

City of Portland
 Development Review Application
 Planning Division Transmittal Form

Application Number: 2013-269 **Application Date:** 12/16/2013
CBL: 192 C001001 **Application Type:** Level I Site Alteration
Applicant: CITY OF PORTLAND /Doug Roncarati
Project Name: Rockland Avenue Outfall
Address: 0 CAPISIC ST
Project Description: Capisic Pond park, on the north side of Capisic Street, west Stevens Avenue, in the Rosemont Neighborhood.

Zoning:

Other Required Reviews:

<input type="checkbox"/> Traffic Movement	<input type="checkbox"/> 14-403 Streets	<input type="checkbox"/> Housing Replacement
<input type="checkbox"/> Storm Water	# Units _____	<input type="checkbox"/> Historic Preservation
<input type="checkbox"/> Subdivision	<input type="checkbox"/> Flood Plain	<input type="checkbox"/> Other:
# Lots _____	<input type="checkbox"/> Shoreland	
<input type="checkbox"/> Site Location	<input type="checkbox"/> Design Review	
# Unit _____		

Distribution List:

Planner	Jean Fraser	Parking	John Peverada
Zoning	Marge Schmuckal	Design Review	Alex Jaegerman
Traffic Engineer	Tom Errico	Corporation Counsel	Danielle West-Chuhta
Civil Engineer	David Sensus	Sanitary Sewer	John Emerson
Fire Department	Chris Pirone	Inspections	Tammy Munson
City Arborist	Jeff Tarling	Historic Preservation	Deb Andrews
Engineering	David Margolis-Pineo	DRC Coordinator	Phil DiPierro
		Outside Agency	

Comments needed by 12/27/2013



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1. APPLICATION FORM



Level I – Site Alteration
Development Review Application
Portland, Maine
Planning and Urban Development Department
Planning Division



Portland's Planning and Urban Development Department coordinates the development review process for site plan, subdivision and other applications under the City's Land Use Code. Attached is the application form for a Level I: Site Alteration site plan.

Level I: Site Alteration Development includes:

- Alteration of a site. The disturbance of land areas of less than one (1) acre that are stripped, graded, grubbed, filled or excavated. The Planning Authority shall exempt from review the loam and seeding of lawns and the cumulative placement of less than fifteen (15) cubic yards of fill on any lot provided such loaming or placement does not alter a drainage course, swale, wetland or redirect water onto adjoining property and does not violate any other provision of the Portland City Code or state or federal law. "Disturbed area" does not include routine maintenance, but does include re-development and new impervious areas.
- The construction of any temporary or permanent parking area, paving of existing unpaved surface parking areas between 1,000 and 7,500 square feet, or creation of other impervious surface areas between 1,000 and 7,500 square feet.
- The rehabilitation or reconstruction, but not new construction, of piers, docks, wharves, bridges, retaining walls, and other structures located within the shoreland zone.
- A site alteration in which vehicle access is proposed from more than one (1) street;

The Land Use Code (including Article V), the Technical Manual, and the Design Manual are available on the City's web site at <http://www.portlandmaine.gov/planning/default.asp> or copies may be purchased at the Planning Division Office.

Planning Division
Fourth Floor, City Hall
389 Congress Street
(207) 874-8721 or (207) 874-8719
Office Hours
Monday thru Friday
8:00 a.m. – 4:30 p.m.

PROJECT NAME: Rockland Avenue Outfall

PROPOSED DEVELOPMENT ADDRESS:

Capasic Pond Park, on the north side of Capasic Street, west of Stevens Avenue, in the Rosemont Neighborhood.

PROJECT DESCRIPTION:

Improvements include the stabilization of the channel below the Rockland Avenue Outfall using natural rounded river stone and plantings consistent with previous park restoration work, and the installation of an underground in-line trash and sediment control structure uphill of the outfall in order to provide benefits to the pond and help increase the likelihood of success for the Capasic Pond Enhancement project.

CHART/BLOCK/LOT: 224AX001

CONTACT INFORMATION:	
Applicant – must be owner, Lessee or Buyer Name: Doug Roncarati, Stormwater Program Coordinator City of Portland Department of Public Services, Engineering Address: 55 Portland Street Portland/ME Zip Code: 04101	Applicant Contact Information Work # 207-874-8848 Home# Cell # e-mail: dar@portlandmaine.gov Fax#
Owner – (if different from Applicant) Name: Address: City/State: Zip Code:	Owner Contact Information Work # Home# Cell # e-mail: Fax#
Agent/ Representative Name: Woodard & Curran, c/o David Senus, PE Address: 41 Hutchins Drive Portland/ME Zip Code: 04102	Agent/Representative Contact Information Work # 207-774-2112 Cell # e-mail: dsenus@woodardcurran.com
Billing Information (Same as Applicant) Name: Address: City/State: Zip Code:	Billing Information Work # Cell # e-mail: Fax#

Portland's development review process and requirements are outlined in the Land Use Code (Chapter 14), which includes the Subdivision Ordinance (Section 14-491) and the Site Plan Ordinance (Section 14-521).

Refer to the application checklist for a detailed list of submittal requirements. All site plans and written application materials must be uploaded to a website for review. At the time of application, instructions for uploading the plans will be provided to the applicant. One paper set of the plans, written materials and application fee must be submitted to the Planning Division Office to start the review process.

Application Check List

<p>2% of the performance guarantee</p>	<p>Inspection Fee: An inspection fee of 2% of the performance guarantee is due prior to the release of permits</p>
<p>Required</p>	<p>Performance Guarantee: A performance guarantee is required to cover all public and private site improvements.</p>
	<p>Level I Site Alteration Site Plan Fee Waived for City Project Application Fee (\$200.00) The City invoices separately for the following:</p> <ul style="list-style-type: none"> • Notices (\$.75 each) • Legal Ad (% of total Ad) • Planning Review (\$40.00 hour) • Legal Review (\$75.00 hour) <p>Third party review is assessed separately.</p> <p>Fees Paid (office use) _____</p>

APPLICATION FEES: Check all reviews that apply. Payment may be made by Check or Cash addressed to the City of Portland.

<p>Surveyor Contact Information Surveyor Name: City of Portland, Department of Public Services Address: 55 Portland Street City/State: Portland/ME Zip Code: 04101 e-mail: _____ Cell # _____ Work # _____ Fax# _____</p>	<p>Engineer Contact Information Engineer Name: Woodard & Curran, c/o David Senus, PE Address: 41 Hutchins Drive City/State: Portland/ME Zip Code: 04102 e-mail: dsenus@woodardcurran.com Cell # _____ Work # 207-774-2112 Fax# _____</p>
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Applicant Checklist	Planner Checklist	Number of Paper Copies	Submital Requirement
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Completed application form.
<input type="checkbox"/>	<input type="checkbox"/>	1	Application fees.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Written description of project.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Evidence of right, title and interest.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Copies of required state and/or federal permits.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Written assessment of proposed project's compliance with applicable zoning, requirements.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Written description of existing and proposed easements or other burdens.
<input type="checkbox"/>	<input type="checkbox"/>	1	Written requests for waivers from individual site plan and/or technical standards.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	Evidence of financial and technical capacity.

General Submital Requirements – Level I Site Alteration

sq. ft.	784,080	Proposed Total Disturbed Area of the Site
sq. ft.	12,600	Proposed Total Paved Area
sq. ft.	N/A	Proposed Total Impervious Area
sq. ft.		Existing Total Impervious Area
sq. ft.		Proposed Total Impervious Area
sq. ft.		Proposed Impervious Net Change
PARKING SPACES		
		Existing Number of Parking Spaces
		Proposed Number of Parking Spaces
		TOTAL Number of Parking Spaces

PROJECT DATA
The following information is required where applicable, in order complete the application

Please refer to Article V, Site Plan of the City of Portland Land Use Code for detailed information concerning the City's site plan review process, thresholds and standards. Should you have any questions regarding the submital requirements or any other aspect of the site plan review process, please contact the Planning Division.

Signature of Applicant: 	Date: 12/16/2013
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(Agent on behalf of the City of Portland)

This application is for a Site Plan review only, a Performance Guarantee, Inspection Fee, Building Permit Application and associated fees will be required prior to construction.

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

Site Plans and Boundary Survey Requirements – Level I Site Alteration

Number of Copies	Number of Copies	Applicant Checklist	Planner Checklist	Number of Copies	Submitted Requirement
1	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Boundary Survey meeting the requirements of Section 13 of the City of Portland Technical Manual.
	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Site Plan including the following:
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Existing structures with distance from property line (including location of proposed piers, docks or wharves if in Shoreland Zone)
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Location and dimension of existing and proposed paved areas.
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Location and details of proposed infrastructure improvements (e.g. - curb and sidewalk improvements, utility connections, roadway improvements).
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Identification of and proposed protection measures for any significant natural features on the site (including wetlands, ponds, watercourses, floodplains, significant wildlife habitats and fisheries or other important natural features listed in Section 14-526 (b)1. of the Land Use Code.
		<input type="checkbox"/>	<input type="checkbox"/>		Details of proposed pier rehabilitation (Shoreland areas only).
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Existing utilities.
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Existing and proposed grading and contours.
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Proposed stormwater management and erosion controls.
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Total area and limits of proposed land and disturbance.
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Existing vegetation to be preserved and proposed site landscaping.
		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Existing and proposed easements or public or private rights of way.

N/A

7. Hydrant locations

sprinkled in compliance with NFPA 13D. This is required by City Code. (NFPA 101 2009 ed.)

• As of September 16, 2010 all new construction of one and two family homes are required to be

6. Proposed fire protection of all structures

5. Elevation of all structures

4. Square footage of all structures [total and per story]

3. Proposed uses of any structures [NFPA and IBC classification]

2. Name address, telephone number of architect

1. Name, address, telephone number of applicant

A separate drawing[s] shall be provided to the Portland Fire Department for all site plan reviews.



**PORTLAND FIRE DEPARTMENT
SITE REVIEW
FIRE DEPARTMENT CHECKLIST**



Except as provided in article III, or to conditions imposed under section 14-526(e) only, or to those submission requirements set forth in section 14-527 as relate solely thereto.

(d) Site design standards
 5. Historic resources,
 6. Exterior lighting,
 8. Signage and wayfinding, and
 9. Zoning related design standards.

(c) Public infrastructure and community safety standards.
 1. Consistency with city master plans.

(b) Environmental quality standards
 1. Preservation of significant natural features,
 2. Landscaping and landscape preservation, and
 3. Water quality, stormwater management and erosion control.

(a) Transportation standards:
 1. Impact on surrounding street systems,
 2. Access and circulation, and
 4. Parking

Level I: Site alteration plans shall only be subject to the following site plan standards, as applicable, as contained in section 14-526:

Site Plan Standards for Review of Level I: Site Alteration

2. PROJECT DESCRIPTION

2.1 PROJECT SITE & BACKGROUND

The Rockland Avenue Outfall is located in Capisic Pond Park, which is located on the north side of Capisic Street, west of Stevens Avenue in the Rosemont neighborhood of Portland. A location map is enclosed in Appendix A. The Rockland Avenue stormwater outfall discharges surface runoff (collected via storm drains) from approximately 160-acres of highly developed residential and commercial area into Capisic Pond, which lies in the lowest portion of the Capisic Brook watershed, and drains south to the tidal Fore River. Capisic Pond is the City of Portland's largest freshwater water body and the adjacent Park is a favorite destination for area residents and bird watchers.

The stormwater runoff from the Rockland Avenue outfall carries pollution from the upstream developed areas into Capisic Pond. Erosion of the channel below the outfall has also been identified as a problem, as undermining of the outfall pipe may compromise infrastructure, and the erosion adds to sedimentation in the Pond. The following photograph shows the existing outfall:

Figure 2-1: Photograph of Rockland Avenue Outfall



In recent years, visitors to the Park have expressed concerns to the City about the visible impacts associated with the outfall, most notably the trash and sediment that collects in the channel below the outfall, erosion that occurs along the banks of the channel during high flow/high velocity storm events, and the overall "look" of the outfall pipe and associated aluminum trash rack. Park visitors and concerned citizens have also expressed concerns over what impact the stormwater discharges from this outfall have on the overall water quality of the Pond and the wildlife that relies on the habitat that the park offers. In February of 2012, project stakeholders (via a public meeting) expressed a desire to identify a stormwater quality treatment retrofit solution for the outfall which would stabilize the channel and provide trash and sediment removal.

The current stormwater quality controls for the outfall consist primarily of deep sump catch basins and Casco Traps on the outlets of many of the upstream connected catch basins. Deep sump catch basins provide limited non-floatable trash and sediment reduction, and Casco Traps provide limited control for floatable trash and oils and grease. Non-structural stormwater management in this watershed primarily consists of public education and outreach programs, catch basin cleaning programs, and street sweeping. The system is fully separated, so the primary sources of pollutants are roadways, yards, and parking lots. Pollutants in stormwater can be variable and broad ranging; however, the pollutants that are visibly present at the outfall and channel include floatable and non-floatable trash and sediment. Less visible, but common, pollutants in stormwater runoff are metals, petroleum by-products, chlorides, bacterial indicators, and nutrients.



Figure 2-2: 2001 Aerial Imagery (Top) VS 2009 Aerial Imagery (Bottom)

Over the past 15 years, the City has made significant investment in improving the Capisic Brook watershed through combined sewer overflow abatement and stormwater management and planning. With recent Capisic Pond Park habitat enhancements through the West Side Interceptor Sewer Separation project and planned improvements to watershed quality under the Capisic Brook Watershed Management Plan, there is a high level of interest in further improving water quality in Capisic Pond. The Rockland Outfall projects, along with a larger Capisic Pond Enhancement project being permitted separately, will help to address pollutant and sediment issues that have been identified.

As development has increased over the past 50-years in the Capisic Brook watershed, runoff into Capisic Pond has presumably increased, and sediments have built up in Capisic Pond. The shallow, slow-moving, and nutrient-rich water favors the growth of cattails (*Typha* spp.).

Cattails are aggressive colonizers when they take hold and are often able to out-compete most other wetland plant species and form large monocultures (i.e. stands of a single plant species). The cattail stands can be very dense and will slow surface water, causing additional sediments to settle, furthering the sedimentation of the pond and favoring additional cattail growth. While emergent marsh habitat (including cattails) is utilized by a variety of waterfowl species, a monoculture is not the most beneficial scenario, as it does not provide habitat for as wide of a variety of species as a diverse wetland habitat. Additionally, as the cattails expand, the percentage of the wetland system that is dominated by open water begins to shrink, as demonstrated by the figure below. This can negatively impact the pond's rating for wading bird and waterfowl habitat.

2.2 PROJECT NEED

Due to the size of the proposed land disturbance (less than one acre, including stripping, grading, grubbing, filling, and excavation), the project qualifies for review under a Level I Site Alteration. The following Report is presented in conformance with the requirements of a Level I Site Alteration. Civil and landscaping plan sheets showing the proposed design of the project have been attached for your reference.

2.4 LEVEL I SITE ALTERATION APPLICATION

This project is part of the overall enhancement plan for Capisic Pond, and that a Preliminary Level III Site Plan Application for additional work for the Capisic Pond Enhancement project is being submitted concurrently and under separate cover.

An underground, in-line trash and sediment control structure will also be installed near the park entrance at Rockland Avenue, uphill of the outfall. This system will require quarterly inspections in the first year to monitor sediment and debris loading, followed by at minimum annual cleaning via vac-truck thereafter. The damaged end of the existing 60-inch reinforced concrete outfall pipe will be repaired, reset and structurally secured. All areas within the project limit of work will be temporarily impacted and restored.

The Rockland Avenue Outfall work will help increase the likelihood of the success of the Capisic Pond Enhancement project by helping to manage pollutants and sediment discharged to the pond from a large drainage area. Improvements planned for the outfall include stabilization of the channel below the Rockland Avenue outfall using natural rounded river stone and plantings consistent with previous park restoration work.

2.3 PROPOSED PROJECT

The proposed Rockland Avenue Outfall project will help to reduce the amount of pollution and sediment being discharged into Capisic Pond. This will help to ensure the success of future Capisic Pond enhancement projects that aim to increase the open water area of the pond and diversify the pond's wetland species. In addition, the project will address structural pipe issues by resetting and structurally securing displaced sections of pipe near the outfall end and will provide a means of channel stabilization to remediate the existing scour and erosion that is occurring within the drainage channel.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) rates Inland Waterbird and Waterfowl Habitats (IWHs) based on five categories. For each potential habitat, points are assessed in the following categories: dominant wetland class, wetland diversity, size of the wetland, interspersed of different wetland types, and percentage of open water. All points are tallied, and a score is given to the habitat to determine its ranking as a low-, moderate-, or high-value. Capisic Pond is currently ranked as moderate value, but is trending quickly towards a low-value rating. Cattail encroachment is causing a loss of open water habitat, and is slowly leading to a degradation of the IWH habitat and a reduction of the scenic and recreational aspects of the pond. With cattail encroachment, the pond is losing its ranking points for percent open water.



Enclosed in Appendix B are two plan sheets entitled "Plan of City Property at Capisic Pond" prepared by the City of Portland, Maine Parks and Public Works Department, Engineering Division in September 1993. The City of Portland Department of Public Services is currently working on preparing a new "boundary page" to verify and update the 1993 Plan for the areas associated with and adjacent to the work. The updated boundary page will be forwarded to the Planning staff when it becomes available.

3.1 BOUNDARY SURVEY

The Rockland Avenue Outfall is located in Capisic Pond Park, on the north side of Capisic Street, west of Stevens Avenue. The project site is located entirely on public land owned by the City of Portland (parcel located at chart, block, lot 224A X001).

3. EVIDENCE OF RIGHT, TITLE, AND INTEREST





4. EVIDENCE OF STATE AND/OR FEDERAL APPROVALS

Woodard & Curran and the City of Portland have engaged the Maine Department of Environmental Protection (MaineDEP), the U.S. Army Corps of Engineers (USACOE), and the Maine Department of Inland Fisheries and Wildlife (MDIFW) throughout the preliminary design phases of this project. The proposed project will require the following state and federal approvals:

- Natural Resource Protection Act (NRPA) Permit-By-Rule – The project is anticipated to qualify for a NRPA Permit By Rule (PBR) under MaineDEP Chapter 305 rules. The project must meet the requirements of three sections of the PBR requirements.

- Section 7 – Outfall pipes
- Section 13 – Habitat creation or enhancement and water quality improvement activities
- Section 20 – Activities located in, on or over high or moderate value inland waterfowl and wading bird habitat, or shorebird nesting, feeding, and staging areas

- USACOE – It is anticipated that the project will qualify for Category 1 approval under the USACOE General Permit for Maine.

The City will be notified of any change in permitting requirements for the project. Copies of permits or notification forms will be provided to the City under separate cover as they become available.



5. EVIDENCE OF FINANCIAL AND TECHNICAL CAPACITY

5.1 FINANCIAL CAPACITY

A cost estimate has been completed for the Rockland Avenue Outfall project. The estimated cost of permitting, design, construction, and construction administration is approximately \$300,000. The project is included in the City of Portland's approved 2014 Capital Improvement Plan and \$315,000 has been allocated for this project through the City's sewer fund.

5.2 TECHNICAL CAPACITY

On behalf of the City of Portland, Woodard & Curran is preparing this site plan application for the Rockland Avenue Outfall project. Woodard & Curran has extensive experience with these types of projects and resumes can be made available upon request. Woodard & Curran is an over 800 person Portland based firm that has provided engineering services to the public sector for more than 30 years, including permitting, civil/site engineering, stormwater, and construction management services. Woodard & Curran is supported in this project by Regina S. Leonard, R.L.A. for landscape architecture and Boyle Associates Environmental Consultants for wetland biology.

6. ASSESSMENT OF ZONING

The project is located within the City of Portland Recreation and Open Space Zone (R-OS), and the Stream Protection Overlay Zone, and will be designed to comply with the standards and intent of Divisions 8.5 and 26.7 of the Land Use regulations, respectively. The proposed activities will not result in any changes to the site's existing use.

6.1 RECREATION AND OPEN SPACE ZONE (LAND USE CODE DIVISION 8.5)

The project consists of enhancements to an existing municipal park. In accordance with Division 8.5 of the Land Use Code, municipal parks are a permitted use within the R-OS zone.

6.1.1 Space and Bulk Requirements (Land Use Code Section 14-157)

No building or structure of a permanent nature will be erected, altered, enlarged, rebuilt, or used as part of the proposed project. This section of the Land Use Code is not applicable.

6.1.2 Development Standards for Recreation and Open Space Zone (Land Use Code Section 14-158)

The proposed project is not a new development, and no buildings or parking areas will be constructed or modified as part of this project. The work will be an enhancement of an existing municipal park through improvements to an existing outfall and stream. The project shall comply with the development standards outlined in Section 14-158 of the Land Use Code. Per the City's standards, vegetated areas not left in their natural state will be suitably landscaped, and natural features will be preserved to the greatest possible extent. A landscaping plan for the area has been provided as part of the plan set.

6.1.3 Shoreland and Flood Plain Management Regulations (Land Use Code Section 14-159)

The proposed project is located in a flood hazard zone, and shall comply with the requirements of Division 26.5, as discussed below.

6.2 FLOOD PLAIN MANAGEMENT REGULATIONS (LAND USE CODE DIVISION 26.5)

The project is required to comply with the flood plain management regulations because the proposed work will be taking place within an area of special flood hazard (14-450.3). Areas of special flood hazard are defined as "the land in the flood plain having a one (1) percent or greater chance of flooding in any given year as specifically identified in the Flood Insurance Study" (14-450.5). The attached FEMA FIRM map shows that a portion of the project area is located within the AB Zone. The requirements of a flood hazard area development permit shall be met as required for this project (14-450.6). The project will conform to the following standards of the flood plain management regulations (14-450.8):

- No new development is proposed as part of this project (14-450.8(a)).
- There are no new or existing public water supplies associated with the proposed project (14-450.8(b)).
- There are no new or existing public sanitary sewage systems associated with the proposed project (14-450.8(c)).

No building or structure of a permanent nature will be erected, altered, enlarged, rebuilt, or used as part of the project (14-453 (a)), and no parking is proposed as part of this project (14-453(c)). Regrading will take place within the Stream Protection Zone. This permit application fulfills the Site Plan permitting requirements of Section 14-453(b).

6.3.1 Development Standards (Land Use Code Section 14-453)

The project is required to comply with the stream protection regulations because the proposed work will be taking place within a stream protection zone (14-452). The stream protection zone includes all land areas within 75 feet, horizontal distance, of the normal high water line of a stream, as shown on the City of Portland Zoning Map.

6.3 STREAM PROTECTION REGULATIONS (LAND USE CODE DIVISION 26.7)

The project is located within Zone AB, and will conform to all applicable local, state, and federal regulations (14-450.8(p)). Information on the project's other permit applications is included in Section 4.

- No new on-site waste disposal systems are proposed as part of this project (14-450.8(d)).
- No reduction in the flood carrying capacity of Capisic Brook will occur as a result of this project (14-450.8(e)).
- No residential structures will be constructed as part of this project (14-450.8(f)).
- No non-residential structures will be constructed as part of this project (14-450.8(g)).
- The project will not include any manufactured homes (14-450.8(h)).
- The project will not include any recreational vehicles (14-450.8(i)).
- The project will not include any accessory structures (14-450.8(j)).
- The project will not result in any increase in flood levels within the community during the occurrence of the base flood discharge (14-450.8(k)).
- No structures will be constructed as part of this project (14-450.8(l)).
- No new bridges will be constructed as part of this project (14-450.8(m)).
- No new containment walls will be constructed as part of this project (14-450.8(n)).
- No new wharves, piers, or docks will be constructed as part of this project (14-450.8(o)).



7. CONFORMANCE WITH SITE PLAN STANDARDS

Section 14-524 of the City of Portland's Land Use Code outlines the site plan standards that must be met by Level I Site Alteration projects. These standards are defined in Section 14-526 of the Code. Level I Site Alteration plans shall only be subject to the following site plan standards, as applicable:

7.1 TRANSPORTATION STANDARDS

In general, there are no proposed changes to transportation systems. Construction access to the site will be managed to minimize impact to local streets and parking.

7.1.1 Impact on Surrounding Street Systems

No alterations to vehicular and pedestrian circulation are proposed as part of this project. No impacts to surrounding street systems are anticipated as a result of this project.

7.1.2 Access and Circulation

No changes to site access and circulation are proposed as part of this project.

7.1.3 Parking

No new parking, or alterations to existing parking, is proposed or required as part of this project.

7.2 ENVIRONMENTAL QUALITY STANDARDS

7.2.1 Preservation of Significant Natural Features

Significant natural features shall be preserved and protected, such that all areas within the project limit of work will be temporarily impacted and restored to existing conditions to the maximum extent practicable. Further information is provided in Section 8 of this report.

7.2.2 Landscaping and Landscape Preservation

Disturbance and removal of existing trees and other vegetation shall be limited to the maximum extent practicable, as necessary to accomplish the stabilization of the stream channel. A landscaping plan is included in the plan set to show proposed plantings along the stream channel. The figure on the following page shows a conceptual rendering of the area.

7.2.3 Water Quality, Stormwater Management, and Erosion Control

The proposed project will not alter existing stormwater drainage patterns. A negligible amount of impervious area will be created through the widening of a short section of existing gravel pathway to provide for maintenance access to the proposed water quality treatment unit. Approximately 150 square feet of additional gravel surface will be added. It is not anticipated that there will be an increase in peak stormwater flows at the site. The project will comply with the standards of Section 5 of the City of Portland Technical Manual, as discussed in Section 9 of this Report. Groundwater contamination is not anticipated to occur as a result of this project.

The Rockland Avenue Outfall was installed in 2001. The proposed project will not impact any known archaeological resources or designated landmarks within designated historic districts or historic landscape districts.

7.4.1 Historic Resources

7.4 SITE DESIGN STANDARDS

The City has made significant investment over the past 15 years in improving the Capisic Brook watershed through combined sewer overflow abatement and stormwater management and planning. With recent Capisic Pond Park habitat enhancements through the West Side Interceptor Sewer Separation project and planned improvements to watershed quality under the Capisic Brook Watershed Management Plan, the proposed work will ensure that the value and benefit of this work to the Capisic Pond is not diminished. The Rockland Avenue Outfall project will provide benefits to the pond and help increase the likelihood of success for the pond enhancement project, the permit application for which is being submitted concurrently and under separate cover.

7.3.1 Consistency with City Master Plans

7.3 PUBLIC INFRASTRUCTURE AND COMMUNITY SAFETY STANDARDS



Figure 7-1 Rockland Avenue Outfall Conceptual Rendering

7.4.2 Exterior Lighting

No exterior lighting is proposed as part of this project.

7.4.3 Signage and Wayfinding

No new signage is proposed as part of this project.

7.4.4 Zoning Related Design Standards

Narrative regarding how the proposed project will comply with zoning related design standards has been provided in Section 6 of this Report.



8. SIGNIFICANT NATURAL FEATURES

Capisic Pond is the largest fresh water body in the City of Portland, and the pond and surrounding areas make up a significant natural resource. The purpose of the proposed Rockland Avenue Outfall improvements is to reduce pollution and sedimentation to help provide improvements to the natural resource.

8.1 NATURAL RESOURCE IDENTIFICATION

A wetland delineation and functional assessment study was completed for the project area. The delineation and assessment was carried out by Boyle Associates in the summer and fall of 2012, and a final report was completed in September, 2012; this report describes the wetland areas in greater detail and has been attached as Appendix D for your reference.

An unnamed perennial stream was identified beginning at the Rockland Avenue Outfall, and flowing into Capisic Pond. The stream is fed by stormwater flows from the outfall with a low level of base flow that likely originates from surface water inlets (inflow) and groundwater (infiltration) that is collected in the closed drainage system. The area draining to the 60-inch outfall pipe is significant, and as a result, stream flows and velocities are very high during certain storm events, resulting in significant erosion to the stream channel. The proposed work will repair the eroded stream channel and will include measures to help prevent future erosion.

8.2 WILDLIFE HABITAT

The pond and surrounding areas, including the Rockland Avenue Outfall are currently mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) as moderate-value Inland Wading Bird and Waterfowl Habitat (IWWH). Moderate value IWWHs are considered Significant Wildlife Habitat (SWH) under state law. This law provides additional protection for most land within 250-feet of the edge of the pond. The project team has been working in conjunction with MaineDEP, MDIFW, and ACOE during conceptual design to ensure that wildlife habitat impacts are adequately considered as part of both the Rockland Avenue Outfall project and the separate Capisic Pond Enhancement project.

8.3 PROPOSED IMPACTS

All areas within the project limit of work will be temporarily impacted and restored as part of construction. The limit of work includes both upland and wetlands areas. Existing and proposed wetland areas are equivalent. The following table summarizes the anticipated temporary impacts:

Table 8-1: Rockland Avenue Outfall Improvement Areas of Impact

Existing/Proposed	
Total Wetland	1,400 SF
Total Upland	11,200 SF
Total Limit of Work Area	12,600 SF

The proposed work includes the creation of only a negligible amount of new impervious area (approximately 150 square feet) for the creation of a maintenance access path to the proposed water quality treatment unit.

9. STORMWATER MANAGEMENT

The proposed project must comply with the water quality, stormwater management, and erosion control standards identified by the City of Portland in the Land Use chapter of the Code of Ordinance. While the City's Technical Manual does not identify Level I Site Alteration projects on the list of projects requiring compliance with manual's Section 5 on stormwater management, Section 14-524 of the Code of Ordinance requires that the stormwater standards must be met for this level of permit submission.

9.1 EXISTING CONDITIONS

The site is located in the existing Capisic Pond Park. The park consists of open water, open space, and landscaped areas. The existing site runoff flows over the surface of vegetated areas and either infiltrates into the ground or directly to the nearby channel and Pond, and ultimately discharges to the tidal Fore River.

9.2 PROPOSED DEVELOPMENT

The proposed project consists of improvements to the existing Rockland Avenue Outfall, as described in Section 2.3. Only a negligible amount of impervious area (approximately 150 square feet of gravel surface) will be created as part of this project. Site runoff will continue to flow as it does in the existing condition.

9.2.1 Hydrologic Analysis

As the project will not result in new developed area, a new stormwater model was not generated for the project. The stormwater model initially developed for the outfall's design in 2000 was reevaluated and updated to account for additional areas that have been separated from the City's sewer system and added to the Rockland Avenue Outfall catchment area since the outfall's construction in 2001.

The hydrologic model of the Rockland Avenue Outfall was created using the HydroCAD® Stormwater Modeling System by Applied Microcomputer Systems. HydroCAD® uses TR20 runoff calculation methodology. The runoff curve numbers (CN) for the subcatchments have been computed using the TR55 methodology and are included in the HydroCAD® model. The subcatchments were divided based on land use, and area measurements were used to compute a weighted (composite) CN. The CN values were calculated using hydrologic soil group data provided by the City of Portland GIS database. Time of Concentration (TC) computation for the most hydrologically remote point in each subcatchment was developed from runoff time calculations based on length, slope, and surface runoff characteristics of sheet flow, shallow concentrated flow, channel flow, and direct entry flow; a minimum TC value for any subcatchment of five minutes was utilized.

The original HydroCAD® stormwater model was prepared by DeLuca-Hoffman Associates, Inc. as part of a Design Report for the City of Portland's Rockland Avenue Sewer Separation Project, dated October, 2000. In order to account for the additional areas that were not included in the hydrologic model prepared by DeLuca-Hoffman, additional data was obtained from the City's Geographic Information System (GIS) database, such as soil types, topography, and land use.

For this project, the 25-year return frequency storm of 24-hour duration was analyzed to verify pipe stormwater conveyance capacity, and the 1-inch storm was analyzed to determine an appropriate sized system for possible water quality treatment. A Type-III rainfall distribution was applied to these storms. To best model the interconnected impervious and developed areas of the watershed, an Antecedent Moisture Condition of III was utilized when modeling different storm events (representing saturated soils). The 25-year 24-hour precipitation measurement for Cumberland County, Maine (5.5 inches) was

taken from Appendix D of the November 1995 revision of Stormwater Management for Maine: Best Management Practices, prepared by the Maine Department of Environmental Protection. The HydroCAD model has not been included with this application, but can be provided as desired. The design team has been working directly with the City of Portland Department of Public Services, and a summary of the hydrologic evaluation has been previously provided.

9.3 STORMWATER STANDARDS

The project will comply with the stormwater standards as outlined in the City of Portland's Technical Manual Section 5 and the Maine DEP's Chapter 500 Stormwater Management Rules.

9.3.1 Basic Standards

In accordance with Section 5 of the City of Portland Technical Standards, the project is required to meet the Basic Standards of the Maine DEP Chapter 500 rules. Erosion and sedimentation control measures will be utilized during construction to ensure that the work will not result in contamination of any natural resources.

Details for all proposed erosion and sedimentation control measures are included in the engineering plan set submitted with this application. The drawings also include a narrative describing the plan for all temporary and permanent erosion control techniques to be utilized on this project in accordance with MaineDEP Erosion Control Best Management Practices.

9.3.2 General Standards

The project will result in only a negligible increase in impervious area (approximately 150 square feet), and stormwater treatment is not required; however, the sole focus of the project is water quality improvement and habitat enhancement through the installation of a water quality treatment system and channel stabilization. The project is not required to meet the General Standards, and the treatment system selected to handle the existing flow-rates and reduce pollutants in the stormwater flow is not a MaineDEP approved BMP. However, in support of the MaineDEP NRPA permitting efforts, the MaineDEP Watershed Management Unit is acting as a supervising public natural resource agency for the project and is supportive of the design approach.

A "Nutrient Separating Baffle Box" by Suntee Technologies, Inc. has been proposed. The design team has worked directly with Suntee Technologies, Inc. to select and design a system, and a detail is provided in the plan set. The 10'x16' box system will be installed in-line with the existing 60-inch outfall pipe.

The proposed stormwater quality improvement retrofit has been adequately sized to provide water quality treatment for a storm with one inch of rainfall in 24 hours, a common storm event, while also accommodating high flow from large or high intensity storm events.

An operations and maintenance plan for the system is included in Appendix F. The proposed stormwater treatment system is not regulated by local or state regulations, and as such, is not required to be operated and maintained in accordance with Chapter 32 of the City of Portland Code; the proposed system will be managed as part of the City Department of Public Services program.

The project is located within the watershed of Capisic Brook, which is classified as an urban impaired stream; however, the proposed project will create only a negligible amount of new impervious surface (approximately 150 square feet of gravel surface) and no new development, and is therefore not required to provide compensation or mitigation in accordance with the Urban Impaired Stream Standard.

9.3.4 Urban Impaired Stream Standard

With only a negligible amount of new impervious area proposed, the project will not result in a change in flow. The hydrologic evaluation of the site described previously in this section was used to verify the adequacy of the existing outfall pipe. A copy of a Storm Drain Pipe Capacity Calculation spreadsheet is included as part of Appendix B of this report. This spreadsheet uses Manning's equation to determine the adequacy of the existing 60-inch pipe to handle the 25-year storm event peak flow, as calculated by the HydroCAD model. This calculation sheet indicates that the pipe will only be 50% full at the anticipated peak flow.

9.3.3 Flooding Standard





10. SOLID WASTE

10.1 MUNICIPAL SOLID WASTE MANAGEMENT

The proposed project will not result in any changes to solid waste management at the park.

10.2 CONSTRUCTION AND DEMOLITION DEBRIS

As with any construction project, the proposed construction will generate construction waste and demolition debris (CDD). The construction contractor(s) will be responsible for hauling the CDD, or contracting with a waste management service to haul the CDD, from the project site. The contractor(s) will be fully responsible for handling, managing, and disposing of all waste generated by construction in accordance with Maine Solid Waste Management Regulations – 06-096 CMR 400-409. The contractor(s) will be bound by contract to dispose of all materials in full accordance with all applicable local state and federal regulations. The contractor will measure the actual waste volumes at the time of construction.



11. UTILITIES

No new utilities are proposed as part of this project, and existing utilities that are located on the project site will be protected. At this time, impacts to public and private utilities from the construction of this project are not anticipated; however, advancement of the design plans may reveal utility conflicts. If utility impacts are identified, we will contact the impacted utility company to inform them of the planned work and incorporate any necessary requirements.

12. CONSTRUCTION MANAGEMENT PLAN

The Capisic Pond site will be managed during construction to minimize impacts to the surrounding area and natural resources. Security fencing will be utilized and may be adjusted to accommodate the construction activities for the project. Traffic controls will consist of temporary signage to manage pedestrian traffic.

Construction access to the outfall will be from the intersection of Rockland Avenue and Machigonne Street, and all access and parking will be maintained within the City of Portland right-of-way, unless the contractor obtains approval to utilize non-City-owned property. The Capisic Brook Trail begins at this intersection and runs along the outfall pipe and drainage channel. The existing trail will be temporarily re-routed around the project area to allow for safe pedestrian access to Capisic Pond during construction. The contractor will be required to provide a construction management plan for the project, subject to the review and approval of the City and Engineer.

The construction of a reinforced maintenance access from Machigonne Street to the proposed stormwater quality improvement retrofit will be necessary. The system will have three 36-inch diameter access portals, and will be located near the intersection of Rockland Avenue and Machigonne Street; however, it will need to be placed approximately 30-feet away from Machigonne Street to avoid conflicts with existing utilities. This maintenance access will be located along a portion of the Capisic Brook Trail system that connects to Machigonne Street, and has been designed such that access improvement aesthetics are consistent with the existing trail system.

Temporary erosion and sedimentation control measures will be established prior to the start of construction and removed after construction has been completed and the site has been stabilized. Erosion and sedimentation control measures will include temporary construction access and sedimentation barriers. The locations of these erosion and sedimentation control measures will be specified on the construction plans.



13. FIRE DEPARTMENT REVIEW

The project will not result in the construction or modification of any structures, and no fire protection systems or hydrants will be required. We anticipate that review by the Fire Department will not be required for this project.

APPENDIX A: LOCATION MAP



41 Hutchins Drive
 Portland, Maine 04102
 800.426.4262 | www.woodranch.com

COMMITMENT & INTEGRITY DRIVE RESULTS

DESIGNED BY: N/A

DRAWN BY: BCM

CHECKED BY: LJS

225672.77 SITE LOCATION.dwg

PROJECT LOCATION MAP

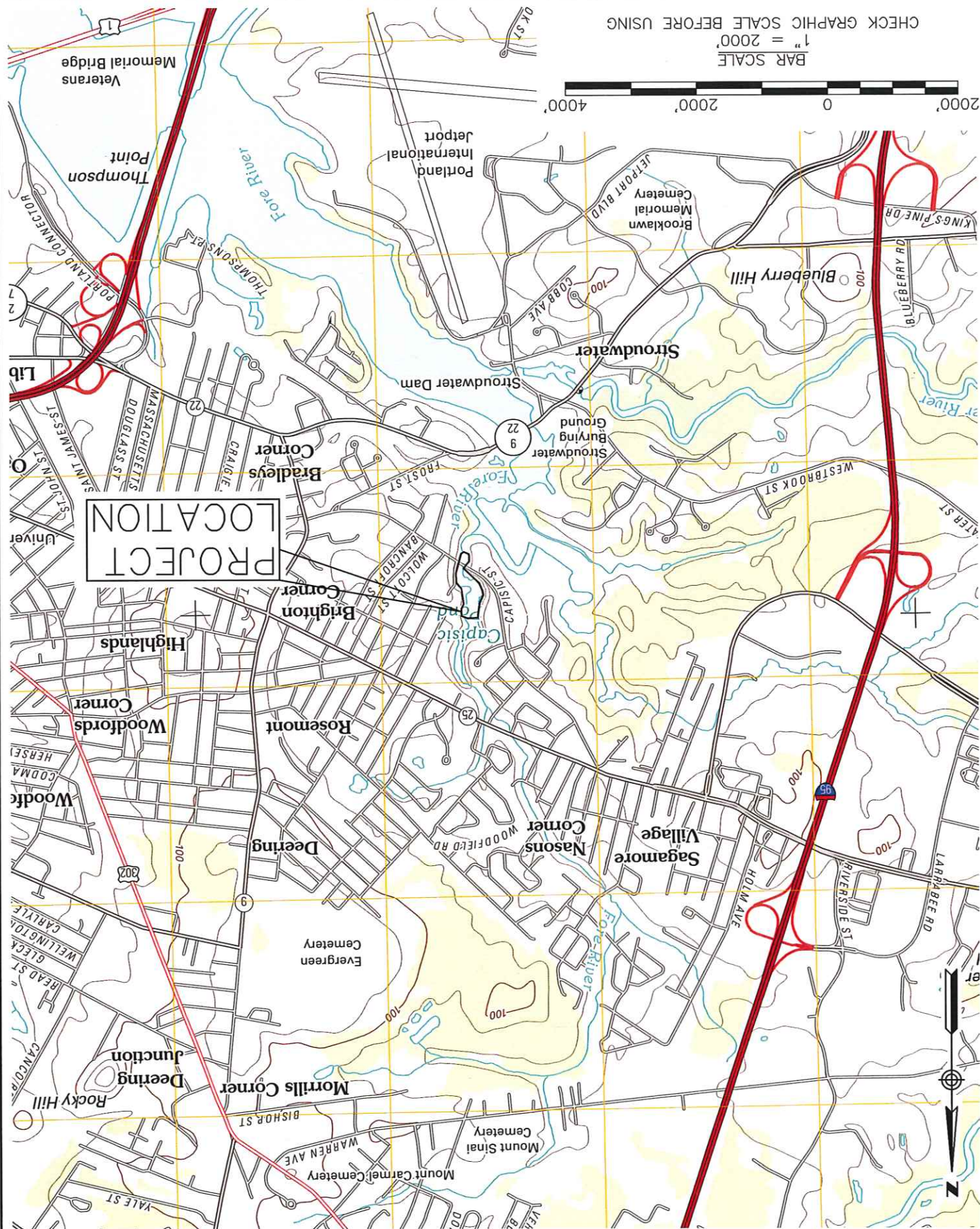
CAPISIC POND ENHANCEMENTS

FIG. 1

CITY OF PORTLAND
 PORTLAND, MAINE

JOB NO: 225672.77
 DATE: NOVEMBER 2013
 SCALE: 1" = 2000'

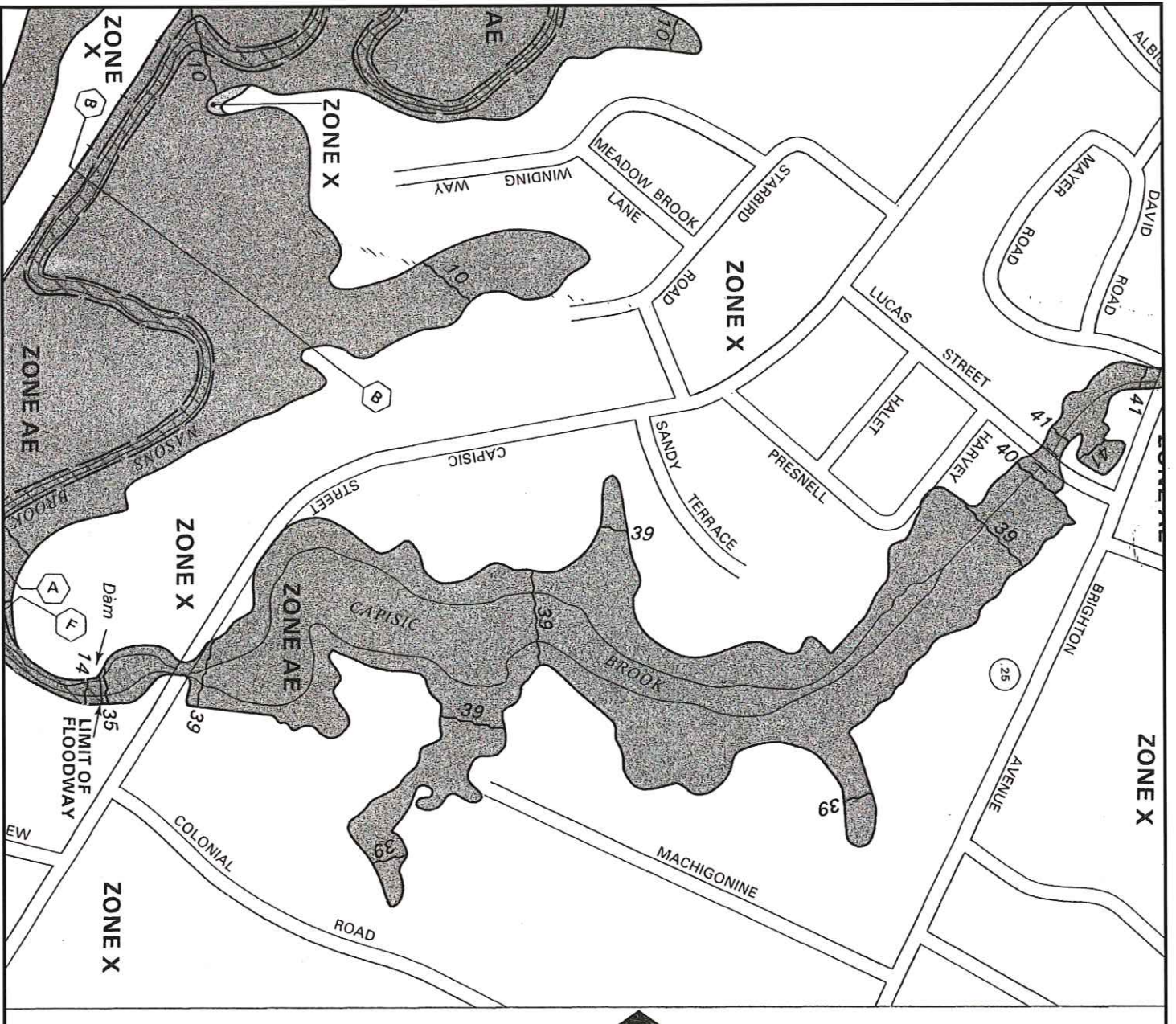
BAR SCALE
 1" = 2000'
 CHECK GRAPHIC SCALE BEFORE USING



PROJECT
 LOCATION

APPENDIX B: SURVEY

APPENDIX C: FEMA FIRMETTE



APPROXIMATE SCALE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PORTLAND,
MAINE
CUMBERLAND COUNTY

PANEL 12 OF 17
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230051 0012 C

MAP REVISED:
DECEMBER 8, 1998

Federal Emergency Management Agency



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

APPENDIX D: WETLAND DELINEATION REPORT & FUNCTIONAL ASSESSMENT



Capisic Pond Park - Portland, Maine
Wetland Delineation Report & Functional Assessment
September 2012



Boyle Associates, Environmental Consultants
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Gorham, Maine 04038
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www.boyleassociates.net



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1. INTRODUCTION

Capisic Pond Park is an approximately 18-acre, city-owned property located in a suburban area of Portland, Maine (Figure 1). Capisic Pond Park is bounded by Capisic Street to the south and west, Lucas Street to the north and Machigonne Street to the east, with several of the property boundaries consisting of residential home lots. The park consists of emergent marsh and mixed forested, shrubby and grassy uplands and wetlands surrounding Capisic Pond. Within the park, a gravel footpath traverses the east side of the pond, generally following over a Portland Water District sewer line. The path runs from a small parking area on the corner of Capisic Street and Macy Street north to a small gravel lot on Lucas Street. There is a small side path that connects to Rockland Avenue. Several mowed trails veer from the main path, allowing access to additional viewpoints of the pond and surrounding habitats. The park is a popular destination for local residents and visitors who use the park primarily for hiking, walking, biking, and nature watching. Uplands within and around the site consist of small areas of woodlands, shrublands and grasslands surrounded by suburban development. Woodlands consist mainly of large tree species such as white pine (*Pinus strobus*) with a shrubby understory of invasive plant species such as honeysuckle (*Lonicera spp.*) and buckthorn (*Frangula* and *Rhamnus spp.*). Residential homes and yards surround most of the site. There are some larger house lots on the western side of the pond. Many areas along the pond are being maintained as lawn up to or very near the edge of the pond.

The park's main visual and habitat feature is Capisic Pond and its surrounding wetlands and riparian habitats. Capisic Pond roughly bisects the property. Fed primarily by Capisic Brook, the pond flows (slowly) from the north to south. Capisic Pond is an approximately 8-acre, manmade freshwater pond. A concrete dam just south of Capisic Street regulates water levels in the pond. Below the dam, Capisic Brook flows south into the Fore River and then to Casco Bay (Figure 2).

Current and past land uses of the park and the upstream and surrounding area have led to significant changes within the pond and its surrounding habitats. The water level in Capisic Pond has decreased due to an increase in sedimentation from upstream sources and to an intentional lowering of the pond to alleviate upgradient stormwater flooding. The lack of depth and increased inflow of nutrients has allowed a flourish of aggressively colonizing cattails (*Typha latifolia* and *T. angustifolia*). The cattails and sediments are changing the pond, making it shallower and reducing the amount of open water habitat. The pond receives inflow from Capisic Brook. Capisic Brook is listed by the Maine Department of Environmental Protection (MDEP) as an Urban-Impaired Stream (Chapter 502 of the Maine Stormwater Management Law). In an effort to improve water quality in Capisic Brook, the City of Portland has initiated several stormwater upgrades, habitat improvements and public outreach campaigns throughout the Capisic Brook watershed. Part of the overall strategy for watershed improvement includes a plan to enhance the wildlife habitats, water quality and land use qualities of Capisic Pond Park. Boyle Associates is working with the City's Engineering and Project Design consultant - Woodard & Curran, to provide wetland and wildlife ecology expertise on portions of the Capisic Pond Park habitat improvement plan. This report provides findings from Boyle Associates investigation of wetland boundaries and functions and values conducted in August, 2012.

1.1 STUDY AREA

The study area includes Capasic Pond Park and a 0.5-acre area south of Capasic Street on which the dam and a portion of the pond are located (see Figures 1 and 2). There is no public access to the portion of the study area south of Capasic Street.

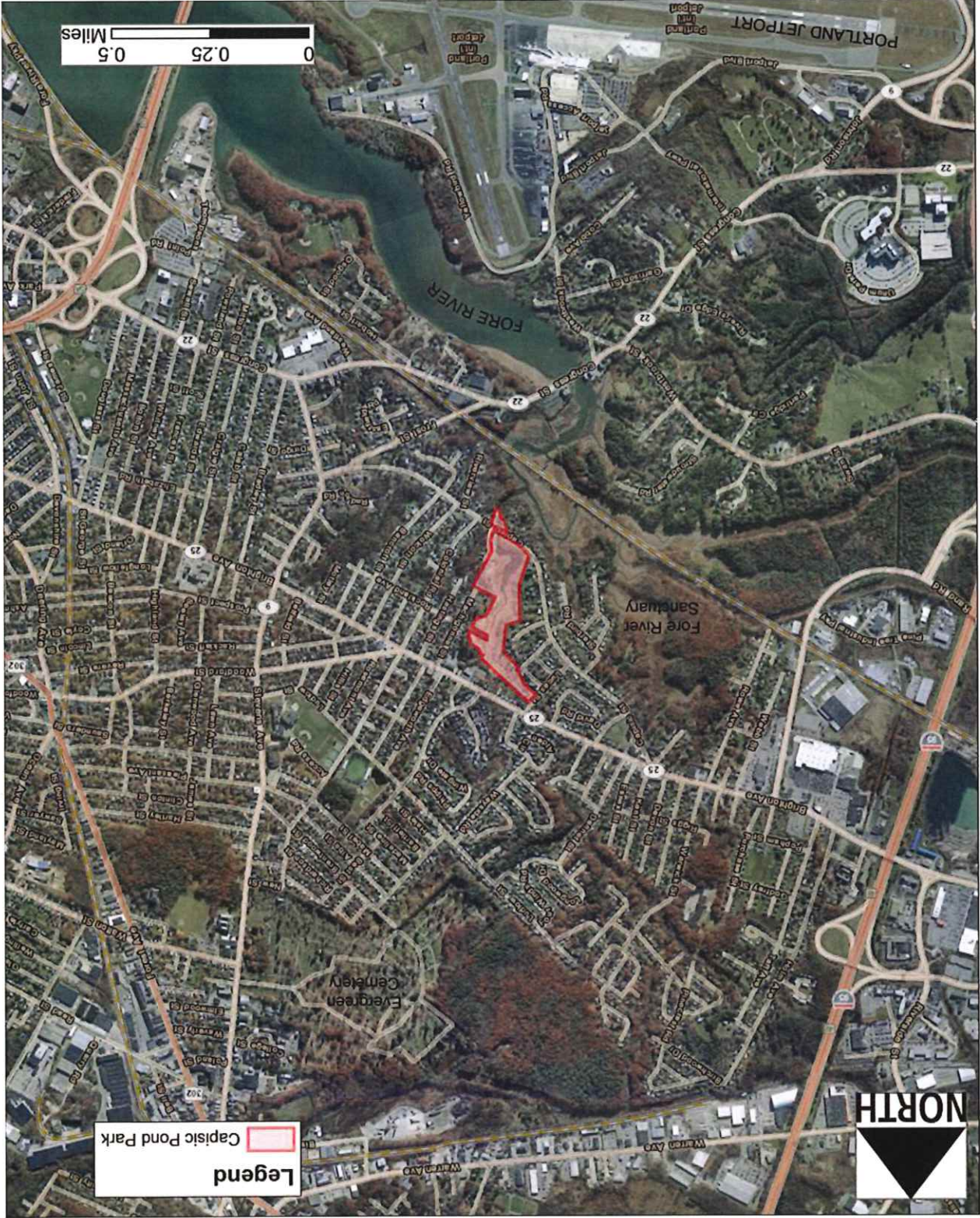


Figure 1. Capisic Pond Park location map (Oct. 2009 aerial photo – ESRI).

Figure 2. Capisic Pond Wetland Delineation and Functional Assessment Study Area (Oct. 2009 aerial photo – ESRI).



2. METHODS

2.1 WETLAND DELINEATION

2.1.1 Selection of Delineation Methodology

Based on current state and United States Army Corps of Engineers (USACE) policy for identifying jurisdictional wetlands, wetland boundaries were determined using the methods described in the 1987 *USACE Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Northcentral and Northeast Region, v2.0*. These methods use a three factor approach for identifying wetlands. The three factors are evidence of hydrology, a dominance of hydrophytic vegetation and the presence hydric soils.

2.1.2 Background Research

Prior to conducting fieldwork, Boyle Associates conducted a thorough review of existing site information including the following:

- United States Geologic Survey (USGS) 7.5-minute (24k) series topographic quadrangle map;
- Cumberland County soil survey from the United States Department of Agriculture/Soil Conservation Service (USDA/SCS, 1974) to determine presence and extent of hydric and upland soils;
- National Wetlands Inventory (NWI) 7.5-minute series quadrangle map from the United States Fish and Wildlife Service (USFWS) to determine the presence of mapped, federally-designated wetlands;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) of Cumberland County, Maine; and,
- Historical records, indexes, reports, and maps (aerial and topographic) of the park and surrounding region – (see Section 4.0 for more information).

2.1.3 Onsite Wetland Boundary Determination

Following a review of the background information, Wetland Scientists from Boyle Associates performed systematic field surveys of the study area. The surveys were initiated with a walk-over inspection of the entire site to identify topographic, drainage and vegetation features that would indicate the presence of wetlands. Next, sample plots were analyzed along transects in order to determine the wetland boundary. Specific methods for sampling, characterizing and evaluating the soils, vegetation, and hydrologic indicators were based on the manual mentioned in Section 2.1.1.

2.1.4 Wetland Vegetation Covertype Mapping

Vegetative covertypes within each wetland were mapped using a combination of GPS location, field sketches and aerial photo interpretation. Each wetland covertype was classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (1979) created by the U.S. Fish and Wildlife Service (also known as the *Cowardin Classification System*). This classification "is intended to describe

ecological taxa, arrange them in a system useful to resource managers, furnish units for mapping, and provide uniformity of concepts and terms. Systems form the highest level of classification hierarchy; these are Marine, Estuarine, Riverine, Lacustrine, and Palustrine. Each system is then further defined using subsystems and classes based on substrate material, hydrologic regime, and vegetative composition. Several modifiers can also be used to further describe each subsystem or class. For example, a freshwater wetland dominated by a forested or woody overstory with mixed deciduous and evergreen vegetation greater than 20 feet tall and seasonally flooded/saturated would be described under Cowardin as: *PFO 1/4E*. The appropriate classification based upon Cowardin system was determined and assigned for each wetland.

2.2 MAPPING

Data collected on the site were mapped using a mapping-grade Global Positioning System (GPS) unit (Trimble GeoXH). A minimum of 30 epochs were collected at each point and data were differentially corrected against fixed data from a commercial base station to ensure sub-meter accuracy. Data were exported to the following coordinate system and datum: NAD 1983, State Plane, Zone Maine West, 1802.

2.3 WETLAND FUNCTIONAL ASSESSMENT

A wetland functional assessment was performed pursuant to the approach described by the Army Corps Highway Methodology Workbook Supplement: Wetland Functions and Values. In this "Descriptive Approach" to functional assessment, the evaluators first determine if particular functions and values are *present* and why, followed by a determination of what functions and values are *principal* and why. Functions and values can be considered "principal" if they are an important physical component of a wetland ecosystem (function only), and/or are considered of special value to society, from a local, regional, and/or national perspective. When making determinations on the wetland, evaluators are encouraged to determine whether the wetland has the *potential* to serve the functions and values as well.

Functions are self-sustaining properties of a wetland ecosystem that exist in the absence of society and that result from both living and non-living components of a specific wetland resource. These include all processes necessary for the self-maintenance of the wetland ecosystem such as primary productivity and nutrient cycling, among others. Therefore, functions relate to the ecological significance of wetland properties without regard to subjective human values.

Values are benefits that derive from one or more functions and the physical characteristics associated with a wetland. Most wetlands have corresponding societal value. The value of a particular wetland function, or combination of functions, is based on human judgment of the worth, merit, quality or importance attributed to those functions.

Groundwater Recharge/Discharge: This function considers the potential for the wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

Floodwater Alteration (Storage & Desynchronization): This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecosystem or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

Fish and Shellfish Habitat: This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in providing fish and shellfish habitat.

Sediment/Toxicant/Pathogen Retention: This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens in runoff water from surrounding uplands, or upstream erosive wetland areas.

Nutrient Removal/Retention/Transformation: This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.

Production Export: This function evaluates the effectiveness of the wetland to produce food or usable products for man or other living organisms.

Sediment/Shoreline Stabilization: This function considers the effectiveness of the wetland in stabilizing stream banks and shorelines against erosion.

Wildlife Habitat: This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and migrating species are considered.

Recreation: This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, boating, canoeing, fishing, hunting and other active or passive recreational activities.

Educational/Scientific Value: This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

Uniqueness/Heritage: This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values, including archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, or its relative importance as a typical wetland class for the geographic location.

Visual Quality/Aesthetics: This value considers the visual and aesthetic quality or usefulness of the wetland.

Endangered Species Habitat: This value considers suitability of the wetland to support threatened or endangered species.

3. RESULTS

3.1 WATERSHED

The survey area is located within the Presumpscot River and Casco Bay watershed (HUC 8: 01060001) and within the Fore River watershed (HUC: 0106000105).

3.2 INVASIVE SPECIES

Invasive species include introduced or non-native species brought to a location by man or some other vector, which adversely affect the natural habitat of a region that they invade economically, environmentally, and/or ecologically. Such species may be either plants or animals and may disrupt ecosystems due to the lack of the natural controls that exist in their native habitats. Typical vectors for invasive species include: water (i.e. seeds or plant fragments floating down a river or stream); wind; animals (either by eating fruits and spreading seeds or by unknowingly transporting seeds on fur and feathers); and transplanting seeds, plant fragments or contaminated soils on equipment, boots, tires, soil, mulch, or other human vectors. Invasive plants may provide some food and habitat value, but they tend to outcompete and crowd out native plants upon which the native animals and insects rely.

Several species and a high-density of invasive plants are found within Capisic Pond Park (see Appendix B for a complete list). Every wetland on the site contains the flowering invasive plant, purple loosestrife (*Lythrum salicaria*). Other invasive plants found within uplands or along wetland boundaries include: bush honeysuckle, glossy buckthorn (*Frangula alnus*), common buckthorn (*Rhamnus cathartica*), multiflora rose (*Rosa multiflora*), Japanese knotweed (*Fallopia japonica*), narrow-leaved cattail (*Typha angustifolia*), and oriental bittersweet (*Celastrus orbiculatus*) – see Appendix B for more information.

Notably absent from the site are the tenacious and common invasive plants common reed (*Phragmites australis*) and autumn olive (*Elaeagnus umbellata*). These plants can be found nearby the site (e.g. within the adjacent Fore River Sanctuary and along Capisic Brook), so their absence in the park is surprising. Future planning and work at the site should include provisions and strategies long-term management of these and all invasive species.

3.3 VERNAL POOLS

No areas within our study were identified as meeting the State of Maine Natural Resources Protection Act (NRPAct) or Army Corps of Engineer's Maine General Permit (GP) definition of a vernal pool.

3.4 WETLANDS & STREAMS

Six wetlands and two streams were identified within the park. The following section includes wetland classifications and descriptions, and a listing of the functions and values determined for each wetland. Table 1 provides a list of wetlands with a brief description; Table 2 provides a list of the streams identified. While each wetland has the potential to provide a variety of functions and values, it should

be noted that impacts and development, both current and historic, have reduced the area's overall ability to provide habitat and value. All wetlands on the site display some sign of impacts and degradation, including draining, trash (including residential yard debris), grading, filling, excavation, and invasive species. Photographs are included in Appendix A.

Table 1. Wetland Survey Results

ID	Type	Classification ¹	WSS ²	Brief Description
A	Scrub- shrub/ Emergent	PSS1E, PEM1E	Yes	Wetland complex draining from outside the eastern boundary into the park. Hydrology from the wetland flows to west and into Capisic Pond via a small culvert under the walking trail. The walking trail appears to be partially impounding flow in the wetland.
B	Emergent	PEM2/1E, PFO1E	No	Mostly herbaceous wet meadow adjacent to the trailhead along Macy Street. Flow tends generally to the southwest and into a culvert. The culvert appears to flow toward the pond, but the downslope outlet could not be located.
C	Emergent	PEM2/1E	No	A small, isolated wet meadow located on a knoll on the eastern side of the property. Hydrology within the wetland did not appear to flow in any particular direction. Ponding was evident post rainfall. The wetland appears to be the result of a historic excavation and provides minor functions or values.
D	Emergent / Scrub- shrub	PEM2/1E, PSS1E	Yes	Wetland complex draining from the eastern boundary and flowing to a shallow basin along the walking trail. Disturbance and fill along the walking trail appear to be impounding the lower elevations within the wetland. Ponding is evident within the wetland post rainfall and water can be seen flowing into the walking trail toward the pond.
E	Emergent / Scrub- shrub	PEM2/1E, PSS1E	Yes	Wetland complex along the eastern parcel boundary. Very little of this resource is within the survey area. The wetland drains from northwest and onto the site. Water is being impounded within the lower elevations of the wetland along the walking trail. A culvert was found draining from wetland E into the pond (wetland F).
F	Emergent / Open Water	PEM1J, PUB3	Yes	Large wetland/pond complex fed by Capisic Brook. The pond is impounded by a weir dam on the south side of Capisic Street and contains large areas of open water habitat interspersed with cattail marsh.

¹ Per Cowardin et al. 1979.
² Wetland of Special Significance

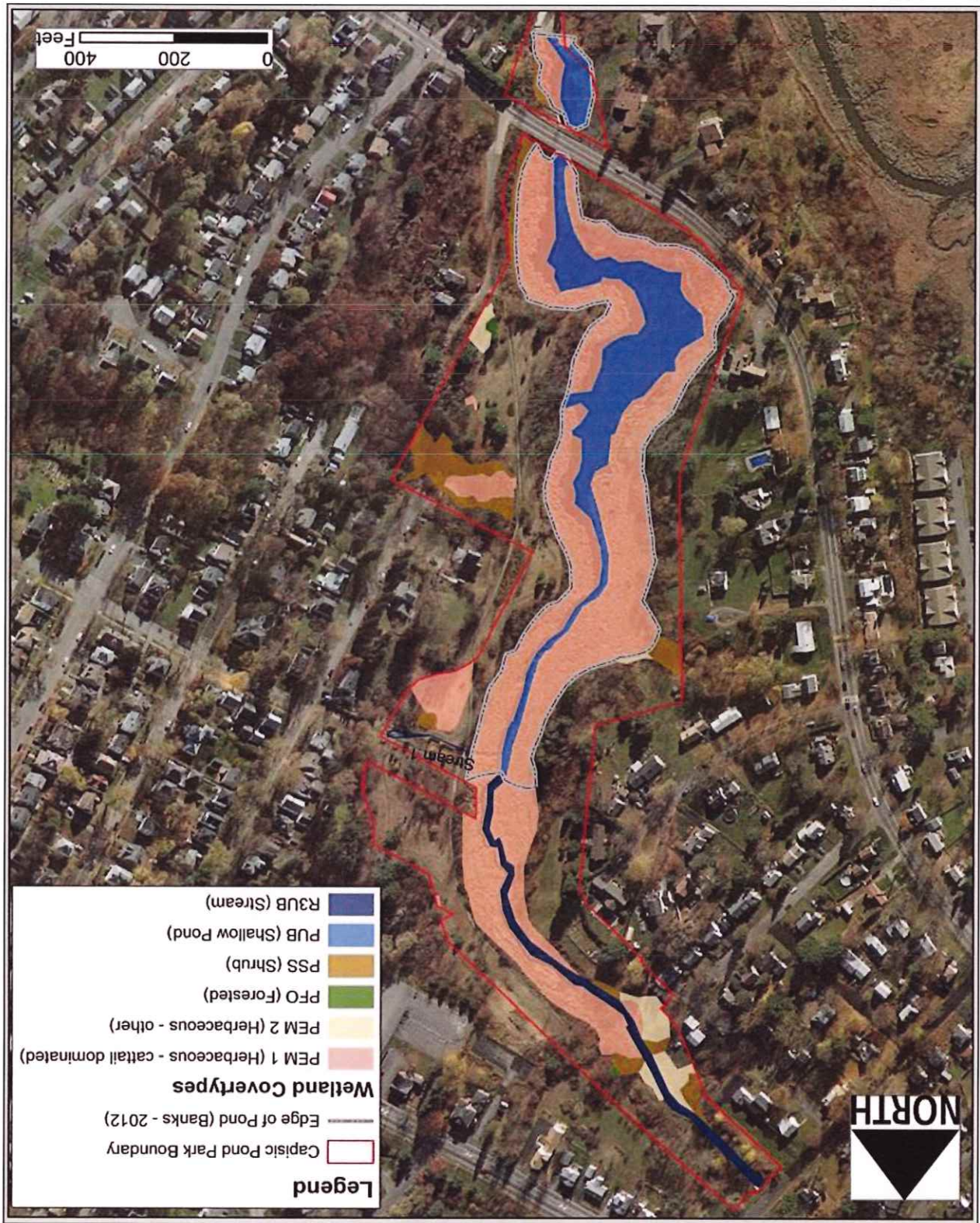
Table 2. Stream Survey Results

ID	Stream Type	Width	Depth	Substrate	Comments
1	Perennial	3-15'	18"	Boulder, cobble, gravel, sand, mud	Stream 1 (unnamed) begins at the Rockland Avenue outfall and flows for a short distance before entering Capasic Pond on the west side of the gravel trail. Stream is eroded and receives strong, concentrated stormwater flows post heavy rain events.
2	Perennial	15-20'	12-24"	Cobble, sand, mud	Within the survey area, stream 2 (Capasic Brook) flows south under Lucas Street through shady shrub habitat toward Capasic Pond. Directly south of Lucas Street the brook is shallow, fast moving, and rocky. As the stream approaches the pond, the habitat opens to emergent marsh and becomes deeper and meandering with slower water velocities before becoming open water and emergent marsh (i.e. Capasic Pond); the stream reforms as a fast-moving rocky-bottom stream below the dam south of Capasic Street (outside of study area).

Figure 3. Capisic Pond Park Wetland Map



Figure 4. Wetland Covertypes



3.4.1 Wetland A

Cowardin Classification: Dominant class: PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

Other classes present: PEM1/2E – Palustrine emergent, seasonally saturated/flooded.

General Description: Wetland A is located in a narrow valley between the gravel walking trail and eastern parcel boundary. The margins of the wetland are comprised of a thick shrubby tangle of invasive and native shrubs. Evidence of historic and current filling along the wetland boundary is apparent. Due to the dense shrub growth and past land disturbances, the boundary between wetland and upland has been partially obscured. Hydrology within the wetland flows generally to the west toward Capisic Pond. A culvert located on the downslope side of the wetland along the walking trail appears to channel hydrology from wetland A into Capisic Pond (known herein as wetland F). Water was observed impounded against the fill extensions from the gravel trail.

Dominant Vegetation: Trees: Black willow (*Salix nigra*)

Shrubs: Speckled alder (*Alnus incana* var. *rugosa*), silky dogwood (*Cornus amomum*), witherod (*Viburnum nudum* var. *cassinoides*), and bush honeysuckle.

Herbs: Broadleaf cattail (*Typha latifolia*), woolgrass (*Scirpus cyperinus*), broadleaf arrowhead (*Sagittaria latifolia*), purple loosestrife, and white turtlehead (*Chelone glabra*).

Soils and Hydrology: Indicators of wetland hydrology are ponded surface water (flooded to approximately 6" in August 2012), saturation of the soil to the surface, water-stained leaves within the shrub-dominated portions of the wetland, and drainage patterns throughout the wetland. Soils within wetland A are lacking an A-horizon (i.e. topsoil). This layer may have been removed during dredging or other site work in the past. The B-horizon (subsoil) consists of a gleyed matrix with redoximorphic features. Gleyed matrices are soils with a blue-green color and are indicative of prolonged saturation.

Wetlands of Special Significance: This wetland meets the Maine NRP definition of a Wetland of Special Significance (WSS) due to the fact that it is located entirely within a FEMA 100-year floodzone and contains Significant Wildlife Habitat (IWWH).

Functional Assessment: Wetland A provides or has the potential to provide the following functions and values: groundwater recharge/dischARGE, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, sediment and shoreline stabilization and wildlife habitat. The capacity for the resource to provide these functions has been reduced due to its position within a developed landscape.

The principal function served by wetland A is floodflow alteration. Wetland A is found within a narrow valley, it has a constricted outlet, it has dense shrub and herbaceous vegetation, and it has a broad, flat

topography; these features enable the wetland to store significant amounts of floodwater and runoff from the surrounding landscape. Additionally, much of the surrounding area near wetland A consists of impervious and semi-impervious surfaces (roads, houses, yards, driveways, etc.). During rain events, large amounts of runoff flow into the wetland, both overland and from stormwater outlets. The makeup of wetland A allows it to slow floodwaters, giving them time to infiltrate into the soil.

3.4.2 Wetland B

Cowardin Classification: Dominant class: PEM2/1E (Palustrine emergent, seasonally saturated/flooded).

Other classes present: PFO1E (Palustrine forested, broad-leaved deciduous, seasonally saturated/flooded).

General Description: Wetland B is located along the east side of the trail near the trailhead abutting Macy Street. Flow within the wetland tends to the south toward a culvert. The culvert appears to flow toward the pond, but an outlet could not be found (the culvert may drain into the City's stormwater conveyance system that runs under the park trail).

Dominant Vegetation: Trees: Red maple (*Acer rubrum*).

Shrubs: White meadowsweet (*Spiraea alba* var. *latifolia*).
Herbs: Flat-top goldenrod (*Euthamia graminifolia*), jewelweed (*Impatiens capensis*), woolgrass, multiflora rose (*Rosa multiflora*), sensitive fern (*Onoclea sensibilis*), swamp rose (*Rosa palustris*), parasol whitetop (*Doellingeria umbellata*), and giant goldenrod (*Solidago gigantea*).

Soils and Hydrology: Soils within wetland B consist of a thick, dark, A-horizon underlain by a B-horizon with a depleted matrix within 10 inches of the mineral soil surface. Hydrology observed at the time of delineation was limited, but included water-stained leaves and drainage patterns. An inlet culvert was noted in the lowest portion of the wetland, near the park trailhead. An outlet into the pond could not be found. It is possible that the wetland is being drained into the stormwater system that runs along the park trail.

Wetlands of Special Significance: Based on field observations and office review of existing data, this wetland does meet any of the Maine NRPA criteria to be defined as a WSS.

Functional Assessment: Wetland B provides or has the potential to provide the following functions and values: groundwater recharge/dischARGE, floodflow alteration, sediment/toxicant retention, nutrient removal, and wildlife habitat. While the wetland has the capacity to provide the above-listed functions, none of these functions can be considered principal, as the resource's ability to provide these functions is limited by the size of the wetland and by development of the wetland and the surrounding landscape.

3.4.3 Wetland C

Cowardin Classification: Dominant class: PEM2/1E – Palustrine emergent, seasonally saturated/flooded.

General Description: Wetland C is a small, isolated wetland located along a grassy side trail of the park near the eastern property boundary and slightly south of wetland A. Wetland C appears to have been created by disturbance. Over time, the compaction of the soil in the small depression has caused extended periods of surface water ponding, saturating the soil and favoring hydrophytic vegetation to colonize the small basin.

Vegetation: Trees: None observed

Shrubs: None observed

Herbs: Flat-top goldenrod (*Euthamia graminifolia*), purple loosestrife, woolgrass, and New York aster (*Symphoricarpos novi-belgii*).

Soils and Hydrology: Soils in wetland C consist of a thick, dark A-horizon with redoximorphic features underlain by a B-horizon with a depleted matrix. The A-horizon was very compact and overlies a dense, impermeous layer of silty-clay. Evidence of hydrology consists of standing water (approximately three inches deep at the time of survey) and saturation to the soil surface.

Wetlands of Special Significance: This wetland is a small, isolated and potentially manmade feature, but due to the fact that it contains Significant Wildlife Habitat (IWWH), the wetland is considered WSS.

Functional Assessment: Wetland C provides or has the potential to provide the following functions and values: groundwater recharge/discharge and wildlife habitat. However, due to its small size and location next to the trail, no principal functions or values were identified for the resource.

3.4.4 Wetland D

Cowardin Classification: Dominant class: PEM2/1E – Palustrine emergent, seasonally saturated/flooded.

Other classes present: PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

General Description: Wetland D is a mixed herbaceous and shrub wetland located along the eastern boundary of the site, just south of Rockland Avenue. The wetland is located just south of Stream 1, that begins at the Rockland Avenue stormwater discharge site.

Vegetation: Trees: None observed

Shrubs: Silky dogwood, wither-rod and tamarack (*Larix laricina*).

Herbs: Common rush (*Juncus effusus*), giant goldenrod, parasol whitetop, flat-top goldenrod, purple loosestrife, woolgrass, and Pennsylvania smartweed (*Polygonum pennsylvanicum*).

Soils and Hydrology: Soils within wetland D have a dark A-horizon made of gravelly fill material. Below the A-horizon, a hardpan, impervious B-horizon with mixed loamy-silty-clay B-horizon was observed. The B-horizon has a depleted matrix and many redoximorphic features.

Water flowing into the wetland from the northwest tends to back up against the Capisic Pond Park trail, adding to the small wetland's hydrology. Hydrologic indicators include periodic standing water in some of the lower areas of the wetland and a generally high water table (presumably perched on the hard silty-clay horizon). Additional indicators of wetness include sediment deposits from previous flooding events and surface soil cracks along the park trail.

Wetlands of Special Significance: Wetland D meets the Maine NRPA definition of WSS due to the fact that is located entirely within a FEMA 100-year floodplain and contains Significant Wildlife Habitat (IWWH).

Functional Assessment: Wetland D provides or has the potential to provide the following functions and values: groundwater recharge/dischARGE, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, and sediment and shoreline stabilization. Several of the functions and values are being provided, but the capacity for the resource to provide those functions is limited due to its size, location and the surrounding, developed landscape. While the wetland has the capacity to provide the above-listed functions, the principal function served by wetland D is floodflow alteration.

Wetland D slopes gradually toward Capisic Pond, and slows and holds some stormwater runoff prior to it entering the pond. Additionally, the wetland appears to receive some overflow from the Rockland Avenue outfall during periods of high runoff. During these events, large amounts of runoff flow into the wetland, both overland and from the stormwater outlet. The makeup of wetland A allows it to slow floodwaters, giving them time to infiltrate the topsoil.

3.4.5 Wetland E

Cowardin Classification: Dominant class: PEM1/2E – Palustrine emergent, seasonally saturated/flooded.

Other classes present: PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

General Description: Wetland E is located in a narrow valley on the east side of the trail – only a small portion of the wetland is located within the study area. Wetland E is very similar to Wetland A. Drainage patterns were noted throughout the wetland and water is being impounded along the park trail. A culvert was observed along the trail; the culvert appears to drain floodwater from wetland E and outlets into the wetland associated with Capisic Pond (Wetland F).

Vegetation: *Trees:* None observed

Shrubs: Black willow

Herbs: Purple loosestrife, jewelweed, swamp rose, common rush, beggar's tick (*Bidens frondosa*), fringed sedge (*Carex crinita*), New York aster, and New England aster (*Symphotrichum novae-angliae*).

Soils and Hydrology: The topsoil in wetland E consists of a thin, silt-loam A-horizon underlain by a silty-clay B-horizon with a depleted matrix and redoximorphic features. Evidence of hydrology includes surface water and soil saturation to the surface.

Wetlands of Special Significance: Wetland E meets the Maine NRP A definition of a WSS because it is located entirely within a FEMA 100-year floodplain and contains Significant Wildlife Habitat (IWWH).
Functional Assessment: Wetland E provides or has the potential to provide the following functions and values: groundwater recharge/dischARGE, floodflow alteration, sediment/toxicant retention, nutrient removal, production export, sediment and shoreline stabilization and wildlife habitat. Several of the functions and values are being provided, but the capacity for the resource to provide those functions is limited due to its small size, its location and its developed surroundings. The principal function served by wetland E is floodflow alteration.

Wetland E is in a similar landscape position as Wetland A. It has a broad basin located adjacent to the gravel trail. Water is impounded along the trail. The standing water slowly infiltrates the soil, attenuating runoff during periods of heavy storm flows.

3.4.6 Wetland F

Cowardin Classification: Dominant class: PEM1/ZE – Palustrine emergent, seasonally saturated/flooded.

Other classes present: PUB – Palustrine unconsolidated bottom; PSS1E – Palustrine scrub-shrub, broad-leaved deciduous, seasonally saturated/flooded.

General Description: Wetland F includes Capisic Pond and its associated riparian wetlands. It covers approximately 10 acres of the study area. In general, Wetland F consists of a dammed, freshwater pond immediately bordered by treed uplands and emergent floodplain wetlands. A few shrubby wetland swales drain into the pond from the west. The wetland is bordered by some of the cleared grasslands and trails of the park to the east and suburban homes and lawns to the west. Wetland F is fed by Capisic Brook from the northwest. Capisic Brook has a narrow, mostly herbaceous floodplain near the northwestern end of the park before it drains into the pond.

The original Capisic Pond dam was constructed on Capisic Brook in the 1600s to power a grist and saw mill. Eventually, in the middle of the 20th century, the City of Portland began managing the dam as a component of its combined sewer/stormwater system. The City rebuilt the dam in its current location on the south side of Capisic Street in 1954. The most recent dam reconstructions, in 1996 and again in 2001, lowered the outlet in order to reduce stormwater flooding issues upstream in the Capisic Brook watershed.

Capisic Pond was last dredged in the 1950s. Over the years, as expansion of impervious surface from development has increased runoff into Capisic Brook, sediments have built up in the pond. The sedimentation, combined with the lower water elevation afforded by the dam lowering efforts of 1996 and 2001, has reduced the water level in the pond. The shallow, turbid water favors the growth of cattails, which outcompete most other species in these types of habitats. A review of historic aerial

photographs has shown a decrease in the open water component of the park over the last few decades, with the largest cattail expansion taking place within the last 10-15 years (see Figure 5) .



Figure 5. 2001 aerial imagery (top) compared with a 2009 image (bottom) indicates expansive growth of cattails around the pond margins and interior.

Vegetation: Trees: American elm (*Ulmus americana*).

Shrubs: Withé-rod, bush honeysuckle and silky dogwood.

Herbs: broadleaf cattail, narrowleaf cattail (*Typha angustifolia*), jewelweed, common duckweed (*Lemna minor*), broadleaf arrowhead, wild cucumber (*Echinocystis lobata*), variegated yellow pond-lily (*Nuphar lutea*), American white waterlily (*Nymphaea odorata*), pickerelweed (*Pontederia cordata*), floating pondweed (*Potamogeton natans*), and coontail species (*Ceratophyllum* sp.).

Soils and Hydrology: Soil within the open water portion of Wetland F consists of deep mucky silt and clay. Soil within the herbaceous plant-dominated portions of Wetland F consist a thick organic soils (also known as histosols).

Evidence of hydrology in Wetland F include surface water approximately four inches in depth, a high water table, saturation to the soil surface, sediment deposits, drift deposits ("wrack"), water-stained leaves, and drainage patterns.

Wetlands of Special Significance: Wetland F meets the criteria of a WSS due to the fact that is located entirely within a FEMA 100-year floodplain, contains greater than 20,000 square feet of open water or

emergent marsh vegetation, and contains significant wildlife habitat (moderate value IWWH as described in the NRPA). Additionally, all wetlands located within 25-feet of Capisic Brook are considered WSS.

Functional Assessment: Wetland F contains Capisic Brook and Capisic Pond. Historic alteration of the surrounding land has significantly altered the natural stream and surrounding wetland resources (e.g. creating the pond, clearing the riparian forests, sedimentation, etc.). One recent (i.e. within the last decade) but major change has been the growth of a cattail monoculture along the pond margins and into the pond center. The expansion of cattails has affected the functionality of the pond, effectively reducing the open water component and increasing the emergent wetland area. However, Capisic Pond and its surrounding wetland are still large, diverse and unique enough to provide important functions and values within the surrounding watershed. Wetland F provides or has the potential to provide the following functions and values: groundwater recharge/dischARGE, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, production export, sediment and shoreline stabilization, wildlife habitat, recreation, educational/scientific value, uniqueness/heritage, and visual quality/aesthetics. Principal functions and values served by wetland F include sediment/toxicant retention, wildlife habitat, recreation, and uniqueness/heritage. These functions and values will be discussed below.

Sediment/Toxicant Retention: Sediment runs to the pond from stormwater outfalls and in runoff from surrounding developed and impervious surfaces. The pond can receive sediment and other pollutants from surface runoff and retain the materials in thick emergent marsh vegetation and allow materials to precipitate in the slow moving water of the pond.

Wildlife Habitat: The pond and its surrounding wetlands provide an important habitat island within an otherwise developed landscape. The wetland provides food, shelter, refugia, and breeding habitat for a variety of wildlife (see Appendix C).

Recreational Value: The pond is bordered on the east by a half-mile hiking trail and is encompassed by city-owned lands designating the area as a park. The trails provide access through the habitats within the park and are used for hiking, biking, bird-watching, dog walking, and "morning strolls". The trails are included within a large, citywide trail system and are managed by Portland Trails (www.trails.org). Additionally, the pond itself has been traditionally used for ice skating.

Uniqueness/Heritage Value: The pond's long history and relevance to Portland's early development is well-documented. Historic use of the pond dates back as far as the late 1600s. The dam site was originally used as a gristmill and sawmill built at the falls of Capisic Brook (near the existing dam structure). Of more recent uniqueness value, Capisic Pond remains the largest freshwater pond in the city.

4.0 REFERENCES



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(All photos taken July-August, 2012 by Boyle Associates.)




PHOTOGRAPHIC RECORD




APPENDIX A




<p>Description: Looking south across PFO/PFM area of Wetland B near trailhead by Macy Street.</p>	
<p>Description: Looking southeast from park trail at herbaceous-dominated, lower elevations of Wetland A.</p>	
<p>Description: Looking north-northwest from Capisic Street bridge at Capisic Pond (Wetland F).</p>	

<p>Description: Looking southeast at Wetland D from main trail near bridge over Rockland Avenue outfall.</p>	
<p>Description: Looking east at Wetland D from main trail.</p>	
<p>Description: Looking east at isolated emergent plant-dominated Wetland C from grassy side trail.</p>	

<p>Description: Looking northeast over cattail-dominated section of Wetland F from large blown down white pine on west side of pond.</p>	
<p>Description: Looking northwest at Wetland F from southern, open water portion of Capisic Pond.</p>	
<p>Description: Looking east at Wetland E from main trail.</p>	

<p>Description: Looking west at Stream 1 from timber bridge along gravel trail.</p>	
<p>Description: Looking east at Rockland Avenue outfall and start of Stream 1.</p>	
<p>Description: Looking south across Wetland F from blown down pine on west side of pond.</p>	

<p>Description: Looking south at Capisic Brook (Stream 2) near Lucas Street.</p>	
<p>Description: Looking northwest at Capisic Brook (Stream 2) under Lucas Street.</p>	
<p>Description: Looking south along Capisic Brook (Stream 2) from the north-central portion of Wetland F.</p>	

<p>Description: Concrete diversion chamber below weir dam.</p>	
<p>Description: Capasic Brook, below the weir dam, spills over granite outcrops and into a deep-walled granite valley.</p>	
<p>Description: Look north at the weir dam on the south side of Capasic Street.</p>	

<p>Description: Young snapping turtle found crossing Macy Street.</p>	 A photograph showing a young snapping turtle crossing a gravelly or dirt surface. The turtle is dark in color and is positioned in the center of the frame, moving from left to right.
<p>Description: Capisic Pond Park trailhead.</p>	 A photograph of a trailhead area. In the foreground, there is a wooden signpost with a red sign that reads "Capisic Pond Park" and a larger informational sign. The background shows a grassy area with trees and a body of water.
<p>Description: Looking north within former pond area of Wetland F. Near complete cattail encroachment has occurred through the central portion of pond.</p>	 A photograph showing a narrow waterway or pond. The water is dark and reflects the sky. The banks are heavily encroached with tall, dark cattails and other vegetation. The sky is blue with some clouds.

LIST OF PLANT SPECIES OBSERVED (2012)

APPENDIX B

Family	Scientific name	Common Name	Noxious or invasive
Aceraceae	<i>Acer rubrum</i>	red maple	
Aceraceae	<i>Acer negundo</i>	boxelder	
Aceraceae	<i>Acer saccharinum</i>	silver maple	
Aceraceae	<i>Acer platanoides</i>	Norway maple	X
Adoxaceae	<i>Sambucus nigra</i>	black elderberry	
Allismataceae	<i>Sagittaria latifolia</i>	common arrowhead	
Anacardiaceae	<i>Rhus typhina</i>	staghorn sumac	
Apiaceae	<i>Daucus carota</i>	Queen Anne's lace	
Asclepiadaceae	<i>Asclepias syriaca</i>	common milkweed	
Asteraceae	<i>Symphotrichum novae-angliae</i>	New England aster	
Asteraceae	<i>Euthamia graminifolia</i>	flat-top goldenrod	
Asteraceae	<i>Solidago gigantea</i>	giant goldenrod	
Asteraceae	<i>Solidago rugosa</i>	wrinkleleaf goldenrod	
Asteraceae	<i>Doellingeria umbellata</i>	parasol whitetop	
Asteraceae	<i>Hieracium sp.</i>	hawkweed	
Asteraceae	<i>Achillea millefolium</i>	yarrow	
Asteraceae	<i>Arctium sp.</i>	burdock	
Asteraceae	<i>Bidens frondosa</i>	devil's beggartick	
Asteraceae	<i>Helianthus tuberosa</i>	Jerusalem artichoke	
Asteraceae	<i>Ambrosia sp.</i>	ragweed	
Asteraceae	<i>Rudbeckia hirta</i>	blackeyed Susan	
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	
Asteraceae	<i>Cirsium arvense</i>	Canada thistle	X
Asteraceae	<i>Taraxacum officinale</i>	dandelion	
Asteraceae	<i>Cichorium intybus</i>	chicory	
Asteraceae	<i>Centaura sp.</i>	knawweed	
Balsaminaceae	<i>Impatiens capensis</i>	jewelweed	
Balsaminaceae	<i>Impatiens glandulifera</i>	ornamental jewelweed	X
Betulaceae	<i>Alnus incana var. rugosa</i>	speckled alder	
Campanulaceae	<i>Campanula rotundifolia</i>	bluebell bellflower	
Caprifoliaceae	<i>Viburnum nudum var. cassinoides</i>	withe-rod	
Caprifoliaceae	<i>Viburnum dentatum</i>	southern arrowwood	
Caprifoliaceae	<i>Viburnum opulus var. americanum</i>	hibusbush cranberry	
Caprifoliaceae	<i>Loniceria sp.</i>	honeysuckle	X
Celastraceae	<i>Celastrus orbiculatus</i>	Oriental bittersweet	X
Celastraceae	<i>Euonymus alatus</i>	burningbush	X
Ceratophyllaceae	<i>Ceratophyllum demersum</i>	coon's tail	
Cornaceae	<i>Cornus amomum</i>	silky dogwood	
Cornaceae	<i>Cornus racemosa</i>	gray dogwood	

Noxious or invasive	Common Name	Scientific name	Family
	wild cucumber	<i>Echinocystis lobata</i>	Cucurbitaceae
	common juniper	<i>Juniperus communis</i>	Cupressaceae
	woolgrass	<i>Scirpus cyperinus</i>	Cyperaceae
	sensitive fern	<i>Onoclea sensibilis</i>	Dryopteridaceae
	lupine	<i>Lupinus sp.</i>	Fabaceae
X	bird's-foot trefoil	<i>Lotus corniculatus</i>	Fabaceae
X	black locust	<i>Robinia pseudacacia</i>	Fabaceae
	cow vetch	<i>Vicia cracca</i>	Fabaceae
X	crown vetch	<i>Securigera varia</i>	Fabaceae
	red clover	<i>Trifolium pratense</i>	Fabaceae
	white clover	<i>Trifolium repens</i>	Fabaceae
	northern red oak	<i>Quercus rubra</i>	Fagaceae
	common rush	<i>Juncus effusus</i>	Juncaceae
	wild bergamot	<i>Monarda fistulosa</i>	Lamiaceae
X	asparagus	<i>Asparagus officinalis</i>	Liliaceae
X	purple loosestrife	<i>Lythrum salicaria</i>	Lythraceae
	evening primrose	<i>Oenothera sp.</i>	Onagraceae
	blue spruce	<i>Picea pungens</i>	Pinaceae
	Scots pine	<i>Pinus sylvestris</i>	Pinaceae
	red spruce	<i>Picea rubens</i>	Pinaceae
	white pine	<i>Pinus strobus</i>	Pinaceae
	larch	<i>Larix laricina</i>	Pinaceae
	plantain	<i>Plantago major</i>	Plantaginaceae
	crabgrass	<i>Digitaria sp.</i>	Poaceae
	switchgrass	<i>Panicum virgatum</i>	Poaceae
	orchard grass	<i>Dactylis glomeratus</i>	Poaceae
	little bluestem	<i>Schizachyrium scoparium</i>	Poaceae
	perennial ryegrass	<i>Lolium perenne</i>	Poaceae
	barnyard grass	<i>Echinochloa sp.</i>	Poaceae
	timothy	<i>Phleum pratense</i>	Poaceae
	Virginia wild rye	<i>Elymus virginicus</i>	Poaceae
	Deertonigue grass	<i>Dichanthelium clandestinum</i>	Poaceae
X	reedcanary grass	<i>Phalaris arundinacea</i>	Poaceae
	arrowleaf tearthumb	<i>Polygonum sagittatum</i>	Polygonaceae
	curly dock	<i>Rumex crispus</i>	Polygonaceae
	Japanese knotweed	<i>Polygonum cuspidatum</i>	Polygonaceae
	Pennsylvania smartweed	<i>Polygonum pennsylvanicum</i>	Polygonaceae
	swamp candle	<i>Lysimachia terrestris</i>	Primulaceae
	buttercup	<i>Ranunculus sp.</i>	Ranunculaceae

Family	Scientific name	Common Name	Noxious or invasive
Ranunculaceae	<i>Thalictrum</i> sp.	meadow-rue	
Rhamnaceae	<i>Rhamnus cathartica</i>	common buckhorn	X
Rhamnaceae	<i>Rhamnus frangula</i>	glossy buckhorn	X
Rosaceae	<i>Rosa palustris</i>	swamp rose	
Rosaceae	<i>Amelanchier canadensis</i>	Canadian serviceberry	
Rosaceae	<i>Photinia melanocarpa</i>	black chokeberry	
Rosaceae	<i>Prunus nigra</i>	Canadian plum	
Rosaceae	<i>Crataegus</i> sp.	hawthorn	
Rosaceae	<i>Rosa multiflora</i>	multiflora rose	X
Rosaceae	<i>Rubus hispida</i>	bristly dewberry	
Rosaceae	<i>Rubus allegheniensis</i>	Allegheny blackberry	
Rosaceae	<i>Malus</i> sp.	crabapple	
Rubiaceae	<i>Cephalanthus occidentalis</i>	common buttonbush	
Salicaceae	<i>Salix discolor</i>	pussy willow	
Salicaceae	<i>Salix nigra</i>	black willow	
Salicaceae	<i>Populus tremuloides</i>	quaking aspen	
Scrophulariaceae	<i>Chelone glabra</i>	white turtlehead	
Tiliaceae	<i>Tilia americana</i>	basswood	
Typhaceae	<i>Typha latifolia</i>	broadleaf cattail	X
Typhaceae	<i>Typha angustifolia</i>	narrowleaf cattail	X
Ulmaceae	<i>Ulmus americana</i>	American elm	
Verbenaceae	<i>Verbena hastata</i>	Swamp verberna	
Vitaceae	<i>Vitis</i> sp.	wild grape vine	

ANIMAL SPECIES LIST

APPENDIX C

BIRDS		
Common name	Species name	Field observed
		E-bird sighting*
Alder flycatcher	<i>Empidonax alnorum</i>	X
American black duck	<i>Anas rubripes</i>	X
American coot	<i>Fulica americana</i>	X
American crow	<i>Corvus brachyrhynchos</i>	X
American goldfinch	<i>Spinus tristis</i>	X
American kestrel	<i>Falco sparverius</i>	X
American redstart	<i>Setophaga ruticilla</i>	X
American robin	<i>Turdus migratorius</i>	X
American tree sparrow	<i>Spizella arborea</i>	X
American wigeon	<i>Anas americana</i>	X
American woodcock	<i>Scolopax minor</i>	X
Baltimore oriole	<i>Icterus galbula</i>	X
Bank swallow	<i>Riparia riparia</i>	X
Barn swallow	<i>Hirundo rustica</i>	X
Belted kingfisher	<i>Magacyeryle alcyon</i>	X
Black-and-white warbler	<i>Mniotilta varia</i>	X
Blackburnian warbler	<i>Dendroica fusca</i>	X
Black-capped chickadee	<i>Poecile atricapillus</i>	X
Black-crowned night heron	<i>Nycticorax nycticorax</i>	X
Blackpoll warbler	<i>Dendroica striata</i>	X
Black-throated blue warbler	<i>Dendroica caerulescens</i>	X
Black-throated green warbler	<i>Dendroica virens</i>	X
Blue Jay	<i>Cyanocitta cristata</i>	X
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>	X
Blue-headed vireo	<i>Vireo solitarius</i>	X
Bobolink	<i>Dolichonyx oryzivorus</i>	X
Bohemian waxwing	<i>Bombycilla garrulus</i>	X
Broad-winged hawk	<i>Buteo platypterus</i>	X
Brown thrasher	<i>Toxostoma rufum</i>	X
Brown-headed cowbird	<i>Molothrus ater</i>	X
Canada goose	<i>Branta canadensis</i>	X
Canada warbler	<i>Wilsonia canadensis</i>	X
Cape May warbler	<i>Dendroica tigrina</i>	X
Northern cardinal	<i>Cardinalis cardinalis</i>	X
Carolina wren	<i>Thryothorus ludovicianus</i>	X
Cedar waxwing	<i>Bombycilla cedrorum</i>	X
Chestnut-sided warbler	<i>Dendroica pensylvanica</i>	X
Chimney swift	<i>Chaetura pelagica</i>	X

BIRDS		
Common name	Species name	Field observed
		E-bird sighting*
Chipping sparrow	<i>Spizella passerina</i>	X
Climax swallow	<i>Petrochelidon pyrrhonota</i>	X
Common grackle	<i>Quiscalus quisculus</i>	X
Common loon	<i>Gavia immer</i>	X
Common yellowthroat	<i>Geothlypis trichas</i>	X
Cooper's hawk	<i>Accipiter cooperii</i>	X
Dark-eyed junco	<i>Junco hyemalis</i>	X
Double-crested cormorant	<i>Phalacrocorax auritus</i>	X
Downy woodpecker	<i>Picoides pubescens</i>	X
Eastern bluebird	<i>Sialia sialis</i>	X
Eastern kingbird	<i>Tyrannus tyrannus</i>	X
Eastern phoebe	<i>Sayornis phoebe</i>	X
Eastern towhee	<i>Pipilo erythrophthalmus</i>	X
Eastern wood-pewee	<i>Contopus virens</i>	X
European starling	<i>Sturnus vulgaris</i>	X
Gadwall	<i>Anas strepera</i>	X
Gray catbird	<i>Dumetella carolinensis</i>	X
Great black-backed gull	<i>Larus marinus</i>	X
Great blue heron	<i>Ardea herodias</i>	X
Great crested flycatcher	<i>Myiarchus crinitus</i>	X
Great egret	<i>Ardea alba</i>	X
Greater yellowlegs	<i>Tringa melanoleuca</i>	X
Green heron	<i>Butorides virescens</i>	X
Hairy woodpecker	<i>Picoides villosus</i>	X
Hermit thrush	<i>Catharus guttatus</i>	X
Herring gull	<i>Larus argentatus</i>	X
Hooded merganser	<i>Lophodytes cucullatus</i>	X
House finch	<i>Carpodacus mexicanus</i>	X
House sparrow	<i>Passer domesticus</i>	X
House wren	<i>Troglodytes aedon</i>	X
Lark sparrow	<i>Chondestes grammacus</i>	X
Least flycatcher	<i>Empidonax minimus</i>	X
Least sandpiper	<i>Calidris minutilla</i>	X
Lincoln's sparrow	<i>Melospiza lincolni</i>	X
Magnolia warbler	<i>Dendroica magnaolia</i>	X
Mallard	<i>Anas platyrhynchos</i>	X
Merlin	<i>Falco columbarius</i>	X
Mourning dove	<i>Zenaidura macroura</i>	X

BIRDS			
Common name	Species name	Field observed	E-bird sighting*
Mourning warbler	<i>Oporornis philaedelpia</i>		X
Nashville warbler	<i>Oreothlypis ruficapilla</i>		X
Northern flicker	<i>Colaptes auratus</i>		X
Northern mockingbird	<i>Mimus polyglottos</i>		X
Northern parula	<i>Parula americana</i>	X	X
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>		X
Northern waterthrush	<i>Parus noveboracensis</i>		X
Orchard oriole	<i>Icterus spurius</i>		X
Osprey	<i>Pandion haliaetus</i>		X
Ovenbird	<i>Seiurus aurocapilla</i>		X
Palm warbler	<i>Dendroica palmarum</i>		X
Pied-billed grebe	<i>Podilymbus podiceps</i>		X
Pileated woodpecker	<i>Dryocopus pileatus</i>		X
Pine siskin	<i>Spinus pinus</i>		X
Pine warbler	<i>Dendroica pinus</i>		X
Prairie warbler	<i>Dendroica discolor</i>		X
Purple finch	<i>Carpodacus purpureus</i>		X
Red-bellied woodpecker	<i>Melanerpes carolinus</i>		X
Red-breasted nuthatch	<i>Sitta canadensis</i>		X
Red-eyed vireo	<i>Vireo olivaceus</i>		X
Redhead	<i>Aythya americana</i>		X
Red-tailed hawk	<i>Buteo jamaicensis</i>	X	X
Red-winged blackbird	<i>Agelaius phoeniceus</i>	X	X
Ring-billed gull	<i>Larus delawarensis</i>		X
Ring-necked duck	<i>Aythya collaris</i>		X
Rock pigeon	<i>Columba livia</i>	X	X
Rose-breasted grosbeak	<i>Phœticus ludovicianus</i>		X
Ruby-crowned kinglet	<i>Regulus calendula</i>	X	X
Ruby-throated hummingbird	<i>Archilochus colubris</i>	X	X
Ruddy duck	<i>Oxyura jamaicensis</i>		X
Rusty blackbird	<i>Euphagus carolinus</i>		X
Savannah sparrow	<i>Passerculus sandwichensis</i>		X
Scarlet tanager	<i>Piranga olivacea</i>		X
Sharp-shinned hawk	<i>Accipiter striatus</i>		X
Solitary sandpiper	<i>Tringa solitaria</i>	X	X
Song sparrow	<i>Melospiza melodia</i>	X	X
Sora	<i>Porzana carolina</i>		X
Spotted sandpiper	<i>Actitis macularius</i>		X

BIRDS			
Common name	Species name	Field observed	E-bird sighting*
Swamp sparrow	<i>Melospiza georgiana</i>		X
Tennessee warbler	<i>Oreothlypis peregrina</i>		X
Tree swallow	<i>Tachycineta bicolor</i>		X
Tufted titmouse	<i>Baeolophus bicolor</i>		X
Turkey vulture	<i>Cathartes aura</i>	X	X
Veery	<i>Catharus fuscescens</i>		X
Virginia rail	<i>Rallus limicola</i>		X
Warbling vireo	<i>Vireo gilvus</i>		X
White-breasted nuthatch	<i>Sitta carolinensis</i>	X	X
White-crowned sparrow	<i>Zonotrichia leucophrys</i>		X
White-throated sparrow	<i>Zonotrichia albicollis</i>		X
Willow flycatcher	<i>Empidonax traillii</i>		X
Wilson's snipe	<i>Gallinago delicata</i>		X
Wilson's warbler	<i>Wilsonia pusilla</i>		X
Wood duck	<i>Aix sponsa</i>	X	X
Wood thrush	<i>Hylotrichia mustelina</i>		X
Yellow warbler	<i>Dendroica petechia</i>		X
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>		X
Yellow-rumped warbler	<i>Dendroica coronata</i>		X

*Source: eBird, 2012. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org>. (Accessed: September 16th, 2012). Search Criteria: first sightings Capisic Pond, 1997-2012

OTHER WILDLIFE	
Common name	Species name
American red squirrel	<i>Tamiasciurus hudsonicus</i>
Eastern gray squirrel	<i>Sciurus griseus</i>
Eastern chipmunk	<i>Tamias striatus</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Coyote	<i>Canis latrans</i>
Common raccoon	<i>Procyon lotor</i>
Green frog	<i>Rana clamitans</i>
Bull frog	<i>Rana catesbeiana</i>
Common snapping turtle	<i>Chelydra serpentina</i>
Painted turtle	<i>Chrysemys picta</i>
fish	multiple (un-td)
Chinese mystery snail	<i>Bellamya chinensis</i>
White-footed mouse	<i>Peromyscus leucopus</i>
Common garter snake	<i>Thamnophis sirtalis</i>

APPENDIX E: STORMWATER CALCULATIONS



41 HUTCHINS DRIVE
 PORTLAND, MAINE 04102
 TEL.(207)774-2112

CLIENT CITY OF PORTLAND
 PROJECT ROCKLAND AVE OUTFALL
 DISCHARGE ESTIMATE
 DESIGNED BY AEA DATE 10/11/2012
 CHECKED BY DATE
 PROJECT NO. 225672.15 SHEET NO. 1

Storm Drain Pipe Capacity Calculation

Percent Full	Flow Rate (gpd)	Flow Rate (cfs)	Velocity (fps)	Wetted Perimeter	Hydraulic Radius (feet)	Flow Area (sq. ft.)
0	0	0	0	0	0	0
1	53,082	0.082	2.470	1.002	0.033	0.033
2	236,864	0.366	3.909	1.419	0.066	0.094
3	566,670	0.876	5.106	1.741	0.099	0.172
4	1,050,299	1.624	6.166	2.014	0.131	0.263
5	1,692,574	2.618	7.132	2.255	0.163	0.367
10	7,358,705	11.381	11.138	3.218	0.318	1.022
15	17,133,105	26.499	14.348	3.977	0.464	1.847
20	30,865,844	47.739	17.076	4.636	0.603	2.796
25	48,281,323	74.674	19.453	5.236	0.733	3.839
30	69,023,684	106.755	21.548	5.796	0.855	4.954
35	92,677,151	143.339	23.404	6.331	0.967	6.125
40	118,776,470	183.705	25.048	6.847	1.071	7.334
45	146,812,201	227.067	26.497	7.353	1.165	8.570
50	176,232,614	272.570	27.764	7.854	1.250	9.817
55	206,442,735	319.294	28.855	8.355	1.324	11.065
60	236,800,310	366.246	29.774	8.861	1.388	12.301
65	266,607,667	412.348	30.521	9.377	1.441	13.510
70	295,097,162	456.411	31.089	9.912	1.481	14.681
75	321,405,177	497.100	31.469	10.472	1.508	15.796
80	344,523,088	532.856	31.643	11.071	1.521	16.839
85	363,194,419	561.734	31.579	11.731	1.516	17.788
90	375,656,504	581.008	31.215	12.490	1.490	18.613
95	378,729,015	585.760	30.401	13.453	1.432	19.268
100	352,465,701	545.140	27.764	15.708	1.250	19.635

25-yr Storm Flow (CFS)
 Diam. (in)
 Manning n
 Slope(ft/ft)

241
 60
 0.011
 0.0312

APPENDIX F: NUTRIENT SEPARATING BAFFLE BOX OPERATION & MAINTENANCE PLAN





**NUTRIENT
SEPARATING
BAFFLE BOX
OPERATION &
MAINTENANCE
PLAN**

Rockland Avenue
Outfall



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Appendix B: Inspection Checklist & Maintenance Guidance	

INTRODUCTION

This Nutrient Separating Battle Box (NSBB) Operations & Maintenance Plan (the Plan) outlines measures that are essential for maintaining an effective stormwater filtration system at the Rockland Avenue Outfall project located in Capisic Pond Park in Portland, Maine. An underground, in-line trash and sediment control structure will be installed near the park entrance at Rockland Avenue, uphill of the outfall.

Periodic and scheduled inspections and maintenance measures are recommended to prevent deficiencies and to ensure proper performance of the system. Failure to complete the recommended maintenance can reduce the hydraulic capacity and the pollutant removal efficiency of the system, resulting in a poor quality of stormwater runoff discharging from the outfall and into Capisic Brook, which is identified as an Urban Impaired Stream by the MaineDBP.

The proposed NSBB system is not regulated by local or state regulations, and as such, is not required to be operated and maintained in accordance with Chapter 32 of the City of Portland Code; the proposed system will be managed as part of the City Department of Public Services program.

MAINTENANCE MEASURES

Proposed infrastructure consists of the stormwater filtration system, the NSBB. Appendix A provides figures which show the various components of the system and Appendix B provides an inspection checklist and maintenance guidance, which have been provided by the manufacturer, Suntree Technologies, Inc. Additional information on typical inspection procedures is provided below.

Inspection Information

Upon completion of construction, the NSBB system should be inspected after every rain event for the first month; thereafter, the system will require quarterly inspections in the first year to monitor sediment and debris loading, followed by, at minimum, annual cleaning via vac-truck thereafter. Sediment should be removed when it has accumulated to 50% (see section below for sediment removal procedure). A typical inspection procedure, as recommended by Suntree Technologies, Inc.®, is as follows:

1. Visually inspect the unit from the surface for broken or missing hinges or handles.
2. Open access points (i.e. Manhole covers or hatches) and secure properly.
3. A visual inspection should be made of the basket screen system to determine the remaining capacity for debris, and to check for cracks, or damages.
4. A visual inspection should be made of the StormBoom; check for missing or broken parts.
5. A visual inspection should be done of the sediment chambers; this may require opening the bottom doors of the screen system (if possible).
6. A visual inspection should be made of the overall condition of the vault, typically joint areas, as well as inflow and outflow pipe groud areas.

Service Information

Service activities include the removal of accumulated sediment and debris. A typical service procedure, as recommended by Suntree Technologies, Inc.®, is as follows:

1. Open the access openings on top of the Battle Box; these openings are typically manhole covers, hatches, or grates.

2. Vacuum the debris captured by the screen system to expose the sediment collection chambers.

3. Open the bottom doors to the basket system to expose the sediment collection chambers; these doors are provided with eyebolts to attach a hook to lift open the doors, which will hinge off to the side.

4. Vacuum each of the lower sediment chambers until they are empty.

5. After cleaning the sediment chambers, close the bottom screen doors of the screen system, and lower/slide the top doors and assure they lock correctly (if equipped with SunGlide Lids).

6. Visually inspect the StormBoom in the skimmer system for oil accumulation. Change the StormBoom if it is significantly discolored or if it is close to one year of service. The StormBoom has ropes attached to each end, which are fastened to eyelets adjacent to the access cover; these ropes act as a leash to prevent the bottom from washing away, and to allow the bottom to be easily pulled out of the containment bracket system on the face of the skimmer. Attach a rope on the end of the new boom to a rope on the end of the old boom. As the old boom is pulled out, it will pull the new boom into position, and the booms will trade places. Attach the rope ends of the new boom to the eyelets adjacent to the access cover.

7. When all maintenance work is completed, close the access covers.



APPENDIX A: SYSTEM FIGURES



SUNTREE TECHNOLOGIES

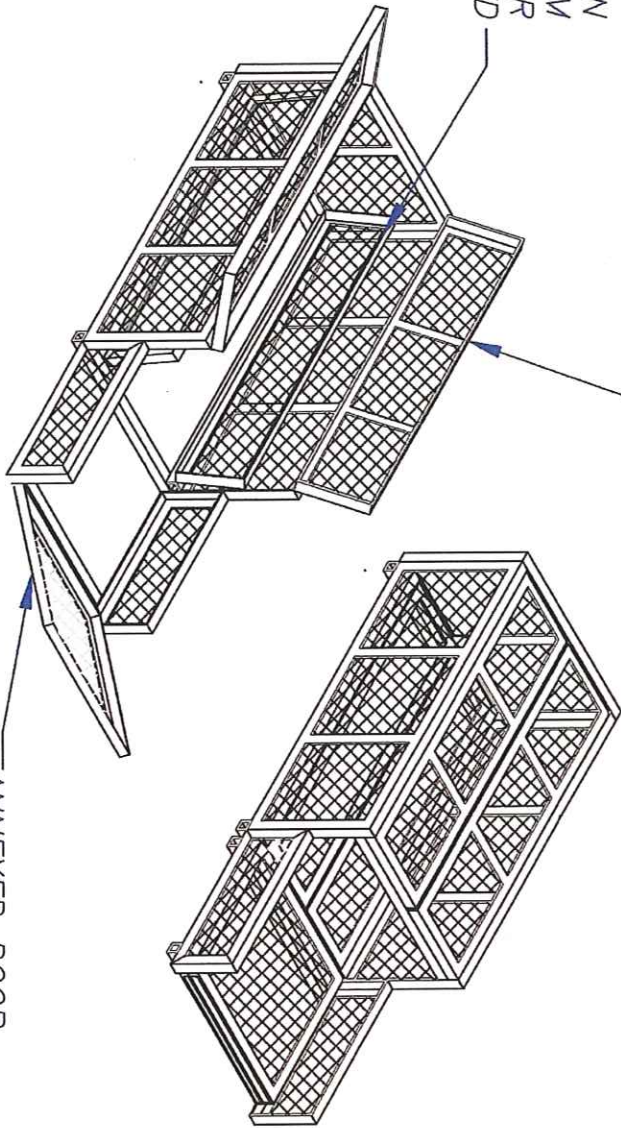
LIDDED BASKET—TYP

TOP DOOR
HINGED

ISO VIEW

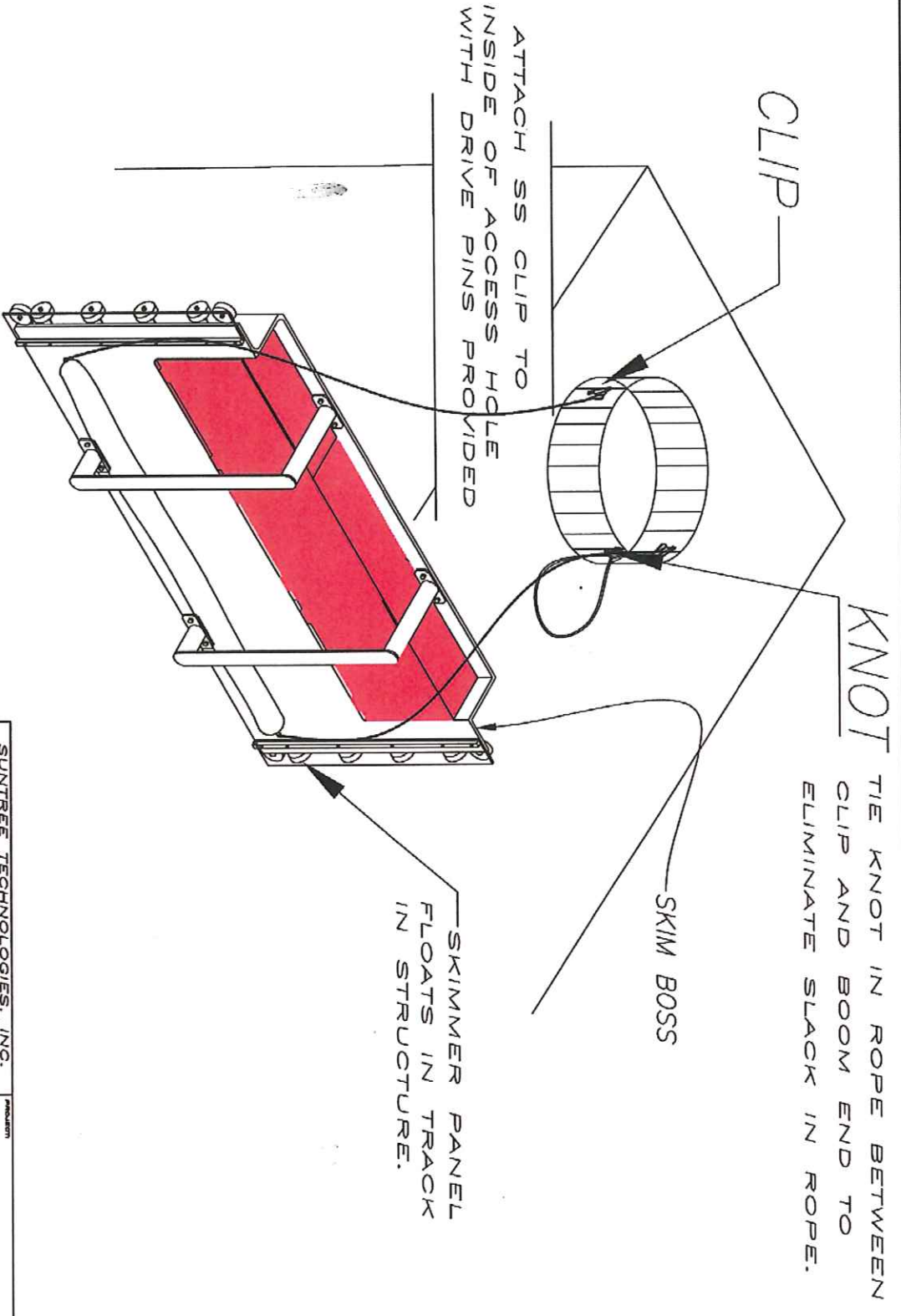
MAIN
BOTTOM
DOOR
HINGED

ANNEXED DOOR
HINGED



NOTE: SIZE MAY VARY DUE
TO STRUCTURE.

SUNTREE TECHNOLOGIES, INC. 798 CLEARLAKE RD. SUITE #2 COCOA, FL. 32922		PROJECT: SUNTREE TECHNOLOGIES SPEC.	
NUTRIENT SEPARATING BAFFLE BOX BAFFLE BOX LIDDED BASKET		DRAWN: BASKET SYSTEM	
DATE: 07/19/04 SCALE: SF = 72		DATE: 07/19/04	
DRAFTER: N.R.B. UNITS = INCHES		DATE:	



SUNTREE TECHNOLOGIES, INC. 798 CLEARLAKE RD. SUITE #2 COCOA FL. 32922		PROJECT # DRAWING #
NUTRIENT SEPARATING BAFFLE BOX STORM BOOM ATTACHMENT		P/N NUMBER NSBB-STORM BOOM TYP.
DATE: 05/18/11	SCALE: SF = 72	DATE SIZE
DRAFTER: N.R.B.	UNITS = INCHES	REVISIONS DATE

APPENDIX B: INSPECTION CHECKLIST & MAINTENANCE GUIDANCE



2.2 Inspection Checklist and Maintenance Guidance

Nutrient Separating Baffle Box

(To be completed at time of inspection or maintenance)

Location: _____

Owner Name: _____

Address: _____

Phone: _____

Date _____ Time _____ Site Conditions _____

Inspection Items	Condition	Recommended Interval	Comments
1. Access Openings		Quarterly	
2. Screen System		Quarterly	
3. Rear Skimmer and Storm Boom		Quarterly	
4. Sediment Chambers		Quarterly	
5. Vault Condition		Quarterly	

1. Inspection items are to determine accessibility into Nutrient Separating Baffle Box.
2. Visually inspect screen system for volume of debris and broken or missing parts.
3. Visually inspect skimmer for missing or broken parts & storm boom for discoloration.
4. Visually inspect sediment chambers for estimated quantity.
5. Visually inspect general condition of vault for any clogged areas.

Maintenance Items	Approximate Volume Collected	Date	Comments
1. Screen System			
2. Sediment Chambers			
3. Skimmer Storm Boom	Replaced Y / N		

1. After opening access vacuum out screen system—estimate volume collected.
2. After cleaning screen system—open bottom doors and vacuum out sediment chambers—estimate volume collected.
3. Replace storm boom if completely blackened.

NOTES

The site plan approval is based on the submitted site plan. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval.

- iii. That the applicant shall introduce additional planting in the vicinity of the maintenance access way near Machigonne Street, as determined by the City Arborist, after the treatment unit and maintenance access way are complete and the scope and need for such planting is clarified through consultation with neighbors and others as appropriate. Any property easements negotiated for the project or associated work should allow for future plantings (but not necessarily require them).
 - ii. That the best management practices and timeframes listed and required in the City of Portland Ordinances for the Shoreland Zone shall be followed during the construction work; and
 - i. That the applicant shall obtain easements or temporary construction agreements for all work outside the sewer easement, to be reviewed and approved by Corporation Counsel prior to the commencement of work; and
- The Planning Authority found the plan is in conformance with the Site Plan Standards of the Land Use Code subject to the following conditions of approval:

SITE PLAN REVIEW

On April 17th, 2014, the Planning Authority approved with conditions a Level I: Site Alteration site plan for the implementation of improvements to the Rockland Avenue Outfall. The proposals include the installation of an underground treatment structure and stabilization of the channel below the outfall, with additional plantings, as shown in the submitted plans (including site, landscaping and finished conditions plans) March 2014 and prepared by Woodard & Curran.

Dear Doug:

Project Name: Rockland Avenue Outfall Improvements; Level I Site Alteration
Project ID: #2013-269
Project Address: Vicinity of Rockland Avenue and Machigonne Street
CBL: 224 A X001
Applicant: Doug Roncarati, Stormwater Program Coordinator, City of Portland, Department of Public Services
Planner: Jean Fraser

Doug Roncarati
 Stormwater Program Coordinator,
 City of Portland Department of Public Services
 55 Portland Street
 Portland, ME 04101

David Sennus/Lauren Swett
 Woodard & Curran
 41 Hutchins Drive
 Portland, ME 04102

April 17th, 2014



Handwritten signature

STANDARD CONDITIONS OF APPROVAL

Please note the following standard conditions of approval and requirements for all approved site plans:

1. **Develop Site According to Plan** The site shall be developed and maintained as depicted on the site plan and in the written submission of the applicant. Modification of any approved site plan or alteration of a parcel which was the subject of site plan approval after May 20, 1974, shall require the prior approval of a revised site plan by the Planning Board or Planning Authority pursuant to the terms of Chapter 14, Land Use, of the Portland City Code.

2. **Separate Building Permits Are Required** A "Site Work Only" Building Permit for the site work is required; please coordinate with the Inspections Division to arrange for this building permit.

3. **Site Plan Expiration** The site plan approval will be deemed to have expired unless work has commenced within three (3) years of the approval, as per condition v. above. This expiry date may not be extended.

4. **Final Plans** Seven (7) final sets of plans must be submitted to the Planning Division prior to the release of a building permit, street opening permit or certificate of occupancy for site plans. If you need to make any modifications to the approved plans, you must submit a revised site plan application for staff review and approval.

5. **Preconstruction Meeting** Prior to the release of a building permit or site construction, a pre-construction meeting shall be held at the project site. This meeting will be held with the contractor, Development Review Coordinator and critical aspects of the site work. At that time, the Development Review Coordinator will confirm that the contractor is working from the approved site plan. The site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.

6. **Department of Public Services Permits** If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

7. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*.dwg), release AutoCAD 2005 or greater. 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 Division at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Jean Fraser at (207) 874-8728.

Sincerely,

Alexander Jaegerman, FAICP
Planning Division Director
(Signature)

CC: Jeff Levine, AICP, Director of Planning and Urban Development
Alexander Jaegerman, FAICP, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Jean Fraser, Planner
Phillip DiPietro, Development Review Coordinator, Planning
Marge Schmuckal, Zoning Administrator, Inspections Division
Tammy Munson, Inspections Division Director
Jonathan Rioux, Inspections Division Deputy Director
Jeanie Bourke, Plan Reviewer/CEO, Inspections Division
Lannie Dobson, Administration, Inspections Division
Brad Saucier, Administration, Inspections Division
Michael Bobinsky, Public Services Director
Katherine Earley, Engineering Services Manager, Public Services
Bill Clark, Project Engineer, Public Services
David Margolis-Pineo, Deputy City Engineer, Public Services
Doug Roncarati, Stormwater Coordinator, Public Services
Greg Vining, Associate Engineer, Public Services
Michelle Sweeney, Associate Engineer
John Low, Associate Engineer, Public Services
Rhonda Zazzara, Field Inspection Coordinator, Public Services
Mike Farmer, Project Engineer, Public Services
Jane Ward, Administration, Public Services
Jeff Turling, City Arborist, Public Services
Jeremiah Bartlett, Public Services
Captain Chris Frone, Fire Department
Danielle West-Chuhra, Corporation Counsel
Thomas Errico, P.E., TY Lin Associates
David Sennus, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File

Jean Fraser - Rockland Ave Easement Docs are ready

From: Camille Alden
To: Nathaniel Smith
Date: 3/25/2014 11:01 AM
Subject: Rockland Ave Easement Docs are ready
CC: Jean Fraser; Lawrence Walden; William Scott; dsensus@woodardcurran.com
Attachments: 03-25-14 Kramer Deed w-Plan.pdf; 03-25-14 Turyn Deed w-Plan.pdf

Nathaniel,

Larry Walden and I have finalized the deeds for the 60' X 100' Rockland Ave. Sewer/Drainage/Pedestrian Easement. They've been converted to a PDF format with the plan included as part of the document. Please see 2 attached deeds.

Good luck with the negotiations with Mr. and Mrs. Kramer and Ms. Turyn. I'm happy to provide any supporting documentation should you need it.

Camille C. Alden, PLS
Senior Surveyor
City of Portland
Department of Public Services
55 Portland Street
Portland, Maine 04101
ph: 207-874-8839
fax: 207-874-8852
email: calden@portlandmaine.gov

EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **MICHAEL E. KRAMER** and **ELIZABETH M. KRAMER**, both with a mailing address of 57 Machigonne Street, Portland, Maine 04102, in consideration of One Dollar (\$1.00) and other valuable consideration paid by the **CITY OF PORTLAND**, a body politic and corporate with a mailing address of 389 Congress Street, Portland, Maine, do hereby remise and release and forever quitclaim to the said City of Portland the easement and rights described below, on and under the land described in Exhibit A and attached hereto and incorporated herein by reference; Exhibit B depicts the area of these easements and rights.

Said easement and rights are for the purpose of installing, perpetually maintaining, repairing and replacing water, sewer and storm water conduits and pipes through, under and across said land, and also for all necessary fixtures and appurtenances related thereto, with all necessary fixtures and appurtenances, together with the right at all times to make connections with said conduits or pipelines to land adjoining said water, sewer and drainage easement by means of pipes or other services; ALSO, an easement for public pedestrian (and other non-motorized travel) access and recreation on said land, and for traversing said land to access lands adjacent thereto; and all with the right to trim, cut down and remove trees, bushes, and other vegetation of all kinds, to remove debris and deposits of any kind and to alter and re-grade the contours of said easement to such extent as in the sole judgment of the Grantee is necessary or appropriate for any of the above purposes; and to enter upon said easement at any and all times for any of the foregoing purposes, reserving to the Grantor and their successors and assigns the use and enjoyment of said strips and for such purposes only as will in no way interfere temporarily or otherwise with the perpetual use thereof by the Grantee, its successors and assigns for the purpose above mentioned, provided that no building or any kind of permanent structure, including, but not limited to, walls and fences, shall be erected on said strip by the Grantor, their successors or assigns; and that the Grantor, their successors and assigns shall not remove earth from said easement without the written permission of the Grantee, its successors and assigns.

IN WITNESS WHEREOF, Michael E. Kramer and Elizabeth M. Kramer have herunto
set their hands and seals on this _____ day of _____, 2014.

WITNESS:

Michael E. Kramer

Elizabeth M. Kramer

STATE OF MAINE
CUMBERLAND, ss. _____, 2014

Personally appeared the above-named Michael E. Kramer and Elizabeth M. Kramer, and
acknowledged the foregoing instrument to be their free acts and deed.

Before me,

Notary Public/Attorney-at-Law

Print Name

Exhibit A

The certain easement and rights across delineated above on and under land on the northwesterly side line of Machigonne Street in the City of Portland, Cumberland County, State of Maine, and bounded and described as follows:

BEGINNING at a point in the northwesterly side line of Machigonne Street as accepted by Order of the City of Portland Council on April 6, 1931, Clerk's Volume 57, Page 37, said point is located S27°00'57"W six hundred and eighteen hundredths feet (600.18') as measured along the northwesterly side line of said Machigonne Street from its intersection with the southwesterly side line of Brighton Avenue;

THENCE, S27°00'57"W sixty and no hundredths feet (60.00') along the northwesterly side line of said Machigonne Street to a point where the southwesterly side line of Rockland Avenue as shown on the Plan of Greater Brighton, dated August, 1904 and recorded in the Cumberland County Registry of Deeds (CCRD) in Plan Book 11, Page 111 intersects the northwesterly side line of Machigonne Street, said point is also the easterly corner of land now or formerly of Michael E. Kramer and Elizabeth Kramer as described in a deed dated August 6, 1984 and recorded in CCRD in Deed Book 6535, Page 303;

THENCE, N62°59'54"W one hundred and no hundredths feet (100.00') along the southwesterly side line of said Rockland Avenue and along the northwesterly line of land now or formerly of said Kramer to a point in the southwesterly line of land now or formerly of the City of Portland as described in a deed dated November 17, 1947 and recorded in CCRD in Deed Book 1899, Page 18;

THENCE, N27°00'57"E sixty and no hundredths feet (60.00') along the southeasterly line of land now or formerly of the said City of Portland to a point in the northwesterly side line of said Rockland Avenue, said point is also the westerly corner of land now or formerly of Adrienne Turyn as described in a deed dated July 30, 2001 and recorded in CCRD in Deed Book 16587, Page 24;

THENCE, S62°59'54"E one hundred and no hundredths feet (100.00') along the northwesterly side line of said Rockland Avenue and along the southwesterly line of land of said Adrienne Turyn to **THE POINT OF BEGINNING.**

Title reference is made to the deed to Michael E. Kramer and Elizabeth M. Kramer dated August 6, 1984 and recorded in CCRD in Deed Book 6535, Page 303.

This deed description is based on a plan titled "Boundary Survey of Capistic Park at Rockland Avenue", dated March 18, 2014, by the City of Portland, Maine, Public Services Department, Engineering Section on file at said Public Services Department Engineering and Archives Vault as Plan 881/38 and attached herein as Exhibit B.

Bearings referenced herein are Grid North, Maine State Plane Coordinate System NAD 1983 (HARN) (2-zone projection), West Zone.

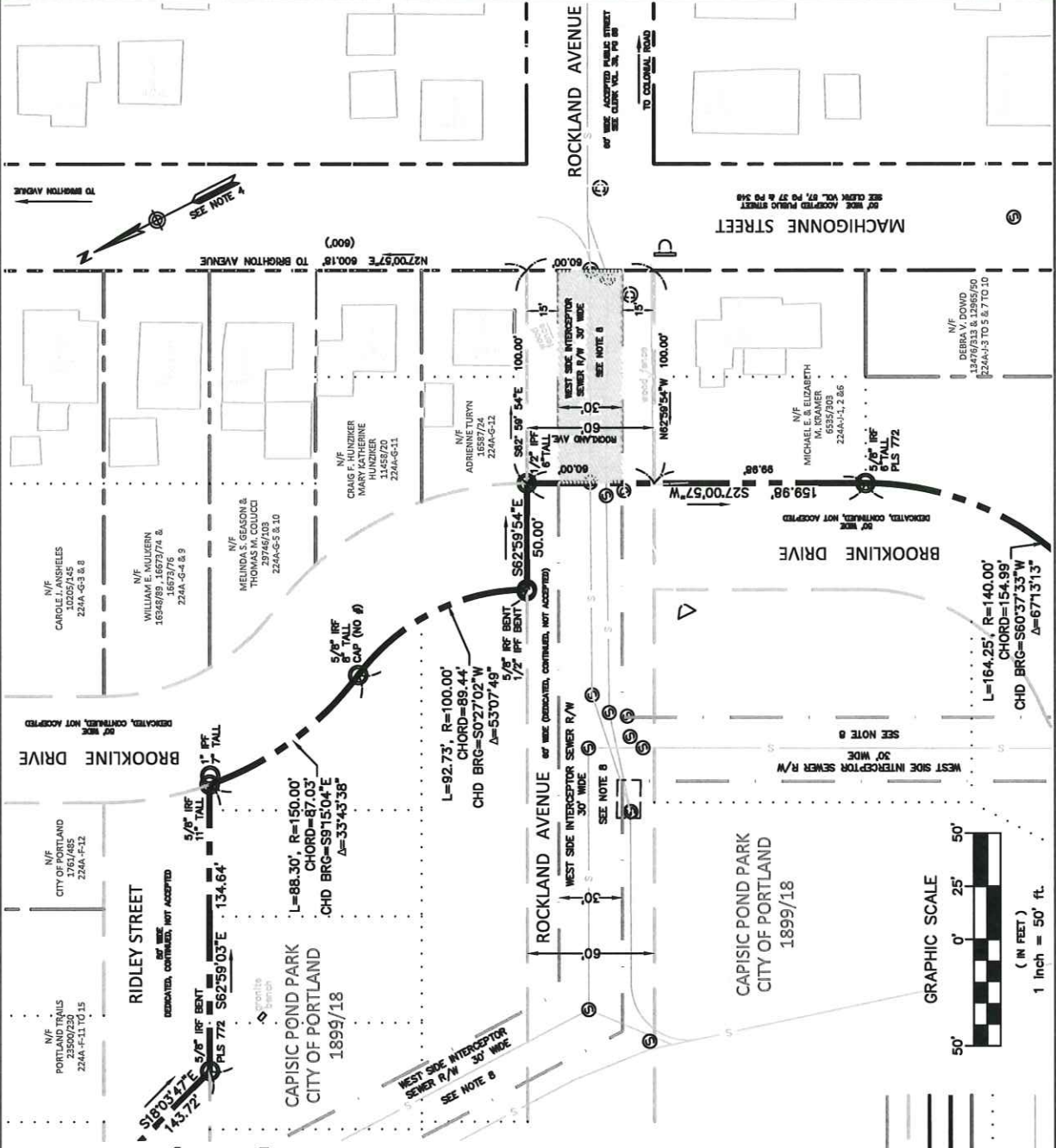
DATE: 03/18/2014
 SCALE: 1" = 50'
 WBS/CCA
 CHECKED BY:
 CCA / LKS
 DRAWN BY: CAMILLE C. ALDEN, PLS #2335
 FIELD BOOK: TB 151, PP 58-75
 DRAWING: CAPISIC PARK-MACY ST. 2014 DB
 CIVIL 3D PROJECT: CAPISIC PARK-MACY ST. 2014 DB

REFERENCES:
 SURVEYOR: CAMILLE C. ALDEN
 CITY OF PORTLAND, MAINE
 PUBLIC SERVICES DEPARTMENT
 ENGINEERING DIVISION

BOUNDARY SURVEY OF
 CAPISIC POND PARK AT
 ROCKLAND AVENUE

SHEET #
EXHIBIT B

881 / 38



- NOTES:**
- This is a boundary survey of the City of Portland Capisic Park property and surrounding street lines. The boundary is primarily based upon the following plan: "Plan of City Property at Capisic Pond" by J.M. Robbins, dated Sept. 10, 1993 and recorded in the City's Engineering Vault as Plan #9477.3. Abutter deeds were researched from the date of the 1993 plan forward to current day to look for any conveyances between abutters and the City.
 - The Capisic Park Property is described in a deed from the George T. Edwards Co. et. al. to the City of Portland in an eminent domain deed dated Nov. 17, 1947 and recorded in Deed Book 1899, Page 18 and is shown on Capisic Pond Improvement Plan, dated Oct. 31, 1947 and recorded as Vault Plan 54717.
 - Deed and Plan Book references are to the Cumberland County Registry of Deeds (CCRD). Vault references refer to records found in the City of Portland, Public Services Department, Engineering Archives Vault.
 - The basis of bearing for this survey is the Maine State Plane Coordinate System (2-zone projection), West Zone using the NAD 1983 (HARN) datum and the U.S. Survey Foot as the unit of measure.
 - Current field work was performed between Dec. 31, 2013 and Jan. 17, 2014 using a Leica TCPR 1205+ robotic total instrument, an Allegro data collector and Carlson software. Current field work was combined with field work from previous surveys performed by City staff and consultants between 2002 and 2007.
 - Physical features such as buildings, pavement edges and water line are based upon the City's digital aerial mapping with a few exceptions which are noted.
 - Subdivision lots are from a Plan of Greater Brighton for George T. Edwards, dated August, 1904 and recorded in Plan Book 11, Page 111 (CCRO).
 - The West Side Interceptor Sewer Right of Way (R/W) shown within Rockland Ave. and Capisic Park is described in a taking, dated July 16, 1906 and recorded in City Clerk Vol. 34, Page 468. The Sewer R/W is also shown on Plan of West Side Interceptor Sewer from Capisic St. Northerly, dated 1906, and recorded as Vault Plan 88/10.
 - Street status and street r/w boundaries are based upon monumentation found in the field and street records found in the City of Portland Engineering Vault.
- LEGEND**
- IRON PIPE/ROD FOUND
 - DRAIN MANHOLE
 - SEWER MANHOLE
 - RIGHT-OF-WAY LINE (W.S.I.S.)
 - STREET LINE (UNACCEPTED)
 - STREET LINE
 - CITY PARK PROPERTY LINE
 - ABUTTER PARCEL LINE
 - INTERIOR PARCEL LINE
 - DRAIN LINE
 - SEWER LINE
- GRAPHIC SCALE**
 50' 0' 25' 50'
 1 Inch = 50' ft.
 (IN FEET)

EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS, that **ADRIENNE TURYN**, with a mailing address of 45 Machigonne Street, Portland, Maine 04102, in consideration of One Dollar (\$1.00) and other valuable consideration paid by the **CITY OF PORTLAND**, a body politic and corporate with a mailing address of 389 Congress Street, Portland, Maine, do hereby remise and release and forever quitclaim to the said City of Portland the easement and rights described below, on and under the land described in Exhibit A and attached hereto and incorporated herein by reference; Exhibit B depicts the area of these easements and rights.

Said easement and rights are for the purpose of installing, perpetually maintaining, repairing and replacing water, sewer and storm water conduits and pipes through, under and across said land, and also for all necessary fixtures and appurtenances related thereto, with all necessary fixtures and appurtenances, together with the right at all times to make connections with said conduits or pipelines to land adjoining said water, sewer and drainage easement by means of pipes or other services; ALSO, an easement for public pedestrian (and other non-motorized travel) access and recreation on said land, and for traversing said land to access lands adjacent thereto; and all with the right to trim, cut down and remove trees, bushes, and other vegetation of all kinds, to remove debris and deposits of any kind and to alter and re-grade the contours of said easement to such extent as in the sole judgment of the Grantee is necessary or appropriate for any of the above purposes; and to enter upon said easement at any and all times for any of the foregoing purposes, reserving to the Grantor and their successors and assigns the use and enjoyment of said strips and for such purposes only as will in no way interfere temporarily or otherwise with the perpetual use thereof by the Grantee, its successors and assigns for the purpose above mentioned, provided that no building or any kind of permanent structure, including, but not limited to, walls and fences, shall be erected on said strip by the Grantor, their successors or assigns; and that the Grantor, their successors and assigns shall not remove earth from said easement without the written permission of the Grantee, its successors and assigns.

IN WITNESS WHEREOF, Adrienne Turyn has hereunto set her hand and seal on this

_____ day of _____, 2014.

WITNESS:

Adrienne Turyn

STATE OF MAINE
CUMBERLAND, ss. _____, 2014

Personally appeared the above-named Adrienne Turyn and acknowledged the foregoing instrument to be her free act and deed.

Before me,

Notary Public/Attorney-at-Law

Print Name

Exhibit A

The certain easement and rights across delineated above on and under land on the northwesterly side line of Machigonne Street in the City of Portland, Cumberland County, State of Maine, and bounded and described as follows:

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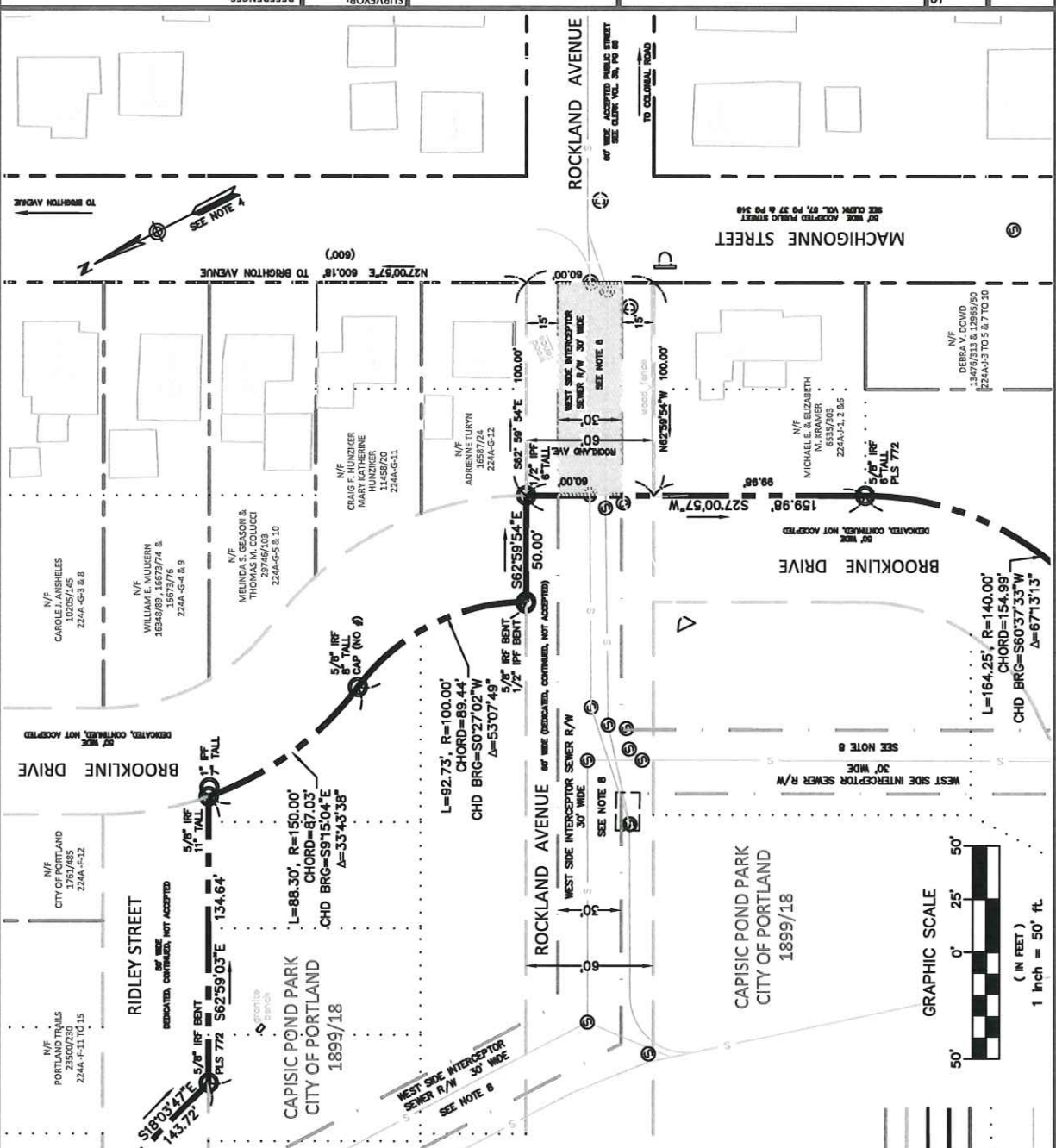
THENCE, N27°00'57"E sixty and no hundredths feet (60.00') along the southeasterly line of land now or formerly of the said City of Portland to a point in the northeasterly side line of said Rockland Avenue, said point is also the westerly corner of land now or formerly of Adrienne Turyn as described in a deed dated July 30, 2001 and recorded in CCRD in Deed Book 16587, Page 24;

THENCE, S62°59'54"E one hundred and no hundredths feet (100.00') along the northeasterly side line of said Rockland Avenue and along the southwesterly line of land of said Adrienne Turyn to **THE POINT OF BEGINNING.**

Title reference is made to the deed to Adrienne Turyn dated July 30, 2001 and recorded in CCRD in Deed Book 16587, Page 24.

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Bearings referenced herein are Grid North, Maine State Plane Coordinate System NAD 1983 (HARN) (2-zone projection), West Zone.



NOTES:

- This is a boundary survey of the City of Portland Capisic Park Property and surrounding street lines. The boundary is primarily based upon the following plan: "Plan of City Property at Capisic Pond" by J.M. Robbins, dated Sept. 10, 1993 and recorded in the City's Engineering Vault as Plan #947/3. Abutter deeds were researched from the date of the 1993 plan forward to current day to look for any conveyances between abutters and the City.
- The Capisic Park Property is described in a deed from the George T. Edwards Co. et. al. to the City of Portland in an eminent domain deed dated Nov. 17, 1947 and recorded in Deed Book 1899, Page 18 and is shown on Capisic Pond Improvement Plan, dated Oct. 31, 1947 and recorded as Vault Plan 547/7.
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- Physical features such as buildings, pavement edges and water line are based upon the City's digital aerial mapping with a few exceptions which are noted.
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- The West Side Interceptor Sewer Right of Way (R/W) shown within Rockland Ave. and Capisic Park is described in a taking, dated July 16, 1906 and recorded in City Clerk Vol. 34, Page 468. The Sewer R/W is also shown on Plan of West Side Interceptor Sewer from Capisic St. Northerly, dated 1906, and recorded as Vault Plan 88/10.
- Street status and street r/w boundaries are based upon monumentation found in the field and street records found in the City of Portland Engineering Vault.

LEGEND

- IRON PIPE/ROD FOUND
- DRAIN MANHOLE
- SEWER MANHOLE
- RIGHT-OF-WAY LINE (W.S.I.S.)
- STREET LINE (UNACCEPTED)
- STREET LINE
- CITY PARK PROPERTY LINE
- ABUTTER PARCEL LINE
- INTERIOR PARCEL LINE
- DRAIN LINE
- SEWER LINE

GRAPHIC SCALE
1 inch = 50' ft.
(IN FEET)

Jean Fraser - RE: Rockland Ave final conditions of approvals/Easements

From: Jean Fraser
To: Senus, David
Date: 4/8/2014 4:08 PM
Subject: RE: Rockland Ave final conditions of approvals/Easements
CC: LaurensWett; Roncarati, Doug; Smith, Nathaniel; Tarling, Jeff

Dave

I still feel that this work offers the opportunity to introduce a little more planting to buffer the neighbors from a public walkway and I have no way of knowing whether the two neighbors affected were at the public meetings.

I'd like to have a condition that is like the one I had already agreed with Jeff Tarling that states:

"That the applicant shall introduce additional planting in the vicinity of the maintenance access way near Machigonne Street, as determined by the City Arborist, after the treatment unit and maintenance access way are complete and need for such planting is clarified through consultation with neighbors and others as appropriate. Any property easements negotiated for the project or associated work should allow for future plantings (but not necessarily require them)";

If you feel strongly re this, maybe we could discuss tomorrow at Dev Rev with Jeff and maybe Barbara (although she has not been fully in the loop).

thanks
Jean

<<>> David Senus <dsenus@woodardcurran.com> 3/19/2014 1:03 PM <>>

Hi Jean.

I'll let Nate, Doug or Jeff respond to item #1. Please keep in mind that the public have been very involved in the project over the past few years, and often very outspoken about landscaping preferences in the park and near the outfall. I can't recall any requests from the public that landscaping be provided at the trailhead at Rockland/Machigonne. If we define the landscaping theme in this area at this time, it may not be the preferred choice of the park users, neighbors, or Friends of Capisic Pond Park who have helped to inform the design to date.

With regard to item #2, we have a revised plan that we'll get to you first of next week. Lauren is away at a national conference for much of this week.

FYI, we have traded voicemails describing our approach to the trail design with Jaime Parker at Portland Trails and from our back and forth, it sounds like we are on the same page regarding the trail improvements that will be provided by the project.

Jean Fraser - RE: Clar needed RE: Rockland Ave Outfall

From: Lauren Swett <lswett@woodardcurran.com>
To: Jean Fraser <JF@portlandmaine.gov>, Jeff Tarling <JST@portlandmaine.gov>...
Date: 2/21/2014 11:24 AM
Subject: RE: Clar needed RE: Rockland Ave Outfall
CC: Camille Alden <CALDEN@portlandmaine.gov>, Nathaniel Smith <NHS@portlandm...>
Attachments: Appendix B.1 Survey.PDF; Appendix B.2 Survey.PDF

Hi Jean,

We are creating a figure to clearly show the proposed conditions at the site to help address your original questions about the site plan. We can show more clearly what the reinforced maintenance access way will look like on the plan. Per the detail on sheet C-301, there will be 3' strips of gravel wearing course, with loam and seed to surround those gravel areas. The intent is not for the maintenance access to be overly intrusive. There will be a gravel subgrade beneath the gravel strips and the loam and seed so that trucks can drive over the area to access the stormwater treatment unit.

The 1993 survey figures that you reference are included as Appendix B in the complete permit application pdf that was provided. I've attached the two separate files for ease of people reviewing over email. The City has been working on providing an updated boundary sheet for the area, but with all the snow this winter, it's been difficult to complete.

For the plans you attached, sheet C-201 is the landscaping plan. The rendering pdf was a visual representation created for use at some of the public meetings, and is not intended to serve as an official landscaping plan.

Let me know if there are any other questions, and we'll be in touch with a figure of proposed conditions.

Thanks,

Lauren

From: Jean Fraser [mailto:JF@portlandmaine.gov]
Sent: Friday, February 21, 2014 11:03 AM
To: Jeff Tarling; William Clark
CC: Camille Alden; Nathaniel Smith; William Scott; Lauren Swett
Subject: Clar needed RE: Rockland Ave Outfall

Bill and Jeff

If we have a sewer easement there, why can't there be some planting. Its **60 ft** across so there must be some room outside the other pipes.

However, I have the submitted paper copy of 1993 Plan that suggests the paper street status with no mention of an easement (for some reason this plan was not included electronically so I only have a paper copy and Jeff has not been able to view it). The paper street appears to be 60 ft wide so why can't there be some planting along the east edge? The application says that an updated version of this plan will be forthcoming but I have not

received it.

Jeff- maybe you could call me and explain why we don't want to include some softening of the new maintenance access? If this was a private development I think we would request some screening.

I still would like a plan showing the final conditions (including at the end near the houses) showing the final location of the trail and the final new planting, as that is what any approval relates to.

I understand there is considerable public interest in this project- and I am sure anything here is an improvement re the actual outfall area. However, the maintenance access appears quite out of keeping with the area and I would like to see the trail reinstatement clearly.

thanks
Jean

PS There are two different Landscape Plans (see attached) - which is final and which has Jeff has approved?

>>> William Clark 2/20/2014 8:57 AM >>>
Hi Jeff,

Come by with a plan to look at. Camille has been doing the survey and would know more.

Thanks,

Bill

>>> Jean Fraser February 19, 2014 4:51 PM >>>
Jeff

I am out of the office tomorrow but if the City does not own the land that's even more reason why they should not be putting down a widened paved area with no landscape.

Please have Bill Clark confirm that the city don't own the land as if we don't own I will need to ask for copy of the easement that we presumably have.

I appreciate its not a huge deal but the only doc I have (its in e-plan) shows that the City owns it. I will follow up on Friday.

Thanks
Jean

>>> Jeff Tarling 2/19/2014 3:52 PM >>>
Hi Jean -

I did check this area and the city does not own the land.

And the underground pipes are close.

Jeff

>>> Jean Fraser 2/19/2014 3:15 PM >>>

I believe the City already owns this area - I am waiting for applicant or someone to confirm but the survey appears to show it as City land. So I would prefer something on the plan since its near public areas and abutting the trail (City should be treated as we treat other applicants).

>>> Jeff Tarling 2/19/2014 3:04 PM >>>
Hi Jean -

After a closer review of underground utilities, stormwater and sewer mains along with unaccepted street information, the landscape plan is acceptable as shown for the Rockland Avenue / Capisic Pond project. (we don't have the room or easement to plant additional landscape in the area we discussed)

I would encourage the city to acquire the unaccepted Rockland Avenue street right of way that serves as entrance to the park and the location of significant underground stormwater & sewer utilities into Capisic Pond Park. Once we have ownership we could provide a more robust landscape screening if needed. We also have some flexibility to slightly "adjust" landscape elements once the project is completed. This served us well with the recent Capisic Stormwater project.

Thanks,

Jeff

>>> Jean Fraser 2/18/2014 4:10 PM >>>

Lauren

A few things have come up where further information would be helpful:

- Section 3 of the application booklet, RTI- is there an updated "boundary page" (as mentioned);
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and treatment unit (I know its underground but there will be disturbance and round man made features showing above ground I believe.)

Thanks and apologies for the delay in getting back to you with these questions.

Jean

874 8728

Notice: Under Maine law, documents - including e-mails - in the possession of public officials or city employees about government business may be classified as public records. There are very few exceptions. As a result, please be advised that what is written in an e-mail could be released to the public and/or the media if requested.

Jean Fraser - RE: Rockland Ave Outfall

From: Jean Fraser
To: Swett, Lauren
Date: 2/18/2014 4:10 PM
Subject: RE: Rockland Ave Outfall
CC: Roncarati, Doug; Tarling, Jeff

Lauren

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Jean
874 8728

Jean Frasier - RE: Rockland Ave Outfall Level I site plan application

From: Lauren Swett <lswett@woodardcurran.com>
To: Jean Frasier <JF@portlandmaine.gov>
Date: 2/28/2014 3:23 PM
Subject: RE: Rockland Ave Outfall Level I site plan application

Hi Jean,

We are working on getting you the updated plan next week. We're in touch with Portland Trails, so we've got that covered. We're waiting to hear back from them with some information, so once we've squared that away, we'll have the plan for you. I'll also have the updated Capisic plans and response to comments for you first of next week so we can get on the agenda for the second March Public Hearing.

Thanks, and I'll be in touch.

Lauren

From: Jean Frasier [mailto:JF@portlandmaine.gov]
Sent: Friday, February 28, 2014 11:30 AM
To: Lauren Swett
Subject: Rockland Ave Outfall Level I site plan application

Lauren

Could you let me know where things stand on this project?

I have liaised with DPS and understand that the detailed boundary survey is on the way next week and also that Jeff Tarling is OK with the suggested condition about future landscape.

I would like to be sure the PT relocation/temporary relocation is OK- I can call them (Portland TrailsP direct but I need the plan showing where the trail will end up where it is near Machigonne Street.

thanks
Jean

>> Jean Frasier 2/21/2014 2:30 PM >>>
Thank you all for the further clarification.

Lauren- have you spoken to the neighbor to the east at all? Do you have anything from Portland Trails saying they are OK with the final plan (ie re the location and nature of the trail here). The Site Plan review focuses on any adverse impact on abutting property owners or parties with a direct interest in the site.

My impression is that its odd to have so much landscaping etc by the outfall and nothing at all here - but I understand the reasons and constraints.

I will await the final site plan- Lauren, just shown the final surface conditions for all of the disturbed area not included in the Landscape Plan.

Jean Fraser - Rockland Ave Outfall Level 1 site plan application

From: Jean Fraser
To: Swett, Lauren
Date: 2/28/2014 11:29 AM
Subject: Rockland Ave Outfall Level 1 site plan application

Lauren

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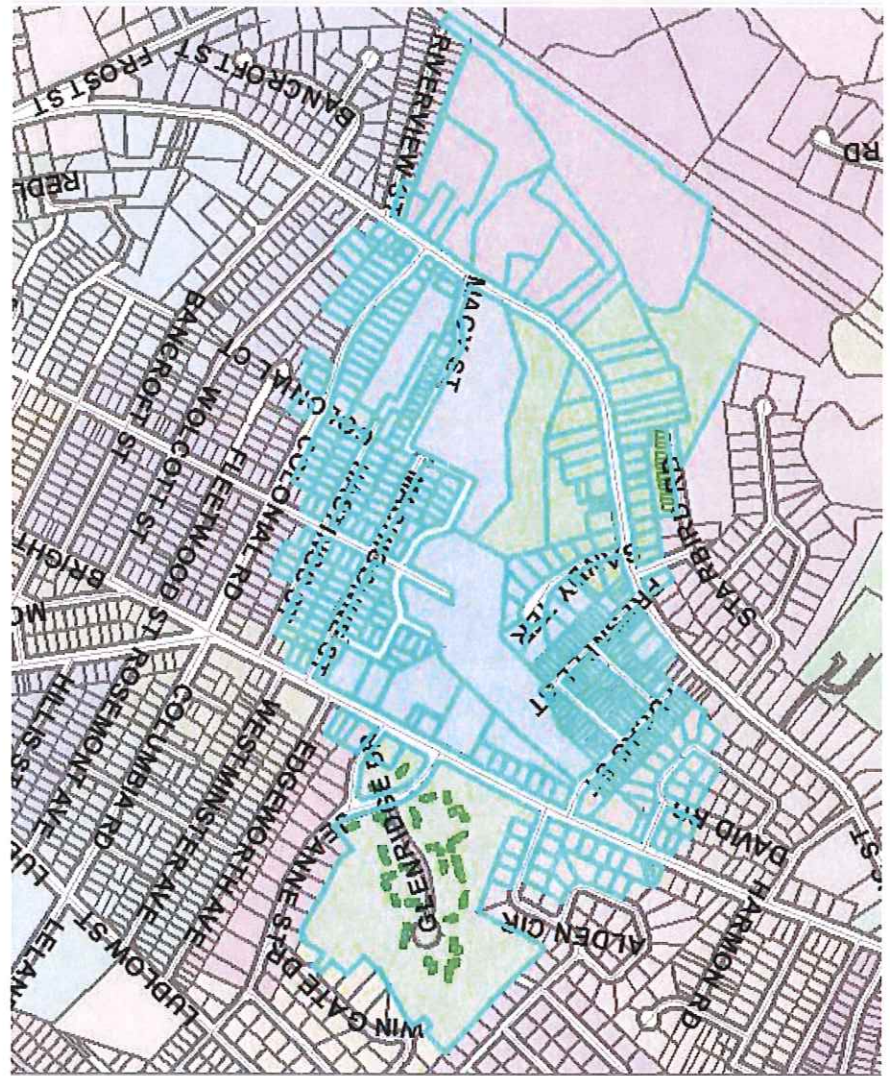
Thank you

Jean

>>> Lauren Swett <lswett@woodardcurran.com> 2/21/2014 1:45 PM >>>

Hi Jean,

To help further clarify what we are proposing, attached are a couple of images that show the existing and proposed condition at Rockland Avenue. The proposed image shows two strips of gravel that will serve as the reinforced wheel paths for a maintenance vehicle accessing the stormwater treatment unit, located beneath the group of three manhole covers. Throughout the public process on this project, there haven't been concerns expressed about adding landscaping in this area. As has been mentioned previously, there is significant stormwater and sewer infrastructure in this area, and adding and maintaining landscaping here would be a challenge. We will be improving the existing rough gravel area at the entrance, and we'll maintain the fences and vegetation on the neighbors' properties.



Jean Fraser - RE: Rockland Ave Outfall

for discussion

From: Jean Fraser
To: Tarling, Jeff
Date: 2/19/2014 3:15 PM
Subject: RE: Rockland Ave Outfall
CC: Margolis-Pineo, David; Roncarati, Doug; Swett, Lauren

I believe the City already owns this area - I am waiting for applicant or someone to confirm but the survey appears to show it as City land. So I would prefer something on the plan since its near public areas and abutting the trail (City should be treated as we treat other applicants).

<< >> Jeff Tarling 2/19/2014 3:04 PM >>>

Hi Jean -

After a closer review of underground utilities, stormwater and sewer mains along with unaccepted street information, the landscape plan is acceptable as shown for the Rockland Avenue / Capisic Pond project. (we don't have the room or easement to plant additional landscape in the area we discussed)

I would encourage the city to acquire the unaccepted Rockland Avenue street right of way that serves as entrance to the park and the location of significant underground stormwater & sewer utilities into Capisic Pond Park. Once we have ownership we could provide a more robust landscape screening if needed. We also have some flexibility to slightly "adjust" landscape elements once the project is completed. This served us well with the recent Capisic Stormwater project.

Thanks,

Jeff

<< >> Jean Fraser 2/18/2014 4:10 PM >>>

Lauren

A few things have come up where further information would be helpful:

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Thanks and apologies for the delay in getting back to you with these questions.

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CITY OF PORTLAND PUBLIC SERVICES DEPARTMENT

CONTRACT DRAWINGS

ROCKLAND AVENUE OUTFALL

PERMITTING SET - NOT FOR CONSTRUCTION

BID NUMBER: #XXXX

MARCH 2014

YEAR
APPROVED
2014

FILE COPY

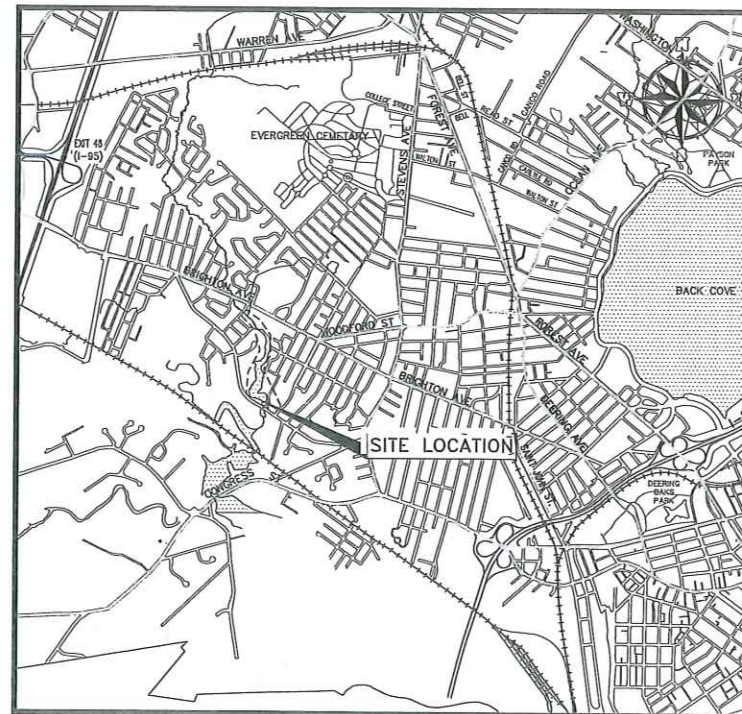
Pho O has
scaled set
DPS + City Arborist
have 11x17 set.
not sent to
assessors or fire as N/R

Rockland outfall
% Machigonne St
2013-269

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014

KATHERINE A. EARLEY DATE
CITY ENGINEER

BRADLEY ROLAND DATE
CITY PROJECT MANAGER



SITE LOCATION MAP

INDEX OF PLANS	
1	GENERAL NOTES, LEGEND & ABBREVIATIONS
2	EXISTING CONDITIONS
3	SITE PLAN & PROFILE, SECTIONS
4	LANDSCAPING PLAN & DETAILS
5	SITE DETAILS - 1
6	SITE DETAILS - 2
7	SITE DETAILS - 3

Fig 1 Finished Conditions Plan



SEAL & SIGNATURE

T:\225672\portland-main_eng_sens\wp\77_csp\site_pand.ph: I:\Drawings\Design_Drawings\225672\77_CSDX_24x36.dwg, Mar 26, 2014 - 4:30pm

GENERAL NOTES:

- SITE AND TOPOGRAPHIC DATA COMPILED FROM NUMEROUS SOURCES INCLUDING A BASE PLAN PREPARED BY KAPPA MAPPING, INC. 6 STATE STREET, SUITE 301 BANGOR, MAINE 04401 UTILIZING AERIAL PHOTOGRAPHY FLOWN ON 4/18/2012 AND BASE PLAN DATA COMPILED FOR THE WEST SIDE INTERCEPT SEWER REPLACEMENT PROJECT (APRIL 19, 2010 BY WOODARD & CURRAN INC). BORING INFORMATION TAKEN FROM ROCKLAND AVENUE SEWER SEPARATION PROJECT PLANS (AUGUST 2009, BY DELUCA-HOFFMAN)
- MAPPING CONTROL SYSTEMS PROJECTION: MAINE WEST ZONE SPCS HORIZONTAL DATUM, NAD83. VERTICAL DATUM: NAVD83. UNITS: US FEET
- ADJACENT PROPERTY AND STREET RIGHT OF WAY LINES ARE CITY OF PORTLAND TAX MAP G.L.S. DATA (APPROXIMATE).
- CAPISIC PARK PROPERTY LINE DERIVED FROM "PLAN OF CITY PROPERTY AT CAPISIC POND", BY J.M. ROBBINS, P.D.P.W. #173
- THE UTILITY LOCATIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION BY THE CONTRACTOR. CONTACT THE CITY IMMEDIATELY UPON DISCOVERING ANY CONFLICTS WITH EXISTING AND PROPOSED UTILITY LOCATIONS. NOT ALL EXISTING UTILITIES ARE SHOWN ON PLANS.
- CLEAN AND/OR FLUSH ALL MANHOLES, CATCH BASINS, AND ASSOCIATED PIPING AFTER THE WORK HAS BEEN COMPLETED.
- COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND CITY. CONTACTS ARE LISTED IN SPECIFICATIONS. NOTIFY UTILITY COMPANIES WITHIN 48 HOURS OF WORK ACTIVITY ADJACENT TO THOSE UTILITIES.
- CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO COMMENCING WORK, ALLOWING SUFFICIENT TIME TO LOCATE AND MARK THE LOCATION OF BURIED UTILITIES. CONTRACTOR SHALL CONTACT "DIG SAFE", TELEPHONE #11, PRIOR TO EXCAVATION.
- RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH (GRAVEL, PAVEMENT, GRASS, ETC.). RESTORATION OF PAVED SURFACES, GRAVEL SURFACES, DRIVEWAYS, AND LAWNS DAMAGED BY CONSTRUCTION ACTIVITIES OUTSIDE OF LIMITS OF WORK INDICATED ON THE PLANS SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER. ANY CURB DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AND SHALL CONFORM TO CITY OF PORTLAND AND MAINE DOT SPECIFICATIONS AT NO ADDITIONAL COST TO OWNER.
- PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE BY A LICENSED LAND SURVEYOR ACCEPTABLE TO THE CITY.
- EXISTING FACILITIES (I.E. TREES, POLES, LIGHT POSTS, CATCH BASINS, ETC.) SHALL BE REMOVED AND PROTECTED DURING CONSTRUCTION. CITY RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF CITY AT CONTRACTOR'S EXPENSE.
- ALL TREES NOT NOTED TO BE REMOVED OR RELOCATED SHALL BE PROTECTED BY CONTRACTOR DURING CONSTRUCTION.
- ALL WORK WITHIN THE RIGHT OF WAY OF CITY STREETS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL SUBMIT A PROPOSED TRAFFIC CONTROL PLAN TO THE TRAFFIC ENGINEER AT LEAST 7 DAYS BEFORE BEGINNING CONSTRUCTION IN ANY STREET. THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE SUBJECT TO APPROVAL BY THE TRAFFIC ENGINEER, WHO MAY ATTACH SPECIAL CONDITIONS TO, OR REQUIRE MODIFICATIONS OF, THE TRAFFIC CONTROL PLAN. WORK SHALL NOT BEGIN UNTIL THE PLAN IS APPROVED BY THE TRAFFIC ENGINEER.
- DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT ON ADJACENT CITY OR PRIVATELY OWNED LOTS, UNLESS PERMISSION HAS BEEN GRANTED IN WRITING BY CITY AND/OR LAND OWNER.
- COORDINATE DISRUPTION OF PRIVATE UTILITY SERVICES WITH LANDOWNERS AT LEAST TWO DAYS (48 HOURS) PRIOR TO DISRUPTION. ALL UTILITY COORDINATION IS RESPONSIBILITY OF CONTRACTOR.
- RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, BARRIERS, FENCES, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. NO TRENCH SHALL BE LEFT OPEN DURING NON-WORKING HOURS. SITE CONTAINS ACTIVE WALKING TRAIL. TRAIL MAY BE CLOSED TO PUBLIC ACCESS AS NECESSARY TO ALLOW FOR CONSTRUCTION. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR, DURING BOTH WORKING AND NON-WORKING HOURS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN A CITY STREET OPENING PERMIT FOR ALL WORK IN THE CITY RIGHT OF WAY BEFORE BEGINNING CONSTRUCTION. THE FEE FOR THIS PERMIT WILL BE WAIVED BY THE CITY. THE CONTRACTOR WILL ALSO BE REQUIRED TO HAVE A CURRENT EXCAVATOR'S LICENSE IN THE CITY. THE EXCAVATOR'S LICENSE FEE WILL NOT BE WAIVED BY THE CITY.
- ALL WORK ASSOCIATED WITH THE PROJECT SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLES V, VI, AND IX OF CHAPTER 25-STREETS, SIDEWALKS, AND OTHER PUBLIC PLACES OF THE CITY OF PORTLAND CODE OF ORDINANCES.
- ALL SEWER CONSTRUCTION IN THE PUBLIC WAY SHALL BE COMPLETED IN ACCORDANCE WITH ARTICLE II OF CHAPTER 24-SEWERS OF THE CITY OF PORTLAND CODE OF ORDINANCES.
- THE CITY OF PORTLAND ENGINEERING DIVISION REQUIRES THAT UPON COMPLETION OF CONSTRUCTION, A COMPLETE SET OF "RECORD" DRAWINGS THAT REFLECT ANY AND ALL MODIFICATIONS TO THE SANITARY SEWER SYSTEM, STORM SEWER SYSTEM AND ANY OTHER UTILITY INSTALLATIONS OR ALTERATIONS WITHIN THE PROJECT LIMITS BE SUBMITTED TO THE DIVISION. THESE DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL AND HARD COPY FORMAT AS DEFINED IN THE SPECIFICATIONS PRIOR TO PAYMENT OF FINAL RETAINAGE.
- WORK IS IN CLOSE PROXIMITY TO EXISTING UTILITIES. PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION SHALL BE INCIDENTAL TO THE PAY ITEM UNDER WHICH WORK TO INSTALL SAID UTILITY IS PERFORMED.
- FOR TEST PIT LOCATIONS SHOWN ON PLANS, FIELD VERIFY UTILITY ELEVATIONS PRIOR TO ORDERING CATCH BASIN & MANHOLE STRUCTURES. NOTIFY ENGINEER OF ANY CONFLICTS.
- CONTACT CITY OF PORTLAND ARBORIST AND ENGINEER PRIOR TO CUTTING ROOTS, TRIMMING BRANCHES, OR DISTURBING TREES THAT NOT HAVE BEEN NOTED FOR REMOVAL ON THE PLANS.
- DEMOLITION (REMOVAL AND DISPOSAL) OF EXISTING PIPE WITHIN 4 FEET OF THE HORIZONTAL LIMITS OF EXCAVATION FOR PROPOSED PIPES OR STRUCTURES SHALL BE INCIDENTAL TO THE PAY ITEM FOR WHICH THE PROPOSED PIPE IS INSTALLED. NO ADDITIONAL PAYMENT SHALL BE MADE. REFER TO SUPPLEMENTAL SPECIFICATION SECTION 202.
- DEMOLITION (REMOVAL AND DISPOSAL) OF EXISTING MANHOLE OR CATCH BASIN IN WHICH THE CENTER OF THE EXISTING STRUCTURE IS WITHIN 8 FEET OF THE CENTER OF THE NEW STRUCTURE SHALL BE INCIDENTAL TO THE PAY ITEM FOR THE NEW STRUCTURE BEING INSTALLED. NO ADDITIONAL PAYMENT SHALL BE MADE. REFER TO SUPPLEMENTAL SPECIFICATION SECTION 202.
- PROVIDE 4-INCHES OF LOAM AND SEED IN ALL LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATIONS.
- IF CONTRACTOR PROPOSES TO TEMPORARILY STOCKPILE ANY SURPLUS SOIL AND ROCK IN THE CITY OF PORTLAND, THE CONTRACTOR SHALL OBTAIN APPROVAL FOR EACH STOCKPILE LOCATION FROM THE ENGINEER. IF CONTRACTOR PROPOSES TO PERMANENTLY STOCKPILE ANY SURPLUS SOIL AND ROCK ON PROPERTY IN THE CITY OF PORTLAND, THE CONTRACTOR MUST OBTAIN ANY SITE PLAN PERMITS REQUIRED FROM THE CITY PLANNING AUTHORITY OR ANY FULL PERMITS REQUIRED FROM MDEP OR U.S. ARMY CORPS OF ENGINEERS. BOTH TEMPORARY AND PERMANENT STOCKPILE LOCATIONS SHALL MEET THE APPLICABLE SETBACK REQUIREMENTS IN THE CITY LAND USE CODE AND SHALL RECEIVE PROPER STABILIZATION AND EROSION & SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH APPROVED SOIL EROSION & WATER POLLUTION CONTROL PLAN.
- PROJECT IS SUBJECT TO THE CONDITIONS SET FORTH IN PERMITS ISSUED BY THE MAINE DEP AND US ARMY CORPS OF ENGINEERS, SPECIFICALLY RELATED TO LIMITS OF IMPACT, EROSION CONTROL MEASURES, RESTORATION ACTIVITIES, AND TIMEFRAME RESTRICTIONS. CONTRACTOR SHALL READ PERMIT DOCUMENTS FULLY AND CARRY OUT WORK IN ACCORDANCE WITH PERMIT DOCUMENTS. COPIES OF PERMIT DOCUMENTS ARE APPENDED TO THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROCKLAND AVENUE AND MACHIGONNE STREET FREE OF SEDIMENT. A STABILIZED CONSTRUCTION EXIST SHALL BE CONSTRUCTED AT ALL ACCESS POINTS AND ROCKLAND AVENUE AND MACHIGONNE STREET WILL BE SHEFT ON A DAILY BASIS OR AT A MORE FREQUENT RATE AS NECESSARY AS REQUESTED BY THE CITY.

SYMBOLS

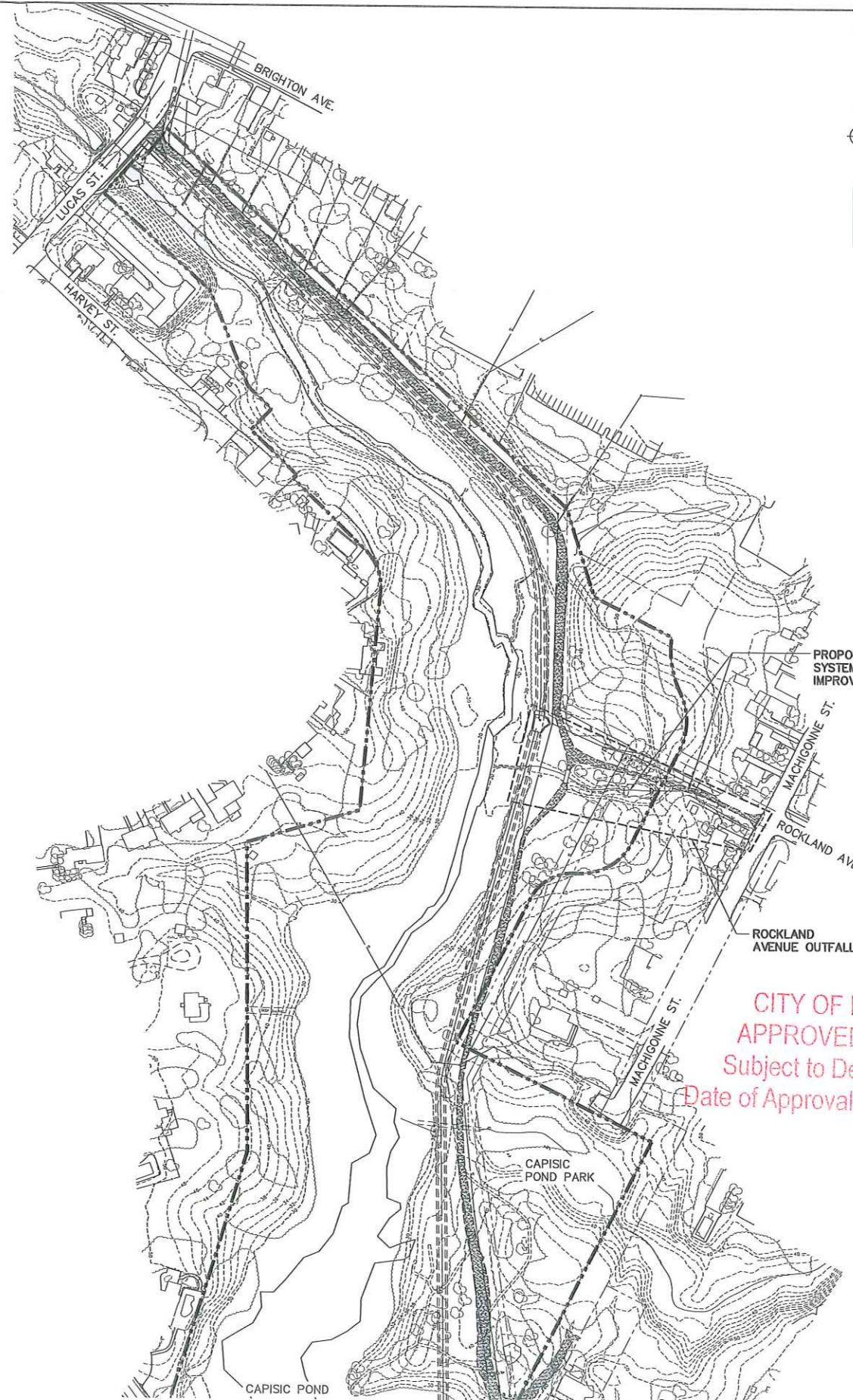
DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER MANHOLE	⊙	⊙
STORM DRAIN MANHOLE	⊙	⊙
CATCH BASIN W/ HEADSTONE	⊙	⊙
CATCH BASIN, FIELD INLET	⊙	⊙
DRAIN BASIN	⊙	⊙
UTILITY POLE W/GUY	⊙	⊙
UTILITY POLE	⊙	⊙
WATER GATE	⊙	⊙
WATER VALVE	⊙	⊙
WATER SHUT OFF	⊙	⊙
HYDRANT	⊙	⊙
SIGN	⊙	⊙
MAILBOX	⊙	⊙
TREE	⊙	⊙
IRON PIN (FOUND)	⊙	⊙
MONUMENTS (FOUND)	⊙	⊙
BORING	⊙	⊙
STONE CHECK DAM	⊙	⊙
GRAVEL	⊙	⊙
PLACED STONE	⊙	⊙

ABBREVIATIONS

A.G.	ABOVE GROUND
BIT	BITUMINOUS
B/W	BETWEEN
CB	CATCH BASIN
CI	CAST IRON
CHP	CENTRAL MAINE POWER
CMF	CORRUGATED METAL PIPE
CONC	CONCRETE
DI	DUCTILE IRON
DIA.	DIAMETER
DMH	DRAIN MANHOLE
DTL	DETAIL
E	UNDERGROUND ELECTRICAL
EL	ELEVATION
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
FF	FINISH FLOOR
FT	FOOT/FEET
G	GAS MAIN
GS	GAS SERVICE
GALV.	GALVANIZED
GRAN.	GRANITE
HDPE	HIGH DENSITY POLYETHYLENE
HDPP	HIGH DENSITY POLYPROPYLENE
HYD	HYDRANT
INV.	INVERT
LF	LINEAR FEET
MAX.	MAXIMUM
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
MIN.	MINIMUM
MON	MONUMENT
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NR	NO REFUSAL
N.T.S.	NOT TO SCALE
OE	OVERHEAD ELECTRIC
OH	OVERHEAD
±	PLUS OR MINUS
L.S.	LICENSED LAND SURVEYOR
PROP.	PROPOSED
PT.	POINT
PVC	POLYVINYL CHLORIDE
PWD	PORTLAND WATER DISTRICT
R.O.W.	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
REINF.	REINFORCED
REQD.	REQUIRED
RPP	RIBBED PLASTIC PIPE
S	SLOPE (FT./FT.)
S	SEWER
SD	STORM DRAIN
SMH	SEWER MANHOLE
SCH	SCHEDULE
STA.	STATION
TYP.	TYPICAL
UP	UTILITY POLE
VC	VITRIFIED CLAY
VIT.	VITRIFIED CLAY
W	WEST
W	WATER
W	WITH
W	WATERMAIN
WS	WATER SERVICE
WSI	WEST SIDE INTERCEPTOR
WV	WATER VALVE

LINE TYPES

DESCRIPTION	EXISTING	PROPOSED
CONTOUR (1' INTERVAL)	---	---
CONTOUR (INDEX)	---	---
SANITARY SEWER	---	---
STORM DRAIN	---	---
UNDERDRAIN	---	---
WATER MAIN	---	---
UNDERGROUND ELECTRIC	---	---
GAS LINE	---	---
OVERHEAD ELECTRIC	---	---
PROPERTY LINE	---	---
PROJECT AREA	---	---
PROPERTY LINE	---	---
RIGHT OF WAY	---	---
EASEMENT	---	---
EDGE OF VEGETATION	---	---
FENCE	---	---
CENTERLINE	---	---
RETAINING WALL	---	---
STONEWALL	---	---
CURB	---	---
EDGE OF PAVEMENT	---	---
EDGE OF GRAVEL	---	---
DESCRIPTION <th>EXISTING</th> <th>PROPOSED</th>	EXISTING	PROPOSED
CONTOUR (1' INTERVAL)	---	---
CONTOUR (INDEX)	---	---
EDGE OF GRAVEL	---	---
CONSTRUCTION FENCE	---	---



OVERALL PARK PLAN
SCALE: 1"=100'

PERMITTING SET - NOT FOR CONSTRUCTION

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
800.426.4322 | www.woodardcurran.com

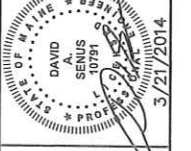


COMMITMENT & INTEGRITY DRIVE RESULTS

LDD PROJECT NAME: N/A
DRAWING NAME: 225672.77 CIOX.DWG
FIELD BOOK USED: N/A

REFERENCES:

DESIGNED BY: BDM/LJS
DRAWN BY: BDM
CHECKED BY: DJS
SCALE: 1"=20'
DATE: MARCH 2014



ROCKLAND AVENUE OUTFALL

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION

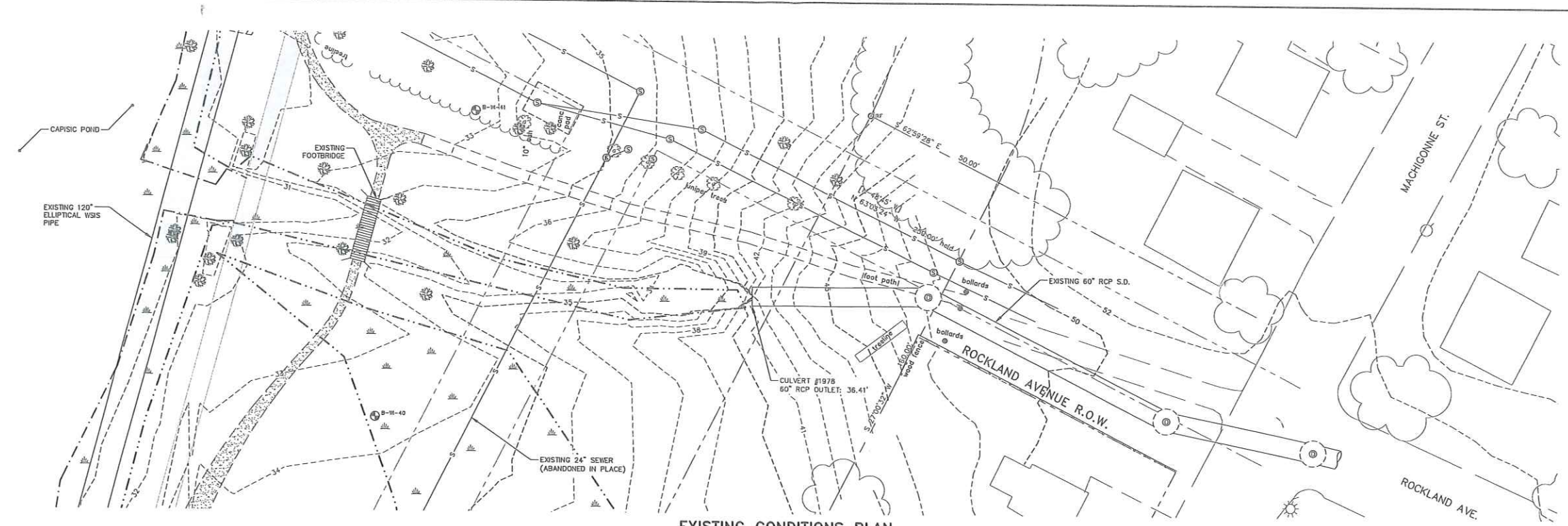


SHEET # 1 OF 7
PLAN NUMBER G-001

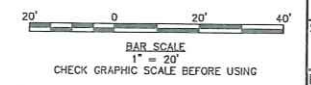
CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014

Z:\225672 portland-gm-ans-ava\wp7 capisic pond.plt\Drawings\Design_Drawing\225672.77 CIOX.dwg, Mar 26, 2014 - 4:36pm

Z:\225672_portland-gm_eng_ave\vg17_coplate_pand_ph_11\Drawings\Design_Drawing\225672\77_C200_24x36.dwg, Mar 26, 2014, - 4:30pm



EXISTING CONDITIONS PLAN
SCALE: 1" = 20'

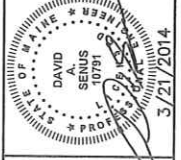


CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014



CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION

ROCKLAND AVENUE OUTFALL
EXISTING CONDITIONS



DESIGNED BY:	BCH/JLS
DRAWN BY:	BCH
CHECKED BY:	DAS
SCALE:	1" = 20'
DATE:	MARCH 2014

REFERENCES:
Overnight, 2012.dwg

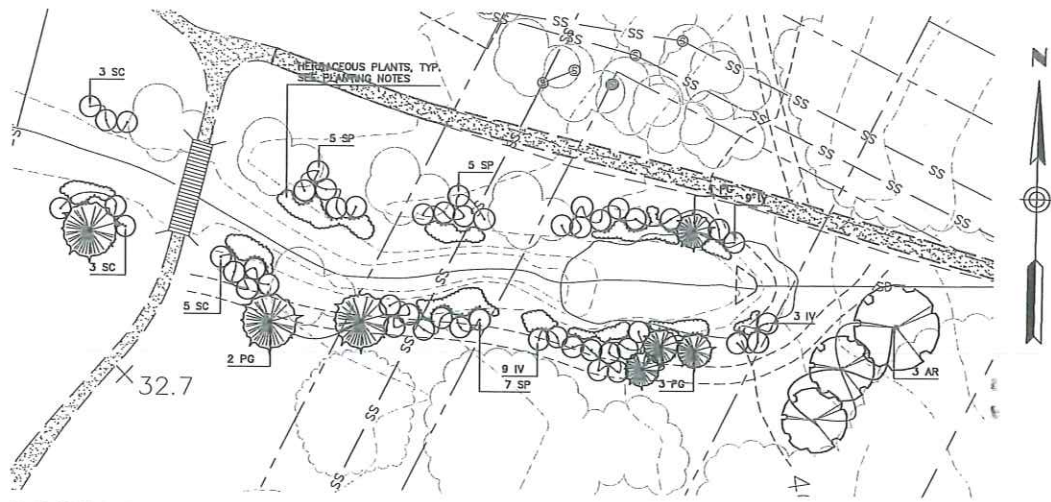
WOODARD & CURRAN
41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
800.421.4252 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

LDD PROJECT NAME: N/A
DRAWING NAME: 225672.77_C200_24x36.DWG
FIELD BOOK USED: N/A

PERMITTING SET - NOT FOR CONSTRUCTION

SHEET #
2 OF 7
PLAN NUMBER
C-200



ROCKLAND AVENUE OUTFALL PLANTINGS

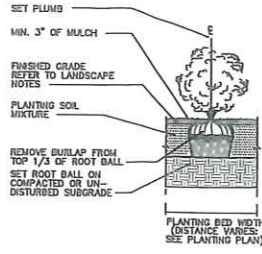
PLANTING KEY - ROCKLAND OUTFALL

TREES:			
AR	2 ACER RUBRUM	RED MAPLE	6-8' HT.
AR	1 ACER RUBRUM	RED MAPLE	2" CAL.
PG	2 PICEA GLAUCA	WHITE SPRUCE	8-10' HT.
PG	4 PICEA GLAUCA	WHITE SPRUCE	5-6' HT.
SHRUBS:			
IV	10 ILEX V. 'WINTER RED'	WINTERBERRY, FEMALE	3-4' HT.
IV	2 ILEX V. 'SO. GENTLEMAN'	WINTERBERRY, MALE	3-4' HT.
SP	41 SALIX PETIOLARIS	SLENDER WILLOW	15-18" HT.
SC	15 SAMBUCUS CANADENSIS	ELDERBERRY	15-18" HT.
HERBACEOUS MATERIAL:			
12	CHELONE GLABRA	TURTLEHEAD	BRP, 24" OC
120	JUNCUS EFFUSUS	SOFT RUSH	PLUG, 18" OC
35	LOBELIA CARDINALIS	CARDINAL FLOWER	PLUG, 24" OC

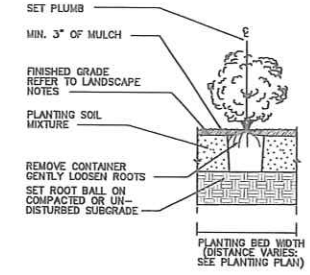
SEED:
 NEW ENGLAND CONSERVATION / WILDLIFE MIX - OR EQUAL;
 APPLICATION RATE: 25 LBS/ACRE (X2) - SPRING SEEDING (FALL)
 SUPPLIER: NEW ENGLAND WETLAND PLANTS, INC. - 820 WEST STREET, AMHERST, MA 01002; TEL. 413-548-8000

GENERAL PLANTING NOTES - ROCKLAND OUTFALL

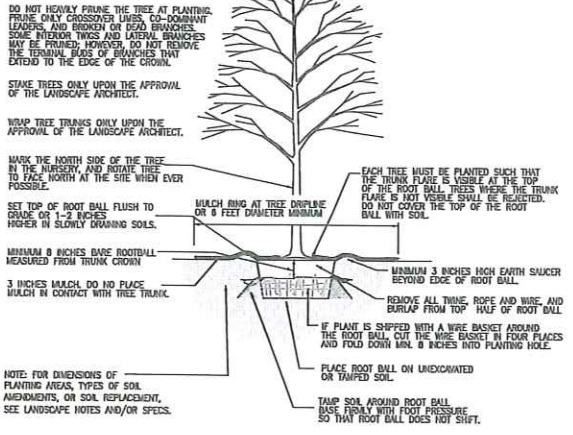
- All materials shall conform to the guidelines established by the American Association of Nurserymen or as specified herein.
- In the case of any discrepancies between species and quantities called out in the planting key and those shown on the plan, quantities and species shown on the plan shall over-ride.
- All planting shall be done in accordance with acceptable horticultural practices.
- All plants subject to approval by the City's Engineer and/or Wetland Professional. All substitutions must be submitted for approval prior to ordering or delivery of plant material on site. City reserves the right to reject any plantings that do not conform to the drawings or specifications outlined herein.
- Planting locations shown on the plan are approximate and will need to be adjusted to respond to as-built conditions that provide growing conditions necessary for plant establishment. City's Engineer and/or Wetland Professional shall layout and/or approve final placement of all plant materials.
- Plants in the Rockland Outfall plan shall be planted per the technical specifications and relevant details herein. All herbaceous material shall be field-located to ensure that the as-built conditions provide optimal growing conditions for the species. The Contractor shall correct any deficiencies in the built condition to ensure that the soil and physical site conditions meet the growing requirements of the specified species.
- Excavated native soils shall be amended with Superhumus (New England Organics, Portland, ME) at a 25 percent ratio.
- All disturbed areas designated shall be seeded as noted in the Site Plantings Key.
- Contractor shall provide a watering plan for approval by the City. All plants and newly grassed areas shall be watered as required thereafter to ensure survival and growth through the first growing season.
- 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. 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.
- The Contractor shall assume responsibility to ensure that all work is performed in compliance with all State and Local requirements.



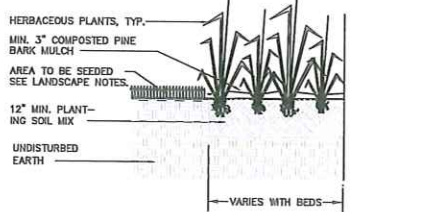
SHRUB PLANTING DETAIL



CONTAINER PLANTS (TREES & SHRUBS)



TREE PLANTING DETAIL - B&B TREES IN ALL SOIL TYPES



HERBACEOUS PLANTS - INSTALLATION DETAILS

41 HUTCHINS DRIVE
 PORTLAND, MAINE 04102
 800.424.4282 | www.woodardcurran.com

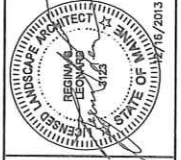
WOODARD & CURRAN

COMMITMENT & INTEGRITY DRIVE RESULTS

LDD PROJECT NAME: N/A
 DRAWING NAME: 225672.77 L10X 24X36.DWG
 FIELD BOOK USED: N/A

Regina S. Leonard
 landscape architecture & design
 29 Bridge Street
 Topsham, Me 04086
 Tel. 207.450.9700
 Regina@rsideign.com

REFERENCES:
 Design: 2/16/2014
 Drawn: 2/16/2014
 Checked: 2/16/2014
 Scale: AS NOTED
 Date: MARCH 2014



**CITY OF PORTLAND
 APPROVED SITE PLAN**
 Subject to Dept. Conditions
 Date of Approval: 4-17-2014

ROCKLAND AVENUE OUTFALL
 LANDSCAPING PLAN & DETAILS

CITY OF PORTLAND, MAINE
 PUBLIC SERVICES DEPARTMENT
 ENGINEERING SECTION



SHEET #
 4 OF 7
 PLAN NUMBER
 C-202

EROSION AND SEDIMENTATION CONTROL NOTES

TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, HYDRAULIC MULCH, HAY AND STRAW MULCH, EROSION CONTROL BLANKET, TURF REINFORCED MATING, RIPRAP AND TEMPORARY SEEDING. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE THE USE OF SILT FENCE, EROSION CONTROL MIX BERMS, FLUMING POOLS, CHECK DAMS, SEDIMENT TRAPS, CATCHBASIN SEDIMENT COLLECTION BAGS AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE THE USE OF RIPRAP AT EXPOSED STORMDRAIN AND CULVERT INLETS AND OUTLETS, ARMORED SWALES AND SLOPES AND PERMANENT VEGETATION.

- GENERAL**
- THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE MAINE CONSTRUCTION GENERAL PERMIT, IF APPLICABLE.
 - ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMP HANDBOOK PUBLISHED BY THE MAINE DEP UNLESS OTHERWISE NOTED IN THESE PLANS. <http://www.maine.gov/dep/water/erosion/>
 - ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.
 - 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.
 - THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.
 - CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN-ON TO DISTURBED AREAS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:
 - FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS THAT 90% OF THE DISTURBED AREA IS COVERED WITH REASONABLY THICK UNIFORM STAND OF PERMANENT GRASS SPECIES, FREE FROM SIZABLE THIN OR BARE SPOTS.
 - FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THAT COMPLETE BINDING OF THE SOO ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOO OR DIE OFF.
 - FOR MULCHED AREAS, PERMANENT STABILIZATION MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL.
 - FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE. STONE MUST BE SIZED APPROPRIATELY AND IN ACCORDANCE WITH SECTION E-8 OF THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL.
 - FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.
 - FOR OPEN CHANNELS, LEVEL SPREADERS, ENGINEERED BUFFERS OR OTHER DESIGNED STORMWATER CONVEYANCE STRUCTURE, PERMANENT STABILIZATION MEANS THE CHANNELIZED AREA(S) IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH APPROVED RIPRAP, OR WITH OTHER NON-EROSIVE LINIC CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE SHALL BE NO EVIDENCE OF SLUMPING, UNDERCUTTING OR DOWNCUTTING OF THE DESIGNED CHANNEL.
 - IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, AND WILL NOT BE BUILT ON, THEN IMMEDIATELY PROVIDE PERMANENT STABILIZATION USING VEGETATION THROUGH PLANTING, SEEDING, SOO OR THROUGH THE USE OF PERMANENT MULCH OR RIPRAP. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED, OVERLY-COMPACTED SUBSOIL WITH TOPSOIL OR COMPOST AND LIGHTLY TILL 2-3" OF SOIL AMENDMENTS INTO THE TOP 8" OF SOIL.
 - PERMANENT SEEDING SPECIFICATIONS: UNLESS OTHERWISE NOTED ON LANDSCAPE PLAN, IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BY AUGUST 15 AND AUGUST 15 EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEED WITH AROOSTOCK WINTER RYE OR MULCHED AT SPECIFIED RATES. SEE WINTER SEEDING AND MULCHING SPECIFICATIONS FOR STABILIZATION AFTER NOVEMBER 1.
 - APPLY TOPSOIL TO A DEPTH OF 4 INCHES. IN COMPACTED AREAS TILL 2-3" OF COMPOST INTO UPPER 8" OF DISTURBED SOIL AND THEN APPLY TOPSOIL.
 - APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 33 LBS PER 1000 SQUARE FEET AND GRANULAR, COMMERCIAL-GRADE FERTILIZER 10-10-10 AT A RATE OF 18 LBS PER 1000 SQUARE FEET.
 - UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2.5 BALES PER 1000 SQUARE FEET AND ANCHOR AS NECESSARY.
 - THE SEED MIXTURE FOR LAWN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
 - 10% CREEPING RED FESCUE
 - 25% KENTUCKY BLUEGRASS
 - 60% PERENNIAL RYE GRASS
 - 5% ANNUAL RYEGRASS
 - THE SEED MIXTURE FOR NON-LAWN AREAS WITH LOW-MAINTENANCE SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
 - 50% CREEPING RED FESCUE
 - 25% TALL FESCUE
 - 10% ANNUAL RYEGRASS
 - 10% WHITE CLOVER
 - 5% RED TOP
 - PROTECT ALL SEEDED AREAS WITH MULCH OR EROSION CONTROL BLANKET IN AREAS OF SHEET OR CONCENTRATED FLOWS. MULCH ALL AREAS SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. SCHEDULE SEEDING OR SODDING TO AVOID FAILURE DUE TO SUMMER DROUGHT AND FALL FROST. NEWLY SEEDD AREAS SHOULD BE PROTECTED FROM VEHICLE TRAFFIC, PEDESTRIAN TRAFFIC AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE OR SURFACE EROSION IS EVIDENT.
 - DITCH LININGS AND RIPRAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF THE CULVERT.
 - EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1. IN THE BASE OF DITCHES AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (WETLANDS AND WATER RESOURCES). EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S1508N OR APPROVED EQUAL. EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURE UPON STABILIZATION OF PROJECT AREA & COST SHALL BE INCIDENTAL TO CONTRACT.

- WINTER CONDITIONS**
- WINTER CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 1. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS.

GOOD HOUSEKEEPING AND POLLUTION PREVENTION

- SPILL PREVENTION CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE. INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER RUNOFF AND APPROPRIATE SPILL PREVENTION, CONTAINMENT AND RESPONSE PLANNING AND IMPLEMENTATION.
- DURING CONSTRUCTION, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUND OR SURFACE WATERS MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO INFILTRATION AREAS. AN 'INFILTRATION AREA' IS ANY AREA OF THE SITE THAT BY DESIGN, OR AS A RESULT OF SOIL AND TOPOGRAPHY, ACCUMULATES RUNOFF THAT INFILTRATES IN THE SOIL. DIKES, BERMS, BUMPS AND OTHER FORMS OF TEMPORARY SECONDARY CONTAMINANT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
- LOCATE ALL MATERIAL STOCKPILES WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.
- TAKE ALL REASONABLE MEASURES TO MINIMIZE DUST RESULTING FROM THE PROJECT. OIL MAY NOT BE USED FOR DUST CONTROL.
- LOCATE ALL LITTER, CONSTRUCTION DEBRIS AND CONSTRUCTION CHEMICALS WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.
- TRENCH OR FOUNDATION DE-WATERING MUST BE SPREAD THROUGH SUFFICIENT NATURAL BUFFERS THAT HAVE CAPACITY TO INFILTRATE THE PUMPED WATER OR SHOULD BE PUMPED TO DESIGNED CONSTRUCTION DEWATERING DEVICES AS DESCRIBED IN THE MAINE EROSION AND SEDIMENT CONTROL BMP HANDBOOK.
- SEDIMENTS AND SOIL MATERIALS SHOULD BE SHEPT FROM PAVED SURFACES AT THE END OF EACH WORKDAY OR PRIOR TO RAIN EVENTS, WHENEVER POSSIBLE.

INSPECTION AND MAINTENANCE

- A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT, THE MAINE EROSION AND SEDIMENT CONTROL BMP HANDBOOK AND ANY MUNICIPAL REQUIREMENTS MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF ADDITIONAL BMPs OR MODIFICATIONS TO BMPs ARE NECESSARY, THE MODIFICATIONS MUST BE IMPLEMENTED WITH 7 CALENDAR DAYS OR PRIOR TO ANY PRECIPITATION EVENT. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
- AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT BY THE CONTRACTOR, SUMMARIZING THE SCOPE OF THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO THE OPERATION OF EROSION AND SEDIMENT CONTROL BMPs, MATERIAL STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE CONSTRUCTION AREA. THE INSPECTION LOG SHOULD BE DELIVERED TO THE PROPERTY OWNER OR RESPONSIBLE CONTRACTING ENTITY UPON COMPLETION OF THE PROJECT.

EROSION AND SEDIMENT CONTROL NOTES

Temporary Erosion Control

Contractor shall prepare and submit a soil erosion and water pollution control plan to engineer in accordance with Section 65E.

Measure	Dates For Use	Timing, Activity, and Location
Sedimentation Barrier	ALL	Before soil disturbance, install downhill of areas to be disturbed and around material stockpiles.
Up-slope Diversion	ALL	Before soil disturbance, install uphill of areas to be disturbed and around material stockpiles.
Catch Basin Protection	ALL	Before soil or pavement disturbance, install ACF Environmental, Inc. High Flow Siltsock, Siltsover Inlet Filter, or equal, installed per manufacturer's requirements.
Dust Control	ALL	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 1	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days, if grass growth provides less than 85% soil coverage by Nov. 1, apply mulch and anchor with erosion control blanket.
Mulch	April 15 to Sept. 15	On all areas of exposed soil prior to rain events apply 100-150 lbs (2.5 bales) per 1,000 sq ft. by mechanical blower.
Winter Mulch	Sept. 16 to Oct. 31	On all areas of exposed soil, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. by mechanical blower. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and maintain and repair as necessary.

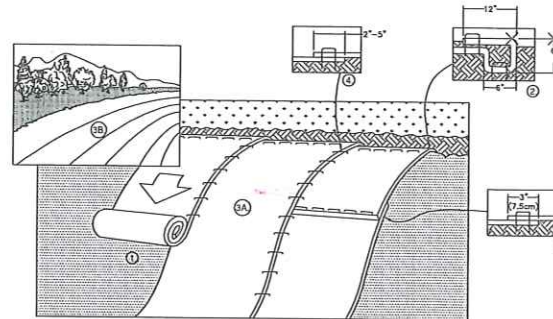
Permanent Erosion Control:

Measure	Dates For Use	Timing, Activity, and Location
Pavement - Base Course - Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation, prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil, apply seed at double the specified rate on bare topsoil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	ALL	Install with final landscaping.

Inspections:

Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

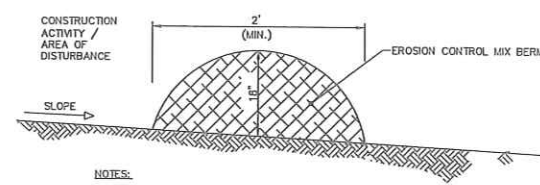
Inspected Item	Look For
Mulched Surfaces	Thin mulch or inadequate application. Wind movement.
Seeded Surfaces	Poor seed germination. Loss of mulch. Development of rivulets.
Sediment Barrier	Sediment build-up to one half the height of the barrier. Undermining of the barrier. Supporting stakes loose, toppled, or unmarked. Breaks in barrier.
Perimeter Diversion	Discharge is to stabilized area. Erosion or breaks in barrier. Supporting stakes loose, toppled or unmarked.
Catch Basin Protection	Sediment build-up and structure blockages. Slow flow/pounding water. Breaks in fabric or voids in barrier.
Dewatering Filter	Breaks in fabric or supporting structure. Slow flow, indicating high sediment build-up.
Construction Entrance	Sedimentation of roadways. Off-site dust complaints.



- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED AS WELL AS REMOVING ANY PROTRUDING ROCKS, STUMPS OR ROOTS. DURING THE GROWING SEASON (APRIL 15- SEPTEMBER 15) USE RECP'S ON THE BASE OF GRASSED WATERWAYS, SOIL SLOPES HAVING A GRADE GREATER THAN 15%, OR ANYWHERE WHERE HAY MULCH HAS PROVEN TO BE INEFFECTIVE AT CONTROLLING SHEET EROSION. RECP'S ARE A MANUFACTURED COMBINATION OF MULCH AND NETTING DESIGNED TO PREVENT EROSION AND RETAIN SOIL MOISTURE. FOR OVER WINTER PROTECTION, APPLY RECP'S ON THE BASE AND SIDE SLOPES OF GRASSED WATERWAYS AND ON SLOPES STEEPER THAN AN 8:1 GRADE.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
- ROLL THE RECP'S (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON RECP'S TYPE.
- CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
- UNTIL GRASS IS ABUNDANT, INSPECT PERIODICALLY AND AFTER EACH RAINSTORM TO CHECK FOR EROSION. IMMEDIATELY REPAIR AND ADD MORE MULCH UNTIL GRASSES ARE FIRMLY ESTABLISHED. DO NOT MOW THE FIRST YEAR.

ROLLED EROSION CONTROL MATTING

N.T.S.



NOTES:

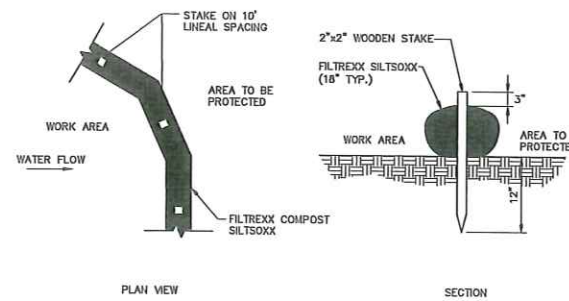
Erosion Control Mix Berms
Erosion control mix can be manufactured on or off the project site. It must consist primarily of organic material and may include: shredded bark, slump grindings, composted bark, or acceptable manufactured products. Wood and bark chips, ground construction debris or reprocessed wood products will not be acceptable as the organic component of the mix.

Composition
Erosion control mix shall contain a well-graded mixture of particle sizes and may contain rocks less than 4" in diameter. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth. The mix composition shall meet the following standards:

- The organic matter content shall be between 80 and 100%, dry weight basis.
- Particle size by weight shall be 100% passing a 6" screen and a minimum of 70% maximum of 85% passing a 0.75" screen.
- The organic portion needs to be fibrous and elongated.
- Large portions of silts, clays or fine sands are not acceptable in the mix.
- Soluble salts content shall be < 4.0 mmhos/cm.
- The pH should fall between 5.0 and 8.0.

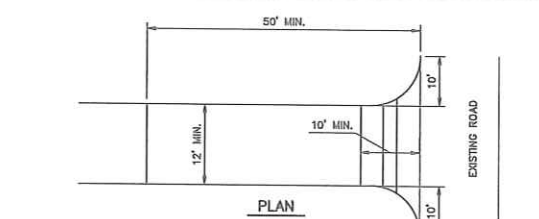
SEDIMENT BARRIER - EROSION CONTROL MIX BERM

N.T.S. (FOR USE AROUND STAGING/ ACCESS AREAS)



SEDIMENT BARRIER - SILTSOXX

N.T.S. (FOR USE AROUND STAGING/ ACCESS AREAS)

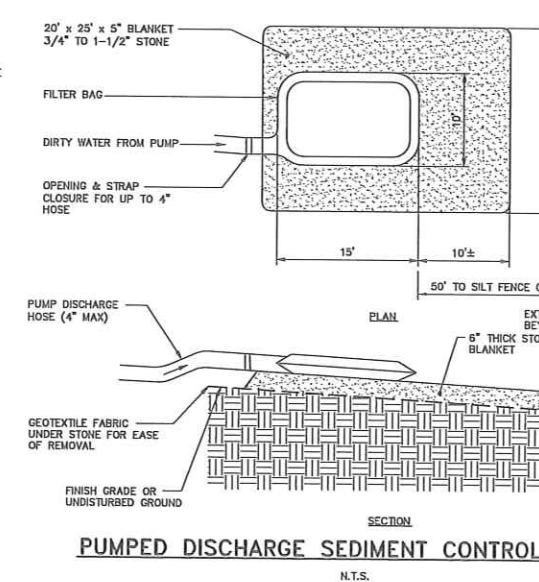


NOTES:

- CONSTRUCTION ENTRANCES MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
- WHEEL WASH PITS MAY ALSO BE USED, IF APPROVED.
- MAINTENANCE: INSPECT FOR EFFECTIVE REMOVAL OF SOIL FROM VEHICLES PRIOR TO LEAVING THE SITE. SWEEP ANY SOIL FROM ADJACENT ROADWAYS.
- REMOVAL: AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED UNTIL ALL AREAS OF THE SITE ARE STABILIZED.

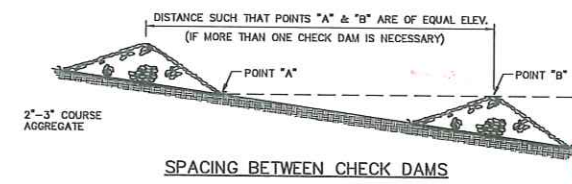
STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.

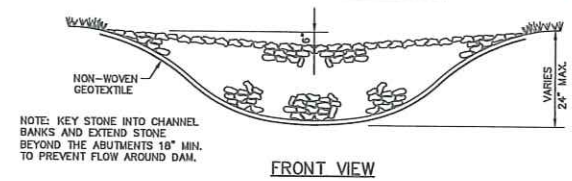


PUMPED DISCHARGE SEDIMENT CONTROL DEVICE

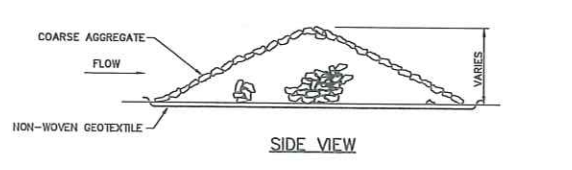
N.T.S.



SPACING BETWEEN CHECK DAMS



FRONT VIEW



SIDE VIEW

STONE CHECK DAM

N.T.S.

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
603.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

LDD PROJECT NAME: N/A
DRAWING NAME: 225672.77_C20X_24X36.01WG
FIELD BOOK USED: N/A

DESIGNED BY: BCL/ALS
DRAWN BY: BCL
CHECKED BY: DJS
SCALE: AS NOTED
DATE: MARCH 2014

3/27/2014

ROCKLAND AVENUE OUTFALL

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014



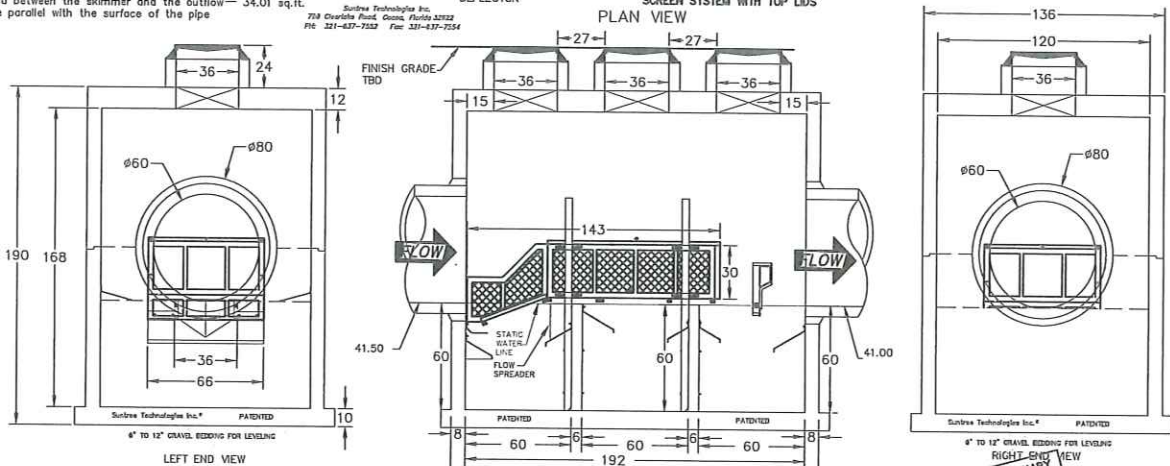
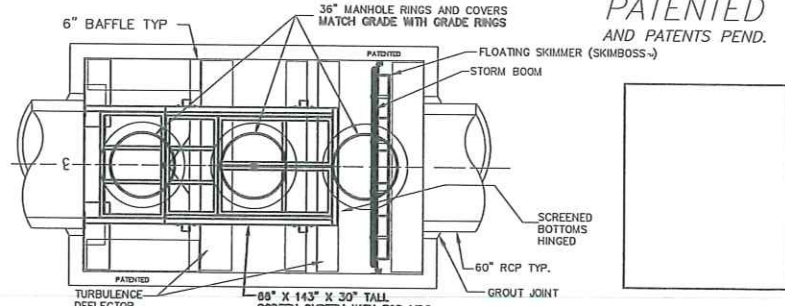
SHEET # 5 OF 7
PLAN NUMBER C-300

PERMITTING SET - NOT FOR CONSTRUCTION

SUNTREE TECHNOLOGIES INC.® NUTRIENT SEPARATING BAFFLE BOX™ MODEL NO: NSBB-10-16-168-ROCKLAND OUTFALL

FLOW & BY-PASS SPECIFICATIONS FOR BIOMASS SEPARATING SCREEN SYSTEM, SEDIMENT COLLECTION CHAMBERS, AND SKIMMER SPECIFICATIONS

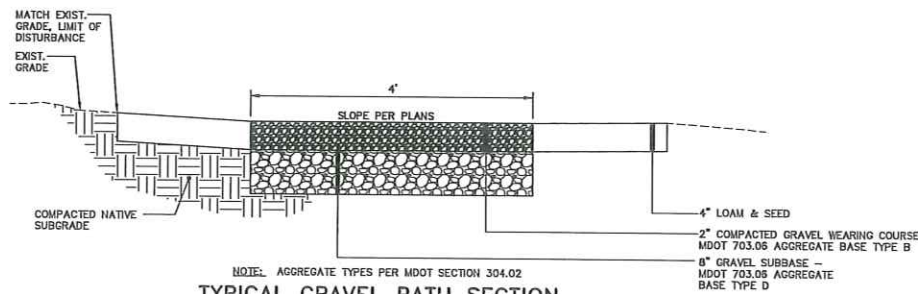
1. Pipe inflow area (Drawn as 60" RCP) — 19.63 sq.ft.
 2. Open orifice area in screen system — 62.53 sq.ft.
 3. Open orifice area in screen system with 50% blockage — 31.27 sq.ft.
 4. Open orifice area in screen system with 75% blockage — 15.63 sq.ft.
 5. Minimum by-pass through screen system — 28.44 sq.ft.
 6. Minimum by-pass around screen system below the top surface of the pipe — 21.65 sq.ft.
 7. Screen system storage volume — 141.46 cu.ft.
- SEDIMENT STORAGE:
8. Volume of first sediment chamber — 250 cu.ft.
 9. Volume of second sediment chamber — 250 cu.ft.
 10. Volume of third sediment chamber — 250 cu.ft.
 11. Total sediment volume — 750 cu.ft.
- SKIMMER SPECIFICATIONS:
12. Flow area under skimmer — 19.58 sq.ft.
 13. Area of pipe in line with skimmer — 11.95 sq.ft.
 14. Area between the skimmer and the outflow pipe parallel with the surface of the pipe — 34.01 sq.ft.



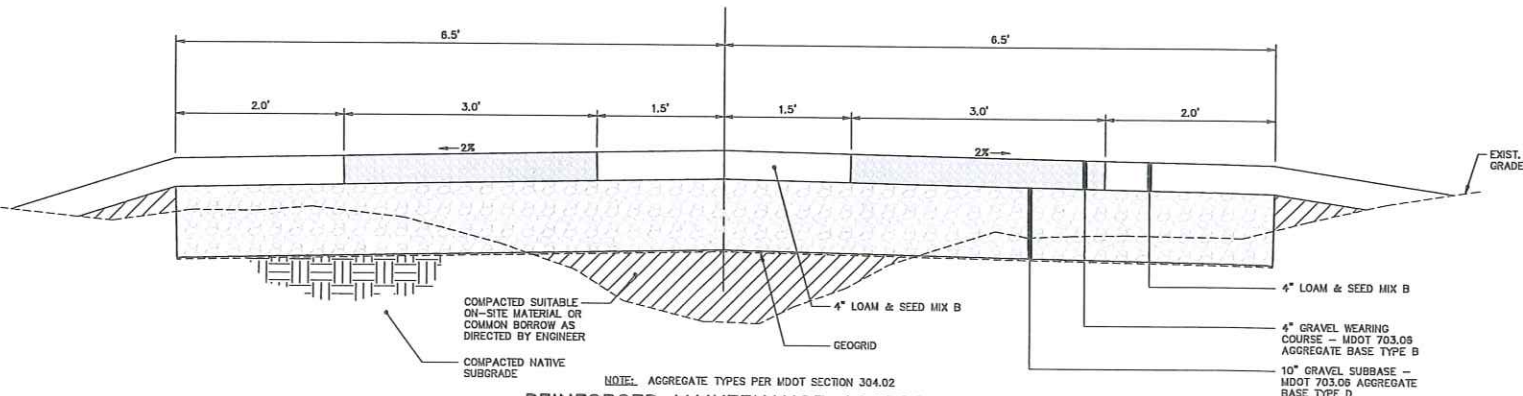
- NOTES:
1. CONCRETE 28 DAY COMPRESSIVE STRENGTH FC=5000 PSI
 2. REINFORCING: ASTM A-615 GRADE 60
 3. SUPPORTS AN H2O LOADING AS INDICATED BY ASHITO
 4. JOINT SEALANT: BUTYL RUBBER SS-S-00210
 5. ALL WALLS TO BE 8" THICK, BOTTOM TO BE 10" THICK, AND TOP TO BE 12" THICK.
 6. TREATMENT DESIGN FLOW FOR 90% REMOVAL EFFICIENCY OF TSS IS 45 CFS.
 7. INFLOW AND OUTFLOW PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE. (CAN NOT INTRUDE BEYOND FLUSH)
 8. BAFFLES ARE TO BE SEALED WITH GROUT TO FORM 3 WATER TIGHT CHAMBERS.

SUNTREE STORMWATER QUALITY TREATMENT UNIT

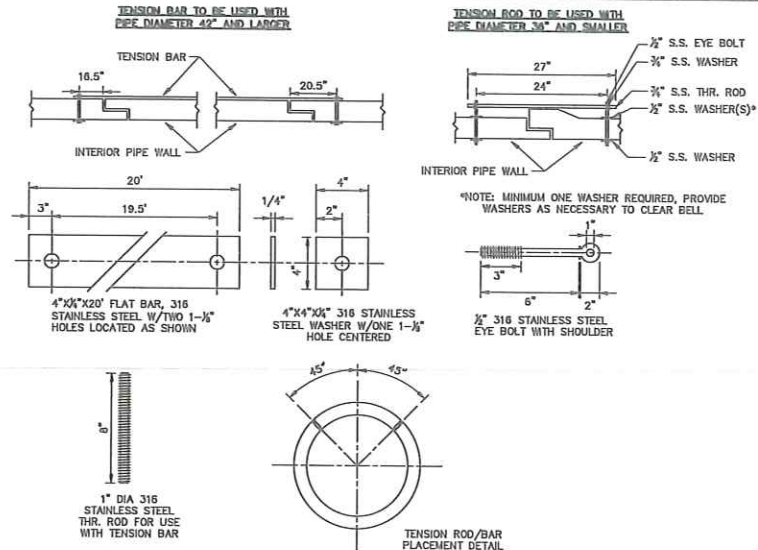
SCALE AS INDICATED



TYPICAL GRAVEL PATH SECTION N.T.S.



REINFORCED MAINTENANCE ACCESS N.T.S.



- NOTES:
1. 316 S.S. RODS, BARS, BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F593 AND ASTM F594.
 2. BOLT LENGTH PROTRUDING MORE THAN 1 INCH BEYOND TIGHTENED NUT SHALL BE CUT OFF FLUSH WITH NUT.

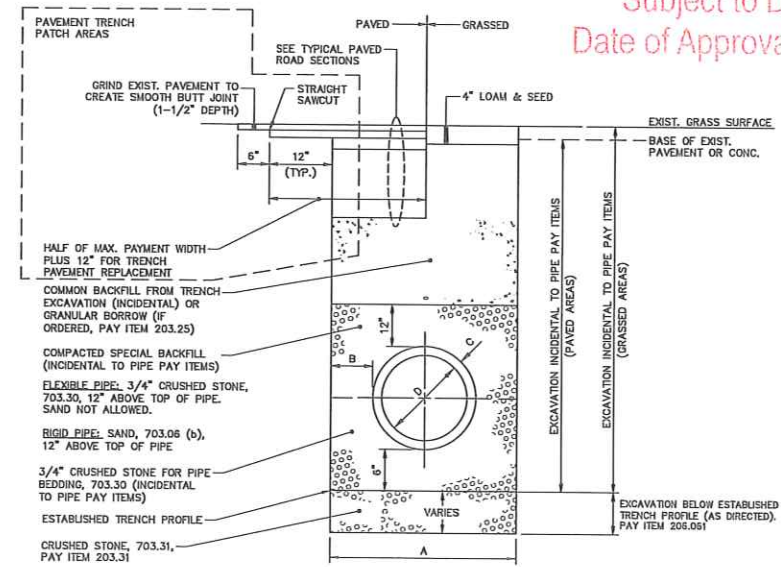
TENSION ROD/BAR ASSEMBLY N.T.S.

PIPE INSTALLATION DETAIL - NOTES

1. ALTERNATIVE CONSTRUCTION METHODS OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTHS OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION "B" SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE, BUT IN ALL CASES "B" SHALL BE AT LEAST 9".
4. DIMENSION "A" IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER ITEMS 203.25 GRANULAR BORROW, 203.29 CRUSHED STONE, 206.061 STRUCTURAL EARTH EXCAVATION, BELOW GRADE AND 206.17 STRUCTURAL ROCK EXCAVATION. DIMENSION "A" SHALL BE BASED ON PIPE DIAMETER, AS SET FORTH IN THE FOLLOWING TABLE.

PIPE DIAMETER, "D" (INCHES)	MAX. TRENCH WIDTH, "A" (FEET)
6	4.0
8	4.0
10	4.0
12	4.0
15	4.0
18	5.0
21	5.0
24	5.5
27	6.0
30	6.0
36	7.0
42	8.0
48	8.5
54	8.5
60	9.0

- NOTES:
- ANY ALTERNATE TRENCHING OR PAYMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES.



PIPE INSTALLATION DETAIL N.T.S.

CITY OF PORTLAND APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014

ROCKLAND AVENUE OUTFALL

SITE DETAILS - 2

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION



SHEET # 6 OF 7
PLAN NUMBER C-301

PERMITTING SET - NOT FOR CONSTRUCTION

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
800.426.4262 | www.woodwardcurran.com

WOODWARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS

LDD PROJECT NAME: N/A
DRAWING NAME: 225672.77 C20X 24x36.DWG
FIELD BOOK USED: N/A

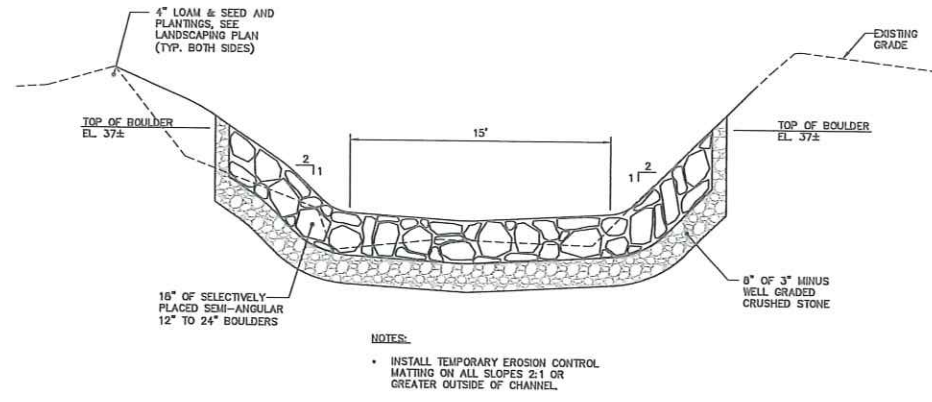
REFERENCES:
Design: 2012.rdw

DESIGNED BY: BCL/LS
DRAWN BY: BCM
CHECKED BY: DMS
DATE: 07/31/2014

SCALE: AS NOTED

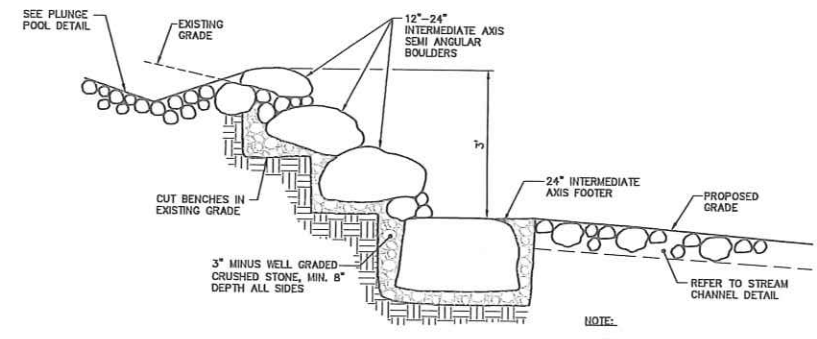
DATE: MARCH 2014

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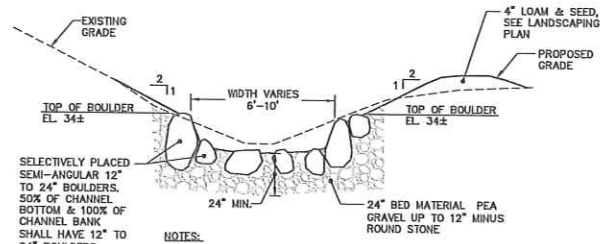
ROCKLAND AVE. OUTFALL PLUNGE POOL DETAIL*

*CROSS SECTION DETAIL ACROSS CHANNEL;
APPLICABLE STA. 1+65 TO 2+20
N.T.S.



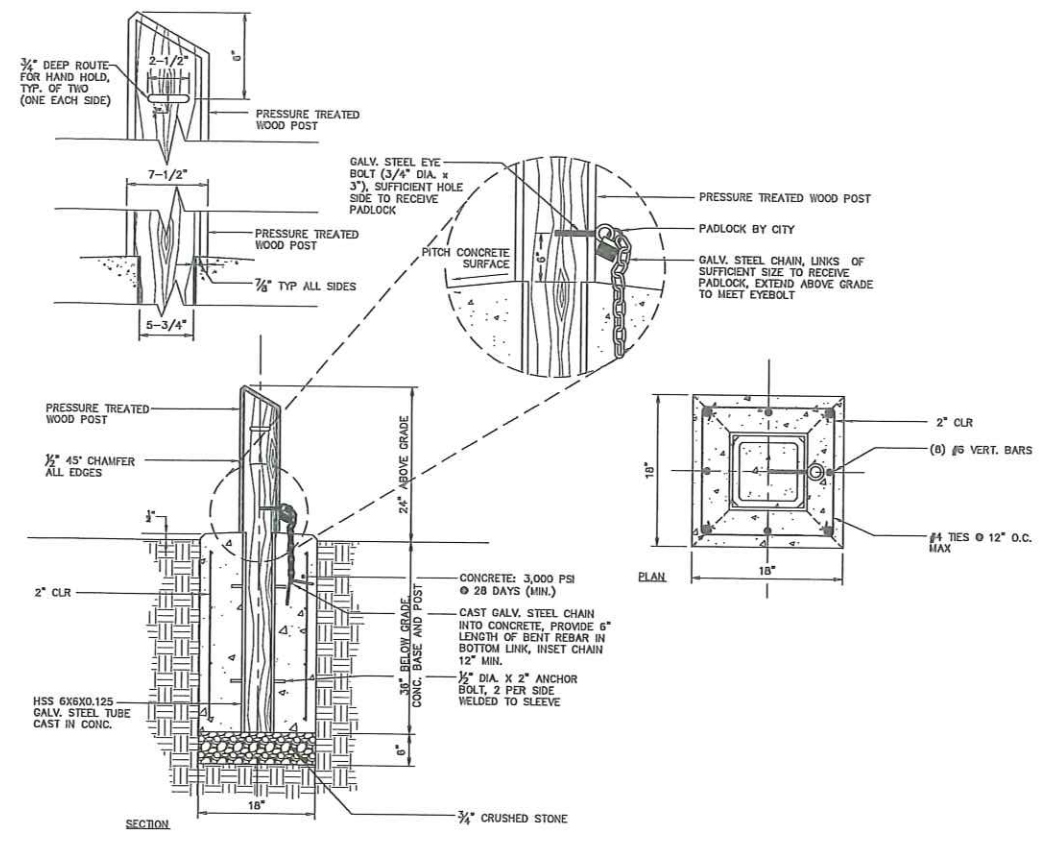
ROCKLAND AVE. OUTFALL CASCADE DETAIL*

*CROSS SECTION DETAIL PATH OF CHANNEL;
APPLICABLE STA. 1+50 TO 1+65
N.T.S.



ROCKLAND AVE. OUTFALL STREAM CHANNEL DETAIL*

*CROSS SECTION DETAIL ACROSS CHANNEL;
APPLICABLE STA. 0+85 TO 1+50
N.T.S.



REMOVABLE WOOD BOLLARD
N.T.S.

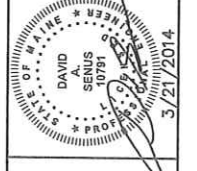
41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
800.426.4332 | www.woodardcurran.com

WOODARD & CURRAN
COMMITMENT & INTEGRITY DRIVE RESULTS

LDD PROJECT NAME: N/A
DRAWING NAME: 225672.77 C20X 24X36.DWG
FIELD BOOK USED: N/A

REFERENCES:

DESIGNED BY:	BCM/ALS
DRAWN BY:	BCM
CHECKED BY:	DAS
SCALE:	AS NOTED
DATE:	MARCH 2014



ROCKLAND AVENUE OUTFALL

SITE DETAILS - 3

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION



SHEET #
7 OF 7
PLAN NUMBER
C-302

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014

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FINISHED CONDITIONS PLAN

SCALE: 1" = 30'



BAR SCALE
1" = 30'
CHECK GRAPHIC SCALE BEFORE USING

LEGEND

WETLAND LIMITS	
PROPERTY/ EASEMENT LINE	
WOOD FENCE	
GRAVEL PATH/ ACCESS	
STONE/ CHANNEL LINING	
VEGETATION/ TREE CANOPY	
INDIVIDUAL TREE/ SHRUB	
MANHOLE COVER	
BOLLARDS	
CONTOUR (1' INTERVAL)	
CONTOUR (INDEX)	

CITY OF PORTLAND
APPROVED SITE PLAN
Subject to Dept. Conditions
Date of Approval: 4-17-2014

41 Hutchins Drive
Portland, Maine 04102
800.426.4262 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS



FINISHED CONDITIONS PLAN

DESIGNED BY: BCM/LJS
CHECKED BY: DAS
DRAWN BY: BCM
225672.77 PROPOSED COND*.dwg

CITY OF PORTLAND, MAINE
PUBLIC SERVICES DEPARTMENT
ENGINEERING SECTION

ROCKLAND AVENUE OUTFALL

JOB NO: 225672.77
DATE: MARCH 2014
SCALE: 1"=30'

FIG. 1

PERMITTING FIGURE – NOT FOR CONSTRUCTION