
Notice of Intent Application

Massachusetts Wetlands Protection Act (M.G.L. c.131 s.40)

Draw Seven Pathway Extension Boston, Massachusetts

Submitted by:

**Massachusetts Department of
Conservation and Recreation**
251 Causeway Street, Suite 900
Boston, MA 02114-2104

Submitted to:

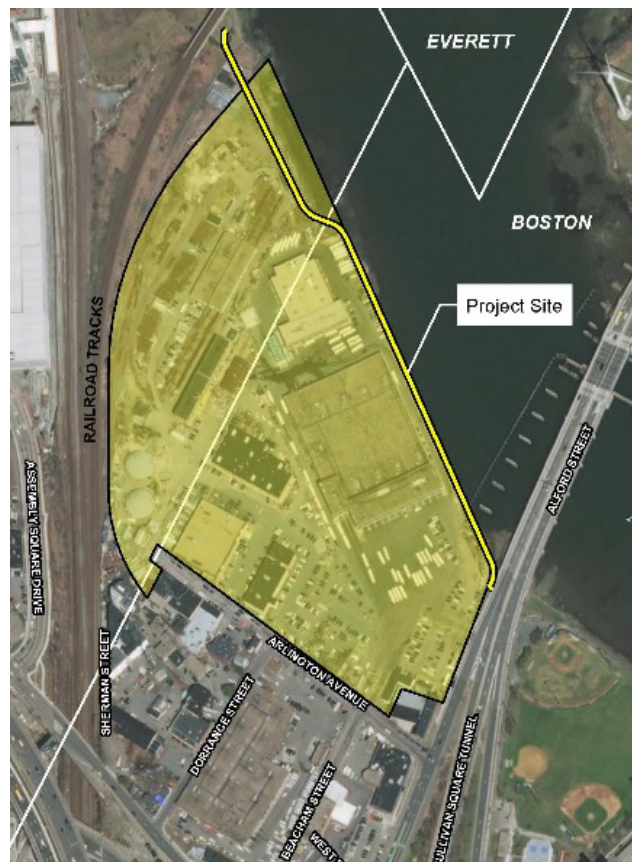
Boston Conservation Commission
City of Boston Environment Department
Boston City Hall, 1 City Hall Square,
Room 709
Boston, MA 02201

Prepared by:

Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, MA 01754

In Association with:

Simpson Gumpertz & Heger



November 21, 2018



4977/Draw7/NOI

PRINCIPALS

November 21, 2018

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

**Subject: Notice of Intent Application, Draw Seven Park Pathway Extension,
Boston and Somerville, Massachusetts**

Dear Commissioners and Staff:

On behalf of the Massachusetts Department of Conservation and Recreation ("DCR," or the "Applicant"), Epsilon Associates, Inc. ("Epsilon") is pleased to submit this Notice of Intent (NOI) to the Boston Conservation Commission (the "Commission"). This NOI has been prepared in accordance with the Massachusetts Wetlands Protection Act (MGL c. 131 §40 (the "Act") and implementing Regulations (310 CMR 10.00) (the "Regulations").

ASSOCIATES

Richard M. Lampeter, INCE
Geoff Starsiak, LEED AP BD+C
Marc Bergeron, PWS, CWS

The Applicant proposes to construct the Draw Seven Park Path extension, an approximately 1,900 foot-long multi-use pathway (the "Project") on the Charlestown Bus Maintenance Facility ("Charlestown Facility") owned and operated by the Massachusetts Bay Transportation Authority ("MBTA"), located just south of the Alford Street bridge in the Boston neighborhood of Charlestown and in Somerville. The proposed 10-foot wide path begins at Alford Street in Boston and extends northwest along the westerly bank of Mystic River to the Draw Seven Park in Somerville where it will connect with the existing DCR pathway network.

3 Mill & Main Place, Suite 250
Maynard, MA 01754
www.epsilonassociates.com

The route for the proposed pathway is accommodated in the Shoreline Stabilization Project at the Charlestown Facility (Waterways License No. 14505) within a dedicated easement along the Mystic River. The route is consistent with the Mystic River Master Plan and provides a vital "missing link" in the Mystic River path network. A minor portion of the proposed project involves work within the 100-year floodplain (Land Subject to Coastal Storm Flowage), the 100-foot Buffer Zone to Coastal Bank, and 25-foot Riverfront Area under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00). This NOI has been prepared and submitted in accordance with

978 897 7100

FAX 978 897 0099

these regulations, and requests approval to construct the Project within locations subject to the jurisdiction of the Boston Conservation Commission.

Additionally, enclosed with the application package is \$922.50 payable to the City of Boston per Boston Conservation Commission guidelines for the local portion of the NOI filing fee.

This NOI is being submitted for the Commission's review at the regularly scheduled **December 5, 2018** public hearing. If you have any questions regarding this NOI please do not hesitate to contact me at (978) 461-6271 or ajacobs@epsilonassociates.com.

Sincerely,
EPSILON ASSOCIATES, INC.



Alyssa Jacobs, PWS
Senior Consultant and Manager, Ecological Sciences

Encl.

CC: MBTA – Holly Palmgren
DCR – Dan Driscoll
SGH – Cory Cormier, P.E.
DEP NERO

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Draw Seven Pathway Extension Alford Street

Submitted by:

Massachusetts Department of Conservation and Recreation
251 Causeway Street, Suite 900
Boston, MA 02114-2104

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Maynard, Massachusetts 01754

In Association with:

Simpson Gumpertz & Heger

November 21, 2018

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Submittal Checklist

Checklist for Filing a Notice of Intent with Boston Conservation Commission

In order for the Boston Conservation Commission to effectively process your Notice of Intent, BCC requests that you complete the checklist below and include it with your submission. If you should need assistance please contact Commission staff: 617-635-3850 (cc@boston.gov).

To the Conservation Commission:

- ✓ Eight copies (a signed original and 7 copies) of a completed Notice of Intent (WPA Form 3)
- ✓ Eight copies of plans (reduced to 11" X 17") in their final form with engineer's stamp affixed supporting calculations and other documentation necessary to completely describe the proposed work and mitigating measures. Plans must include existing conditions, the proposed project, erosion controls and mitigation measures, and all wetland resource areas and associated buffer zones.
- ✓ Eight copies of an 8 1/2" x 11" section of the USGS quadrangle map of the area, containing sufficient information for the Conservation Commission and the Department to locate the site of the work.
- ✓ (If applicable) Eight copies the Federal Emergency Management Agency Flood Insurance Rate Map for the project site. FEMA Flood Maps: <https://msc.fema.gov/portal>.
- ✓ Determination regarding the Natural Heritage and Endangered Species Program: Review Section C. Other Applicable Standards and Requirements of the Notice of Intent, page 4 of 8, pertaining to wildlife habitat. The Conservation Commission and the Natural Heritage & Endangered Species Program have the maps necessary to make this determination.
- ✓ (If applicable) Two hard copies and a digital copy of a Stormwater Report to document compliance with the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q), including associated drainage calculations for rooftops, parking lots, driveways, etc., for the required design storm events.
- ✓ Details of the stormwater management system, including: catch basins, oil separating tanks, detention basins, outfalls, sewer connections, etc.
- ✓ Any photographs related to the project representing the wetland resource areas.
- ✓ A project narrative describing the following: a brief overview of the entire project, the work proposed within wetland resource areas and/or buffer zones; how the performance standards specific to the wetland resource areas will be met; construction equipment and material involved; and measures to protect wetland resource areas and mitigate impacts.
- ✓ **Electronic copies. Documents may be submitted via email, or via an email link to downloadable documents.**
- ✓ Abutter Notification, filed concurrently with the Notice of Intent.
- (If applicable) Completed BRA Climate Preparedness Questionnaire (for new buildings). This can be completed online at <http://www.bostonredevelopmentauthority.org/planning/planning-initiatives/climate-change-preparedness-and-resiliency>. Please print the pdf that you will receive via email after completion and include it in your submission.



To minimize the use of non-recyclable materials **please do not include vinyl or plastic binders, bindings, folders or covers with the filing.** Staples and binder clips are good choices.

WPA Form 3 – Notice of Intent



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):

80 Alford Street
a. Street Address

Boston/Somerville
b. City/Town

02116
c. Zip Code

Latitude and Longitude:
41 32' 19.40"
d. Latitude

70 38' 02.24"
e. Longitude

Bos: 0201836000 Som: 100/A1
f. Assessors Map/Plat Number

g. Parcel /Lot Number

2. Applicant:

a. First Name
MA Dept. of Conservation and Recreation

b. Last Name

c. Organization

251 Causeway Street 9th Floor
d. Street Address

Boston
e. City/Town

MA
f. State

0214
g. Zip Code

617-626-1250
h. Phone Number

i. Fax Number

dan.driscoll@state.ma.us
j. Email Address

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

Holly
a. First Name

Palmgren
b. Last Name

Massachusetts Bay Transportation Authority
c. Organization

10 Park Plaza
d. Street Address

Boston
e. City/Town

MA
f. State

02116
g. Zip Code

617-222-1520
h. Phone Number

i. Fax Number

hpalmgren@MBTA.com
j. Email address

4. Representative (if any):

Alyssa
a. First Name

Jacobs
b. Last Name

Epsilon Associates, Inc.
c. Company

3 Mill & Main Place, Suite 250
d. Street Address

Maynard
e. City/Town

MA
f. State

01754
g. Zip Code

978-897-7100
h. Phone Number

i. Fax Number

ajacobs@epsilonassociates.com
j. Email address

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

\$1,160.00
a. Total Fee Paid

\$237.50
b. State Fee Paid

\$922.50* (city calculated fee)
c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

Construction of a 1,900 foot-long and 10-foot wide multi-use path from Alford Street/Route 99 in Boston to Draw Seven Park in Somerville along the Mystic River. See Attachment A - Project Narrative for more details.

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:

Suffolk

a. County

5288

c. Book

b. Certificate # (if registered land)

172

d. Page Number

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.



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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. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input checked="" type="checkbox"/> Riverfront Area	Mystic River - COASTAL	

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: 50,000 square feet
4. Proposed alteration of the Riverfront Area:
- | | | |
|-------------------------------------|-------------------------------|--|
| 0* exempt under 310 CMR 10.58(6)(i) | <u>0</u> | <u>0</u> |
| | 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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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.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	0	

	1. cubic yards dredged	
l. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	1,130 sf	

	1. square feet	
4. <input type="checkbox"/> 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. <input type="checkbox"/> Project Involves Stream Crossings		
	_____	_____
	a. number of new stream crossings	b. number of replacement stream crossings



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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**

2017

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.



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

- (c) MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhosp/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/nhosp/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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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.



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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.

Draw Seven Park Path Extension

a. Plan Title

SGH

b. Prepared By

Nov. 2018

d. Final Revision Date

Sean Donlon, PE

c. Signed and Stamped by

varies

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:

37440

2. Municipal Check Number

11/13/2018

3. Check date

37438

4. State Check Number

11/13/2018

5. Check date

Epsilon Associates, Inc.

6. Payor name on check: First Name

7. Payor name on check: Last Name



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Document Transaction Number

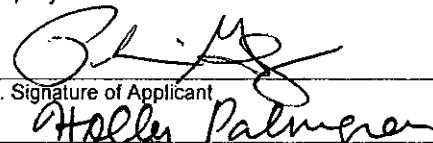

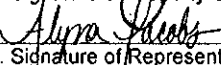
Boston

City/Town

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
	11/12/18
3. Signature of Property Owner (if different)	4. Date
	11/12/18
5. Signature of Representative (if any)	6. Date
	10/24/18

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.

Attachment A

Project Narrative

1.0 Introduction

Epsilon Associates, Inc. (“Epsilon”), on behalf of the Massachusetts Department of Conservation and Recreation (“DCR,” or the “Applicant”), submits this Notice of Intent application to the Boston Conservation Commission (“BCC”). This NOI has been prepared in accordance with the Massachusetts Wetland Protection Act (MGL c.131 s.40) (the “Act”) and implementing Regulations (310 CMR 10.00) (“Regulations”).

The Order of Conditions (“OOC”) issued on April 19, 2017 by the Boston Conservation Commission (DEP File No. 006-1501) permitted shoreline stabilization measures and improvements to coastal resiliency at the Massachusetts Bay Transportation Authority’s (“MBTA”) Charlestown Bus Maintenance Facility (“Charlestown Facility” or “Project Site”), located just north of the Alford Street bridge in the Boston neighborhood of Charlestown and in Somerville. Construction of this project is currently underway. These improvements provided space and ability for the Department of Conservation and Recreation (“DCR”) to construct a new multi-use pathway along the riverfront of the site as described in the original Notice of Intent.

The Applicant proposes to construct the Draw Seven Park Path extension, an approximately 1,900 foot-long multi-use pathway (the “Project”) on the Charlestown Facility owned and operated by the MBTA (Figures 1 and 2). The proposed 10-foot wide path begins at Alford Street in Boston and extends northwest along the westerly bank of Mystic River to the Draw Seven Park in Somerville where it will connect with the existing DCR pathway network.

The route for the proposed pathway was accommodated for in the Shoreline Stabilization Project at the Charlestown Facility within a dedicated easement along the Mystic River. The route is consistent with the Mystic River Master Plan and provides a vital “missing link” in the Mystic River path network (see Figure 3). The existing DCR pathway currently ends at the limits of the Draw Seven Park in Somerville. As envisioned in the Mystic River Greenway Master Plan (2009), the path would extend to Alford Street in Boston and provide a new pedestrian and bicycle connection to locations north and south along the Mystic River. A completed multi-use path would provide access to Assembly Square T Station (via Assembly Row), Assembly Row and Draw Seven Park in Somerville; and Ryan Playground, Sullivan Square, and Sullivan Square MBTA Stations in Boston.

The easement for the proposed pathway is provided by MBTA for the DCR’s use to construct, operate, and maintain the pathway on MBTA property. This Application is for the construction of the pathway itself and presents the proposed pathway design, landscaping, and management plan. Additional information is provided below.

2.0 Existing Conditions

2.1 *MBTA Facilities*

The MBTA's bus maintenance facility located on Alford Street in the Boston neighborhoods of Charlestown and Somerville is the largest bus facility in the MBTA network and houses 231 (approximately 23%) of the MBTA's approximately 1,000 buses. Thirty-eight of the MBTA's 160 bus routes (or nearly 24%) operate out of the Charlestown Facility. In addition to bus operations and storage, the Charlestown Facility is also used to maintain buses.

The Charlestown Facility is located directly adjacent to the Mystic River (Figure 1). The site appears to have been partially filled in the 1940's. A new bulkhead was constructed by the MBTA in 1976 and the MBTA maintenance and storage buildings were constructed in 1978. The two largest buildings at the site include a Bus Storage Garage and a Bus Repair Garage (Figure 2). The closest building (the Bus Storage Garage) is 35 to 45 feet from the water's edge. The Facility also has an Engineering Rail Yard which includes a rail-bending facility and MBTA uses this area for all operational needs throughout the metropolitan area, such as for storage of railroad ties, switch points, equipment, and other critical transportation materials.

2.2 *New Shoreline Embankment and Revetment*

As described in the Notice of Intent Application submitted in February 2017, a new waterfront embankment/revetment protecting the shoreline is being constructed at the MBTA maintenance facility. The shoreline stabilization improvements include six different typical construction sections. The top of slope design elevation for the first three sections of embankment to be installed seaward of the existing bulkhead from Alford Street to the Bus Storage Garage area (approximately 1,150 linear feet) is 13.0 feet (NAVD88), which allows for 2-feet of freeboard above the FEMA 100-year flood elevation of 11.0 feet NAVD88. The 13.0 foot elevation also provides flood protection for the 100-yr flood event in year 2070 (EL12.8 NAVD88) with anticipated climate change and sea level rise, as determined by a study conducted by the Woods Hole Group. The shoreline embankment will be constructed with a top of slope elevation of 13.25 feet (3 inches higher than the design elevation) to allow for some initial settlement of the embankment. The embankment will extend at a slope of 2:1 approximately 40-60 feet seaward of the existing bulkhead, which will remain in place. A geotextile will be added just outboard of the existing bulkhead to prevent additional soil erosion that could occur below the relieving platform as the bulkhead corrodes. The lower portion of the embankment will be protected with riprap and the upper portion (one foot above the MHHW line) will be planted with native vegetation.

The constructed top of slope elevation for the embankment varies from elevation 13.25 feet NAVD88 closest to the Bus Repair Garage to elevation 8.1 +/- feet NAVD88 closest to the Engineering Rail Yard. In this section of lower elevation, the flood protection measure transitions from the embankment to a new sheet pile flood wall with a top of wall elevation of 13.25 feet NAVD88 to provide flood protection to the Charlestown Facility. Finally, the

last two sections are located in the Engineering Rail Yard. These sections include a new revetment, which will extend at a slope of 2 horizontal:1 vertical and has a stone apron to prevent scour. Live stakes are to be planted in the upper portion of the revetment (above MHHW) to incorporate bioengineering. A new sheet pile flood wall will be installed on the landside of the revetment to elevation 13.25 feet NAVD88 to provide flood protection.

Stormwater improvements were also incorporated in the previously permitted project and include the replacement of existing outfalls, new drainage & stormwater quality structures, and the installation of new tide gates.

2.3 Tidal Elevations

The Mean Low Water (“MLW”), Mean Sea Level (“MSL”), and Mean High Water (“MHW”) elevations for the site and vicinity were obtained from the most recent Waterways License issued to the MBTA for the shoreline stabilization project (License No. 14505, issued October 3, 2017 and are as follows. All elevations listed refer to the North American Vertical Datum of 1988 (NAVD 88):

MLW = elevation (“el.”) -5.16 feet;

MSL = el. -0.30 feet, and

MHW = el. 4.33 feet.

2.4 Wetland Resource Areas

Jurisdictional wetland resource areas on or adjacent to the Project site include: Land Under the Ocean that Underlie an Anadromous/Catadromous Fish Run (LUO/Fish Run) Coastal Beach/Tidal Flat, Coastal Bank, Land Subject to Coastal Storm Flowage (LSCSF), and Riverfront Area (RFA).

2.4.1 Land Under the Ocean Underlying an Anadromous/Catadromous Fish Run

Land Under the Ocean (LUO) is defined in 310 CMR 10.25(2) as “*land extending from the mean low water line seaward to the boundary of the municipality’s jurisdiction and includes land under estuaries*”.

On the Project Site, LUO is land below the mean low water (MLW) elevation of the Mystic River seaward to Boston’s municipal jurisdictional boundary. There is no buffer zone associated with LUO.

According to 310 CMR 10.35(2), the portion of LUO that underlies an Anadromous/Catadromous Fish Run is defined as an “*...area within estuaries, ponds, streams, creeks, rivers, lakes or coastal waters, which is a spawning or feeding ground or passageway for anadromous or catadromous which has been identified by the [MA] Division of Marine Fisheries.*”.

As identified in the previous NOI for the Shoreline Stabilization Project, MassGIS Anadromous Fish Run Data indicates that Alewife (*Alosa pseudoharengus*) is a recorded species using this portion of the Mystic River (Figure 4). There is no buffer zone associated with LUO or Fish Run.

2.4.2 Coastal Bank

Coastal bank is defined in 310 CMR 10.30(2) as *“the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland.”*

Consistent with DEP Policy 92-1, the top of the Coastal Bank in Boston is along the newly stabilized shoreline at the 100 year flood elevation. With the shoreline stabilization project, there is not any natural Coastal Bank

Coastal Bank possesses a 100 foot buffer zone under the Act.

2.4.3 Land Subject to Coastal Storm Flowage

310 CMR 10.04 defines Land Subject to Coastal Storm Flowage (LSCSF) as *“...land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater”*.

LSCSF on the Project Site is associated with the floodplain of the tidally influenced Mystic River. According to the applicable Federal Emergency Management Agency—Flood Insurance Rate Map (“FEMA-FIRM”), Community Panel No. 25025C0014J dated March 16, 2016, for the City of Boston, the Project area is located in a coastal flood zone AE at elevation 11 feet NAVD88 (Figure 6). The Somerville FIRM, dated June 4, 2010, has the Zone AE at elevation 9 feet NAVD88 (Figure 7). For this Project, we identify the 100-year flood elevation of 11 feet NAVD88 for the purposes of flood protection.

There is no buffer zone associated with LSCSF.

2.4.4 Land Subject to Tidal Action

Land Subject to Tidal Action (LSTA) is defined by the Act in 310 CMR 10.04 as *“land subject to the periodic rise and fall of a coastal water body, including spring tides”*.

LSTA is shown in path cross Sections A, B, C and D (Sheets C-400 and 401) as the area on the embankment between the MLW and MHW elevations.

2.4.5 Riverfront Area

Riverfront Area (RFA) is defined by the Act in 310 CMR 10.58(2) as *“the area between a river’s mean annual high water line and a parallel line measured horizontally...”*

The mean high water elevation (4.33 feet NAVD 88) of the tidally influenced Mystic River serves as the mean annual high water line for the purposes of determining RFA on the Project Site. Also, RFA is 25-feet wide within the boundaries of densely developed communities including Boston and Somerville. The RFA may overlap with other resource areas and there is no buffer zone associated with RFA.

2.4.6 Rare Species Habitat

The Project site is not located within areas mapped as Priority Habitat of Rare Species and/or Estimated Habitat of Rare Wildlife by the Natural Heritage and Endangered Species Program under the Massachusetts Endangered Species Act and the Massachusetts Wetlands Protection Act, respectively (MassGIS, 2017 – see Figure 5).

There are also no mapped potential vernal pools or certified vernal pools or Areas of Critical Environmental Concern in the vicinity of the Project site.

3.0 Proposed Conditions

3.1 Project Description

The Project is an approximately 1,900 foot-long extension of the Draw Seven Park Pathway and DCR’s Mystic River multi-use path system, beginning at Alford Street/Route 99 in Boston and extending northwest along to Mystic River to the Draw Seven Park in Somerville. The extension consists of approximately 1,900 linear feet of a new, paved, 10-foot wide multi-use ADA-compliant path with striped shoulders, associated signage, landscaping and fencing.

The route for the proposed pathway was provided for in the previously licensed Shoreline Stabilization Project at the Charlestown Facility within a dedicated easement and runs along the Mystic River waterfront portion of the MBTA property. The route is consistent with the Mystic River Master Plan and provides a vital “missing link” in the Mystic River path system. The existing DCR pathway along the Mystic River ends at the limits of the Draw Seven Park in Somerville. As envisioned in the Mystic River Greenway Master Plan (2009) the Project will connect the existing pathway to Alford Street, providing a new pedestrian and bicycle connection to locations north and south along the Mystic River, including Assembly Square T Station and Draw Seven Park in Somerville, Draw Seven Park itself; and the Ryan Playground and the Sullivan Square and Sullivan Square MBTA Stations in Boston.

The constructed embankment/revetment along the waterfront of the Charlestown Facility (see Section 2.2 above) was designed to incorporate the pathway extension. Therefore, only minor material modifications to the embankment are required to accommodate the path cross section, such as the porous pavement with crushed stone base and additional landscaping.

Construction duration for the Project is anticipated to be approximately 6 months, weather permitting. Please see Section 4.2 below for a discussion on construction phasing.

3.2 Pathway Route and Construction

The proposed pathway will connect to the existing sidewalk along Alford Street, between the vehicle access gate at the Charlestown Facility and the Alford Street Bridge (aka “Malden Bridge”). At Alford Street, the path entrance will be 18-feet +/- wide and marked with a granite pier. The entrance is of sufficient distance from the access gate such that exiting vehicles will have an unobstructed view of users entering and exiting the path.

After the entrance at Alford Street, the path will be reduced to 10 feet wide (excluding shoulder striping) and curve slightly towards the river, following along the edge of the embankment/river, which has a top of slope elevation of 13.25-feet NAVD 88. The proposed path centerline elevation is 13.37-feet NAVD. After approximately 1,150 linear feet (i.e. proximate to Station 11 on the accompanying plans in Attachment E), the pathway will make a slight “S” curve to the west, following the embankment at a 4.1% +/- longitudinal slope. The pathway levels out when the embankment top of slope elevation is 8.1 feet NAVD 88 (Station 13) and continues northerly for an additional 750 linear feet before terminating at the Draw Seven Park limits with a path centerline elevation of 8.2 feet NAVD 88. Primary access to the path is at either end of the path: Alford Street (Boston) to the south and Draw Seven Park (Somerville) to the north. Non-vehicular maintenance and emergency access is provided via a ramp at approximately the halfway point of the MBTA Bus Facility, and will be secured by a gate for security purposes. It is anticipated that the gate will be monitored and have emergency call controls that path users can utilize in the event of an emergency.

The 10-foot wide path is proposed to be constructed of porous pavement with narrow, striped shoulders on both sides of the path. A four-foot tall wooden guiderail is proposed along the waterside of the path, and a security fence will be installed along the landside for the full length of the path.

Two bicycle racks, benches and an interpretative sign are proposed on the landside proximate to the “S” curve to provide a rest area for path users. The interpretative signage will present an overview of the Mystic River Reservation, as well as general information related to the shoreline stabilization project, including flood resiliency design and reclaimed wetland resource areas. In this area, the sheet pile flood wall constructed for flood control as part of the shoreline stabilization project is located further from the pathway and allows for the placement of these amenities. The security fencing will be installed mostly landside of the floodwall in this area to encompass the proposed plantings. The flood wall continues from this “S” curve to the pathway connection at Draw Seven Park. At Draw Seven Park, where the path will connect to the existing pathway network.

3.3 *Landscaping and Fencing*

New landscaping and security fencing will be installed along the landside limits of the proposed pathway. A new security fence will be installed along the western side of the pathway for its entire length, replacing the existing barbed-wire fencing. As noted above, along the easterly side of the path, a four-foot high wooden guiderail will be installed to provide safety for the path users, but also allow visibility of the Mystic River.

The shoreline stabilization project will install native plantings along the embankment slope as approved in Shoreline Stabilization permit drawings with no modifications proposed as part of this project. Additional landscape design for the proposed pathway is described below.

At the Alford Street entrance, proposed landscaping includes new native plantings both in front of and behind the security fence, including new trees. At the transition zone between the embankment and revetment where benches and bicycle racks are proposed, additional landscaping, including shade trees, is proposed in front of and behind the flood wall. New plantings will also be installed to the west of the pathway to help provide screening of the Engineering Rail Yard area. A small area of new landscaping is also proposed near the pathway connection to the existing path at Draw Seven Park.

Native species, similar to those selected for the shoreline stabilization project, are included in the proposed landscaping plan. Selected trees, shrubs and herbaceous plants are ecotype species native to the Mystic River Lower Watershed and will provide long-term soil stabilization, habitat diversity and shade. Woody shrub species will be containerized or balled and burlapped at the time of installation; herbaceous material will most likely be planted as plugs. Plant species chosen are available through local nurseries specializing in healthy native stock. These species are relatively tolerant of salt spray or urban areas. New plant material will be maintained and guaranteed for a period of three years.

Below is a preliminary plant list developed to complement the shoreline stabilization project.

Tree List

- ◆ Red maple (*Acer rubrum*)
- ◆ River birch (*Betula nigra*)
- ◆ Black cherry (*Prunus serotina*)
- ◆ White oak (*Quercus alba*)
- ◆ Eastern red cedar (*Juniperus virginiana*)
- ◆ Eastern white pine (*Pinus strobus*)

Shrub List:

- ◆ Beach plum (*Prunus maritima*)
- ◆ Northern bayberry (*Morella pensylvanica*)

- ◆ Virginia rose (*Rosa virginiana*)
- ◆ Winged sumac (*Rhus copallina*)
- ◆ Sweet pepperbush (*Clethra alnifolia*)
- ◆ New Jersey Tea (*Ceanothus americanus*)

Grasses, Groundcovers and Perennials:

- ◆ Butterfly weed (*Asclepias tuberosa*)
- ◆ Switchgrass (*Panicum virgatum*)
- ◆ Bearberry (*arctostaphylus uva-ursi*)
- ◆ Beach pea (*Lathyrus japonicas*)
- ◆ Seaside goldenrod (*Solidago sempervirens*)
- ◆ Coastal hairgrass (*Deschampsia fluxuosa*)
- ◆ Virginia creeper (*Parthenocissus quinquefolia*)
- ◆ Little blue stem (*Schizachyrium scoparium*)

3.4 Stormwater Management

The pathway is proposed to be constructed with porous pavement thus the Project results in *de minimus* new impervious cover. The new granite pavers marking the entrance will add a *de minimus* amount of impervious area, along with the concrete pads for the bike racks and benches. The proposed pathway will not increase peak runoff rates or runoff volumes. For the embankment condition (approximately station 0+00 to 11+40 +/-), the porous pavement will be installed atop a 12" (min) compacted crushed stone base layer. See typical path cross section on sheet C-400 of the NOI plans. The crushed stone base layer will provide storage and will exfiltrate into planting soils and drain into the embankment via a 6" perforated pipe. Similarly for the condition outside the shoreline embankment (approximately station 11+40 to 18+47 +/-), the porous pavement will be installed atop a 12" compacted crushed stone base layer that will provide storage/retention and infiltrate into the soils below the path. See typical path cross section on sheet C-401 of the NOI plans.

Large magnitude rainstorms that result in direct runoff from the porous pavement will flow through the embankment plantings that will filter the overland flow. Maintenance of the porous pavement will be part of DCR's standard pathway maintenance program. Please see Section 4.1 below for construction period stormwater management. Please refer to Attachment G, provided as a separate attachment, for a summary of the Project's compliance with the MA DEP Stormwater Management Standards to the maximum extent feasible as a pathway project.

4.0 Wetland Impacts and Mitigation Measures

The proposed pathway and associated amenities described below will primarily occur within the 100-foot Buffer Zone to Coastal Bank, 25-Foot Riverfront Area¹, and a small portion within Land Subject to Coastal Storm Flowage in the City of Boston. No additional work in water (LUO), Land Subject to Tidal Action, or the new limits of Coastal Bank associated with the shoreline stabilization project is proposed.

Permanent impacts to LSCSF total 1,130 sf and are due to minor grading and landscaping at the Alford Street entrance. Temporary impacts total 1,140 sf and are associated with the bus maintenance facility gated exit and the addition of traffic signs and a pedestrian beacon. The project itself is located entirely within the Buffer Zone to Bank, but does not propose any new impacts that are in addition to the shoreline stabilization work.

4.1 *Mitigation Measures*

4.1.1 Erosion Control

Best Management Practices (BMPs) will be implemented during all phases of construction to manage stormwater runoff and prevent erosion. Construction-period stormwater runoff and erosion controls will be in place prior to any construction activities. These will consist of compost filter tubes along the waterside limits of work and catch basin inlet protection along Alford Street (silt sacks or similar).

4.1.2 Spill Prevention and Response Plan

During construction, a spill containment kit will be kept on site at all times. In the event that there is an accidental release of petroleum product into a wetland resource area, the Boston or Somerville Conservation Commission will be notified along with appropriate emergency response agencies. Equipment will be serviced or maintained offsite and kept in a condition that prevents leakage or discharge of pollutants.

4.2 *Construction Phasing*

It is anticipated that the construction of this pathway will coincide with the completion of the shoreline stabilization project and will utilize the same construction and material laydown areas within the bus facility. Access to the site for construction will primarily be from Arlington Avenue and through the Engineering Rail Yard. The proposed sequence of construction for this Project is as follows. Please note that several mobilization activities, i.e. establishing a laydown area, installing construction fencing etc. have already been completed as part of the shoreline stabilization work:

¹ As described in Section 5.2 of this narrative, the Project is exempt from the Riverfront Area performance standards and thus RFA impacts were not calculated here or in WPA Form 3.

- ◆ Erosion and Sedimentation Controls will remain in place from the Shoreline Stabilization work and will be maintained throughout the duration of the project.
- ◆ Complete rough grading of the embankment to establish the appropriate subbase elevations.
- ◆ Install security fencing.
- ◆ Install proposed landscaping adjacent to the pathway.
- ◆ Install wooden guiderails.
- ◆ Place and compact crushed stone base material for the pathway's porous pavement.
- ◆ Place and compact base material for granite entry with concrete pavers and concrete surfaces in the S-turn area.
- ◆ Install concrete pavers with granite curbing at the Alford Street Entrance and concrete walking surface in the S-turn area. Install porous pavement.
- ◆ Install proposed landscape features adjacent to the pathway, including the bike racks and benches in the S-turn. Re-seed all disturbed areas.
- ◆ Complete construction of project signage, including any interpretative signage. Install warning signs, new bus stop-line, and re-stripe the crosswalk at the vehicle access gate along Alford Street.
- ◆ Upon permanent stabilization, and in accordance with the Approved Order of Conditions, remove erosion and sedimentation control devices.
- ◆ Remove any temporary construction fencing.

5.0 Compliance with WPA Performance Standards

As described in Section 2.4, the wetland resource areas that are on or adjacent to the Project site include: Land Under the Ocean/Fish Run (LUO/Fish Run), Last Subject to Tidal Action (LSTA), Coastal Bank, Land Subject to Coastal Storm Flowage (LSCSF), and Riverfront Area (RFA). This section describes how the Project will comply with the performance standards for work in wetland resource areas jurisdictional under the Act. No work is proposed in LUO, LSTA or Coastal Bank within the City of Boston. A detailed alternatives analysis for the shoreline protection project was provided in the Notice of Intent application submitted on February 28, 2017 (DEP File No. 006-1501).

5.1 *Land Subject to Coastal Storm Flowage*

The Project is utilizing the 100-year flood elevation from the most updated Flood Insurance Rate Maps (FIRMs). Within the City of Boston, the elevation is 11 feet NAVD 88 and the majority of the proposed path is located above this elevation. Under the Act, there are no performance standards for LSCSF. Small areas of additional impact associated with minor grading and plantings at the Alford Street entrance will occur within LSCSF. The Project design will not have any adverse effects occur relative to the Act's public interests of storm damage prevention or flood control. The top of the Coastal Bank of the stabilized shoreline in Path Cross Sections A to D in Boston extend to an elevation of at least 13 feet NAVD88 (Sheets C-400 to C401). This top elevation is two feet higher than the current LSCSF elevations in Boston, respectively.

5.2 *Riverfront Area*

In accordance with 310 CMR 10.58(6), *certain activities or areas are grandfathered or exempted from requirements for the Riverfront Area.*

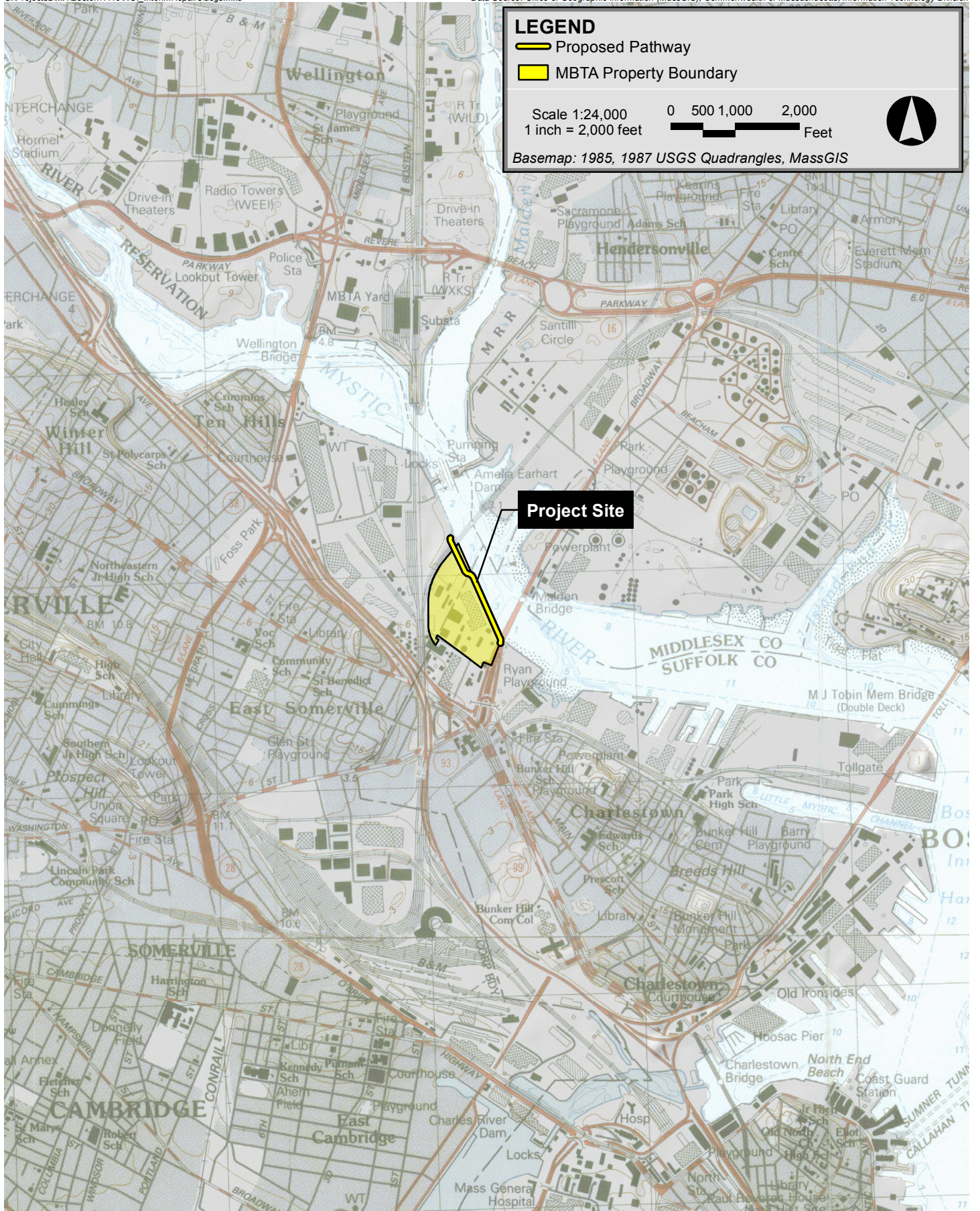
Structures and activities subject to a Chapter 91 license or permit are exempt from the Riverfront Area performance standards provided the structure or activity obtains a license or permit (310 CMR 10.58(6)[i]). Since DCR is seeking a Chapter 91 license for this pathway, it is exempt from the RFA regulations.

6.0 **Conclusion**

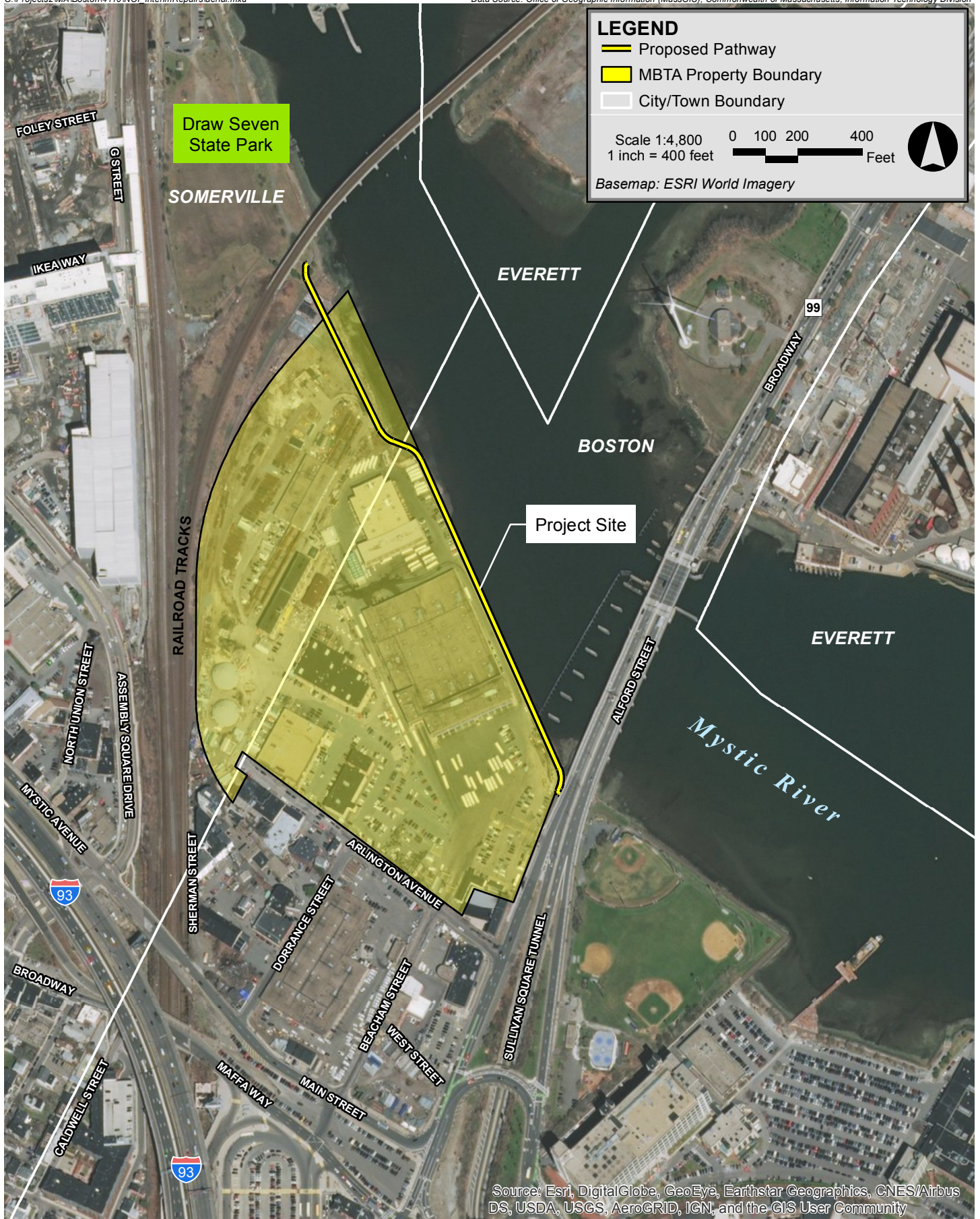
The Project's purpose is a critical missing link in the Mystic River path system. The work described herein has been designed to comply with applicable performance standards of Coastal Bank, Land Subject to Coastal Storm Flowage, and Riverfront Area. The information contained in this NOI and the accompanying site plans describes the site, proposed work and the effect of said work on the interests identified in the Act and Regulations. The Applicant therefore respectfully requests that the Boston Conservation Commission issue an Order of Conditions approving the Project with appropriate conditions to protect those interests identified in M.G.L. c. 131 §40.

Attachment B

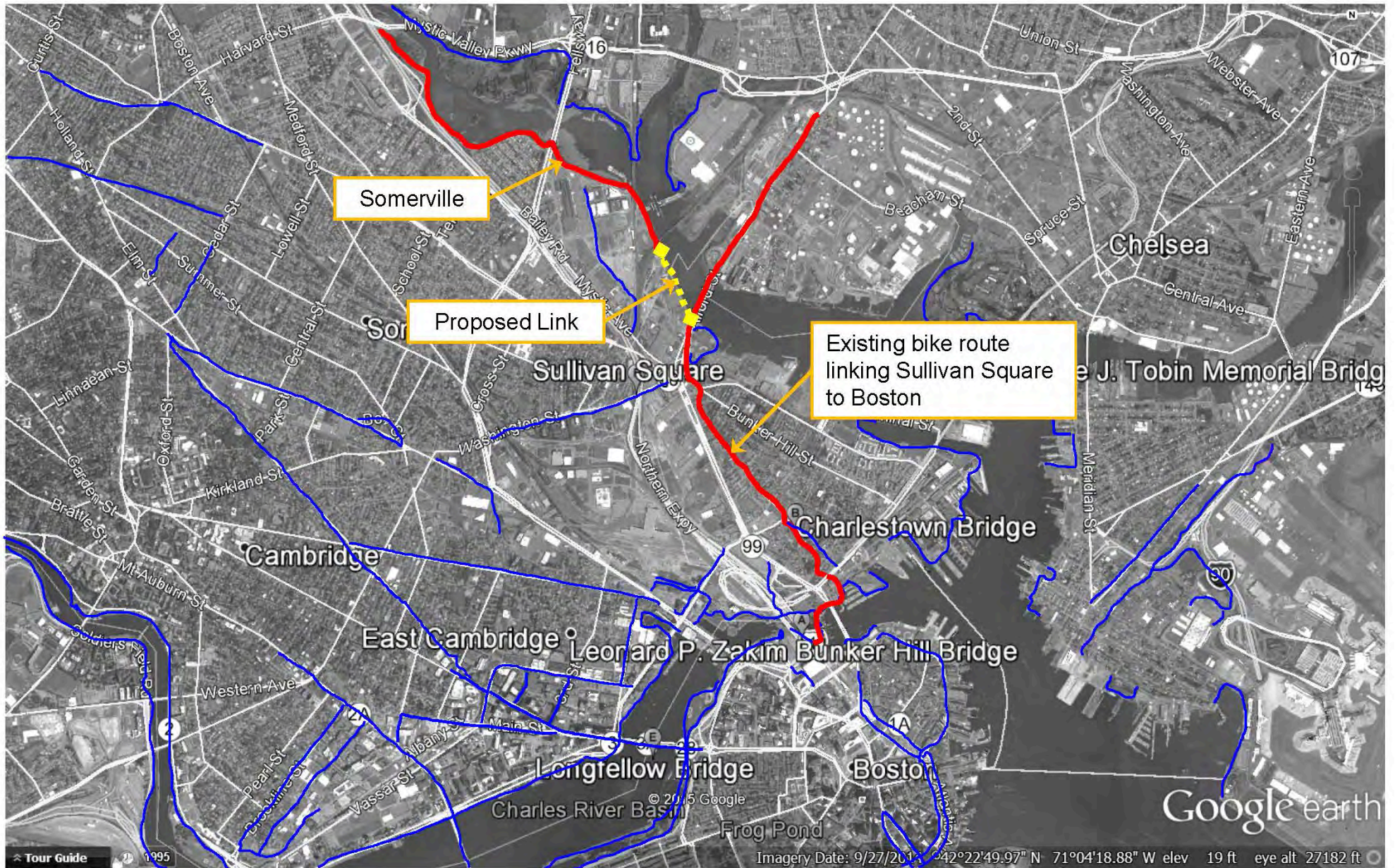
Figures



Draw Seven Park Extension Pathway – Somerville and Boston



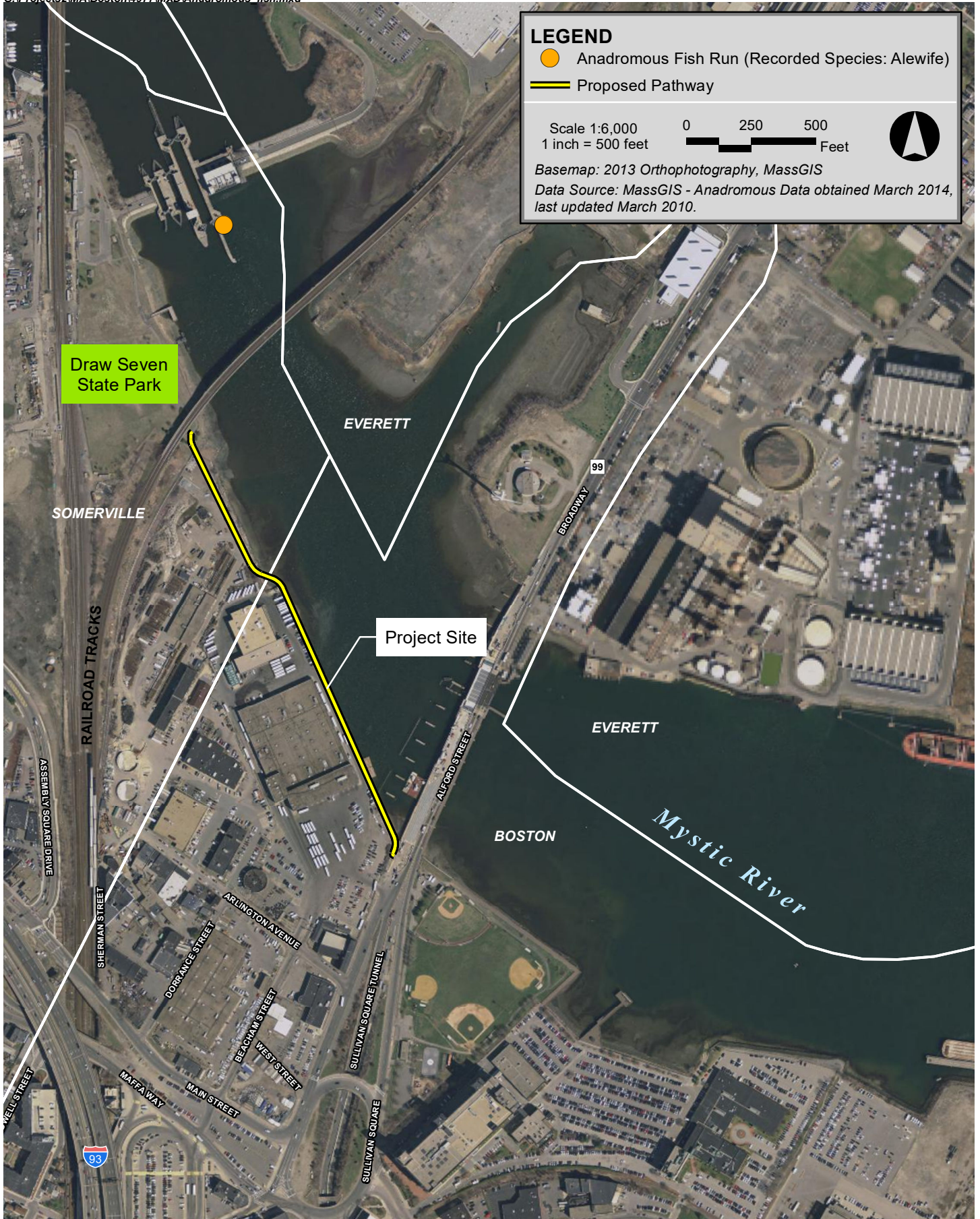
Draw Seven Park Extension Pathway – Somerville and Boston



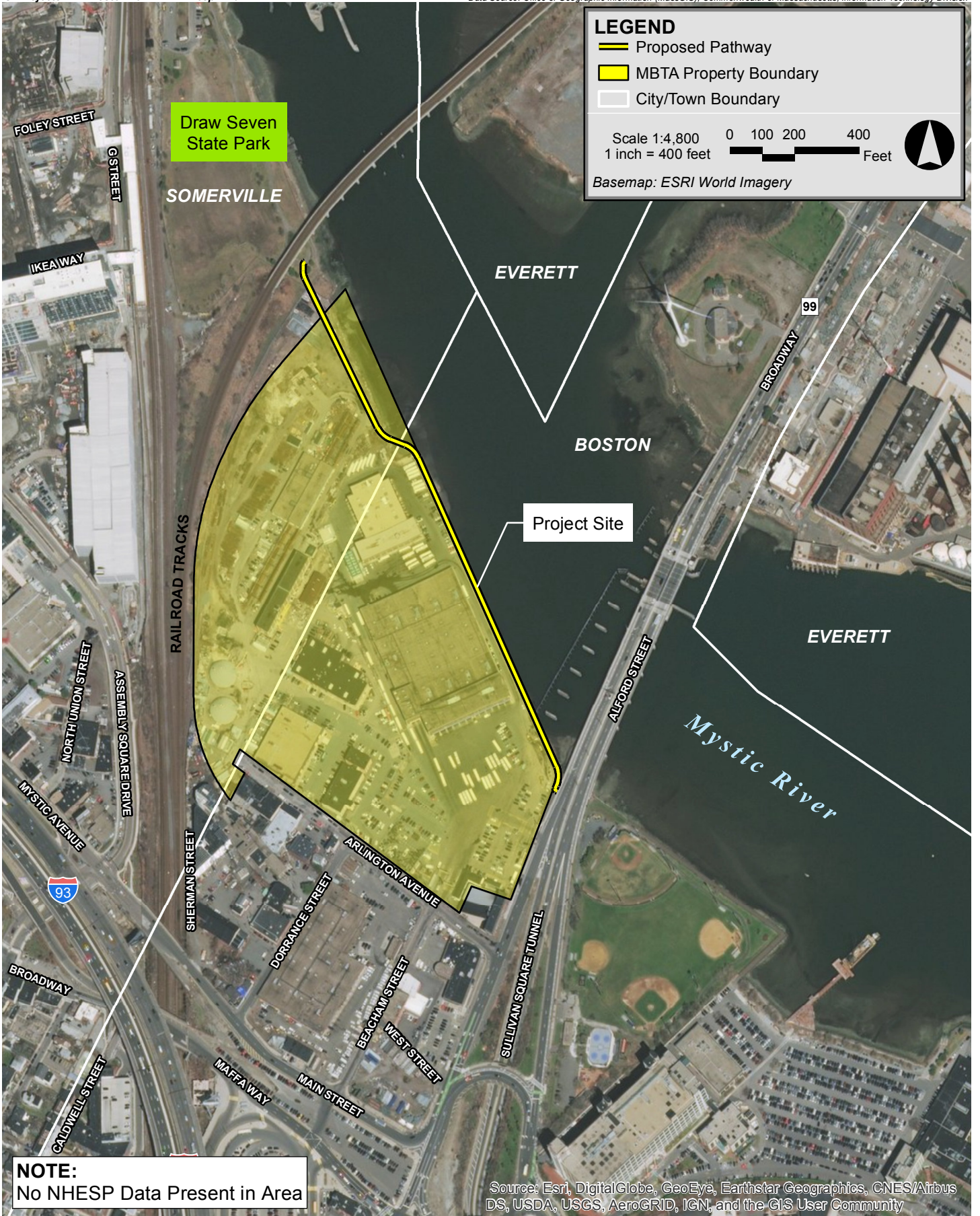
Legend:

- Existing Bike Route to Boston
- ◆◆◆◆ Proposed Bike Path
- Existing Other Bike Lanes or Paths (Not Comprehensive)

Draw Seven Park Extension Pathway – Somerville and Boston



Draw Seven Park Extension Pathway – Somerville and Boston



Draw Seven Park Extension Pathway – Somerville and Boston

LEGEND

- Proposed Pathway
- MBTA Property Boundary

Scale 1:9,600
1 inch = 800 feet

0 200 400 800 Feet

Basemap: FEMA FIRM Panel Image

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AP, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary

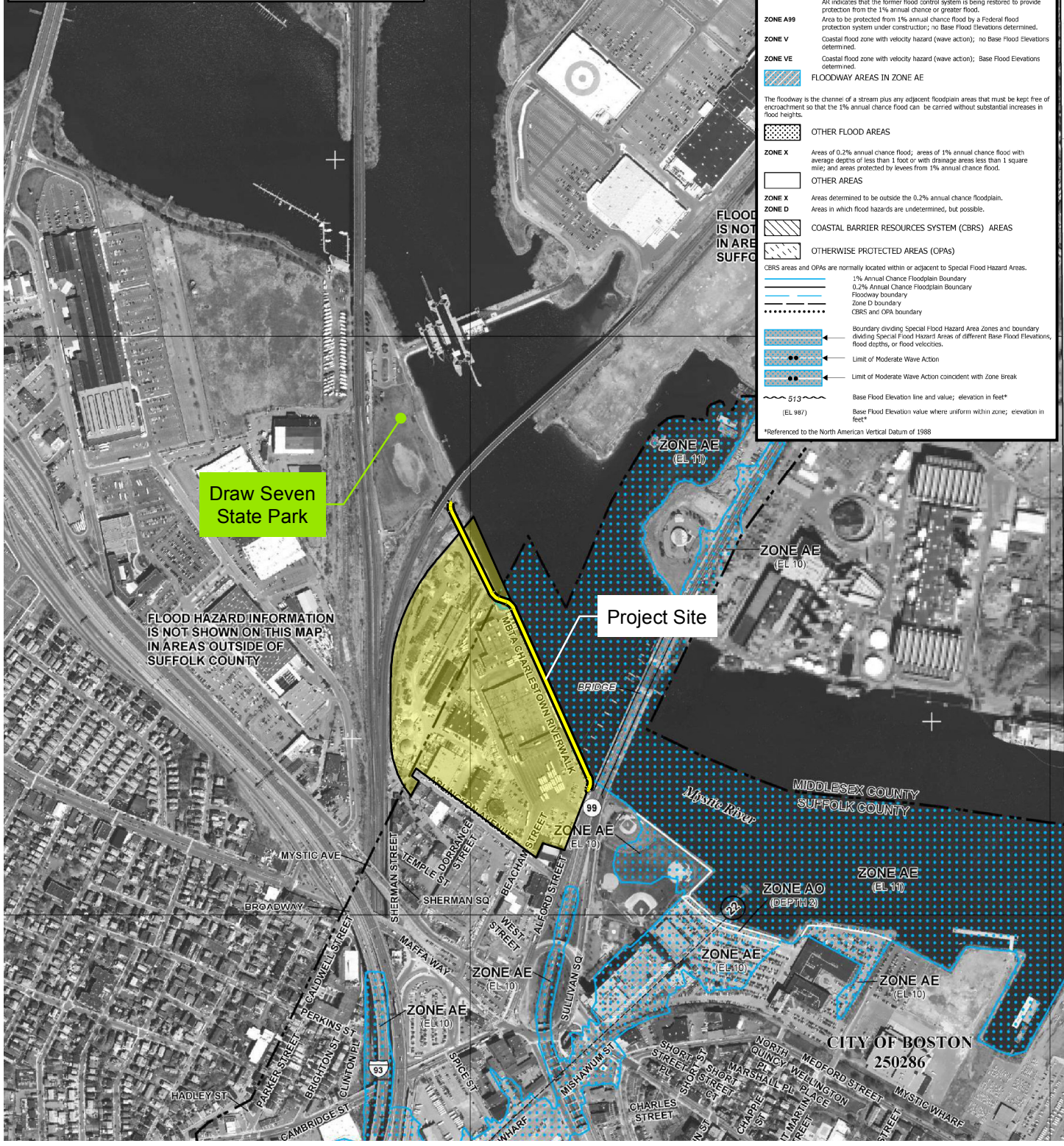
Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

- Limit of Moderate Wave Action
- Limit of Moderate Wave Action coincident with Zone Break

Base Flood Elevation line and value; elevation in feet* (EL 987)

Base Flood Elevation value where uniform within zone; elevation in feet*

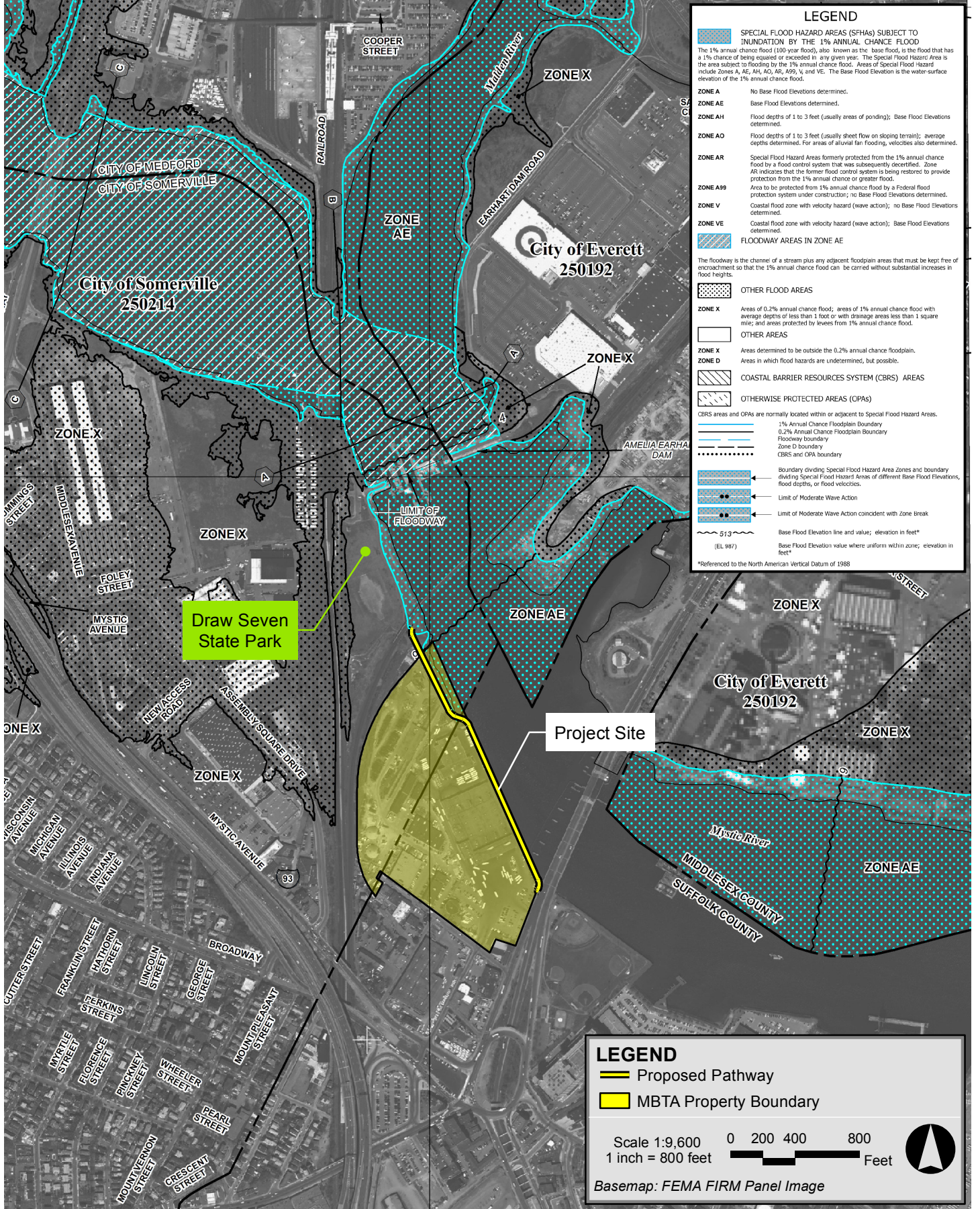
*Referenced to the North American Vertical Datum of 1988



Draw Seven Park Extension Pathway – Somerville and Boston



Figure 6
FEMA FIRM Boston, Effective Date: March 16, 2016 (El. 11 feet)



Draw Seven Park Extension Pathway – Somerville and Boston

Attachment C

MEPA Certificate



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Matthew A. Beaton
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1081
<http://www.mass.gov/eea>

April 22, 2016

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Charlestown Bus Facility- Shoreline Stabilization and
Yard Improvements Project
PROJECT MUNICIPALITY : Boston and Somerville
PROJECT WATERSHED : Mystic River
EEA NUMBER : 15487
PROJECT PROPONENT : Massachusetts Bay Transportation Authority
DATE NOTICED IN MONITOR : March 23, 2016

Pursuant to the Massachusetts Environmental Policy Act (MEPA) (M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF), the project involves the stabilization of a shoreline contained by an existing sheetpile bulkhead at the Massachusetts Bay Transportation Authority's (MBTA) Charlestown Bus Facility (CBF). The bus maintenance facility is the MBTA's largest, providing buses that serve approximately 99,000 bus passengers per day. In recognition of the importance of this infrastructure facility and its exposure to storm damage, the Federal Transit Administration (FTA) awarded a competitive resilience grant to the MBTA to fund a portion of the project.

The bulkhead forms the shoreline along the southern portion of the CBF's eastern boundary adjacent to a bus storage garage and a maintenance building. The bulkhead is in very poor condition. Corrosion of the sheetpiling has allowed upland material to pass through the bulkhead, causing sink holes in a bus circulation lane that impact CBF operations. The northern shoreline is not lined with sheetpiling but has eroded behind a dilapidated timber bulkhead. The poor condition of the shoreline has made the CBF vulnerable to flooding and damage from

severe storm events, which are expected to worsen in the future due to the effects of sea-level rise (SLR).

The project will stabilize the shoreline using a combination of structural and non-structural solutions. The southern portion of the bulkhead will be stabilized by a new embankment planted with native vegetation above the Mean Higher High Water mark (MHHW) and protected with a submerged riprap revetment below MHHW. The northern portion of the shoreline will be protected solely by a riprap revetment. The project includes the installation of a flood wall parallel to the shoreline that will rise to elevation 15 feet NAVD 88, four feet above the 100-year storm elevation. The MBTA will provide a 10- to 13-foot wide easement to the Department of Conservation and Recreation (DCR) to construct a multi-use pathway.¹

Project Site

The Charlestown Bus Facility is an approximately 24-acre site located in Somerville and the Charlestown section of Boston. Bus maintenance facilities are located in the southern and eastern parts of the site, and the northern and western parts of the site are occupied by the Engineering Rail Yard. The site is bordered to the north by MBTA Commuter Rail tracks and DCR's Draw 7 Park; to the west by the railroad tracks and commercial and industrial uses; to the south by Alford Street and Sullivan Square; and to the east by the Mystic River. Four 345-kiloVolt (kV) electric lines, associated with an electric generating facility in Everett, pass through the site. Two lines cross the Engineering Rail Yard in an east-west orientation and two lines cross in a north-south direction between the shoreline and the bus maintenance buildings. The lines are buried approximately three to four feet below the ground surface and pose a significant constraint on the design of the project.

The Mystic River provides migratory and/or spawning and foraging habitat for alewife (*Alosa pseudoharengus*), blueback (*Alosa aestivalis*), American shad (*Alosa sapidissima*), American eel (*Anguilla rostrata*), Atlantic tomcod (*Microgadus tomcod*), and white perch (*Morone americana*). Nearby intertidal streams provide habitat for winter flounder (*Pseudopleuronectes americanus*). The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) 25017C0439E (effective June 4, 2010) is the current map for the Somerville portion of the site and indicates that a narrow band of land along the shoreline is located within a 100-year floodplain (Zone AE) with a Base Flood Elevation (BFE) of 9.0 feet North American Vertical Datum of 1988 (NAVD 88). On March 16, 2016, FEMA issued an updated FIRM (2502500C14J) covering the Boston section of the site that established a Zone AE with a BFE of 11 feet NAVD 88.

The site is a key link in a network of commuter and recreational bicycle and pedestrian facilities north and south of the bus facility. It is located at the southern terminus of a path extending through Somerville and along the Mystic River through Draw 7 Park and adjacent to Alford Street, which contains bike lanes providing access through Sullivan Square to downtown Boston.

¹ A 2004 Supplemental Environmental Project Agreement with EPA, the MBTA is obligated to grant an easement from Draw 7 Park to Route 99 to provide public access. The proposed easement is wider than the minimum required.

Permitting and Jurisdiction

The project is undergoing MEPA review and required the filing of an ENF because it will require State Agency Actions and it meets or exceeds the following review thresholds: 301 CMR 11.03(3)(b)(1)(a), alteration of a coastal bank; 301 CMR 11.03(3)(b)(1)(b), alteration of 500 or more linear feet of a bank along a fish run; 301 CMR 11.03(3)(b)(1)(f), alteration of ½ or more acres of any other wetlands (Coastal Beach, Land Under the Ocean and Land Subject to Coastal Storm Flowage); and 301 CMR 11.03(3)(b)(6), construction, reconstruction, or expansion of an existing solid fill structure of 1,000 or more sf base area, provided the structure occupies flowed tidelands or other waterways. The project requires a Chapter 91 (c.91) License and a 401 Water Quality Certificate (WQC) from the Massachusetts Department of Environmental Protection (MassDEP). The project is also subject to a Public Benefits Determination.

The project also requires Orders of Conditions (OOC) from the Boston and Somerville Conservation Commissions (and, if either Order is appealed, a Superseding Order of Conditions (SOC) from MassDEP). The project requires an Individual Permit from the U.S. Army Corps of Engineers (ACOE) and may require a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities from the U.S. Environmental Protection Agency (EPA).

Because the project is being undertaken by the MBTA, a State Agency, MEPA jurisdiction is broad and extends to all aspects of the project that may cause Damage to the Environment as defined in the MEPA regulations.

Environmental Impacts and Mitigation

The project will stabilize the shoreline along a length of 1,870 lf of Coastal Bank. It will dredge 7,900 cubic yards (cy) of sediment from an area of 74,700 sf, including 52,500 sf of Land Under the Ocean (LUO) and 22,200 sf of Coastal Beach. Dredging this area will provide a stable substrate for the placement of 27,500 cy of fill material to construct the embankment and revetment. The project will impact 42,800 sf of Land Subject to Coastal Storm Flowage (LSCSF), including 23,200 sf permanent impacts in connection with the embankment and 20,500 sf of temporary impacts associated with repaving portions of the site.²

The purpose of the project is to protect important public transportation infrastructure from shoreline erosion and future storm damage associated with climate change. The project will provide mitigation for wetlands impacts at a 1:1 ratio. The mitigation will include removing fill in the northern portion of the site to restore approximately 10,600 sf of Coastal Beach habitat and additional off-site wetlands mitigation. The project will install stormwater Best Management Practices (BMPs) to improve water quality by removing pollutants from stormwater discharges into the Mystic River. The proposed flood wall will protect the site from

² During the review period, the MBTA provided revised estimates of impacts to LSCSF based on the FIRM maps formally adopted in March 2016. The estimates in the ENF were based on elevations shown on the preliminary FIRM maps that had been available for public review while the project was under design development. This Certificate refers to the estimates based on the 2016 FIRM.

flooding and storm wave damage projected under future sea level rise scenarios. The project will provide a dedicated easement for the DCR multi-use path.

Review of the ENF

The ENF provided a detailed description and plans of the project, analyzed alternatives, and discussed the project's impacts and measures to reduce and mitigate impacts. During the review period, the MBTA provided additional information regarding the climate change and sea level rise scenarios used to design the project's resiliency design features.

Alternatives Analysis

The ENF described five alternatives to the Preferred Alternative. The Sheet Pile Wall alternative would construct a flood wall at elevation 15 feet NAVD 88 and install a new sheet pile wall immediately seaward of the existing bulkhead. The existing bulkhead would be partially removed after the new sheet piling is installed. This alternative would minimize the amount of fill by not including an embankment, but would require the use of tie-backs or other structural means of supporting the wall. Tie-backs cannot be used in this location because of its proximity to the 345 kV transmission line. Structural support of the wall could be provided using a cantilevered design with soil improvements, but the cost of a cantilevered wall is prohibitive; furthermore, soil improvements, such as jet grouting through the existing sediments, would have similar impacts to LUO as the Preferred Alternative. The Sheetpile Bulkhead with Bioengineering alternative would place a new sheetpile bulkhead in a more seaward location than the first alternative, with fill placed between the new and old bulkheads that could be bioengineered with plantings, as well as a flood wall constructed to elevation 15 ft NAVD 88. The area of fill required by this alternative would be less than other alternatives, but would result in impacts to LUO due to soil improvements seaward needed to support the wall.

The Earth Retaining Structure with Cantilever alternative would create an easement for the DCR multi-use on a cantilevered structure landward of the existing sheetpile bulkhead at an elevation of one foot above the existing flood elevation. A sloping riprap revetment would be constructed below and seaward of the cantilevered structure. According to the ENF, this alternative is impracticable because removing the existing bulkhead to construct the revetment in its place would require involve excavation and other construction activities around the 345-kV lines. The Earth Retaining Structure with Pilings alternative is similar to the previously described alternative, but would use a pile wall to support the multi-use pathway rather than a cantilever. This alternative would minimize filling compared to the cantilevered alternative, but is impracticable for the same construction-related reasons. Finally, the Sloped Embankment with Riprap Revetment alternative is identical to the Preferred Alternative, except an armored revetment would cover the entire face of the embankment. This alternative would result in the same impacts as the Preferred Alternative, but would not provide benefits to water quality and habitat included in the Preferred Alternative.

Wetlands and Waterways

The project will impact 52,500 sf of Land Under the Ocean (LUO), 22,200 sf of Coastal Beach, 1,870 lf of Coastal Bank, and 42,800 sf of Land Subject to Coastal Storm Flowage (LSCF). The site includes Riverfront Area, but the project will be exempt from the regulatory provisions for that resource area because it will obtain a c. 91 License. The impacts to LUO,

Coastal Beach, and LSCSF are due primarily to the embankment and revetment proposed to stabilize the shoreline. The ENF described an embankment design based on a 2:1 (horizontal: vertical) slope for the embankment. During the review period, the MBTA indicated that during the final design of the project, it will explore making the embankment slope steeper (1.5:1) as a means of minimizing impacts to LUO. The MBTA estimated that this design change could reduce the impacts of the embankment by approximately 20 percent. I encourage the MBTA and permitting agencies to further explore this design change during the permitting process. I also encourage the MBTA to consider recommendations from MassDEP and CZM regarding the specific design features of the proposed natural treatment of the embankment surface above the MHHW. This bioengineered slope should use natural fiber blankets, native plantings, and appropriate anchoring systems.

The ENF reviewed the project's compliance with the Wetlands Regulations (310 CMR 10.00) performance standards. According to the ENF, the project will comply with the standards for LUO, Coastal Beach, and Coastal Bank by minimizing the footprint of the embankment; improving shoreline interaction with water flows and sediment distribution by reducing wave reflection compared to existing conditions; improving water quality using stormwater BMPs and a bioengineered embankment; and by adhering to the February 15 to July 15 time-of-year restriction recommended by DMF. The project will also mitigate resource area impacts on a 1:1 ratio, including 10,600 sf of reclaimed Coastal Beach along the site's northern shoreline. The MBTA has committed to provide additional off-site mitigation for remaining wetlands impacts. During the permitting process, the MBTA should evaluate possibilities for creating or restoring salt marsh on or near the project site.

The project includes activities on filled and flowed Commonwealth Tidelands. Shore protection and stormwater outfalls are both recognized as a water-dependent use of tidelands by the c. 91 regulations.

The primary goal of this project is to increase the resiliency of the site and stabilize the shoreline; however, the MBTA has consulted with DCR to incorporate the multi-use path in the conceptual design and ensure consistency between both projects. I acknowledge and appreciate the MBTA's efforts in this regard. I note comments from MassDEP Waterways that encourage the MBTA and DCR to continue consultation regarding the design and construction of the multi-use path and consider whether it could be completed concurrent with the shoreline stabilization project. As the MBTA refines the project design, it should continue to consult with DCR and consider features that could facilitate completion of the pathway. A key area of focus is at the northern end of the sheetpile bulkhead where it projects in a seaward direction at right angles to the northern shoreline. A pile-supported structure spanning that corner could improve safety for bicycles and pedestrians.

Stormwater

The project will replace portions of the stormwater management system adjacent to the bus storage and repair buildings. Six existing outfalls, ranging in diameter from 15 inches to 48 inches, in this area will be replaced in kind with new concrete outfalls. Proprietary separators will be installed and approximately 18 catch basins in this area will be replaced with deep sump catch basins with hooded outlets. According to the ENF, high groundwater at the site renders other types of BMPs infeasible. The MBTA also considered reducing the area of impervious

surfaces, but paved driveways are necessary to accommodate busses and other vehicles. The MBTA will prepare a Stormwater Pollution Prevention Plan (SWPPP) to address maintenance of the new stormwater management system in accordance with the facility's NPDES Multi-Sector General Permit. According to MassDEP, additional stormwater management measures may be required because the site is a land use of higher potential pollutant loads (LUHPPL).

The MBTA will remove all materials and operations in the Engineering Rail Yard located within 100 feet of the shoreline and create a rain garden to receive runoff from a portion of the site. Existing catch basins will also be replaced with deep sump hooded catch basins. The MBTA is planning to further revise the site layout of the Engineering Rail Yard and add additional stormwater management measures in the future. At this time, a new outfall and tide gate will be constructed to accommodate the future drainage system without impacting the embankment. The project also includes the replacement of a tide gate and outfall that discharge stormwater from the City of Somerville's system.

Climate Change Adaptation

The project will protect critical public infrastructure from flood and coastal storm damage by stabilizing the shoreline. Failure of the sheetpile bulkhead under flood conditions would threaten public transportation operations at the bus maintenance facility. The project will also improve the climate change resiliency of the facility by constructing a flood wall along the shoreline that will prevent flooding under higher sea level conditions in the future. The ENF included an analysis of the site's inundation risk under climate change scenarios developed in a study of climate change vulnerability and adaptation options prepared for the Massachusetts Department of Transportation (MassDOT) and Federal Highway Administration (FHWA).³ The MassDOT-FHWA study was based on the highest sea-level rise projections developed by the United States National Climate Assessment published in 2012. The study indicated that without a flood wall, the Engineering Rail Yard and portions of the site containing bus maintenance operations would be vulnerable to flooding by 2030, and that the entire site would face a high risk of inundation under projected conditions in 2070. The height of the proposed flood wall is four feet above the current 100-year flood elevation and will provide additional protection to the site from future flood conditions.

Comments from Boston NOW and the Mystic River Watershed Association applaud the MBTA's efforts to improve the resiliency of the site and minimize environmental impacts, including the use of natural buffers in the project design to simultaneously achieve flood prevention, stormwater runoff filtering, and habitat creation.

Conclusion

Pursuant to 301 CMR 13.02, I am declining to require a Public Benefit Review for this project. The project is a water-dependent use and, as such, is presumed to provide adequate public benefits pursuant to 301 CMR 13.04(1). The site contains no landlocked tidelands and the project is within the jurisdiction of the MassDEP. I am satisfied that the project's impacts to tideland resources can be adequately addressed during the c. 91 Waterways permitting process.

³ *MassDOT-FHWA Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery*, June 2015.

The ENF has sufficiently defined the nature and general elements of the project for the purposes of MEPA review and demonstrated that the project's environmental impacts will be avoided, minimized and/or mitigated to the extent practicable. Based on the information in the ENF and after consultation with State Agencies, I find that no further MEPA review is required at this time. Remaining issues can be addressed through the local, state and federal permitting and review processes.



April 22, 2016

Date

Matthew A. Beaton

Comments received:

04/08/2016	Boston Water and Sewer Commission (BWSC)
04/12/2016	Board of Underwater Archaeological Resources (BUAR)
04/12/2016	Boston Harbor Now
04/12/2016	Massachusetts Department of Environmental Protection (MassDEP) - Northeast Regional Office (NERO)
04/12/2016	Massachusetts Department of Environmental Protection (MassDEP)- Waterways Regulation Program (WRP)
04/12/2016	Massachusetts Office of Coastal Zone Management (CZM)
04/12/2016	Department of Conservation and Recreation (DCR)
04/14/2016	Division of Marine Fisheries (DMF)
04/18/2016	Mystic River Watershed Association (MyRWA)

MAB/AJS/ajs

**Boston Water and
Sewer Commission**



980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

April 8, 2016

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: 80 Alford Street, Boston
Environmental Notification Form

Dear Secretary Beaton:

The Boston Water and Sewer Commission (Commission) has reviewed the Environmental Notification Form (ENF) for the proposed Shoreline Stabilization and Yard Improvement at the Massachusetts Bay Transportation Authority's (MBTA) 80 Alford Street Bus Facility. The project site is located along the Mystic River at the intersection of Alford Street and Arlington Avenue in Charlestown. This letter provides the Commission's comments on the ENF.

The project proponent, the MBTA, proposes to construct site improvements at its bus facility in Charlestown. The site improvements will include a new flood wall, the installation of a new embankment, riprap revetment protection to stabilize the shoreline and stormwater system improvement. The stormwater system improvements consist of the replacement of existing pipes, manholes and catch basins. The project, when complete, will protect the shoreline at the facility and improve the stormwater quality discharged from the site.

For water service, the Commission owns and maintains the 8-inch water main in Alford Street and an 8-inch water main in Arlington Avenue. There is also an 8-inch private water main in Arlington Avenue and several private water mains on the site. All of the water mains are served by the Commission's Northern Low Service system.

For sewer and storm drain service, the site is served by a 15-inch sewer and 15-inch storm drain in Alford Street. Arlington Avenue has a 12-inch sanitary sewer and 12-inch storm drain. On the MBTA's site, the Commission owns a 12-inch sanitary sewer and a storm drain that increase in diameter from 20-inch to 48-inch and terminates at outfall 30JSDO30 in the Mystic River. The Massachusetts Water Resources Authority owns and maintains a large diameter sewer in Arlington Avenue and Alford Street.



This project involves only site improvements. Therefore, no change in water demand or wastewater generation is associated with this project.

The Commission has the following comments on the proposed project.

General

1. All new or relocated water mains, sewers and storm drains must be designed and constructed at the MBTA's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations.
2. The design of the project should comply with the City of Boston's Complete Streets Initiative, which requires incorporation of "green infrastructure" into street designs. Green infrastructure includes greenscapes, such as trees, shrubs, grasses and other landscape plantings, as well as rain gardens and vegetative swales, infiltration basins, and paving materials and permeable surfaces. The proponent must develop a maintenance plan for the proposed green infrastructure. For more information on the Complete Streets Initiative see the City's website at <http://bostoncompletestreets.org/>
3. The Commission owns and maintains an outfall within the vicinity of the project site. It is located at in the existing seawall near the northeast corner of the Bus Garage. The Commission requires that the MBTA take appropriate measures to ensure that the outfall is not damaged during construction.
4. The MBTA should be aware that the US Environmental Protection Agency issued the Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, the MBTA will be required to apply for a RGP to cover these discharges.
5. The Commission will require the MBTA to undertake all necessary precautions to prevent damage or disruption of the existing active water and sewer lines on or adjacent to, the project site during construction. As a condition of the site plan approval, the Commission will require the MBTA to inspect the existing sewer lines



on site by CCTV after site construction is complete, to confirm that the lines were not damaged from construction activity.

6. Activities within the proposed (Facility) have Standard Industrial Classification (SIC) Codes that the Environmental Protection Agency (EPA) has designated as requiring a Multi-Sector General Stormwater Permit for Industrial Facilities (MSGP). The facility manager is responsible for submitting to EPA a Notice of Intent (NOI) for coverage under the MSGP, and for submitting to the Commission a copy of the NOI and Pollution Prevention Plan prepared pursuant to the NOI. If the MSGP designated SIC Codes apply to the project and the project obtains “No-Exposure” Certification from EPA for the activities, a copy of the No-Exposure Certification must be provided to the Commission.

Water

1. The MBTA is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. The MBTA should contact the Commission’s Meter Department for information on and to obtain a Hydrant Permit.

Sewage / Drainage

1. In conjunction with the Site Plan and the General Service Application the MBTA will be required to submit a Stormwater Pollution Prevention Plan. The plan must:
 - Identify specific best management measures for controlling erosion and preventing the discharge of sediment, contaminated stormwater or construction debris to the Commission’s drainage system when construction is underway.
 - Include a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and the location of major control structures or treatment structures to be utilized during the construction.
 - Specifically identify how the project will comply with the Department of Environmental Protection’s Performance Standards for Stormwater Management both during construction and after construction is complete.
2. Developers of projects involving disturbances of land of one acre or more will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. The MBTA is responsible for determining if such a permit



is required and for obtaining the permit. If such a permit is required, it is required that a copy of the permit and any pollution prevention plan prepared pursuant to the permit be provided to the Commission's Engineering Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above.

3. The Commission encourages the MBTA to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.
4. The discharge of dewatering drainage to a sanitary sewer is prohibited by the Commission. The MBTA is advised that the discharge of any dewatering drainage to the storm drainage system requires a Drainage Discharge Permit from the Commission. If the dewatering drainage is contaminated with petroleum products, the MBTA will be required to obtain a Remediation General Permit from the Environmental Protection Agency (EPA) for the discharge.
5. The MBTA must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer.
6. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. The Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system.
7. The Commission requests that the MBTA install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. The MBTA should contact the Commission's Operations Division for information regarding the purchase of the castings.
8. If the maintenance facility has vehicle washing station, rinse water from the washing station is required to go through an oil trap and discharge to the sanitary sewer system.
9. The Commission requires installation of particle separators on all new parking lots greater than 7,500 square feet in size. If it is determined that it is not possible to infiltrate all of the runoff from the new parking lot, the Commission will require the



installation of a particle separator or a standard Type 5 catch basin with an outlet tee for the parking lot. Specifications for particle separators are provided in the Commission's requirements for Site Plans.

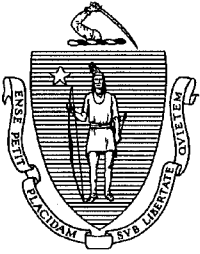
Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/rja

cc: H. Palmgren, MBTA
M. Zlody, BED via e-mail
P. Larocque, BWSC via e-mail



The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1141 Fax (617) 626-1240 Web Site: www.mass.gov/eea/agencies/czm/buar/

April 12, 2014

Secretary Matthew A. Beaton.
Executive Office of Energy and Environmental Affairs
Attention: Alex Strysky, MEPA Unit
100 Cambridge St., Suite 900
Boston, MA 02114

RE: Charlestown Bus Facility-Shoreline Stabilization and Yard Improvements, Boston, MA
(EEA#15487)

Dear Secretary Beaton,

The staff of the Massachusetts Board of Underwater Archaeological Resources has reviewed the above referenced project's ENF (EEA # 15487) and supporting materials. We offer the following comments.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential submerged cultural resources in the proposed project area. No record of any underwater archaeological resources was found. Based on the results of this review and given the nature of the proposed activities (i.e., prior disturbance of area), the Board has determined that this project is unlikely to impact submerged cultural resources.

However, should heretofore-unknown submerged cultural resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse affects and notify the Board, as well as other appropriate agencies, immediately in accordance with the Board's Policy Guidance for the Discovery of Unanticipated Archaeological Resources.

The Board appreciates the opportunity to provide these comments as part of the review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above, by email at victor.mastone@state.ma.us, or by telephone at (617) 626-1141.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor T. Mastone".

Victor T. Mastone
Director

/vtm



Navigating our future.

15 State Street, Suite 1100
Boston, MA 02109
617 223 8104
bostonharbornow.org

April 12, 2016

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: Alex Stryisky, MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Charlestown Bus Facility – Shoreline Stabilization and Yard Improvement Project (ENF)

Dear Secretary Beaton,

Thank you for the opportunity to comment on the Environmental Notification Form for the Charlestown Bus Facility Shoreline Stabilization and Yard Improvements Project. Boston Harbor Now is a recent merger between The Boston Harbor Association and the Boston Harbor Island Alliance.

Our comments during the MEPA process are limited to climate resilience. We will provide more extensive comments during the Chapter 91 licensing process. For example, the proposal includes an easement to DCR for a multi-use pathway along the Mystic River waterfront. As DCR was not present at the April 5th MEPA site visit, we have additional questions about the proposed easement, path design and other public benefits. This site has been identified in the Mystic River master plan as a critical link in an integrated network of pedestrian/bike paths. This proposal needs to reflect that larger context.

Project Purpose

Buses based in the MBTA’s Charlestown bus facility represent roughly 25% of the system’s buses and serve nearly 30% of its riders. Located on the west bank of the Mystic River just north of the Alford Street Bridge, the site is currently at risk of coastal flood damage due to its eroding shoreline and rising seas. Partial failure of the existing bulkhead has led to deep, expanding sinkholes and closure of an existing bus circulation lane due to safety concerns.

This project is designed to extend the usable lifespan of the facility, decrease untreated stormwater runoff, and provide a waterfront recreational pathway. Proposed filling along the riverbank outside the existing bulkhead will be partially mitigated through creating new wetland resource area habitat.

Proposed flood control measures

The proposed design involves a “hybrid” approach of green and grey infrastructure: a riprap revetment below mean higher high water (MHHW), native (presumably salt-tolerant) vegetation above MHHW, and a sea wall installed to a height three feet above the current (as of March 2016) FEMA 100-year coastal storm elevation of approximately 7.25 feet above high tide. DCR will be provided an easement to develop and manage a multi-use pathway on the river side of the seawall.

Risk management and projected sea level rise

The Charlestown bus maintenance facility was dedicated nearly forty years ago in late 1979. By 2079, this site will likely be part of a larger regional seawall protecting Boston’s low-lying filled tidelands from regular coastal flooding.

According to the 2013 National Climate Assessment, Boston Harbor could see between 1-2 feet of sea level rise by 2050 and 3-6 feet by 2100. These estimates, however, did not include glacial melt or the gravitational pull of the Greenland and Antarctic glaciers. UMass scientists working with the City of Boston on its Climate Ready Boston (CRB) vulnerability assessment included these additional sources of sea level rise in calculating a range of projected climate effects based on 1) future carbon emissions and 2) probability of occurring.

Using higher projections of future coastal flood levels is a more risk intolerant management decision. Given that the bus maintenance facility represents a critical piece of transportation infrastructure for Greater Boston communities, the MBTA should use the higher end of the Climate Ready Boston estimates of likely sea level rise once they are available later this year.

For example, CRB predicts that, if global carbon emissions remain high, sea levels in Boston Harbor could be up to 1.5 feet higher by 2050 and up to 7 feet higher by 2100. For planning purposes, we would encourage the MBTA to adopt projections in these ranges, rather than make less conservative assumptions about future carbon emissions.

At the MEPA site visit flood maps based on the same research were shown. These maps project:

- In 2013, a 0.1 to 0.5% (“1,000-year to 200-year flood”) annual chance of flooding on the north side of the site;

- In 2030, a 2 to 5% (“50-year to 20-year flood”) annual chance of flooding on the north side of the site; and
- In 2070, a 20% (“5-year flood”) annual chance of flooding the entire site.

Based on these projections, we believe that the proposed design for reinforcing the shoreline adjacent to the MBTA bus maintenance facility is sound, aesthetically appealing, and provides multiple benefits while decreasing short- and mid-term risks of coastal flood damage to this site.

Our key recommendation is to make sure that these improvements are made within the context of the future need for a regional coastal flood barrier. For example, could the proposed sea wall and recreational path together form a broader base for a higher flood barrier to be installed later as increased flood control measures are required?

Thank you for the opportunity to comment. We look forward to seeing this project move forward.

Sincerely,



Julie Wormser
VP for Policy and Planning



Jill Valdes Horwood
Waterfront Policy Analyst



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

April 12, 2016

Matthew A. Beaton, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Charlestown
Charlestown Bus Facility -Shoreline
Stabilization and Yard Improvements
80 Alford Street, Boston
EEA # 15487

Attn: MEPA Unit

Dear Secretary Beaton:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Environmental Notification Form (ENF) submitted by the Massachusetts Bay Transportation Authority (MBTA) to stabilize the shoreline and improve coastal resiliency at the Charlestown Bus Maintenance Facility on a 24-acre site on the Mystic River in Charlestown (EEA #15487). The proposed project includes a new embankment with riprap, a flood wall, stormwater improvements, and a multi-use path along the riverfront. MassDEP provides the following comments.

Wetlands

According to the ENF, the project would permanently impact 52,500 square feet (sf) of land under the ocean (LUO), 22,200 sf of coastal beaches, 1,870 linear feet of bank, and 68,900 sf of land subject to coastal storm flowage (41,300 sf temporarily and 27,600 sf permanently). The Summary of Wetland Impacts (Table 5-1), does not correspond with the plan entitled Wetland Resource Areas with Impacts on the impacts to coastal beach (Sheet 5 of 5, dated 1/25/16). The plan identifies 12,200 sf of alteration to coastal beach and 10,600 sf of coastal beach reclamation near the northern waterfront boundary.

The project proposes removal of existing fill and rubble to create new coastal beach totaling 10,600 square feet; however, no information is provided on how this new beach will be formed. A depositional environment is needed to support a coastal beach; is a beach appropriate for this reach of river? If so, will compatible materials be brought on site? What is the composition of the existing substrate underneath the “reclaimed” area? Is this area more

appropriate for establishment of salt marsh? If so, then consideration should be given to use of a stone toe backed by geotextile material or coir logs anchored with duck-bill anchors to form a stable toe.

The project will alter 52,500 square feet of Land Under the Ocean and 3 feet of sediments will be removed between Sections A-A and D-D. Though the Benthic Report indicates that fauna in this vicinity is dominated by small polychaetes, 129 *Mya arenaria* (soft-shell clam) were found in the vicinity of Sample M5 and M6 (it is unclear if these samples correspond to benthic grab stations G5 and G-6 shown on Figure 1). Will the proposed project result in the loss of shellfish habitat? Can shellfish habitat be improved as part of the proposed mitigation for the project? How does the proposed project meet 310 CMR 10.25(6)?

Live stakes in geotextile fabric are proposed above Mean Higher High Water elevation in Section E-E. Geotextile fabric should be anchored with duck-bill anchors.

The proponent is committed to providing 1:1 mitigation for wetlands impact to coastal beach and LUO. However, there is limited area for wetland replication, and the proposed wetlands mitigation on site would need to be supplemented. The ENF has not identified any areas off site for wetlands replication. It also is anticipated that the construction would be subject to time of year restrictions by the Division of Marine Fisheries. At the time of the MEPA review, the proponent had not filed a Notice of Intent.

401 Water Quality Certification

Approximately 7,900 cy of debris and sediment will be dredged from a 74,700 sf area of the river. Sediment testing had not been done at the time of the MEPA review. Construction of the proposed embankment will result in filling (27,500 cubic yards) of land under water within the proposed dredging footprint on the riverfront side of the bulkhead to stabilize the marine soils to support the embankment, pathway, and seawall.

Stormwater

The ENF briefly describes the proposed improvements to the stormwater management system, including drain pipe, manhole, and catch basin replacement. These modifications to the drainage system would not address water quality runoff from the bus facility effectively. The project site is a land use of higher potential pollutant load (LUHPPLs) under the stormwater regulations in 310 CMR 10.05(6)(k). The LUHPPL standard 5 requires the use of specific best management practices to address the higher level of pollutants, such as oil and grease which are higher at fleet storage areas *Stormwater Management Handbook*, (Table LUHPPL Standard 5, Volume 1, Chapter 1, page 14). The drainage from the project also discharges to shellfish growing areas, which are critical areas requiring the use of specific BMPs to minimize impacts and protect the resource area *Stormwater Management Handbook*, (Table CA 1 Standard 6, Volume 1, Chapter 1, page 17.) According to the ENF, the proponent is considering the use of proprietary separators and a bioretention area. However, the water quality treatment BMPs selected should be consistent with the BMPs identified in the *Stormwater Management Handbooks*.

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. Please contact Heidi.Davis@state.ma.us at (978) 694-3255 for further information on the wetlands issues. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us , MEPA Review Coordinator at (978) 694-3338.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Rachel Freed, Heidi Davis, MassDEP-NERO
Ken Chin, Derek Standish, Jerome Grafe MassDEP Boston



Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

Memorandum

To: Alex Strysky MEPA

From: Jerome Grafe MassDEP/Boston

Cc: Ben Lynch, MassDEP/Boston

Re: **Comments from the Chapter 91 Waterways Regulation Program
ENF, MBTA - Charlestown Bus Facility, Charlestown, Suffolk County - EEA
#150487**

Date: April 12, 2016

The Waterways Regulation Program (WRP) has reviewed the above-referenced Environmental Notification Form (EEA #150487), "Charlestown Bus Facility - Shoreline Stabilization and Yard Improvements Project," submitted by the Massachusetts Bay Transportation Authority (MBTA). The ENF describes a major effort to stabilize the existing shoreline structure, including installation of new embankment, riprap revetment protection, and a floodwall running the entire shoreline of the project site between Route 99 and Draw Seven Park. The project includes significant upgrades of existing on-site drainage system, including line upgrades, new water treatment units, the removal of several outfall pipes; and, the replacement with deep hooded sumps. The ENF also references an easement from MBTA to the Department of Conservation and Recreation (DCR) for the proposed construction of a new, 10'-wide, paved multi-use pathway along the entire riverfront of the site, connecting the pathway at Draw Seven Park with the existing bicycle lane at the Alford Street Bridge (Route 99). WRP recommends close coordination between MBTA and DCR in the planning, design, and construction implementation of the respective projects, including consideration of a coordinated approach that would complete both projects in a single construction mobilization. The Department has determined that the construction of shore protection structures and stormwater outfalls is a water-dependent activity, pursuant to 310 CMR 9.12(2)(a)11. The WRP may seek additional measures in the anticipated Chapter 91 licensing process..

Chapter 91 Jurisdiction:

The project will require authorization through a Chapter 91 (c.91) Waterways License. The project site includes both Filled and Flowed Tidelands. Chapter 91 filled tidelands jurisdiction extends to the first public way.

Chapter 91 Waterways License Application:

The Department awaits the filing of a c.91 Waterways License Application which meets the minimum filing standards as set forth in 310 CMR 9.11(3) and includes the Secretary's Certificate concluding the MEPA review process.

If you have any questions regarding these comments please feel free to contact me at (617) 292-5708 or jerome.grafe@state.ma.us



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

MEMORANDUM

TO: Matthew A. Beaton, Secretary, EEA
ATTN: Alex Strysky, MEPA Unit
FROM: Bruce Carlisle, Director, CZM
DATE: April 12, 2016
RE: EEA 15487, Charlestown Bus Facility – Shoreline Stabilization and Yard Improvements, Boston and Somerville

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated March 23, 2016, and offers the following comments.

Project Description

The proposed project will stabilize the deteriorating shoreline and improve coastal resiliency at the MBTA's Charlestown Bus Facility, the largest MBTA bus maintenance facility, located on the Mystic River in Somerville and Boston. Specifically, the project proposes to stabilize the existing corroding sheet pile bulkhead with a combination of reinforcement techniques including riprap revetment, riprap revetment topped with a vegetated embankment, and restoration of intertidal habitat. The project also involves dredging along the shore to prepare for the new revetment, the addition of a concrete floodwall along the length of the shoreline, improvement of existing stormwater infrastructure, and preserving the capacity for a future DCR multi-use path between the top of the revetment and the flood wall. The proposed work will impact previously developed areas of Coastal Bank, Coastal Bank, and Land Under the Ocean.

Project Comments

The proposed shoreline stabilization design includes structural and non-structural elements. Non-structural elements include native vegetation planted above the high tide line to allow for a natural buffer to filter stormwater and help attenuate wave action. Although CZM acknowledges the value in implementing non-structural shoreline elements, the project narrative provided minimal details relating to the specific design of the proposed bioengineering. CZM recommends that the bioengineering elements of the project use natural fiber blankets and/or rolls and native, salt-tolerant vegetation. CZM recommends that no synthetic fiber materials be used as part of the bioengineering to avoid adverse impacts to wildlife and the marine ecosystem. The proponent should refer to CZM's Storm Smart Properties Fact Sheets (No. 3, 4, and 5) for guidance on the non-structural portions of the proposed bioengineered slope.

Current FEMA floodplain mapping for the project site shows an A Zone elevation of 12.0 NAVD88 (November 15, 2013) for the portion of the project site within Boston and an A Zone elevation of 9.0 NAVD88 (June 4, 2010) for the portion of the site within Somerville. As a precautionary measure the project is designed with the higher predicted flood elevation in mind. As



a mitigation strategy, the project includes the construction of a floodwall along the shoreline adjacent to the DCR multi-use path. The floodwall will provide protection to the bus facility during large flooding events. CZM recommends the proponent regularly reevaluate mitigation strategies and flooding scenarios to address the potential impacts of climate change which could adversely affect the functionality of the bus facility.

The project proposes to impact 52,500 square feet (sf) of Land Under the Ocean (Mystic River), 22,200 sf of Coastal Beach, 1,870 linear feet of Coastal Bank, and associated impacts to the buffer zone. These impacts are primarily a result of the stabilization of the existing shoreline with a stone revetment. The slope of the proposed revetment is 2:1. CZM encourages the proponent to evaluate the impacts and benefits of steepening the slope to reduce encroachment into the adjacent coastal resources. Proposed mitigation for these impacts includes the restoration of 10,600 sf of coastal beach at the northern end of the project site. Additional mitigation for resource area impacts should be coordinated with MassDEP and DMF.

The project proposes to improve stormwater treatment on the project site by replacing deteriorating pipes, outfalls, manholes, and catch basins. Catch basins will be replaced with deep sump catch basins with hooded outlets. The project will also install a 15,000 sf bioretention/rain garden area adjacent to the rail yard. These improvements should greatly improve stormwater quality and reduce nutrient and pollutant inputs to the Mystic River. CZM recommends that the MBTA develop an Operation & Maintenance Plan for the rain garden area to ensure it maintains stormwater treatment benefits.

CZM encourages the continued coordination between the MBTA and DCR to facilitate the design and implementation of the multi-use path along the shoreline of the MBTA Bus Facility. This path will create a valuable pedestrian/bike link between Boston and Somerville.

Federal Consistency

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at 617-626-1050 or visit the CZM web site at www.state.ma.us/czm/fcr.htm.

BKC/bw/lbe/rh

cc: Nat Tipton, DCR
Brad Washburn, CZM



April 12, 2016

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: Alex Strycky, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: EOEEA #15487 Charlestown Bus Facility – Shoreline Stabilization and Yard Improvements Project

Dear Secretary Beaton:

The Department of Conservation and Recreation (“DCR” or “Department”) has reviewed the Environmental Notification Form (“ENF”) submitted by the Massachusetts Bay Transportation Authority (the “Proponent”) for its Charlestown Bus Facility – Shoreline Stabilization and Yard Improvements Project (the “Project”).

As described in the ENF, the Project aims to improve shore stabilization and flood control for the Charlestown Bus Facility. The Project will construct a new vegetated embankment with a riprap revetment along the southern shoreline of the Project site, install riprap along the northern shoreline, and build a flood wall along the entire shoreline. The Project also includes improvements to the site’s dilapidated stormwater management system, including new pipes, manholes, and catch basins. The current site lacks adequate protection and experiences ongoing erosion. As described and shown in the ENF, the site includes a corroded sheet pile bulkhead that needs major work to restore its function. A section behind the bulkhead contains large sink holes that are expanding with time.

Under the Preferred Alternative for the Project, the Proponent will design and construct a bikeway (subject to funding being provided by DCR) that will fill a missing pedestrian/bicycle link between Draw Seven Park in Somerville and Route 99 in Boston. Construction of the bikeway in this section is a critical need to complete connectivity of the Mystic River Reservation (Draw 7/Assembly Square) to Boston’s North End. Under a 2004 Supplemental Environmental Project (“SEP”) Agreement with the Environmental Protection Agency, the Proponent is obligated to grant an easement to DCR to allow public access along the property that will extend on MBTA land from Draw Seven Park to Route 99.

DCR submits the following comments in support of the Project.

Bike Path

By including the bike path under the Project scope, subject to funding being provided by DCR, the Project will provide one of the most important missing links in the entire network of DCR off-road greenways and will expand potential use and functionality of the bike path. The Preferred Alternative for the Project would include a sloped embankment with a riprap revetment with a stone toe at scour depth beneath the Mean Lower Low Water (“MLLW”) line. The existing bulkhead would be left in place.

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston MA 02114-2119
617-626-1250 617-626-1351 Fax
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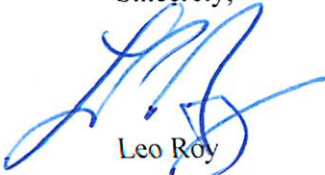
Matthew A. Beaton, Secretary, Executive
Office of Energy & Environmental Affairs

Leo Roy, Commissioner
Department of Conservation & Recreation

Plantings will be provided on the upper portion of the embankment to filter stormwater runoff, provide habitat and further protect the shoreline from erosion. This work will greatly improve the aesthetics over the existing condition. As described in the ENF, if funded by DCR the Project will include an elevated boardwalk that will greatly enhance safety by straightening the alignment and prevent two 90° bends. If funding is not identified by DCR, DCR plans to secure the easement to preserve the ability to construct the bikeway at a later date.

Thank you for the opportunity to comment on the ENF. If you have questions regarding our comments, please contact Dan Driscoll, Director of Recreation Facilities at 617-626-1438.

Sincerely,



Leo Roy
Commissioner

cc: Laura Dietz, Dan Driscoll, Patrice Kish, Tom LaRosa, Norman Orrall, Matthew Sisk, Nat Tipton (DCR)
Holly Palmgren (MBTA)
Lester Smith, Epsilon Associates
Sean Dolan (Simpson, Gumpertz & Heger)



David E. Pierce
Director

Commonwealth of Massachusetts

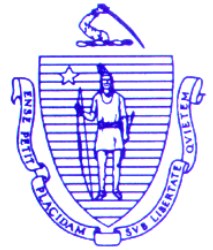
Division of Marine Fisheries

251 Causeway Street, Suite 400

Boston, Massachusetts 02114

(617)626-1520

fax (617)626-1509



Charles D. Baker
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Matthew A. Beaton

Secretary

George N. Peterson, Jr.

Commissioner

Mary-Lee King

Deputy Commissioner

April 14, 2016

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Alex Strysky, EEA No. 15487
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Beaton:

The Massachusetts Division of Marine Fisheries (*Marine Fisheries*) has reviewed the Environmental Notification Form (ENF) submitted on behalf of MBTA for shoreline stabilization and yard improvements to the Charlestown Bus Facility located at 80 Alford Street along the Mystic River in Boston and Somerville, MA. The project includes installation of a new embankment and riprap revetment protection along with a new flood wall along the site's entire waterfront. The Project will also incorporate major stormwater improvements to treat runoff from the Charlestown Facility. The Department of Conservation and Recreation (DCR) will then be able to construct a new multi-use pathway along the riverfront of the site.

The proposed project is located along the Mystic River, which provides migratory and/or spawning and foraging habitat for alewife (*Alosa pseudoharengus*), blueback (*Alosa aestivalis*), American shad (*Alosa sapidissima*), American eel (*Anguilla rostrata*), white perch (*Morone americana*), and Atlantic tomcod (*Microgadus tomcod*). Nearby intertidal areas provide habitat for spawning and early development for winter flounder (*Pseudopleuronectes americanus*).

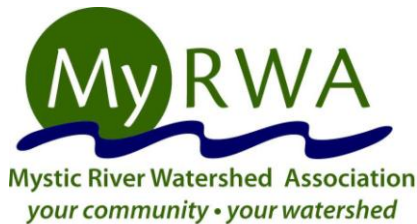
Marine Fisheries recommends a Time of Year (TOY) restriction for no in-water work from February 15 to July 15, for the protection of diadromous fish and winter flounder critical life stages. Proposed fill and dredge activities may permanently alter the seafloor and therefore may be considered a habitat conversion of tidal land. A permanent impact of this type may be subject to mitigation by the Army Corps of Engineers and other permitting agencies.

Thank you for considering our comments. Please call Kate Ostrikis in our Gloucester office at (978) 282-0308 ext. 157 or email Katelyn.Ostrikis@state.ma.us.

Sincerely,

David E. Pierce
Director

DP/ko/sd



April 18, 2016

Alex Strycky, MEPA Analyst
Executive Office of Energy and Environmental Affairs (EEA)
100 Cambridge St., Suite 900 (9th Floor)
Boston MA, 02114
Attn: MEPA Office

Subject: Comments on the Charlestown Bus Facility – Shoreline Stabilization and Yard Improvements Project at 80 Alford St., Boston, MA 02116 Environmental Notification Form EEA#15487

Dear Mr. Strycky:

We are writing to express the support of the Mystic River Watershed Association for the Charlestown Bus Facility project described in the recent Environmental Notification Form (ENF) filing by the Massachusetts Bay Transportation Authority (MBTA), the project proponent.

Because our organization advocates for safe and efficient public transportation and public access to the watershed's natural resources that public transportation enables, we understand the need to repair and upgrade this facility so that the important service it provides can continue. We believe that the function of the MBTA buses staged at the Charlestown facility, which serves nearly 100,000 passengers daily, plays a key role in our watershed, both for public access and for economic health. We recognize and applaud the coastal resiliency, flood prevention, and stormwater treatment benefits emphasized in the ENF. The proponent's receipt of the U.S. Federal Transit Administration's competitive resilience grant funding speaks to the importance of the project. Moreover, we view this development as a long-awaited opportunity to establish a critical multi-use (pedestrian and bicycle) path connection along the Mystic River from Somerville to Route 99 in Boston.

MyRWA Mission

The Mystic River Watershed Association (MyRWA) is a non-profit organization dedicated to the preservation and enhancement of the Mystic River Watershed. The mission of MyRWA is to protect and restore the Mystic River, its tributaries, and watershed lands for the benefit of present and future generations and to celebrate the value, importance, and great beauty of these natural resources. This includes working to improve the water quality in the Mystic River and all of its tributaries.

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Coastal Resiliency, Flood Prevention, and Stormwater Impacts

We find the proponent's project design to be thoughtful and sensitive to environmental concerns. MyRWA applauds the use of natural buffers in the project design. The plans make use of native vegetation, rather than gray infrastructure, to simultaneously achieve flood prevention, stormwater runoff filtering, and habitat creation. The engineering of the flood prevention wall to be three feet taller than the 100-year FEMA storm elevation is a wise and strategic recognition of the need for climate adaptation. We believe that the creation of a new wetland resource area is an acceptable mitigation measure to offset the fill required for the new embankment.

The stormwater improvements described in the proposal are also significant. We have observed sheens forming on the surface of the Mystic River basin that we believe can be mitigated by increased treatment of stormwater from facilities generating road oils. The ENF proposes to advance this goal and we applaud this initiative. We would also like to see inclusion of the potential bioretention area in the final plans. We are also concerned about the potential ecological and public health impacts of the dredging required to complete the shoreline stabilization work. Recent work by the U.S. Geological Survey, the state Department of Environmental Protection, and the state Department of Conservation and Recreation (DCR) established that sediments in the Mystic River basin contain elevated levels of biologically toxic chemicals including chromium, copper, lead, PAHs, and especially arsenic (Breault, Durant, and Robbat 2005). The proposed depth of dredging (3 feet) could potentially expose lower sediment layers, where, corresponding to historic industrial usage, the contamination is greater. We appreciate that the proponent is completing sediment testing and look forward to verifying that the proponent's will plan appropriately for the remediation of these potential contaminants to ensure that human contact is prevented.

Multi-use pathway and public access impacts

We are especially supportive of the proposed easement to allow the DCR to complete the multi-use pathway on the river-side of the flood prevention wall. This pathway would establish a continuous linkage from Somerville to Route 99 in Boston, creating a non-automotive transit path for residents and visitors traveling through the most densely populated area of the Mystic River Watershed. We believe that this development offers substantial benefits for public access and public awareness of the river itself, as well as potential secondary benefits in reducing traffic and automobile emissions. The DCR easement is a consequential and laudable outcome of a project that reflects MBTA's enduring commitment to promoting access to public transportation in the Commonwealth in all of its forms.

On behalf of the Mystic River Watershed Association,



Ek OngKar Singh Khalsa, Executive Director

cc: Holly Palmgren, Manager of Environmental Construction, MBTA
MyRWA Policy Committee

Serving Twenty-Two Communities

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Melrose Reading Revere Somerville Stoneham Wakefield Watertown Wilmington Winchester Winthrop Woburn

Attachment D

Abutter Notification Information

Affidavit of Service Under The Massachusetts Wetlands Protection Act

I, **Alyssa Jacobs**, hereby certify under the pains and penalties of perjury that on **November 21, 2018**, Epsilon Associates, Inc. gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, the DEP Guide to Abutter Notification dated April 8, 1994 in connection with the following matter:

A **Notice of Intent** application was filed under the Massachusetts Wetland Protection Act by Massachusetts Department of Conservation and Recreation on **November 21, 2018** for property located at **80 Alford Street** in Boston and Somerville, MA.

The form of notification, and a list of the abutters to whom it was given and their addresses are attached to this Affidavit of Service.



Alyssa Jacobs, PWS
Senior Consultant

November 21, 2018
DATE

**NOTIFICATION TO ABUTTERS
UNDER THE MASSACHUSETTS WETLAND PROTECTION ACT**

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following:

- A. The name of the applicant is **Massachusetts Department of Conservation & Recreation (DCR)**.
- B. The applicant has filed a Notice of Intent application with the Boston Conservation Commission seeking an Order of Conditions which authorizes **DCR to construct the Draw Seven Park Pathway Extension**. A portion of these activities are subject to jurisdiction under the Massachusetts Wetlands Protection Act (General Laws Chapter 131, Section 40). Project activities will impact Land Subject to Coastal Storm Flowage and Riverfront Area and the 100-foot Buffer Zone to Coastal Bank.
- C. The address of the lot where the activity is proposed is **80 Alford Street, Boston, MA**
- D. Copies of the NOI and site plans may be examined or obtained for a fee from either the:
- Copies of the Notice of Intent may be examined at the Copies of the NOI and site plans may be examined at the **Boston Conservation Commission office located at City Hall, Room 709 Monday through Friday 8:30 am to 5:30 pm. Please call for an appointment (617-635-3850). Please leave a message on the voice mail if no one is available to answer the phone.** Copy fees may be applicable.
 - Copies of the NOI and site plans may be obtained from the applicant's representative, **Epsilon Associates, Inc, by calling 978-897-7100 between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday.**
- E. Information regarding the time, date and place of the public hearing may also be obtained from the **Boston Conservation Commission by calling 617-635-3850 Monday through Friday 8:30 am to 5:30 pm. It is anticipated that a public hearing will be held on December 5, 2018 but please contact the Conservation Commission to confirm the meeting date, time and location.**

NOTE: Notice of the public hearing, including its date, time and place, will be published at least five (5) days in advance in the **Boston Herald**.

NOTE: Notice of the public hearing, including its date, time and place, will be posted in City Hall at least forty-eight (48) hours in advance.

NOTE: You also may contact the Conservation Commission or the Northeast Regional Department of Environmental Protection for more information about this application or the Wetlands Protection Act. To contact the Northeast Regional Department of Environmental Protection Office, call (978) 694-3200.

Charlestown Bus Facility - Shoreline Stabilization and Yard Improvements Project

List of Abutters within 100' of Project Site

Parcel ID	MBLU	Owner	Addressee	Mailing Address	City, State, Zipcode	Location Address	City, State, Zipcode
Boston							
201830001		CITY OF BOSTON	¹	MAIN	CHARLESTOWN, MA 02129	MAIN ST	CHARLESTOWN, MA 02129
201830002		COMMONWEALTH OF MASS	²	ALFORD	CHARLESTOWN, MA 02129	ALFORD ST	CHARLESTOWN, MA 02129
201838000		CHARLES M HOYT III 2014	C/O CHARLES M HOYT III	36 CROSS ST	TOPSFIELD, MA 01983	62 ALFORD ST	CHARLESTOWN, MA 02129
201844000		RAD REALTY CORPORATION	C/O RAD REALTY INC	PO BOX 474	STRATHAM, NH 03885	96 ARLINGTON AV	CHARLESTOWN, MA 02129
201845000		HERRMANN KAREN	C/O STABLE REALTY TRUST	92 ARLINGTON AV	CHARLESTOWN, MA 02129	90 ARLINGTON AV	CHARLESTOWN, MA 02129
201846000						ARLINGTON AV	
201847000		TRADITIONAL CRAFT INITIATIVE	C/O TRADITIONAL CRAFT INITIATIVE LLC	238 WALDEN ST	CAMBRIDGE, MA 02140	ARLINGTON AV	CHARLESTOWN, MA 02129
201848000							
201849000							
201850000						80 ARLINGTON AV	
201852000						22 DORRANCE ST	
201851000		DORRANCE ARLINGTON LLC	C/O DORRANCE ARLINGTON LLC	238 WALDEN ST	CAMBRIDGE, MA 02140	78 ARLINGTON AV	CHARLESTOWN, MA 02129
201836000		MASS BAY TRANSP AUTH		80 ALFORD	CHARLESTOWN, MA 02129	80 ALFORD ST	CHARLESTOWN, MA 02129
201843000				ARLINGTON AVE		ARLINGTON AV	
201868000				20 ARLINGTON AVE		20 ARLINGTON AV	
201871000				32 ALFORD		32 ALFORD ST	
Somerville							
1668	101/ C/ 4/ /	MATHEWS JOHN V TRUSTEE	JOHN H MATHEWS REALTY TRUST	PO BOX 238	MEDFORD, MA 02155-0003	9R SHERMAN ST	SOMERVILLE, MA 02145
15300	100/ A/ 2/ /	COMM OF MASS	C/O DIVISION OF CAPITAL ASSET MANAGEMENT	ONE ASHBURTON PL 15TH FL	BOSTON, MA 02108	0 FOLEY ST	SOMERVILLE, MA 02145
15390	101/ C/ 3/ /	CITY OF SOMERVILLE	ASSEMBLY SQ DRIVE	93 HIGHLAND AVE	SOMERVILLE, MA 02143	MYSTIC AVE	SOMERVILLE, MA 02145
15118	100/ A/ 1/ /	MBTA	C/O MARK DOYLE R E DIRECTOR	10 PARK PLAZA SUITE 5720	BOSTON, MA 02116	0 FOLEY ST	SOMERVILLE, MA 02145

Notes:

Parcel Owner is the also the owner of the Project address.

Note 1 This is the mailing address on file on the City of Boston's Abutter Mailing List Generator website (City of Boston Assessing Department).

The typical contact address for the City of Boston is: City of Boston, c/o Maura Zlody, Boston City Hall, Room 709, Boston, MA 02201.

Note 2 This is all the information available from the City of Boston's Abutter Mailing List Generator website.

Attachment E

Filing Fee Information



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

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



A. Applicant Information

1. Location of Project:

<u>80 Alford Street</u>	<u>Boston / Somerville</u>
a. Street Address	b. City/Town
<u>37348</u>	<u>\$237.50</u>
c. Check number	d. Fee amount

2. Applicant Mailing Address:

<u>MA Dept. of Conservation and Recreation</u>	
c. Organization	
<u>251 Causeway Street 9th Floor</u>	
d. Mailing Address	
<u>Boston</u>	<u>MA</u> <u>02140</u>
e. City/Town	f. State g. Zip Code
<u>617-626-1250</u>	<u>dan.driscoll@state.ma.us</u>
h. Phone Number	i. Fax Number j. Email Address

3. Property Owner (if different):

<u>Holly</u>	<u>Palmgren</u>
a. First Name	b. Last Name
<u>Massachusetts Bay Transportation Authority</u>	
c. Organization	
<u>10 Park Plaza</u>	
d. Mailing Address	
<u>Boston</u>	<u>MA</u> <u>02116</u>
e. City/Town	f. State g. Zip Code
<u>617-222-1520</u>	<u>hpalmgren@MBTA.com</u>
h. Phone Number	i. Fax Number j. Email Address

B. Fees

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.

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat 2j	1	\$500	\$500
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Step 5/Total Project Fee:			\$500
Step 6/Fee Payments:			
Total Project Fee:			\$500
State share of filing Fee:			\$237.50
City/Town share of filing Fee:			\$922.50 (local fee calculation)

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.)

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

EPSILON ASSOCIATES, INC.
3 MILL & MAIN PLACE
STE 250
MAYNARD, MA 01754

Middlesex Savings Bank
CONCORD, MA 01742
53-7122/2113

37440

11/13/2018

PAY TO THE
ORDER OF

City of Boston

\$

**922.50

DOLLARS

Nine Hundred Twenty-Two and 50/100

PROTECTED AGAINST FRAUD

City of Boston

MEMO

M. Briggs

⑈037440⑈ ⑆211371227⑆ 800205855⑈

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Details on Back Intuit® CheckLock™ Secure Check

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

EPSILON ASSOCIATES, INC.
3 MILL & MAIN PLACE
STE 250
MAYNARD, MA 01754

Middlesex Savings Bank
CONCORD, MA 01742
53-7122/2113

37438

11/13/2018

PAY TO THE
ORDER OF

Commonwealth of Massachusetts

\$

**237.50

DOLLARS

Two Hundred Thirty-Seven and 50/100

PROTECTED AGAINST FRAUD

Commonwealth of Massachusetts

MEMO

M. Briggs

NOI Fees

⑈037438⑈ ⑆211371227⑆ 800205855⑈

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Details on Back Intuit® CheckLock™ Secure Check

Attachment F

Site Plans (prepared by SGH)

DEPARTMENT OF CONSERVATION AND RECREATION BUREAU OF PLANNING, DESIGN & RESOURCE PROTECTION

DESIGN PLANS OF

DRAW SEVEN PARK PATH EXTENSION -
DRAW SEVEN PARK TO ALFORD STREET

IN THE CITY/TOWN OF

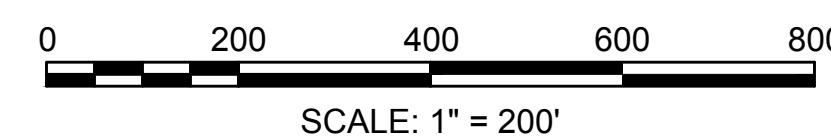
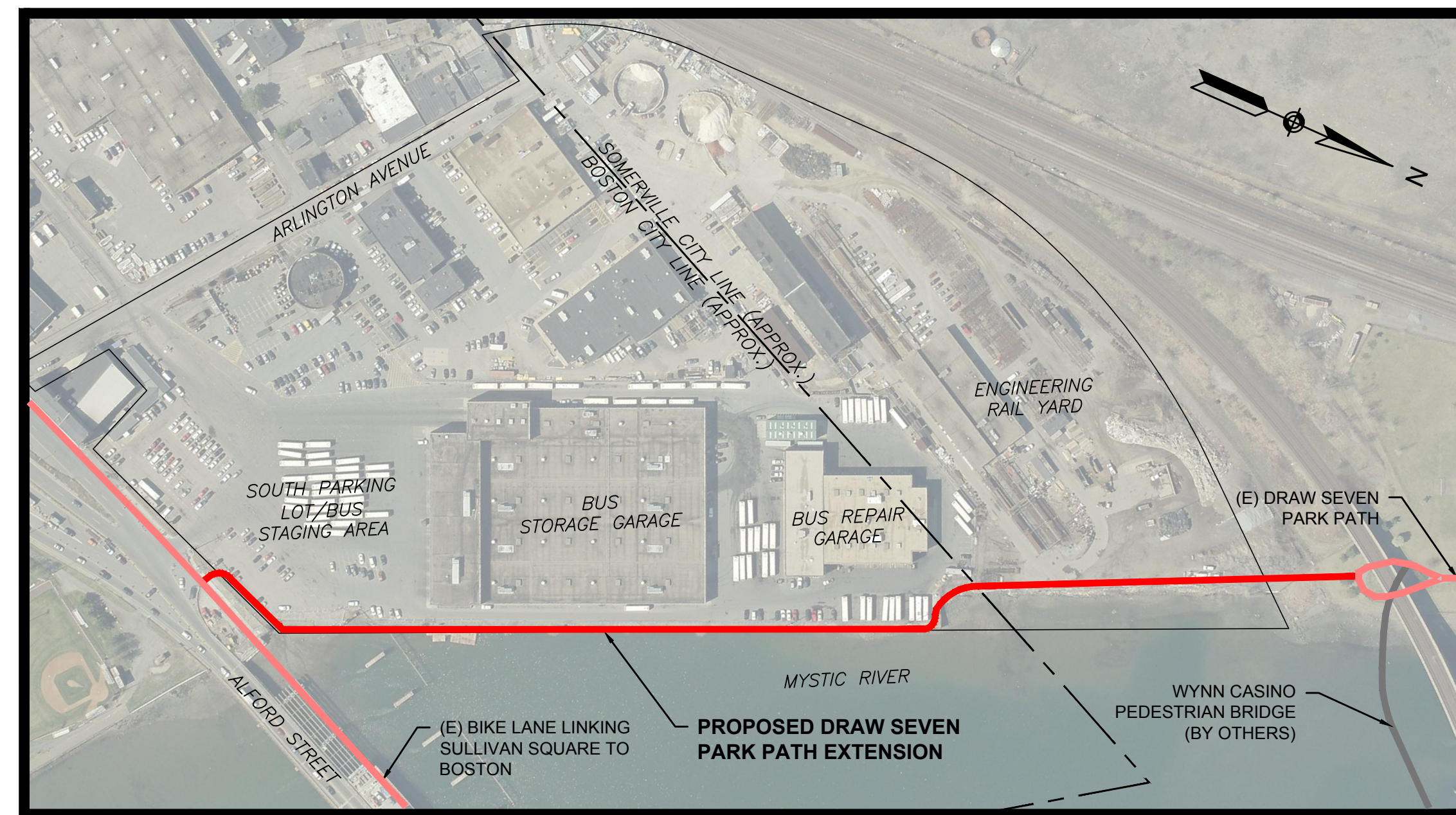
BOSTON, MA



ISSUED FOR NOTICE OF INTENT

INDEX

SHEET NO.	DESCRIPTION	STATUS
G-001	TITLE PAGE AND INDEX	IFR 01
C-001	CIVIL GENERAL NOTES	IFR 01
C-002	ABBREVIATIONS & LEGEND	IFR 01
C-050	OVERALL PATH / KEY PLAN	IFR 01
C-051	RESOURCE AREA PLAN	IFR 01
C-100	DEMOLITION AND SITE PREP PLAN	IFR 01
C-101	PROPOSED PATH LAYOUT PLAN 1	IFR 01
C-102	PROPOSED PATH LAYOUT PLAN 2	IFR 01
C-103	PROPOSED PATH LAYOUT PLAN 3	IFR 01
C-111	PROPOSED GRADING PLAN AND PROFILE 1	IFR 01
C-112	PROPOSED GRADING PLAN AND PROFILE 2	IFR 01
C-113	PROPOSED GRADING PLAN AND PROFILE 3	IFR 01
C-200	ENLARGED PROPOSED GRADING PLAN	IFR 01
C-400	TYPICAL SECTIONS 1	IFR 01
C-401	TYPICAL SECTIONS 2	IFR 01
C-402	MULTI USE PATH SECTIONS 1	IFR 01
C-403	MULTI USE PATH SECTIONS 2	IFR 01
C-500	CIVIL DETAILS	IFR 01
L-200	PLANTING ENLARGEMENT PLANS	IFR 01
L-500	LANDSCAPE SITE DETAILS	IFR 01
L-501	DETAILS	IFR 01



REV.	DATE	DESCRIPTION	BY
IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD

	SIMPSON GUMPERTZ & HEGER Engineering of Structures and Building Enclosures Simpson Gumpertz & Heger Inc. 41 Seven Street, Building 1, Suite 500 Waltham, Massachusetts 02453 781.907.9000 fax 781.907.9009 www.sgh.com
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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION & RECREATION
BUREAU OF PLANNING, DESIGN & RESOURCE PROTECTION

**DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA**

DESIGNER: CAC	TITLE PAGE AND INDEX	DRAWING NO.
CHECKED: SPD		G-001
DRAWN: RJA	CONT. P18-3229-D1A	SCALE AS NOTED
CHECKED: SPD	ACC.	DATE: 11/13/18

1 OF 21

NOT FOR CONSTRUCTION

GENERAL NOTES:

- REFER TO THE "CHARLES TOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS" PLANS AND CONTRACT SPECIFICATIONS (MBTA CONTRACT NO. R54CN02), PREPARED BY SIMPSON GUMPERTZ & HEGER, INC., DATED 28 JUNE 2017 FOR COMPLETE LIST OF GENERAL NOTES RELATED TO PATHWAY CONSTRUCTION. NOTES LISTED HEREIN ARE SUPPLEMENTAL NOTES FOR WORK RELATED TO THE PROPOSED PATH.
- EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERING, LLC, DATED FEBRUARY 22, 2017, AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
- VERIFY EXISTING UTILITY LOCATIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANCIES TO THE EOR PRIOR TO CONSTRUCTION OR ANY AFFECTED WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING, OR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS NECESSARY FOR THE WORK.
- ALL ELEVATIONS ARE REFERENCED FROM NAVD83 DATUM UNLESS OTHERWISE NOTED.
- HORIZONTAL COORDINATES INDICATED ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83).
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY IN ACCORDANCE WITH ALL APPLICABLE OSHA REQUIREMENTS. SPECIAL PRECAUTIONS MAY BE REQUIRED IN THE VICINITY OF POWER LINES AND OTHER UTILITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING CONSTRUCTION FOLLOWS ALL APPLICABLE LOCAL STATE AND FEDERAL REGULATIONS.
- CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY THEIR OPERATIONS TO THEIR ORIGINAL CONDITION, OR BETTER.
- SEE LANDSCAPE DRAWINGS FOR ALL SODDING, SEEDING, AND MULCHING. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THESE AREAS UP TO AND INCLUDING THE INITIAL MOWING. SEE LANDSCAPE DRAWINGS FOR EXTENT AND TYPE OF PLANTINGS.
- SCALES SHOWN ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZED PRINTS. DIVIDE SCALES BY APPROPRIATE SCALE FACTOR FOR REDUCED SIZE PRINTS.
- THIS PROJECT IS SUBJECT TO THE REQUIREMENTS OF AN ORDER OF CONDITIONS (OOC) ISSUED BY THE CITIES OF BOSTON AND SOMERVILLE CONSERVATION COMMISSIONS. SEE "SHORELINE STABILIZATION AND YARD IMPROVEMENT" PLANS FOR ADDITIONAL INFORMATION. [AMENDMENT PENDING FOR PATH EXTENSION WORK]
- ALL NOTES APPLY TO ALL CONSTRUCTION PLANS WHERE APPLICABLE.
- GENERAL CONSTRUCTION REQUIREMENTS

A. COORDINATION

- THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE AUTHORITY 7 DAYS IN ADVANCE OF STARTING WORK OR LOCATING EQUIPMENT AT THE SITE. CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATION AND SETUP, AND LAYDOWN AREA LOCATIONS WITH THE AUTHORITY.
- CONTRACTOR SHALL COORDINATE SITE ACCESS REQUIREMENTS AND ALLOWABLE WORK HOURS WITH AUTHORITY PRIOR TO CONSTRUCTION. CONTRACTOR SHALL MAKE HIS OWN ASSESSMENT OF SITE ACCESS, AUTHORITY'S ACCESS REQUIREMENTS, COORDINATION WITH REQUIRED FLAGGERS OR OTHER REQUIRED THIRD PARTY PERSONNEL, SITE LOGISTICS, CONSTRUCTION TRAFFIC, AND OTHER FACTORS AFFECTING THE PROPOSED CONSTRUCTION, AND DEVELOP CONSTRUCTION METHODS AND PHASING TO MEET THE PROPOSED PROJECT SCHEDULE.
- DO NOT RELY SOLELY ON ELECTRONIC VERSIONS OF DRAWINGS, SPECIFICATIONS, AND DATA FILES THAT ARE PROVIDED BY THE ENGINEER. FIELD VERIFY LOCATION OF PROJECT FEATURES.
- CONTRACTOR IS RESPONSIBLE TO PERFORM WORK IN A MANNER THAT ALLOWS MBTA BUS OPERATIONS TO RUN CONTINUOUSLY THROUGHOUT CONSTRUCTION. MBTA OPERATES BUSES AT THIS SITE 24 HRS/DAVY EVERY DAY AND DURING INCLEMENT WEATHER.
- CONSTRUCTION ACTIVITIES WILL NOT BE ALLOWED ON ANY DAY WHERE MORE THAN 2 INCHES OF SNOW IS FORECAST TO FALL AT THE SITE UNLESS APPROVED BY THE ENGINEER. SNOW WILL BE MOVED FROM THE BUS OPERATIONS PAVEMENT INTO THE CONSTRUCTION AREA. THE CONTRACTOR IS REQUIRED TO HAUL ALL SNOW AWAY FROM SITE OR MELT IT ON SITE IF ADDITIONAL SPACE IS REQUIRED FOR CONSTRUCTION ACTIVITIES TO RESUME AFTER A WINTER STORM.
- CONTRACTOR IS TO COORDINATE TRAFFIC CIRCULATION REQUIREMENTS WITH THE AUTHORITY, AND PROVIDE ALL TEMPORARY BARRIERS AND SIGNAGE REQUIRED FOR TEMPORARY TRAFFIC MANAGEMENT. JERSEY BARRIERS SHALL BE PROVIDED TO RESTRICT ACCESS NEAR HEAVY CONSTRUCTION EQUIPMENT. DURING CONSTRUCTION THE MBTA BUS OPERATIONS WILL USE BAY 12 OF THE STORAGE GARAGE TO DRIVE BUSES THROUGH. THE CONTRACTOR IS REQUIRED TO PROVIDE NECESSARY TRAFFIC BARRIERS, LIGHTING AND SIGNAGE TO ALLOW BUSES TO SAFELY OPERATE THROUGH BAY 12 ON A DAILY BASIS. COORDINATE WITH MBTA SAFETY AND BUS OPERATIONS.
- DURING CONSTRUCTION THE CONTRACTOR IS ONLY ALLOWED TO ACCESS THE SITE THROUGH DESIGNATED ENTRY POINTS APPROVED BY THE AUTHORITY PRIOR TO THE START OF CONSTRUCTION OR AS SHOWN ON THE TRAFFIC MANAGEMENT DURING CONSTRUCTION PLANS.
- PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
- FLAG ALL WORK LIMITS. POST DEP SIGN AND CONSTRUCTION SITE NOTICE WITH EPA PERMIT NUMBERS ASSIGNED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.

B. WORKMANSHIP

- THE CONTRACTOR SHALL EXERCISE CARE WHEN OPERATING EQUIPMENT ADJACENT TO (E) STRUCTURES SO AS NOT TO CAUSE DAMAGE OR DISPLACEMENT OF THE (E) STRUCTURES AND (E) SHEET PILE BULKHEAD.
- DEFICIENT WORK AND/OR WORK NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS SHALL BE REPAIRED OR REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL COMPENSATE THE AUTHORITY FOR SERVICES ARISING FROM DEFICIENT WORK, REVIEW OF MODIFICATIONS/CONTRACTOR SUBSTITUTION, OR EXPEDITING OF SUBMITTALS.
- COST OF INVESTIGATION AND/OR REDESIGN INCURRED BY THE DESIGN ENGINEER DUE TO CONTRACTOR ERRORS WILL BE AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY THEIR OPERATIONS TO THEIR ORIGINAL CONDITION, OR BETTER.

DEFINITIONS

- AUTHORITY - MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA), CREATED BY CHAPTER 563, SECTION 18 OF THE ACTS OF 1964, OF THE COMMONWEALTH, THE PARTY OF THE FIRST PART TO THE CONTRACT
- CONTRACTOR THE INDIVIDUAL, FIRM, PARTNERSHIP, CORPORATION, OR COMBINATION THEREOF, PRIVATE, MUNICIPAL OR PUBLIC, INCLUDING JOINT VENTURES, WHICH, AS AN INDEPENDENT CONTRACTOR, HAS ENTERED INTO CONTRACT WITH THE AUTHORITY, AS PARTY OR PARTIES OF THE SECOND PART, AND WHO IS REFERRED TO THROUGHOUT THE CONTRACT DOCUMENTS BY SINGULAR NUMBER.
- ENGINEER THE GENERAL MANAGER OF THE AUTHORITY OR DESIGNEE ACTING WITHIN THE SCOPE OF THE PARTICULAR DUTIES ENTRUSTED TO THIS PERSON.
- DESIGN ENGINEER, EOR, AND/OR CONSULTANT (SIMPSON GUMPERTZ & HEGER, INC. (SGH)) HAS BEEN RETAINED BY THE AUTHORITY AS ENGINEERING CONSULTANT DURING THE CONSTRUCTION OF CHARLESTOWN BUS GARAGE SHORELINE STABILIZATION AND YARD IMPROVEMENTS PROJECT. THE TERMS "DESIGN ENGINEER", "EOR", AND "CONSULTANT" ARE AT TIMES INTERCHANGEABLE.
- TESTING AGENCY - UNLESS OTHERWISE NOTED, IS THE INDEPENDENT ENTITY EMPLOYED BY THE CONTRACTOR TO PERFORM INSPECTION AND TESTING OF THE WORK. THE AUTHORITY MAY ELECT TO PERFORM INDEPENDENT TESTING OF CERTAIN COMPONENTS.

SITE DEMOLITION NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING ALL EXISTING AND NEW SITE DRAINAGE AND UTILITIES WHICH ARE TO REMAIN, OR BE CONSTRUCTED.
- DISPOSAL OF ALL DEMOLISHED MATERIAL MUST BE OFF-SITE BY THE CONTRACTOR AND IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. NO ON-SITE BURIAL PITS ARE ALLOWED.

EROSION CONTROL NOTES:

1. GENERAL

- REFER TO THE "SHORELINE STABILIZATION AND YARD IMPROVEMENTS" PLANS FOR COMPLETE EROSION AND SEDIMENTATION CONTROL PLANS, DETAILS, AND NOTES.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MASSDEP EROSION AND SEDIMENTATION CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, AND THE APPROVED OOC'S FOR THE PROJECT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT DURING CONSTRUCTION. THE INTENT OF THIS PLAN IS TO CONTROL EROSION AND RESULTING SEDIMENT TRANSPORTATION OFF SITE. THE ITEMS INDICATED ARE THE ENGINEER'S BEST ESTIMATE OF REQUIREMENTS; MORE CONTROL MAY BE NEEDED DEPENDING ON SITE CONDITIONS, SEASON, ETC. CONTRACTOR SHALL INSTALL ADDITIONAL MEASURES AS NECESSARY TO COMPLY WITH THIS INTENT.
- THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS TO PREPARE, AND/OR MODIFY AT THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND FILE FOR COVERAGE AS AN OPERATOR UNDER THE NPDES CONSTRUCTION GENERAL PERMIT FOR THE SITE PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ENGAGE A QUALIFIED SEDIMENT CONTROL INSPECTOR RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE REQUIREMENTS ON THE CONSTRUCTION DOCUMENTS, THE ORDER OF CONDITIONS, AND THE SWPPP.
- THE SWPPP, E&S PLANS, THE NOI, THE ORDER OF CONDITIONS, AND COPIES OF ALL INSPECTION REPORTS SHALL BE KEPT ON-SITE THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITY. ANY CHANGES MUST BE NOTED, DATED, AND INITIALED BY THE GENERAL CONTRACTOR.
- REFUELING AND MAINTENANCE ACTIVITIES DURING CONSTRUCTION SHALL OCCUR WITHIN A DEFINED AREA OUTSIDE OF WETLAND RESOURCE AREAS AND THEIR BUFFER ZONES OR THE CONTRACTOR SHALL EMPLOY MEASURES THAT PREVENT CONTAMINATING THE RESOURCE AREAS. CONTRACTOR SHALL PREPARE A PLAN FOR STOCKPIILING, REFUELING, AND MAINTENANCE AND SHALL SUBMIT THE PLAN TO THE AUTHORITY, ENGINEER, DESIGN ENGINEER, AND THE COMMISSION PRIOR TO INITIATION OF WORK ON THE SITE.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS. SHALL BE MAINTAINED DURING CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN-PLACE UNTIL SITE WORK IS COMPLETE AND FINAL GROUND COVER IS ESTABLISHED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH AS DETAILED ON THE DRAWINGS, IN THE SWPPP, AND IN THE ORDER OF CONDITIONS. AT A MINIMUM, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND CLEANED/REPAIRED AS NEEDED THROUGHOUT ALL PHASES OF CONSTRUCTION. IN ADDITION, INSPECTION SHALL TAKE PLACE WITHIN 24 HOURS AFTER A RAINFALL EVENT OF GREATER THAN 0.25 IN. OF RAINFALL WITHIN A 48 HOUR PERIOD AND AS INDICATED IN THE APPROVED ORDER OF CONDITIONS; THE MOST STRINGENT SHALL APPLY.
- ANY NON-STORM DISCHARGES SUCH AS, BUT NOT LIMITED TO, FIRE HYDRANT FLUSHINGS, WASH WATERS, DUST CONTROL, IRRIGATION DRAINAGE, ETC., THAT DO NOT CONTAIN HAZARDOUS MATERIALS SHALL BE PREVENTED FROM ALLOWING SEDIMENT TRANSPORT INTO STORM SEWERS. FLUSHINGS THAT CONTAIN HAZARDOUS MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWERS AND SHALL BE COLLECTED AND DISPOSED OF IN AN APPROVED MANNER.

2. SCOPE OF EROSION CONTROL

- THE CONTRACTOR SHALL EMPLOY MEASURES TO PREVENT ALL EROSION OF, SILTATION OF, SEDIMENTATION OF, AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO WETLANDS, WATERWAYS, CONSTRUCTION AREAS, ADJACENT AREAS, AND OFF-SITE AREAS RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF COMPOST FILTER TUBES, SILT FENCING, CATCH BASIN INSERTS, FLOATING TURBIDITY BARRIER, STABILIZED CONSTRUCTION ENTRANCE(S), ETC. IS REQUIRED. REFER TO THE EROSION AND SEDIMENT PLAN DRAWINGS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UPDATE BMP CONTROLS AS SITE CONDITIONS WARRANT. MORE CONTROLS MAY BE REQUIRED PER SITE CONDITIONS. ANY AREA WHERE EROSION IS OBSERVED MUST BE ADDRESSED BY THE CONTRACTOR, WHETHER SHOWN ON THE PLANS OR NOT. IN THE CASE THAT DOWNSTREAM EROSION IS OBSERVED, THE CONTRACTOR MUST CONTACT THE EOR FOR RECOMMENDATIONS.
- PERMANENT EROSION CONTROL, TURF ESTABLISHMENT, AND SOIL STABILIZATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND MAY TAKE MULTIPLE ROUNDS OF PLANTINGS TO ESTABLISH.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER CLEANING AND DISPOSAL OF ANY DEBRIS TAKEN OFF SITE. CONTRACTOR IS RESPONSIBLE FOR ALL FINES AND FEES FOR IMPROPER PLACEMENT OR MAINTENANCE OF CONTROLS.
- CONTRACTOR SHALL KEEP ON-SITE AT ALL TIMES ADDITIONAL COMPOST FILTER TUBES, SILT FENCES, FLOATING TURBIDITY BARRIERS, AND CATCH BASIN INSERTS TO MITIGATE ANY EMERGENCY OR REPAIR CONDITIONS. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH A COMPOST FILTER TUBE. AS CONSTRUCTION PROGRESSES THE LOCATION OF STOCKPILE AREA MAY BE MODIFIED. CONTRACTOR TO COORDINATE NEW STOCKPILE LOCATION WITH ENGINEER.
- CATCH BASIN INSERTS SHALL BE INSTALLED IN ANY CATCH BASINS SUBJECT TO SEDIMENTATION, AS INDICATED ON THE DRAWINGS, OR AS DIRECTED BY ENGINEER. INSERT IS TO BE PROVIDED FOR THE DRAINAGE SYSTEM THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION AND UNTIL FINAL SITE STABILIZATION IS REACHED.
- FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED AS INDICATED IN THE DRAWINGS AND AS NEEDED IN CONSULTATION WITH THE BOSTON AND SOMERVILLE CONSERVATION COMMISSION AGENCIES. THE FLOATING TURBIDITY BARRIERS ARE TO REMAIN IN PLACE UNTIL ALL WORK HAS BEEN COMPLETED AND FINAL SITE STABILIZATION IS REACHED.
- THE ENTRANCE AND EXIT TO AND FROM THE CONSTRUCTION AREA SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ANY PUBLIC WAY OR INTO THE MYSTIC RIVER. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED OFF SITE MUST BE REMOVED IMMEDIATELY.
- TRUCKS ENTERING AND LEAVING THE SITE SHALL HAVE THEIR LOADS COMPLETELY COVERED IN COMPLIANCE WITH MASSACHUSETTS GENERAL LAW CHAPTER 85 SECTION 36. THE APPLICANT SHALL ALSO INSTRUCT ALL DRIVERS ON SITE THAT VEHICLES SHALL NOT IDLE FOR LONGER THAN 5 MINUTES IN COMPLIANCE WITH MASSACHUSETTS GENERAL LAW CHAPTER 90 SECTION 16A.

GRADING AND EARTHWORK NOTES:

- REFER TO SHORELINE STABILIZATION DRAWINGS AND SECTION 02300 FOR ALL EARTHWORK REQUIREMENTS.
- PROPOSED GRADES TO BLEND SMOOTHLY WITH EXISTING GRADES.
- ALL SPOT ELEVATIONS SHOWN ON CIVIL DRAWINGS REFER TO SURFACE GRADES UNLESS OTHERWISE INDICATED.

POROUS PAVEMENT NOTES:

- REFER TO SPECIFICATION SECTIONS 02301 "SHORELINE EMBANKMENTS AND PATHWAY EARTHWORK", 02513 "BITUMINOUS CONCRETE PAVEMENT", AND 02510 "POROUS PAVEMENT".
- THE COMPACTED CRUSHED STONE BASE SHALL BE SPREAD AND TRIMMED TRUE TO LINE AND GRADE.
- ANY DEPRESSIONS THAT APPEAR DURING AND AFTER COMPACTION SHALL BE FILLED WITH ADDITIONAL CRUSHED STONE BASE AND RE-COMPACTED UNTIL THE SURFACE IS TRUE AND EVEN.
- COMPACTED CRUSHED STONE BASE SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM D698).
- NO LOAM, PEAT, ORGANIC MATTER OR OTHER SOFT MATERIAL SHALL BE USED (OR SHALL BE) BELOW THE COMPACTED GRAVEL BASE.
- THE EXISTING GRAVEL BORROW SUB-GRADE SHALL BE PROOF-ROLLED BEFORE PLACING THE COMPACTED CRUSHED STONE BASE.
- THE GRAVEL BORROW SUB-BASE AND COMPACTED CRUSHED STONE BASE SHALL BE SHAPED AND SLOPED TO MATCH THE PROPOSED SURFACE.

HMA NOTES:

- REFER TO SPECIFICATION SECTIONS 02301 "SHORELINE EMBANKMENTS AND PATHWAY EARTHWORK" AND 02513 "BITUMINOUS CONCRETE PAVEMENT".
- THE COMPACTED GRAVEL BASE SHALL BE SPREAD IN TWO EQUAL LAYERS, EACH OF WHICH SHALL BE TRIMMED TRUE TO LINE AND GRADE.
- ANY DEPRESSIONS THAT APPEAR DURING AND AFTER COMPACTION SHALL BE FILLED WITH ADDITIONAL GRAVEL BASE AND RE-COMPACTED UNTIL THE SURFACE IS TRUE AND EVEN.
- COMPACTED GRAVEL BASE SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY (MHD STANDARD SPECIFICATION) AT OPTIMUM MOISTURE CONTENT (ASTM D698).
- NO LOAM, PEAT, ORGANIC MATTER OR OTHER SOFT MATERIAL SHALL BE USED (OR SHALL BE) BELOW THE COMPACTED GRAVEL BASE.
- THE SUB-GRADE SHALL BE PROOF-ROLLED BEFORE PLACING THE HMA COMPACTED GRAVEL BASE.
- THE SUB-GRADE AND COMPACTED GRAVEL BASE SHALL BE SLOPED TO MATCH THE PROPOSED SURFACE.
- PROVIDE BINDER COURSE AND TOP COURSE AS NOTED ON DRAWING MEETING THE REQUIREMENTS OF MHD TABLE A IN M3.11.

PATHWAY CONSTRUCTION SEQUENCE:


- CONSTRUCTION SEQUENCE FOR (P) PATHWAY WORK TO BE PROVIDED IN FINAL DESIGN.

MATERIALS AND PRODUCTS:

ASPHALT BINDER COURSE	MEET REQUIREMENTS OF MHD TABLE A IN M3.11 FOR HMA BINDER COURSE. PAVEMENT SHALL COMPLY WITH MHD M3.01.0 AND M3.11 FOR CLASS 1 PAVEMENT.
ASPHALT TOP COURSE	MEET REQUIREMENTS OF MHD TABLE A IN M3.11 FOR HMA TOP COURSE. PAVEMENT SHALL COMPLY WITH MHD M3.01.0 AND M3.11 FOR CLASS 1 PAVEMENT.
ASPHALT SEALER	HOT APPLIED, SINGLE-COMPONENT JOINT SEALANT FOR ASPHALT COMPLY WITH ASTM D 6690, TYPES I, II, AND III.
HOT-POURED JOINT SEALER	HOT APPLIED SINGLE COMPONENT POLYMERIC JOINT SEALING COMPOUND PER AASHTO M173
CRUSHED STONE BASE:	AASHTO NO. 57 STONE.
GRAVEL BASE	PROCESSED GRAVEL PER MHD M1.03.1
GRAVEL BORROW	COMBINATION OF CRUSHED ROCK, SCREENED GRAVEL, GRAVEL BASE, AND GRAVEL BACKFILL PER MHD M1.03.0.
LOAM / TOPSOIL	SEE LANDSCAPE DRAWINGS.
PREFORMED JOINT FILLER	MEET REQUIREMENTS OF AASHTO M153
POROUS PAVEMENT	POROUS PAVE OR APPROVED EQUAL.
CB FILTER BAG	CATCH BASIN FILTER BAG SHALL BE "SILTSACK" HIGH FLOW, MANUFACTURED BY SI GEOSOLUTIONS, ACF ENVIRONMENTAL, TERRAFIX GEOSYNTHETICS INC., OR APPROVED EQUAL.
SEDIMENT FILTER TUBE	SEDIMENT FILTER TUBE SHALL BE MULTI-FILAMENT POLYPROPYLENE, W/100% STRENGTH FROM UV EXPOSURE AT 1000 HRS, MANUFACTURED BY FILTREXX, MVK SILT SOCK, GEI WORKS, OR APPROVED EQUAL.
TACK COAT	ASTM D977, TYPE RS-1.
WHITE PAVEMENT MARKINGS	MEET REQUIREMENTS OF MHD M7.01.03 "WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS". FOR PATH STRIPING & CROSSWALK
HDPE	PERFORATED AND SOLID PER AASHTO M294M, TYPE S WITH SMOOTH INTERIOR & WATERTIGHT JOINTS PER ASTM 3212. USE NITRILE RUBBER GASKETS WHERE INDICATED FOR EXPOSURE TO CONTAMINANTS.

* SUBMIT ALL PRODUCTS NOT SPECIFIED HEREIN TO THE EOR FOR REVIEW AND APPROVAL

COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION & RECREATION BUREAU OF PLANNING, DESIGN & RESOURCE PROTECTION			
DRAW SEVEN PARK PATH EXTENSION BOSTON, MA			
DESIGNER: CAC	CIVIL GENERAL NOTES		DRAWING NO.
CHECKED: SPD			C-001
DRAWN: RJA	CONT. P18-3229-D1A	SCALE: AS NOTED	
CHECKED: SPD	ACC.	DATE: 11/13/18	2 OF 21

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NOT FOR CONSTRUCTION

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACCOMP	ASPHALT COATED CORRUGATED METAL PIPE
ADA	AMERICANS WITH DISABILITIES ACT
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
B-XX	BORING NUMBER
BC	BOTTOM OF CURB
BECO	BOSTON ELECTRIC COMPANY
BM	BENCH MARK
BOE	BOTTOM OF EXCAVATION
BWSC	BOSTON WATER AND SEWER COMMISSION
BWW	BOSTON WATER WORKS
℄	CENTER LINE
C. TO C.	CENTER TO CENTER
CB	CATCH BASIN
CG&E	COMMONWEALTH GAS & ELECTRIC
CIP	CAST-IN-PLACE
CLF	CHAIN LINK FENCE
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CMR	CODE OF MASSACHUSETTS REGULATIONS
CNG	COMPRESSED NATURAL GAS
COL	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONST	CONSTRUCTION
CTE	CONNECT TO EXISTING
DBLE	DOUBLE
DCR	DEPARTMENT OF CONSERVATION AND RECREATION
DH	DRILL HOLE
DI	DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
DND	DO NOT DISTURB
DYCL	DASHED YELLOW CENTERLINE
(E)	EXISTING
E	EASTING
E & S	EROSION AND SEDIMENTATION
EL	ELEVATION
ELEC	ELECTRIC
EHH	ELECTRIC HANDHOLE
EMH	ELECTRICAL MANHOLE
EOP	EDGE OF PAVEMENT
EOR	ENGINEER OF RECORD
FA	FIRE ALARM
FAB	FIRE ALARM BOX
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FG	FINISHED GRADE
FIN.	FINISH
FT. or '	FEET
GG	GAS GATE
GR	GRATE
GRN.	GRANITE
GS	GROUND SURFACE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HH	HANDHOLE
HMA	HOT MIX ASPHALT
HP	HIGH POINT
HTL	HIGH TIDE LINE
INV.	INVERT
KV	KILOVOLT
LA	LANDSCAPE ARCHITECT
LOE	LIMIT OF EXCAVATION
L.O.W	LIMIT OF WORK
LRG	LARGE
LP	LIGHT POLE
MAG	MAGNETIC NAIL
MASSDOT	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
MAX.	MAXIMUM
MBTA	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
MDC	METROPOLITAN DISTRICT COMMISSION
ME	MATCH EXISTING
MH	MANHOLE
MHD	MASSACHUSETTS HIGHWAY DIVISION
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER

MIN.	MINIMUM
MLLW	MEAN LOW LOW WATER
MLW	MEAN LOW WATER
MMAG	MAGNETIC NAIL
MON.	MONUMENT
MSL	MEAN SEA LEVEL
MTRV	TRAVERSE POINT
MW	MONITORING WELL
(N)	NEW
N	NORTHING
NAD83	NORTH AMERICAN DATUM 1983
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988
NIC	NOT IN CONTRACT
n/f	NOW OR FORMERLY
NTS	NOT TO SCALE
OC	ON CENTER
OGS	OUTFALL GATE STRUCTURE
OHW	OVERHEAD WIRE
OT	UNKNOWN STRUCTURE
O/W SEP.	OIL/WATER SEPARATOR
(P)	PROPOSED
PC	POINT OF CURVATURE
PEN.	PENETRATION
PERF	PERFORATED
PK	PK NAIL
PL	PLATE
POLY	POLYETHYLENE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PTC	PIPE TYPE CABLE
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INFLECTION
(R)	RECORD
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R=	RIM/RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
REINF.	REINFORCE
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SEWER
SDR	POLY VINYL CHLORIDE(PVC)
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SWL	SOLID WHILE LINE
S&P	SUPPORT AND PROTECT
T/	TOP OF
T&FA	TELEPHONE & FIRE ALARM
TBD	TO BE DETERMINED
T.C.	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
TMH	TIDEGATE MANHOLE
T.W.	TOP OF WALL
TYP	TYPICAL
ULT	UTILITY LIGHT POLE
UPL	UTILITY POLE
UON	UNLESS OTHERWISE NOTED
VCP	VITRIFIED CLAY PIPE
VGC	VERTICAL GRANITE CURB
VIF	VERIFY IN FIELD
W/	WITH
WCR	WALK CROSSING
W/I	WITHIN
WG	WATER GATE VALVE
WM	WATER METER
WS	WATER SURFACE
WSO	WATER SHUTOFF
WQS	WATER QUALITY STRUCTURE
WQV	WATER QUALITY VOLUME
X	TO BE REMOVED
XL	NEW LOCATION OF RELOCATED STRUCTURE
XM	TO REMAIN
XR	TO BE RELOCATED
YR.	YEAR
8"W	8" UNDERGROUND WATER LINE

SYMBOL LEGEND

	FIRE HYDRANT
	DRAINAGE LINE
	ELECTRIC LINE
	ELECTRIC MANHOLE
	DRAINAGE MANHOLE
	SEWER MANHOLE
	CATCH BASIN
	TELEPHONE MANHOLE
	WATER LINE
	GAS LINE
	SEWER LINE
	WATER SYMBOL
	OVERHEAD WIRE
	EDGE OF BUILDING
	TRAFFIC SIGNAL
	UTILITY POLE
	GATE POST
	STREET LIGHT
	ELECTRIC MANHOLE
	SEWER MANHOLE
	HAND HOLE
	OTHER STRUCTURE
	GAS MANHOLE
	GAS GATE
	MANHOLE
	GAS VALVE
	UTILITY POLE
	LIGHT POLE
	TREE (12")

LEGEND:

	345KV WITH 10 FT DIAMETER EASEMENT
	100 FT BUFFER TO COASTAL BANK
	BOSTON/SOMERVILLE CITY LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	LIMIT OF WORK
	(P) FENCE LINE
	(P) FLOOD WALL LINE
	(P) MAJOR CONTOUR
	(P) MINOR CONTOUR
	CLEARANCE FOR PATH
	CONCRETE
	DEMO PAVEMENT
	HMA
	POROUS PAVEMENT
	RIP RAP REVETMENT

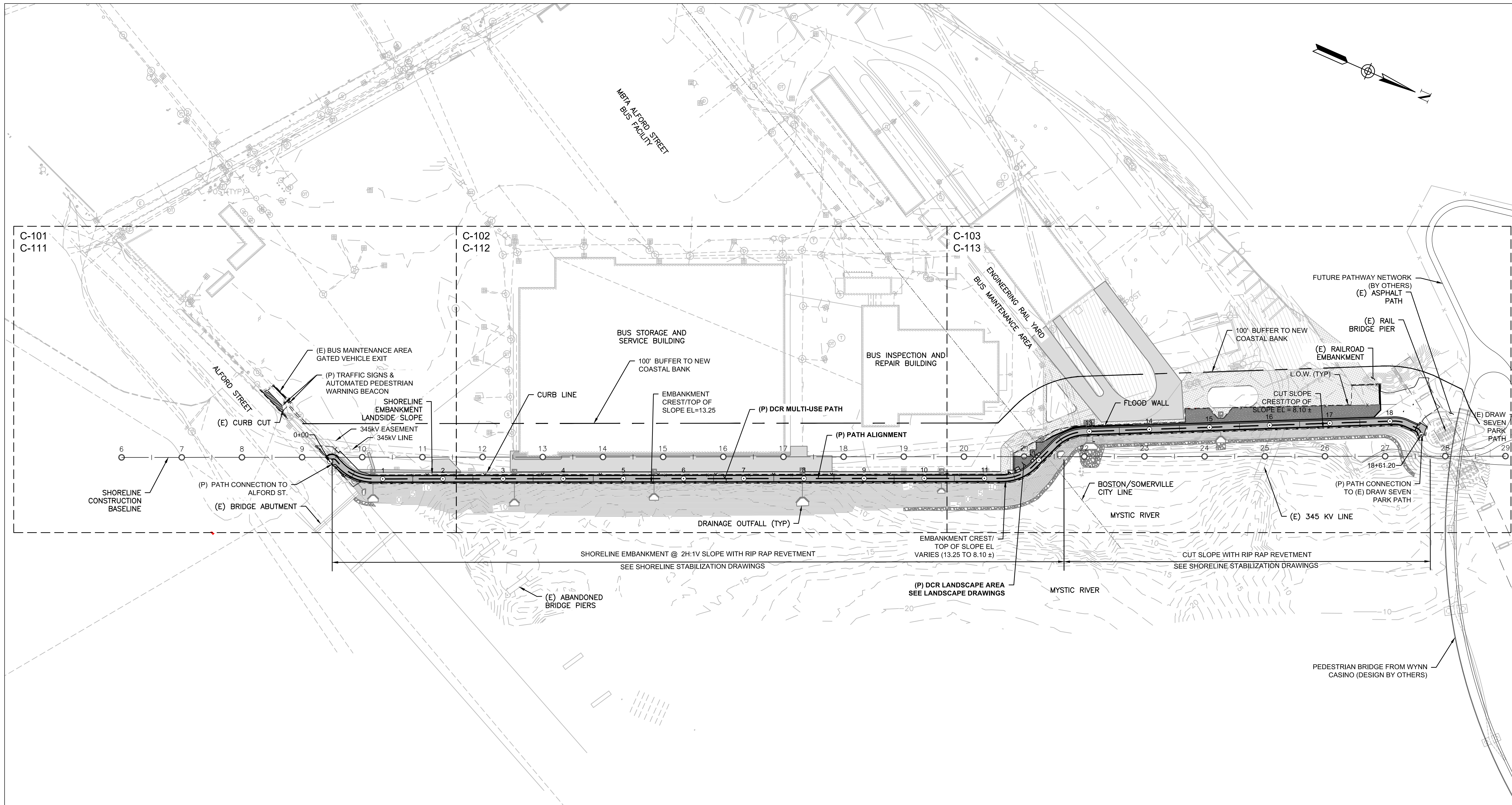
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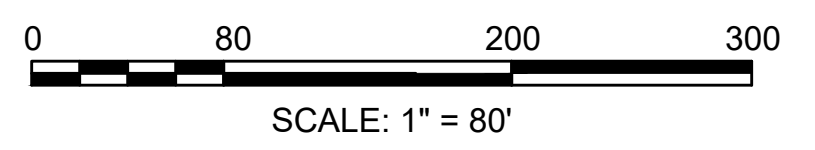
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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

DESIGNER: CAC	ABBREVIATIONS & LEGEND	DRAWING NO.
CHECKED: SPD		C-002
DRAWN: RJA	CONT. P18-3229-D1A	SCALE: AS NOTED
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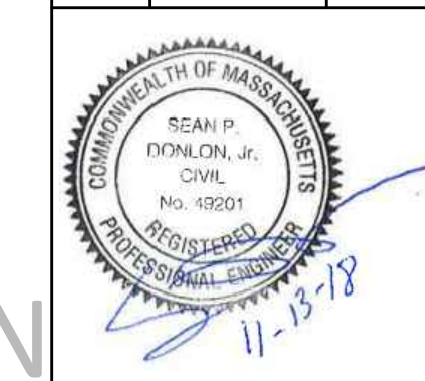
OVERALL PATH / KEY PLAN
1"=80'



NOTES:

- EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
- REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
- ALL ELEVATIONS LISTED ARE BASED ON THE PROPOSED SHORELINE ELEVATIONS AND DO NOT ACCOUNT FOR ANTICIPATED SETTLEMENT.

REV.	DATE	DESCRIPTION	BY
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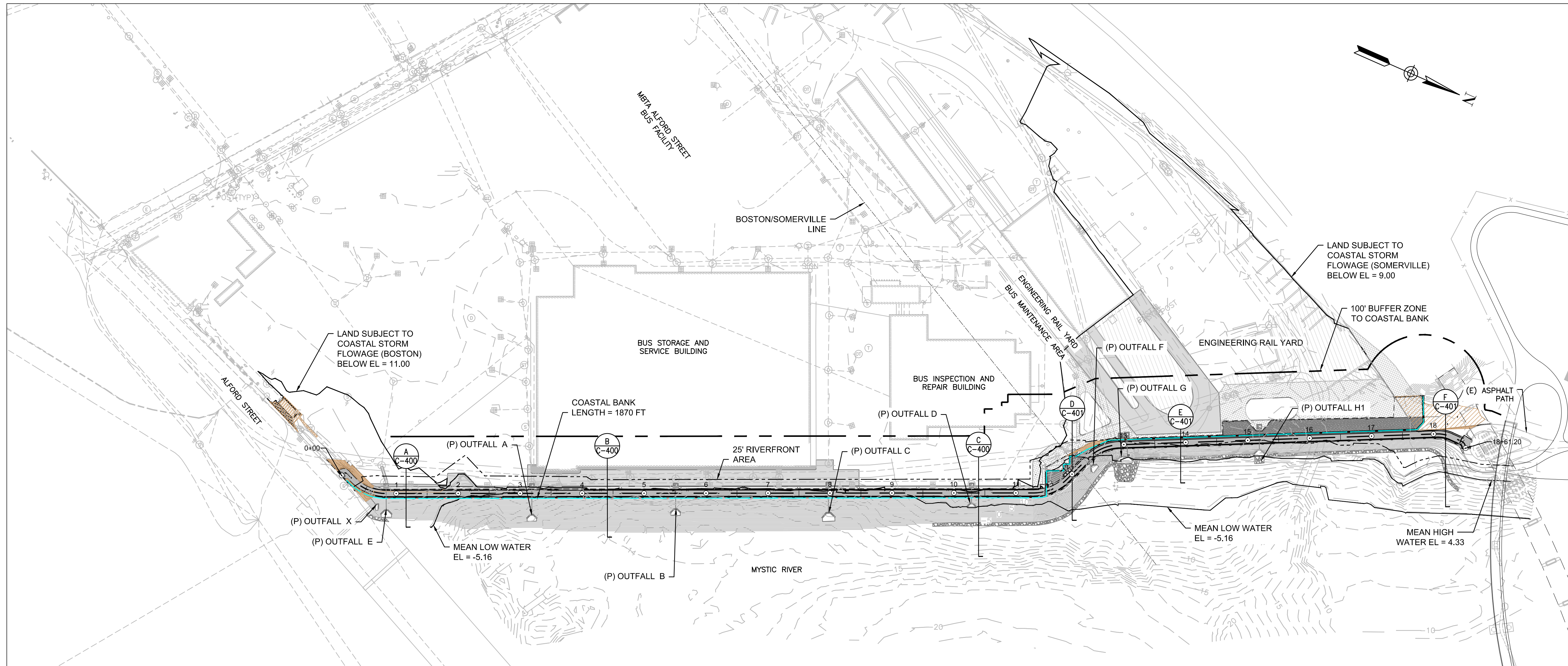
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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

DESIGNER: CAC	OVERALL PATH / KEY PLAN	DRAWING NO.
CHECKED: SPD		C-050
DRAWN: RJA	CONT. P18-3229-D1A	SCALE AS NOTED
CHECKED: SPD	ACC.	DATE: 11/13/18
		4 OF 21

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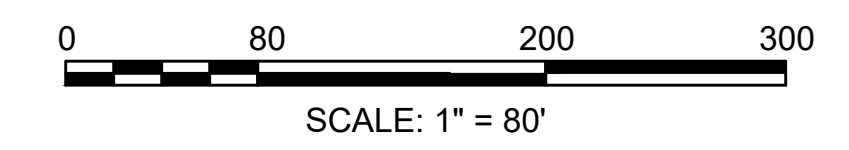
WETLANDS RESOURCE AREAS WITH IMPACTS
1" = 80'

BOSTON RESOURCE AREA IMPACT QUANTITIES:
 LAND SUBJECT TO COASTAL STORM FLOWAGE (PERMANENT) = 1,130 SF
 LAND SUBJECT TO COASTAL STORM FLOWAGE (TEMPORARY) = 1,140 SF

SOMERVILLE RESOURCE AREA IMPACT QUANTITIES:
 LAND SUBJECT TO COASTAL STORM FLOWAGE (PERMANENT) = 400 SF
 IMPROVEMENTS WITHIN 100FT BUFFER ZONE = 4,940 SF

- NOTES:**
- SEE C-001 FOR APPLICABLE NOTES.
 - EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
 - REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.

- LEGEND:**
- LAND SUBJECT TO COASTAL STORM FLOWAGE - PERMANENT IMPACTS
 - LAND SUBJECT TO COASTAL STORM FLOWAGE - TEMPORARY IMPACTS
 - IMPROVEMENTS WITHIN 100FT BUFFER ZONE



REV.	DATE	DESCRIPTION	BY
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SEAN P. D'AMICO, Jr.
CIVIL
No. 49201
REGISTERED
PROFESSIONAL ENGINEER

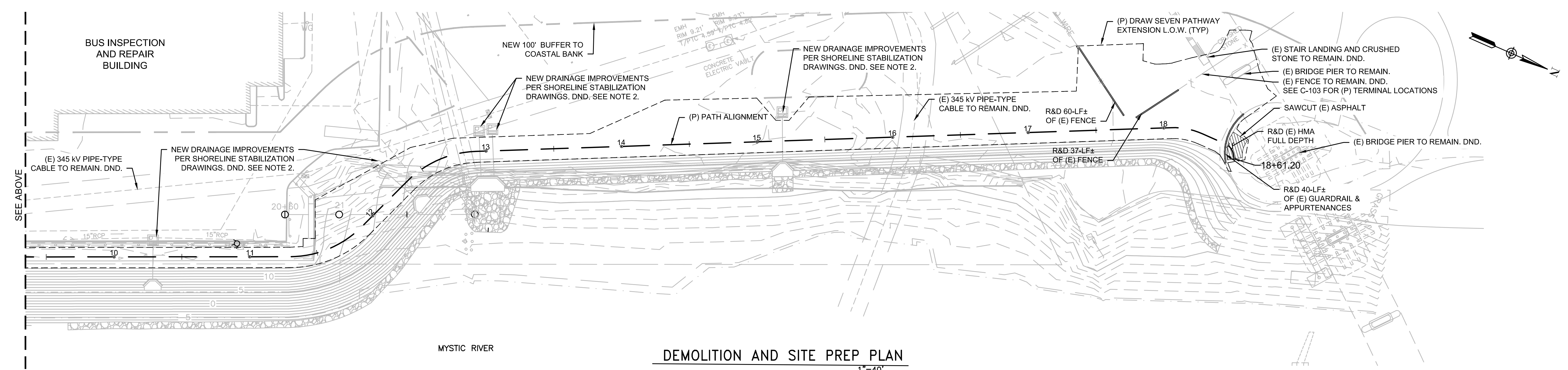
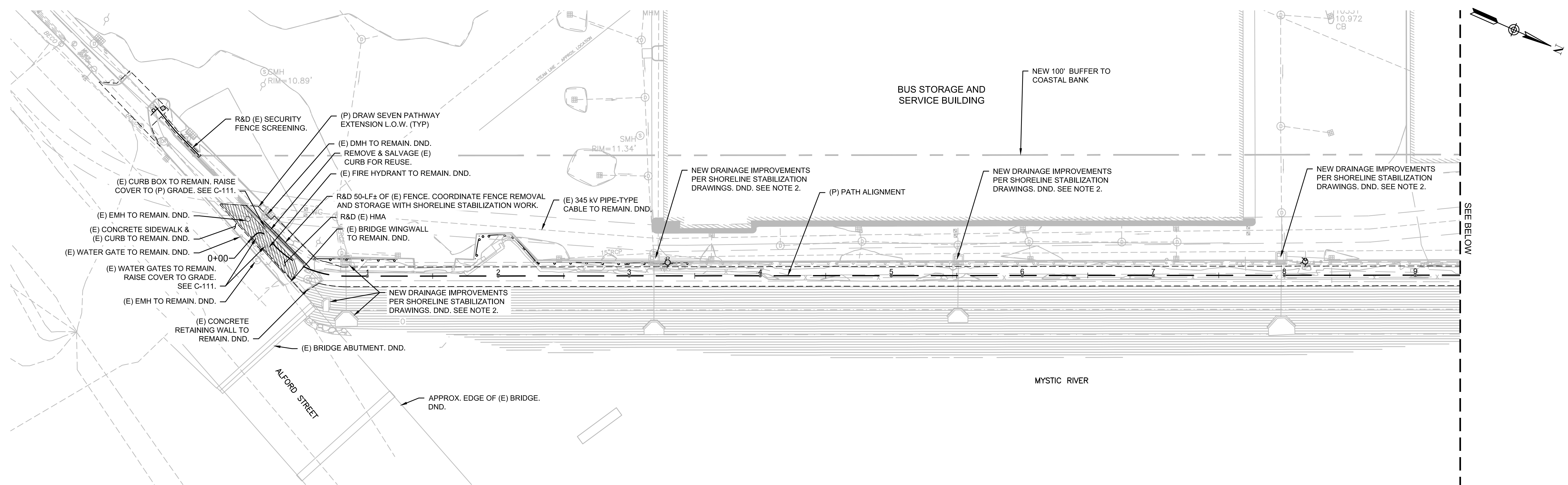
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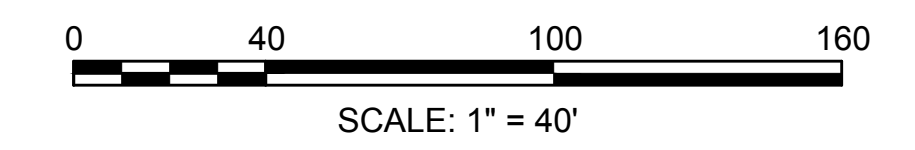
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DESIGNER: CAC	RESOURCE AREA PLAN	DRAWING NO.
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DRAWN: RJA	DATE: 11/13/18	C-051
CHECKED: SPD	ACC.	5 OF 21

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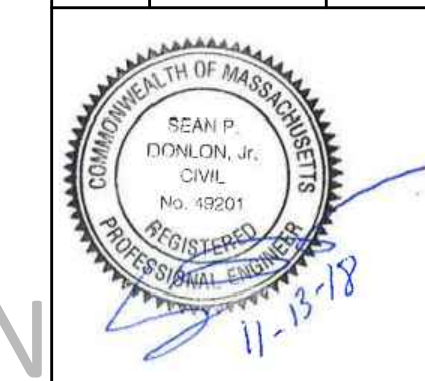


DEMOLITION AND SITE PREP PLAN
1"=40'



- NOTES:**
- EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
 - REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
 - SEE C-001 FOR APPLICABLE NOTES.

REV.	DATE	DESCRIPTION	BY
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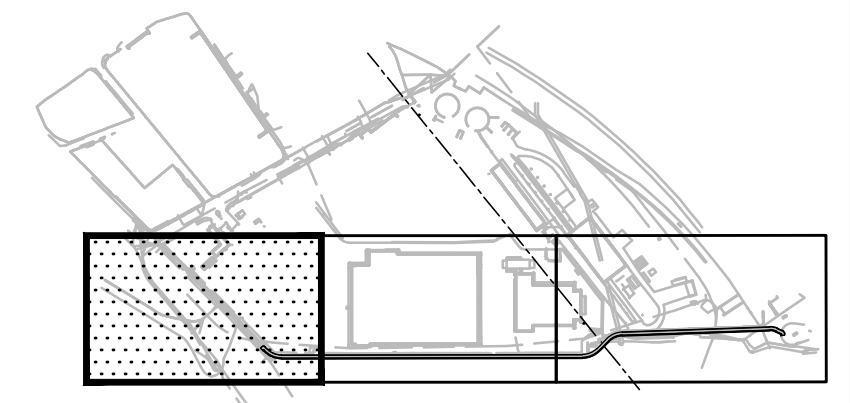
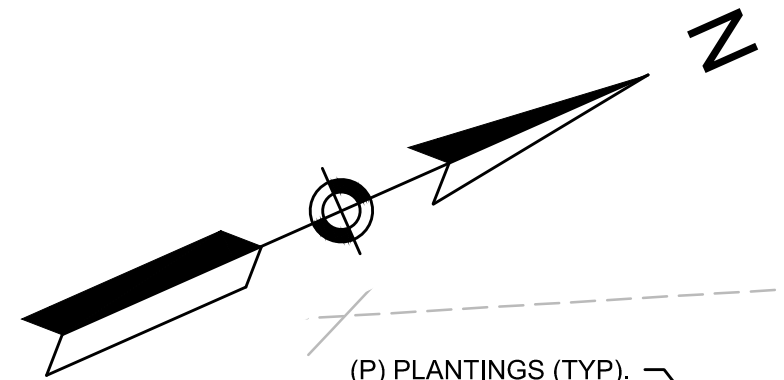
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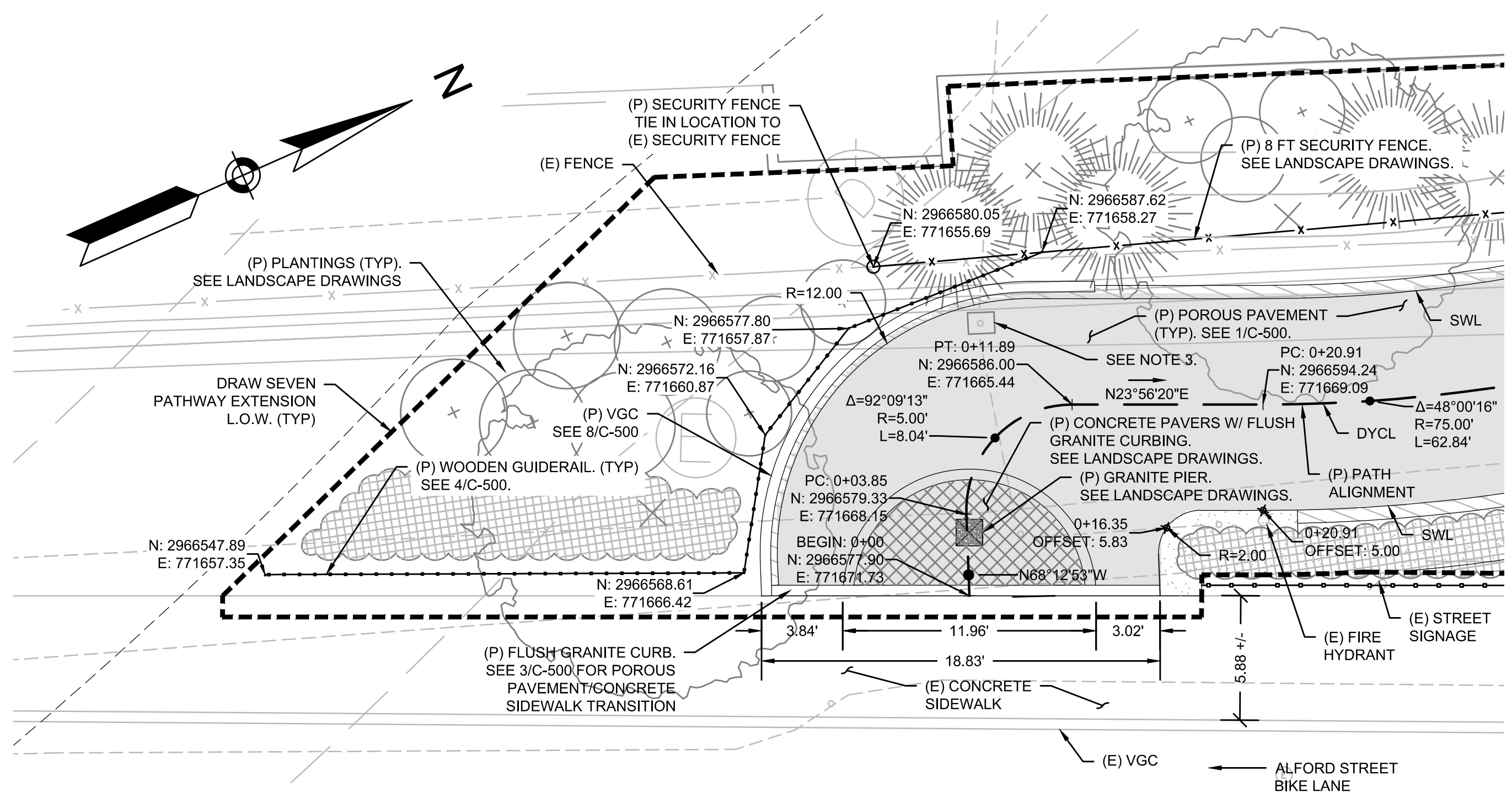
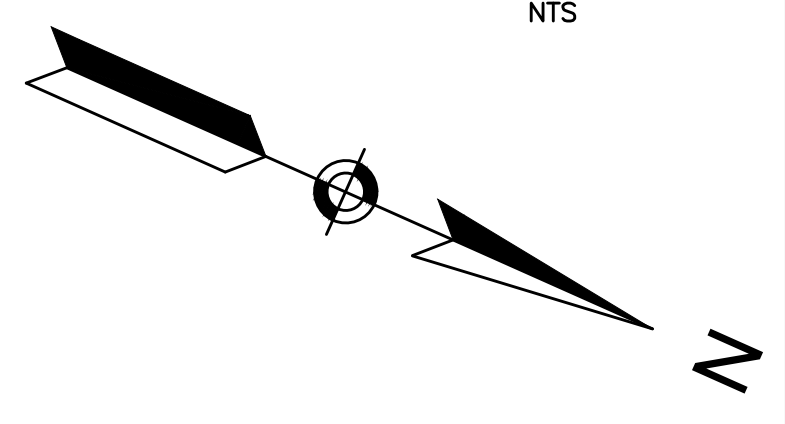
**DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA**

DESIGNER: CAC	DEMOLITION AND SITE PREP PLAN	DRAWING NO. C-100
CHECKED: SPD		
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CHECKED: SPD	CONT. P18-3229-D1A	SCALE AS NOTED
	ACC.	DATE: 11/13/18
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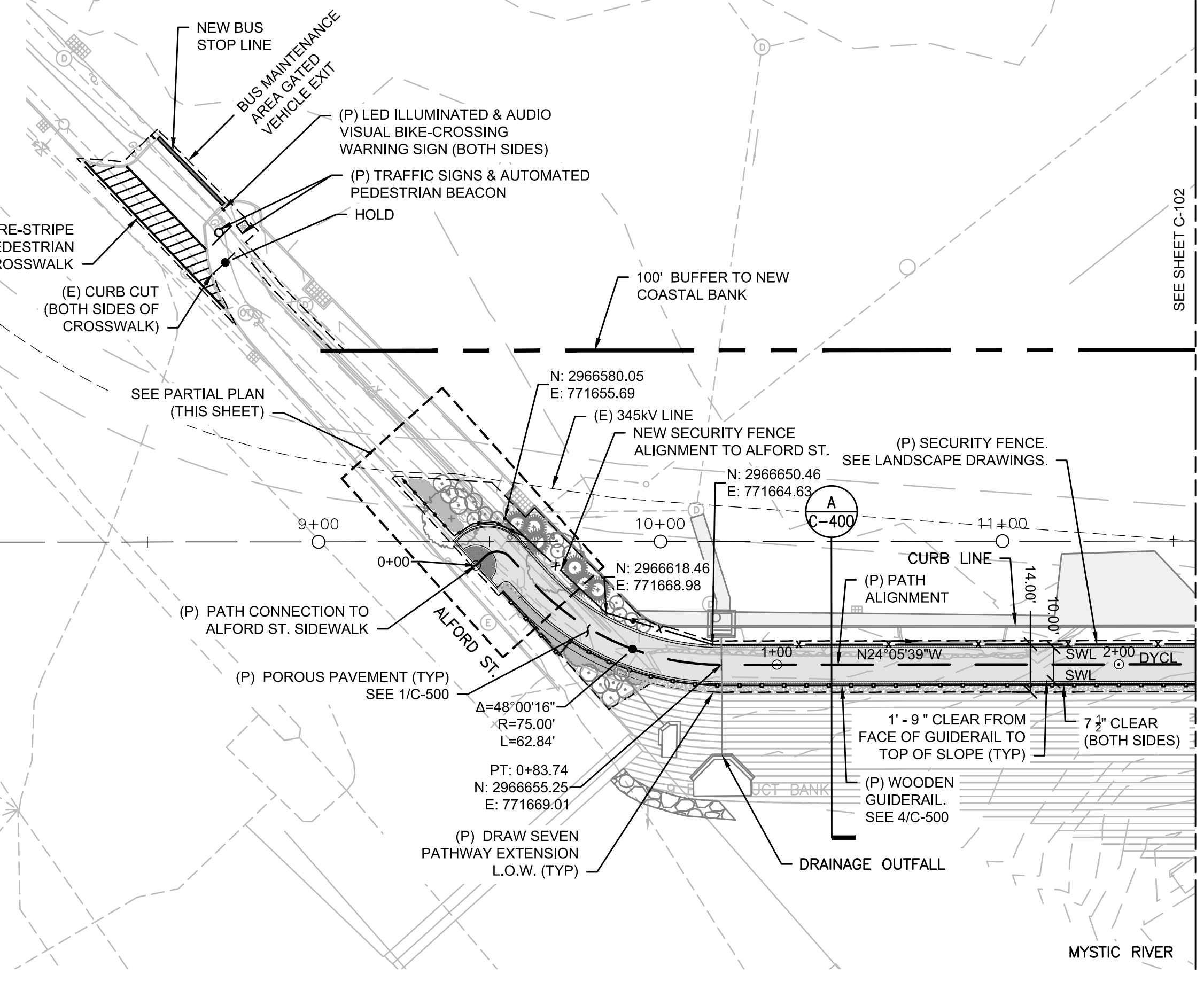
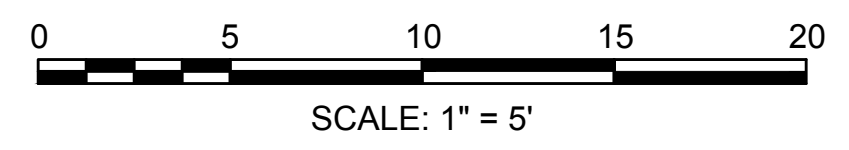
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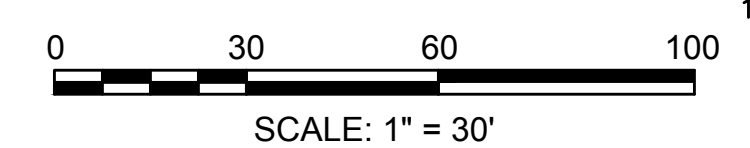
KEY PLAN
NTS



1 PARTIAL PLAN OF ALFORD STREET CONNECTION

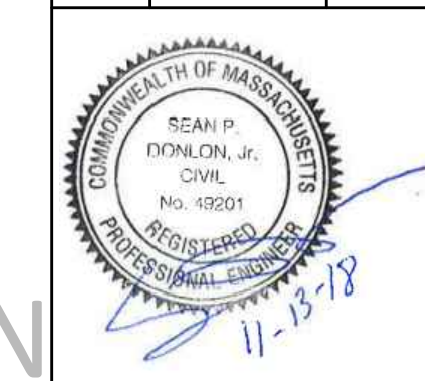


PROPOSED PATH LAYOUT PLAN 1



- NOTES:
- EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
 - REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
 - CONTRACTOR TO FIELD VERIFY LOCATION OF (E) BWSC CURB BOX. NOTIFY EOR OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH ANY AFFECTED WORK.

REV.	DATE	DESCRIPTION	BY
IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD



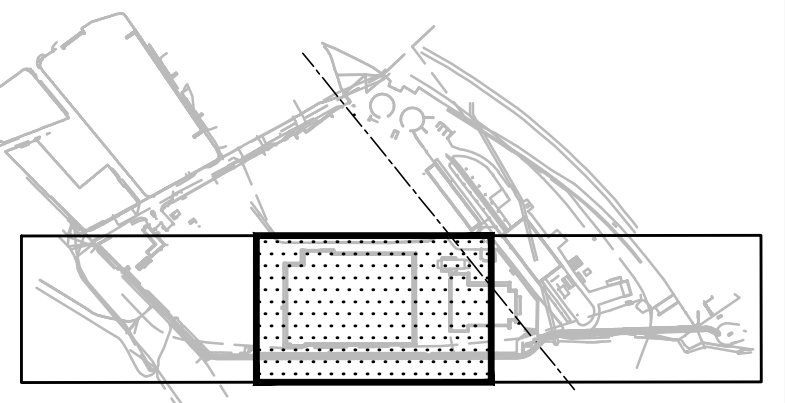
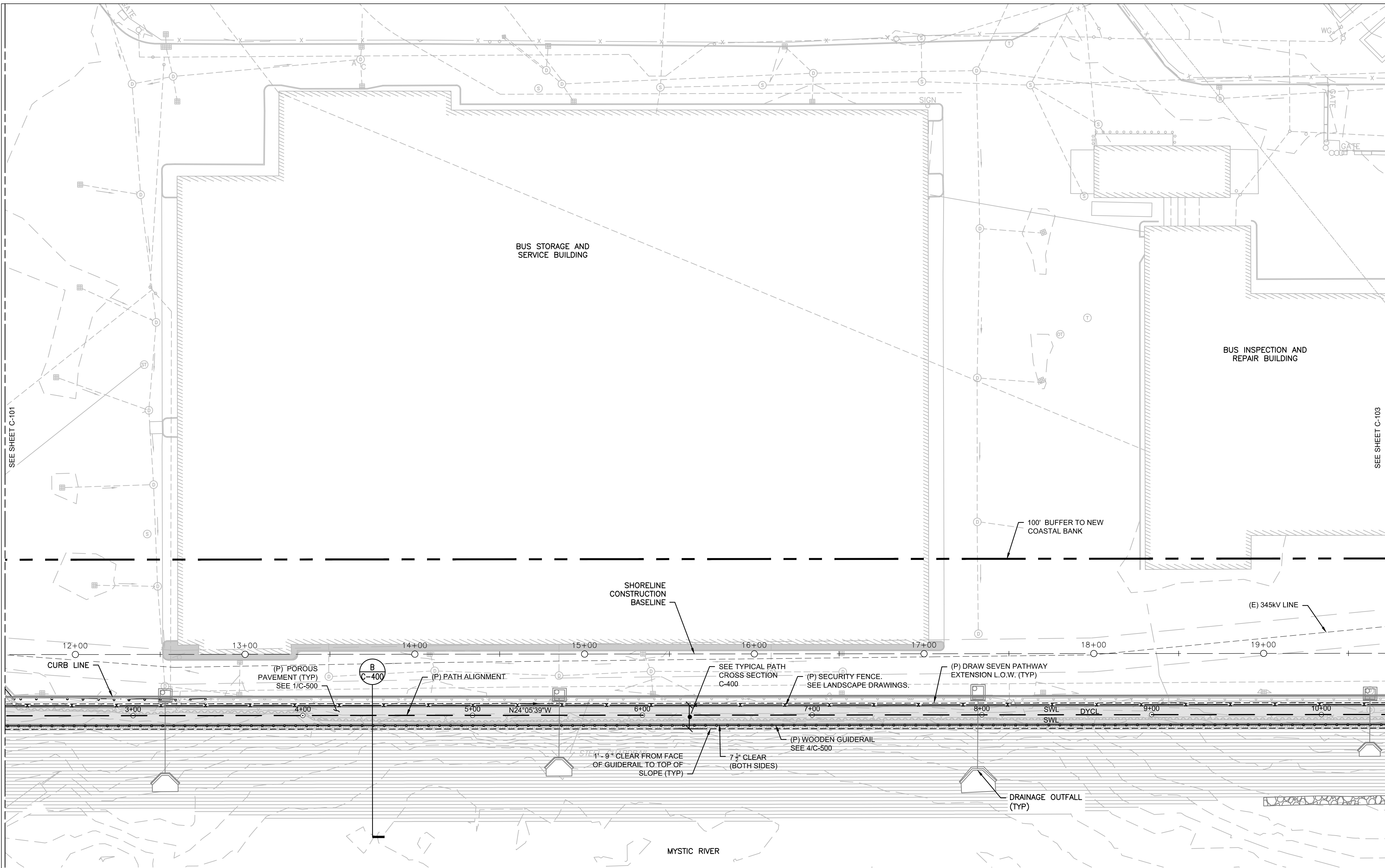
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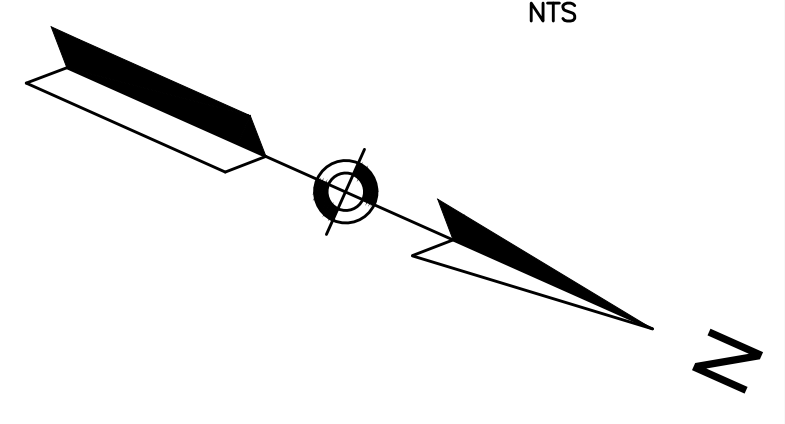
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BOSTON, MA

DESIGNER: CAC	PROPOSED PATH LAYOUT PLAN 1	DRAWING NO.
CHECKED: SPD		C-101
DRAWN: RJA	CONT. P18-3229-D1A	SCALE AS NOTED
CHECKED: SPD	ACC.	DATE: 11/13/18

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KEY PLAN
NTS



BUS STORAGE AND SERVICE BUILDING

BUS INSPECTION AND REPAIR BUILDING

SEE SHEET C-101

SEE SHEET C-103

100' BUFFER TO NEW COASTAL BANK

SHORELINE CONSTRUCTION BASELINE

(E) 345KV LINE

12+00

13+00

14+00

15+00

16+00

17+00

18+00

19+00

CURB LINE

(P) POROUS PAVEMENT (TYP) SEE 1/C-500

B C-400

(P) PATH ALIGNMENT

SEE TYPICAL PATH CROSS SECTION C-400

(P) SECURITY FENCE. SEE LANDSCAPE DRAWINGS.

(P) DRAW SEVEN PATHWAY EXTENSION L.O.W. (TYP)

N24°05'39" W

1' - 9" CLEAR FROM FACE OF GUIDERAIL TO TOP OF SLOPE (TYP)

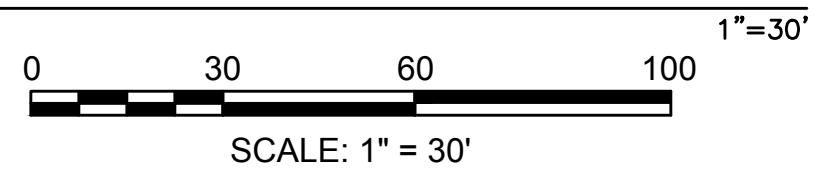
7' CLEAR (BOTH SIDES)

(P) WOODEN GUIDERAIL SEE 4/C-500

DRAINAGE OUTFALL (TYP)

MYSTIC RIVER

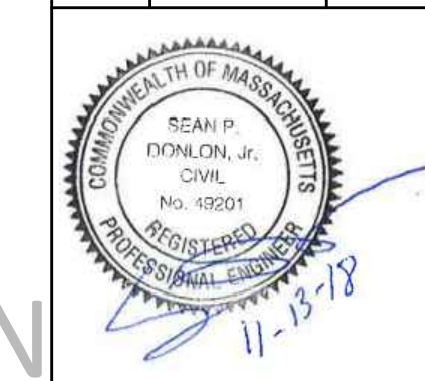
PROPOSED PATH LAYOUT PLAN 2



NOTES:

- EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLDORRE MARINE ENGINEERING, LLC, DATED APRIL 2015.
- REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.

REV.	DATE	DESCRIPTION	BY
IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD



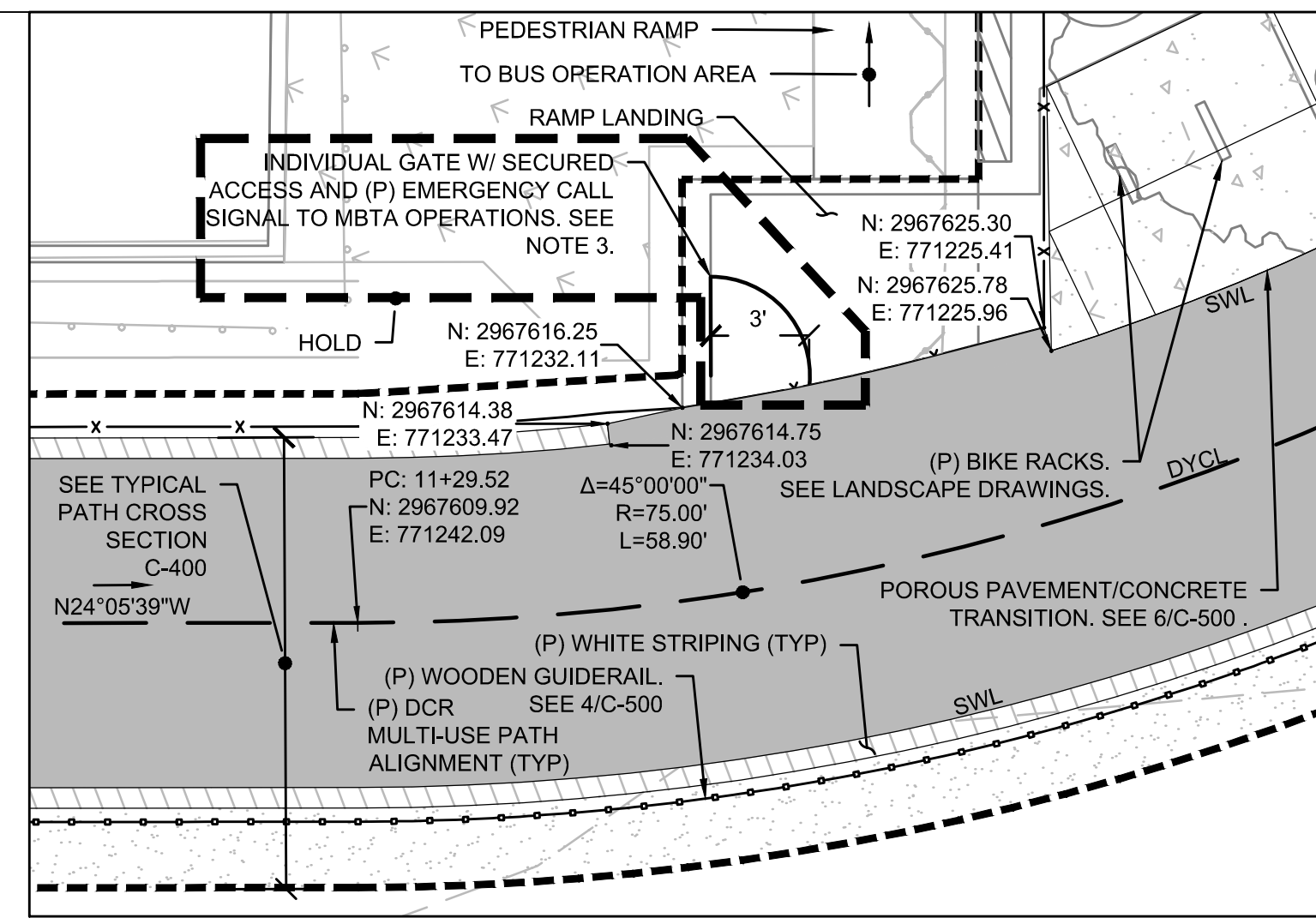
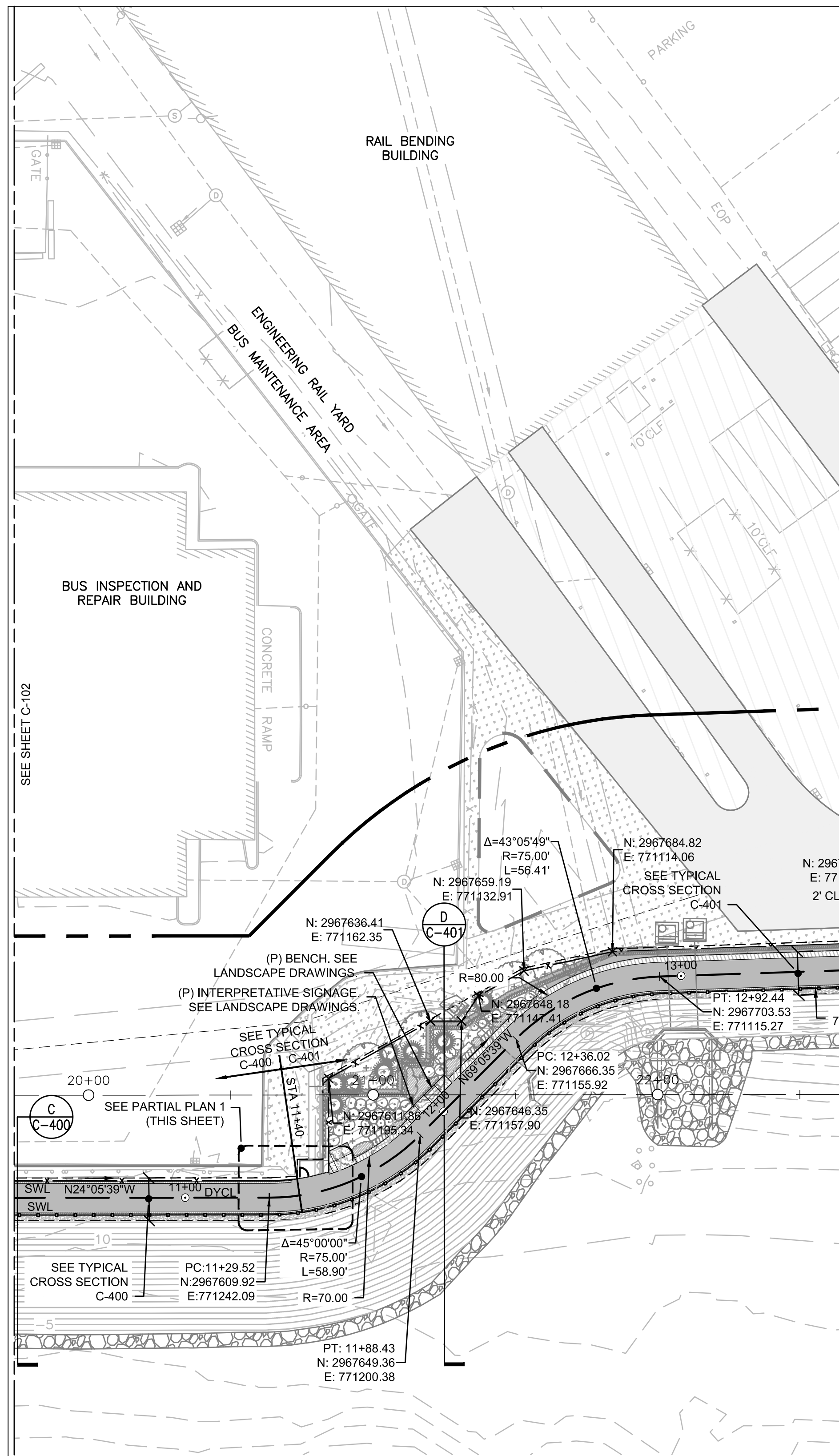
SIMPSON GUMPERTZ & HEGER
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41 Seyon Street, Building 1, Suite 500
Waltham, Massachusetts 02453
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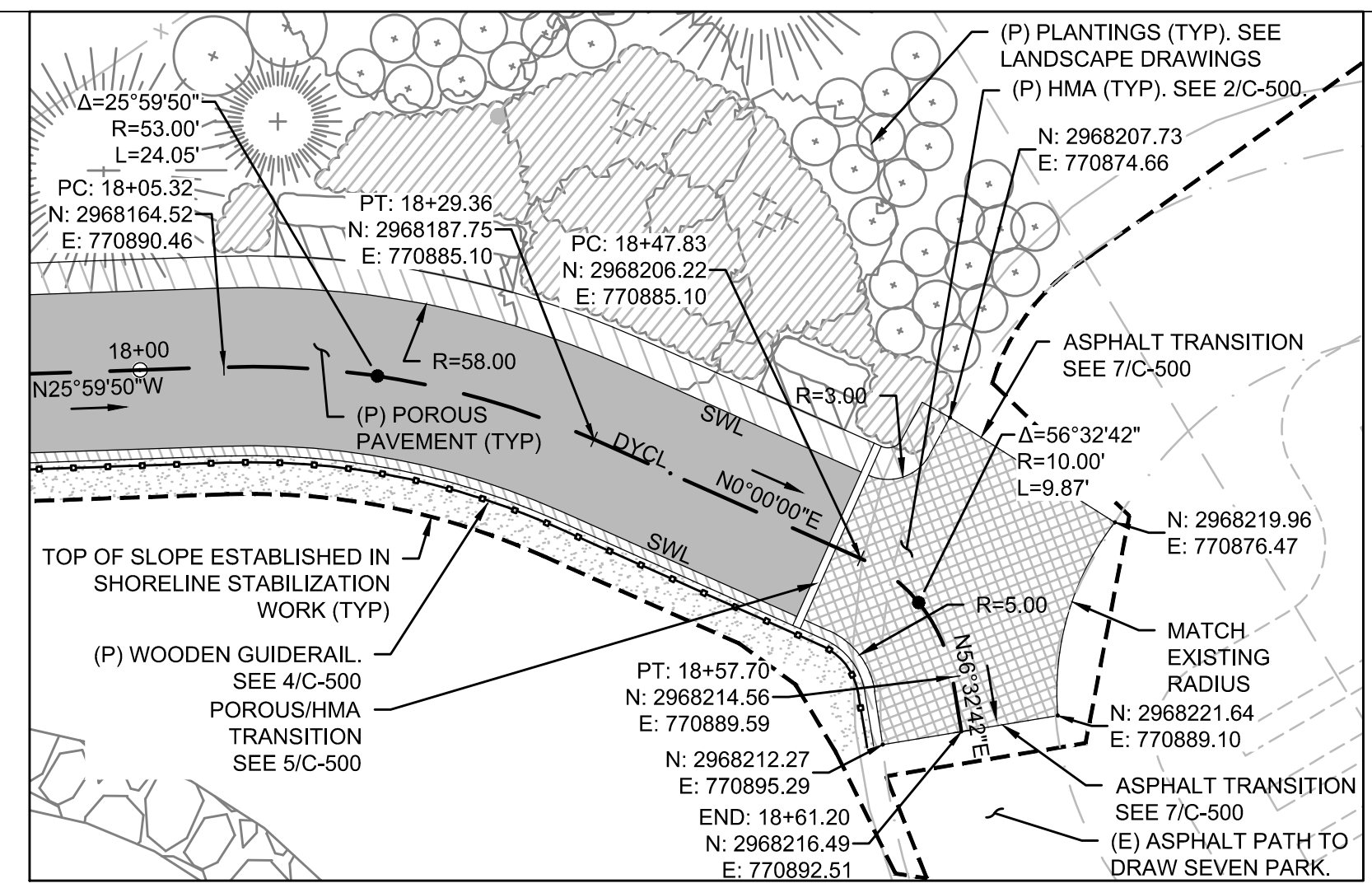
DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

DESIGNER: CAC	PROPOSED PATH LAYOUT PLAN 2	DRAWING NO.
CHECKED: SPD		C-102
DRAWN: RJA	CONT. P18-3229-D1A	SCALE AS NOTED
CHECKED: SPD	ACC.	DATE: 11/13/18

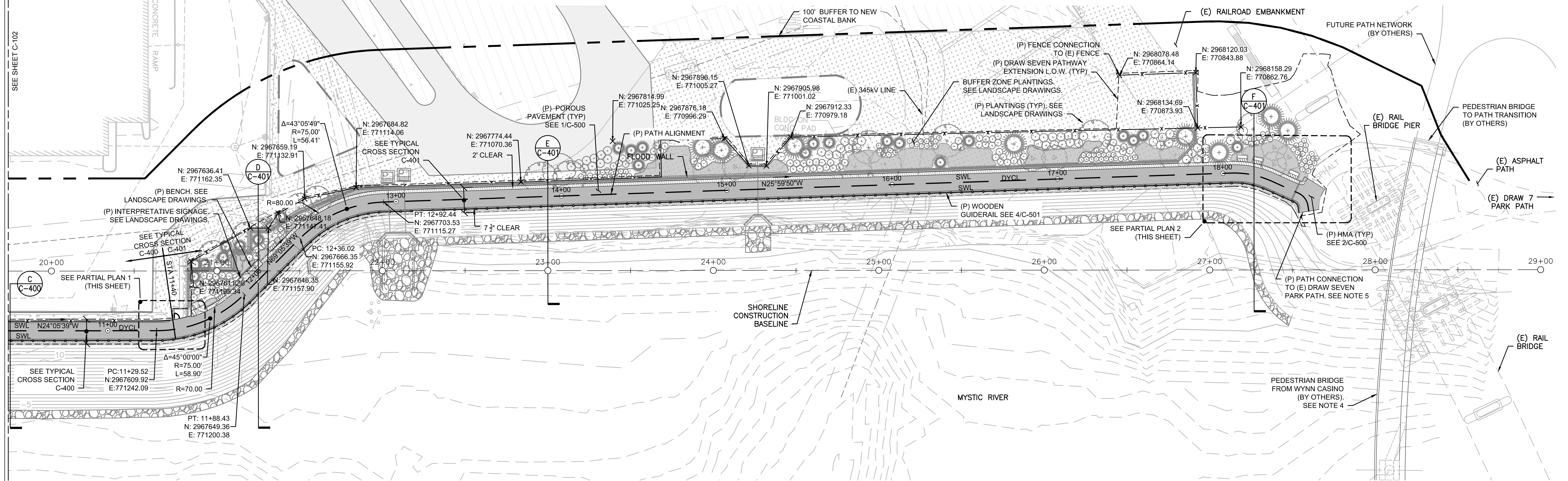
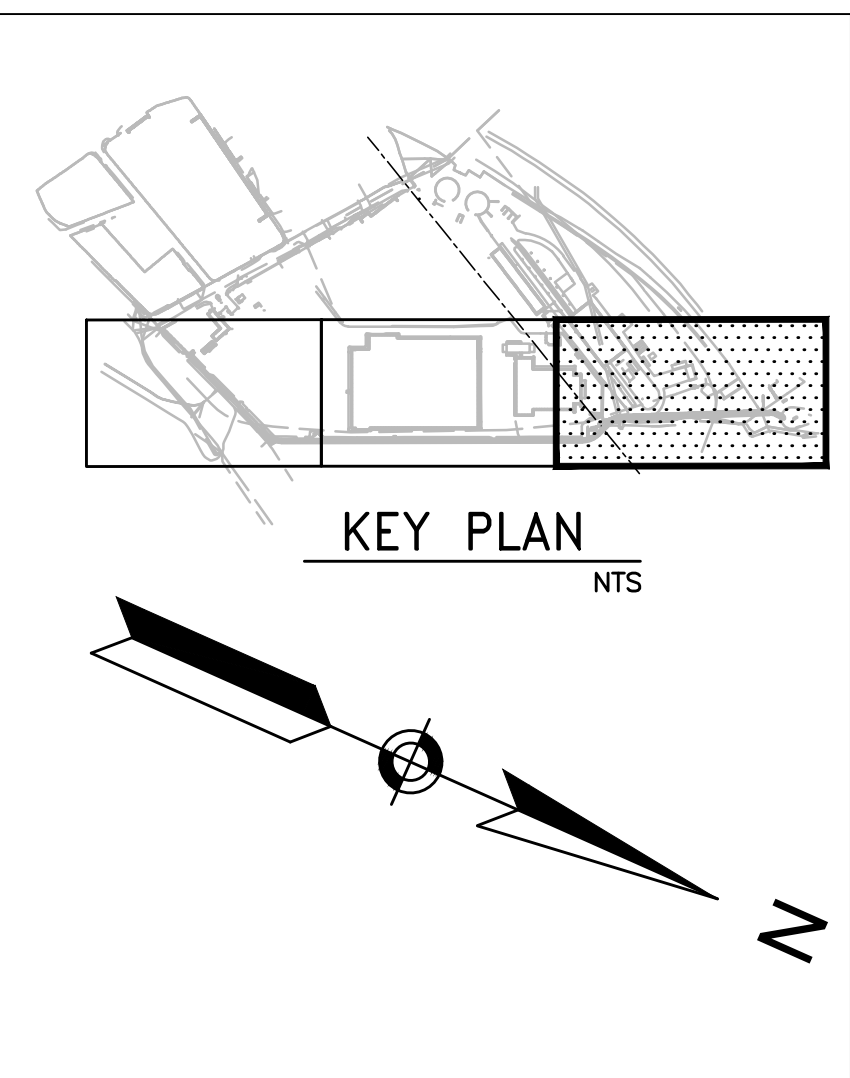
NOT FOR CONSTRUCTION



1 PARTIAL PLAN 1 PEDESTRIAN RAMP ACCESS
SCALE: 1" = 5'



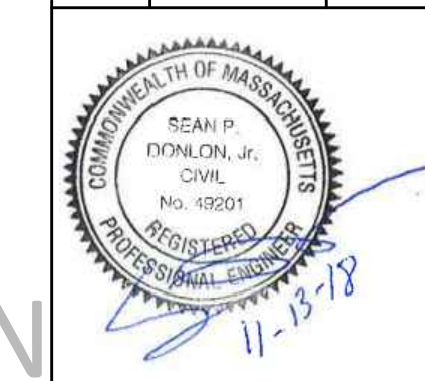
2 PARTIAL PLAN 2 DRAW SEVEN PARK CONNECTION
SCALE: 1" = 10'



PROPOSED PATH LAYOUT PLAN 3
SCALE: 1" = 30'

- NOTES:
- EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED 22 FEBRUARY 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIED MARINE ENGINEERING, LLC, DATED APRIL 2015.
 - REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
 - DCR/MBTA TO COORDINATE FINAL REQUIREMENTS FOR POWER/CONTROLS FOR THE INDIVIDUAL GATE W/SECURE ACCESS AND EMERGENCY CALL BUTTON.
 - PEDESTRIAN BRIDGE INFORMATION IS SHOWN CONCEPTUALLY AND BASED ON AN ELECTRONIC CAD FILE, PROVIDED BY AECOM ON 02 JANUARY 2017.
 - PATH LAYOUT FROM (P) PATH TERMINATION LOCATION TO FUTURE DRAW SEVEN PARK PATH NETWORK IS BY OTHERS.

REV.	DATE	DESCRIPTION	BY
IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD



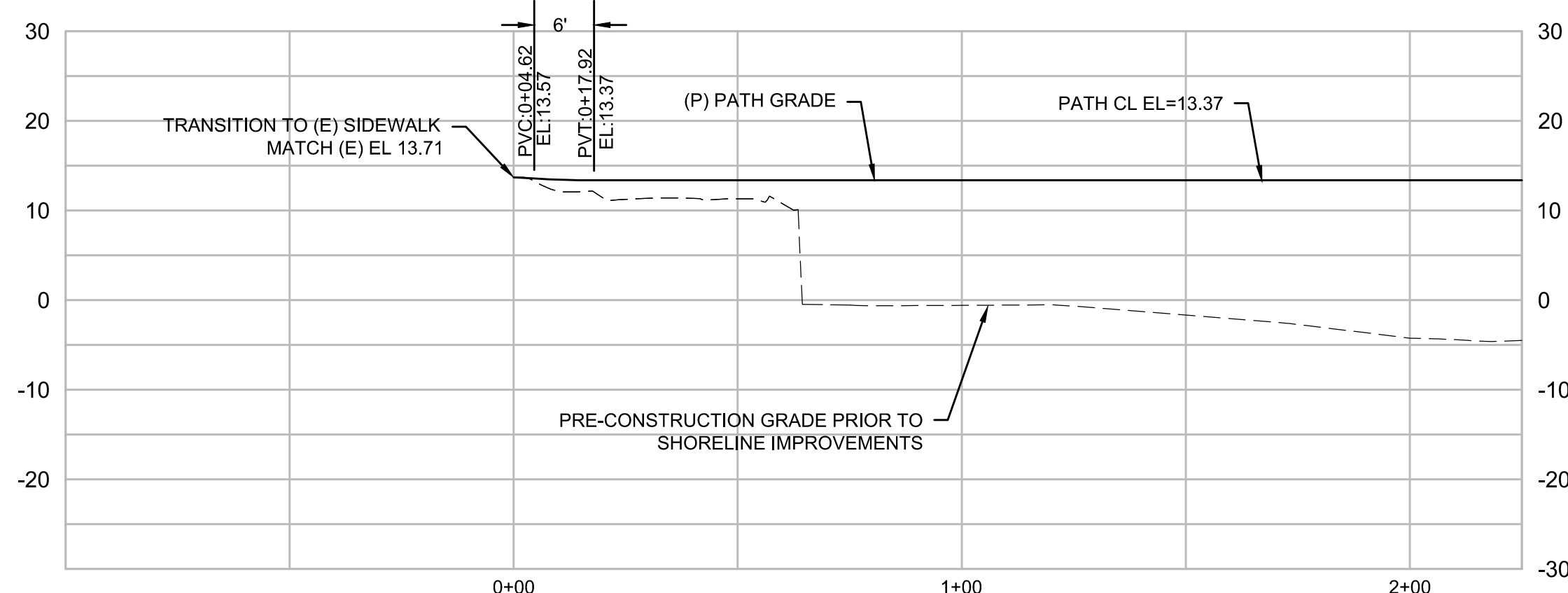
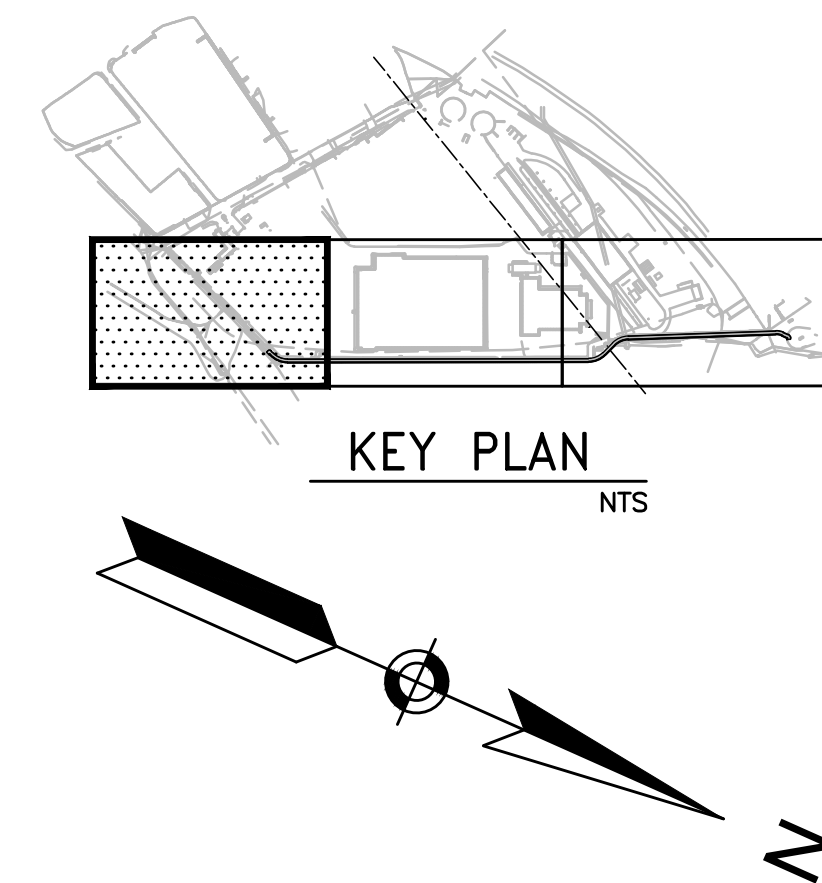
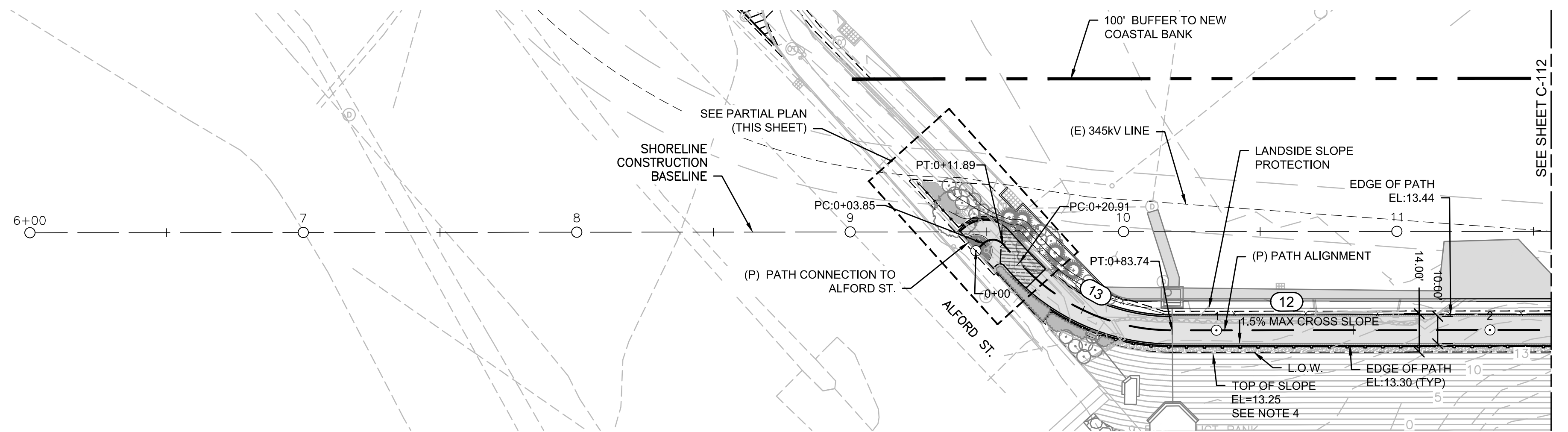
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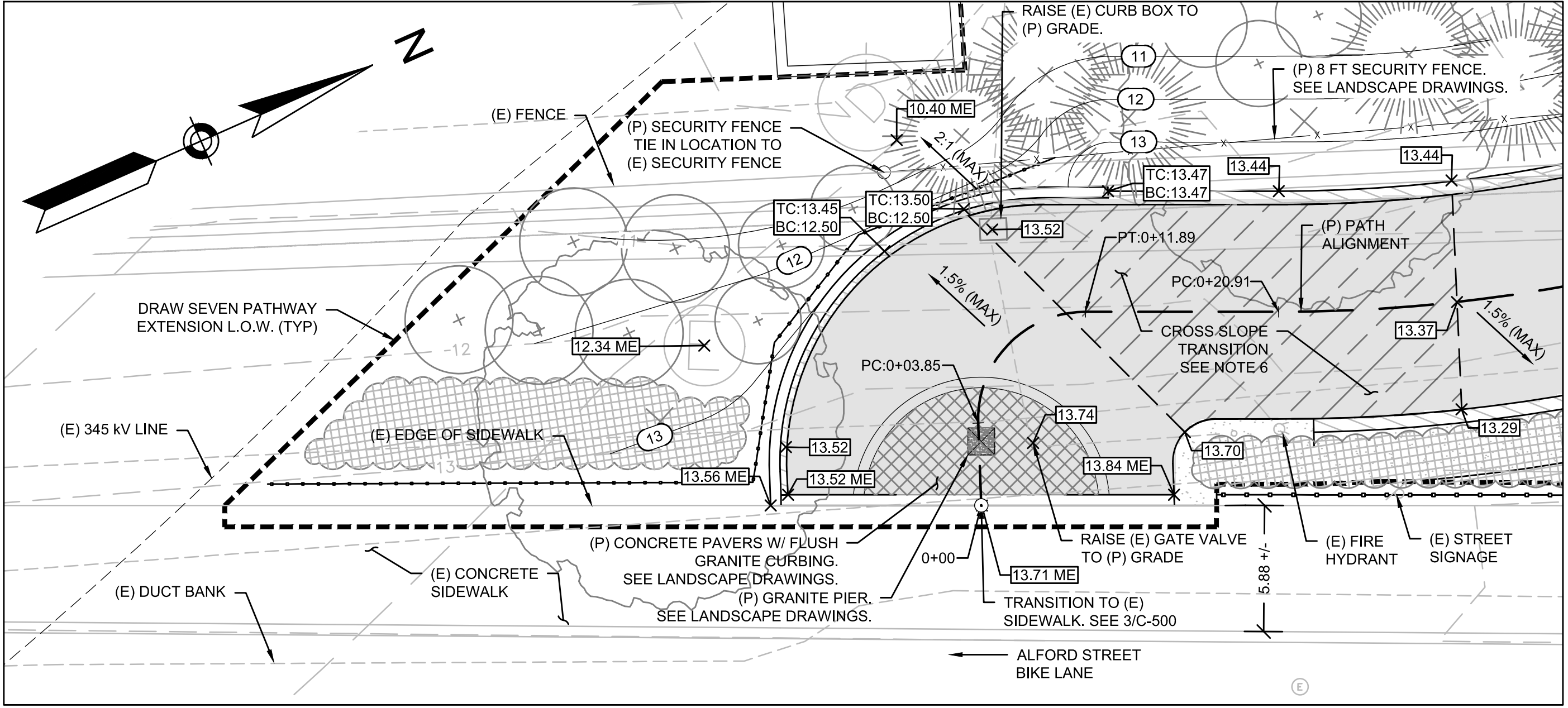
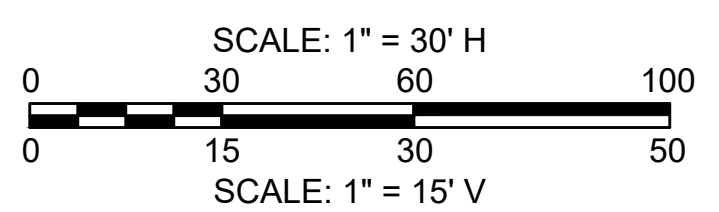
DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

DESIGNER: CAC	<p>PROPOSED PATH LAYOUT PLAN 3</p>	DRAWING NO.
CHECKED: SPD		C-103
DRAWN: RJA		
CHECKED: SPD	CONT. P18-3229-D1A	SCALE AS NOTED
	ACC.	DATE: 11/13/18
		9 OF 21

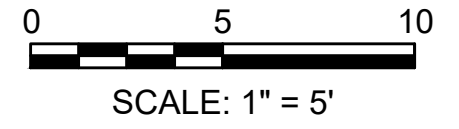
NOT FOR CONSTRUCTION



PROPOSED GRADING PLAN AND PROFILE 1
1"=30'



1 PARTIAL PLAN OF ALFORD STREET CONNECTION
1"=5'



- NOTES:
- SEE C-001 FOR APPLICABLE NOTES.
 - EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
 - REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
 - ALL ELEVATIONS LISTED ARE BASED ON THE PROPOSED SHORELINE ELEVATIONS AND DO NOT ACCOUNT FOR ANTICIPATED SETTLEMENT.
 - WALKING SURFACES LONGITUDINAL SLOPE SHALL NOT EXCEED 4.5% AND THE CROSS SLOPES SHALL NOT EXCEED 1.5% PER ACCESSIBILITY REQUIREMENTS (521 CMR). NO TOLERANCE FOR SLOPE REQUIREMENTS IN EXCESS OF 521 CMR.
 - CONTRACTOR IS RESPONSIBLE FOR SMOOTHLY GRADING CROSS SLOPE TRANSITION. SLOPE AT ANY POINT SHALL NOT EXCEED 1.5%.

IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD
REV.	DATE	DESCRIPTION	BY

SEAN P. D'AMICO, JR.
CIVIL
No. 49201
REGISTERED
PROFESSIONAL ENGINEER
11-13-18

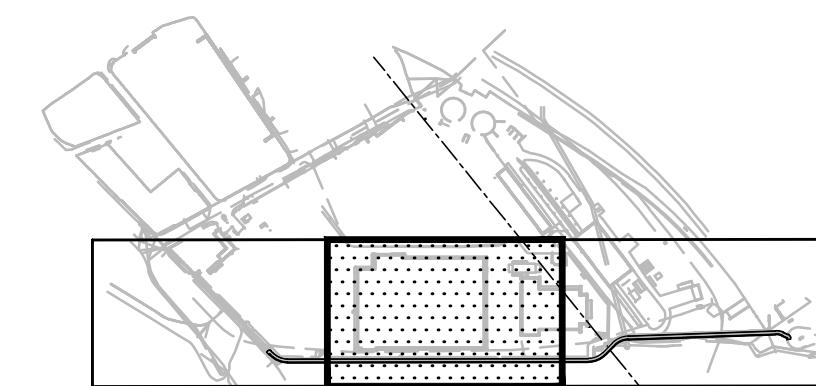
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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

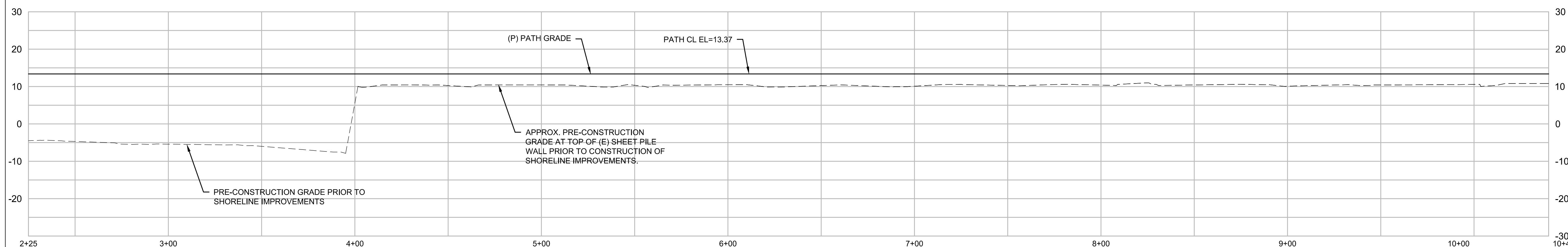
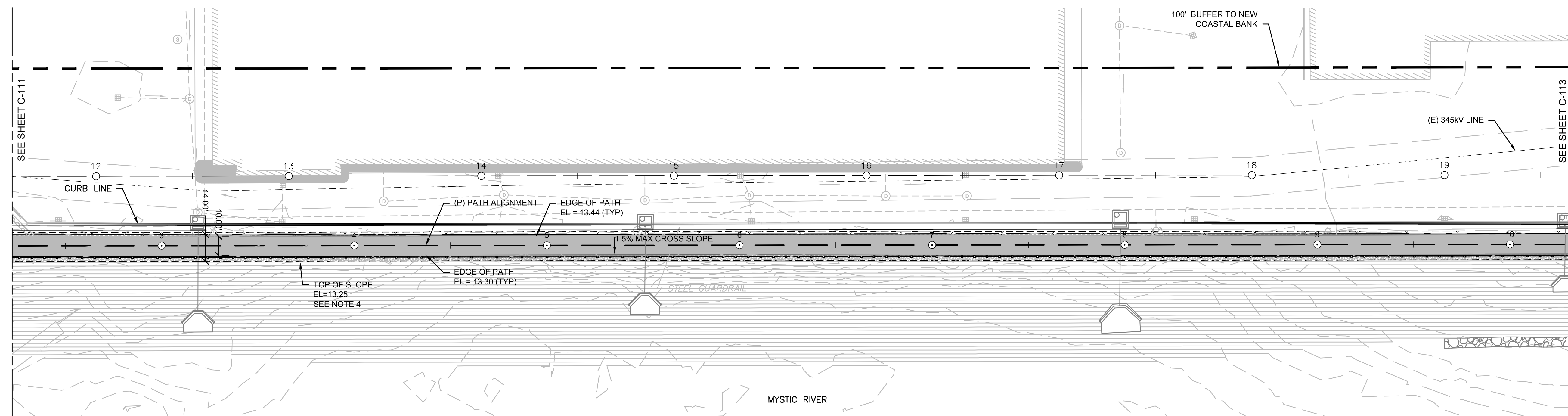
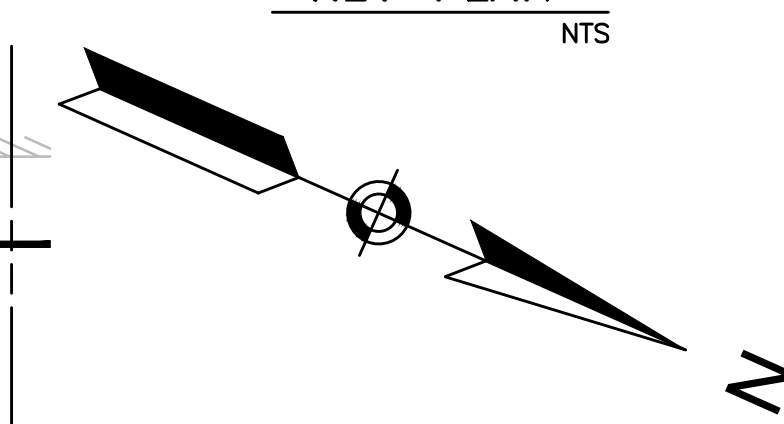
DESIGNER: CAC	PROPOSED GRADING PLAN AND PROFILE 1	DRAWING NO.
CHECKED: SPD		C-111
DRAWN: RJA		SCALE: AS NOTED
CHECKED: SPD	CONT. P18-3229-D1A	DATE: 11/13/18
	ACC.	10 OF 21

NOT FOR CONSTRUCTION



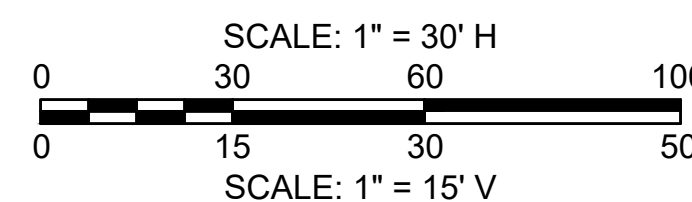
KEY PLAN

NTS



PROPOSED GRADING PLAN AND PROFILE 2

1"=30'



NOTES:

- SEE C-001 FOR APPLICABLE NOTES.
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REV.	DATE	DESCRIPTION	BY
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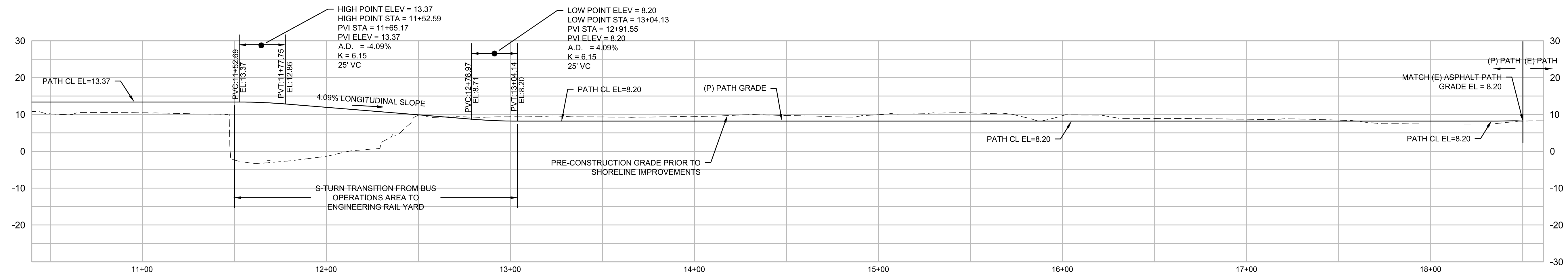
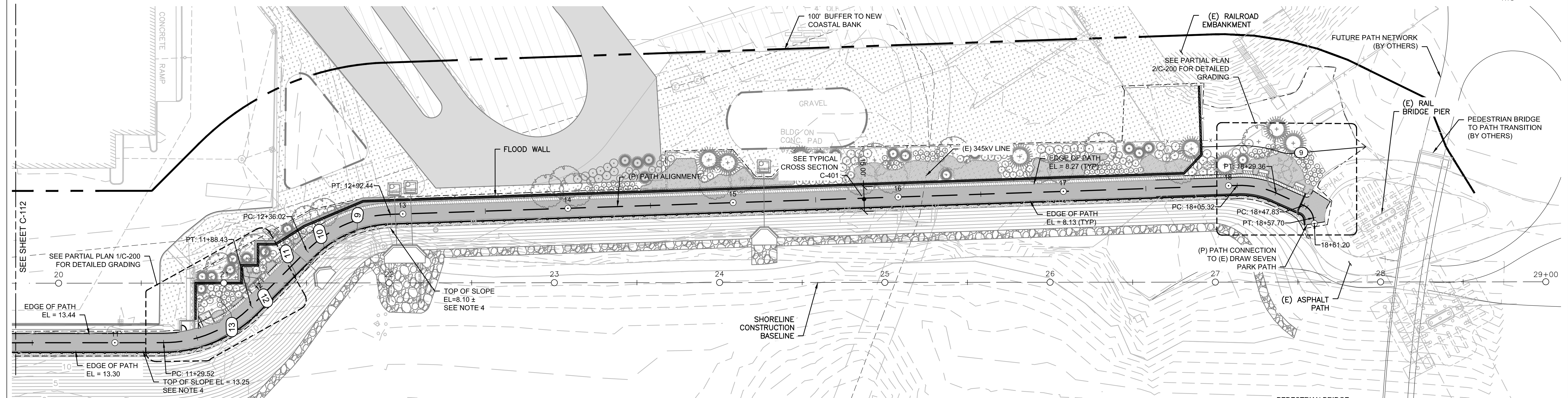
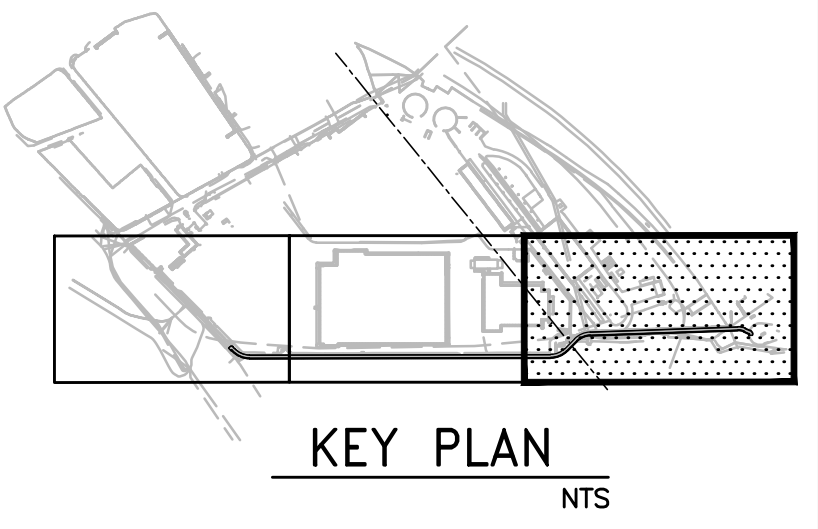
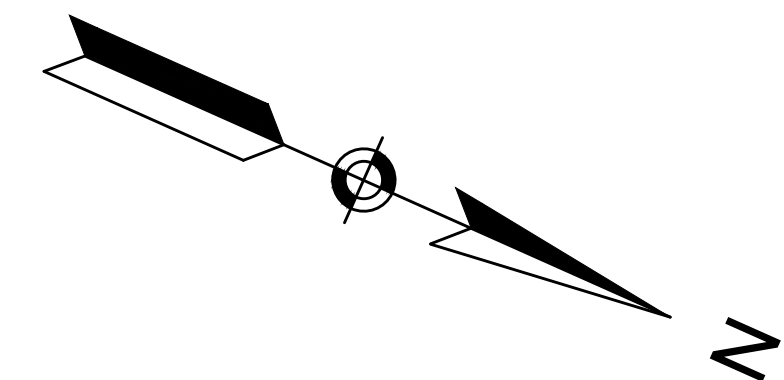
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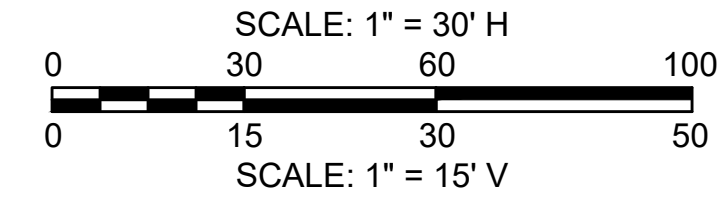
DRAW SEVEN PARK PATH EXTENSION
 BOSTON, MA

DESIGNER: CAC	PROPOSED GRADING PLAN AND PROFILE 2	DRAWING NO.
CHECKED: SPD		C-112
DRAWN: RJA	CONT. P18-3229-D1A	SCALE AS NOTED
CHECKED: SPD	ACC.	DATE: 11/13/18

NOT FOR CONSTRUCTION



PROPOSED GRADING PLAN AND PROFILE 3
1"=30'



- NOTES:**
- SEE C-001 FOR APPLICABLE NOTES.
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IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD
REV.	DATE	DESCRIPTION	BY

SEAN P. D'AMICO, Jr.
CIVIL
No. 49201
PROFESSIONAL ENGINEER

SIMPSON GUMPERTZ & HEGER
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**DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA**

**PROPOSED GRADING PLAN
AND PROFILE 3**

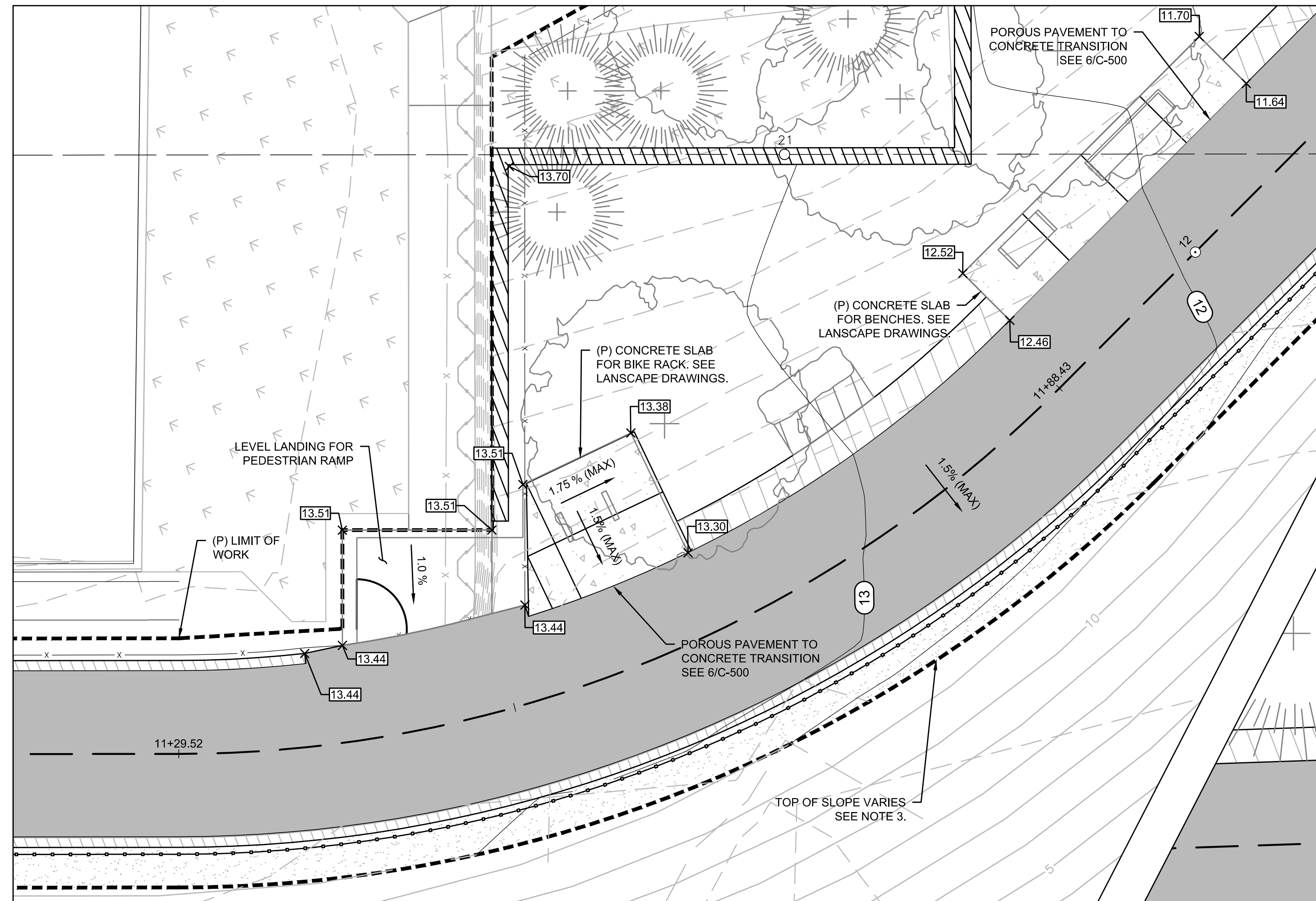
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CHECKED: SPD
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CONT. P18-3229-D1A
ACC.

SCALE: AS NOTED
DATE: 11/13/18

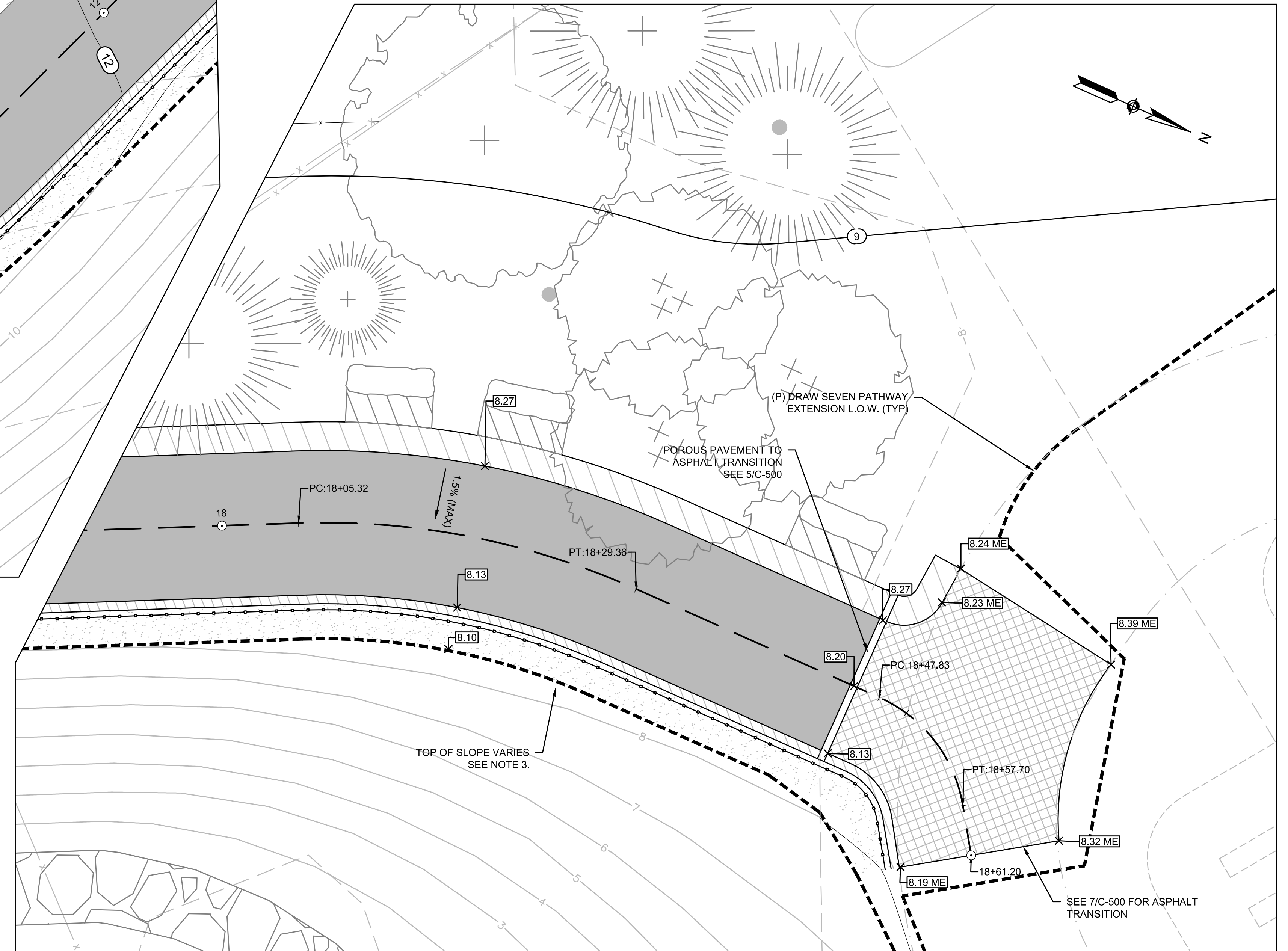
DRAWING NO.
C-113
12 OF 21

NOT FOR CONSTRUCTION



1 PARTIAL PLAN OF MBTA RAMP ACCESS

1"=5'



2 PARTIAL PLAN OF DRAW SEVEN PARK CONNECTION

1"=5'

- NOTES:
- SEE C-001 FOR APPLICABLE NOTES.
 - EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.
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SEAN P. DONOHUE, JR., CIVIL No. 49201 REGISTERED PROFESSIONAL ENGINEER

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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

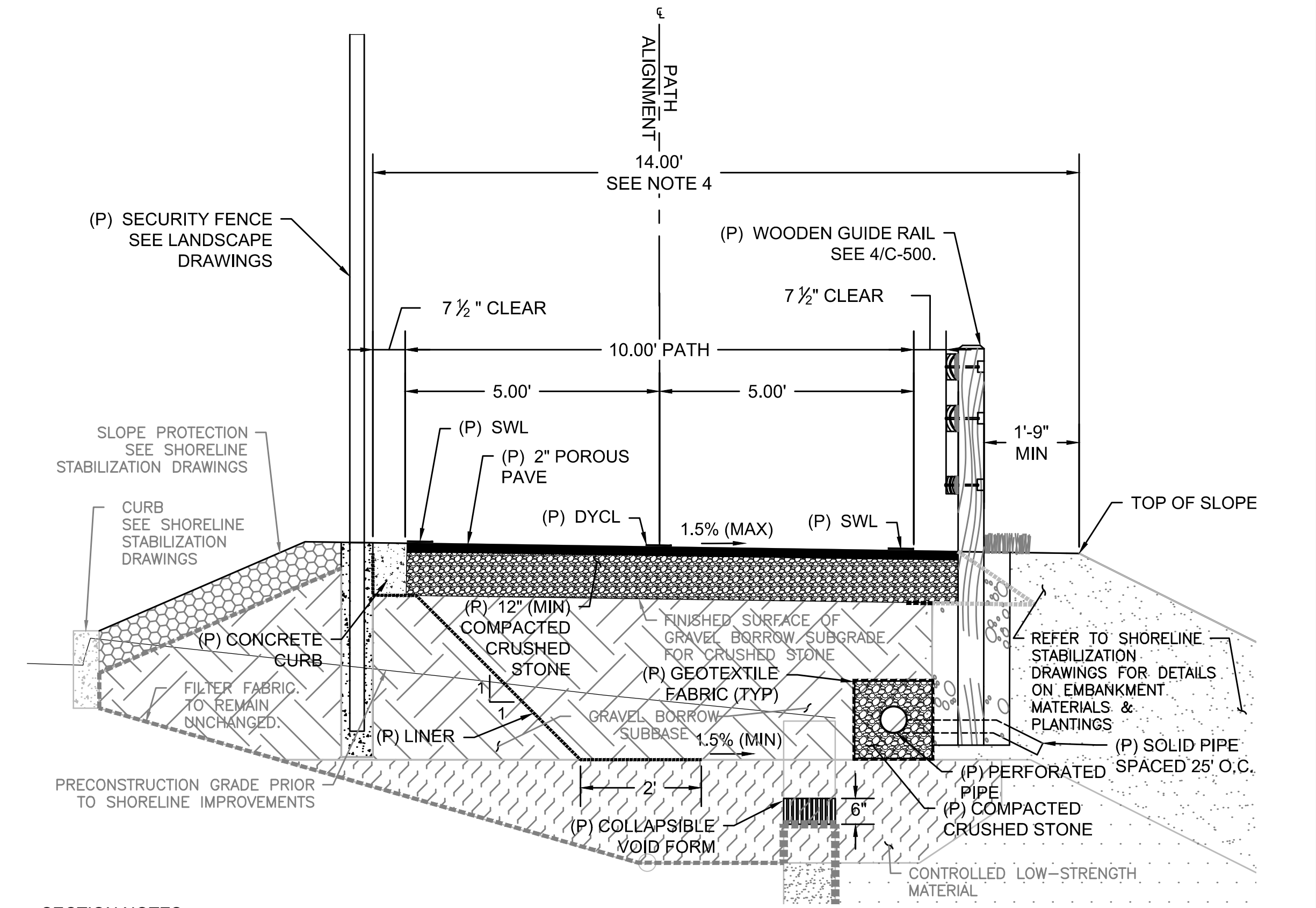
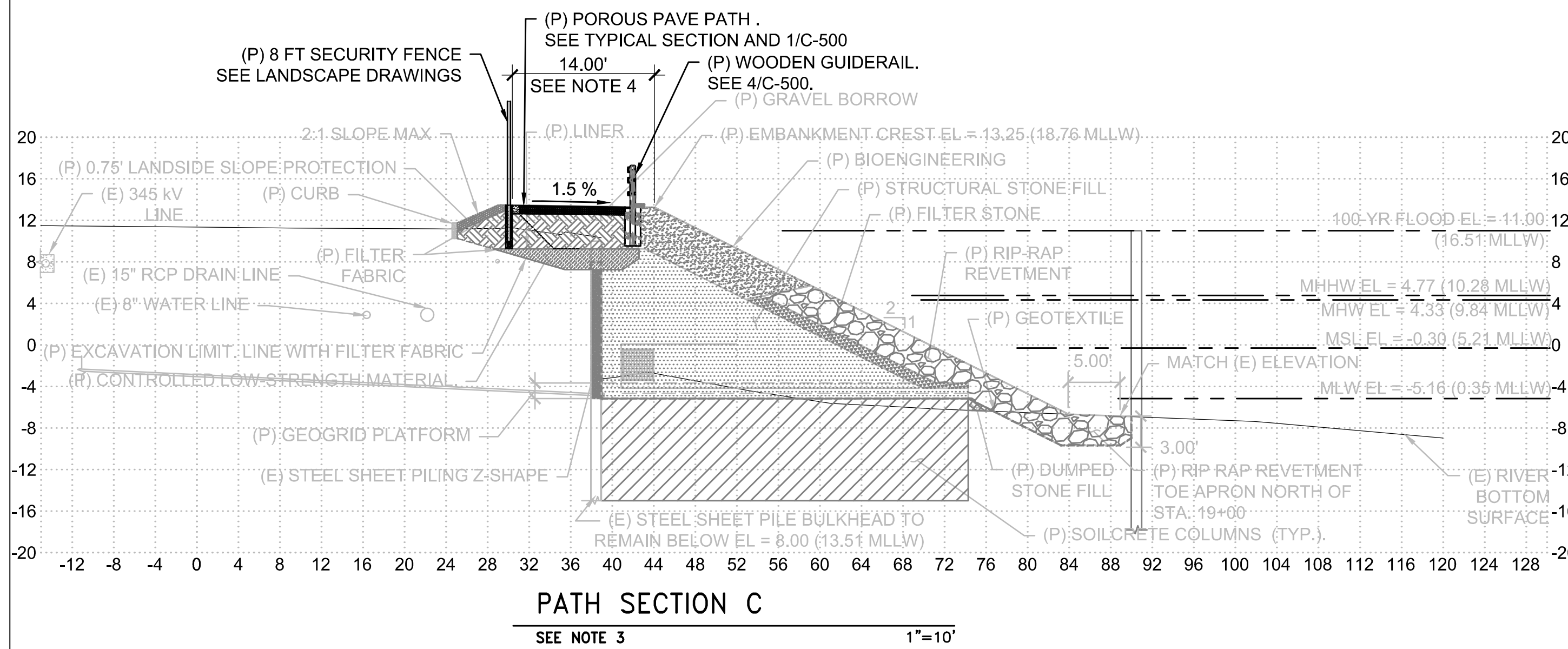
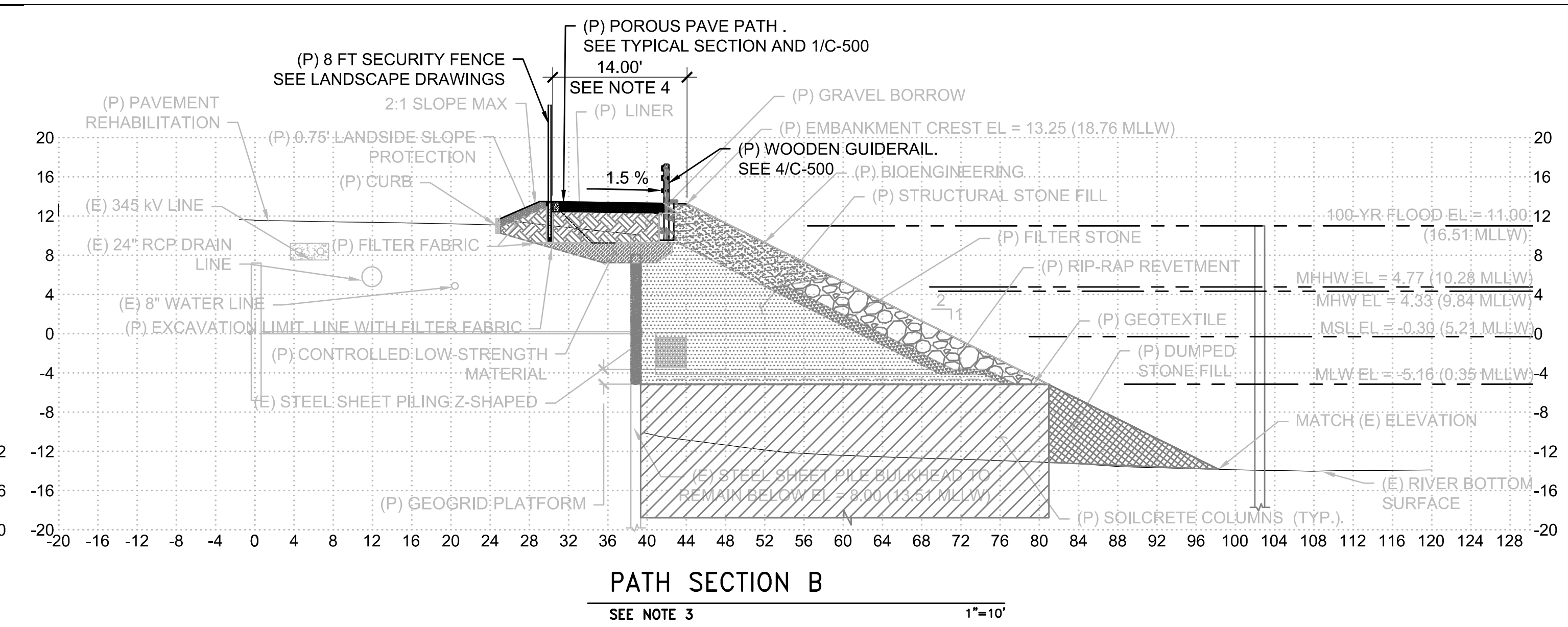
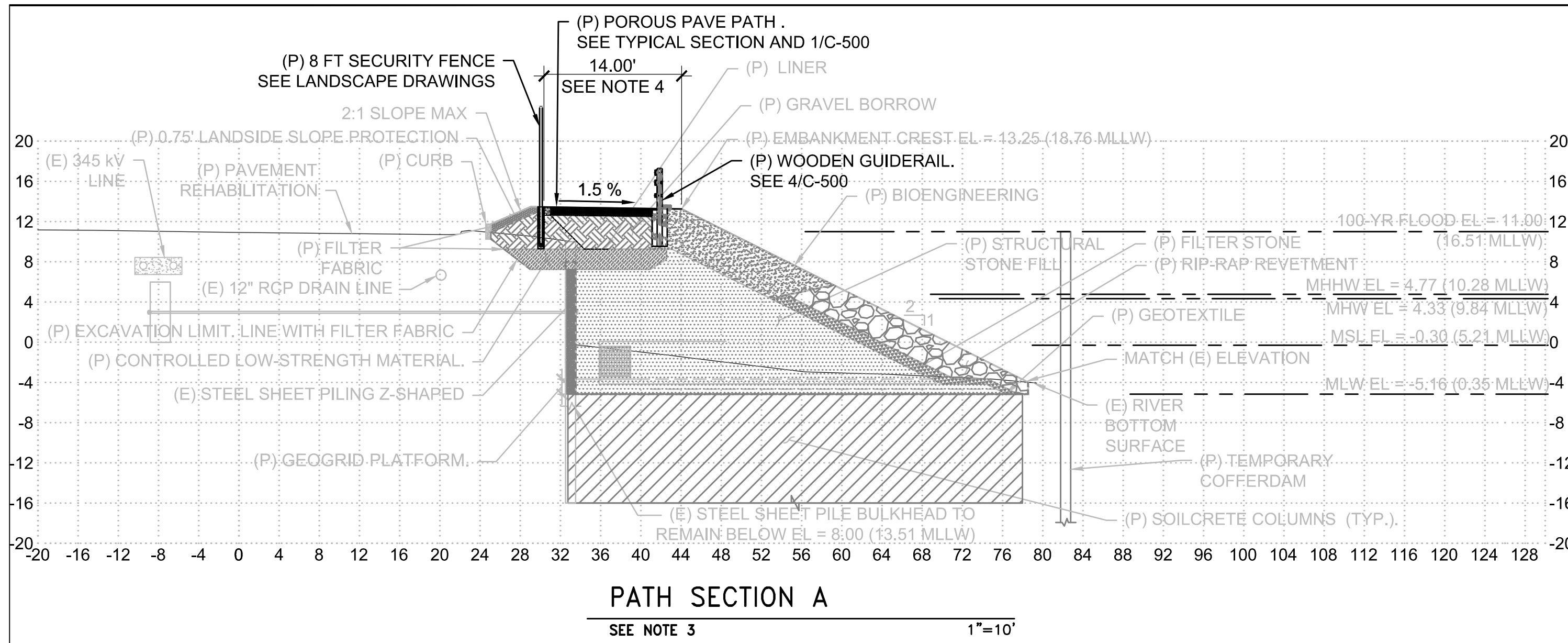
ENLARGED PROPOSED GRADING PLAN

DESIGNER: CAC
CHECKED: SPD
DRAWN: RJA
CHECKED: SPD

CONT. P18-3229-D1A
ACC.

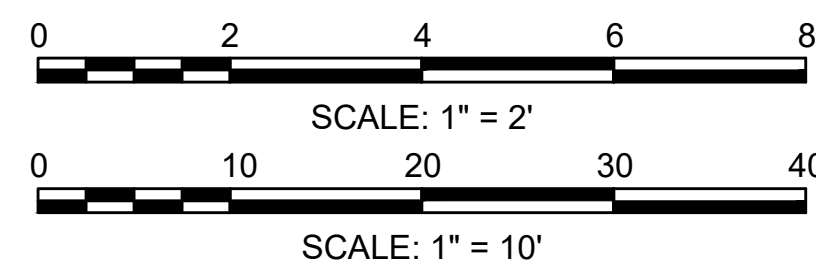
SCALE AS NOTED
DATE: 11/13/18

DRAWING NO. C-200
13 OF 21



- SECTION NOTES:**
- THICKNESS OF COMPACTED CRUSHED STONE BASE LAYER WILL VARY DEPENDING ON SETTLEMENT OF SHORELINE EMBANKMENT AT TIME OF PATH CONSTRUCTION. CONTRACTOR SHALL INCREASE THICKNESS BY PROVIDING ADDITIONAL CRUSHED STONE AS NECESSARY TO ACHIEVE TOP OF PATH FINISHED GRADE ELEVATIONS INDICATED ON THE PLANS.
 - GRAVEL BORROW WILL BE PLACED AS PART OF SHORELINE STABILIZATION WORK. CONTRACTOR SHALL ADJUST FINISHED SURFACE OF GRAVEL BORROW AS NECESSARY TO PROVIDE ADEQUATE SUBGRADE FOR POROUS PAVEMENT AND ACHIEVE MINIMUM PROPOSED THICKNESS OF POROUS PAVE & CRUSHED STONE LAYERS.
 - SEE SECTION 02301 FOR EARTHWORK REQUIREMENTS.

- NOTES:**
- SCREENED-OUT INFORMATION IS FROM THE BASE SCOPE OF THE SHORELINE STABILIZATION DESIGN PACKAGE UNLESS OTHERWISE NOTED AND IS SHOWN FOR REFERENCE ONLY.
 - ALL ELEVATIONS LISTED ARE BASED ON THE PROPOSED SHORELINE ELEVATIONS AND DO NOT ACCOUNT FOR ANTICIPATED SETTLEMENT.
 - REFER TO C-402 AND C-403 FOR PROPOSED MULTI USE PATH SECTIONS.
 - DCR AND MBTA TO NEGOTIATE FINAL EASEMENT EXTENTS.



NOT FOR CONSTRUCTION

IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD
REV.	DATE	DESCRIPTION	BY

SEAN P. D'ERILON, JR.
CIVIL
No. 49201
PROFESSIONAL ENGINEER

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DEPARTMENT OF CONSERVATION & RECREATION
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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

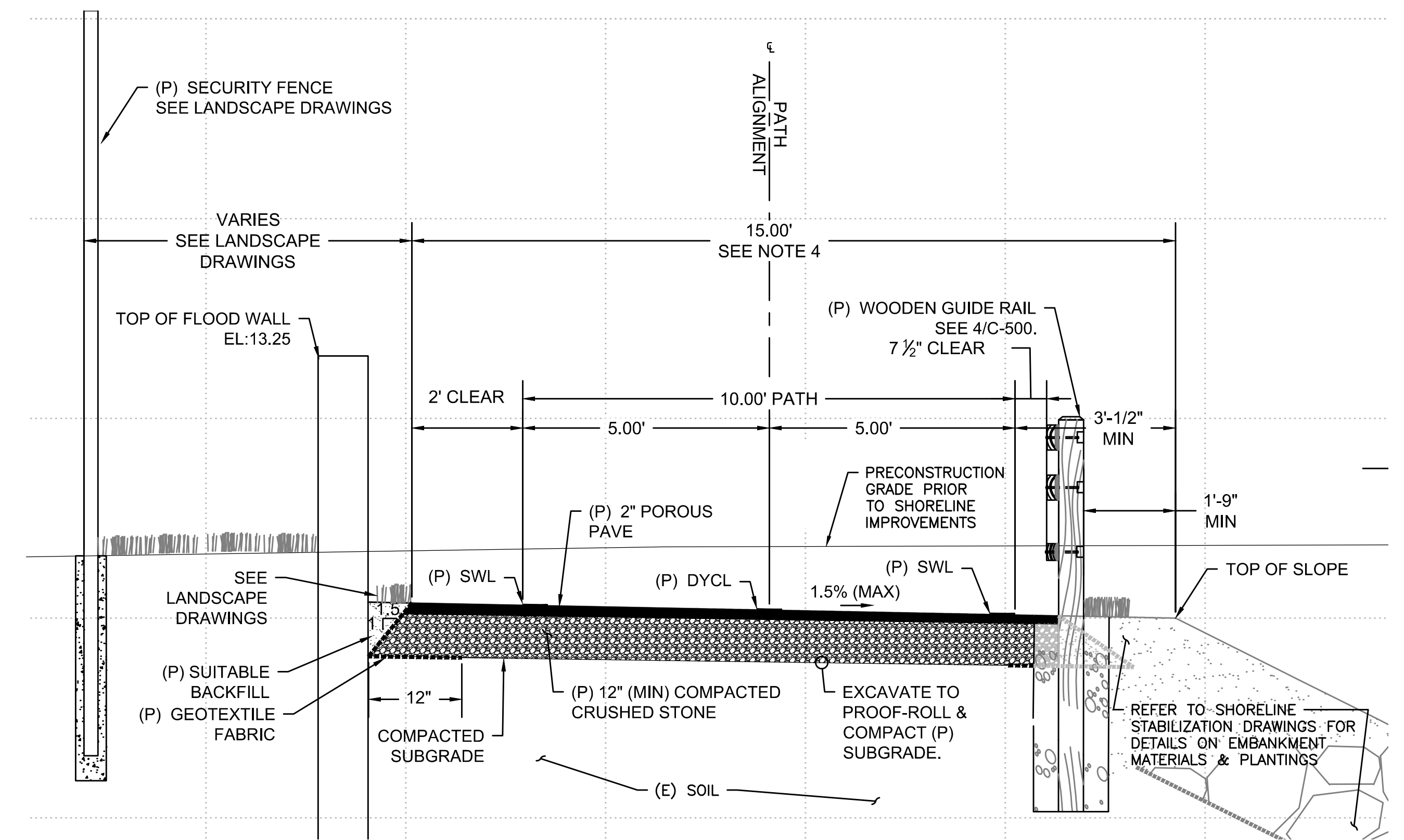
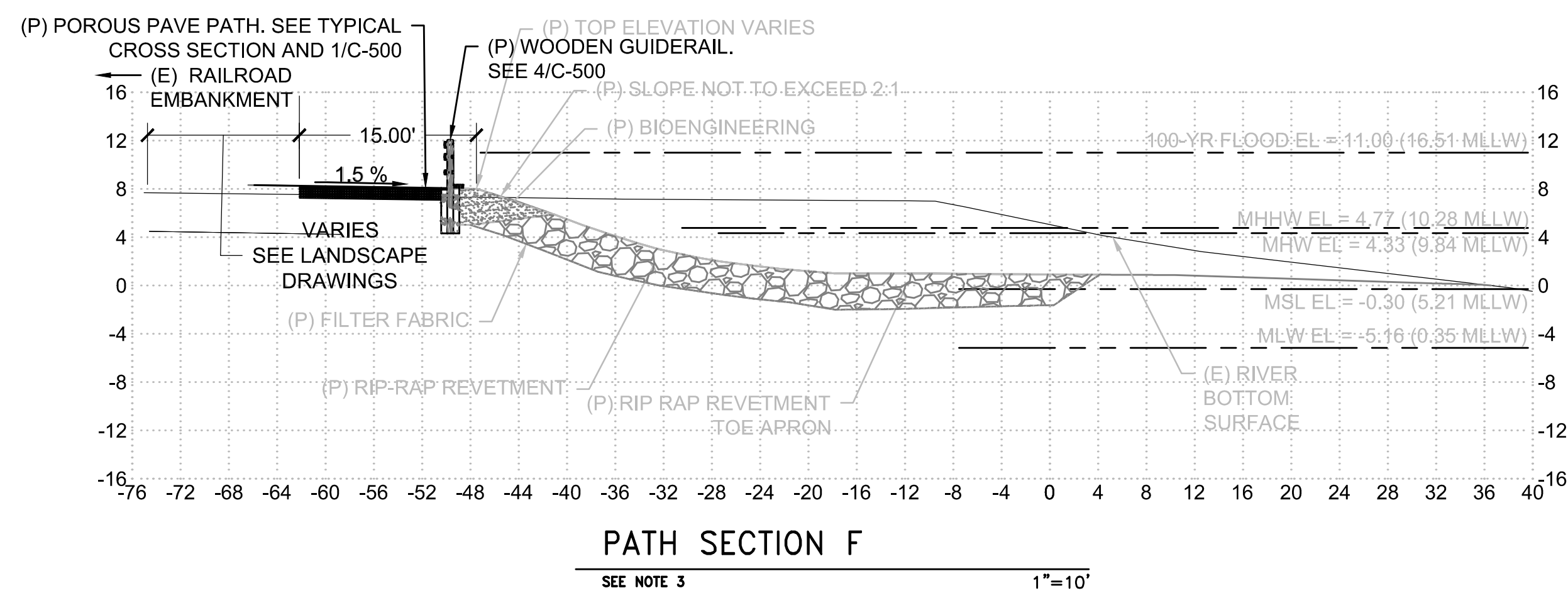
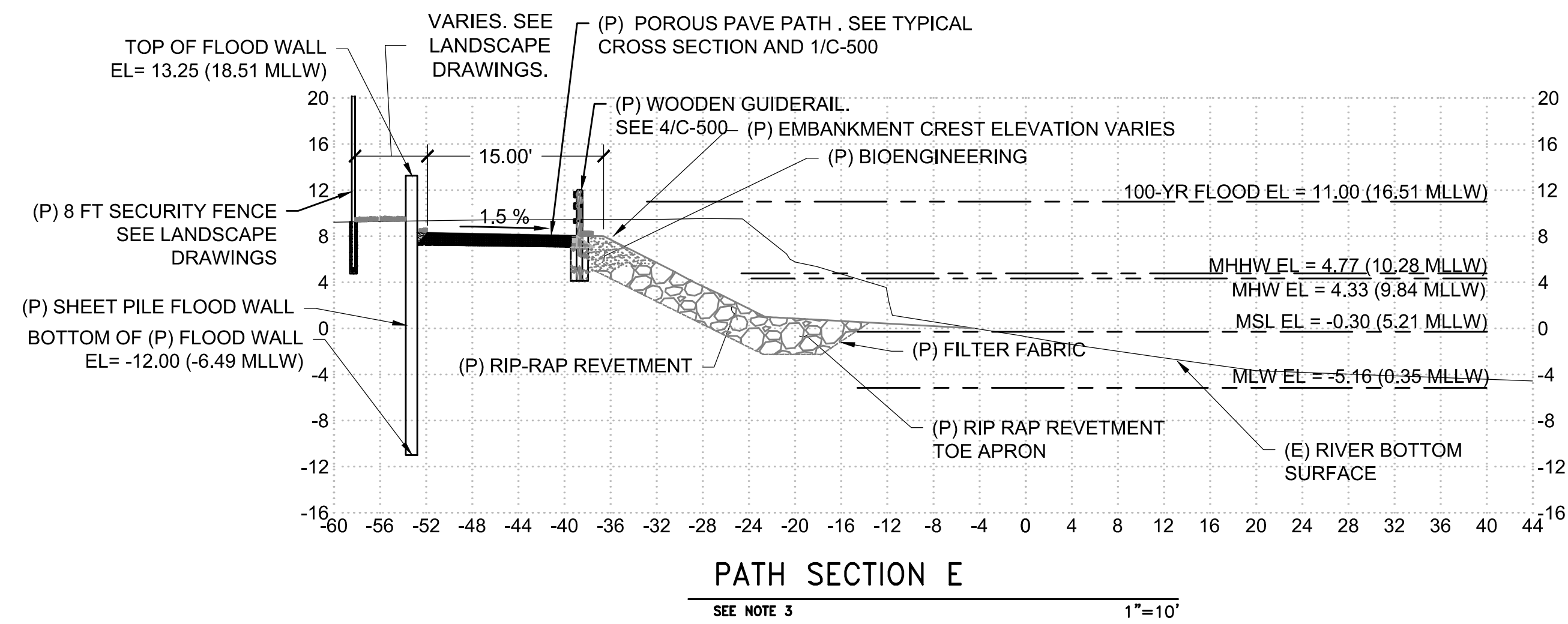
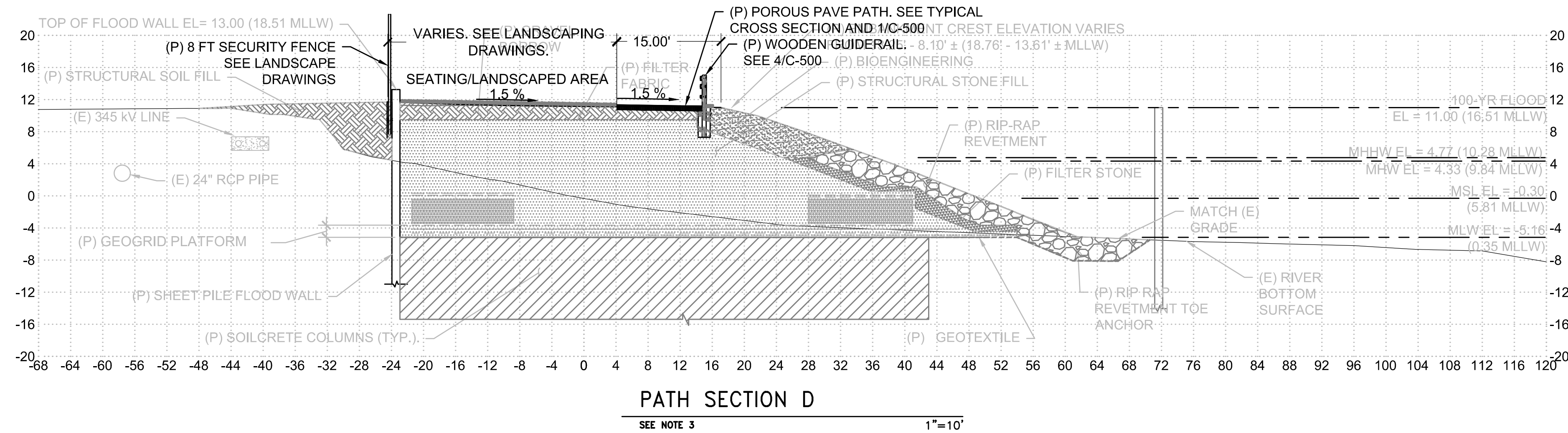
TYPICAL SECTIONS 1

DESIGNER: CAC
CHECKED: SPD
DRAWN: RJA
CHECKED: SPD

CONT. P18-3229-D1A
ACC.

SCALE AS NOTED
DATE: 11/13/18

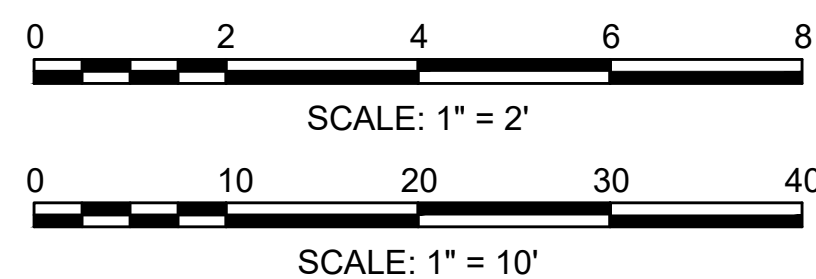
DRAWING NO. C-400
14 OF 21



SECTION NOTES:
 A. THICKNESS OF COMPACTED CRUSHED STONE BASE LAYER WILL VARY DEPENDING ON SETTLEMENT OF SHORELINE EMBANKMENT AT TIME OF PATH CONSTRUCTION. CONTRACTOR SHALL INCREASE THICKNESS BY PROVIDING ADDITIONAL CRUSHED STONE AS NECESSARY TO ACHIEVE TOP OF PATH FINISHED GRADE ELEVATIONS, INDICATED ON THE PLANS.
 B. SEE SPECIFICATION 02301 FOR EARTHWORK REQUIREMENTS.

TYPICAL PATH CROSS SECTION AT S-TURN & ENGINEERING RAIL YARD
 STA 11+40 TO 18+47

- NOTES:**
1. SCREENED-OUT INFORMATION IS FROM THE BASE SCOPE OF THE SHORELINE STABILIZATION DESIGN PACKAGE UNLESS OTHERWISE NOTED AND IS SHOWN FOR REFERENCE ONLY.
 2. ALL ELEVATIONS LISTED ARE BASED ON THE PROPOSED SHORELINE ELEVATIONS AND DO NOT ACCOUNT FOR ANTICIPATED SETTLEMENT.
 3. REFER TO C-402 AND C-403 FOR PROPOSED MULTI USE PATH SECTIONS.
 4. DCR AND MBTA TO NEGOTIATE FINAL EASEMENT EXTENTS.



NOT FOR CONSTRUCTION

IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD
REV.	DATE	DESCRIPTION	BY

SEAN P. D'ERILON, JR., CIVIL No. 49261 REGISTERED PROFESSIONAL ENGINEER

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 Engineering of Structures and Building Enclosures
 Simpson Gumpertz & Heger Inc. 781.907.9000
 41 Seven Street, Building 1, Suite 500 Waltham, Massachusetts 02453 fax 781.907.9009 www.sgh.com

COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF CONSERVATION & RECREATION
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DRAW SEVEN PARK PATH EXTENSION
 BOSTON, MA

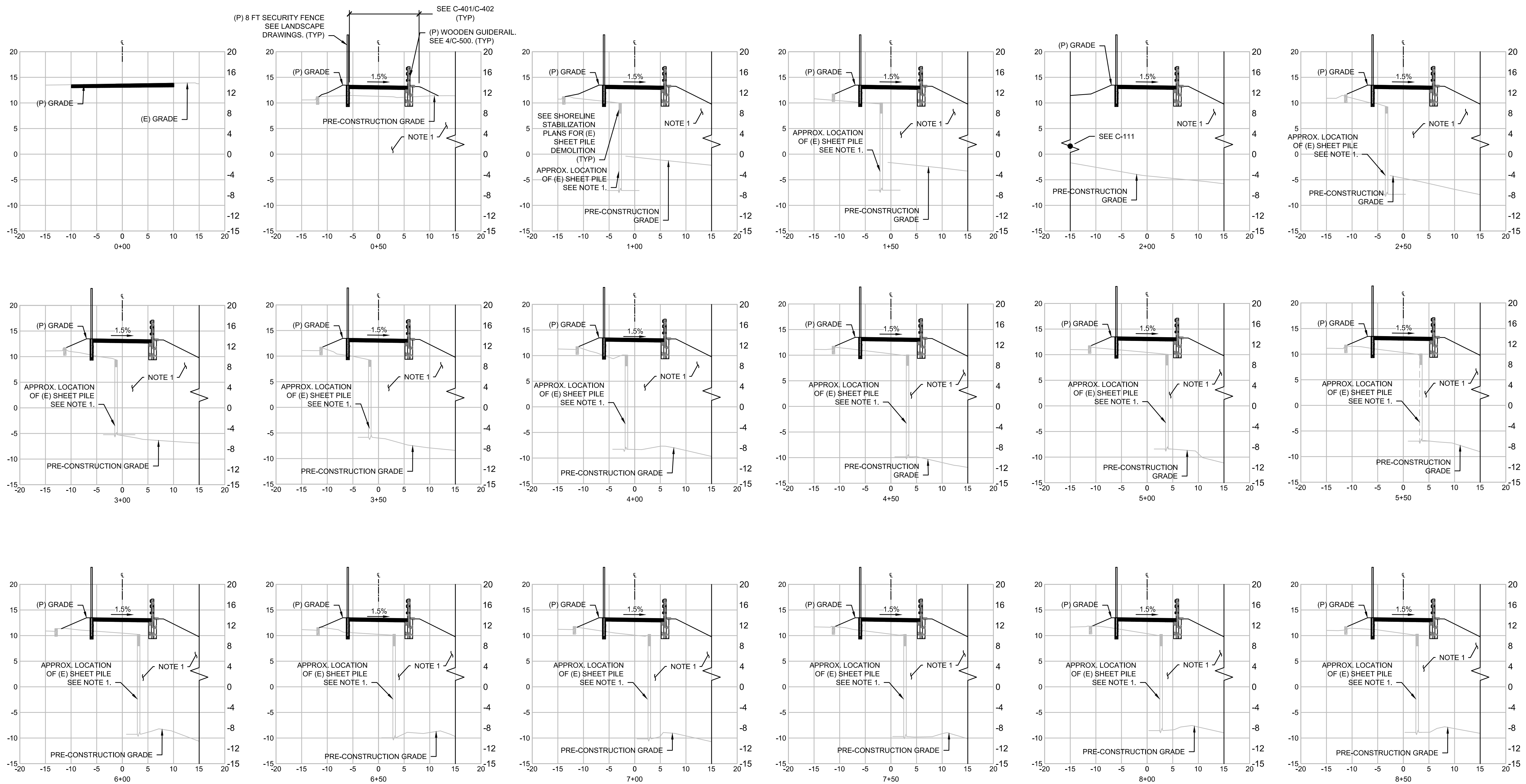
TYPICAL SECTIONS 2

DESIGNER: CAC
 CHECKED: SPD
 DRAWN: RJA
 CHECKED: SPD

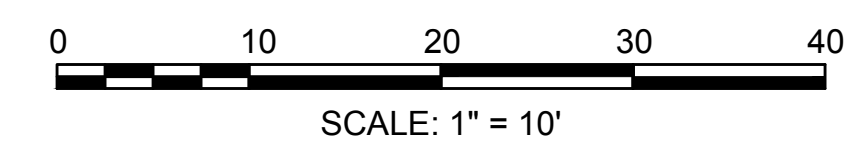
CONT. P18-3229-D1A
 ACC.

SCALE AS NOTED
 DATE: 11/13/18

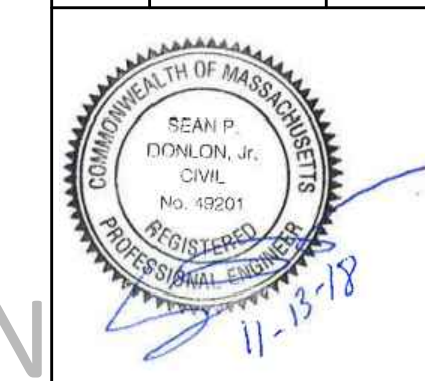
DRAWING NO. **C-401**
 15 OF 21



- NOTES:
- (P) GRADING OUTSIDE WIDTH OF PATH AND (E) SHEET PILE IS SHOWN FOR REFERENCE ONLY. REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
 - ALL ELEVATIONS LISTED ARE BASED ON THE PROPOSED SHORELINE ELEVATIONS AND DO NOT ACCOUNT FOR ANTICIPATED SETTLEMENT.
 - SEE TYPICAL SECTIONS ON C-400 AND C-401 FOR TYPICAL EMBANKMENT SECTION INFORMATION.



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REV.	DATE	DESCRIPTION	BY



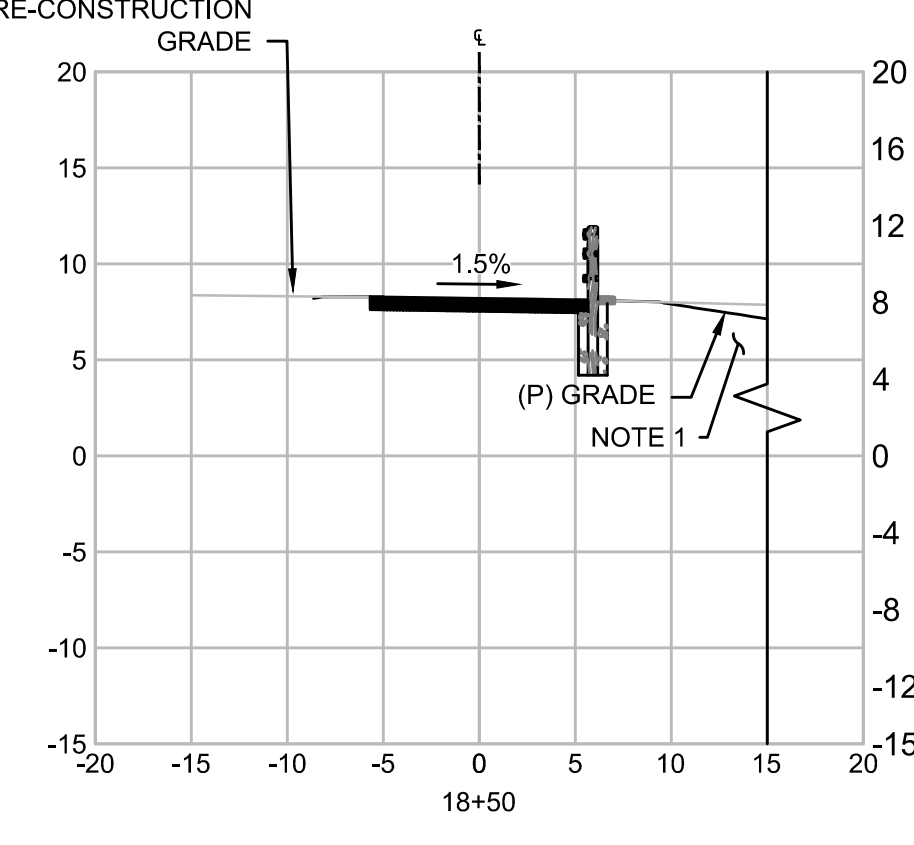
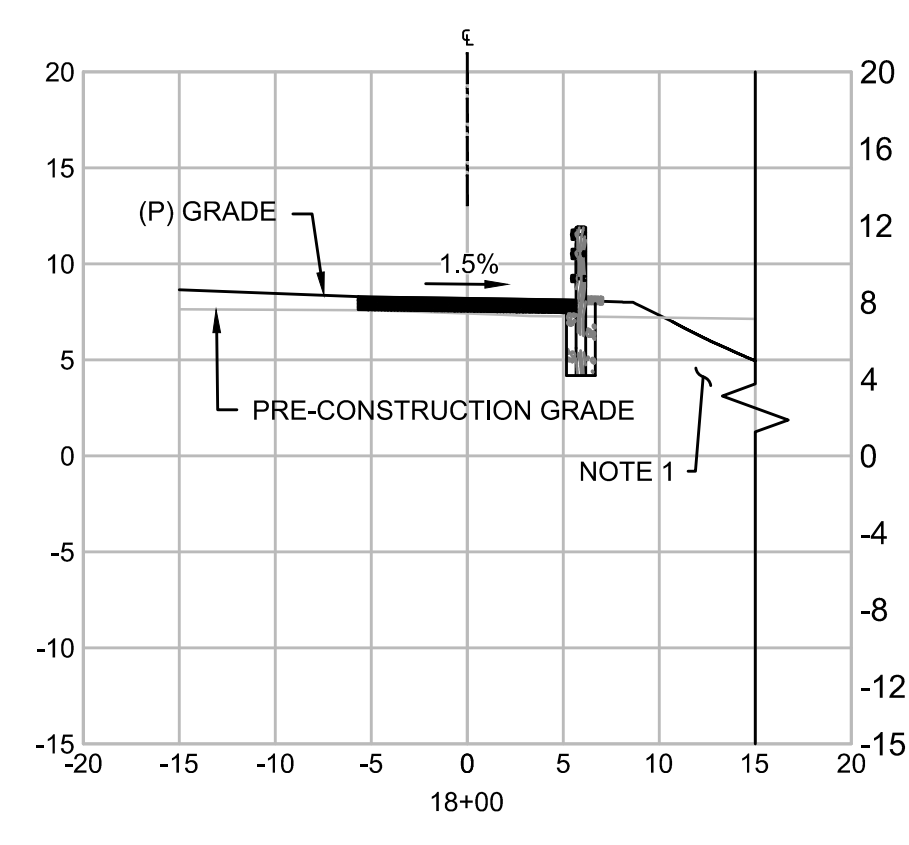
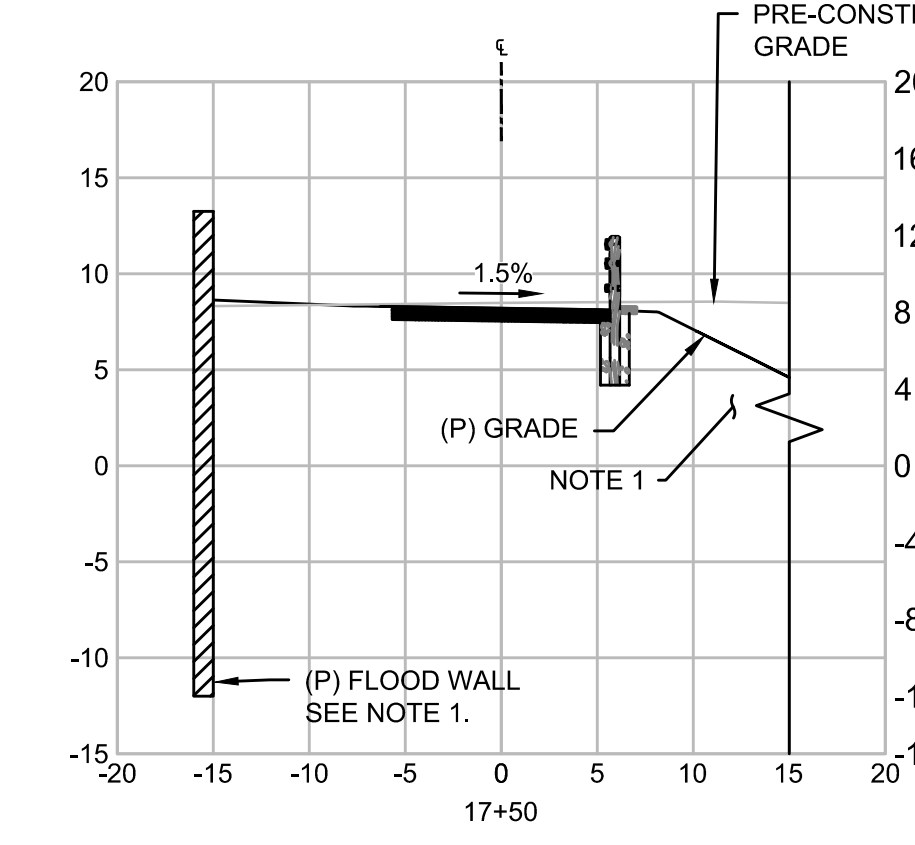
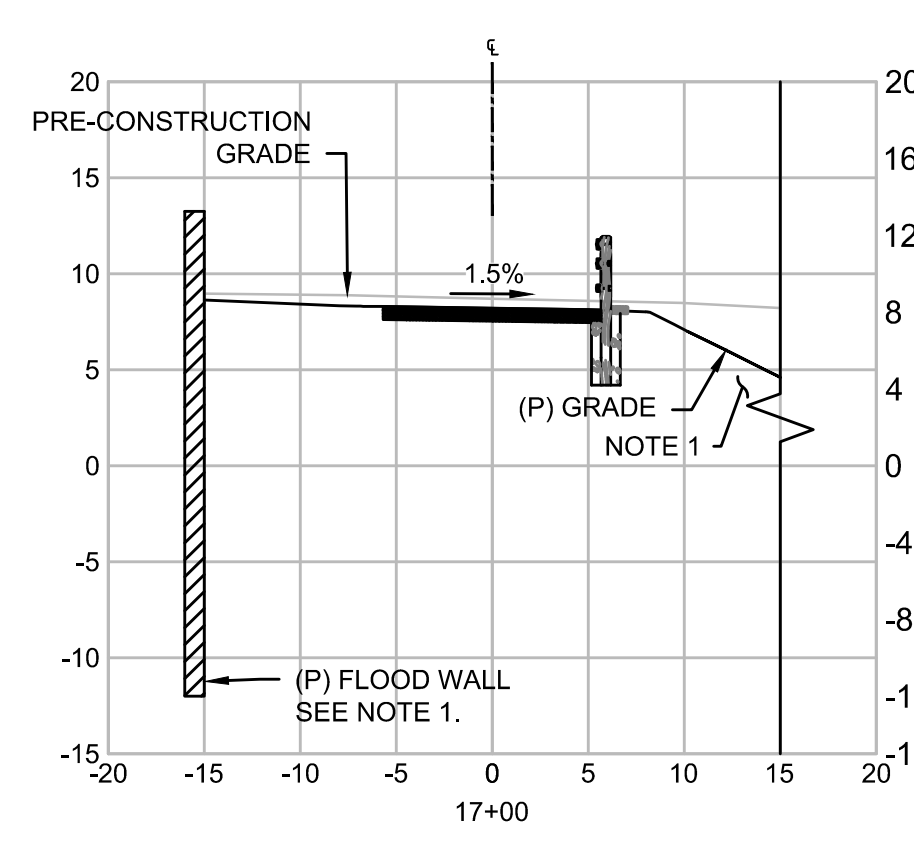
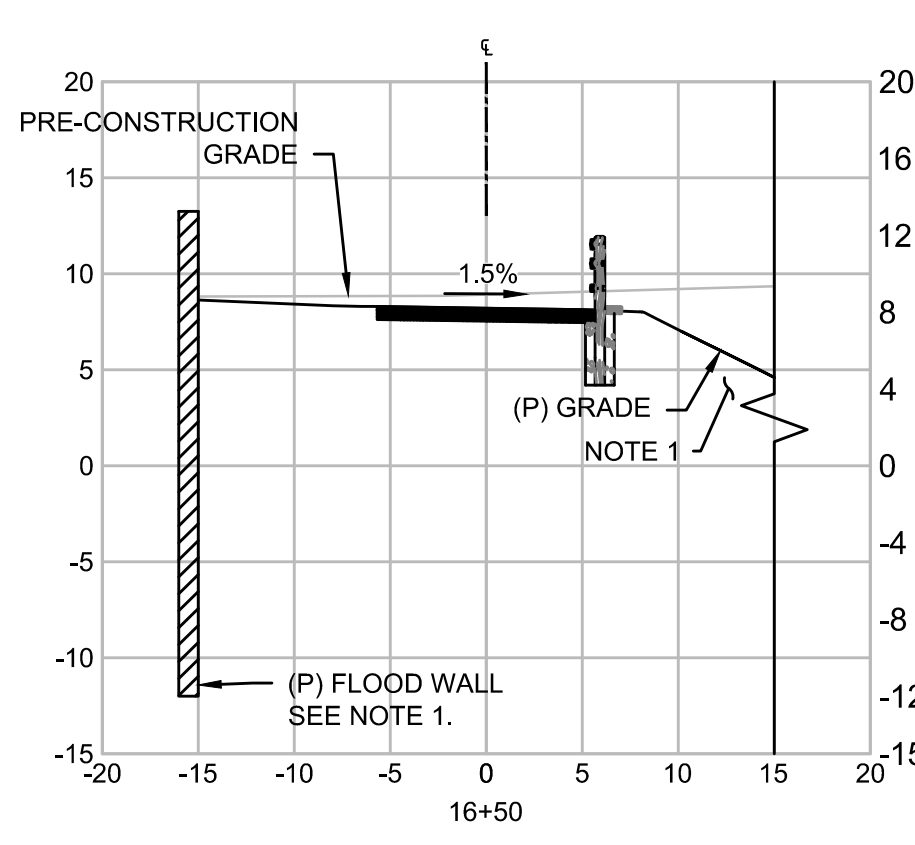
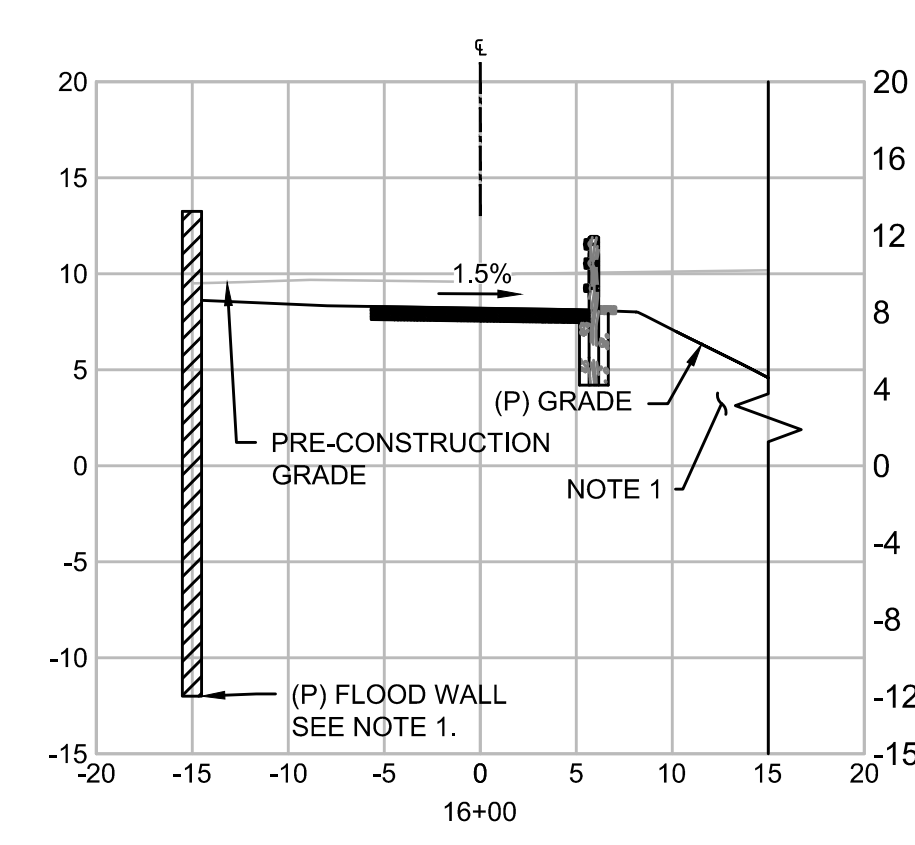
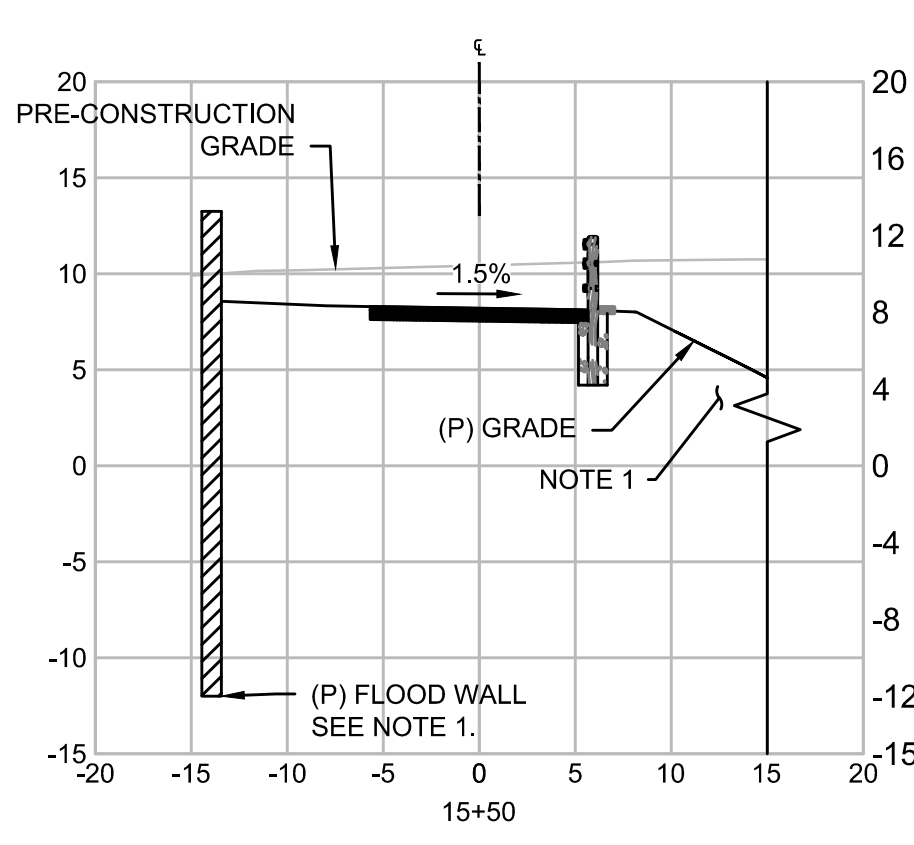
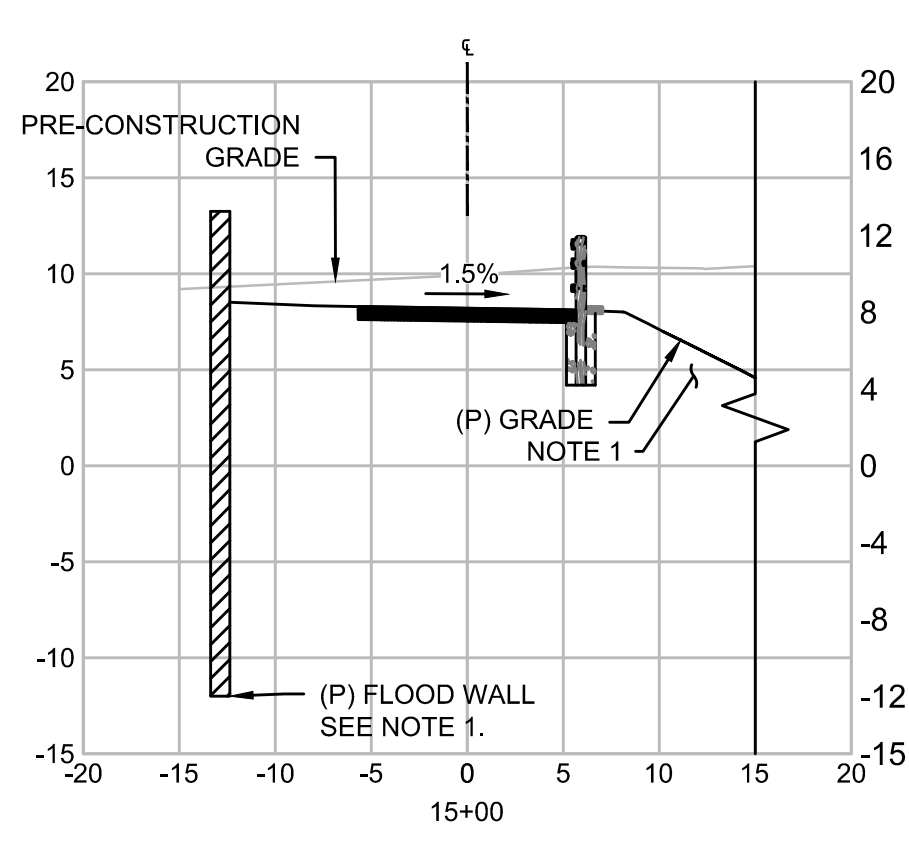
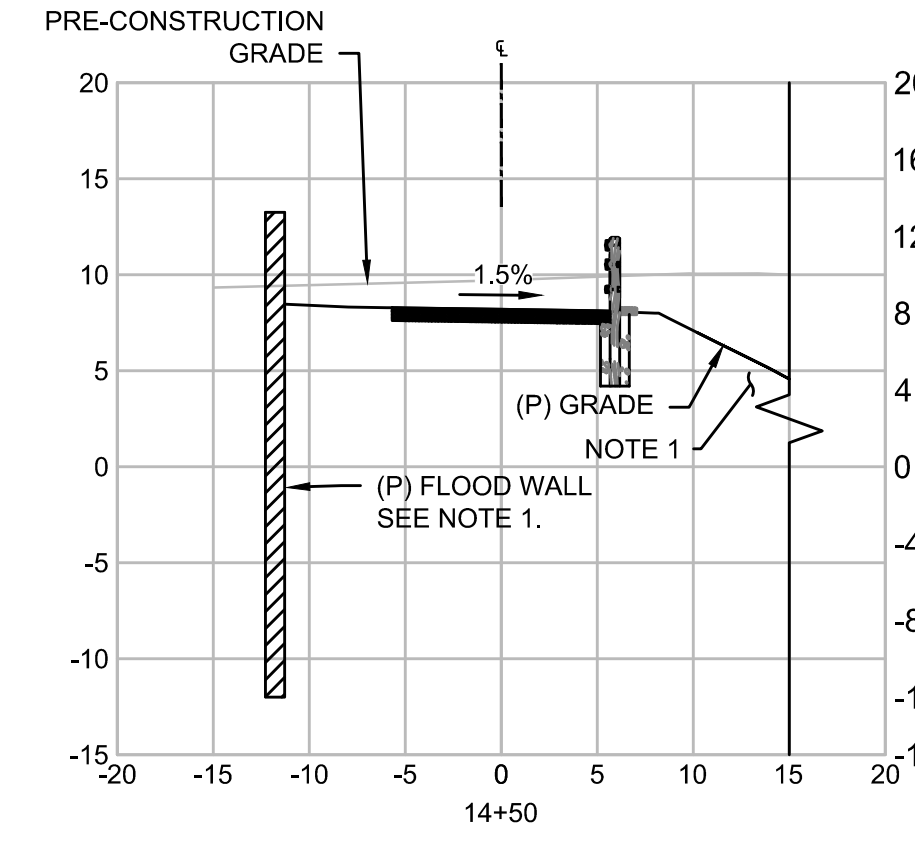
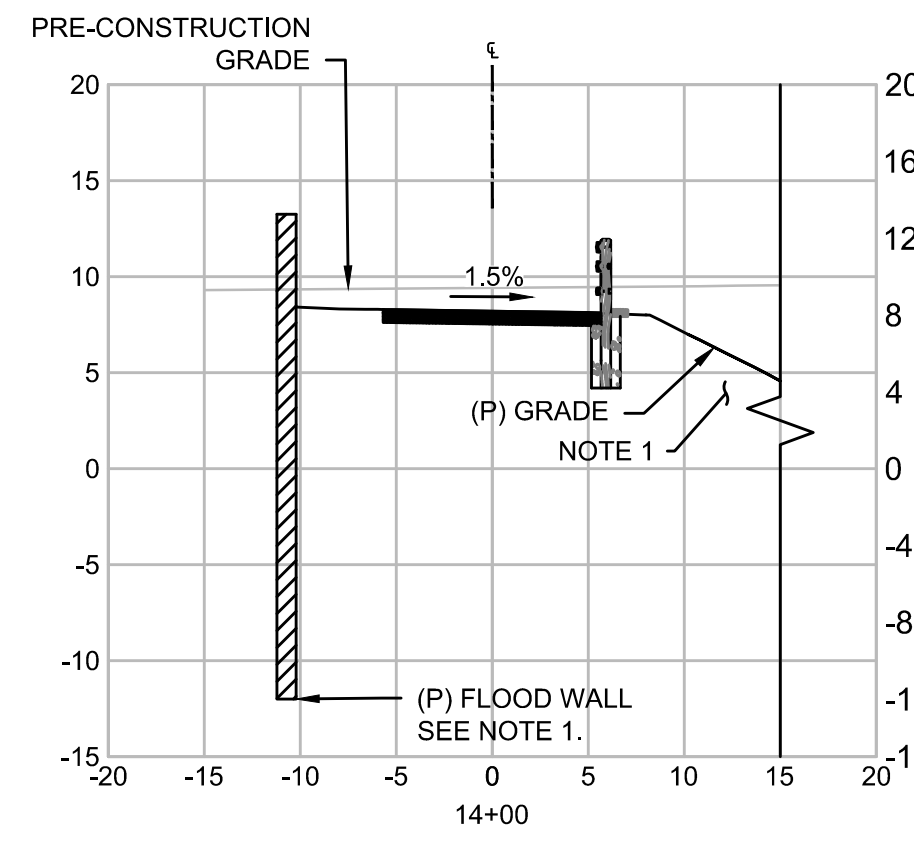
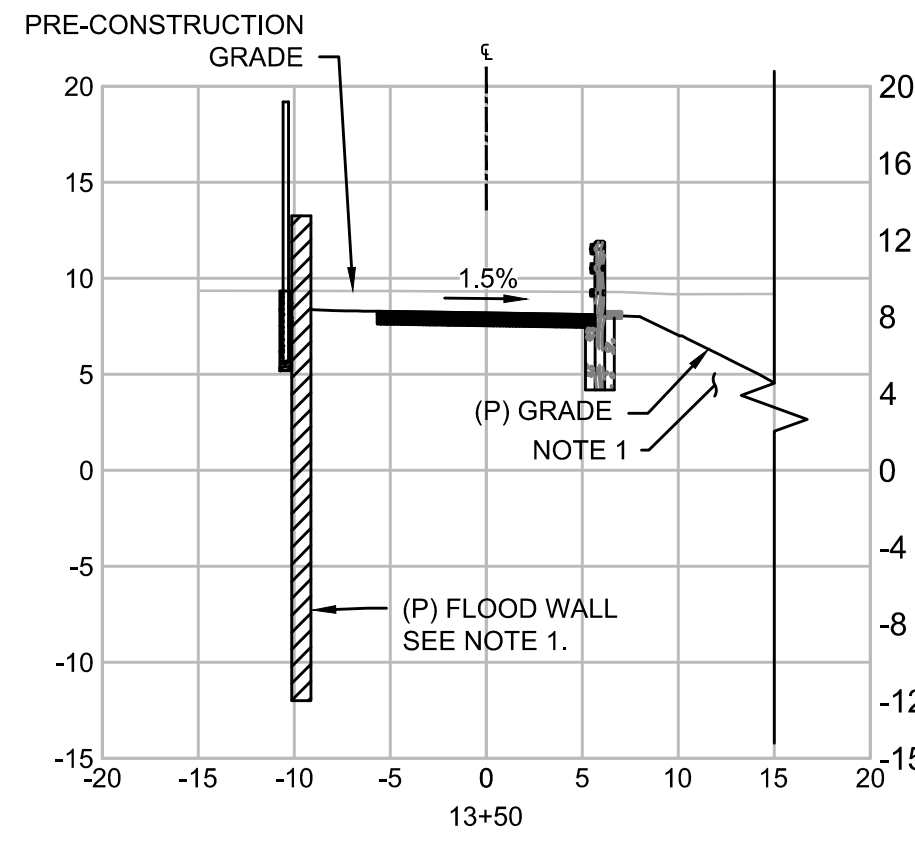
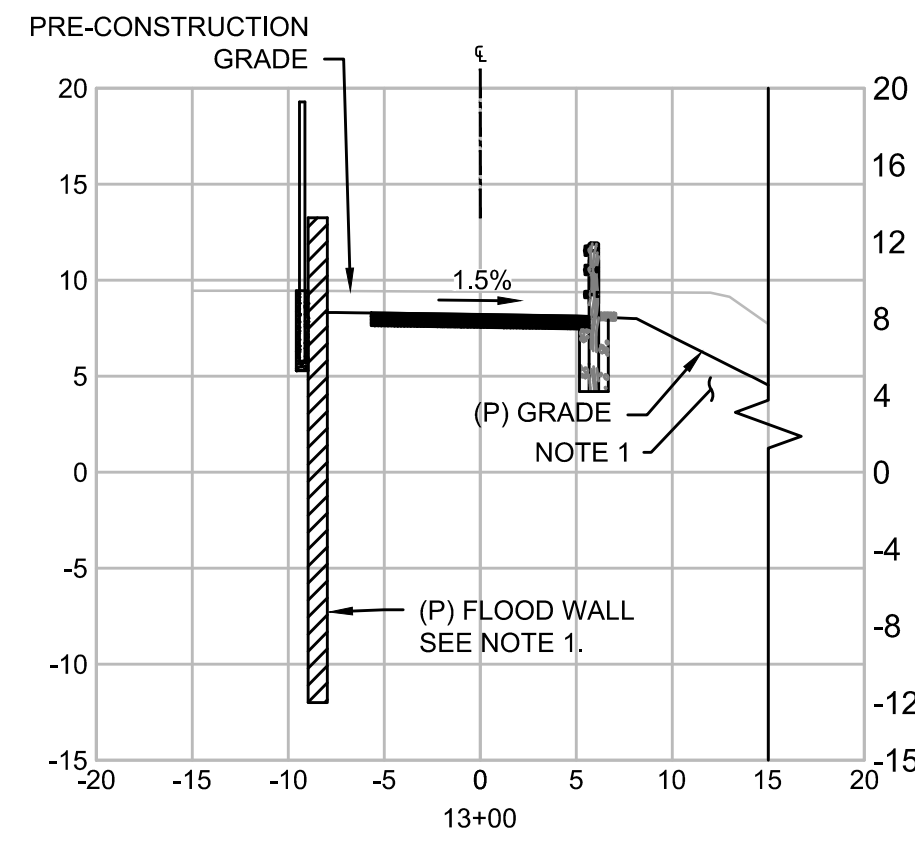
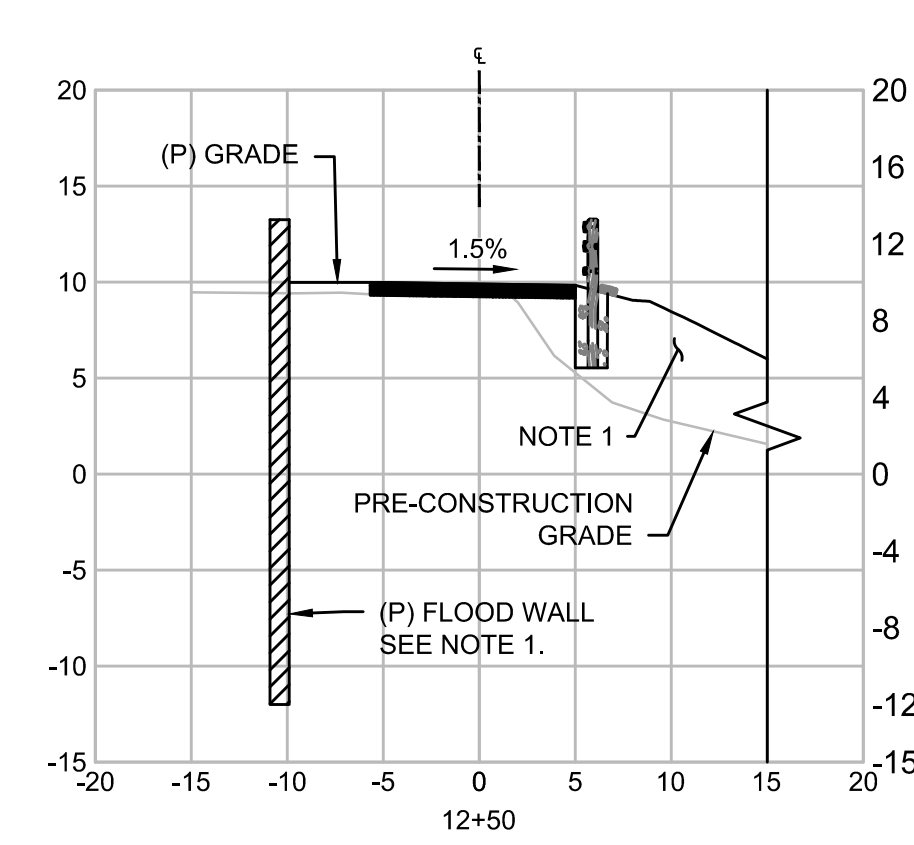
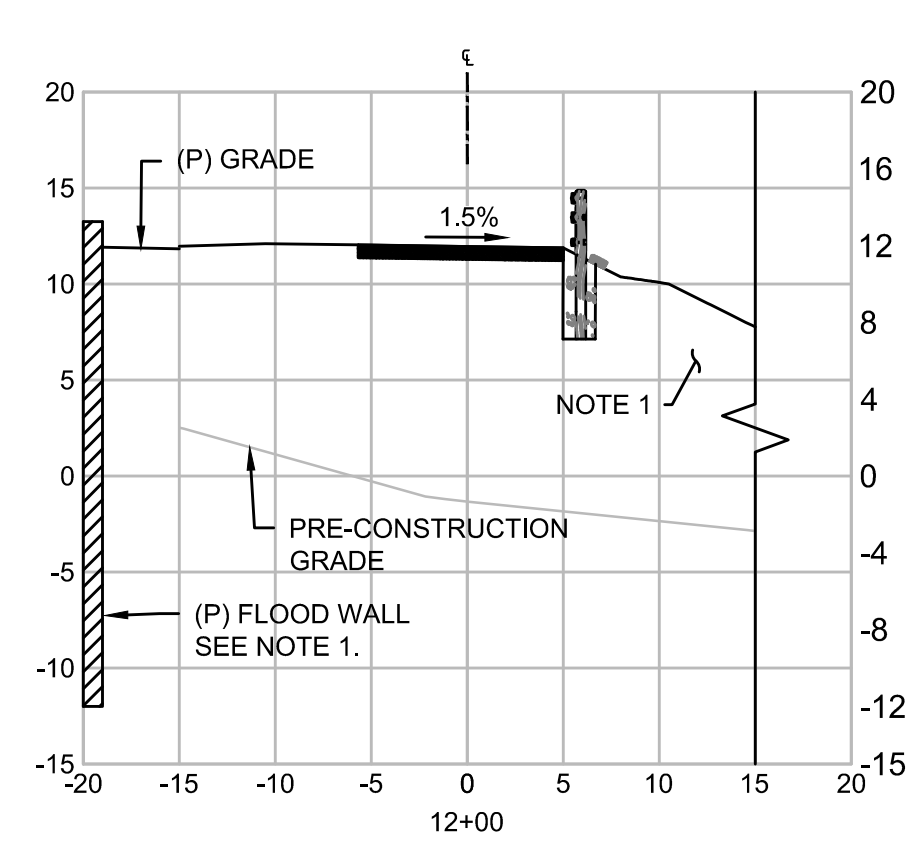
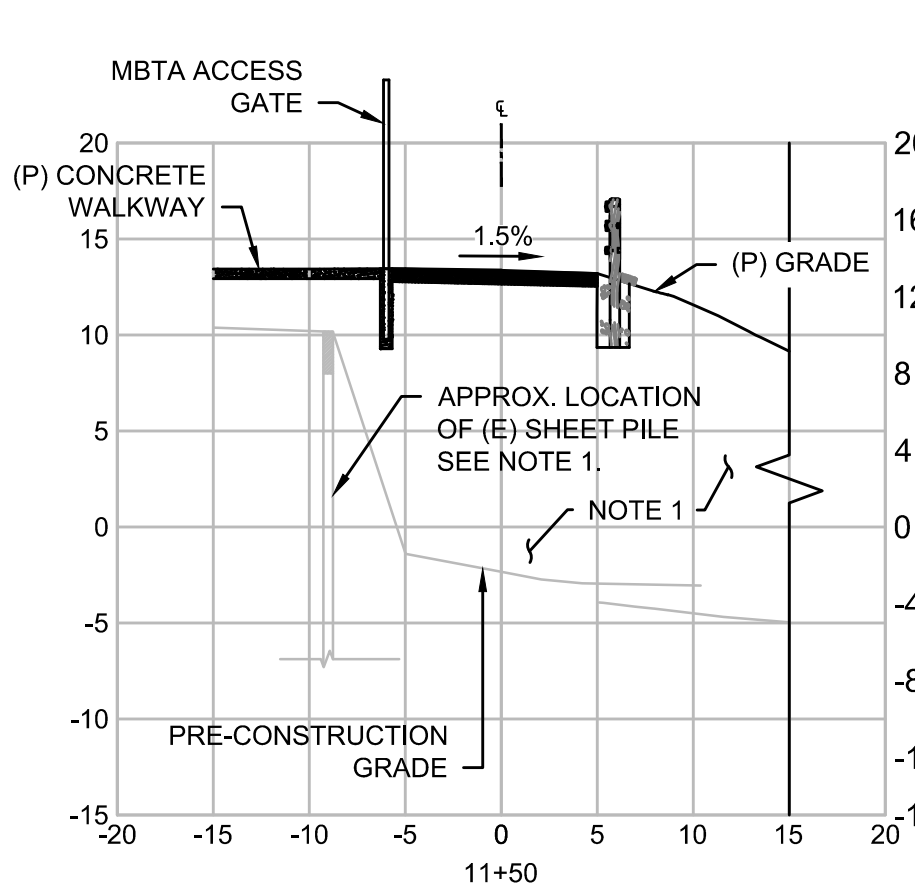
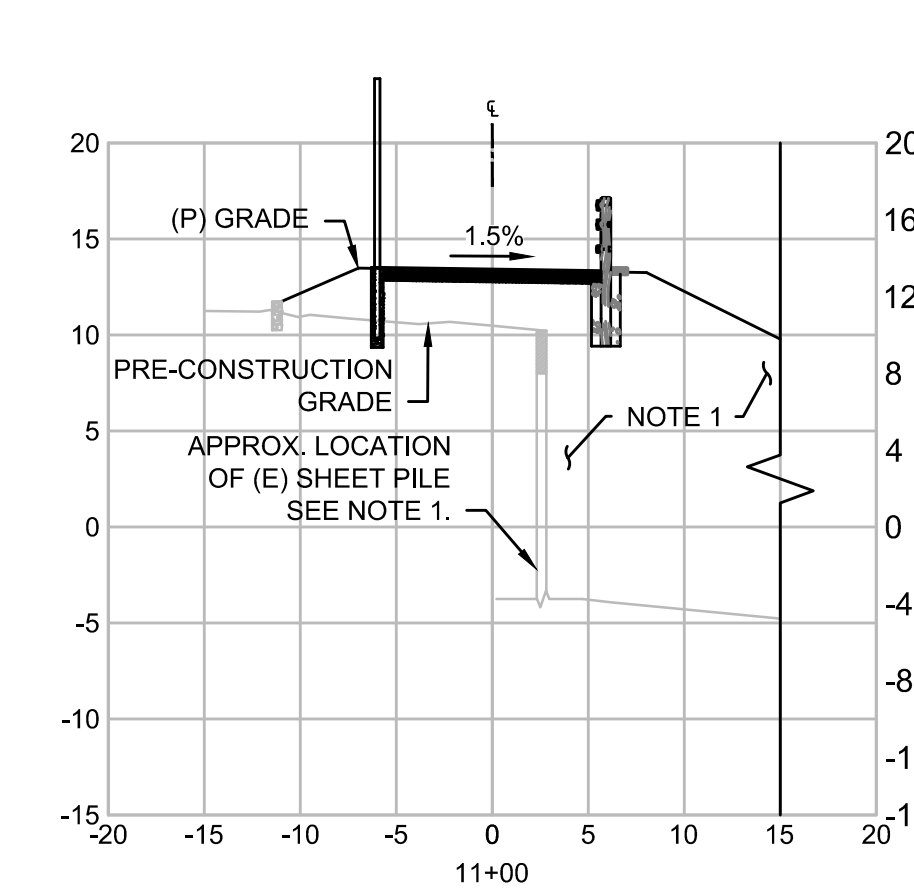
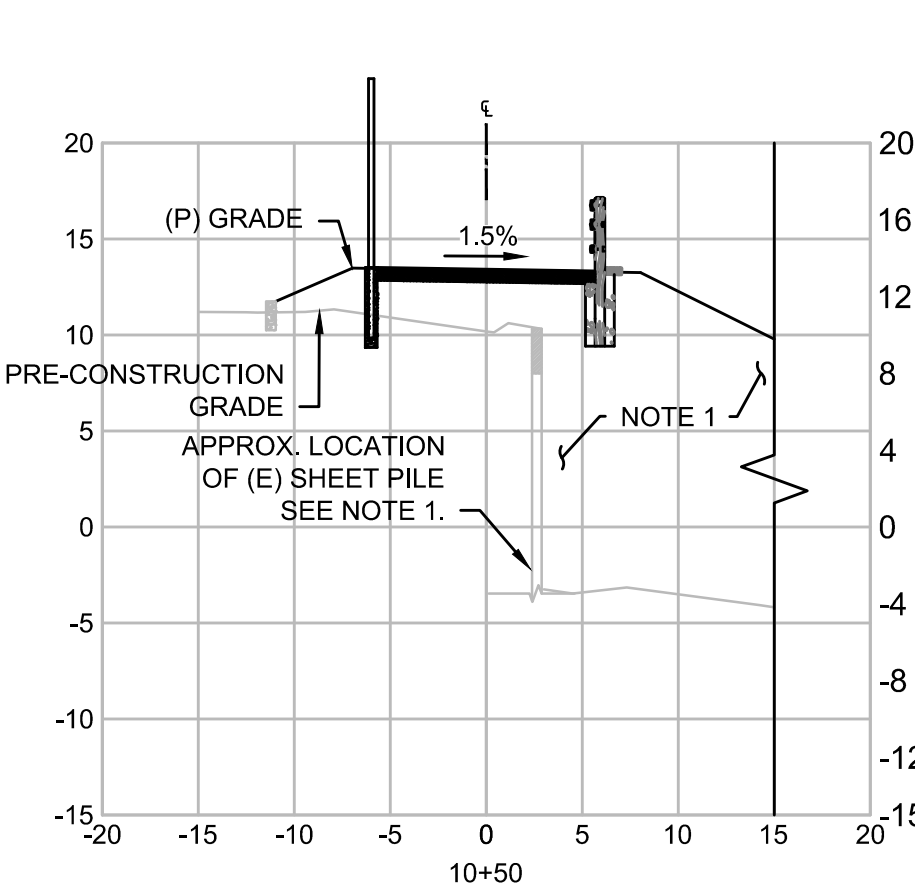
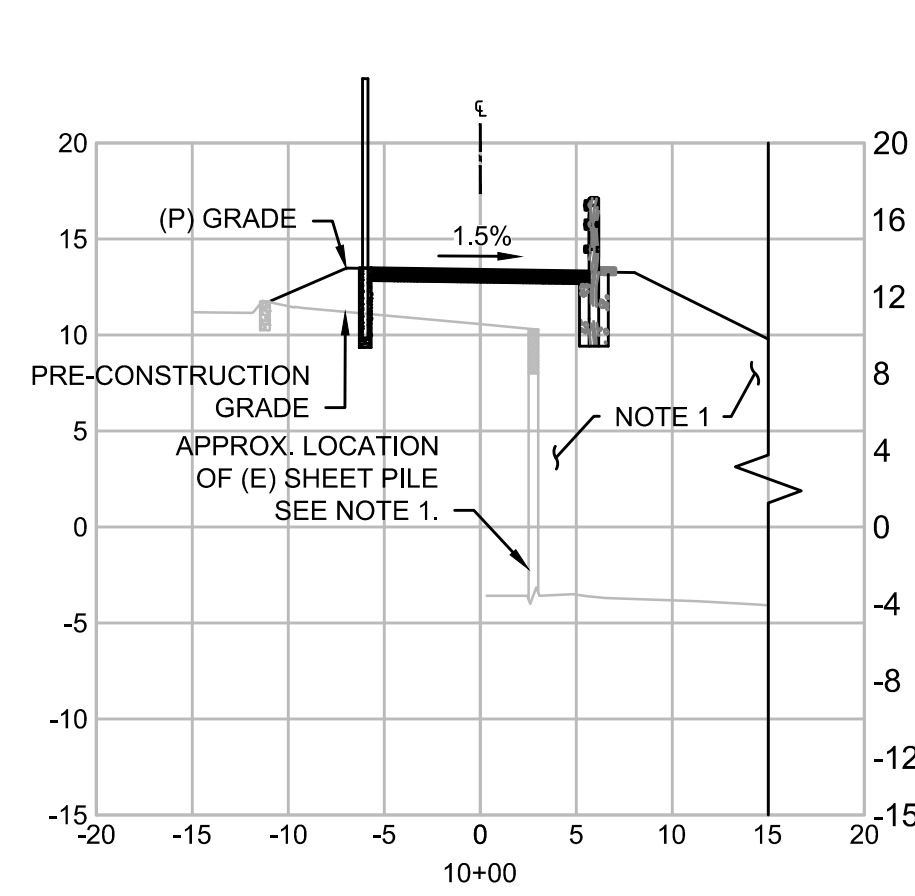
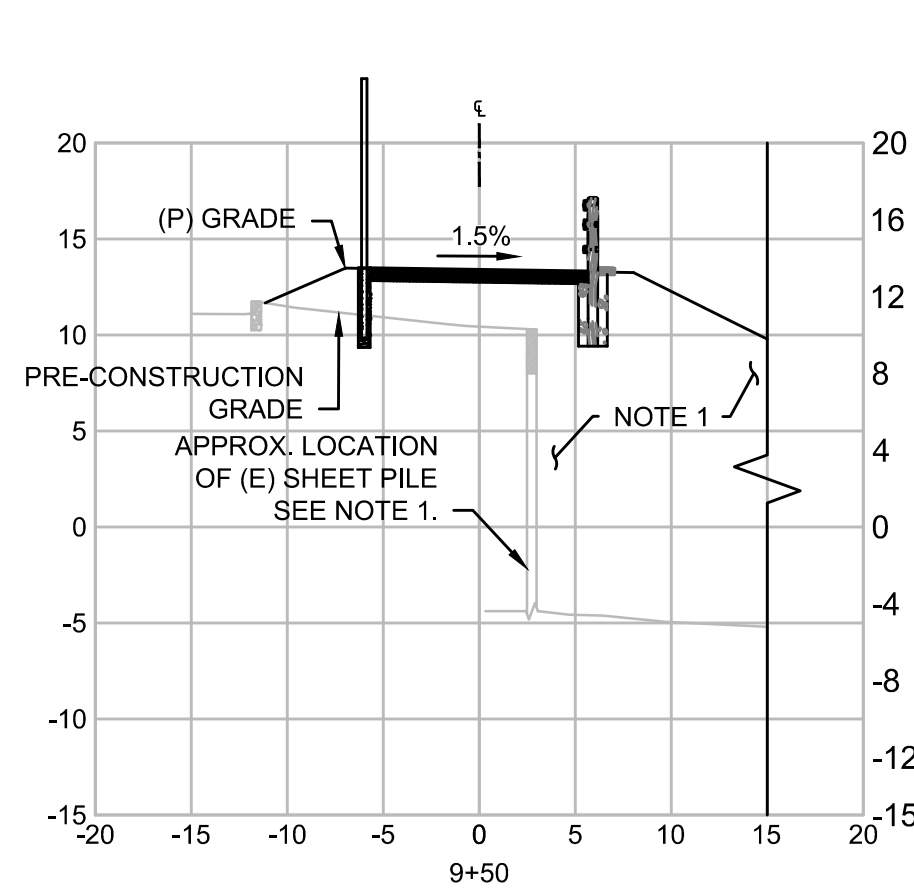
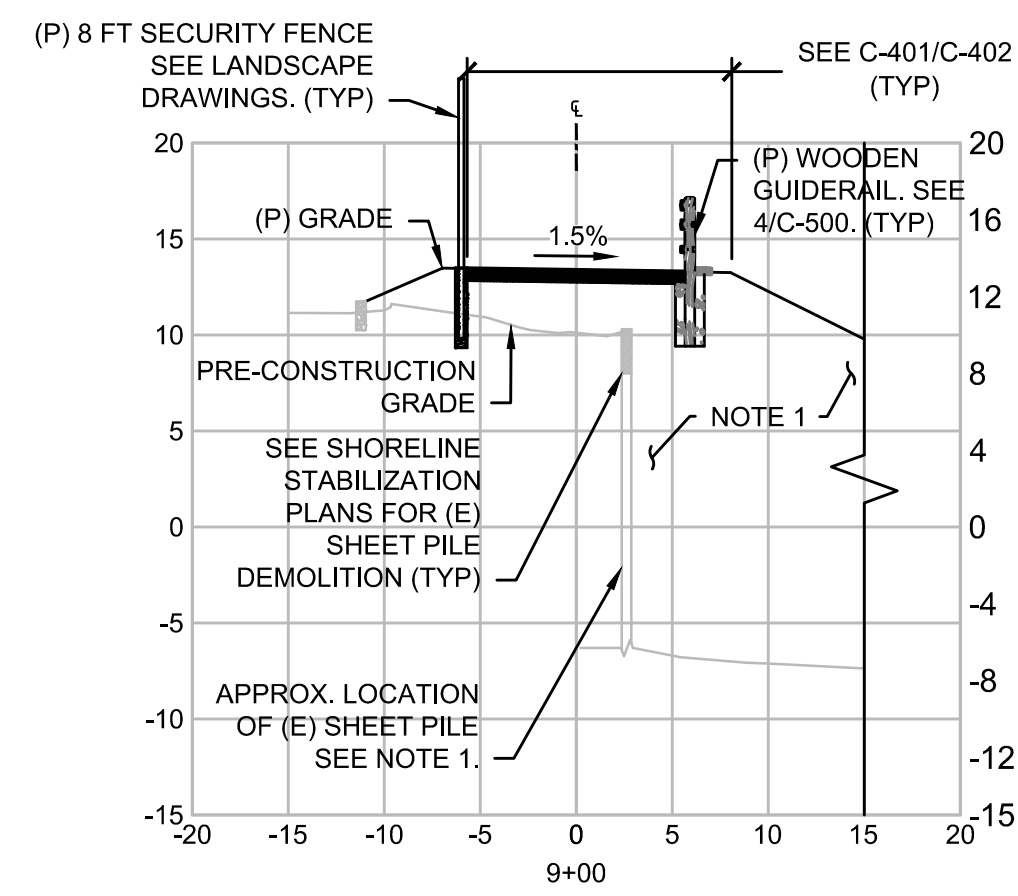
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 BUREAU OF PLANNING, DESIGN & RESOURCE PROTECTION

DRAW SEVEN PARK PATH EXTENSION
 BOSTON, MA

DESIGNER: CAC	MULTI USE PATH SECTIONS 1 CONT. P18-3229-D1A ACC.	SCALE AS NOTED	C-402 DATE: 11/13/18 16 OF 21
CHECKED: SPD		DATE: 11/13/18	
DRAWN: RJA			

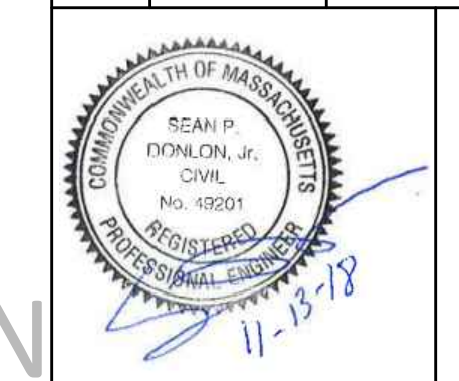
NOT FOR CONSTRUCTION



NOTES:
 1. (P) GRADING OUTSIDE WIDTH OF PATH, (P) FLOOD WALL, AND (E) SHEET PILE IS SHOWN FOR REFERENCE ONLY. REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.
 2. ALL ELEVATIONS LISTED ARE BASED ON THE PROPOSED SHORELINE ELEVATIONS AND DO NOT ACCOUNT FOR ANTICIPATED SETTLEMENT.
 3. SEE TYPICAL SECTIONS ON C-400 AND C-401 FOR TYPICAL EMBANKMENT SECTION INFORMATION.

NOT FOR CONSTRUCTION

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**DRAW SEVEN PARK PATH EXTENSION
 BOSTON, MA**

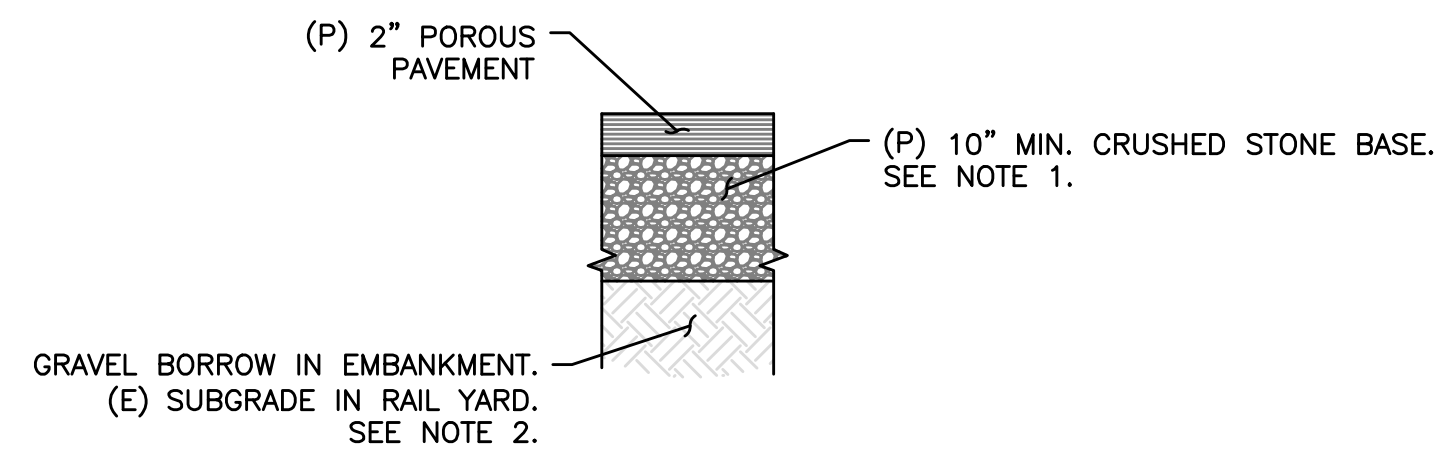
MULTI USE PATH SECTIONS 2

DESIGNER: CAC
 CHECKED: SPD
 DRAWN: RJA
 CHECKED: SPD

CONT. P18-3229-D1A
 ACC.

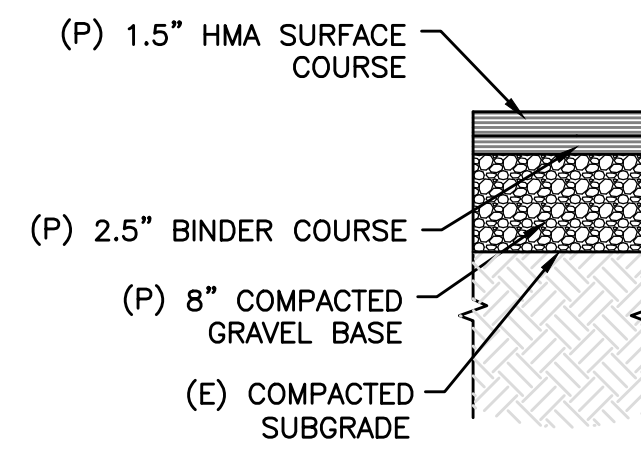
SCALE AS NOTED
 DATE: 11/13/18

DRAWING NO.
C-403
 17 OF 21



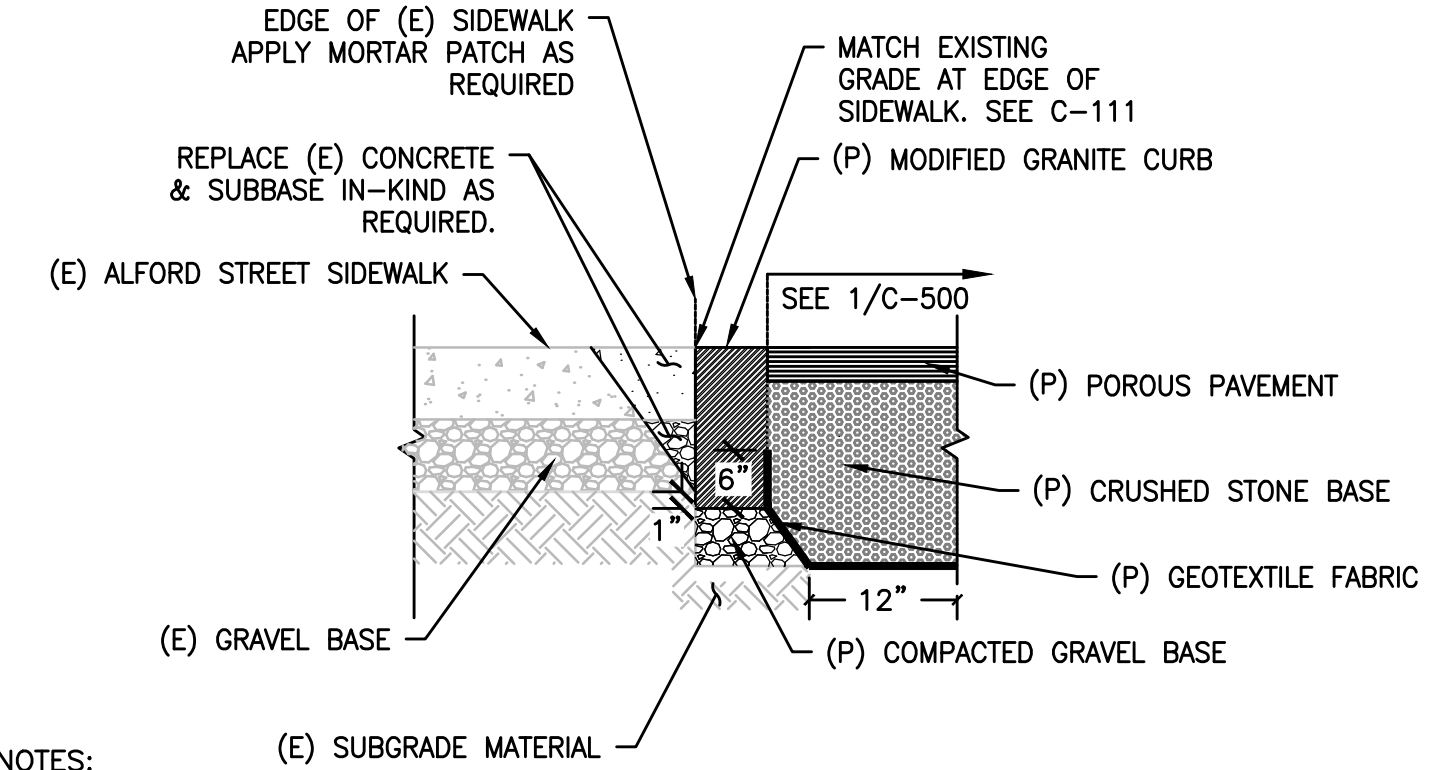
- NOTES:**
- THICKNESS OF COMPACTED CRUSHED STONE BASE LAYER WILL VARY DEPENDING ON SETTLEMENT OF SHORELINE EMBANKMENT AT TIME OF PATH CONSTRUCTION. CONTRACTOR SHALL INCREASE THICKNESS BY PROVIDING ADDITIONAL CRUSHED STONE AS NECESSARY TO ACHIEVE TOP OF PATH FINISHED GRADE ELEVATIONS, INDICATED ON THE PLANS.
 - GRAVEL BORROW WILL BE PLACED AS PART OF SHORELINE STABILIZATION CONTRACT. CONTRACTOR SHALL ADJUST FINISHED SURFACE OF GRAVEL BORROW AS NECESSARY TO PROVIDE ADEQUATE SUBGRADE FOR POROUS PAVEMENT AND ACHIEVE MINIMUM PROPOSED THICKNESS OF POROUS PAVE & CRUSHED STONE LAYERS.

1 POROUS PAVEMENT TYPICAL SECTION NTS



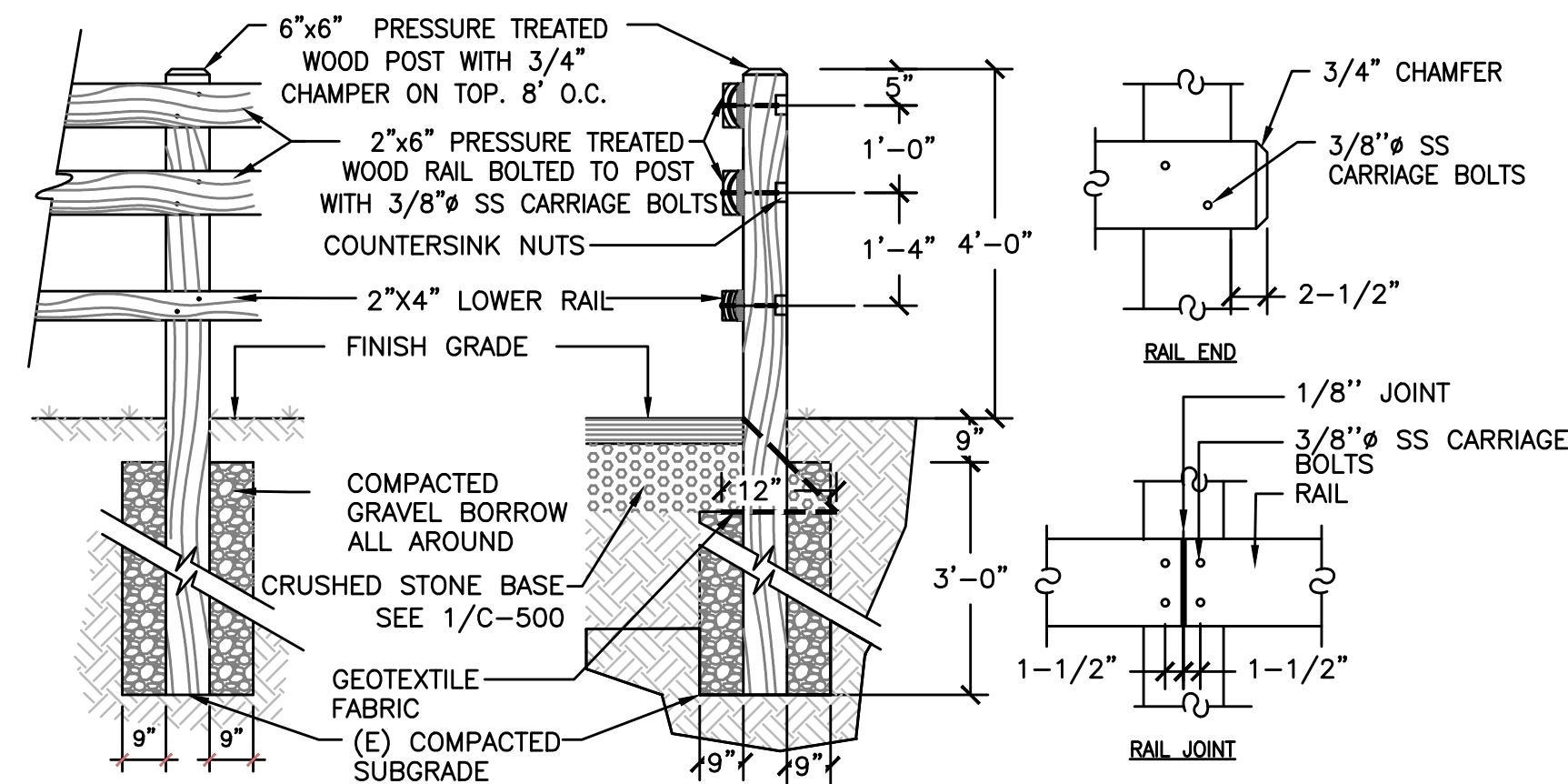
- NOTES:**
- ALL MATERIALS AND PAVEMENT OPERATIONS SHALL MEET THE MINIMUM REQUIREMENTS OF MASSDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 - SEE MATERIALS AND PRODUCTS LIST ON C-001.

2 ASPHALT PAVEMENT NTS

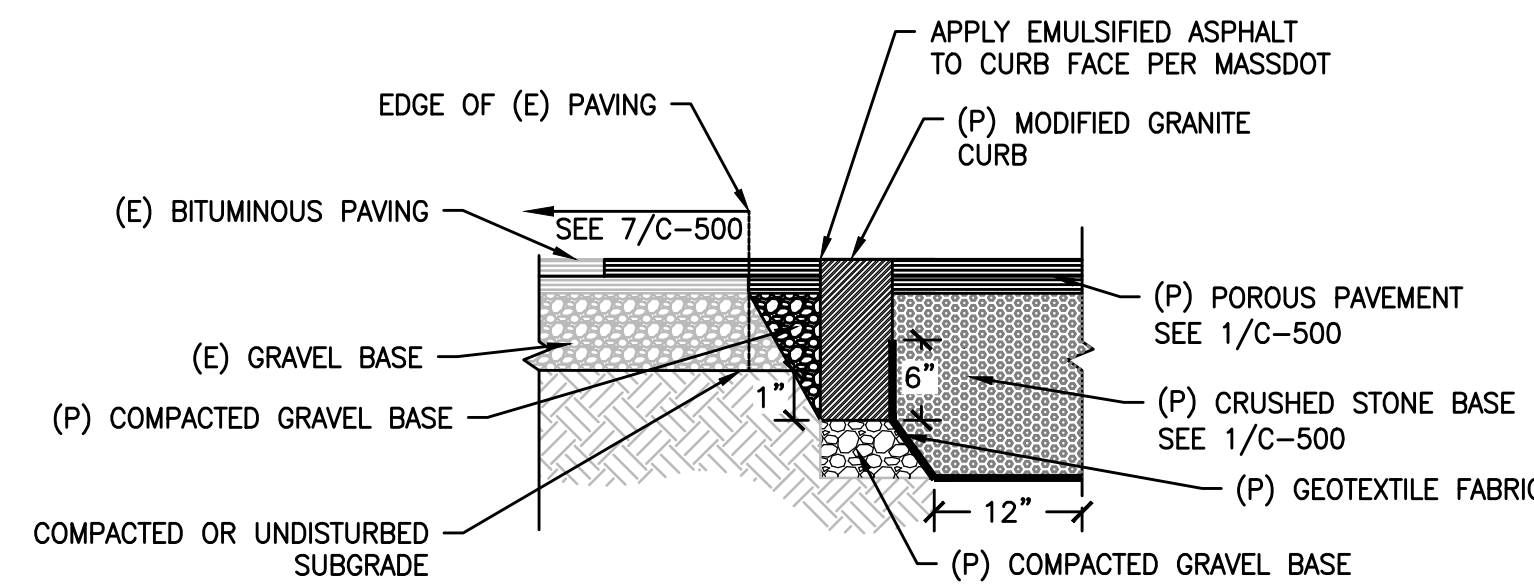


- NOTES:**
- EXISTING, ADJOINING CONCRETE SHALL BE DRY AND FREE OF DEBRIS.

3 POROUS PAVEMENT TO SIDEWALK TRANSITION ALFORD STREET SIDEWALK CONNECTION NTS

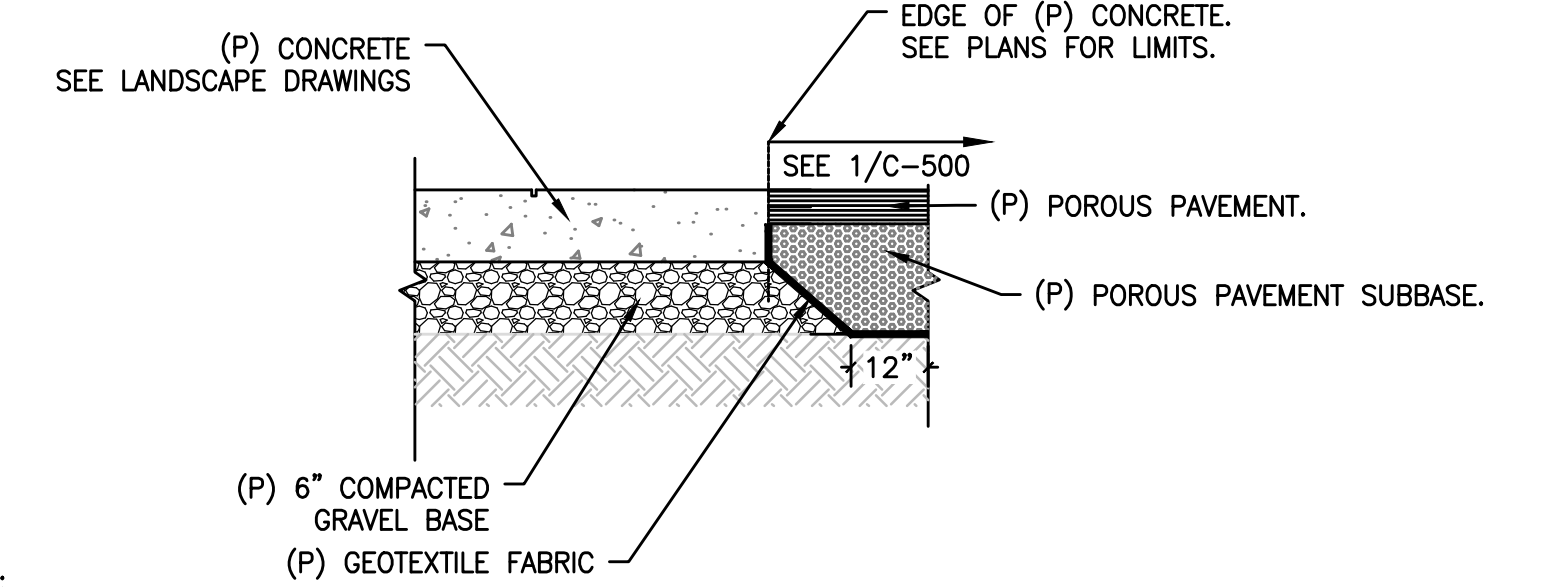


4 WOODEN GUIDERAIL NTS



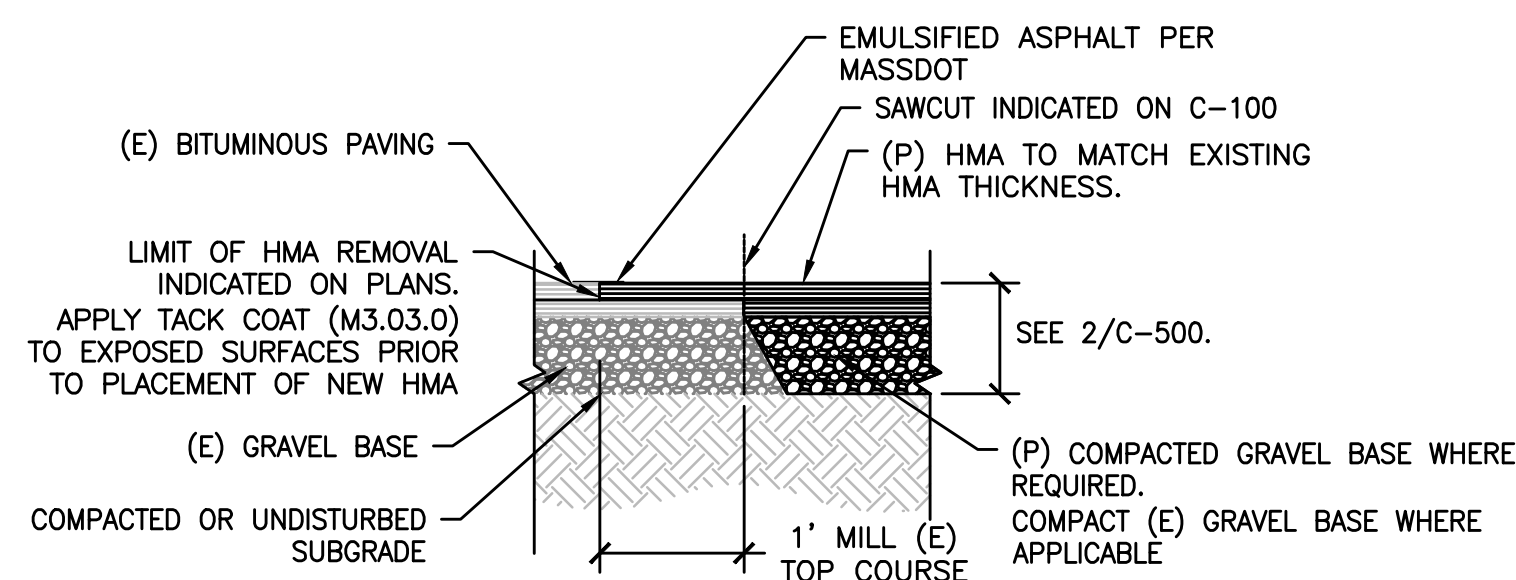
- NOTES:**
- ALL ASPHALT REMOVAL AND REPLACEMENT WORK SHALL BE COMPLETED BEFORE THE CONSTRUCTION OF THE POROUS PAVEMENT.
 - EXISTING, ADJOINING PAVEMENT SHALL BE DRY AND FREE OF DEBRIS.
 - ALL MATERIALS AND PAVEMENT OPERATIONS SHALL MEET THE MINIMUM REQUIREMENTS OF MASSDOT STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION.

5 POROUS PAVEMENT TO ASPHALT TRANSITION NTS



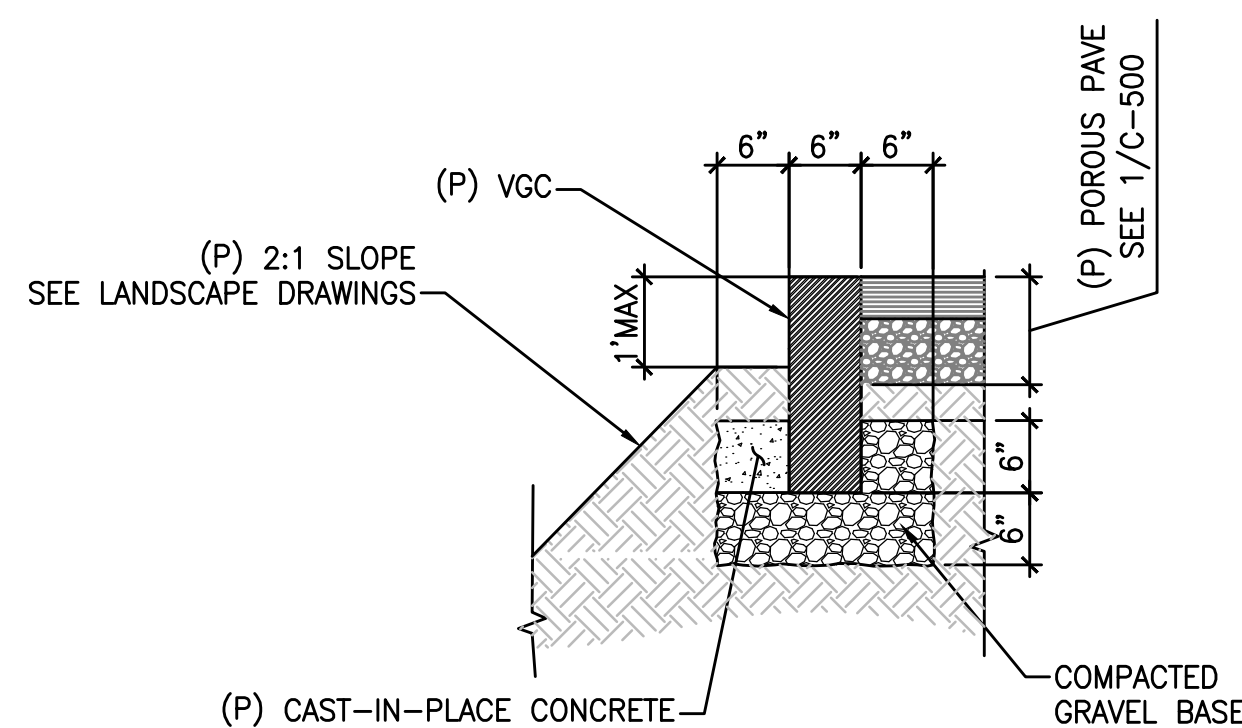
- NOTES:**
- ALL CONCRETE WORK REMOVAL AND REPLACEMENT WORK SHALL BE COMPLETED BEFORE THE CONSTRUCTION OF THE POROUS PAVEMENT.
 - EXISTING, ADJOINING CONCRETE SHALL BE DRY AND FREE OF DEBRIS.

6 POROUS PAVEMENT TO CONCRETE TRANSITION NTS



- NOTES:**
- EXISTING, ADJOINING PAVEMENT SHALL BE DRY AND FREE OF DEBRIS.
 - ALL MATERIALS AND PAVEMENT OPERATIONS SHALL MEET THE MINIMUM REQUIREMENTS OF MASSDOT STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION.

7 ASPHALT TRANSITION NTS



- NOTES:**
- (P) RADII ARE TO BE TRUE ARCS. BROKEN OR CUT STRAIGHT SECTIONS ARE NOT TO BE USED TO CONSTRUCT (P) RADII.

8 VERTICAL GRANITE CURB NTS

REV.	DATE	DESCRIPTION	BY
IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD



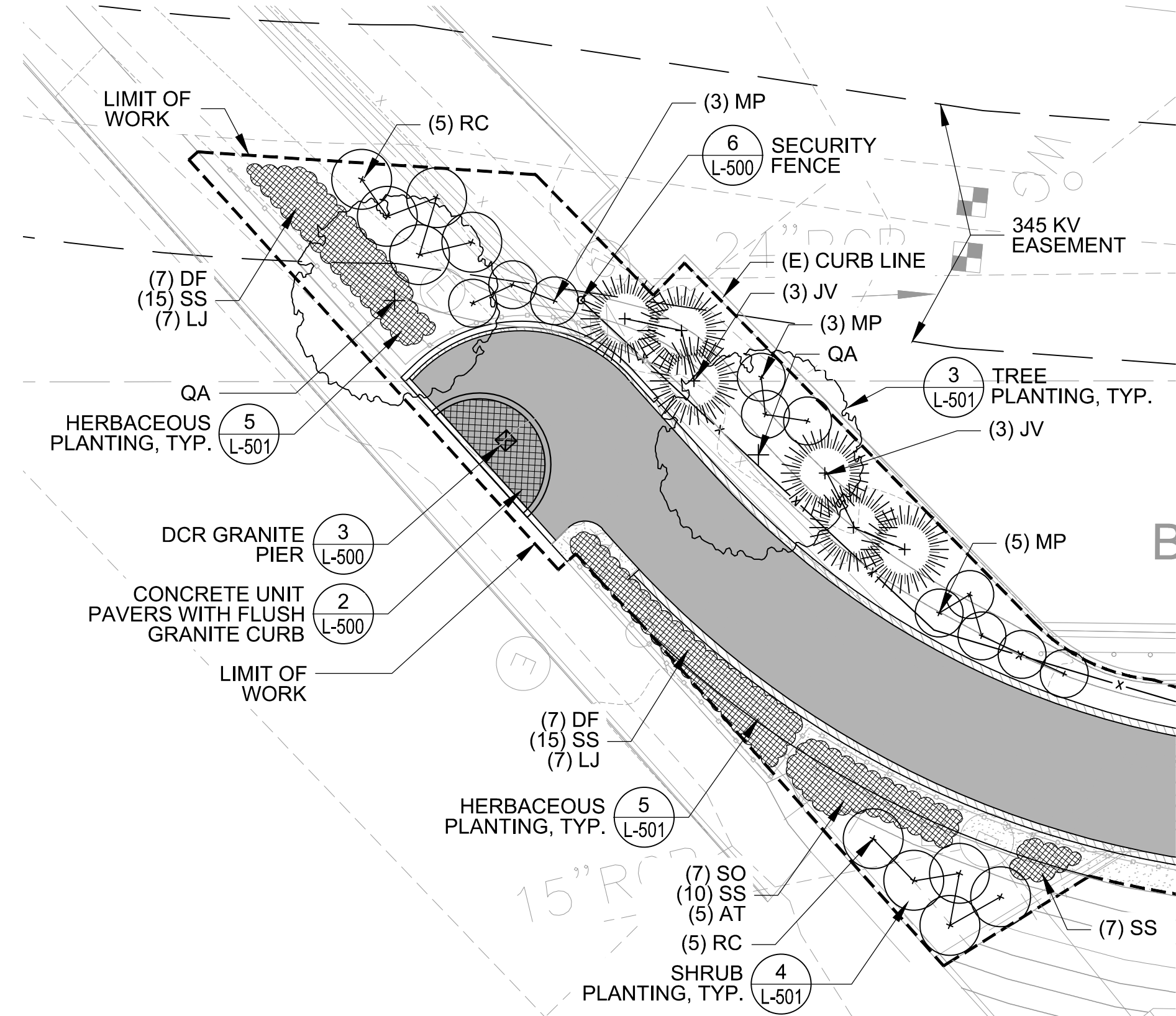
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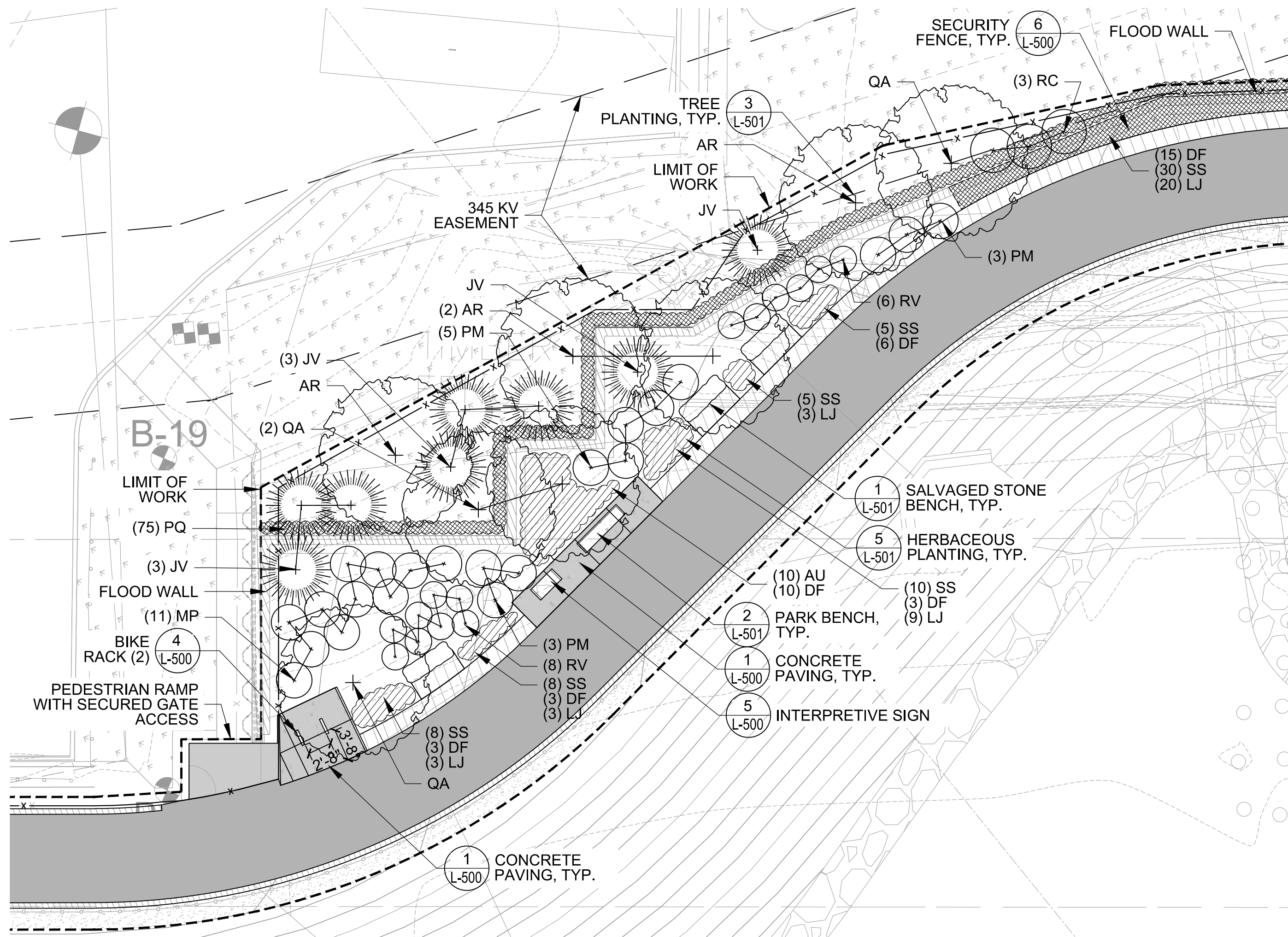
DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

DESIGNER: CAC	CIVIL DETAILS 1		DRAWING NO. C-500
CHECKED: SPD	CONT. P18-3229-D1A	SCALE AS NOTED	
DRAWN: RJA	DATE: 11/13/18		
CHECKED: SPD	ACC.		18 OF 21

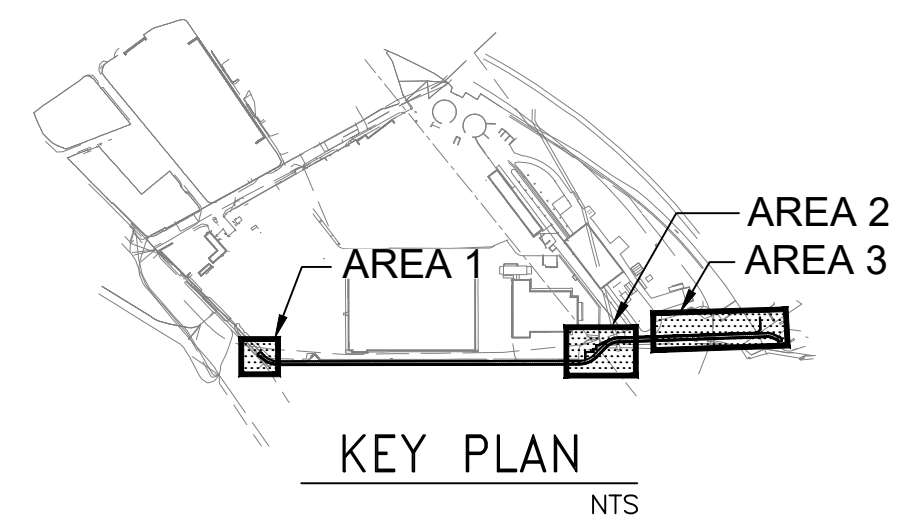
NOT FOR CONSTRUCTION



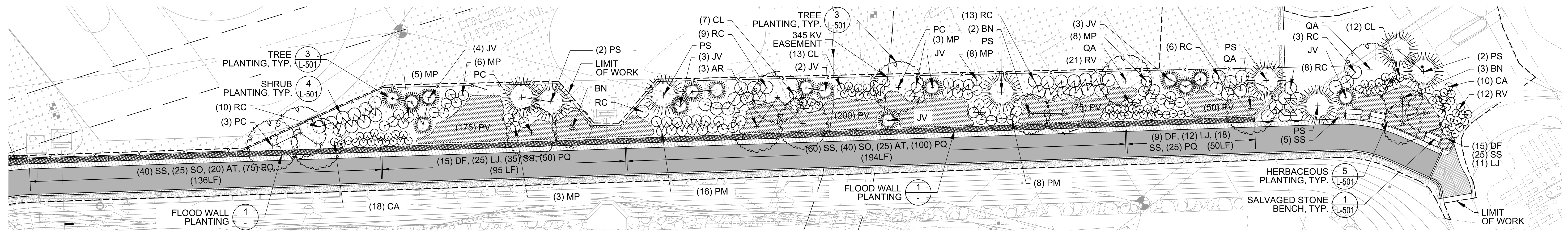
3 PLANTING ENLARGEMENT AREA 1
SCALE: 1" = 10'-0"
SCALE IN FEET



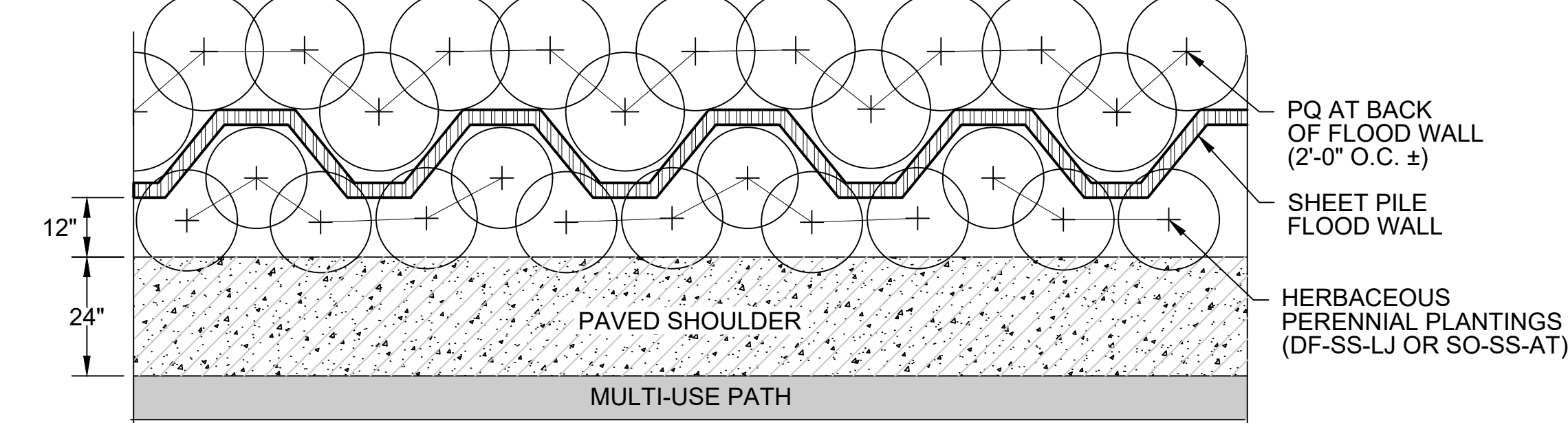
4 PLANTING ENLARGEMENT AREA 2
SCALE: 1" = 10'-0"
SCALE IN FEET



- PLANTING NOTES:**
- IF DISCREPANCIES EXIST BETWEEN THE NUMBER OF PLANTS DRAWN ON THE PLANTING PLAN AND THE NUMBER OF PLANTS IN THE PLANT SCHEDULE, THE PLANT SCHEDULE SHALL GOVERN.
 - ALL CONTAINER PLANTS (TREES AND SHRUBS) AND PLUGS TO BE LOCATED IN THE FIELD BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
 - SEED ALL DISTURBED AREAS ALONG PATH AT DIRECTION OF LANDSCAPE ARCHITECT.
 - NO HORTICULTURAL CULTIVARS ARE TO BE USED ON THIS PROJECT.



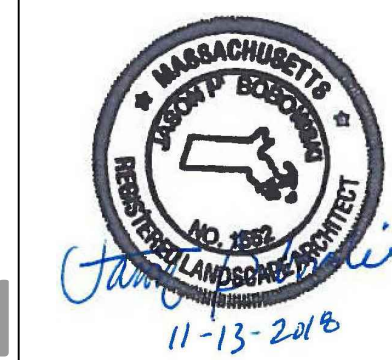
2 PLANTING ENLARGEMENT AREA 3
SCALE: 1" = 20'-0"
SCALE IN FEET



1 FLOOD WALL PLANTING - ENLARGEMENT
SCALE: NTS

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REV.	DATE	DESCRIPTION	BY
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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

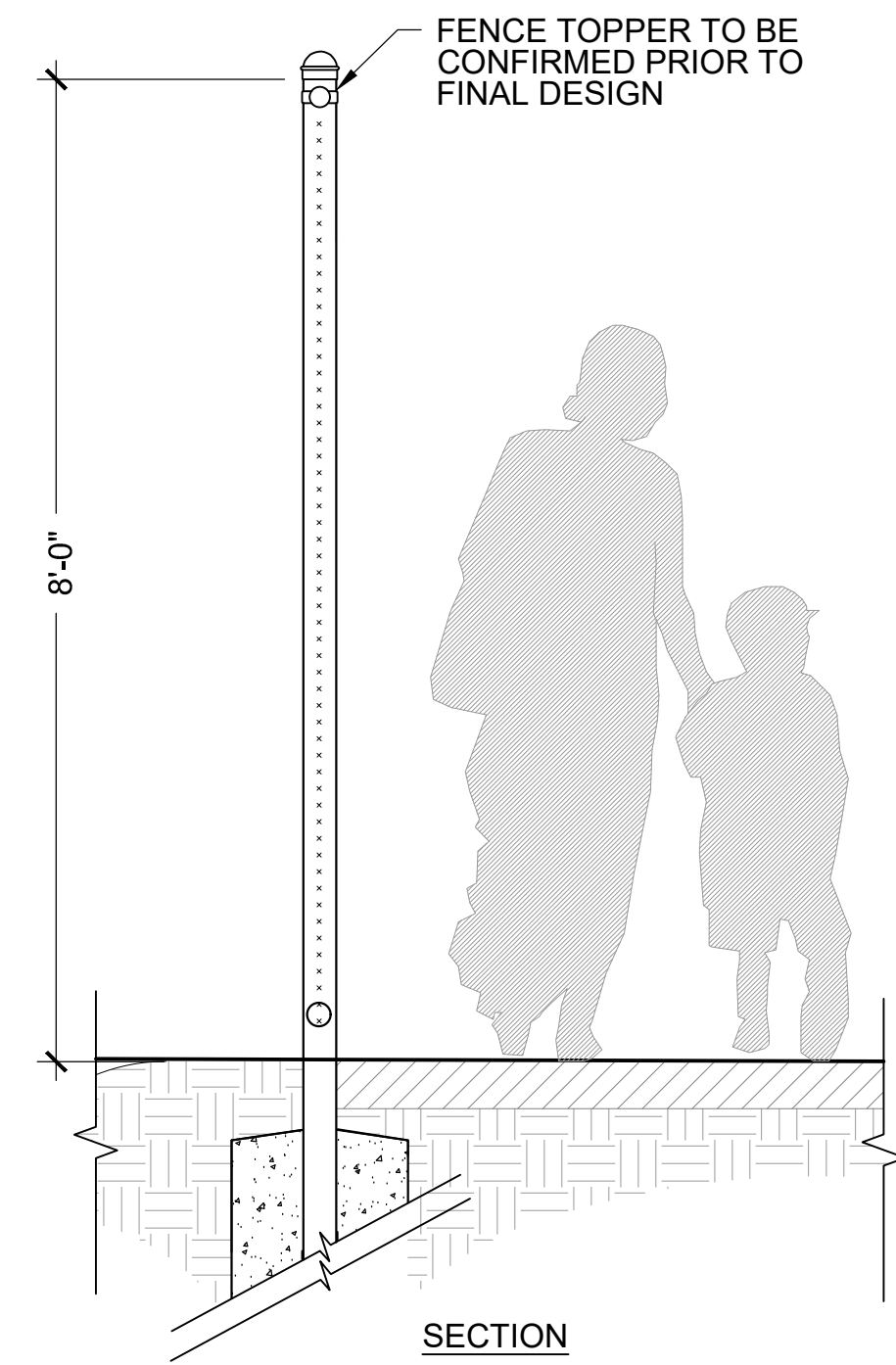
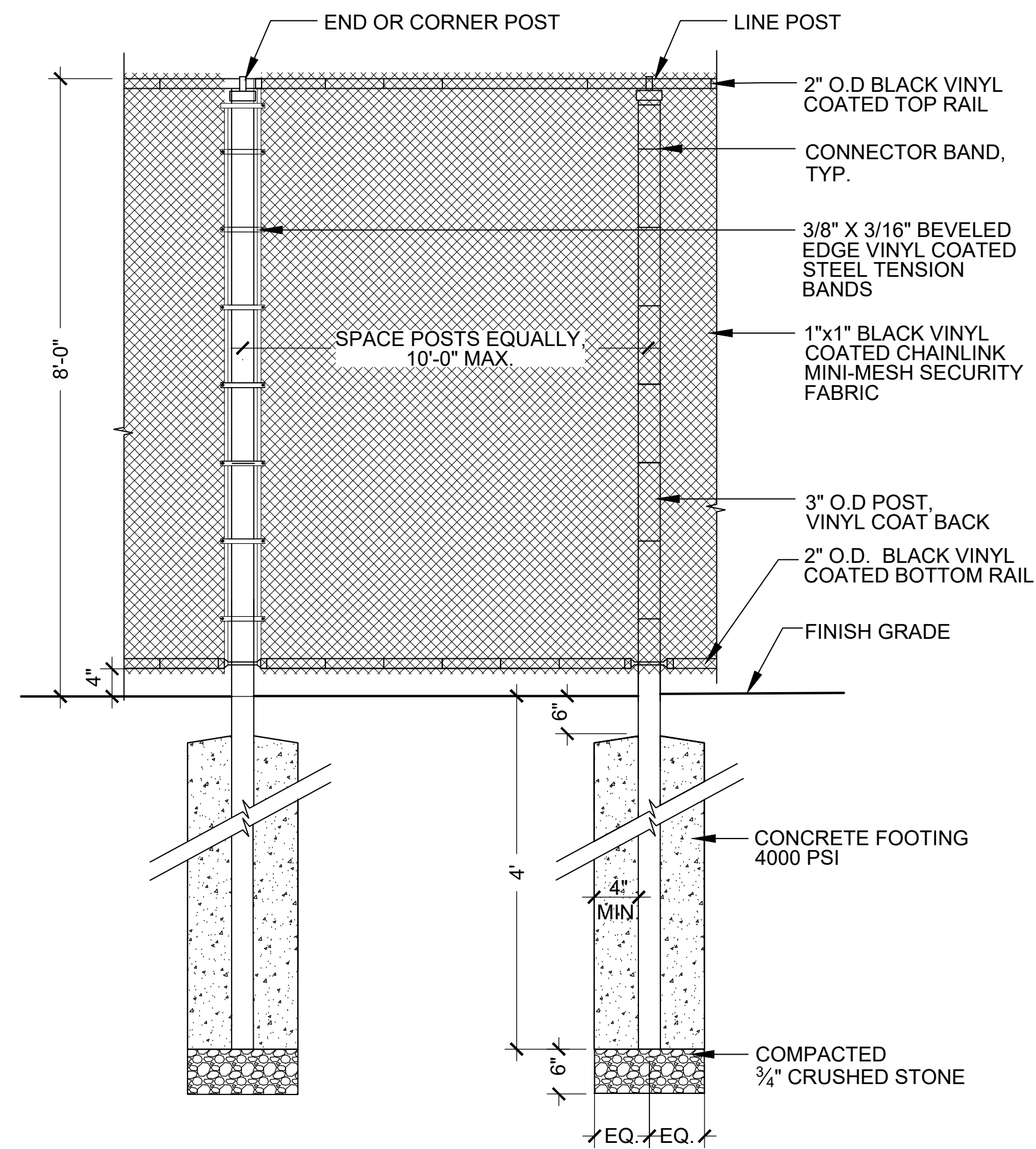
PLANTING ENLARGEMENT PLANS

DESIGNER: JB
CHECKED: DB
DRAWN: AK
CHECKED: JB

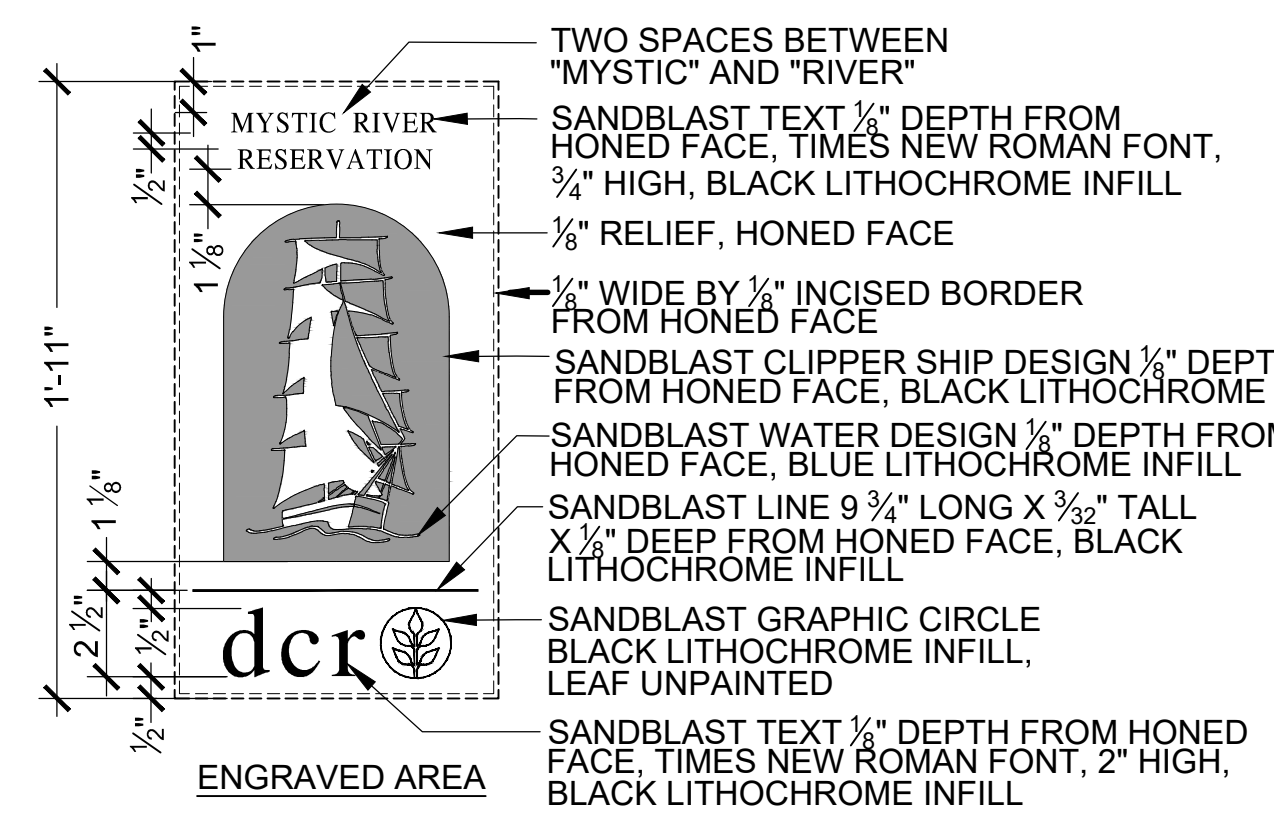
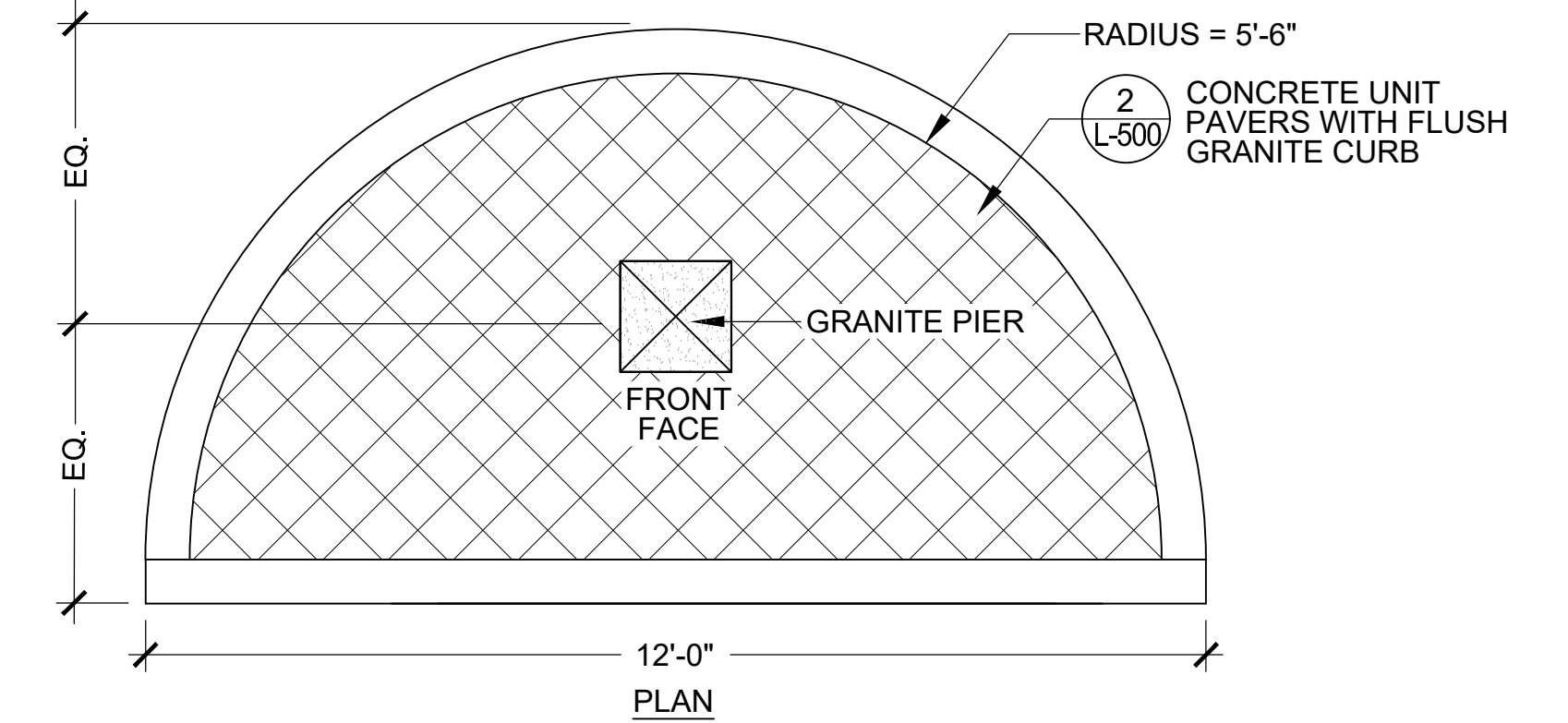
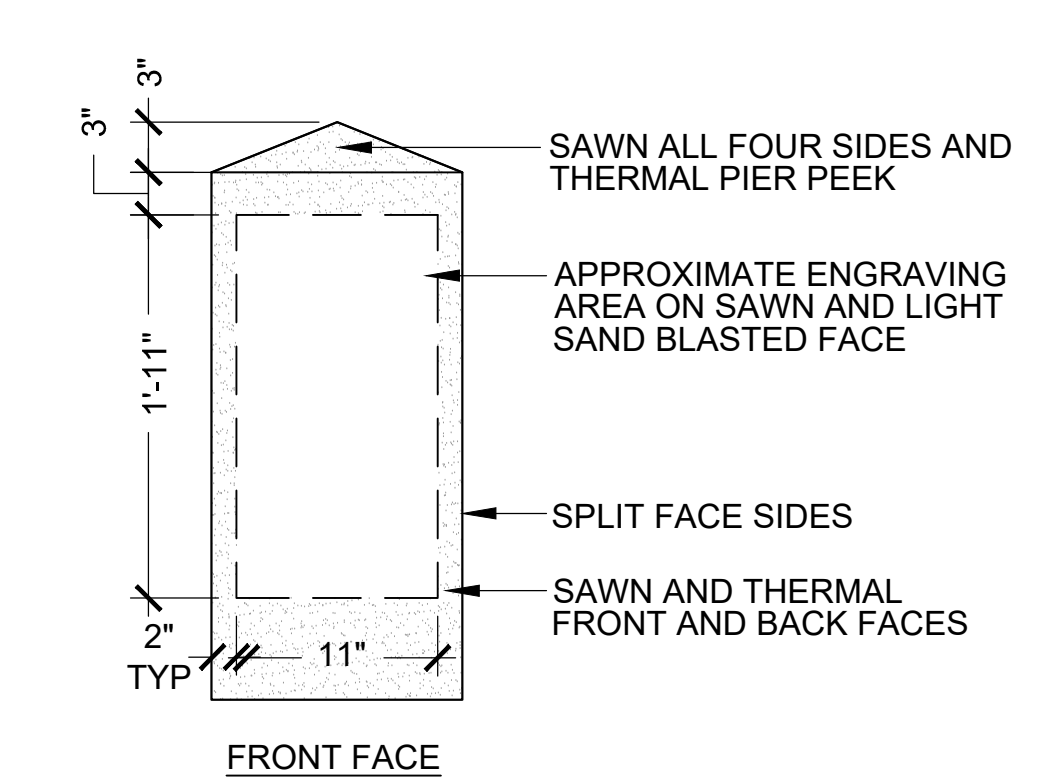
CONT. P18-3229-D1A
ACC.

SCALE AS NOTED
DATE: 11/13/18

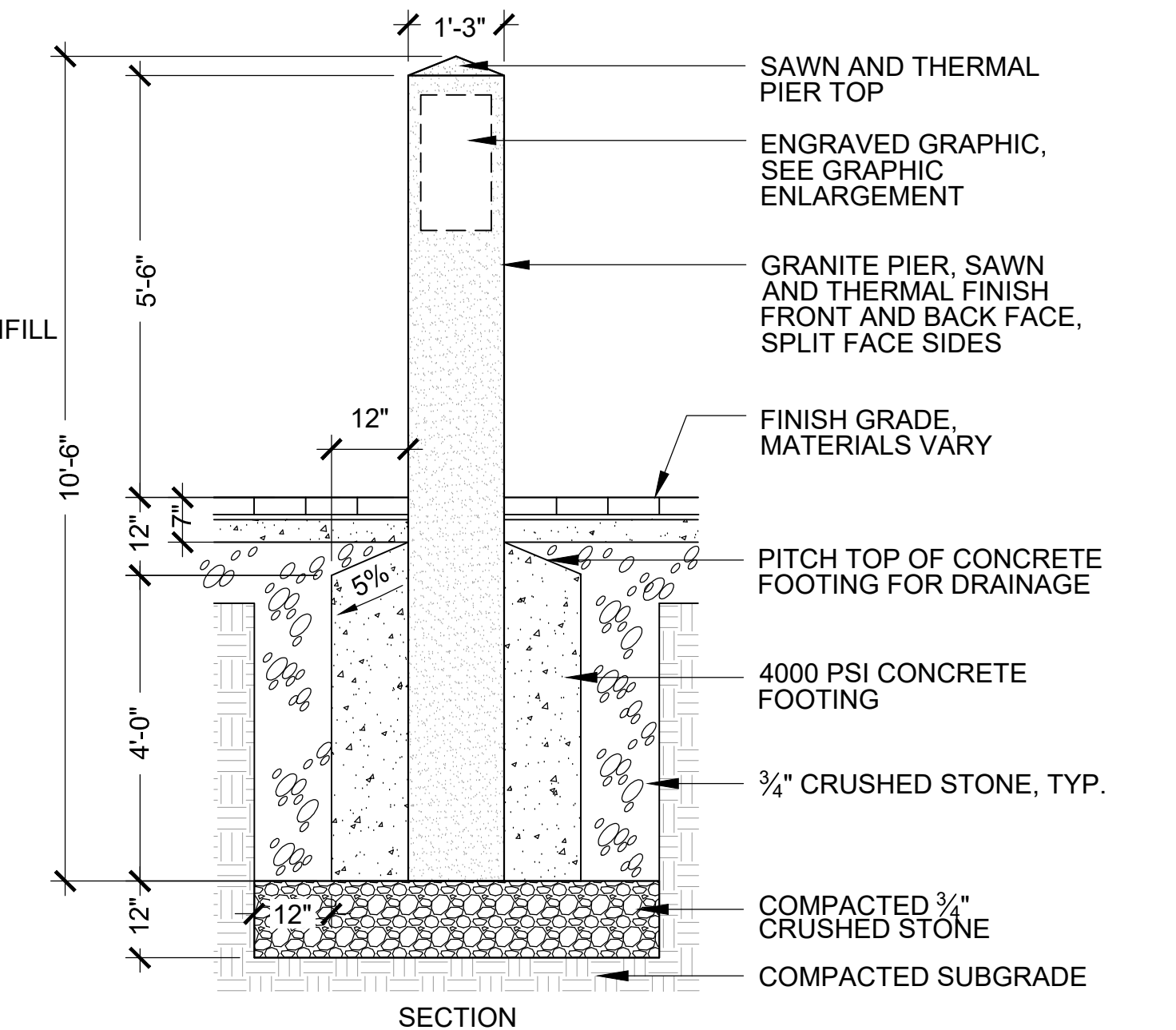
DRAWING NO. **L-200**
19 OF 21



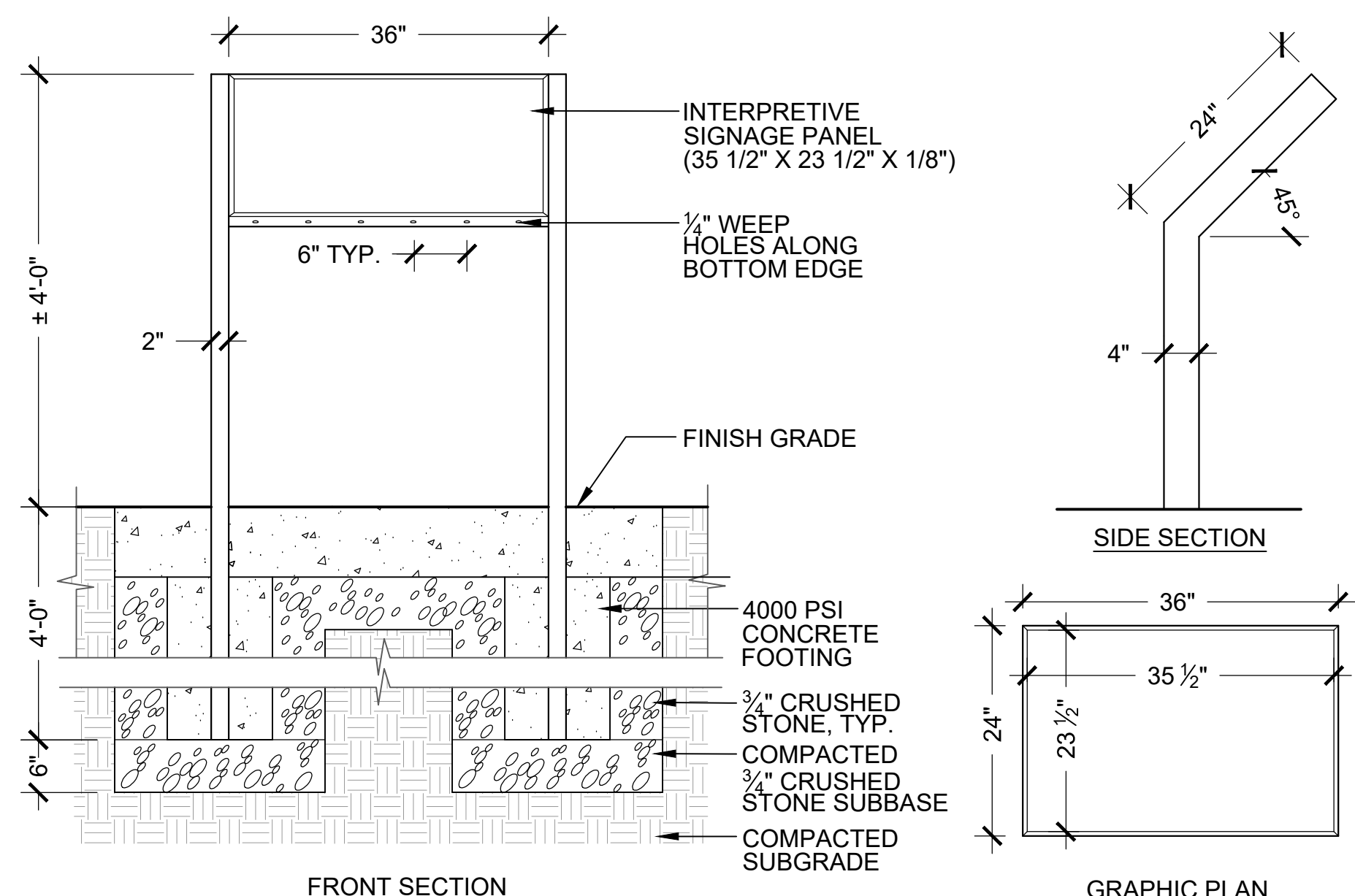
- NOTES:**
- SEE SHEET L-200 FOR SECURITY FENCE LOCATIONS.
 - SECURITY FENCE SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
 - FINISH: BLACK POWDER COAT.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL.



- ENGRAVING NOTES:**
- STIPPLED AREA INDICATES SAWN AND THERMAL FINISH, WHITE AREA INDICATES LIGHT SANDBLASTED SURFACE.
 - TONED AREA INDICATES DEEP RECESSED SANDBLASTED SURFACE WITH LITHOCHROME.
 - ELECTRONIC IMAGE TO BE PROVIDED BY THE OWNER'S REP.
 - CONTRACTOR TO SUBMIT GRANITE, ENGRAVING AND LITHOCHROME SAMPLES FOR APPROVAL BY THE OWNER'S REP.

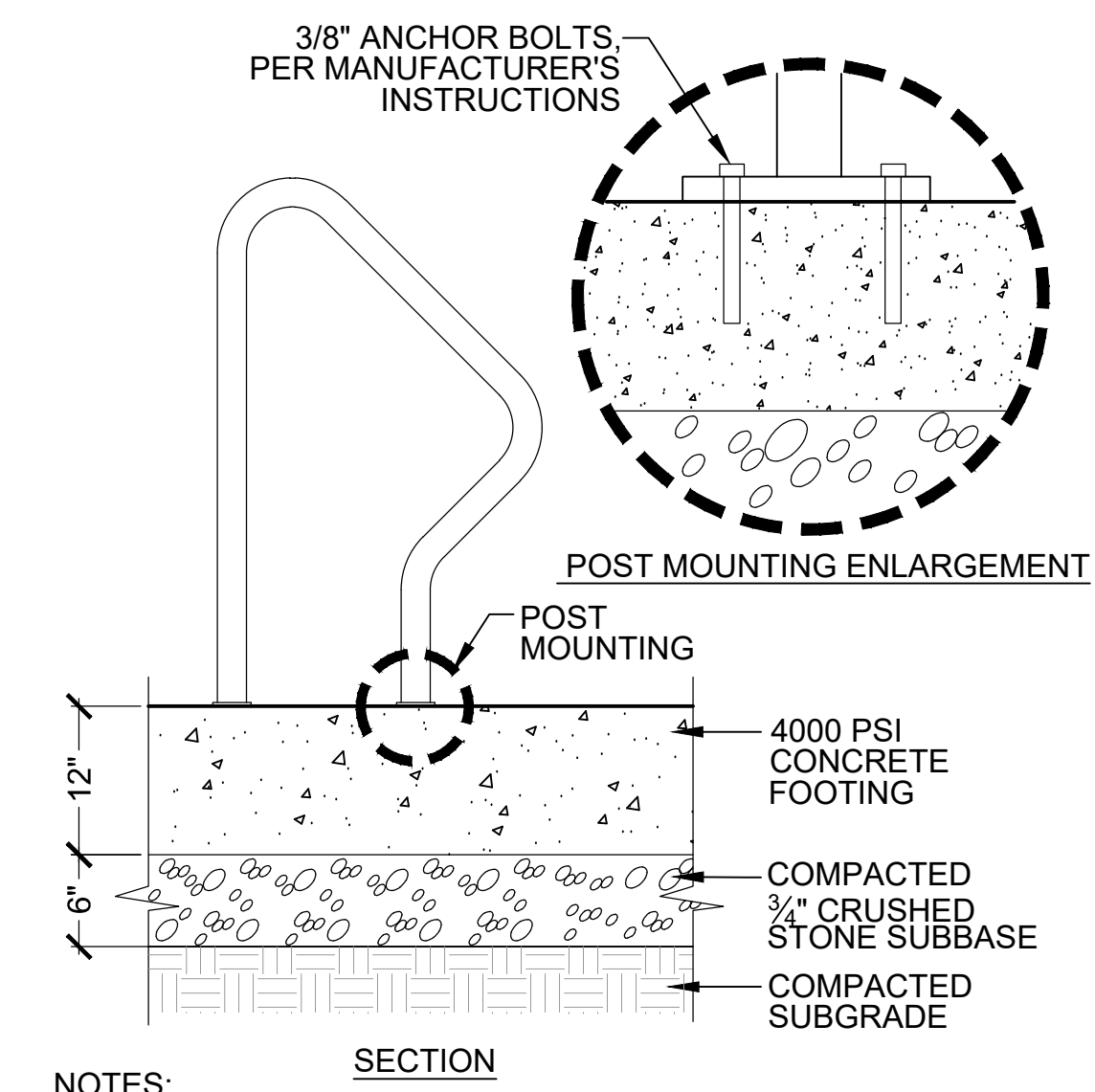


6 SECURITY FENCE
SCALE: AS SHOWN



- NOTES:**
- SEE SHEET L-200 FOR INTERPRETIVE SIGN LOCATION.
 - FINISH: BLACK POWDER COAT.
 - SIGNAGE GRAPHIC TO BE PROVIDED BY OWNER'S REPRESENTATIVE.
 - CONTRACTOR RESPONSIBLE FOR COST OF EMBEDDING GRAPHIC IMAGE IN SIGN MOUNT.
 - SIGN MOUNT AND GRAPHIC SHALL BE GRAFFITI RESISTANT.
 - CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY OWNER'S REPRESENTATIVE.

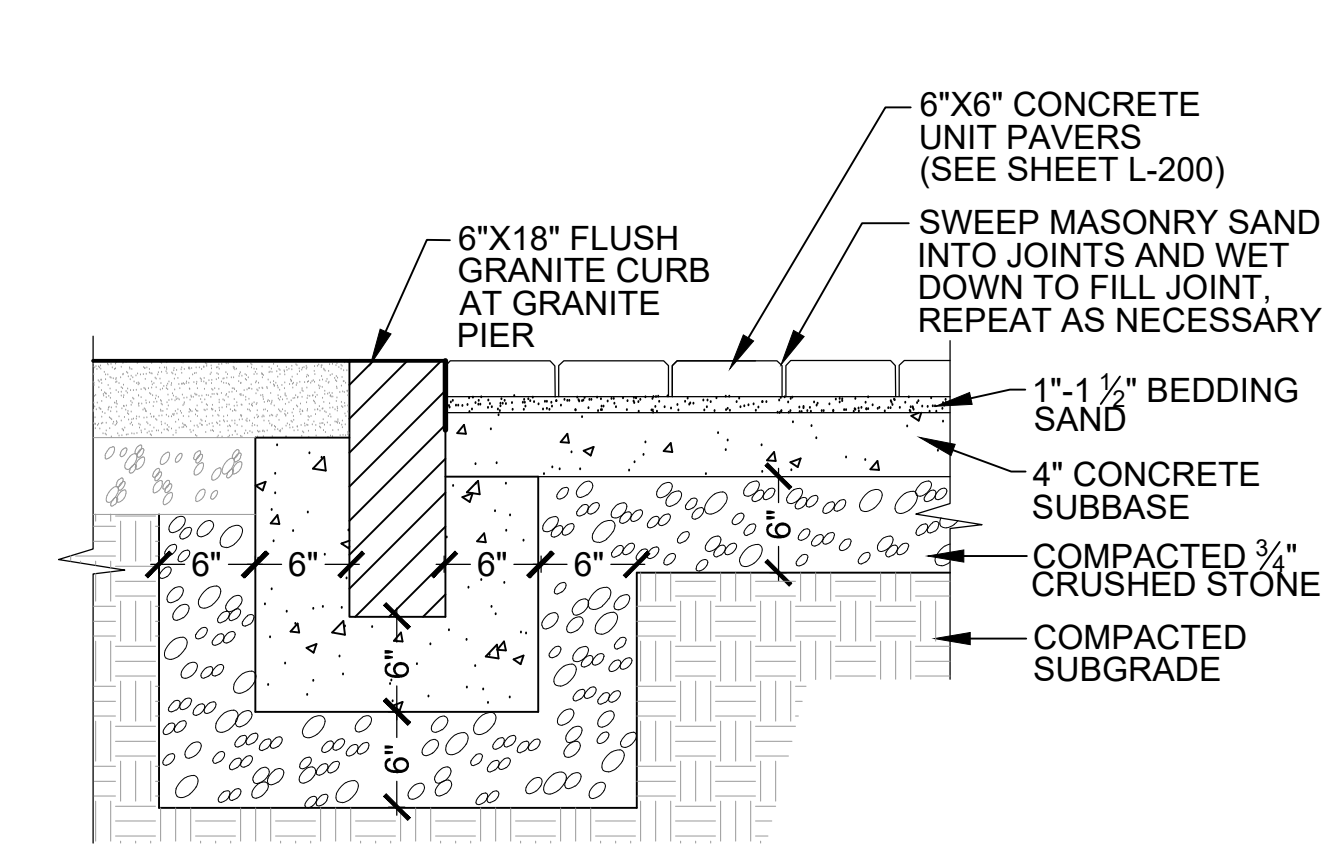
5 INTERPRETIVE SIGN
SCALE: AS SHOWN



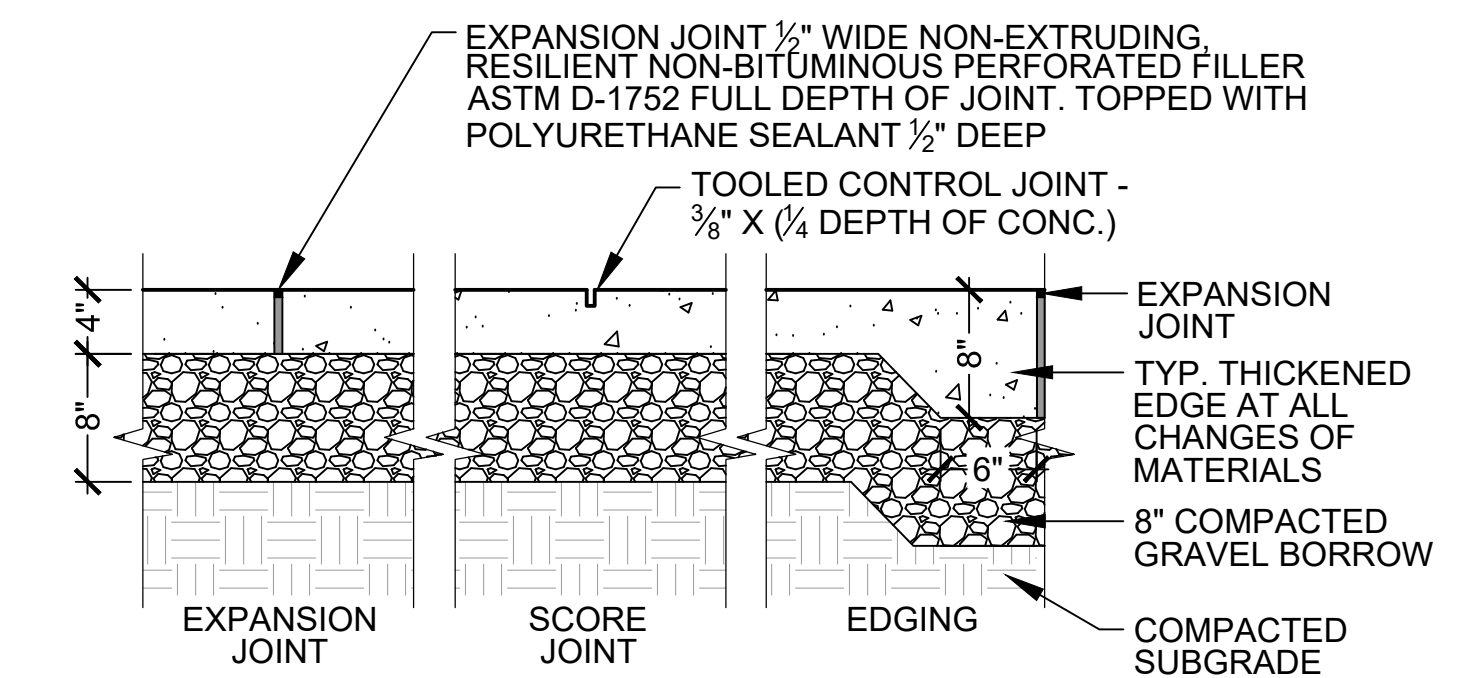
- NOTES:**
- SEE SHEET L-200 FOR BIKE RACK LOCATIONS AND SPACING.
 - BIKE RACK SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
 - FINISH: BLACK POWDER COAT.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY OWNER'S REPRESENTATIVE.

4 BIKE RACK
SCALE: AS SHOWN

3 DCR GRANITE PIER
SCALE: AS SHOWN



2 CONCRETE UNIT PAVERS
SCALE: AS SHOWN



- NOTES:**
- TYP. E.J. SHALL BE USED WHERE HORIZONTAL CONCRETE AND OTHER PAVING SURFACES MEET VERTICAL CONCRETE AND MASONRY SURFACES. NOT MORE THAN 20' IN ANY DIRECTION OR AS SHOWN ON PLANS.
 - CONCRETE 4000 PSI TYPE II IN 28 DAYS.
 - CONCRETE FINISHED W/STIFF BRISTLED NYLON BROOM, PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
 - SEE SHEET L-200 FOR CONCRETE PAVING LAYOUT.

1 CONCRETE PAVING
SCALE: AS SHOWN

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DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

LANDSCAPE SITE DETAILS

DESIGNER: JB
CHECKED: DB
DRAWN: AK
CHECKED: JB

CONT. P18-3229-D1A
ACC.

SCALE: AS NOTED
DATE: 11/13/18

DRAWING NO. L-500
20 OF 21

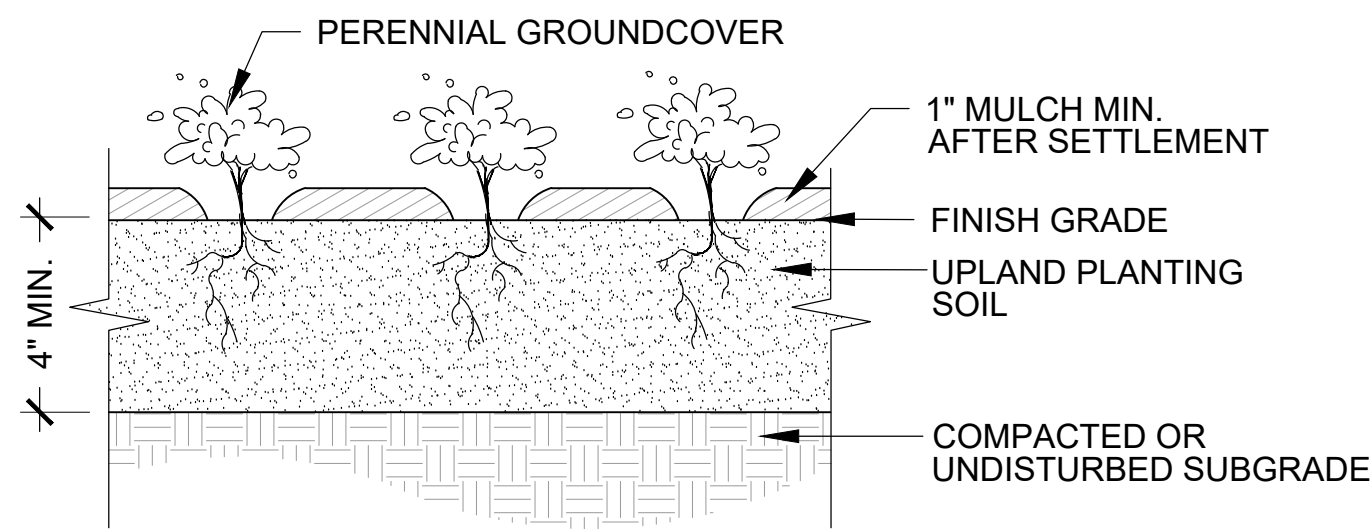
NOT FOR CONSTRUCTION

QTY.	SYM.	SCIENTIFIC NAME	COMMON NAME	PLANT SIZE (MIN.)	CONTAINER TYPE	WETLAND INDICATOR	SALINITY RANGE (PPT)	MATURE HEIGHT	AVERAGE SPACING	MINIMUM GROUPING
Deciduous Trees										
7	AR	Acer rubrum	Red Maple	2" CAL.	B&B	FAC		40-70'		
6	BN	Betula nigra 'Duraheat'	Duraheat River Birch	2" CAL.	B&B	FACW		30-40'		
5	PC	Prunus serotina	Black Cherry	2" CAL.	B&B	FACU		40-70'		
9	QA	Quercus alba	White Oak	2" CAL.	B&B	FAC		40-70'		
Evergreen Trees										
29	JV	Juniperus virginiana	Eastern Red Cedar	8' HT	B&B	FACU		30-60'		
8	PS	Pinus strobus	Eastern White Pine	12' HT	B&B	FACU		50-80'		
Shrubs										
28	CA	Ceanothus americanus	New Jersey Tea	2' HT	#1 CONT.	UPL	FW	3'	3' O.C.	7
32	CL	Clethra alnifolia	Sweet Pepperbush	3' HT	#1 CONT.	FAC+	IF	5'	3' O.C.	5
55	MP	Morella pensylvanica	Northern Bayberry	3' HT	#1 CONT.	FAC	0-30	7'	4' O.C.	7
35	PM	Prunus maritima	Beach Plum	3' HT	#1 CONT.	UPL	5-30	5'	4' O.C.	5
500	PV	Panicum virgatum var. spissum	Switch Grass	6" HT	2" PLUG	FAC	0-10	4'	2' O.C.	25
63	RC	Rhus copallinum	Winged Sumac	3' HT	#1 CONT.	UPL	FW	10'	5' O.C.	3
48	RV	Rosa virginiana	Virginia Rose	2' HT	#1 CONT.	FAC	FW	4'	3' O.C.	5
Groundcover, Perennials and Grasses										
50	AT	Asclepias tuberosa	Butterfly Weed	12" HT	QT.	UPL	FW	1'	2' O.C.	10
10	AU	Arctostaphylos uva-ursi	Bearberry	12" HT	#1 CONT.	UPL	FW	1'	2' O.C.	15
93	DF	Deschampsia flexuosa 'Pilgrim'	Coastal Hairgrass	12" HT	#1 CONT.	FACU	FW	2'	2' O.C.	10
100	LJ	Lathyrus japonicus	Beach Pea	6" HT	2" PLUG	FACU	FW	2'	18" O.C.	15
325	PQ	Parthenocissus quinquefolia	Virginia Creeper	12" HT	#1 CONT.	FACU	FW	2'	2' O.C.	10
72	SO	Solidago sempervirens	Seaside Goldenrod	6" HT	QT.	FACW	FW	3'	2' O.C.	25
296	SS	Schizachyrium scoparium	Little Bluestem	12" HT	QT.	FACU	FW	3'	18" O.C.	20
1,771	TOTAL									

1. PPT=PARTS PER THOUSAND; IF=TOLERATES INFREQUENT FLOODING BY SALT WATER; FW=FRESHWATER ONLY; TOLERATES SALT SPRAY

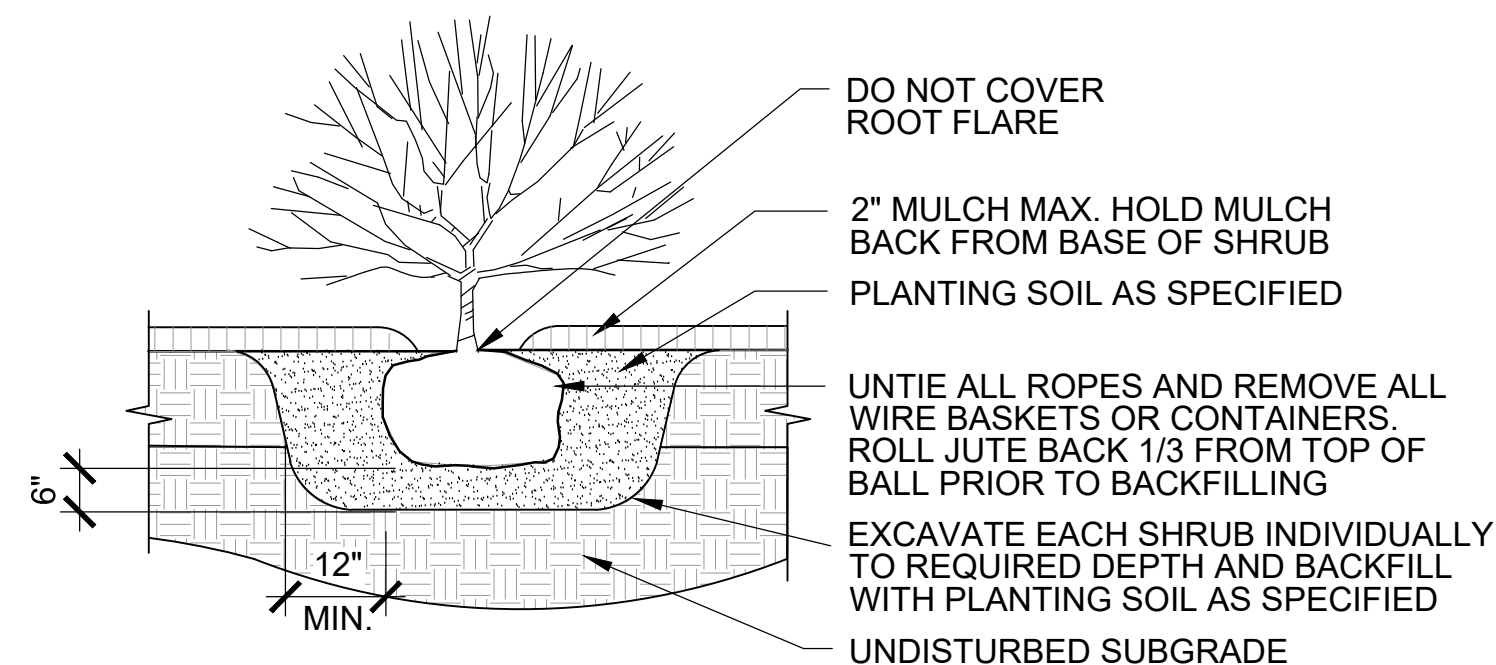
6 PLANT SCHEDULE

SCALE: AS SHOWN



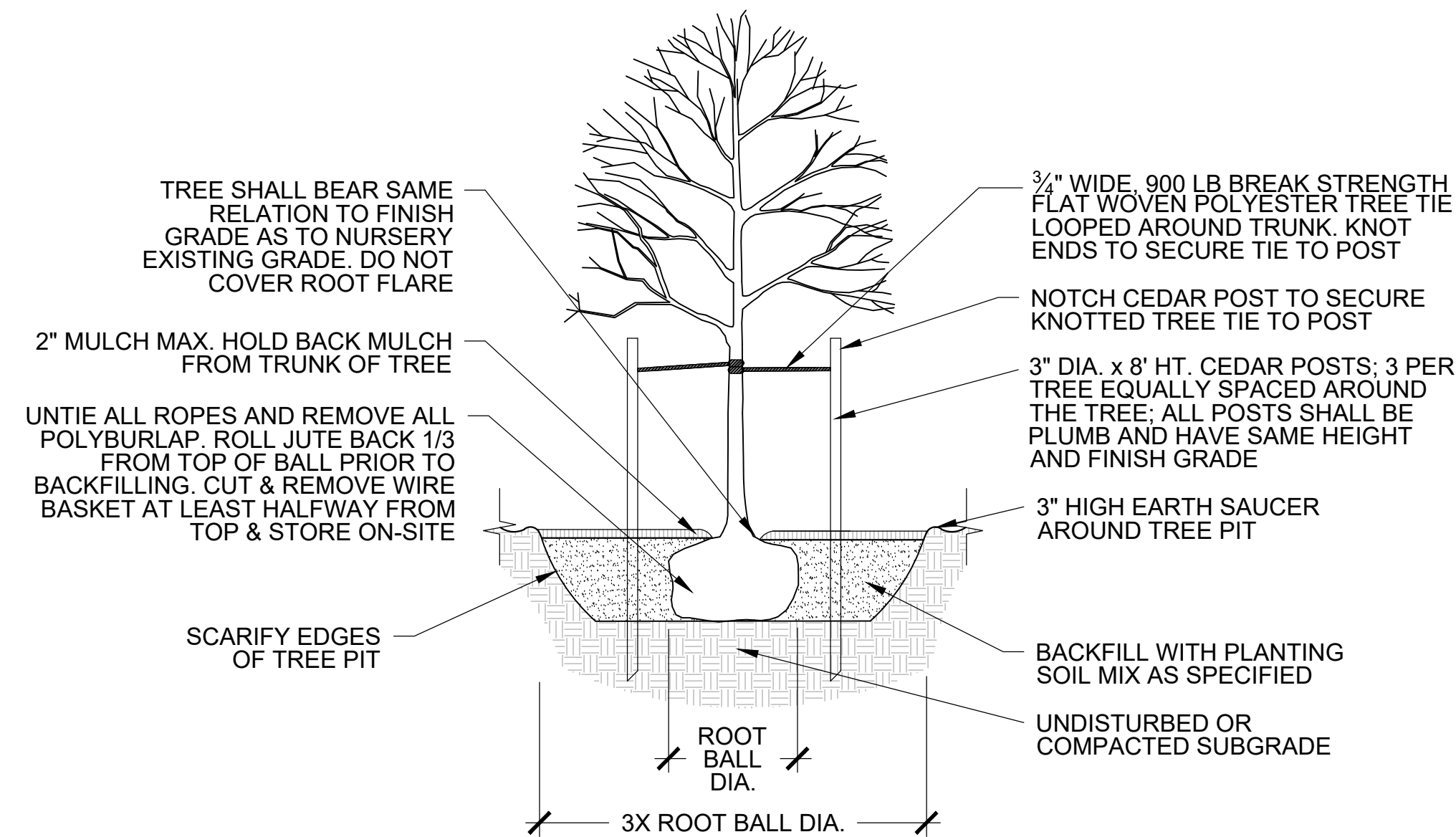
5 HERBACEOUS PLANTING

SCALE: AS SHOWN



4 SHRUB PLANTING

SCALE: AS SHOWN

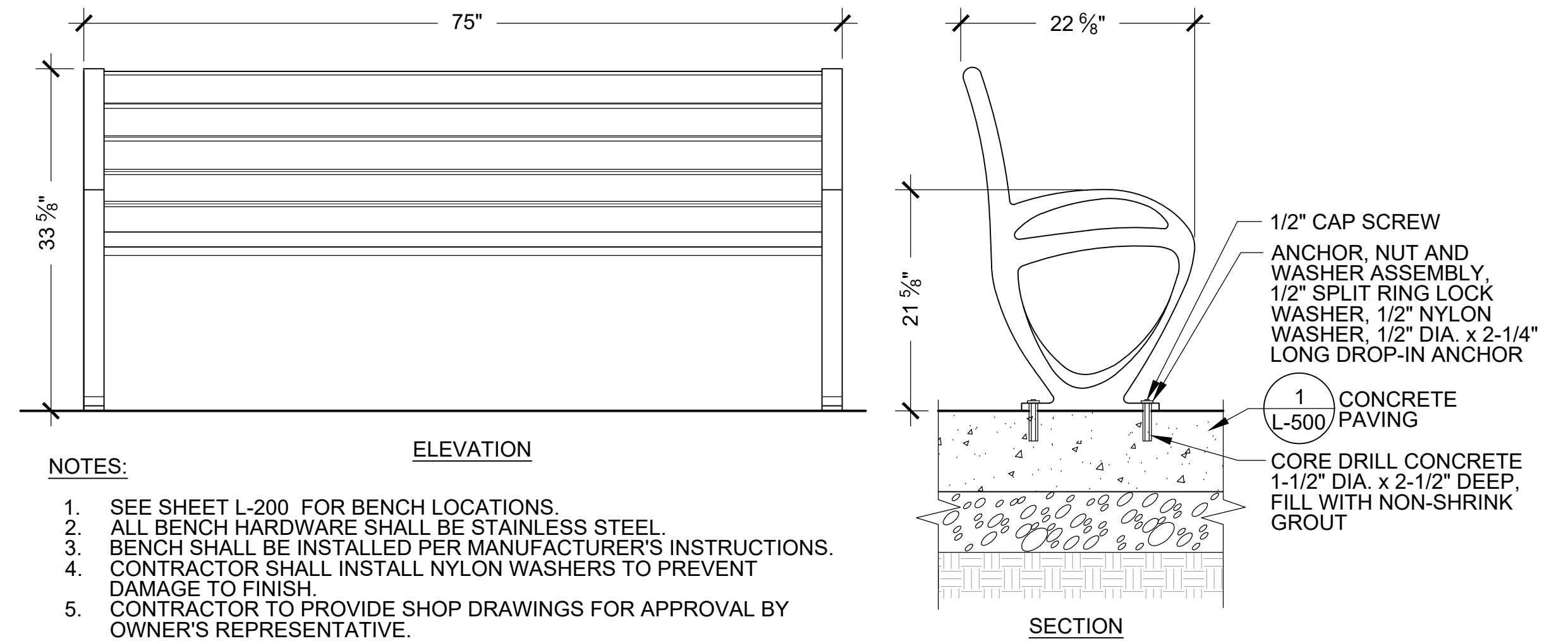


NOTES:

- CLEANLY PRUNE ALL DAMAGED BRANCHES.
- TREE SHALL HAVE STRAIGHT TRUNK AND BE PLUMB AFTER SETTLEMENT. CONTRACTOR SHALL ADJUST AS REQUIRED OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- ALL TREES SHALL BE FLOODED TWICE WITHIN 24 HOURS OF PLANTING.

3 TREE PLANTING

SCALE: AS SHOWN

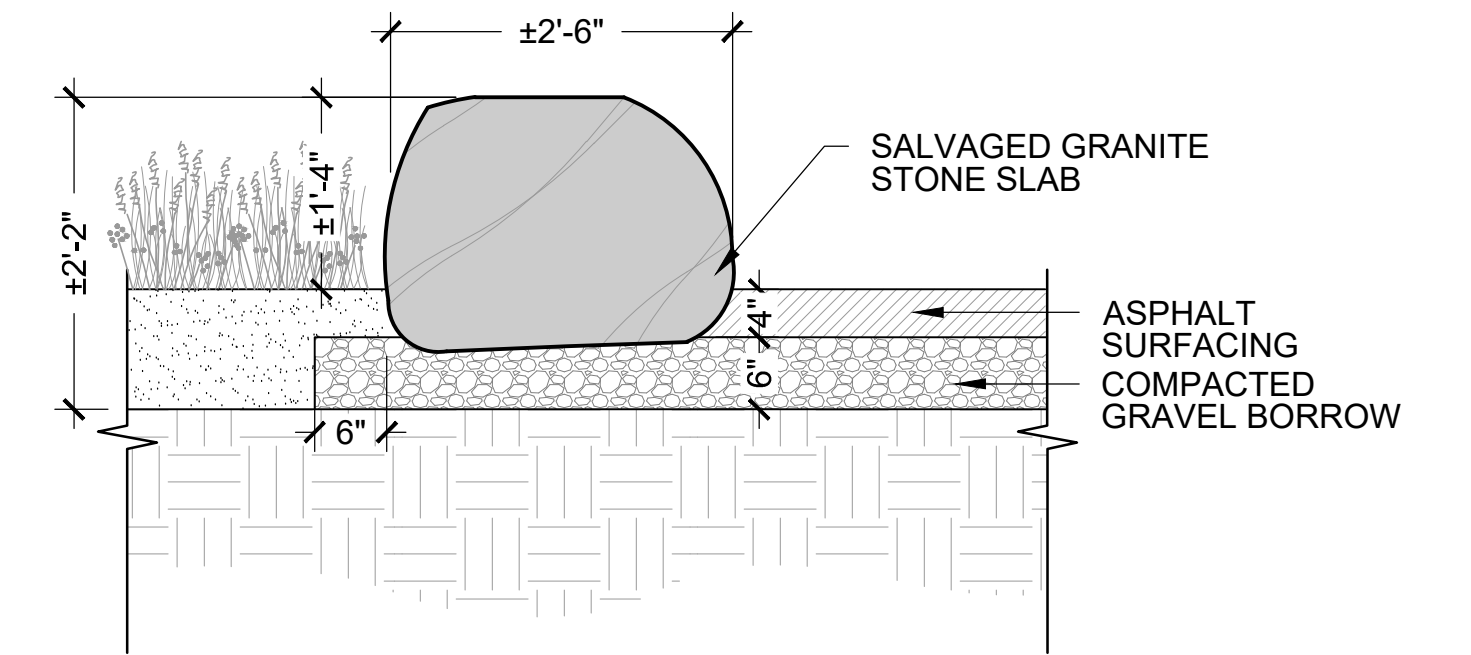


NOTES:

- SEE SHEET L-200 FOR BENCH LOCATIONS.
- ALL BENCH HARDWARE SHALL BE STAINLESS STEEL.
- BENCH SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
- CONTRACTOR SHALL INSTALL NYLON WASHERS TO PREVENT DAMAGE TO FINISH.
- CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY OWNER'S REPRESENTATIVE.

2 PARK BENCH

SCALE: AS SHOWN



NOTES:

- DIMENSIONS OF SALVAGED GRANITE STONE SLABS ARE APPROXIMATE.
- GRANITE STONE SLABS FOR USE AS SALVAGED STONE BENCHES SHALL BE TAGGED FROM ON-SITE STOCKPILES BY LANDSCAPE ARCHITECT

1 SALVAGED STONE BENCH

SCALE: AS SHOWN

NOT FOR CONSTRUCTION

IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	JB
REV.	DATE	DESCRIPTION	BY

SIMPSON GUMPERTZ & HEGER
Engineering of Structures and Building Enclosures
Simpson Gumpertz & Heger Inc.
41 Sevon Street, Building 1, Suite 300
Waltham, Massachusetts 02453
781.907.9000
781.907.9009
www.sgh.com

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION & RECREATION
BUREAU OF PLANNING, DESIGN & RESOURCE PROTECTION

DRAW SEVEN PARK PATH EXTENSION
BOSTON, MA

DETAILS

DESIGNER: JB
CHECKED: DB
DRAWN: AK
CHECKED: JB

CONT. P18-3229-D1A
ACC.

SCALE AS NOTED
DATE: 11/13/18

DRAWING NO. **L-501**
21 OF 21

Attachment G

Stormwater Management Checklist and Narrative (prepared by SGH)



15 November 2018

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

Project 171860 – Draw Seven Park Path Extension, Boston, MA

To whom it may concern:

Please see enclosed Stormwater Management Memorandum, prepared by Simpson Gumpertz & Heger Inc. This memorandum is provided as an attachment to the Draw Seven Pathway Extension Notice of Intent Application.

Sincerely yours,



Sean P. Donlon, P.E.
Senior Project Manager
MA License No. 49201

I:\BOS\Projects\2017\171860.00-DRAWWP\005SPDonlon-L-171860 .ras.docx

Cory A. Cormier, P.E.
Senior Staff I – Structures
MA License No. 53751



Attachment G – Stormwater Management Memo

Date: 15 November 2018

To: Boston Conservation Commission

From: Sean P. Donlon, P.E., and Cory A. Cormier, P.E.
Simpson Gumpertz & Heger Inc. (SGH)

Project: 171860 – Draw Seven Park Path Extension, Boston, MA

Subject: Compliance with MA DEP Stormwater Management Standards

1. BACKGROUND

The proposed Draw Seven Park Path Extension project consists of a 1,900 ft +/- multi-use pathway that connects the existing Draw Seven Park to Alford Street. The proposed pathway improvements will consist of a porous pavement path with striped shoulders, pedestrian barriers (e.g. guiderail), associated signage, landscaping, and fencing. Please see the NOI plans titled “Draw Seven Park Path Extension – Draw Seven Park to Alford Street”, dated 13 November 2018, for additional design details.

The route for the proposed pathway was accommodated for in the Shoreline Stabilization Project at the Charlestown Facility with a proposed dedicated easement along the Mystic River. The pathway will be constructed within the easement immediately following the completion of the shoreline stabilization work. Therefore, we refer to the newly constructed shoreline improvements herein as the “existing conditions” for the pathway. Please refer to the drawings titled “Charlestown Bus Facility – Shoreline Stabilization and Yard Improvements”, dated 28 June 2017, prepared by SGH, for additional details on the shoreline stabilization improvements.

The proposed pathway has two typical cross section conditions corresponding to the shoreline improvements (existing conditions). The first typical cross section, identified as the “Bus Garage Cross Section”, will be constructed atop the shoreline embankment and adjacent to the Bus Garage facility from approximately station 0+00 to 11+40 +/- . The cross section consists of 2 in. of porous pavement (see attachment 1) and 12 in. of compacted crushed stone. A 6 in. perforated underdrain pipe surrounded by crushed stone and geotextile will also be constructed along this section of path. See typical path cross section on sheet C-400 of the NOI plans for more information.

The second typical cross section, identified as the “Engineering Rail Yard Cross Section,” will be constructed atop existing grade established with the shoreline improvements from approximately station 11+40 to 18+47 +/- . The path cross section consists of 2 in. of porous pavement and 12 in. of compacted crushed stone above the existing soil. See typical path cross section on sheet C-401 of the NOI plans for more information.

2. MASSDEP STORMWATER MANAGEMENT STANDARDS

The drainage improvements associated with the proposed pathway consist of installing porous pavement that will promote infiltration, and perforated underdrains to drain stormwater into planting soils and into the shoreline embankment.

The following sections identify the ten MA DEP Stormwater Management standards and summarize the project's compliance with each standard as applicable. Since the proposed project is a multi-use path, the Stormwater Management Standards shall apply only to the maximum extent practicable. It is our understanding that a comprehensive stormwater management report is not required due to the nature of the improvements and the limited modifications to shoreline stabilization design, which was previously approved by the appropriate Conservation Commissions.

2.1 Standard #1 – No new stormwater conveyances may discharge untreated stormwater directly to or cause erosion in wetlands.

No new untreated outfalls are proposed as part of this project.

2.2 Standard #2 – Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

The proposed pathway will not increase the peak runoff rates or volumes and meets Standard #2. The project proposes porous pavement installed atop 12" (min) of compacted crushed stone along the entirety of the pathway. To confirm that peak runoff rates or volumes will not increase, we compared the available storage/retention of the crushed stone reservoir course beneath the porous pavement for the two typical cross section conditions (see background Section 1) to that of the existing conditions. We utilized the SCS Runoff Curve Number (CN) methodology to calculate the potential maximum storage/retention. We summarize our analysis below:

2.2.1 Bus Garage Cross Section (STA 0+00 to STA 11+40 +/-)

We assumed a curve number (CN) of 76 for the existing shoreline embankment within the limits of proposed path based on a classification of a "gravel" surface and Hydrologic Soil Group A (TR-55 Table 2-2a). Based on Equation 2-4 in the TR-55 methodology, this surface cover will yield a maximum retention of $S=3.15$ in. The proposed crushed stone base provides a retention depth of 4.80 in. (12 in. of stone w/ 40% porosity), and an effective CN of 68 for the proposed path, resulting in a reduction of the effective CN for the proposed pathway condition.

2.2.2 Engineering Rail Yard Cross Section (STA 11+40 to STA 18+47 +/-)

We assumed a curve number (CN) of 69 for the existing surface within the limits of the proposed path in the Engineering Rail Yard based on a classification of "open space, fair condition" and Hydrologic Soil Group B (TR-55 Table 2-2a). The surface conditions are consistent with the conditions previously provided for the shoreline stabilization design and permit. Based on Equation 2-4 in the TR-55 methodology, this surface cover will yield a maximum retention of $S=4.49$ in. The proposed crushed stone base provides a retention depth of 4.80 in. (12 in. of stone w/ 40% porosity), and an effective CN of 68 for the proposed path, resulting in a reduction of the effective CN for the proposed pathway condition.

2.3 Standard #3 – Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures.

The proposed pathway improvements include pervious pavement and add a de minimus amount of impervious area on site, and maintain the routing of runoff flows proposed in the shoreline improvement project. Total recharge volumes will increase due to the installation of the porous pavement surfacing in-lieu of compacted gravel along the embankment. The crushed stone base for the porous pavement provides a storage depth of 4.80 in. (12 in. of stone @ 40% porosity), greater than the target recharge depths of 0.60 in. and 0.35 in. for assumed Hydrologic Soil Groups A and B, respectively. Therefore, the proposed pathway work meets Standard 3.

2.4 Standard #4 – Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).

The proposed pathway improvements include pervious pavement and add a de minimus amount of impervious area, and do not impact the proposed stormwater treatment measures installed for the shoreline stabilization project. Pollutant loading is minimal for the proposed mixed-use pathway and stormwater from the pathway is treated via infiltration to the maximum extent practicable.

2.5 Standard #5 – For land uses with high potential pollutant loads, source control and pollution prevention shall be implemented to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.

This standard is not applicable to this project.

2.6 Standard #6 – Stormwater discharges within Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any critical area require the use of specific source control and pollution prevention.

This standard is not applicable to this project.

2.7 Standard #7 – A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standards 2 and 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6.

The proposed multi-use pathway is subject to the Stormwater Management Standards only to the maximum extent practicable.

2.8 Standard #8 – A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities shall be developed and implemented.

Erosion and Sedimentation control will be provided in accordance with the “Charlestown Bus Facility – Shoreline Stabilization and Yard Improvements” plans (conformed set), dated 28 June 2017, prepared by SGH for the shoreline stabilization work.

2.9 Standard #9 – A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Operation and maintenance of the proposed stormwater management system will be the responsibility of the Applicant. A long-term O&M plan will be developed and submitted prior to construction.

2.10 Standard #10 – All illicit discharges to the stormwater management system are prohibited

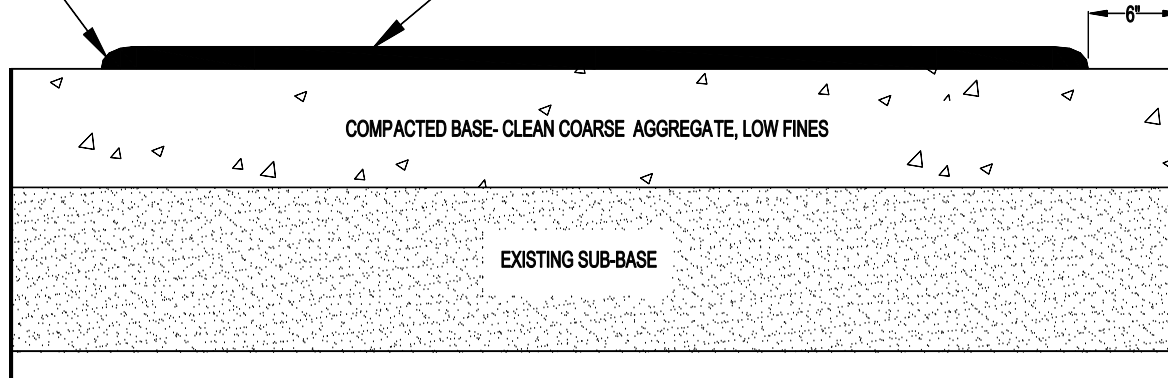
To the best of the applicant's and engineer's knowledge, no illicit discharges exist on the project site and no illicit discharges will be introduced as part of the proposed pathway improvements.

SIDEWALK/TRAILWAY

SPECIFY EDGE TO BE SQUARE,
ROUNDED, OR 45 CHAMFER

POROUS PAVE XL SERIES

1.5" OR 2" THICK



2" MINIMUM - FOOT TRAFFIC AREAS
4" MINIMUM - LIGHT VEHICLE AREAS
6" MINIMUM - HEAVY VEHICLE AREAS
ADDITIONAL DEPTH AS REQUIRED
FOR HIGH DRAINAGE AREAS



POROUS PAVE
4385 EAST 110TH STREET
GRANT, MI 49327
EMAIL: SALES@POROUSPAVEINC.COM
TOLL FREE: 888 448-3873
FAX: 231 834-5537

DRAWN BY: TW

DATE: 7/11

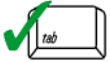
REVISED:



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 8²
- 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.



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.

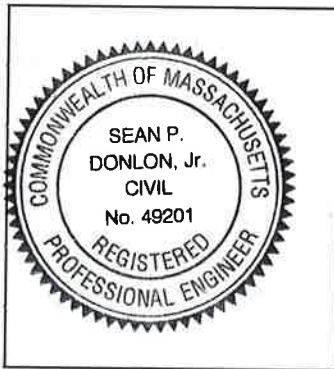
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



EOR Note: Please see Attachment G of the NOI Application, titled "Stormwater Management Memo", dated 15 November 2018, for explanation's of the Project's compliance to the MA DEP Stormwater Management Standards.

 11-15-18
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): Porous pavement

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 Field¹
- 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)

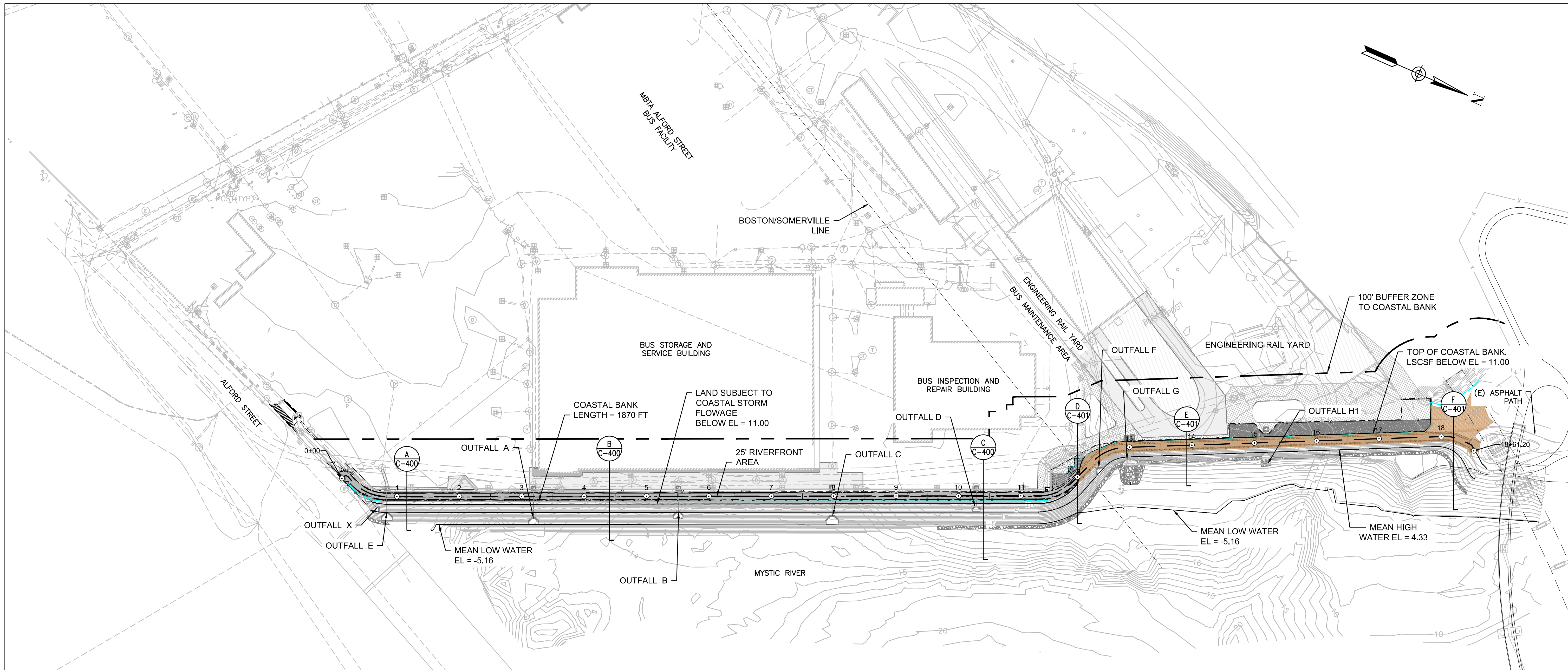
- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and 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. (Will be added to scope in active shoreline stabilization SWPPP)

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.



WETLANDS RESOURCE AREAS WITH IMPACTS
1" = 80'

BOSTON RESOURCE AREA IMPACT QUANTITIES:

LAND SUBJECT TO COASTAL STORM FLOWAGE (PERMANENT) = 180 SF
 100 FT BUFFER ZONE TO COASTAL BANK (TEMPORARY AND PERMANENT) = 17,320 SF

SOMERVILLE RESOURCE AREA IMPACT QUANTITIES:

LAND SUBJECT TO COASTAL STORM FLOWAGE (PERMANENT) = 15,290 SF
 100 FT BUFFER ZONE TO COASTAL BANK (TEMPORARY AND PERMANENT) = 9,960 SF

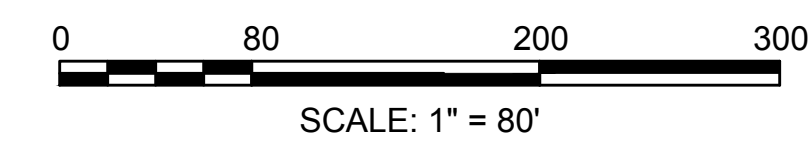
NOTES:
 1. SEE C-001 FOR APPLICABLE NOTES.

2. EXISTING CONDITIONS INFORMATION IS BASED ON A SURVEY FILE PROVIDED ELECTRONICALLY BY C&C CONSULTING ENGINEERS, LLC, DATED FEBRUARY 22, 2017 AND BY SURVEYED INFORMATION PROVIDED BY APPLIEDORE MARINE ENGINEERING, LLC, DATED APRIL 2015.

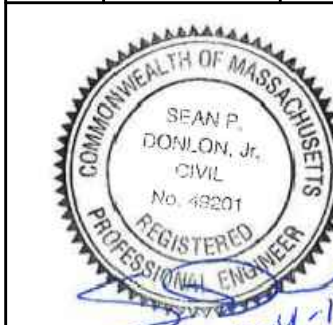
3. REFER TO DRAWINGS TITLED "CHARLESTOWN BUS FACILITY - SHORELINE STABILIZATION AND YARD IMPROVEMENTS", PREPARED BY SGH, DATED 28 JUNE 2017.

LEGEND:

LAND SUBJECT TO COASTAL STORM FLOWAGE - PERMANENT IMPACTS



REV.	DATE	DESCRIPTION	BY
IFR02	12/04/18	RE-ISSUED FOR NOTICE OF INTENT	SPD
IFR01	11/13/18	ISSUED FOR NOTICE OF INTENT	SPD



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COMMONWEALTH OF MASSACHUSETTS
 DEPARTMENT OF CONSERVATION & RECREATION
 BUREAU OF PLANNING, DESIGN & RESOURCE PROTECTION

DRAW SEVEN PARK PATH EXTENSION
 BOSTON, MA

RESOURCE AREA PLAN

DESIGNER: CAC
 CHECKED: SPD
 DRAWN: RJA
 CHECKED: SPD

CONT. P18-3229-D1A
 ACC.

SCALE AS NOTED
 DATE: 11/13/18

DRAWING NO.
C-051
 5 OF 21

NOT FOR CONSTRUCTION