dcr
Massachusetts

Notice of Intent

Castle Island gate replacement
Day Boulevard, Boston, MA

Narrative and Plans

August 2020

Table of Contents

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 #:
eDEP Transaction #:1197616
City/Town:BOSTON

A.General Information

1. Project Location:

a. Street Address	CASTLE ISLAND, DAY BOULEVARD		
b. City/Town	BOSTON	c. Zip Code	02127
d. Latitude	42.33794N	e. Longitude	71.02199W
f. Map/Plat #	0	g.Parcel/Lot #	0302615000

2. Applicant:

☐ Individual ☑ Organization

a. First Name	JASON	b.Last Name	SANTOS		
c. Organization	MA DEPT. OF CONSERVATION & RECREATIONS				
d. Mailing Address	251 CAUSEWAY ST.				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02114
h. Phone Number	857-383-6522	i. Fax		j. Email	jason.santos@mass.gov

3.Property Owner:

☐ more than one owner

a. First Name	PRISCILLA	b. Last Name	GEIGIS		
c. Organization	MA DEPT. OF CONSERVATION & RECREATION				
d. Mailing Address	251 CAUSEWAY ST.				
e. City/Town	BOSTON	f.State	MA	g. Zip Code	02114
h. Phone Number		i. Fax		j.Email	priscilla.geigis@mass.gov

4.Representative:

a. First Name	STEFANIE	b. Last Name	FARRINGTON		
c. Organization	MA DEPT. OF CONSERVATION & RECREATION				
d. Mailing Address	251 CAUSEWAY STREET, STE. 600				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02114
h.Phone Number	207-653-0757	i.Fax		j.Email	stefanie.farrington@mass.gov

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

a.Total Fee Paid	500.00	b.State Fee Paid	237.50	c.City/Town Fee Paid	262.50

6.General Project Description:

NEW GATE INSTALLATION, ADDITION OF MEDIAN ISLANDS, CURB MODIFICATIONS/PAVING, AND LANDSCAPING

7a.Project Type:

1.☐ Single Family Home	2. ☐ Residential Subdivision
3.☐ Limited Project Driveway Crossing	4. ☐ Commercial/Industrial
5.☐ Dock/Pier	6. ☐ Utilities
7.☐ Coastal Engineering Structure	8. ☐ Agriculture (eg., cranberries, forestry)
9.☑ Transportation	10. ☐ Other

7b.Is any portion of the proposed activity eligible to be treated as a 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:

2. Limited Project: 310 CMR 10.24(7)(C) 1. MAINTENANCE AND IMPROVEMENT OF EXISTING PUBLIC ROADWAYS, BUT LIMITED TO WIDENING LESS THAN A SINGLE LANE, ADDING SHOULDERS, CORRECTING SUBSTANDARD INTERSECTIONS, AND IMPROVING DRAINAGE SYSTEMS.

8.Property recorded at the Registry of Deeds for:

a.County: **b.Certificate:** **c.Book:** **d.Page:**

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

1.Buffer Zone & Resource Area Impacts (temporary & permanent):

☐ This is a Buffer Zone only project - 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)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a.☐ Bank	1. linear feet	2. linear feet
b.☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c.☐ Land under Waterbodies and Waterways	1. Square feet	2. square feet
	3. cubic yards dredged	
d.☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e.☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f.☐ Riverfront Area	1. Name of Waterway (if any)	
2. Width of Riverfront Area (check one)	☐ 25 ft. - Designated Densely Developed Areas only ☐ 100 ft. - New agricultural projects only	

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project

square feet

4. Proposed Alteration of the Riverfront Area:

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under	Land under the ocean below,
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beaches	Indicate size under Coastal Beaches and/or Coatstal Dunes, below	
d. Coastal Beaches	1. square feet	0 2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
f. Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab, crea.
i. ☐ Land Under Salt Ponds	1. square feet	
	2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	1. cubic yards dredged	
l. ☑ Land Subject to Coastal Storm Flowage	66785 1. square feet	

4.Restoration/Enhancement

☐ Restoration/Replacement

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 entered the additional amount here.

a. square feet of BVW b. square feet of Salt Marsh

5.Projects Involves Stream Crossings

☐ Project Involves Streams Crossings

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

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 of Endangered Species program (NHESP)?

a. ☐ Yes ☑ No

If yes, include proof of mailing or hand delivery of NOI to:
Natural Heritage and Endangered Species
Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

b. Date of map:FROM MAP VIEWER

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18)....

c. Submit Supplemental Information for Endangered Species Review * (Check boxes as they apply)

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

3.☐ Project plans for entire project site, including wetland resource areas and areas outside of wetland 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

c.☐ MESA filing fee (fee information available at: http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-fee-schedule.html)
Make check payable to "Natural Heritage & Endangered Species Fund" 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

d. 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/eea/agencies/dfg/dfw/laws-regulations/cmr/321-cmr-1000-massachusetts-endangered-species-act.html#10.14; 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 Number

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.

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review...

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

a. ☐ Not applicable - project is in inland resource area only

b. ☐ Yes ☑ No

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 S. Rodney French Blvd
New Bedford, MA 02744

North Shore - Hull to New Hampshire:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

If yes, it 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.

3. 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 DEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC Name

4. 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

5. 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

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

a. [X] 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. [X] A portion of the site constitutes redevelopment

3. [ ] Proprietary BMPs are included in the Stormwater Management System

b. [ ] No, Explain why the project is exempt:

1. [ ] Single Family Home

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

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 by regular mail delivery.

1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the
[x] 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
[x] [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.
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.
[x]

a. Plan Title:	b. Plan Prepared By:	c. Plan Signed/Stamped By:	c. Revised Final Date:	e. Scale:
CASTLE ISLAND GATE REPLACEMENT DAY BOULEVARD, BOSTON, MA NARRATIVE AND PLANS			5/29/20	

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.
[x]

9. Attach Stormwater Report, if needed.
[X]

E. Fees

1.

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

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

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payer name on check: First Name

7. Payer name on check: Last Name

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.

Jason Santos

1. Signature of Applicant

6/18/2020

2. Date

3. Signature of Property Owner(if different)

6-10-20

4. Date

Stefanie Farrington

5. Signature of Representative (if any)

06/15/20

6. Date

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 Section C, Items 1-3, above, refer to that section and the Instructions for additional submittal requirements.

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 - Notice of Wetland FeeTransmittal Form

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

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:1197616
City/Town:BOSTON

A. Applicant Information

1. Applicant:

a. First Name	JASON	b.Last Name	SANTOS		
c. Organization	MA DEPT. OF CONSERVATION & RECREATIONS				
d. Mailing Address	251 CAUSEWAY ST.				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02114
h. Phone Number	8573836522	i. Fax		j. Email	jason.santos@mass.gov

2.Property Owner:(if different)

a. First Name	PRISCILLA	b. Last Name	GEIGIS		
c. Organization	MA DEPT. OF CONSERVATION & RECREATION				
d. Mailing Address	251 CAUSEWAY ST.				
e. City/Town	BOSTON	f.State	MA	g. Zip Code	02114
h. Phone Number		i. Fax		j.Email	priscilla.geigis@mass.gov

3. Project Location:

a. Street Address	CASTLE ISLAND, DAY BOULEVARD	b. City/Town	BOSTON

Are you exempted from Fee? ☐

Note: Fee will be exempted if you are one of the following:

- City/Town/County/District
- Municipal Housing Authority
- Indian Tribe Housing Authority
- MBTA

State agencies are only exempt if the fee is less than $100

B. Fees

Activity Type	Activity Number	Activity Fee	RF Multiplier	Sub Total
J.) ANY OTHER ACTIVITY NOT IN CATEGORY 1,3,4,5 OR 6;	1	500.00		500.00

City/Town share of filling fee	State share of filing fee	Total Project Fee
$262.50	$237.50	$500.00

Boston File Number

MassDEP File Number

A. GENERAL INFORMATION

1. Project Location

a. Street Address	b. City/Town	c. Zip Code
Castle Island, Day Boulevard	Boston	02127

f. Assessors Map/Plat Number	g. Parcel /Lot Number
0	0302615000

2. Applicant

a. First Name	b. Last Name	c. Company
Jason	Santos	MA Dept. of Conservation & Recreation

d. Mailing Address: 251 Causeway St., Ste. 600

e. City/Town	f. State	g. Zip Code
Boston	MA	02114

h. Phone Number	i. Fax Number	j. Email address
857-383-6522		jason.santos@mass.gov

3. Property Owner

a. First Name	b. Last Name	c. Company
Priscilla	Geigis	Deputy Commissioner, DCR

d. Mailing Address: 251 Causeway St., Ste. 600

e. City/Town	f. State	g. Zip Code
Boston	MA	02114

h. Phone Number	i. Fax Number	j. Email address
		priscilla.geigis@mass.gov

❑ Check if more than one owner

(If there is more than one property owner, please attach a list of these property owners to this form.)

4. Representative (if any)

a. First Name	b. Last Name	c. Company
Stefanie	Farrington	DCR

d. Mailing Address: 251 Causeway St., Ste. 600

e. City/Town	f. State	g. Zip Code
Boston	MA	02114

h. Phone Number	i. Fax Number	j. Email address
207-653-0757		stefanie.farrington@mass.gov

Boston File Number

MassDEP File Number

5. Is any portion of the proposed project jurisdictional under the Massachusetts Wetlands Protection Act M.G.L. c. 131 §40?

[X] Yes ❑ No

If yes, please file the WPA Form 3 - Notice of Intent with this form

6. General Information

PROJECT DESCRIPTION: NEW GATE INSTALLATION, ADDITION OF MEDIAN ISLANDS, CURB MODIFICATIONS/PAVING, AND LANDSCAPING.

7. Project Type Checklist

a. ❑ Single Family Home
b. ❑ Residential Subdivision
c. ❑ Limited Project Driveway Crossing
d. ❑ Commercial/Industrial
e. ❑ Dock/Pier
f. ❑ Utilities
g. ❑ Coastal Engineering Structure
h. ❑ Agriculture – cranberries, forestry
i. [X] Transportation
j. ❑ Other

8. Property recorded at the Registry of Deeds

a. County

b. Page Number

c. Book

d. Certificate # (if registered land)

B. BUFFER ZONE & RESOURCE AREA IMPACTS

Buffer Zone Only - Is the project located only in the Buffer Zone of a resource area protected by the Boston Wetlands Ordinance?

❑ Yes [X] No

1. Coastal Resource Areas

Resource Area	**Resource Area Size**	**Proposed Alteration***	**Proposed Migitation**
❑ *Coastal Flood Resilience Zone*	*Square feet*	*Square feet*	*Square feet*

Boston File Number

MassDEP File Number

❑ *25-foot Waterfront Area*	*Square feet*	*Square feet*	*Square feet*

2. Inland Resource Areas

Resource Area	**Resource Area Size**	**Proposed Alteration***	**Proposed Migitation**
❑ *Inland Flood Resilience Zone*	*Square feet*	*Square feet*	*Square feet*
❑ *Isolated Wetlands*	*Square feet*	*Square feet*	*Square feet*
❑ *Vernal Pool*	*Square feet*	*Square feet*	*Square feet*
❑ *Vernal Pool Habitat (vernal pool + 100 ft. upland area)*	*Square feet*	*Square feet*	*Square feet*
❑ *25-foot Waterfront Area*	*Square feet*	*Square feet*	*Square feet*

C. OTHER APPLICABLE STANDARDS & REQUIREMENTS

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://www.mass.gov/dfwele/dfw/nhesp/nhregmap.htm.

   ❑ Yes [X] No

   If *yes*, the project is subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18).

   A. Submit Supplemental Information for Endangered Species Review

   ☐ Percentage/acreage of property to be altered:

   (1) within wetland Resource Area _____ percentage/acreage

   (2) outside Resource Area _____ percentage/acreage

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

2. Is the proposed project subject to provisions of the Massachusetts Stormwater Management

3. Is any portion of the proposed project within an Area of Critical Environmental Concern?

   ❑ Yes [X] No

Boston File Number

MassDEP File Number

4. Is the proposed project subject to provisions of the Massachusetts Stormwater Management Standards?

[X] *Yes. Attach a copy of the Stormwater Checklist & Stormwater Report as required.*

- ❑ *Applying for a Low Impact Development (LID) site design credits*
- [X] *A portion of the site constitutes redevelopment*
- ❑ *Proprietary BMPs are included in the Stormwater Management System*

❑ *No. Check below & include a narrative as to why the project is exempt*

- ❑ *Single-family house*
- ❑ *Emergency road repair*
- ❑ *Small Residential Subdivision (less than or equal to 4 single family houses or less than or equal to 4 units in a multifamily housing projects) with no discharge to Critical Areas*

5. Is the proposed project subject to Boston Water and Sewer Commission Review?

❑ Yes [X] No

D. 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 Protection Ordinance.

Jason Santos — Signature of Applicant — 8/11/20 — Date

Signature of Property Owner (if different) — 8-11-20 — Date

Stefanie Farrington — Signature of Representative (if any) — 8/17/20 — Date

Project Description

The Department of Conservation and Recreation ("Department" or "DCR") seeks an Order of Conditions issued pursuant to the Massachusetts Wetlands Protection Act (WPA) and its implementing regulations, 310 CMR 10 (Regulations), for the proposed project at Day Boulevard, Castle Island, Boston, MA. This project consists of a new gate installation, addition of median islands, curb modifications/paving, and landscaping. The purpose of this project is to support public safety, as this road constitutes the only entrance to Castle Island and the gate is currently not functional. The planned activities within coastal wetland resource areas and their buffer zones (shown in Figure 1) are described in the following section. Wetland resource areas that occur outside the area of work activities are not described nor included in the NOI.

Work Description

1. Excavate 12-18 inches in order to install 2 new raised median islands; one is 40 ft x 6 ft and one is 56 ft x 10 ft (Figure 4).
2. Modify existing granite curb in order to box in the gate posts (Figure 5).
3. Install swivel gate posts for the two new proposed gates; one is 25 ft in length and one is 21 ft in length.
4. Pave to tie in the existing road to the excavated areas for the newly installed curb (Figure 6).
5. Install pavement markings and signage. Landscaping: install loam/seed and plant grass plugs and/or small native shrubs and trees on median islands (Figure 7).
6. Once the gate is fabricated (6- to 8-week lead time), install lock posts and hang new gate.

<u>Site Preparation:</u>

The existing surface of the area to be paved will be milled out using a cold-planing machine with a smaller ride-on grinding machine. This process involves removing approximately 2 inches of paved surface in order to prepare the roadway for paving and remove any deficiencies on the roadway itself. Approximately 2 inches will be paved using asphalt to create a paper joint in order to transition from the cold-planed roadway to the existing pavement. Milling and structure debris will be disposed of offsite. Materials will be stored only in a designated area outside of the resource area and/or buffer zone, and will be encircled by erosion controls and covered with tarps as necessary.

Existing drainage structures, including but not limited to drain catch basins, drain manholes, sewer manholes, gas and water gates/boxes, will be re-aligned to meet the finished paving grade. This process may include adjusting the structures to grade and repairing structures to their original strength and stability. This process may include jackhammering around the structure frame to remove it and repair the structure with brick, block and mortar, then replacing and "collaring" the frame with concrete.

<u>Paving:</u>

A paving machine is used to place the asphalt on the prepared roadway and two hydro-static rollers are used for compaction. Asphalt will be placed at a depth of 2-4" and a final grade consistent with the roadway condition. A thermoplastic kettle truck and a "mini mac" (a small vehicle) are used to place thermoplastic lines (road striping). If the cold-planing process removes the loop detectors for traffic lighting sequences, these will be replaced. This operation includes saw-cutting the newly paved roadway and placing wires, then sealing the saw cuts and connecting the wires to the lighting system for sequencing.

Equipment:

Type	Purpose
Cold-planing machine with a smaller ride-on grinding machine	Milling
Sweeper	Milling and paving
Bobcat	Milling, paving and structure adjustments
Paving machine	Paving
Hydro-static rollers	Paving
Thermoplastic kettle truck	Thermoplastic line placement
"mini mac"	Thermoplastic line placement
Mini excavator	Curb installation
Dump truck	Curb installation
Tool truck	Curb installation
Trailer	Curb installation

Paving vehicles are removed directly after the paving operation. Cold-planing vehicles arrive the day of paving or are stored onsite before construction. The thermoplastic kettle truck and mini mac are driven to and from the construction site. Curb installation vehicles will be stored onsite outside of the resource areas and buffer zones, and all vehicles will be fueled off-site.

Erosion and Sedimentation Controls:

Straw wattles with natural fiber netting[1] will be placed along seaward-facing portions of Day Boulevard along the resource area or buffer zone edges prior to the start of the project. Filter fabric will be installed for any catch basins within 100 feet of the project site. Construction fencing will be used to delineate the limit of work where appropriate. All erosion/sedimentation controls will be removed upon completion of the project.

[1]Or other sedimentation control measures as conditioned by the Boston Conservation Commission and discussed during a Boston Conservation Commission / DCR joint field evaluation.

Resource Area Description

This section provides a brief description of each coastal resource area covered by the WPA and its Regulations that is within the project site. Coastal wetland resource areas at this site include Coastal Beach and Coastal Bank; however, no impacts to these resource areas are proposed. These resource areas are depicted on the coastal wetland resources map (Figure 1). Land Subject to Coastal Storm Flowage (LSCSF) is depicted in Figure 2. Coastal Beach and Coastal Bank are depicted as identified in the 2005 MassDEP Wetlands data layer. Land Subject to Coastal Storm Flowage is depicted as identified in the 2017 FEMA National Flood Hazard Layer (NFHL) data layer.

Coastal Beach

Definition:

310 CMR 10.27(2):

- Coastal Beach means unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean.
- Tidal Flat means any nearly level part of a coastal beach which usually extends from the mean low water line landward to the more steeply sloping face of the coastal beach or which may be separated from the beach by land under the ocean.

WPA Performance Standards:

310 CMR 10.27(3): Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a), shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.

(5) Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.

(6) In addition to complying with the requirements of 310 CMR 10.27(3) and (4), a project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat caused by:

(a) alterations in water circulation;

(b) alterations in the distribution of sediment grain size; and

(c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.

(7) Notwithstanding the provisions of 310 CMR 10.27(3) through (6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

Applicability to the Castle Island project:

The project site is located within the 100-foot buffer zone to the adjacent Coastal Beach. All activity described above shall be conducted within the buffer zone and will not enter the resource area. These activities will not increase the erosion nor change the form of the coastal beach, as they will occur within the existing roadway.

Coastal Bank

Definition

310 CMR 10.30(2):

Coastal Bank means 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.

WPA Performance Standards

Coastal Banks that Supply Sediment.

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

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

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

(c) protective planting designed to reduce erosion may be permitted.

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

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

Coastal Banks that are Vertical Buffers.

(6) Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.

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

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

Applicability to the Castle Island project:

The project site is located within the 100-foot buffer zone to the adjacent Coastal Bank. All activity described above shall be conducted within the buffer zone and will not enter the resource area. These activities will not have an adverse effect on the movement of sediment, nor on the stability of the coastal bank, as they will occur within the

existing roadway. There is no specified habitat of rare vertebrate or invertebrate species indicated by NHESP for the project site.

Land Subject to Coastal Storm Flowage

Definition:

310 CMR 10.04: Land Subject to Coastal Storm Flowage means 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.

Applicability to the Castle Island project:

There will be no loss of flood storage voluzme due to this project, nor will flows be restricted or wildlife habitat functions altered; all pavement repairs will be performed in-kind, and there shall be no change to the existing drainage at the site. As described in the stormwater report, the project is a net reduction in impervious area, and thus will not contribute additional untreated stormwater to the closed drainage system.

Climate Change Impacts & Resilience

The Department of Conservation and Recreation (DCR) is assessing park facilities, and the natural resources & cultural resources under DCR management, related to climate change vulnerability and resilience. The Department is working proactively to enhance climate change resilience via conservation land protection, ecological restoration initiatives such as invasive species management, and updates for design standards that will support best construction and management practices.

For this project, pervious surface will be increased by over 800 sq ft, and there shall be no impact on resiliency related to sea level rise nor increasing storm frequency. The addition of native shrubs and trees on the median islands will help to reduce the urban heat-island effects in this area.

Castle Island Gate Replacement

Boston, MA

PREPARED FOR

DCR
251 Causeway St., Ste. 600
Boston, MA 02114
857-383-6522

PREPARED BY

101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

July 2020

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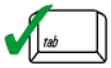
Checklist for Stormwater Report

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

Checklist for Stormwater Report

A. Introduction

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



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

The Stormwater Report must include:

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

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

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

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

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

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

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

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

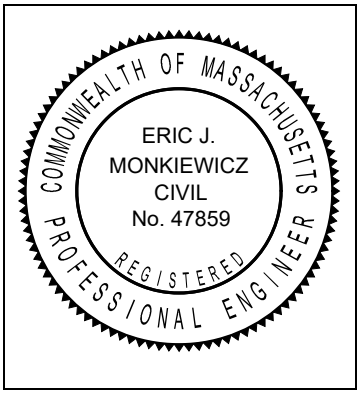
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



Signature and Date

Checklist

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

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

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

☒ No disturbance to any Wetland Resource Areas

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

☒ Reduced Impervious Area (Redevelopment Only)

☒ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

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

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

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☐ Other (describe): _____

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

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

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

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

Standard 3: Recharge – N.A. Reduction in Impervious Area

☒ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

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

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

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

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

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

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

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

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

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

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

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

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

Standard 4: Water Quality - N.A. Reduction in Impervious Area

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) – N.A.

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

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

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

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

☐ All exposure has been eliminated.

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

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

Standard 6: Critical Areas

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

Standard 9: Operation and Maintenance Plan

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

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

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

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

Standard 10: Prohibition of Illicit Discharges

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

☒ An Illicit Discharge Compliance Statement is attached;

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

Stormwater Report Narrative

This Stormwater Report has been prepared to demonstrate compliance with the Massachusetts Stormwater Management Standards in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and Water Quality Certification Regulations (314 CMR 9.00). This report also demonstrates compliance with the City of Boston rules and regulations for stormwater design and mitigation.

Project Description

Castle Island is a peninsula in South Boston accessible by William J Day Boulevard. For the project location, see Figure 1, Site Locus Map. The Applicant, the Massachusetts Department of Conservation & Recreation (DCR), is proposing to construct a gate across William J Day Boulevard and add two island medians. These island medians will be landscaped and will increase pervious area on the site by 1,000 square feet. The project will also include restriping of the travel lanes leading up to the medians on either side and the realignment of 16 existing parking spaces to create 12 wider, angled parking spaces.

The site is located within the Boston Harbor watershed. Only one natural resource area, Pleasure Bay near the project, but is not considered a critical area. For additional information regarding the natural resource areas present on the site see the Project Notice of Intent, Narrative and Plans dated 06/2020.

Table 1
Natural Resource Areas

Name	*Critical Area*	*Zone 1 or Zone A*	*ORW or SRW*	*Zone II or IWPA*	*Other*
Pleasure Bay	No	No	No	No	Bathing Beach

According to the National Resources Conservation Service (NRCS), surface soils on the site include Udorthents and Urban Land. While the on-site soils do not have an associated Hydrologic Soil Group (HSG) listed on the NRCS map, soils surrounding the site are HSG A and soils within the project area are likely to be classified similarly. Based on the soil evaluation included in Appendix C, the site is likely considered to

be within an area of rapid infiltration (soils with a saturated hydraulic conductivity greater than 2.4 inches per hour).

Existing Drainage Conditions

The existing roadway is 50 feet wide with two lanes of traffic on either side, and an additional 18-foot-wide parking lot adjacent to the northeast travel lane. The road is curbed on either side. Under existing conditions, stormwater runoff sheet flows to catch basins on either side of the road. The parking lot adjacent to the northeast travel lane is sloped towards the roadway to allow for the runoff to flow northwest and enter the closed drainage system in the roadway. The sidewalks and grassed areas on either side of the roadway are also graded towards to roadway, and stormwater runoff from these areas is captured in the closed drainage system as well. For the existing conditions hydraulic analysis, the project study area was divided into one drainage area which flow to one design point, (see Figure 2). The design point and its tributary drainage area are summarized below.

Table 2
Existing Conditions Hydrologic Data

Drainage Area	*Discharge Location*	*Design Point*	*Area (sq. ft.)*	*Curve Number*	*Time of Concentration (min)*
EX-1	Closed Drainage System Outfall	DP-1	27,918	85	6.0

Proposed Drainage Conditions

Figure 3 illustrates the proposed "post construction" drainage conditions for the project. As shown, the site will be divided into one drainage area that discharges stormwater to one Design Point. Proposed drainage conditions will largely mirror the existing drainage. The roadway profile will not be altered as part of constructions, and any stormwater runoff from the road or sidewalks will continue to flow towards the existing closed drainage system. Runoff from the proposed vegetated medians will also be directed into the roadway where it will be collected by the existing catch basins. Table 3 below provides a summary of the proposed conditions hydrologic data.

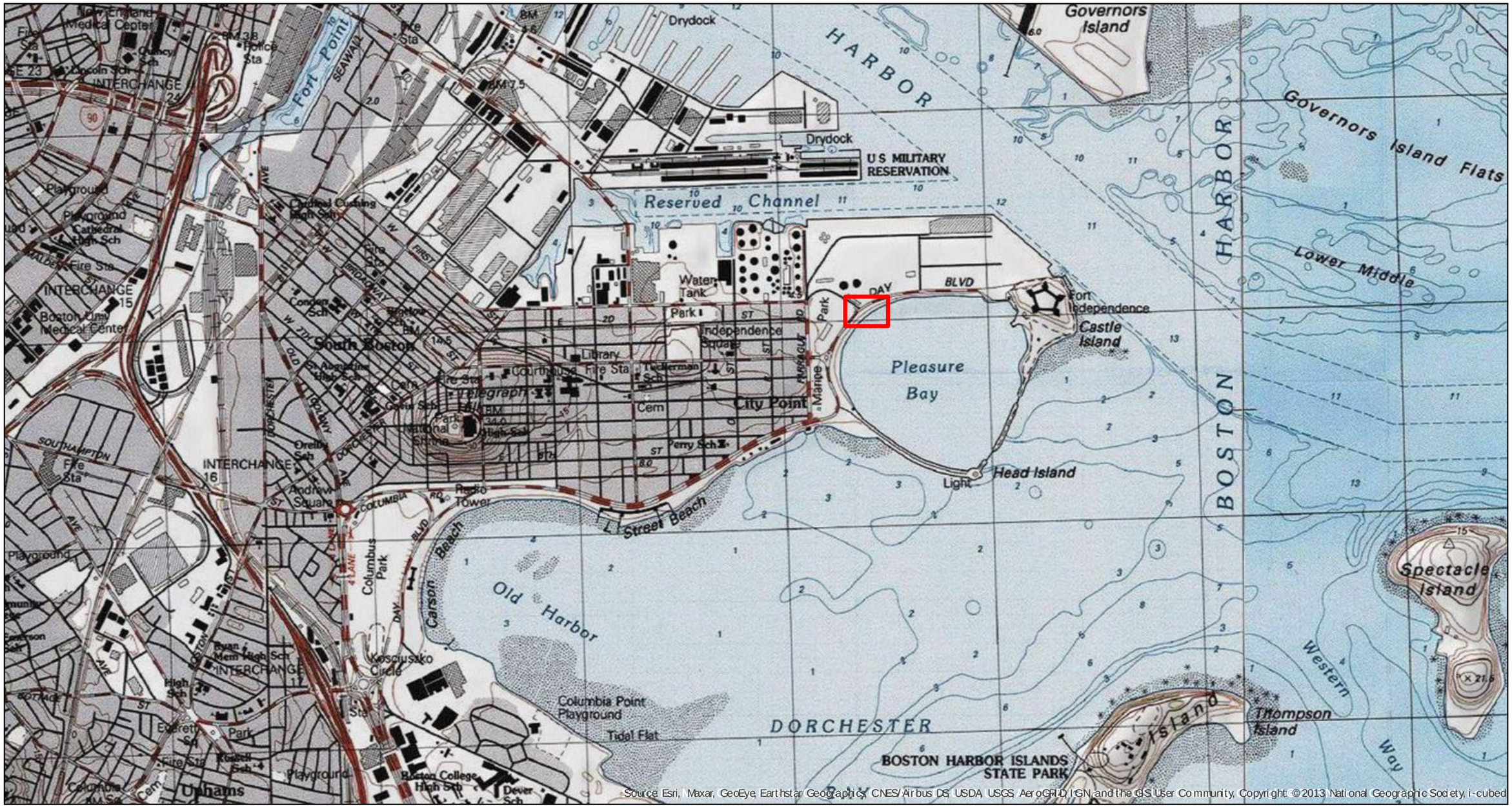
Table 3
Proposed Conditions Hydrologic Data

Drainage Area	*Discharge Location*	*Design Point*	*Area (sq. ft.)*	*Curve Number*	*Time of Concentration (min)*
PR-1	Closed Drainage System Outfall	DP-1	27,918	83	6.0

Environmentally Sensitive and Low Impact Development (LID) Techniques

Low Impact Development (LID) techniques and stormwater Best Management Practices (BMPs) implemented into the site design include minimized disturbance to existing trees and vegetation, and a reduction of impervious area. In general, stormwater from the impervious surfaces will continue to be captured in existing catch basins and will flow through the existing closed drainage system.

Figure 1: Site Locus Map



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Copyright © 2013 National Geographic Society, i-cubed

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0 500 1000 2000 Feet

Legend

Project Location

Castle Island Gate Replacement | Boston, MA

Figure 1: Site Locus Map

Figure 2: Existing Drainage Areas

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0 12.5 25 50 Feet

Legend

Existing Drainage Area

Castle Island Gate Replacement | Boston, MA

Figure 2: Existing Drainage Area

Figure 3: Proposed Drainage Areas

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0 12.5 25 50 Feet

Legend

- Proposed Drainage Area
- Proposed Median

Castle Island Gate Replacement | Boston, MA

Figure 3: Proposed Drainage Area

Regulatory Compliance

Massachusetts Department of Environmental Protection (DEP) - Stormwater Management Standards

The project is considered a redevelopment and should comply fully with Stormwater Standards 1, 7, 8, 9 & 10 and to the maximum extent practicable with Stormwater Standards 2 thru 6. As demonstrated below, the proposed Project fully complies with the DEP Stormwater Management Standards and will provide and increase of 830 square feet of pervious area.

Standard 1: No New Untreated Discharges or Erosion to Wetlands

The Project has been designed to fully comply with Standard 1.

Supporting information and computations demonstrating that no new untreated discharges will result from the Project are presented through compliance with Standards 4 through 6.

There are no new stormwater outlets or conveyances associated with this project, and no proposed BMPs. All stormwater runoff will be directed to the existing closed drainage system, through the existing catch basins located on either side of the roadway.

Standard 2: Peak Rate Attenuation

The Project has been designed to fully comply with Standard 2.

The rainfall-runoff response of the site under existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years. The results of the analysis, as summarized in Table 4 below, indicate that there is no increase in peak discharge rates between the existing and proposed conditions. Stormwater discharge will act practically the same between existing and proposed conditions, aside from the increase in pervious area, which will infiltrate some stormwater runoff into the ground.

Computations and supporting information regarding the hydrologic modeling are included in Appendix B.

Table 4
Peak Discharge Rates (cfs*)

Design Point	*2-year*	*10-year*	*25-year*	*100-year*
Design Point: DP-1				
Existing	1.47	2.86	3.73	5.07
Proposed	1.15	2.31	3.05	4.20

Standard 3: Stormwater Recharge

The Project has been designed to fully comply with Standard 3.

In accordance with the Stormwater Handbook, the Project does not have a Required Recharge Volume as there will be no increase in impervious area to the project site.

Standard 4: Water Quality

The Project has been designed to fully comply with Standard 4.

As stated above, the project is a net reduction in impervious area, and thus will not contribute additional untreated stormwater to the closed drainage system.

Computations and supporting information, including the Long-Term Pollution Prevention Plan, are included in Appendix D.

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

The Project is not considered a LUHPPL.

Standard 6: Critical Areas

The existing stormwater design will remain the same, and there will be no additional stormwater flow added to the closed drainage network or discharge point.

Proposed source controls and pollution prevention measures have been identified in the Long-Term Pollution Prevention Plan included in Appendix D.

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

The Project is a redevelopment and has been designed to comply with Stormwater Management Standards 2-6 to the maximum extent practicable. Standards 1, 8-10 have been met completely.

Refer directly to each Standard for applicable computations and supporting information demonstrating compliance with each.

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

The Project will disturb less than one acre of land and is not required to obtain coverage under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit.

Standard 9: Operation and Maintenance Plan

In compliance with Standard 9, a Post Construction Stormwater Operation and Maintenance (O&M) Plan has been developed for the Project. The O&M Plan is included in Appendix D.

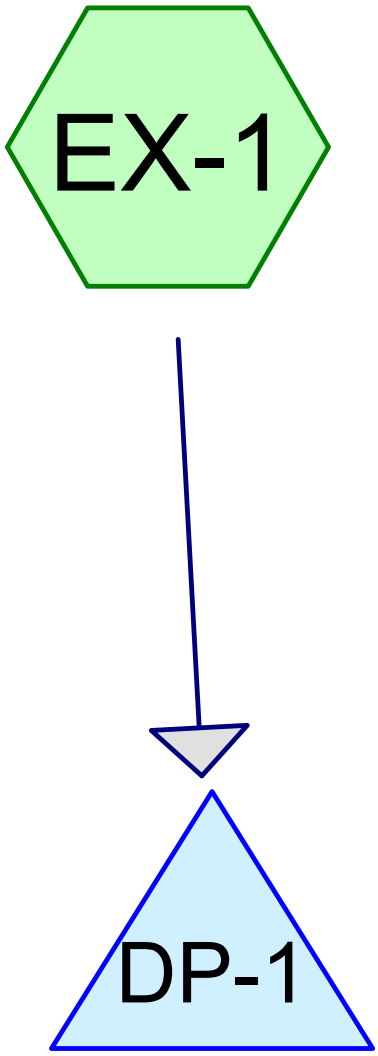
Standard 10: Prohibition of Illicit Discharges

The design plans submitted with this report have been designed so that the components included therein are in full compliance with current standards. There are no known illicit discharges to the existing closed drainage system, and there will be no design changes to the closed drainage system under proposed conditions. If any illicit discharges are found during construction, they will be addressed. No statement is made with regards to the drainage system in portions of the site not included in the redevelopment project area.

Appendix B
Standard 2 Computations and Supporting Information

Rainfall volumes used for this analysis were based on the Natural Resources Conservation Service (NRCS) Type III, 24-hour storm event for Suffolk County. Rainstorm data was provided using NOAA Atlas 14 data for Boston, MA. Runoff coefficients for the existing and proposed conditions, as previously shown in Tables 1 and 2 respectively, were determined using NRCS Technical Release 55 (TR-55) methodology as provided in HydroCAD. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

HydroCAD Analysis: Existing Conditions



Closed Drainage Outlet

Subcat Reach Pond Link

Routing Diagram for EX_Drainage
Prepared by VHB, Printed 7/10/2020
HydroCAD® 10.00-25 s/n 01038 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.468	98	Paved parking, HSG A (EX-1)
0.172	49	Sidewalk/Grass Cover Fair, HSG A (EX-1)
0.641	**85**	**TOTAL AREA**

Soil Listing (all nodes)

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

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.468	0.000	0.000	0.000	0.000	0.468	Paved parking	EX-1
0.172	0.000	0.000	0.000	0.000	0.172	Sidewalk/Grass Cover Fair	EX-1
0.641	**0.000**	**0.000**	**0.000**	**0.000**	**0.641**	**TOTAL AREA**	

2-Year Storm Event – Existing

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Runoff Area=27,918 sf 73.09% Impervious Runoff Depth>1.59"
Tc=0.0 min CN=85 Runoff=1.47 cfs 0.085 af

Pond DP-1: Closed Drainage Outlet Inflow=1.47 cfs 0.085 af
Primary=1.47 cfs 0.085 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.085 af Average Runoff Depth = 1.59"
26.91% Pervious = 0.172 ac 73.09% Impervious = 0.468 ac

Summary for Subcatchment EX-1:

Runoff = 1.47 cfs @ 12.00 hrs, Volume= 0.085 af, Depth> 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.14"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass Cover Fair, HSG A
	20,404	98	Paved parking, HSG A
	27,918	85	Weighted Average
	7,514		26.91% Pervious Area
	20,404		73.09% Impervious Area

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 73.09% Impervious, Inflow Depth > 1.59" for 2-yr event
Inflow = 1.47 cfs @ 12.00 hrs, Volume= 0.085 af
Primary = 1.47 cfs @ 12.00 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

10-Year Storm Event – Existing

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Runoff Area=27,918 sf 73.09% Impervious Runoff Depth>3.15"
Tc=0.0 min CN=85 Runoff=2.86 cfs 0.168 af

Pond DP-1: Closed Drainage Outlet Inflow=2.86 cfs 0.168 af
Primary=2.86 cfs 0.168 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.168 af Average Runoff Depth = 3.15"
26.91% Pervious = 0.172 ac 73.09% Impervious = 0.468 ac

Summary for Subcatchment EX-1:

Runoff = 2.86 cfs @ 12.00 hrs, Volume= 0.168 af, Depth> 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.98"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass Cover Fair, HSG A
	20,404	98	Paved parking, HSG A
	27,918	85	Weighted Average
	7,514		26.91% Pervious Area
	20,404		73.09% Impervious Area

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 73.09% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 2.86 cfs @ 12.00 hrs, Volume= 0.168 af
Primary = 2.86 cfs @ 12.00 hrs, Volume= 0.168 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

25-Year Storm Event- Existing

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Runoff Area=27,918 sf 73.09% Impervious Runoff Depth>4.17"
Tc=0.0 min CN=85 Runoff=3.73 cfs 0.223 af

Pond DP-1: Closed Drainage Outlet Inflow=3.73 cfs 0.223 af
Primary=3.73 cfs 0.223 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.223 af Average Runoff Depth = 4.17"
26.91% Pervious = 0.172 ac 73.09% Impervious = 0.468 ac

Summary for Subcatchment EX-1:

Runoff = 3.73 cfs @ 12.00 hrs, Volume= 0.223 af, Depth> 4.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.12"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass Cover Fair, HSG A
	20,404	98	Paved parking, HSG A
	27,918	85	Weighted Average
	7,514		26.91% Pervious Area
	20,404		73.09% Impervious Area

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 73.09% Impervious, Inflow Depth > 4.17" for 25-yr event
Inflow = 3.73 cfs @ 12.00 hrs, Volume= 0.223 af
Primary = 3.73 cfs @ 12.00 hrs, Volume= 0.223 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

100-Year Storm Event – Existing

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Runoff Area=27,918 sf 73.09% Impervious Runoff Depth>5.77"
Tc=0.0 min CN=85 Runoff=5.07 cfs 0.308 af

Pond DP-1: Closed Drainage Outlet Inflow=5.07 cfs 0.308 af
Primary=5.07 cfs 0.308 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.308 af Average Runoff Depth = 5.77"
26.91% Pervious = 0.172 ac 73.09% Impervious = 0.468 ac

Summary for Subcatchment EX-1:

Runoff = 5.07 cfs @ 12.00 hrs, Volume= 0.308 af, Depth> 5.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=7.88"

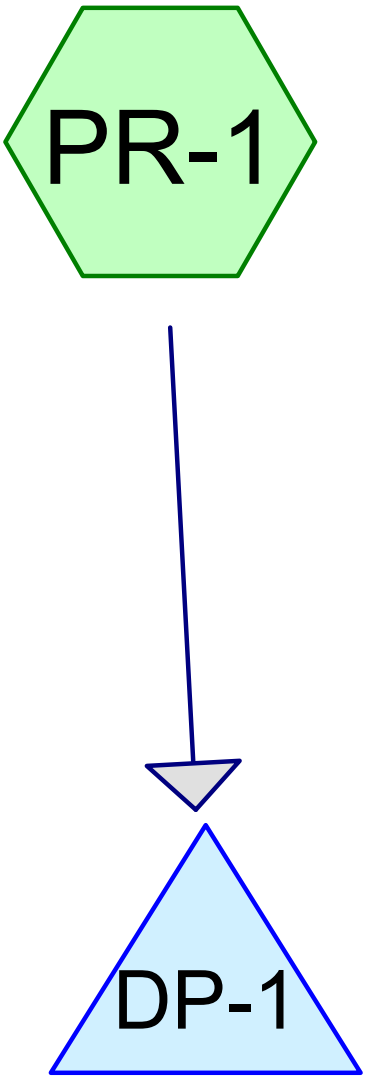
	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass Cover Fair, HSG A
	20,404	98	Paved parking, HSG A
	27,918	85	Weighted Average
	7,514		26.91% Pervious Area
	20,404		73.09% Impervious Area

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 73.09% Impervious, Inflow Depth > 5.77" for 100-yr event
Inflow = 5.07 cfs @ 12.00 hrs, Volume= 0.308 af
Primary = 5.07 cfs @ 12.00 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

HydroCAD Analysis: Proposed Conditions



Closed Drainage Outlet

Subcat Reach Pond Link

Routing Diagram for PR_Drainage
Prepared by VHB, Printed 7/10/2020
HydroCAD® 10.00-25 s/n 01038 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.019	39	>75% Grass cover, Good, HSG A (PR-1)
0.449	98	Paved parking, HSG A (PR-1)
0.172	49	Sidewalk/Grass cover, Fair, HSG A (PR-1)
0.641	**83**	**TOTAL AREA**

Soil Listing (all nodes)

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

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.019	0.000	0.000	0.000	0.000	0.019	>75% Grass cover, Good	PR-1
0.449	0.000	0.000	0.000	0.000	0.449	Paved parking	PR-1
0.172	0.000	0.000	0.000	0.000	0.172	Sidewalk/Grass cover, Fair	PR-1
0.641	**0.000**	**0.000**	**0.000**	**0.000**	**0.641**	**TOTAL AREA**	

2-Year Storm Event – Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Runoff Area=27,918 sf 70.09% Impervious Runoff Depth>1.45"
Tc=6.0 min CN=83 Runoff=1.15 cfs 0.077 af

Pond DP-1: Closed Drainage Outlet Inflow=1.15 cfs 0.077 af
Primary=1.15 cfs 0.077 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.077 af Average Runoff Depth = 1.45"
29.91% Pervious = 0.192 ac 70.09% Impervious = 0.449 ac

Summary for Subcatchment PR-1:

Runoff = 1.15 cfs @ 12.09 hrs, Volume= 0.077 af, Depth> 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.14"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass cover, Fair, HSG A
	19,569	98	Paved parking, HSG A
	835	39	>75% Grass cover, Good, HSG A
	27,918	83	Weighted Average
	8,349		29.91% Pervious Area
	19,569		70.09% Impervious Area

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

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 70.09% Impervious, Inflow Depth > 1.45" for 2-yr event
Inflow = 1.15 cfs @ 12.09 hrs, Volume= 0.077 af
Primary = 1.15 cfs @ 12.09 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

10-Year Storm Event- Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Runoff Area=27,918 sf 70.09% Impervious Runoff Depth>2.96"
Tc=6.0 min CN=83 Runoff=2.31 cfs 0.158 af

Pond DP-1: Closed Drainage Outlet Inflow=2.31 cfs 0.158 af
Primary=2.31 cfs 0.158 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.158 af Average Runoff Depth = 2.96"
29.91% Pervious = 0.192 ac 70.09% Impervious = 0.449 ac

Summary for Subcatchment PR-1:

Runoff = 2.31 cfs @ 12.09 hrs, Volume= 0.158 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.98"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass cover, Fair, HSG A
	19,569	98	Paved parking, HSG A
	835	39	>75% Grass cover, Good, HSG A
	27,918	83	Weighted Average
	8,349		29.91% Pervious Area
	19,569		70.09% Impervious Area

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

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 70.09% Impervious, Inflow Depth > 2.96" for 10-yr event
Inflow = 2.31 cfs @ 12.09 hrs, Volume= 0.158 af
Primary = 2.31 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

25-Year Storm Event- Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Runoff Area=27,918 sf 70.09% Impervious Runoff Depth>3.95"
Tc=6.0 min CN=83 Runoff=3.05 cfs 0.211 af

Pond DP-1: Closed Drainage Outlet Inflow=3.05 cfs 0.211 af
Primary=3.05 cfs 0.211 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.211 af Average Runoff Depth = 3.95"
29.91% Pervious = 0.192 ac 70.09% Impervious = 0.449 ac

Summary for Subcatchment PR-1:

Runoff = 3.05 cfs @ 12.09 hrs, Volume= 0.211 af, Depth> 3.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.12"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass cover, Fair, HSG A
	19,569	98	Paved parking, HSG A
	835	39	>75% Grass cover, Good, HSG A
	27,918	83	Weighted Average
	8,349		29.91% Pervious Area
	19,569		70.09% Impervious Area

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

Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 70.09% Impervious, Inflow Depth > 3.95" for 25-yr event
Inflow = 3.05 cfs @ 12.09 hrs, Volume= 0.211 af
Primary = 3.05 cfs @ 12.09 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

100-Year Storm Event – Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Runoff Area=27,918 sf 70.09% Impervious Runoff Depth>5.53"
Tc=6.0 min CN=83 Runoff=4.20 cfs 0.296 af

Pond DP-1: Closed Drainage Outlet Inflow=4.20 cfs 0.296 af
Primary=4.20 cfs 0.296 af

Total Runoff Area = 0.641 ac Runoff Volume = 0.296 af Average Runoff Depth = 5.53"
29.91% Pervious = 0.192 ac 70.09% Impervious = 0.449 ac

Summary for Subcatchment PR-1:

Runoff = 4.20 cfs @ 12.09 hrs, Volume= 0.296 af, Depth> 5.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=7.88"

	Area (sf)	CN	Description
*	7,514	49	Sidewalk/Grass cover, Fair, HSG A
	19,569	98	Paved parking, HSG A
	835	39	>75% Grass cover, Good, HSG A
	27,918	83	Weighted Average
	8,349		29.91% Pervious Area
	19,569		70.09% Impervious Area

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

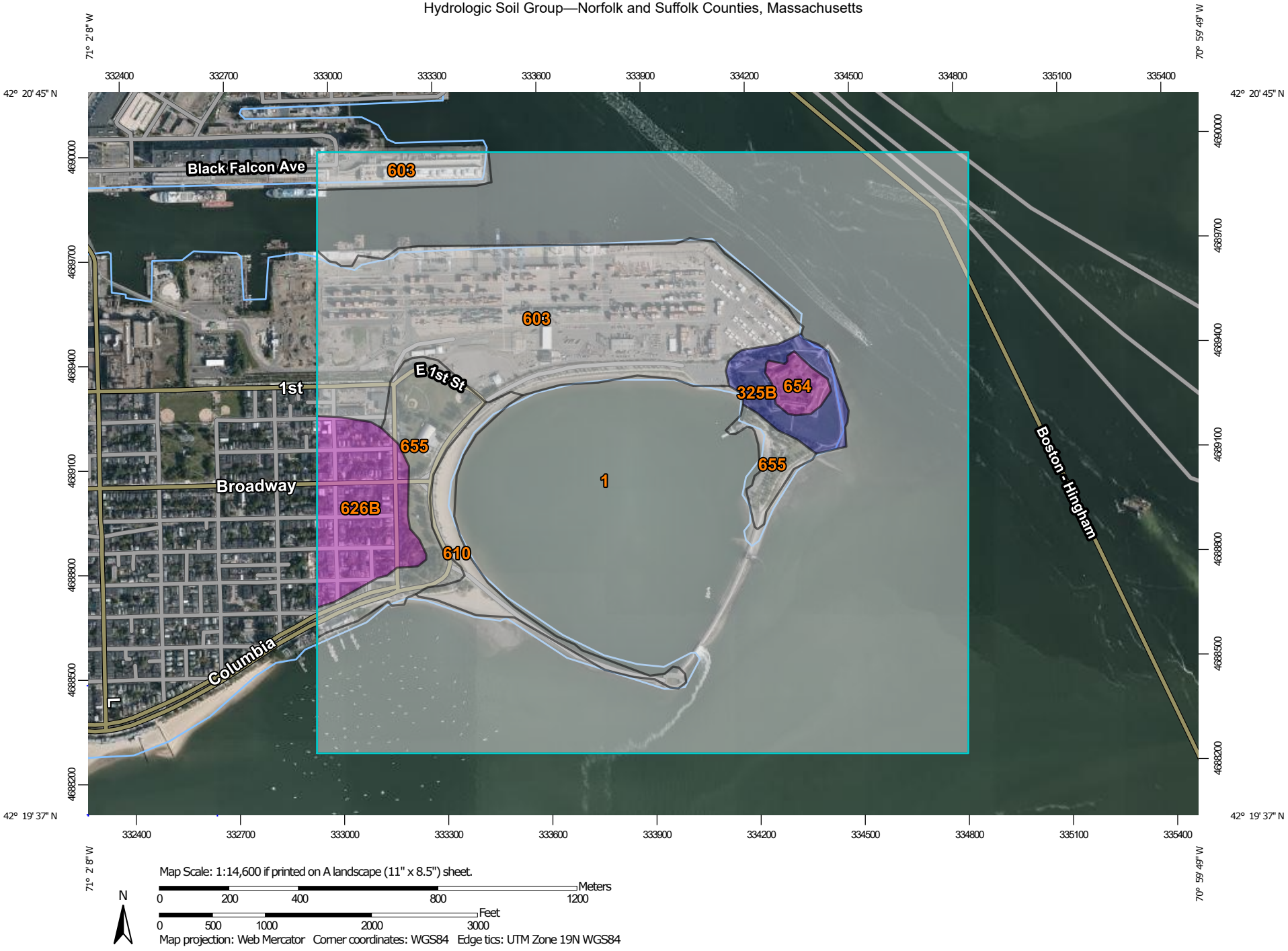
Summary for Pond DP-1: Closed Drainage Outlet

Inflow Area = 0.641 ac, 70.09% Impervious, Inflow Depth > 5.53" for 100-yr event
Inflow = 4.20 cfs @ 12.09 hrs, Volume= 0.296 af
Primary = 4.20 cfs @ 12.09 hrs, Volume= 0.296 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Appendix C
Standard 3 Computations and Supporting Information

NRCS Soils Map


71° 2' 8" W
70° 59' 49" W
42° 20' 45" N
42° 19' 37" N
332400
332700
333000
333300
333600
333900
334200
334500
334800
335100
335400
4690000
4689700
4689400
4689100
4688800
4688500
4688200
Black Falcon Ave
603
603
E 1st St
1st
325B
654
655
655
Broadway
626B
610
1
Boston - Hingham
Columbia
Map Scale: 1:14,600 if printed on A landscape (11" x 8.5") sheet.
N
0 200 400 800 1200 Meters
0 500 1000 2000 3000 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 16, Jun 11, 2020

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

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		561.9	69.9%
325B	Newport silt loam, 3 to 8 percent slopes	B	13.8	1.7%
603	Urban land, wet substratum, 0 to 3 percent slopes		139.7	17.4%
610	Beaches, sand		16.0	2.0%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	31.1	3.9%
654	Udorthents, loamy	A	5.5	0.7%
655	Udorthents, wet substratum		35.5	4.4%
Totals for Area of Interest			**803.4**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix D
Standard 9 Computations and Supporting Information

Long –Term Pollution Prevention Plan

Castle Island Gate Replacement
Boston, MA

Operation and Maintenance Plan (O&M)
and
Long Term Pollution Prevention Plan (LTPPP)

July 2020

This Stormwater Management System Operation and Maintenance Plan provides for the inspection and maintenance of existing catch basins and for measures to prevent pollution associated with the proposed medians at Castle Island in Boston, MA.

This document has been prepared in accordance with the requirements of the Stormwater Regulations included in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10).

Responsible Party

The Massachusetts Department of Conservation and Recreation (DCR) will be responsible for the maintenance of the roadway facilities and associated stormwater management features, in accordance with their own standards.

Questions or concerns regarding maintenance activities may also be addressed to DCR:

Massachusetts Department of Conservation and Recreation Main Office
251 Causeway Street
Boston, MA 02114
(508) 509-1757

Maintenance Measures

The stormwater management system covered by this Operation and Maintenance Plan consists of the following component:

- Existing catch basins

Maintenance of this component will be conducted in accordance with DCR standard maintenance practices.

If inspection indicates the need for major repairs, the inspector should contact the DCR maintenance supervisor to initiate procedures to effect repairs in accordance with DCR's standard construction practices.

Practices for Long Term Pollution Prevention

In general, long term pollution prevention and related maintenance activities will be conducted consistent with DCR Storm Water Management Plan. Information about the plan are available at the following web-site:

https://www.mass.gov/service-details/dcr-stormwater-management

For the facilities covered by this Operation and Maintenance Plan, long term pollution prevention includes the following measures:

Litter Pick-up
DCR will conduct litter pick-up from the stormwater management facilities in conjunction with routine maintenance activities.

Routine Inspection and Maintenance
DCR will conduct inspection and maintenance of the stormwater management practices in accordance with the guidelines discussed above.

Spill Prevention and Response

DCR will implement response procedures for releases of significant materials such as fuels, oils, or chemical materials onto the ground or other areas that could reasonably be expected to discharge to surface or groundwater.

- Reportable quantities will immediately be reported to the applicable Federal, State, and local agencies as required by law.
- Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and disposed of in accordance with Federal, State, and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release and the ability of the responsible party to perform the required response.
- Reportable quantities of chemical, fuels, or oils are established under the Clean Water Act and enforced through DEP.

Maintenance of Landscaped Areas

Routine mowing should be conducted according to standard DCR practices.

DCR shall minimize use of fertilizers, herbicides, and pesticides for the maintenance of facilities covered by this plan. Any use of fertilizers, herbicides, or pesticides shall be reviewed and approved by the DCR Division of Engineering prior to application. Local Conservation Commission review may also be required.

Snow and Ice Management

Snow and Ice Management shall be conducted according to standard DCR practices.

Prohibition of Illicit Discharges

The DEP Stormwater Management Standards prohibit illicit discharges to the storm water management system. Illicit discharges are discharges that do not entirely consist of stormwater, except for certain specified non-stormwater discharges.

Discharges from the following activities are not considered illicit discharges:

firefighting	foundation drains
water line flushing	footing drains
landscape irrigation	individual resident car washing
uncontaminated groundwater	flows from riparian habitats and wetlands
potable water sources	dechlorinated water from swimming pools
water used to clean residential buildings without detergents	water used for street washing
	air conditioning condensation

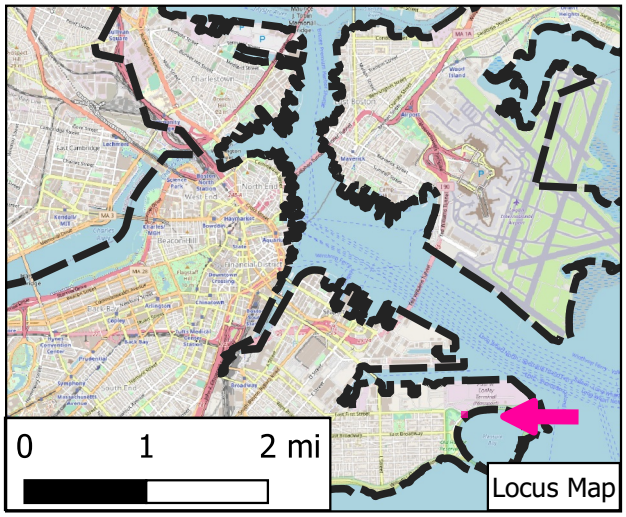
There are no known or proposed illicit connections associated with this project. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), the applicable parties shall be notified for assistance in determining the nature and source of the

Massachusetts Department of Conservation & Recreation

Figure 1

Gate Replacement
Day Boulevard, Castle Island, Boston, MA

NOI



Key

- Proposed Island
- Proposed Gate

MassDEP Wetlands (2005)

- COASTAL BANK BLUFF OR SEA CLIFF
- COASTAL BEACH
- 100-ft Buffer Zone

N

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

MASS GIS

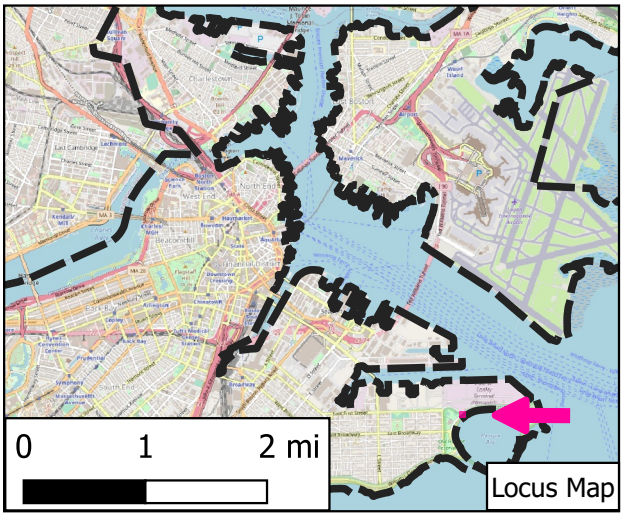
Figure created using QGIS 3.6.3-Noosa
Basemap data ©2015 Google and
© OpenStreetMap contributors, CC-BY-SA
Maps data MassGIS (Bureau of Geographic Information),
Commonwealth of Massachusetts EOTSS

Massachusetts Department of Conservation & Recreation

Figure 2

Gate Replacement
Day Boulevard, Castle Island, Boston, MA

NOI



Key

- Proposed Island
- Proposed Gate
- **Water**
- FEMA NFHL
  - AE: 1% Annual Chance of Flooding with BFE
  - VE: High Risk Coastal Area

N

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

MASS GIS

Figure created using QGIS 3.6.3-Noosa
Basemap data ©2015 Google and
© OpenStreetMap contributors, CC-BY-SA
Maps data MassGIS (Bureau of Geographic Information),
Commonwealth of Massachusetts EOTSS

PRODUCED BY AN AUTODESK STUDENT VERSION

LOCATION MAP

DAY BLVD @ SHORE RD, SOUTH BOSTON

EXISTING CONDITION

N

MAY 26, 2020

REV.	DATE:	DESCRIPTION	SHEET #:

dcr Massachusetts

DESIGNER: MDP

CHECKED BY: JRP

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION (DCR) PLANNING & ENGINEERING

PROJECT TITLE: DAY BOULEVARD GATE RECONSTRUCTION

CITY/TOWN: BOSTON

DRAWING TITLE: EXISTING CONDITION

PROJECT NO.:

DRAWING NO.: TR-01

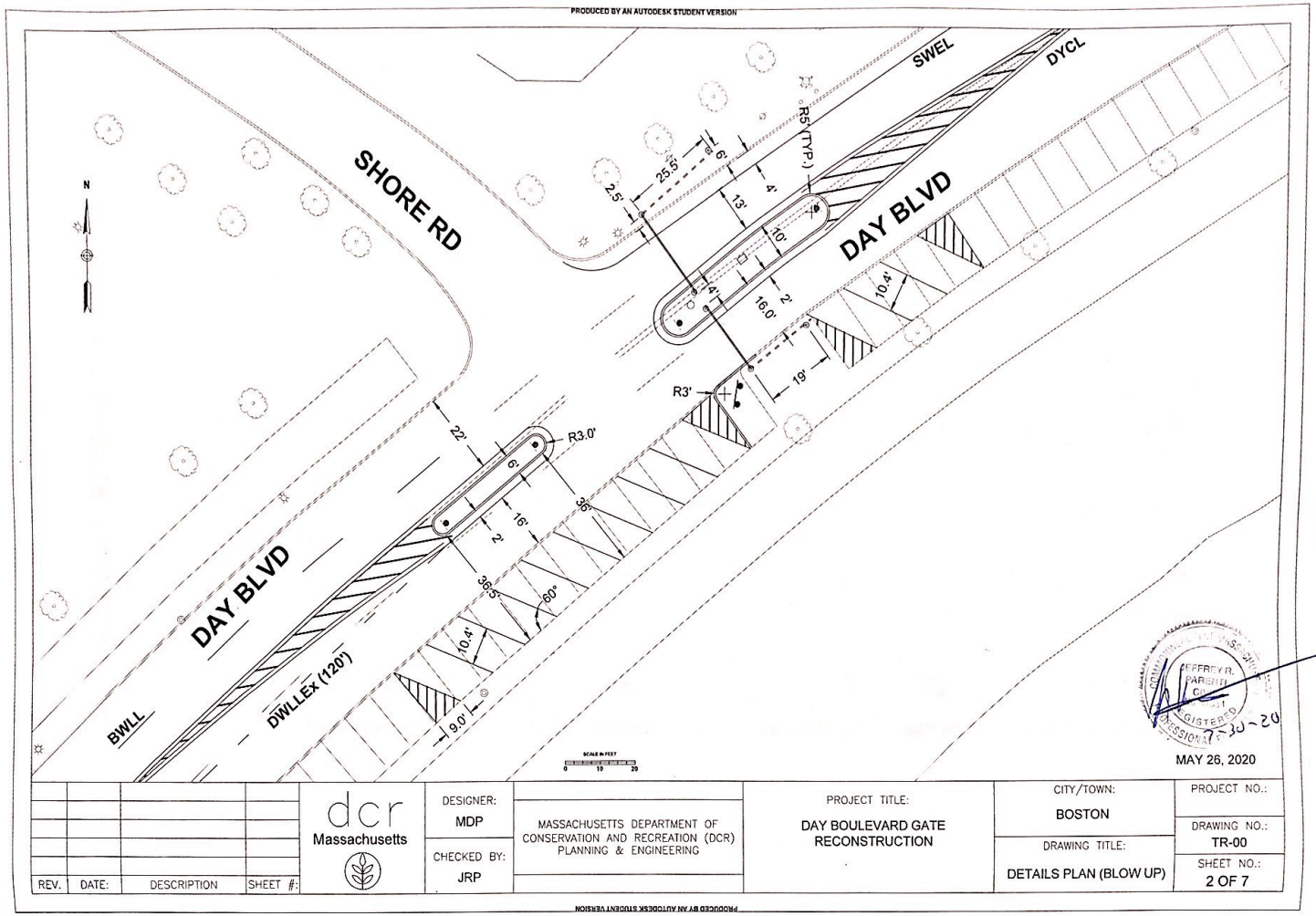
SHEET NO.:

PRODUCED BY AN AUTODESK STUDENT VERSION

PRODUCED BY AN AUTODESK STUDENT VERSION

PRODUCED BY AN AUTODESK STUDENT VERSION

PRODUCED BY AN AUTODESK STUDENT VERSION



REV.	DATE:	DESCRIPTION	SHEET #:

dcr Massachusetts

DESIGNER: MDP

CHECKED BY: JRP

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION (DCR) PLANNING & ENGINEERING

PROJECT TITLE: DAY BOULEVARD GATE RECONSTRUCTION

CITY/TOWN: BOSTON

DRAWING TITLE: DETAILS PLAN (BLOW UP)

PROJECT NO.:

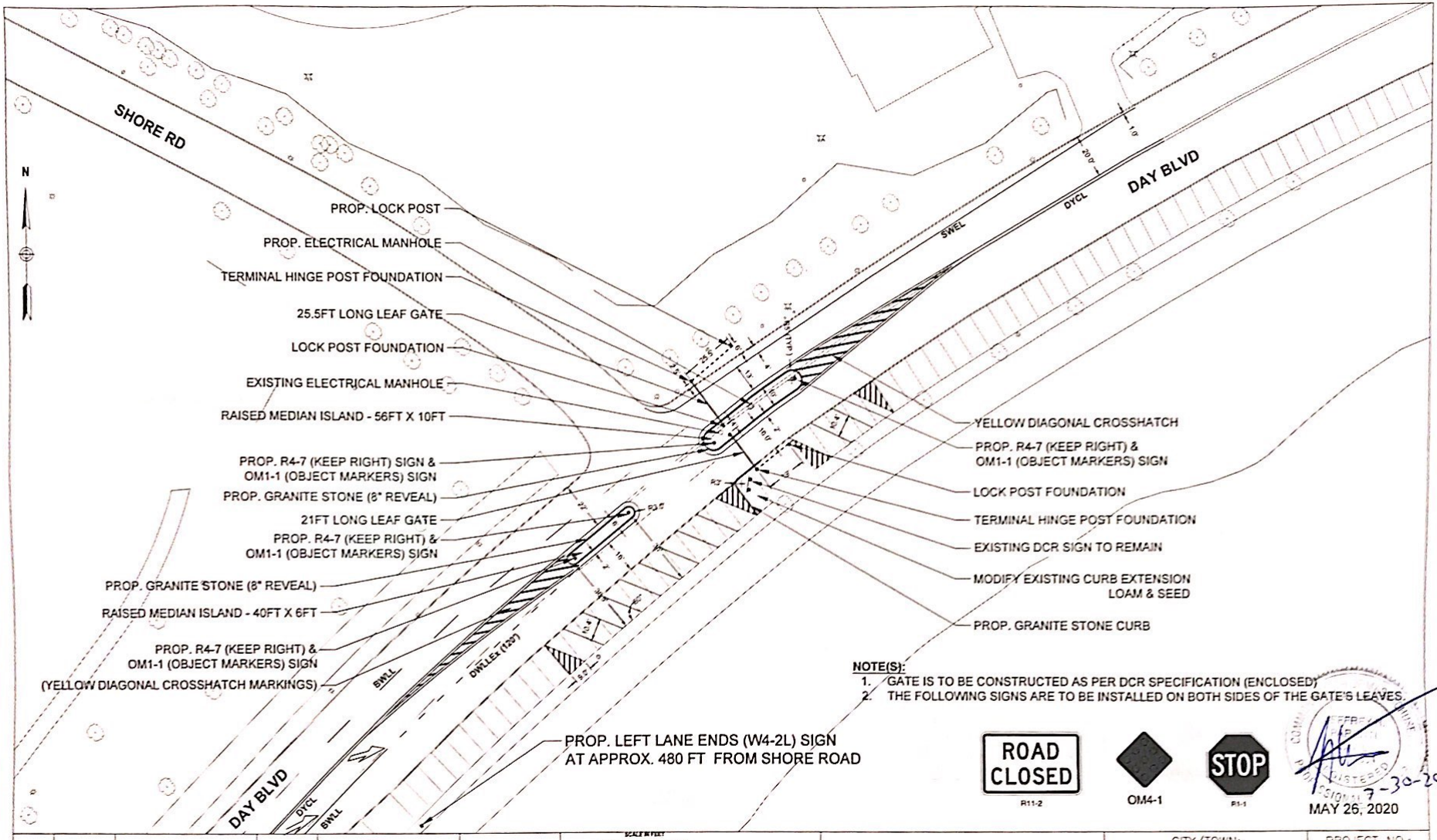
DRAWING NO.: TR-00

SHEET NO.: 2 OF 7

PRODUCED BY AN AUTODESK STUDENT VERSION

Scanned with CamScanner

PRODUCED BY AN AUTODESK STUDENT VERSION



NOTE(S):
1. GATE IS TO BE CONSTRUCTED AS PER DCR SPECIFICATION (ENCLOSED)
2. THE FOLLOWING SIGNS ARE TO BE INSTALLED ON BOTH SIDES OF THE GATE'S LEAVES.

7-30-20
MAY 26, 2020

REV.	DATE:	DESCRIPTION	SHEET #:

dcr Massachusetts

DESIGNER: MDP
CHECKED BY: JRP

SCALE IN FEET: 0 20 40

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION (DCR) PLANNING & ENGINEERING

PROJECT TITLE: DAY BOULEVARD GATE RECONSTRUCTION

CITY/TOWN: BOSTON

DRAWING TITLE: CONSTRUCTION PLAN

PROJECT NO.:

DRAWING NO.: TR-02

SHEET NO.: 4 OF 7

PRODUCED BY AN AUTODESK STUDENT VERSION

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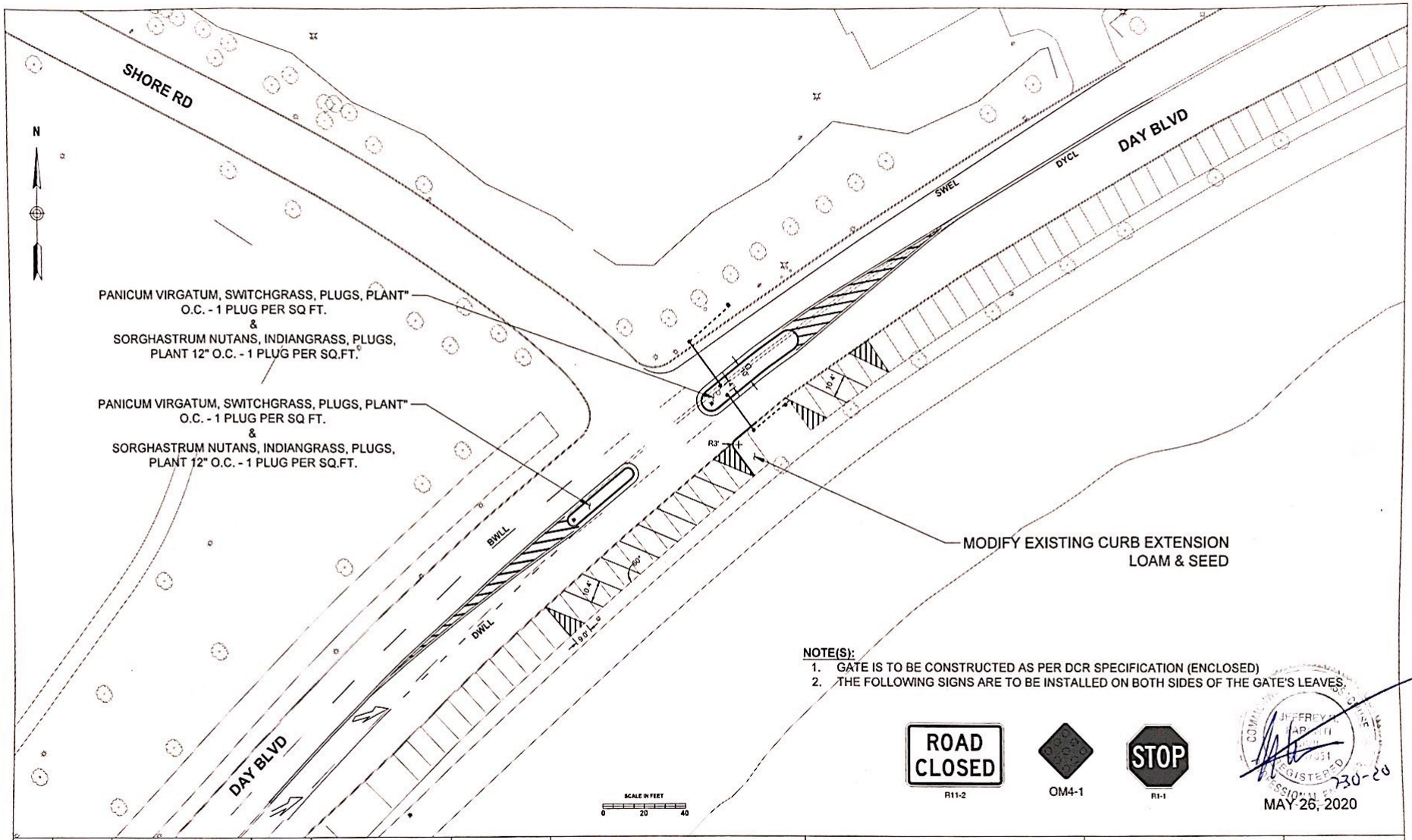
PRODUCED BY AN AUTODESK STUDENT VERSION



NOTE(S):

1. GATE IS TO BE CONSTRUCTED AS PER DCR SPECIFICATION (ENCLOSED)
2. THE FOLLOWING SIGNS ARE TO BE INSTALLED ON BOTH SIDES OF THE GATE'S LEAVES.

REV.	DATE:	DESCRIPTION	SHEET #:

dcr Massachusetts

DESIGNER:	MDP
CHECKED BY:	JRP

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION (DCR) PLANNING & ENGINEERING

PROJECT TITLE: DAY BOULEVARD GATE RECONSTRUCTION

CITY/TOWN:	BOSTON
DRAWING TITLE:	LANDSCAPE PLAN
PROJECT NO.:	
DRAWING NO.:	TR-03
SHEET NO.:	5 OF 7

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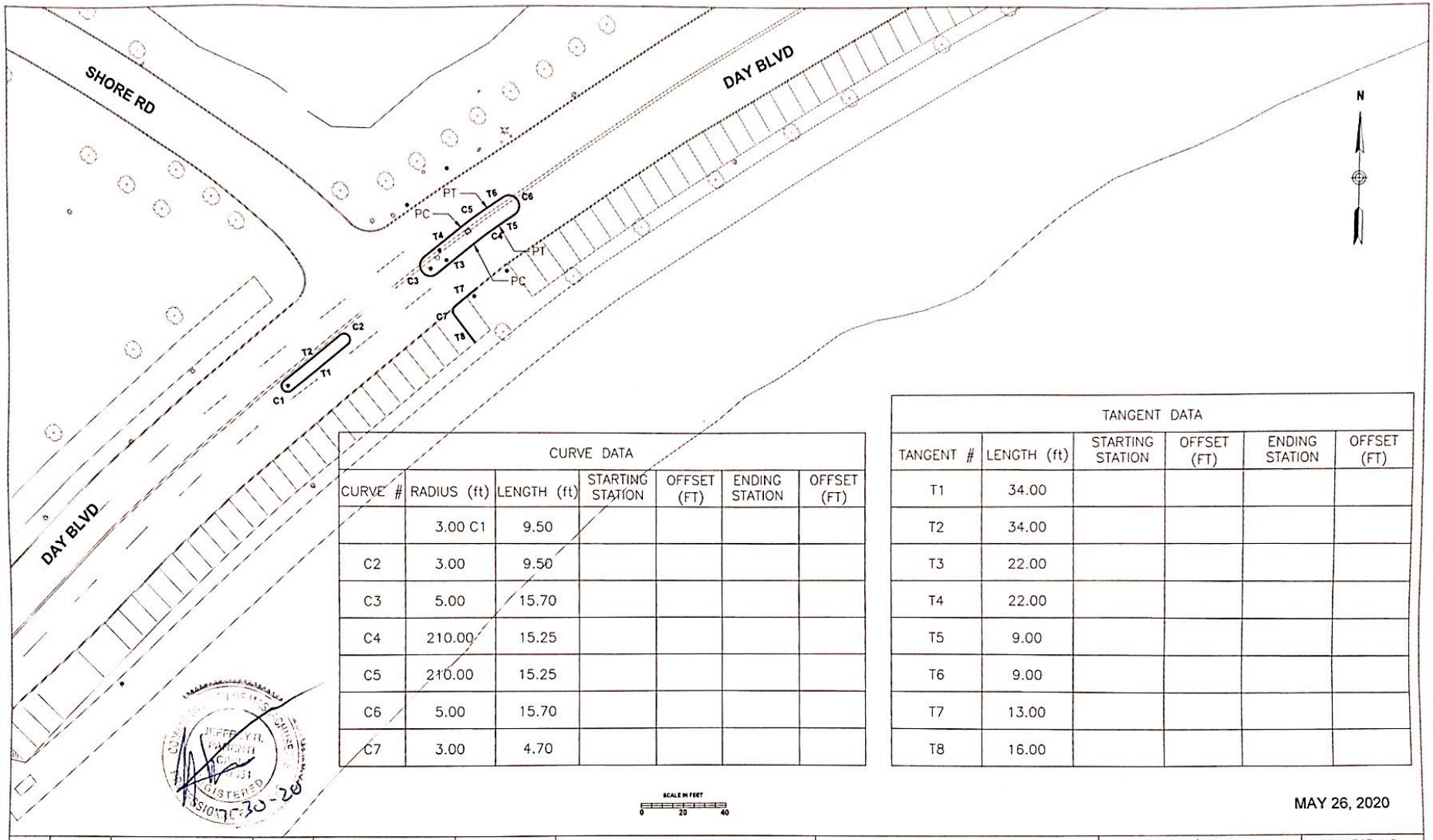
PRODUCED BY AN AUTODESK STUDENT VERSION

Scanned with CamScanner

PRODUCED BY AN AUTODESK STUDENT VERSION



CURVE DATA						
CURVE #	RADIUS (ft)	LENGTH (ft)	STARTING STATION	OFFSET (FT)	ENDING STATION	OFFSET (FT)
	3.00 C1	9.50				
C2	3.00	9.50				
C3	5.00	15.70				
C4	210.00	15.25				
C5	210.00	15.25				
C6	5.00	15.70				
C7	3.00	4.70				

TANGENT DATA					
TANGENT #	LENGTH (ft)	STARTING STATION	OFFSET (FT)	ENDING STATION	OFFSET (FT)
T1	34.00				
T2	34.00				
T3	22.00				
T4	22.00				
T5	9.00				
T6	9.00				
T7	13.00				
T8	16.00				

SCALE IN FEET
0 20 40

MAY 26, 2020

REV.	DATE:	DESCRIPTION	SHEET #:

dcr Massachusetts

DESIGNER: MDP

CHECKED BY: JRP

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION (DCR) PLANNING & ENGINEERING

PROJECT TITLE: DAY BOULEVARD GATE RECONSTRUCTION

CITY/TOWN: BOSTON

DRAWING TITLE: CURB TIE PLAN

PROJECT NO.:

DRAWING NO.: TR-04

SHEET NO.: 6 OF 7

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PRODUCED BY AN AUTODESK STUDENT VERSION

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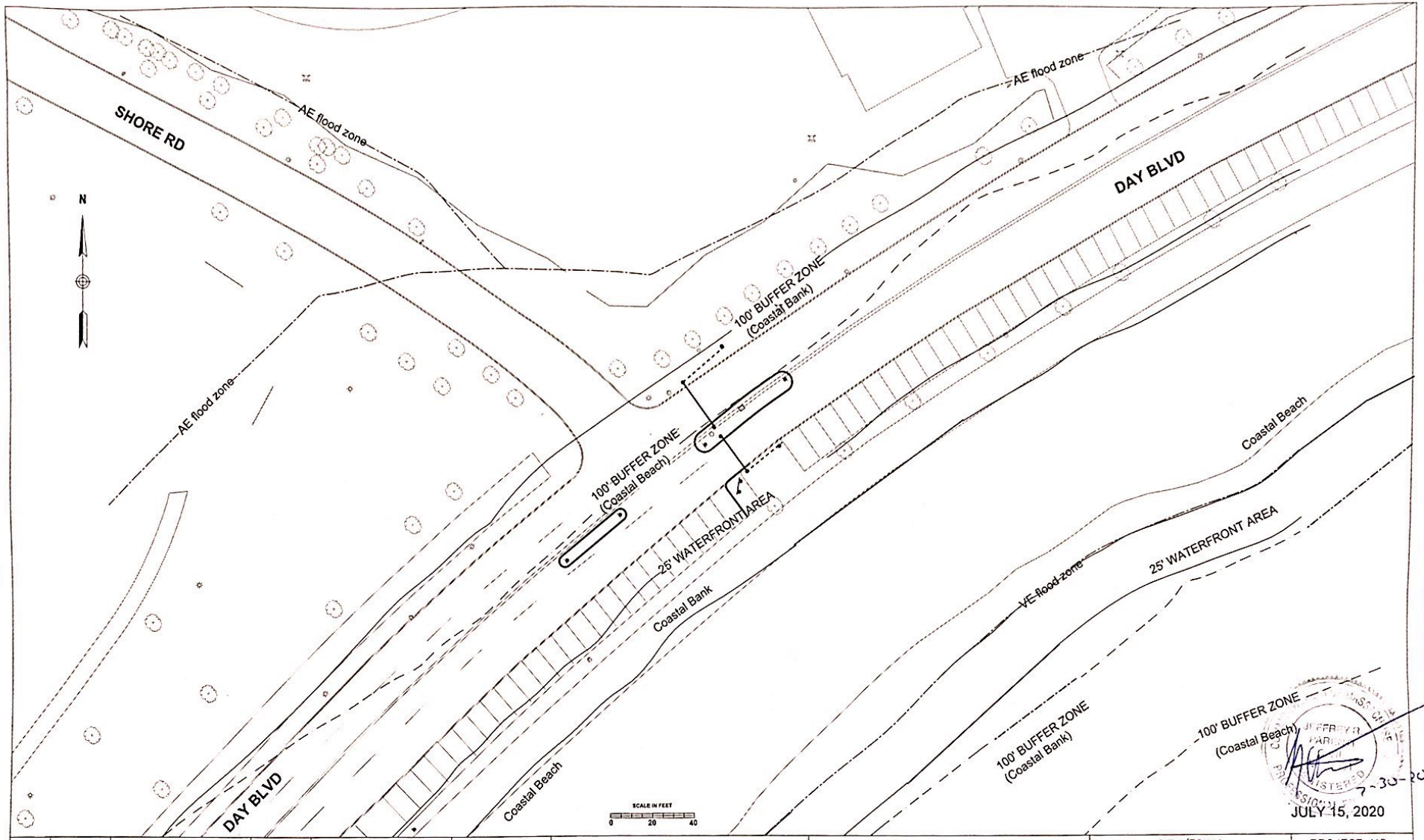
PRODUCED BY AN AUTODESK STUDENT VERSION



JULY 15, 2020

REV.	DATE:	DESCRIPTION	SHEET #:

DESIGNER: MDP

CHECKED BY: JRP

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION (DCR) PLANNING & ENGINEERING

PROJECT TITLE: DAY BOULEVARD GATE RECONSTRUCTION

CITY/TOWN: BOSTON

DRAWING TITLE: FLOOD MAP

PROJECT NO.:

DRAWING NO.: FM-01

SHEET NO.: 7 OF 7

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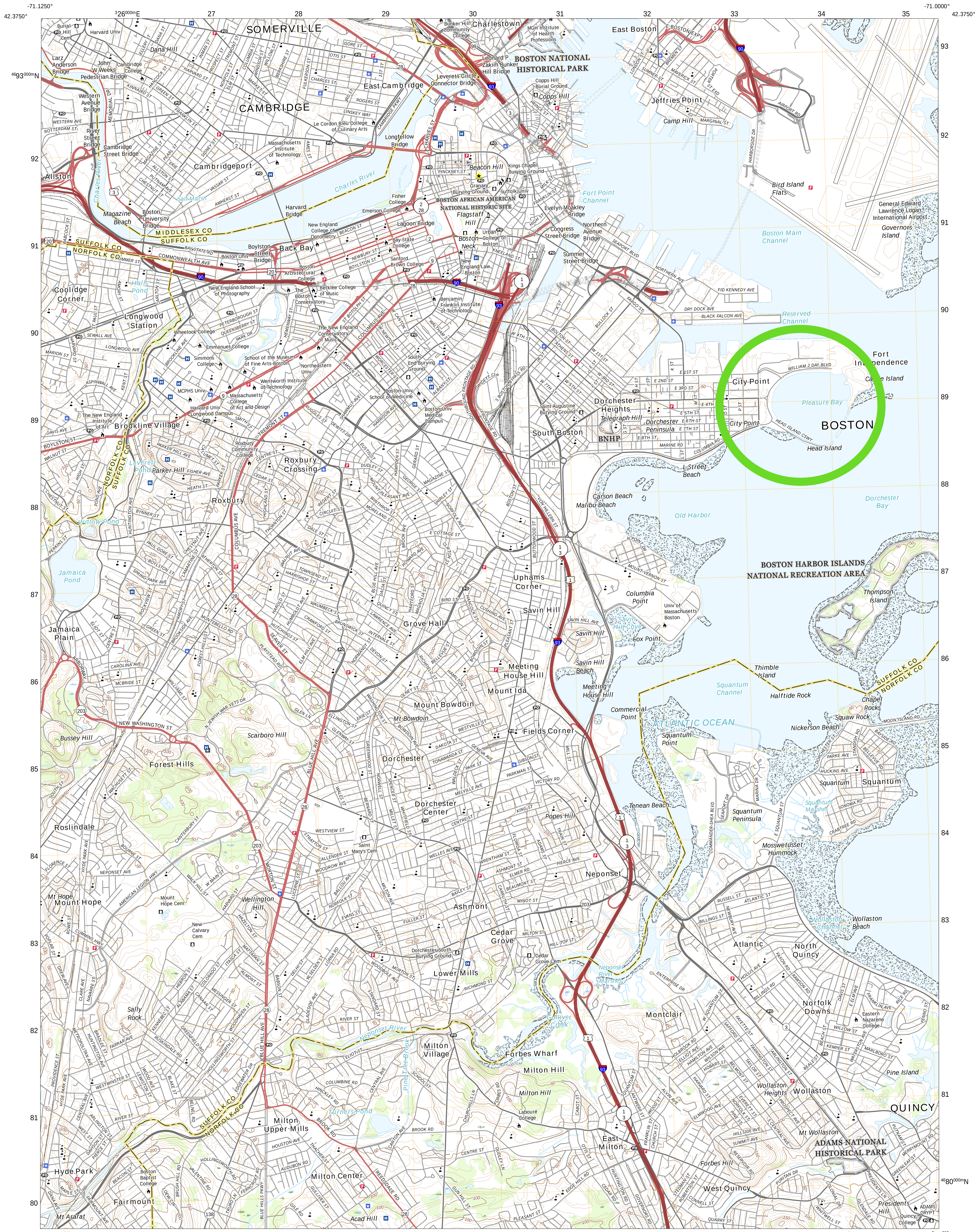
USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

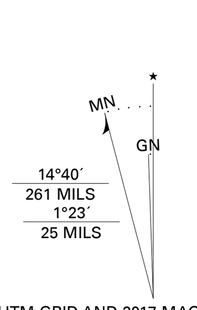
The National Map US Topo

BOSTON SOUTH QUADRANGLE
MASSACHUSETTS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 19T
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery....NAIP, July 2016 - September 2016
Roads....U.S. Census Bureau, 2016
Names....GNIS, 1974 - 2018
Hydrography....National Hydrography Dataset, 2005 - 2016
Contours....National Elevation Dataset, 2008 - 2012
Boundaries....Multiple sources; see metadata file 2016 - 2017
Wetlands....FWS National Wetlands Inventory 1992 - 2011



UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

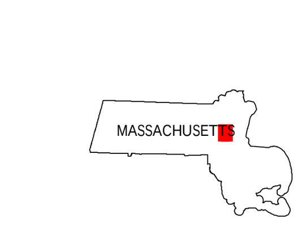
U.S. National Grid
100,000 - m Square ID
CG
Grid Zone Designation 19T

SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18



QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES

1 Lexington
2 Boston North
3 Lynn
4 Newton
5 Hull
6 Norwood
7 Blue Hills
8 Weymouth

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

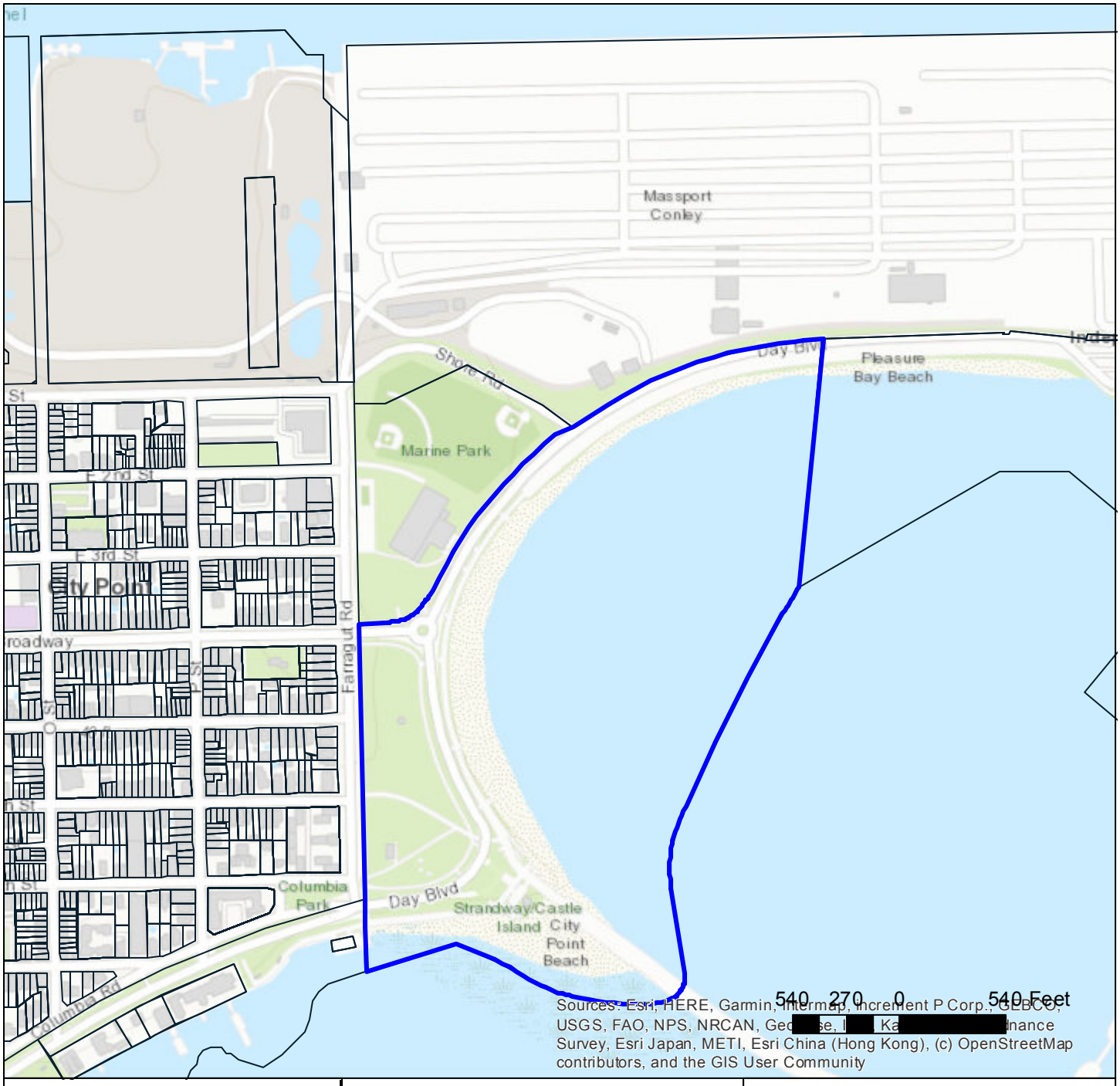
BOSTON SOUTH, MA
2018

96

NSN. 7643016369497
NGA REF NO. USGSX24K4932

Boston Assessor's Map

May 27, 2020

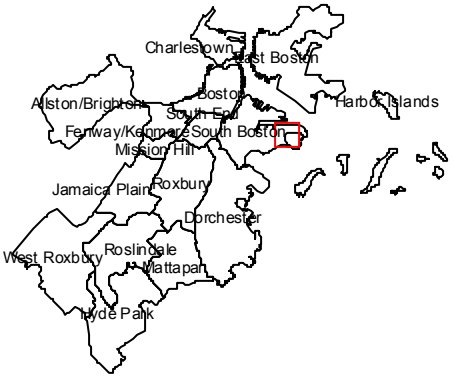


Parcel ID: 0603415000
Address: 1889 WILLIAM J DAY BL
Zipcode: 02127
Owner: COMMONWLTH OF MASS
Land Use: E
Lot Size: 2,736,000.00 sq ft
Living Area: 0.00 sq ft
Total Value: $47,168,600.00
Land Value: $47,168,600.00
Building Value: $0.00
Gross Tax: $0.00

BostonMaps

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

The City of Boston makes no claims, no representations, and no warranties, expressed or implied, concerning the validity (expressed or implied), the reliability, or the accuracy of the GIS data and GIS data products furnished by the City, including the implied validity of any uses of such data. The use of this data, in any such manner, shall not supercede any federal, state or local laws or regulations.



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

The AE Zone category has been divided by a **Limit of Moderate Wave Action (LiMWA)**. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between the VE Zone and the LiMWA (or between the shoreline and the LiMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Massachusetts State Plane Mainland Zone (FIPS zone 2001). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM is derived from Massachusetts Geographic Information System (MassGIS) digital ortho-photography produced at 45 centimeter (2005) and 30 centimeter (2008) resolution. Aerial photography is dated Spring 2005 and Spring 2008.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data Tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

Only coastal structures that are certified to provide protection from the 1-percent-annual chance flood are shown on this panel. However, all structures taken into consideration for the purpose of coastal flood hazard analysis and mapping are present in the DFIRM database in S_Gen_Struct.

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, AR, 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
- 513 — 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

- A — A — Cross section line
- 23 — 23 — Transect line
- Culvert
- Bridge
- 45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 4989000 M — 1000-meter grid: Massachusetts State Plane Mainland Zone (FIPS Zone 2001), Lambert Conformal Conic projection
- 4689000m N — 1000-meter Universal Transverse Mercator tick values, zone 19N
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 25, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
March 16, 2016 - to change Base Flood Elevations and Special Flood Hazard Areas, to change zone designations, to update the effects of wave action, to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision and to modify Coastal Barrier Resource System units.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0083J

FIRM

FLOOD INSURANCE RATE MAP

SUFFOLK COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)

PANEL 83 OF 176
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0083	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 25025C0083J
MAP REVISED MARCH 16, 2016

Federal Emergency Management Agency

COMMONWLTH OF MASS
1889 WM J DAY BLVD
SOUTH BOSTON MA 2127

COMMONWLTH OF MASS
FARRAGUT RD
SOUTH BOSTON MA 2127

COMMWLTH OF MASS
20 FARRAGUT RD
SOUTH BOSTON MA 2127

COMMONWLTH OF MASS
WM J DAY BLVD
SOUTH BOSTON MA 2127

DAILEY ELIZABETH T
63 FARRAGUT ROAD
SOUTH BOSTON MA 2127

REZZA DORIS M
65 FARRAGUT ROAD
SOUTH BOSTON MA 2127

FARRAGUT COURT CONDO TR
125 FARRAGUT RD
SOUTH BOSTON MA 2127

BIANCHI TIMOTHY
1 TWOMEY COURT #37
SOUTH BOSTON MA 2127

SILVA ISABEL JUDITH TS
219 COURT RD
WINTHROP MA 2152

BURKE DENNIS W
245 HIGHLAND ST
MILTON MA 2186

TOUHEY BRIAN V
67 SILVERHILL RD
MILFORD MA 1757

THOMAS MERIBAH F
1 TWOMEY CT #41
S BOSTON MA 2127

SILVA ISABEL JUDITH TS
219 COURT RD
WINTHROP MA 2152

RATTET JANICE G
PO BOX 1222
WEST TISBURY MA 2575

ALLEN ANNE CHRISTINA
1 TWOMEY CT 44
SOUTH BOSTON MA 2127

LEIST JOHN F
1 TWOMEY CT #45
SOUTH BOSTON MA 2127

MARTIN PAUL R
1 TWOMEY COURT #46
SOUTH BOSTON MA 2127

METHELIS EDWARD F
1 TWOMEY COURT #47
SOUTH BOSTON MA 2127

STAPLETON LISA D
29 BUCKINGHAM RD
MILTON MA 2186

SPACONE SUSAN
9 TWOMEY CT #49
SOUTH BOSTON MA 2127

NEAL FREDERICK
9 TWOMEY COURT #50
SOUTH BOSTON MA 2127

GETONGA JAMES
9 TWOMEY CT APT 51
BOSTON MA 2127

MONROE JASON
9 TWOMEY CT #52
S BOSTON MA 2127

LONERGAN STEFFAN
9 TWOMEY CT #53
SOUTH BOSTON MA 2127

DOYLE JOHN M
9 TWOMEY CT
SOUTH BOSTON MA 2127

MCCARTHY WILLIAM E
17 TWOMEY CT #55
S BOSTON MA 2127

DOHERTY HENRY T JR
73A WINTHROP AV &
LAWRENCE MA 1843

LEVINS JOSEPH C JR
17 TWOMEY COURT #57
SOUTH BOSTON MA 2127

ADDUCI ANNE M
17 TWOMEY COURT #58
SOUTH BOSTON MA 2127

KING PATRICK J ETAL
20 FANEUIL RD
WALTHAM MA 2452

Notification to Abutters

Under the Massachusetts Wetlands Protection Act and Boston Wetlands Protection Ordinance

In accordance with M.G.L. 131 §40 and Boston Wetlands Protection Ordinance, you are hereby notified of the following:

A. The name of the Applicant is Department of Conservation & Recreation (DCR).

B. The Applicant has filed a Notice of Intent with the Boston Conservation Commission and MassDEP for permission to remove, fill, dredge, or alter an Area Subject to Protection (Wetland Resource Area and/or Buffer Zone) under the Massachusetts Wetlands Protection Act and Boston Wetlands Protection Ordinance.

C. The address of the lot where the activity is proposed: Day Boulevard, Castle Island.

D. The proposed activity is: new gate installation, addition of median islands, curb modifications/paving, and landscaping.

E. A Public Hearing regarding this application will be held by the Boston Conservation Commission. Information regarding the date, time, and place of the public hearing may be obtained from the Applicant or the Boston Conservation Commission.

F. Copies of the application may be examined by contacting the Boston Conservation Commission at 617-635-3850 or cc@boston.gov.

G. Copies of the application may also be obtained from the Applicant by calling this telephone number: 207-653-0757 or emailing stefanie.farrington@mass.gov between the hours of 9am – 3pm on the following days of the week: Monday-Friday.

Note: Public Hearing Notice, including its date, time, and place, will be published at least 5 days in advance.