R5A ZONING DISTRICT (±16.20 AC)

0 25 50 100
SCALE in FEET
1"=50'

UNIT SUMMARY:

DWELLING UNITS (DU)

	EX DU	EX RESIDENT SERVICE UNITS	PROP DU
CIRCLE 1 :	24 DU	0 SU	64 DU
CIRCLE 2:	24 DU	6 SU	24 DU
CIRCLE 3:	28 DU	2 SU	28 DU
CIRCLE 4	24 DU	0 SU	24 DU
CIRCLE 5:	17 DU	1 SU	18 DU
CIRCLE 6:	24 DU	0 SU	24 DU
	141 DU	9 SU	182 DU

PARKING SUMMARY:

OFF-STREET	EX	PROPOSED
BUILDING 1 :	25	72
CIRCLE 2:	38	34
CIRCLE 3:	38	33
CIRCLE 4:	35	26
CIRCLE 5:	25	25
CIRCLE 6:	27	26
ADMIN BLDG:	8	8
	194	224

ON-STREET	
RIVERTON DR.	45-51 PS
SPRINGBROOK WAY	34-39 PS
APRIL-NOV	±79-90 PS
NOV-APRIL	±40-45 PS
TOTAL AVAILABLE:	VARIES

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RIVERTON PARK REDEVELOPMENT AND REHABILITATION
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DRAWING
MASTER PLAN
CWS PROJECT NUMBER: 15.021

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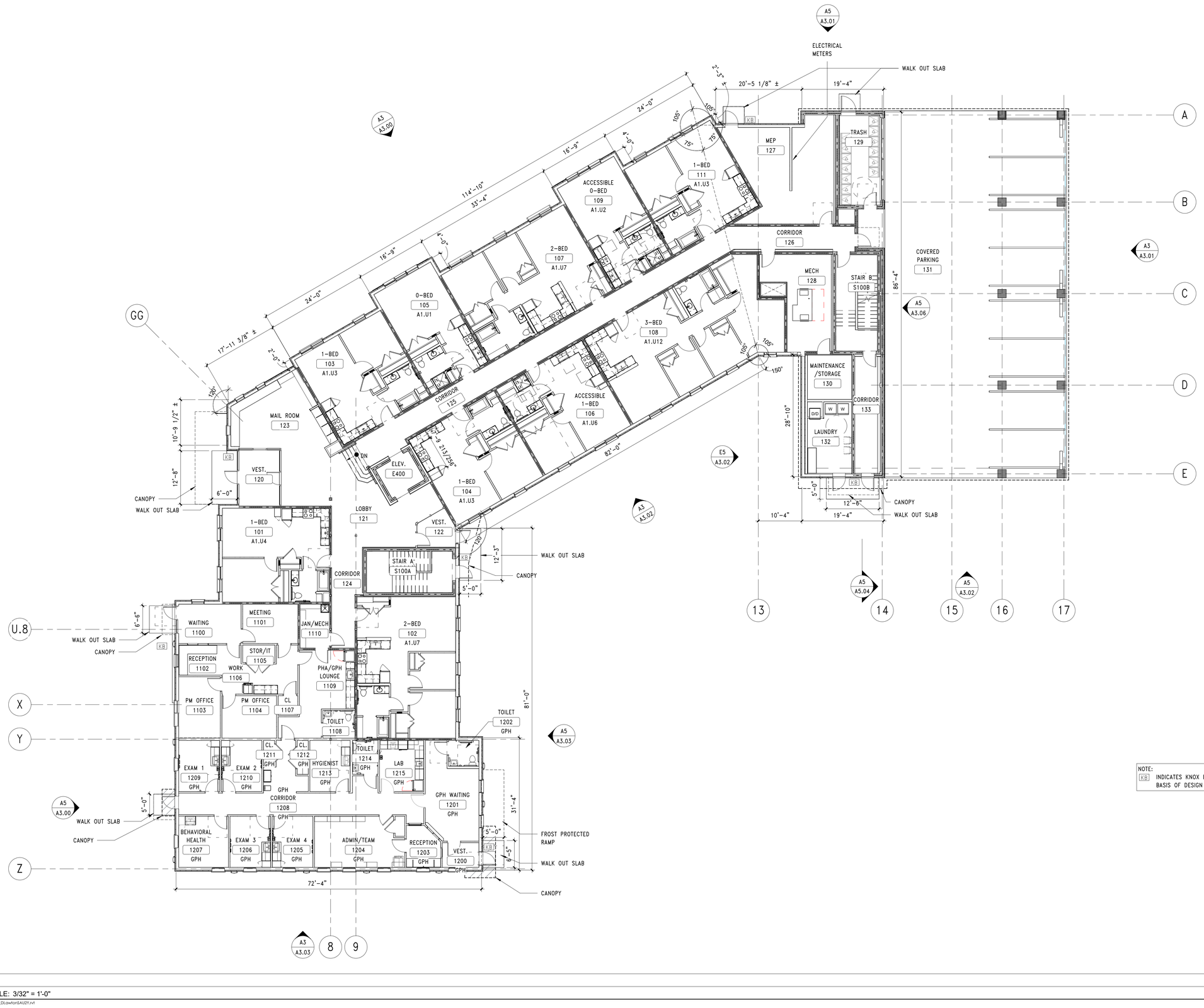
4	ISSUED FOR 50% MSHA REVIEW	09.18.2024
5	PER CITY REVIEW COMMENTS	09.18.2024

DRAWING NUMBER
C1.0
SCALE: AS SHOWN
DATE: 07/08/2024



NOTE:
KB INDICATES KNOX BOX LOCATIONS
BASIS OF DESIGN KNOX BOX 3200 SERIES

A5 FIRST FLOOR - OVERALL PLAN
SCALE: 3/32" = 1'-0"

C:\Users\Dylan Lawton\Documents\21023_Circle One Building_R22_CENTRAL_DLawtonSAU2Y.rvt

PROJECT NORTH

DRAWING NUMBER
A1.10

SCALE: 3/32" = 1'-0"
DATE: 08/12/2024

8/7/2024 9:40:40 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

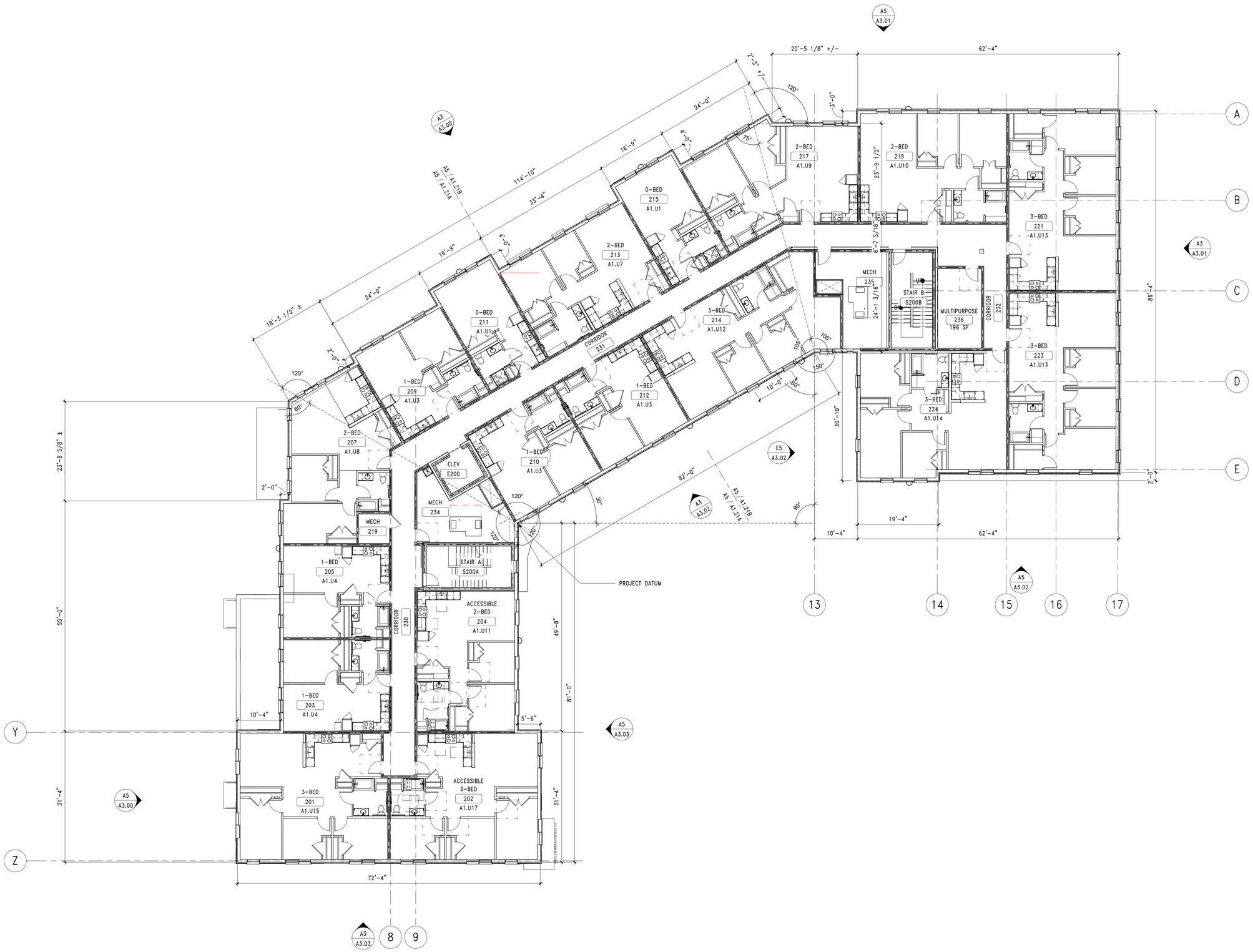
DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING
RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
FIRST FLOOR PLAN
CWS PROJECT NUMBER: 21023

REVISIONS



A5 SECOND FLOOR- OVERALL PLAN

SCALE: 3/32" = 1'-0"

C:\Users\Dylan Lawton\Documents\21023_Circle One Building_R22_CENTRAL_DLawtonSAU22Y.rvt

CWS ARCHITECTURE + INTERIOR DESIGN

PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER

CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
CIRCLE 1 BUILDING

RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

SECOND FLOOR PLAN

CWS PROJECT NUMBER: 21023

REVISIONS

PROJECT NORTH

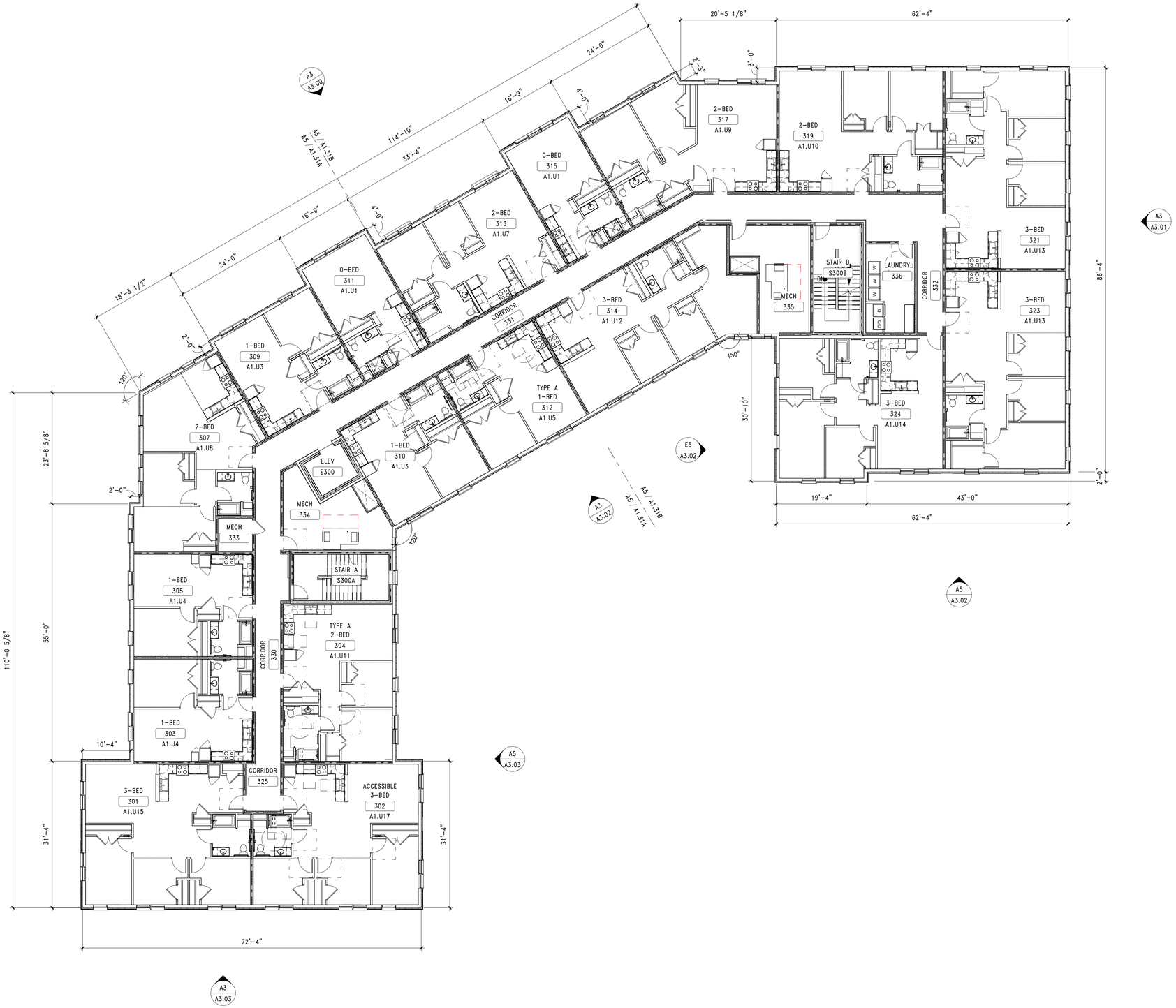
PLAN NORTH
TRUE NORTH

DRAWING NUMBER
A1.20

SCALE: 3/32" = 1'-0"
DATE: 08/12/2024

8/1/2024 3:46:08 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A5 03-THIRD FLOOR - OVERALL PLAN

SCALE: 3/32" = 1'-0"

C:\Users\Dylan Lawton\Documents\21023_Circle One Building_R22_CENTRAL_DLawtonSA02Y.rvt

CWS ARCHITECTURE + INTERIOR DESIGN

PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER

CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER

RIVERTON PARK, LP

14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
CIRCLE 1 BUILDING

RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

THIRD FLOOR PLAN

CWS PROJECT NUMBER: 21023

REVISIONS

PROJECT NORTH

PLAN NORTH
TRUE NORTH

DRAWING NUMBER

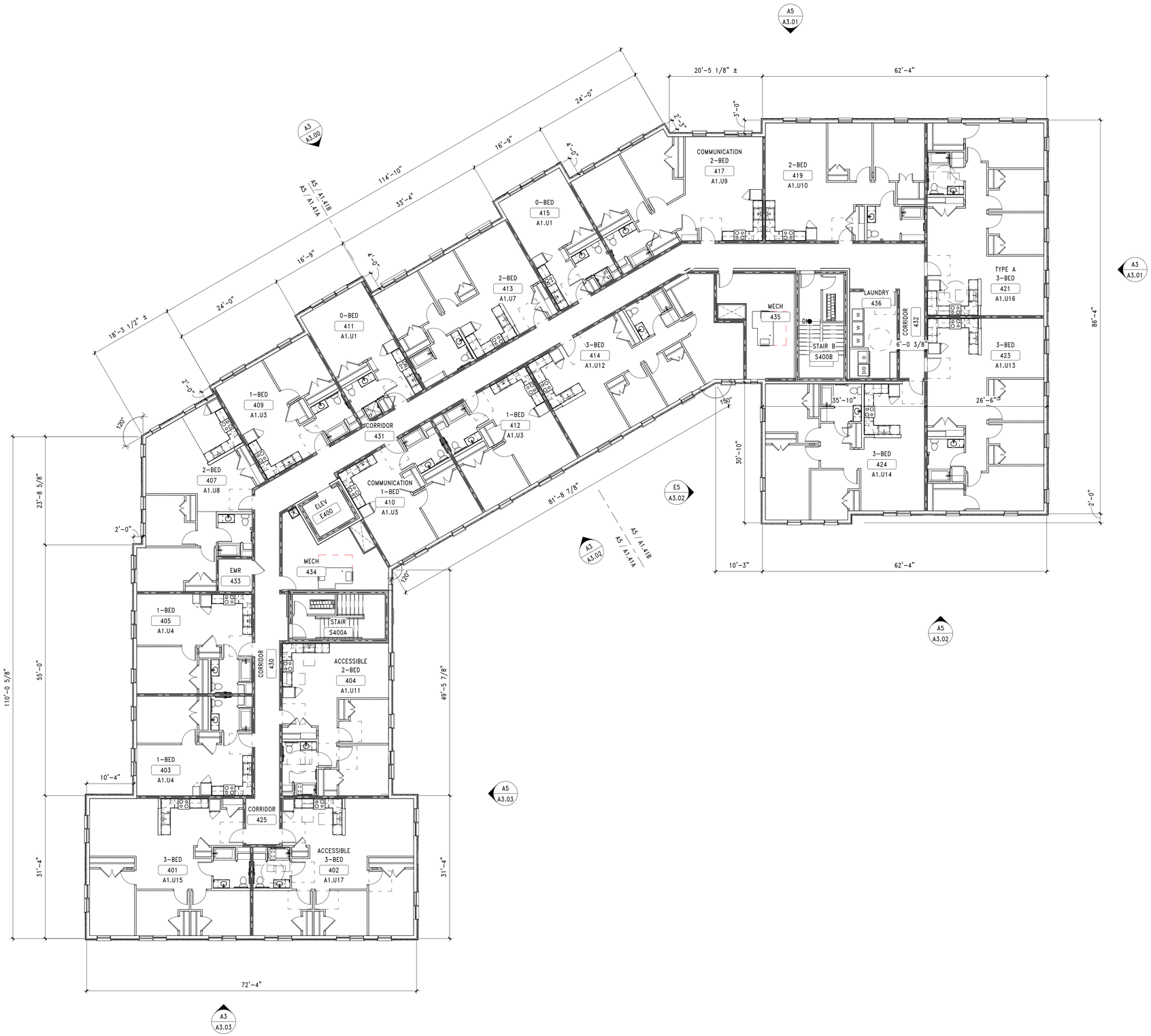
A1.30

SCALE: 3/32" = 1'-0"

DATE: 08/12/2024

8/1/2024 3:48:46 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A5 04-FOURTH FLOOR - OVERALL PLAN

SCALE: 3/32" = 1'-0"

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CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING
RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
FOURTH FLOOR PLAN
CWS PROJECT NUMBER: 21023

REVISIONS

PROJECT NORTH
PLAN NORTH
TRUE NORTH

DRAWING NUMBER
A1.40

SCALE: 3/32" = 1'-0"
DATE: 08/12/2024

8/1/2024 3:49:03 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ELEVATION 2 COLOR

REFERENCED FROM: A1.11A SCALE: 1/8" = 1'-0"



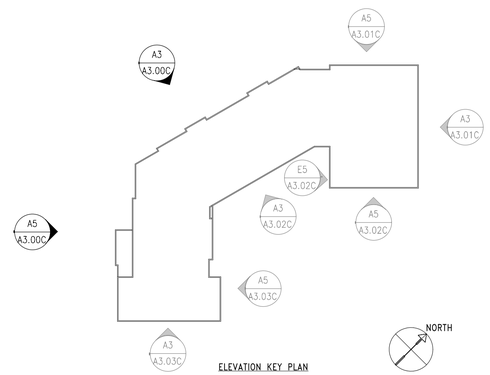
A5 ELEVATION 1 COLOR

REFERENCED FROM: A3.00C SCALE: 1/8" = 1'-0"

EXTERIOR FINISH MATERIAL LEGEND

CODE	MATERIAL	MANUFACTURER	COLOR AND FINISH
1	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	PEARL GRAY (FACTORY)
2	NOT USED		
3	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BOOTHBAY BLUE (FACTORY)
4	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	DEEP OCEAN (FACTORY)
5	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	RICH ESPRESSO (FACTORY)
6	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
7	BRAKE METAL TRIM CAP FLASHING	TBD	TBD
8	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	AGED PEWTER (FACTORY)
9	NOT USED		
10	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	RICH ESPRESSO (FACTORY)
11	NOT USED		
12	NOT USED		
13	BRAKE METAL TRIM TRANSITION FLASHING		COLOR TO MATCH SIDING MATERIAL
14	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BLACKBERRY (FIELD PTD) SW 7577
15	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
16	COMPOSIT WINDOW ASSEMBLY W/ JAMB EXTENSIONS	PELLA	WHITE (FACTORY)
17	THERMALLY BROKEN STOREFRONT ASSEMBLY. TRI-FAB 451-UT	KAWNEER	BRONZE (FACTORY)
18	EXTERIOR INSULATED METAL DOOR AND FRAME ASSEMBLY	DE LA FONTAINE	TBD
19	BUILDING SIGNAGE – ALUMINIUM	TBD	TBD
20	EXPOSED CONCRETE	NA	NA
21	FOUNDATION COVERBOARD	TBD	TBD
22	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
23	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
24	WALL SCONSE – CYPHER	ARCHITECTURAL AREA LIGHT	BRONZE (FACTORY)
25	WALL SCONSE – GEOPAK TRAPEZOID	HUBBLE OUTDOOR LIGHT	BRONZE (FACTORY)
26	CLEARANCE BAR DRIVE UNDER	IDEAL SHIELD	YELLOW (FACTORY)
27	WELDED WIRE MESH SCREEN	TBD	(FACTORY)

NOTE: SEE A8.20 FOR WINDOW AND LOUVER SCHEDULE



ELEVATION KEY PLAN

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING
RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
EXTERIOR ELEVATIONS
COLOR
CWS PROJECT NUMBER: 21023

REVISIONS

DRAWING NUMBER
A3.00C

SCALE: As indicated
DATE: 08/12/2024

8/1/2024 12:26:01 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

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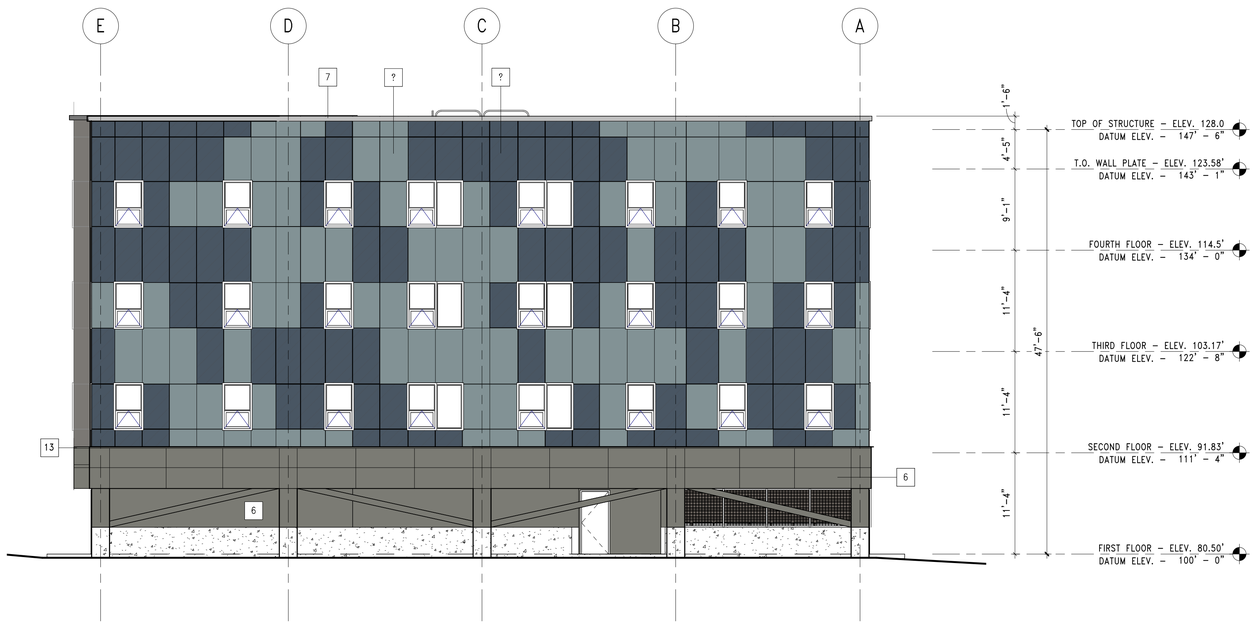


A3 ELEVATION 4 COLOR

REFERENCED FROM: A3.00C SCALE: 1/8" = 1'-0"



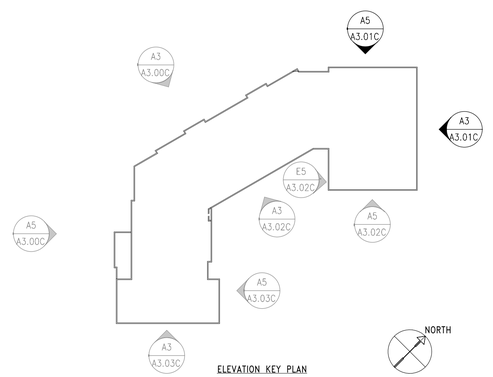
A5 ELEVATION 3 COLOR

REFERENCED FROM: A3.00C SCALE: 1/8" = 1'-0"

EXTERIOR FINISH MATERIAL LEGEND

CODE	MATERIAL	MANUFACTURER	COLOR AND FINISH
1	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	PEARL GRAY (FACTORY)
2	NOT USED		
3	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BOOTHBAY BLUE (FACTORY)
4	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	DEEP OCEAN (FACTORY)
5	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	RICH ESPRESSO (FACTORY)
6	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
7	BRAKE METAL TRIM CAP FLASHING	TBD	TBD
8	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	AGED PEWTER (FACTORY)
9	NOT USED		
10	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	RICH ESPRESSO (FACTORY)
11	NOT USED		
12	NOT USED		
13	BRAKE METAL TRIM TRANSITION FLASHING		COLOR TO MATCH SIDING MATERIAL
14	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BLACKBERRY (FIELD PTD) SW 7577
15	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
16	COMPOSIT WINDOW ASSEMBLY W/ JAMB EXTENSIONS	PELLA	WHITE (FACTORY)
17	THERMALLY BROKEN STOREFRONT ASSEMBLY. TRI-FAB 451-UT	KAWNEER	BRONZE (FACTORY)
18	EXTERIOR INSULATED METAL DOOR AND FRAME ASSEMBLY	DE LA FONTAINE	TBD
19	BUILDING SIGNAGE – ALUMINIUM	TBD	TBD
20	EXPOSED CONCRETE	NA	NA
21	FOUNDATION COVERBOARD	TBD	TBD
22	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
23	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
24	WALL SCONSE – CYPHER	ARCHITECTURAL AREA LIGHT	BRONZE (FACTORY)
25	WALL SCONSE – GEOPAK TRAPEZOID	HUBBLE OUTDOOR LIGHT	BRONZE (FACTORY)
26	CLEARANCE BAR DRIVE UNDER	IDEAL SHIELD	YELLOW (FACTORY)
27	WELDED WIRE MESH SCREEN	TBD	(FACTORY)

NOTE: SEE A8.20 FOR WINDOW AND LOUVER SCHEDULE



ELEVATION KEY PLAN

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING
RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
EXTERIOR ELEVATIONS
COLOR
CWS PROJECT NUMBER: 21023

REVISIONS

DRAWING NUMBER
A3.01C

SCALE: As indicated
DATE: 08/12/2024

8/1/2024 12:43:12 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

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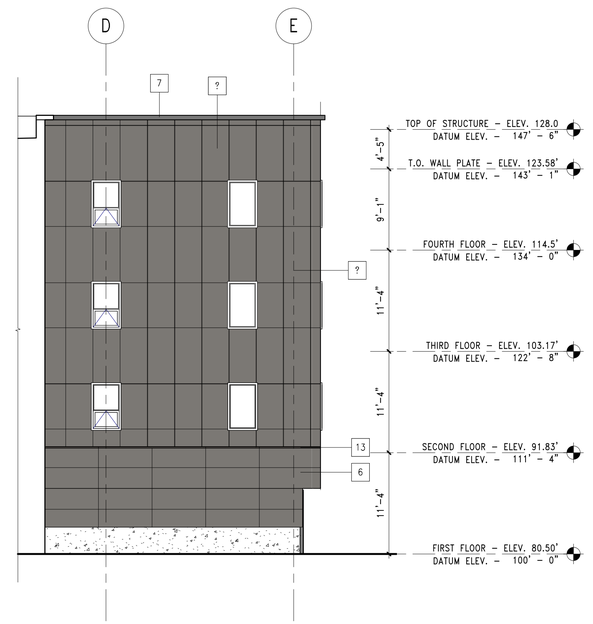
A3 ELEVATION 7 COLOR

REFERENCED FROM: A1.U11 SCALE: 1/8" = 1'-0"



A5 ELEVATION 5 COLOR

REFERENCED FROM: A1.11A SCALE: 1/8" = 1'-0"



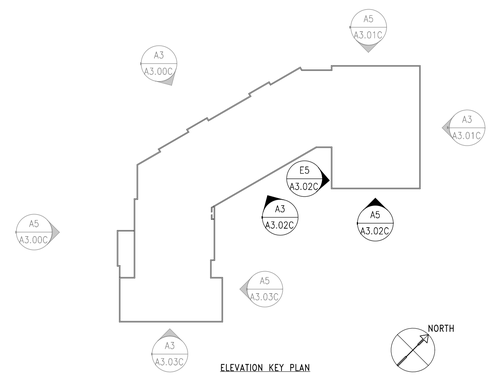
E5 ELEVATION 6 COLOR

REFERENCED FROM: A1.U12 SCALE: 1/8" = 1'-0"

EXTERIOR FINISH MATERIAL LEGEND

CODE	MATERIAL	MANUFACTURER	COLOR AND FINISH
1	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	PEARL GRAY (FACTORY)
2	NOT USED		
3	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BOOTHBAY BLUE (FACTORY)
4	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	DEEP OCEAN (FACTORY)
5	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	RICH ESPRESSO (FACTORY)
6	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
7	BRAKE METAL TRIM CAP FLASHING	TBD	TBD
8	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	AGED PEWTER (FACTORY)
9	NOT USED		
10	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	RICH ESPRESSO (FACTORY)
11	NOT USED		
12	NOT USED		
13	BRAKE METAL TRIM TRANSITION FLASHING		COLOR TO MATCH SIDING MATERIAL
14	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BLACKBERRY (FIELD PTD) SW 7577
15	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
16	COMPOSIT WINDOW ASSEMBLY W/ JAMB EXTENSIONS	PELLA	WHITE (FACTORY)
17	THERMALLY BROKEN STOREFRONT ASSEMBLY. TRI-FAB 451-UT	KAWNEER	BRONZE (FACTORY)
18	EXTERIOR INSULATED METAL DOOR AND FRAME ASSEMBLY	DE LA FONTAINE	TBD
19	BUILDING SIGNAGE – ALUMINIUM	TBD	TBD
20	EXPOSED CONCRETE	NA	NA
21	FOUNDATION COVERBOARD	TBD	TBD
22	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
23	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
24	WALL SCONSE – CYPHER	ARCHITECTURAL AREA LIGHT	BRONZE (FACTORY)
25	WALL SCONSE – GEOPAK TRAPEZOID	HUBBLE OUTDOOR LIGHT	BRONZE (FACTORY)
26	CLEARANCE BAR DRIVE UNDER	IDEAL SHIELD	YELLOW (FACTORY)
27	WELDED WIRE MESH SCREEN	TBD	(FACTORY)

NOTE: SEE A8.20 FOR WINDOW AND LOUVER SCHEDULE



ELEVATION KEY PLAN

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, ME 04074
207 774 4441
CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
CIRCLE 1 BUILDING
RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
EXTERIOR ELEVATIONS
COLOR
CWS PROJECT NUMBER: 21023

REVISIONS

DRAWING NUMBER
A3.02C

SCALE: As indicated
DATE: 08/12/2024

8/1/2024 12:14:29 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

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A3 ELEVATION 9 COLOR

REFERENCED FROM: A3.00C SCALE: 1/8" = 1'-0"



A5 ELEVATION 8 COLOR

REFERENCED FROM: A1.11B SCALE: 1/8" = 1'-0"

C:\Users\Dylan Lawton\Documents\21023_Circle One Building_R22_CENTRAL_DLawtonSAU2Y.rvt

EXTERIOR FINISH MATERIAL LEGEND

CODE	MATERIAL	MANUFACTURER	COLOR AND FINISH
1	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	PEARL GRAY (FACTORY)
2	NOT USED		
3	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BOOTHBAY BLUE (FACTORY)
4	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	DEEP OCEAN (FACTORY)
5	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	RICH ESPRESSO (FACTORY)
6	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	AGED PEWTER (FACTORY)
7	BRAKE METAL TRIM CAP FLASHING	TBD	TBD
8	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	AGED PEWTER (FACTORY)
9	NOT USED		
10	FIBER CEMENT LAP SIDING	HARDIE LAP SIDING	RICH ESPRESSO (FACTORY)
11	NOT USED		
12	NOT USED		
13	BRAKE METAL TRIM TRANSITION FLASHING		COLOR TO MATCH SIDING MATERIAL
14	FIBER CEMENT PANELS W/ SURROUND TRIM AND EXPOSED FASTENERS.	HARDIE PANEL SIDING	BLACKBERRY (FIELD PTD) SW 7577
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16	COMPOSIT WINDOW ASSEMBLY W/ JAMB EXTENSIONS	PELLA	WHITE (FACTORY)
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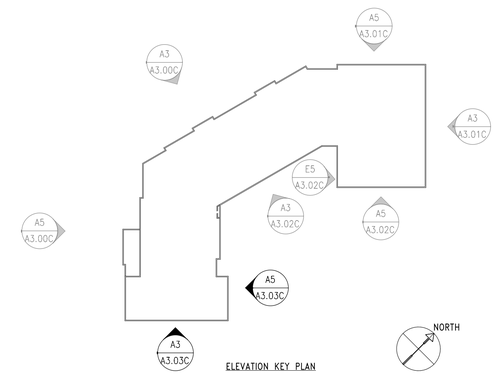
18	EXTERIOR INSULATED METAL DOOR AND FRAME ASSEMBLY	DE LA FONTAINE	TBD
19	BUILDING SIGNAGE – ALUMINIUM	TBD	TBD
20	EXPOSED CONCRETE	NA	NA
21	FOUNDATION COVERBOARD	TBD	TBD
22	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
23	BRAKE METAL TRIM CAP FLASHING	TBD	TBD (FACTORY)
24	WALL SCONSE – CYPHER	ARCHITECTURAL AREA LIGHT	BRONZE (FACTORY)
25	WALL SCONSE – GEOPAK TRAPEZOID	HUBBLE OUTDOOR LIGHT	BRONZE (FACTORY)
26	CLEARANCE BAR DRIVE UNDER	IDEAL SHIELD	YELLOW (FACTORY)
27	WELDED WIRE MESH SCREEN	TBD	(FACTORY)

NOTE: SEE A8.20 FOR WINDOW AND LOUVER SCHEDULE



ELEVATION KEY PLAN

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PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER

CWS ARCHITECTURE + INTERIOR DESIGN
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OWNER

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PROJECT

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CIRCLE 1 BUILDING
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PORTLAND, MAINE 04103

DRAWING

EXTERIOR ELEVATIONS
COLOR
CWS PROJECT NUMBER: 21023

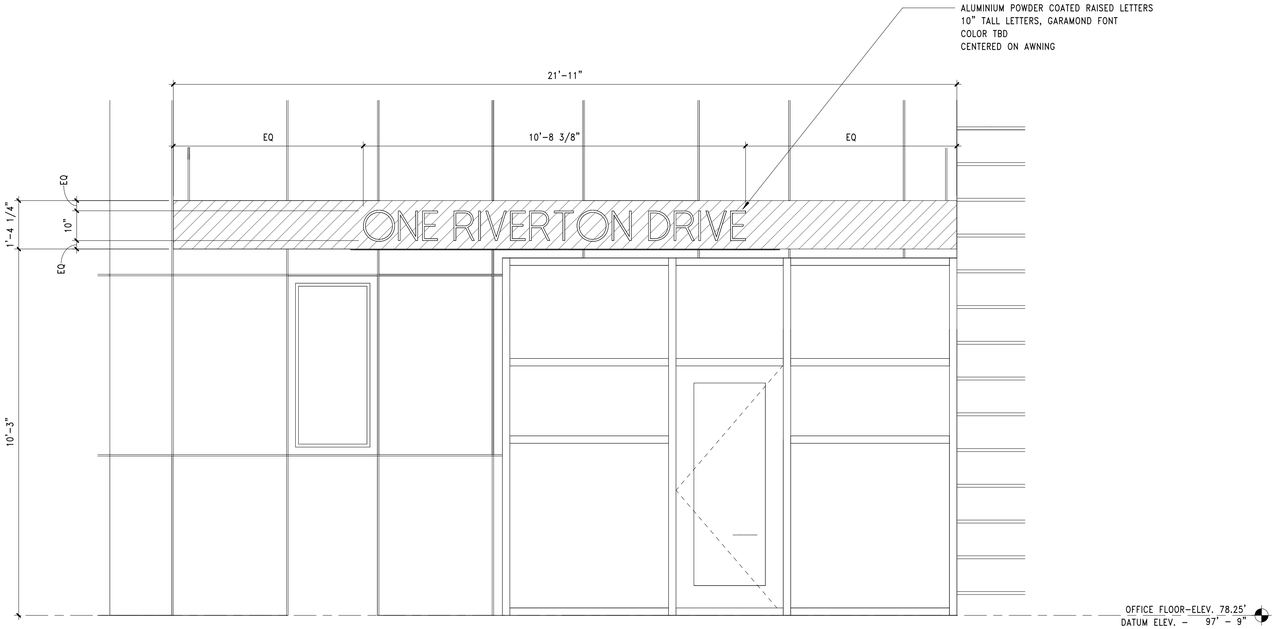
REVISIONS

DRAWING NUMBER
A3.03C

SCALE: As indicated
DATE: 08/12/2024

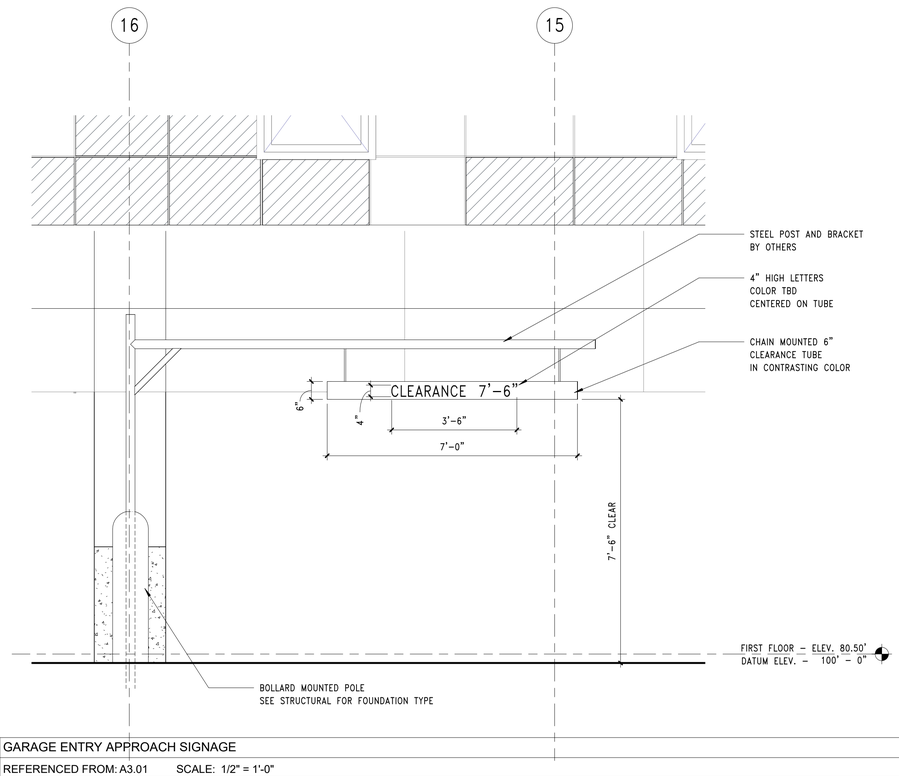
8/1/2024 12:04:41 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



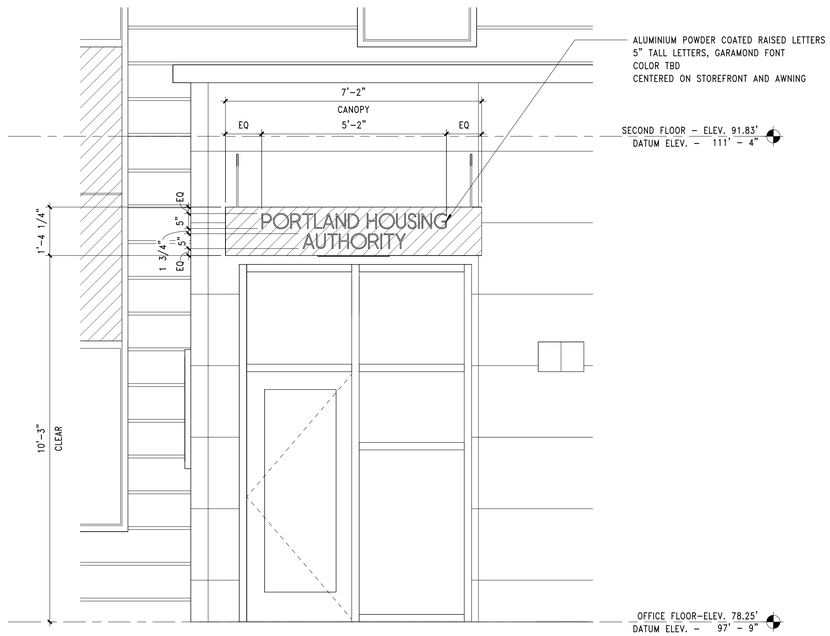
A3 BUILDING ENTRY SIGNAGE

REFERENCED FROM: A1.00 SCALE: 1/2" = 1'-0"



E3 GARAGE ENTRY APPROACH SIGNAGE

REFERENCED FROM: A3.01 SCALE: 1/2" = 1'-0"



A5 PHA ENTRY SIGNAGE

REFERENCED FROM: A1.00 SCALE: 1/2" = 1'-0"

C:\Users\Dylan Lawton\Documents\21023_Circle One Building_R22_CENTRAL_DLawtonSAU2Y.rvt

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14 BAXTER BLVD.
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK CIRCLE 1 BUILDING

RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

SIGNAGE DETAILS

CWS PROJECT NUMBER: 21023

REVISIONS

DRAWING NUMBER

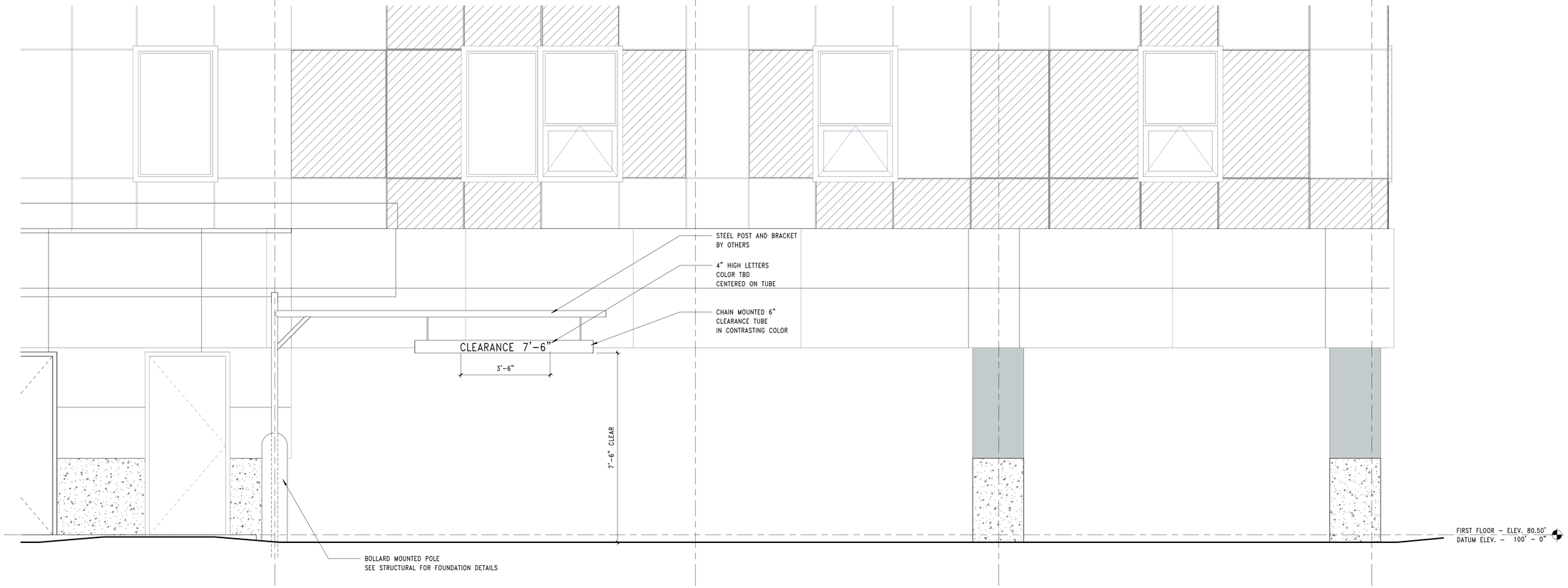
A3.50

SCALE: 1/2" = 1'-0"

DATE: 08/12/2024

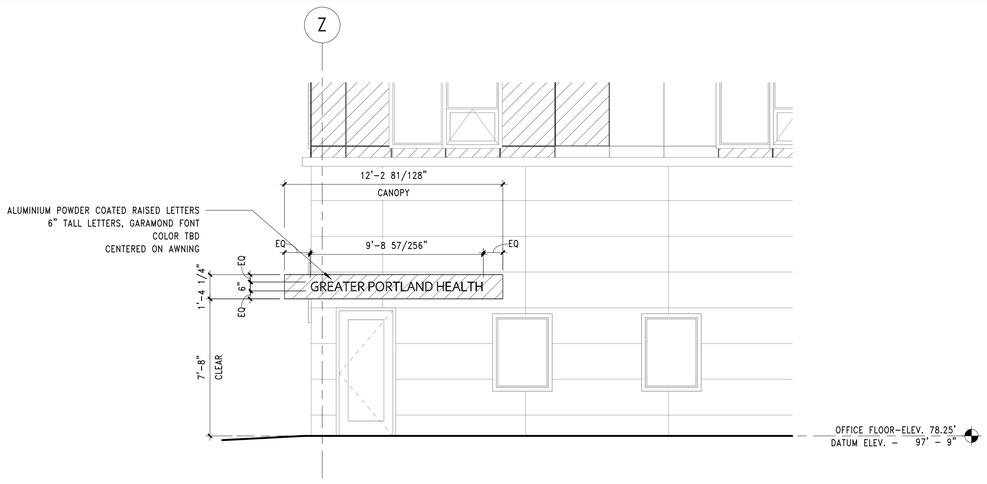
8/1/2024 4:37:46 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 GARAGE ENTRY EXIT SIGNAGE

REFERENCED FROM: A3.02 SCALE: 1/2" = 1'-0"



E5 BUILDING SIGNAGE FROM REAR PARKING LOT

REFERENCED FROM: A3.03 SCALE: 1/4" = 1'-0"

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DRAWING

SIGNAGE DETAILS

CWS PROJECT NUMBER: 21023

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DRAWING NUMBER

A3.51

SCALE: As indicated

DATE: 08/12/2024

8/1/2024 12:28:28 PM

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

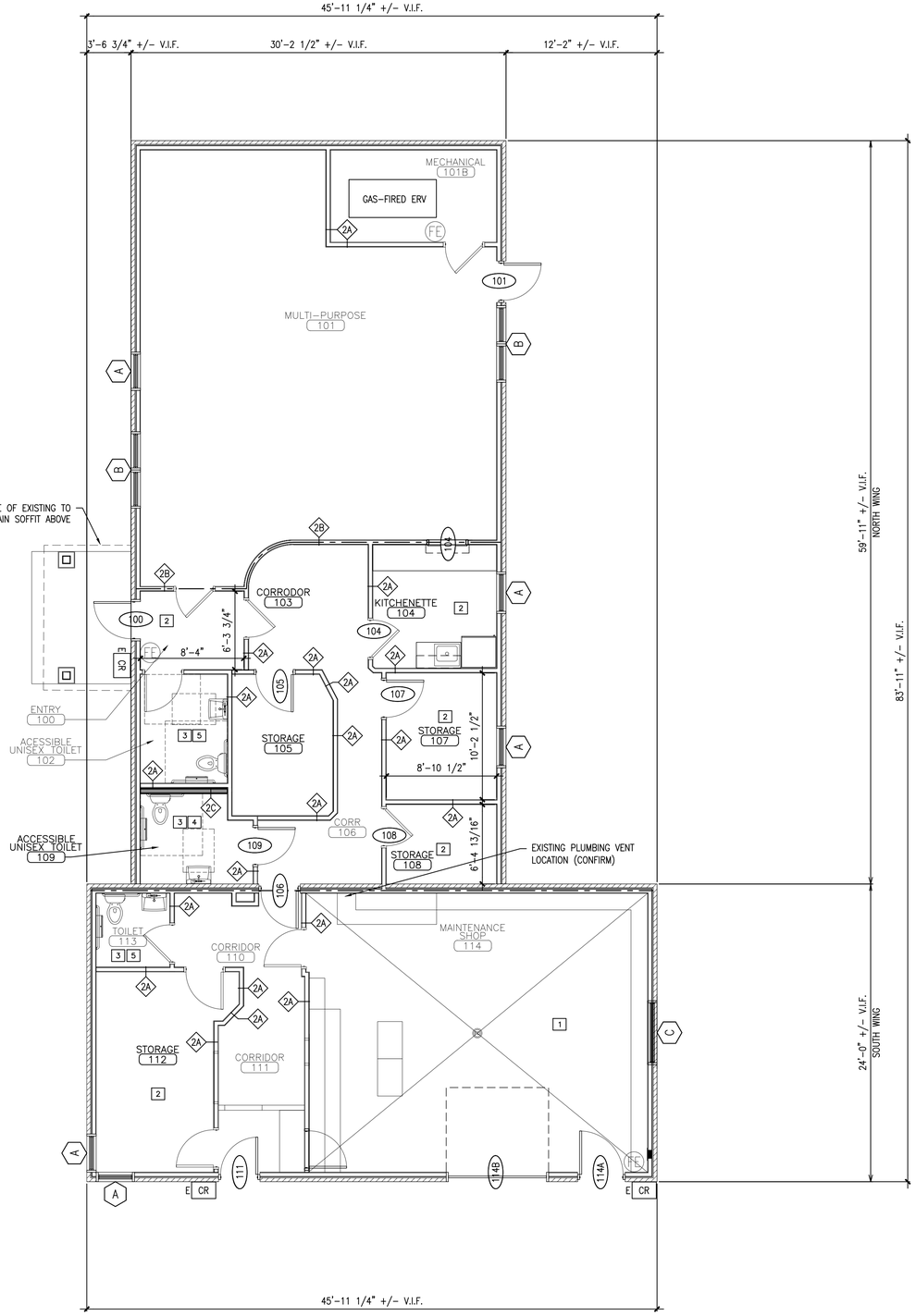
C:\Users\Dylan Lawton\Documents\21023_Circle One Building_R22_CENTRAL_DLawtonSAU2Y.rvt

RIVERTON PARK CIRCLE 1 BUILDING

PORTLAND, MAINE



CWS ARCHITECTURE + INTERIOR DESIGN



A5 NEW WORK FLOOR PLAN

REFERENCED FROM:

M:\2019 Design Projects\19013 PWA RND-Riverton Park\1-Drawings\2024_Admin_Bldg\19013 ARDF Admin Bldg

PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL W/ EXISTING BRICK/CMU VENEER
- EXISTING INTERIOR WOOD STUD & GWB ASSEMBLY
- NEW INTERIOR WOOD STUD & GWB ASSEMBLY
- EXISTING 1-HOUR FIRE-RATED WALL ASSEMBLY
- E CR — CREDENTIAL READER – EXISTING
- FE — WALL-MOUNTED FIRE EXTINGUISHER – EXISTING
- FE — WALL-MOUNTED FIRE EXTINGUISHER
- KB — SURFACE-MOUNTED KNOX BOX – EXISTING
- T — THERMOSTAT
- HOSE BIB – EXISTING

F3 FLOOR PLAN LEGEND AND KEYED NOTES

REFERENCED FROM:

EXISTING CONCRETE FLOOR FINISH TO REMAIN

PROVIDE VCT. PREPARE EXISTING CONCRETE SLAB AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.

RELOCATE EXISTING PLUMBING FIXTURES WHERE SHOWN. PROVIDE SCALD GUARD AT EXISTING OR NEW EXPOSED SINK PIPING

PROVIDE NEW TOILET ACCESSORIES: (2) GRAB BARS INSTALLED PER ADA REQUIREMENTS, TOILET PAPER DISPENSER, MIRROR, RECESSED PAPER TOWEL DISPENSER AND TRASH RECEPTACLE

PROVIDE NEW TOILET ACCESSORIES: TOILET PAPER DISPENSER, MIRROR, RECESSED PAPER TOWEL DISPENSER AND TRASH RECEPTACLE

F5 INTERIOR FINISH NOTES

REFERENCED FROM:

ADMIN BUILDING MEP SCOPE:

MECHANICAL:

- PROVIDE NEW GAS-FIRED INTERIOR ERV WITHIN EXISTING MECHANICAL ROOM 101B
- PROVIDE NEW INSULATED SUPPLY AND RETURN DUCTWORK WITHIN ATTIC SPACE FROM NEW ERV LOCATION, TO SERVE NORTH WING OF BUILDING – LAYOUT AND DIFFUSER LOCATIONS TBD.
- PROVIDE NEW INSULATED THROUGH-WALL INTAKE AND EXHAUST DUCTWORK THROUGH ROOF AND/OR EXTERIOR WALL – TBD.
- PROVIDE ELECTRIC VRF HEAT PUMP SYSTEM TO SERVE ENTIRE BUILDING. INCLUDE EXTERIOR PAD-MOUNTED CONDENSER – LOCATION TBD.

ELECTRICAL:

- UPGRADE EXISTING SINGLE-PHASE SERVICE TO 400A, SINGLE PHASE 240V SERVICE ENTRANCE AT EXISTING LOCATION
- PROVIDE NEW SUBPANEL & WIRING TO SERVE NEW MECHANICAL EQUIPMENT
- PROVIDE NEW INTERIOR AND EXTERIOR LIGHT FIXTURES WHERE INDICATED ON RCP
- PROVIDE NEW WIRING AND OUTLETS AS REQUIRED FOR APPLIANCES AS SHOWN ON FLOOR PLANS

PLUMBING:

- RELOCATE EXISTING PLUMBING FIXTURES WITHIN TOILET ROOMS AS SHOWN
- PROVIDE NEW ADA COMPLIANT SINK AND FAUCET AT KITCHENETTE 104
- EXTEND/MODIFY BELOW-SLAB AND IN-WALL PLUMBING PIPING AS REQUIRED FOR NEW LOCATIONS.

F5 MEP SCOPES

REFERENCED FROM:

PROJECT NORTH

True North

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PROJECT

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ADMINISTRATION BUILDING
RENOVATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

NEW WORK FLOOR PLAN

CWS PROJECT NUMBER: 19013

REVISIONS

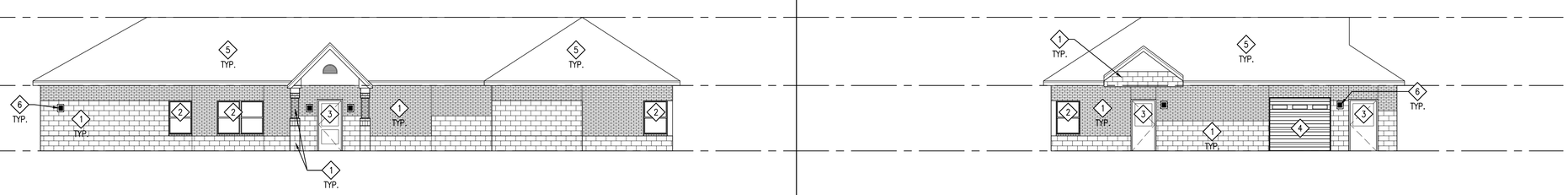
DRAWING NUMBER

A1.10

SCALE: 3/16" = 1'-0"

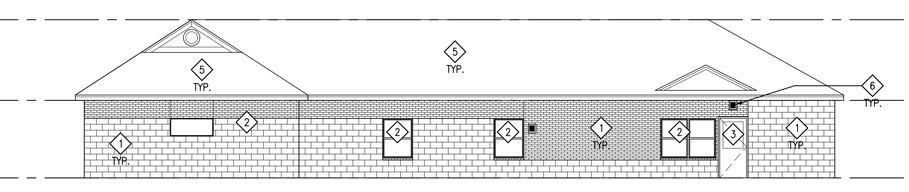
DATE: 07/08/2024

ISSUED FOR: SITE PLAN AMENDMENT

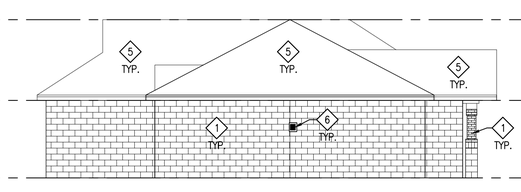


A2 LEFT SIDE EXTERIOR ELEVATION
REFERENCED FROM: SCALE: 1/8"=1'-0"

E2 FRONT SIDE EXTERIOR ELEVATION
REFERENCED FROM: SCALE: 1/8"=1'-0"



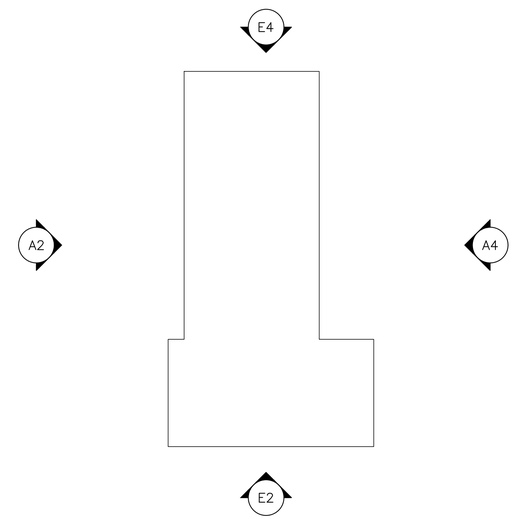
A4 RIGHT SIDE EXTERIOR ELEVATION
REFERENCED FROM: SCALE: 1/8"=1'-0"



E4 BACK SIDE EXTERIOR ELEVATION
REFERENCED FROM: SCALE: 1/8"=1'-0"

CODE	MATERIAL	MANUFACTURER	PRODUCT, STYLE AND COLOR	FINISH
1	EXISTING BRICK/CMU VENEER TO REMAIN	EXISTING	EXISTING	EXISTING
2	VINYL WINDOW ASSEMBLY	PELLA	250 SERIES VINYL WINDOW W/ ADVANCED LOW-E TRIPLE INSULATED GLAZING. REFERENCE A8.21 FOR MORE INFO.	FACTORY
3	INSULATED DOOR ASSEMBLY	TBD	TBD	TBD
4	INSULATED OVERHEAD DOOR ASSEMBLY	OVERHEAD DOOR COMPANY	SECTIONAL STEEL DOOR MODEL 432. REFERENCE A8.01 FOR MORE INFO.	FACTORY
5	ASPHALT SHINGLE ROOFING	TBD	TBD	TBD
6	EXTERIOR LED WALL-MOUNTED LIGHT FIXTURE	TBD		FACTORY

A5 EXTERIOR MATERIALS LEGEND
REFERENCED FROM: SCALE: N/A



G5 KEY PLAN
REFERENCED FROM: SCALE: N/A

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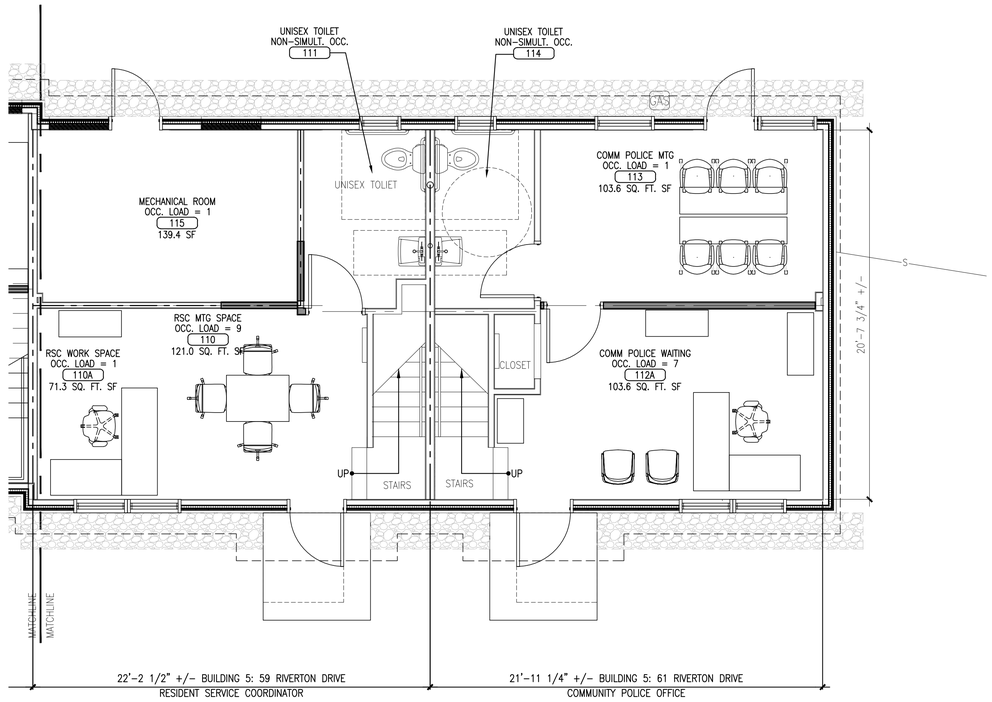
DRAWING
EXTERIOR ELEVATIONS
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A3.01

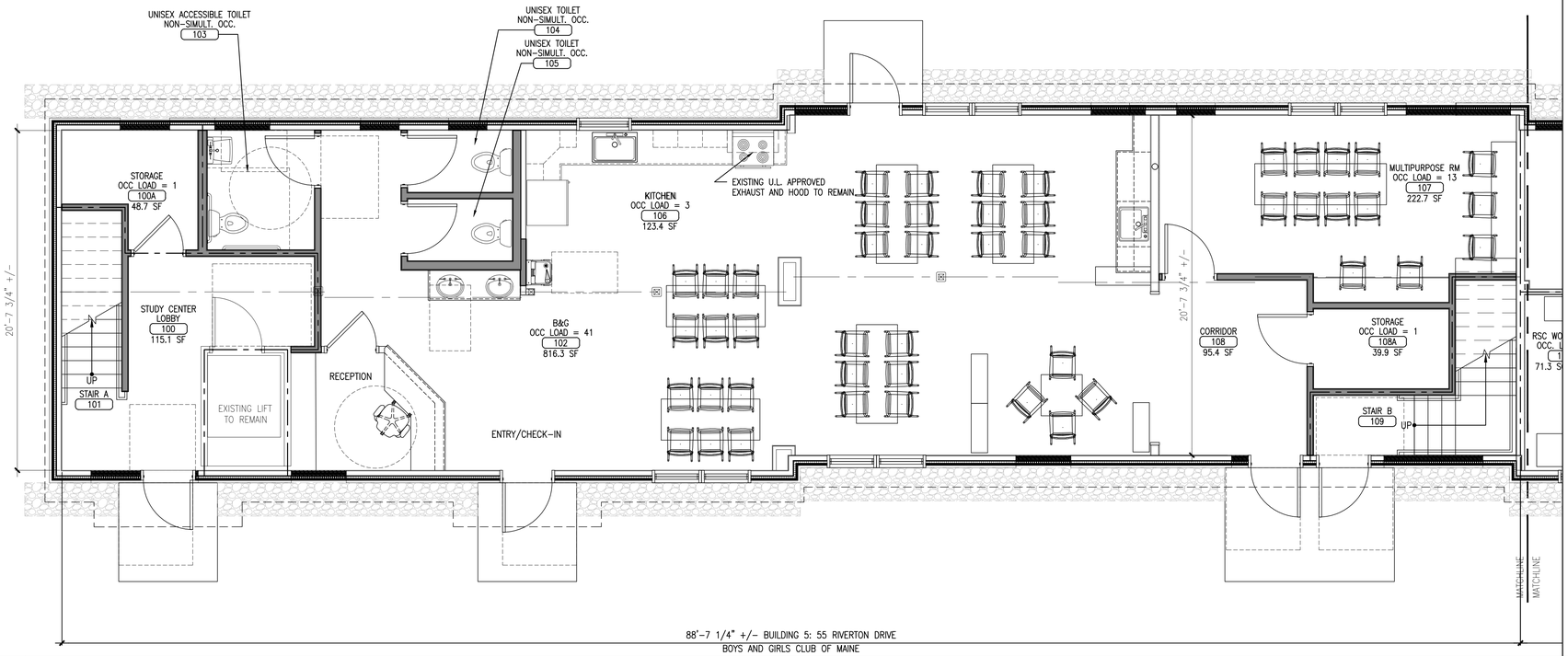
SCALE: AS NOTED
DATE: 07/08/2024

ISSUED FOR: SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 5 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 5 SCALE: 1/4"=1'-0"

G3 MEP SCOPES

REFERENCED FROM: SCALE: NTS

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
- NEW EXTERIOR INFILL WALL ASSEMBLY.
- EXISTING INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- EXISTING 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION
- INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION
- (FE) WALL-MOUNTED FIRE EXTINGUISHER
- (GAS) EXISTING GAS METER TO REMAIN
  EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 5 UNIT MATRIX (TBD)

REFERENCED FROM: SCALE: NTS

PROJECT NORTH

True North

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PROJECT
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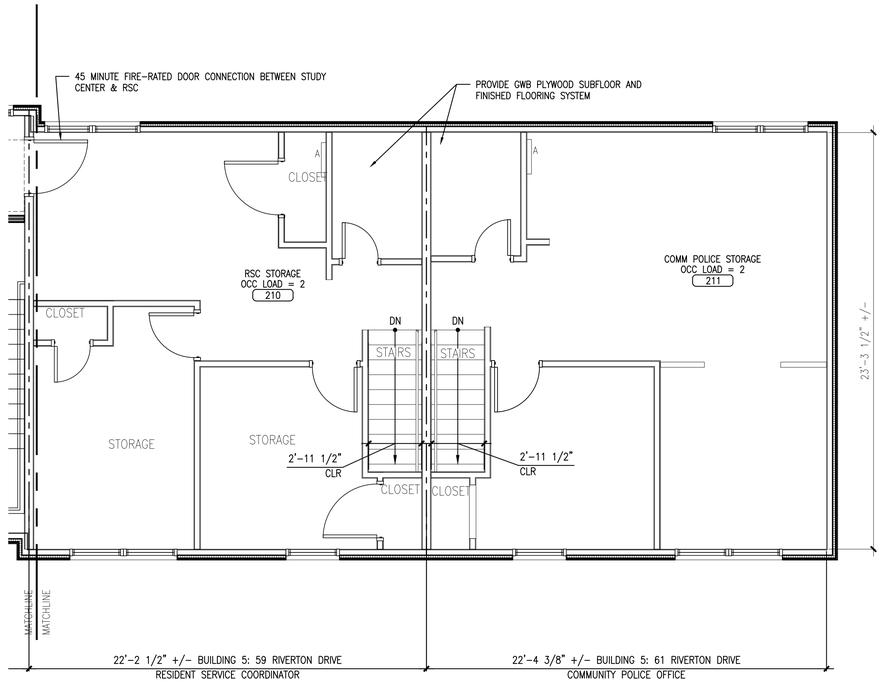
DRAWING
FIRST FLOOR
NEW WORK PLAN
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A1.05.1

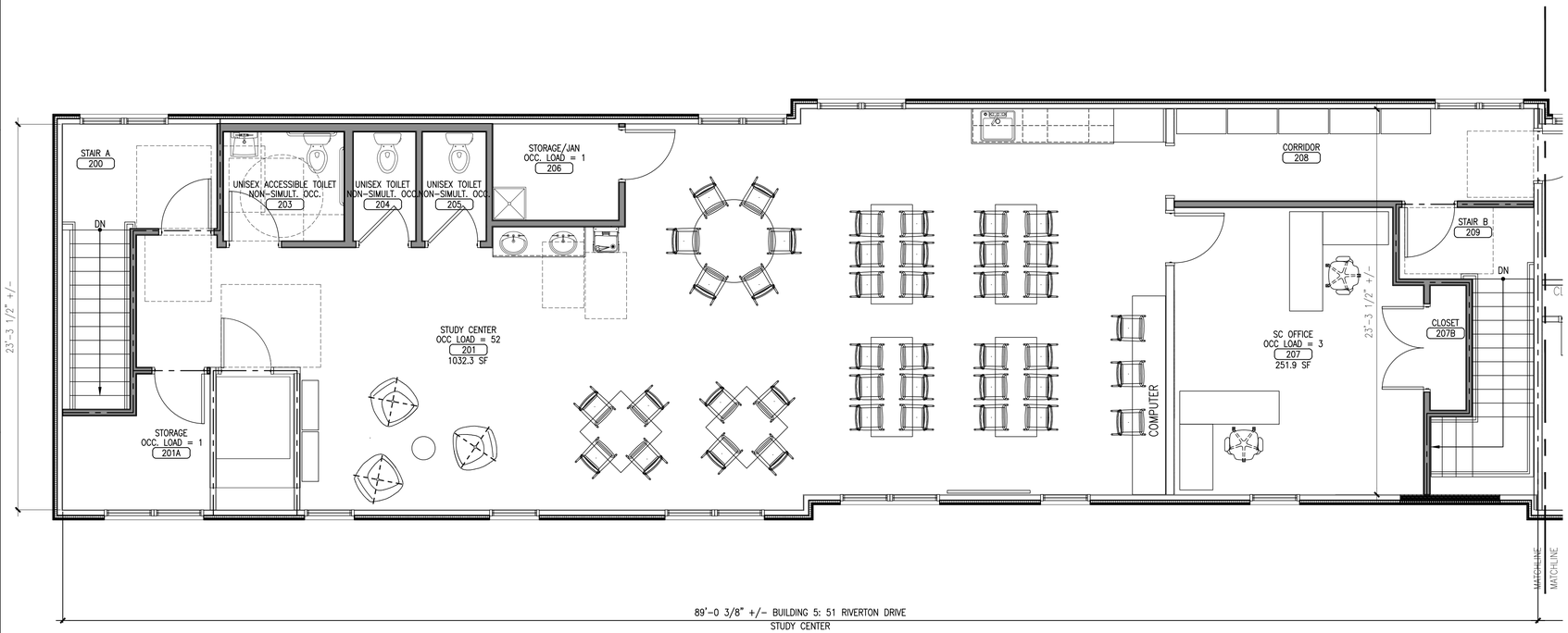
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL SECOND FLOOR PLAN

REFERENCED FROM: BUILDING 5 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL SECOND FLOOR PLAN

REFERENCED FROM: BUILDING 5 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
- NEW EXTERIOR INFILL WALL ASSEMBLY.
- EXISTING INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- EXISTING 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION
- INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION
- (FE) WALL-MOUNTED FIRE EXTINGUISHER
- (GAS) EXISTING GAS METER TO REMAIN EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 5 UNIT MATRIX (TBD)

REFERENCED FROM: SCALE: NTS

PROJECT NORTH

True North

DRAWING NUMBER

A1.05.2

SCALE: AS NOTED

DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

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PROJECT

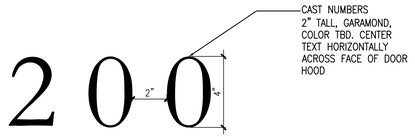
RIVERTON PARK BUILDING 5 RENOVATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

SECOND FLOOR NEW WORK PLAN

CWS PROJECT NUMBER: 19013

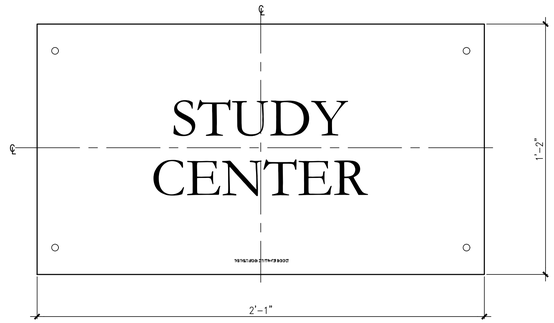
REVISIONS



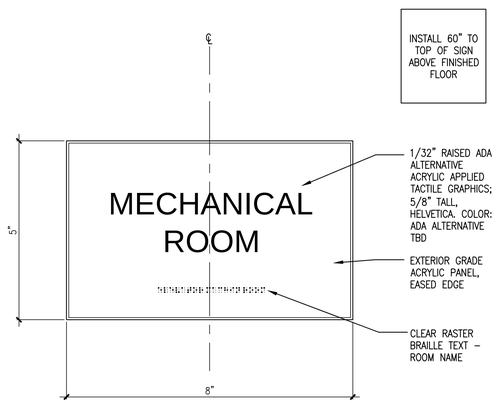
A3 BUILDING NUMBER SIGNAGE
REFERENCED FROM: SCALE: 3"=1'-0"



C3 EXISTING EXTERIOR BUILDING SIGNAGE
REFERENCED FROM: SCALE: N/A







A5 MECHANICAL ROOM SIGNAGE
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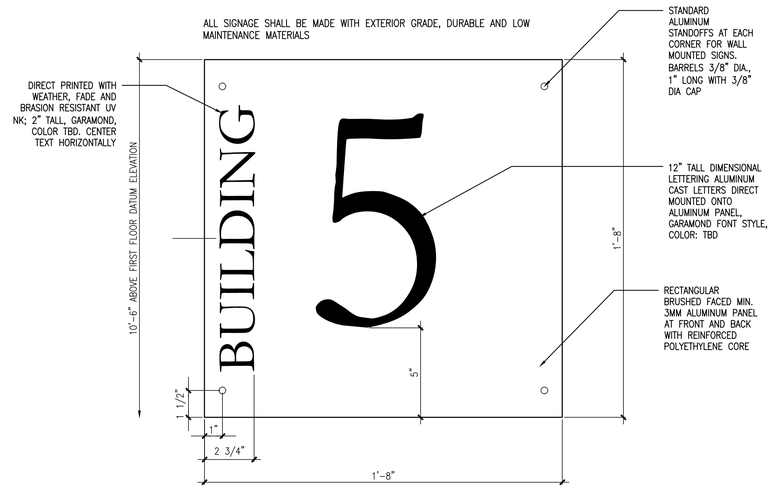
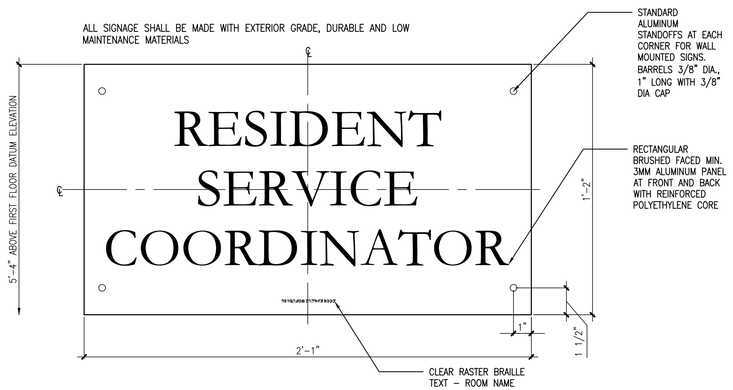


C5 EXTERIOR BUILDING NUMBER SIGNAGE
REFERENCED FROM: SCALE: 3"=1'-0"



F5 EXTERIOR BUILDING SIGNAGE
REFERENCED FROM: SCALE: 3"=1'-0"

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REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

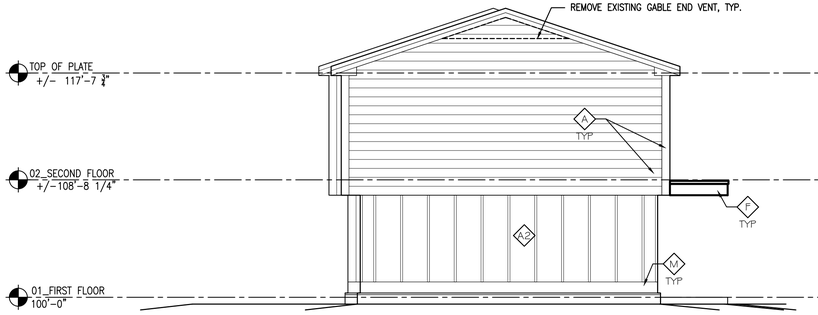
DRAWING
EXTERIOR SIGNAGE
CWS PROJECT NUMBER: 19013

REVISIONS

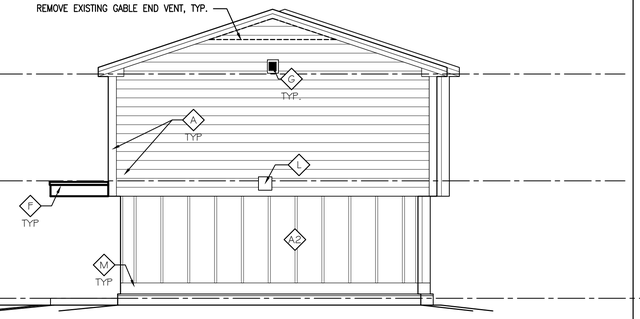
DRAWING NUMBER
A3.00

SCALE: AS NOTED
DATE: 09/16/2024

ISSUED FOR: MSHA 50% APP

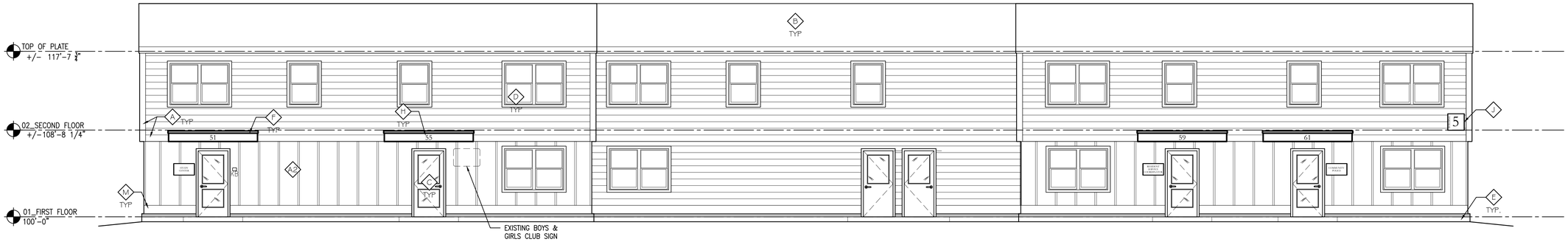


A2 LEFT SIDE ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

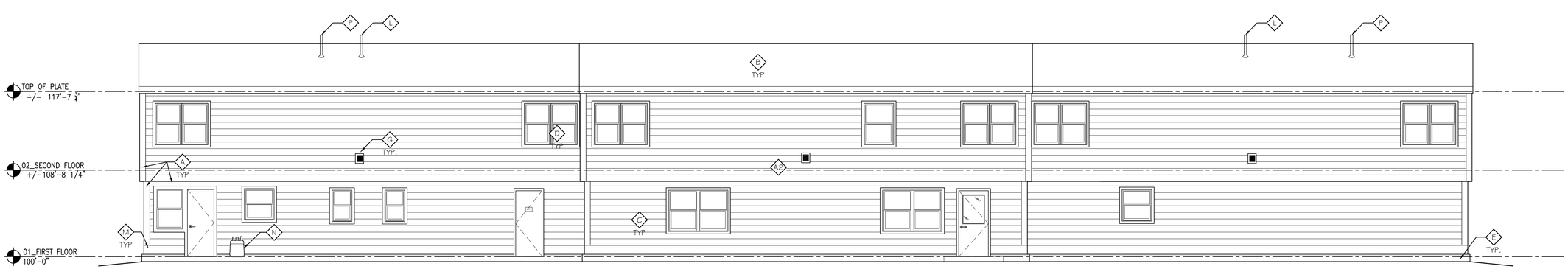


D2 LEFT SIDE ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

CODE	MATERIAL	MANUFACTURER	PRODUCT, STYLE AND COLOR / NOTES	FINISH
A	FIBER CEMENT SIDING AND TRIM	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 8" REVEAL; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
B	BOARD AND BATTON SIDING	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 24" SPACING; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
C	ASPHALT SHINGLE ROOFING	CERTAINTEED	LANDMARK HEATHER BLEND	FACTORY
D	EXTERIOR DOOR AND FRAME ASSY		REFERENCE FLOOR PLANS AND SHEET A8.01, A8.02 & FINISH SCHEDULE	FACTORY PRIMED, FIELD-PAINTED
E	VINYL WINDOW ASSEMBLY	PELLA	REFERENCE DRAWING SHEET A8.10 FOR MORE INFO.	FACTORY
F	EXTERIOR INSULATION AND FIBER CEMENT PANELS	FINEX	1/2" MULTIPURPOSE FIBER CEMENT PANEL	FACTORY - SMOOTH FINISH
G	WOOD-FRAMED CANTILEVERED DOOR HOOD	N/A	TBD	EXIST
H	EXTERIOR LED LIGHT FIXTURE - LOCATIONS VARY - REFERENCE REFLECTED CEILING PLANS FOR MORE INFO.	TBD	PROVIDE 10"x12" FIBER CEMENT BACKER - PAINT TO MATCH	FACTORY
J	BUILDING ADDRESS - REFERENCE FLOOR PLANS FOR ADDRESS PER ENTRY	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
K	BUILDING SIGNAGE	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
L	NEW CABLE BOX IN EXISTING CONDITION. CONCEAL NEW COAX CABLE WITHIN EXISTING WALL STUD CAVITY.	N/A	N/A	N/A
M	RADON MITIGATION SYSTEM RISER VENT.	N/A	N/A	N/A
N	PVC TRIM	N/A	N/A	N/A
P	EXISTING GAS METER TO REMAIN. PROVIDE NEW WALL MOUNTED BRACKETS TO ACCOMMODATE CHANGE IN WALL THICKNESS	N/A	N/A	N/A
R	PLUMBING VENT REFERENCE ROOF, MECHANICAL AND PLUMBING PLANS FOR MORE INFORMATION	N/A	N/A	N/A
S	BATHROOM VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A



A4 FRONT ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



A5 REAR BUILDING ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

W:\2019 Design Projects\19013 PHA 960-Riverton Park\1-Drawings\2024 Bldg 5\05 A3 Series = Elevations

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2 RIVERTON DRIVE
PORTLAND, MAINE 04103

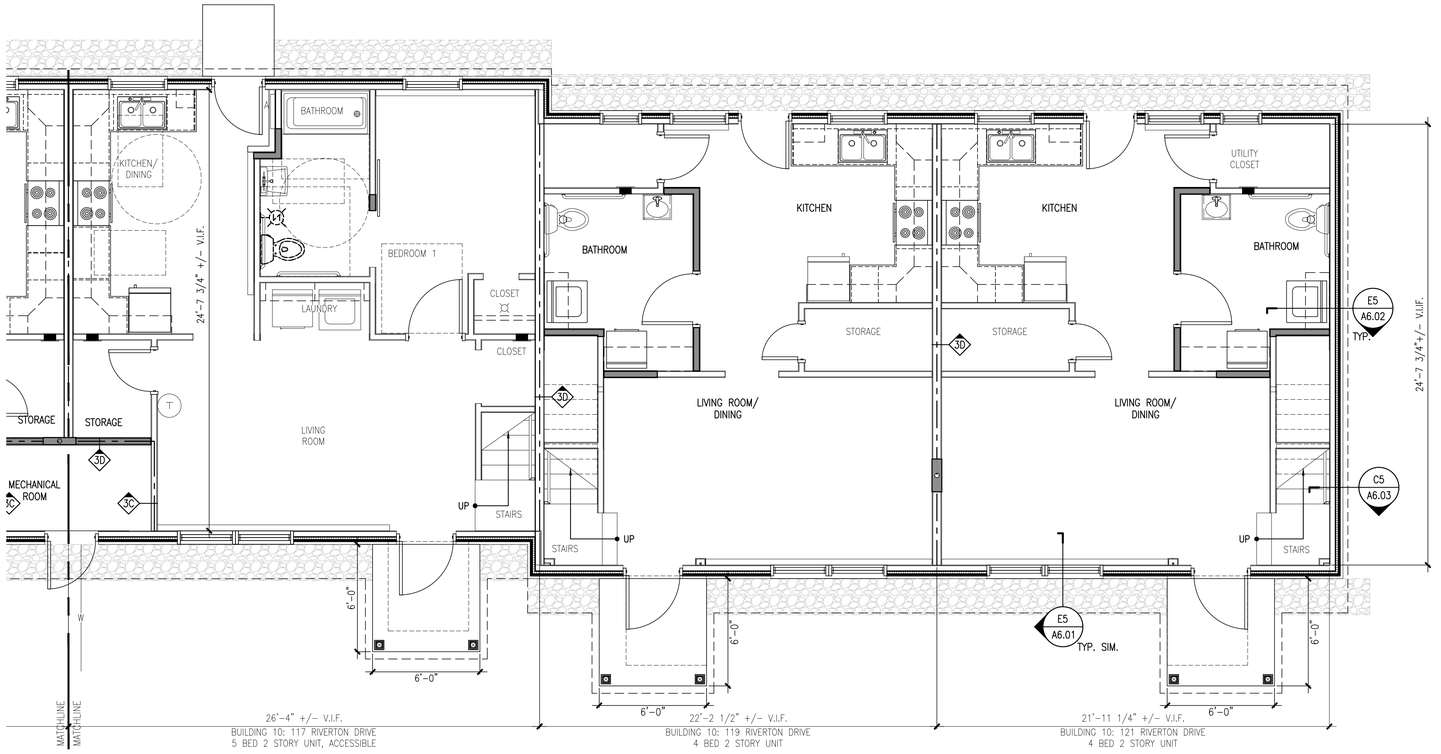
DRAWING
EXTERIOR ELEVATIONS
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A3.05

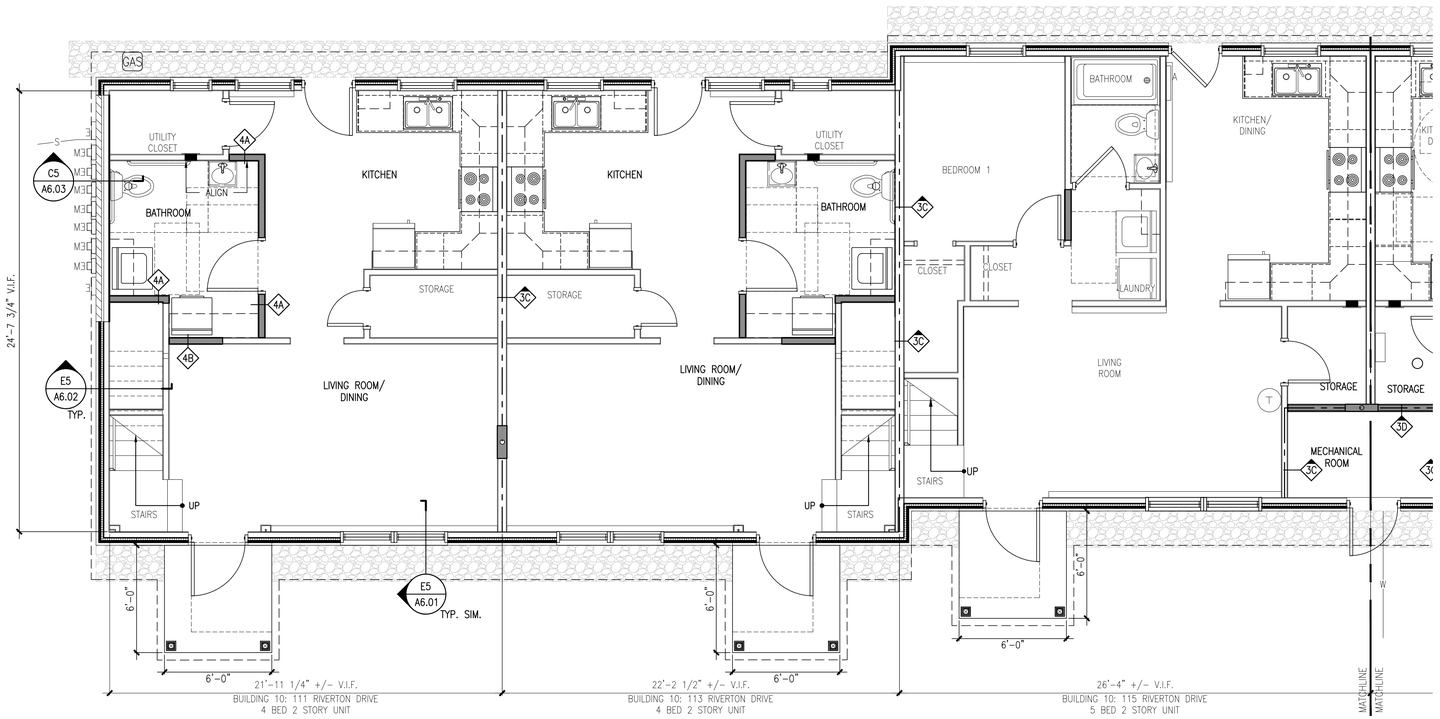
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 10 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 10 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
- NEW EXTERIOR INFILL WALL ASSEMBLY.
- EXISTING INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- EXISTING 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION
- INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION

FE WALL-MOUNTED FIRE EXTINGUISHER

GAS EXISTING GAS METER TO REMAIN
EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 10 UNIT MATRIX (TBD)

REFERENCED FROM: SCALE: NTS

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

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OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

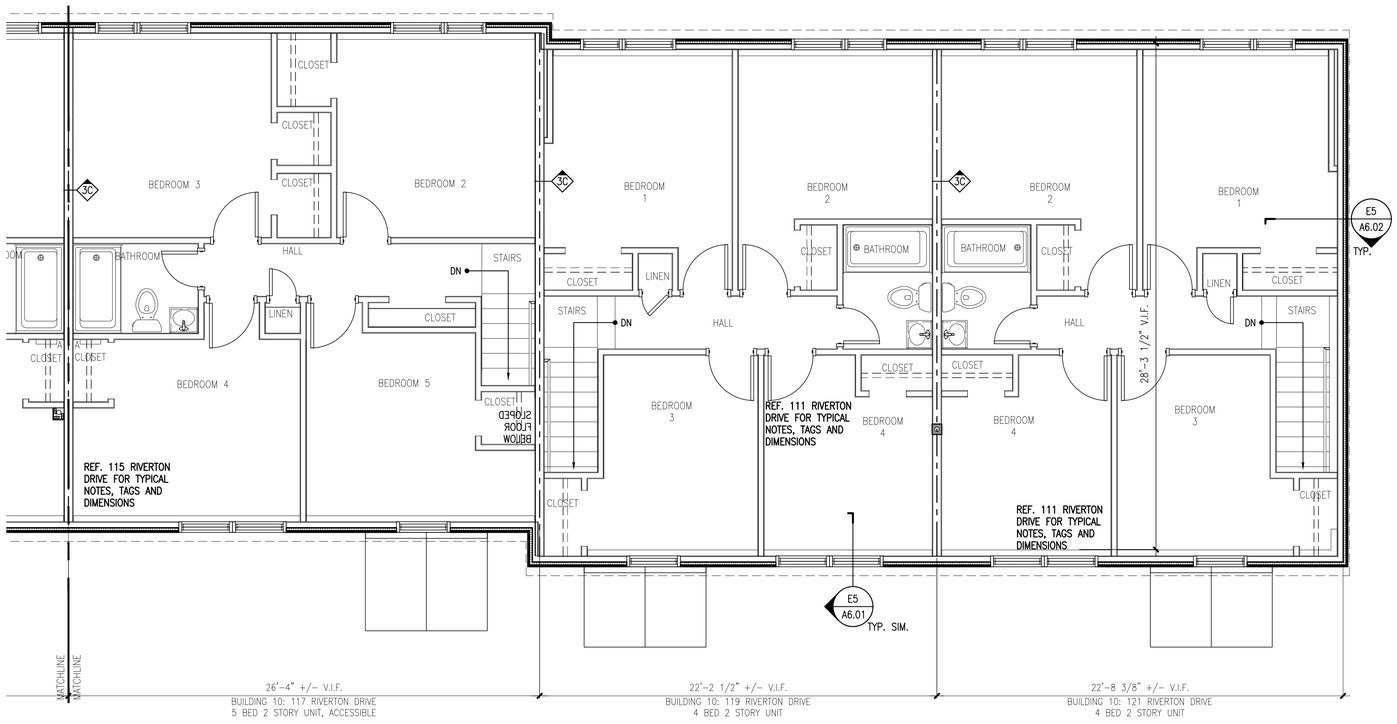
DRAWING
FIRST FLOOR
NEW WORK PLAN
BUILDING 10
CWS PROJECT NUMBER: 19013

REVISIONS

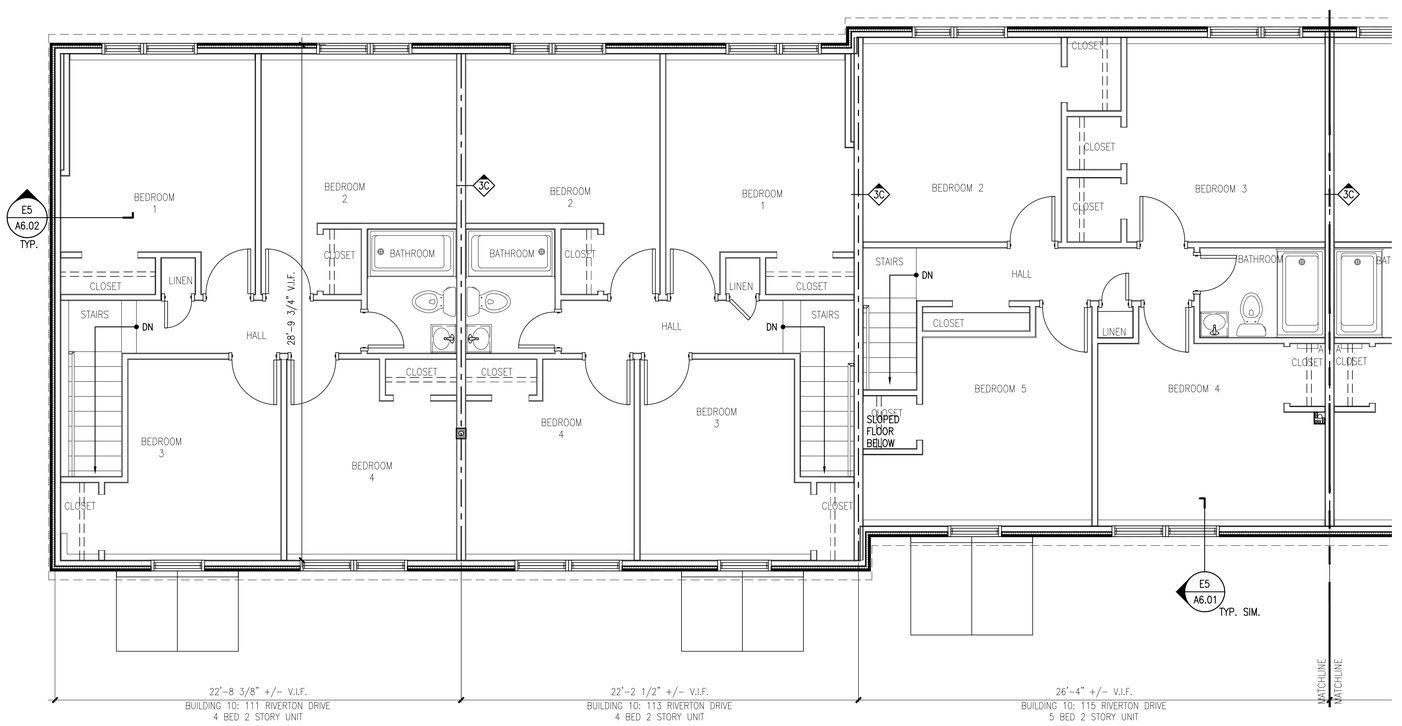
DRAWING NUMBER
A1.10.1

SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL SECOND FLOOR PLAN
REFERENCED FROM: BUILDING 10 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL SECOND FLOOR PLAN
REFERENCED FROM: BUILDING 10 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

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- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION
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G5 NEW WORK NOTES & BUILDING 10 UNIT MATRIX (TBD)
REFERENCED FROM: SCALE: NTS

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PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

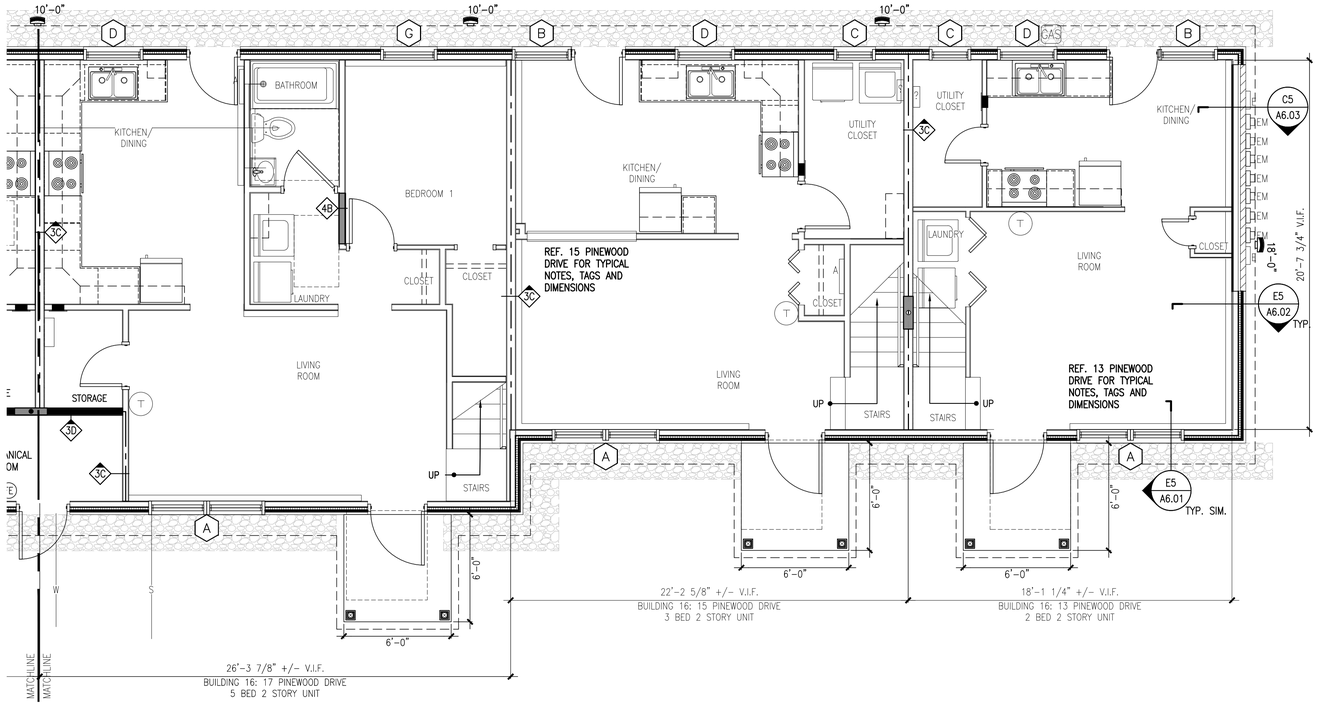
DRAWING
SECOND FLOOR NEW WORK PLAN BUILDING 10
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A1.10.2

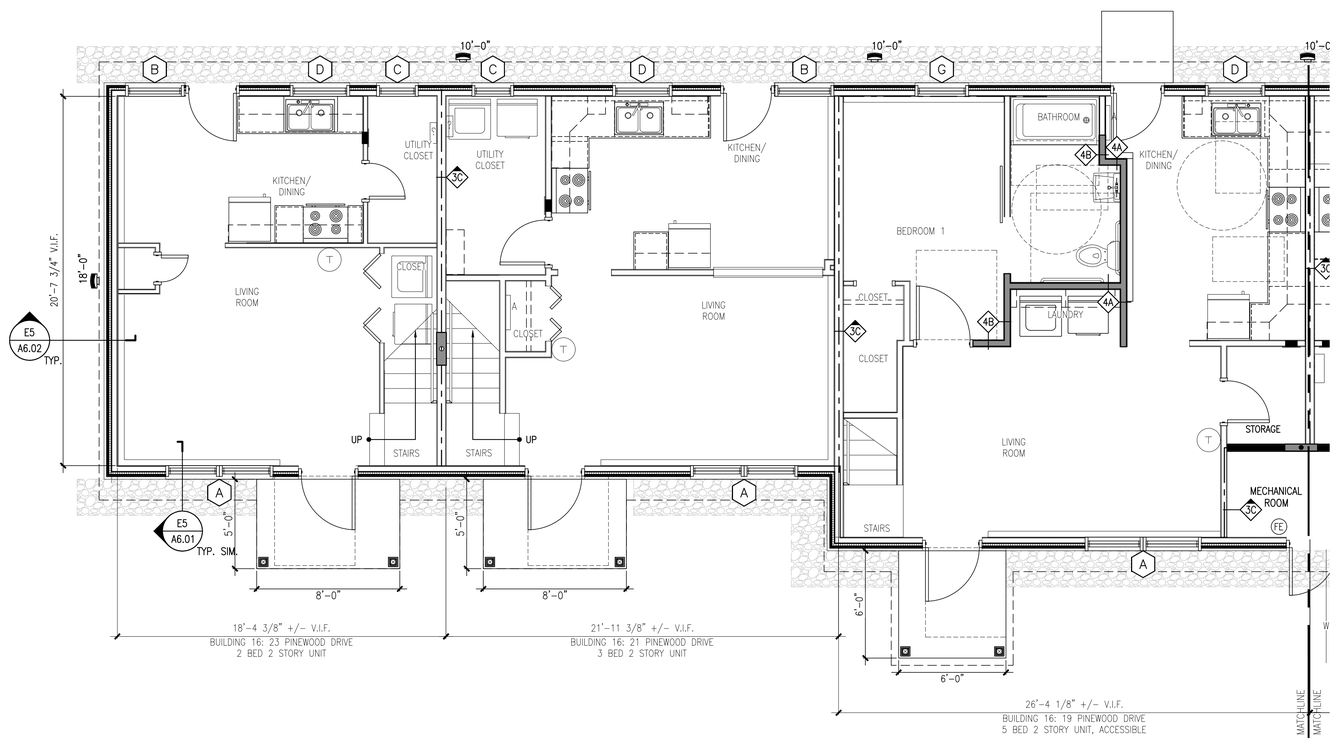
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 16 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 16 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
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- GAS EXISTING GAS METER TO REMAIN EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 16 UNIT MATRIX (TBD)

REFERENCED FROM: SCALE: NTS

CWS ARCHITECTURE + INTERIOR DESIGN

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PROJECT

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2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

FIRST FLOOR NEW WORK PLAN BUILDING 16
CWS PROJECT NUMBER: 19013

REVISIONS

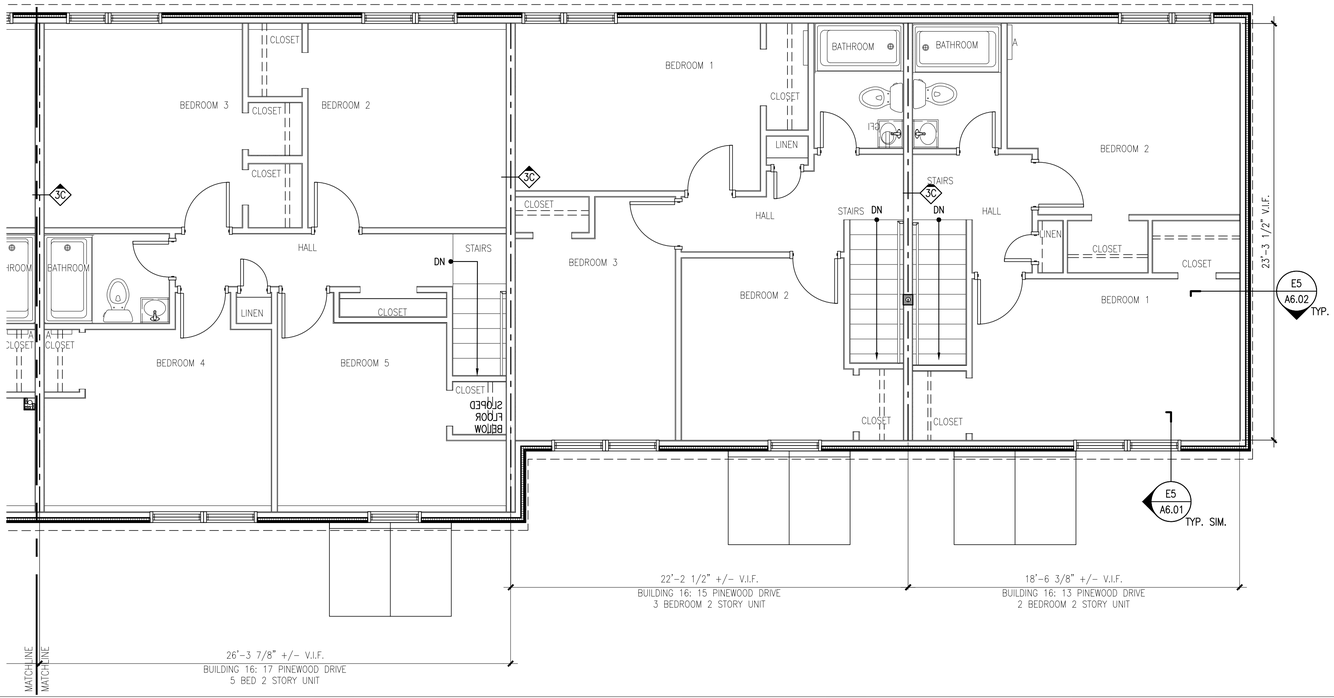
DRAWING NUMBER

A1.16.1

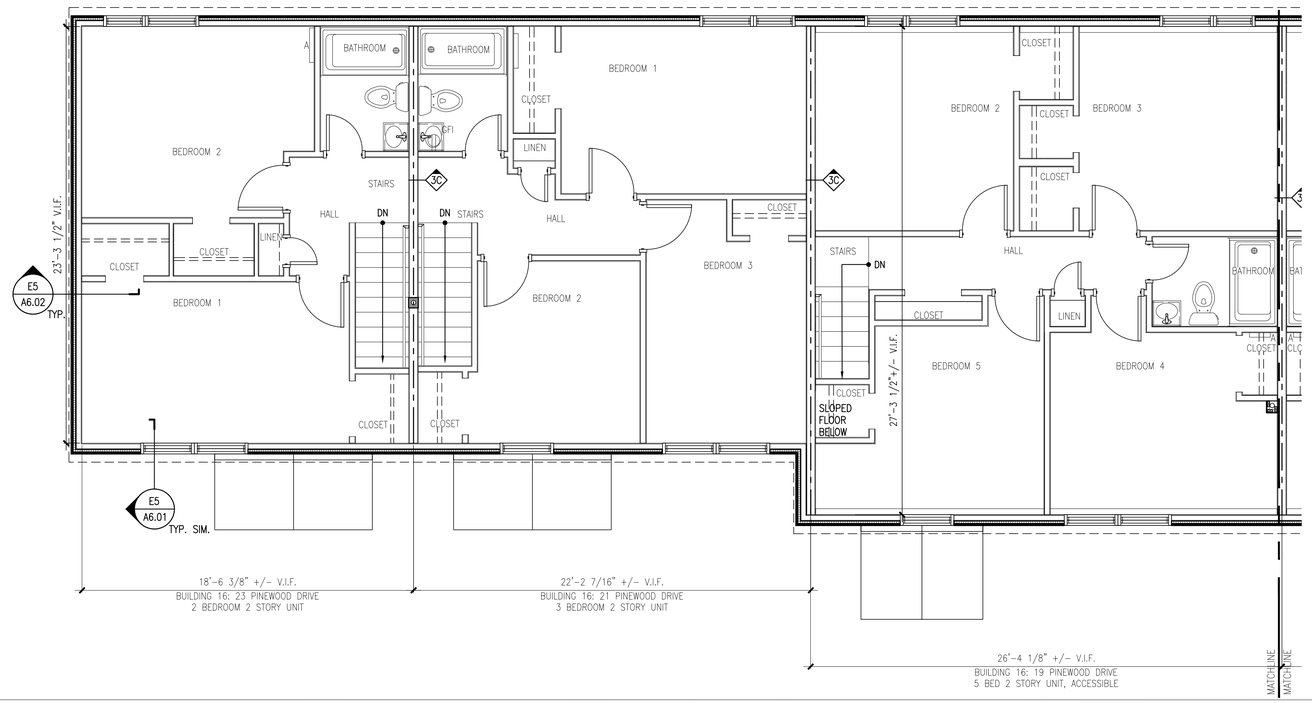
SCALE: AS NOTED

DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL SECOND FLOOR PLAN
REFERENCED FROM: BUILDING 16 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL SECOND FLOOR PLAN
REFERENCED FROM: BUILDING 16 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
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- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION

FE WALL-MOUNTED FIRE EXTINGUISHER
GAS EXISTING GAS METER TO REMAIN EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 16 UNIT MATRIX (TBD)
REFERENCED FROM: SCALE: NTS

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PORTLAND, MAINE 04103

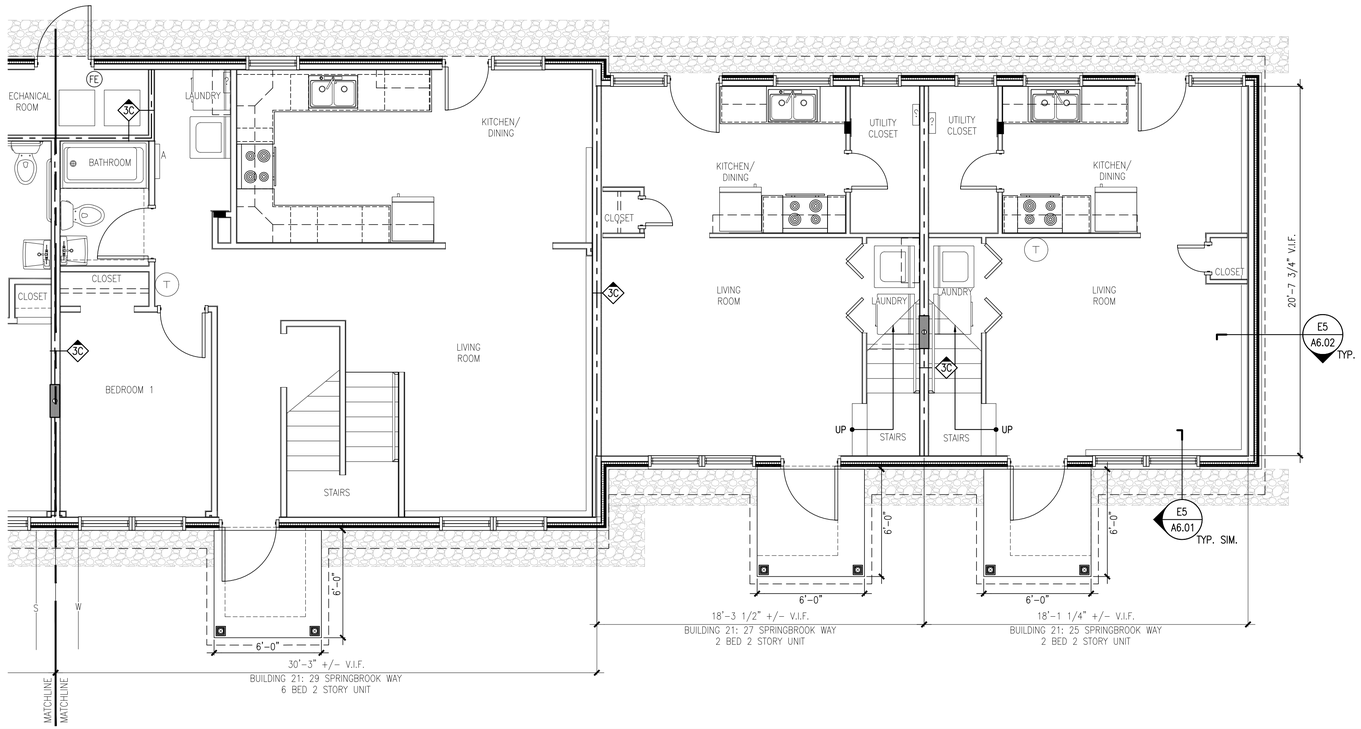
DRAWING
SECOND FLOOR NEW WORK PLAN BUILDING 16
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A1.16.2

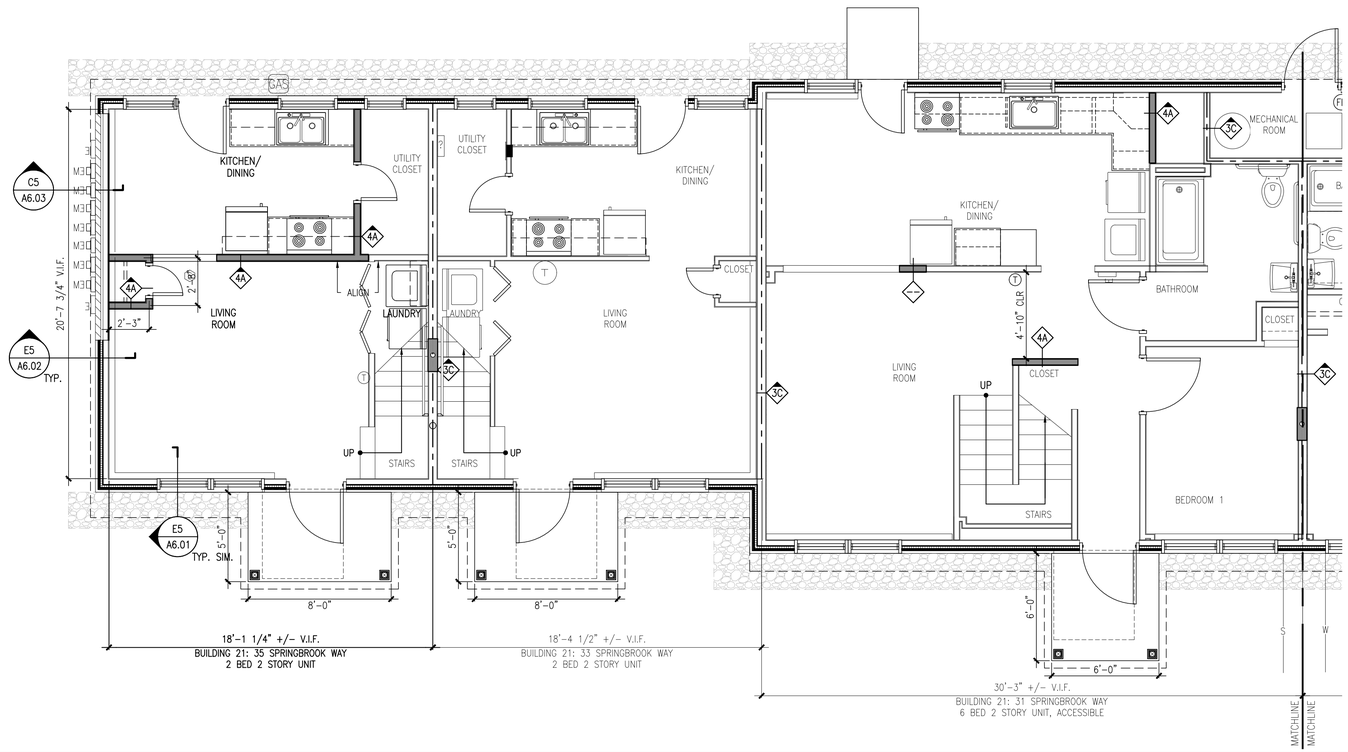
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 21 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL FIRST FLOOR PLAN

REFERENCED FROM: BUILDING 21 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
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- INTERIOR NON-RATED WOOD STUD AND GWB PARTITION
- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION

FE — WALL-MOUNTED FIRE EXTINGUISHER

GAS — EXISTING GAS METER TO REMAIN
EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 21 UNIT MATRIX (TBD)

REFERENCED FROM: SCALE: NTS

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PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
FIRST FLOOR
NEW WORK PLAN
BUILDING 21
CWS PROJECT NUMBER: 19013

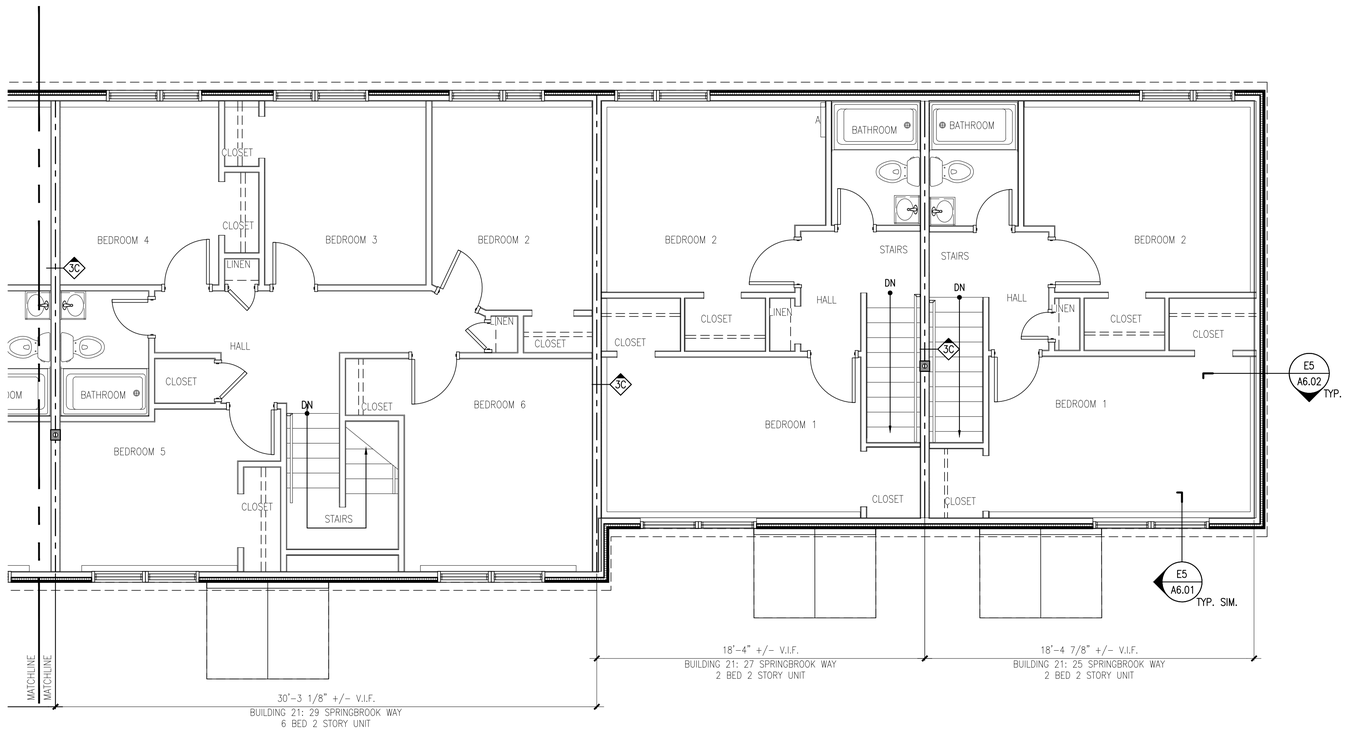
REVISIONS

DRAWING NUMBER
A1.21.1

SCALE: AS NOTED
DATE: 08/12/2024

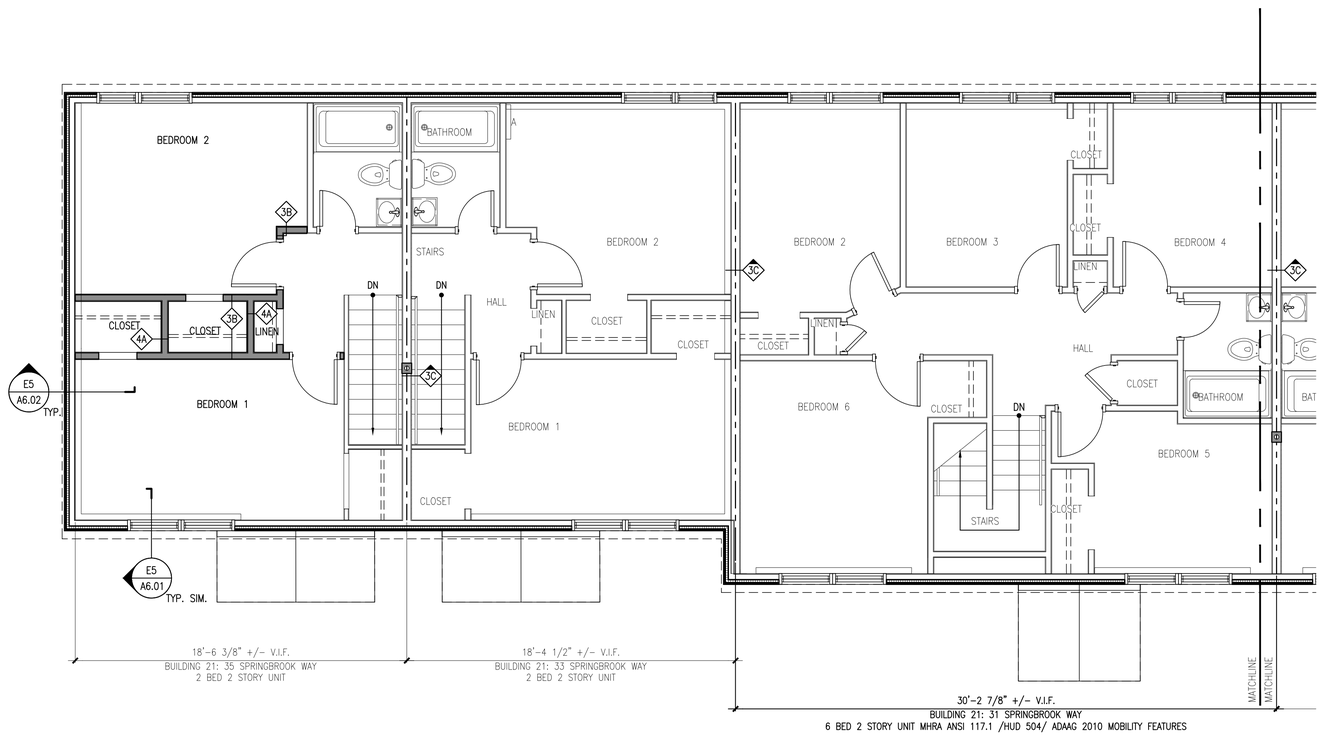
ISSUED FOR: MAJOR SITE PLAN AMENDMENT

N:\2019 Design Projects\19013 RHA R&D-Riverton Park\1-Drawings\19013 A1.21 1st Fl Series



A3 ENLARGED PARTIAL SECOND FLOOR PLAN

REFERENCED FROM: BUILDING 21 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL SECOND FLOOR PLAN

REFERENCED FROM: BUILDING 21 SCALE: 1/4"=1'-0"

W:\2019 Design Projects\19013 RHA RAD-Riverton Park\1-Drawings\19013 A121 2nd FL Series

G5 NEW WORK NOTES & BUILDING 21 UNIT MATRIX (TBD)

REFERENCED FROM: SCALE: NTS

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
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- 1-HOUR FIRE-RATED INTERIOR WOOD STUD AND GWB PARTITION

(FE) WALL-MOUNTED FIRE EXTINGUISHER

GAS EXISTING GAS METER TO REMAIN
EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

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DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, MAINE 04074 207.774.4441
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RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

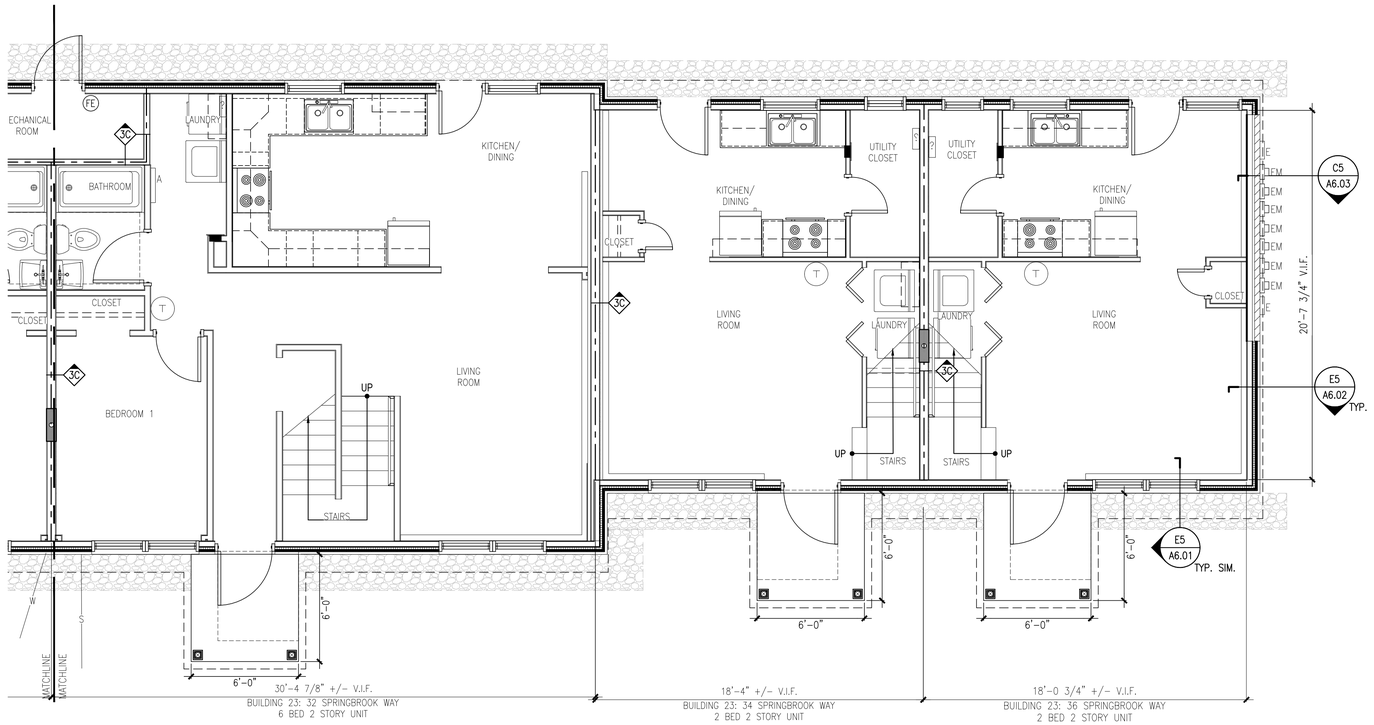
DRAWING
SECOND FLOOR
NEW WORK PLAN
BUILDING 21
CWS PROJECT NUMBER: 19013

REVISIONS

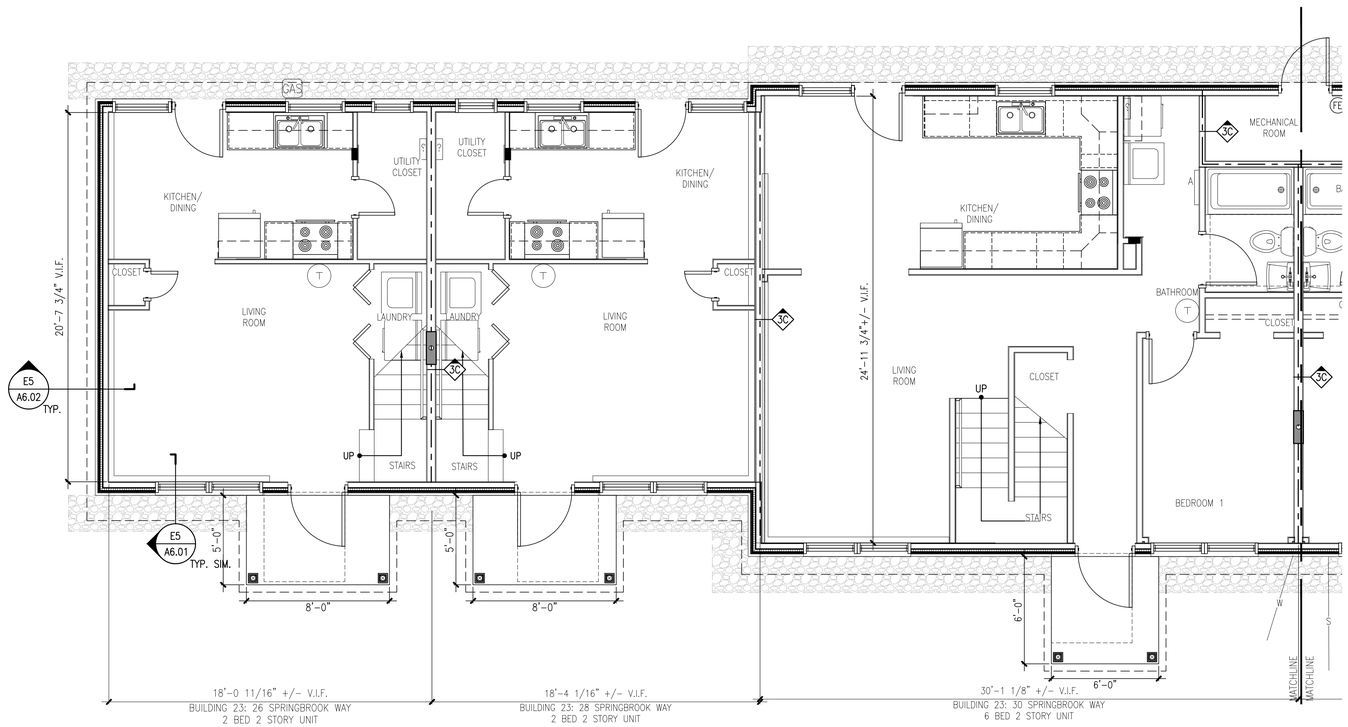
DRAWING NUMBER
A1.21.2

SCALE: AS NOTED
DATE: 09/16/2024

ISSUED FOR: MSHA 50% APP



A3 ENLARGED PARTIAL FIRST FLOOR PLAN
REFERENCED FROM: BUILDING 23 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL FIRST FLOOR PLAN
REFERENCED FROM: BUILDING 23 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

- EXISTING EXTERIOR WOOD STUD WALL ASSEMBLY WITH NEW INSULATION, SHEATHING, AND EXTERIOR FINISH SCOPE. REFERENCE WALL SECTIONS FOR MORE INFO
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FE WALL-MOUNTED FIRE EXTINGUISHER

GAS EXISTING GAS METER TO REMAIN EXTEND/MODIFY PIPING AS REQUIRED TO FACILITATE NEW EXTERIOR WALL SCOPE

G5 NEW WORK NOTES & BUILDING 23 UNIT MATRIX (TBD)
REFERENCED FROM: SCALE: NTS

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

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PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

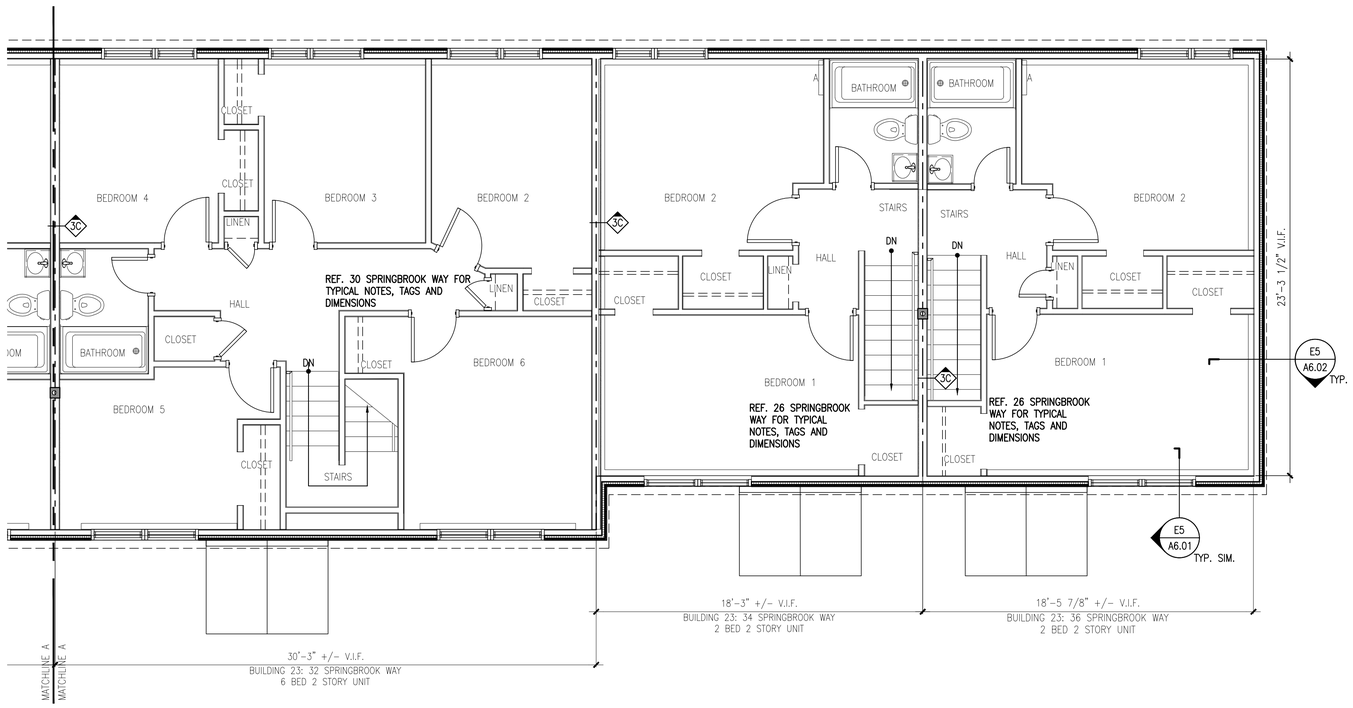
DRAWING
FIRST FLOOR NEW WORK PLAN BUILDING 23
CWS PROJECT NUMBER: 19013

REVISIONS

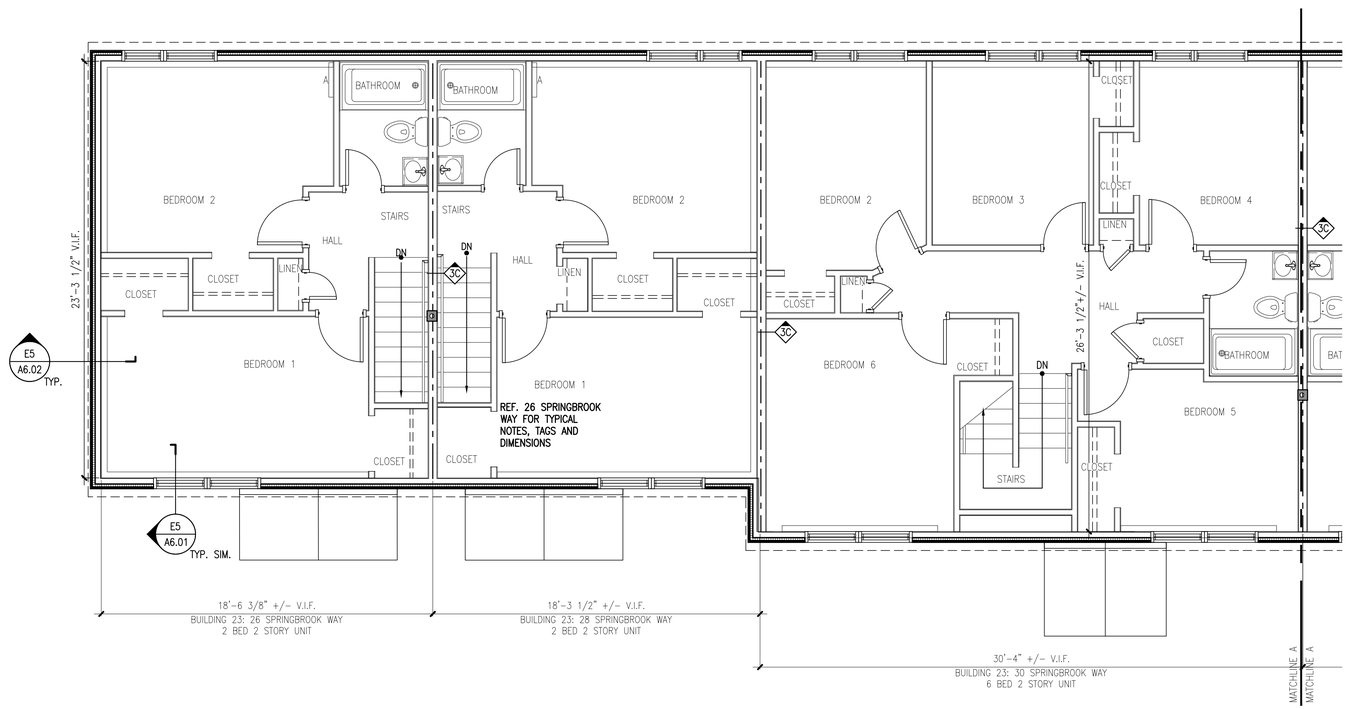
DRAWING NUMBER
A1.23.1

SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 ENLARGED PARTIAL SECOND FLOOR PLAN
REFERENCED FROM: BUILDING 23 SCALE: 1/4"=1'-0"



A5 ENLARGED PARTIAL SECOND FLOOR PLAN
REFERENCED FROM: BUILDING 23 SCALE: 1/4"=1'-0"

NEW WORK PLAN LEGEND

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G5 NEW WORK NOTES & BUILDING 23 UNIT MATRIX (TBD)
REFERENCED FROM: SCALE: NTS

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PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

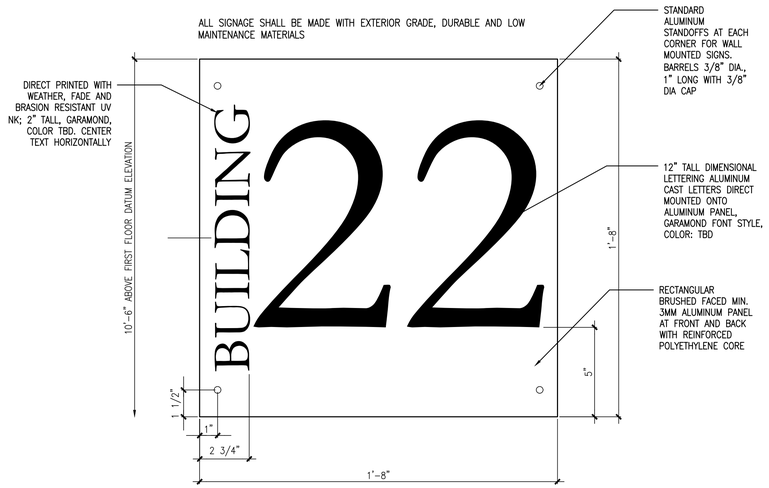
DRAWING
SECOND FLOOR NEW WORK PLAN BUILDING 23
CWS PROJECT NUMBER: 19013

REVISIONS

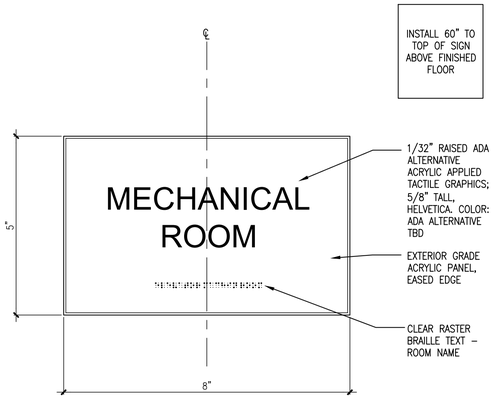
DRAWING NUMBER
A1.23.2

SCALE: AS NOTED
DATE: 08/12/2024

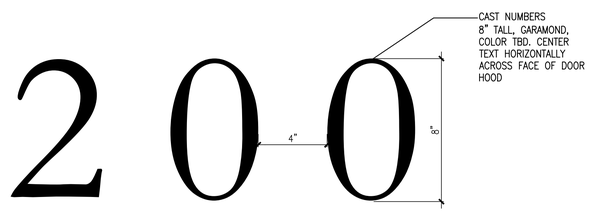
ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A3 EXTERIOR BUILDING NUMBER SIGNAGE
REFERENCED FROM: SCALE: 3"=1'-0"



E3 MECHANICAL ROOM SIGNAGE
REFERENCED FROM: SCALE: 6"=1'-0"



A5 BUILDING NUMBER SIGNAGE
REFERENCED FROM: SCALE: 3"=1'-0"

E5 NOT USED
REFERENCED FROM: SCALE: N/A

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PLANNING + DESIGN CONSTRUCTION SERVICES

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PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

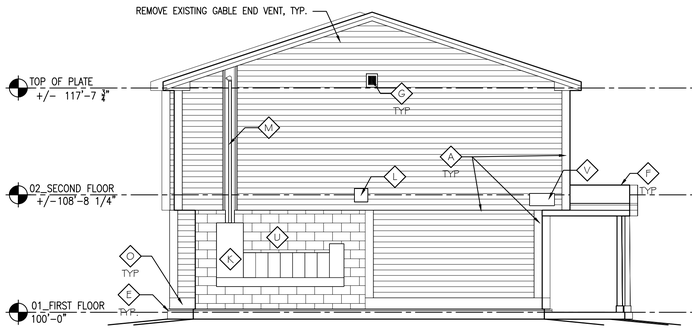
DRAWING
EXTERIOR SIGNAGE
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A3.00

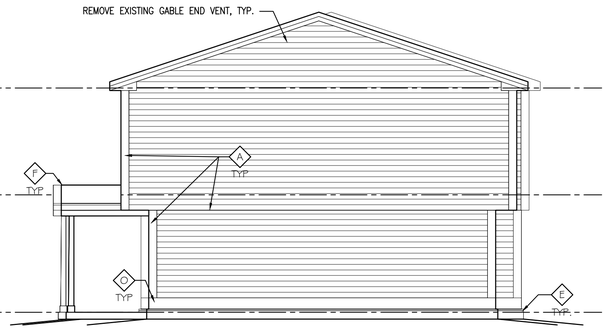
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



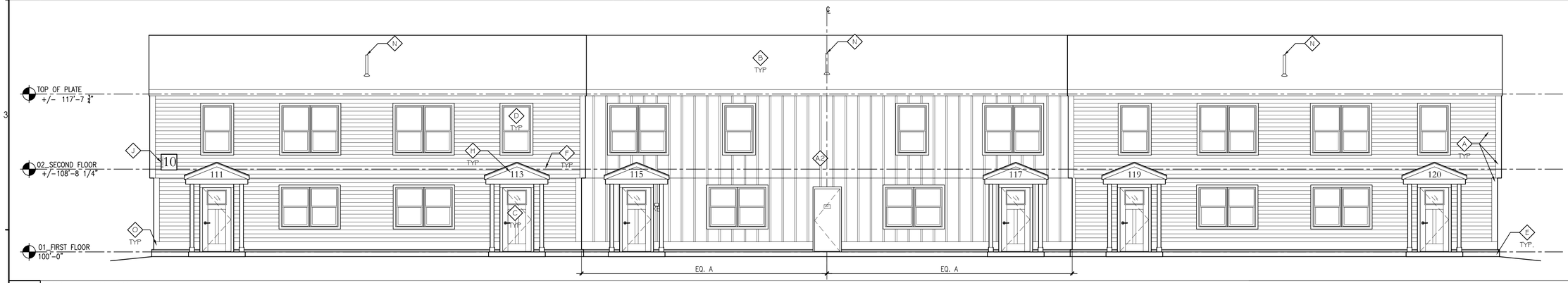
A2 LEFT SIDE ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



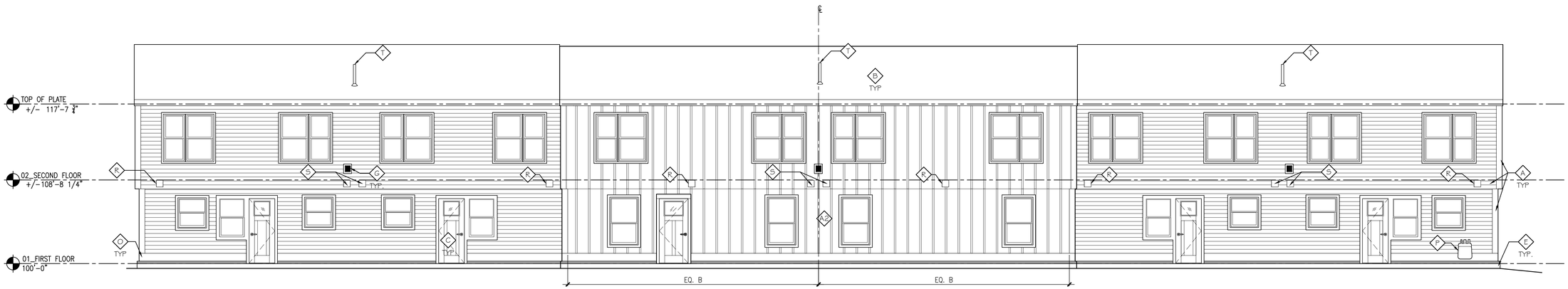
D2 LEFT SIDE ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



A4 FRONT ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



A5 REAR BUILDING ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

CODE	MATERIAL	MANUFACTURER	PRODUCT, STYLE AND COLOR / NOTES	FINISH
A	FIBER CEMENT SIDING AND TRIM	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 5" REVEAL; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
A2	BOARD AND BATTON SIDING	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 16" SPACING; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
B	ASPHALT SHINGLE ROOFING	CERTAINTEED	LANDMARK HEATHER BLEND	FACTORY
C	EXTERIOR DOOR AND FRAME ASSY		REFERENCE FLOOR PLANS AND SHEET A8.01, A8.02 & FINISH SCHEDULE	FACTORY PRIMED, FIELD-PAINTED
D	ALTERNATE No. 4: COMPOSITE WINDOW ASSEMBLY	TBD	REFERENCE DRAWING SHEET A8.10 FOR MORE INFO.	FACTORY
E	EXTERIOR INSULATION AND FIBER CEMENT PANELS	FINEX	1/2" MULTIPURPOSE FIBER CEMENT PANEL	FACTORY – SMOOTH FINISH
F	WOOD-FRAMED DOOR HOOD AND STOOP ASSEMBLY – REFERENCE BUILDING PLANS & A7.10 FOR MORE INFO	N/A	TBD	EXIST
G	EXTERIOR LED LIGHT FIXTURE – LOCATIONS VARY – REFERENCE REFLECTED CEILING PLANS FOR MORE INFO.	TBD	PROVIDE 10"x12" FIBER CEMENT BACKER – PAINT TO MATCH	FACTORY
H	BUILDING ADDRESS – REFERENCE FLOOR PLANS FOR ADDRESS PER ENTRY	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
J	BUILDING SIGNAGE	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
K	ELECTRICAL METER BANK. LOCATIONS AND SIZE VARY BY BUILDING. REFERENCE FLOOR PLANS AND SECTIONS FOR MORE INFO.	N/A	REF A6.03 FOR DETAILS	N/A
L	NEW CABLE BOX IN EXISTING CONDITION. CONCEAL NEW COAX CABLE WITHIN EXISTING WALL STUD CAVITY.	N/A	N/A	N/A
M	EXIST ELECTRICAL CONDUIT TO REMAIN.	N/A	PAINT TO MATCH SIDING REF A6.03 FOR DETAILS	N/A
N	RADON MITIGATION SYSTEM RISER VENT.	N/A	N/A	N/A
O	PVC TRIM	N/A	N/A	N/A
P	EXISTING GAS METER TO REMAIN. PROVIDE NEW WALL MOUNTED BRACKETS TO ACCOMMODATE CHANGE IN WALL THICKNESS	N/A	N/A	N/A
Q	PLUMBING VENT REFERENCE ROOF, MECHANICAL AND PLUMBING PLANS FOR MORE INFORMATION	N/A	N/A	N/A
R	DRYER VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
S	RANGE VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
T	BATHROOM VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
U	EXISTING BRICK VENEER TO REMAIN	N/A	REF A6.03 FOR DETAILS	N/A
V	EXISTING PHONE HOUSING TO REMAIN	N/A	N/A	N/A

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, MAINE 04074 207.774.4441
WWW.CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
BUILDINGS 10
EXTERIOR ELEVATIONS
CWS PROJECT NUMBER: 19013

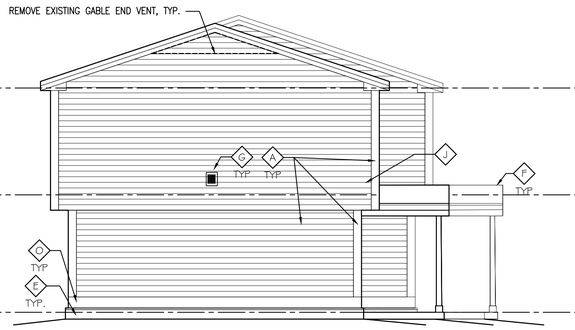
REVISIONS

DRAWING NUMBER
A3.10

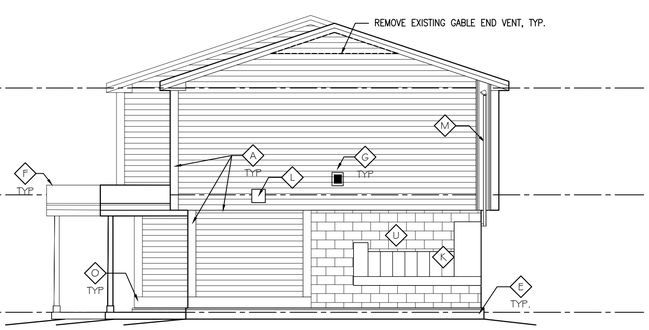
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

W:\2019 Design Projects\19013 PHA RAD-Riverton Park\1-Drawings\19013 A3.10 - Building-10 - Elevations



A2 LEFT SIDE ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

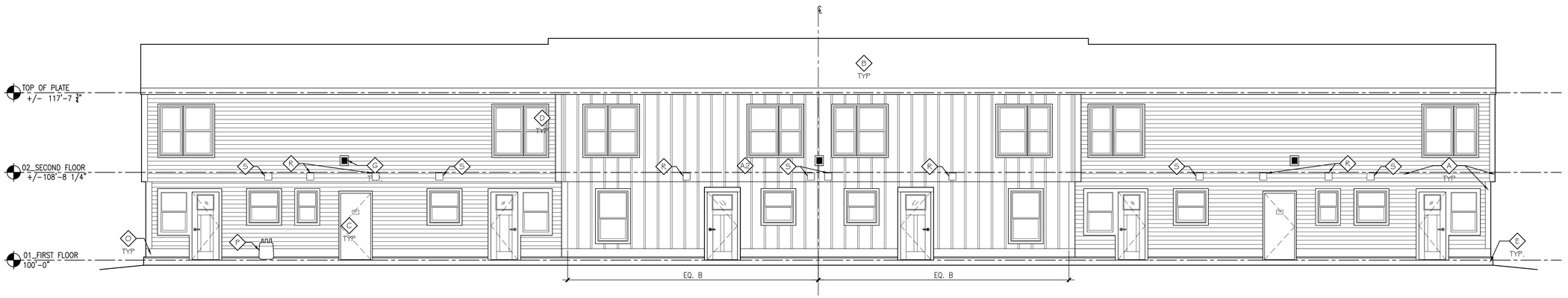


D2 LEFT SIDE ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

CODE	MATERIAL	MANUFACTURER	PRODUCT, STYLE AND COLOR / NOTES	FINISH
A	FIBER CEMENT SIDING AND TRIM	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 5" REVEAL; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
A2	BOARD AND BATTON SIDING	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 16" SPACING; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
B	ASPHALT SHINGLE ROOFING	CERTAINTEED	LANDMARK HEATHER BLEND	FACTORY
C	EXTERIOR DOOR AND FRAME ASSY		REFERENCE FLOOR PLANS AND SHEET A8.01, A8.02 & FINISH SCHEDULE	FACTORY PRIMED, FIELD-PAINTED
D	ALTERNATE No. 4: COMPOSITE WINDOW ASSEMBLY	TBD	REFERENCE DRAWING SHEET A8.10 FOR MORE INFO.	FACTORY
E	EXTERIOR INSULATION AND FIBER CEMENT PANELS	FINEX	1/2" MULTIPURPOSE FIBER CEMENT PANEL	FACTORY – SMOOTH FINISH
F	WOOD-FRAMED DOOR HOOD AND STOOP ASSEMBLY – REFERENCE BUILDING PLANS & A7.10 FOR MORE INFO	N/A	TBD	EXIST
G	EXTERIOR LED LIGHT FIXTURE – LOCATIONS VARY – REFERENCE REFLECTED CEILING PLANS FOR MORE INFO.	TBD	PROVIDE 10"x12" FIBER CEMENT BACKER – PAINT TO MATCH	FACTORY
H	BUILDING ADDRESS – REFERENCE FLOOR PLANS FOR ADDRESS PER ENTRY	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
J	BUILDING SIGNAGE	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
K	ELECTRICAL METER BANK. LOCATIONS AND SIZE VARY BY BUILDING. REFERENCE FLOOR PLANS AND SECTIONS FOR MORE INFO.	N/A	REF A6.03 FOR DETAILS	N/A
L	NEW CABLE BOX IN EXISTING CONDITION. CONCEAL NEW COAX CABLE WITHIN EXISTING WALL STUD CAVITY.	N/A	N/A	N/A
M	EXIST ELECTRICAL CONDUIT TO REMAIN.	N/A	PAINT TO MATCH SIDING REF A6.03 FOR DETAILS	N/A
N	RADON MITIGATION SYSTEM RISER VENT.	N/A	N/A	N/A
O	PVC TRIM	N/A	N/A	N/A
P	EXISTING GAS METER TO REMAIN. PROVIDE NEW WALL MOUNTED BRACKETS TO ACCOMMODATE CHANGE IN WALL THICKNESS	N/A	N/A	N/A
Q	PLUMBING VENT REFERENCE ROOF, MECHANICAL AND PLUMBING PLANS FOR MORE INFORMATION	N/A	N/A	N/A
R	DRYER VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
S	RANGE VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
T	BATHROOM VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
U	EXISTING BRICK VENEER TO REMAIN	N/A	REF A6.03 FOR DETAILS	N/A
V	EXISTING PHONE HOUSING TO REMAIN	N/A	N/A	N/A



A4 FRONT ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



A5 REAR BUILDING ELEVATION
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

W:\2019 Design Projects\19013 PHA 960-Riverton Park\1-Drawings\19013 A3.16 - Building-16 - Elevations

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
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204 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, MAINE 04074 207.774.4441
WWW.CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

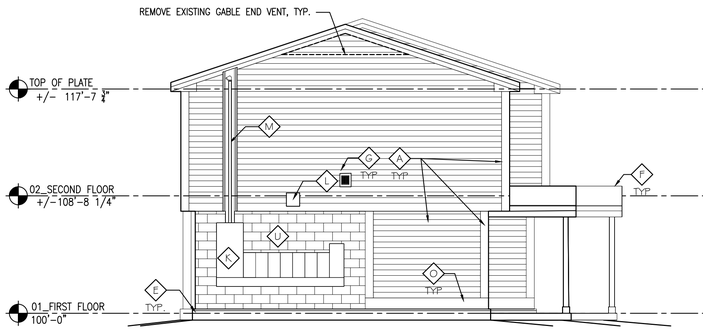
DRAWING
BUILDING 16
EXTERIOR ELEVATIONS
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A3.16

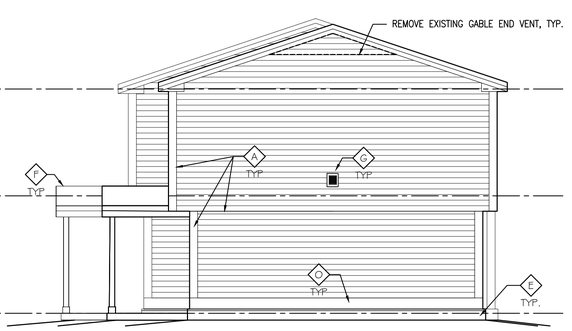
SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A2 LEFT SIDE ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



D2 LEFT SIDE ELEVATION

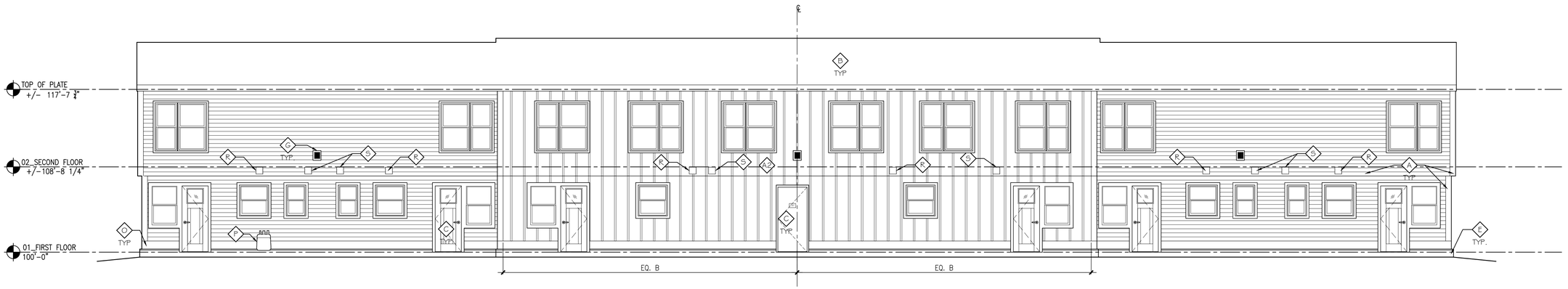
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

CODE	MATERIAL	MANUFACTURER	PRODUCT, STYLE AND COLOR / NOTES	FINISH
A	FIBER CEMENT SIDING AND TRIM	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 5" REVEAL; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
A2	BOARD AND BATTON SIDING	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 16" SPACING; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
B	ASPHALT SHINGLE ROOFING	CERTAINTEED	LANDMARK HEATHER BLEND	FACTORY
C	EXTERIOR DOOR AND FRAME ASSY		REFERENCE FLOOR PLANS AND SHEET A8.01, A8.02 & FINISH SCHEDULE	FACTORY PRIMED, FIELD-PAINTED
D	ALTERNATE No. 4: COMPOSITE WINDOW ASSEMBLY	TBD	REFERENCE DRAWING SHEET A8.10 FOR MORE INFO.	FACTORY
E	EXTERIOR INSULATION AND FIBER CEMENT PANELS	FINEX	1/2" MULTIPURPOSE FIBER CEMENT PANEL	FACTORY – SMOOTH FINISH
F	WOOD-FRAMED DOOR HOOD AND STOOP ASSEMBLY – REFERENCE BUILDING PLANS & A7.10 FOR MORE INFO	N/A	TBD	EXIST
G	EXTERIOR LED LIGHT FIXTURE – LOCATIONS VARY – REFERENCE REFLECTED CEILING PLANS FOR MORE INFO.	TBD	PROVIDE 10"x12" FIBER CEMENT BACKER – PAINT TO MATCH	FACTORY
H	BUILDING ADDRESS – REFERENCE FLOOR PLANS FOR ADDRESS PER ENTRY	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
J	BUILDING SIGNAGE	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
K	ELECTRICAL METER BANK. LOCATIONS AND SIZE VARY BY BUILDING. REFERENCE FLOOR PLANS AND SECTIONS FOR MORE INFO.	N/A	REF A6.03 FOR DETAILS	N/A
L	NEW CABLE BOX IN EXISTING CONDITION. CONCEAL NEW COAX CABLE WITHIN EXISTING WALL STUD CAVITY.	N/A	N/A	N/A
M	EXIST ELECTRICAL CONDUIT TO REMAIN.	N/A	PAINT TO MATCH SIDING REF A6.03 FOR DETAILS	N/A
N	RADON MITIGATION SYSTEM RISER VENT.	N/A	N/A	N/A
O	PVC TRIM	N/A	N/A	N/A
P	EXISTING GAS METER TO REMAIN. PROVIDE NEW WALL MOUNTED BRACKETS TO ACCOMMODATE CHANGE IN WALL THICKNESS	N/A	N/A	N/A
Q	PLUMBING VENT REFERENCE ROOF, MECHANICAL AND PLUMBING PLANS FOR MORE INFORMATION	N/A	N/A	N/A
R	DRYER VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
S	RANGE VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
T	BATHROOM VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
U	EXISTING BRICK VENEER TO REMAIN	N/A	REF A6.03 FOR DETAILS	N/A
V	EXISTING PHONE HOUSING TO REMAIN	N/A	N/A	N/A



A4 FRONT ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



A5 REAR BUILDING ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

W:\2019 Design Projects\19013 PHA RAD-Riverton Park\1-Drawings\19013 A3.21 - Building-21 - Elevations

CWS ARCHITECTURE + INTERIOR DESIGN

PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER

CWS ARCHITECTURE + INTERIOR DESIGN
264 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, MAINE 04074 207.774.4441
WWW.CWSARCH.COM

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK
REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

BUILDING 21
EXTERIOR ELEVATIONS

CWS PROJECT NUMBER: 19013

REVISIONS

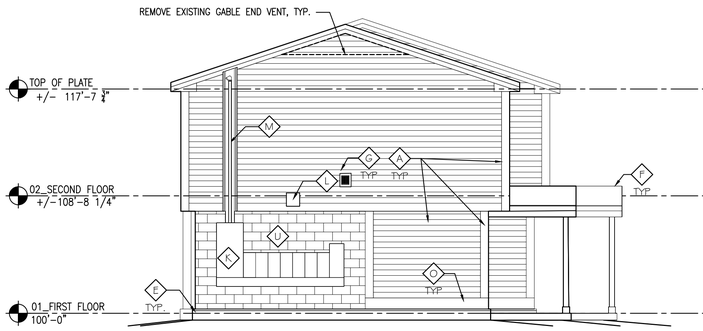
DRAWING NUMBER

A3.21

SCALE: AS NOTED

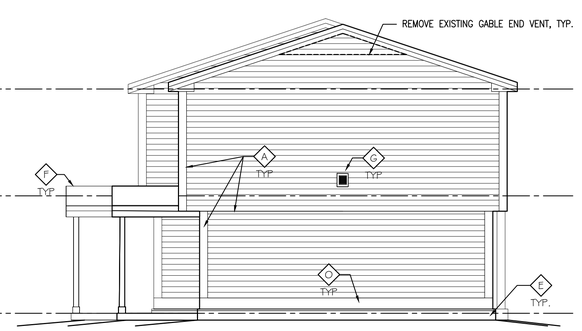
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT



A2 LEFT SIDE ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



D2 LEFT SIDE ELEVATION

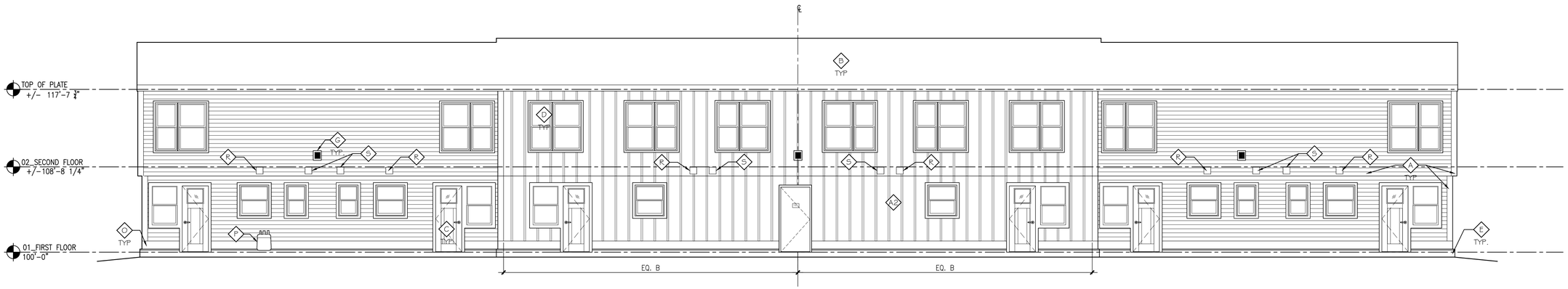
REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

CODE	MATERIAL	MANUFACTURER	PRODUCT, STYLE AND COLOR / NOTES	FINISH
A	FIBER CEMENT SIDING AND TRIM	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 5" REVEAL; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
A2	BOARD AND BATTON SIDING	JAMES HARDIE	REFERENCE SPECIFICATION SECTION 07 46 10; 16" SPACING; REFERENCE BUILDING ELEVATIONS FOR MATERIAL PATTERN	FACTORY
B	ASPHALT SHINGLE ROOFING	CERTAINTEED	LANDMARK HEATHER BLEND	FACTORY
C	EXTERIOR DOOR AND FRAME ASSY		REFERENCE FLOOR PLANS AND SHEET A8.01, A8.02 & FINISH SCHEDULE	FACTORY PRIMED, FIELD-PAINTED
D	ALTERNATE No. 4: COMPOSITE WINDOW ASSEMBLY	TBD	REFERENCE DRAWING SHEET A8.10 FOR MORE INFO.	FACTORY
E	EXTERIOR INSULATION AND FIBER CEMENT PANELS	FINEX	1/2" MULTIPURPOSE FIBER CEMENT PANEL	FACTORY – SMOOTH FINISH
F	WOOD-FRAMED DOOR HOOD AND STOOP ASSEMBLY – REFERENCE BUILDING PLANS & A7.10 FOR MORE INFO	N/A	TBD	EXIST
G	EXTERIOR LED LIGHT FIXTURE – LOCATIONS VARY – REFERENCE REFLECTED CEILING PLANS FOR MORE INFO.	TBD	PROVIDE 10"x12" FIBER CEMENT BACKER – PAINT TO MATCH	FACTORY
H	BUILDING ADDRESS – REFERENCE FLOOR PLANS FOR ADDRESS PER ENTRY	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
J	BUILDING SIGNAGE	GEMINI PRODUCTS	GARAMOND TYPEFACE PAINTED CAST ALUMINUM LETTERS	FACTORY,TBD
K	ELECTRICAL METER BANK. LOCATIONS AND SIZE VARY BY BUILDING. REFERENCE FLOOR PLANS AND SECTIONS FOR MORE INFO.	N/A	REF A6.03 FOR DETAILS	N/A
L	NEW CABLE BOX IN EXISTING CONDITION. CONCEAL NEW COAX CABLE WITHIN EXISTING WALL STUD CAVITY.	N/A	N/A	N/A
M	EXIST ELECTRICAL CONDUIT TO REMAIN.	N/A	PAINT TO MATCH SIDING REF A6.03 FOR DETAILS	N/A
N	RADON MITIGATION SYSTEM RISER VENT.	N/A	N/A	N/A
O	PVC TRIM	N/A	N/A	N/A
P	EXISTING GAS METER TO REMAIN. PROVIDE NEW WALL MOUNTED BRACKETS TO ACCOMMODATE CHANGE IN WALL THICKNESS	N/A	N/A	N/A
Q	PLUMBING VENT REFERENCE ROOF, MECHANICAL AND PLUMBING PLANS FOR MORE INFORMATION	N/A	N/A	N/A
R	DRYER VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
S	RANGE VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
T	BATHROOM VENT REFERENCE MECHANICAL PLANS FOR MORE INFORMATION	N/A	N/A	N/A
U	EXISTING BRICK VENEER TO REMAIN	N/A	REF A6.03 FOR DETAILS	N/A
V	EXISTING PHONE HOUSING TO REMAIN	N/A	N/A	N/A



A4 FRONT ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"



A5 REAR BUILDING ELEVATION

REFERENCED FROM: PLANS SCALE: 3/16"=1'-0"

CWS ARCHITECTURE + INTERIOR DESIGN
PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER
CWS ARCHITECTURE + INTERIOR DESIGN
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WWW.CWSARCH.COM

OWNER
RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT
RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING
BUILDING 23
EXTERIOR ELEVATIONS
CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER
A3.23

SCALE: AS NOTED
DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT

W:\2019 Design Projects\19013 PHA RAD-Riverton Park\1-Drawings\19013 A3.23 - Building-23 - Elevations

RIVERTON PARK REHABILITATION

PORTLAND, MAINE



CWS ARCHITECTURE + INTERIOR DESIGN



REHAB UNIT TALLY AND KEY

NON-ACCESSIBLE OR LIMITED ACCESSIBILITY IMPROVEMENTS	COMMUNICATIONS	ACCESSIBLE	BEDROOM
20	0	0	2 BEDROOM
43	1	0	3 BEDROOM
27	1	0	4 BEDROOM
17	1	2	5 BEDROOM
5	0	1	6 BEDROOM
112	3	3	SUB-TOTAL
118			TOTAL

CWS ARCHITECTURE + INTERIOR DESIGN

PLANNING + DESIGN CONSTRUCTION SERVICES

DESIGNER

CWS ARCHITECTURE + INTERIOR DESIGN
204 US ROUTE ONE, SUITE 100-2A
SCARBOROUGH, MAINE 04074 207.774.4441
WWW.CWSARCH.COM

OWNER

RIVERTON PARK, LP
14 BAXTER BLVD
PORTLAND, MAINE 04101

PROJECT

RIVERTON PARK REHABILITATION
2 RIVERTON DRIVE
PORTLAND, MAINE 04103

DRAWING

UNIT LOCATIONS SITE PLAN

CWS PROJECT NUMBER: 19013

REVISIONS

DRAWING NUMBER

G1.00

SCALE: NA

DATE: 08/12/2024

ISSUED FOR: MAJOR SITE PLAN AMENDMENT