Notice of Intent

Langone Park and Puopolo Playground Improvements

December 2018

Prepared for:
City of Boston Parks and Recreation Department

Submitted to:
Boston Conservation Commission

Weston & Sampson
85 Devonshire Street
Suite 300
Boston, MA, 02109
www.westonandsampson.com
Tel: 857-415-3895
Fax: 978-977-0100

Weston & Sampson SM

5 Centennial Drive, Peabody, MA 01960 (HQ)
Tel: 978.532.1900

Langone Park and Puopolo Playground Improvements
WSE Project No. 2170867

December 5, 2018

Boston Conservation Commission
1 City Hall Square, Room 709
Boston, MA 02201

Re: NOI Filing
Langone Park and Puopolo Playground Improvements
Commercial Street, North End

Dear Members of the Commission:

On behalf of the City of Boston Parks and Recreation Department, Weston & Sampson is hereby enclosing eight (8) copies (including original) of the Notice of Intent submittal (including plans) as well as an electronic copy to fulfill the requirements of the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40 submittal requirements and the City of Boston submittal requirements. This submittal is a formal Notice of Intent for Langone Park and Puopolo Playground Improvements. The Properties are located on Commercial Street in the North End neighborhood of Boston.

As part of the filing, we have attached the following:

Appendix A: Project Description
Appendix B: Alternatives Analysis
Appendix C: Project Maps
Appendix D: Contract Specifications (Relevant Sections)
Appendix E: Wetlands Memorandum
Appendix F: Contract Plans
Appendix G: Stormwater Report
Appendix H: Abutters Notification

If you have any questions regarding this submittal, please contact me at (857) 415-3895.

Very truly yours,

WESTON & SAMPSON

Brandon Kunkel, RLA
Team Leader, Senior Project Manager, Design Group

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

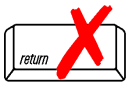
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

471 Commercial St, 529 543 Commercial St — a. Street Address
Boston — b. City/Town
02201 — c. Zip Code

Latitude and Longitude:
42deg 22'6.72"N — d. Latitude
71deg 3'16.83"W — e. Longitude

f. Assessors Map/Plat Number
Langone-0303055000, Puopolo-030307000 — g. Parcel /Lot Number

2. Applicant:

Chris — a. First Name
Cook — b. Last Name
City of Boston Parks and Recreation Department — c. Organization
1010 Massachusetts Avenue — d. Street Address
Boston — e. City/Town
MA — f. State
02118 — g. Zip Code
617-635-4505 — h. Phone Number
i. Fax Number
parks@boston.gov — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Mel — a. First Name
Higgins — b. Last Name
Weston & Sampson Engineers — c. Company
5 Centennial Drive — d. Street Address
Peabody — e. City/Town
MA — f. State
01960 — g. Zip Code
978-532-1900 x2332 — h. Phone Number
i. Fax Number
higginsm@wseinc.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

exempt — a. Total Fee Paid
b. State Fee Paid
c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
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WPA Form 3 – Notice of Intent

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A. General Information (continued)

6. General Project Description:

General Improvements to Langone Park and Puopolo Playground (See Appendix A for additional information)

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Suffolk	
c. Book	d. Page Number
unlisted	unlisted

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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Boston
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

   ☐ 25 ft. - Designated Densely Developed Areas only

   ☐ 100 ft. - New agricultural projects only

   ☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

   a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

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Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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Boston
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet	
	2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☒ Coastal Banks	770 1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet	
	2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	72,200 1. square feet	

4. ☐ Restoration/Enhancement
If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Boston
City/Town

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☒ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Boston
City/Town

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing.
a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☒ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title

Weston & Sampson Engineers
b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant — 2. Date: Oct 17/18

3. Signature of Property Owner (if different) — 4. Date

5. Signature of Representative (if any) — 6. Date: 11/14/18

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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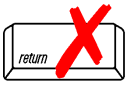


A. Applicant Information

1. Location of Project:

a. Street Address | b. City/Town

c. Check number | d. Fee amount

2. Applicant Mailing Address:

a. First Name | b. Last Name

c. Organization

d. Mailing Address

e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

3. Property Owner (if different):

a. First Name | b. Last Name

c. Organization

d. Mailing Address

e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

Total Project Fee: _____ a. Total Fee from Step 5

State share of filing Fee: _____ b. 1/2 Total Fee **less $**12.50

City/Town share of filling Fee: _____ c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Appendix A

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

Project Description

Background

Langone Park and Puopolo Playground are located on Boston Harbor North in the North End neighborhood of Boston. While they possess separate names and addresses, the two park properties essentially function as one contiguous park and playground footprint. The sites are located north of Commercial Street between the intersections of Charter Street and Foster Street. The park and playground properties currently consist of a children's playground area with pervious and impervious surfacing, basketball court, bocce courts, a Little League baseball field, and a multiuse rectangular field with softball, baseball and soccer overlays. The properties also have a series of concrete and asphalt walkways and plazas including a significant length of Boston's HarborWalk, as well as lawn and planting areas. The entire park sits on filled tidal wetlands and is categorized as urban fill.

Over time, park conditions have deteriorated considerably. Emergency seawall repairs are currently being designed for one section of the park, and large sections of the harbor edge are currently inundated during storm events and astronomical tides. This project will bring much needed upgrades to all areas of the park and provide additional benefits to park and HarborWalk visitors and help protect the neighborhood through the deployment of a variety of coastal resiliency measures designed to moderate and mitigate future flooding.

Scope of Work

The project consists of reconstructing the Little League field, replacing and improving the multi-use field with a synthetic turf field, relocating and expanding the playground area, expanding and improving the bocce courts, raising and improving the HarborWalk, creating a new memorial area (consolidating all existing monuments/memorials into a single zone) and workout area off of Commercial Street's bicycle path, and creating an activated lawn space overlooking the harbor. Additional site improvements include sports and pedestrian lighting, paved walkway and plaza spaces, site furnishings and extensive tree and shrub planting areas.

The project will also make significant improvements to storm water management on site. As currently designed, storm water will be captured and treated in deep sump hooded catch basins before being directed to a new harbor outfall with tide gate. Stormwater recharge is not recommended on site due to the soil classification and state regulations that discourage the practice of introducing stormwater recharge into fill material containing urban debris. This system will help alleviate additional burden in the combined sewer along Commercial Street by directing any water from on site away from this over-burdened municipal system.

Environmental Impacts

Sensitive environmental resource areas in, or near, the work area include Coastal Bank and Land Subject to Coastal Storm Flowage. No work is proposed within the mean high water limit.

Work will impact approximately 72,200 square feet of Land Subject to Coastal Storm Flowage. This work will occur within already altered area (the park and playground) and

include construction of new basketball courts, paved walkways, and new planted areas. Because the first inch of storm water runoff is being collected from all impervious surfaces and treated, negative environmental impacts to the Land Subject to Coastal Storm Flowage resource area are not anticipated.

The length of coastal bank impacts include 770 linear feet of bank associated with the sea wall repairs. The work will result in a more stable sea wall/coastal bank that better protects the park and playground from wave action impacts.

To protect the resource areas outside the work area (Coastal Bank and Land Under the Ocean) during construction, a sediment curtain will be placed along the water-frontage of the park and playground and compost tubes and catch basin sediment protection measures will be placed around the perimeter of the work area at the interface with resource areas. The erosion controls will be monitored throughout the project and accumulated sediment will be removed.

Appendix B

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

Alternatives Analysis

Weston & Sampson, with the City of Boston Parks and Recreation Department (BPRD) through public engagement and community outreach meetings in addition to existing site analysis and proposed use considerations, explored many options throughout our design process to date. As the site is an already developed site and the project intention is to revitalize and improve the existing conditions to meet the current and future demands of the park, Weston & Sampson believes the proposed plans submission provides the optimal benefits for BPRD, The City and the environment. A summary of each alternative is provided below:

Alternative 1: Do Nothing

Weston & Sampson with BPRD did consider only to renovate in place the existing amenities and spaces in place, including keeping the existing topographic elevations, layout of fields and other usable spaces as they currently are on site today. However, to not significantly improve the topographic elevations within the park limits would allow continued site deterioration and flooding of the park during reoccurring storm events. The probability of dangerous storm events and frequency of their occurrence within the Northeast has been noted through climate projection studies. It was documented and observed in the months of February and March 2018, multiple storm events caused portions of the park to become inundated, allowing harbor waters to breach the seawall and engulf significant areas of the park. These storm events topped athletic fields, walkways and potentially compromised portions of the existing seawall itself.

Weston & Sampson did perform a seawall inspection in the following months, and in combination with the emergency seawall repairs included with these project improvements, do believe the existing seawall will continue to deteriorate, allowing continued storm event water inundation throughout the site and damage to not only the investment of amenities being proposed but would potentially allow non-treated stormwater run-off directly into the harbor. Much of the existing stormwater system is below the high tide and stormwater elevations. This alternative is not recommended by Weston & Sampson or preferred by BPRD.

Alternative 2: Connect Stormwater to Commercial Street Combined Sewer system

Weston & Sampson did also consider maintaining the existing stormwater outfall connection for all stormwater events within the park towards Commercial Street and away from the harbor as it currently operates in this manner. Through conversations with the Boston Water and Sewer Commission (BWSC), the preferred stormwater outfall design is to directly outlet into the harbor following treatment and to not make the connection into Commercial Street. The existing BWSC 15" diameter combined stormwater and sewer outfall pipe located in Commercial Street is at or near capacity and is recommended by BWSC to separate the two utilities whenever possible. The anticipated stormwater improvements within the proposed park design allow for the separation of stormwater and sewer. It was also noted, that Commercial Street topographically is generally at the lowest point of the overall North End neighborhood system and with future projected inundation via storm events, this system may become compromised with flooding. This approach as it relates to the existing combined sewer overflow (CSO) within Commercial Street may serve to only burden or perhaps overburden the system in the future. Furthermore, Commercial Street is, in general, at a higher elevation than much of the site, making drainage back towards the street

difficult or impossible. Weston & Sampson does not recommend this as a viable alternative to the stormwater design.

Alternative 3: Infiltrate Stormwater

BWSC does have a compliance standard that the first one-inch (1") stormwater event be infiltrated and Weston & Sampson has always made best efforts to infiltrate to the greatest extent possible when working with the City of Boston. The BWSC infiltration requirements were considered and anticipated initially, however given the history of the site, Weston & Sampson and per the Massachusetts Department of Environmental protection (MassDEP) policy for "urban" fill sites, it is not recommended to infiltrate. It is not advisable by MassDEP to infiltrate stormwater within soils that are clay based or into soils that may contain construction debris and both soil types are true for this site as determined through geotechnical borings and test pits.

Weston & Sampson does not recommend infiltration of stormwater into the site soils and would like to work with both BWSC and the Conservation Commission and seek a variance on this policy, so we may comply with the MassDEP policy and receive approval from the Conservation Commission.

Alternative 4: Treat and Convey Stormwater to Harbor (Proposed Plan)

The proposed stormwater design being put forth and presented for consideration by Weston & Sampson, is the collection and treatment of storm events and surface run-off to vegetated areas and into area drains, subsurface lateral collection pipes and deep sump hooded catch basins for treatment. All collected stormwater would be treated to both City of Boston and MassDEP requirements prior to conveyance into the harbor. BWSC is also in agreement that direct outfall into the harbor is the preferred design option for stormwater outfalls.

The stormwater design intent is to collect all superficial stormwater flow to minimize or reduce the potential for urban fill leaching through infiltration into groundwater and through the granite block seawall and into the harbor. The design intent identified herein is the proposed stormwater catchment and treatment method recommended by Weston & Sampson on behalf of BPRD.

Appendix C

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

FIGURE 1
Langone and Puopolo Parks
Boston, Massachusetts

Locus Map

Work Area

1,800 0 1,800

Scale In Feet

Weston & Sampson

Path: \\wse03.local\WSE\Projects\MA\Boston MA\Langone + Puopolo\GIS\Figure 1 - Locus.mxd **User:** GasparA **Saved:** 7/25/2018 2:00:15 PM **Opened:** 7/25/2018 2:00:50 PM

FIGURE 2
Langone and Puopolo Parks
Boston, Massachusetts

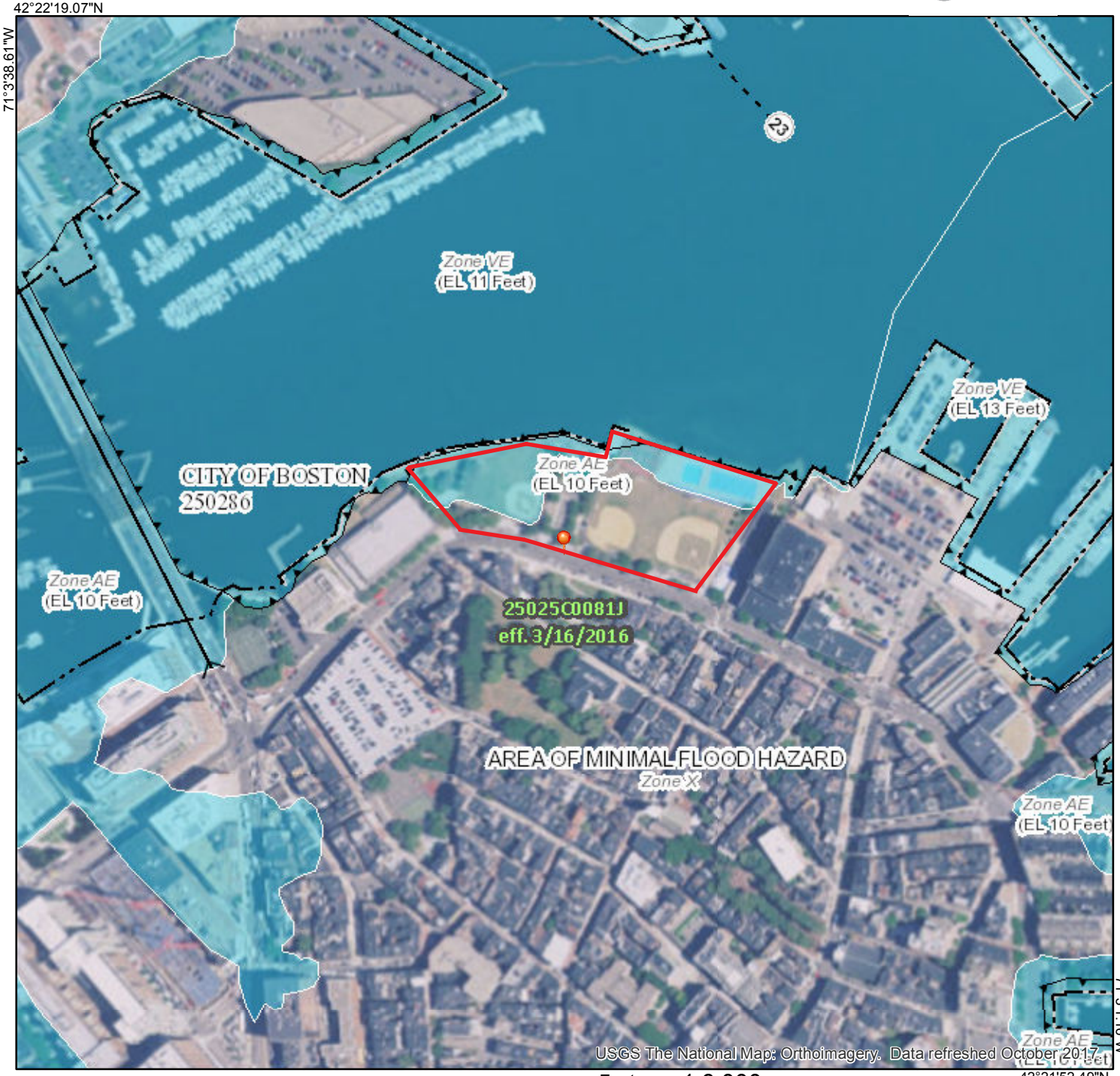
ENVIRONMENTAL RECEPTORS

100 0 100
Scale In Feet

Weston & Sampson℠

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/25/2018 at 2:09:39 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix D

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

SECTION 01562

DUST CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION:

This section of the specification covers the control of dust via calcium chloride and water, complete.

PART 2 - PRODUCTS

2.01 CALCIUM CHLORIDE:

A. Calcium chloride shall conform to the requirements of AASHTO-M 144, Type I or Type II and Specification for Calcium Chloride, ASTM D98. The calcium chloride shall be packaged in moisture proof bags or in airtight drums with the manufacturer, name of product, net weight, and percentage of calcium chloride guaranteed by the manufacturer legibly marked on each container.

B. Calcium chloride failing to meet the requirements of the aforementioned specifications or that which has become caked or sticky in shipment, may be rejected by the Engineer.

2.02 WATER:

A. Water shall not be brackish and shall be free from oil, acid, and injurious alkali or vegetable matter.

PART 3 - EXECUTION

3.01 APPLICATION:

A. Calcium chloride shall be applied when ordered by the Engineer and only in areas which will not be adversely affected by the application. See Section 01570, ENVIRONMENTAL PROTECTION.

B. Calcium chloride shall be uniformly applied at the rate of 1-1/2 pounds per square yard or at any other rate as required by the Engineer. Application shall be by means of a

mechanical spreader, or other approved methods. The number and frequency of applications shall be determined by the Engineer.

C. Water may be sprinkler applied with equipment including a tank with gauge-equipped pressure pump and a nozzle-equipped spray bar.

D. Water shall be dispersed through the nozzle under a minimum pressure of 20 pounds per square inch, gauge pressure.

END OF SECTION

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SECTION 01570

ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.01 DESCRIPTION:

A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.

B. The requirements set forth in this section of the specifications apply to construction in and adjacent to wetlands, unless otherwise specifically stated.

C. All work under this Contract shall be in accordance with the Conservation Commissions' Orders of Conditions as well as any conditional requirements applied.

D. Prior to commencement of work, the Contractor shall meet with representatives of the Engineer to develop mutual understandings relative to compliance of the environmental protection program.

1.02 SUBMITTALS:

A. The Contractor shall submit for approval six sets of details and literature fully describing environmental protection methods to be employed in carrying out construction activities within 100 feet of wetlands or across areas designated as wetlands.

PART 2 - PRODUCTS

2.01 SILT CURTAIN:

A. The silt curtain shall be a Type-1-Silt-Barrier consisting of 18-ounce vinyl fabric skirt with a 6-inch marine quality floatation device. The skirt shall be ballasted to hang vertical in the water column by a minimum 3/16-inch galvanized chain. The silt curtain shall extend into the water as shown on the drawings. If necessary, join adjacent ends of the silt curtain by connecting the reinforcing grommets and shackling ballast lines.

2.02 CATCH BASIN PROTECTION:

A. To trap sediment and to prevent sediment from clogging drainage systems, catch basin protection in the form of a siltation sack (Siltsack as manufactured by ACF Environmental, Inc. or approved equal) shall be provided as approved by the Engineer.

2.03 COMPOST FILTER TUBES:

A. Silt socks shall be a tubular filter sock of mesh fabric. The fabric will have openings of between 1/8" to ¼" diameter. The mesh material will either photo degrade within one

year or be made of nylon with a life expectancy of 24 months. The sock shall be filled with a mix of composted leaf mulch, bark mulch and wood chips that have been composted for at least one year. The sock will have a minimum diameter of 12-inches.

PART 3- EXECUTION

3.01 NOTIFICATION AND STOPPAGE OF WORK:

A. The Engineer will notify the Contractor in writing of any non-compliance with the provisions of the Order of Conditions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Engineer until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

3.02 AREA OF CONSTRUCTION ACTIVITY:

A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

3.03 PROTECTION OF WATER RESOURCES:

A. The Contractor shall not pollute streams, lakes, oceans or reservoirs with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.

B. Special measures should be taken to insure against spillage of any pollutants into public waters.

3.04 CONSTRUCTION IN AREAS DESIGNATED AS WETLANDS ON THE DRAWINGS:

A. Insofar as possible, the Contractor shall make every effort to minimize disturbance within areas designated as wetlands or within 100-feet of wetland resource areas.

B. The Contractor shall perform his work in such a way that these areas are left in the condition existing prior to construction.

3.05 PROTECTING AND MINIMIZING EXPOSED AREAS:

A. The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, temporary vegetation, mulching or other protective measures shall be provided

as specified.

B. The Contractor shall take account of the conditions of the soil where temporary cover crop will be used to insure that materials used for temporary vegetation are adaptive to the sediment control. Materials to be used for temporary vegetation shall be approved by the Engineer.

3.06 LOCATION OF STORAGE AREAS:

A. The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer. Plans showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.

B. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of one hundred (100) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of straw wattles around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

C. There shall be no storage of equipment or materials in areas designated as wetlands.

D. The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

3.07 PROTECTION OF LANDSCAPE:

A. The Contractor shall not deface, injure, or destroy trees or shrubs nor remove or cut them without written authority from the Owner. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized by the Engineer. Excavating machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees which are not to be removed, particularly overhanging branches and limbs. The Contractor shall, in any event, be responsible for any damage resulting from such use.

B. Branches, limbs, and roots shall not be cut except by permission of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. When there is unavoidable injury to branches, limbs and trunks of trees, the injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint as directed.

C. Where, in the opinion of the Engineer, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting or other operations, the Engineer may require the Contractor to adequately protect such trees by placing boards, planks, poles or fencing around them. Any trees or landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the expense of the Contractor. The Engineer will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed of.

D. Cultivated hedges, shrubs, and plants which could be injured by the Contractor's operations shall be protected by suitable means or shall be dug up, balled and temporarily replanted and maintained. After construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of a kind and quality at least equal to that existing at the start of the work.

3.06 CLEARING AND GRUBBING:

A. The Contractor shall clear and grub only on the Owner's land or the Owner's easements, and only the area required for construction operations, as approved by the Engineer.

3.07 DUST CONTROL:

A. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of streets as necessary, to minimize creation and dispersion of dust. If the Engineer decides it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed.

B. Calcium Chloride shall not be used for dust control within a drainage basin or in the vicinity of any source of potable water.

3.08 CATCH BASIN PROTECTION:

A. Catch basin protection shall be used for every catch basin, shown on the plans or as required by the Engineer, to trap sediment and prevent it from clogging drainage systems and entering wetlands. Siltation sacks shall be securely installed under the catch basin grate. Care shall be taken to keep the siltation sacks from breaking apart or clogging. All deposited sediment shall be removed periodically and at times prior to predicted precipitation to allow free drainage flow. Prior to working in areas where catch basins are to be protected, each catch basin sump shall be cleaned of all debris and protected. The contractor shall properly dispose of all debris at no additional cost to the Owner.

3.09 COMPOST FILTER TUBES:

A. The compost filter tubes will be staked in the ground using wooden stakes driven at 4-foot intervals. The wooden stakes will be placed at a minimum depth of 24-inches into the ground.

END OF SECTION

SECTION 01740

CLEANING UP

PART 1 - GENERAL

1.01 DESCRIPTION:

The Contractor must employ at all times during the progress of its work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

PART 2 - PRODUCTS

Not applicable

PART 3 - EXECUTION

3.01 DAILY CLEANUP:

A. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.

B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.

C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.

3.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:

A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

3.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

A. On or before completion of the work, the Contractor shall, unless otherwise specifically required or permitted in writing, tear down and remove all temporary buildings and

structures it built; shall remove all temporary works, tools and machinery or other construction equipment it furnished; shall remove all rubbish from any grounds which it has occupied; shall remove silt fences and hay bales used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by its operations in a neat and satisfactory condition.

3.04 RESTORATION OF DAMAGED PROPERTY:

A. The Contractor shall restore or replace, when and as required, any property damaged by its work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

3.05 FINAL CLEANUP:

A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

END OF SECTION

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Appendix E

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

Weston & Sampson SM

5 Centennial Drive, Peabody, MA 01960 (HQ)
Tel: 978.532.1900

MEMORANDUM

TO: Brandon Kunkel

FROM: Mel Higgins, PWS

DATE: October 10, 2018

SUBJECT: Wetland Resources at Langone Park and Puopolo Playground, Boston, MA

Langone Park and Puopolo Playground, located respectively at 471, and 529 – 543 Commercial Street in Boston, Massachusetts, are located on filled tidelands on the edge of Boston Harbor North. Along the northern edge of the parks are a series of sea walls which protect the parks from wave action.

The sea walls act as a coastal bank, and Mean High Water (at EL 4.33 feet NAVD88) per the NOAA Tides & Currents website for Boston Harbor (https://tidesandcurrents.noaa.gov/datums.html?id=8443970, as of 10/10/18) is located within the face of the sea walls. As such, the sea walls are considered the limit of both Mean High Water and the coastal bank.

Other environmental resources not obvious during a site visit is the 100-year flood zone or land subject to coastal storm flowage, at EL 10 per the most recent FEMA FIRM mapping as provided by the FEMA Flood Map Service Center website (https://msc.fema.gov/portal/home, as of 10/10/10)

Attached are photographs of the parks and sea walls.

1. Overlooking Boston Harbor.

2. Overlooking Boston Harbor.

3. Top of sea wall, overlooking Boston Harbor.

4. Top of sea wall, overlooking Boston Harbor.

5. Side of sea wall.

6. Seawalls from North Washington Bridge

7. Seawall at Low Tide

Appendix F

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

Appendix G

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

Stormwater Report

Conservation Commission
Boston, Massachusetts

Improvements to
Langone Park & Puopolo Playground

Notice of Intent
Massachusetts Wetland Protection Act
M.G.L. c. 131 § 40

October 9, 2018

JOB NO: 2170867

Weston & Sampson
5 Centennial Drive
Peabody, MA 01960

www.westonandsampson.com
Tel: 978-532-1900 Fax: 978-977-0100

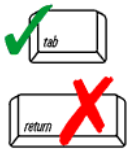
Table of Contents

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

---

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

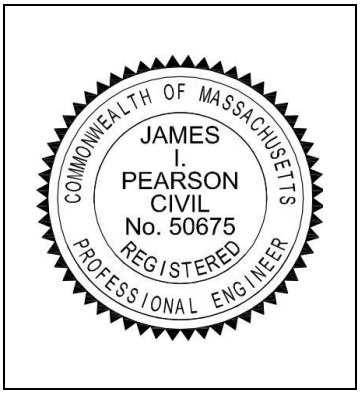
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



10/11/2018

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

☒ No disturbance to any Wetland Resource Areas

☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☐ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☐ Other (describe): _____

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☒ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

☒ Site is comprised solely of C and D soils and/or bedrock at the land surface

☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

☒ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

☐ Limited Project

☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.

☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area

☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff

☒ Bike Path and/or Foot Path

☒ Redevelopment Project

☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Stormwater Report

To Be Submitted with the Notice of Intent

Applicant/Project Name: Boston Parks and Recreation Department
Langone Park and Puopolo Playground

Project Address: Commercial Street, Boston MA

Application Prepared by:
Firm: Weston & Sampson
Registered PE: James Pearson

Due to the project's proximity to regulated resource areas, this project falls within the jurisdiction of the Massachusetts Wetland Protection Act, M.G.L. c. 131 § 40. Under the Act, project proponents must demonstrate that wetland resources are protected. This is accomplished by addressing compliance with the ten standards in the Massachusetts Stormwater Handbook. Below is an explanation concerning Standards 1-10 of the Massachusetts Stormwater Handbook as they apply to the Boston Parks and Recreation Langone Park and Puopolo Playground located on Commercial Street:

General:

Due to the need for general park improvements and additions, the City of Boston (Boston Parks and Recreation Department, BPRD) proposes the installation of new playground equipment, athletic fields and courts. In addition, BPRD proposes that the existing seawall be repaired as it is currently in need of emergency repair. Other aspects of the project are further explained in the project description section of the Notice of Intent.

Standard 1: No New Untreated Discharges

The proposed project will create no new untreated discharges. Total impervious area post-development will increase by approximately 1,860 square feet. Underdrain systems will be installed beneath sports fields to prevent over-saturation, and deep sump hooded catch basins will be installed throughout the site to collect surface runoff. All underground piping will be routed to an outfall at the seawall, discharging to the harbor. Under existing conditions, this area is heavily armored and therefore the proposed outfall will not create new erosion in the harbor.

Standard 2: Peak Rate Attenuation

Due to the increase in impervious area under proposed conditions, the peak discharge from the site is expected to increase. For typical upland development projects, some form of stormwater detention would typically be provided in order to mitigate peak stormwater discharges so that the peak discharges under the post-development condition

do not exceed the pre-development peak discharges for the 2-year and 10-year storms. Further consideration is also given to the 100-year storm event to ensure that the project does not result in an increase to flood hazards downstream of the project.

Under certain conditions, it is more appropriate that this standard be waived. The stormwater handbook indicates that this is appropriate for projects that have discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04. The intent of the standard is to prevent storm damage due to downstream or offsite flooding. When the downstream receptor is the ocean and/or areas within tidal influence, as is true in this case, increased stormwater discharge will not produce these effects. It is therefore appropriate to waive this standard for this project.

To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include compost filter tubes, catch basin protection, and a stabilized construction entrance.

Standard 3: Recharge

Under this standard, the addition of new impervious areas to a site is understood to contribute to the loss of recharge to groundwater. Impervious surfaces can cause rainfall to flow off of the site as surface runoff rather than to percolate into the soil where it can recharge the groundwater aquifer.

Under certain conditions, it is appropriate to waive strict compliance with this standard. Certain criteria within the stormwater handbook are worthy of note:

1) Volume 1 Chapter 1 of the handbook states "MassDEP recognizes that it may be difficult to infiltrate the required recharge volume on certain sites because of soil conditions. For sites comprised solely of C and D soils and bedrock at the land surface, proponents are required to infiltrate the required recharge volume only to the maximum extent practicable."

2) Volume 2 Chapter 2 of the handbook provides design criteria for infiltration BMPs. The criteria for infiltration BMPs indicates that these should not be installed over fill material, or in Hydrologic Group "D" soils.

3) Volume 3 Chapter 1 of the handbook provides criteria for site investigations related to determining the suitability of sites for infiltration BMPs. That criteria indicates that "stormwater recharge is not permitted through fill materials composed of asphalt, brick, concrete, construction debris, and materials classified as solid or hazardous waste."

Soil data for the site was obtained through the Untited States Department of Agriculture (USDA) web soil survey application (Attachment B). More detailed soil data was obtained through a series of test pits and borings throughout the site (Attachment C).

Based on the latter data set, it has been determined that the upper existing soil layers throughout the site consist of fill material of varying thicknesses. This fill material appears to be a mix of different soil types and a conglomeration of brick, concrete and other construction debris. The underlying soil beneath the fill across the site is consistently a clay material, consistent with a hydrologic soil group classification "D".

Generally, the findings described above indicate that there does not appear to be an appropriate location on the site for the placement of an infiltration BMP. Consequently, stormwater runoff will only be allowed to infiltrate to the maximum extent practicable. This will occur by making onsite impervious areas "disconnected" from catch basins. Catch basins will generally be located in the midst of vegetated areas, and runoff from impervious surfaces will generally be directed toward those vegetated areas. In light of existing site conditions, we believe that this strategy is the best approach to compliance under this standard.

Standard 4: Water Quality

Under this standard, the installation of impervious surfaces generally requires the provision of BMPs that provide stormwater quality treatment to reduce the Total Suspended Solids (TSS) from stormwater runoff. Consideration for TSS removal is given to the type of land use that is being proposed. Relatively low intensity land uses that do not involve the installation of impervious surfaces related to industrial, commercial or vehicular activity tend to produce little or no TSS load. Based on this rationale, Volume 1, Chapter 1 indicates that the Stormwater Management Standards shall apply to the maximum extent practicable to certain low-intensity land uses, including "footpaths, bikepaths and other paths for pedestrian and/or nonmotorized vehicle access."

The impervious surfaces that are proposed as part of this redevelopment project are consistent with the preceding definition, therefore stormwater quality treatment has been provided to the maximum extent practicable. This is accomplished by the installation of deep sump hooded catch basins only to the extent necessary to manage surface runoff within the park. Catch basins have been located within vegetated or grassed areas to the maximum extent practicable in order to create a condition in which impervious areas do not directly discharge runoff to catch basins. Rather, runoff will be directed from impervious areas into vegetated areas as much as is practicable so that vegetated areas will provide an added TSS filtering effect.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

This project will not create a land use with higher potential pollutant load.

Standard 6: Critical Areas

There will be no new discharge to critical areas.

Standard 7: Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

The project is a redevelopment project. Certain standards for redeveloped areas have been met to the maximum extent practicable as described herein.

Standard 8: Construction Period Pollution Prevention and Erosion and Sediment Control

A detailed Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan is included in Attachment E. To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include compost filter tubes, silt fence, catch basin protection, and a stabilized construction entrance.

Standard 9: Operation and Maintenance Plan

An operations and maintenance plan is included in Attachment F.

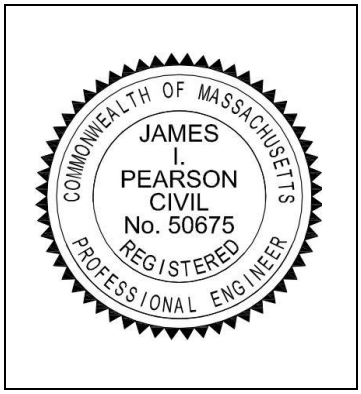
Standard 10: Prohibition of Illicit Discharges

An illicit discharge compliance statement has been included in Attachment G.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including any relevant soil evaluations, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan, the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



10/11/2018

Signature and Date

Attachment A - Locus Map

ATTACHMENT A

Langone and Puopolo Parks
Boston, Massachusetts

Locus Map

Work Area

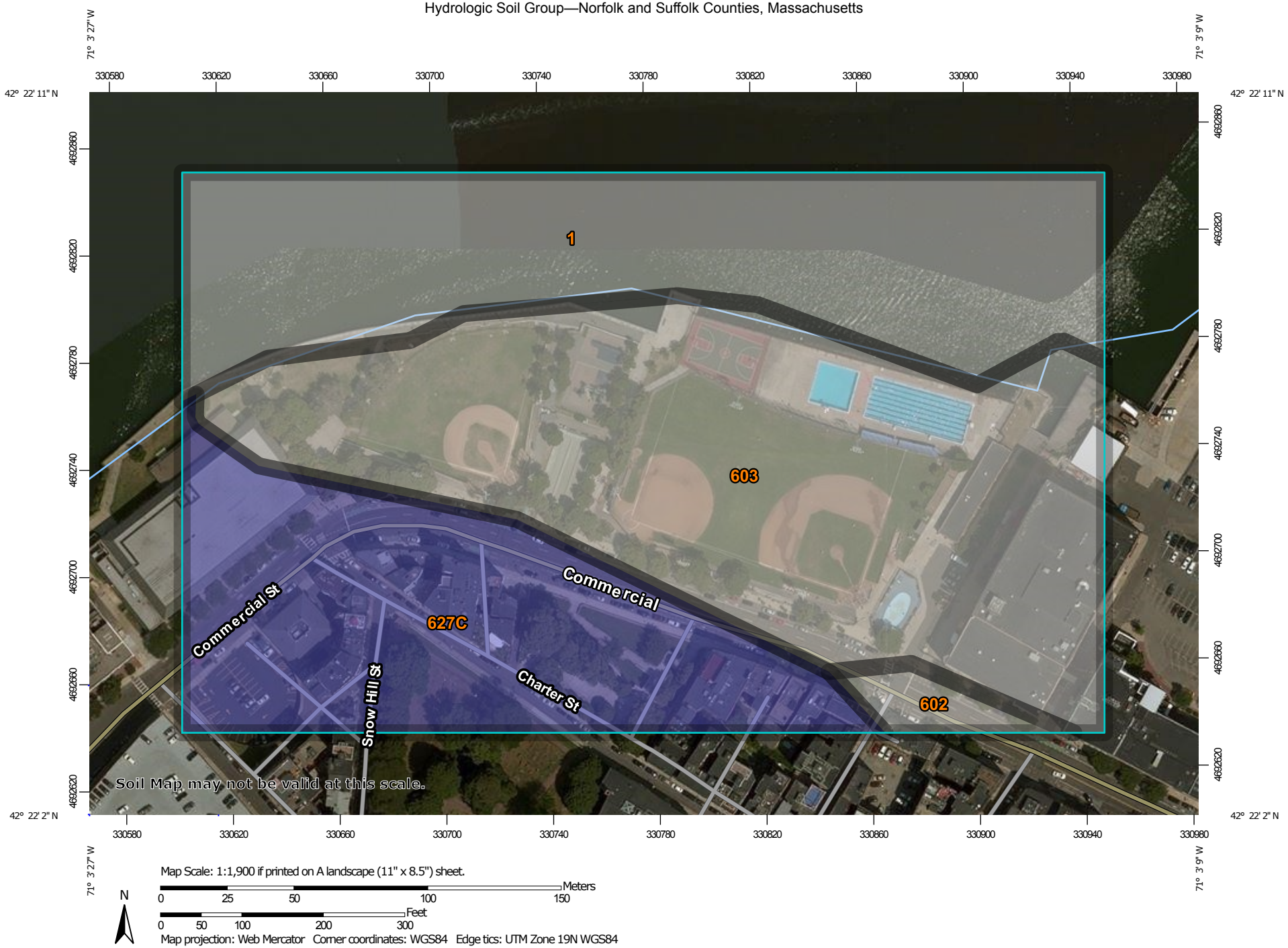
1,800 0 1,800

Scale In Feet

Weston & Sampson

Path: \\wse03.local\WSE\Projects\MA\Boston MA\Langone + Puopolo\GIS\Figure 1 - Locus.mxd **User:** GasparA **Saved:** 7/25/2018 2:00:15 PM **Opened:** 7/25/2018 2:00:50 PM

Attachment B - NRCS Soils Map, Soils Report, and HSG Classifications



Map Scale: 1:1,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 14, Sep 12, 2018

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

Date(s) aerial images were photographed: Aug 10, 2014—Aug 25, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		5.2	29.2%
602	Urban land, 0 to 15 percent slopes		0.3	1.8%
603	Urban land, wet substratum, 0 to 3 percent slopes		7.9	43.9%
627C	Newport-Urban land complex, 3 to 15 percent slopes	B	4.5	25.0%
Totals for Area of Interest			**17.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment C - Test Pit Summary and Logs

NOTES:

1. BORING LOCATIONS SHOWN ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS RELATIVE TO EXISTING SITE FEATURES.
2. LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING AND OTHER DATA SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES AND/OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE.
3. BORINGS PERFORMED BY TECHNICAL DRILLING SERVICES, INC. FROM AUGUST 8 TO AUGUST 17, 2018 AND OBSERVED BY A WESTON & SAMPSON REPRESENTATIVE.
4. SURVEY PRODUCED BY FELDMAN LAND SURVEYORS, JANUARY, 2018. ELEVATIONS REFER TO BOSTON CITY BASE.

LEGEND:

B-1 BORING DESIGNATION AND APPROXIMATE LOCATION.

TP-1 TEST PIT DESIGNATION AND APPROXIMATE LOCATION.

80 40 0 80 160

SCALE: 1"=80'

FIGURE 1
BORING LOCATION PLAN

BPRD
LANGONE & PUOPOLO PARKS

DESIGNED BY: RJV	CHECKED BY: STS	DATE: AUGUST 2018

Weston & Sampson SM

Weston & Sampson

BORING NUMBER: **B-1/MW-1**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 4" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 15.4 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/9/2018 **END DATE:** 8/9/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/8/2018	12 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 / *15.4*											
	S1	4.0	8/13	11 15 100/1"					FILL	Brown, fine to coarse SAND, some gravel; moist.[FILL]	
5 / *10.4*											
	S2	9.0	16/24	5 3 4 14	7					Loose, dark gray, gravelly fine to coarse SAND, trace brick fragments; moist.[FILL]	Sampler wet upon retrieval.
10 / *5.4*										▼	
	S3	14.0	20/24	7 9 11 10	20					Medium dense, dark gray, gravelly fine to coarse SAND, trace brick fragments; moist.[FILL]	
15 / *0.4*											Switched to drive and wash at 16'.
	S4	18.0	12/24	8 8 12 7	20					Medium dense, dark gray, fine to coarse SAND, some gravel, trace silt; wet.	
20 / *-4.6*									CLAY	Stiff, gray-brown, CLAY; wet. (LL=38, PL=23, PI=15)	Switched to open-hole at 23'. Pocket penetrometer measurement = 2.75 TSF
	S5	23.0	24/24	3 5 6 8	11						
25											

MATERIAL DESCRIPTION
(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-9.6											
	S6	28.0	18/24	5 12 10 9	22				CLAY	Very stiff, gray, CLAY, little sand, trace gravel; wet.	
30											
-14.6											
	S7	33.0	24/24	4 6 10 13	16					Very stiff, gray, CLAY, trace gravel, trace sand; wet.	
35											
-19.6										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-2A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 16.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/8/2018 **END DATE:** 8/8/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0											
16.7	S1	0.0	15/24	6 13 19 29	32				FILL	Top 5": Brown silty SAND, some clay. Middle 5": Gray GRAVEL, some sand. Bottom 5": Brown, fine to medium SAND, some gravel.	
	S2	2.0	10/24	13 28 10 6	38					Dense, dark brown, fine to medium SAND, little gravel, with occasional brick fragments and a mild organic odor; moist.[FILL]	

Auger refusal at 2 ft. Boring offset to B-2B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-2B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 4" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 16.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/8/2018 **END DATE:** 8/8/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/8/2018	12 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *16.7*										See log of boring B-2A for samples at (0'-2') and (2'-4').	
5 *11.7*	S3	4.0	10/24	6 7 6 18	13				FILL	Medium dense, dark brown, fine to medium SAND, some gravel, some silt; moist.	Gravel = 22.1% Sand = 57.7% Fines = 20.2%
	S4	6.0	6/24	15 25 15 11	40					Dense, brown, fine to coarse SAND, some wood fragments; moist.[FILL]	
10 *6.7*	S5	8.0	7/24	12 6 14 16	20					Medium dense, brown, fine to coarse SAND, little gravel, trace silt, trace wood fragments; moist.[FILL]	
	S6	10.0	14/24	5 13 19 18	32					Dense, gray-brown, fine to coarse SAND, little gravel, trace brick fragments; moist.[FILL]	Spoon wet upon retrieval.
	S7	12.0	14/24	9 19 19 17	38					Top 8": Gray-brown, fine to coarse SAND, little gravel, trace brick fragments; wet.[FILL] Bottom 6": Gray, fine to coarse silty SAND; wet.[FILL]	
15 *1.7*	S8	14.0	0/24	12 19 19 13	38					No recovery: Piece of gravel stuck in shoe tip.	Switched to drive and wash at 14'.
	S9	16.0	12/24	12 12 14 16	26				SAND	Medium dense, gray, fine to coarse SAND, some gravel, little silt; wet.	
20 *-3.3*	S10	18.0	10/24	8 10 16 18	26					Medium dense, brown, fine to medium silty SAND, trace clay, trace gravel; wet.	
	S11	23.0	12/24	12 12 19 18	31					Dense, brown, fine to medium silty SAND, some gravel; wet.	
25											

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-2B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
25										(see guide below for soil classification based on constituent percentage) Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10% Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
-8.3											
	S12	28.0	0/24	9 21 25 18	46				SAND	No recovery.	
30											
-13.3											
	S13	33.0	8/24	75 36 19 19	55					Very dense, gray, silty SAND, trace gravel; wet.	
35											
-18.3										Bottom of boring at 35'.	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-3**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 19.1 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/15/2018 **END DATE:** 8/15/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/15/2018	12 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 / *19.1*									FILL	(see guide below for soil classification based on constituent percentage) Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10% Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
5 / *14.1*	S1	4.0	8/24	6 3 4 6	7				FILL	Loose, brown, fine to coarse SAND, little silt, trace gravel; moist.[FILL]	
10 / *9.1*	S2	9.0	8/24	2 2 1 1	3				FILL	Very loose, brown, fine to coarse SAND, little silt, little gravel; moist.[FILL] ▼	
15 / *4.1*	S3	14.0	4/24	6 13 16 18	29				CLAY	Very stiff, gray, CLAY, little gravel, trace sand; wet.	
20 / *-0.9*	S4	19.0	18/24	8 9 30 26	39				CLAY	Hard, brown-gray, CLAY, some gravel, little sand, little clay; wet.	
25	S5	23.0	12/24	5 10 15 16	25				CLAY	Very stiff, gray, CLAY, trace gravel, occasional oxidation / staining.	Switched to open hole at 23'. Pocket penetrometer measurement > 4.5 TSF

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-3**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-5.9											
25	S6	28.0	12/24	4 6 7 10	13				CLAY	Stiff, gray, CLAY, little gravel, trace sand; wet.	Pocket penetrometer measurement = 1.5 TSF
30											
-10.9	S7	33.0	/24	7 8 19 14	27					Very stiff, gray, CLAY, little gravel, trace sand; wet.	Pocket penetrometer measurement = 2.0 TSF
35											
-15.9										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-4**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 19.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/16/2018 **END DATE:** 8/16/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/16/2018	11 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *19.7*									FILL	Approx. 4" silty SAND underlain by a woven geotextile, underlain by approx. 8" coarse sand, trace silt.	
5 *14.7*	S1	4.0	12/24	2 2 2 2	4					Loose, brown, fine to coarse SAND, trace gravel, trace brick fragments, and mild organic odor; moist.[FILL]	
10 *9.7*	S2	9.0	14/24	1 1 2 3	3					Very loose, dark brown, fine to medium SAND, little silt, with some wood and brick fragments; moist.[FILL] ▼	Bottom 2" wet upon retrieval.
15 *4.7*	S3	14.0	24/24	1 1 4 4	5					Loose, dark gray, fine silty SAND, with some wood and brick fragments, and mild organic odor; moist.[FILL]	Switched to drive and wash after 14'.
20 *-0.3*	S4	18.0	24/24	3 5 5 6	10				CLAY	Stiff, gray, CLAY, trace gravel, occasional oxidation / staining; wet.	Switched to open hole at 18'. Pocket penetrometer measurement = 3.25 TSF
25	S5	23.0	6/24	14 16 16 14	32					Hard, gray-brown, CLAY, some sand, little gravel, occasional oxidation / staining; wet.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE SYMBOL	SAMPLE TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-4**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25											
-5.3											
	S6	28.0	14/24	8 12 21 17	33				CLAY	Hard, gray, CLAY, little gravel, little sand; wet.	
30											
-10.3											
	S7	33.0	14/24	7 7 8 9	15					Very stiff, gray, CLAY, little sand, trace gravel; wet.	Pocket penetrometer measurement = 2.25 TSF
35											
-15.3										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-5**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 16.2 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/9/2018 **END DATE:** 8/9/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *16.2*									FILL	0 to 6": Topsoil.	
	S1	4.0	6/24	4 6 5 4	11					Medium dense, brown, fine to medium SAND, trace gravel, trace roots fibers; moist.[FILL]	5' - auger grinding.
5 *11.2*											
	S2	9.0	10/24	1 1 1 1	2					Very loose, brown, fine to medium sandy GRAVEL, little silt; moist.[FILL]	
10 *6.2*											
	S3	14.0	10/24	1 1 1 3	2				ORGANIC SILT	Soft, dark brown, ORGANIC SILT, some sand, trace gravel, trace shell fragments and a stong petroleum-like odor; moist.	
15 *1.2*											
	S4	16.0	12/24	4 20 5 6	25					Very stiff, dark brown, ORGANIC SILT, some sand, trace gravel, trace shell fragments and a stong petroleum-like odor; moist.	
	S5	18.0	4/24	2 3 7 6	10					Stiff, dark brown, ORGANIC SILT, some sand, trace gravel, trace shell fragments and a stong petroleum-like odor; moist.	
20 *-3.8*											
	S6	20.0	10/24	5 15 14 13	29					Very stiff, dark gray, ORGANIC SILT, trace gravel, trace clay, with a mild petroleum-like odor; moist.	
	S7	22.0	6/24	3 12 11 32	23					Very stiff, dark gray, ORGANIC SILT, little gravel, trace clay, with a mild petroleum-like odor; moist.	23' - auger grinding.
25	S8	24.0	12/24	2 7	19					Very stiff, gray-brown sandy CLAY, trace gravel; moist.	Gravel = 6.9% Sand = 45.8%

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-8.8				12 10					CLAY		Fines = 47.3%
	S9	26.0	12/24	11 9 11 12	20					Very stiff, gray-brown CLAY, little gravel, little sand; moist. (LL=31, PL=18, PI=13)	
30											
-13.8	S10	30.0	14/24	5 5 7 8	12					Stiff, gray-brown CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.5 TSF
	S11	34.0	24/24	2 5 6 6	11					Stiff, gray-brown CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.0 TSF
35 -18.8										Bottom of boring at 36'.	

Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%
Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-6**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 18.4 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/13/2018 **END DATE:** 8/13/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
0 *18.4*									FILL		
	S1	4.0	12/24	2 2 1 1	3					Very loose, brown, fine to coarse SAND, little gravel, trace brick fragments, trace root fibers; moist.[FILL]	
5 *13.4*											
	S2	9.0	12/24	1 3 12 6	15					Medium dense, gray-brown, silty SAND, trace gravel, trace brick fragments, trace root fibers; moist.[FILL]	12' - auger grinding.
10 *8.4*											
	S3	14.0	4/24	4 7 3 4	10					Medium dense, dark gray, fine to medium SAND, some wood fragments; moist.	Wood stuck in tip of spoon.
15 *3.4*									CLAY		
	S4	19.0	24/24	5 7 12 12	19					Top 4": Dark gray, fine to medium SAND; moist. Bottom 16": Very stiff, gray, CLAY, trace gravel, trace sand, with occasional oxidation / staining; moist.	Switched to open hole at 19'. Pocket penetrometer measurement = 3.5 TSF
20 *-1.6*											
	S5	23.0	24/24	4 5 7 8	12					Stiff, gray CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.5 TSF
25											

Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%
Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%

SAMPLE	
SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS	
N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS	
N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25											
-6.6											
	S6	28.0	2/24	4 5 5 7	10				CLAY	Stiff, gray CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.75 TSF
30											
-11.6											
	S7	33.0	24/24	5 9 14 28	23					Very stiff, gray, CLAY; moist.	Gravel stuck in tip of spoon. Pocket penetrometer measurement = 1.0 TSF
35											
-16.6	S8	35.0	24/24	20 19 17 22	36					Hard, gray, CLAY, some gravel, little sand; moist.	

Bottom of boring at 37'.

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-7A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 12.9 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/10/2018 **END DATE:** 8/10/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *12.9*										0 to 6": Asphalt concrete pavement.	Based on soil cuttings.
	S1	4.0	2/6	100					FILL		

Auger refusal at 4 ft. Boring offset to B-7B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-7B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 15 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/10/2018 **END DATE:** 8/10/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/10/2018	9 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 / 15.0											
5 / 10.0	S1	4.0	6/24	4 3 3 5	6				FILL	Loose, brown, fine to medium SAND, little gravel, trace silt, occasional fine roots; moist.[FILL]	Auger grinding at 4'. Wood stuck in tip of spoon.
10 / 5.0	S2	9.0	10/24	8 5 11 12	16					Medium dense, dark brown, SILT, some gravel; wet.[FILL]	Spoon wet upon retrieval.
15 / 0.0	S3	14.0	16/24	7 13 20 22	33					Top 10": Dark brown, SILT, some gravel; wet.[FILL] Bottom 6": Gray, fine to coarse SAND, little silt, trace gravel; wet.[FILL]	
20 / -5.0	S4	19.0	6/24	11 12 13 10	25					Medium dense, dark gray, fine to coarse SAND, little silt, trace gravel; wet.[FILL]	Switched to drive and wash at 21'.
25	S5	23.0	6/24	3 3 2 4	5					Loose, dark gray, fine to coarse, silty SAND, trace gravel; wet.[FILL]	

MATERIAL DESCRIPTION
(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-7B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-10.0									FILL		
	S6	28.0	8/24	14 8 11 19	19				CLAY	Very stiff, gray, CLAY, with occasional oxidation / staining; wet.	Switched to open hole at 28'. Pocket penetrometer measurement = 4.0 TSF
30 -15.0											
	S7	33.0	24/24	4 7 6 7	13					Stiff, gray, CLAY; wet.	Pocket penetrometer measurement = 2.5 TSF
35 -20.0										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-8**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 14.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/10/2018 **END DATE:** 8/10/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
8/10/2018	5 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *14.7*										(see guide below for soil classification based on constituent percentage) Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10% Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
5 *9.7*	S1	4.0	4/24	WOH WOH WOH 1					FILL	Very loose, fine to coarse SAND, little gravel, little silt, trace brick fragments; wet.[FILL] ▼	
10 *4.7*	S2	9.0	10/24	WOH 1 1 2	2					Very soft, dark gray, silty CLAY, some gravel / fractured rock; wet.[FILL]	
15 *-0.3*	S3	14.0	10/24	2 5 8 17	13					Top 2": Dark gray, silty CLAY, some gravel; wet.[FILL] Bottom 8": Dark gray, gravely SAND, little silt, trace brick fragments with a mild organic odor; wet.[FILL]	
20 *-5.3*	S4	19.0	12/24	1 7 8 12	15					Medium dense, dark gray, fine to medium SAND, little silt, trace gravel, trace brick fragments, trace root fibers and a mild organic odor; wet.[FILL]	Gravel = 8.4% Sand = 75.4% Fines = 16.2%
25	S5	24.0	12/24	7 3	5					Loose, dark gray, fine to medium SAND, some silt, trace gravel, trace brick fragments, trace root fibers and a mild organic odor; wet.[FILL]	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-8**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25										Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%. Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
-10.3				2 1					FILL		
	S6	29.0	18/24	6 9 12 16	21				CLAY	Top 9": Dark gray, fine to coarse SAND, some silt; wet. Bottom 9": Gray, CLAY, with occasional oxidation / staining; wet.	Switched to open hole at 29'. Pocket penetrometer measurement > 4.5 TSF
30 -15.3											
	S7	34.0	18/24	7 9 12 13	21					Very stiff, gray, CLAY; wet.	Pocket penetrometer measurement = 3.5 TSF
35 -20.3											

Bottom of boring at 36'.

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-9A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 13.4 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/16/2018 **END DATE:** 8/16/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0											
13.4										Approx. 8" reinforced concrete.	Based on auger cuttings.
										Gray-brown, sandy GRAVEL; moist.[FILL]	Based on auger cuttings.

Auger refusal at 2 ft. Boring offset to B-9B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-9B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 13.2 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/16/2018 **END DATE:** 8/16/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0											
13.2										Approx. 8" reinforced concrete.	Based on auger cuttings.
										Gray-brown, sandy GRAVEL, with one cobble during augering; moist.[FILL]	Based on auger cuttings.
										Auger refusal and bottom of boring at 2 ft.	

(see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-10A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 17.3 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/14/2018 **END DATE:** 8/14/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *17.3*										Approx. 1' of topsoil.	Based on auger cutting.
5 *12.3*	S1	4.0	8/24	2 4 5 4	9				FILL	Loose, brown, fine to coarse gravely SAND, little silt, trace brick fragments; moist.[FILL]	
10 *7.3*	S2	9.0	4/24	5 4 7 8	11					Medium dense, brown, fine to coarse gravelly SAND, little silt; moist.[FILL]	

Auger refusal at 12 ft. Boring offset to B-10B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-10B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 17.3 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/14/2018 **END DATE:** 8/15/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *17.3*										Approx. 1' of topsoil	Based on auger cuttings.
5 *12.3*										See log of boring B-10A for samples at (4'-6') and (9'-11').	
10 *7.3*											
15 *2.3*	S3	14.0	10/24	1 6 6 9	12				FILL	Medium dense, dark gray, fine to coarse SAND, little gravel, little silt, trace brick fragments, trace root fibers and a mild organic and petroleum-like odor; moist.[FILL]	
20 *-2.7*	S4	19.0	12/24	10 8 6 6	14					Medium dense, dark gray, fine to coarse SAND, little silt, trace gravel, trace shell fragments and a mild organic and petroleum-like odor; moist.[FILL]	Switched to casing at 21'.
25	S5	23.0	8/24	2 2 4 5	6				SILT	Medium stiff, gray, sandy SILT, trace gravel; moist.	Gravel stuck in tip of spoon.

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-7.7									SILT		
25	S6	28.0	20/24	9 13 18 19	31				CLAY	Hard, gray, CLAY, with occasional oxidation / staining; moist.	Switched to open-hole at 28'. Pocket penetrometer measurement > 4.5 TSF
-12.7											
30	S7	33.0	24/24	5 7 11 11	18					Very stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 3.0 TSF
-17.7											
35	S8	38.0	24/24	3 4 5 6	9					Stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 1.5 TSF
-22.7											
40	S9	43.0	24/24	2 3 4 4	7					Medium stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 1.0 TSF
-27.7											
45	S10	48.0	24/24	3 3 4 6	7					Medium stiff, gray, CLAY; moist. (LL=47, PL=20, PI=27)	Pocket penetrometer measurement = 1.0 TSF
-32.7											
50	S11	53.0	24/24	3 3 5	8					Medium stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 0.75 TSF

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
55				6					CLAY		
-37.7											
	S12	58.0	24/24	4 5 10 9	15					Stiff, gray, CLAY, trace sand, trace gravel; wet.	Pocket penetrometer measurement = 0.75 TSF
60											
-42.7									GLACIAL TILL		
	S13	63.0	18/24	35 35 21 21	56					Hard, gray, sandy CLAY, little gravel, trace sand; moist.	
65											
-47.7											
	S14	68.0	24/24	4 8 13 19	21					Very stiff, gray, gravelly CLAY, trace sand; moist.	
70											
-52.7											

Roller bit refusal and bottom of boring at 71'.

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-11**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 17.9 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/13/2018 **END DATE:** 8/13/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *17.9*											3' - auger grinding.
	S1	4.0	18/24	8 10 11 9	21					Top 10": Dark brown, fine to medium SAND, trace gravel, trace silt, trace brick fragments, trace roots fibers; moist.[FILL] Bottom 8": Brown, fine to coarse SAND, little gravel, trace brick fragments; moist.[FILL]	
5 *12.9*											
	S2	9.0	14/24	1 WOH WOH 1					FILL	Very loose, brown, fine to medium SAND, little silt, trace gravel, trace debris (brick, wood, etc.) and a mild organic odor; moist.[FILL]	Gravel = 9.2% Sand = 71.9% Fines = 18.9%
10 *7.9*											
	S3	14.0	16/24	1 1 1 2	2					Very loose, brown, fine to coarse silty SAND, trace gravel, trace brick fragments and a mild organic odor; moist.[FILL]	
15 *2.9*											
	S4	19.0	14/24	5 22 14 9	36					Dense, dark gray, fine to medium SAND, little gravel, little silt with a mild organic odor; moist.[FILL]	
20 *-2.1*											Switched to drive and wash at 21'.
	S5	22.0	19/24	10 15 22 26	37				CLAY	Hard, gray-brown, CLAY, with occasional oxidation / staining; moist	Switched to open hole at 22'. Pocket penetrometer measurement > 4.5 TSF
25											

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25 *-7.1*											
	S6	27.0	24/24	5 8 8 14	16				CLAY	Very stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 3.0 TSF
30 *-12.1*											
	S7	32.0	24/24	4 5 6 9	11					Medium stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 2.25 TSF

Bottom of boring at 34'.

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-12**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 14.8 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/17/2018 **END DATE:** 8/17/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *14.8*										No sampling performed in the fill from 0 to 14 ft.	
5 *9.8*											
10 *4.8*											
15 *-0.2*	S1	14.0	16/24	1 2 2 3	4				ORGANIC SILT	Soft, dark gray-brown, ORGANIC SILT, little sand, trace gravel, with strong petroleum-like odor; moist.	
	S2	16.0	20/24	2 2 3 4	5					Medium stiff, dark brown, ORGANIC SILT, trace sand, some shell fragments and a strong petroleum-like odor; moist.	
20 *-5.2*	S3	18.0	18/24	2 2 2 2	4					Soft, dark brown, ORGANIC SILT, some wood, trace shell fragments and a mild organic odor; moist.	Switched to casing at 18'.
	S4	20.0	18/24	1 WOH WOH WOH						Very soft, dark brown, ORGANIC SILT, some wood, trace shell fragments and a mild organic odor; moist.	
	S5	22.0	0/24	1 1 2 3	3					No recovery.	
25	S6	24.0	6/24	WOR WOR					SILT	Soft, dark gray, fine to coarse sandy SILT, trace gravel; moist.	

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-12**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-10.2				3 4					SILT		
	S7	26.0	10/24	10 9 11 11	20					Top 5": Dark gray, fine to coarse sandy SILT, little gravel; moist. Bottom 5": Gray, CLAY, little gravel, little sand; moist.	
	S8	28.0	7/24	6 7 8 8	15				CLAY	Very stiff, gray, CLAY, little gravel, little sand; moist.	Switched to open hole at 28'.
30 -15.2											
	S9	33.0	4/24	4 5 6 7	11					Stiff, gray, CLAY, some gravel, little sand; moist.	
35 -20.2											
	S10	38.0	/24	6 6 7 8	13					Stiff, gray, CLAY, some gravel, little sand; moist.	
40 -25.2											
	S11	43.0	24/24	4 4 4 6	8					Medium stiff, gray, CLAY, trace sand, with occasional oxidation / staining; moist. (LL=45, PL=24, PI=21)	Pocket penetrometer measurement = 1.25 TSF
45 -30.2											
	S12	48.0	8/24	11 17 11 10	28					Very stiff, gray, CLAY, little gravel, little sand; moist.	
50 -35.2										Bottom of boring at 50'.	

Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%

Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Attachment D - Test Pit Summary and Logs

Long Term Pollution Prevention Plan
Langone Park and Puopolo Playground
Boston, MA

To meet the requirements of Standard 4 of the Massachusetts Stormwater Handbook, this Long Term Pollution Prevention Plan is provided to identify the proper procedures of practices for source control and pollution prevention.

Storage and Handling of Oil and other Hazardous Materials

There will be no oil or other hazardous materials stored onsite.

Salt Storage

There will be no salt storage onsite.

Vehicle Storage and Washing

The park improvements do not include vehicular parking, so there will be no vehicle storage on site. Vehicles will not be stored or washed onsite.

Operation and Maintenance of Stormwater Control Structures

Included in Attachment H of this appendix is the Operation and Maintenance plan for this site, which includes sweeping of the impervious areas and periodic removal of sediment from catch basins. The Boston Parks and Recreation Department (BPRD) will be responsible for implementing the plan.

Landscaping

The landscaped areas will be maintained by the BPRD. Fertilizers will not be stored onsite.

De-icing & Snow Disposal

The BPRD may periodically utilize salt and sand to treat the impervious surfaces of the pedestrian walks and main circulation areas during snow and ice events.

Attachment E - Construction Period Pollution Prevention and Erosion and Sediment Control Plan

Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan

SECTION 1: Introduction

Due to the need for general park improvements and additions, the City of Boston (Boston Parks and Recreation Department, BPRD) proposes the installation of new playground equipment, athletic fields and courts. In addition, BPRD proposes that the existing seawall be repaired as it is currently in need of emergency repair. Other aspects of the project are further explained in the project description section of the Notice of Intent.

As part of this project, this "Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan" has been created to ensure that no further disturbance to the wetland resource is created during the construction of these repairs.

SECTION 2: Construction Period Pollution Prevention Measures

Best Management Practices (BMPs) will be utilized as Construction Period Pollution Prevention Measures to reduce potential pollutants and prevent any off-site discharge. The objectives of the BMPs for construction activity are to minimize the disturbed areas, stabilize any disturbed areas, control the site perimeter and retain sediment. Both erosion and sedimentation controls and non-stormwater best management measures will be used to minimize site disturbance and ensure compliance with the performance standards of the WPA and Stormwater Standards. Measures will be taken to minimize the area disturbed by construction activities to reduce the potential for soil erosion and stormwater pollution problems. In addition, good housekeeping measures will be followed for the day-to-day operation of the construction site under the control of the contractor to minimize the impact of construction. This section describes the control practices that will be in place during construction activities. All recommended control practices will comply with the standards set in the MA DEP Stormwater Policy Handbook.

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

In order to minimize disturbed areas all work will be completed within well-defined work limits. These work limits are shown on the construction plans. The Contractor shall not disturb native vegetation in the undisturbed wetland area without prior approval from the Engineer. The Contractor will be responsible to make sure that all workers know the proper work limits and do not extend their work into the undisturbed areas. The protective measures are described in more detail in the following sections.

2.2 Control Stormwater Flowing onto and through the project

All construction areas adjacent to wetlands will be lined with compost filter tubes and silt fence. The tubes and silt fence will be inspected daily and accumulated silt will be

removed as appropriate. In addition, any storage of material will require a second level of protection by surrounding the areas with another row of compost filter tubes. A stabilized truck entrance/exit is proposed so that equipment visiting the site can remove any accumulated dirt and mud from vehicles to prevent tracking the mud onto public roads.

2.3 Stabilize Soils

The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, mulching, the use of erosion control mats, or other protective measures shall be provided as specified.

The Contractor shall take account of the conditions of the soil where erosion control seeding will take place to ensure that materials used for re-vegetation are adaptive to the sediment control.

2.4 Proper storage and cover of any stockpiles

The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer.

No excavated materials or materials used in backfill operations shall be stored within a minimum distance of fifty (50) feet of any watercourse or any wetlands. Adequate measures for erosion and sediment control such as the placement of compost filter tubes around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

There shall be no storage of equipment or materials in areas designated as wetlands.

The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

2.5 Perimeter Controls and Sediment Barriers

Erosion control lines as described in Section 5 will be utilized to ensure that no sedimentation occurs outside the perimeter of the work area.

2.6 Storm Drain Inlet Protection

Storm Drain inlets (catch basins) will be fitted with a protective insert.

2.7 Retain Sediment On-Site

The Contractor will be responsible to monitor all erosion control measures. Whenever necessary the Contractor will clear all sediment from the compost filter tubes and silt fence that have been silted up during construction. Daily monitoring shall be conducted using the attached Monitoring Form.

The following good housekeeping practices will be followed on-site during the construction project.

2.8 Material Handling and Waste Management

All materials stored on-site will be stored in a neat, orderly manner in appropriate containers. All materials will be kept in their original containers with the original manufacturer's label. Substances will not be mixed with one another unless recommended by the manufacturer.

All waste materials will be collected and stored in a securely lidded metal container from a licensed management company. The waste and any construction debris from the site will be hauled off-site daily and disposed of properly. The contractor will be responsible for all waste removal. Manufacturer's recommendations for proper use and disposal will be followed for all materials. Sanitary waste will be collected from the portable units a minimum of once a week, by a licensed sanitary waste management contractor.

2.9 Designated Washout Areas

The Contractor shall use washout facilities at their own facilities, unless otherwise directed by the Engineer.

2.10 Proper Equipment/Vehicle Fueling and Maintenance Practices

On-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the risk of leakage. To ensure that leaks on stored equipment do not contaminate the site, oil-absorbing mats will be placed under all equipment during storage. Regular fueling and service of the equipment shall not be performed. Repair of equipment or machinery shall not be allowed in any event within 100' of wetlands. Any petroleum products will be stored in tightly sealed containers that are clearly labeled.

2.11 Equipment/Vehicle Washing

The Contractor will be responsible to ensure that no equipment is washed on-site.

SECTION 3: Spill Prevention and Control Plan

The Contractor will be responsible for preventing spills in accordance with the project specifications and applicable federal, state and local regulations. The Contractor will identify a properly trained site employee, involved with the day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of the responsible spill personnel will be posted on-site. Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator.

3.1 Spill Control Equipment

Spill control/containment equipment will be kept in the Work Area. Materials and equipment necessary for spill cleanup will be kept either in the Work Area or in an otherwise accessible on-site location. Equipment and materials will include, but not be limited to, absorbent booms/mats, brooms, dust pans, mops, rags, gloves, goggles, sand, plastic and metal containers specifically for this purpose. It is the responsibility of the Contractor to ensure the inventory will be readily accessible and maintained.

3.2 Notification

All workers will be directed to inform the on-site supervisor of a spill event. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon notification. Workers should avoid direct contact with spilled materials during the containment procedures. Primary notification of a spill should be made to the local Fire Department and Police Departments. Secondary Notification will be to the certified cleanup contractor if deemed necessary by Fire and/or Police personnel. The third level of notification is to the DEP. The specific cleanup contractor to be used will be identified by the Contractor prior to commencement of construction activities.

3.3 Spill Containment and Clean-Up Measures

Spills will be contained with granular sorbent material, sand, sorbent pads, booms or all of the above to prevent spreading. Certified cleanup contractors should complete spill cleanup. The material manufacturer's recommended methods for spill cleanup will be clearly posted and on-site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

3.4 Hazardous Materials Spill Report

The Contractor will report and record any spill. The spill report will present a description of the release, including the quantity and type of material, date of the spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

This document does not relieve the Contractor of the Federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302 and the State requirements specified under the Massachusetts Contingency Plan (M.C.P) relating to spills or other releases of oils or hazardous substances. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a twenty-four (24) hour period, the Contractor is required to comply with the response requirements of the above mentioned regulations. Spills of oil or hazardous material in excess of the reportable quantity will be reported to the National Response Center (NRC).

SECTION 4: Contact Information/Responsible Parties

Owner/Operator:
Boston Parks and Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118

Engineer:
James Pearson, P.E.
Weston & Sampson, Inc.
5 Centennial Drive
Peabody, MA 01960
978-532-1900

Site Inspector:
TBD

Contractor:
TBD

SECTION 5: Erosion and Sedimentation Control

Erosion and Sedimentation Controls are shown on the project plans. In addition a technical specification (***Section 01570 Environmental Protection***) has been included as part of Appendix D, which details all Erosion and Sedimentation controls.

SECTION 6: Site Development Plans

A full set of site development plans are included with this submittal.

SECTION 7: Operation and Maintenance of Erosion Control

The erosion control measures will be installed as detailed in the technical specification ***01570 Environmental Protection***. If there is a failure to the controls the Contractor,

under the supervision of the Engineer, will be required to stop work until the failure is repaired.

Periodically throughout the work, the sediment that has been deposited against the controls shall be removed pursuant to DEP guidelines to ensure that the controls are working properly.

SECTION 8: Inspection Schedule

During construction the erosion and sedimentation controls will be inspected daily. Once the Contractor is selected, an onsite inspector will be selected to work closely with the Engineer to insure that all erosion and sedimentation controls are in place and working properly. An Inspection Form is included.

Inspection Form

Inspected By: _____ Date: _____Time:_____

YES	NO	DOES NOT APPLY	ITEM
			Do any erosion/siltation control measures require repair or clean out to maintain adequate function?
			Is there any evidence that sediment is leaving the site and entering the wetlands?
			Are any temporary soil stockpiles or construction materials located in non-approved areas?
			Are on-site construction traffic routes, parking, and storage of equipment and supplies located in areas not specifically designed for them?

Specific location, current weather conditions, and action to be taken:

_____

_____

_____

_____

_____

Other Comments:

_____

_____

Pending the actions noted above I certify that the site is in compliance with the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan.

Signature: _____ Date: _____

Attachment F - Operations and Maintenance Plan

Attachment F –
Long-Term Operation and Maintenance Plan

1.0 Introduction

The following document has been written to comply with the stormwater guidelines set forth by the Massachusetts Department of Environmental Protection (MassDEP). The intent of these guidelines is to encourage Low Impact Development techniques to improve the quality of the stormwater runoff. These techniques, also known as Best Management Practices (BMPs) collect, store, and treat the runoff before discharging to adjacent environmental resources.

2.0 Purpose

This Operation and Maintenance Plan (O&M Plan) is intended to provide a mechanism for the consistent inspection and maintenance of each BMP installed on the project site. Included in this O&M Plan is a description of each BMP type and an inspection form for each BMP. The Boston Parks and Recreation Department (BPRD) is the owner and operator of the system and is responsible for its upkeep and maintenance.

This work will be funded on an annual basis through the City's operating budget. The estimated budget to maintain these BMPs utilizing the City's workforce and equipment is approximately $2,000 per year. This budget assumes that City equipment will be utilized and no additional equipment rental is required.

In the event the City sells the property, it is the City's responsibility to transfer this plan as well as the past three years of operation and maintenance records to the new property owner.

3.0 BMP Description and Locations

3.1 Street Sweeping

Street sweeping consists of using a street sweeping machine to clean impervious areas of accumulated sediment, debris, and trash at pedestrian walks and other impervious surfaces.

3.2 Deep Sump Catch Basins

Deep sump catch basins will be located throughout the site and used as pre-treatment before entering the stormwater detention/infiltration basin. The deep sump catch basins are designed to remove trash, debris, and coarse sediment from the stormwater runoff.

3.4 Vegetated filter strips

Grassed or vegetated areas around catch basins acts to filter stormwater runoff before it enters the storm drain system.

4.0 Inspection, Maintenance Checklist and Schedule

4.1 Street Sweeping

Street sweeping shall be performed on the proposed pedestrian and impervious recreation areas at least twice per year, primarily in the spring and fall. Street sweeping shall be performed using an appropriate street sweeping machine.

In the event of contamination by a spill or other means, all street sweeping cleanings must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000 and handled as hazardous waste.

In the absence of evidence of contamination, street sweeping cleanings may be taken to a landfill or other facility permitted by MassDEP to accept Solid Waste without any prior approval by MassDEP. Please note that current MassDEP regulations prevent landfills from accepting materials that contain free-draining liquids. Also see attached operations and maintenance standards (reproduced from the Massachusetts Stormwater Handbook) at the end of this section

4.2 Deep Sump Catch Basins

Inspect and/or clean catch basin at least four times per year and at the end of foliage and snow removal seasons. Sediments must be removed whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. The catch basin and oil-grit separators should be cleaned a minimum of four times per year regardless of the amount of sediment in the basin. Catch basins shall be cleaned with clamshell buckets or vacuum trucks.

In the event of contamination by a spill or other means, all cleanings must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000 and handled as hazardous waste.

In the absence of evidence of contamination, catch basin cleanings may be taken to a landfill or other facility permitted by MassDEP to accept Solid Waste without any prior approval by MassDEP. Please note that current MassDEP regulations prevent landfills from accepting materials that contain free-draining liquids. Also see attached operations and maintenance standards (reproduced from the Massachusetts Stormwater Handbook) at the end of this section

4.3 Vegetated filter strips

Vegetated areas adjacent to catch basins shall be maintained in good health in order to maximize its ability to capture suspended solids in runoff. Periodic mowing/trimming and fertilization shall be performed in accordance with existing BPRD practices. Any dead vegetation shall be re-planted.

4.4 Inspections and Record Keeping

- An inspection form should be filled out each and every time maintenance work is performed.
- A binder should be kept by the owner that contains all of the completed inspection forms and any other related materials.
- A review of all Operation & Maintenance actions should take place annually to ensure that these Stormwater BMPs are being taken care of in the manner illustrated in this Operation & Maintenance Plan.
- All operation and maintenance log forms for the last three years, at a minimum, shall be kept on site at the owner.
- The inspection and maintenance schedule may be refined in the future based on the findings and results of this operation and maintenance program or policy.

5.0 Public Safety Features

Underground stormwater system measures are protected from access via manhole covers and grates.

6.0 Stormwater Management System Owner/Responsible Party

Boston Parks and Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118

This operation and Maintenance Plan will be recorded with the registry of deeds so that current and future owners are aware of the requirement for proper operation and maintenance of the onsite stormwater system.

Boston Parks and Recreation Department
Langone Park and Puopolo Playground
Permanent BMP Inspection Checklist

Street Sweeping

Frequency:	Bi-Annually, primarily in the spring and fall.
Location:	Pedestrian Walks, impervious recreational surfaces
Inspected By:	_____ Date: _____
Observations:	_____ _____ _____
Actions Taken:	_____ _____ _____
Instructions:	Sweep impervious surfaces using street sweeping machine. All trash, debris, and sediments should be disposed of in accordance with local, state, and federal regulations.

Deep Sump Catch Basins

Frequency:	Inspect and clean deep sump catch basins in March, June, September and December.
Structure Number:	_____
Inspected By:	_____ Date: _____
Observations:	_____ _____ _____
Actions Taken:	_____ _____ _____
Instructions:	Clean units four times per year or whenever the depth of the deposits is greater than or equal to one half the depth from the bottom of the invert to the lowest pipe in the structure.

Vegetated filter strips

Frequency:	Vegetated areas around catch basins shall be inspected weekly, or as often as mowing is required, during the spring, summer and autumn months.
Structure No.:	_____
Inspected By:	_____ Date: _____
Observations:	_____ _____ _____
Actions Taken:	_____ _____ _____
Instructions:	Inspect vegetation. Any dead vegetation shall be replaced. Mowing, trimming and fertilization shall occur in accordance with existing BPRD practices.

Attachment G - Illicit Discharge Compliance Statement

Illicit Discharge Compliance Statement

Section I – Purpose/Intent

The purpose of this document is to provide for the health, safety, and general welfare of the citizens of Boston, Massachusetts through the regulation of non-stormwater discharges into existing outstanding resource areas at Langone Park and Puopolo Playground to the maximum extent practicable, as required by federal and state law. This document establishes methods for controlling the introduction of pollutants into existing outstanding resource areas to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process.

Section II - Definitions

For the purposes of this statement, the following shall mean:

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to the Massachusetts Erosion and Sedimentation Control Act or NPDES Construction Permits. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Connection: An illegal connection is defined as either of the following:

a. Any pipe, open channel, drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the outstanding resource area including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water, regardless of whether said drain or connection has been previously allowed, permitted, or approved by an authorized enforcement agency; or
b. Any pipe, open channel, drain or conveyance connected to the City of Boston storm water treatment system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Illicit Discharge: Any direct or indirect non-stormwater discharge to the City of Boston stormwater treatment system, except as exempted in Section II of this ordinance.

Industrial Activity: Activities subject to NPDES Industrial Permits as defined in 40CFR, Section 122.26 (b) (14).

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: A permit issued by MassDEP under authority delegated pursuant to 33 USC § 1342 (b) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

City of Boston Stormwater Treatment System: Any facility, owned or maintained by the City, designed or used for collecting and/or conveying stormwater, including but not limited to roads with drainage systems, City of Boston streets, curbs, gutters, inlets, catch basins, piped storm drains, pumping facilities, infiltration, retention and detention basins, natural and man-made or altered drainage channels, reservoirs, and other drainage structures.

Non-Stormwater Discharge: Any discharge to the storm drain system that is not composed entirely of stormwater.

Person: Any individual, association, organization, partnership, firm, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, city, county or other political subdivision of the State, interstate body, or any other legal entity.

Pollutant: Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; petroleum hydrocarbons; automotive fluids; cooking grease; detergents (biodegradable or otherwise); degreasers; cleaning chemicals; non-hazardous liquid and solid wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; liquid and solid wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; concrete and cement; and noxious or offensive matter of any kind.

Pollution: Contamination or other alteration of any water's physical, chemical, or biological properties by addition of any constituent including but not limited to a change in temperature, taste, color, turbidity, or odor of such waters, or the discharge of any liquid, gaseous, solid, radioactive, or other substance into any such waters as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety, welfare, or environment, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Wastewater: Any water or other liquid discharged from a facility, that has been used, as for washing, flushing, or in a manufacturing process, and so contains waste products.

Section III - Prohibitions

Prohibition of Illicit Discharges:

No person shall throw, drain, or otherwise discharge, cause or allow others under its control to throw, drain, or otherwise discharge into the City of Boston stormwater treatment system or watercourses any materials, including but not limited to, any pollutants or waters containing any pollutants, other than stormwater. The commencement, conduct or continuance of any illicit discharge to the storm drain system is prohibited except as described as follows:

1. Water line flushing performed by a government agency, other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, natural riparian habitat or wetland flows, and any other water source not containing pollutants;

2. Discharges or flows from fire fighting, and other discharges specified in writing by the City of Boston as being necessary to protect public health and safety;

3. Dye testing is an allowable discharge, but requires a verbal notification to the City of Boston prior to the time of the test;

4. Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for a discharge to the City of Boston stormwater treatment system.

Section IV - Industrial or Construction Activity Discharges

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City of Boston Department of Public Works prior to allowing discharges to the Boston stormwater treatment system.

Section V - Notification of Spills and Accidental Discharges

Notwithstanding other requirements of law, as soon as any person responsible for a facility, activity or operation, or responsible for emergency response for a facility, activity or operation has information of any known or suspected release of pollutants or non-stormwater discharges from that facility, activity, or operation which are resulting or may result in illicit discharges or pollutants discharging into stormwater, the City of Boston stormwater treatment system, State Waters, or Waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release so as to minimize the effects of the discharge. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the City of Boston Department Public Works in person or by phone no later than the next business day, including the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice, via certified mail return receipt requested addressed to the City of Boston Department of Public Works within three (3) business days of the initial notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

IN WITNESS WHEREOF the parties hereto have executed copies of this Agreement on the _____ day of _____, _____.

_____

City of Boston

Appendix H

Langone Park and Puopolo Playground Improvements

December 2018

Weston & Sampson

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1.	FIVEOO COMMERCIAL STREET 498 COMMERCIAL ST BOSTON MA 02109	$0.47			
2.	BAGDASARIAN BRUCE H 63 RIDGE AV NEWTON MA 02459	$0.47			
3.	CACICI ANITA 105 CHARTER BOSTON MA 02113	$0.47			
4.	CHERUBINI JULIAN H 297 HIGH ST DEDHAM MA 02026	$0.47			
5.	CITY OF BOSTON 521 COMMERCIAL BOSTON MA 02113	$0.47			
6.		$0.47			

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1.		COPPS HILL CONDO ASSN 103 CHARTER BOSTON MA 02113	$0.47			
2.		DORAN FREDERICK G 1665 ST DAVID'S LANE VERO BEACH FL 32964	$0.47			
3.		ESTRADA JUAN J 556 COMMERCIAL ST #1 BOSTON MA 02109	$0.47			
4.		FORMICONI ALDO A 77 SALEM ST BOSTON MA 02113	$0.47			
5.		FOUR 70 COMMERCIAL ST LLC 420 COMMERCIAL ST BOSTON MA 02109	$0.47			
6.			$0.47			

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1.	ABELSON MICHAEL 500 COMMERCIAL ST #B BOSTON MA 02109	$0.47			
2.	BONNEY ALISON G 536 COMMERCIAL ST BOSTON MA 02109	$0.47			
3.	CHARTER COMMERCIAL CONDO TR 562 COMMERCIAL ST BOSTON MA 02109	$0.47			
4.	CITY OF BOSTON 471 COMMERCIAL BOSTON MA 02113	$0.47			
5.	CITY OF BOSTON 529 COMMERCIAL BOSTON MA 02113	$0.47			
6.		$0.47			

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1.	DIAMOND KELLY P 480 COMMERCIAL ST #1B BOSTON MA 02109	$0.47			
2.	DOTTO GIAN-PAOLO 23 FOSTER ST BOSTON MA 02109	$0.47			
3.	FINK REUBEN 236 COMMERCIAL ST #3 BOSTON MA 02109	$0.47			
4.	FORMICONI VICTORIA 540 COMMERCIAL ST #3 BOSTON MA 02109	$0.47			
5.	GIOVANGELO JOSEPH L JR 53 POWISSET ST DOVER MA 02030	$0.47			
6.		$0.47			

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1.	AFFILIATED FAMILY FUNERAL PO BOX 130548 HOUSTON TX 77219	$0.47			
2.	BURKE JOHN P TS 40 RAVEN RD LOWELL MA 01852	$0.47			
3.	CHARTER HOUSE CONDOMINIUM TR 376 MASSACHUSETTS AV ARLINGTON MA 02474	$0.47			
4.	CITY OF BOSTON 551 COMMERCIAL BOSTON MA 02113	$0.47			
5.	COMMONWEALTH OF MASS 551 COMMERCIAL BOSTON MA 02113	$0.47			
6.		$0.47			

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1.	DIFILLIPPO DONNA 500 COMMERCIAL ST #D BOSTON MA 02109	$0.47			
2.	DURGIN DANIEL T 544 COMMERCIAL ST #8 BOSTON MA 02109	$0.47			
3.	FIVE-56 COMMRCL ST CONDO TR 556 COMMERCIAL ST BOSTON MA 02109	$0.47			
4.	FOSTER PAUL D 540 COMMERCIAL ST APT 6 BOSTON MA 02109	$0.47			
5.	GRACE CHRISTOPHER 5 HERMITAGE CLOSE ENGLAND GU168LT0	$0.47			
6.		$0.47			

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1.	GREENE FAY ELIZABETH 540 COMMERCIAL ST #5 BOSTON MA 02109	$0.47			
2.	LARSEN BEVERLY J 556 COMMERCIAL ST #4 BOSTON MA 02109	$0.47			
3.	MCNABB EDWARD J JR ETAL 107 CHARTER BOSTON MA 02113	$0.47			
4.	MOSCARELLI WILLIAM J 540 COMMERCIAL ST #2 BOSTON MA 02109	$0.47			
5.	OHANLEY RONALD P III 500 COMMERCIAL ST APT 1 BOSTON MA 02109	$0.47			
6.		$0.47			

See Reverse for Instructions

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USPS® Tracking Number / Firm-specific Identifier	Address	Postage	Fee	Special Handling	Parcel Airlift
1.	PETRALIA EVA TS 27 KENILWORTH RD ARLINGTON MA 02476	$0.47			
2.	REGAN GEORGE K JR 300 COMMERCIAL ST BOSTON MA 02109	$0.47			
3.	SNYDER MARK 825 LONG POND RD PLYMOUTH MA 02360	$0.47			
4.	UNITED STATES OF AMER 466 HANOVER BOSTON MA 02113	$0.47			
5.	ZAUSAYLOV SERGEY 480 COMMERCIAL ST #PH-A BOSTON MA 02109	$0.47			
6.					

See Reverse for Instructions

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	USPS® Tracking Number / Firm-specific Identifier	Address	Postage	Fee	Special Handling	Parcel Airlift
1.		H B REALTY CONDO TR 482 COMMERCIAL BOSTON MA 02109	$0.47			
2.		MARTIGNETTI MARIA 51 FULTON ST BOSTON MA 02109	$0.47			
3.		MODZELEWSKI JOHN F 492 COMMERCIAL ST BOSTON MA 02109	$0.47			
4.		OBIN MARTIN S 560 COMMERCIAL ST #3 BOSTON MA 02109	$0.47			
5.		OTT DAVID J 71 YALE ST WINCHESTER MA 01890	$0.47			
6.			$0.47			

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USPS® Tracking Number Firm-specific Identifier	Address	Postage	Fee	Special Handling	Parcel Airlift
1.	PHILLIPS MATTHEW G 560 COMMERCIAL ST #1 BOSTON MA 02109	$0.47			
2.	RHODES ISLAND LLC 500 COMMERCIAL ST #E BOSTON MA 02109	$0.47			
3.	THATCHER RALPH JAMES 540 COMMERCIAL ST #4 BOSTON MA 02109	$0.47			
4.	WHANN DEIRDRE S 560 COMMERCIAL ST #2 BOSTON MA 02109	$0.47			
5.	HELENCAR LLC 496 COMMERCIAL ST BOSTON MA 02109	$0.47			
6.		$0.47			

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USPS® Tracking Number / Firm-specific Identifier	Address	Postage	Fee	Special Handling	Parcel Airlift
1.	MCGLAME MAUREEN 103 CHARTER ST #2 BOSTON MA 02113	$0.47			
2.	MODZELEWSKI JOHN F ETAL 496 COMMERCIAL BOSTON MA 02109	$0.47			
3.	OBRIEN BRENDAN J TS 500 COMMERCIAL ST #A BOSTON MA 02109	$0.47			
4.	PETRALIA ALPHONSINE 27 KENILWORTH RD ARLINGTON MA 02476	$0.47			
5.	POST LARRY 142 MARLBOROUGH ST BOSTON MA 02116	$0.47			
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3.	CACICI ANITA 105 CHARTER BOSTON MA 02113	$0.47			
4.	CHERUBINI JULIAN H 297 HIGH ST DEDHAM MA 02026	$0.47			
5.	CITY OF BOSTON 521 COMMERCIAL BOSTON MA 02113	$0.47			
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2.	DORAN FREDERICK G 1665 ST DAVID'S LANE VERO BEACH FL 32964	$0.47			
3.	ESTRADA JUAN J 556 COMMERCIAL ST #1 BOSTON MA 02109	$0.47			
4.	FORMICONI ALDO A 77 SALEM ST BOSTON MA 02113	$0.47			
5.	FOUR 70 COMMERCIAL ST LLC 420 COMMERCIAL ST BOSTON MA 02109	$0.47			
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1.	ABELSON MICHAEL 500 COMMERCIAL ST #B BOSTON MA 02109	$0.47			
2.	BONNEY ALISON G 536 COMMERCIAL ST BOSTON MA 02109	$0.47			
3.	CHARTER COMMERCIAL CONDO TR 562 COMMERCIAL ST BOSTON MA 02109	$0.47			
4.	CITY OF BOSTON 471 COMMERCIAL BOSTON MA 02113	$0.47			
5.	CITY OF BOSTON 529 COMMERCIAL BOSTON MA 02113	$0.47			
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1.	DIAMOND KELLY P 480 COMMERCIAL ST #1B BOSTON MA 02109	$0.47			
2.	DOTTO GIAN-PAOLO 23 FOSTER ST BOSTON MA 02109	$0.47			
3.	FINK REUBEN 236 COMMERCIAL ST #3 BOSTON MA 02109	$0.47			
4.	FORMICONI VICTORIA 540 COMMERCIAL ST #3 BOSTON MA 02109	$0.47			
5.	GIOVANGELO JOSEPH L JR 53 POWISSET ST DOVER MA 02030	$0.47			
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1.	AFFILIATED FAMILY FUNERAL PO BOX 130548 HOUSTON TX 77219	$0.47			
2.	BURKE JOHN P TS 40 RAVEN RD LOWELL MA 01852	$0.47			
3.	CHARTER HOUSE CONDOMINIUM TR 376 MASSACHUSETTS AV ARLINGTON MA 02474	$0.47			
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1.	DIFILLIPPO DONNA 500 COMMERCIAL ST #D BOSTON MA 02109	$0.47			
2.	DURGIN DANIEL T 544 COMMERCIAL ST #8 BOSTON MA 02109	$0.47			
3.	FIVE-56 COMMRCL ST CONDO TR 556 COMMERCIAL ST BOSTON MA 02109	$0.47			
4.	FOSTER PAUL D 540 COMMERCIAL ST APT 6 BOSTON MA 02109	$0.47			
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1.	GREENE FAY ELIZABETH 540 COMMERCIAL ST #5 BOSTON MA 02109	$0.47			
2.	LARSEN BEVERLY J 556 COMMERCIAL ST #4 BOSTON MA 02109	$0.47			
3.	MCNABB EDWARD J JR ETAL 107 CHARTER BOSTON MA 02113	$0.47			
4.	MOSCARELLI WILLIAM J 540 COMMERCIAL ST #2 BOSTON MA 02109	$0.47			
5.	OHANLEY RONALD P III 500 COMMERCIAL ST APT 1 BOSTON MA 02109	$0.47			
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1.	H B REALTY CONDO TR 482 COMMERCIAL BOSTON MA 02109	$0.47			
2.	MARTIGNETTI MARIA 51 FULTON ST BOSTON MA 02109	$0.47			
3.	MODZELEWSKI JOHN F 492 COMMERCIAL ST BOSTON MA 02109	$0.47			
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1.	PHILLIPS MATTHEW G 560 COMMERCIAL ST #1 BOSTON MA 02109	$0.47			
2.	RHODES ISLAND LLC 500 COMMERCIAL ST #E BOSTON MA 02109	$0.47			
3.	THATCHER RALPH JAMES 540 COMMERCIAL ST #4 BOSTON MA 02109	$0.47			
4.	WHANN DEIRDRE S 560 COMMERCIAL ST #2 BOSTON MA 02109	$0.47			
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3.	MODZELEWSKI JOHN F ETAL 496 COMMERCIAL BOSTON MA 02109	$0.47			
4.	OBRIEN BRENDAN J TS 500 COMMERCIAL ST #A BOSTON MA 02109	$0.47			
5.	PETRALIA ALPHONSINE 27 KENILWORTH RD ARLINGTON MA 02476	$0.47			
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I. Introduction

Langone Park and Puopolo Playground are located adjacent to Boston Harbor on the north side of Commercial Street near the intersection of Charter and Foster Streets in the North End neighborhood of the City of Boston. While the properties possess separate names and addresses, the two Boston Parks and Recreation Department (BPRD) parks function as one contiguous park and play space. The proposed improvements within 4.62 acres of area include a new children's playground, basketball court, bocce courts, a natural turf Little League sized baseball field, and a multiuse rectangular synthetic turf field with softball and non-conforming baseball diamonds. Both the Little League baseball field and the multiuse synthetic turf fields will have LED sports lighting provided with total light control (TLC). Pedestrian walkways consist of a mix of concrete sidewalks and elevated wood deck boardwalk. A portion of the walkway network serves as a key link within the City of Boston's HarborWalk connecting Charlestown and downtown Boston.

The actual total area of both park parcels measures 8.90acres and this encompasses both land and a portion of the harbor itself. The 4.62 acres of land is the result of filling in tidal wetlands. Portions of the park date to well before 1892 when the site was known as "North End Park" and "North End Beach". As the 20th century passed, the park footprint expanded to include Langone Park and both park parcels have gone through multiple improvements and updates with the most recent renovation occurring in 2001. Now, with many physical attributes and utility infrastructure in deteriorated condition, the City has embarked on this comprehensive renovation effort.

Particularly important at this time is the completion of emergency repairs to the existing seawall and significant portions of the park/harbor edge as interior park elements (including the HarborWalk and adjacent facilities) have become destabilized and subject to flood inundation during storm and king tide events. The events have become more frequent and volatile as climate impacts increase. This project is intended to provide much needed upgrades to the park/harbor interface and to all other areas of the park. Improvements will yield a high performing park and open space asset that incorporates multiple climate resiliency measures designed to withstand and mitigate the possibility of future flooding. The proposed improvements will comply with city, state and federal standards.

II. Resource Area Performance Standards

Currently, the Massachusetts Wetlands Protection Act does not provide performance standards for Land Subject to Coastal Storm Flowage (LSCSF). Per the Massachusetts Department of Environmental Protection (MassDEP) website concerning the "Land Subject to Coastal Storm Flowage Advisory Group", the Wetlands and Waterways Program convened an advisory group that met in 2014 and 2015 to develop performance standards and regulations. To date, the State of Massachusetts Wetlands Protection Act does not yet include performance standards with this designated coastal resource area. This is indicated at:

http://www.mass.gov/service-details/land-suject-to-coastal-storm-flowage-advisory-group.

As the existing park is located adjacent to and within sensitive environmental resource areas including coastal bank areas and land subject to coastal storm flowage, no work is proposed within the mean high-water limit. Proposed improvements and construction activities will impact approximately 72,200 square feet of land subject to coastal storm flowage. However, this work will occur within existing altered areas. The improvements within the land subject to coastal

storm flowage includes construction of a new elevated boardwalk (key link in the Boston HarborWalk), basketball court, walkways, planted areas and other miscellaneous site improvements.

The first inch of stormwater runoff is being collected from all impervious surfaces and treated in deep sump hooded catch basins. Based on our analysis, we believe there will be no negative environmental impact within the Land Subject to Coastal Storm Flowage resource area or adjacent park areas as a result of the planned improvement program.

III. Proposed Synthetic Turf Field at Puopolo Playground

The Boston Parks and Recreation Department carefully considers surface types for all field renovation projects. Presently, the City deploys both natural turf and synthetic turf field surfaces to meet the demands of user groups and residents.

Boston's North End possesses very limited park and open space overall and the Langone and Puopolo Park properties offer the only field venues to a large user group and resident base. The Little League field is purposed for youth baseball only and it receives less play compared to the multiuse field. For that reason, natural turf continues to be the preferred surface. At the multi-use field, the reasons for converting the surface to synthetic turf are compelling and include:

- The Puopolo multiuse field must accommodate a wide range of permitted baseball, softball, soccer and other sports related activities that rely on a rectangular shaped field configuration. The nearby Eliot Elementary School also uses the field on a nearly daily basis.
- The field must accommodate daily informal use by neighborhood/city residents.
- Natural turf is unable to sustain the permitted level of usage. A well-constructed and irrigated natural turf field can accommodate typically between 400 and 600 hours of use on an annual basis.
- The Puopolo multiuse field, as the only rectangular shaped field venue in the North End, is in heavy and continuous demand. Hours of usage easily exceed 1,200 hours per year and activities can occur during and immediately following poor weather.
- Historically, the City has not been able to maintain natural turf conditions to the level needed to support the desired activities. Degraded turf conditions impact quality of play and create impediments to maintaining player safety.
- Synthetic turf fields yield consistent playing conditions and opportunities for use and enjoyment at a rate that is two to four times that of a natural turf field. This is critical to residents of the North End and the larger City.
- The use of synthetic turf eliminates the need for irrigation and the application of fertilizers traditionally required for natural field maintenance.
- With an estimated longevity of 12-16 years, synthetic turf field systems are now designed to be recyclable. Base materials (gravel, drainage stone and subdrainage systems) are retained and reused while the actual turf backing, fabric and infill materials are removed and recycled.
- Concerns surrounding the makeup of the infill material distributed across the surface of a synthetic turf field have been noted for projects of this type. Boston Parks and Recreation staff and Weston & Sampson toxicologists have extensively researched this matter. To allay concerns, strict specification protocols are employed to ensure that all infill materials are adequately tested (during the submittal process and on-site as deemed necessary) to meet federal and state safety standards.

As noted, synthetic turf fields have been constructed throughout the Boston Parks system. One park to note is the Lopreti Park located in East Boston where a synthetic turf was constructed several years ago. This harbor front, multiuse field venue was plagued by poor playing conditions for decades and it now performs at a high level and supports an extremely heavy level of use (permitted and informal) throughout the year. The field is well maintained and well-integrated into the fabric of this important waterfront park and open space asset.

IV. Means and Methods of Construction for a Synthetic Turf Field

Constructing the base and installing the turf are two key components of converting a natural turf field to a synthetic turf field. While there are many factors that a contractor may consider when constructing a synthetic turf field the following basic steps are typically followed:

Construction of the Base:

The base not only serves as the platform for the synthetic turf, but it also serves as a component of the overall stormwater management strategy. Below are four key steps to building the field base:

- The contractor excavates or fills, and compacts borrow materials to achieve the required subgrade elevation.
- The contractor forms and installs a cast-in-place concrete curb nailer, which encapsulates the entire field.
- The contractor places a geotextile fabric over the subgrade and installs the subsurface perforated drainage pipes within the field of play area, and collector pipes at the perimeter.
- The contractor installs 12” depth of free draining base stone and finish stone.

Turf Installation:

- Synthetic turf is rolled out across the width of the field and seams are lined up.
- One side of the roll is trimmed with a sharp knife to ensure a straight seam and the other side of the next roll is cut using a steel straightedge allowing for a clean joint between sections of turf. The turf edges are then folded back, and seaming tape or stitching is used to join the rolls at each seam.
- Two-part adhesive is applied at all seams unless the manufacturer recommends stitching in lieu of an adhesive.

Infill Installation:

- The sand and crumb rubber infill are layered onto the field to fill the voids between the turf fibers using a mechanically-operated spreader controlling the desired fill rate.
- In between layering, the field is mechanically brushed and groomed.

V. Work Performed on the Coastal Bank

The length of coastal bank interface and impact includes 770 linear feet associated with the existing granite seawall. Restoration of the seawall will result in a more stable park edge/coastal bank that better protects the property from wave action impacts and inundation.

To protect the harbor waters resource area outside the work area (Coastal Bank and Land Under the Ocean) during construction, a sediment turbidity curtain will be placed along the water-frontage of the park where wall repairs and proposed improvements are to be performed. Additionally, compost tubes and catch basin sediment protection measures will be placed around the perimeter of the work area at the interface with coastal bank resource areas. The erosion controls will be monitored by Weston & Sampson throughout construction and accumulated sediment will be removed.

Performance standards for coastal bank are provided in the Wetland Protection Act Regulations 310 CMR 10.30. Below are descriptions pertaining to how the project will adhere to each standard.

Standard No. 1:

No new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted on such a coastal bank except that such a coastal engineering structure shall be permitted when required to prevent storm damage to buildings constructed prior to the effective date of 310 CMR 10.21 through 10.37 or constructed pursuant to a Notice of Intent filed prior to the effective date of 310 CMR 10.21 through 10.37 (August 10, 1978), including reconstructions of such buildings subsequent to the effective date of 310 CMR 10.21 through 10.37, provided that the following requirements are met:

a) A coastal engineering structure or a modification thereto shall be designed and constructed to minimize, using best available measures, adverse effects on adjacent or nearby coastal beaches due to changes in wave action, and

b) The applicant demonstrates that no method of protecting the building other than the proposed coastal engineering structure is feasible.

c) Protective planting designed to reduce erosion may be permitted.

Project Adherence:

The coastal bank in this instance is considered the existing seawall and is used to protect the park from adverse wave action. The proposed emergency repairs will improve wave protection.

Concerning item a): The sea wall is already in place and there are no adjacent coastal beaches.

Concerning item b): The sea wall is already in place. No new structures are proposed.

Concerning item c): No new plantings on coastal bank are being proposed.

Standard No. 2:

Any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by 310 CMR 10.30(3), shall not have an adverse effect due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.

Project Adherence:

The coastal bank in this instance is considered to be the existing seawall and is used to protect the park from adverse wave action. The proposed emergency repairs will improve wave protection. Work within 100 feet of the bank includes the various park improvements identified previously and these will have no effect on wave action impacts.

Standard No. 3:

The Order of Conditions and the Certificate of Compliance for any new building within 100 feet landward of the top of a coastal bank permitted by the issuing authority under M.G.L. c. 131, § 40 shall contain the specific condition: 310 CMR 10.30(3), promulgated under M.G.L. c. 131, § 40, requires that no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by the Order of Conditions.

Project Adherence:

No new building is proposed within 100 feet of the coastal bank.

Standard No. 4:
Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.

Project Adherence:

The emergency repairs for the sea wall will help to stabilize the coastal bank. Work within 100 feet of the bank are park improvements that will not affect the stability of the bank/seawall since a reconstructed seawall is designed to improve bank stability.

Standard No. 5:

Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes and barrier beaches.

Project Adherence:

The seawall/bank is already in place and there are no nearby coastal beaches, coastal dunes or barrier beaches.

Standard No. 6:

Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Project Adherence:

There are no mapped estimated habitats of rare wildlife for coastal wetlands within the limit of work.

The means and methods for constructing the improvements to, or immediately behind the coastal bank seawall shall include the performance and completion of work exclusively from the land side. The work to be completed from the land side of the existing granite block seawall (seawall reconstruction, steel sheet piling and cast-in-place concrete) are as follows:

Granite-Block Seawall:
To extend its existing serviceability, the upper portion (approximately 3 foot depth) of the existing soil backfill behind the granite block portion of the seawall will be removed and replaced with compacted engineered fill wrapped in non-woven geotextile fabric resistant to decay and saltwater. Localized voids in the upper portion of seawall that have developed over time will also be filled or "pinned" with smaller pieces of granite. The purpose of the new engineered backfill and geotextile fabric is to eliminate existing voids and prevent the potential for loss of fine-grained soil backfill during daily tidal fluctuations, storm events and wave action. Throughout the construction activities behind the granite block, sections of existing backfill will be sequentially excavated and replaced using conventional earth moving equipment working exclusively behind the seawall.

Steel Sheet Pile Seawall:
Repairs to the existing steel sheet pile portion of the seawall will include installation of new steel sheet piles behind the existing piles and the reattachment of existing tiebacks. The sheet pile installation is expected to be completed using crane-mounted equipment and conventional earth moving equipment working exclusively behind the existing sheeting.

Cast-In-Place Concrete Seawall:
At the eastern portion of the site adjacent to the basketball court, cracks in the existing concrete seawall will be repaired. Repairs are anticipated to include limited patching using conventional equipment working from behind the seawall.

Existing Permeability Versus Proposed Permeability

The existing site's stormwater management strategies include the collection of stormwater run-off into catch basins and piped towards Commercial Street where there is a connection to an existing 15inch diameter combined sanitary and sewer pipe. It has been noted that during sever storm events, portions of the park are subject to puddling and harbor water inundation, including flooding of the existing HarborWalk and Little League baseball field. The existing soils have been classified as "urban fill" with little infiltration capability and with a high clay based content.

As an integral part of the park improvement program, the proposed stormwater management strategies to be implemented throughout the site will significantly improve quality of all rainfall that is to be captured. Strategies include the installation of subsurface perforated stormwater collector pipes, deep sump hooded catch basins and installation of a new tide gate at the interface of the seawall and the harbor. All stormwater management performance standards will meet and comply with the Massachusetts Department of Environmental (MassDEP) Protection Act M.G.L. c. 131, Section 4.

Weston & Sampson implemented and oversaw an extensive boring and test pit program during the schematic design phase of the project. Please note that it is inadvisable per MassDEP regulations for an urban fill classified site to encourage stormwater infiltration where clay-based and debris contaminated soils are present. The Langone and Puopolo sites are subject to contain both clay and debris laden soils throughout.

Due to the increase in impervious area under proposed conditions, the peak discharge from the site is expected to increase. For typical upland development projects, some form of stormwater detention would typically be provided in order to mitigate peak stormwater discharges so that the peak discharges under the post-development condition do not exceed the pre-development peak discharges for the 2-year and 10-year storms. Further consideration is also given to the 100-year storm event to ensure that the project does not result in an increase to flood hazards downstream of the project.

Under certain conditions, it is appropriate that this standard be waived. The stormwater handbook indicates that this is appropriate for sites that have discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04. The intent of the standard is to prevent storm damage due to downstream or offsite flooding. When the downstream receptor is the ocean and/or areas within tidal influence, as is this case, increased stormwater discharge will not produce these effects. We believe it is therefore appropriate to waive this standard for this project.

To ensure that the work incorporates the performance standards recommended in the Massachusetts Department of Environmental Protection's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include turbidity curtain, compost filter tubes, catch basin protection and a stabilized construction entrance.

In addition, the increased impervious areas to the site, are expected to contribute to the loss of stormwater recharge. Impervious surfaces can cause rainfall to flow off the site as surface runoff rather than permeate into the soil where it can recharge. Under certain conditions it is appropriate to waive strict compliance with this standard. Certain criteria within the stormwater handbook are worthy of note:

1) Volume 1, Chapter 1 of the handbook states "MassDEP recognizes that it may be difficult to infiltrate the required recharge volume on certain sites because of soil conditions. For sites comprised solely of "C" and "D" soil groups and bedrock at the land surface, proponents are required to infiltrate the required recharge volume only to the maximum extent practicable."

2) Volume 2, Chapter 2 of the handbook provides design criteria for infiltration BMPs. The criteria for infiltration BMPs indicate that these should not be installed over fill material, or in Hydrologic Group "D" soils.

3) Volume 3, Chapter 1 of the handbook provides criteria for site investigations related to determining the suitability of sites for infiltration BMPs. That criteria indicates that "stormwater recharge is not permitted through fill materials composed of asphalt, brick, concrete, construction debris, and materials classified as solid or hazardous waste."

Soil data for the site was obtained through the United States Department of Agriculture (USDA) web soil survey application (Attachment B) and detailed soil data was obtained through a series

of test pits and borings throughout the site (Attachment C) of the stormwater report. Based on the data set, it has been determined that the upper existing soil layers throughout the site consist of fill material of varying thicknesses. This fill material appears to be a mix of different soil types and a conglomeration of brick, concrete and other construction debris. The underlying soil beneath the fill across the site is consistently a clay material, consistent with a hydrologic soil group classification “D”.

Generally, the findings described above indicate that there does not appear to be an appropriate location on the site for the placement of an infiltration BMP. Consequently, stormwater runoff will only be allowed to infiltrate to the maximum extent feasible. This will occur by making onsite impervious areas “disconnected” from catch basins. Catch basins will generally be amid planted areas and runoff from impervious surfaces will generally be directed toward those areas. Given existing and proposed site conditions, we believe this strategy is the best approach to compliance under this standard.

Stormwater Report

Conservation Commission
Boston, Massachusetts

Improvements to
Langone Park & Puopolo Playground

Notice of Intent
Massachusetts Wetland Protection Act
M.G.L. c. 131 § 40

October 9, 2018

JOB NO: 2170867

Weston & Sampson
5 Centennial Drive
Peabody, MA 01960

www.westonandsampson.com
Tel: 978-532-1900 Fax: 978-977-0100

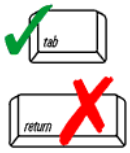
Table of Contents

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

---

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

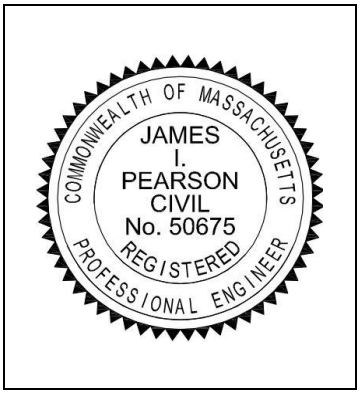
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



10/11/2018

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

☒ No disturbance to any Wetland Resource Areas

☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☐ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☐ Other (describe): _____

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☒ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

☒ Site is comprised solely of C and D soils and/or bedrock at the land surface

☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

☒ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

☐ Limited Project

☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.

☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area

☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff

☒ Bike Path and/or Foot Path

☒ Redevelopment Project

☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Stormwater Report

To Be Submitted with the Notice of Intent

Applicant/Project Name: Boston Parks and Recreation Department
Langone Park and Puopolo Playground

Project Address: Commercial Street, Boston MA

Application Prepared by:
Firm: Weston & Sampson
Registered PE: James Pearson

Due to the project's proximity to regulated resource areas, this project falls within the jurisdiction of the Massachusetts Wetland Protection Act, M.G.L. c. 131 § 40. Under the Act, project proponents must demonstrate that wetland resources are protected. This is accomplished by addressing compliance with the ten standards in the Massachusetts Stormwater Handbook. Below is an explanation concerning Standards 1-10 of the Massachusetts Stormwater Handbook as they apply to the Boston Parks and Recreation Langone Park and Puopolo Playground located on Commercial Street:

General:

Due to the need for general park improvements and additions, the City of Boston (Boston Parks and Recreation Department, BPRD) proposes the installation of new playground equipment, athletic fields and courts. In addition, BPRD proposes that the existing seawall be repaired as it is currently in need of emergency repair. Other aspects of the project are further explained in the project description section of the Notice of Intent.

Standard 1: No New Untreated Discharges

The proposed project will create no new untreated discharges. Total impervious area post-development will increase by approximately 1,860 square feet. Underdrain systems will be installed beneath sports fields to prevent over-saturation, and deep sump hooded catch basins will be installed throughout the site to collect surface runoff. All underground piping will be routed to an outfall at the seawall, discharging to the harbor. Under existing conditions, this area is heavily armored and therefore the proposed outfall will not create new erosion in the harbor.

Standard 2: Peak Rate Attenuation

Due to the increase in impervious area under proposed conditions, the peak discharge from the site is expected to increase. For typical upland development projects, some form of stormwater detention would typically be provided in order to mitigate peak stormwater discharges so that the peak discharges under the post-development condition

do not exceed the pre-development peak discharges for the 2-year and 10-year storms. Further consideration is also given to the 100-year storm event to ensure that the project does not result in an increase to flood hazards downstream of the project.

Under certain conditions, it is more appropriate that this standard be waived. The stormwater handbook indicates that this is appropriate for projects that have discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04. The intent of the standard is to prevent storm damage due to downstream or offsite flooding. When the downstream receptor is the ocean and/or areas within tidal influence, as is true in this case, increased stormwater discharge will not produce these effects. It is therefore appropriate to waive this standard for this project.

To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include compost filter tubes, catch basin protection, and a stabilized construction entrance.

Standard 3: Recharge

Under this standard, the addition of new impervious areas to a site is understood to contribute to the loss of recharge to groundwater. Impervious surfaces can cause rainfall to flow off of the site as surface runoff rather than to percolate into the soil where it can recharge the groundwater aquifer.

Under certain conditions, it is appropriate to waive strict compliance with this standard. Certain criteria within the stormwater handbook are worthy of note:

1) Volume 1 Chapter 1 of the handbook states "MassDEP recognizes that it may be difficult to infiltrate the required recharge volume on certain sites because of soil conditions. For sites comprised solely of C and D soils and bedrock at the land surface, proponents are required to infiltrate the required recharge volume only to the maximum extent practicable."

2) Volume 2 Chapter 2 of the handbook provides design criteria for infiltration BMPs. The criteria for infiltration BMPs indicates that these should not be installed over fill material, or in Hydrologic Group "D" soils.

3) Volume 3 Chapter 1 of the handbook provides criteria for site investigations related to determining the suitability of sites for infiltration BMPs. That criteria indicates that "stormwater recharge is not permitted through fill materials composed of asphalt, brick, concrete, construction debris, and materials classified as solid or hazardous waste."

Soil data for the site was obtained through the Untited States Department of Agriculture (USDA) web soil survey application (Attachment B). More detailed soil data was obtained through a series of test pits and borings throughout the site (Attachment C).

Based on the latter data set, it has been determined that the upper existing soil layers throughout the site consist of fill material of varying thicknesses. This fill material appears to be a mix of different soil types and a conglomeration of brick, concrete and other construction debris. The underlying soil beneath the fill across the site is consistently a clay material, consistent with a hydrologic soil group classification "D".

Generally, the findings described above indicate that there does not appear to be an appropriate location on the site for the placement of an infiltration BMP. Consequently, stormwater runoff will only be allowed to infiltrate to the maximum extent practicable. This will occur by making onsite impervious areas "disconnected" from catch basins. Catch basins will generally be located in the midst of vegetated areas, and runoff from impervious surfaces will generally be directed toward those vegetated areas. In light of existing site conditions, we believe that this strategy is the best approach to compliance under this standard.

Standard 4: Water Quality

Under this standard, the installation of impervious surfaces generally requires the provision of BMPs that provide stormwater quality treatment to reduce the Total Suspended Solids (TSS) from stormwater runoff. Consideration for TSS removal is given to the type of land use that is being proposed. Relatively low intensity land uses that do not involve the installation of impervious surfaces related to industrial, commercial or vehicular activity tend to produce little or no TSS load. Based on this rationale, Volume 1, Chapter 1 indicates that the Stormwater Management Standards shall apply to the maximum extent practicable to certain low-intensity land uses, including "footpaths, bikepaths and other paths for pedestrian and/or nonmotorized vehicle access."

The impervious surfaces that are proposed as part of this redevelopment project are consistent with the preceding definition, therefore stormwater quality treatment has been provided to the maximum extent practicable. This is accomplished by the installation of deep sump hooded catch basins only to the extent necessary to manage surface runoff within the park. Catch basins have been located within vegetated or grassed areas to the maximum extent practicable in order to create a condition in which impervious areas do not directly discharge runoff to catch basins. Rather, runoff will be directed from impervious areas into vegetated areas as much as is practicable so that vegetated areas will provide an added TSS filtering effect.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

This project will not create a land use with higher potential pollutant load.

Standard 6: Critical Areas

There will be no new discharge to critical areas.

Standard 7: Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

The project is a redevelopment project. Certain standards for redeveloped areas have been met to the maximum extent practicable as described herein.

Standard 8: Construction Period Pollution Prevention and Erosion and Sediment Control

A detailed Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan is included in Attachment E. To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include compost filter tubes, silt fence, catch basin protection, and a stabilized construction entrance.

Standard 9: Operation and Maintenance Plan

An operations and maintenance plan is included in Attachment F.

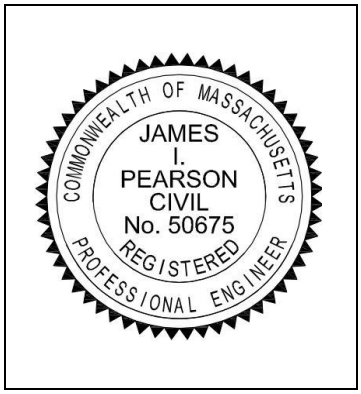
Standard 10: Prohibition of Illicit Discharges

An illicit discharge compliance statement has been included in Attachment G.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including any relevant soil evaluations, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan, the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



10/11/2018

Signature and Date

Attachment A - Locus Map

ATTACHMENT A

Langone and Puopolo Parks
Boston, Massachusetts

Locus Map

Work Area

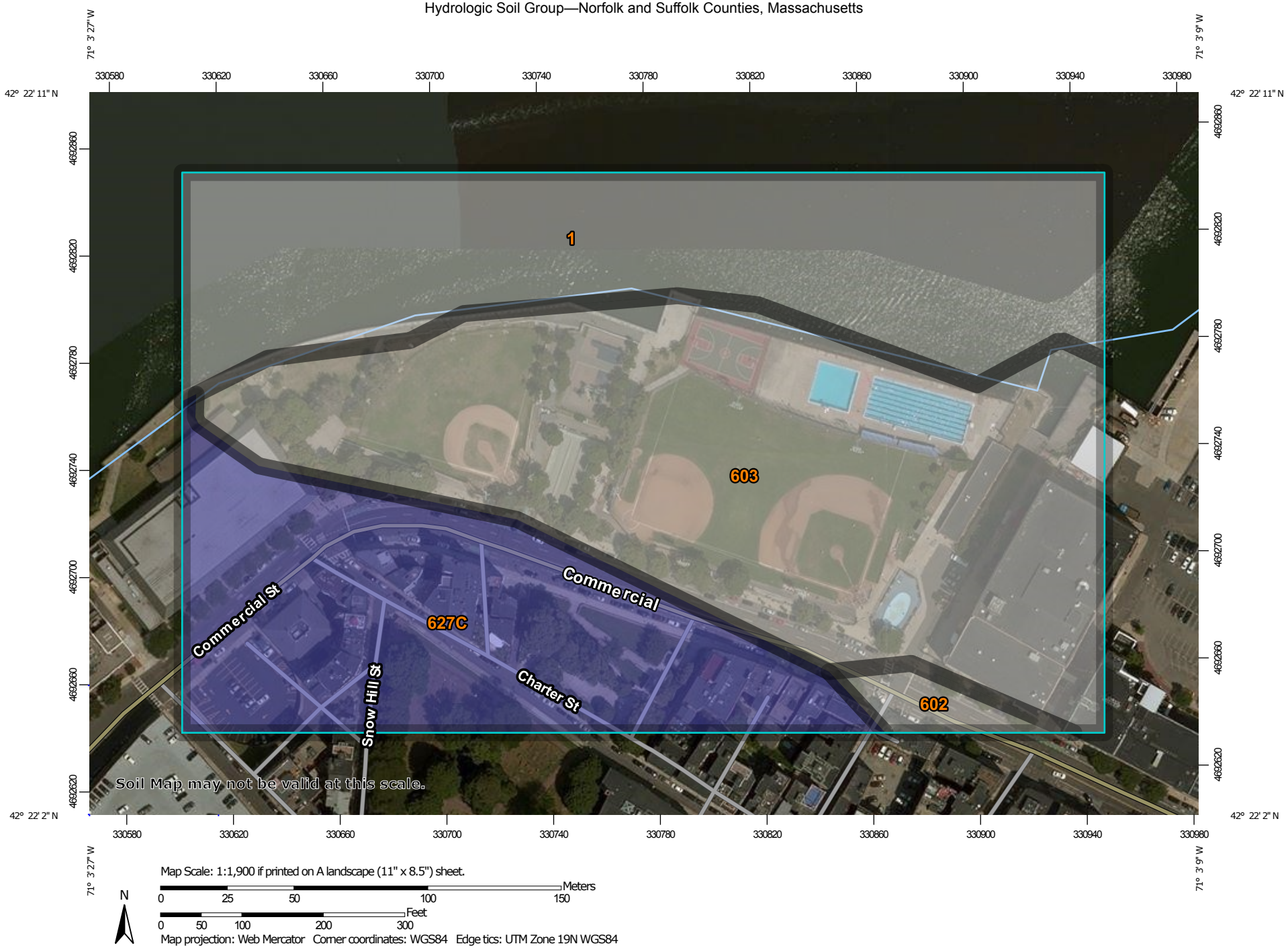
1,800 0 1,800

Scale In Feet

Weston & Sampson

Path: \\wse03.local\WSE\Projects\MA\Boston MA\Langone + Puopolo\GIS\Figure 1 - Locus.mxd **User:** GasparA **Saved:** 7/25/2018 2:00:15 PM **Opened:** 7/25/2018 2:00:50 PM

Attachment B - NRCS Soils Map, Soils Report, and HSG Classifications



Map Scale: 1:1,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 14, Sep 12, 2018

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

Date(s) aerial images were photographed: Aug 10, 2014—Aug 25, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		5.2	29.2%
602	Urban land, 0 to 15 percent slopes		0.3	1.8%
603	Urban land, wet substratum, 0 to 3 percent slopes		7.9	43.9%
627C	Newport-Urban land complex, 3 to 15 percent slopes	B	4.5	25.0%
Totals for Area of Interest			**17.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Attachment C - Test Pit Summary and Logs

NOTES:

1. BORING LOCATIONS SHOWN ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS RELATIVE TO EXISTING SITE FEATURES.
2. LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING AND OTHER DATA SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES AND/OR OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE.
3. BORINGS PERFORMED BY TECHNICAL DRILLING SERVICES, INC. FROM AUGUST 8 TO AUGUST 17, 2018 AND OBSERVED BY A WESTON & SAMPSON REPRESENTATIVE.
4. SURVEY PRODUCED BY FELDMAN LAND SURVEYORS, JANUARY, 2018. ELEVATIONS REFER TO BOSTON CITY BASE.

LEGEND:

B-1 BORING DESIGNATION AND APPROXIMATE LOCATION.

TP-1 TEST PIT DESIGNATION AND APPROXIMATE LOCATION.

80 40 0 80 160

SCALE: 1"=80'

FIGURE 1
BORING LOCATION PLAN

BPRD
LANGONE & PUOPOLO PARKS

DESIGNED BY: RJV	CHECKED BY: STS	DATE: AUGUST 2018

Weston & Sampson SM

Weston & Sampson

BORING NUMBER: **B-1/MW-1**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 4" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 15.4 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/9/2018 **END DATE:** 8/9/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/8/2018	12 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 / *15.4*											
	S1	4.0	8/13	11 15 100/1"					FILL	Brown, fine to coarse SAND, some gravel; moist.[FILL]	
5 / *10.4*											
	S2	9.0	16/24	5 3 4 14	7					Loose, dark gray, gravelly fine to coarse SAND, trace brick fragments; moist.[FILL]	Sampler wet upon retrieval.
10 / *5.4*										▼	
	S3	14.0	20/24	7 9 11 10	20					Medium dense, dark gray, gravelly fine to coarse SAND, trace brick fragments; moist.[FILL]	
15 / *0.4*											Switched to drive and wash at 16'.
	S4	18.0	12/24	8 8 12 7	20					Medium dense, dark gray, fine to coarse SAND, some gravel, trace silt; wet.	
20 / *-4.6*									CLAY	Stiff, gray-brown, CLAY; wet. (LL=38, PL=23, PI=15)	Switched to open-hole at 23'. Pocket penetrometer measurement = 2.75 TSF
	S5	23.0	24/24	3 5 6 8	11						
25											

MATERIAL DESCRIPTION
(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-9.6											
	S6	28.0	18/24	5 12 10 9	22				CLAY	Very stiff, gray, CLAY, little sand, trace gravel; wet.	
30											
-14.6											
	S7	33.0	24/24	4 6 10 13	16					Very stiff, gray, CLAY, trace gravel, trace sand; wet.	
35											
-19.6										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-2A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 16.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/8/2018 **END DATE:** 8/8/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0											
16.7	S1	0.0	15/24	6 13 19 29	32				FILL	Top 5": Brown silty SAND, some clay. Middle 5": Gray GRAVEL, some sand. Bottom 5": Brown, fine to medium SAND, some gravel.	
	S2	2.0	10/24	13 28 10 6	38					Dense, dark brown, fine to medium SAND, little gravel, with occasional brick fragments and a mild organic odor; moist.[FILL]	

Auger refusal at 2 ft. Boring offset to B-2B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-2B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 4" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 16.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/8/2018 **END DATE:** 8/8/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/8/2018	12 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *16.7*										See log of boring B-2A for samples at (0'-2') and (2'-4').	
5 *11.7*	S3	4.0	10/24	6 7 6 18	13				FILL	Medium dense, dark brown, fine to medium SAND, some gravel, some silt; moist.	Gravel = 22.1% Sand = 57.7% Fines = 20.2%
	S4	6.0	6/24	15 25 15 11	40					Dense, brown, fine to coarse SAND, some wood fragments; moist.[FILL]	
10 *6.7*	S5	8.0	7/24	12 6 14 16	20					Medium dense, brown, fine to coarse SAND, little gravel, trace silt, trace wood fragments; moist.[FILL]	
	S6	10.0	14/24	5 13 19 18	32					Dense, gray-brown, fine to coarse SAND, little gravel, trace brick fragments; moist.[FILL]	Spoon wet upon retrieval.
	S7	12.0	14/24	9 19 19 17	38					Top 8": Gray-brown, fine to coarse SAND, little gravel, trace brick fragments; wet.[FILL] Bottom 6": Gray, fine to coarse silty SAND; wet.[FILL]	
15 *1.7*	S8	14.0	0/24	12 19 19 13	38					No recovery: Piece of gravel stuck in shoe tip.	Switched to drive and wash at 14'.
	S9	16.0	12/24	12 12 14 16	26				SAND	Medium dense, gray, fine to coarse SAND, some gravel, little silt; wet.	
20 *-3.3*	S10	18.0	10/24	8 10 16 18	26					Medium dense, brown, fine to medium silty SAND, trace clay, trace gravel; wet.	
	S11	23.0	12/24	12 12 19 18	31					Dense, brown, fine to medium silty SAND, some gravel; wet.	
25											

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-2B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
25										(see guide below for soil classification based on constituent percentage) Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10% Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
-8.3											
	S12	28.0	0/24	9 21 25 18	46				SAND	No recovery.	
30											
-13.3											
	S13	33.0	8/24	75 36 19 19	55					Very dense, gray, silty SAND, trace gravel; wet.	
35											
-18.3										Bottom of boring at 35'.	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-3**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 19.1 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/15/2018 **END DATE:** 8/15/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/15/2018	12 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 / *19.1*									FILL	(see guide below for soil classification based on constituent percentage) Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10% Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
5 / *14.1*	S1	4.0	8/24	6 3 4 6	7				FILL	Loose, brown, fine to coarse SAND, little silt, trace gravel; moist.[FILL]	
10 / *9.1*	S2	9.0	8/24	2 2 1 1	3				FILL	Very loose, brown, fine to coarse SAND, little silt, little gravel; moist.[FILL] ▼	
15 / *4.1*	S3	14.0	4/24	6 13 16 18	29				CLAY	Very stiff, gray, CLAY, little gravel, trace sand; wet.	
20 / *-0.9*	S4	19.0	18/24	8 9 30 26	39				CLAY	Hard, brown-gray, CLAY, some gravel, little sand, little clay; wet.	
25	S5	23.0	12/24	5 10 15 16	25				CLAY	Very stiff, gray, CLAY, trace gravel, occasional oxidation / staining.	Switched to open hole at 23'. Pocket penetrometer measurement > 4.5 TSF

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-3**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
25 / -5.9											
	S6	28.0	12/24	4 6 7 10	13				CLAY	Stiff, gray, CLAY, little gravel, trace sand; wet.	Pocket penetrometer measurement = 1.5 TSF
30 / -10.9											
	S7	33.0	/24	7 8 19 14	27					Very stiff, gray, CLAY, little gravel, trace sand; wet.	Pocket penetrometer measurement = 2.0 TSF
35 / -15.9										Bottom of boring at 35'.	

(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-4**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 19.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/16/2018 **END DATE:** 8/16/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/16/2018	11 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *19.7*									FILL	Approx. 4" silty SAND underlain by a woven geotextile, underlain by approx. 8" coarse sand, trace silt.	
5 *14.7*	S1	4.0	12/24	2 2 2 2	4					Loose, brown, fine to coarse SAND, trace gravel, trace brick fragments, and mild organic odor; moist.[FILL]	
10 *9.7*	S2	9.0	14/24	1 1 2 3	3					Very loose, dark brown, fine to medium SAND, little silt, with some wood and brick fragments; moist.[FILL] ▼	Bottom 2" wet upon retrieval.
15 *4.7*	S3	14.0	24/24	1 1 4 4	5					Loose, dark gray, fine silty SAND, with some wood and brick fragments, and mild organic odor; moist.[FILL]	Switched to drive and wash after 14'.
20 *-0.3*	S4	18.0	24/24	3 5 5 6	10				CLAY	Stiff, gray, CLAY, trace gravel, occasional oxidation / staining; wet.	Switched to open hole at 18'. Pocket penetrometer measurement = 3.25 TSF
25	S5	23.0	6/24	14 16 16 14	32					Hard, gray-brown, CLAY, some sand, little gravel, occasional oxidation / staining; wet.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE SYMBOL	SAMPLE TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-4**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25											
-5.3											
	S6	28.0	14/24	8 12 21 17	33				CLAY	Hard, gray, CLAY, little gravel, little sand; wet.	
30											
-10.3											
	S7	33.0	14/24	7 7 8 9	15					Very stiff, gray, CLAY, little sand, trace gravel; wet.	Pocket penetrometer measurement = 2.25 TSF
35											
-15.3										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-5**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 16.2 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/9/2018 **END DATE:** 8/9/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *16.2*									FILL	0 to 6": Topsoil.	
	S1	4.0	6/24	4 6 5 4	11					Medium dense, brown, fine to medium SAND, trace gravel, trace roots fibers; moist.[FILL]	5' - auger grinding.
5 *11.2*											
	S2	9.0	10/24	1 1 1 1	2					Very loose, brown, fine to medium sandy GRAVEL, little silt; moist.[FILL]	
10 *6.2*											
	S3	14.0	10/24	1 1 1 3	2				ORGANIC SILT	Soft, dark brown, ORGANIC SILT, some sand, trace gravel, trace shell fragments and a stong petroleum-like odor; moist.	
15 *1.2*											
	S4	16.0	12/24	4 20 5 6	25					Very stiff, dark brown, ORGANIC SILT, some sand, trace gravel, trace shell fragments and a stong petroleum-like odor; moist.	
	S5	18.0	4/24	2 3 7 6	10					Stiff, dark brown, ORGANIC SILT, some sand, trace gravel, trace shell fragments and a stong petroleum-like odor; moist.	
20 *-3.8*											
	S6	20.0	10/24	5 15 14 13	29					Very stiff, dark gray, ORGANIC SILT, trace gravel, trace clay, with a mild petroleum-like odor; moist.	
	S7	22.0	6/24	3 12 11 32	23					Very stiff, dark gray, ORGANIC SILT, little gravel, trace clay, with a mild petroleum-like odor; moist.	23' - auger grinding.
25	S8	24.0	12/24	2 7	19					Very stiff, gray-brown sandy CLAY, trace gravel; moist.	Gravel = 6.9% Sand = 45.8%

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-8.8				12 10					CLAY		Fines = 47.3%
	S9	26.0	12/24	11 9 11 12	20					Very stiff, gray-brown CLAY, little gravel, little sand; moist. (LL=31, PL=18, PI=13)	
30											
-13.8	S10	30.0	14/24	5 5 7 8	12					Stiff, gray-brown CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.5 TSF
	S11	34.0	24/24	2 5 6 6	11					Stiff, gray-brown CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.0 TSF
35 -18.8										Bottom of boring at 36'.	

Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%
Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-6**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 18.4 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/13/2018 **END DATE:** 8/13/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
0 *18.4*									FILL		
5 *13.4*	S1	4.0	12/24	2 2 1 1	3					Very loose, brown, fine to coarse SAND, little gravel, trace brick fragments, trace root fibers; moist.[FILL]	
10 *8.4*	S2	9.0	12/24	1 3 12 6	15					Medium dense, gray-brown, silty SAND, trace gravel, trace brick fragments, trace root fibers; moist.[FILL]	12' - auger grinding.
15 *3.4*	S3	14.0	4/24	4 7 3 4	10					Medium dense, dark gray, fine to medium SAND, some wood fragments; moist.	Wood stuck in tip of spoon.
20 *-1.6*	S4	19.0	24/24	5 7 12 12	19				CLAY	Top 4": Dark gray, fine to medium SAND; moist. Bottom 16": Very stiff, gray, CLAY, trace gravel, trace sand, with occasional oxidation / staining; moist.	Switched to open hole at 19'. Pocket penetrometer measurement = 3.5 TSF
25	S5	23.0	24/24	4 5 7 8	12					Stiff, gray CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.5 TSF

Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%
Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%

SAMPLE	
SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS	
N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS	
N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25											
-6.6											
	S6	28.0	2/24	4 5 5 7	10				CLAY	Stiff, gray CLAY, with occasional oxidation / staining; moist.	Pocket penetrometer measurement = 2.75 TSF
30											
-11.6											
	S7	33.0	24/24	5 9 14 28	23					Very stiff, gray, CLAY; moist.	Gravel stuck in tip of spoon. Pocket penetrometer measurement = 1.0 TSF
35											
-16.6	S8	35.0	24/24	20 19 17 22	36					Hard, gray, CLAY, some gravel, little sand; moist.	

Bottom of boring at 37'.

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-7A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 12.9 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/10/2018 **END DATE:** 8/10/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *12.9*										0 to 6": Asphalt concrete pavement.	Based on soil cuttings.
	S1	4.0	2/6	100					FILL		

Auger refusal at 4 ft. Boring offset to B-7B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-7B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 15 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/10/2018 **END DATE:** 8/10/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
8/10/2018	9 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 / 15.0											
5 / 10.0	S1	4.0	6/24	4 3 3 5	6				FILL	Loose, brown, fine to medium SAND, little gravel, trace silt, occasional fine roots; moist.[FILL]	Auger grinding at 4'. Wood stuck in tip of spoon.
10 / 5.0	S2	9.0	10/24	8 5 11 12	16					Medium dense, dark brown, SILT, some gravel; wet.[FILL]	Spoon wet upon retrieval.
15 / 0.0	S3	14.0	16/24	7 13 20 22	33					Top 10": Dark brown, SILT, some gravel; wet.[FILL] Bottom 6": Gray, fine to coarse SAND, little silt, trace gravel; wet.[FILL]	
20 / -5.0	S4	19.0	6/24	11 12 13 10	25					Medium dense, dark gray, fine to coarse SAND, little silt, trace gravel; wet.[FILL]	Switched to drive and wash at 21'.
25	S5	23.0	6/24	3 3 2 4	5					Loose, dark gray, fine to coarse, silty SAND, trace gravel; wet.[FILL]	

MATERIAL DESCRIPTION
(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-7B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-10.0									FILL		
	S6	28.0	8/24	14 8 11 19	19				CLAY	Very stiff, gray, CLAY, with occasional oxidation / staining; wet.	Switched to open hole at 28'. Pocket penetrometer measurement = 4.0 TSF
30 -15.0											
	S7	33.0	24/24	4 7 6 7	13					Stiff, gray, CLAY; wet.	Pocket penetrometer measurement = 2.5 TSF
35 -20.0										Bottom of boring at 35'.	

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson

BORING NUMBER: **B-8**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 14.7 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/10/2018 **END DATE:** 8/10/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
8/10/2018	5 ft. +/-	Based on wet samples.

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *14.7*										(see guide below for soil classification based on constituent percentage) Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10% Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
5 *9.7*	S1	4.0	4/24	WOH WOH WOH 1					FILL	Very loose, fine to coarse SAND, little gravel, little silt, trace brick fragments; wet.[FILL] ▼	
10 *4.7*	S2	9.0	10/24	WOH 1 1 2	2					Very soft, dark gray, silty CLAY, some gravel / fractured rock; wet.[FILL]	
15 *-0.3*	S3	14.0	10/24	2 5 8 17	13					Top 2": Dark gray, silty CLAY, some gravel; wet.[FILL] Bottom 8": Dark gray, gravely SAND, little silt, trace brick fragments with a mild organic odor; wet.[FILL]	
20 *-5.3*	S4	19.0	12/24	1 7 8 12	15					Medium dense, dark gray, fine to medium SAND, little silt, trace gravel, trace brick fragments, trace root fibers and a mild organic odor; wet.[FILL]	Gravel = 8.4% Sand = 75.4% Fines = 16.2%
25	S5	24.0	12/24	7 3	5					Loose, dark gray, fine to medium SAND, some silt, trace gravel, trace brick fragments, trace root fibers and a mild organic odor; wet.[FILL]	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-8**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25										Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%. Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%	
-10.3				2 1					FILL		
	S6	29.0	18/24	6 9 12 16	21				CLAY	Top 9": Dark gray, fine to coarse SAND, some silt; wet. Bottom 9": Gray, CLAY, with occasional oxidation / staining; wet.	Switched to open hole at 29'. Pocket penetrometer measurement > 4.5 TSF
30 -15.3											
	S7	34.0	18/24	7 9 12 13	21					Very stiff, gray, CLAY; wet.	Pocket penetrometer measurement = 3.5 TSF
35 -20.3											

Bottom of boring at 36'.

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-9A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 13.4 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/16/2018 **END DATE:** 8/16/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0											
13.4										Approx. 8" reinforced concrete.	Based on auger cuttings.
										Gray-brown, sandy GRAVEL; moist.[FILL]	Based on auger cuttings.

Auger refusal at 2 ft. Boring offset to B-9B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-9B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 13.2 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/16/2018 **END DATE:** 8/16/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0											
13.2										Approx. 8" reinforced concrete.	Based on auger cuttings.
										Gray-brown, sandy GRAVEL, with one cobble during augering; moist.[FILL]	Based on auger cuttings.
										Auger refusal and bottom of boring at 2 ft.	

(see guide below for soil classification based on constituent percentage)

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

Weston & Sampson SM

BORING NUMBER: **B-10A**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / hollow-stem auger (HSA)
CASING DIAMETER: 4.25" HSA
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 17.3 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/14/2018 **END DATE:** 8/14/2018

GROUNDWATER OBSERVATIONS		
DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *17.3*										Approx. 1' of topsoil.	Based on auger cutting.
5 *12.3*	S1	4.0	8/24	2 4 5 4	9				FILL	Loose, brown, fine to coarse gravely SAND, little silt, trace brick fragments; moist.[FILL]	
10 *7.3*	S2	9.0	4/24	5 4 7 8	11					Medium dense, brown, fine to coarse gravelly SAND, little silt; moist.[FILL]	

Auger refusal at 12 ft. Boring offset to B-10B.

(see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-10B**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 17.3 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/14/2018 **END DATE:** 8/15/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *17.3*										Approx. 1' of topsoil	Based on auger cuttings.
5 *12.3*										See log of boring B-10A for samples at (4'-6') and (9'-11').	
10 *7.3*											
15 *2.3*	S3	14.0	10/24	1 6 6 9	12				FILL	Medium dense, dark gray, fine to coarse SAND, little gravel, little silt, trace brick fragments, trace root fibers and a mild organic and petroleum-like odor; moist.[FILL]	
20 *-2.7*	S4	19.0	12/24	10 8 6 6	14					Medium dense, dark gray, fine to coarse SAND, little silt, trace gravel, trace shell fragments and a mild organic and petroleum-like odor; moist.[FILL]	Switched to casing at 21'.
25	S5	23.0	8/24	2 2 4 5	6				SILT	Medium stiff, gray, sandy SILT, trace gravel; moist.	Gravel stuck in tip of spoon.

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-7.7									SILT		
25	S6	28.0	20/24	9 13 18 19	31				CLAY	Hard, gray, CLAY, with occasional oxidation / staining; moist.	Switched to open-hole at 28'. Pocket penetrometer measurement > 4.5 TSF
-12.7											
30	S7	33.0	24/24	5 7 11 11	18					Very stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 3.0 TSF
-17.7											
35	S8	38.0	24/24	3 4 5 6	9					Stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 1.5 TSF
-22.7											
40	S9	43.0	24/24	2 3 4 4	7					Medium stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 1.0 TSF
-27.7											
45	S10	48.0	24/24	3 3 4 6	7					Medium stiff, gray, CLAY; moist. (LL=47, PL=20, PI=27)	Pocket penetrometer measurement = 1.0 TSF
-32.7											
50	S11	53.0	24/24	3 3 5	8					Medium stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 0.75 TSF

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
55				6					CLAY		
-37.7											
	S12	58.0	24/24	4 5 10 9	15					Stiff, gray, CLAY, trace sand, trace gravel; wet.	Pocket penetrometer measurement = 0.75 TSF
60											
-42.7									GLACIAL TILL		
	S13	63.0	18/24	35 35 21 21	56					Hard, gray, sandy CLAY, little gravel, trace sand; moist.	
65											
-47.7											
	S14	68.0	24/24	4 8 13 19	21					Very stiff, gray, gravelly CLAY, trace sand; moist.	
70											
-52.7											

Roller bit refusal and bottom of boring at 71'.

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-11**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 17.9 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/13/2018 **END DATE:** 8/13/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *17.9*											3' - auger grinding.
	S1	4.0	18/24	8 10 11 9	21					Top 10": Dark brown, fine to medium SAND, trace gravel, trace silt, trace brick fragments, trace roots fibers; moist.[FILL] Bottom 8": Brown, fine to coarse SAND, little gravel, trace brick fragments; moist.[FILL]	
5 *12.9*											
	S2	9.0	14/24	1 WOH WOH 1					FILL	Very loose, brown, fine to medium SAND, little silt, trace gravel, trace debris (brick, wood, etc.) and a mild organic odor; moist.[FILL]	Gravel = 9.2% Sand = 71.9% Fines = 18.9%
10 *7.9*											
	S3	14.0	16/24	1 1 1 2	2					Very loose, brown, fine to coarse silty SAND, trace gravel, trace brick fragments and a mild organic odor; moist.[FILL]	
15 *2.9*											
	S4	19.0	14/24	5 22 14 9	36					Dense, dark gray, fine to medium SAND, little gravel, little silt with a mild organic odor; moist.[FILL]	
20 *-2.1*											Switched to drive and wash at 21'.
	S5	22.0	19/24	10 15 22 26	37				CLAY	Hard, gray-brown, CLAY, with occasional oxidation / staining; moist	Switched to open hole at 22'. Pocket penetrometer measurement > 4.5 TSF
25											

SAMPLE		GRANULAR SOILS		COHESIVE SOILS		GENERAL NOTES:
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY	1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.
S	Split spoon	0-4	Very Loose	< 2	Very Soft	
ST	Shelby tube	4-10	Loose	2-4	Soft	
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff	2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.
NX	Rock core	30-50	Dense	8-15	Stiff	
GP	Direct push	> 50	Very Dense	15-30	Very Stiff	
				> 30	Hard	

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) *Elevation*	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
25 *-7.1*											
	S6	27.0	24/24	5 8 8 14	16				CLAY	Very stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 3.0 TSF
30 *-12.1*											
	S7	32.0	24/24	4 5 6 9	11					Medium stiff, gray, CLAY; moist.	Pocket penetrometer measurement = 2.25 TSF

Bottom of boring at 34'.

Mineral Soil
GRAVEL, SAND, SILT, CLAY: >50%
gravelly, sandy, silty, clayey: 35-50%
some: 20-35%
little: 10-20%
trace: 0-10%

Organic Soil
PEAT: 50-100%
organic (soil): 15-50%
with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson SM

BORING NUMBER: **B-12**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DRILLER: Brett Balyk - Technical Drilling Services
LOGGED / CHECKED BY: RJV / STS
RIG TYPE / DRILLING METHODS: ATV / cased rotary / HSA
CASING DIAMETER: 4.25" HSA, 3" Casing
SAMPLING METHODS: Standard penetration test (SPT)
SAMPLER TYPE: Standard 24" long x 2" OD (1-3/8" ID) split-spoon
SAMPLER HAMMER: 140-lb. automatic hammer
OTHER:

BORING LOCATION: See attached plan.
GROUND ELEVATION: 14.8 ft. +/- **DATUM:** Boston City Base
DRILLING START DATE: 8/17/2018 **END DATE:** 8/17/2018

GROUNDWATER OBSERVATIONS

DATE	DEPTH	COMMENTS
	Not observed	

DEPTH (ft.) / Elevation	TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION	COMMENTS
0 *14.8*										No sampling performed in the fill from 0 to 14 ft.	
5 *9.8*											
10 *4.8*											
15 *-0.2*	S1	14.0	16/24	1 2 2 3	4				ORGANIC SILT	Soft, dark gray-brown, ORGANIC SILT, little sand, trace gravel, with strong petroleum-like odor; moist.	
	S2	16.0	20/24	2 2 3 4	5					Medium stiff, dark brown, ORGANIC SILT, trace sand, some shell fragments and a strong petroleum-like odor; moist.	
20 *-5.2*	S3	18.0	18/24	2 2 2 2	4					Soft, dark brown, ORGANIC SILT, some wood, trace shell fragments and a mild organic odor; moist.	Switched to casing at 18'.
	S4	20.0	18/24	1 WOH WOH WOH						Very soft, dark brown, ORGANIC SILT, some wood, trace shell fragments and a mild organic odor; moist.	
	S5	22.0	0/24	1 1 2 3	3					No recovery.	
25	S6	24.0	6/24	WOR WOR					SILT	Soft, dark gray, fine to coarse sandy SILT, trace gravel; moist.	

MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)

Mineral Soil	Organic Soil
GRAVEL, SAND, SILT, CLAY: >50%	PEAT: 50-100%
gravelly, sandy, silty, clayey: 35-50%	organic (soil): 15-50%
some: 20-35%	with some organics: 5-15%
little: 10-20%	
trace: 0-10%	

SAMPLE

SYMBOL	TYPE
S	Split spoon
ST	Shelby tube
AG	Auger grab
NX	Rock core
GP	Direct push

GRANULAR SOILS

N-Value	Density
0-4	Very Loose
4-10	Loose
10-30	Med. Dense
30-50	Dense
> 50	Very Dense

COHESIVE SOILS

N-VALUE	CONSISTENCY
< 2	Very Soft
2-4	Soft
4-8	Med. Stiff
8-15	Stiff
15-30	Very Stiff
> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Weston & Sampson

BORING NUMBER: **B-12**

CLIENT: Boston Parks and Recreation Department
PROJECT NUMBER: 2170867
PROJECT NAME: Langone Park and Puopolo Playground Improvements
PROJECT LOCATION: North End, Boston MA

DEPTH (ft.) / Elevation	SAMPLE INFORMATION: TYPE - NO.	DEPTH (ft.)	REC./PEN. (in.)	SPT BLOWS/6"	SPT N-VALUE	% MOISTURE	% FINES (P200)	GRAPHIC LOG	STRATA NAME	MATERIAL DESCRIPTION (see guide below for soil classification based on constituent percentage)	COMMENTS
-10.2				3 4					SILT		
	S7	26.0	10/24	10 9 11 11	20					Top 5": Dark gray, fine to coarse sandy SILT, little gravel; moist. Bottom 5": Gray, CLAY, little gravel, little sand; moist.	
	S8	28.0	7/24	6 7 8 8	15				CLAY	Very stiff, gray, CLAY, little gravel, little sand; moist.	Switched to open hole at 28'.
30 -15.2											
	S9	33.0	4/24	4 5 6 7	11					Stiff, gray, CLAY, some gravel, little sand; moist.	
35 -20.2											
	S10	38.0	/24	6 6 7 8	13					Stiff, gray, CLAY, some gravel, little sand; moist.	
40 -25.2											
	S11	43.0	24/24	4 4 4 6	8					Medium stiff, gray, CLAY, trace sand, with occasional oxidation / staining; moist. (LL=45, PL=24, PI=21)	Pocket penetrometer measurement = 1.25 TSF
45 -30.2											
	S12	48.0	8/24	11 17 11 10	28					Very stiff, gray, CLAY, little gravel, little sand; moist.	
50 -35.2										Bottom of boring at 50'.	

Mineral Soil: GRAVEL, SAND, SILT, CLAY: >50%; gravelly, sandy, silty, clayey: 35-50%; some: 20-35%; little: 10-20%; trace: 0-10%

Organic Soil: PEAT: 50-100%; organic (soil): 15-50%; with some organics: 5-15%

SAMPLE		GRANULAR SOILS		COHESIVE SOILS	
SYMBOL	TYPE	N-Value	Density	N-VALUE	CONSISTENCY
S	Split spoon	0-4	Very Loose	< 2	Very Soft
ST	Shelby tube	4-10	Loose	2-4	Soft
AG	Auger grab	10-30	Med. Dense	4-8	Med. Stiff
NX	Rock core	30-50	Dense	8-15	Stiff
GP	Direct push	> 50	Very Dense	15-30	Very Stiff
				> 30	Hard

GENERAL NOTES:

1. The stratification lines represent the approximate boundary between soil types; actual transitions may be gradual.

2. Water level readings have been made in the drill holes at the times and conditions stated on the boring log. Fluctuations in the level of groundwater may occur due to other factors than those presented at the time measurements are made.

Attachment D - Test Pit Summary and Logs

Long Term Pollution Prevention Plan
Langone Park and Puopolo Playground
Boston, MA

To meet the requirements of Standard 4 of the Massachusetts Stormwater Handbook, this Long Term Pollution Prevention Plan is provided to identify the proper procedures of practices for source control and pollution prevention.

Storage and Handling of Oil and other Hazardous Materials

There will be no oil or other hazardous materials stored onsite.

Salt Storage

There will be no salt storage onsite.

Vehicle Storage and Washing

The park improvements do not include vehicular parking, so there will be no vehicle storage on site. Vehicles will not be stored or washed onsite.

Operation and Maintenance of Stormwater Control Structures

Included in Attachment H of this appendix is the Operation and Maintenance plan for this site, which includes sweeping of the impervious areas and periodic removal of sediment from catch basins. The Boston Parks and Recreation Department (BPRD) will be responsible for implementing the plan.

Landscaping

The landscaped areas will be maintained by the BPRD. Fertilizers will not be stored onsite.

De-icing & Snow Disposal

The BPRD may periodically utilize salt and sand to treat the impervious surfaces of the pedestrian walks and main circulation areas during snow and ice events.

Attachment E - Construction Period Pollution Prevention and Erosion and Sediment Control Plan

Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan

SECTION 1: Introduction

Due to the need for general park improvements and additions, the City of Boston (Boston Parks and Recreation Department, BPRD) proposes the installation of new playground equipment, athletic fields and courts. In addition, BPRD proposes that the existing seawall be repaired as it is currently in need of emergency repair. Other aspects of the project are further explained in the project description section of the Notice of Intent.

As part of this project, this "Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan" has been created to ensure that no further disturbance to the wetland resource is created during the construction of these repairs.

SECTION 2: Construction Period Pollution Prevention Measures

Best Management Practices (BMPs) will be utilized as Construction Period Pollution Prevention Measures to reduce potential pollutants and prevent any off-site discharge. The objectives of the BMPs for construction activity are to minimize the disturbed areas, stabilize any disturbed areas, control the site perimeter and retain sediment. Both erosion and sedimentation controls and non-stormwater best management measures will be used to minimize site disturbance and ensure compliance with the performance standards of the WPA and Stormwater Standards. Measures will be taken to minimize the area disturbed by construction activities to reduce the potential for soil erosion and stormwater pollution problems. In addition, good housekeeping measures will be followed for the day-to-day operation of the construction site under the control of the contractor to minimize the impact of construction. This section describes the control practices that will be in place during construction activities. All recommended control practices will comply with the standards set in the MA DEP Stormwater Policy Handbook.

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

In order to minimize disturbed areas all work will be completed within well-defined work limits. These work limits are shown on the construction plans. The Contractor shall not disturb native vegetation in the undisturbed wetland area without prior approval from the Engineer. The Contractor will be responsible to make sure that all workers know the proper work limits and do not extend their work into the undisturbed areas. The protective measures are described in more detail in the following sections.

2.2 Control Stormwater Flowing onto and through the project

All construction areas adjacent to wetlands will be lined with compost filter tubes and silt fence. The tubes and silt fence will be inspected daily and accumulated silt will be

removed as appropriate. In addition, any storage of material will require a second level of protection by surrounding the areas with another row of compost filter tubes. A stabilized truck entrance/exit is proposed so that equipment visiting the site can remove any accumulated dirt and mud from vehicles to prevent tracking the mud onto public roads.

2.3 Stabilize Soils

The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, mulching, the use of erosion control mats, or other protective measures shall be provided as specified.

The Contractor shall take account of the conditions of the soil where erosion control seeding will take place to ensure that materials used for re-vegetation are adaptive to the sediment control.

2.4 Proper storage and cover of any stockpiles

The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer.

No excavated materials or materials used in backfill operations shall be stored within a minimum distance of fifty (50) feet of any watercourse or any wetlands. Adequate measures for erosion and sediment control such as the placement of compost filter tubes around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

There shall be no storage of equipment or materials in areas designated as wetlands.

The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

2.5 Perimeter Controls and Sediment Barriers

Erosion control lines as described in Section 5 will be utilized to ensure that no sedimentation occurs outside the perimeter of the work area.

2.6 Storm Drain Inlet Protection

Storm Drain inlets (catch basins) will be fitted with a protective insert.

2.7 Retain Sediment On-Site

The Contractor will be responsible to monitor all erosion control measures. Whenever necessary the Contractor will clear all sediment from the compost filter tubes and silt fence that have been silted up during construction. Daily monitoring shall be conducted using the attached Monitoring Form.

The following good housekeeping practices will be followed on-site during the construction project.

2.8 Material Handling and Waste Management

All materials stored on-site will be stored in a neat, orderly manner in appropriate containers. All materials will be kept in their original containers with the original manufacturer's label. Substances will not be mixed with one another unless recommended by the manufacturer.

All waste materials will be collected and stored in a securely lidded metal container from a licensed management company. The waste and any construction debris from the site will be hauled off-site daily and disposed of properly. The contractor will be responsible for all waste removal. Manufacturer's recommendations for proper use and disposal will be followed for all materials. Sanitary waste will be collected from the portable units a minimum of once a week, by a licensed sanitary waste management contractor.

2.9 Designated Washout Areas

The Contractor shall use washout facilities at their own facilities, unless otherwise directed by the Engineer.

2.10 Proper Equipment/Vehicle Fueling and Maintenance Practices

On-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the risk of leakage. To ensure that leaks on stored equipment do not contaminate the site, oil-absorbing mats will be placed under all equipment during storage. Regular fueling and service of the equipment shall not be performed. Repair of equipment or machinery shall not be allowed in any event within 100' of wetlands. Any petroleum products will be stored in tightly sealed containers that are clearly labeled.

2.11 Equipment/Vehicle Washing

The Contractor will be responsible to ensure that no equipment is washed on-site.

SECTION 3: Spill Prevention and Control Plan

The Contractor will be responsible for preventing spills in accordance with the project specifications and applicable federal, state and local regulations. The Contractor will identify a properly trained site employee, involved with the day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of the responsible spill personnel will be posted on-site. Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator.

3.1 Spill Control Equipment

Spill control/containment equipment will be kept in the Work Area. Materials and equipment necessary for spill cleanup will be kept either in the Work Area or in an otherwise accessible on-site location. Equipment and materials will include, but not be limited to, absorbent booms/mats, brooms, dust pans, mops, rags, gloves, goggles, sand, plastic and metal containers specifically for this purpose. It is the responsibility of the Contractor to ensure the inventory will be readily accessible and maintained.

3.2 Notification

All workers will be directed to inform the on-site supervisor of a spill event. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon notification. Workers should avoid direct contact with spilled materials during the containment procedures. Primary notification of a spill should be made to the local Fire Department and Police Departments. Secondary Notification will be to the certified cleanup contractor if deemed necessary by Fire and/or Police personnel. The third level of notification is to the DEP. The specific cleanup contractor to be used will be identified by the Contractor prior to commencement of construction activities.

3.3 Spill Containment and Clean-Up Measures

Spills will be contained with granular sorbent material, sand, sorbent pads, booms or all of the above to prevent spreading. Certified cleanup contractors should complete spill cleanup. The material manufacturer's recommended methods for spill cleanup will be clearly posted and on-site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

3.4 Hazardous Materials Spill Report

The Contractor will report and record any spill. The spill report will present a description of the release, including the quantity and type of material, date of the spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

This document does not relieve the Contractor of the Federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302 and the State requirements specified under the Massachusetts Contingency Plan (M.C.P) relating to spills or other releases of oils or hazardous substances. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a twenty-four (24) hour period, the Contractor is required to comply with the response requirements of the above mentioned regulations. Spills of oil or hazardous material in excess of the reportable quantity will be reported to the National Response Center (NRC).

SECTION 4: Contact Information/Responsible Parties

Owner/Operator:
Boston Parks and Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118

Engineer:
James Pearson, P.E.
Weston & Sampson, Inc.
5 Centennial Drive
Peabody, MA 01960
978-532-1900

Site Inspector:
TBD

Contractor:
TBD

SECTION 5: Erosion and Sedimentation Control

Erosion and Sedimentation Controls are shown on the project plans. In addition a technical specification (***Section 01570 Environmental Protection***) has been included as part of Appendix D, which details all Erosion and Sedimentation controls.

SECTION 6: Site Development Plans

A full set of site development plans are included with this submittal.

SECTION 7: Operation and Maintenance of Erosion Control

The erosion control measures will be installed as detailed in the technical specification ***01570 Environmental Protection***. If there is a failure to the controls the Contractor,

under the supervision of the Engineer, will be required to stop work until the failure is repaired.

Periodically throughout the work, the sediment that has been deposited against the controls shall be removed pursuant to DEP guidelines to ensure that the controls are working properly.

SECTION 8: Inspection Schedule

During construction the erosion and sedimentation controls will be inspected daily. Once the Contractor is selected, an onsite inspector will be selected to work closely with the Engineer to insure that all erosion and sedimentation controls are in place and working properly. An Inspection Form is included.

Inspection Form

Inspected By: _____ Date: _____Time:_____

YES	NO	DOES NOT APPLY	ITEM
			Do any erosion/siltation control measures require repair or clean out to maintain adequate function?
			Is there any evidence that sediment is leaving the site and entering the wetlands?
			Are any temporary soil stockpiles or construction materials located in non-approved areas?
			Are on-site construction traffic routes, parking, and storage of equipment and supplies located in areas not specifically designed for them?

Specific location, current weather conditions, and action to be taken:

_____

_____

_____

_____

_____

Other Comments:

_____

_____

Pending the actions noted above I certify that the site is in compliance with the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan.

Signature: _____ Date: _____

Attachment F - Operations and Maintenance Plan

Attachment F –
Long-Term Operation and Maintenance Plan

1.0 Introduction

The following document has been written to comply with the stormwater guidelines set forth by the Massachusetts Department of Environmental Protection (MassDEP). The intent of these guidelines is to encourage Low Impact Development techniques to improve the quality of the stormwater runoff. These techniques, also known as Best Management Practices (BMPs) collect, store, and treat the runoff before discharging to adjacent environmental resources.

2.0 Purpose

This Operation and Maintenance Plan (O&M Plan) is intended to provide a mechanism for the consistent inspection and maintenance of each BMP installed on the project site. Included in this O&M Plan is a description of each BMP type and an inspection form for each BMP. The Boston Parks and Recreation Department (BPRD) is the owner and operator of the system and is responsible for its upkeep and maintenance.

This work will be funded on an annual basis through the City's operating budget. The estimated budget to maintain these BMPs utilizing the City's workforce and equipment is approximately $2,000 per year. This budget assumes that City equipment will be utilized and no additional equipment rental is required.

In the event the City sells the property, it is the City's responsibility to transfer this plan as well as the past three years of operation and maintenance records to the new property owner.

3.0 BMP Description and Locations

3.1 Street Sweeping

Street sweeping consists of using a street sweeping machine to clean impervious areas of accumulated sediment, debris, and trash at pedestrian walks and other impervious surfaces.

3.2 Deep Sump Catch Basins

Deep sump catch basins will be located throughout the site and used as pre-treatment before entering the stormwater detention/infiltration basin. The deep sump catch basins are designed to remove trash, debris, and coarse sediment from the stormwater runoff.

3.4 Vegetated filter strips

Grassed or vegetated areas around catch basins acts to filter stormwater runoff before it enters the storm drain system.

4.0 Inspection, Maintenance Checklist and Schedule

4.1 Street Sweeping

Street sweeping shall be performed on the proposed pedestrian and impervious recreation areas at least twice per year, primarily in the spring and fall. Street sweeping shall be performed using an appropriate street sweeping machine.

In the event of contamination by a spill or other means, all street sweeping cleanings must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000 and handled as hazardous waste.

In the absence of evidence of contamination, street sweeping cleanings may be taken to a landfill or other facility permitted by MassDEP to accept Solid Waste without any prior approval by MassDEP. Please note that current MassDEP regulations prevent landfills from accepting materials that contain free-draining liquids. Also see attached operations and maintenance standards (reproduced from the Massachusetts Stormwater Handbook) at the end of this section

4.2 Deep Sump Catch Basins

Inspect and/or clean catch basin at least four times per year and at the end of foliage and snow removal seasons. Sediments must be removed whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. The catch basin and oil-grit separators should be cleaned a minimum of four times per year regardless of the amount of sediment in the basin. Catch basins shall be cleaned with clamshell buckets or vacuum trucks.

In the event of contamination by a spill or other means, all cleanings must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000 and handled as hazardous waste.

In the absence of evidence of contamination, catch basin cleanings may be taken to a landfill or other facility permitted by MassDEP to accept Solid Waste without any prior approval by MassDEP. Please note that current MassDEP regulations prevent landfills from accepting materials that contain free-draining liquids. Also see attached operations and maintenance standards (reproduced from the Massachusetts Stormwater Handbook) at the end of this section

4.3 Vegetated filter strips

Vegetated areas adjacent to catch basins shall be maintained in good health in order to maximize its ability to capture suspended solids in runoff. Periodic mowing/trimming and fertilization shall be performed in accordance with existing BPRD practices. Any dead vegetation shall be re-planted.

4.4 Inspections and Record Keeping

- An inspection form should be filled out each and every time maintenance work is performed.
- A binder should be kept by the owner that contains all of the completed inspection forms and any other related materials.
- A review of all Operation & Maintenance actions should take place annually to ensure that these Stormwater BMPs are being taken care of in the manner illustrated in this Operation & Maintenance Plan.
- All operation and maintenance log forms for the last three years, at a minimum, shall be kept on site at the owner.
- The inspection and maintenance schedule may be refined in the future based on the findings and results of this operation and maintenance program or policy.

5.0 Public Safety Features

Underground stormwater system measures are protected from access via manhole covers and grates.

6.0 Stormwater Management System Owner/Responsible Party

Boston Parks and Recreation Department
1010 Massachusetts Avenue, 3rd Floor
Boston, MA 02118

This operation and Maintenance Plan will be recorded with the registry of deeds so that current and future owners are aware of the requirement for proper operation and maintenance of the onsite stormwater system.

Boston Parks and Recreation Department
Langone Park and Puopolo Playground
Permanent BMP Inspection Checklist

Street Sweeping

Frequency:	Bi-Annually, primarily in the spring and fall.
Location:	Pedestrian Walks, impervious recreational surfaces
Inspected By:	_____ Date: _____
Observations:	_____ _____ _____
Actions Taken:	_____ _____ _____
Instructions:	Sweep impervious surfaces using street sweeping machine. All trash, debris, and sediments should be disposed of in accordance with local, state, and federal regulations.

Deep Sump Catch Basins

Frequency:	Inspect and clean deep sump catch basins in March, June, September and December.
Structure Number:	_____
Inspected By:	_____ Date: _____
Observations:	_____ _____ _____
Actions Taken:	_____ _____ _____
Instructions:	Clean units four times per year or whenever the depth of the deposits is greater than or equal to one half the depth from the bottom of the invert to the lowest pipe in the structure.

Vegetated filter strips

Frequency:	Vegetated areas around catch basins shall be inspected weekly, or as often as mowing is required, during the spring, summer and autumn months.
Structure No.:	_____
Inspected By:	_____ Date: _____
Observations:	_____ _____ _____
Actions Taken:	_____ _____ _____
Instructions:	Inspect vegetation. Any dead vegetation shall be replaced. Mowing, trimming and fertilization shall occur in accordance with existing BPRD practices.

Attachment G - Illicit Discharge Compliance Statement

Illicit Discharge Compliance Statement

Section I – Purpose/Intent

The purpose of this document is to provide for the health, safety, and general welfare of the citizens of Boston, Massachusetts through the regulation of non-stormwater discharges into existing outstanding resource areas at Langone Park and Puopolo Playground to the maximum extent practicable, as required by federal and state law. This document establishes methods for controlling the introduction of pollutants into existing outstanding resource areas to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process.

Section II - Definitions

For the purposes of this statement, the following shall mean:

Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to the Massachusetts Erosion and Sedimentation Control Act or NPDES Construction Permits. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Connection: An illegal connection is defined as either of the following:

a. Any pipe, open channel, drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the outstanding resource area including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water, regardless of whether said drain or connection has been previously allowed, permitted, or approved by an authorized enforcement agency; or
b. Any pipe, open channel, drain or conveyance connected to the City of Boston storm water treatment system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Illicit Discharge: Any direct or indirect non-stormwater discharge to the City of Boston stormwater treatment system, except as exempted in Section II of this ordinance.

Industrial Activity: Activities subject to NPDES Industrial Permits as defined in 40CFR, Section 122.26 (b) (14).

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: A permit issued by MassDEP under authority delegated pursuant to 33 USC § 1342 (b) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

City of Boston Stormwater Treatment System: Any facility, owned or maintained by the City, designed or used for collecting and/or conveying stormwater, including but not limited to roads with drainage systems, City of Boston streets, curbs, gutters, inlets, catch basins, piped storm drains, pumping facilities, infiltration, retention and detention basins, natural and man-made or altered drainage channels, reservoirs, and other drainage structures.

Non-Stormwater Discharge: Any discharge to the storm drain system that is not composed entirely of stormwater.

Person: Any individual, association, organization, partnership, firm, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, city, county or other political subdivision of the State, interstate body, or any other legal entity.

Pollutant: Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; petroleum hydrocarbons; automotive fluids; cooking grease; detergents (biodegradable or otherwise); degreasers; cleaning chemicals; non-hazardous liquid and solid wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; liquid and solid wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; concrete and cement; and noxious or offensive matter of any kind.

Pollution: Contamination or other alteration of any water's physical, chemical, or biological properties by addition of any constituent including but not limited to a change in temperature, taste, color, turbidity, or odor of such waters, or the discharge of any liquid, gaseous, solid, radioactive, or other substance into any such waters as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety, welfare, or environment, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Wastewater: Any water or other liquid discharged from a facility, that has been used, as for washing, flushing, or in a manufacturing process, and so contains waste products.

Section III - Prohibitions

Prohibition of Illicit Discharges:

No person shall throw, drain, or otherwise discharge, cause or allow others under its control to throw, drain, or otherwise discharge into the City of Boston stormwater treatment system or watercourses any materials, including but not limited to, any pollutants or waters containing any pollutants, other than stormwater. The commencement, conduct or continuance of any illicit discharge to the storm drain system is prohibited except as described as follows:

1. Water line flushing performed by a government agency, other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, natural riparian habitat or wetland flows, and any other water source not containing pollutants;

2. Discharges or flows from fire fighting, and other discharges specified in writing by the City of Boston as being necessary to protect public health and safety;

3. Dye testing is an allowable discharge, but requires a verbal notification to the City of Boston prior to the time of the test;

4. Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for a discharge to the City of Boston stormwater treatment system.

Section IV - Industrial or Construction Activity Discharges

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City of Boston Department of Public Works prior to allowing discharges to the Boston stormwater treatment system.

Section V - Notification of Spills and Accidental Discharges

Notwithstanding other requirements of law, as soon as any person responsible for a facility, activity or operation, or responsible for emergency response for a facility, activity or operation has information of any known or suspected release of pollutants or non-stormwater discharges from that facility, activity, or operation which are resulting or may result in illicit discharges or pollutants discharging into stormwater, the City of Boston stormwater treatment system, State Waters, or Waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release so as to minimize the effects of the discharge. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the City of Boston Department Public Works in person or by phone no later than the next business day, including the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice, via certified mail return receipt requested addressed to the City of Boston Department of Public Works within three (3) business days of the initial notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

IN WITNESS WHEREOF the parties hereto have executed copies of this Agreement on the _____ day of _____, _____.

_____

City of Boston

PREPARED BY:

Weston & Sampson design studio

85 DEVONSHIRE STREET, 3RD FLOOR
BOSTON, MA 02109
(617) 412-4480

PARE CORPORATION

10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
(508) 543-1755

SURVEYOR:

FELDMAN LAND SURVEYORS

152 HAMPDEN STREET
BOSTON, MA 02119
(617) 357-9740

CITY OF BOSTON

THE HONORABLE MARTIN J. WALSH, MAYOR

PARKS AND RECREATION DEPARTMENT
CHRISTOPHER COOK, COMMISSIONER

IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BOSTON, MASSACHUSETTS

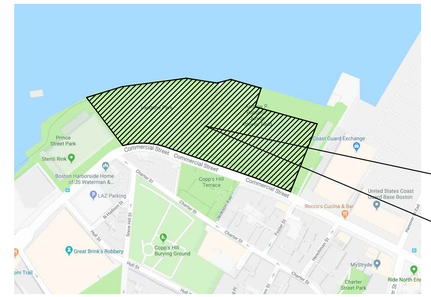
DECEMBER 5, 2018

SUPPLEMENTAL SUBMISSION
DATED DECEMBER 31, 2018

NOTICE OF INTENT
- NOT FOR CONSTRUCTION -

BOSTON PARKS AND RECREATION

DRAWING INDEX



NORTH

LOCATION MAP
LANGONE PARK & PUOPOLO PLAYGROUND
529-543 COMMERCIAL STREET
BOSTON, MA 02109

Sheet No.: ***L0.00***

Sheet Name:: ***COVER SHEET***

BPRD Project No.	22955
Date	12/05/2018
Scale	N/A
Drawn	ME, EB
Checked	BK

Project Name: ***IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND***

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- HARBORWALK DECKING SYSTEM, TYP.
- CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
- INTEGRAL COLOR CONCRETE PAVEMENT - 2 COLORS, TYP.
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- BITUMINOUS CONCRETE PAVEMENT WITH COLOR SEALCOAT, TYP.
- PIP RUBBER SAFETY SURFACING - 3 COLORS, TYP.
- PRECAST CONCRETE PAVERS, TYP.
- STONE DUST AT BOCCE COURTS, TYP.
- SYNTHETIC TURF, TYP.
- PLANTING AREA, TYP.
- SCORE JOINT, TYP.
- EXPANSION JOINT, TYP.
- CAST-IN-PLACE CONCRETE RETAINING/SEAT WALL
- SALVAGED GRANITE RETAINING/SEAT WALL
- PEDESTRIAN LIGHT FIXTURE, TYP.
- SPORTS LIGHTING, TYP.
- BIKE RACKS ON CONC. PAD SEE SPECIFICATIONS
- SALVAGED GRANITE BLOCKS
- TRASH RECEPTACLE
- DRINKING FOUNTAIN
- TREE GRATE
- 6-FT HT BVCL
- SPORTS SAFETY NETTING
- CATENARY LIGHTING
- BACKLESS BENCH, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
SPECS.	SPECIFICATIONS
BIT. CONC.	BITUMINOUS CONCRETE
BVCL	BLACK VINYL CHAIN LINK FENCE

BOSTON HARBOR

STATE HARBOR LINE AND U.S. PIER & BULKHEAD LINE

PROPERTY LINE

N75°38'25"E 626.11' (SEE NOTE #5)

LOT AREA = 386,429 SQ.FT. ≈ 8.871 ACRES

PARCEL ID 0303056000

PARCEL ID 0303055000

PARCEL ID 0303055001

PARCEL ID 0303057000

PARCEL ID 0303059000

Now or Formerly COMMONWEALTH OF MASSACHUSETTS CERTIFICATE #85049 LCC #1610-E PARCEL ID 0303059000

LCC #1610-E

LIMIT OF WORK

TURBIDITY CURTAIN

HARBORWALK

HARBORWALK OVERLOOK

OPEN LAWN

BASKETBALL COURT WITH MULTI-SPORT GOALS

POOL AREA

ZONE AE (EL 10)(16.5 BCB)

ZONE X

100' COASTAL BUFFER ZONE

PLATFORM OVERLOOK WITH CAFE SEATING

BOCCE COURTS

LITTLE LEAGUE FIELD [NATURAL GRASS]

300' X 180' MULTI-PURPOSE RECTANGULAR FIELD [SYNTHETIC TURF]

SOFTBALL OVERLAY WITH BACKSTOP

BASEBALL OVERLAY WITH BACKSTOP

BATTING CAGE

1 STORY CONCRETE BUILDING

METAL ROOF

WOOD DECK

GRASS

PLAYGROUND

ADULT FITNESS EQUIPMENT

MEMORIAL GROVE

ENTRY PLAZA

ENTRY PLAZA

LIMIT OF WORK / PROPERTY LINE

COMMERCIAL STREET

COMMERCIAL STREET

(PUBLIC – VARIABLE WIDTH)

COPPS HILL TERRACE

JACKSON AVENUE

TBM–A

TBM–B

BM–1

SCALE:
1" = 30'-0"
0 15 30 60FT

Prepared By:
Weston & Sampson

Consultant Project No. 2170867

No.	Date	Revision

Approved By: Date:

Project Name.:

IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No.	CPR 22955
Date	12/5/2018
Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.:

OVERALL SITE PLAN

SHEET:

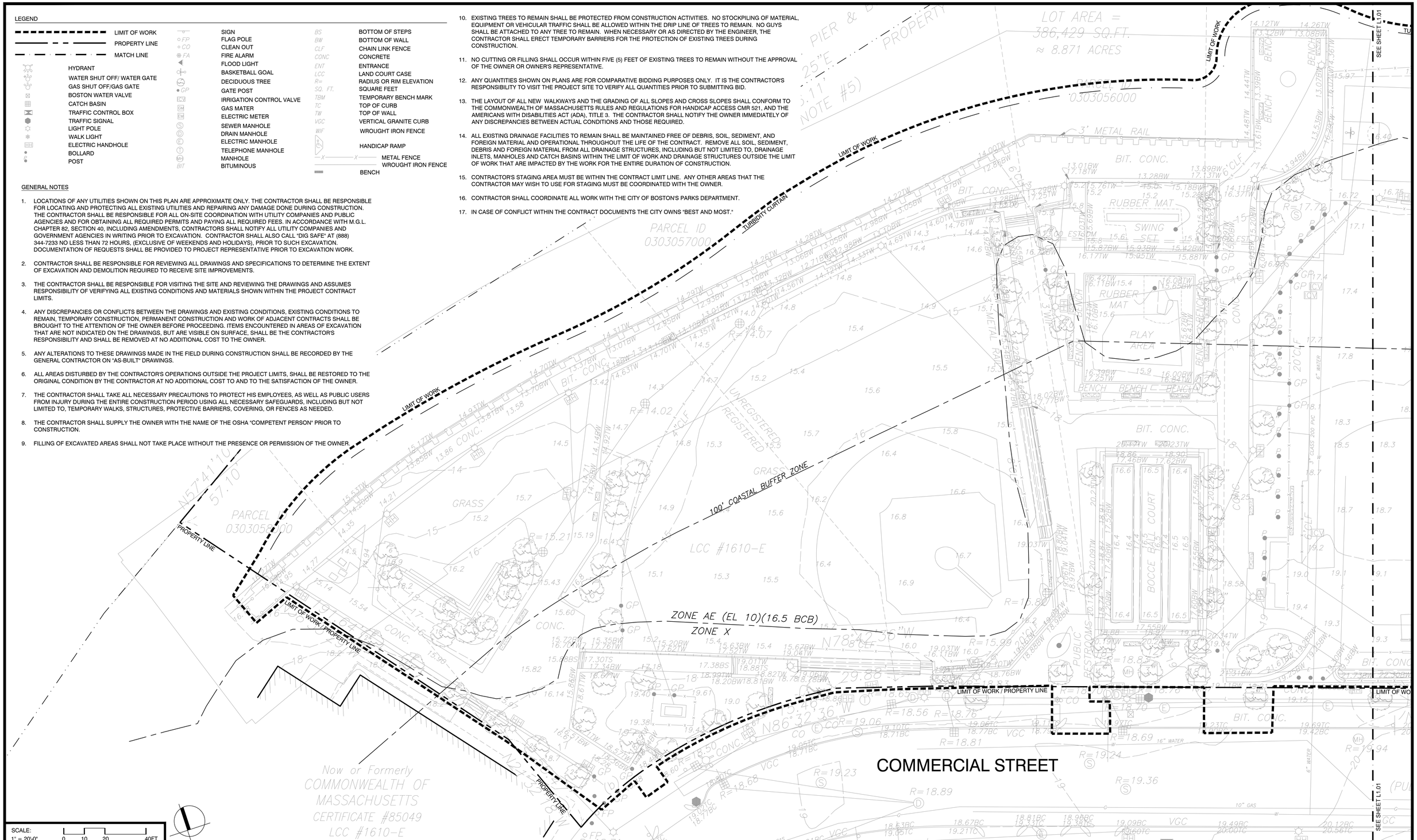
L0.01

LEGEND

LIMIT OF WORK	SIGN	BS	BOTTOM OF STEPS
PROPERTY LINE	FP FLAG POLE	BW	BOTTOM OF WALL
MATCH LINE	CO CLEAN OUT	CLF	CHAIN LINK FENCE
HYDRANT	FA FIRE ALARM	CONC	CONCRETE
WATER SHUT OFF/ WATER GATE	FLOOD LIGHT	ENT	ENTRANCE
GAS SHUT OFF/GAS GATE	BASKETBALL GOAL	LCC	LAND COURT CASE
BOSTON WATER VALVE	DECIDUOUS TREE	R=	RADIUS OR RIM ELEVATION
CATCH BASIN	GATE POST	SQ. FT.	SQUARE FEET
TRAFFIC CONTROL BOX	GP IRRIGATION CONTROL VALVE	TBM	TEMPORARY BENCH MARK
TRAFFIC SIGNAL	GAS MATER	TC	TOP OF CURB
LIGHT POLE	ELECTRIC METER	TW	TOP OF WALL
WALK LIGHT	SEWER MANHOLE	VGC	VERTICAL GRANITE CURB
ELECTRIC HANDHOLE	DRAIN MANHOLE	WIF	WROUGHT IRON FENCE
BOLLARD	ELECTRIC MANHOLE		HANDICAP RAMP
POST	TELEPHONE MANHOLE	X X	METAL FENCE
	MANHOLE		WROUGHT IRON FENCE
	BIT BITUMINOUS		BENCH

GENERAL NOTES

1. LOCATIONS OF ANY UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO PROJECT REPRESENTATIVE PRIOR TO EXCAVATION WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE EXTENT OF EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE SITE IMPROVEMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE AND REVIEWING THE DRAWINGS AND ASSUMES RESPONSIBILITY OF VERIFYING ALL EXISTING CONDITIONS AND MATERIALS SHOWN WITHIN THE PROJECT CONTRACT LIMITS.
4. ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION, PERMANENT CONSTRUCTION AND WORK OF ADJACENT CONTRACTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
5. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS-BUILT" DRAWINGS.
6. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT LIMITS, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO AND TO THE SATISFACTION OF THE OWNER.
7. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT HIS EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
8. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.
9. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER.
10. EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. NO STOCKPILING OF MATERIAL, EQUIPMENT OR VEHICULAR TRAFFIC SHALL BE ALLOWED WITHIN THE DRIP LINE OF TREES TO REMAIN. NO GUYS SHALL BE ATTACHED TO ANY TREE TO REMAIN. WHEN NECESSARY OR AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL ERECT TEMPORARY BARRIERS FOR THE PROTECTION OF EXISTING TREES DURING CONSTRUCTION.
11. NO CUTTING OR FILLING SHALL OCCUR WITHIN FIVE (5) FEET OF EXISTING TREES TO REMAIN WITHOUT THE APPROVAL OF THE OWNER OR OWNER'S REPRESENTATIVE.
12. ANY QUANTITIES SHOWN ON PLANS ARE FOR COMPARATIVE BIDDING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES PRIOR TO SUBMITTING BID.
13. THE LAYOUT OF ALL NEW WALKWAYS AND THE GRADING OF ALL SLOPES AND CROSS SLOPES SHALL CONFORM TO THE COMMONWEALTH OF MASSACHUSETTS RULES AND REGULATIONS FOR HANDICAP ACCESS CMR 521, AND THE AMERICANS WITH DISABILITIES ACT (ADA), TITLE 3. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE REQUIRED.
14. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS, SOIL, SEDIMENT, AND FOREIGN MATERIAL AND OPERATIONAL THROUGHOUT THE LIFE OF THE CONTRACT. REMOVE ALL SOIL, SEDIMENT, DEBRIS AND FOREIGN MATERIAL FROM ALL DRAINAGE STRUCTURES, INCLUDING BUT NOT LIMITED TO, DRAINAGE INLETS, MANHOLES AND CATCH BASINS WITHIN THE LIMIT OF WORK AND DRAINAGE STRUCTURES OUTSIDE THE LIMIT OF WORK THAT ARE IMPACTED BY THE WORK FOR THE ENTIRE DURATION OF CONSTRUCTION.
15. CONTRACTOR'S STAGING AREA MUST BE WITHIN THE CONTRACT LIMIT LINE. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER.
16. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CITY OF BOSTON'S PARKS DEPARTMENT.
17. IN CASE OF CONFLICT WITHIN THE CONTRACT DOCUMENTS THE CITY OWNS "BEST AND MOST."



SCALE: 1" = 20'-0" (0 10 20 40FT)

Prepared By: Weston & Sampson

Consultant Project No. 2170867

No.	Date	Revision

Approved By: Date:

Project Name.:

IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No.	CPR 22955
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Drawn	EB, ME
Checked	BK

Sheet Name.:

EXISTING CONDITIONS PLAN

SHEET:

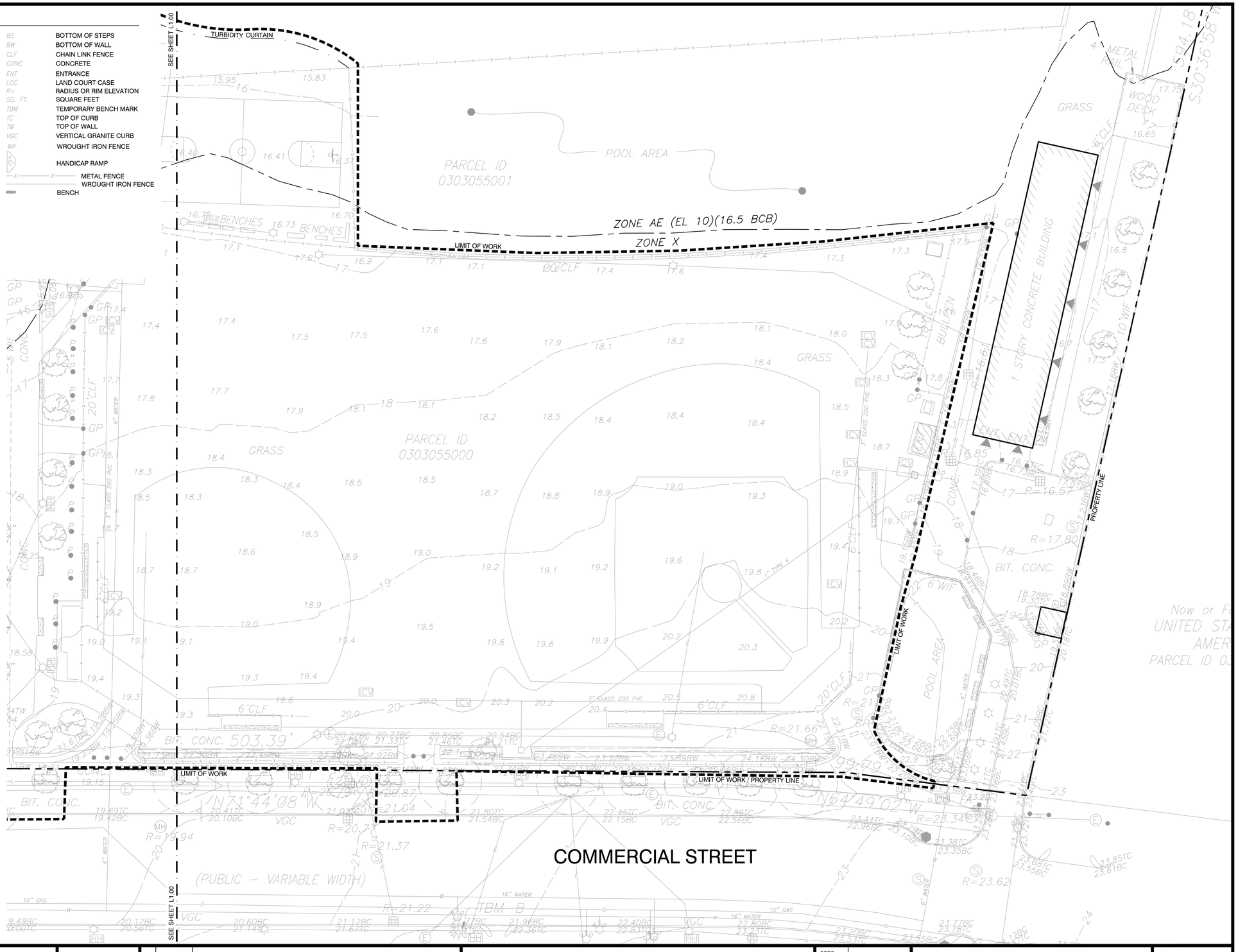
L1.00

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- HYDRANT
- WATER SHUT OFF/ WATER GATE
- GAS SHUT OFF/GAS GATE
- BOSTON WATER VALVE
- CATCH BASIN
- TRAFFIC CONTROL BOX
- TRAFFIC SIGNAL
- LIGHT POLE
- WALK LIGHT
- ELECTRIC HANDHOLE
- BOLLARD
- POST
- SIGN
- FP FLAG POLE
- CO CLEAN OUT
- FA FIRE ALARM
- FLOOD LIGHT
- BASKETBALL GOAL
- DECIDUOUS TREE
- GP GATE POST
- IRRIGATION CONTROL VALVE
- GM GAS MATER
- EM ELECTRIC METER
- SEWER MANHOLE
- DRAIN MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MH MANHOLE
- BIT BITUMINOUS
- BS BOTTOM OF STEPS
- BW BOTTOM OF WALL
- CLF CHAIN LINK FENCE
- CONC CONCRETE
- ENT ENTRANCE
- LCC LAND COURT CASE
- R= RADIUS OR RIM ELEVATION
- SQ. FT. SQUARE FEET
- TBM TEMPORARY BENCH MARK
- TC TOP OF CURB
- TW TOP OF WALL
- VCC VERTICAL GRANITE CURB
- WIF WROUGHT IRON FENCE
- HANDICAP RAMP
- METAL FENCE
- WROUGHT IRON FENCE
- BENCH

GENERAL NOTES

REFER TO SHEET L1.00 FOR GENERAL NOTES



SCALE: 1" = 20'-0" (0 10 20 40FT)

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson SM

Consultant Project No. 2170867

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

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Drawn	EB, ME
Checked	BK

Sheet Name.:

EXISTING CONDITIONS PLAN

SHEET: L1.01

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- R&D BITUMINOUS CONCRETE PAVEMENT, FULL DEPTH, COMPLETE
- R&D CONCRETE PAVEMENT, FULL DEPTH COMPLETE.
- R&D CONCRETE STAIRS AND HANDRAIL, COMPLETE
- R&S GRANITE SET PAVEMENT, TYP.
- STRIP AND STOCKPILE TOPSOIL
- CLEAR AND GRUB
- EROSION CONTROL- COMPOSITE FILTER TUBE
- TURBIDITY CURTAIN
- 6' HT. CONSTRUCTION FENCE, TYP.
- SAW CUT
- REMOVE AND RESET GRANITE BLOCKS
- R&D FENCE, COMPLETE
- R&D CURB, TYP.
- R&D HANDRAIL, TYP.
- R&D EXISTING TREE, TYP.
- R&D UTILITY STRUCTURE, TYP.
- R&D BOLLARD, COMPLETE
- R&D REMOVE & DISPOSE
- R&S REMOVE & SALVAGE
- R&R REMOVE & RESET
- R&D EXISTING BENCH, TYP.
- INLET SEDIMENTATION CONTROL
- R&D FLAG POLE, COMPLETE
- REMOVE AND DISPOSE OF EXISTING BASKETBALL HOOP & POST, COMPLETE.
- CONSTRUCTION ENTRANCE
- R&D DRAINAGE STRUCTURE
- R&S BLUE SAFETY LIGHT
- TREE PROTECTION, TYP.
- CAP AND ABANDON UTILITY LINE

EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL MEET ALL OF THE COMMONWEALTH OF MASSACHUSETTS D.E.P. AND THE CITY OF BOSTON'S WETLAND ORDINANCE REGULATIONS FOR SEDIMENT AND EROSION CONTROL.
4. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE.
5. ALL CATCH BASINS AND DRAIN GRATES WITHIN LIMIT OF CONTRACT SHALL BE PROTECTED WITH FILTER FABRIC DURING THE ENTIRE DURATION OF CONSTRUCTION.
6. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES. SEE GRADING & DRAINAGE PLANS, NOTES, DETAILS AND SPECIFICATIONS.
7. ANY AREA OUTSIDE THE PROJECT LIMIT THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
8. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY OWNER.
9. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC/PRIVATE ROADS.
10.

NOTES:

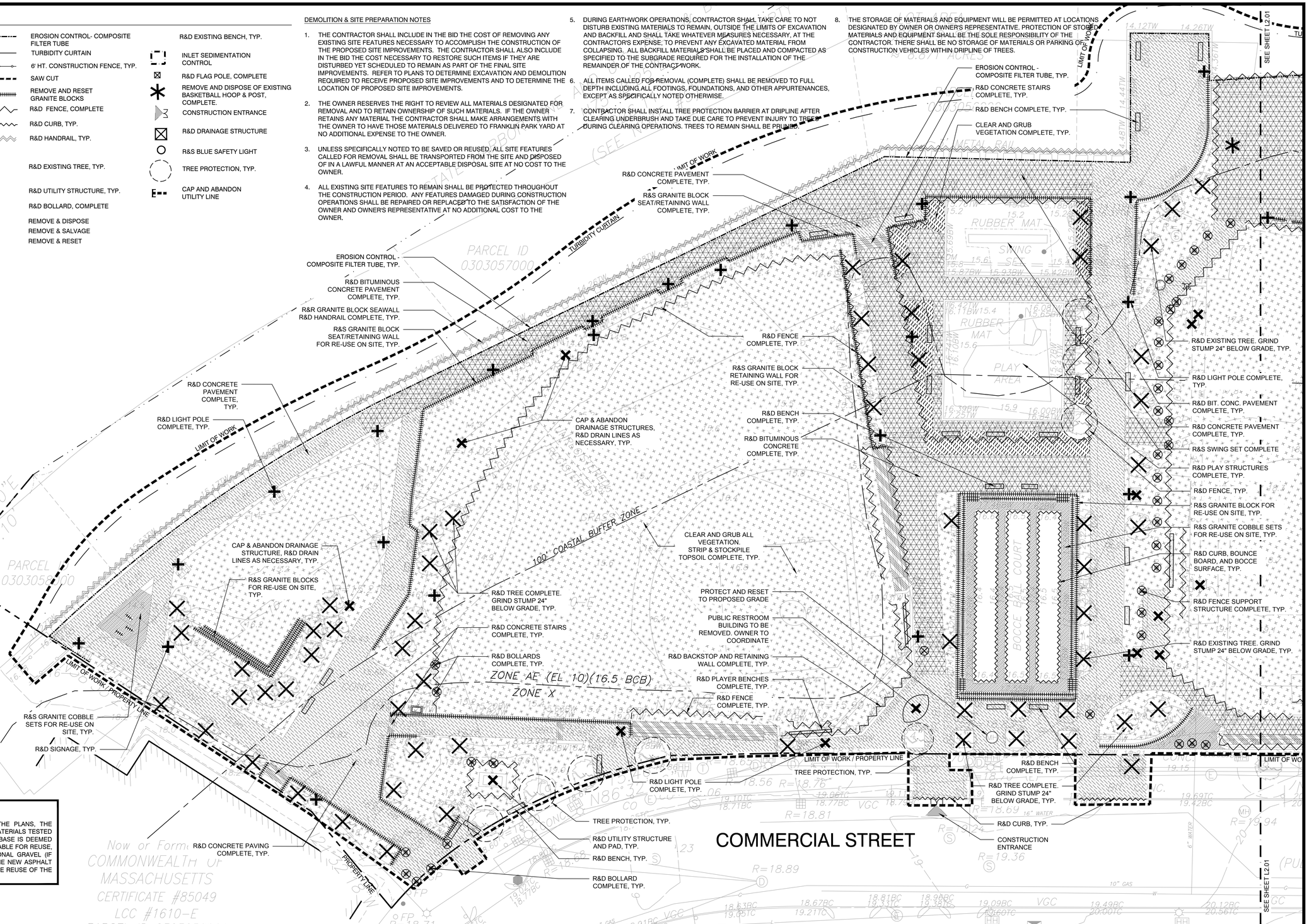
1. CONTRACTOR SHALL PROVIDE 6' HT. CONSTRUCTION FENCE PLACED AT LIMIT OF WORK OR USE EXISTING FENCE IN PLACE UNTIL CONTRACTOR HAS TO REMOVE AND DISPOSE OF IT AS INDICATED ON PLANS. CONTRACTOR IS RESPONSIBLE FOR SECURING THE SITE AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PERIOD.
2. CONTRACTOR MUST NOTIFY OWNER AND CITY OF BOSTON DEPARTMENT OF PUBLIC WORKS OF ANY WORK TO BE COMPLETED WITHIN THE RIGHT OF WAY FORTY-EIGHT HOURS PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL PROTECT ALL UTILITY POLES THAT FALL WITHIN LIMIT OF WORK.
4. CONTRACTOR SHALL CLEAR AND WATER JET ALL DRAINAGE STRUCTURES AND LINES WITHIN LIMIT OF WORK AND VERIFY WORKING CONDITION.
5. CONTRACTOR SHALL R&D ALL EXISTING STORMWATER STRUCTURES AND PIPE WHERE CONFLICTING WITH PROPOSED IMPROVEMENTS. ANY STRUCTURES NOT CONFLICTING WITH IMPROVEMENTS SHALL BE FILLED WITH WASHED STONE, CAPPED, AND ABANDONED.

SPECIAL NOTE | REUSE OF GRAVEL BASE MATERIALS

UPON THE REMOVAL OF ASPHALT PAVEMENT, AS DESIGNATED ON THE PLANS, THE CONTRACTOR RESERVES THE RIGHT TO HAVE EXISTING GRAVEL BASE MATERIALS TESTED FOR COMPLIANCE WITH THE PROJECT SPECIFICATIONS. IF THE GRAVEL BASE IS DEEMED TO BE COMPLIANT BY THE LANDSCAPE ARCHITECT AND THEREFORE SUITABLE FOR REUSE, IT SHALL BE RETAINED AND THEN SUPPLEMENTED WITH NEW, ADDITIONAL GRAVEL (IF NEEDED), FINE GRADED AND COMPACTED FOR THE INSTALLATION OF THE NEW ASPHALT PAVEMENT COURSES. UNDER THIS SCENARIO A SUITABLE CREDIT FOR THE REUSE OF THE GRAVEL WILL BE NEGOTIATED AND AGREED UPON.

DEMOLITION & SITE PREPARATION NOTES

1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE DISTURBED YET SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE PROPOSED SITE IMPROVEMENTS AND TO DETERMINE THE LOCATION OF PROPOSED SITE IMPROVEMENTS.
2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS DELIVERED TO FRANKLIN PARK YARD AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. UNLESS SPECIFICALLY NOTED TO BE SAVED OR REUSED, ALL SITE FEATURES CALLED FOR REMOVAL SHALL BE TRANSPORTED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AT NO COST TO THE OWNER.
4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AND OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
6. ALL ITEMS CALLED FOR REMOVAL (COMPLETE) SHALL BE REMOVED TO FULL DEPTH INCLUDING ALL FOOTINGS, FOUNDATIONS, AND OTHER APPURTENANCES, EXCEPT AS SPECIFICALLY NOTED OTHERWISE.
7. CONTRACTOR SHALL INSTALL TREE PROTECTION BARRIER AT DRIPLINE AFTER CLEARING UNDERBRUSH AND TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS. TREES TO REMAIN SHALL BE PRUNED.
8. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNER'S REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THERE SHALL BE NO STORAGE OF MATERIALS OR PARKING OF CONSTRUCTION VEHICLES WITHIN DRIPLINE OF TREES.



SCALE: 1" = 20'-0" (0, 10, 20, 40FT)

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson

Consultant Project No. 2170867

No.	Date	Revision

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No.	CPR 22955
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Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.:

SITE DEMOLITION AND PREPARATION PLAN

SHEET:

L2.00

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- R&D BITUMINOUS CONCRETE PAVEMENT, FULL DEPTH, COMPLETE
- R&D CONCRETE PAVEMENT, FULL DEPTH COMPLETE.
- R&D CONCRETE STAIRS AND HANDRAIL, COMPLETE
- R&S GRANITE SET PAVEMENT, TYP.
- STRIP AND STOCKPILE TOPSOIL
- CLEAR AND GRUB
- EROSION CONTROL- COMPOSITE FILTER TUBE
- 6' HT. CONSTRUCTION FENCE, TYP.
- SAW CUT
- R&D GRANITE BLOCK RETAINING WALL, TYP.
- R&D FENCE, COMPLETE
- R&D CURB, TYP.
- R&D EXISTING BENCH, TYP.
- R&D EXISTING TREE, TYP.
- R&D UTILITY STRUCTURE, TYP.
- R&D BOLLARD, COMPLETE
- R&D — REMOVE & DISPOSE
- R&S — REMOVE & SALVAGE
- R&R — REMOVE & RESET
- INLET SEDIMENTATION CONTROL
- R&D FLAG POLE, COMPLETE
- REMOVE AND DISPOSE OF EXISTING BASKETBALL HOOP & POST, COMPLETE.
- R&D DRAINAGE STRUCTURE
- R&S BLUE SAFETY LIGHT
- TREE PROTECTION, TYP.
- CAP AND ABANDON UTILITY LINE

SITE PREPARATION AND DEMOLITION NOTES

REFER TO SHEET L.200 FOR SITE PREPARATION AND DEMOLITION NOTES

SCALE: 1" = 20'-0" (0, 10, 20, 40FT)

TURBIDITY CURTAIN
SEE SHEET L1.00
EROSION CONTROL - COMPOSITE FILTER TUBE, TYP.
R&D FENCE, TYP.
R&D BASKETBALL POSTS, TYP.
R&D BITUMINOUS CONCRETE PAVEMENT, TYP.
R&S GRANITE BLOCKS FOR RE-USE ON SITE, TYP.
POOL AREA
PARCEL ID 0303055001
ZONE AE (EL 10)(16.5 BCB)
ZONE X
LIMIT OF WORK
100' COASTAL BUFFER ZONE
REMOVE & RELOCATE HYDRANT
R&D GATE POSTS COMPLETE, TYP.
R&D IRRIGATION SYSTEM, COMPLETE, TYP.
R&D EXISTING TREE. GRIND STUMP 24" BELOW GRADE, TYP.
R&D FENCE AND SUPPORT POSTS COMPLETE, TYP.
R&D FENCE AND SUPPORT POSTS COMPLETE, TYP.
R&D LIGHT POLE COMPLETE, TYP.
CLEAR AND GRUB ALL VEGETATION. STRIP & STOCKPILE TOPSOIL COMPLETE, TYP.
R&D BENCH COMPLETE, TYP.
R&D CONCRETE PAVEMENT COMPLETE, TYP.
R&D STORAGE CONTAINERS COMPLETE, TYP.
R&D BACKSTOP, TYP.
R&D PLAYER BENCHES, TYP.
R&D CONCRETE PAVING COMPLETE, TYP.
R&D FENCE, TYP.
R&D IRRIGATION SYSTEM, COMPLETE, TYP.
R&D GRANITE BLOCK RETAINING WALL, TYP.
R&D WATER LINE, COMPLETE, TYP.
R&D IRRIGATION SYSTEM, COMPLETE, TYP.
R&D CLF FENCE, POSTS, AND WALL BRACKETS COMPLETE, TYP.
R&D EXISTING TREE. GRIND STUMP 24" BELOW GRADE, TYP.
R&D GATE AND POSTS, COMPLETE, TYP.
R&D UTILITY STRUCTURE, TYP.
CAP WATER SERVICE
R&D FENCE, TYP.
PROPERTY LINE
R&D CONCRETE PAVEMENT COMPLETE, TYP.
R&D BACKSTOP COMPLETE, TYP.
LIMIT OF WORK
R&R MEMORIAL, TYP.
R&D EXISTING TREE. GRIND STUMP 24" BELOW GRADE, TYP.
R&S GRANITE BLOCKS FOR RE-USE ON SITE, TYP.
LIMIT OF WORK
R&D BOLLARD, TYP.
R&D EXISTING TREE. GRIND STUMP 24" BELOW GRADE, TYP.
R&D CONCRETE SEATWALLS, COMPLETE, TYP.
R&D FENCE, TYP. RETAINING WALL TO REMAIN.
R&D ELECTRICAL MANHOLE, TYP.
LIMIT OF WORK / PROPERTY LINE
R&D SPORTS LIGHTING, TYP.
PROTECT AND RESET TO PROPOSED GRADE
COMMERCIAL STREET
(PUBLIC – VARIABLE WIDTH)
SEE SHEET L1.00

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson

Consultant Project No. 2170867

No.	Date	Revision

Approved By: Date:

Project Name.: **IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND**

BPRD Project No.	CPR 22955
Date	12/5/2018
Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.: **SITE DEMOLITION AND PREPARATION PLAN**

SHEET: **L2.01**

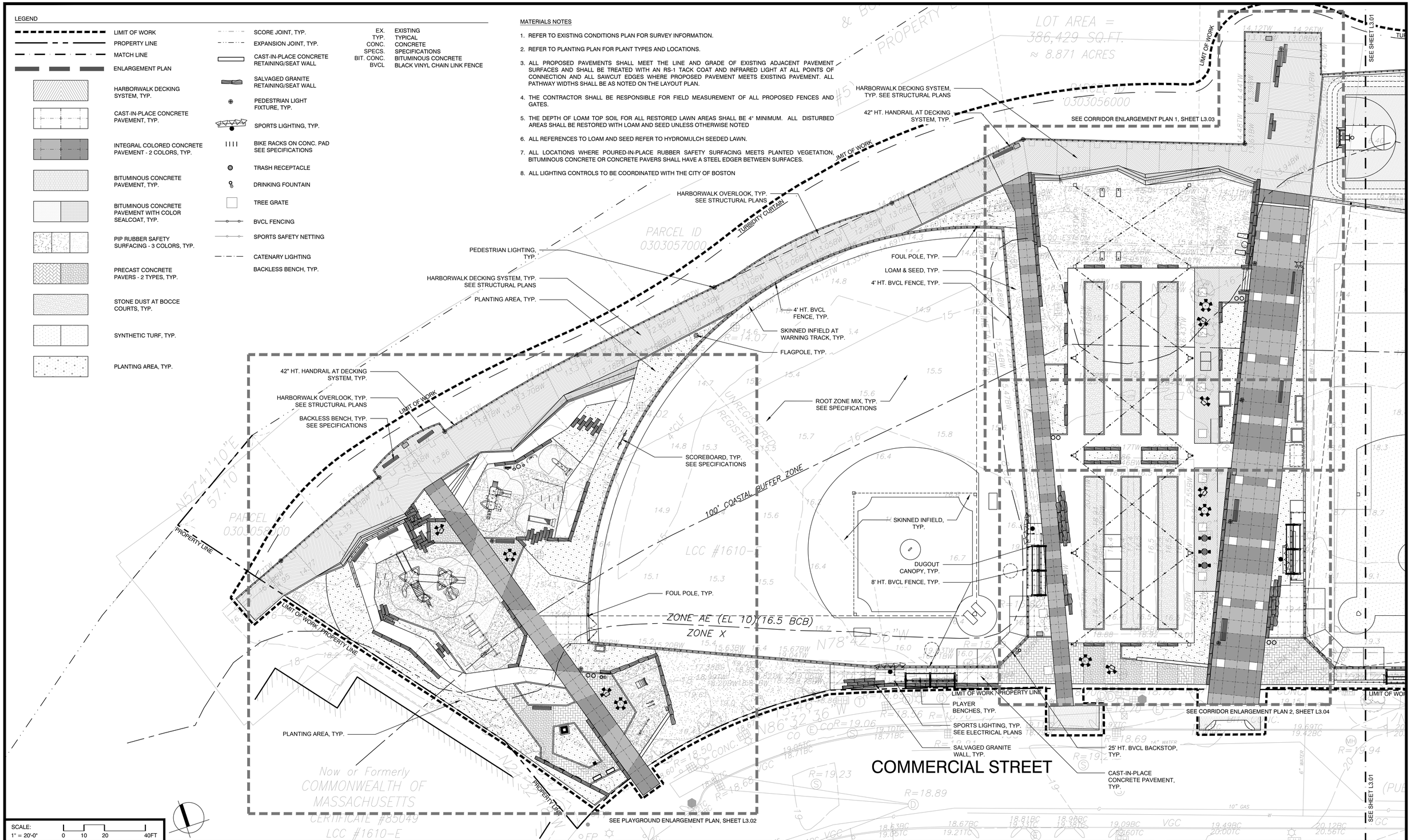
LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- HARBORWALK DECKING SYSTEM, TYP.
- CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
- INTEGRAL COLORED CONCRETE PAVEMENT - 2 COLORS, TYP.
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- BITUMINOUS CONCRETE PAVEMENT WITH COLOR SEALCOAT, TYP.
- PIP RUBBER SAFETY SURFACING - 3 COLORS, TYP.
- PRECAST CONCRETE PAVERS - 2 TYPES, TYP.
- STONE DUST AT BOCCE COURTS, TYP.
- SYNTHETIC TURF, TYP.
- PLANTING AREA, TYP.
- SCORE JOINT, TYP.
- EXPANSION JOINT, TYP.
- CAST-IN-PLACE CONCRETE RETAINING/SEAT WALL
- SALVAGED GRANITE RETAINING/SEAT WALL
- PEDESTRIAN LIGHT FIXTURE, TYP.
- SPORTS LIGHTING, TYP.
- BIKE RACKS ON CONC. PAD SEE SPECIFICATIONS
- TRASH RECEPTACLE
- DRINKING FOUNTAIN
- TREE GRATE
- BVCL FENCING
- SPORTS SAFETY NETTING
- CATENARY LIGHTING
- BACKLESS BENCH, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
SPECS.	SPECIFICATIONS
BIT. CONC.	BITUMINOUS CONCRETE
BVCL	BLACK VINYL CHAIN LINK FENCE

MATERIALS NOTES

1. REFER TO EXISTING CONDITIONS PLAN FOR SURVEY INFORMATION.
2. REFER TO PLANTING PLAN FOR PLANT TYPES AND LOCATIONS.
3. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AND INFRARED LIGHT AT ALL POINTS OF CONNECTION AND ALL SAWCUT EDGES WHERE PROPOSED PAVEMENT MEETS EXISTING PAVEMENT. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT PLAN.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENT OF ALL PROPOSED FENCES AND GATES.
5. THE DEPTH OF LOAM TOP SOIL FOR ALL RESTORED LAWN AREAS SHALL BE 4" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED
6. ALL REFERENCES TO LOAM AND SEED REFER TO HYDROMULCH SEEDED LAWN.
7. ALL LOCATIONS WHERE POURED-IN-PLACE RUBBER SAFETY SURFACING MEETS PLANTED VEGETATION, BITUMINOUS CONCRETE OR CONCRETE PAVERS SHALL HAVE A STEEL EDGER BETWEEN SURFACES.
8. ALL LIGHTING CONTROLS TO BE COORDINATED WITH THE CITY OF BOSTON



SCALE: 1" = 20'-0" 0 10 20 40FT

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson

Consultant Project No. 2170867

No.	Date	Revision

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BPRD Project No.	CPR 22955
Date	12/5/2018
Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.:

MATERIALS PLAN

SHEET:

L3.00

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- HARBORWALK DECKING SYSTEM, TYP.
- CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
- INTEGRAL COLORED CONCRETE PAVEMENT - 2 COLORS, TYP.
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- BITUMINOUS CONCRETE PAVEMENT WITH COLOR SEALCOAT, TYP.
- PIP RUBBER SAFETY SURFACING - 3 COLORS, TYP.
- PRECAST CONCRETE PAVERS - 2 TYPES, TYP.
- STONE DUST AT BOCCE COURTS, TYP.
- SYNTHETIC TURF, TYP.
- PLANTING AREA, TYP.
- SCORE JOINT, TYP.
- EXPANSION JOINT, TYP.
- CAST-IN-PLACE CONCRETE RETAINING/SEAT WALL
- SALVAGED GRANITE RETAINING/SEAT WALL
- PEDESTRIAN LIGHT FIXTURE, TYP.
- SPORTS LIGHTING, TYP.
- BIKE RACKS ON CONC. PAD SEE SPECIFICATIONS
- TRASH RECEPTACLE
- DRINKING FOUNTAIN
- TREE GRATE
- BVCL FENCING
- SPORTS SAFETY NETTING
- CATENARY LIGHTING
- BACKLESS BENCH, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
SPECS.	SPECIFICATIONS
BIT. CONC.	BITUMINOUS CONCRETE
BVCL	BLACK VINYL CHAIN LINK FENCE

MATERIALS NOTES

REFER TO SHEET L3.00 FOR MATERIALS NOTES

BITUMINOUS CONCRETE PAVING WITH COLOR SEALCOAT - COLOR 1, TYP.
BITUMINOUS CONCRETE PAVING WITH COLOR SEALCOAT - COLOR 2, TYP.
BITUMINOUS CONCRETE PAVING, TYP.
BASKETBALL COURT LAYOUT WITH RUNNING TRACK SURROUND, TYP.
MULTI-SPORT GOAL, TYP.
12' HT. BVCL FENCE ATOP MOW CURB, TYP.
SCOREBOARD, TYP. SEE SPECIFICATIONS
FOUL POLE, TYP.
SPORTS LIGHTING, TYP. SEE ELECTRICAL PLANS
6' HT. BVCL FENCE WITH 35' HT. SPORTS SAFETY NETTING ON TOP, TYP.
BATTING CAGE, TYP.
STORAGE AREA, TYP.
INTEGRAL COLORED CONCRETE PAVEMENT- COLOR 1, TYP.
INTEGRAL COLORED CONCRETE PAVEMENT- COLOR 2, TYP.
ZONE AE (EL 10)(16.5 BCB)
ZONE X
LIMIT OF WORK
SEE SHEET L3.00
TURBIDITY CURTAIN
100' COASTAL BUFFER ZONE
300' X180' SOCCER LAYOUT, TYP.
SYNTHETIC TURF - COLOR 1, TYP.
BASEBALL LAYOUT, TYP.
SYNTHETIC TURF - COLOR 2, TYP.
SOFTBALL LAYOUT, TYP.
SYNTHETIC TURF - COLOR 2, TYP.
SYNTHETIC TURF - COLOR 1, TYP.
MOVEABLE BASEBALL PITCHING MOUND
BASEBALL EQUIPMENT STORAGE CONTAINERS, TYP.
EXISTING UTILITY CABINETS
SALVAGED GRANITE BLOCK WALL, TYP.
PLANTING AREA, TYP.
SPORTS LIGHTING, TYP. SEE ELECTRICAL PLANS
PLAYER BENCHES, TYP.
25' HT. BVCL BACKSTOP, TYP.
PROPERTY LINE
LIMIT OF WORK / PROPERTY LINE
INTEGRAL COLORED CONCRETE PAVEMENT - COLOR 2, TYP.
INTEGRAL COLORED CONCRETE PAVEMENT - COLOR 1, TYP.
4' HT. BVCL FENCE WITH 20' HT. SPORTS NETTING ON TOP , TYP.
RESTROOM FACILITY, SEE SPECIFICATIONS
8' HT. BVCL FENCE, TYP.
PLAYER BENCHES, TYP.
SPORTS LIGHTING, TYP. SEE ELECTRICAL PLANS
CAST-IN-PLACE CONCRETE STAIRS, TYP.
SALVAGED GRANITE BLOCK TERRACE SEATING, TYP.
CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
25' HT. BVCL BACKSTOP, TYP.
PRECAST CONCRETE PAVERS, TYP.
DUGOUT CANOPY, TYP.
SPORTS LIGHTING, TYP. SEE ELECTRICAL PLANS
PLANTING AREA, TYP.
8' HT. ORNAMENTAL FENCE, TYP.
BITUMINOUS CONCRETE, TYP.
VERTICAL GRANITE CURB, TYP.
CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
PRECAST CONCRETE PAVERS, TYP.
RESET MEMORIAL, TYP.
COMMERCIAL STREET
PARCEL ID 0303055000
METAL RAIL
WOOD DECK
GRASS
CONCRETE BUILDING
POOL AREA
LIMIT OF WORK

SCALE: 1" = 20'-0" (0, 10, 20, 40FT)

Prepared By: Weston & Sampson SM

Consultant Project No. 2170867

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BPRD Project No.	CPR 22955
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Scale	AS SHOWN
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Checked	BK

Sheet Name.:

MATERIALS PLAN

SHEET:

L3.01

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- HARBORWALK DECKING SYSTEM, TYP.
- CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
- INTEGRAL COLORED CONCRETE PAVEMENT - 2 COLORS, TYP.
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- BITUMINOUS CONCRETE PAVEMENT WITH COLOR SEALCOAT, TYP.
- PIP RUBBER SAFETY SURFACING - 3 COLORS, TYP.
- PRECAST CONCRETE PAVERS - 2 TYPES, TYP.
- STONE DUST AT BOCCE COURTS, TYP.
- SYNTHETIC TURF, TYP.
- PLANTING AREA, TYP.

- SCORE JOINT, TYP.
- EXPANSION JOINT, TYP.
- CAST-IN-PLACE CONCRETE RETAINING/SEAT WALL
- SALVAGED GRANITE RETAINING/SEAT WALL
- PEDESTRIAN LIGHT FIXTURE, TYP.
- SPORTS LIGHTING, TYP.
- BIKE RACKS ON CONC. PAD SEE SPECIFICATIONS
- TRASH RECEPTACLE
- DRINKING FOUNTAIN
- TREE GRATE
- BVCL FENCING
- SPORTS SAFETY NETTING
- CATENARY LIGHTING
- BACKLESS BENCH, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
SPECS.	SPECIFICATIONS
BIT. CONC.	BITUMINOUS CONCRETE
BVCL	BLACK VINYL CHAIN LINK FENCE

INTEGRAL COLOR CONCRETE PAVEMENT - COLOR 1, TYP.
INTEGRAL COLOR CONCRETE PAVEMENT - COLOR 2, TYP.
BACKLESS BENCH, TYP.
STAINLESS STEEL HANDRAIL, TYP.
CUSTOM DECKING SEATWALL, TYP.
CUSTOM DECKING SEATWALL, TYP.
CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
4' HT. BVCL FENCE, TYP.
PLAY EQUIPMENT, TYP. SEE SPECIFICATIONS
POURED-IN-PLACE RUBBER SAFETY SURFACING, TYP.
SALVAGED GRANITE BLOCK RETAINING WALL, TYP.
100' COASTAL BUFFER ZONE
CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
12' WIDE BVCL DOUBLE GATE, TYP.
SPORTS LIGHTING, TYP.
PLANTING AREA, TYP.
RECLAIMED GRANITE BLOCK WALL, TYP.
ZONE AE (EL 10)(16.5 BCE
ZONE X
POURED-IN-PLACE RUBBER SAFETY SURFACING, TYP.
PLAY EQUIPMENT, TYP. SEE SPECIFICATIONS
CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
CAFE TABLES (1 ADA ACCESSIBLE), TYP.
ADULT FITNESS EQUIPMENT, TYP. SEE SPECIFICATIONS
POURED-IN-PLACE RUBBER SAFETY SURFACING, TYP.
SALVAGED GRANITE BLOCK WALL, TYP.
FLUSH GRANITE CURB, TYP.
TRASH AND RECYCLING RECEPTACLES, TYP.
PLANTING AREA, TYP.
PRECAST CONCRETE PAVERS - TYPE 1, TYP.
PRECAST CONCRETE PAVERS - TYPE 2, TYP.
RELOCATED MARITIME MEMORIAL
SALVAGED GRANITE BLOCK WALL, TYP.
RELOCATED MEMORIAL PLAQUES (3 TOTAL)
RELOCATED LANGONE MEMORIAL
EXISTING TREES TO REMAIN, TYP.
CAST-IN-PLACE CONCRETE SEAT WALL, TYP.
INTEGRAL COLOR CONCRETE PAVEMENT - COLOR 2, TYP.
INTEGRAL COLOR CONCRETE PAVEMENT - COLOR 1, TYP.
RELOCATED LANGONE BENCHES (2 TOTAL)

SCALE: 1" = 10'-0" (0, 5, 10, 20FT)

1 PLAYGROUND ENLARGEMENT PLAN

BOSTON PARKS & RECREATION

Prepared By:
Weston & Sampson

Consultant Project No. 2170867

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Scale	AS SHOWN
Drawn	EB, ME
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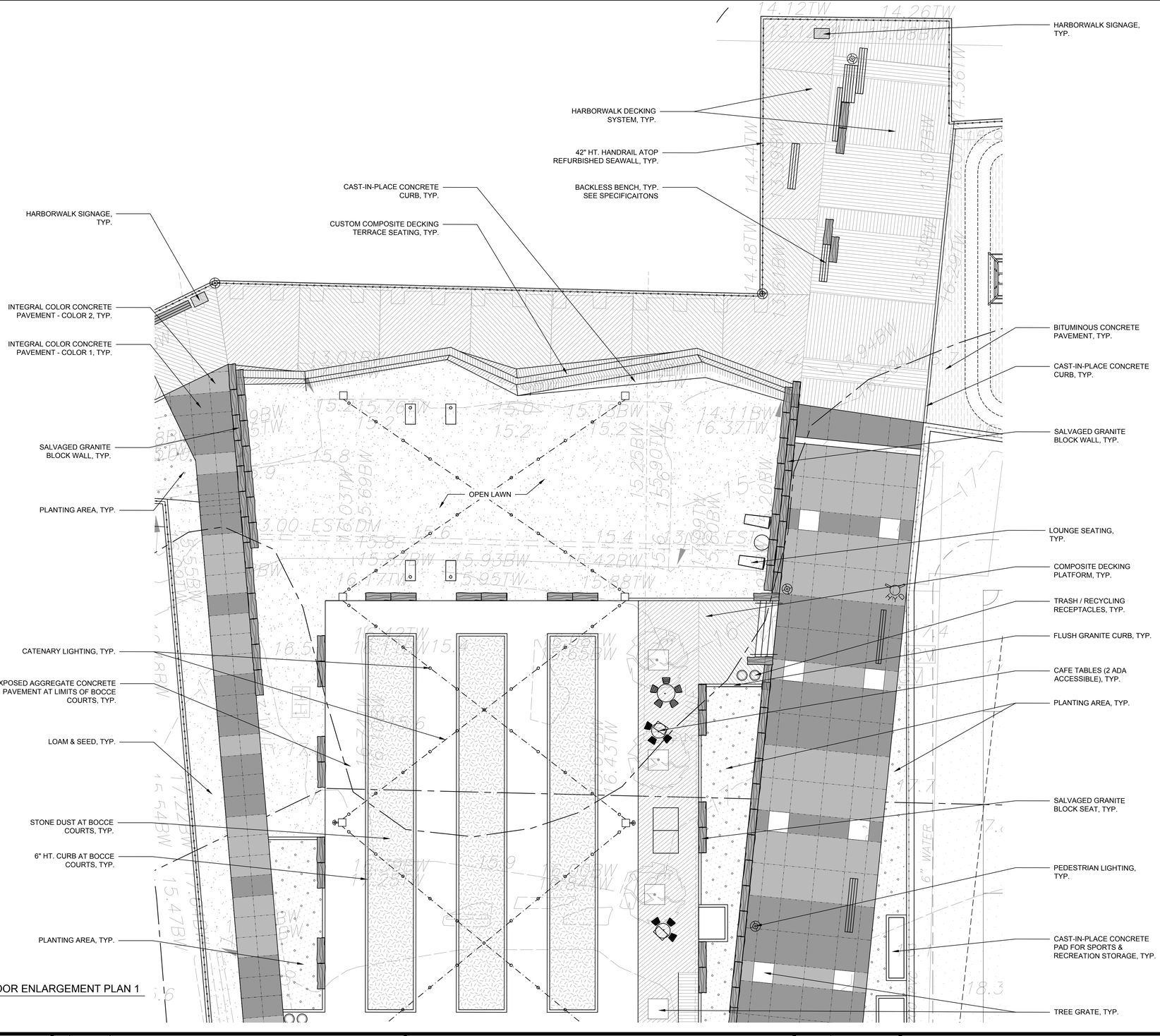
Sheet Name.:
MATERIALS ENLARGEMENT PLANS

SHEET:
L3.02

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- HARBORWALK DECKING SYSTEM, TYP.
- CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
- INTEGRAL COLORED CONCRETE PAVEMENT - 2 COLORS, TYP.
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- BITUMINOUS CONCRETE PAVEMENT WITH COLOR SEALCOAT, TYP.
- PIP RUBBER SAFETY SURFACING, TYP.
- PRECAST CONCRETE PAVERS - 2 TYPES, TYP.
- STONE DUST AT BOCCE COURTS, TYP.
- SYNTHETIC TURF, TYP.
- PLANTING AREA, TYP.
- SCORE JOINT, TYP.
- EXPANSION JOINT, TYP.
- CAST-IN-PLACE CONCRETE RETAINING/SEAT WALL
- SALVAGED GRANITE RETAINING/SEAT WALL
- PEDESTRIAN LIGHT FIXTURE, TYP.
- SPORTS LIGHTING, TYP.
- BIKE RACKS ON CONC. PAD SEE SPECIFICATIONS
- TRASH RECEPTACLE
- DRINKING FOUNTAIN
- TREE GRATE
- BVCL FENCING
- SPORTS SAFETY NETTING
- CATENARY LIGHTING
- BACKLESS BENCH, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
SPECS.	SPECIFICATIONS
BIT. CONC.	BITUMINOUS CONCRETE
BVCL	BLACK VINYL CHAIN LINK FENCE



1 CORRIDOR ENLARGEMENT PLAN 1

SCALE:
1" = 10'-0"
0 5 10 20FT

BOSTON PARKS & RECREATION

Prepared By:
Weston & Sampson℠

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Drawn	EB, ME
Checked	BK

Sheet Name.:

MATERIALS ENLARGEMENT PLANS

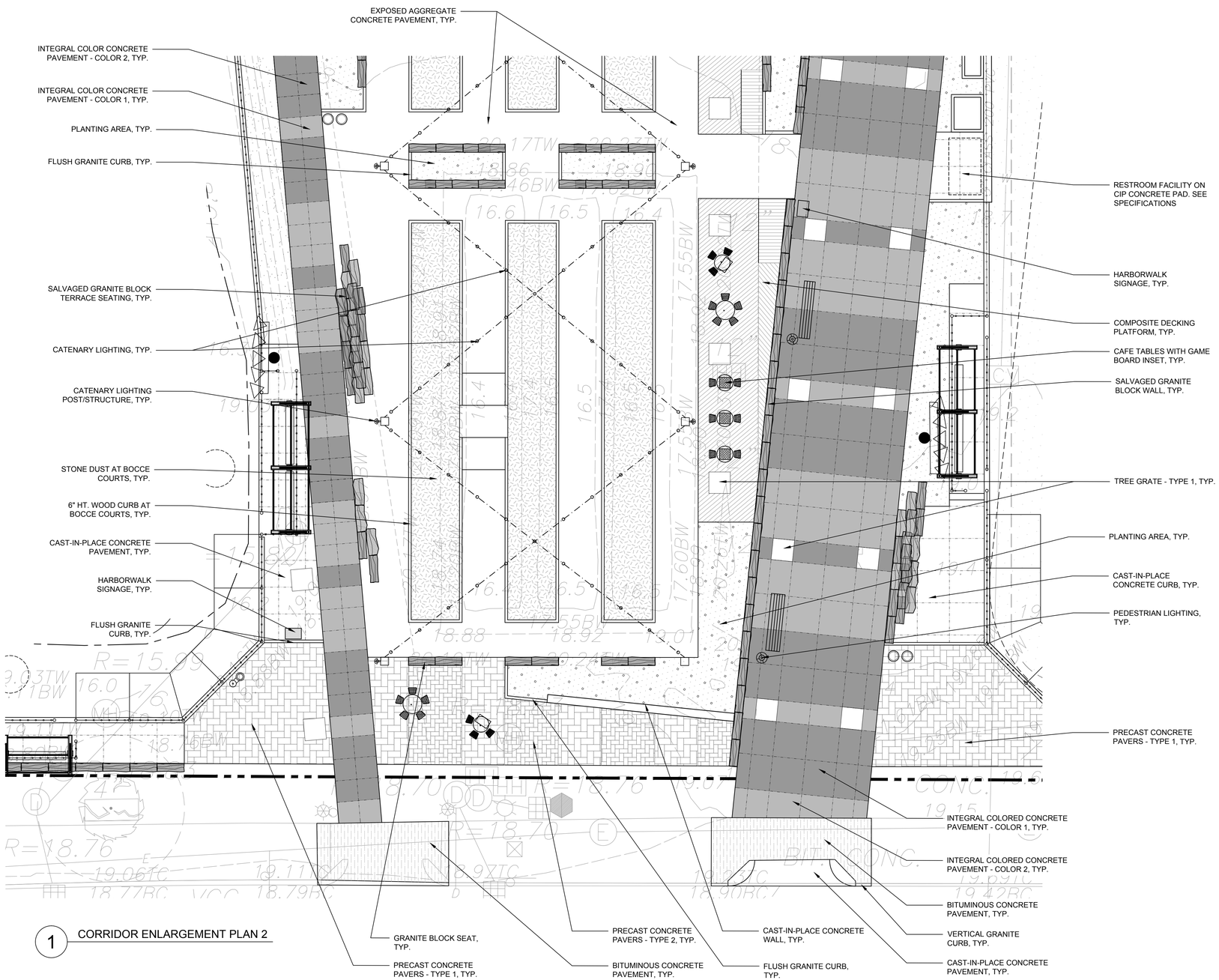
SHEET:

L3.03

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- HARBORWALK DECKING SYSTEM, TYP.
- CAST-IN-PLACE CONCRETE PAVEMENT, TYP.
- INTEGRAL COLORED CONCRETE PAVEMENT - 2 COLORS, TYP.
- BITUMINOUS CONCRETE PAVEMENT, TYP.
- BITUMINOUS CONCRETE PAVEMENT WITH COLOR SEALCOAT, TYP.
- PIP RUBBER SAFETY SURFACING, TYP.
- PRECAST CONCRETE PAVERS - 2 TYPES, TYP.
- STONE DUST AT BOCCE COURTS, TYP.
- SYNTHETIC TURF, TYP.
- PLANTING AREA, TYP.
- SCORE JOINT, TYP.
- EXPANSION JOINT, TYP.
- CAST-IN-PLACE CONCRETE RETAINING/SEAT WALL
- SALVAGED GRANITE RETAINING/SEAT WALL
- PEDESTRIAN LIGHT FIXTURE, TYP.
- SPORTS LIGHTING, TYP.
- BIKE RACKS ON CONC. PAD SEE SPECIFICATIONS
- TRASH RECEPTACLE
- DRINKING FOUNTAIN
- TREE GRATE
- BVCL FENCING
- SPORTS SAFETY NETTING
- CATENARY LIGHTING
- BACKLESS BENCH, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
SPECS.	SPECIFICATIONS
BIT. CONC.	BITUMINOUS CONCRETE
BVCL	BLACK VINYL CHAIN LINK FENCE



1 CORRIDOR ENLARGEMENT PLAN 2

SCALE: 1" = 10'-0" (0, 5, 10, 20FT)

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson SM

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BPRD Project No.	CPR 22955
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Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.:

MATERIALS ENLARGEMENT PLANS

SHEET:

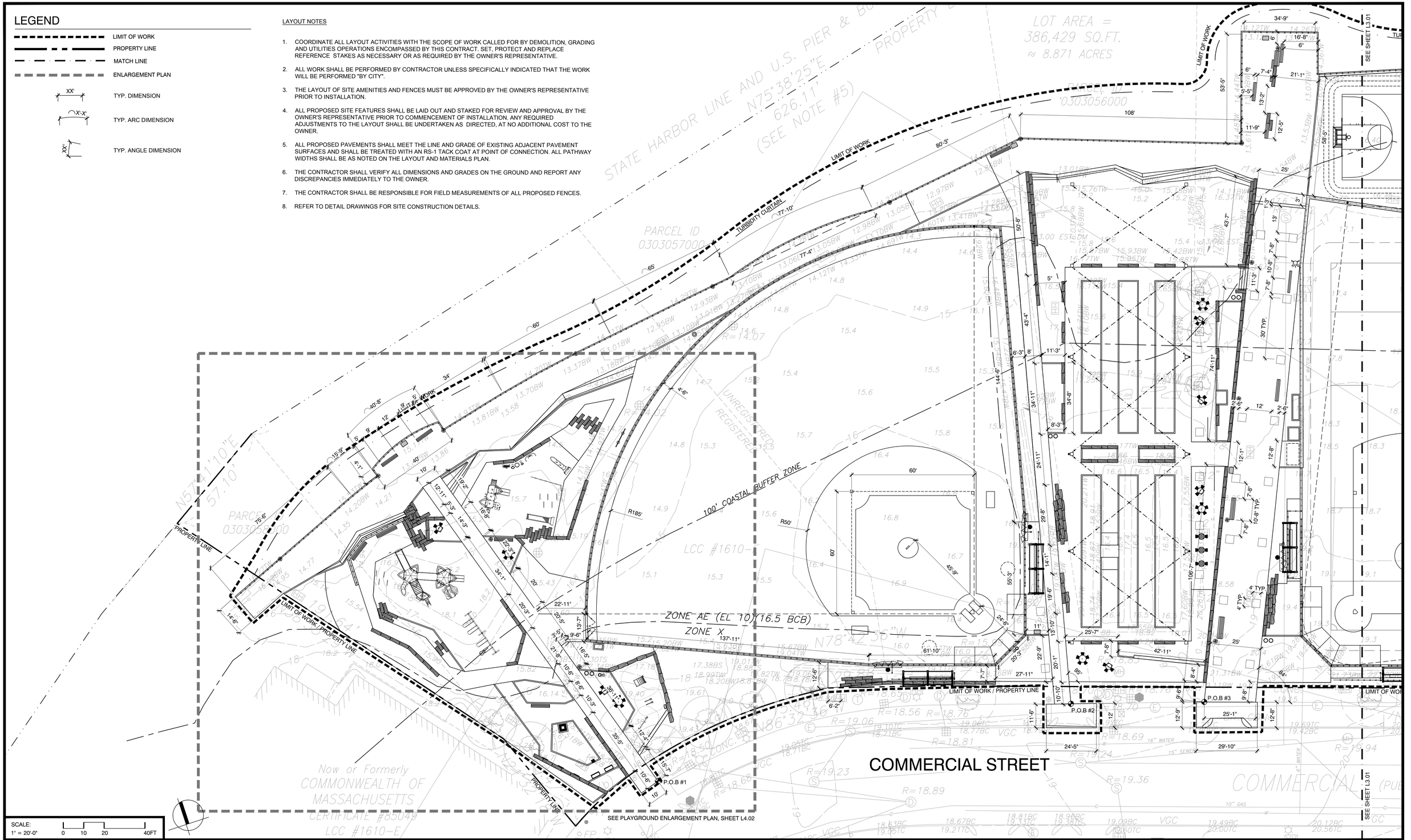
L3.04

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- XX' — TYP. DIMENSION
- X'-X" — TYP. ARC DIMENSION
- XX° — TYP. ANGLE DIMENSION

LAYOUT NOTES

1. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
2. ALL WORK SHALL BE PERFORMED BY CONTRACTOR UNLESS SPECIFICALLY INDICATED THAT THE WORK WILL BE PERFORMED "BY CITY".
3. THE LAYOUT OF SITE AMENITIES AND FENCES MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
5. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
6. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS OF ALL PROPOSED FENCES.
8. REFER TO DETAIL DRAWINGS FOR SITE CONSTRUCTION DETAILS.



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Date	12/5/2018
Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.: **LAYOUT PLAN**

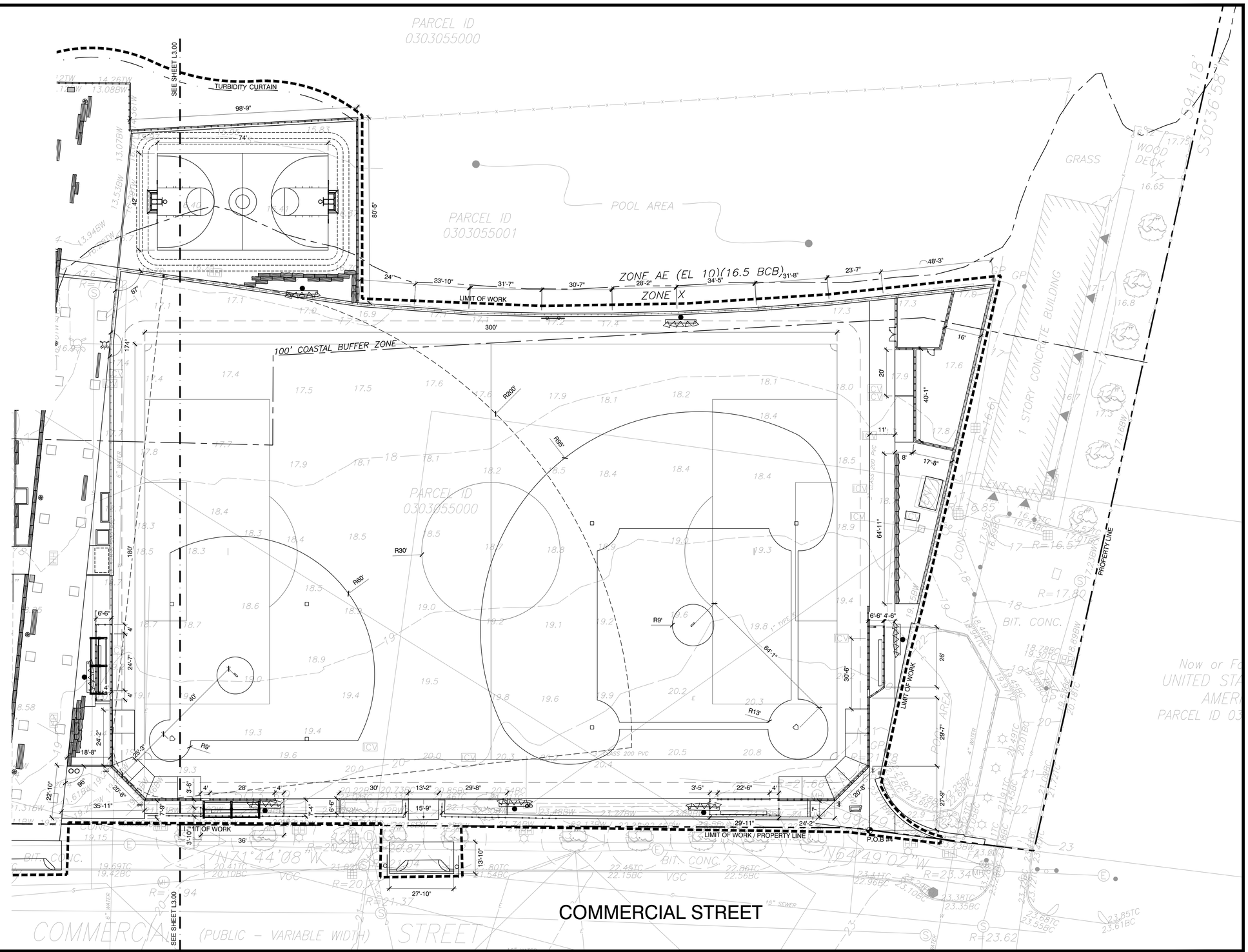
SHEET: **L4.00**

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- XX' — TYP. DIMENSION
- X'-X' — TYP. ARC DIMENSION
- XX° — TYP. ANGLE DIMENSION

LAYOUT NOTES

REFER TO SHEET L4.00 FOR LAYOUT NOTES.



SCALE: 1" = 20'-0" (0, 10, 20, 40FT)

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Checked	BK

Sheet Name.: **LAYOUT PLAN**

SHEET: **L4.01**

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- XX' — TYP. DIMENSION
- X'-X" — TYP. ARC DIMENSION
- XX° — TYP. ANGLE DIMENSION

LAYOUT NOTES

REFER TO SHEET L4.00 FOR LAYOUT NOTES.

1 PLAYGROUND LAYOUT ENLARGEMENT PLAN

SCALE: 1" = 10'-0" (0 5 10 20FT)

BOSTON PARKS & RECREATION

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Drawn	EB, ME
Checked	BK

Sheet Name.: **LAYOUT ENLARGEMENT PLAN**

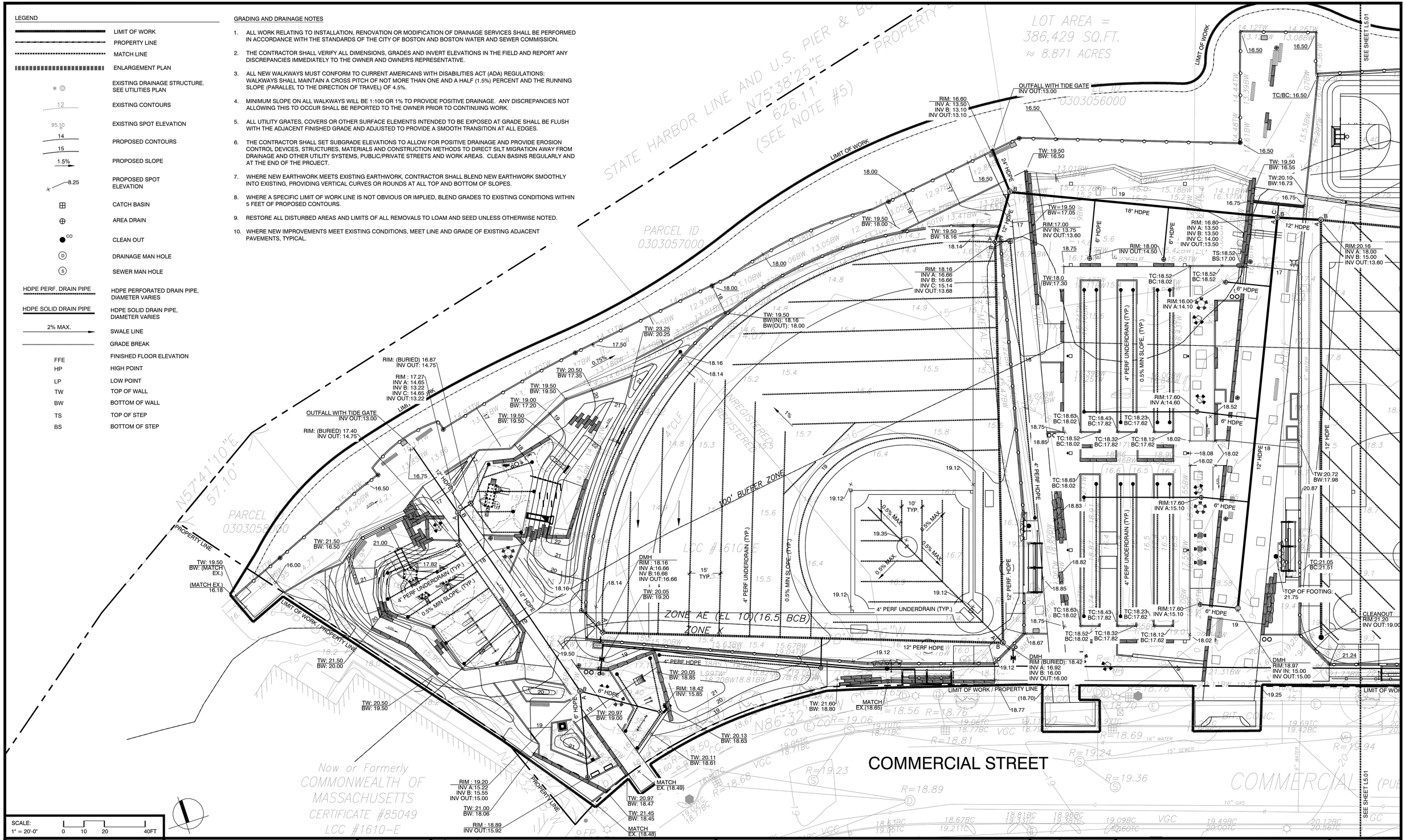
SHEET: **L4.02**

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- EXISTING DRAINAGE STRUCTURE. SEE UTILITIES PLAN
- 12 — EXISTING CONTOURS
- 95.10 — EXISTING SPOT ELEVATION
- 14 — PROPOSED CONTOURS
- 15 — PROPOSED SLOPE
- 1.5% — PROPOSED SPOT ELEVATION
- 8.25 — CATCH BASIN
- AREA DRAIN
- CO — CLEAN OUT
- D — DRAINAGE MAN HOLE
- S — SEWER MAN HOLE
- HDPE PERF. DRAIN PIPE — HDPE PERFORATED DRAIN PIPE, DIAMETER VARIES
- HDPE SOLID DRAIN PIPE — HDPE SOLID DRAIN PIPE, DIAMETER VARIES
- 2% MAX. — SWALE LINE
- GRADE BREAK
- FFE — FINISHED FLOOR ELEVATION
- HP — HIGH POINT
- LP — LOW POINT
- TW — TOP OF WALL
- BW — BOTTOM OF WALL
- TS — TOP OF STEP
- BS — BOTTOM OF STEP

GRADING AND DRAINAGE NOTES

1. ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF DRAINAGE SERVICES SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF BOSTON AND BOSTON WATER AND SEWER COMMISSION.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, GRADES AND INVERT ELEVATIONS IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER AND OWNER'S REPRESENTATIVE.
3. ALL NEW WALKWAYS MUST CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT (ADA) REGULATIONS: WALKWAYS SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF (1.5%) PERCENT AND THE RUNNING SLOPE (PARALLEL TO THE DIRECTION OF TRAVEL) OF 4.5%.
4. MINIMUM SLOPE ON ALL WALKWAYS WILL BE 1:100 OR 1% TO PROVIDE POSITIVE DRAINAGE. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE OWNER PRIOR TO CONTINUING WORK.
5. ALL UTILITY GRATES, COVERS OR OTHER SURFACE ELEMENTS INTENDED TO BE EXPOSED AT GRADE SHALL BE FLUSH WITH THE ADJACENT FINISHED GRADE AND ADJUSTED TO PROVIDE A SMOOTH TRANSITION AT ALL EDGES.
6. THE CONTRACTOR SHALL SET SUBGRADE ELEVATIONS TO ALLOW FOR POSITIVE DRAINAGE AND PROVIDE EROSION CONTROL DEVICES, STRUCTURES, MATERIALS AND CONSTRUCTION METHODS TO DIRECT SILT MIGRATION AWAY FROM DRAINAGE AND OTHER UTILITY SYSTEMS, PUBLIC/PRIVATE STREETS AND WORK AREAS. CLEAN BASINS REGULARLY AND AT THE END OF THE PROJECT.
7. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
8. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 5 FEET OF PROPOSED CONTOURS.
9. RESTORE ALL DISTURBED AREAS AND LIMITS OF ALL REMOVALS TO LOAM AND SEED UNLESS OTHERWISE NOTED.
10. WHERE NEW IMPROVEMENTS MEET EXISTING CONDITIONS, MEET LINE AND GRADE OF EXISTING ADJACENT PAVEMENTS, TYPICAL.



BOSTON PARKS & RECREATION

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GRADING, DRAINAGE, AND UTILITIES PLAN

SHEET:

L5.00

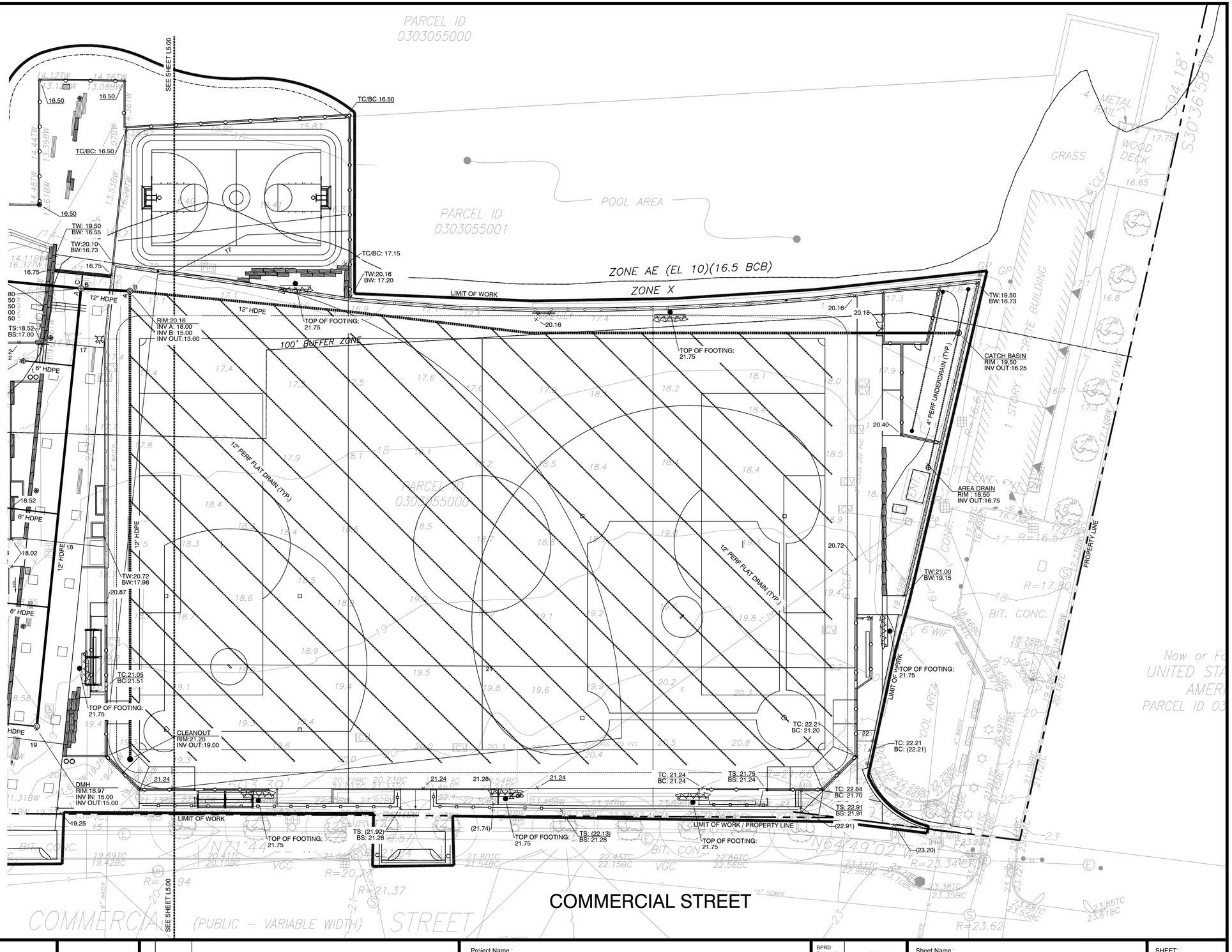
LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- EXISTING DRAINAGE STRUCTURE. SEE UTILITIES PLAN
- 12 — EXISTING CONTOURS
- 95.10 — EXISTING SPOT ELEVATION
- 14 — PROPOSED CONTOURS
- 15 — PROPOSED SLOPE
- 1.5% — PROPOSED SLOPE
- 8.25 — PROPOSED SPOT ELEVATION
- CATCH BASIN
- AREA DRAIN
- CO — CLEAN OUT
- D — DRAINAGE MAN HOLE

HDPE PERF. DRAIN PIPE	HDPE PERFORATED DRAIN PIPE, DIAMETER VARIES
HDPE SOLID DRAIN PIPE	HDPE SOLID DRAIN PIPE, DIAMETER VARIES
2% MAX.	SWALE LINE
	GRADE BREAK
FFE	FINISHED FLOOR ELEVATION
HP	HIGH POINT
LP	LOW POINT
TW	TOP OF WALL
BW	BOTTOM OF WALL
TS	TOP OF STEP
BS	BOTTOM OF STEP

GRADING AND DRAINAGE NOTES

REFER TO SHEET L5.00 FOR GRADING AND DRAINAGE NOTES



SCALE:
1" = 20'-0"
0 10 20 40FT

BOSTON PARKS & RECREATION

Prepared By:
Weston & Sampson SM

Consultant Project No. 2170867

No.	Date	Revision

Approved By: Date:

Project Name.:

IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No.	CPR 22955
Date	12/5/2018
Scale	AS SHOWN
Drawn	EB, ME
Checked	BK

Sheet Name.:

GRADING, DRAINAGE, AND UTILITY PLAN

SHEET:

L5.01

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- MATCH LINE
- ENLARGEMENT PLAN
- LOAM & SEED, TYP.
- PERENNIAL GRASS/ SUN PLANTING
- PERENNIAL SHADE / FLOWER PLANTING
- LIMITS OF STRUCTURAL SOIL, TYP.
- PROPOSED TREES
- EXISTING TREES TO REMAIN

PLANTING NOTES

1. THE DEPTH OF LOAM BORROW FOR ALL PROPOSED LAWN AREAS SHALL BE 6" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED
2. ALL REFERENCES TO LOAM AND SEED (L&S) REFER TO HYDROMULCH SEEDED LAWN.

TREE SCHEDULE - SHEET L6.01

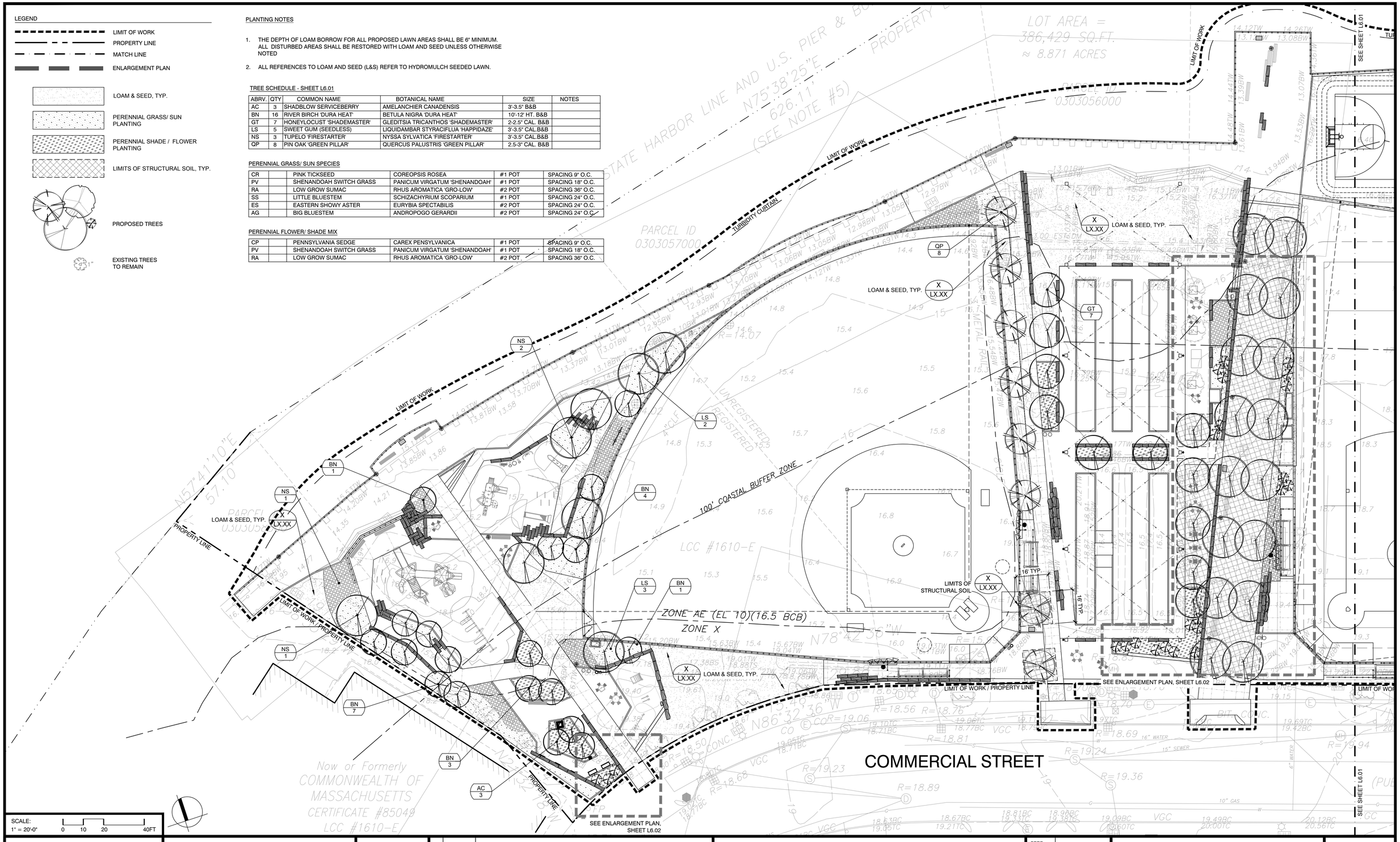
ABRV.	QTY	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
AC	3	SHADBLOW SERVICEBERRY	AMELANCHIER CANADENSIS	3'-3.5" B&B	
BN	16	RIVER BIRCH 'DURA HEAT'	BETULA NIGRA 'DURA HEAT'	10'-12' HT. B&B	
GT	7	HONEYLOCUST 'SHADEMASTER'	GLEDITSIA TRICANTHOS 'SHADEMASTER'	2-2.5" CAL. B&B	
LS	5	SWEET GUM (SEEDLESS)	LIQUIDAMBAR STYRACIFLUA 'HAPPIDAZE'	3'-3.5" CAL.B&B	
NS	3	TUPELO 'FIRESTARTER'	NYSSA SYLVATICA 'FIRESTARTER'	3'-3.5" CAL.B&B	
QP	8	PIN OAK 'GREEN PILLAR'	QUERCUS PALUSTRIS 'GREEN PILLAR'	2.5-3" CAL. B&B	

PERENNIAL GRASS/ SUN SPECIES

CR		PINK TICKSEED	COREOPSIS ROSEA	#1 POT	SPACING 9" O.C.
PV		SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1 POT	SPACING 18" O.C.
RA		LOW GROW SUMAC	RHUS AROMATICA 'GRO-LOW'	#2 POT	SPACING 36" O.C.
SS		LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM	#1 POT	SPACING 24" O.C.
ES		EASTERN SHOWY ASTER	EURYBIA SPECTABILIS	#2 POT	SPACING 24" O.C.
AG		BIG BLUESTEM	ANDROPOGO GERARDII	#2 POT	SPACING 24" O.C.

PERENNIAL FLOWER/ SHADE MIX

CP		PENNSYLVANIA SEDGE	CAREX PENSYLVANICA	#1 POT	SPACING 9" O.C.
PV		SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1 POT	SPACING 18" O.C.
RA		LOW GROW SUMAC	RHUS AROMATICA 'GRO-LOW'	#2 POT	SPACING 36" O.C.



SCALE: 1" = 20'-0" (0, 10, 20, 40FT)

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Sheet Name.:

PLANTING PLAN

SHEET:

L6.00

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- ENLARGEMENT PLAN
- LOAM & SEED, TYP.
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- PERENNIAL SHADE / FLOWER PLANTING
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- PROPOSED TREES
- EXISTING TREES TO REMAIN

PLANTING NOTES

REFER TO SHEET L6.00 FOR PLANTING NOTES

TREE SCHEDULE - SHEET L6.01

ABRV.	QTY	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
GT	5	HONEYLOCUST 'SHADEMASTER'	GLEDITSIA TRICANTHOS 'SHADEMASTER'	2-2.5" CAL. B&B	
NS	3	TUPELO 'FIRESTARTER'	NYSSA SYLVATICA 'FIRESTARTER'	2.5-3" CAL. B&B	
QC	16	SCARLET OAK	QUERQUS COCCINEA	2.5-3" CAL.B&B	

SHRUB SCHEDULE - SHEET L6.01

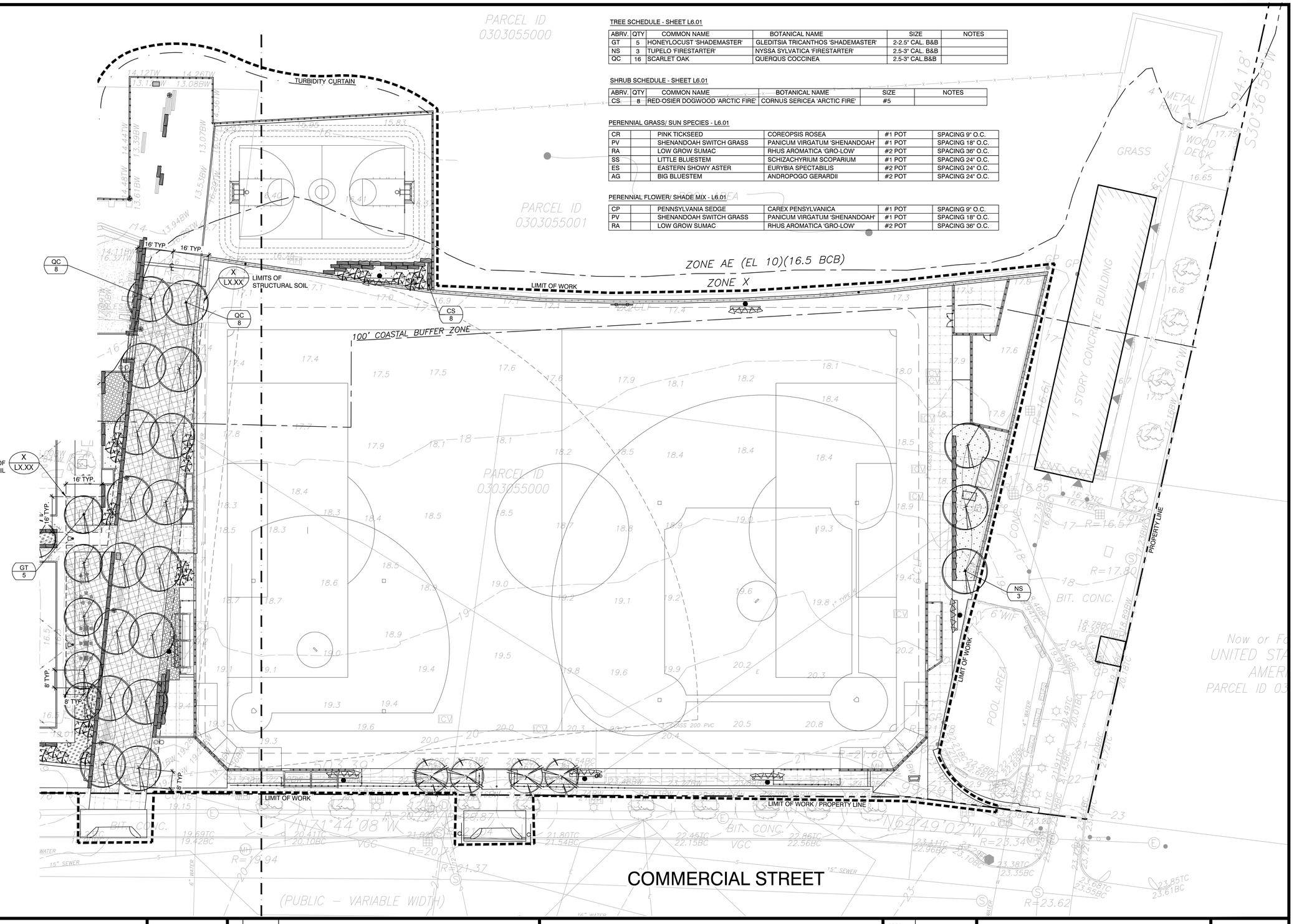
ABRV.	QTY	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
CS	8	RED-OSIER DOGWOOD 'ARCTIC FIRE'	CORNUS SERICEA 'ARCTIC FIRE'	#5	

PERENNIAL GRASS/ SUN SPECIES - L6.01

CR		PINK TICKSEED	COREOPSIS ROSEA	#1 POT	SPACING 9" O.C.
PV		SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1 POT	SPACING 18" O.C.
RA		LOW GROW SUMAC	RHUS AROMATICA 'GRO-LOW'	#2 POT	SPACING 36" O.C.
SS		LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM	#1 POT	SPACING 24" O.C.
ES		EASTERN SHOWY ASTER	EURYBIA SPECTABILIS	#2 POT	SPACING 24" O.C.
AG		BIG BLUESTEM	ANDROPOGO GERARDII	#2 POT	SPACING 24" O.C.

PERENNIAL FLOWER/ SHADE MIX - L6.01

CP		PENNSYLVANIA SEDGE	CAREX PENSYLVANICA	#1 POT	SPACING 9" O.C.
PV		SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1 POT	SPACING 18" O.C.
RA		LOW GROW SUMAC	RHUS AROMATICA 'GRO-LOW'	#2 POT	SPACING 36" O.C.



SCALE: 1" = 20'-0" (0 10 20 40FT)

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson℠

Consultant Project No. 2170867

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Sheet Name.: ***PLANTING PLAN***

SHEET: ***L6.01***

LEGEND

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- PROPERTY LINE
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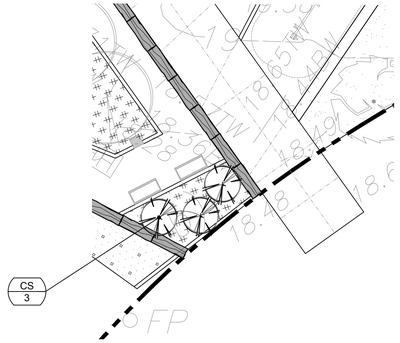
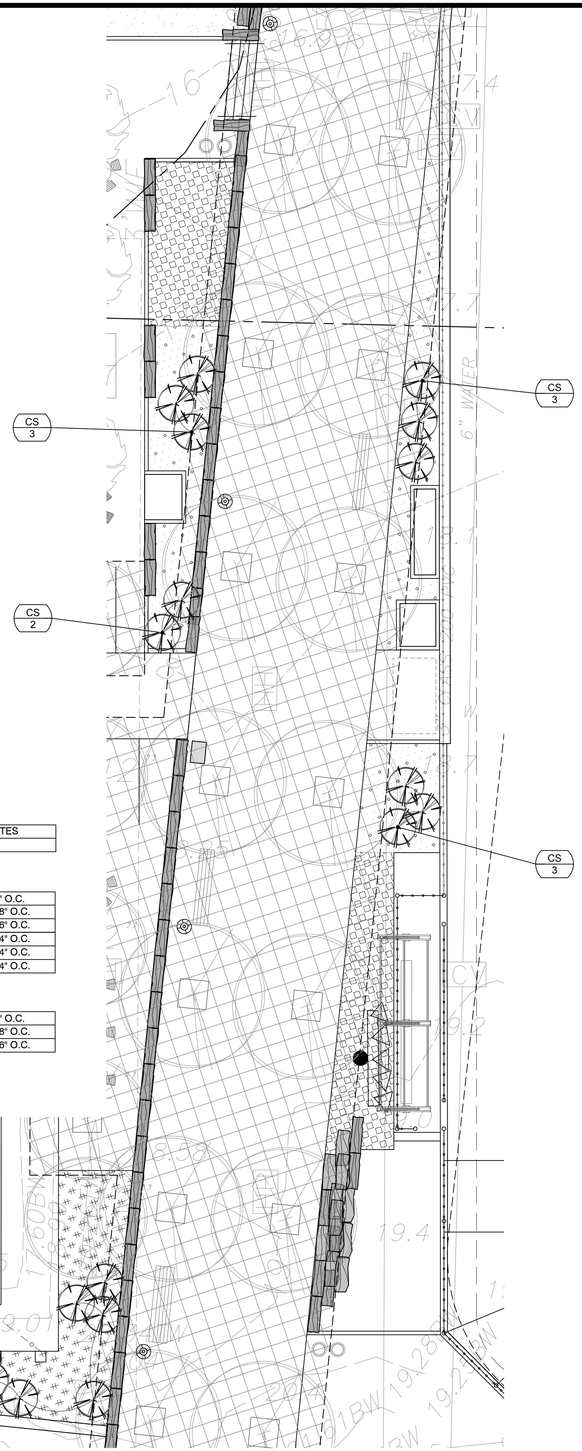
- PROPOSED TREES/ SHRUBS
- EXISTING TREES TO REMAIN

PLANTING NOTES

REFER TO SHEET L6.00 FOR PLANTING NOTES





SHRUB SCHEDULE - SHEET L6.02

ABRV.	QTY	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
CS	24	RED-OSIER DOGWOOD 'ARCTIC FIRE'	CORNUS SERICEA 'ARCTIC FIRE'	#5	

PERENNIAL GRASS/ SUN SPECIES - L6.02

CR		PINK TICKSEED	COREOPSIS ROSEA	#1 POT	SPACING 9" O.C.
PV		SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1 POT	SPACING 18" O.C.
RA		LOW GROW SUMAC	RHUS AROMATICA 'GRO-LOW'	#2 POT	SPACING 36" O.C.
SS		LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM	#1 POT	SPACING 24" O.C.
ES		EASTERN SHOWY ASTER	EURYBIA SPECTABILIS	#2 POT	SPACING 24" O.C.
AG		BIG BLUESTEM	ANDROPOGO GERARDII	#2 POT	SPACING 24" O.C.

PERENNIAL FLOWER/ SHADE MIX - L6.02

CP		PENNSYLVANIA SEDGE	CAREX PENSYLVANICA	#1 POT	SPACING 9" O.C.
PV		SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'SHENANDOAH'	#1 POT	SPACING 18" O.C.
RA		LOW GROW SUMAC	RHUS AROMATICA 'GRO-LOW'	#2 POT	SPACING 36" O.C.

SCALE:
1" = 20'-0"
0 10 20 40FT

BOSTON PARKS & RECREATION

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Weston & Sampson

Consultant Project No. 2170867

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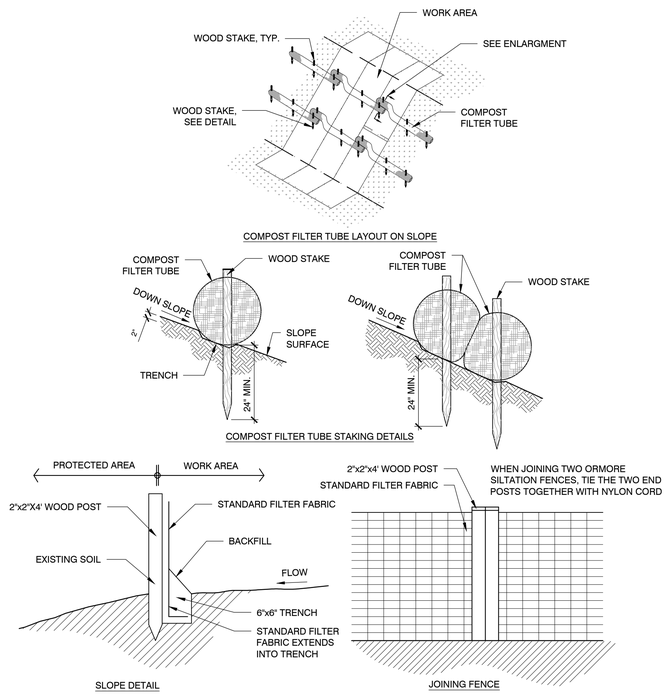
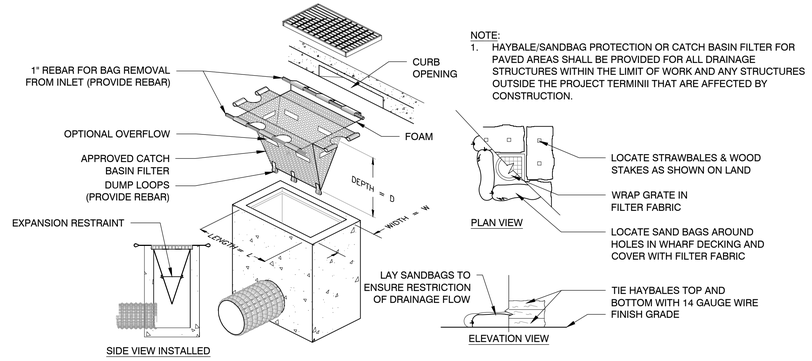
PLANTING PLAN

SHEET:
L6.02



1 SILTATION - EROSION CONTROL

SCALE: N.T.S.



3 INLET SEDIMENT CONTROL

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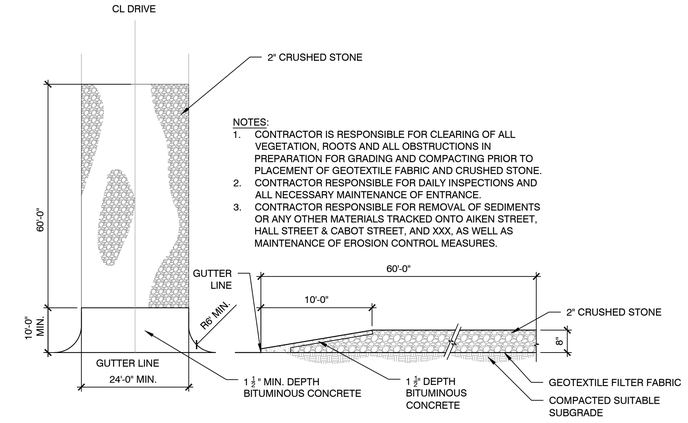

4 CONSTRUCTION ENTRANCE

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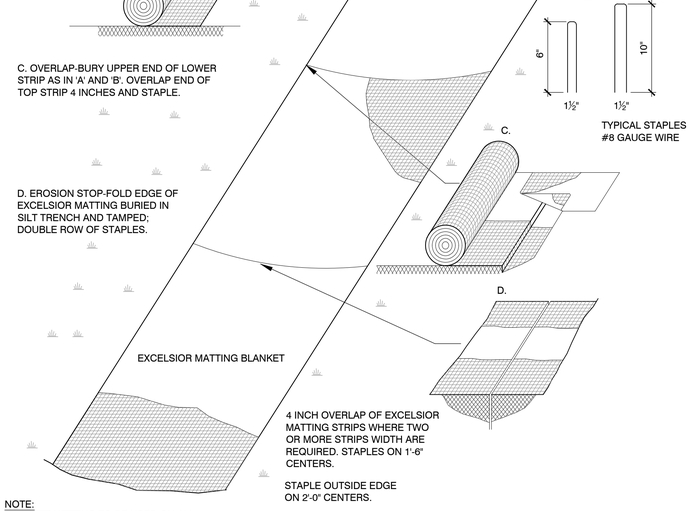

5 EROSION CONTROL BLANKET

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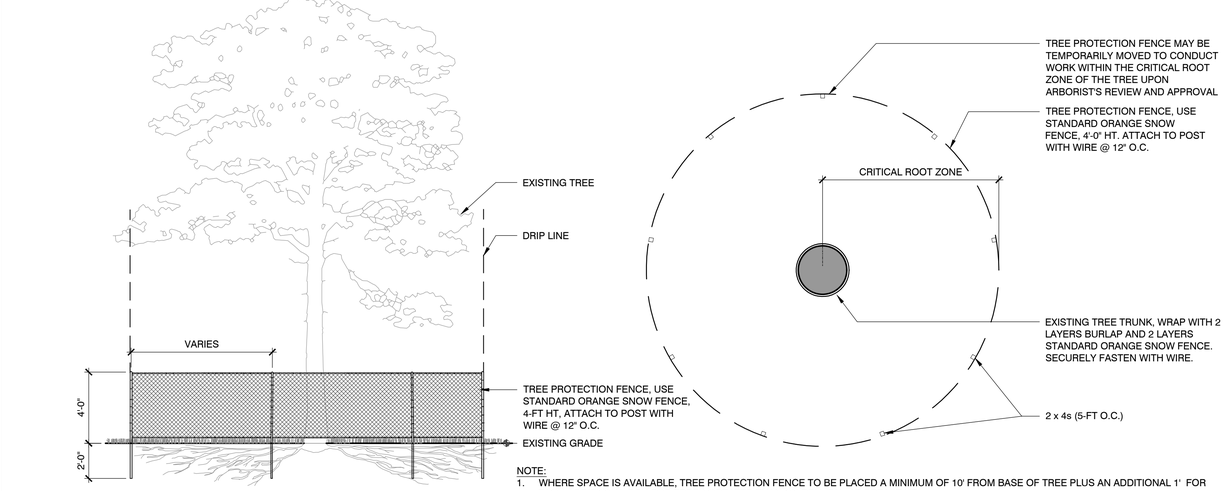

TREE PROTECTION

SCALE: N.T.S.

12/5/2018

JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

BOSTON PARKS & RECREATION

Prepared By:
Weston & Sampson

Consultant Project No. 2170867

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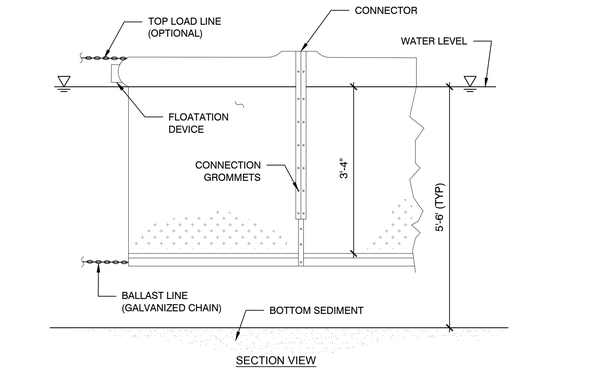
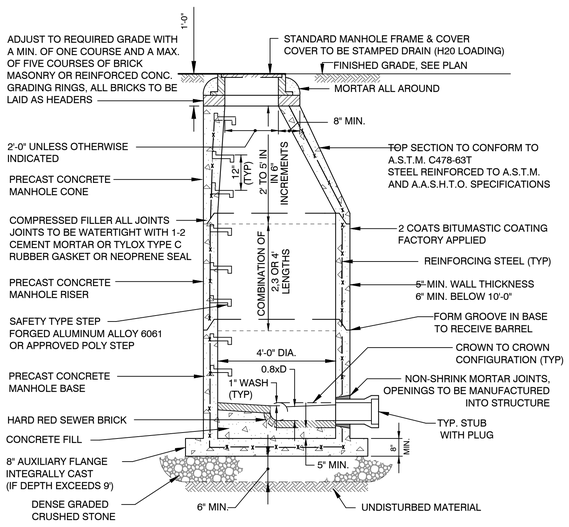
Sheet Name.:
CONSTRUCTION DETAILS

SHEET:
L7.00



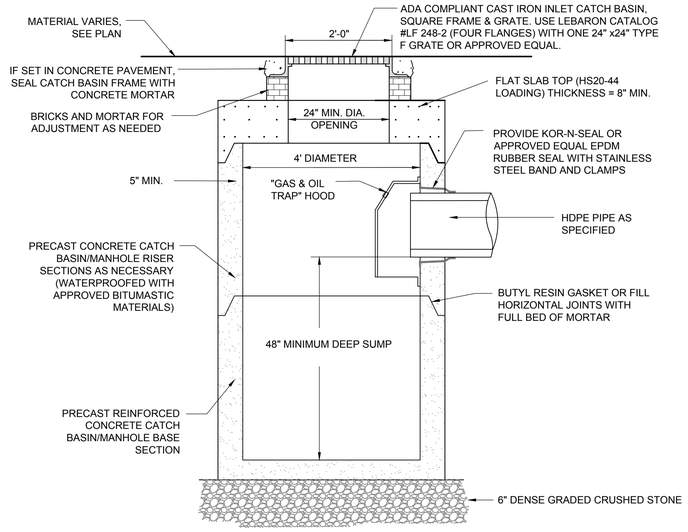
1 TURBIDITY CURTAIN

SCALE: N.T.S.



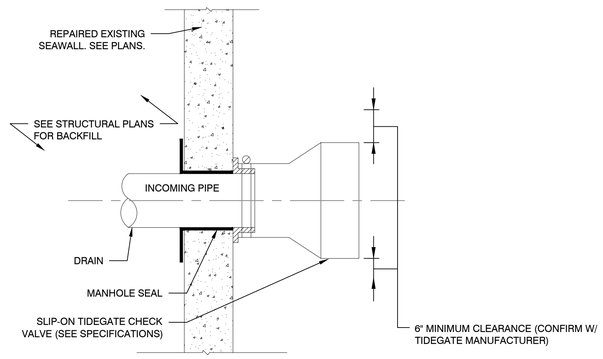
2 DRAINAGE MANHOLE

SCALE: N.T.S.



3 PRECAST CONCRETE DEEP SUMP CATCH BASIN WITH HOOD

SCALE: N.T.S.



5 OUTFALL WITH TIDEGATE STRUCTURE

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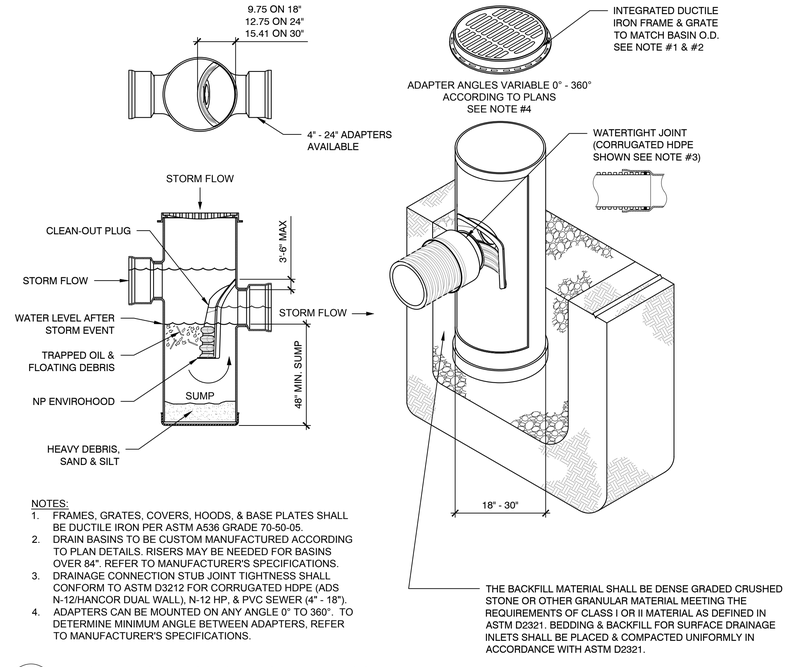

NOTES:

1. FRAMES, GRATES, COVERS, HOODS, & BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. DRAIN BASINS TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS MAY BE NEEDED FOR BASINS OVER 84". REFER TO MANUFACTURER'S SPECIFICATIONS.
3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 18").
4. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS, REFER TO MANUFACTURER'S SPECIFICATIONS.

4 PVC DEEP SUMP CATCH BASIN WITH HOOD

SCALE: N.T.S.

COMMONWEALTH OF MASSACHUSETTS
JAMES I. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER

12/5/2018

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CONSTRUCTION DETAILS

SHEET:

L7.01

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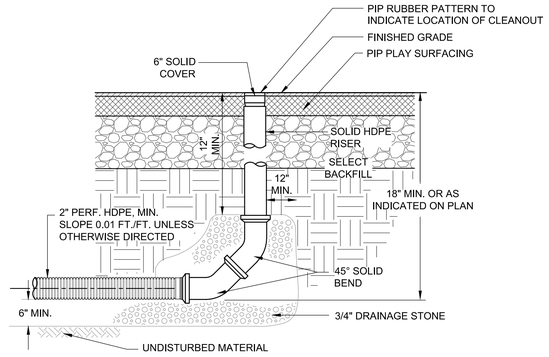
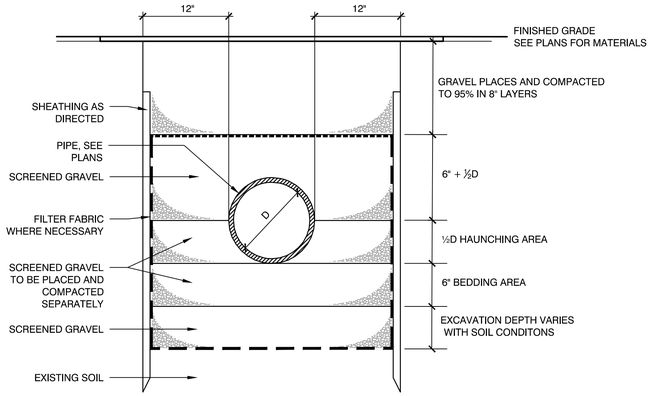
1 SCALE: N.T.S.



3 LATERAL DRAIN / CLEANOUT
SCALE: N.T.S.



4 DRAINAGE TRENCH
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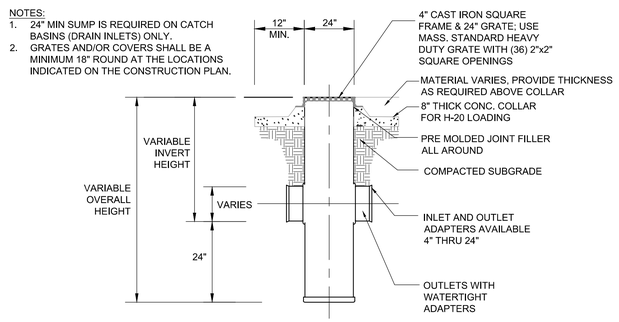

2 PVC AREA DRAIN DETAIL
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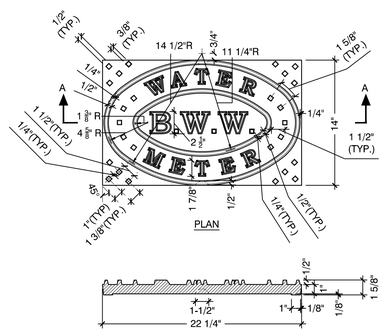
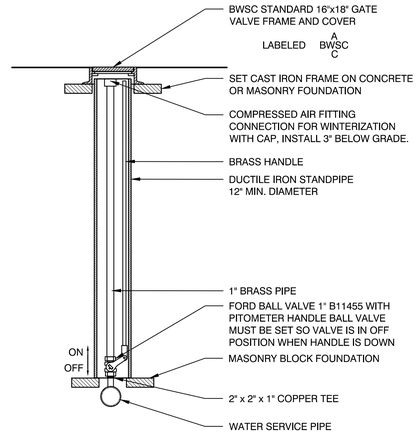


NOTE:
1. ALL CASTING SHALL BE MANUFACTURED FROM GRAY IRON CONFORMING TO ASTM A48 CLASS 35B AND/OR AASHTO M105 CLASS 35B.

5 HEAVY METER COVER- BWSC STANDARD
SCALE: N.T.S.



6 PIPE WINTERIZATION BLOW OUT STRUCTURE
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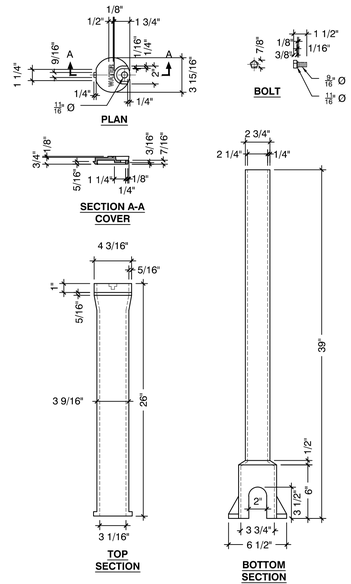
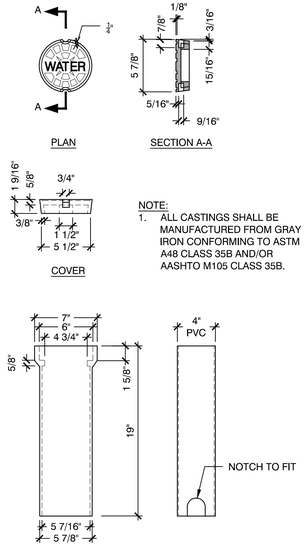


ITEM	NUMBER
COVER	99602000
TOP SECTION	99602001
BOTTOM SECTION	99602002
BOLT ONLY	99602003

NOTE:
1. ALL CASTINGS SHALL BE MANUFACTURED FROM GRAY IRON CONFORMING TO ASTM A48 CLASS 35B AND/OR AASHTO M105 CLASS 35B.

7 CURB BOX- BWSC STANDARD
SCALE: N.T.S.



ITEM	NUMBER
COVER	99460000
TOP SECTION	99460001

NOTE:
1. ALL CASTINGS SHALL BE MANUFACTURED FROM GRAY IRON CONFORMING TO ASTM A48 CLASS 35B AND/OR AASHTO M105 CLASS 35B.

8 WATER SERVICE ROADWAY BOX- BWSC STANDARD
SCALE: N.T.S.

COMMONWEALTH OF MASSACHUSETTS
JAMES I. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER

12/5/2018

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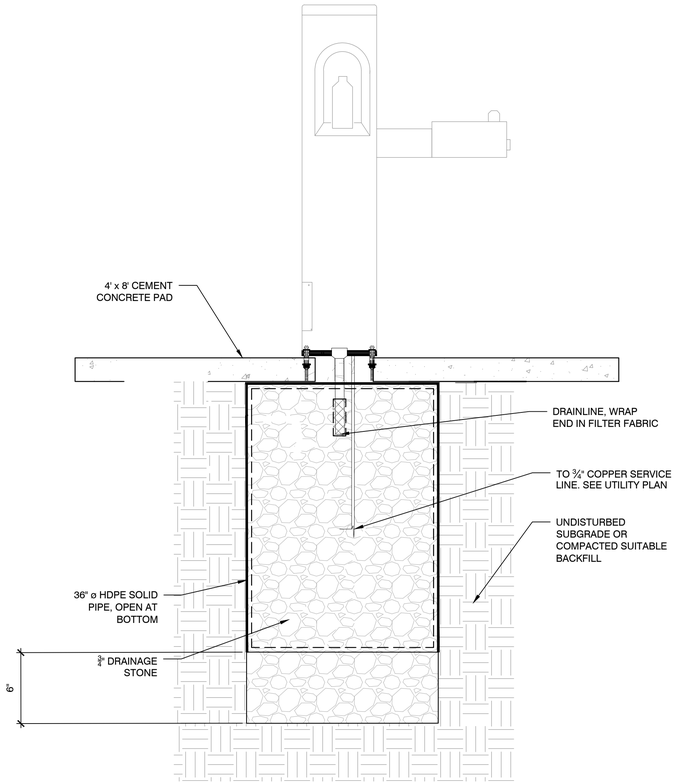
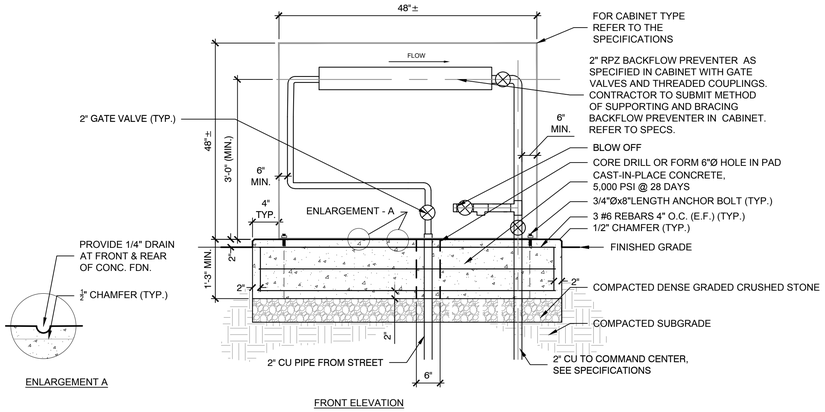
Sheet Name.: **CONSTRUCTION DETAILS**

SHEET: **L7.02**



1 DRINKING FOUNTAIN CONNECTION

SCALE: N.T.S.



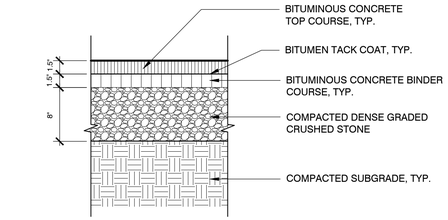
ENLARGEMENT A

FRONT ELEVATION

NOTES:
1. INSTALL A BRASS BLOWOFF FITTING AND VALVE ON THE OUTFLOW SIDE OF THE BACKFLOW PREVENTION DEVICE TO WINTERIZE THE SYSTEM AS REQUIRED.
2. THE BACKFLOW PREVENTER & METER SHALL BE INSTALLED WITH UNIONS, HANGERS, SUPPORTS AND ALL OTHER APPROPRIATE FITTINGS, IN ORDER TO EASILY REMOVE THE DEVICE FOR SERVICE AND TO MEET ALL APPLICABLE PLUMBING CODES.
3. BACKFLOW PREVENTER SHALL BE INSTALLED A MINIMUM 6" FROM THE WALLS OF THE METER CABINET.
4. CONFIRM LAYOUT AND ALIGNMENT REQUIREMENTS FOR ALL PIPING, FITTINGS, VALVES, METER, AND BACKFLOW PREVENTER WITH CITY OF BOSTON PLUMBING INSPECTOR PRIOR TO INSTALLATION.
5. SEE SPECIFICATIONS FOR EQUIPMENT INFORMATION
6. 2" PIPING WITHIN METER CABINET TO BE COPPER TUBING (TYPE L).

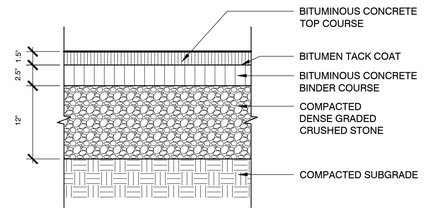
2 BACKFLOW PREVENTER CABINET

SCALE: N.T.S.



3 BITUMINOUS CONCRETE PAVEMENT - PEDESTRIAN

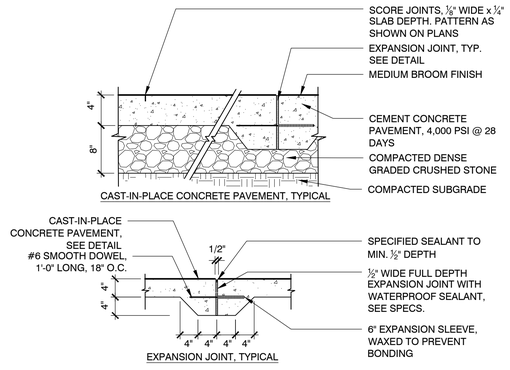
SCALE: N.T.S.



NOTE:.
1. CONTRACTOR TO PROVIDE SMOOTH TRANSITION WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENT, TYP.

4 BITUMINOUS CONCRETE PAVEMENT - VEHICULAR

SCALE: N.T.S.



CAST-IN-PLACE CONCRETE PAVEMENT, TYPICAL

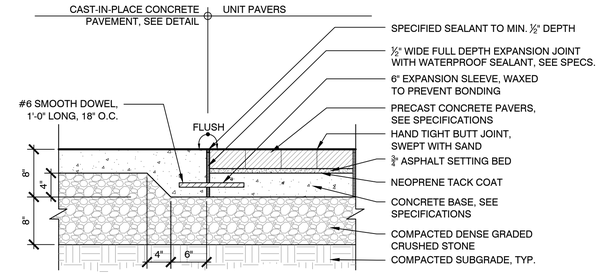
EXPANSION JOINT, TYPICAL

EXPANSION JOINT INSTALLATION NOTES:

1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS (18" O.C.) WITHIN CONCRETE PAVING AND BETWEEN NEW CONCRETE PAVING AND EXISTING CONCRETE PAVING TO REMAIN.
2. DELETE EXPANSION SLEEVE AND DOWEL WHERE JOINT ABUTS WALL, CURBS, OR OTHER VERTICAL SURFACES, UNLESS OTHERWISE NOTED.
3. EXPANSION JOINTS MAX. 25'-0" O.C. UNLESS SHOWN OTHERWISE.
4. EXPANSIONS JOINTS SHALL BE PLACED WHERE NEW CEMENT CONCRETE PAVEMENT MEETS EXISTING PAVEMENT OR WALLS TO REMAIN.
5. ALL EXPANSION JOINTS SHALL BE SAW CUT.

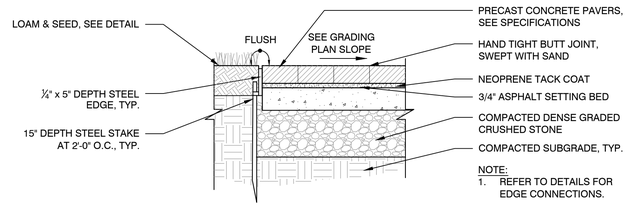
5 CAST-IN-PLACE CONCRETE PAVEMENT

SCALE: N.T.S.



6 PRECAST CONCRETE PAVERS AT CAST-IN-PLACE PAVEMENT

SCALE: N.T.S.



NOTE:
1. REFER TO DETAILS FOR EDGE CONNECTIONS.

7 PRECAST CONCRETE PAVERS AT VEGETATION

SCALE: N.T.S.

JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

12/5/2018

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson SM

Consultant Project No. 2170867

No.	Date	Revision

Approved By: Date:

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

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SHEET:

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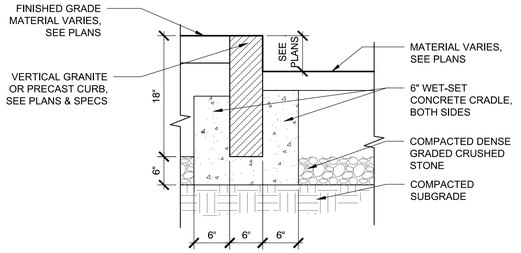
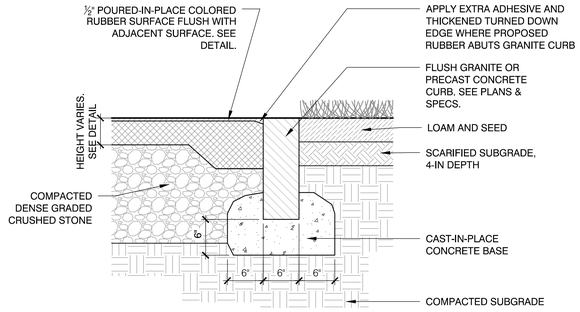


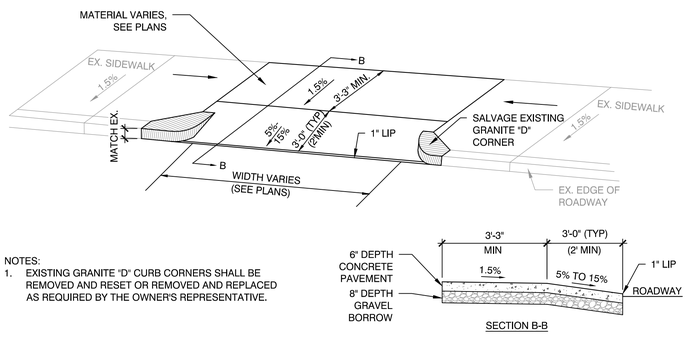
1 VERTICAL GRANITE CURB

SCALE: N.T.S.



2 FLUSH CURB

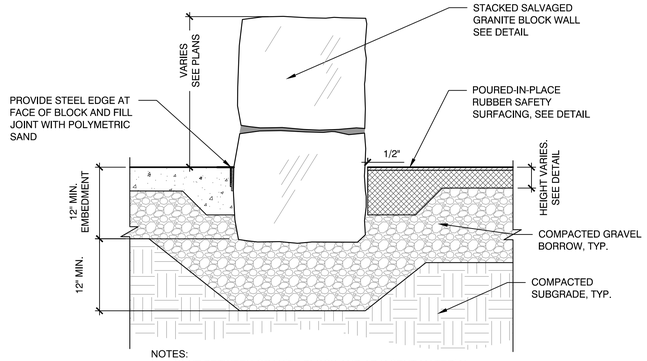
SCALE: N.T.S.



NOTES:
1. EXISTING GRANITE "D" CURB CORNERS SHALL BE REMOVED AND RESET OR REMOVED AND REPLACED AS REQUIRED BY THE OWNER'S REPRESENTATIVE.

3 SALVAGED GRANITE D-CURB AT CURB CUT

SCALE: N.T.S.

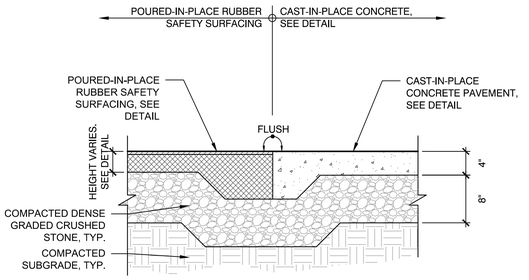


NOTES:
1. JOINT BETWEEN GRANITE BLOCK AND ADJACENT MATERIAL SHALL NOT EXCEED ½" AND BE FILLED WITH MORTAR.

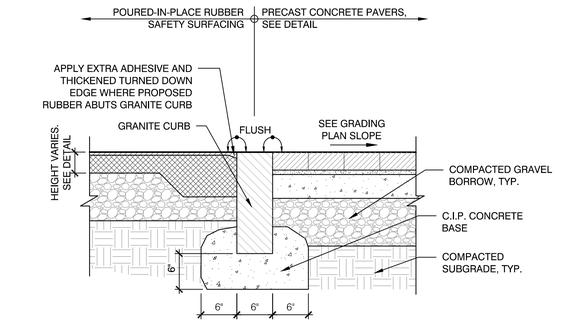
P.I.P. RUBBER AT SALVAGED GRANITE BLOCK WALL

5 POURED-IN-PLACE RUBBER SAFETY SURFACING

SCALE: N.T.S.



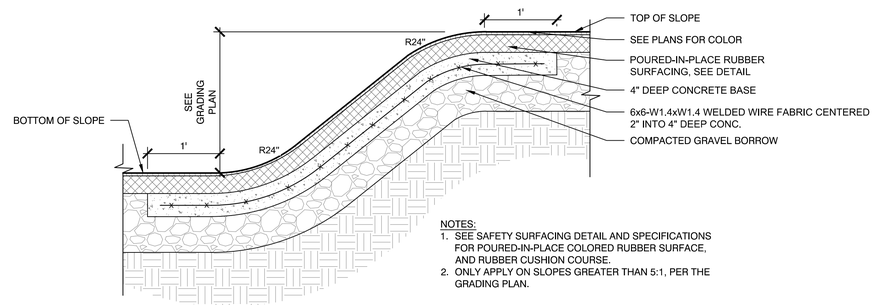
P.I.P. RUBBER AT C.I.P. PAVEMENT



P.I.P. RUBBER AT FLUSH GRANITE CURB

4 POURED-IN-PLACE RUBBER SAFETY SURFACING AT VARIOUS EDGE CONDITIONS

SCALE: N.T.S.



NOTES:
1. SEE SAFETY SURFACING DETAIL AND SPECIFICATIONS FOR POURED-IN-PLACE COLORED RUBBER SURFACE, AND RUBBER CUSHION COURSE.
2. ONLY APPLY ON SLOPES GREATER THAN 5:1, PER THE GRADING PLAN.

6 POURED-IN-PLACE RUBBER SAFETY SURFACING AT SLOPE

SCALE: N.T.S.

BOSTON PARKS & RECREATION

Prepared By:
Weston & Sampson

Consultant Project No. 2170867

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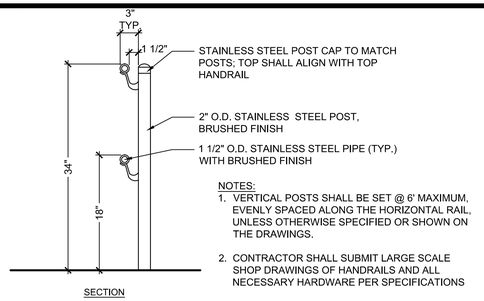
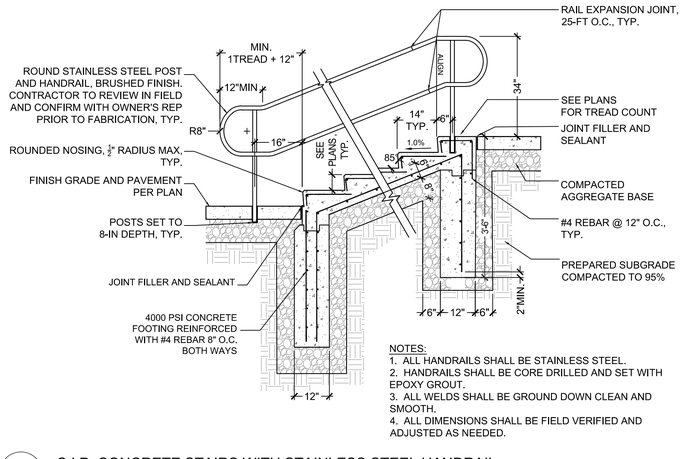
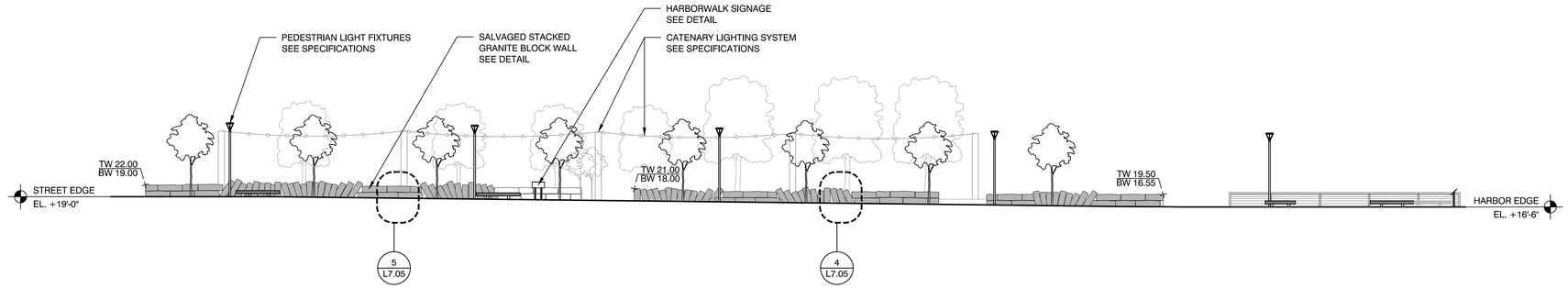
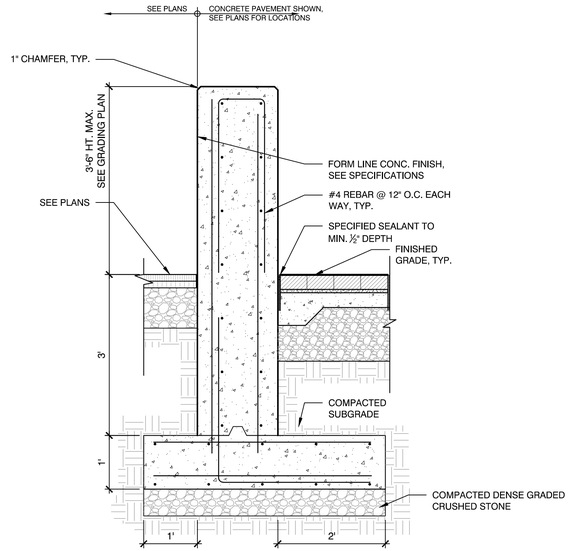






1 C.I.P. CONCRETE STAIRS WITH STAINLESS STEEL HANDRAIL

SCALE: N.T.S.

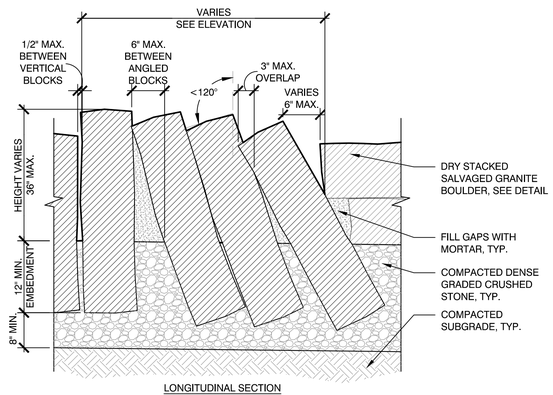


2 CAST-IN-PLACE CONCRETE WALL W/ INSET LETTERING

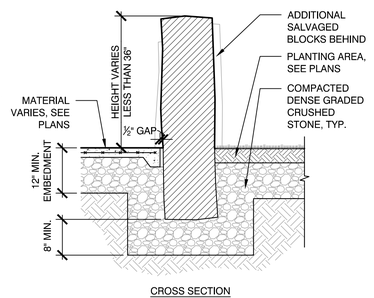
SCALE: N.T.S.

3 SALVAGED GRANITE BLOCK WALL - ELEVATION

SCALE: N.T.S.



LONGITUDINAL SECTION

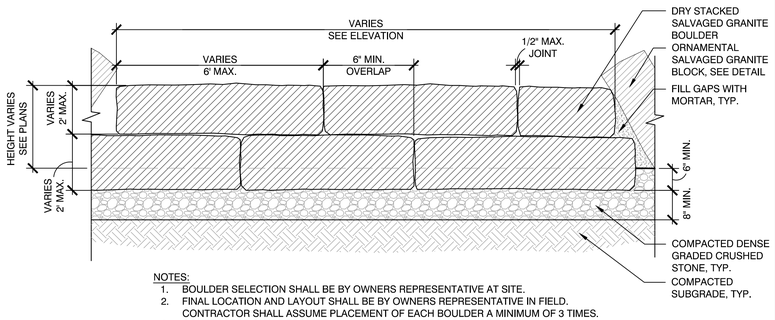


CROSS SECTION

NOTES:
1. BOULDER SELECTION SHALL BE BY OWNERS REPRESENTATIVE AT SITE.
2. FINAL LOCATION AND LAYOUT SHALL BE BY OWNERS REPRESENTATIVE IN FIELD. CONTRACTOR SHALL ASSUME PLACEMENT OF EACH BOULDER A MINIMUM OF 3 TIMES.
3. CONTRACTOR SHALL PROVIDE 6' x 1" BATTER FOR EACH ROW OF STONE.

4 SALVAGED GRANITE BLOCK WALL - ORNAMENTAL

SCALE: N.T.S.



NOTES:
1. BOULDER SELECTION SHALL BE BY OWNERS REPRESENTATIVE AT SITE.
2. FINAL LOCATION AND LAYOUT SHALL BE BY OWNERS REPRESENTATIVE IN FIELD. CONTRACTOR SHALL ASSUME PLACEMENT OF EACH BOULDER A MINIMUM OF 3 TIMES.
3. CONTRACTOR SHALL PROVIDE 6' x 1" BATTER FOR EACH ROW OF STONE.

5 SALVAGED GRANITE BLOCK WALL - STACKED

SCALE: N.T.S.

BOSTON PARKS & RECREATION

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Weston & Sampson SM
Consultant Project No. 2170867

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SHEET:
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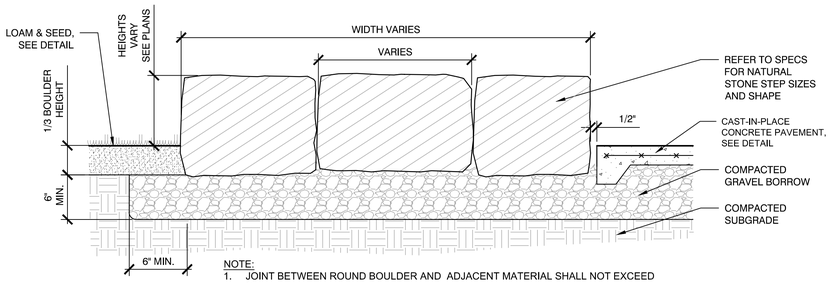
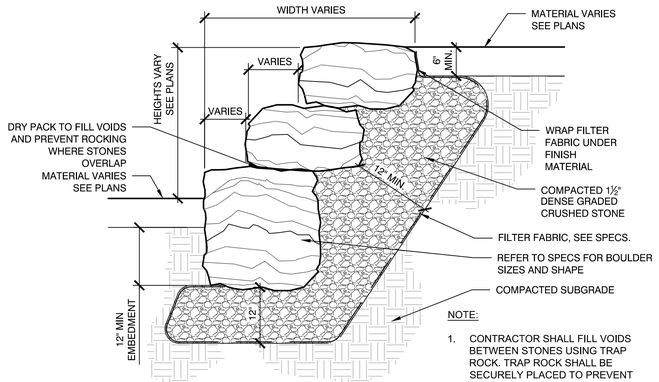


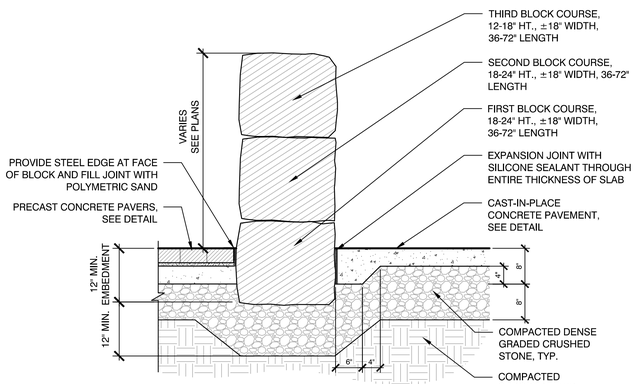
NOTE:
1. JOINT BETWEEN ROUND BOULDER AND ADJACENT MATERIAL SHALL NOT EXCEED ½" AND BE FILLED WITH MORTAR.

1 RECLAIMED GRANITE BLOCK SEATING
SCALE: N.T.S.



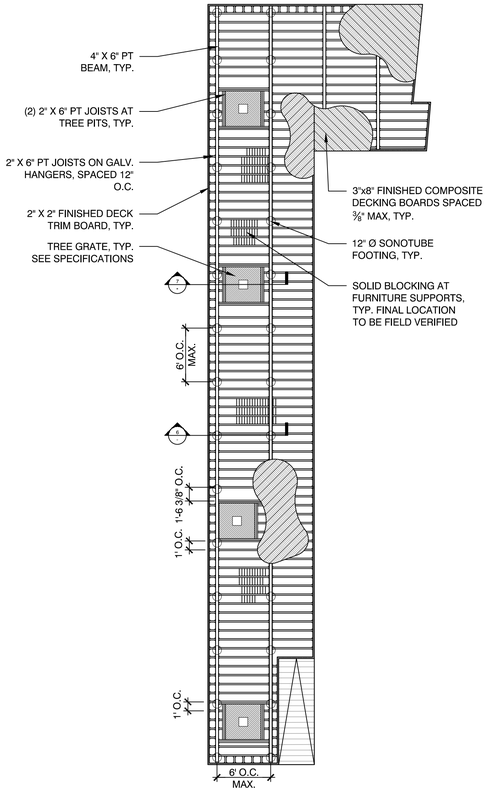
NOTE:
1. CONTRACTOR SHALL FILL VOIDS BETWEEN STONES USING TRAP ROCK. TRAP ROCK SHALL BE SECURELY PLACED TO PREVENT REMOVAL.

2 SALVAGED GRANITE BLOCK - TERRACED
SCALE: N.T.S.

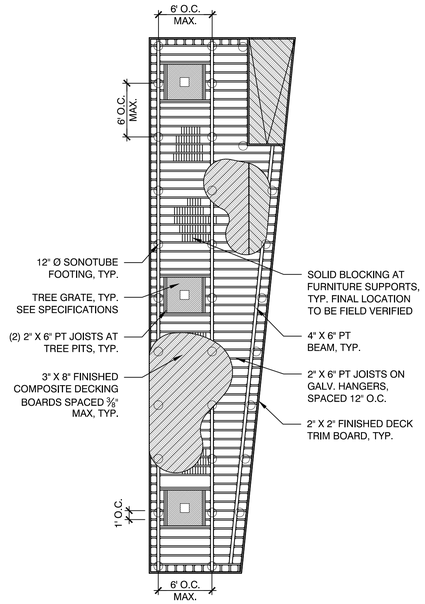


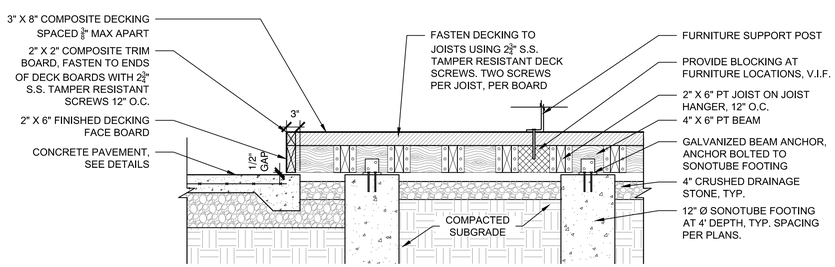
NOTES:
1. BOULDER SELECTION SHALL BE BY OWNERS REPRESENTATIVE AT SITE.
2. FINAL LOCATION AND LAYOUT SHALL BE BY OWNERS REPRESENTATIVE IN FIELD. CONTRACTOR SHALL ASSUME PLACEMENT OF EACH BOULDER A MINIMUM OF 3 TIMES.
3. CONTRACTOR SHALL PROVIDE 6' x 1" BATTER FOR EACH ROW OF STONE.

3 SALVAGED GRANITE BLOCK WALL
SCALE: N.T.S.

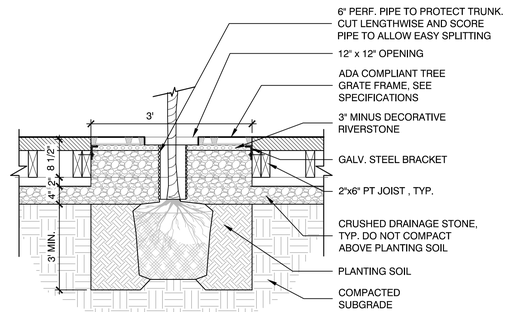


4 RAISED DECK FRAMING PLAN AT BOCCE COURTS
SCALE: N.T.S.





5 RAISED DECK AT BOCCE COURTS
SCALE: N.T.S.



6 TREE OPENING AT DECK
SCALE: N.T.S.

BOSTON PARKS & RECREATION

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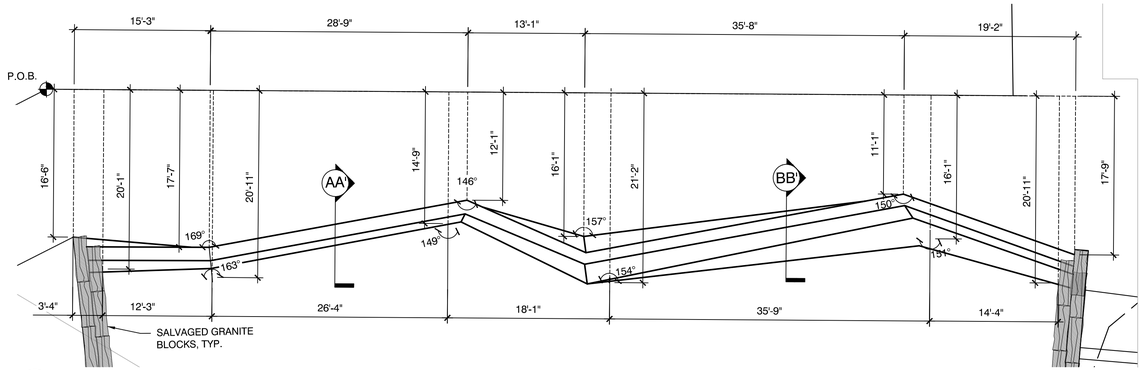
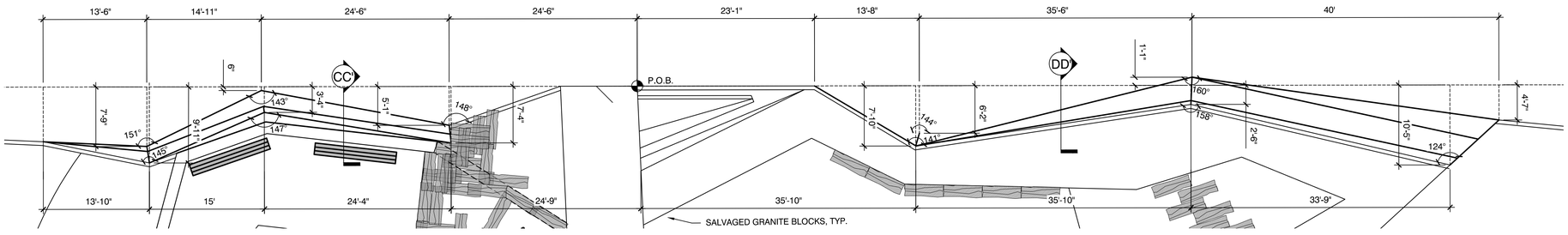


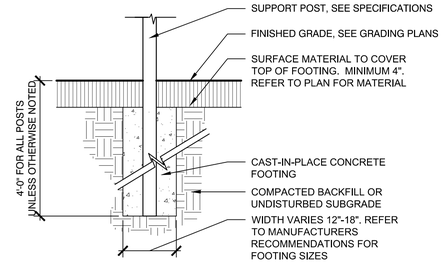
1 COMPOSITE DECKING SEATWALL AT CORRIDOR LAWN

SCALE: N.T.S.



2 COMPOSITE DECKING SEATWALL AT PLAYGROUND

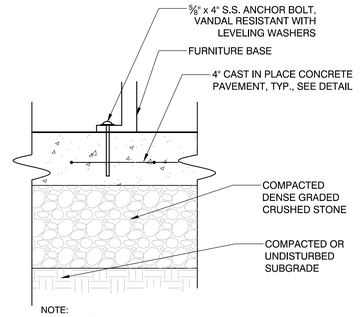
SCALE: N.T.S.



NOTE:
1. FOOTINGS SHALL BE REQUIRED FOR ALL POSTS AND GROUND CONNECTIONS, SEE PLANS.

3 PLAY / EXERCISE / SITE FURNISHING SUPPORT FOOTING

SCALE: N.T.S.



NOTE:
1. ALL SITE FURNISHINGS SHALL BE SURFACE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS.

SURFACE MOUNT TO CONCRETE

4 SITE FURNISHING SURFACE MOUNT

SCALE: N.T.S.

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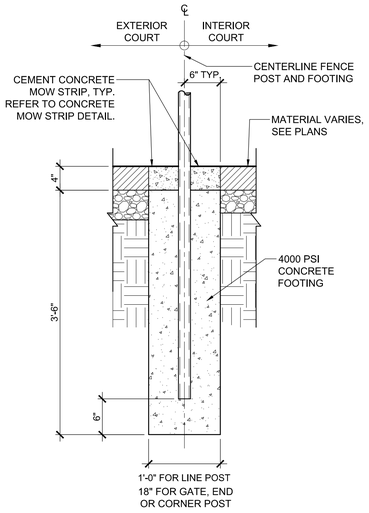
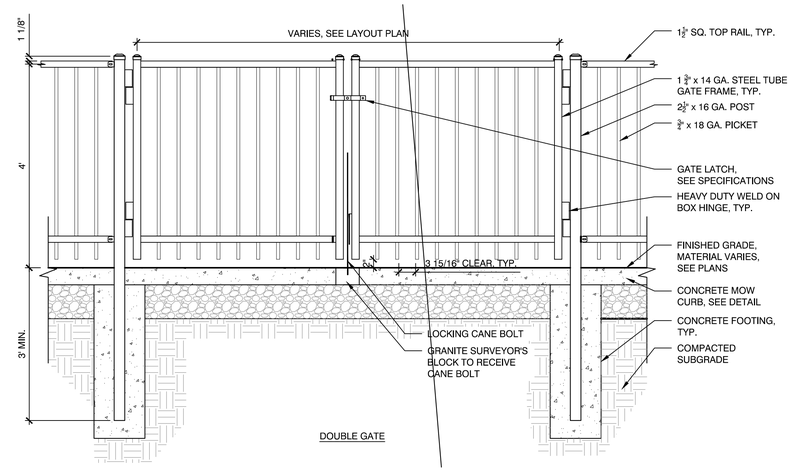


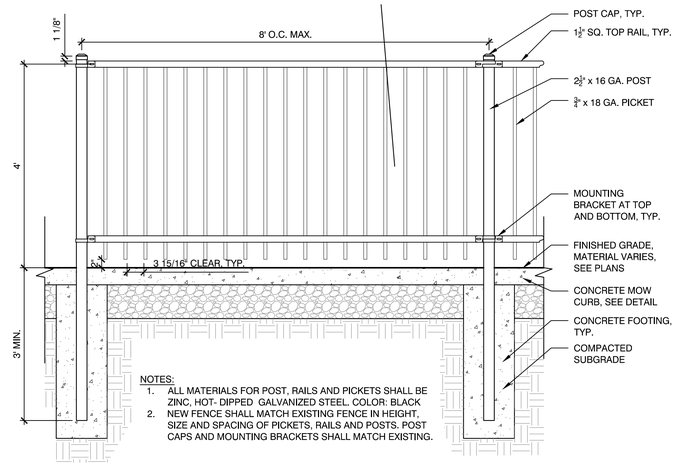
1 FENCE POST FOOTING

SCALE: N.T.S.



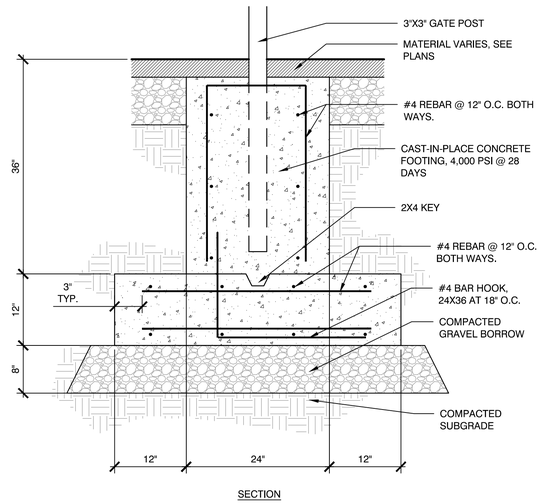
3 4' HT. DOUBLE SWING GATE

SCALE: N.T.S.



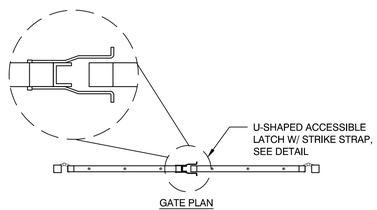
5 4' HT. ORNAMENTAL FENCE

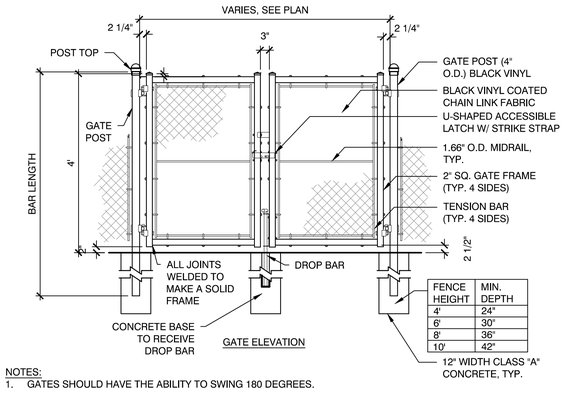
SCALE: N.T.S.



7 GATE POST FOOTING

SCALE: N.T.S.



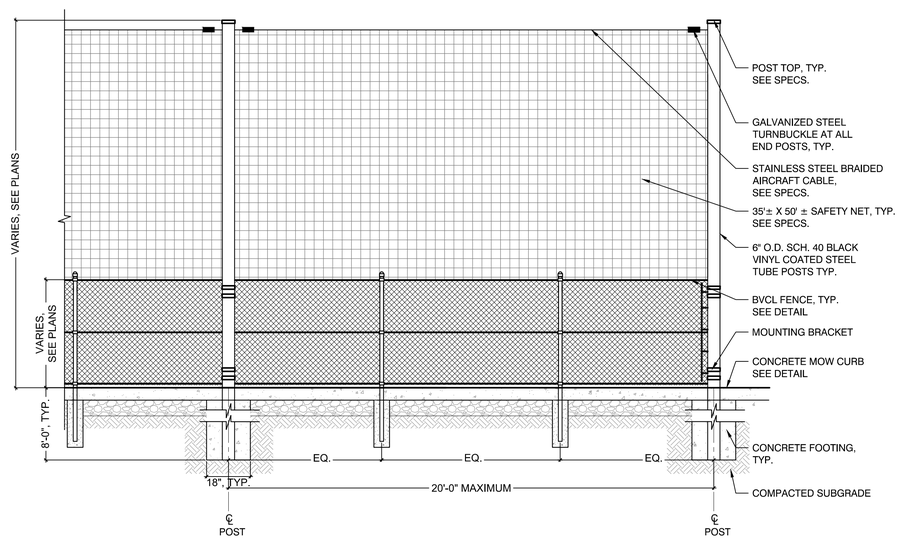


FENCE HEIGHT	MIN. DEPTH
4'	24"
6'	30"
8'	36"
10'	42"

NOTES:
1. GATES SHOULD HAVE THE ABILITY TO SWING 180 DEGREES.

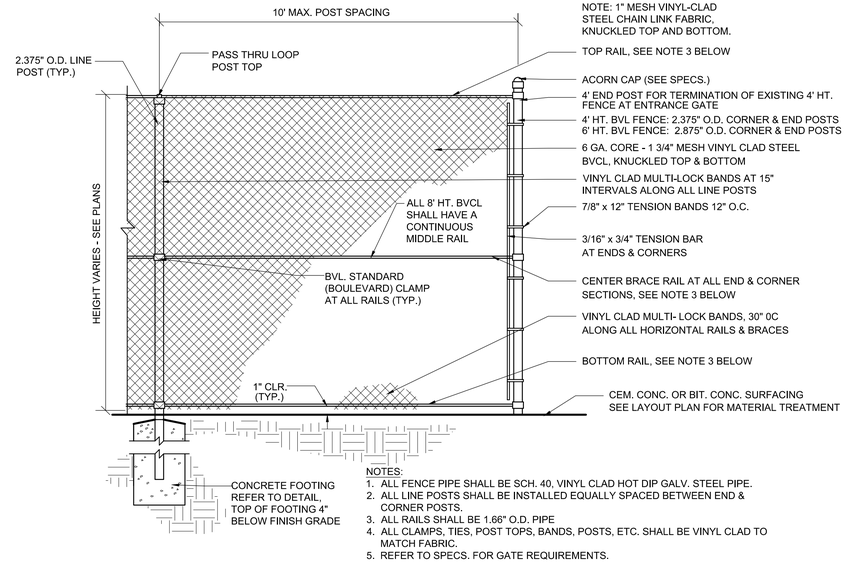
2 4' HT. BVCL DOUBLE SWING GATE

SCALE: N.T.S.



4 6' HT. BVCL FENCE + 35' HT. SPORTS NETTING

SCALE: N.T.S.



NOTES:
1. ALL FENCE PIPE SHALL BE SCH. 40, VINYL CLAD HOT DIP GALV. STEEL PIPE.
2. ALL LINE POSTS SHALL BE INSTALLED EQUALLY SPACED BETWEEN END & CORNER POSTS.
3. ALL RAILS SHALL BE 1.66" O.D. PIPE
4. ALL CLAMPS, TIES, POST TOPS, BANDS, POSTS, ETC. SHALL BE VINYL CLAD TO MATCH FABRIC.
5. REFER TO SPECS. FOR GATE REQUIREMENTS.

6 4' - 12' HT. BVCL FENCE

SCALE: N.T.S.

BOSTON PARKS & RECREATION

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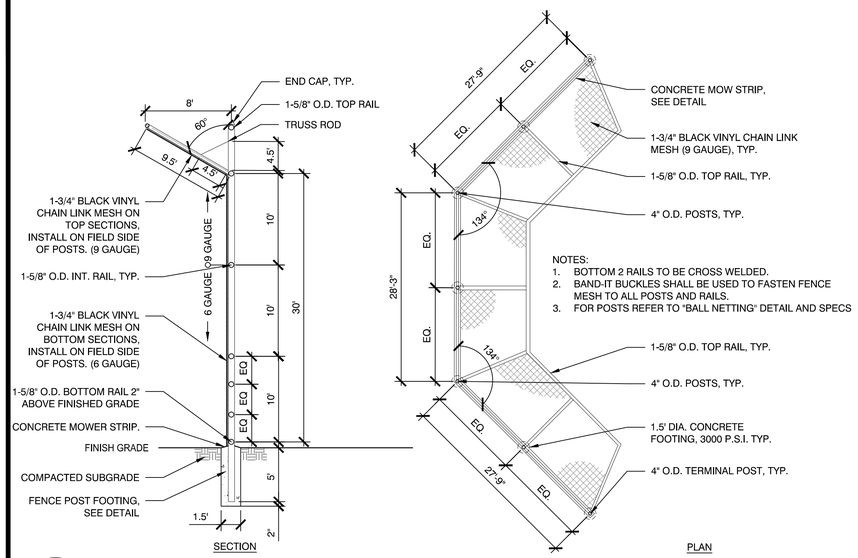
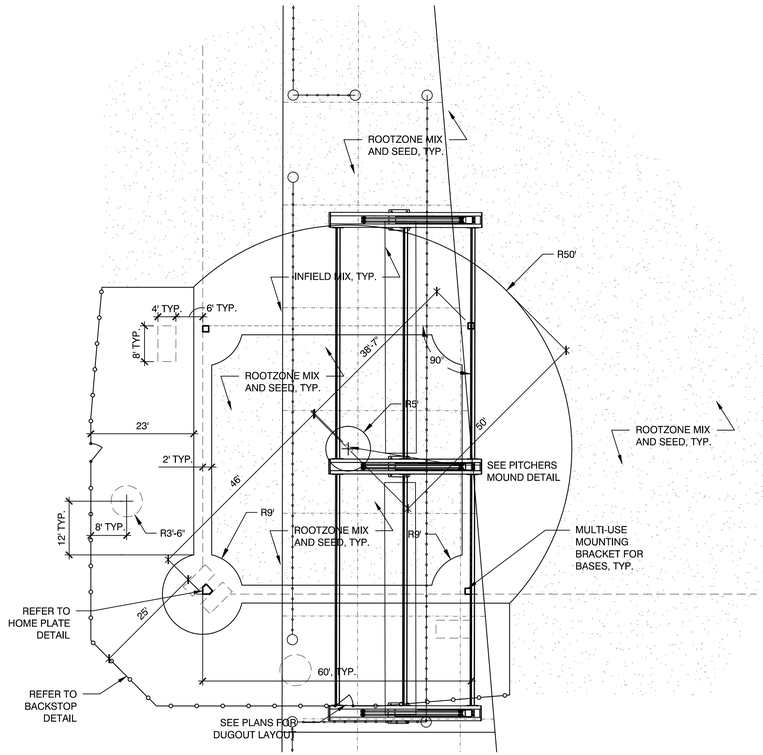


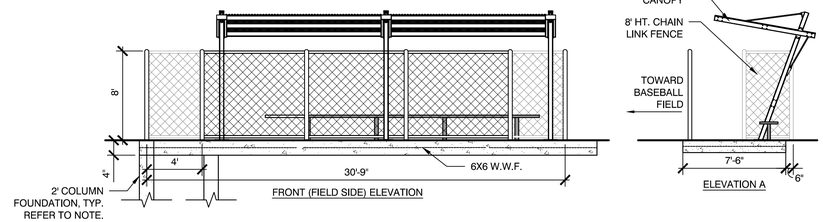
NOTES:
1. BOTTOM 2 RAILS TO BE CROSS WELDED.
2. BAND-IT BUCKLES SHALL BE USED TO FASTEN FENCE MESH TO ALL POSTS AND RAILS.
3. FOR POSTS REFER TO "BALL NETTING" DETAIL AND SPECS

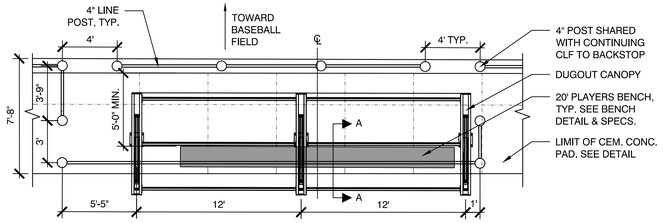
1 30' HT. BACKSTOP
SCALE: N.T.S.



2 LITTLE LEAGUE FIELD LAYOUT
SCALE: N.T.S.

NOTES:
1. EACH COLUMN SHALL BE ANCHORED IN AN 2'Ø BY 4'-6" REINFORCED CEMENT CONCRETE FOOTING. REINFORCING #4 BARS, 12" E.W.

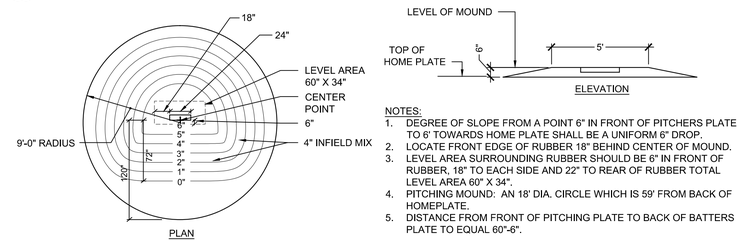




3 PLAYER BENCHES
SCALE: N.T.S.

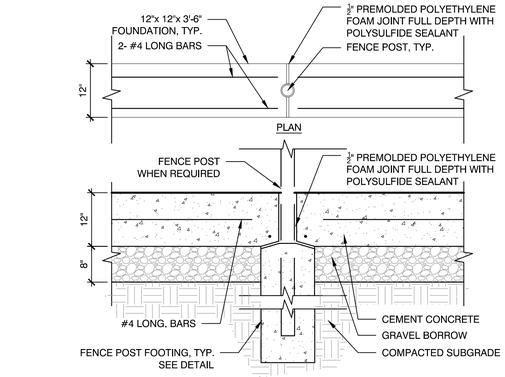
NOTES:
1. CONTRACTOR SHALL PROVIDE GROUND SLEEVE CAP BY MANUFACTURER.
2. ANTI-ROTATION STOP BOLT SHALL BE 1.2"X 8" LONG HEX BOLT AND ANTI-ROTATION STOP MUST BE PARALLEL WITH SLOT AT BOTTOM OF FOUL POLE.

4 FOUL POLE AT FENCE
SCALE: N.T.S.



NOTES:
1. DEGREE OF SLOPE FROM A POINT 6" IN FRONT OF PITCHERS PLATE TO 6' TOWARDS HOME PLATE SHALL BE A UNIFORM 6" DROP.
2. LOCATE FRONT EDGE OF RUBBER 18" BEHIND CENTER OF MOUND.
3. LEVEL AREA SURROUNDING RUBBER SHOULD BE 6" IN FRONT OF RUBBER, 18" TO EACH SIDE AND 22" TO REAR OF RUBBER TOTAL LEVEL AREA 60" X 34".
4. PITCHING MOUND: AN 18' DIA. CIRCLE WHICH IS 59' FROM BACK OF HOMEPLATE.
5. DISTANCE FROM FRONT OF PITCHING PLATE TO BACK OF BATTERS PLATE TO EQUAL 60'-6".

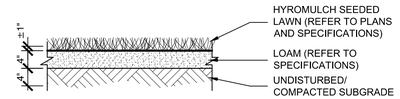
5 LITTLE LEAGUE PITCHER'S MOUND
SCALE: N.T.S.



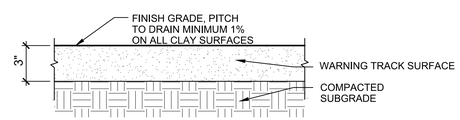
CONCRETE MOW STRIP AT FENCE

NOTES:
1. MOW STRIP CORNERS ADJACENT TO RESILIENT SURFACING SHALL BE SQUARE TO ENSURE SMOOTH INTERFACE BETWEEN MATERIALS.
2. MOW STRIP CORNERS ADJACENT TO PLANTING BED OR LAWN AREAS WILL HAVE ¾" CHAMFER
3. CONTRACTOR SHALL PROVIDE ¾" PREMOLDED POLYETHYLENE FOAM EXPANSION JOIN, FULL DEPTH WITH SILICONE SEALANT EVERY 30' O.C. UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL USE EXTREME CAUTION AT ROOT ZONE OF EXISTING TREES TO REMAIN. CONTRACTOR SHALL CLEAN CUT ANY ROOTS OVER 2" DIA. THAT ARE EFFECTED BY THE SCOPE OF WORK. CONTRACTOR SHALL CONSULT ARBORIST PRIOR TO ANY ROOT REMOVAL.

6 CONCRETE MOW STRIP
SCALE: N.T.S.

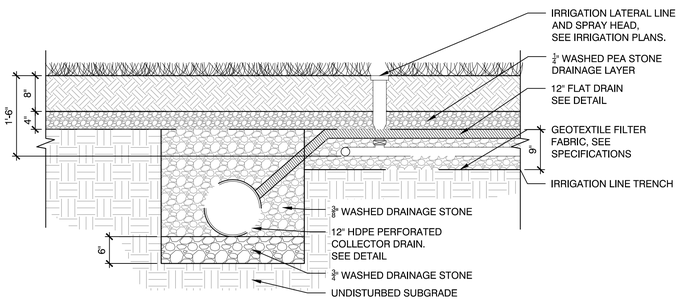


7 ROOT ZONE MIX AT LITTLE LEAGUE FIELD
SCALE: N.T.S.



NOTES:
1. APPLY APPROVED PRE-EMERGENT WEED KILLER AT SUB-GRADE PRIOR TO INSTALLATION OF WARNING TRACK SURFACE.

8 INFIELD / WARNING TRACK MIX AT LITTLE LEAGUE FIELD
SCALE: N.T.S.



9 LATERAL COLLECTOR DRAIN
SCALE: N.T.S.

BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson

Consultant Project No. 2170867

No.	Date	Revision

Approved By: Date:

Project Name.: **IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND**

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Scale	
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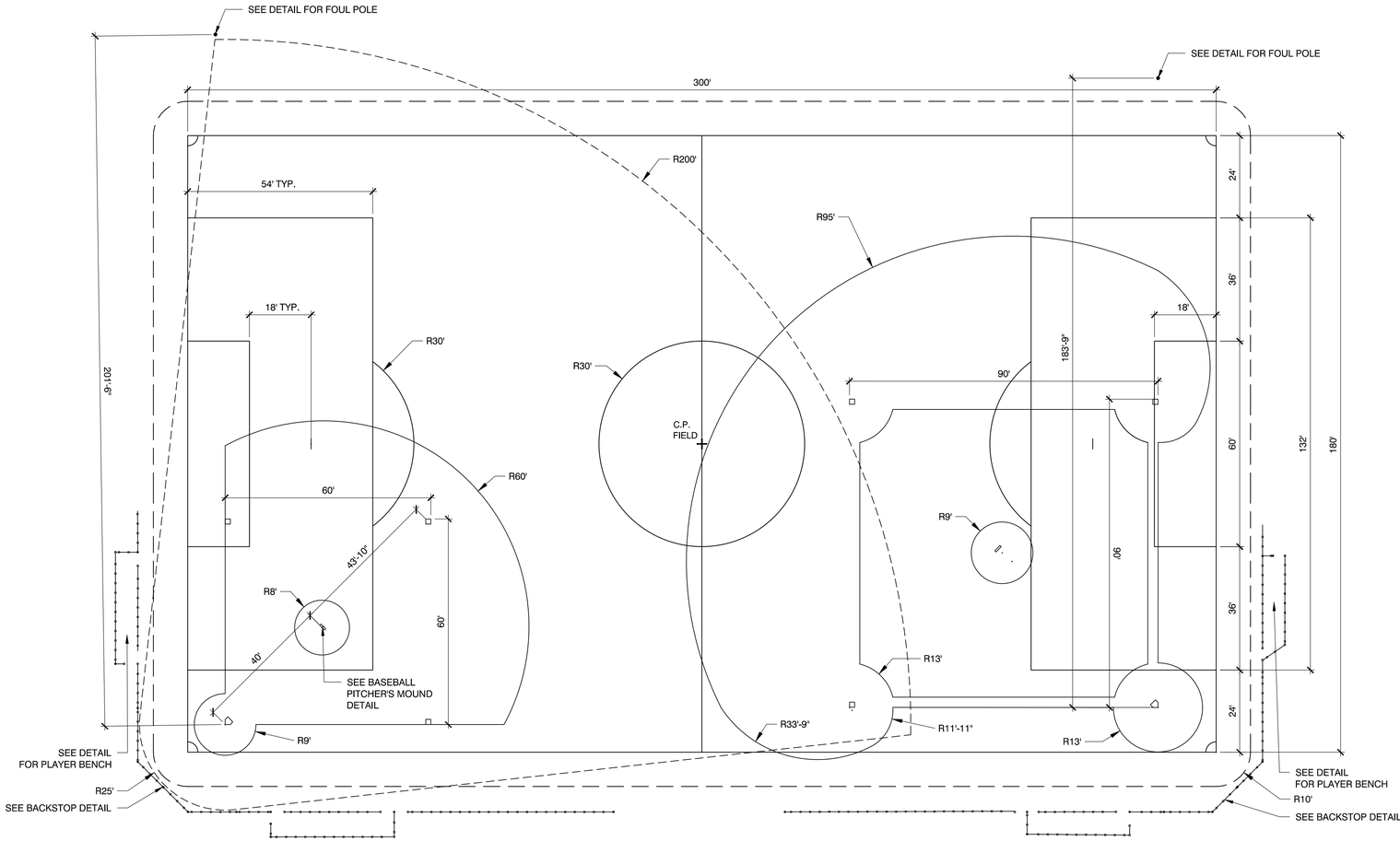
Sheet Name.: **CONSTRUCTION DETAILS**

SHEET: **L7.09**



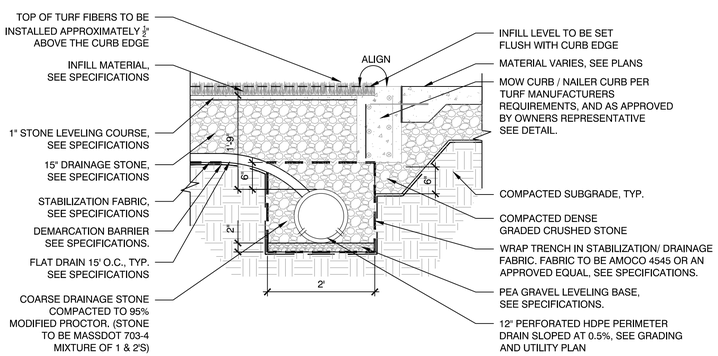
1 MULTI-USE RECTANGULAR FIELD LAYOUT (SOCCER + SOFTBALL AND BASEBALL OVERLAY)

SCALE: N.T.S.

NOTES:
1. SUBGRADE ELEVATIONS TO FOLLOW SAME SLOPE AS FINISHED SURFACE ELEVATIONS WITHIN TURF LIMITS.
2. ABSOLUTELY NO SUBSTITUTIONS SHALL BE ALLOWED FOR BOTH THE STONE LEVELING COURSE AND DRAINAGE STONE WITHOUT A WRITTEN AND SIGNED DOCUMENT DIRECTLY FROM THE TURF MANUFACTURER. DOCUMENT SHALL STATE: THE MATERIAL IS AN ACCEPTABLE MATERIAL TO BE USED DIRECTLY UNDER THEIR TURF FIELD FABRIC AND THAT THE SUBSTITUTION MATERIAL PROVIDES THE SAME CHARACTERISTICS (DRAINAGE, STRUCTURAL INTEGRITY, PLAYABILITY, ETC.) AS THE MATERIALS SPECIFIED. FAILURE TO PROVIDE SUCH A DOCUMENT SHALL BE AT THE RISK AND COST OF THE CONTRACTOR.

2 SYNTHETIC TURF SURFACING

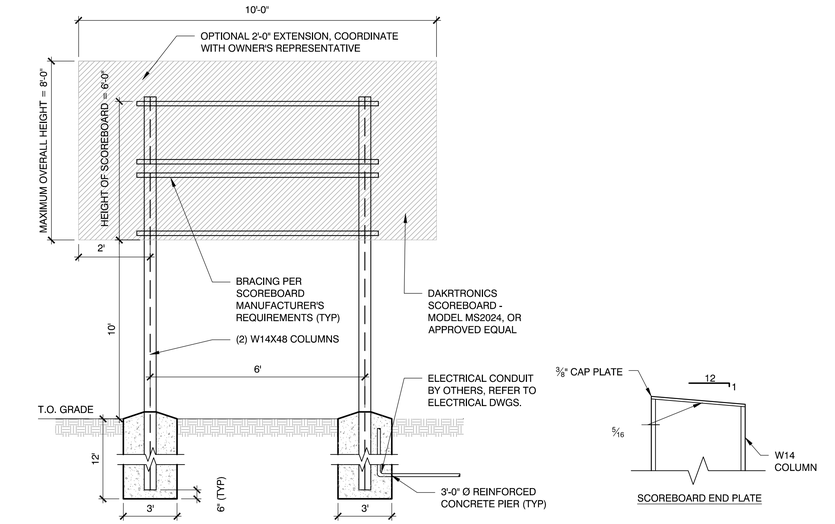
SCALE: N.T.S.



NOTES:
1. FLAT DRAIN TO BE DIRECTLY CONNECTED TO PERIMETER DRAIN. PROVIDE MANUFACTURED FITTINGS TO MAKE THE CONNECTION AS REQUIRED AND APPROVED BY THE OWNERS REPRESENTATIVE.
2. CONCRETE CURB TO BE 4,500 PSI AT 28 DAYS (AIR CONTENT 6% +/- 1%) (COARSE AGGREGATE ASTM C-33 SIZE #57)

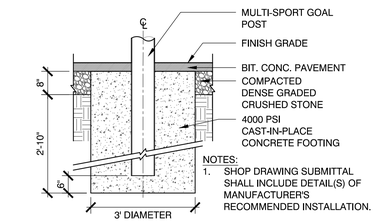
3 COLLECTOR DRAIN

SCALE: N.T.S.



4 SCOREBOARD

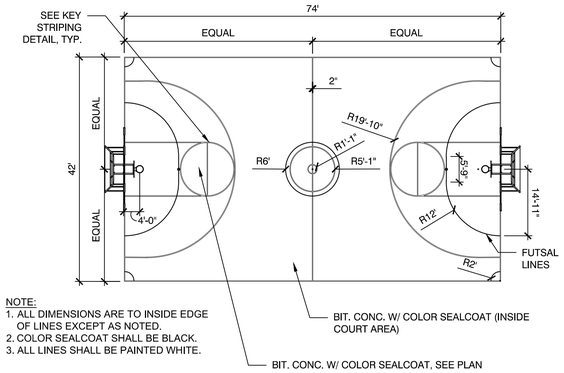
SCALE: N.T.S.



NOTES:
1. SHOP DRAWING SUBMITTAL SHALL INCLUDE DETAIL(S) OF MANUFACTURER'S RECOMMENDED INSTALLATION.

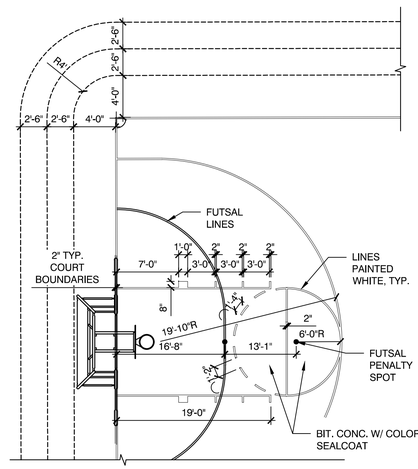
5 MUTLI-SPORT GOAL FOOTING

SCALE: N.T.S.



NOTE:
1. ALL DIMENSIONS ARE TO INSIDE EDGE OF LINES EXCEPT AS NOTED.
2. COLOR SEALCOAT SHALL BE BLACK.
3. ALL LINES SHALL BE PAINTED WHITE.

BASKETBALL COURT STRIPING



BASKETBALL KEY STRIPING

6 MULTI-SPORT COURT LAYOUT

SCALE: N.T.S.

BOSTON PARKS & RECREATION

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Weston & Sampson SM

Consultant Project No. 2170867

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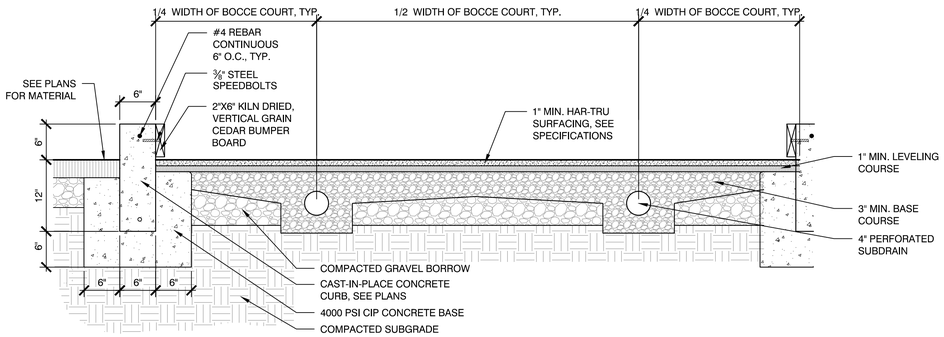
Sheet Name.:

CONSTRUCTION DETAILS

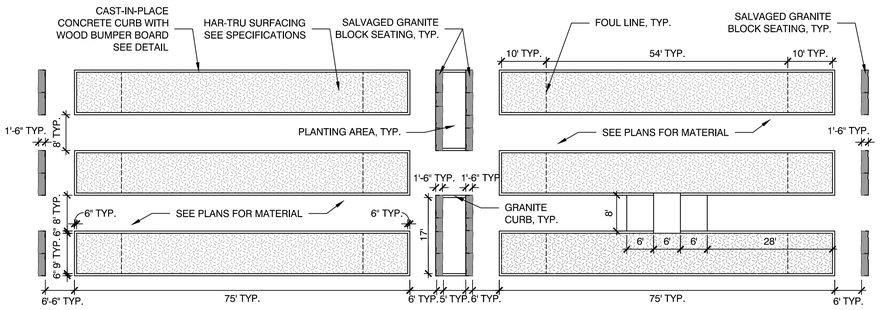
SHEET:

L7.10



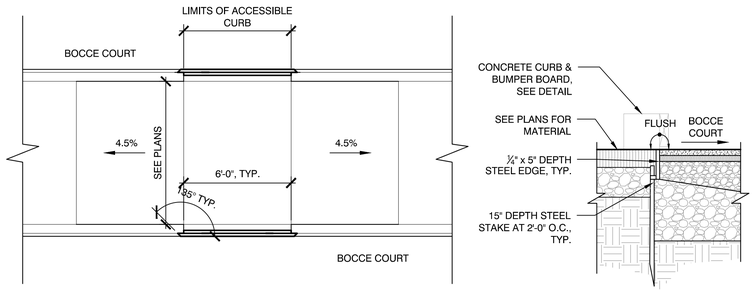
1 STONE DUST SURFACING WITH CONCRETE CURB AT BOCCE COURTS

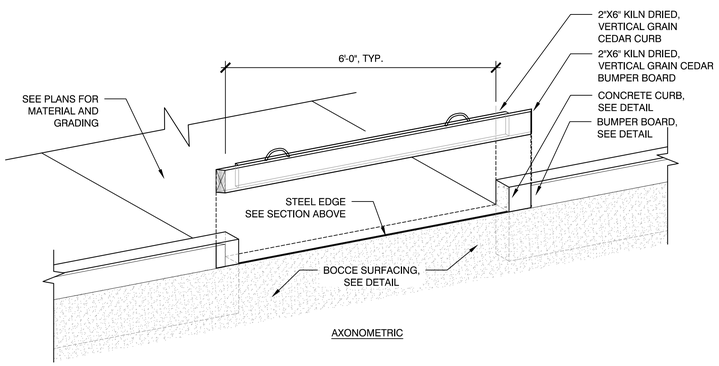
SCALE: N.T.S.



3 BOCCE LAYOUT

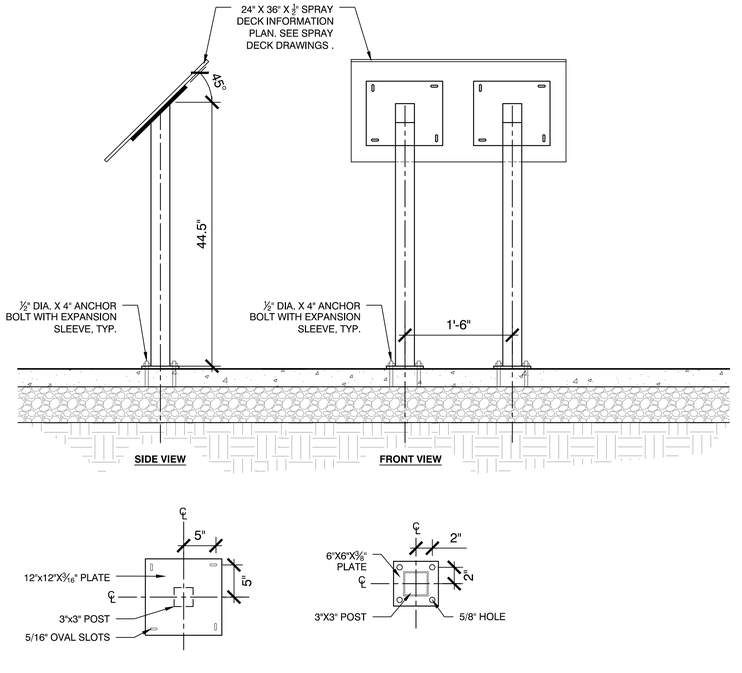
SCALE: N.T.S.





2 ACCESSIBLE CURB AT BOCCE COURT

SCALE: N.T.S.



4 HARBORWALK SIGNAGE

SCALE: N.T.S.

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Sheet Name.:
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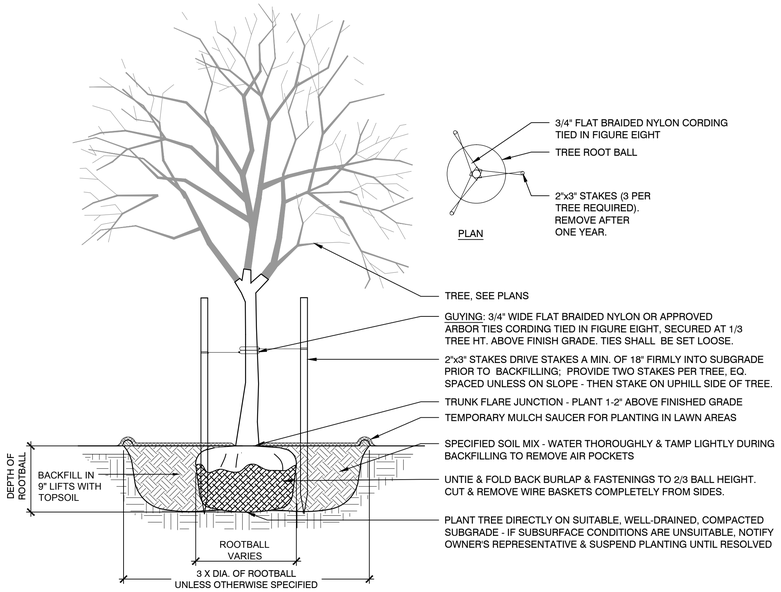
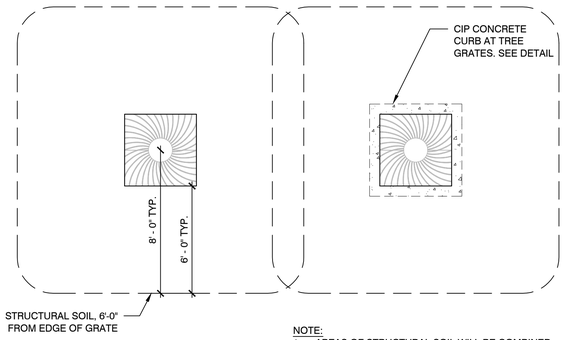
SHEET:
L7.11



1 TREE PLANTING IN LAWN

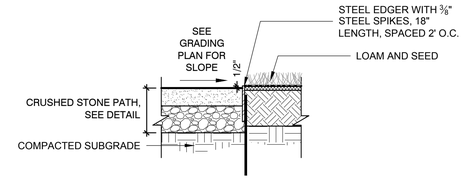
SCALE: N.T.S.



NOTE:
1. AREAS OF STRUCTURAL SOIL WILL BE COMBINED WHERE APPLICABLE, SEE GRADING PLAN

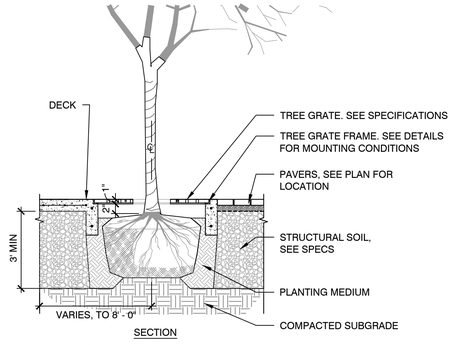
3 STRUCTURAL SOIL EXTENTS

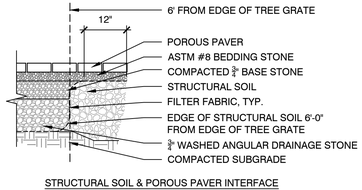
SCALE: N.T.S.



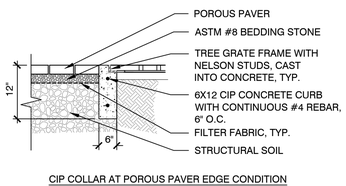
6 STEEL EDGE AT LAWN

SCALE: N.T.S.





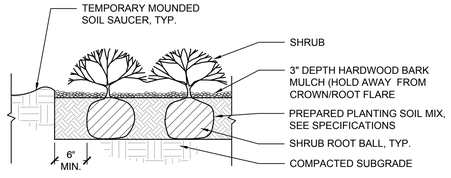
STRUCTURAL SOIL & POROUS PAVER INTERFACE



CIP COLLAR AT POROUS PAVER EDGE CONDITION

2 TREE GRATE

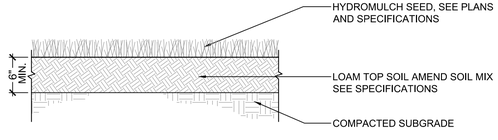
SCALE: N.T.S.



NOTE:
1. ALL MULCH MUST BE DARK IN COLOR. PROVIDE SAMPLE PRIOR TO INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.

4 SHRUB PLANTING

SCALE: N.T.S.

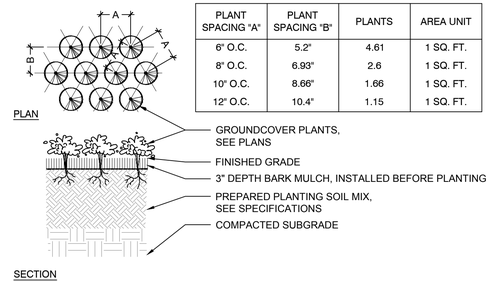


5 LOAM & SEED

SCALE: N.T.S.

GROUNDCOVER SPACING TABLE

PLANT SPACING "A"	PLANT SPACING "B"	PLANTS	AREA UNIT
6" O.C.	5.2"	4.61	1 SQ. FT.
8" O.C.	6.93"	2.6	1 SQ. FT.
10" O.C.	8.66"	1.66	1 SQ. FT.
12" O.C.	10.4"	1.15	1 SQ. FT.



NOTES:
1. ALL GROUND COVERS TO BE PLANTED IN TRIANGULAR PATTERN. SEE PLANTING SCHEDULE FOR SPACING.
2. JUTE EROSION CONTROL MAT TO BE USED ON ALL SLOPES 3:1 OR GREATER. SEE SPECIFICATIONS

7 GROUNDCOVER PLANTING

SCALE: N.T.S.

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SHEET:
L7.12

1.0 - GENERAL

1.01 THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATION, DIMENSIONS, AND DETAILS OF OPENINGS, SLEEVES, EMBEDMENTS, INSERTS, PADS, CURBS, DEPRESSIONS, ANCHOR BOLTS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.

1.02 THE CONTRACTOR IS RESPONSIBLE FOR CHECKING, COORDINATING AND VERIFYING ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCY TO THE ARCHITECT AND ENGINEER AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.

1.03 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE EXISTENCE AND LOCATION OF OVERHEAD, BURIED AND/OR EMBEDDED UTILITIES, AND DETERMINING LOCATIONS OF ALL EMBEDDED MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS AFFECTED BY THE WORK OF THIS CONTRACT.

1.04 ALL WORK IS TO CONFORM WITH THE FOLLOWING CODES AND STANDARDS:

(A) "780 CMR: MASSACHUSETTS AMENDMENTS MASSACHUSETTS STATE BUILDING CODE" - 9TH EDITION (MSBC)
(B) INTERNATIONAL BUILDING CODE, (IBC 2015)
(C) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" - AMERICAN CONCRETE INSTITUTE (ACI 318)
(D) "MANUAL OF STEEL CONSTRUCTION" - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC 360)
(E) "STRUCTURAL WELDING CODE - STEEL" - AMERICAN WELDING SOCIETY (AWS D1.1)
(F) "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" - AMERICAN SOCIETY OF CIVIL ENGINEERS, (ASCE 7-10)

FOR ADDITIONAL CODES AND STANDARDS REFER TO SPECIFICATIONS.

1.05 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF UNFORESEEN CONDITIONS THAT MAY BE UNCOVERED DURING DEMOLITION AND CONSTRUCTION AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.

1.06 PERMANENT STRUCTURAL ELEMENTS TO BE DESIGNED IN ACCORDANCE WITH PERFORMANCE SPECIFICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

(A) DEEP FOUNDATIONS: DRILLED MICRO-PILES (DMPs)
(B) SOIL IMPROVEMENTS
(C) MECHANICALLY STABILIZED EARTH (MSE) WALLS

FOR PERFORMANCE DESIGN REQUIREMENTS OF ELEMENTS LISTED ABOVE, REFER TO ADDITIONAL NOTES ON THESE SHEETS AND IN THE TECHNICAL SPECIFICATIONS. ALL DESIGN SUBMITTAL DRAWINGS AND CALCULATIONS SHALL BE CERTIFIED, SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS.

1.07 DETAILS AND NOTES SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE ENGINEER.

1.08 IN ACCORDANCE WITH SPECIFICATION SECTION 01 45 23, TESTING AND INSPECTION OF STRUCTURAL WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COSTS FOR TESTING AND INSPECTIONS WILL BE PAID BY THE OWNER. PROVIDE TEST RESULTS TO THE ENGINEER IN A TIMELY MANNER.

1.09 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL REQUIRED SHORING AND TEMPORARY BRACING TO RESIST FORCES ON THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD.

2.0 - CAST IN PLACE CONCRETE

2.01 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).

2.02 CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.

2.03 UNLESS NOTED OTHERWISE, CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:

(A) EXTERIOR WALKS AND SLABS: 5000 PSI
(B) ALL OTHER STRUCTURAL CONCRETE: 4500 PSI

2.04 ALL PERMANENTLY EXPOSED VERTICAL AND HORIZONTAL CONCRETE SURFACES SHALL BE TREATED OR SEALED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

2.05 CONCRETE WORK SHALL BE COORDINATED WITH SITE/LANDSCAPE, AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL VERIFY INSTALLATION AND LOCATIONS OF ALL EMBEDDED ITEMS INCLUDING BUT NOT LIMITED TO INSERTS, ANCHOR BOLTS, DOWELS, BLOCKOUTS, SLEEVES, EMBEDDED PIPING, AND EMBEDDED CONDUIT PRIOR TO CONCRETE PLACEMENT.

2.06 SEALANT FOR CONTROL/CONTRACTION JOINTS AND SAW CUT JOINTS SHALL BE SIKADUR 51 MANUFACTURED BY SIKA OR AN APPROVED EQUAL.

2.07 CONCRETE EXPOSED TO WEATHER (FREEZE-THAW CONDITIONS) IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER SPECIFICATIONS REQUIREMENTS.

2.08 A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.

2.09 CONCRETE SLABS SHALL BE PLACED SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE DRAWINGS.

2.10 PROVIDE A 3/4" CHAMFER ON ALL VERTICAL AND HORIZONTAL CORNERS EXPOSED TO VIEW UNLESS NOTED OTHERWISE.

2.11 ALL CONCRETE SHALL BE WATER CURED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

2.12 NON-SHRINK, NON-METALLIC, GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,500 PSI (ASTM C942) AND A MINIMUM BOND STRENGTH OF 2,000 PSI AT 28-DAYS (ASTM C882). GROUT MAY BE EXTENDED WITH COARSE AGGREGATE PER THE MANUFACTURER'S RECOMMENDATIONS.

3.0 - CAST IN PLACE CONCRETE REINFORCEMENT

3.01 REINFORCEMENT DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "ACI DETAILING MANUAL" - SP-66, "CRSI MANUAL OF STANDARD PRACTICE".

3.02 STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:

(A) BARS, TIES, AND STIRRUPS___ASTM A615 GRADE 60
(B) WELDED WIRE FABRIC ASTM A185, FLAT SHEETS

3.03 REINFORCING STEEL SHALL BE DEFORMED AND EPOXY COATED PER ASTM A775.

3.04 MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS REQUIRED FOR FIRE PROTECTION OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:

(A) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:____3"
(B) CONCRETE EXPOSED TO EARTH OR WEATHER:
(1) NO. 6 THRU NO. 18 BARS____2"
(2) NO. 5 BAR, W31 OR D31 WIRE AND SMALLER____2"

3.05 REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS, CORNERS, AND INTERSECTIONS UNLESS OTHERWISE NOTED. REINFORCING SHALL BE LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS, UNLESS OTHERWISE NOTED.

3.06 FOR REINFORCING STEEL SPLICE LAP LENGTHS REFER TO THE TABLE PROVIDED UNLESS OTHERWISE INDICATED.

3.07 MECHANICAL SPLICES SHALL BE PERMITTED SUBJECT TO APPROVAL BY THE ENGINEER. MECHANICAL SPLICES SHALL DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NO WELDED CONNECTIONS ARE PERMITTED.

3.08 WELDED WIRE FABRIC SHALL BE LAPPED (1) SQUARE PLUS (2) INCHES WHERE REQUIRED AND SHALL BE WIRED TOGETHER AT ALL LAPS. WWF SHALL BE SUPPORTED BY CHAIRS AND/OR CARRYING BARS PRIOR TO CONCRETE PLACEMENT.

3.09 REINFORCEMENT SHALL NOT BE TACK WELDED.

3.10 NOTIFY THE TESTING LAB AND ENGINEER A MINIMUM OF 48 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT IN ORDER TO ACCOMMODATE INSPECTION OF REINFORCEMENT AND CONCRETE TESTING. NO CONCRETE SHALL BE PLACED WITHIN 48 HOURS OF SUCH NOTIFICATION.

3.11 WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE DETAILS AS DETERMINED BY THE ARCHITECT AND ENGINEER. IN NO CASE SHALL REINFORCEMENT BE LESS THAN THE MINIMUM REINFORCEMENT PERMITTED BY THE CODES, NOR LESS THAN THE FOLLOWING:

(E) CONCRETE WALLS: .0025 x GROSS CONCRETE AREA IN EACH DIRECTION

3.12 WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTIONS APPLIES.

3.13 WHERE THERE IS CONFLICT BETWEEN LOCATIONS OF COLUMN VERTICAL BARS AND BEAM HORIZONTAL BARS, THE COLUMN BARS SHALL REMAIN IN THEIR DESIGNATED POSITIONS AND BEAM BAR LOCATIONS SHALL BE ADJUSTED.

3.14 DOWELS SHALL MATCH BAR SIZE, NUMBER AND SPACING, UNLESS NOTED OTHERWISE.

4.0 - STRUCTURAL STEEL

4.01 STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION", STEEL BUILDING AND BRIDGES" (AISC MARCH 18, 2005).

4.02 STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:

(A) WIDE FLANGE SHAPES:_____ASTM A992.
(B) OTHER STEEL SHAPES, PLATES AND BARS:_____ASTM A572 OR ASTM A36.
(C) STRUCTURAL TUBING:_____ASTM A500 GR B.
(D) STRUCTURAL PIPE:_____ASTM A53 GR B.

4.03 ALL WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS AND SHALL CONFORM TO A.W.S. SPECIFICATIONS AMENDED TO DATE. ELECTRODES SHALL BE E70XX.

4.04 BOLTS SHALL CONFORM TO ASTM A325 AND BE INSTALLED SNUG-TIGHT UNLESS NOTED OTHERWISE

4.05 STRUCTURAL STEEL FRAMING SHALL BE WITHIN TOLERANCE BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

4.06 FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER FOR EACH SPECIFIC USE.

4.07 STRUCTURAL STEEL SHAPES AND PLATES SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123 U.N.O. FASTENERS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 U.N.O. HOT-DIPPED GALVANIZING SHALL ALSO CONFORM TO ASTM A385. THE GALVANIZER SHALL SUBMIT A CERTIFICATE OF CONFORMANCE FOR RECORD.

4.08 PROVIDE FIELD TOUCH-UP AND REPAIR OF GALVANIZING AS REQUIRED PER ASTM A780 USING AN INORGANIC ZINC-RICH PRIMER.

4.09 WHEN DISSIMILAR METALS ARE IN CONTACT (E.G. STAINLESS STEEL IN CONTACT WITH GALVANIZED STEEL), COAT SURFACE WITH COAL TAR EPOXY OR PROVIDE OTHER APPROVED MEANS TO PROVIDE A BARRIER.

4.10 WELDS SHALL BE 1/4" FILLET WELDS MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS.

4.11 PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED.

4.12 SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR APPROVAL PRIOR TO FABRICATION.

5.0 - FOUNDATIONS

5.01 CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE TIME THEY ARE MADE.

5.02 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL TEMPORARY EARTH SUPPORT, SHORING AND BRACING REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.

5.03 THE CONTRACTOR SHALL DESIGN AND PROVIDE SHEETING, SHORING, BRACING, AND/OR UNDERPINNING IN ORDER TO PROTECT EXISTING UTILITIES FROM EXCESSIVE MOVEMENTS DURING THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH OSHA, STATE & LOCAL REQUIREMENTS.

5.04 THE CONTRACTOR SHALL CARRY OUT CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER. DEWATER ANY AREAS REQUIRING EXCAVATION IN ADVANCE OF PERFORMING EXCAVATION. MAINTAIN GROUNDWATER LEVELS AT LEAST 2 FEET BELOW PLANNED SUBGRADES.

5.05 ALL SUBGRADES TO RECEIVE FILL MATERIALS. FOUNDATIONS, SLABS OR OTHER CONSTRUCTION SHALL BE FREE OF RUNNING OR STANDING WATER PRIOR TO PLACEMENT.

5.06 FOUNDATIONS SHALL BE INSTALLED IN THE GEOMETRY SHOWN IN THE PLANS, ANY ROCK ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED TO CLEAR THE REQUIRED FOUNDATION GEOMETRY.

5.07 SPREAD FOOTING BEARING SURFACES SHALL BE EXCAVATED BY EQUIPMENT WITH A SMOOTH, TOOTHLESS CUTTING EDGE.

5.08 REFER TO THE DRAFT GEOTECHNICAL REPORT PREPARED BY WESTON & SAMPSON DATED 10/31/2018 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

6.0 DESIGN LOADS

LOADS, LOADING CONDITIONS AND COMBINATIONS SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE 9TH EDITION, IBC 2009 AND ASCE 7-10 AS APPLICABLE. LOADS DESIGNATED BY "PSF" ARE UNIFORM LOADS, THOSE DESIGNATED BY "LB" ARE CONCENTRATED LOADINGS AND SHALL BE APPLIED AS REQUIRED BY THE MSBC.

BUILDING OCCUPANCY CATEGORY___II

6.01 DEAD LOADS
(A) SELF-WEIGHT OF ALL ATTACHED AND SUSPENDED ELEMENTS, CONSULT APPLICABLE DRAWINGS AND TRADES FOR FURTHER INFORMATION

6.02 LIVE LOADS
(A) BOARDWALK
(1) UNIFORM ___90 PSF
(2) MAINTENANCE VEHICLE___MAX. WEIGHT = 5,000 LBS, MAX. AXLE LOAD = 3,000 LBS

6.03 SNOW LOAD
(A) GROUND SNOW LOAD, PG___40 PSF
(B) MIN. FLAT ROOF SNOW LOAD, PF___30 PSF + DRIFT
(C) SNOW EXPOSURE FACTOR, CE___1.0
(D) SNOW LOAD IMPORTANCE FACTOR, I___1.0, II
(E) THERMAL FACTOR, CT___1.2

6.04 WIND DESIGN DATA
(A) BASIC WIND SPEED, Vult____128 MPH
(B) WIND EXPOSURE____C

6.05 EARTHQUAKE DESIGN DATA
(A) SEISMIC IMPORTANCE FACTOR, I____1.0, II
(B) MAPPED SPECTRAL RESPONSE ACCELERATIONS, SS, S1____0.217G, 0.069G
(C) SITE CLASS____D

6.06 GEOTECHNICAL INFORMATION
(A) REFER TO WESTON & SAMPSON DRAFT REPORT DATED 10/31/2018 FOR RECOMMENDATIONS.

TENSION DEVELOPMENT & SPLICE LENGTHS FOR EPOXY-COATED BARS, F'c = 4,000 PSI		
BAR SIZE	TOP BARS (IN.)	OTHER BARS (IN.)
#3	24	19
#4	32	25
#5	40	31
#6	48	37
#7	70	54
#8	80	62
#9	91	70
#10	102	79
#11	113	87

1 MINIMUM SPLICE DEVELOPEMENT LENGTHS
SCALE: 1/2" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CAMPBELL
STRUCTURAL
No. 36256
REGISTERED PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson SM

Consultant Project No. 2170867

NORTH

No.	Date	Revision

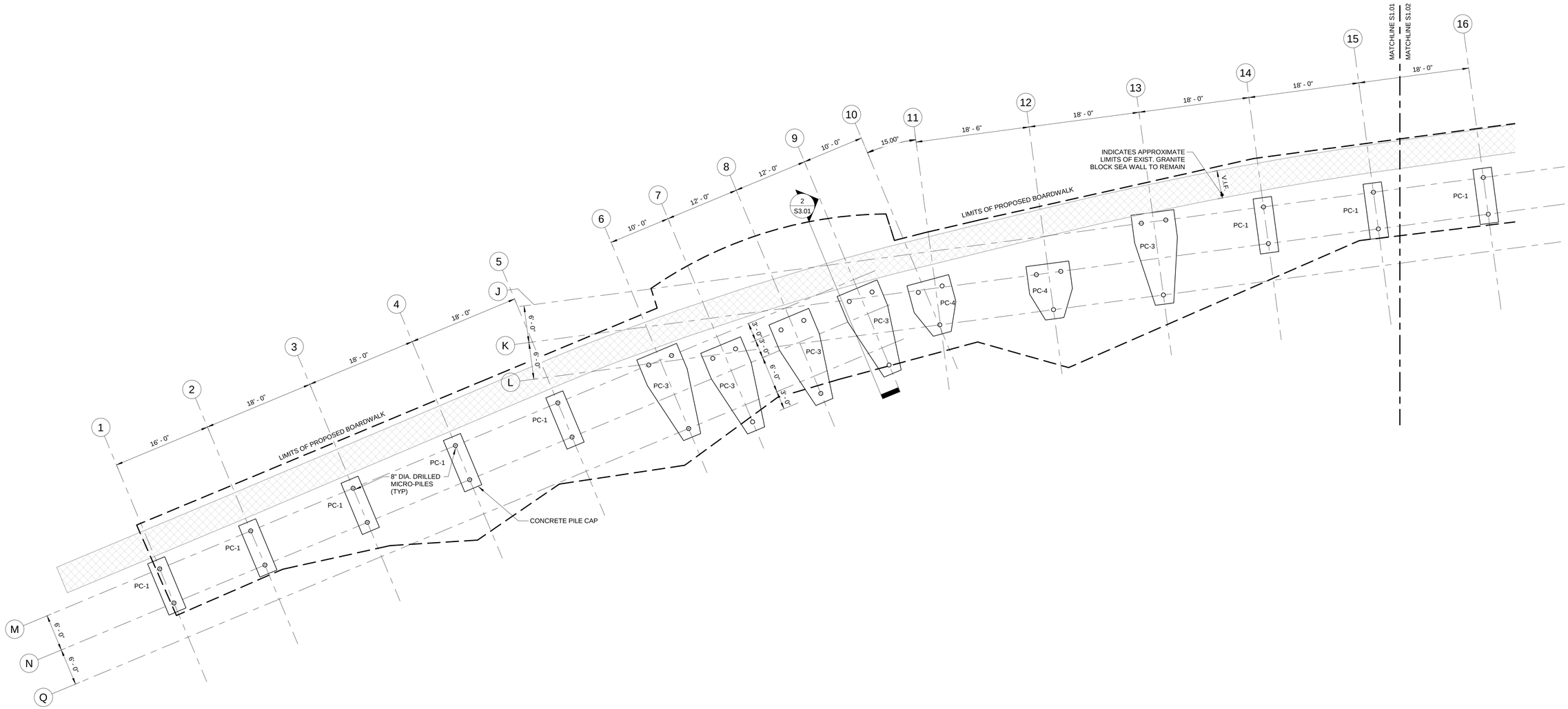
Approved By: Date:

Project Name:
IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No. CPR 22955
Date 12/05/2018
Scale As indicated
Drawn KMC/JGK
Checked NMS

Sheet Name:
GENERAL NOTES

SHEET:
S0.01



NOTES:

1. COORDINATE BOARDWALK LAYOUT AND GRADING WITH SITE DRAWINGS.
2. PC-# INDICATES CONCRETE PILE CAP CONFIGURATION. PILE CAPS ARE 2'-6" THICK AND HAVE DIMENSIONS AS INDICATED ON PLAN.
3. [X'-XX"] INDICATES BOTTOM OF FOUNDATION ELEVATION.

1 FOUNDATION PLAN I

SCALE: 1/8" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A CAMPBELL
STRUCTURAL
No. 36256
REGISTERED PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

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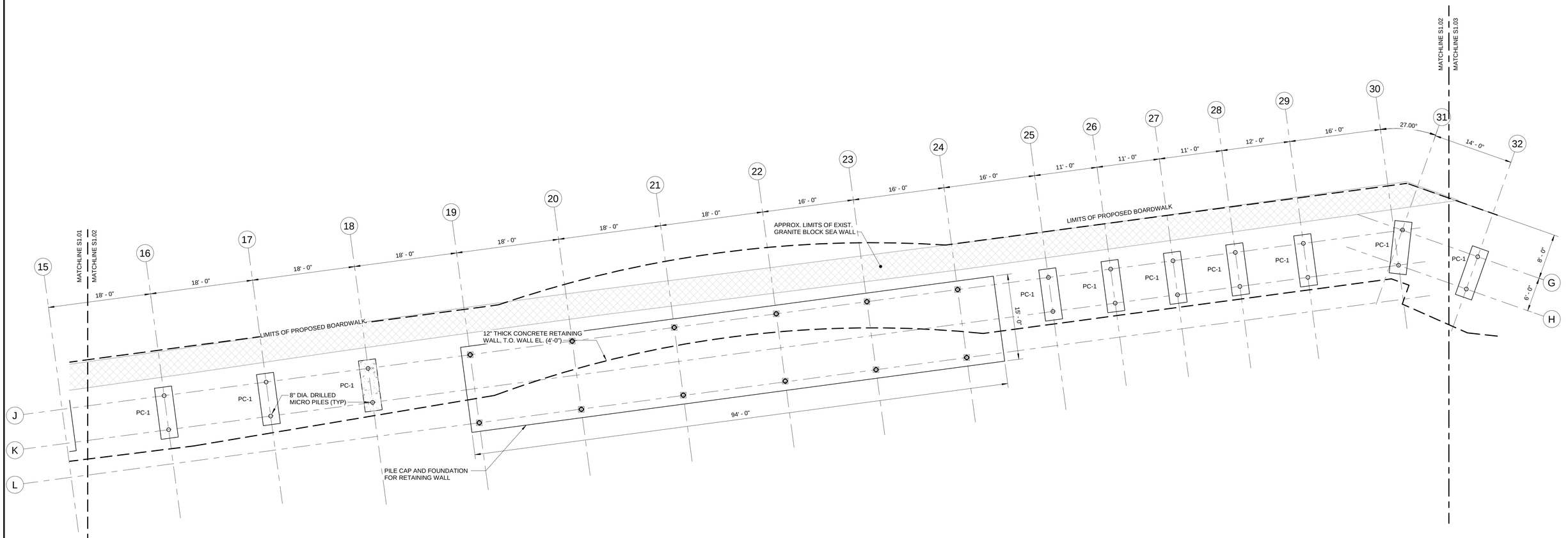
Checked	NMS

Sheet Name:
BOARDWALK FOUNDATION PLAN I

SHEET:
S1.01



NOTES:

1. COORDINATE BOARDWALK LAYOUT AND TOP OF DECK ELEVATIONS WITH SITE DRAWINGS.
2. PC-# INDICATES CONCRETE PILE CAP CONFIGURATION. PILE CAPS ARE 2'-6" THICK AND HAVE DIMENSIONS AS INDICATED ON PLAN.
3. [X'-XX"] INDICATES BOTTOM OF FOUNDATION ELEVATION.

1 FOUNDATION PLAN II

SCALE: 1/8" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A CAMPBELL
STRUCTURAL
No. 36256
REGISTERED PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson SM

Consultant Project No. 2170867

NORTH

No.	Date	Revision

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

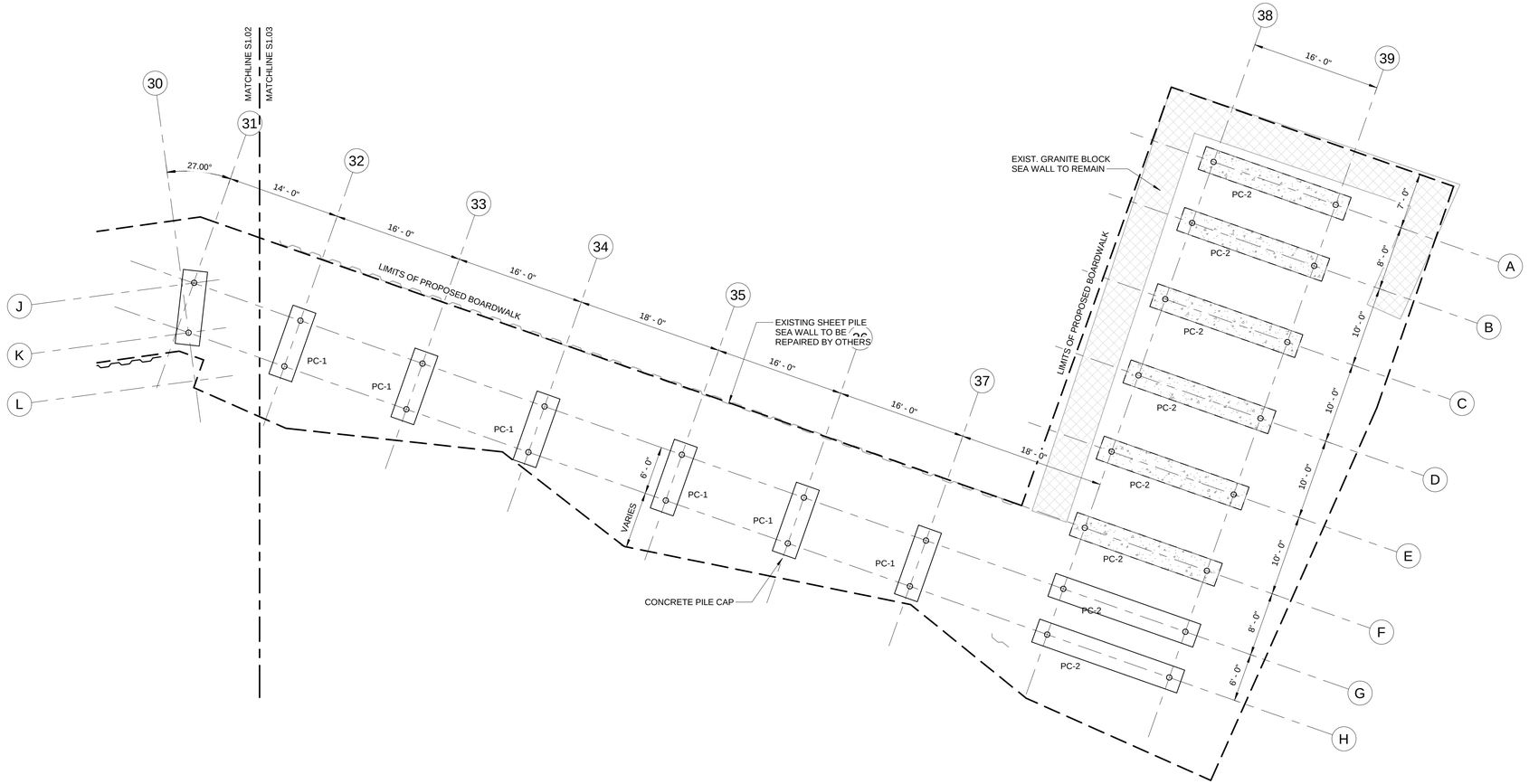
BPRD Project No.	CPR 22955
Date	12/05/2018
Scale	1/8" = 1'-0"
Drawn	Author
Checked	Checker

Sheet Name:

BOARDWALK FOUNDATION PLAN II

SHEET:

S1.02



NOTES:

1. COORDINATE BOARDWALK LAYOUT AND GRADING WITH SITE DRAWINGS.
2. PC-# INDICATES CONCRETE PILE CAP CONFIGURATION. PILE CAPS ARE 2'-6" THICK AND HAVE DIMENSIONS AS INDICATED ON PLAN.
3. [X'-XX"] INDICATES BOTTOM OF FOUNDATION ELEVATION.

1 FOUNDATION PLAN III

SCALE: 1/8" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CAMPBELL
STRUCTURAL
No. 36256
REGISTERED
PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson

Consultant Project No. 2170867

NORTH

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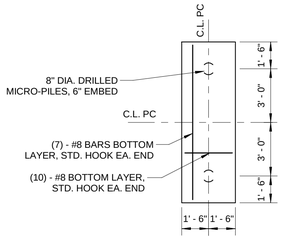
Project Name: **IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND**

BPRD Project No.	CPR 22955
Date	12/05/2018
Scale	1/8" = 1'-0"
Drawn	KMC
Checked	NMS

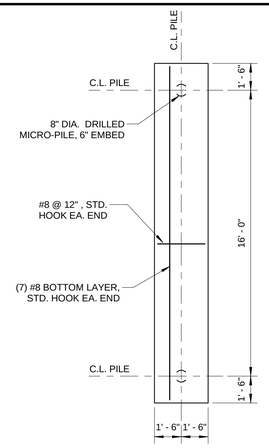
Sheet Name: **BOARDWALK FOUNDATION PLAN III**

SHEET: **S1.03**



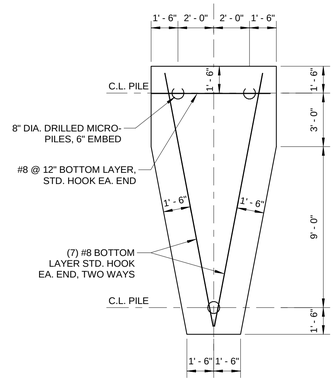
1 PC-1

SCALE: 1/4" = 1'-0"



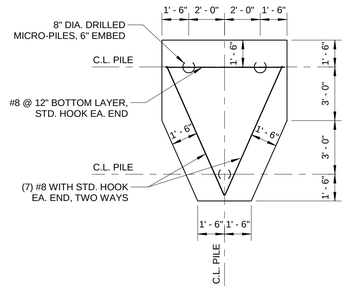
2 PC-2

SCALE: 1/4" = 1'-0"



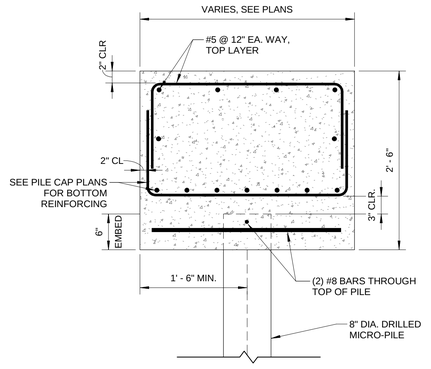
3 PC-3

SCALE: 1/4" = 1'-0"



4 PC-4

SCALE: 1/4" = 1'-0"



5 TYPICAL PILE CAP SECTION

SCALE: 1" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CAMPBELL
STRUCTURAL
No. 36256
REGISTERED
PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson

Consultant Project No. 2170867

NORTH

No.	Date	Revision

Approved By: Date:

Project Name:

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BPRD Project No.	CPR 22955
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Scale	As indicated
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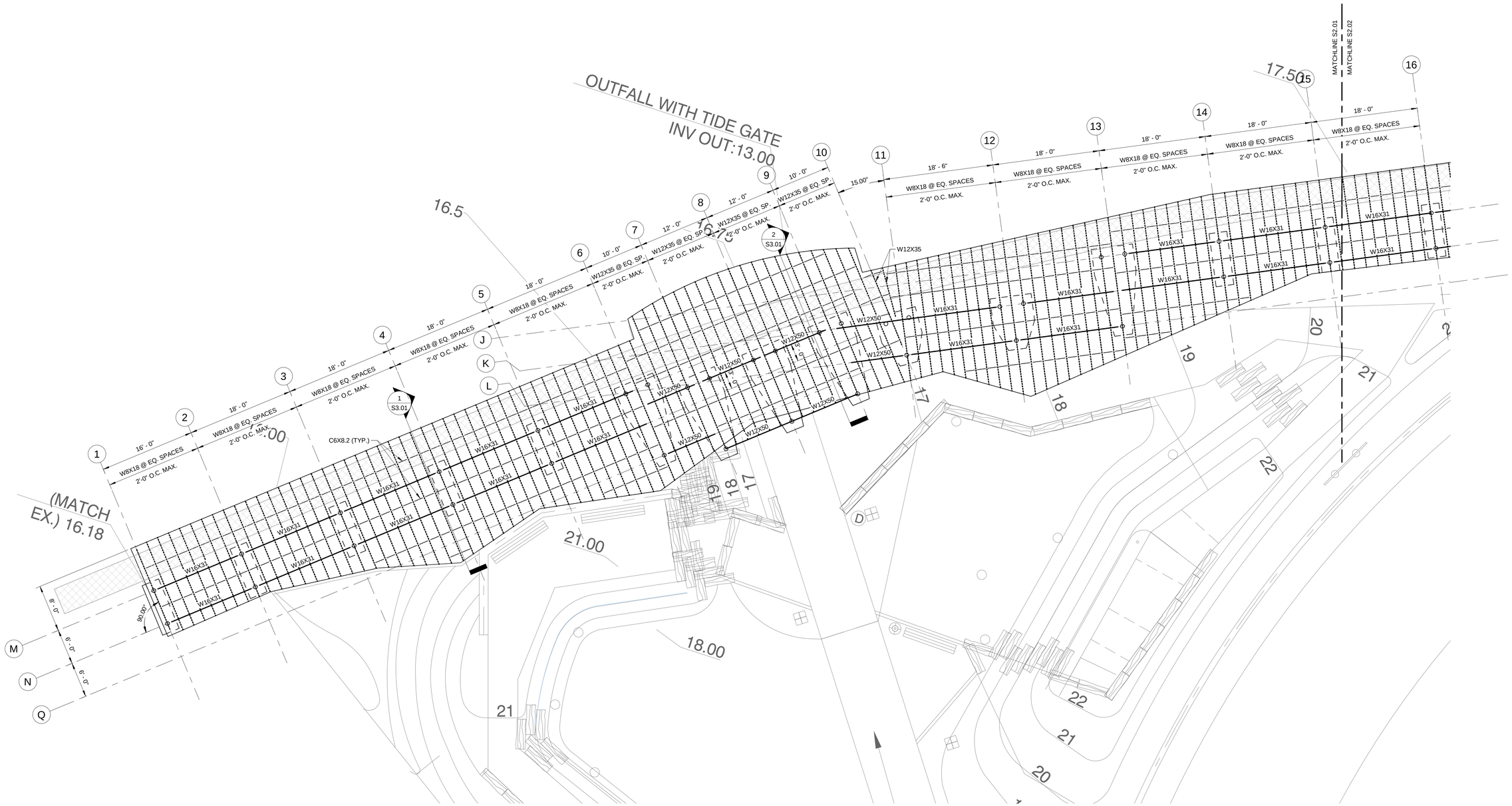
Checked	NMS

Sheet Name:

PILE CAP DETAILS

SHEET:

S1.11



1 BOARDWALK FRAMING PLAN I

SCALE: 1/8" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CAMPBELL
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12-5-2018

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Weston & Sampson SM

Consultant Project No. 2170867

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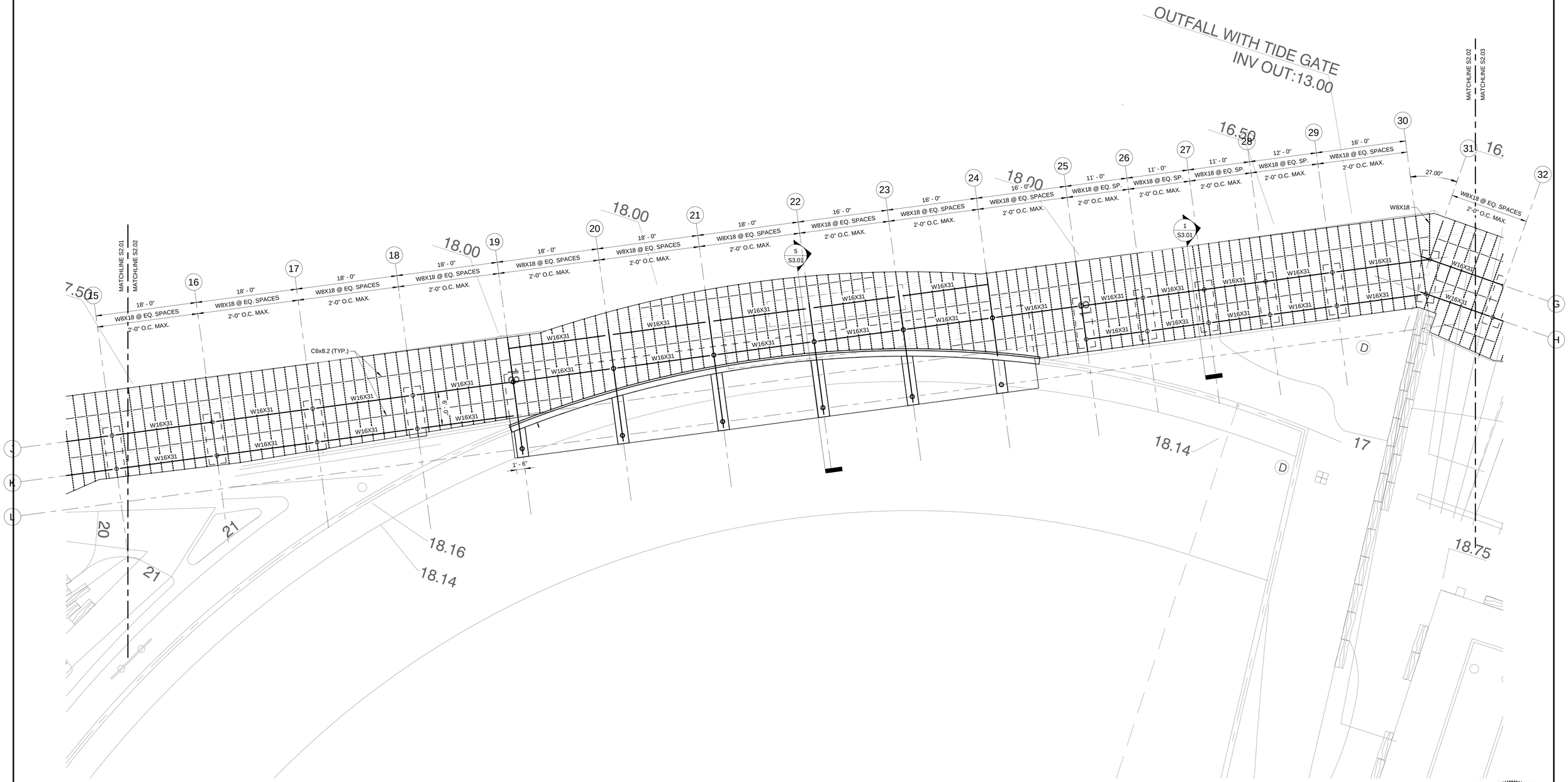
Scale	1/8" = 1'-0"
Drawn	KMC
Checked	NMS

Sheet Name:
BOARDWALK FRAMING PLAN I

SHEET:
S2.01



1 BOARDWALK FRAMING PLAN II

SCALE: 1/8" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CAMPBELL
STRUCTURAL
No. 36256
REGISTERED PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson℠

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NORTH

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

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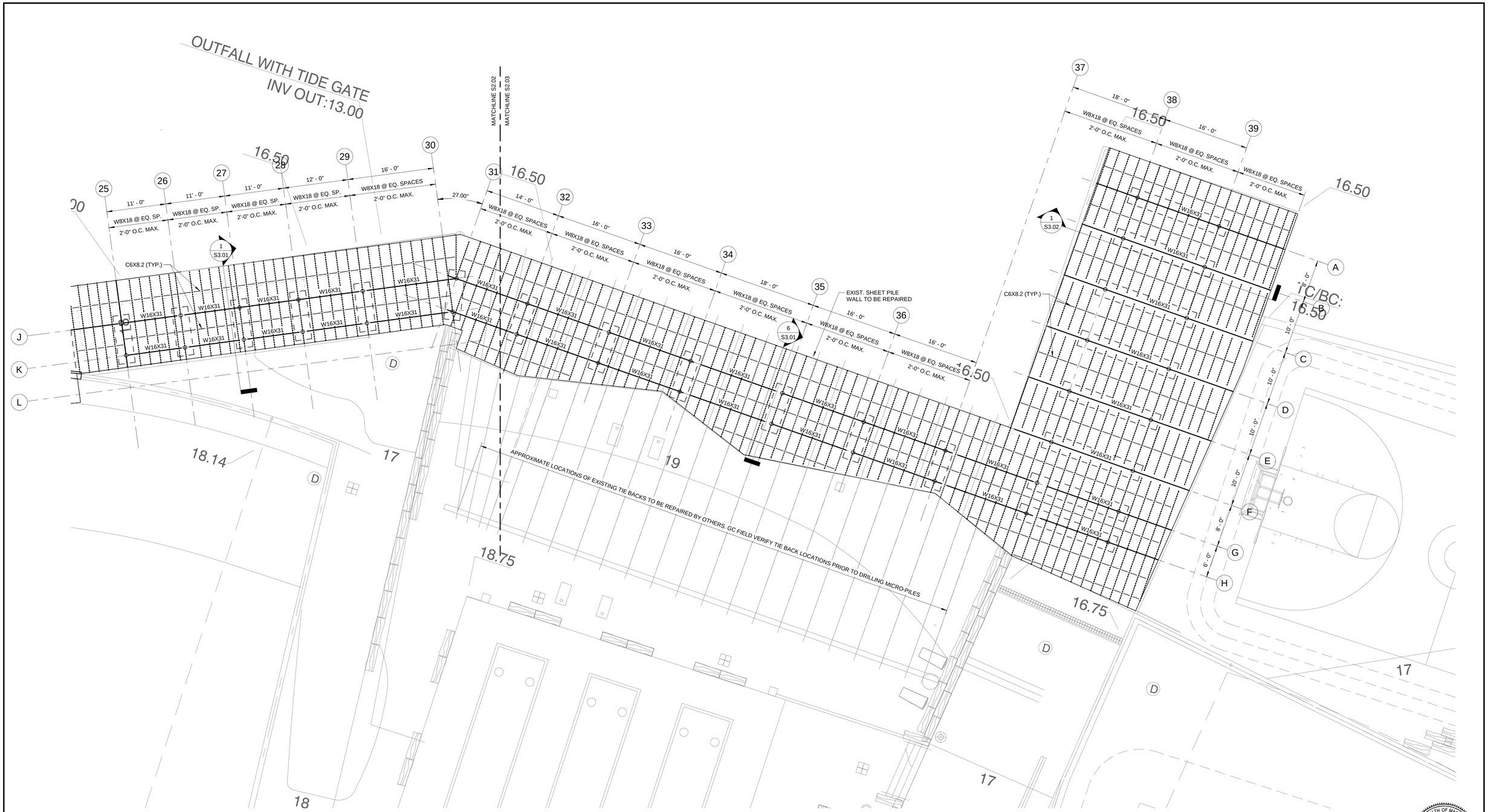
Date	12/05/2018
Scale	1/8" = 1'-0"
Drawn	KMC
Checked	NMS

Sheet Name:

BOARDWALK FRAMING PLAN II

SHEET:

S2.02



1 BOARDWALK FRAMING PLAN III

SCALE: 1/8" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A CAMPBELL
STRUCTURAL
No. 36255
REGISTERED
PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson SM

Consultant Project No. 2170867

NORTH

No.	Date	Revision

Approved By: Date:

Project Name:

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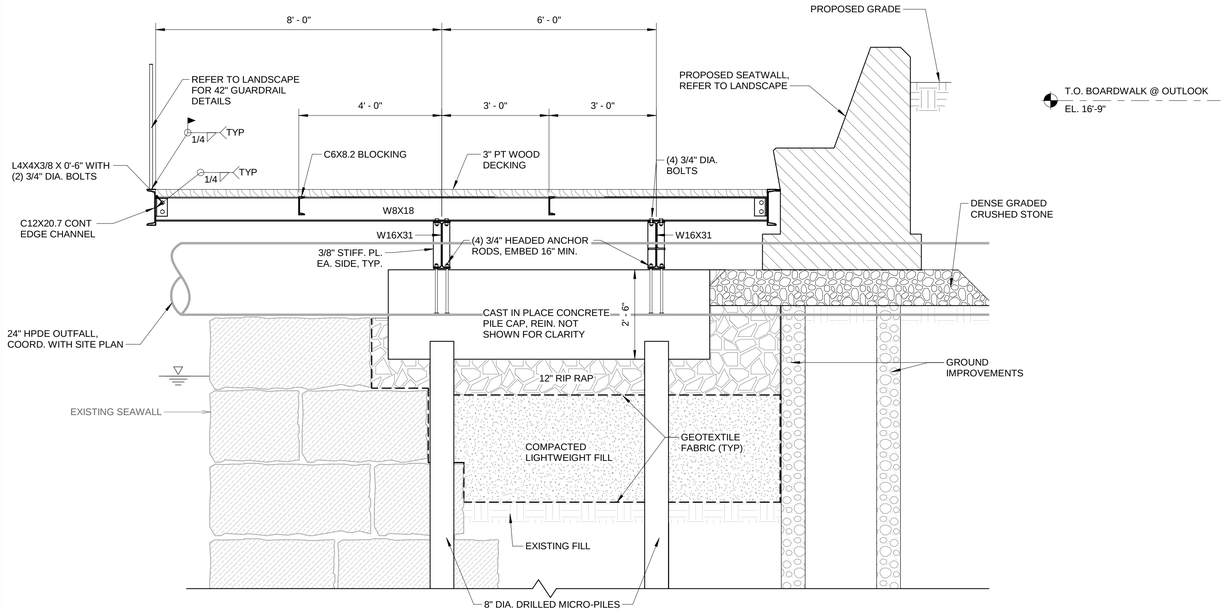
Date	12/05/2018
Scale	1/8" = 1'-0"
Drawn	KMC
Checked	NMS

Sheet Name: BOARDWAK FRAMING PLAN III

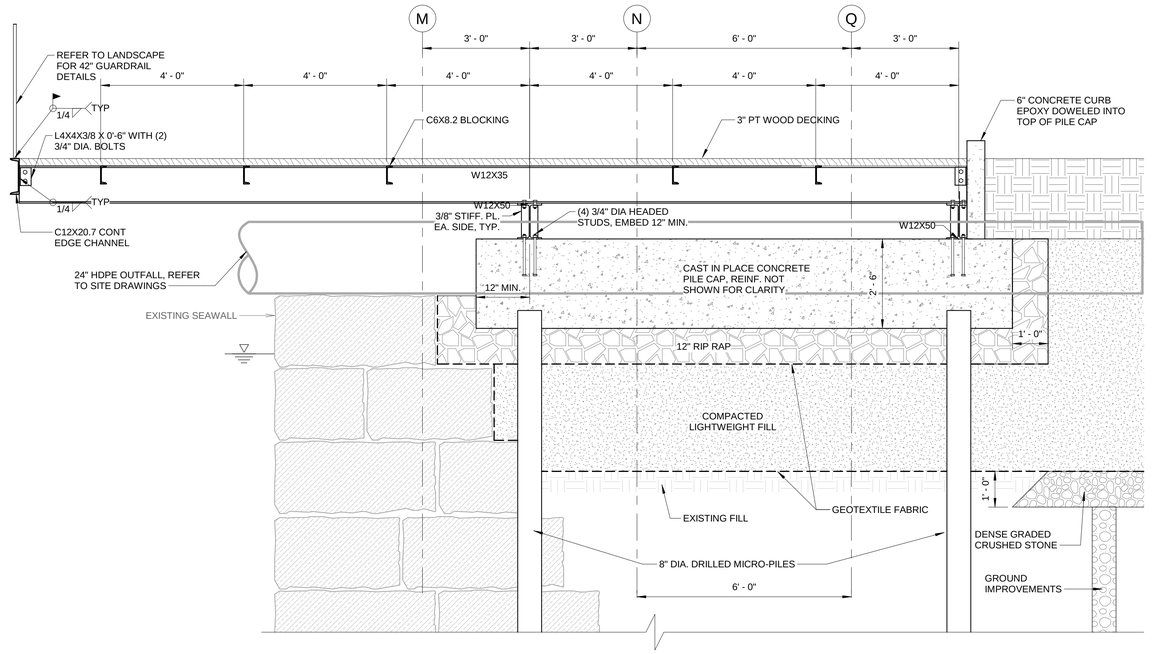
SHEET: S2.03



1 SECTION A

SCALE: 1/2" = 1'-0"

T.O. BOARDWALK @ OUTLOOK
EL. 16'-9"



2 SECTION B

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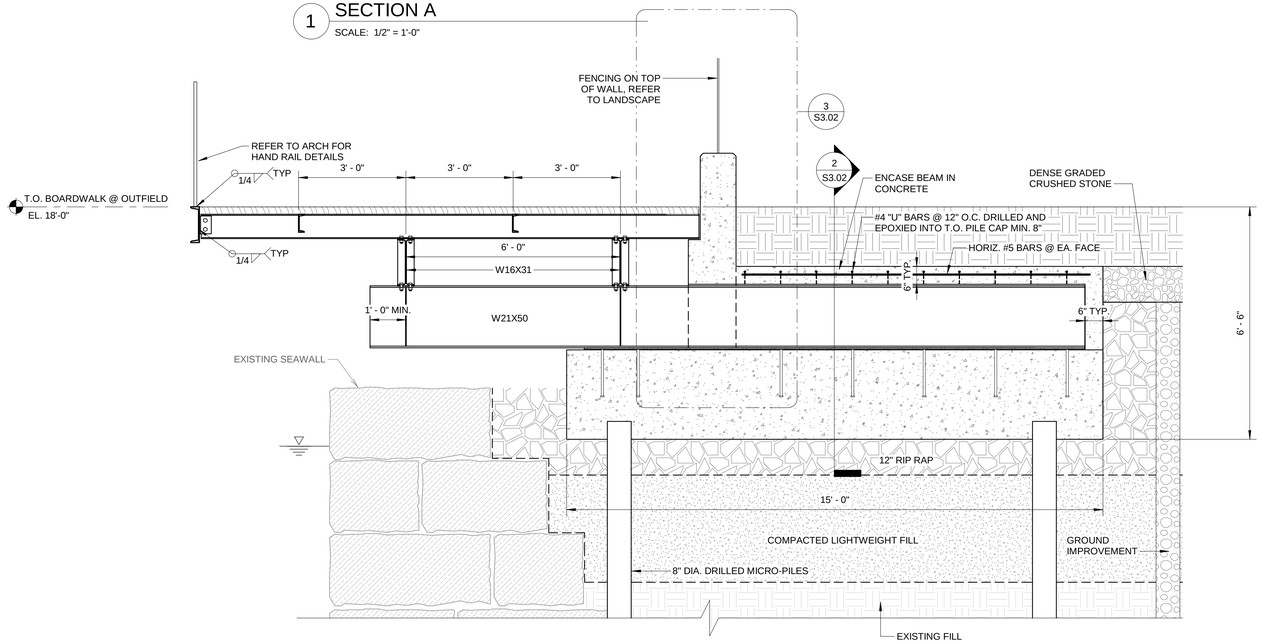
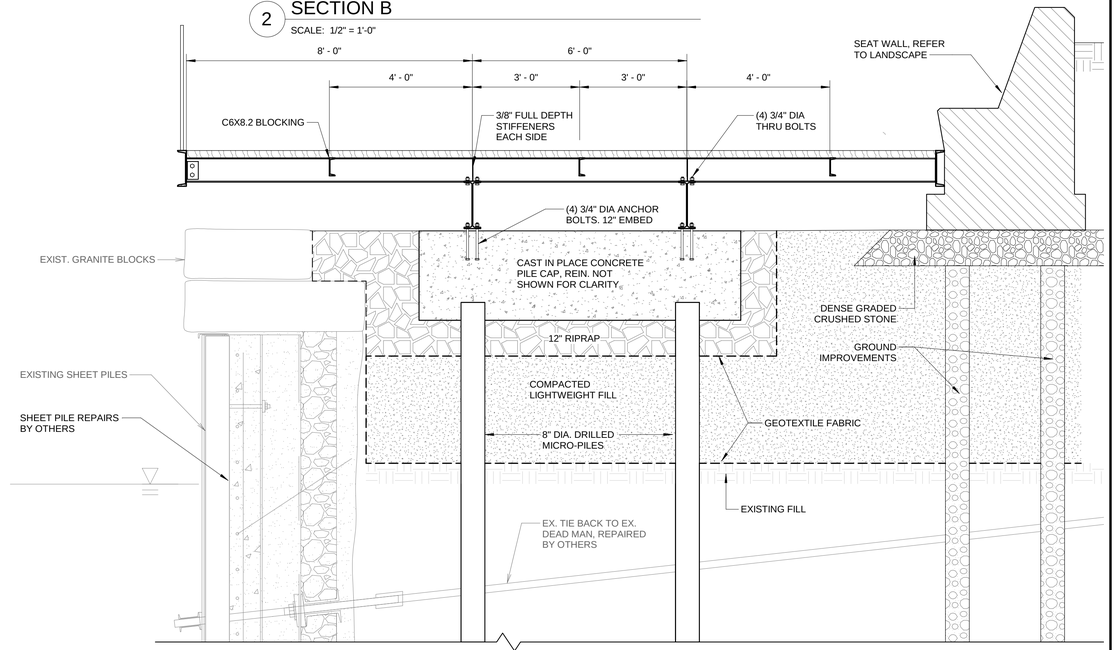


5 SECTION C

SCALE: 1/2" = 1'-0"



6 SECTION D

SCALE: 1/2" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT
NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A. CAMPBELL
STRUCTURAL
No. 36256
REGISTERED
PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

Weston & Sampson

Consultant Project No. 2170867

NORTH

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

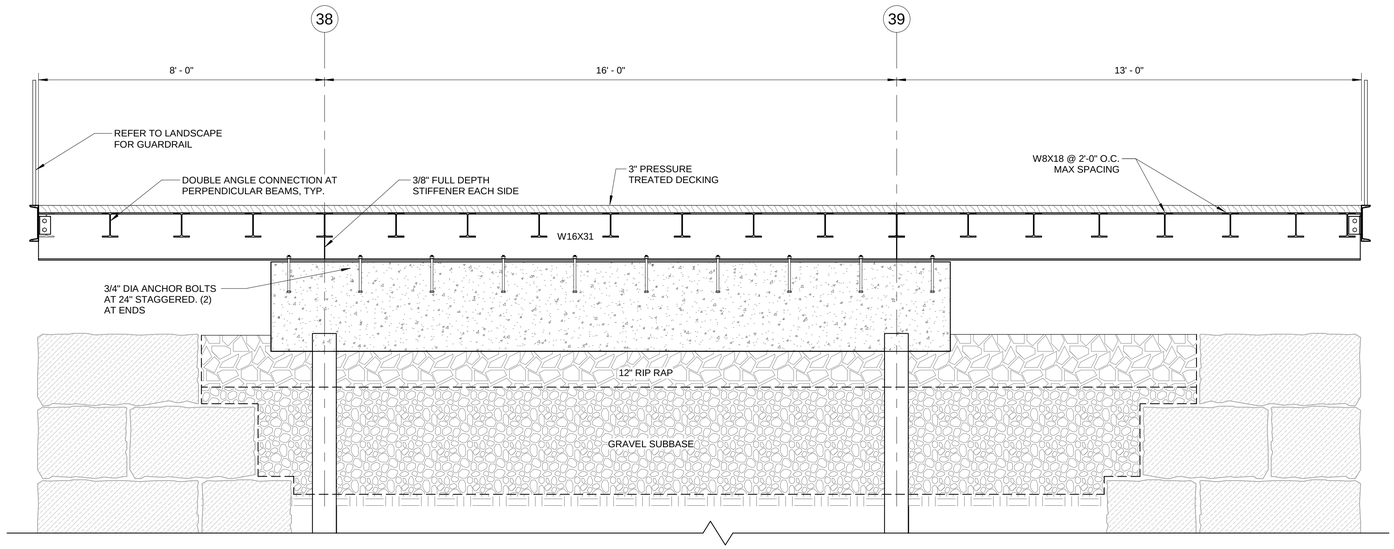
BPRD Project No.	CPR 22955
Date	12/05/2018
Scale	1/2" = 1'-0"
Drawn	KMC
Checked	Checker

Sheet Name:

BOARDWALK FRAMING SECTIONS I

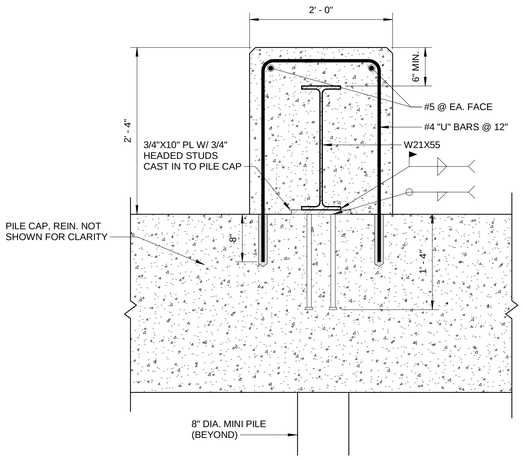
SHEET:

S3.01



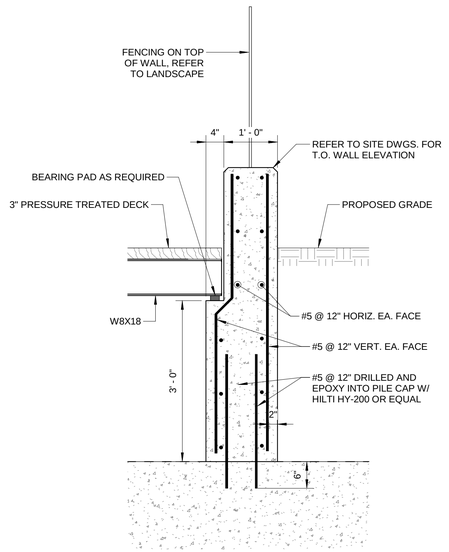
1 SECTION E

SCALE: 1/2" = 1'-0"



2 SECTION THROUGH CONCRETE ENCASEMENT

SCALE: 1" = 1'-0"



3 SECTION @ OUTFIELD WALL

SCALE: 3/4" = 1'-0"

FOR PERMITTING/DESIGN DEVELOPMENT

NOT FOR CONSTRUCTION

COMMONWEALTH OF MASSACHUSETTS
RICHARD A CAMPBELL
STRUCTURAL
No. 36256
REGISTERED PROFESSIONAL ENGINEER
12-5-2018

BOSTON PARKS AND RECREATION

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IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

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Scale	As indicated
Drawn	KMC
Checked	NMS

Sheet Name:

BOARDWALK FRAMING SECTIONS II

SHEET:

S3.02

GENERAL NOTES:

1. FOR THE PURPOSE OF THIS PROJECT

   OWNER – BOSTON PARKS AND RECREATION DEPARTMENT
   1010 MASSACHUSETTS AVENUE
   BOSTON, MA 02118

   ENGINEER – PARE CORPORATION
   10 LINCOLN ROAD, SUITE 210
   FOXBORO, MA 02035
   CONTACT – RYAN MCCOY

2. VERTICAL DATUM: BOSTON CITY BASE – VIA RTK/GPS or MLW.

3. EXISTING SITE PLAN REFERENCES AS–BUILT PLAN TITLED "LANGONE PLAY AREA GRADING AND UTILITIES PLAN" BY WALLACE, FLOYD ASSOCIATES, INC. DATED MARCH 1999.

4. THE LINEWORK REPRESENTING UNDERGROUND STRUCTURES AND PIPES HAVE BEEN SHOWN IN THEIR APPROXIMATE LOCATION BASED PLANS PROVIDED BY THE BOSTON PARKS AND RECREATION DEPARTMENT (BPRD). THE UNDERGROUND UTILITIES SHOWN MAY NOT COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THERE IS NO WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.

5. ALL WORK SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND MUNICIPAL REGULATIONS, INCLUDING THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE (IBC).

6. CONTRACTOR SHALL ENSURE THAT ADEQUATE SHORING AND FALSEWORK ARE PROVIDED TO THE EXISTING STRUCTURE(S) RESULTING IN A STABLE AND SAFE STRUCTURE AT ALL TIMES. CONTRACTOR IS ADVISED THAT THE EXISTING STEEL SHEET PILES, WALLS, WALE, AND TIE RODS ARE DETERIORATED, THEREFORE THE STRUCTURAL CAPACITY OF THE RETAINING SYSTEM MAY BE REDUCED.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGING, BRACING, SHEETING, SHORING, TEMPORARY EARTH SUPPORTS, ETC. THAT AVOIDS EXCESSIVE DEFLECTION OR OVERSTRESSING OF THE STEEL SHEET PILES AND/OR WALE SYSTEM, AND SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS, AS REQUIRED.

8. CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS, METHODS, AND SAFETY OF WORK.

9. PROPER CONSTRUCTION AND TRAFFIC SIGNAGE SHALL BE INSTALLED AT OR NEAR THE PROJECT ENTRANCES(S). COORDINATE WITH LOCAL POLICE WHEN CONSTRUCTION VEHICLE ACTIVITIES COULD POTENTIALLY IMPEDE WITH NORMAL DAILY VEHICULAR AND/OR PEDESTRIAN TRAFFIC.

10. PLANS AND SECTIONS ARE APPROXIMATE AND ARE TO BE USED FOR GENERAL LAYOUT. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS TO ASSURE CONSISTENCY WITH THE PROPOSED CONSTRUCTION PLANS. THE CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS, DIMENSIONS, CLEARANCES, ELEVATIONS, AND OTHER INFORMATION INDICATED IN THE DOCUMENTS PRIOR TO ORDERING ANY MATERIALS, COMMENCING ANY FABRICATIONS, OR PERFORMING ANY WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY FIELD CONDITIONS WHICH MAY DIFFER FROM THAT REPRESENTED PRIOR TO COMMENCING WORK.

11. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL VISIT THE SITE AND SHALL NOTIFY THE ENGINEER OF ANY ADDITIONAL UTILITIES, STRUCTURES, OR ANY OTHER ELEMENTS WHICH MAY IMPEDE WORK. UTILITY AND/OR STRUCTURE RELOCATIONS, IF NECESSARY, SHALL BE COORDINATED THROUGH THE OWNER'S ENGINEER AT NO ADDITIONAL COST.

12. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL WORK THROUGH THE BPRD AND THE ENGINEER. THE CONTRACTOR SHALL COORDINATE THE WORK SO AS TO MINIMIZE INTERRUPTIONS IN NEARBY FACILITY OPERATIONS AND TOURISM.

13. THE CONTRACTOR SHALL FULLY CORDON OFF THE WORK AREA TO PREVENT PUBLIC ACCESS. APPROXIMATE LOCATIONS OF SIGNAGE AND THE LIMITS OF SECURITY FENCING ARE SHOWN HEREIN.

14. THE CONTRACTOR SHALL MAINTAIN A SECURE SITE AND PROVIDE APPROPRIATE SAFETY MEASURES TO PREVENT ACCIDENTS. SAFETY MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO SIGNAGE, BARRICADES, FENCING, FLASHING WARNING LIGHTS, AND POLICING.

15. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS AND SAFETY PROCEDURES TO ENSURE PERSONAL HEALTH AND SAFETY. THE CONTRACTOR MUST MAINTAIN A SAFE AND CLEAN WORKING ENVIRONMENT AND SHALL ASSURE PERSONAL PROTECTIVE EQUIPMENT (PPE) AT ALL TIMES.

16. THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO PREVENT DAMAGE TO EXISTING STRUCTURES BY OR AS A RESULT OF HIS OPERATIONS. ANY DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.

17. ALL DEBRIS AS A RESULT OF, OR IN THE IMMEDIATE VICINITY OF THE WORK SHALL BE RECOVERED AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

18. CONTRACTOR'S STORAGE AREA: DUE TO THE SITE'S WATERFRONT LOCATION, ALL NECESSARY MEASURES SHALL BE TAKEN TO PREVENT BY ANY METHOD, OIL, CONSTRUCTION DEBRIS, STOCKPILED MATERIALS, AND OTHER MATERIALS ON THE SITE, FROM ENTERING THE WATERWAY. ANY DEBRIS FALLING INTO THE WATER SHALL BE RECOVERED AND PROPERLY DISPOSED OF.

19. STAGING/LAYDOWN AREAS, AS APPROVED BY THE ENGINEER, SHALL BE RESTORED BY THE CONTRACTOR TO THE EXISTING CONDITION. IN ADDITION, THE CONTRACTOR SHALL REPLACE ALL DAMAGED MATERIALS AS A RESULT OF HIS OPERATIONS, TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

20. SHOP AND ERECTION DRAWINGS FOR ALL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL AS PER THE SPECIFICATIONS. FABRICATION OF THESE ITEMS SHALL NOT COMMENCE WITHOUT APPROVED SHOP DRAWINGS. SHOP DRAWINGS ARE PREPARED AND USED BY THE CONTRACTOR AS INSTRUMENTS TO SEQUENCE HIS WORK AND TO FACILITATE FABRICATION AND ERECTION. REVIEW OF SHOP DRAWINGS SHALL BE FOR GENERAL DETAIL AND ARRANGEMENT ONLY. CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR DIMENSIONS, PROPER FIT, AND DETAILED DESIGN OF CONNECTIONS. THEIR APPROVAL BY THE ENGINEER IS NOT TO BE CONSTRUED AS A WAIVER OF CONSTRUCTION CONTRACT REQUIREMENTS OR RESPONSIBILITIES, UNLESS THE CONTRACTOR HAS BEEN GRANTED A DEVIATION IN WRITING.

21. IN CASE OF CONTRADICTION BETWEEN THE DRAWINGS, THE SPECIFICATIONS, AND THE CODES, OR IF ANY CHANGE IS REQUIRED, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY. NO CHANGE SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

EROSION CONTROL NOTES:

1. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT.
2. CONTRACTOR SHALL PREVENT SEDIMENT FROM ENTERING THE HARBOR VIA DISCHARGES THROUGH ANY DRAINAGE STRUCTURES OR RUNOFF FROM WITHIN THE LIMITS OF WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESTORING AND REPAIRING ALL DAMAGE AS A RESULT OF UNAUTHORIZED WORK OR DISCHARGES AT NO ADDITIONAL COST TO THE OWNER.
4. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TURBIDITY BARRIERS AS INDICATED IN THE CONTRACT DOCUMENTS. TURBIDITY BARRIERS SHALL BE ANCHORED SECURELY AS NECESSARY TO ENSURE COLLECTION OF SEDIMENT AND ENABLE THE WORK TO BE PERFORMED.
5. THE TURBIDITY BARRIER SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK AND SHALL REMAIN IN PLACE UNTIL ALL WORK IS COMPLETED, AS APPROVED BY THE ENGINEER.
6. SOIL STOCKPILES SHALL BE A MINIMUM OF 2–FEET FROM THE EDGE OF THE BULKHEAD TO LIMIT RUNOFF INTO THE HARBOR.
7. EROSION CONTROL BARRIERS SHALL BE MODIFIED OR EXPANDED AS FIELD CONDITIONS WARRANT.
8. ALL EROSION CONTROL BARRIERS SHALL BE INSPECTED AT LEAST ONCE PER WEEK. ANY DAMAGED AREAS OF THE EROSION CONTROL BARRIER SHALL BE REPAIRED WITHIN 24 HOURS OF DISCOVERY.
9. DEWATERING BASINS SHALL CONSIST OF HAY BALE ENCLOSURES, TANKS, PERMEABLE BLADDERS, OR OTHER APPROPRIATE METHOD. DEWATERING WASTE WATERS SHALL BE PUMPED TO THE DEWATERING BASINS AND TREATED PRIOR TO DISCHARGE.
10. DISCHARGE OF TURBID WATER TO THE HARBOR SHALL BE PROHIBITED.

SPILL PREVENTION AND CONTROL NOTES:

1. SPILLS AND LEAKS SHALL BE AVOIDED THROUGH FREQUENT INSPECTION OF EQUIPMENT AND MATERIAL STORAGE AREAS.
2. HEAVY EQUIPMENT AND OTHER VEHICLES SHALL BE ROUTINELY INSPECTED FOR LEAKS AND REPAIRED AS NECESSARY.
3. HAZARDOUS MATERIAL STORAGE TO BE PLACED ONLY IN DESIGNATED AREAS. MATERIAL STORAGE AREAS SHALL BE ROUTINELY INSPECTED FOR LEAKY CONTAINERS, OPEN CONTAINERS, OR IMPROPER STORAGE TECHNIQUES THAT MAY LEAD TO SPILLS OR LEAKS.
4. APPROPRIATE SPILL REMEDIATION PROCEDURES AND SUPPLIES SHALL BE READILY AVAILABLE ON–SITE. TOOLS AND SUPPLIES SHALL BE CLEARLY MARKED SO THAT ALL PERSONNEL CAN LOCATE AND ACCESS THESE SUPPLIES.
5. SPILL REMEDIATION SHALL BE PERFORMED IMMEDIATELY. CONTRACTOR SHALL FOLLOW PROPER RESPONSE PROCEDURES IN ACCORDANCE WITH ANY APPLICABLE REGULATORY REQUIREMENTS.
6. AT NO TIME SHALL SPILLS BE DIVERTED TOWARD STORM DRAINS OR TO THE HARBOR.
7. EQUIPMENT/VEHICLE FUELING AND REPAIR/MAINTENANCE OPERATIONS SHALL TAKE PLACE ONLY WITHIN DESIGNATED STAGING AREAS.
8. THE EQUIPMENT OPERATOR SHALL FULLY MONITOR FUELING OPERATIONS TO EQUIPMENT AND VEHICLES AT ALL TIMES.
9. ANY SPILLAGE SHALL BE IMMEDIATELY CLEANED WITH SPILL KITS KEPT ON SITE.
10. IN THE CASE OF SMALL AMOUNTS OF SOIL CONTAMINATION, SUCH SOIL SHALL BE PLACED IN 55 GALLON DRUMS FOR DISPOSAL BY A LICENSED HAZARDOUS WASTE HAULER.
11. IN THE CASE OF A LARGE AMOUNT OF SOIL CONTAMINATION OR DISCHARGE TO THE HARBOR, MASSACHUSETTS DEP AND APPLICABLE AGENCIES SHALL BE NOTIFIED AS NECESSARY. A HAZARDOUS WASTE REMEDIATION FIRM SHALL BE CONTRACTED TO REMOVE AND DISPOSE OF THE CONTAMINATED MATERIAL OR CONTAIN THE SPILL AT NO ADDITIONAL COST TO THE OWNER.

DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO ANY DEMOLITION OR CONSTRUCTION. ANY DISCREPANCIES RELATING TO THE DRAWINGS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. CONTRACTOR TO BE AWARE OF SELECTIVE DEMOLITION AT ALL SECTIONS OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT IN–KIND OF ALL WORK INADVERTENTLY REMOVED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL REMOVE ITEMS TO BE DEMOLISHED AS INDICATED ON THE DRAWINGS WITH CARE AND NOT TO DAMAGE ADJACENT STRUCTURES. THE WORK AREA SHALL BE LEFT READY TO RECEIVE NEW WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OFFSITE DISPOSAL OF ALL PROJECT DEMOLITION MATERIAL, TRASH, AND DEBRIS IN ACCORDANCE WITH LOCAL AND STATE LAWS.

STEEL NOTES:

1. NEW WALES, PLATES AND SHAPES SHALL CONFORM TO ASTM A572 GRADE 50 REQUIREMENTS. RECTANGULAR OR SQUARE HSS SHALL CONFORM TO ASTM A500 GRADE B. BOLTS AND FASTENERS SHALL CONFORM TO ASTM A325 REQUIREMENTS.
2. EXISTING SHEET PILE, TIE ROD ENDS AND HARDWARE METALS SHALL BE INSPECTED PRIOR TO ANY JOINING OF NEW METALS ONTO SURFACES. CONTRACTOR SHALL INSPECT EXISTING METALS FOR SOUNDNESS PRIOR TO START OF ANY WORK.
3. EXISTING TIE RODS SHALL BE LOAD TESTED AT TWO LOCATIONS TO DETERMINE MAXIMUM TENSILE CAPACITY AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
4. NEW TIE RODS SHALL BE DYWYDAG, GRADE 75 OR EQUAL, WITH ASSOCIATED CONNECTORS AND HARDWARE.

CONCRETE NOTES:

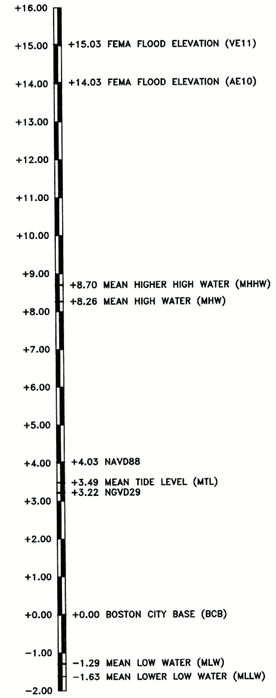
1. CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF ACI 318 – "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND THE MASSACHUSETTS STATE BUILDING CODE.
2. CONCRETE SHALL BE PROPORTIONED, MIXED, AND PLACED UNDER THE SUPERVISION OF THE APPROVED TESTING AGENCY.
3. CONCRETE SHALL BE NORMAL WEIGHT, WITH TYPE II CEMENT, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4,000 PSI 3/4" AGGREGATE–TYPICAL. ALL CONCRETE DESIGN MIXES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
4. ALL CONCRETE SHALL BE AIR–ENTRAINED WITH AN AIR CONTENT OF 6% +/– 1%.
5. ALL EXPOSED EDGES SHALL BE CHAMFERED 1" UNLESS NOTED OTHERWISE.
6. WHEN CONCRETE IS PLACED AGAINST PREVIOUSLY HARDENED CONCRETE, THE INTERFACE SHALL BE CLEAN, FREE OF LAITANCE AND INTENTIONALLY ROUGHENED TO FULL AMPLITUDE OF APPROXIMATELY 1/4 INCH.
7. CONCRETE WASHOUT OPERATIONS TO OR WITHIN HARBOR MUST NOT TAKE PLACE AT ANY TIME.
8. PRESSURES DUE TO PLACEMENT OF CONCRETE MUST BE LIMITED TO AVOID EXCESSIVE DEFLECTION OR OVERSTRESS OF THE SHEET PILES AND/OR WALE SYSTEM. REFERENCE ACI 347 – "GUIDE TO FORMWORK FOR CONCRETE" REQUIREMENTS.
9. THE DETAILS SHOWN ARE BASED ON A CONCRETE POUR RATE OF 4 FEET PER HOUR WITH A LIFT HEIGHT NOT EXCEEDING 5 FEET DURING A 12 HOUR PERIOD. CONTRACTOR SHALL MONITOR PLACEMENT OF CONCRETE TO ENSURE 5 FOOT HEIGHT LIMIT IS NOT EXCEEDED. CONTRACTOR SHALL SUBMIT FALSEWORK DESIGN CALCULATIONS TO THE ENGINEER FOR APPROVAL.

REINFORCING STEEL NOTES:

1. REINFORCING BARS SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 – "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND THE MASSACHUSETTS STATE BUILDING CODE.
2. COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ALL ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.
3. REINFORCING BARS SHALL CONFORM TO ASTM A615 OR A706 (WELDABLE) GRADE 60.
4. ALL SUPPORTS SUCH AS CHAIRS, BOLSTERS, SPACERS, BLOCKS AND HANGERS SHALL BE OF NON–CORROSIVE MATERIAL. BLOCKS SHALL BE MADE OF 4,000 PSI (UN–REINFORCED) CONCRETE.
5. UNLESS NOTED ON THE DRAWINGS, THE MINIMUM CONCRETE PROTECTION (CLEAR COVER) FOR CAST–IN–PLACE CONCRETE COVER SHALL BE AS FOLLOWS:
   A. FORMED CONCRETE EXPOSED TO EARTH OR WATER: 3"
   B. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
6. MINIMUM REINFORCEMENT DEVELOPMENT LENGTH SHALL BE IN ACCORDANCE WITH ACI 318 UNLESS NOTED ON THE DRAWINGS. LAP SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH ACI 318 FOR CLASS B LAPS UNLESS NOTED OTHERWISE.
7. WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185 OR A706 AND SHALL BE SUPPLIED IN FLAT SHEETS ONLY. SPLICES OF WWF SHALL BE AT LEAST 12 INCHES. WELDING OF REINFORCING BARS SHALL CONFORM TO AWS 1.4 – "STRUCTURAL WELDING CODE – REINFORCING STEEL"
8. ALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS. UNLESS NOTED OTHERWISE, BARS SHALL BE CONTINUOUS AND SHALL RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS.

WELDING NOTES:

1. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 AND AWS D1.4.
2. CLEAN AND INSPECT EXISTING MATERIAL PRIOR TO WELDING OF NEW MATERIAL. EXISTING MATERIAL SHALL BE TESTED FOR WELDABILITY TO NEW MATERIAL.
3. EXISTING MATERIAL SHALL BE PRE–HEATED IN ACCORDANCE WITH AWS D1.1.
4. ALL ELECTRODES SHALL BE E60 OR E70.
5. FIELD WELDS SHALL BE INSPECTED BY AWS QUALIFIED PERSONNEL.



DATUM INFORMATION

BOSTON, MA 8443970
PID: MY0555 VM: 185

75% SUBMISSION
NOT FOR CONSTRUCTION

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

LANGONE PARK SEAWALL REPAIRS
COMMERCIAL STREET
BOSTON, MASSACHUSETTS

THE CITY OF BOSTON
BOSTON PARKS AND RECREATION DEPARTMENT

COMMONWEALTH OF MASSACHUSETTS
RYAN M. McCOY
CIVIL
No. 46959
REGISTERED PROFESSIONAL ENGINEER

REVISIONS:		

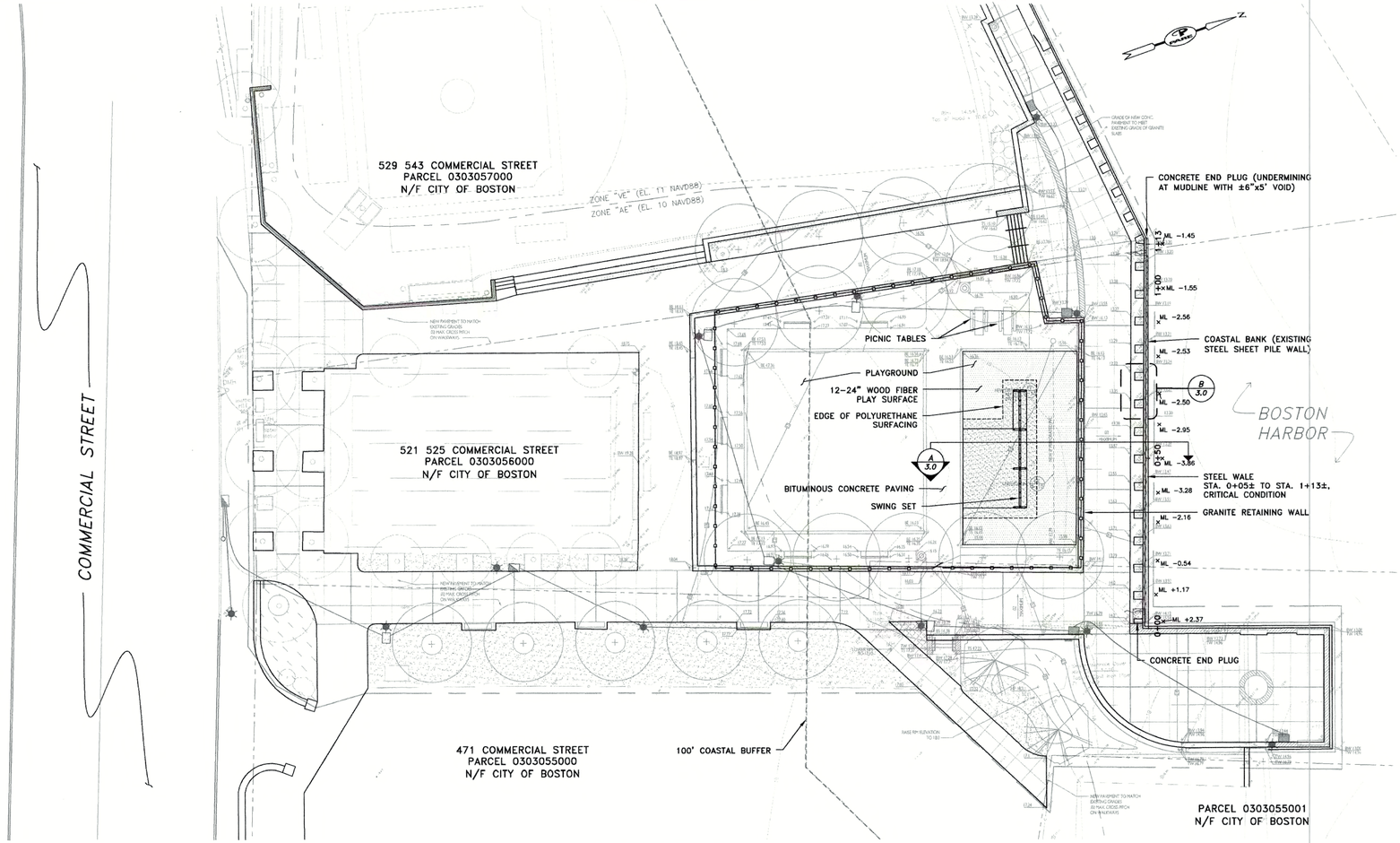
PROJECT NO.:	17142.00
DATE:	OCTOBER 2018
SCALE:	AS NOTED
DESIGNED BY:	DJG
CHECKED BY:	RMM
DRAWN BY:	LMC/DJG
APPROVED BY:	KWH

GENERAL NOTES

DRAWING NO.: 2.0

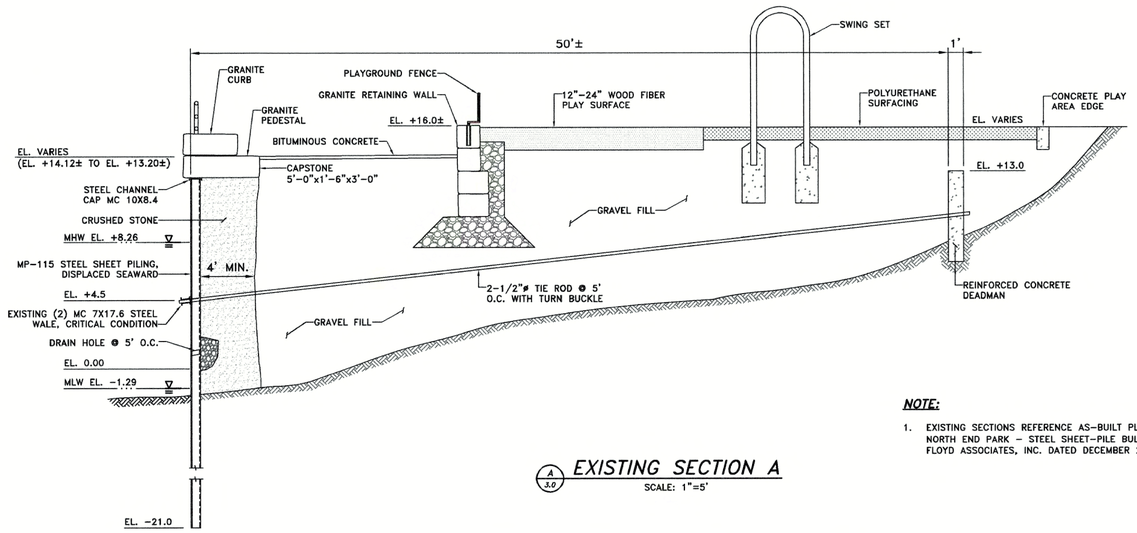
SHEET NO.: 2 OF 8

P:\JOBS\17 Jobs\17142.00 BosParks Langone Seawall Repairs\DWGS\2.0 GENERAL NOTES.dwg



EXISTING CONDITIONS PLAN

SCALE: 1"=20'±

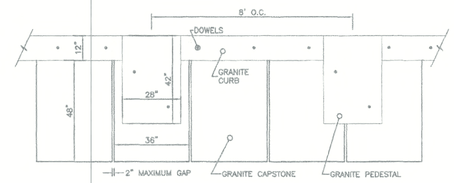


A 3.0 EXISTING SECTION A

SCALE: 1"=5'

NOTE:

1. EXISTING SECTIONS REFERENCE AS-BUILT PLAN TITLED "IMPROVEMENTS TO NORTH END PARK – STEEL SHEET-PILE BULKHEAD REPAIR" BY WALLACE, FLOYD ASSOCIATES, INC. DATED DECEMBER 2001.



B 3.0 EXISTING GRANITE CAPSTONE PART PLAN

SCALE: 1"=3'

NOTES:

1. EXISTING SITE PLAN REFERENCES AS-BUILT PLAN TITLED "IMPROVEMENTS TO NORTH END PARK – LANGONE PLAY AREA GRADING AND UTILITIES PLAN" BY WALLACE, FLOYD ASSOCIATES, INC. DATED DECEMBER 2001.
2. BASELINE ESTABLISHED BY PARE CORPORATION AT THE TIME OF THE INSPECTION ON OCTOBER 4, 2017 FOR REFERENCE PURPOSES.
3. PROPERTY LINES AND PARCEL INFORMATION REFERENCE INFORMATION FROM BOSTON ASSESSOR'S OFFICE VIA ONLINE DATABASE.
4. EXISTING HARBOR BOTTOM SOUNDINGS BASED ON INSPECTION COMPLETED BY PARE CORPORATION ON OCTOBER 4, 2017. ("ML #.## MUDLINE ELEVATION)
5. STEEL SHEET PILES ARE LATERALLY DISPLACED 6"± SEAWARD.

LEGEND

- ELECTRIC CABINET
- SUBMERGED PULLBOX
- PULLBOX AT FINISHED GRADE
- LIGHT FIXTURE

75% SUBMISSION
NOT FOR CONSTRUCTION

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
508-543-1755

SCALE ADJUSTMENT GUIDE

0" 1"

BAR IS ONE INCH ON ORIGINAL DRAWING.

LANGONE PARK SEAWALL REPAIRS

COMMERCIAL STREET
BOSTON, MASSACHUSETTS

THE CITY OF BOSTON
BOSTON PARKS AND RECREATION DEPARTMENT

COMMONWEALTH OF MASSACHUSETTS
RYAN M. McCOY
CIVIL
No. 49858
REGISTERED PROFESSIONAL ENGINEER

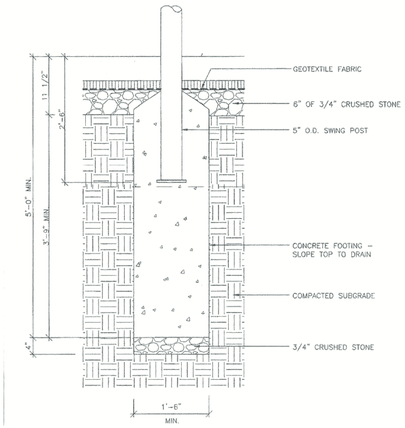
REVISIONS:		

PROJECT NO.:	17142.00
DATE:	OCTOBER 2018
SCALE:	AS NOTED
DESIGNED BY:	DJG
CHECKED BY:	RMM
DRAWN BY:	LMC/DJG
APPROVED BY:	KWH

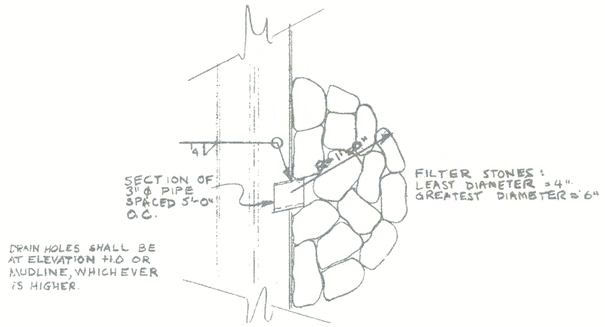
EXISTING CONDITIONS PLAN AND SECTIONS

DRAWING NO.: 3.0

SHEET NO.: 3 OF 8



SWING POST DETAIL
SCALE: 1"=1.5'



DRAIN HOLE DETAIL
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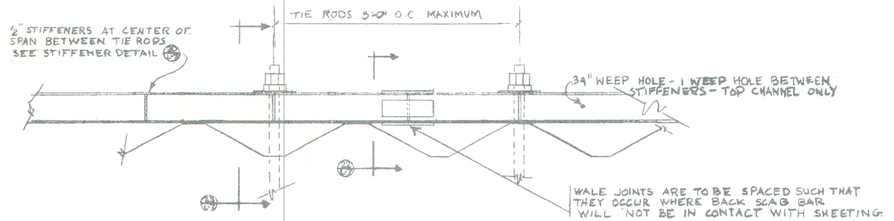
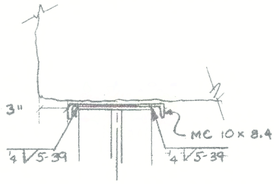


WALE DETAIL
SCALE: 1"=1.5'±



CHANNEL CAP DETAIL
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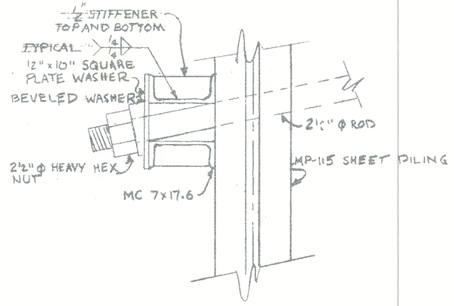
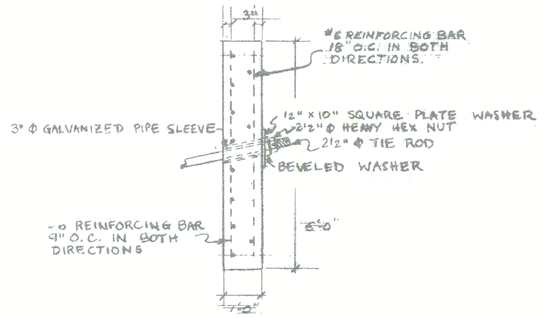
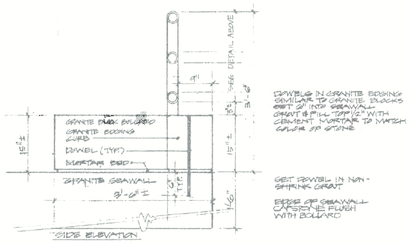
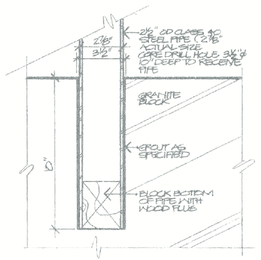


WALE AND TIE ROD DETAIL
SCALE: 1"=2'±

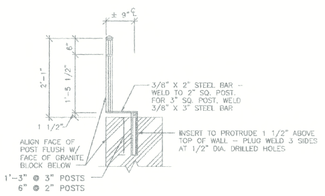


CONCRETE DEADMAN DETAIL
SCALE: 1"=2'±

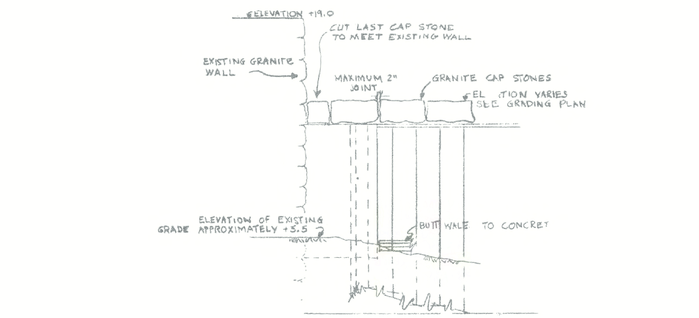




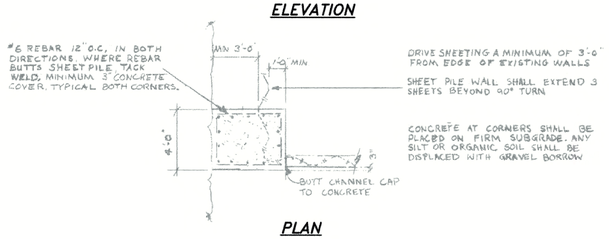
CAPSTONE RAIL MOUNTING DETAIL
NOT TO SCALE



PLAYGROUND FENCE ON GRANITE BLOCK WALL
SCALE: 1"=2'±

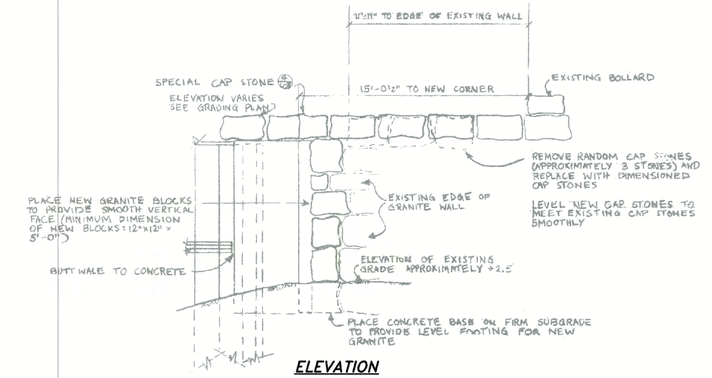


ELEVATION

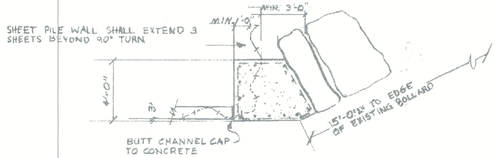


PLAN

EAST END SEAWALL DETAIL
SCALE: 1"=5'±



ELEVATION



PLAN

WEST END SEAWALL DETAIL
SCALE: 1"=5'±

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10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
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SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

LANGONE PARK SEAWALL REPAIRS
COMMERCIAL STREET
BOSTON, MASSACHUSETTS

THE CITY OF BOSTON
BOSTON PARKS AND RECREATION DEPARTMENT

RYAN M. McCOY CIVIL No. 40958 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

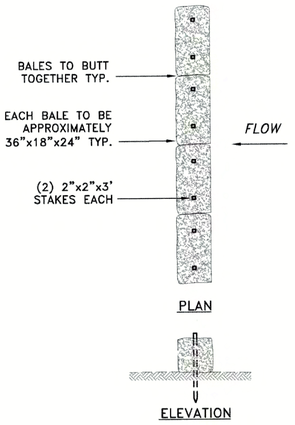
REVISIONS:

PROJECT NO.:	17142.00
DATE:	OCTOBER 2018
SCALE:	AS NOTED
DESIGNED BY:	DJG
CHECKED BY:	RMM
DRAWN BY:	LMC/DJG
APPROVED BY:	KWH

EXISTING SECTIONS AND DETAILS

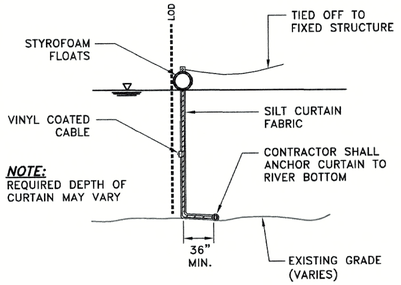
DRAWING NO.: 3.1

SHEET NO.: 4 OF 8



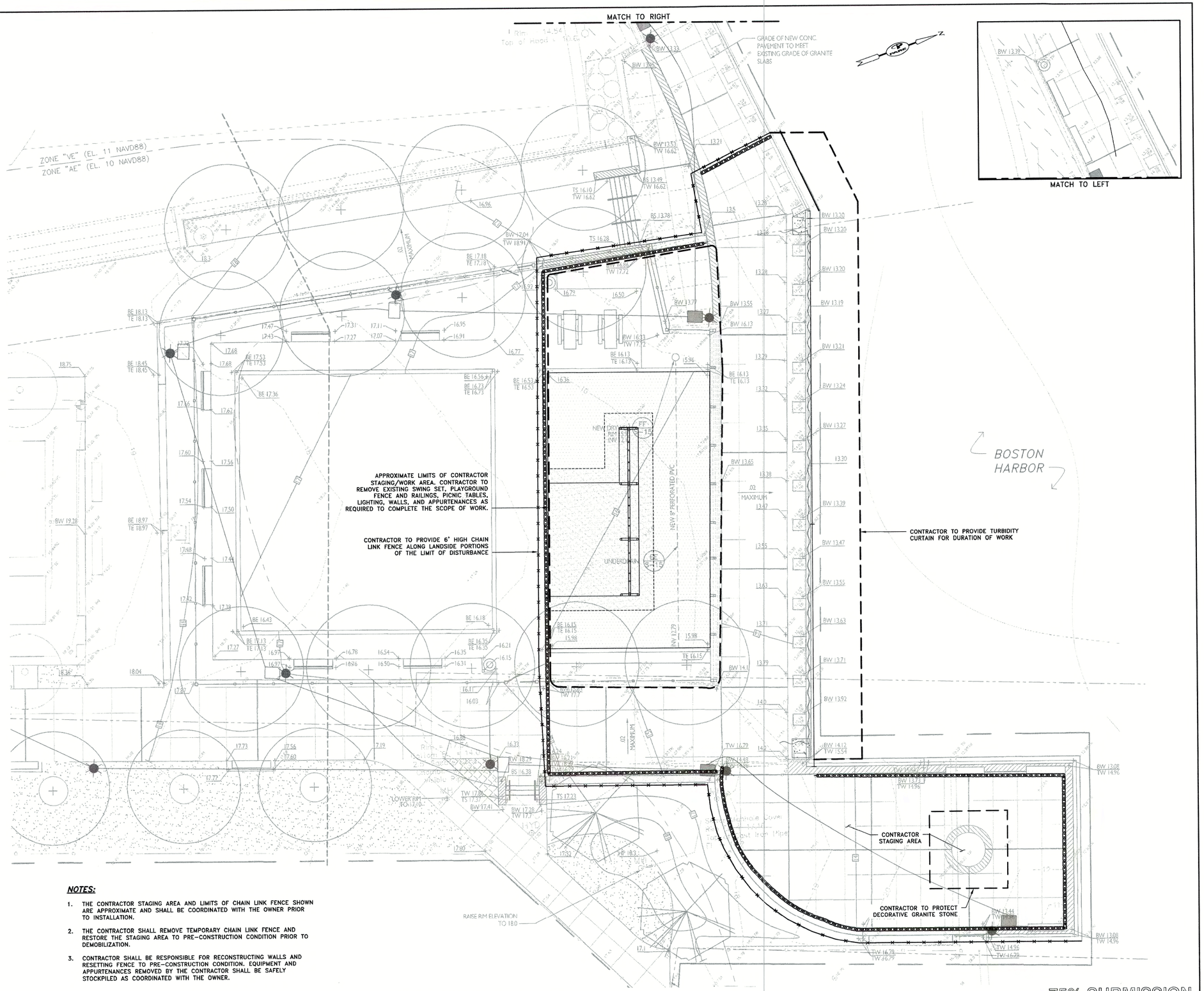
TYPE 1 EROSION CONTROL

NOT TO SCALE



TURBIDITY BARRIER DETAIL

NOT TO SCALE



NOTES:

1. THE CONTRACTOR STAGING AREA AND LIMITS OF CHAIN LINK FENCE SHOWN ARE APPROXIMATE AND SHALL BE COORDINATED WITH THE OWNER PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL REMOVE TEMPORARY CHAIN LINK FENCE AND RESTORE THE STAGING AREA TO PRE-CONSTRUCTION CONDITION PRIOR TO DEMOBILIZATION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR RECONSTRUCTING WALLS AND RESETTING FENCE TO PRE-CONSTRUCTION CONDITION. EQUIPMENT AND APPURTENANCES REMOVED BY THE CONTRACTOR SHALL BE SAFELY STOCKPILED AS COORDINATED WITH THE OWNER.

SITE PREPARATION PLAN

SCALE: 1"=20'±

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SCALE ADJUSTMENT GUIDE
0" 1"
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LANGONE PARK SEAWALL REPAIRS

COMMERCIAL STREET
BOSTON, MASSACHUSETTS

THE CITY OF BOSTON
BOSTON PARKS AND RECREATION DEPARTMENT

COMMONWEALTH OF MASSACHUSETTS
RYAN M. McCOY
CIVIL
No. 49988
REGISTERED PROFESSIONAL ENGINEER

REVISIONS:		

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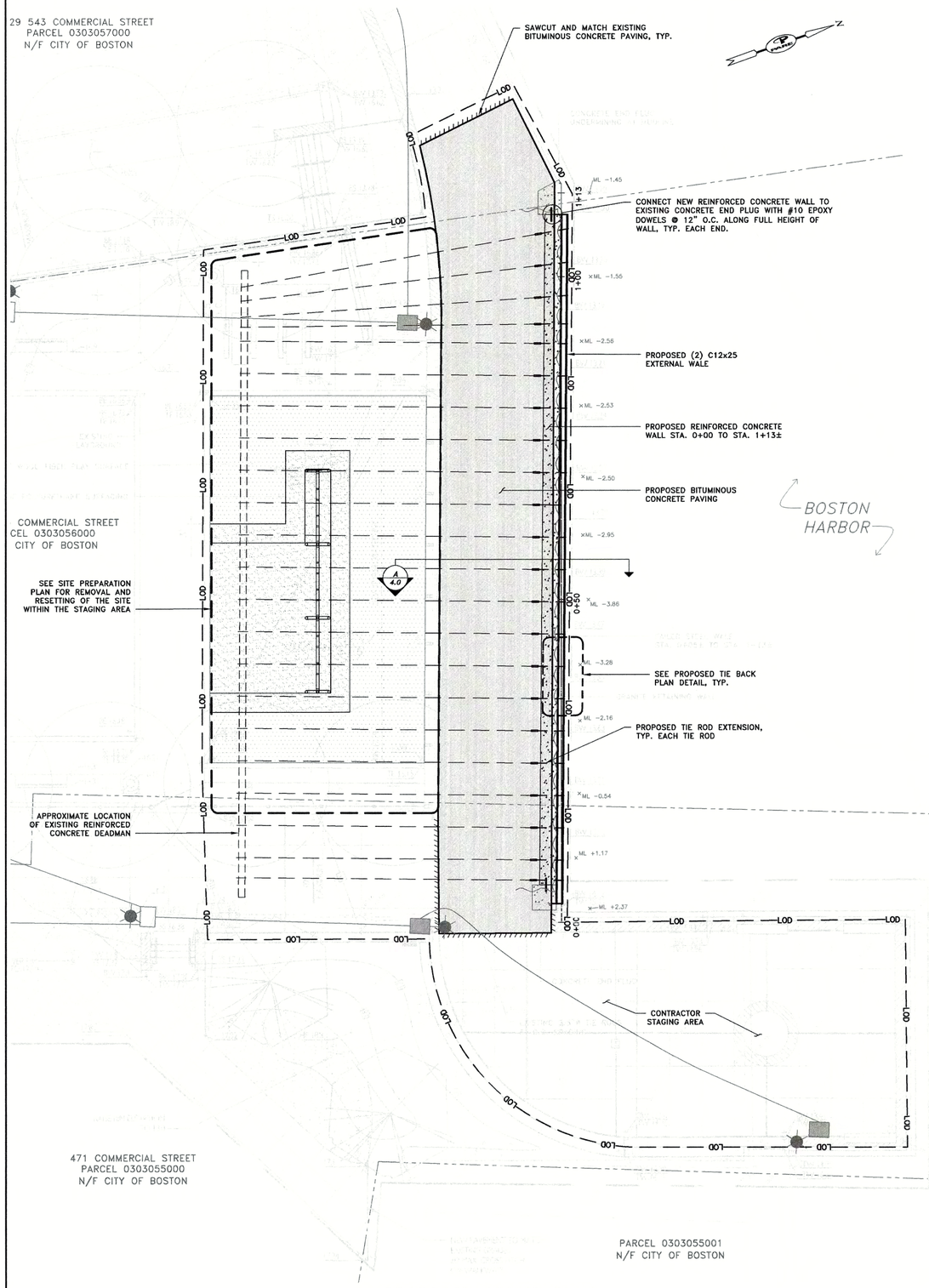
CHECKED BY:	RMM
DRAWN BY:	LMC/DJG
APPROVED BY:	KWH

SITE PREPARATION PLAN

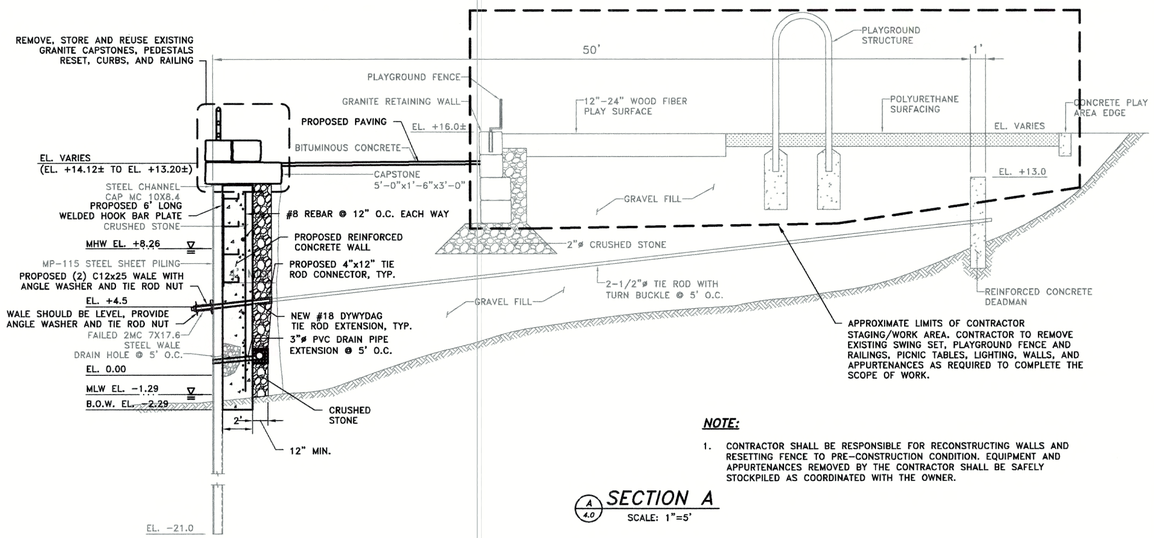
DRAWING NO.: 3.2

SHEET NO.: 5 OF 8



PROPOSED REPAIR PLAN

SCALE: 1"=10'±

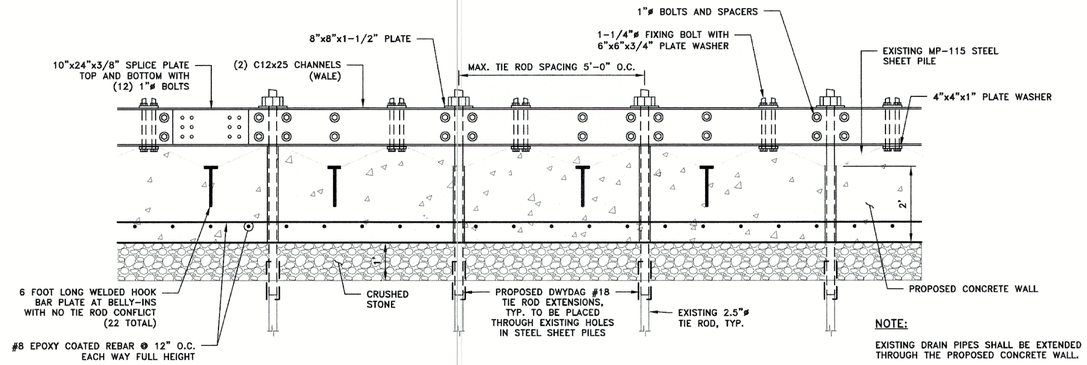


NOTE:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR RECONSTRUCTING WALLS AND RESETTING FENCE TO PRE-CONSTRUCTION CONDITION. EQUIPMENT AND APPURTENANCES REMOVED BY THE CONTRACTOR SHALL BE SAFELY STOCKPILED AS COORDINATED WITH THE OWNER.

A/4.0 SECTION A

SCALE: 1"=5'



NOTE:

EXISTING DRAIN PIPES SHALL BE EXTENDED THROUGH THE PROPOSED CONCRETE WALL.

OPTION A
PROPOSED TIE BACK PLAN DETAIL

SCALE: 1"=2'±

OPTION A – PROPOSED SCOPE OF WORK

1. PRIOR TO PROJECT COMMENCEMENT, NOTIFY AND COORDINATE WITH ALL STATE, LOCAL AND FEDERAL AUTHORITIES AS REQUIRED. NOTIFY DIG-SAFE FOR UTILITY MARKING.
2. INSTALL SIGNAGE AND SECURITY FENCING AS NECESSARY.
3. MOBILIZE CONSTRUCTION EQUIPMENT AND PERSONNEL TO THE JOB SITE.
   A. CONTRACTOR TO UTILIZE PLAYGROUND AS REQUIRED TO FACILITATE WORK. REMOVE AND PROTECT FOR REUSE EXISTING SWING SET, PLAYGROUND FENCE, PICNIC TABLES, AND APPURTENANCES. TIMBER CRANE MATTS OR APPROVED EQUIVALENT SHALL BE USED TO PROTECT PLAYGROUND SURFACING.
4. INSTALL EROSION AND SEDIMENT CONTROLS AS NECESSARY.
5. REMOVE AND PROTECT FOR REUSE EXISTING GRANITE CAPSTONE, GRANITE BLOCK BOLLARD, AND RAILING ON THE TOPSIDE OF THE EXISTING STEEL SHEET PILES.
6. SAWCUT EXISTING BITUMINOUS PAVEMENT AND EXCAVATE TO EXPOSE EXISTING TIE RODS.
   A. CONTRACTOR SHALL ENSURE THAT ADEQUATE SIDE SLOPES, SHORING, AND FALSEWORK ARE PROVIDED AT THE EXCAVATION RESULTING IN A STABLE AND SAFE STRUCTURE AT ALL TIMES. CONTRACTOR IS ADVISED THAT THE EXISTING STEEL SHEET PILES, WALLS, WALE, AND TIE RODS ARE DETERIORATED, THEREFORE THE STRUCTURAL CAPACITY OF THE RETAINING SYSTEM MAY BE REDUCED.
   B. CONTRACTOR SHALL REMOVE AND RESET EXISTING LIGHT HOLES, PULL BOXES, AND HANDHOLES AS REQUIRED TO COMPLETE THE WORK.
7. CUT EXISTING TIE RODS BEHIND EXISTING STEEL SHEET PILE AND INSTALL NEW SISTERED TIE ROD EXTENSIONS AND EXTERIOR STEEL WALE. NO MORE THAN TWO (2) TIE RODS MAY BE CUT PER EXCAVATED SECTION. INSTALL REINFORCEMENT, HOOK BAR PLATES, AND CRUSHED STONE DRAINAGE FILTER AS REQUIRED. EXTEND OUTFALLS AND DRAIN PIPES THROUGH EXISTING SHEET PILE AND FORMWORK.
8. INSTALL FALSEWORK AND TEMPORARY SHORING/SUPPORTS. POUR CONCRETE WALL.
   A. CONCRETE SHALL BE A TREMIE MIX PLACED IN 5-FOOT MAXIMUM LIFTS, OR AS PROVIDED BY THE CONCRETE PLACEMENT SUBMITTAL PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN MASSACHUSETTS. CONCRETE SHALL BE PLACED IN THE DRY WHEN POSSIBLE.
   B. THE CONTRACTOR SHALL ENSURE THAT FALSEWORK IS DESIGNED TO AVOID EXCESSIVE DEFLECTION OR OVERSTRESSING OF THE STEEL SHEET PILES AND/OR WALE SYSTEM. ENSURE CONCRETE HAS PROPERLY CURED BEFORE REMOVAL OF FORMWORK AND TEMPORARY SHORING.
9. BACKFILL THE REMAINING EXCAVATION WITH ONSITE MATERIAL IN COMPACTED 12" LOOSE LIFTS AND REMOVE TEMPORARY SHORING/SUPPORT OF EXCAVATION.
10. RECONSTRUCT WALLS AND RESET FENCE TO PRECONSTRUCTION CONDITION AS REQUIRED. REGRADE AND REPAVE EXISTING WALKWAY TO THE SPECIFIED ELEVATIONS AND LOCATIONS. RESET EXISTING GRANITE CAPSTONES, CURBING, PEDESTALS, AND RAILING TO ORIGINAL CONFIGURATION. REPLACE EXISTING SWING SET, PLAYGROUND FENCE, PICNIC TABLES, AND APPURTENANCES.
11. NOTIFY ENGINEER OF SUBSTANTIAL PROJECT COMPLETION.
12. DEMOBILIZE AND RETURN DISTURBED AREAS OF THE SITE TO PRE-CONSTRUCTION CONDITIONS.

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BOSTONIA CONDITA A.D. 1630

SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING.

LANGONE PARK SEAWALL REPAIRS
COMMERCIAL STREET
BOSTON, MASSACHUSETTS

THE CITY OF BOSTON
BOSTON PARKS AND RECREATION DEPARTMENT

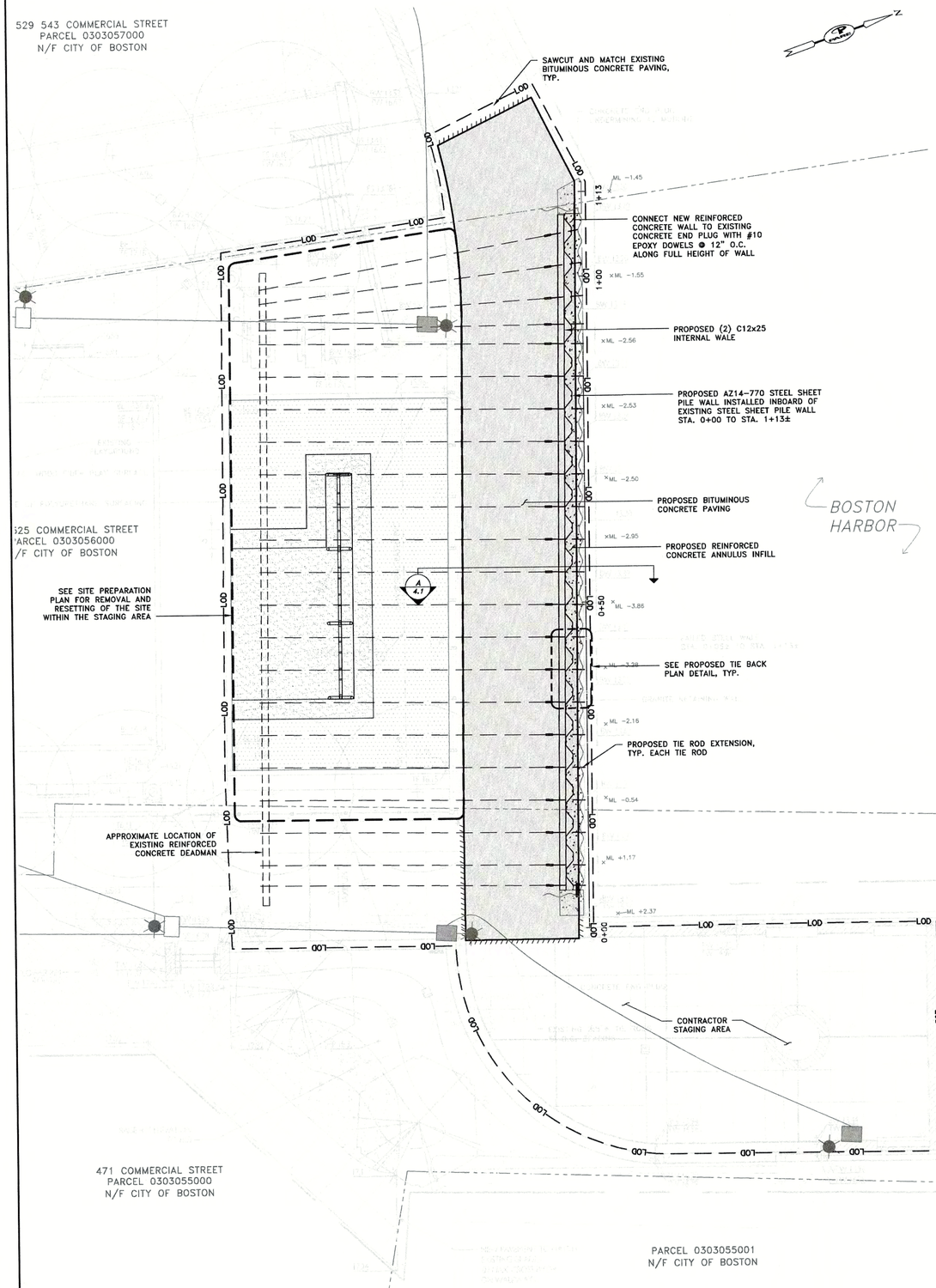
RYAN M. McCOY CIVIL No. 49568 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

REVISIONS:		

PROJECT NO.:	17142.00
DATE:	OCTOBER 2018
SCALE:	AS NOTED
DESIGNED BY:	DJG
CHECKED BY:	RMM
DRAWN BY:	LMC/DJG
APPROVED BY:	KWH

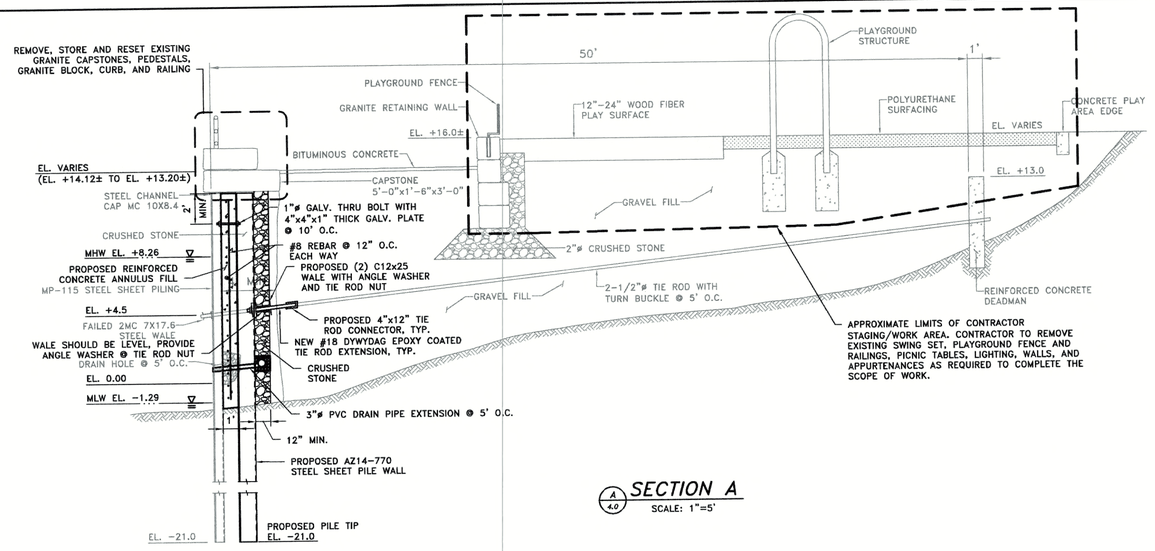
OPTION A
PROPOSED SITE PLAN AND SECTIONS

DRAWING NO.:
4.0
SHEET NO.: 6 OF 8



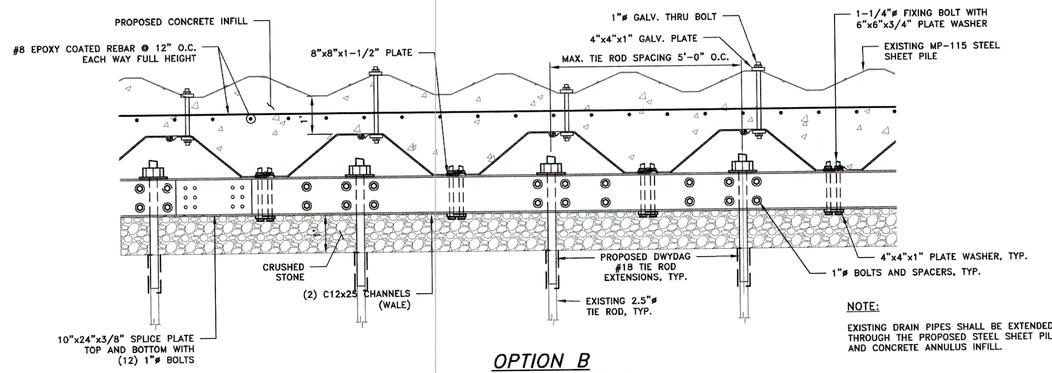
PROPOSED REPAIR PLAN

SCALE: 1"=10'±



A 4.0 SECTION A

SCALE: 1"=5'



OPTION B
PROPOSED TIE BACK PLAN DETAIL

SCALE: 1"=2'±

NOTE:

EXISTING DRAIN PIPES SHALL BE EXTENDED THROUGH THE PROPOSED STEEL SHEET PILE AND CONCRETE ANNULUS INFILL.

OPTION B – PROPOSED SCOPE OF WORK

1. PRIOR TO PROJECT COMMENCEMENT, NOTIFY AND COORDINATE WITH ALL STATE, LOCAL AND FEDERAL AUTHORITIES AS REQUIRED. NOTIFY DIG-SAFE FOR UTILITY MARKING.
2. INSTALL SIGNAGE AND SECURITY FENCING AS NECESSARY.
3. MOBILIZE CONSTRUCTION EQUIPMENT AND PERSONNEL TO THE JOB SITE.
   A. CONTRACTOR TO UTILIZE PLAYGROUND AS REQUIRED TO FACILITATE WORK. REMOVE AND PROTECT FOR REUSE EXISTING SWING SET, PLAYGROUND FENCE, PICNIC TABLES, AND APPURTENANCES. TIMBER CRANE MATTS OR APPROVED EQUIVALENT SHALL BE USED TO PROTECT PLAYGROUND SURFACING.
4. INSTALL EROSION AND SEDIMENT CONTROLS AS NECESSARY.
5. REMOVE AND PROTECT FOR REUSE EXISTING GRANITE CAPSTONE, GRANITE BLOCK BOLLARD, AND RAILING ON THE TOPSIDE OF THE EXISTING STEEL SHEET PILES.
6. SAWCUT EXISTING BITUMINOUS PAVEMENT AND EXCAVATE TO EXPOSE EXISTING TIE RODS.
   A. CONTRACTOR SHALL ENSURE THAT ADEQUATE SIDE SLOPES, SHORING, AND FALSEWORK ARE PROVIDED AT THE EXCAVATION RESULTING IN A STABLE AND SAFE STRUCTURE AT ALL TIMES. CONTRACTOR IS ADVISED THAT THE EXISTING STEEL SHEET PILES, WALLS, WALE, AND TIE RODS ARE DETERIORATED, THEREFORE THE STRUCTURAL CAPACITY OF THE RETAINING SYSTEM MAY BE REDUCED.
   B. CONTRACTOR SHALL REMOVE AND RESET EXISTING LIGHT HOLES, PULL BOXES, AND HANDHOLES AS REQUIRED TO COMPLETE THE WORK.
7. CUT EXISTING TIE RODS BEHIND EXISTING STEEL SHEET PILE AND INSTALL NEW STEEL SHEET PILES, SISTERED TIE ROD EXTENSIONS, AND INTERIOR STEEL WALE. NO MORE THAN TWO (2) TIE RODS MAY BE CUT PER EXCAVATED SECTION.
8. REMOVE THE REMAINING SOIL BETWEEN THE EXISTING BULKHEAD AND NEW SHEETPILE WALL. INSTALL REINFORCEMENT, THRU-BOLTS, AND EXTEND OUTFALLS AND DRAIN PIPES THROUGH EXISTING SHEET PILE AND FORMWORK.
9. INSTALL FALSEWORK AND TEMPORARY SHORING/SUPPORTS. POUR CONCRETE WALL.
   A. CONCRETE SHALL BE A TREMIE MIX PLACED IN 5-FOOT MAXIMUM LIFTS, OR AS PROVIDED BY THE CONCRETE PLACEMENT SUBMITTAL PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN MASSACHUSETTS. CONCRETE SHALL BE PLACED IN THE DRY WHEN POSSIBLE.
   B. THE CONTRACTOR SHALL ENSURE THAT FALSEWORK IS DESIGNED TO AVOID EXCESSIVE DEFLECTION OR OVERSTRESSING OF THE STEEL SHEET PILES AND/OR WALE SYSTEM. ENSURE CONCRETE HAS PROPERLY CURED BEFORE REMOVAL OF FORMWORK AND TEMPORARY SHORING.
9. INSTALL CRUSHED STONE DRAINAGE FILTER AS REQUIRED AND BACKFILL THE REMAINING EXCAVATION WITH ONSITE MATERIAL IN COMPACTED 12" LOOSE LIFTS AND REMOVE TEMPORARY SHORING/SUPPORT OF EXCAVATION.
10. RECONSTRUCT WALLS AND RESET FENCE TO PRECONSTRUCTION CONDITION AS REQUIRED. REGRADE AND REPAVE EXISTING WALKWAY TO THE SPECIFIED ELEVATIONS AND LOCATIONS. RESET EXISTING GRANITE CAPSTONES, CURBING, PEDESTALS, AND RAILING TO ORIGINAL CONFIGURATION. REPLACE EXISTING SWING SET, PLAYGROUND FENCE, PICNIC TABLES, AND APPURTENANCES.
11. NOTIFY ENGINEER OF SUBSTANTIAL PROJECT COMPLETION.
12. DEMOBILIZE AND RETURN DISTURBED AREAS OF THE SITE TO PRE-CONSTRUCTION CONDITIONS.

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SCALE ADJUSTMENT GUIDE
0" 1"
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LANGONE PARK SEAWALL REPAIRS
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BOSTON PARKS AND RECREATION DEPARTMENT

COMMONWEALTH OF MASSACHUSETTS
RYAN M. McCOY
CIVIL
No. 49958
REGISTERED PROFESSIONAL ENGINEER

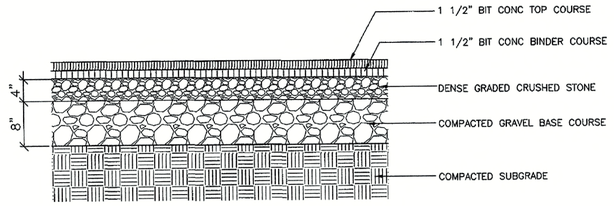
REVISIONS:		

PROJECT NO.:	17142.00
DATE:	OCTOBER 2018
SCALE:	AS NOTED
DESIGNED BY:	DJG
CHECKED BY:	RMM
DRAWN BY:	LMC/DJG
APPROVED BY:	KWH

OPTION B
PROPOSED SITE PLAN AND SECTIONS

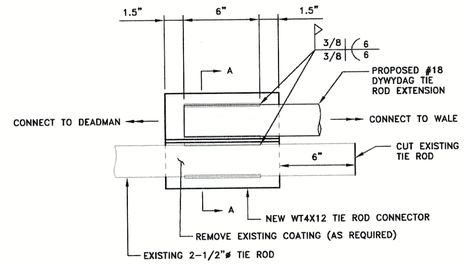
DRAWING NO.: 4.1

SHEET NO.: 7 OF 8



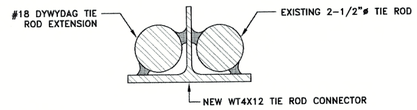
PROPOSED PAVEMENT SECTION

NOT TO SCALE



PROPOSED TIE ROD CONNECTOR DETAIL

SCALE: 2"=1'-0"

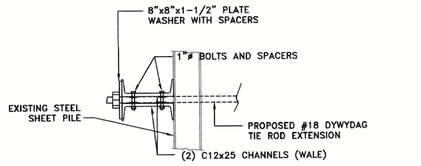


NOTES:

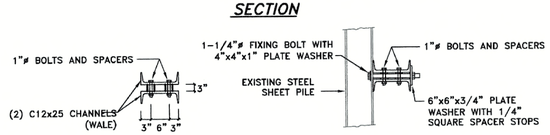
1. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 AND AWS D1.4.
2. EXISTING MATERIAL SHALL BE TESTED FOR WELDABILITY PRIOR TO INSTALLATION OF NEW MATERIAL.
3. PRE-HEAT EXISTING MATERIAL IN ACCORDANCE WITH AWS D1.1.
4. ALL ELECTRODES SHALL BE E60 WHEN WELDING TO EXISTING MATERIAL.

TIE ROD CONNECTOR SECTION A-A

SCALE: 3"=1'-0"



SECTION

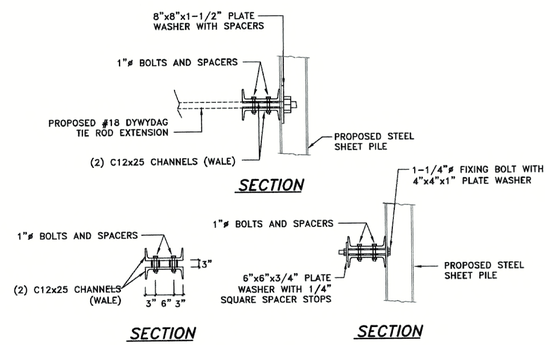


SECTION

SECTION

OPTION A
PROPOSED TIEBACK DETAILS

NOT TO SCALE



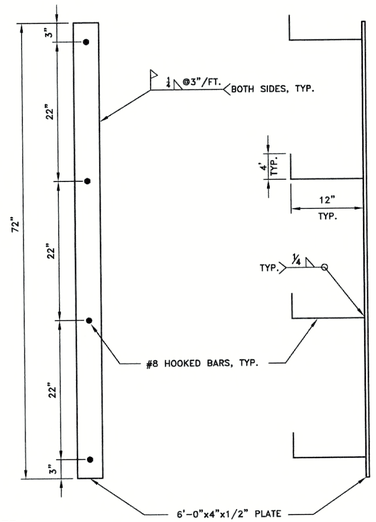
SECTION

SECTION

SECTION

OPTION B
PROPOSED TIEBACK DETAILS

NOT TO SCALE

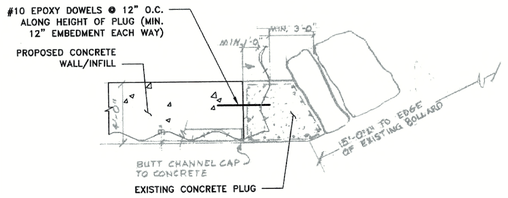


NOTE:

1. HOOK BAR PLATES TO BE INSTALLED ON EXISTING "BELLY IN" SHEETS.

OPTION A
6 FOOT LONG WELDED
HOOKED BAR PLATE DETAIL

SCALE: 1"=1'-0"



TYPICAL CONCRETE PLUG CONNECTION DETAIL

SCALE: 1"=5'±

NOTES:

1. FIELD WELDS SHALL BE INSPECTED BY AWS QUALIFIED PERSONNEL.
2. CUT HOLES IN NEW OR EXISTING STEEL SHEET PILE TO ACCOMMODATE NEW SISTERED TIE RODS AS REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE TIE RODS AND NEW WALE ARE LEVEL ALONG THE STEEL SHEET PILE FACE.
4. RESET THE GRANITE CAPSTONES, CURB, PEDESTALS, AND RAILINGS IN ACCORDANCE WITH THE EXISTING PLANS AND DETAILS SHOWN ON DRAWING 3.0 AND 3.1

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PROPOSED SECTIONS AND DETAILS

DRAWING NO.:
4.2
SHEET NO.: 8 OF 8

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AC	ALTERNATING CURRENT
A	AMPERE
ATC	AUTOMATIC TEMPERATURE CONTROLS
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
C	CONDUIT
CKT	CIRCUIT
CB	CIRCUIT BREAKER
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRIC METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EF	EXHAUST FAN
FL	FLOOR
FLA	FULL LOAD AMPERE
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
IG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MC	MECHANICAL CONTRACTOR
MTD	MOUNTED
MTG	MOUNTING
NMC	NON-METALLIC CONDUIT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PNL	PANELBOARD
PH	PHASE
PVC	POLYVINYL CHLORIDE CONDUIT
RSC	RIGID GALVANIZED STEEL CONDUIT
SF	SUPPLY FAN
SS	SAFETY SWITCH
TEL	TELEPHONE
TRF	TRANSFORMER
V	VOLTS
W	WATTS OR WIRE
WP	WEATHERPROOF
4WSN	4-WIRE SOLID NEUTRAL

RECEPTACLE ABBREVIATIONS

GFI	GROUND FAULT CIRCUIT INTERUPTER, PERSONAL PROTECTION
WP	WEATHERPROOF RECEPTACLE WITH COVERPLATE LISTED FOR WET LOCATION WITH AN ATTACHMENT PLUG INSERTED.

ELECTRICAL LEGEND

1,3 LP1B	HOMERUN TO PANELBOARD, NUMBER OF TICKS INDICATES NUMBER OF #12 AWG CONDUCTORS CONTAINED IN RACEWAY. TWO (2) #12 AWG SHALL NOT BE INDICATED BY TICKS, NUMERALS 1 AND 3 INDICATE CIRCUITS IN PANELBOARD. RACEWAYS LARGER THAN 1/2" AND CONDUCTORS LARGER THAN #12 AWG SHALL BE INDICATED ON THE DRAWINGS. PROVIDE AN INSULATED GREEN GROUND WIRE IN ALL RACEWAYS MINIMUM SIZE TO BE #12AWG.
	RACEWAY RUN ABOVE GROUND
	RACEWAY RUN UNDERGROUND
	PANELBOARD-SURFACE MOUNTED
T	DRY TYPE TRANSFORMER
J	JUNCTION BOX WITH BLANK COVERPLATE, SIZE AS REQUIRED BY N.E.C.
	DUPLEX CONVENIENCE OUTLET RATED 20A, 125V, U-SLOT GROUNDED TYPE MOUNTED 18" ABOVE FINISHED FLOOR TO CENTER LINE. ALL OTHER MOUNTING HEIGHTS SHALL BE AS NOTED ADJACENT TO THE SYMBOL. REFER TO RECEPTACLE ABBREVIATIONS FOR SPECIAL PURPOSE RECEPTACLES.
S_a	SINGLE POLE SWITCH (120/277V) MOUNTED 4'-0" ABOVE FINISHED FLOOR. ALL OTHER MOUNTING HEIGHTS SHALL BE AS NOTED ON THE DRAWINGS. "a" SUBSCRIPT DENOTES CIRCUITS CONTROLLED.
T1	SPORTS LIGHT POLE - 'T1' INDICATES POLE NUMBER
	PEDESTRIAN LIGHT FIXTURE
PHH HH	HAND HOLE "PHH" POWER HAND HOLE "CHH" COMMUNICATIONS HAND HOLE

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHTS, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. WORK SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE, MASSACHUSETTS BUILDING CODE, NFPA, REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION AND BOSTON STREET LIGHTING STANDARDS.
3. THE WORD "CONTRACTOR" AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE ELECTRICAL SUBCONTRACTOR.
4. CONTRACTOR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL PROVIDE LABOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN.
5. CONTRACTOR SHALL PAY ELECTRIC UTILITY COMPANY BACKCHARGES AND PROVIDE COORDINATION WITH SAME.
6. EXCEPT AS OTHERWISE NOTED, THE ELECTRICAL WORK SHALL INCLUDE DEMOLITION, PANELBOARDS, CIRCUIT BREAKERS, FEEDERS, WIRING, RACEWAYS, LIGHTING FIXTURES, DEVICES, SAFETY SWITCHES, TRANSFORMERS AND CONNECTION NECESSARY TO OPERATE MOTORS AND OTHER EQUIPMENT.
7. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND POWER AND THE GENERAL CONTRACTOR SHALL PAY ALL ENERGY CHARGES.
8. DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL KEEP HIS PORTION OF THE WORK NEAT, CLEAN AND ORDERLY.
9. ALL SYSTEMS SHALL BE TESTED FOR SHORT CIRCUIT AND GROUNDS PRIOR TO ENERGIZING AND ANY DEFECTS SHALL BE CORRECTED.
10. ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL WORK SHALL BE INCLUDED AS PART OF THIS SECTION.
11. COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ELECTRICAL EQUIPMENT. WHERE SPECIFIED ELECTRICAL EQUIPMENT IS SUBSTITUTED, THE ELECTRICAL CONTRACTOR SHALL SUBMIT COMPLETE SPECIFICATIONS ON THE SUBSTITUTE AS WELL AS THE ITEM ORIGINALLY SPECIFIED.
12. MATERIALS SHALL BE SPECIFICATION GRADE AND UL LISTED.
13. WHERE MATERIAL IS CALLED OUT IN THE LEGEND BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OR DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.
14. WORK SHALL BE COORDINATED WITH THAT OF OTHER TRADES TO ELIMINATE INTERFERENCES.
15. ELECTRICAL CONTRACTOR SHALL OBTAIN SHOP DRAWINGS/SPECIFICATIONS OF ALL EQUIPMENT FROM THE GENERAL CONTRACTOR PRIOR TO PURCHASING AND INSTALLING ELECTRICAL EQUIPMENT FOR SAME. NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL EQUIPMENT INSTALLED AND CONTRACT DOCUMENTS.
16. ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF WHICH SYSTEM IS PUT INTO SERVICE.
17. WORK SHALL BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE EQUIPMENT (INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED.
18. WIRE SHALL BE TYPE "XLP" INSULATED FOR 600 VOLTS, MINIMUM WIRE SIZE SHALL BE #12 AWG COPPER UNLESS SPECIFICALLY NOTED OTHERWISE.
19. WIRING METHODS:
    A. BELOW GRADE WIRING SHALL BE IN SCHEDULE 80 PVC.
    B. ABOVE GROUND WIRING SHALL BE IN RGS.
20. PANELBOARDS SHALL BE DEAD FRONT, THERMAL MAGNETIC BOLT-ON CIRCUIT BREAKER TYPE, DESIGNED FOR SURFACE OR FLUSH MOUNTING AS INDICATED ON PLAN, AND HAVING CONNECTIONS TO 120/208 OR 277/480 VOLT, 3 PHASE, 4 WIRE SERVICE. ALL BUS BARS SHALL BE COPPER. CABINETS SHALL BE MADE OF CODE GAUGE GALVANIZED SHEET STEEL, WITH A MINIMUM OF 4 INCH GUTTERS, DOOR IN DOOR CONSTRUCTION, LOCKED DOOR, AND FLUSH HINGES. TYPEWRITTEN INDEX SHALL BE MOUNTED ON DOOR INSIDE TRANSPARENT COVER INDICATING LOAD SERVED. PANELS SHALL INCLUDE SEPARATE EQUIPMENT GROUND BUS.
21. PANELBOARDS, DISCONNECT SWITCHES, AND CONTROLLERS SHALL HAVE NAMEPLATES OF BLACK LAMINATED PLASTIC WITH ENGRAVED WHITE LETTERS, SECURED WITH SELF-TAPPING SCREWS.
22. CONTRACTOR SHALL PHASE BALANCE PANELBOARDS IN THE FIELD. LOAD ON EACH PHASE SHALL BE BALANCED WITHIN 10% OF EACH OTHER.
23. TOGGLE SWITCHES SHALL BE OF THE SINGLE POLE A.C. QUIET TOGGLE TYPE FOR MOUNTING IN A SINGLE-GANG SPACING. TOGGLE SWITCHES SHALL BE FULLY RATED 20 AMPERES AT 120/277 VOLT.
24. DUPLEX RECEPTACLES SHALL BE 2 POLE, 3 WIRE, GROUNDING TYPE 20 AMPERE, 125 VOLT WITH METAL PLASTER EARS. RECEPTACLES SHALL BE NEMA STANDARD CONFIGURATION 5-20R.
25. FEEDER TAPS WILL NOT BE ALLOWED IN PANELBOARD GUTTERS.
26. CONTRACTOR SHALL CHECK EXISTING CONDITIONS TO DETERMINE EXACT EXTENT OF WORK TO BE PERFORMED PRIOR TO BIDDING. DIMENSIONS RELEVANT TO EXISTING WORK SHALL BE VERIFIED IN THE FIELD.
27. IN AREAS NOT AFFECTED BY THIS RENOVATION, THIS SUBCONTRACTOR SHALL MAINTAIN CONTINUITY OF ELECTRIC SERVICE.
28. PROVIDE AS-BUILT "CADD" DRAWINGS AT THE COMPLETION OF THE PROJECT.

COMMONWEALTH OF MASSACHUSETTS
ROBERT F. McALEER
ELECTRICAL
No. 48017
REGISTERED
PROFESSIONAL ENGINEER

BOSTON PARKS & RECREATION

Prepared By:
Weston & Sampson SM

Consultant Project No. 2170867

NORTH

No.	Date	Revision

Approved By: Date:

Project Name.:
IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No.	CPR 22955
Date	12/5/2018
Scale	NONE
Drawn	EB, ME
Checked	BK

Sheet Name.:
ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET:
E0.01

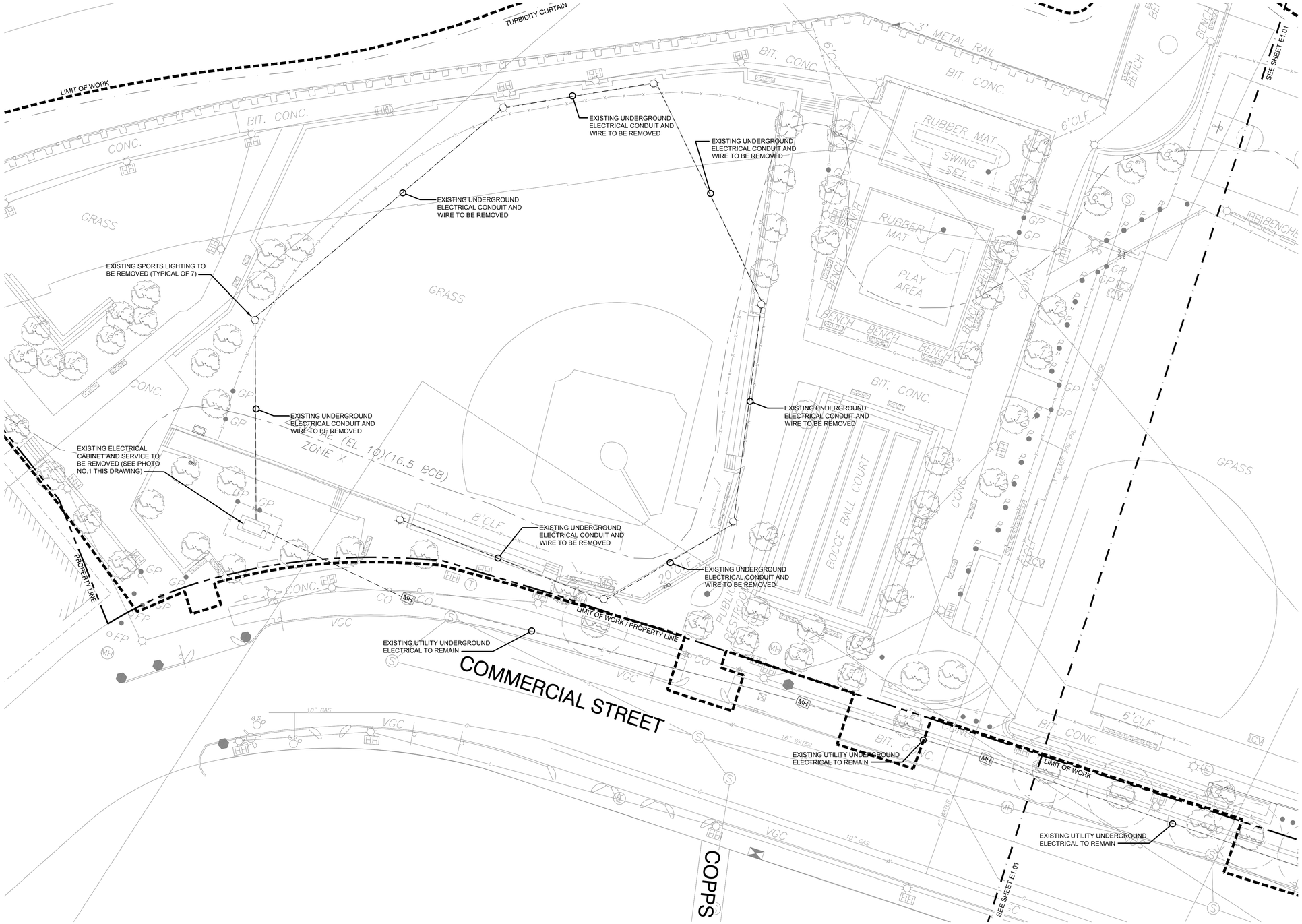
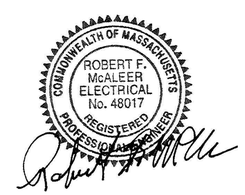


PHOTO NO.1



20 10 0 20 40
SCALE: 1"=20'

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Sheet Name.:
ELECTRICAL LANGONE PARK SITE DEMOLITION PLAN

SHEET:
E1.00

PHOTO NO.1

SEE SHEET E1.00

EXISTING UNDERGROUND ELECTRICAL CONDUIT AND WIRE TO BE REMOVED

LIMIT OF WORK

100' COASTAL BUFFER ZONE

PARCEL ID 0303055001

POOL AREA

ZONE AE (EL 10)(16.5 BCB)

ZONE X

EXISTING UNDERGROUND ELECTRICAL CONDUIT AND WIRE TO BE REMOVED

WOOD DECK

GRASS

PARCEL ID 0303055000

GRASS

EXISTING UTILITY TRANSFORMER AND SWITCH (TO BE REMOVED) (SEE PHOTO NO.1 THIS DRAWING)

1 STORY CONCRETE BUILDING

EXISTING UTILITY BUILDING TO REMAIN

PROPERTY LINE

EXISTING POLE MOUNTED LIGHTING TO BE REMOVED (TYPICAL OF 4)

EXISTING UNDERGROUND ELECTRICAL CONDUIT AND WIRE TO BE REMOVED

EXISTING UNDERGROUND ELECTRICAL CONDUIT AND WIRE TO BE REMOVED

EXISTING ELECTRIC UTILITY LINES TO REMAIN

EXISTING UNDERGROUND ELECTRICAL CONDUIT AND WIRE TO BE REMOVED

EXISTING ELECTRIC UTILITY MANHOLE TO REMAIN (TYPICAL)

LIMIT OF WORK / PROPERTY LINE

COMMERCIAL STREET

EXISTING ELECTRIC UTILITY LINES TO REMAIN

EXISTING ELECTRIC UTILITY LINES TO REMAIN

Now or Formerly UNITED STATES OF AMERICA PARCEL ID 0303050000

COMMONWEALTH OF MASSACHUSETTS
ROBERT F. McALEER
ELECTRICAL
No. 48017
REGISTERED
PROFESSIONAL ENGINEER

20 10 0 20 40
SCALE: 1"=20'

BOSTON PARKS & RECREATION

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Drawn	EB, ME
Checked	BK

Sheet Name.:
ELECTRICAL PUOPOLO PARK SITE DEMOLITION PLAN

SHEET:
E1.01

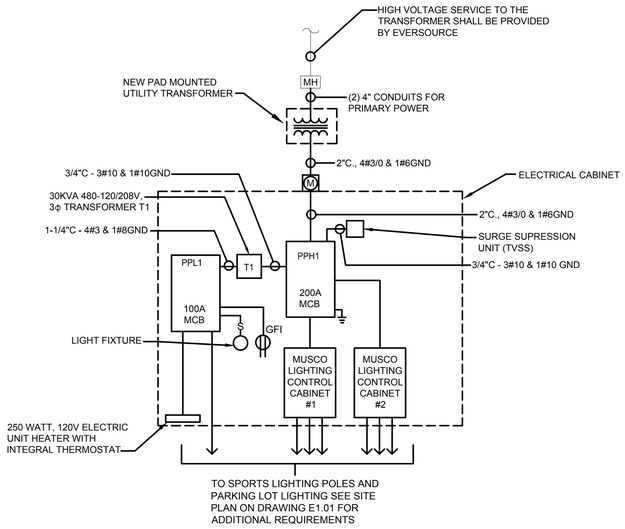
DRAWING NOTES:

1. REFER TO DRAWING E0.01 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DOWNSIZING FEEDERS AT ELECTRICAL DEVICES FOR CONNECTION IN THE FIELD. FEEDERS HAVE BEEN OVERSIZED FOR VOLTAGE DROP.

DRAWING NOTES:

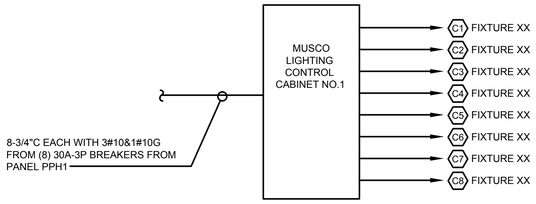
1. REFER TO DRAWING E0.01 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DOWNSIZING FEEDERS AT ELECTRICAL DEVICES FOR CONNECTION IN THE FIELD. FEEDERS HAVE BEEN OVERSIZED FOR VOLTAGE DROP.

BOSTON PARKS & RECREATION	Prepared By: Weston & Sampson Consultant Project No. 2170867	NORTH	No. / Date / Revision Approved By: / Date:	Project Name.: IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND	BPRD Project No. CPR 22955 Date 12/5/2018 Scale 1" = 20' - 0" Drawn EB, ME Checked BK	Sheet Name.: ELECTRICAL PUOPOLO PARK SITE NEW WROK PLAN	SHEET: E2.01



ELECTRICAL ONE LINE DIAGRAM

NOT TO SCALE



SPORTS LIGHTING CONTROL CABINET DIAGRAM

NOT TO SCALE

PANELBOARD SCHEDULE

DESIGNATION: PPH1 — S.C. RATING: 22,000A RMS SYM. — REMARKS:

LOCATION: ELECTRICAL ROOM — SERVICE: 277/480V, 3Ø, 4W

RATING: 200 AMPS — MOUNTING: SURFACE

MAIN: 200 MCB

CKT. NO.	LOAD DESIGNATION	BREAKER TRIP	BREAKER POLE	PHASE A B C	BREAKER POLE	BREAKER TRIP	LOAD DESIGNATION	CKT. NO.
1	-	-				-	-	2
3	FIXTURE POLE XX/CONTACTOR C1	30				30	FIXTURE POLE XX/CONTACTOR C2	4
5	-	-				-	-	6
7	-	-				-	-	8
9	FIXTURE POLE XX/CONTACTOR C3	30				30	FIXTURE POLE XX/CONTACTOR C4	10
11	-	-				-	-	12
13	-	-				-	-	14
15	FIXTURE POLE XX/CONTACTOR C5	30				30	FIXTURE POLE XX/CONTACTOR C6	16
17	-	-				-	-	18
19	-	-				-	-	20
21	FIXTURE POLE XX/CONTACTOR C7	30				30	FIXTURE POLE XX/CONTACTOR C8	22
23	-	-				-	-	24
25	-	-				20	SPARE	26
27	15KVA CABINET TRANSFORMER	50				20	SPARE	28
29	-	-				20	SPARE	30
31	SPARE	20				20	SPARE	32
33	SPARE	20				20	SPARE	34
35	SPARE	20				20	SPARE	36
37	SPARE	20				20	SPARE	38
39	SPARE	20				20	SPARE	40
41	SPARE	20				20	SPARE	42

PANELBOARD SCHEDULE

DESIGNATION: PPL1 — S.C. RATING: 10,000A RMS SYM. — REMARKS:

LOCATION: ELECTRICAL ROOM — SERVICE: 120/240V, 1Ø, 3W

RATING: 100 AMPS — MOUNTING: SURFACE

MAIN: 100A MCB

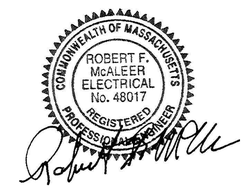
CKT. NO.	LOAD DESIGNATION	BREAKER TRIP	BREAKER POLE	PHASE A B C	BREAKER POLE	BREAKER TRIP	LOAD DESIGNATION	CKT. NO.
1	LIGHTING IN ELECTRICAL CABINET	20				20	ELECTRIC HEATER IN ELECTRICAL CABINET	2
3	RECEPTACLE IN ELECTRICAL CABINET	20				20	SPARE	4
5	SPARE	20				20	SPARE	6
7	SPARE	20				20	SPARE	8
9	SPARE	20				20	SPARE	10
11	SPARE	20				20	SPARE	12

CONDUIT & WIRING SCHEDULE

CONDUIT	FEEDER	FROM	CONTACTOR NUMBER	TO	FIXTURES	LOAD	CONTACTOR SIZE	REMARKS
P1	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P2	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P3	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P4	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P5	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P6	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P7	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P8	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P9	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	
P10	3"C., 3#4 & 1#6GND	MUSCO LIGHTING CONTROL CABINET NO.1 IN ELECTRICAL CABINET	CX	XXXX	XXXX	XXXX	XXXX	

LIGHTING FIXTURE SCHEDULE

TYPE	TYPE	MANUFACTURER	CATALOG NUMBER	LAMP NO.	LAMP TYPE	MOUNTING	VOLTAGE	LOAD	REMARKS
P1	WATERFRONT PEDESTRIAN LED LIGHT FIXTURE MOUNTED ON XX' POLE	CREE LIGHTING	ARE-EDR-5S-R3-04-D-UL-BK-700-35K	1	LED 4122 LUMENS 35K	POLE	120	47W	POLE SHALL BE OMNILITE CATALOG #DS340-450V-140-D1-BLACK OR APPROVED EQUAL
P2	PEDESTRIAN LED LIGHT FIXTURE MOUNTED ON CATENARY POST	CREE LIGHTING	ARE-EDR-5S-R3-04-D-UL-BK-700-35K	1	LED 4122 LUMENS 35K	POLE	120	47W	
C1	EXTON POWERSPAN CABLE SYSTEM WITH 5W LED CREE LIGHTING FIXTURES	TEGAN LIGHTING	LIGHT: EX5-K-C-12/24/35-PX-DL-XX-XX GLOBE: EX5-K-PX-C-GEF-XX	1	LED XXXX LUMENS XXXXK	CABLE/POLE	120	5W	
		REFLEX/ULS	POLE: SSA-4203-XX-20'						



BOSTON PARKS & RECREATION

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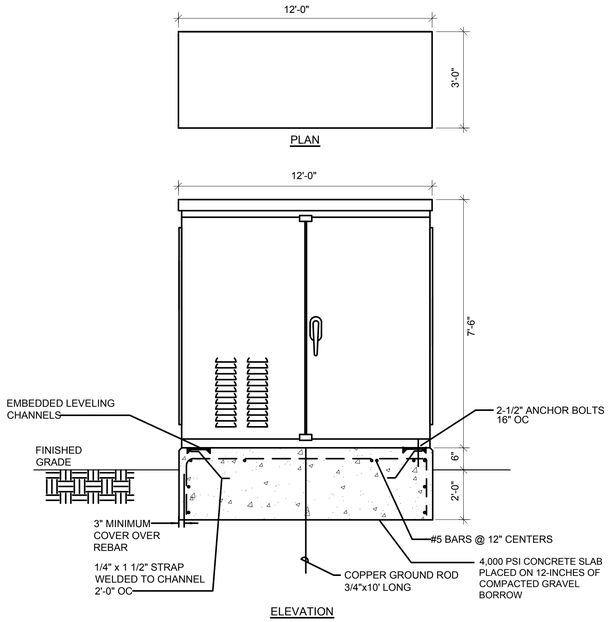
Sheet Name.: ***ELECTRICAL ONE LINE DIAGRAM AND SCHEDULES***

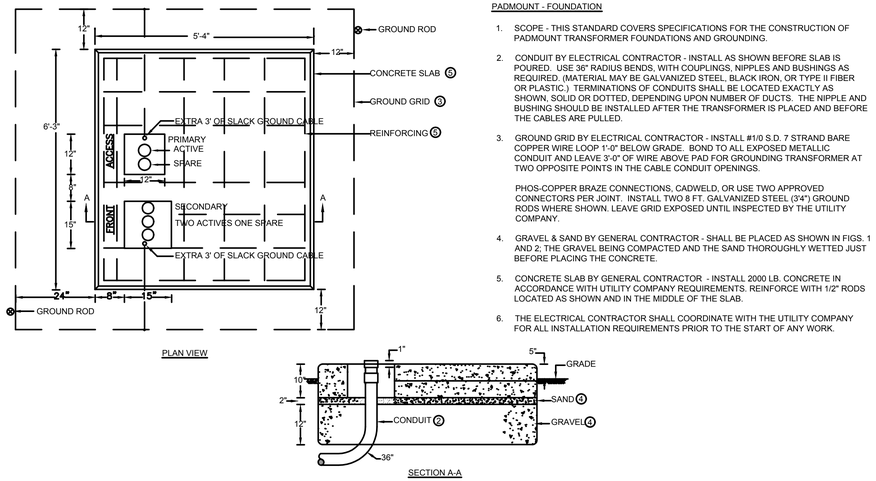
SHEET: **E3.01**



NOTES:

1. CONTRACTOR SHALL COORDINATE THE EXACT CABINET SIZE WITH ALL MANUFACTURER EQUIPMENT SIZES PRIOR TO SUBMITTING THE CABINET FOR APPROVAL. PROVIDE A SCALED DRAWING SHOWING ALL EQUIPMENT FOR APPROVAL.

1	PAD MOUTNED ELECTRICAL CABINET DETAIL	NO SCALE

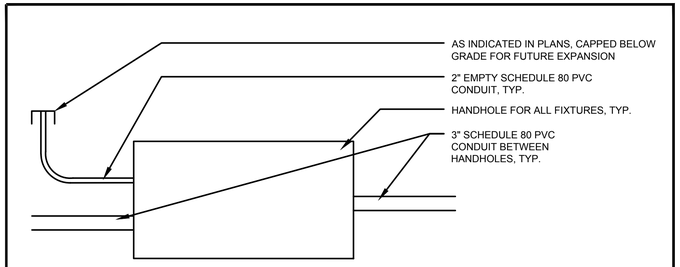


PADMOUNT - FOUNDATION

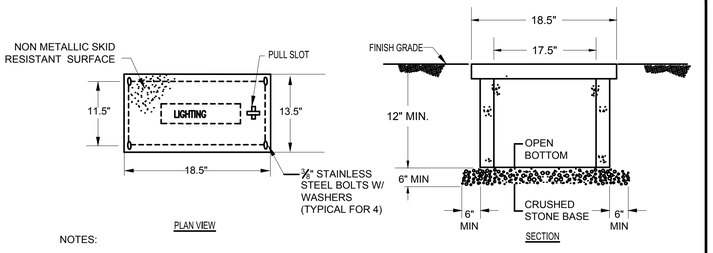
1. SCOPE - THIS STANDARD COVERS SPECIFICATIONS FOR THE CONSTRUCTION OF PADMOUNT TRANSFORMER FOUNDATIONS AND GROUNDING.
2. CONDUIT BY ELECTRICAL CONTRACTOR - INSTALL AS SHOWN BEFORE SLAB IS POURED. USE 36" RADIUS BENDS, WITH COUPLINGS, NIPPLES AND BUSHINGS AS REQUIRED. (MATERIAL MAY BE GALVANIZED STEEL, BLACK IRON, OR TYPE II FIBER OR PLASTIC.) TERMINATIONS OF CONDUITS SHALL BE LOCATED EXACTLY AS SHOWN, SOLID OR DOTTED, DEPENDING UPON NUMBER OF DUCTS. THE NIPPLE AND BUSHING SHOULD BE INSTALLED AFTER THE TRANSFORMER IS PLACED AND BEFORE THE CABLES ARE PULLED.
3. GROUND GRID BY ELECTRICAL CONTRACTOR - INSTALL #1/0 S.D. 7 STRAND BARE COPPER WIRE LOOP 1'-0" BELOW GRADE. BOND TO ALL EXPOSED METALLIC CONDUIT AND LEAVE 3'-0" OF WIRE ABOVE PAD FOR GROUNDING TRANSFORMER AT TWO OPPOSITE POINTS IN THE CABLE CONDUIT OPENINGS.

   PHOS-COPPER BRAZE CONNECTIONS, CADWELD, OR USE TWO APPROVED CONNECTORS PER JOINT. INSTALL TWO 8 FT. GALVANIZED STEEL (3/4") GROUND RODS WHERE SHOWN. LEAVE GRID EXPOSED UNTIL INSPECTED BY THE UTILITY COMPANY.
4. GRAVEL & SAND BY GENERAL CONTRACTOR - SHALL BE PLACED AS SHOWN IN FIGS. 1 AND 2; THE GRAVEL BEING COMPACTED AND THE SAND THOROUGHLY WETTED JUST BEFORE PLACING THE CONCRETE.
5. CONCRETE SLAB BY GENERAL CONTRACTOR - INSTALL 2000 LB. CONCRETE IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS. REINFORCE WITH 1/2" RODS LOCATED AS SHOWN AND IN THE MIDDLE OF THE SLAB.
6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY FOR ALL INSTALLATION REQUIREMENTS PRIOR TO THE START OF ANY WORK.

2	PAD MOUNTED TRANSFORMER DETAIL	NO SCALE



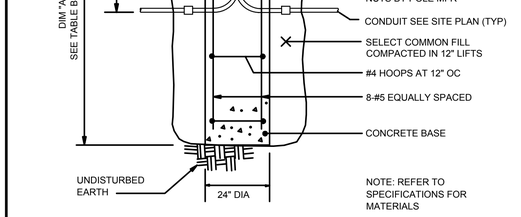
6	TYPICAL SITE LIGHTING DISTRIBUTION	NO SCALE



NOTES:

1. THIS HANDHOLE IS INTENDED FOR NON-DELIBERATE VEHICULAR TRAFFIC ONLY.
2. HANDHOLE SHALL BE PREFABRICATED POLYMER CONCRETE AGGREGATE EQUAL TO QUAZITE OR EQUAL PRE CAST CONCRETE CONSTRUCTION.

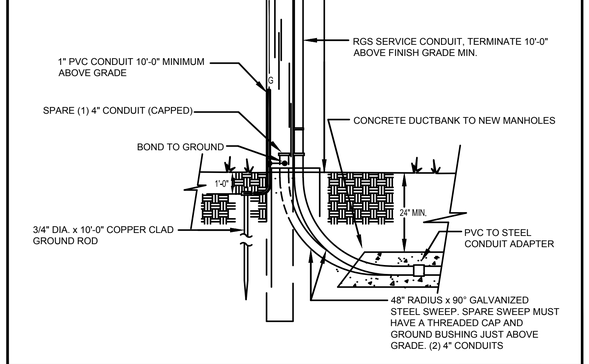
3	PREFABRICATED HANDHOLE "HH" DETAIL	NO SCALE



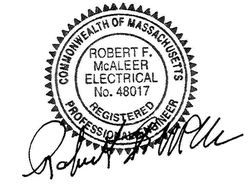
POLE HEIGHT	DIMENSION "A"
10'-0"	4'-6"
20'-0"	4'-6"
30'-0"	6'-6"
40'-0"	6'-6"

NOTE:
ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR. ALL EXCAVATION, BACKFILL & CONCRETE SHALL BE BY GENERAL CONTRACTOR

4	TYPICAL LIGHT POLE BASE DETAIL	NO SCALE



5	TYPICAL RISER POLE DETAIL	NO SCALE



BOSTON PARKS & RECREATION

Prepared By: Weston & Sampson

Consultant Project No. 2170867

NORTH

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Approved By: Date:

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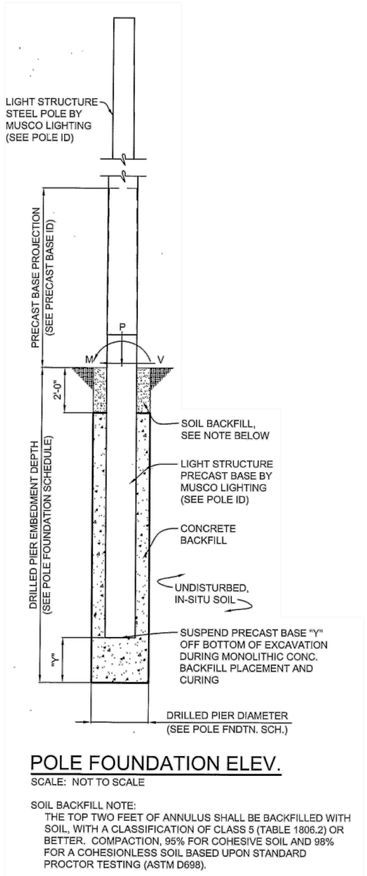
Checked	BK

Sheet Name.: **ELECTRICAL DETAILS SHEET I**

SHEET: **E4.00**

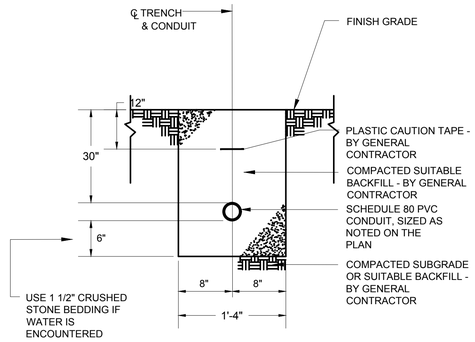


POLE FOUNDATION ELEV.

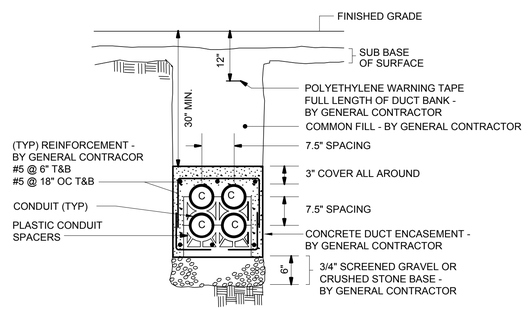
SCALE: NOT TO SCALE

SOIL BACKFILL NOTE:
THE TOP TWO FEET OF ANNULUS SHALL BE BACKFILLED WITH SOIL, WITH A CLASSIFICATION OF CLASS 5 (TABLE 1806.2) OR BETTER. COMPACTION, 95% FOR COHESIVE SOIL AND 98% FOR A COHESIONLESS SOIL BASED UPON STANDARD PROCTOR TESTING (ASTM D698).

1	SPORTS LIGHT POLE BASE DETAIL	NO SCALE



2	TYPICAL DIRECT BURIED DUCTBANK DETAIL	NO SCALE



3	TYPICAL CONCRETE ENCASED DUCTBANK DETAIL	NO SCALE

COMMONWEALTH OF MASSACHUSETTS
ROBERT F. McALEER
ELECTRICAL
No. 48017
REGISTERED
PROFESSIONAL ENGINEER

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Approved By: Date:

Project Name.:
IMPROVEMENTS TO LANGONE PARK & PUOPOLO PLAYGROUND

BPRD Project No.	CPR 22955
Date	12/5/2018
Scale	NONE
Drawn	EB, ME
Checked	BK

Sheet Name.:
ELECTRICAL DETAILS SHEET II

SHEET:
E4.01