William H. McCarthy, Jr.
Counsellor At Law
5 Cross Rd.
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Tel. (617) 877-4107
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Email: billmccarthylaw@verizon.net

Via Digital Transmission and Overnight Courier
May 3, 2021

Mr. Nick Moreno
Executive Director
City of Boston Conservation Commission
Boston City Hall, Room 709
Boston, MA 02201

Re: Showa Boston Institute for Language and Culture, Inc.
Notice of Intent Application Form
Boston Wetlands Ordinance
City of Boston Code, Ordinances, Chapter 7-1.4

Dear Director Moreno:

As attorney for and on behalf of Showa Boston Institute for Language and Culture, Inc., having an address of 420 Pond St., Boston (Jamaica Plain), MA 02130 ("Showa"), I hereby transmit Showa's Notice of Intent Application Form (the "Application") to the City of Boston Conservation Commission (the "Commission"). The Application is made for the purpose of seeking, respectfully, the Commission's permission to undertake a proposed project (the "Proposed Project") within a wetlands buffer zone entirely within Showa's property.

In brief, the Proposed Project consists of converting an existing natural grass playing field to synthetic turf playing field. No additional impervious cover or structures are proposed as part of the Proposed Project. If the Proposed Project receives the Commission's approval and an Order of Conditions, if applicable, then, upon completion of the Proposed Project, the synthetic turf field will be used by Showa's students as well as students of the British International School of Boston (the "BISB"). The BISB leases buildings and other spaces on the Showa campus, and both Showa and the BISB share in the use of various campus facilities, the existing playing field being one example.

For additional details on the Proposed Project, including the Commission's requirements associated with the Application, I refer you to the extensive and excellent work product of Ms. Melissa Flynn, P.E., of SMRT Architects and Engineers, 200 Brickstone Square, Suite 303, Andover, MA 01810. Ms. Flynn's contact information is contained in the Application. Thank you for all your assistance to date with this matter. Should the Commission and or you require additional information from Showa, please feel free to contact me as their representative and attorney, duly authorized.

Sincerely,

William H. McCarthy, Jr.

Enclosures
cc: Showa Boston Institute for Language and Culture, Inc.
Boston International School of Boston
SMRT Architects and Engineers

Checklist for Filing a Notice of Intent with Boston Conservation Commission

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

Please Submit the Following to the Conservation Commission:

- ☒ Two copies (a signed original and 1 copy) of a completed Notice of Intent (WPA Form 3)
- ☒ Two copies (a signed original and 1 copy) of a completed Boston Notice of Intent (Local Form)
- ☒ Two copies of plans (reduced to 11" X 17") in their final form with engineer's stamp affixed supporting calculations and other documentation necessary to completely describe the proposed work and mitigating measures. Plans must include existing conditions, the proposed project, erosion controls and mitigation measures, grading and spot elevations and all wetland resource areas and associated buffer zones. Some projects may require both an aerial view of the plans along with a profile view of plans depending on the scope of work.
- ☒ Two copies of an 8 ½" x 11" section of the USGS quadrangle map of the area, containing sufficient information for the Conservation Commission and the Department to locate the site of the work.
  (Also included in the Stormwater Management Report)
- ☒ (If applicable) Two copies the Federal Emergency Management Agency Flood Insurance Rate Map for the project site. FEMA Flood Maps: https://msc.fema.gov/portal.
  (Also included in the Stormwater Management Report)
- N/A ☐ Two copies of the determination regarding the Natural Heritage and Endangered Species Program: Review Section C. Other Applicable Standards and Requirements of the Notice of Intent, page 4 of 8, pertaining to wildlife habitat. The Conservation Commission and the Natural Heritage & Endangered Species Program have the maps necessary to make this determination.
  (No endangered or threatened species within project area for NHESP Mapping)
- ☒ (If applicable) Two hard copies of a Stormwater Report to document compliance with the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q), including associated drainage calculations for rooftops, parking lots, driveways, etc., for the required design storm events.
- N/A ☐ (If applicable) A narrative detailing best management practices for stormwater management as set forth in the Stormwater Management Standards of the Massachusetts Department of Environmental Protection and any separate standards and guidelines prepared by the City and the Boston Water and Sewer Commission.
- ☒ (If applicable) Two hard copies of the Checklist for Stormwater Report
  (Also included in the Stormwater Management Report)
- N/A ☐ Details of the stormwater management system, including: catch basins, oil separating tanks, detention basins, outfalls, sewer connections, etc.
- ☒ Any photographs related to the project representing the wetland resource areas.
- ☒ Two copies of a detailed project narrative describing the following: an overview of the entire project, the work proposed within wetland resource areas and/or buffer zones; how the performance standards specific to the wetland resource areas will be met (listing out each performance standard); a consideration of the effect that projected sea level rise, changes in storm intensity and frequency, and other consequences of climate change may have on the resource areas and proposed activities; construction equipment and material involved; and measures to protect wetland resource areas and mitigate impacts. The applicant shall also include narrative on how they plan to integrate climate change and adaptation planning considerations into their project to promote climate resilience to protect and promote Resource Area Values and functions into the future.
  Included in Stormwater Management Report
- ☒ Two copies of an Abutters List, Affidavit of Service and Abutter Notification, filed concurrently with the Notice of Intent. Abutter notices shall be sent in both English and the second most commonly spoken language(s) in the neighborhood(s) where the project is proposed. Notices shall also include Babel notice cards for additional translation and language access services. All abutters within 300' of the project

property line must be notified including those in a neighboring municipality. In such an instance, a copy of the filing must also be sent to the local Conservation Commission of the neighboring municipality. EXCEPTION: When work is in land under water bodies and waterways or on a tract of land greater than 50 acres, written notification must only be given to abutters within 300 feet of the "project site."

N/A ☐ Two copies of the BPDA Climate Resiliency Checklist (for new buildings). This can be completed online at http://www.bostonplans.org/planning/planning-initiatives/article-37-green-building-guidelines. Please print the pdf that you will receive via email after completion and include it in your submission.

☒ **Electronic copies.** Documents may be submitted via email, or via an email link to downloadable documents.

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

Two copies of the Stormwater Pollution Prevention Plan (SWPPP) have also been included for the Commission's review.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

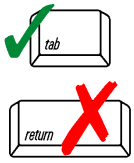
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

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



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

A. General Information

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

420 Pond St. (a. Street Address) | Boston (Jamaica Plain) (b. City/Town) | 02130 (c. Zip Code)

Latitude and Longitude: 42.306632° (d. Latitude) | -71.130196° (e. Longitude)

1902456000 (f. Assessors Map/Plat Number) | (g. Parcel /Lot Number)

2. Applicant:

Frank (a. First Name) | Schwartz, President (b. Last Name)

Showa Boston Institute for Language and Culture, Inc. (c. Organization)

420 Pond Street (d. Street Address)

Boston (Jamaica Plain) (e. City/Town) | MA (f. State) | 02130 (g. Zip Code)

617-522-0080 (h. Phone Number) | 617-522-0732 (i. Fax Number) | fschwartz@showaboston.edu (j. Email Address)

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

(a. First Name) | (b. Last Name)

(c. Organization)

(d. Street Address)

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

(h. Phone Number) | (i. Fax Number) | (j. Email address)

4. Representative (if any):

William (a. First Name) | McCarthy, Esq. (b. Last Name)

Law Office of William H. McCarthy, Jr. (c. Company)

5 Cross Rd. (d. Street Address)

Orleans (e. City/Town) | MA (f. State) | 02653 (g. Zip Code)

617-877-4107 (h. Phone Number) | 617-830-0088 (i. Fax Number) | billmccarthylaw@verizon.net (j. Email address)

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

$2,037.50** (a. Total Fee Paid) | $237.50 (b. State Fee Paid) | $1,800.00** (c. City/Town Fee Paid)

**City of Boston has own fee structures for NOI:
Title 14 Section 450 fee = $1,500.00
Boston Wetland Ordinance
(Notice of Intent- Category 2) = $300.00

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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A. General Information (continued)

6. General Project Description:

Construction of a new synthetic turf field in the location of the current natural grass field.

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

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

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Suffolk	
c. Book	d. Page Number
13979	299

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	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 available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

   ☐ 25 ft. - Designated Densely Developed Areas only

   ☐ 100 ft. - New agricultural projects only

   ☐ 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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City/Town

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

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
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Provided by MassDEP:
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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   b. Date of map

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

   c. Submit Supplemental Information for Endangered Species Review*

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

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

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

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

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

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

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

(d) ☐ Vegetation cover type map of site

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

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

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

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

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

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

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

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

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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:

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

Massachusetts Department of Environmental Protection
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D. Additional Information (cont'd)

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

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

Showa Institute for Language and Culture, Inc./British International School of Boston
Athletic Field Renovations- Issued for Permitting Plan Set (10 sheets)

SMRT Architects and Engineers	Melissa A. Flynn, PE
b. Prepared By	c. Signed and Stamped by
5-4-2021	Site Plans as noted (20' scale & 30 scale)
d. Final Revision Date	e. Scale

f. Additional Plan or Document Title	g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

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

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

397	4-30-21
2. Municipal Check Number	3. Check date
396	4-30-21
4. State Check Number	5. Check date
William	McCarthy
6. Payor name on check: First Name	7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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F. Signatures and Submittal Requirements

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

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

Frank Schwartz — 1. Signature of Applicant

5/3/21 — 2. Date

3. Signature of Property Owner (if different)

4. Date

William H. McCarthy Jr, Esq. — 5. Signature of Representative (if any)

5-3-2021 — 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 any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

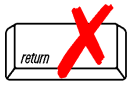
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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



A. Applicant Information

1. Location of Project:

420 Pond Street	Boston (Jamaica Plain)
a. Street Address	b. City/Town
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Frank	Schwartz, President
a. First Name	b. Last Name

Showa Boston Institute for Language and Culture, Inc.
c. Organization

420 Pond Street
d. Mailing Address

Boston (Jamaica Plain)	MA	02130
e. City/Town	f. State	g. Zip Code

6175-220-080	617-522-0732	fschwartz@showaboston.edu
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

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

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

B. Fees

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

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
j. other activity not in Category 1, 3, 4, 5, or 6- Synthetic turf installation	1	$500.00	$500.00

Step 5/Total Project Fee: $500.00

Step 6/Fee Payments:

Total Project Fee:	$2,037.50** (a. Total Fee from Step 5)
State share of filing Fee:	$237.50 (b. 1/2 Total Fee **less** $12.50)
City/Town share of filling Fee:	$1,800.00** (c. 1/2 Total Fee **plus** $12.50)

**City of Boston has own fee structures for NOI:
Title 14 Section 450 fee = $1,500.00
Boston Wetland Ordinance
(Notice of Intent- Category 2) = $300.00

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

To retain a copy of this file you must save and/or print.

Username:	**SMRT_ANDOVER**
Transaction ID:	**1274795**
Document:	**WPA Form 3 - NOI**
Size of File:	**248.22K**
Status of Transaction:	**In Process**
Date and Time Created:	**5/5/2021:2:19:03 PM**

Note: This file only includes forms that were part of your transaction as of the date and time indicated above. If you need a more current copy of your transaction, return to eDEP and select to “Download a Copy” from the Current Submittals page.

Please find the enclosed check for $237.50 for the state portion of the filing fee for the project referenced in these documents.

If you require any additional information, please contact me at 978-289-6037.

Thank you,

Melissa A. Flynn
mflynn@smrtinc.com
SMRT Architects and Engineers

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 #:1274795
City/Town:BOSTON

A.General Information

1. Project Location:

a. Street Address	420 POND STREET		
b. City/Town	BOSTON	c. Zip Code	02130
d. Latitude	42.30629N	e. Longitude	71.13312W
f. Map/Plat #	1902456000	g.Parcel/Lot #	1902456000

2. Applicant:

☐ Individual ☑ Organization

a. First Name	FRANK	b.Last Name	SCHWARTZ, PRESIDENT		
c. Organization	SHOWA BOSTON INSTITUTE				
d. Mailing Address	420 POND ST				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02130
h. Phone Number	617-522-0080	i. Fax	617-522-0732	j. Email	fschwartz@showaboston.edu

3.Property Owner:

☐ more than one owner

a. First Name	FRANK	b. Last Name	SCHWARTZ, PRESIDENT		
c. Organization	SHOWA BOSTON INSTITUTE				
d. Mailing Address	420 POND ST				
e. City/Town	BOSTON	f.State	MA	g. Zip Code	02130
h. Phone Number	617-522-0080	i. Fax	617-522-0732	j.Email	fschwartz@showaboston.edu

4.Representative:

a. First Name	WILLIAM	b. Last Name	MCCARTHY, ESQ.		
c. Organization	LAW OFFICE OF WILLIAM H. MCCARTHY, JR.				
d. Mailing Address	5 CROSS RD				
e. City/Town	ORLEANS	f. State	MA	g. Zip Code	02653
h.Phone Number	617-877-4107	i.Fax	617-830-0088	j.Email	billmccarthylaw@verizon.net

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:

CONSTRUCTION OF A NEW SYNTHETIC TURF FIELD IN THE LOCATION OF THE CURRENT NATURAL GRASS FIELD.

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

8.Property recorded at the Registry of Deeds for:

a.County:	b.Certificate:	c.Book:	d.Page:
SUFFOLK		13979	299

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	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	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. ☑ Yes, Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol.2, Chapter 3)
2. ☐ A portion of the site constitutes redevelopment
3. ☐ Proprietary BMPs are included in the Stormwater Management System

b. ☐ No, 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 ☑ Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland ☑ [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.
3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s). ☐ Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
4. List the titles and dates for all plans and other materials submitted with this NOI. ☑

a. Plan Title:	b. Plan Prepared By:	c. Plan Signed/Stamped By:	c. Revised Final Date:	e. Scale:
SHOWA INSTITUTE FOR LANGUAGE AND CULTURE, INC./BRITISH INTERNATIONAL SCHOOL OF BOSTON ATHLETIC FIELD RENOVATIONS-ISSUED FOR PERMITTING PLAN SET (10 SHEETS)	MELISSA A. FLYNN, PE		5/4/21	

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

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

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

8. Attach NOI Wetland Fee Transmittal Form. ☑

9. Attach Stormwater Report, if needed. ☑

E. Fees

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

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

2. Municipal Check Number	3. Check date
4. State Check Number	5. Check date
6. 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.

Frank Schwartz	5/5/2021
1. Signature of Applicant	2. Date
Frank Schwartz	5/5/2021
3. Signature of Property Owner(if different)	4. Date
William H. McCarthy Jr, Esp.	5/5/2021
5. Signature of Representative (if any)	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 #:1274795
City/Town:BOSTON

A. Applicant Information

1. Applicant:

a. First Name	FRANK	b.Last Name	SCHWARTZ, PRESIDENT		
c. Organization	SHOWA BOSTON INSTITUTE				
d. Mailing Address	420 POND ST				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02130
h. Phone Number	6175220080	i. Fax	6175220732	j. Email	fschwartz@showaboston.edu

2.Property Owner:(if different)

a. First Name	FRANK	b. Last Name	SCHWARTZ, PRESIDENT		
c. Organization	SHOWA BOSTON INSTITUTE				
d. Mailing Address	420 POND ST				
e. City/Town	BOSTON	f.State	MA	g. Zip Code	02130
h. Phone Number	6175220080	i. Fax	6175220732	j.Email	fschwartz@showaboston.edu

3. Project Location:

a. Street Address	420 POND STREET	b. City/Town	BOSTON

Are you exempted from Fee? ☐ (YOU HAVE SELECTED 'NO')

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

City of Boston Environment

NOTICE OF INTENT APPLICATION FORM
Boston Wetlands Ordinance
City of Boston Code, Ordinances, Chapter 7-1.4

Boston File Number

MassDEP File Number

A. GENERAL INFORMATION

1. Project Location

420 Pond St	Boston (Jamaica Plain)	02130
a. Street Address	b. City/Town	c. Zip Code

190245600	
f. Assessors Map/Plat Number	g. Parcel /Lot Number

2. Applicant

Frank	Schwartz, President	Showa Boston Institute for Language and Culture, Inc.
a. First Name	b. Last Name	c. Company

420 Pond Street
d. Mailing Address

Boston (Jamaica Plain)	MA	02130
e. City/Town	f. State	g. Zip Code

617-522-0080	617-522-0732	fschwartz@showaboston.edu
h. Phone Number	i. Fax Number	j. Email address

3. Property Owner

Same as Applicant
a. First Name | b. Last Name | c. Company

d. Mailing Address

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

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

❑ 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)

William	McCarthy, Esq.	Law Office of William H. McCarthy, Jr.
a. First Name	b. Last Name	c. Company

5 Cross Road
d. Mailing Address

Orleans	MA	02653
e. City/Town	f. State	g. Zip Code

617-877-4107	617-830-0080	billmccarthylaw@verizon.net
h. Phone Number	i. Fax Number	j. Email address

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

☒ Yes ☐ No

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

6. General Information

Construction of a new synthetic turf field in the location of the current natural grass field.

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. ☐ Transportation
j. ☒ Other

8. Property recorded at the Registry of Deeds

Suffolk
a. County

299
b. Page Number

13979
c. Book

d. Certificate # (if registered land)

9. Total Fee Paid

$2,037.50
a. Total Fee Paid

$237.50
b. State Fee Paid

$1,500.00 (City of Boston fee)
$300.00 (NOI Category 2 fee)
c. City Fee Paid

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 ☐ No

1. Coastal Resource Areas

Resource Area	Resource Area Size	Proposed Alteration*	Proposed Migitation
❑ *Coastal Flood Resilience Zone*	*Square feet*	*Square feet*	*Square feet*
❑ *25-foot Waterfront Area*	*Square feet*	*Square feet*	*Square feet*
❑ *100-foot Salt Marsh Area*	*Square feet*	*Square feet*	*Square feet*
❑ *Riverfront 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*	21,747 *Square feet*	9,468 *Square feet*	0 *Square feet*
☒ *Riverfront Area*	20,534 *Square feet*	1,611 *Square feet*	0 *Square feet*

C. OTHER APPLICABLE STANDARDS & REQUIREMENTS

1. What other permits, variances, or approvals are required for the proposed activity described herein and what is the status of such permits, variances, or approvals?

1	Boston Water & Sewer Commission (BWSC) - Site Plan Submission - In Progress
2	Boston Planning & Development Agency (BPDA) - Art. 80E-2.2 Site Plan Component of Small Project Review and Approval.
3	Boston Inspectional Services Department (ISD) (Building Permit per Application No: ALT1049947) - Building Permit Plan Review Approval pending transmission of Stamped Plans approved by the BPDA.

2. 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 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 ☒ 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

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

❑ Yes ☒ No

If yes, provide the name of the ACEC: _____

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

☒ *Yes. Attach a copy of the Stormwater Checklist & Stormwater Report as required.*
- ❑ *Applying for a Low Impact Development (LID) site design credits*
- ❑ *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 ❑ 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.

Frank Schwartz
Signature of Applicant

5/3/21
Date

Signature of Property Owner (if different)

Date

William H. McCarthy, Jr., Esq.
Signature of Representative (if any)

5-3-2021
Date

City of Boston
Environment

City of Boston
Mayor Martin J. Walsh

EXTENSION FORM

The undersigned hereby allows the **Boston Conservation Commission** an extension of time, beyond the statutory limit, to review an application or issue a final decision under the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40, and the Boston Wetlands Ordinance, Boston City Code, Ordinances, Chapter 7-1.4d during the state of emergency declared by the Governor on March 10, 2020.

Applicant:

a. First Name	b. Last Name	c. Company
Frank	Schwartz, President	Showa Boston Institute for Language and Culture, Inc.

d. Mailing Address: 420 Pond St.

e. City/Town	f. State	g. Zip Code
Boston (Jamaica Plain)	MA	02130

h. Phone Number	i. Fax Number	j. Email address
617-522-0080		fschwartz@showaboston.edu

Frank Schwartz
Signature of Applicant

May 3, 2021
Date

Property Owner (if different):

a. First Name	b. Last Name	c. Company

d. Mailing Address

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

h. Phone Number	i. Fax Number	j. Email address

Signature of Property Owner (if different)

Date

Applications will only be accepted when submitted with a properly executed Extension Form.

Wetland Narrative

SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE

BRITISH INTERNATIONAL SCHOOL OF BOSTON

ATHLETIC FIELD RENOVATIONS

Boston (Jamaica Plain), Massachusetts

SMRT

Submitted by:
SMRT Architects and Engineers
May 7, 2021
Project # 21057
smrtinc.com

TABLE OF CONTENTS

List of Figures

1. PROJECT DESCRIPTION

The project consists of constructing a new synthetic turf field at the location of the existing natural grass field at Showa Boston Institute's Jamaica Plain campus. The campus covers an area of approximately 30 acres, including buildings, access, circulation, parking infrastructure, playground, playing field, and basketball courts. The British International School of Boston is a tenant on the Showa campus. The proposed project is located at the southwest portion of the campus.

The proposed improvements are very limited in scope and are located within the footprint of the existing field. There are no additional site improvements to the campus besides the construction of the new synthetic turf field and new chain link fencing along the south sideline. The new chain link fence is located at the same location as the existing fence, so the separation from the stream and bank is maintained.

- The proposed field playing dimensions of 180' x 330' will allow for regulation play of field hockey, soccer, and boy's lacrosse. A safety runout area of 10' at the sidelines and 15' at the endlines are provided; therefore, the overall dimensions of the turf field surfacing is 200' x 360'. To accommodate this playing dimension, several of the existing granite blocks will be utilized for small retaining walls at the northeast and southeast corners of the field.
- The existing 5-6' high chain link fence along the southern edge will be replaced with 42" high chain link with 12' high ball safety netting installed above the fence.
- No stormwater quality treatment facilities are required for the project. A small rip rap plunge pool will be installed at the southwest corner of the field. Any stormwater runoff that does not infiltrate directly into the ground under the field will outlet to this rip rap plunge pool before entering the intermittent stream / drainage ditch to the south.

Approximately 2.0 acres will be disturbed due to the construction of the turf field. Construction staging and stockpiling will be located immediately adjacent to the construction site. Construction vehicles will enter the campus from Pond Street. The access gate at Louders Lane will not be used for construction.

2. CONSERVATION COMMISSION / MASSDEP NOTICE OF INTENT REQUIREMENTS

This Notice of Intent Application is being submitted in accordance with the performance standards described in the Wetlands Protection Act Regulations, 310 Code of Massachusetts Regulations (CMR) 10.00, the Boston Wetlands Regulations (approved 8/19/2020), and the Boston Wetlands Ordinate (filed one December 11, 2019).

WPA Form 3 – Notice of Intent (NOI) has been filed electronically via MassDEP's Online Filing System. The Boston NOI form has been submitted as part of the package as well.

3. WETLAND RESOURCE AREA / BUFFER ZONE IMPACT

The proposed project site is located north of an intermittent stream. The wetland/bank flagging was completed by Peer Consultants, P.C. on March 8, 2021. The flagging was picked up by DGT Associates Surveying & Engineering and is shown on the "BISB Turf Field – Topographic Plan of Land" survey dated 3/26/2021. The survey plan is included in the final plan set provided with this submission.

The resource areas located within the project vicinity are as follows: Buffer Zone, Inland Resource Areas (25-foot Waterfront Area and Riverfront Area), Intermittent Stream, and Land Under Water Bodies and

Water Ways.

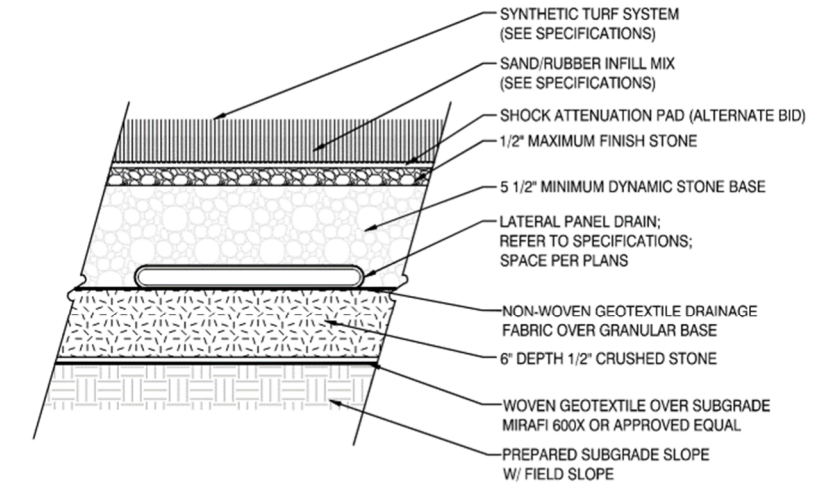
The proposed project does not include any disturbance within the intermittent stream or the land under water bodies and water ways. A portion of the proposed field falls with the 100-foot buffer zone, waterfront area, and riverfront area. The following are the areas that will be disturbed within those resource areas:

Resource Area	Square Footage
Riverfront Area	1,611 sf
Waterfront Area	9,468 sf
Remaining Area within 100-Foot Buffer Area	23,396 sf
TOTAL AREA within 100-Foot Buffer Area	**34,475 sf**

Refer to Figure A for Wetland Buffer Impact Areas.

The nature of the proposed disturbance as noted in Section 1 is the construction of a synthetic turf field. No buildings/structures or impervious areas are proposed within the resource areas.

The synthetic turf field construction section is shown in Detail A8 on Sheet CI501 (shown below). The top layer of the field system consists of the sand/rubber infill mix and the turf fibers which are attached to a geotextile backing. Below the geotextile fabric are two layers of stone base and geotextile fabric. The top layer of "dynamic" stone is 6" thick and is placed on a non-woven geotextile drainage fabric. On top of the fabric, lateral panel drains are installed 20' on center across the entire field. Below the dynamic stone/panel drain layer is an additional 6" thick layer of ½" crushed stone placed on top of a woven geotextile fabric. Below this woven fabric is the prepared subgrade.



SYNTHETIC TURF SECTION A8

Stormwater runoff is designed to drain vertically through the field section, so there is no "sheet flow" across the playing field. The stormwater flows down into the voids of the stone base. The bottom 6" layer of

stone stores a large volume of stormwater until the water either infiltrates directly into the subgrade below the field or the volume reaches the perforated panel drains and flows to the collector pipes along the edge of the field. This field construction allows for stormwater storage as well as minimizing runoff and erosion around the field. Complete stormwater modelling and calculations are included in the Stormwater Management Report in this package. Section 5 of this narrative provides a summary of how the project meets the Massachusetts Stormwater Standards.

4. WETLAND RESOURCE AREA / BUFFER ZONE PROTECTION

The Applicant is aware that the construction next to a resource area is very sensitive. As a result of the size of the project, a National Pollution Discharge Elimination System (NPDES) Construction General Permit is required. A Stormwater Pollution Prevention Plan (SWPPP) has been developed for the Contractor to follow to ensure the adjacent resource areas are protected.

Prior to any construction activity, erosion control measures will be installed. A stabilized stone construction entrance, silt fence/wattle barriers along the perimeter of the construction activity, and silt sacks will be installed. There are several large trees along the driveway that will also be protected as well. As outlined in the SWPPP, the Contractor will conduct regular inspections of the erosion controls and repair/replace any erosion control measures that are not performing properly. Refer to Sheets CE101 and CE501 for the complete erosion control plan, details, and notes.

Based on the construction schedule, some of the synthetic turf material will be stockpiled and stored adjacent to the site. These staging/stockpile areas have been designated on Sheet CE101 and are located completely outside the 100-foot buffer zone.

Refer to the Stormwater Pollution Prevention Plan included in this submission package for complete details.

5. STORMWATER MANAGEMENT COMPLIANCE

The proposed project meets the Massachusetts Stormwater Massachusetts Department of Environmental Protection (MassDEP) Stormwater Standards.

MassDEP Standard 1 – Untreated Stormwater

No new untreated discharges are proposed as part of the project.

MassDEP Standard 2 – Post-Development Peak Discharge Rates

The proposed development reduces the peak flow rate of runoff from the overall site for the 10-year, 25-year and 100-year storms. Only the 2-year storm has a very slight increase of 0.1 cfs. It is anticipated that the very slight increase in flow will have a negligible impact on the existing stormwater management system.

MassDEP Standard 3 – Recharge to Groundwater

This standard is not applicable to this project.

MassDEP Standard 4 – Water Quality Treatment

A Long-Term Pollution Prevention Plan is included as part of the project. Similar to Standard 3, there is no impervious area added as part of this project; therefore, portions of this Standard are not applicable.

MassDEP Standard 5 – Higher Potential Pollutant Loads
This standard is not applicable to this project.

MassDEP Standard 6 – Protection of Critical Area
This standard is not applicable to this project.

MassDEP Standard 7 – Redevelopment
This standard is not applicable to this project.

MassDEP Standard 8 – Erosion/Sediment Control
A Stormwater Pollution Prevention Plan (SWPPP) has been developed for this project and will be implemented. The project is also regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit. Refer to the Erosion and Sediment Control sheets of the Permitting Drawings.

MassDEP Standard 9 – Operation/Maintenance Plan
Due to the limited scope of stormwater management improvements on this project, the stormwater operations, inspections, and maintenance requirements have been incorporated into the Long-Term Pollution Prevention Plan for the site.

MassDEP Standard 10 – Prohibition of Illicit Discharges
No illicit discharges will occur as part of this project and a Long-Term Pollution Prevention Plan has been developed for the site.

Stormwater Management Conclusion
The proposed project at the Showa Boston Institute campus will not have an adverse effect (short-term or long-term) on the adjacent natural resources. The project disturbance is within the 100-foot MassDEP wetland buffer; however, no structures or impervious cover is proposed within the wetland area.

Refer to the Stormwater Report included in this submission package for complete details.

6. SYNTHETIC TURF DISCUSSION

Environmental Concerns
There have been extensive studies conducted to determine the impact of synthetic turf fields on the environment. The most relevant study to this project is the "Risk Assessment of Artificial Turf Field" that was conducted by the Connecticut Department of Energy & Environmental Project (July 2010). In 2008-2009, the State of Connecticut initiated a study to determine if there are any health and environmental impacts resulting from the use of crumb rubber in synthetic fields. Among other items, the study measured leaching of metals from fields during rain events. "In general, the analysis of the collected stormwater detected insignificant levels of metals and semi-volatile organic compounds known to leach from tires. However, three of the eight stormwater samples showed elevated levels of zinc and were determined to be acutely toxic to aquatic organisms. The detected levels of zinc were well below groundwater protection criteria, but did exceed DEEP's acute aquatic toxicity criteria for surface waters."

The study identified that invertebrates were most likely to be impacted by the higher levels of zinc toxicity from the runoff from the artificial fields. The resource area that is located adjacent to this project is an intermittent stream and it is unlikely that there are invertebrates that would be impacted by any increased

zinc loading. It should also be noted that these elevated levels of zinc are comparable to concentrations in typical urban runoff and do not raise any significant concerns for groundwater quality or drinking water standards.

Environmental Benefits

In many ways, synthetic turf field provide some environmental advantages over natural grass field. Synthetic turf fields do not require irrigation which reduces the overall water usage of the site. No fertilizers, pesticides, or other lawn treatments are required to maintain the field, so there is no chance of these materials entering the adjacent water resources. No mowing of the field is required, so there is a reduction in fossil fuel usage. A reduction in the mechanical equipment needed to maintain the field also decreases the chance of oil spills or other potential hazards associated with lawn care equipment.

Climate Change

The location and nature of the project will not be affected by the projected sea level rise. However, the construction of the synthetic turf field will help alleviate some of the consequences of the increase in storm intensity and frequency. The stone base under the field is able to store a large volume of stormwater and allow it to either slowly infiltrate into the subgrade below or be slowly released at the rip rap plunge pool outlet. The upper layer of the synthetic turf field (infill/fiber/backing) has the capacity to drain a minimum of 8”/hour vertically, which means that there is no sheet flow off the field. One of the main advantages of this fast vertical draining is it will prevent erosion along the slopes to the south of the site and help maintain the bank next to the intermittent stream. Also, since there is no sheet flow, there is no concern that infill will flow out of the field and into the adjacent intermittent stream.

Heat Island Discussion

It is true that the surface temperature of synthetic turf fields is higher than natural grass fields. However, the risk associated with this increase temperature is more related to player safety than with environmental concerns. Several studies have shown that the field does not act as a heat sink, and the built-up heat dissipates quickly under cloud cover. Since the turf field does not trap heat within the field section, the temperature of any stormwater that is being stored in the void space of the stone base does not increase. Therefore, when the stormwater is released at the rip rap plunge pool and enters the intermittent stream, there is no temperature impact or increase on the intermittent stream.

It should be noted that the player safety is not being ignored as part of this temperature discussion. There are several models that can be used to predict the surface temperature of the field that allow school staff and officials to schedule events accordingly. School staff are aware of this temperature issue and work in best practices into the operations of their fields.

FOR SWSC USE ONLY

REMAINING PROJECT AREA WITH BUFFER ZONE = 23,396 SF
(100' OFFSET FROM WETLAND RESOURCE)

PROJECT AREA WITH WATERFRONT AREA = 9,468 SF
(25' OFFSET FROM RIVERFRONT AREA LINE)

PROJECT AREA WITH RIVERFRONT AREA = 1,611 SF
(25' OFFSET FROM WETLAND RESOURCE)

REV	DESCRIPTION	DATE
0	ISSUED FOR PERMITTING	5-7-21

ISSUED FOR PERMITTING
5-7-21

CURRENT ISSUE STATUS:

PROJECT NORTH:

COMMONWEALTH OF MASSACHUSETTS
MELISSA A. FOLEY
NO. 51785
REGISTERED PROFESSIONAL ENGINEER

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SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

WETLAND BUFFER IMPACT PLAN

SHEET TITLE:

SCALE: 1"=20'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--		
DRAWN BY:	MAF		
SMRT FILE:	FigA-21057.dwg	SHEET No.	FIG. A

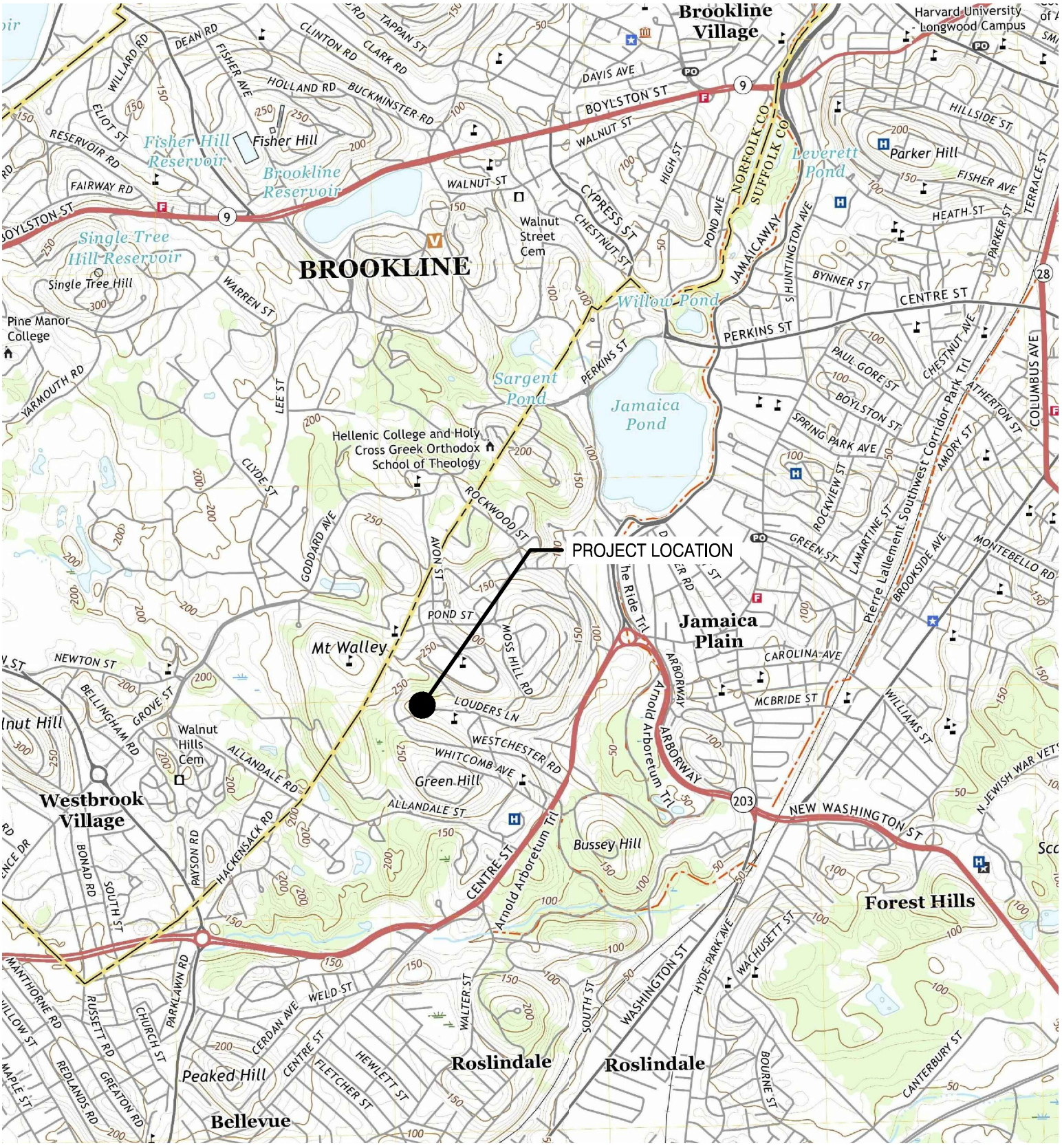


Figure 1- USGS Locus Map- Boston South Quadrangle 2021

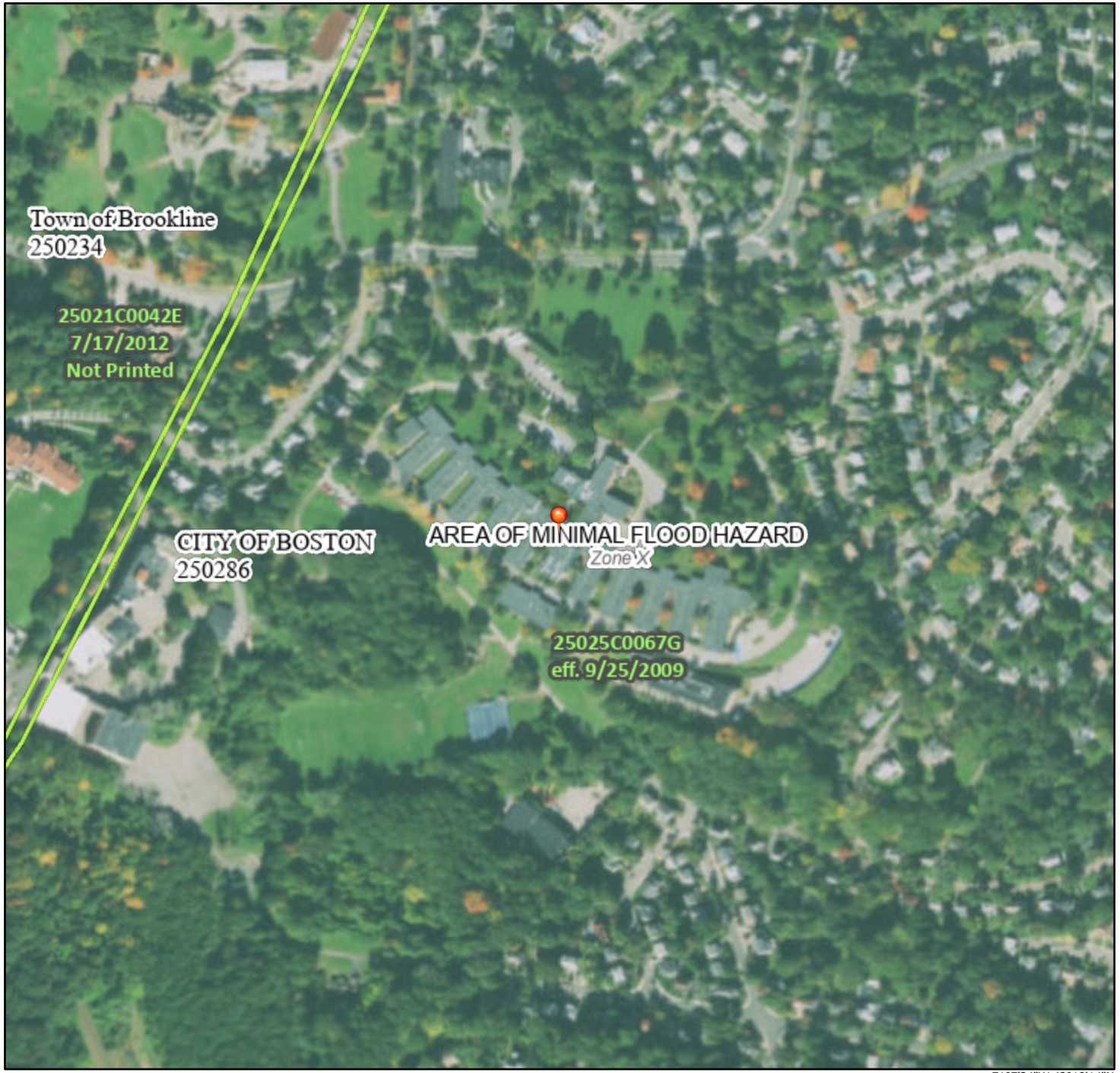
Showa Boston Institute for Language and Culture
British International School of Boston - Boston (Jamaica Plain), MA

SMRT

National Flood Hazard Layer FIRMette

FEMA

71°8'11"W 42°18'41"N



71°7'34"W 42°18'14"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

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

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

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

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

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

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/25/2021 at 2:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Wetland Photographs

View from center of playing field looking southeast (2/25/21).

View from center of playing field looking southeast/south (2/25/21).

Wetland Photographs

View from center of playing field looking south/southwest (2/25/21).

View from center of playing field looking southwest (2/25/21).

SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND STREET

BOSTON (JAMAICA PLAIN), MASSACHUSETTS 02130

ISSUED FOR PERMITTING
5-4-21

FOR BWSC USE ONLY

GENERAL NOTES

1. THE SCOPE OF SITE WORK FOR THIS PROJECT INCLUDES PROTECTION OF EXISTING STRUCTURES AND UTILITIES, AND REINSTATEMENT OF DISTURBED AREAS OF THE SITE TO MATCH EXISTING CONDITIONS. THE EXISTING CONDITIONS SHOWN ON THE PROJECT DRAWINGS ARE TAKEN FROM RECORD DRAWINGS AND HISTORICAL INFORMATION. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SITE CONDITIONS PRIOR TO THE START OF WORK AND CONTACT THE PROJECT ARCHITECT IMMEDIATELY IF DISCREPANCIES ARE FOUND.
2. EXISTING UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM HISTORICAL RECORDS AND PREVIOUS DESIGN DRAWINGS. NO GUARANTEE IS MADE THAT THE UTILITIES SHOWN WILL BE FOUND IN THE LOCATIONS INDICATED, OR THAT THE INFORMATION SHOWN IS COMPLETE. INFORMATION ON EXISTING UTILITY LOCATIONS IS PROVIDED FOR REFERENCE ONLY AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING EXISTING UTILITY LOCATIONS AND DEPTHS AND COORDINATING THE WORK ACCORDINGLY.
3. THE CONTRACTOR SHALL UNDERTAKE TEST PITS AT THE SITE AND ENGAGE PRIVATE UTILITY DETECTION SERVICE, AS NECESSARY, TO ACCURATELY IDENTIFY UTILITIES IN ORDER TO EFFICIENTLY PLAN AND COMPLETE THE WORK.
4. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITIES ADJACENT TO THE WORK. ANY DAMAGE TO EXISTING STRUCTURES, ROADS, SIDEWALKS, UTILITIES, OR OTHER SITE FEATURES CAUSED BY THE WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
5. ANY UTILITY REPAIRS OR RECONFIGURATION REQUIRED AS PART OF THIS PROJECT SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE AUTHORITY HAVING JURISDICTION.
6. TEMPORARY WORKS, SUPPORT AND PROTECTION OF STRUCTURES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COSTS SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT SUM.
7. ALL WORK SHALL BE UNDERTAKEN IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY STANDARDS.
8. OPEN EXCAVATIONS AND WORK AREAS SHALL BE CLEARLY DELINEATED AND FENCED, AS NECESSARY TO PREVENT UNAUTHORIZED ACCESS
9. DRIVEWAYS, WALKWAYS AND ENTRANCES SERVING PREMISES SHALL BE KEPT CLEAR AND AVAILABLE TO OWNER, OWNER'S EMPLOYEES, AND EMERGENCY VEHICLES, AS NECESSARY TO MAINTAIN THE FUNCTION OF THE FACILITY. COORDINATE ALL WORK WITH OWNER TO ENSURE THAT ADEQUATE ACCESS AND CIRCULATION IS MAINTAINED AT ALL TIMES.
10. DE-WATERING, IF NECESSARY, SHALL BE UNDERTAKEN IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL STANDARDS. NO DISCHARGE OF SEDIMENT LADEN RUNOFF TO SURFACE WATERS, OR THE PIPED STORM DRAIN SYSTEM AT THE SITE SHALL BE ALLOWED.
11. ALL DISTURBED PAVEMENT AREAS, ROADS AND SIDEWALKS SHALL BE REINSTATED TO MATCH EXISTING GRADES, MATERIALS AND DEPTHS.
12. EXISTING PAVEMENT SHALL BE SAW-CUT AT LEAST TWELVE INCHES INTO SOUND MATERIAL TO PROVIDE A CLEAN, STRAIGHT EDGE BETWEEN EXISTING SOUND SURFACE MATERIAL AND THE REPAIRED AREA.
13. A SMOOTH TRANSITION SHALL BE PROVIDED BETWEEN REPAIR WORKS AND EXISTING PAVEMENT. ALL REINSTATED AREAS SHALL BE GRADED TO PITCH UNIFORMLY TO ENSURE POSITIVE DRAINAGE.
14. LIKE-NEW" IS DEFINED AS A COMPLETE REPLACEMENT OR REMEDIATION OF ANY DISTURBED AREAS RESULTING FROM CONSTRUCTION ACTIVITIES. APPROVAL OF AREAS TO BE RESTORED TO A "LIKE-NEW" CONDITION ARE AT THE DISCRETION OF THE OWNER.

LEGEND

SF — SF — SF	SILT FENCE
	HAY BALES OR COIR LOGS
	CHAIN LINK FENCING
NSD — NSD — NSD — NSD	STORM DRAIN PIPING
UD — UD — UD — UD — UD	SYNTHETIC TURF PANEL DRAIN
XX.X'	LINEAR DIMENSION
RXX.X'	RADIAL DIMENSION
	SYNTHETIC TURF
	CRUSHED STONE
	FLUSH
	DIRECTION OF DRAINAGE FLOW
XXX.XX +	SPOT ELEVATION

LIST OF DRAWINGS

GENERAL SITE ABBREVIATIONS

CB	CATCH BASIN
CO	CLEANOUT
DMH	DRAINAGE MANHOLE
INV IN	INVERT IN
INV OUT	INVERT OUT
TC	TOP OF CURB
TF	TOP OF FRAME
TYP	TYPICAL

PROJECT INFORMATION

OWNER / APPLICANT:

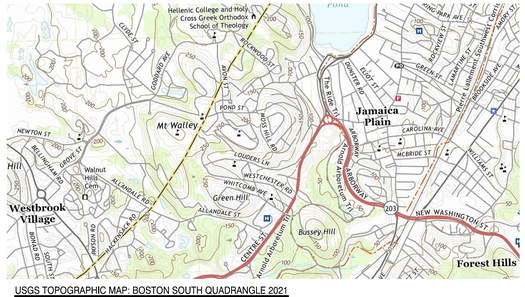
SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
420 POND STREET
BOSTON, MASSACHUSETTS 02130

ARCHITECT/ENGINEER OF RECORD:

SMRT ARCHITECTS AND ENGINEERS
200 BRICKSTONE SQUARE, STE. 303
ANDOVER, MA 01810

PROJECT LOCUS MAPS

GOOGLE AERIAL 2021



USGS TOPOGRAPHIC MAP: BOSTON SOUTH QUADRANGLE 2021

REV	DESCRIPTION	DATE
0	ISSUED FOR PERMITTING	5-4-21

ISSUED FOR PERMITTING
5-4-21
CURRENT ISSUE STATUS:

PROJECT NORTH:

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Architecture • Engineering • Planning

SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

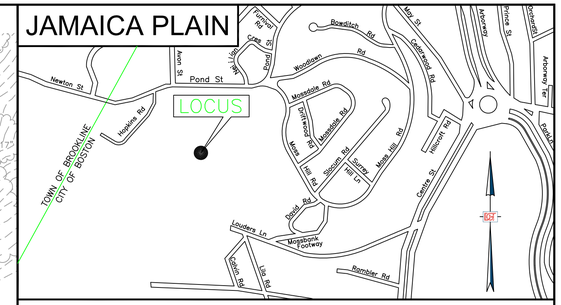
GENERAL INFORMATION & NOTES

SHEET TITLE:

SCALE: AS NOTED

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--	GI001	
DRAWN BY:	MAF		
SMRT FILE:	GI001-20507.dwg	SHEET No.	

24x36



LOCUS MAP N.T.S.

NOTES

1) FIELD SURVEY PERFORMED: MAY, JUNE, 2018 AND SEPTEMBER, OCTOBER, 2019 AND MARCH, 2021.

2) ELEVATIONS SHOWN REFER BOSTON CITY BASE (BCB) AS CONVERTED FROM THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AS ESTABLISHED BY GPS OBSERVATIONS.

3) CONTOURS IN SELECT AREAS ARE SUPPLEMENTED BY LIDAR DATA FROM NOAA DATA FILE '2013–2014 USGS CMGP LIDAR: POST–SANDY (MA, NH, RI).

4) WETLAND/BANK FLAGGING BY PEER CONSULTANTS, P.C. ON MARCH 8, 2021.

5) PROPERTY LINES NOT VERIFIED IN THE SURVEY.

LEGEND:

AD	AREA DRAIN
CLF	CHAIN LINK FENCE
ICV	IRRIGATION CONTROL VALVE
TOW	TOP OF WALL
⊡	IRRIGATION CONTROL VALVE
▲	WETLAND/BANK FLAG

COMMONWEALTH OF MASSACHUSETTS
MICHAEL A CLIFFORD
No. 35364
REGISTERED PROFESSIONAL LAND SURVEYOR

PROFESSIONAL LAND SURVEYOR — DATE: 6-MAY-2021

SCALE: 1" = 20'
0 10 20 40

BY:	DESCRIPTION:	DATE:	REV: 0
DRAWING NO.:	S-1387_02TP		

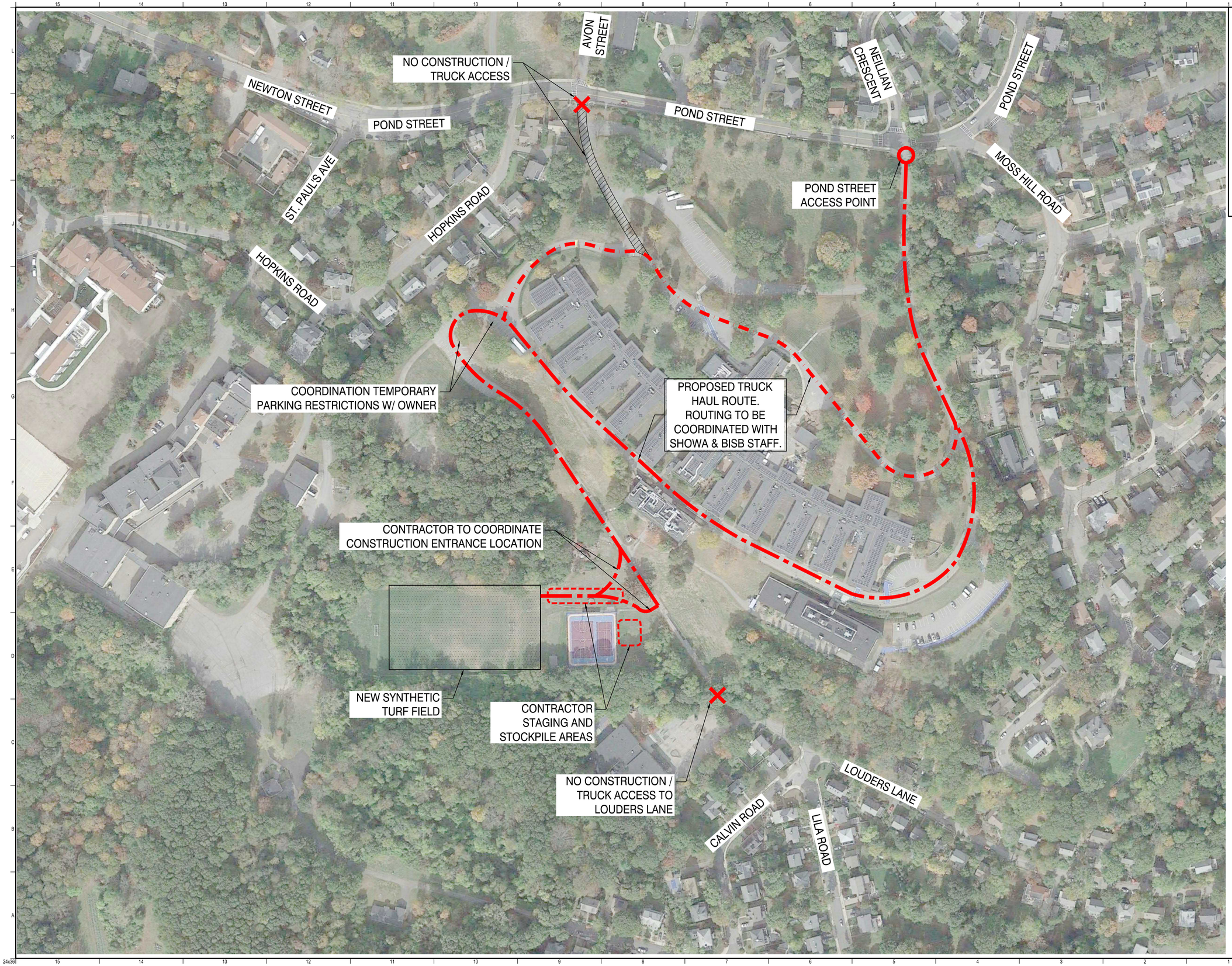
BISB TURF FIELD

TOPOGRAPHIC PLAN OF LAND
IN
BOSTON, MASSACHUSETTS
SUFFOLK COUNTY, WEST ROXBURY DISTRICT

PREPARED FOR:
BRITISH INTERNATIONAL SCHOOL OF BOSTON

PREPARED BY:
DGT Associates
Surveying & Engineering
617.275.0541 | www.DGTassociates.com
803 SUMMER STREET, 1ST FLOOR, BOSTON, MA 02127

RESEARCH:	D. CLIFFORD
FIELD:	M.T. CLIFFORD
CALCULATION:	G.E.I.
DRAFTING:	V.V./J.U./A.L.
CHECK:	M. CLIFFORD, PLS.
PROJ. MANAGER:	B. TALEB
DATE:	26-MAR-2021
JOB NO.	S–1387.02
CRD FILE	S–1387–ALL.CRD
SHEET NO.	1 OF 1



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REV	DESCRIPTION	DATE
0	ISSUED FOR PERMITTING	5-4-21

ISSUED FOR PERMITTING
5-4-21

CURRENT ISSUE STATUS:

PROJECT NORTH:

COMMONWEALTH OF MASSACHUSETTS
MELISSA A. FOSTER
NO. 51783
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www.smrtinc.com
Architecture • Engineering • Planning

SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE LOGISTICS PLAN

SHEET TITLE:

0 15' 30' 60' 120'

SCALE: 1"=30'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--		
DRAWN BY:	MAF		
SMRT FILE:	C-101-21057.dwg	SHEET No.	C-101

24x36

FOR SWSC USE ONLY

REMOVE & STOCKPILE EXISTING GRANITE STONE BLOCKS FOR REUSE

REMOVE & DISPOSE ENTIRE IRRIGATION SYSTEM (LINES, VALVES, ETC.)

REMOVE & STOCKPILE EXISTING GRANITE STONE BLOCKS FOR REUSE

REMOVE & STOCKPILE EXISTING GRANITE STONE BLOCKS FOR REUSE

APPROX. LIMIT OF NEW SYNTHETIC TURF FIELD

STRIP AND DISPOSE OF TOPSOIL

REMOVE & DISPOSE EXISTING CHAIN LINK FENCE

REMOVE & DISPOSE EXISTING BACKSTOP

4' WOVEN WIRE FENCE

WOODED AREA

TREE LINE/ EDGE OF BRUSH

100 FOOT BUFFER LINE

GRASS SOCCER FIELD

INTERMITTENT STREAM

STONE ARMORING

INTERMITTENT STREAM/DRAINAGE DITCH

OVERGROWN AREA

SHED

SHRUBS

16" DOUBLE

STEP

BOULDER

ICV'S

REV	DESCRIPTION	DATE
0	ISSUED FOR PERMITTING	5-4-21

ISSUED FOR PERMITTING
5-4-21

CURRENT ISSUE STATUS:

PROJECT NORTH:

COMMONWEALTH OF MASSACHUSETTS
MELISSA A. FOSTER
NO. 51765
REGISTERED PROFESSIONAL ENGINEER

SMRT Architects and Engineers
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SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE DEMOLITION PLAN

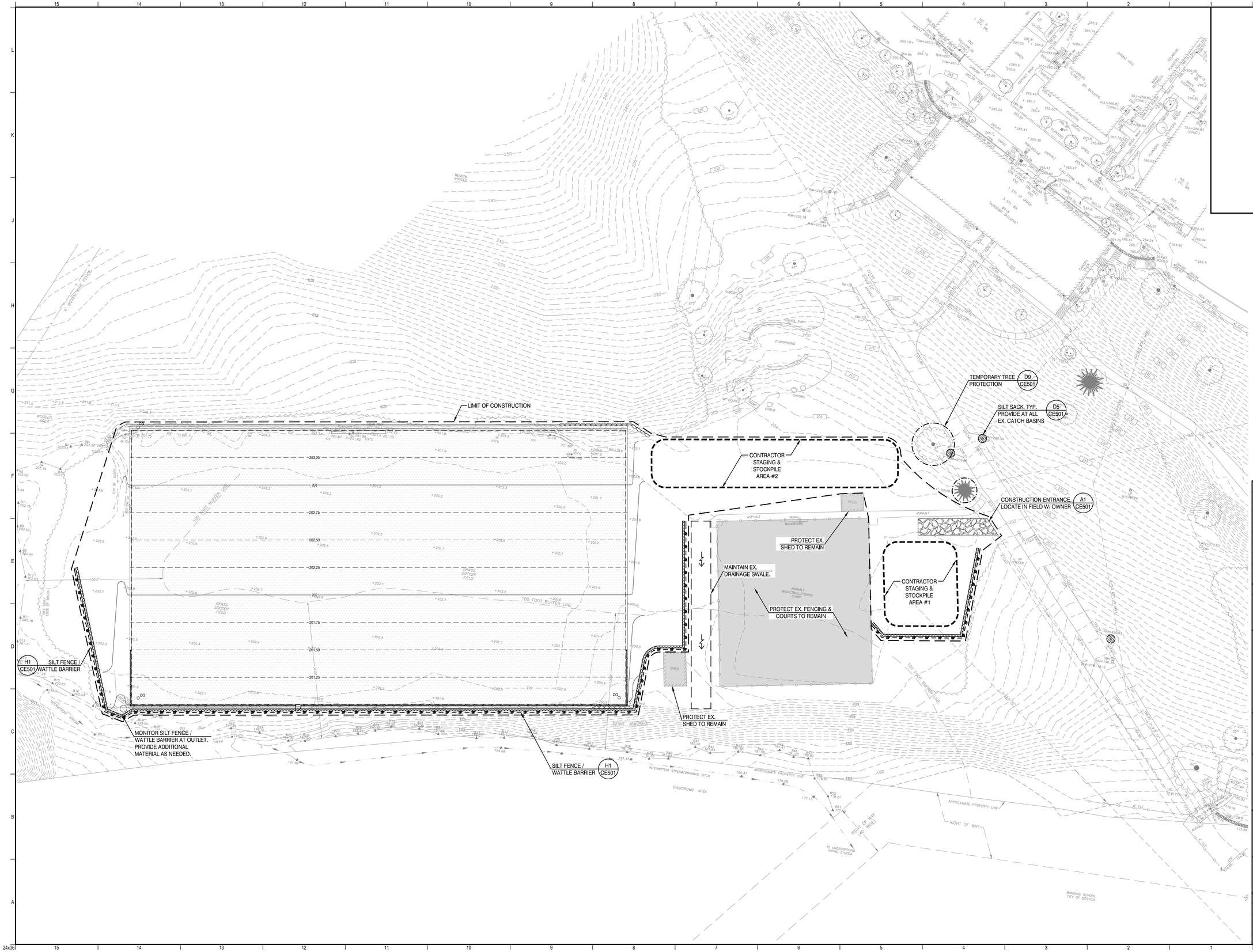
SHEET TITLE:

0 10' 20' 40' 60'

SCALE: 1"=20'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--		
DRAWN BY:	MAF		
SMRT FILE:	CD101-21057.dwg	SHEET No.	CD101

24x36



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0	ISSUED FOR PERMITTING	5-4-21

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5-4-21

CURRENT ISSUE STATUS:

PROJECT NORTH:

COMMONWEALTH OF MASSACHUSETTS
MELISSA A. FOSTER
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ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE EROSION & SEDIMENT CONTROL PLAN

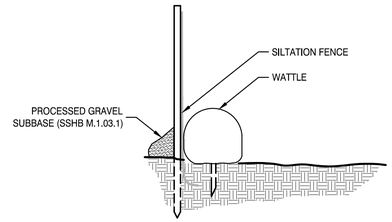
SHEET TITLE:

0 15' 30' 60' 120'

SCALE: 1"=30'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--	CE101	
DRAWN BY:	MAF		
SMRT FILE:	CE101-21057.dwg	SHEET No.	

24x36



SILT FENCE / WATTLE BARRIER H1

SCALE: 3/4" = 1'-0"

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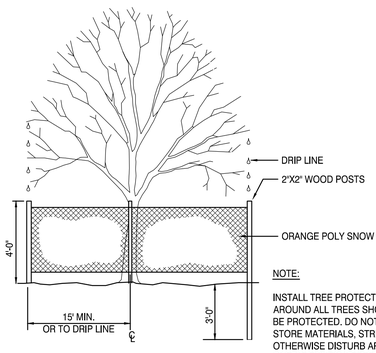
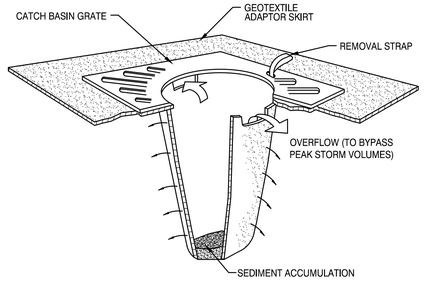


NOTE:

INSTALL TREE PROTECTION FENCING AROUND ALL TREES SHOWN ON PLAN TO BE PROTECTED. DO NOT COMPACT SOILS, STORE MATERIALS, STRIP TOPSOIL, OR OTHERWISE DISTURB AREA WITHIN DRIP LINE OF EXISTING TREE.

TEMPORARY TREE PROTECTION D9

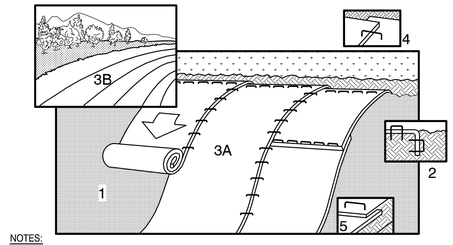


NOTES:

1. CATCH BASIN PROTECTION TO BE "SILTSACK" (BY ACF ENVIRONMENTAL) OR "STREAM GUARD" (BY FOSS ENVIRONMENTAL SERVICES).
2. INSERT TO BE EMPTIED IN AN APPROVED MANNER WHEN IT IS 1/2 FULL OF SEDIMENT.
3. INSPECT INSERT AFTER ALL RAINFALL EVENTS, REPAIR AND MAINTAIN AS REQUIRED.

SILT SACK D5

SCALE: 3/4" = 1'-0"

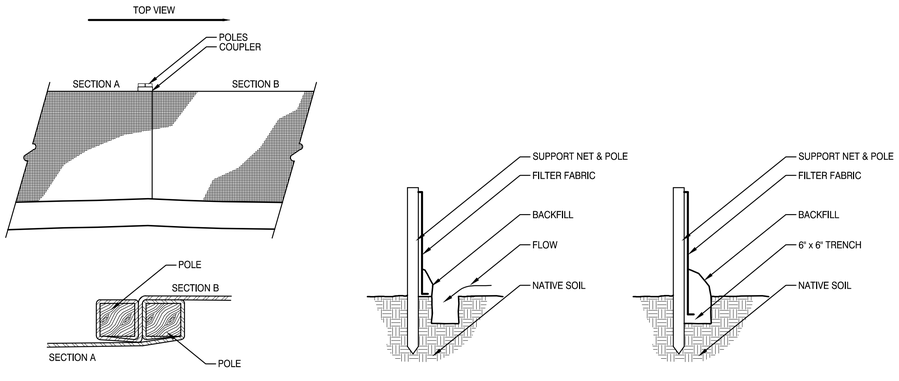


NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP. REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
6. EROSION CONTROL BLANKET SHALL BE 100% BIODEGRADABLE DOUBLE MESH NET BLANKET WITH 100% COCONUT FIBER MATRIX AND ORGANIC JUTE NETTING. CONTROL BLANKET FOR USE IN CHANNELS SHALL BE NORTH AMERICAN GREEN® BIONET® C125-BN™. EAST COAST EROSION BLANKETS ECC-2B OR APPROVED EQUAL.

EROSION CONTROL BLANKET D1

SCALE: 3/4" = 1'-0"

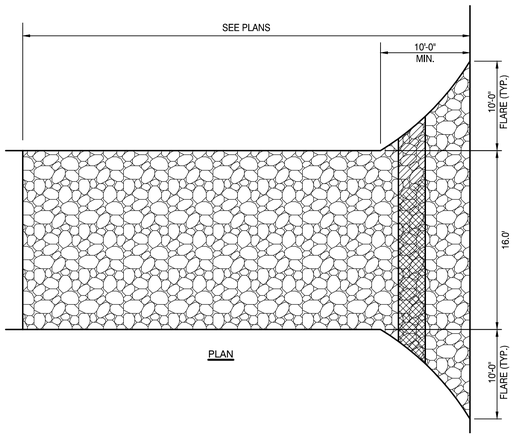


JOINING SECTIONS

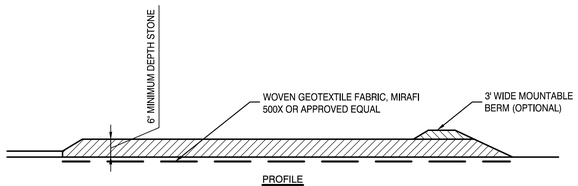
TOE-IN INSTALLATION METHODS

SILT FENCE A9

SCALE: 1/8" = 1'-0"



PLAN



PROFILE

NOTES:

1. THE PURPOSE IS TO REMOVE MUD FROM TIRES OF CONSTRUCTION VEHICLES.
2. WHEN STONE BECOMES CLOGGED AND INEFFECTIVE, TOPDRESS WITH 3" OF NEW STONE OR REPLACE ENTIRE PAD.
3. IF TIRE WASHING IS REQUIRED, WASH WATER SHALL DRAIN INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. REMOVE ENTIRE SYSTEM AT COMPLETION OF THE PROJECT, AND RESTORE TO ORIGINAL CONDITION.

STABILIZED CONSTRUCTION ENTRANCE A1

SCALE: 1/8" = 1'-0"

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5-4-21

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MELISSA F. WILSON
NO. 51785
REGISTERED PROFESSIONAL ENGINEER

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BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE EROSION & SEDIMENT CONTROL NOTES & DETAILS

SHEET TITLE:

0 10' 20' 40' 60'

SCALE: 1"=20'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--	CE501	
DRAWN BY:	MAF		
SMRT FILE:	CE501-21057.dwg	SHEET No.	

24x36

FOR BWSC USE ONLY

E1 / CI501 NORTH SIDELINE ANCHOR CURB W/ 2' WIDE STONE TRENCH

USE EXISTING GRANITE BLOCKS FOR RETAINING WALL

A8 / CI502 FIELD HOCKEY FIELD 180' x 300'

A1 / CI502 SOCCER FIELD 180' x 330'

E1 / CI502 BOY'S LACROSSE FIELD 180' x 330'

H5 / CI501 WEST ENDLINE ANCHOR CURB

SYNTHETIC TURF SECTION (RE: A1 & A8/CI501)

EAST ENDLINE ANCHOR CURB H5 / CI501

BALL SAFETY NETTING (BSN) OPENING AT GATE

H12 / CI501 H8 / CI501 42" HIGH CHAIN LINK FENCE W/ BALL SAFETY NETTING (BSN) TOTAL HEIGHT = 12'

D8 / CI501 4' WIDE SINGLE CHAIN LINK FENCE GATE

H1 / CI501 SOUTH SIDELINE EXTENDED ANCHOR CURB

USE EXISTING GRANITE BLOCKS FOR RETAINING WALL

4' WOVEN WIRE FENCE

100 FOOT BUFFER LINE

GRASS SOCCER FIELD

GRASS SOCCER FIELD

100 FOOT BUFFER LINE

TREE LINE/ EDGE OF BRUSH

INTERMITTENT STREAM

INTERMITTENT STREAM

INTERMITTENT STREAM/DRAINAGE DITCH

APPROXIMATE

6 INCH PVC INV=199.38

ASPHALT

SHED

SHRUBS

16" DOUBLE

RAMP

STEP

SHRUB

27"

16"

17"

B1 203.53
B2 203.34
B4 203.19
B5 203.02
B6 202.94
B7 202.78
B8 202.62
B9 202.94
B10 202.67
B11 202.18
B12 201.71
B13 201.07
B14 201.26
B15 200.63
B16 200.49
B17 200.35
B18 199.43
B19 199.55
B20 198.41
B21 198.80
B22 198.42
B23 197.39
B24 196.76
B25 194.09
B26 192.90
B27 191.40
B28 191.41
B29 190.36
B30 192.61
B31 190.30
B32 187.88
B33 185.27
B34 185.72
B35 185.04
B36 184.54
B37 183.89
B38 181.78
B39 181.82
B40 181.93
B41 182.20
B42 181.84
B43 181.65
B44 181.68

10.0'
10.0'
15.0'
15.0'
120.0'
100.0'
100.0'
100.0'
±65.1'
±26.2'
40.0' 42" HIGH CLF NO BSN ON RETURNS
40.0' 42" HIGH CLF NO BSN ON RETURNS
CO
CO
CO

REV	DESCRIPTION	DATE
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5-4-21

CURRENT ISSUE STATUS:

PROJECT NORTH:

COMMONWEALTH OF MASSACHUSETTS
MELISSA A. FOSTER
NO. 51782
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ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE IMPROVEMENTS PLAN

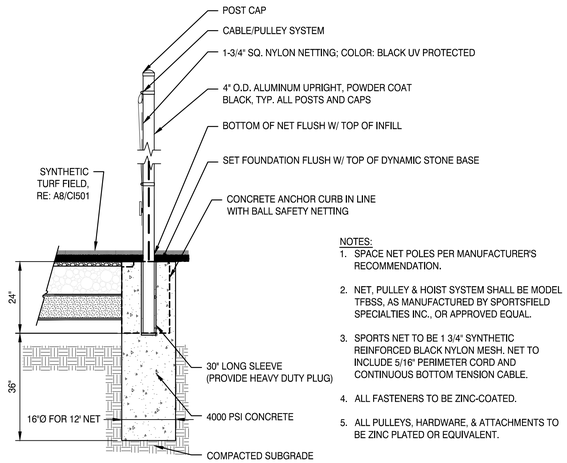
SHEET TITLE:

0 10' 20' 40' 60'

SCALE: 1"=20'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--	CI101	
DRAWN BY:	MAF		
SMRT FILE:	CI101-21057.dwg	SHEET No.	

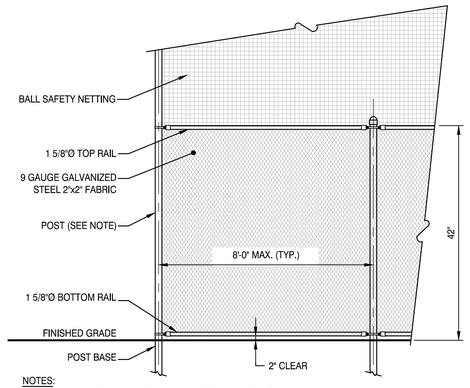
24x36



NOTES:

1. SPACE NET POLES PER MANUFACTURER'S RECOMMENDATION.
2. NET, PULLEY & HOIST SYSTEM SHALL BE MODEL TFBSS, AS MANUFACTURED BY SPORTSFIELD SPECIALTIES INC., OR APPROVED EQUAL.
3. SPORTS NET TO BE 1 3/4" SYNTHETIC REINFORCED BLACK NYLON MESH. NET TO INCLUDE 5/16" PERIMETER CORD AND CONTINUOUS BOTTOM TENSION CABLE.
4. ALL FASTENERS TO BE ZINC-COATED.
5. ALL PULLEYS, HARDWARE, & ATTACHMENTS TO BE ZINC PLATED OR EQUIVALENT.

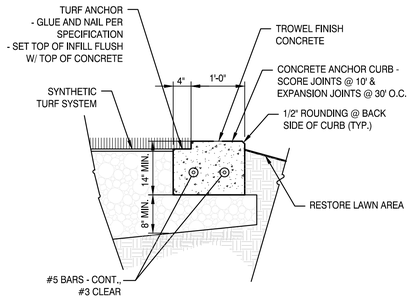
BALL SAFETY NETTING H12



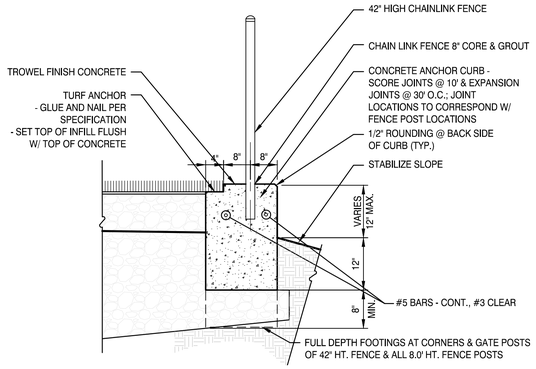
NOTES:

1. TERMINAL POST TO BE 4" O.D. LINE POST TO BE 2 7/8" O.D.
2. ALL POSTS UTILIZED FOR BALL SAFETY NETTING TO BE 4" O.D.
3. MAXIMUM SPACING BETWEEN BALL SAFETY NETTING POSTS SHALL BE 20'.
4. TOTAL HEIGHT OF FENCE & BALL SAFETY NETTING SHALL BE 12'.

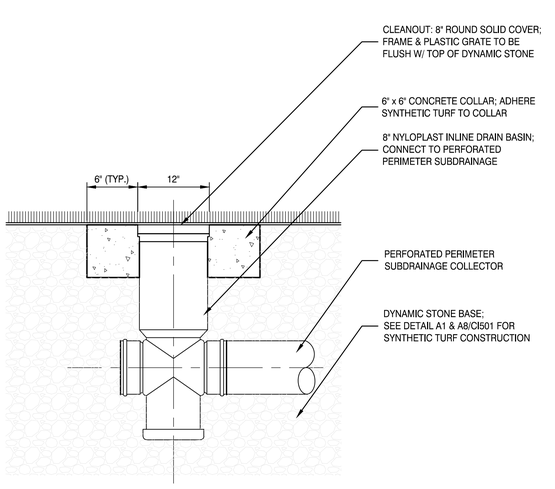
42" HIGH CHAIN LINK FENCE GATE H8



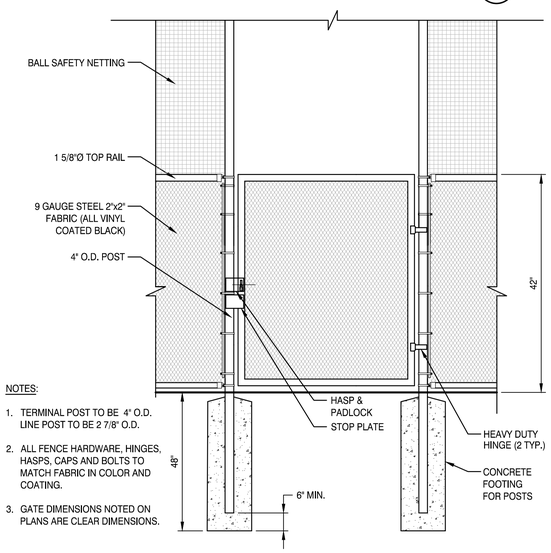
EAST & WEST ENDLINE ANCHOR CURB H5



SOUTH SIDELINE EXTENDED ANCHOR CURB H1



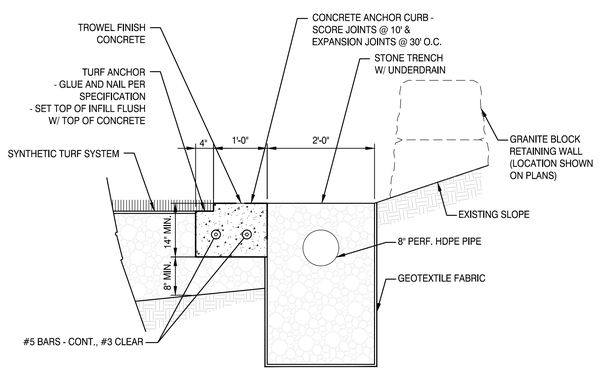
CLEANOUT D12



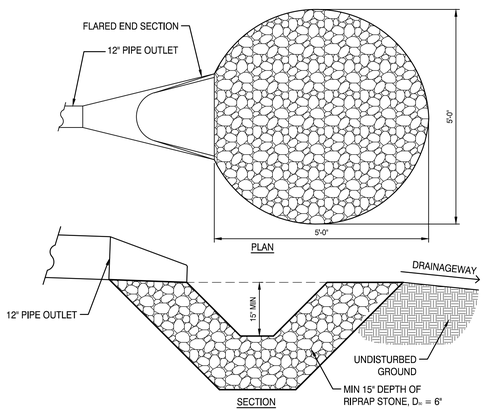
NOTES:

1. TERMINAL POST TO BE 4" O.D. LINE POST TO BE 2 7/8" O.D.
2. ALL FENCE HARDWARE, HINGES, HASPS, CAPS AND BOLTS TO MATCH FABRIC IN COLOR AND COATING.
3. GATE DIMENSIONS NOTED ON PLANS ARE CLEAR DIMENSIONS.

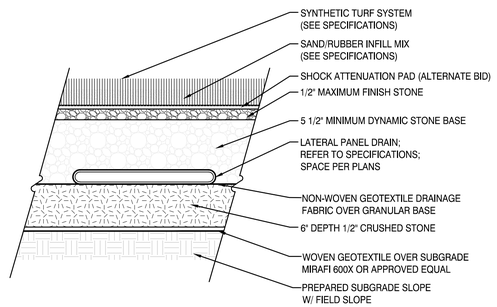
SINGLE CHAIN LINK FENCE GATE D8



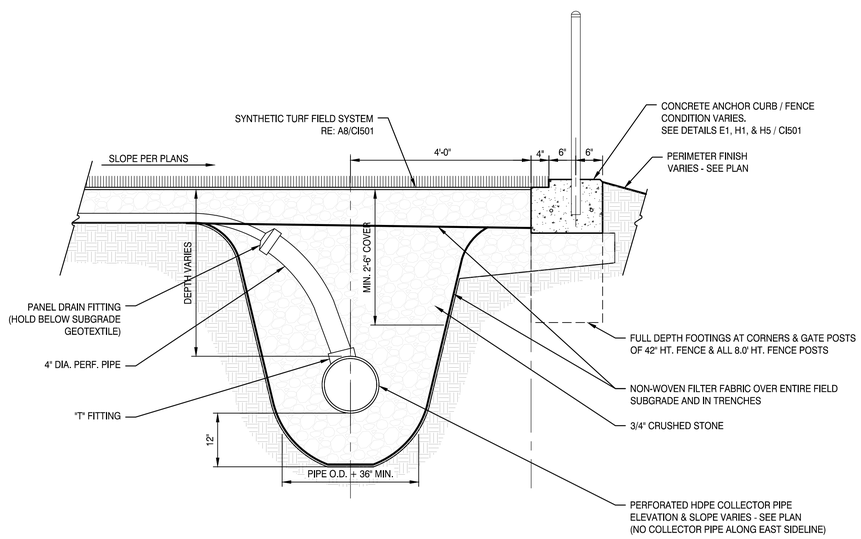
NORTH SIDELINE ANCHOR CURB W/ 2' WIDE STONE TRENCH E1



RIP RAP PLUNGE POOL A12



SYNTHETIC TURF SECTION A8



SYNTHETIC TURF SYSTEM & ANCHOR CURB A1

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0	ISSUED FOR PERMITTING	5-4-21

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5-4-21

CURRENT ISSUE STATUS:

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COMMONWEALTH OF MASSACHUSETTS — MELISSA R. WU — NO. 51785 — REGISTERED PROFESSIONAL ENGINEER

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ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE DETAILS

SHEET TITLE:

0 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--		
DRAWN BY:	MAF		
SMRT FILE:	CI501-21057.dwg	SHEET No.	CI501

24x36

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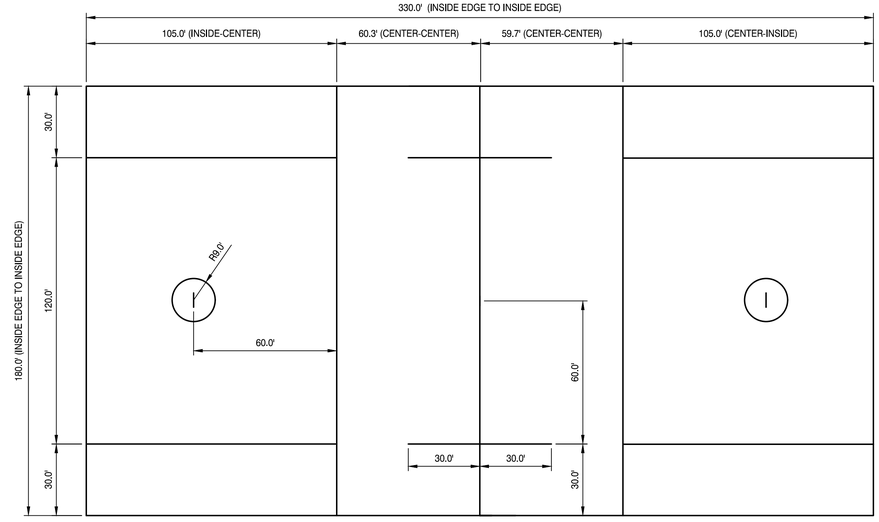
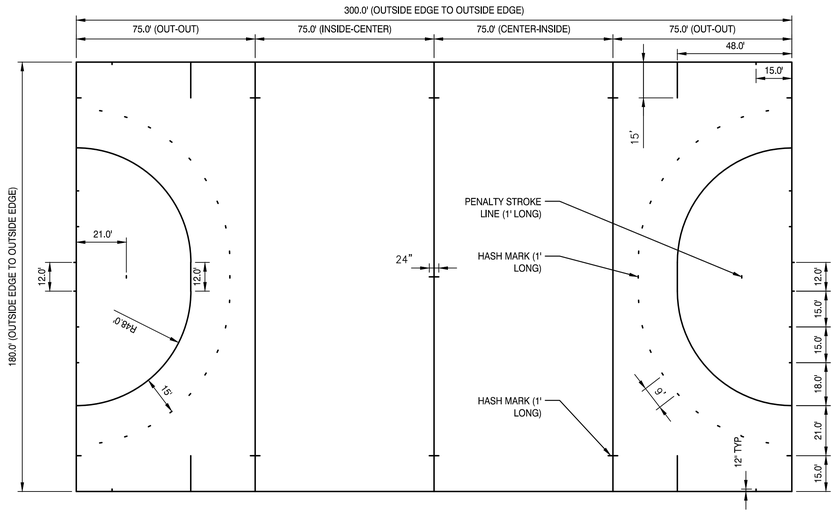
1. THE SOCCER, FIELD HOCKEY, AND MEN'S LACROSSE LINES SHALL BE 4" WIDTH INLAID LINES.
2. FIELD STRIPING COLORS TO BE AS FOLLOWS:
   SOCCER: WHITE
   MEN'S LACROSSE: YELLOW
   FIELD HOCKEY: BLUE
3. LOGO SHALL BE INLAID.
4. ALL STRIPING SHALL CONFORM TO NATIONAL FEDERATION STANDARDS.

FIELD LINING - STRIPING NOTES A8



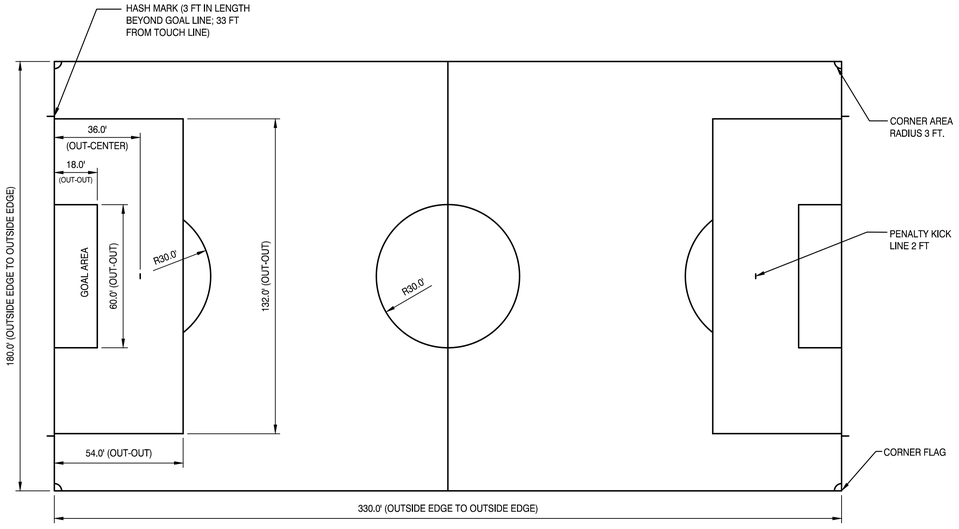
BOY'S LACROSSE - FIELD LINING E1

1" = 30'



FIELD HOCKEY - FIELD LINING A8

1" = 30'



SOCCER - FIELD LINING A1

1" = 30'

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COMMONWEALTH OF MASSACHUSETTS
MELISSA A. WILSON
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ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE DETAILS

SHEET TITLE:

0 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--	CI502	
DRAWN BY:	MAF		
SMRT FILE:	CI502-21057.dwg	SHEET No.	

24x36

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TF 203.35
TC 203.5 (EX. ±203.2)
CLEANOUT TF=203.35 INV IN=199.65 INV OUT=199.65 D12 CI501
TC 203.50 (EX. ±203)
A12 CI501 2' WIDE STONE TRENCH W/ UNDERDRAIN
TC 203.50 (EX. ±202)
8" PERF. HDPE PIPE
TW 204.00 BW 203.50
TW 206.00 BW 203.50
TC 203.50
TC 203.50
REINSTALL GRANITE BLOCKS TO MEET EDGE OF FIELD AND PROPOSED GRADES OF NEW CONC. ANCHOR CURB
PANEL DRAINS, TYP.
20.0' TYP.
100 FOOT BUFFER LINE
203.25
203
202.75
202.50
202.25
202
201.75
201.50
201.25
1.25%
GRASS SOCCER FIELD
OVERGROWN AREA
A1 CI501 10" COLLECTOR PIPE L=195 LF; S=0.005
12" HDPE OUTLET PIPE L=10 LF; S=0.005
A12 CI501 RIP RAP PLUNGE POOL W/ 12" HDPE FLARED END INV OUT=198.62
198.62
TC 201.00
CO
6" PVC INV IN=199.38
200.75
200.75
CLEANOUT TF=201.00 INV IN (N)=198.67 INV IN (E)=198.67 D12 CI501
TW 201.00 BW 200.00
TW 201.00 BW 198.00
CLEANOUT TF=201.00 INV OUT=198.67 D12 CI501
TC 201.00
±65.1'
±26.2'
ASPHALT
SHED
SHRUBS
DOUBLE RAMP
STEP
SHRUB
4' WOVEN WIRE FENCE
WOODED AREA
TOP OF SLOPE
BOTTOM OF SLOPE
TREE LINE/ EDGE OF BRUSH
INTERMITTENT STREAM
STREAM
INTERMITTENT STREAM/DRAINAGE DITCH
APPROXIMATE
LINE ARMORING

REV	DESCRIPTION	DATE
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COMMONWEALTH OF MASSACHUSETTS MELISSA A. FOSTER NO. 51765 REGISTERED PROFESSIONAL ENGINEER

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BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

SITE GRADING & DRAINAGE PLAN

SHEET TITLE:

0 10' 20' 40' 60'
SCALE: 1"=20'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--		
DRAWN BY:	MAF		
SMRT FILE:	CG101-21057.dwg	SHEET No.	CG101

24x36

#	OBJECTID	PID_LONG	PID	GIS_ID	FULL_ADDRESS	CITY	ZIPCODE	OWNER	ADDRESSEE	Owner2	MAIL_ADDRESS	MAIL_CS	MAIL_ZIPCODE
1	136508	1902430000	1902430000	1902430000	ST PAULS AV	JAMAICA PLAIN	02130	DEXTER SCHOOL MASS CORP	DEXTER SCHOOL MASS CORP		20 NEWTON	BROOKLINE	02445
2	136519	1902442000	1902442000	1902442000	31 HOPKINS RD	JAMAICA PLAIN	02130	WALSH ADAM A	WALSH ADAM A	WALSH MONDAKINI B	31 HOPKINS RD	JAMAICA PLAIN	02130
3	136531	1902455000	1902455000	1902455000	444 POND ST	JAMAICA PLAIN	02130	VENUS R GRAY REVOCABLE TRUST	VENUS R GRAY REVOCABLE TRUST		444 POND ST	JAMAICA PLAIN	02130
4	136545	1902461050	1902461050	1902461050	198 MOSS HILL RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
5	136522	1902446000	1902446000	1902446000	34 HOPKINS RD	JAMAICA PLAIN	02130	HENRY PAUL W	HENRY PAUL W		34 HOPKINS RD	JAMAICA PLAIN	02130
6	136546	1902461060	1902461060	1902461060	194 MOSS HILL RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
7	136543	1902461030	1902461030	1902461030	202 MOSS HILL RD	JAMAICA PLAIN	02130	MOUSSA GHASSAN	MOUSSA GHASSAN	EL-HACHEM RITA	202 MOSS HILL RD	JAMAICA PLAIN	02130
8	136517	1902440000	1902440000	1902440000	25 HOPKINS RD	JAMAICA PLAIN	02130	HEYMAN MONROE ETAL	HEYMAN MONROE ETAL		25 HOPKINS RD	JAMAICA PLAIN	02130
9	136557	1902462060	1902462060	1902462060	2 DAVID RD	JAMAICA PLAIN	02130	SOMERTO ANNA	SOMERTO ANNA	JONAS RINAT	2 DAVID RD	JAMAICA PLAIN	02130
10	136520	1902443000	1902443000	1902443000	42 HOPKINS RD	JAMAICA PLAIN	02130	SCHOOL DEXTER	SCHOOL DEXTER		20 NEWTON ST	BROOKLINE	02445
11	136534	1902456100	1902456100	1902456100	POND ST	JAMAICA PLAIN	02130	DAUGHTERS OF ST PAUL	DAUGHTERS OF ST PAUL		50 ST PAUL AV	JAMAICA PLAIN	02130
12	136558	1902463000	1902463000	1902463000	MOSS HILL RD	JAMAICA PLAIN	02130	SELKOE POLLY S TS	SELKOE POLLY S TS		166 MOSS HILL RD	JAMAICA PLAIN	02130
13	136521	1902444000	1902444000	1902444000	38 HOPKINS RD	JAMAICA PLAIN	02130	MCGUIRE MICHAEL J	MCGUIRE MICHAEL J		38 HOPKINS RD	JAMAICA PLAIN	02130
14	136535	1902457000	1902457000	1902457000	400 POND ST	JAMAICA PLAIN	02130	HAUSER CARL J	HAUSER CARL J		400 POND ST	JAMAICA PLAIN	02130
15	136518	1902441000	1902441000	1902441000	HOPKINS RD	JAMAICA PLAIN	02130	WALSH ADAM A	WALSH ADAM A	WALSH MONDAKINI B	31 HOPKINS RD	JAMAICA PLAIN	02130
16	136532	1902456000	1902456000	1902456000	420 414 POND ST	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
17	136556	1902462030	1902462030	1902462030	180 MOSS HILL RD	JAMAICA PLAIN	02130	DOUGLAS ANTHONY M JR TS	DOUGLAS ANTHONY M JR TS		180 MOSS HILL RD	JAMAICA PLAIN	02130
18	136533	1902456001	1902456001	1902456001	POND ST	JAMAICA PLAIN	02130	DAUGHTERS OF ST PAUL	DAUGHTERS OF ST PAUL		50 ST PAUL AV	JAMAICA PLAIN	02130
19	136547	1902461070	1902461070	1902461070	190 MOSS HILL RD	JAMAICA PLAIN	02130	MOSKOWITZ STEVEN	MOSKOWITZ STEVEN		190 MOSS HILL RD	JAMAICA PLAIN	02130
20	136559	1902463001	1902463001	1902463001	DAVID RD	JAMAICA PLAIN	02130	SELKOE DENNIS J	SELKOE DENNIS J		166 MOSS HILL RD	JAMAICA PLAIN	02130
21	136507	1902429000	1902429000	1902429000	35 HOPKINS RD	JAMAICA PLAIN	02130	DEXTER SCHOOL	DEXTER SCHOOL		20 NEWTON ST	BROOKLINE	02445
22	136544	1902461040	1902461040	1902461040	200 MOSS HILL RD	JAMAICA PLAIN	02130	JAMES H WILLIAMS JR IRREVOCABLE TRUST	JAMES H WILLIAMS JR IRREVOCABLE TRUST	MCKENZIE DENZIL D	C/O JAMES H WILLIAMS JR	JAMAICA PLAIN	02130
23	136381	1902349031	1902349031	1902349031	235 MOSS HILL RD	JAMAICA PLAIN	02130	SMITH RICKEY E	SMITH RICKEY E		235 MOSS HILL RD	JAMAICA PLAIN	02130
24	136281	1902332000	1902332010	1902332000	427 POND ST #E	JAMAICA PLAIN	02130	LAURIE J WATSON TRINITY	LAURIE J WATSON TRINITY		427 POND ST #E	JAMAICA PLAIN	02130
25	136530	1902454000	1902454000	1902454000	2 HOPKINS RD	JAMAICA PLAIN	02130	DANIELS ALFRED L	DANIELS ALFRED L		2 HOPKINS RD	JAMAICA PLAIN	02130
26	136275	1902327000	1902327000	1902327000	33 NEILLIAN CR	JAMAICA PLAIN	02130	BEZIS CHERYL D	BEZIS CHERYL D		33 NEILLIAN CR	JAMAICA PLAIN	02130
27	136536	1902457001	1902457001	1902457001	POND ST	JAMAICA PLAIN	02130	HAUSER CARL J	HAUSER CARL J		400 POND ST	JAMAICA PLAIN	02130
28	136524	1902448000	1902448000	1902448000	26 HOPKINS RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
29	136636	1902519000	1902519000	1902519000	94 LOUDERS LA	JAMAICA PLAIN	02130	STAZINSKI RICHARD	STAZINSKI RICHARD		94 LOUDERS LANE	JAMAICA PLAIN	02130
30	136553	1902462005	1902462005	1902462005	9 DAVID RD	JAMAICA PLAIN	02130	JARUDI LEMMA	JARUDI LEMMA		9 DAVID RD	JAMAICA PLAIN	02130
31	136856	1902743000	1902743000	1902743000	42 LILA RD	JAMAICA PLAIN	02130	JOHN BARRINGTON MEYER TRUST-	JOHN BARRINGTON MEYER TRUST-		42 LILA RD	JAMAICA PLAIN	02130
32	136284	1902332000	1902332006	1902332000	427 POND ST #C	JAMAICA PLAIN	02130	JONES DAMON G	JONES DAMON G		427C POND ST #C	JAMAICA PLAIN	02130
33	136527	1902451000	1902451000	1902451000	14 HOPKINS RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
34	136378	1902349028	1902349028	1902349028	223 MOSS HILL RD	JAMAICA PLAIN	02130	NEWTON ELYSE L	NEWTON ELYSE L		223 MOSS HILL RD	JAMAICA PLAIN	02130
35	136639	1902522000	1902522000	1902522000	20 CALVIN RD	JAMAICA PLAIN	02130	RIOLES MICHAEL M	RIOLES MICHAEL M		20 CALVIN RD	JAMAICA PLAIN	02130
36	136278	1902330000	1902330000	1902330000	415 POND ST	JAMAICA PLAIN	02130	VITALE HENRY FRANK	VITALE HENRY FRANK		415 POND ST	JAMAICA PLAIN	02130
37	136550	1902462002	1902462002	1902462002	3 DAVID RD	JAMAICA PLAIN	02130	JEFFERSON DEBRA ANN	JEFFERSON DEBRA ANN	JEFFERSON JOSHUA C	3 DAVID RD	JAMAICA PLAIN	02130
38	136295	1902342000	1902342000	1902342000	10 NEILLIAN CR	JAMAICA PLAIN	02130	BORDWIN MILTON	BORDWIN MILTON		10 NEILLIAN CR	JAMAICA PLAIN	02130
39	136283	1902332000	1902332004	1902332000	427 POND ST #B	JAMAICA PLAIN	02130	DANAEE HADI	DANAEE HADI		427B POND ST #B	JAMAICA PLAIN	02130
40	136538	1902459000	1902459000	1902459000	256 MOSS HILL RD	JAMAICA PLAIN	02130	MONDELLO NAZARENE	MONDELLO NAZARENE		256 MOSS HILL RD	JAMAICA PLAIN	02130
41	136638	1902521000	1902521000	1902521000	24 CALVIN RD	JAMAICA PLAIN	02130	URIARTE-GASTON MIREN	URIARTE-GASTON MIREN		24 CALVIN RD	JAMAICA PLAIN	02130
42	136549	1902462001	1902462001	1902462001	1 DAVID RD	JAMAICA PLAIN	02130	IVES DAVID M	IVES DAVID M		186 MOSS HILL RD	JAMAICA PLAIN	02130
43	136555	1902462010	1902462010	1902462010	DAVID RD	JAMAICA PLAIN	02130	MORASH FAMILY LP	MORASH FAMILY LP		22 LELANDS PATH	EDGERTOWN	02539
44	136409	1902351000	1902351000	1902351000	344 POND ST	JAMAICA PLAIN	02130	MCFRANE GABRIELLE	MCFRANE GABRIELLE		344 POND ST	JAMAICA PLAIN	02130
45	136292	1902339000	1902339000	1902339000	30 NEILLIAN CR	JAMAICA PLAIN	02130	SAPONTZIS STEVEN	SAPONTZIS STEVEN		30 NEILLIAN CR	JAMAICA PLAIN	02130
46	136529	1902453000	1902453000	1902453000	6 HOPKINS RD	JAMAICA PLAIN	02130	MARCOTTE KEITH A ETAL	MARCOTTE KEITH A ETAL		6 HOPKINS RD	JAMAICA PLAIN	02130
47	136286	1902333000	1902333000	1902333000	339 POND ST	JAMAICA PLAIN	02130	ARTHUR J LEWIS JR REVOCABLE	ARTHUR J LEWIS JR REVOCABLE		339 POND ST	JAMAICA PLAIN	02130
48	136541	1902461010	1902461010	1902461010	234 MOSS HILL RD	JAMAICA PLAIN	02130	KEANE PETER TS	KEANE PETER TS		234 MOSS HILL RD	JAMAICA PLAIN	02130
49	136280	1902332000	1902332002	1902332000	427 POND ST #A	JAMAICA PLAIN	02130	SOLDZ MILTON TS	SOLDZ MILTON TS		427A POND ST #A	JAMAICA PLAIN	02130
50	136635	1902518010	1902518010	1902518010	LOUDERS LN	JAMAICA PLAIN	02130	CITY OF BOSTON	CITY OF BOSTON		LOUDERS LN	JAMAICA PLAIN	02130
51	136853	1902740000	1902740000	1902740000	19 CALVIN RD	JAMAICA PLAIN	02130	KATSIROUBAS ANNE TS	KATSIROUBAS ANNE TS		19 CALVIN RD	JAMAICA PLAIN	02130
52	136552	1902462004	1902462004	1902462004	7 DAVID RD	JAMAICA PLAIN	02130	LUSSIER STEPHEN	LUSSIER STEPHEN		7 DAVID RD	JAMAICA PLAIN	02130
53	136526	1902450000	1902450000	1902450000	18 HOPKINS RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
54	136377	1902349027	1902349027	1902349027	4 MOSSDALE RD	JAMAICA PLAIN	02130	YUAN DEFENG	YUAN DEFENG		4 MOSS DALE RD	JAMAICA PLAIN	02130
55	136285	1902332000	1902332008	1902332000	427 POND ST #D	JAMAICA PLAIN	02130	SPERBER JAMES A	SPERBER JAMES A	FOSTER ROBERT J	427 POND ST, Unit D	JAMAICA PLAIN	02130
56	136277	1902329000	1902329000	1902329000	41 NEILLIAN CR	JAMAICA PLAIN	02130	JONES ELIZABETH W	JONES ELIZABETH W		41 NEILLIAN CR	JAMAICA PLAIN	02130
57	136540	1902461000	1902461000	1902461000	248 MOSS HILL RD	JAMAICA PLAIN	02130	GILBERTSON MATTHEW ETEMAD	GILBERTSON MATTHEW ETEMAD		248 MOSS HILL RD	JAMAICA PLAIN	02130
58	136852	1902739000	1902739000	1902739000	15 CALVIN RD	JAMAICA PLAIN	02130	SKERETT PATRICK	SKERETT PATRICK		15 CALVIN RD	JAMAICA PLAIN	02130

59	136403	1902349053	1902349053	1902349053	5 SLOCUM RD	JAMAICA PLAIN	02130	HOBBS SUSAN B TS	HOBBS SUSAN B TS		5 SLOCUM RD	JAMAICA PLAIN	02130
60	136294	1902341000	1902341000	1902341000	14 NEILLIAN CR	JAMAICA PLAIN	02130	OCONNELL AMY E	OCONNELL AMY E		14 NELLIEN CR	JAMAICA PLAIN	02130
61	136523	1902447000	1902447000	1902447000	30 HOPKINS RD	JAMAICA PLAIN	02130	GIMBRONE 2017 FAMILY TRUST	GIMBRONE 2017 FAMILY TRUST		30 HOPKINS RD	JAMAICA PLAIN	02130
62	136380	1902349030	1902349030	1902349030	231 MOSS HILL RD	JAMAICA PLAIN	02130	SHEEHAN MAUREEN A	SHEEHAN MAUREEN A		231 MOSS HILL RD	JAMAICA PLAIN	02130
63	136537	1902458000	1902458000	1902458000	260 MOSS HILL RD	JAMAICA PLAIN	02130	ENGLAND STANFORD H	ENGLAND STANFORD H		260 MOSS HILL RD	JAMAICA PLAIN	02130
64	136855	1902742000	1902742000	1902742000	46 LILA RD	JAMAICA PLAIN	02130	SULLIVAN ALANNA	SULLIVAN ALANNA	SULLIVAN COLIN	46 LILA RD	JAMAICA PLAIN	02130
65	136379	1902349029	1902349029	1902349029	227 MOSS HILL RD	JAMAICA PLAIN	02130	SERGI JOHN	SERGI JOHN		227 MOSS HILL RD	JAMAICA PLAIN	02130
66	136542	1902461020	1902461020	1902461020	204 MOSS HILL RD	JAMAICA PLAIN	02130	WANG YANG	WANG YANG		204 MOSS HILL RD	JAMAICA PLAIN	02130
67	136279	1902331000	1902331000	1902331000	419 POND ST	JAMAICA PLAIN	02130	KLICKSTEIN BRUCE M	KLICKSTEIN BRUCE M		419 POND ST	JAMAICA PLAIN	02130
68	136854	1902741000	1902741000	1902741000	50 LILA RD	JAMAICA PLAIN	02130	TOW BRUCE L	TOW BRUCE L		50 LILA RD	JAMAICA PLAIN	02130
69	136551	1902462003	1902462003	1902462003	5 DAVID RD	JAMAICA PLAIN	02130	MACISAAC ALAN J	MACISAAC ALAN J		5 DAVID RD	JAMAICA PLAIN	02130
70	136528	1902452000	1902452000	1902452000	10 HOPKINS RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
71	136282	1902332000	1902332000	1902332000	427 POND ST	JAMAICA PLAIN	02130	FOUR 27 POND STREET	FOUR 27 POND STREET		427 POND ST	JAMAICA PLAIN	02130
72	136525	1902449000	1902449000	1902449000	22 HOPKINS RD	JAMAICA PLAIN	02130	SHOWA BOSTON INSTITUTE	SHOWA BOSTON INSTITUTE		420 POND ST	JAMAICA PLAIN	02130
73	136831	1902718000	1902718000	1902718000	61 LILA RD	JAMAICA PLAIN	02130	MCCLENNEN DOUGLAS A	MCCLENNEN DOUGLAS A		61 LILA RD	JAMAICA PLAIN	02130
74	136637	1902520000	1902520000	1902520000	90 LOUDERS LA	JAMAICA PLAIN	02130	CLARKE JULIA L	CLARKE JULIA L		727 WEST ROXBURY PKWY	WEST ROXBURY	02130
75	136276	1902328000	1902328000	1902328000	37 NEILLIAN CR	JAMAICA PLAIN	02130	SHERRIS DAVID	SHERRIS DAVID		37 NEILLIAN CR	JAMAICA PLAIN	02130
76	136376	1902349026	1902349026	1902349026	2 DRIFTWOOD RD	JAMAICA PLAIN	02130	CUNNIFFE DENIS	CUNNIFFE DENIS		2 DRIFTWOOD RD	JAMAICA PLAIN	02130
77	136731	1902625000	1902625000	1902625000	50 ST PAULS AV	JAMAICA PLAIN	02130	DAUGHTERS OF ST PAUL	DAUGHTERS OF ST PAUL		50 ST PAULS AVE	JAMAICA PLAIN	02130
78	136539	1902460000	1902460000	1902460000	252 MOSS HILL RD	JAMAICA PLAIN	02130	HOWARD SHEERAN PHELPS TS	HOWARD SHEERAN PHELPS TS		252 MOSS HILL RD	JAMAICA PLAIN	02130
79	136554	1902462006	1902462006	1902462006	11 DAVID RD	JAMAICA PLAIN	02130	MUNDY MADELON V	MUNDY MADELON V		11 DAVID RD	JAMAICA PLAIN	02130
80	136408	1902350000	1902350000	1902350000	2 WOODLAND RD	JAMAICA PLAIN	02130	THOMPSON WILLIAM A	THOMPSON WILLIAM A		2 WOODLAND RD	JAMAICA PLAIN	02130
81	136851	1902738000	1902738000	1902738000	11 CALVIN RD	JAMAICA PLAIN	02130	NIXON SAMUEL HUNTER	NIXON SAMUEL HUNTER	KASELL LEAH SIGRID	11 CALVIN RD	JAMAICA PLAIN	02130
82	136548	1902462000	1902462000	1902462000	186 MOSS HILL RD	JAMAICA PLAIN	02130	IVES DAVID M	IVES DAVID M		186 MOSS HILL RD	JAMAICA PLAIN	02130
83	136402	1902349052	1902349052	1902349052	173 MOSS HILL RD	JAMAICA PLAIN	02130	CHEUNG ROBIN	CHEUNG ROBIN		173 MOSS HILL RD	JAMAICA PLAIN	02130
84	136293	1902340000	1902340000	1902340000	24 NEILLIAN CR	JAMAICA PLAIN	02130	ZAHLAWAY MARION B	ZAHLAWAY MARION B		24 NEILLIAN CR	JAMAICA PLAIN	02130
85	136857	1902744000	1902744000	1902744000	LILA RD	JAMAICA PLAIN	02130	JOHN BARRINGTON MEYER TRUST-	JOHN BARRINGTON MEYER TRUST-		42 LILA RD	JAMAICA PLAIN	02130
86	136828	1902715000	1902715000	1902715000	45 LILA RD	JAMAICA PLAIN	02130	SHORTSLEEVE ROBERT H	SHORTSLEEVE ROBERT H		45 LILA RD	JAMAICA PLAIN	02130
87	136287	1902334000	1902334000	1902334000	343 POND ST	JAMAICA PLAIN	02130	LEE ALEXANDER R	LEE ALEXANDER R		343 POND ST	JAMAICA PLAIN	02130
88	136630	1902516001	1902516001	1902516001	LOUDERS LA	JAMAICA PLAIN	02130	CANNISTRARO VINCENT	CANNISTRARO VINCENT		87 HILLS FERRY RD	NASHUA	03064
89	136516	1902439000	1902439000	1902439000	HOPKINS RD	JAMAICA PLAIN	02130	HEYMAN MONROE ETAL	HEYMAN MONROE ETAL		25 HOPKINS RD	JAMAICA PLAIN	02130
90	136350	1902349000	1902349000	1902349000	181 MOSS HILL RD	JAMAICA PLAIN	02130	CHEN MULIAN	CHEN MULIAN		181 MOSS HILL RD	JAMAICA PLAIN	02130
91	136762	1902652000	1902652000	1902652000	72 LOUDERS LA	JAMAICA PLAIN	02130	KATHLEEN A HIRSCH	KATHLEEN A HIRSCH		72 LOUDERS LANE	JAMAICA PLAIN	02130
92	136370	1902349020	1902349020	1902349020	247 MOSS HILL RD	JAMAICA PLAIN	02130	KONTOGLIS VASSILIS	KONTOGLIS VASSILIS		247 MOSSHILL RD	JAMAICA PLAIN	02130
93	136347	1902348005	1902348005	1902348005	10 SLOCUM RD	JAMAICA PLAIN	02130	FREEMAN CARLENE CHISOM	FREEMAN CARLENE CHISOM		10 SLOCUM RD	JAMAICA PLAIN	02130
94	136513	1902435000	1902435000	1902435000	456 POND ST	JAMAICA PLAIN	02130	CANTONE GREGORY	CANTONE GREGORY		456 POND ST	JAMAICA PLAIN	02130
95	136633	1902518000	1902518000	1902518000	130 LOUDERS LA	JAMAICA PLAIN	02130	CITY OF BOSTON	CITY OF BOSTON		LOUDERS LANE	JAMAICA PLAIN	02130
96	136510	1902432000	1902432000	1902432000	ST PAULS AV	JAMAICA PLAIN	02130	DEXTER SCHOOL	DEXTER SCHOOL		20 NEWTON ST	BROOKLINE	02445
97	136759	1902649000	1902649000	1902649000	84 LOUDERS LA	JAMAICA PLAIN	02130	JEAN SULLIVAN MCKEIGUE TRUST	JEAN SULLIVAN MCKEIGUE TRUST		84 LOUDERS LANE	JAMAICA PLAIN	02130
98	136765	1902655000	1902655000	1902655000	60 LOUDERS LA	JAMAICA PLAIN	02130	LENCER WAYNE I	LENCER WAYNE I		60 LOUDERS LANE	JAMAICA PLAIN	02130
99	136383	1902349033	1902349033	1902349033	243 MOSS HILL RD	JAMAICA PLAIN	02130	LAHAM JAMES TS	LAHAM JAMES TS		243 MOSS HILL RD	JAMAICA PLAIN	02130
100	136830	1902717000	1902717000	1902717000	57 LILA RD	JAMAICA PLAIN	02130	BARRY JAMES H	BARRY JAMES H		37 LILA RD	JAMAICA PLAIN	02130
101	136369	1902349019	1902349019	1902349019	255 MOSS HILL RD	JAMAICA PLAIN	02130	TOBIN GEORGE S	TOBIN GEORGE S		255 MOSS HILL RD	JAMAICA PLAIN	02130
102	136375	1902349025	1902349025	1902349025	4 DRIFTWOOD RD	JAMAICA PLAIN	02130	LORIAUX ALAIN	LORIAUX ALAIN		4 DRIFTWOOD RD	JAMAICA PLAIN	02130
103	136352	1902349002	1902349002	1902349002	5 MOSSDALE RD	JAMAICA PLAIN	02130	MAHNKE LISA	MAHNKE LISA		5 MOSSDALE RD	JAMAICA PLAIN	02130
104	136509	1902431000	1902431000	1902431000	12 ST PAULS AV	JAMAICA PLAIN	02130	DEXTER SCHOOL MASS CORP	DEXTER SCHOOL MASS CORP		20 NEWTON	BROOKLINE	02445
105	136641	1902524000	1902524000	1902524000	6 CALVIN RD	JAMAICA PLAIN	02130	MARTIN JAMES L	MARTIN JAMES L		6 CALVIN RD	JAMAICA PLAIN	02130
106	136764	1902654000	1902654000	1902654000	64 LOUDERS LA	JAMAICA PLAIN	02130	PEARL OROURKE TRUST	PEARL OROURKE TRUST		64 LOUDERS LA	JAMAICA PLAIN	02130
107	136827	1902713000	1902713000	1902713000	41 LILA RD	JAMAICA PLAIN	02130	ELLISON ROBERT M	ELLISON ROBERT M		41 LILA RD	JAMAICA PLAIN	02130
108	136515	1902437000	1902437000	1902437000	15 HOPKINS RD	JAMAICA PLAIN	02130	SENOPOULOS PETER A	SENOPOULOS PETER A		15 HOPKINS RD	JAMAICA PLAIN	02130
109	136372	1902349022	1902349022	1902349022	14 DRIFTWOOD RD	JAMAICA PLAIN	02130	VENKATARAMAN SHAMBHAVI	VENKATARAMAN SHAMBHAVI		14 DRIFTWOOD RD	JAMAICA PLAIN	02130
110	136349	1902348007	1902348007	1902348007	177 MOSS HILL RD	JAMAICA PLAIN	02130	SUSSEL JOANNA	SUSSEL JOANNA		177 MOSS HILL RD	JAMAICA PLAIN	02130
111	136512	1902434000	1902434000	1902434000	460 POND ST	JAMAICA PLAIN	02130	DEXTER SCHOOL	DEXTER SCHOOL		20 NEWTON ST	BROOKLINE	02445
112	136761	1902651000	1902651000	1902651000	76 LOUDERS LA	JAMAICA PLAIN	02130	LADUE GRACE A	LADUE GRACE A		76 LOUDERS LANE	JAMAICA PLAIN	02130
113	136289	1902336000	1902336000	1902336000	407 POND ST	JAMAICA PLAIN	02130	WOODWORTH CAROL K ETAL	WOODWORTH CAROL K ETAL		407 POND	JAMAICA PLAIN	02130
114	136632	1902517000	1902517000	1902517000	73 LOUDERS LA	JAMAICA PLAIN	02130	FUESSLER ROLF A	FUESSLER ROLF A		73 LOUDERS LANE	JAMAICA PLAIN	02130
115	136640	1902523000	1902523000	1902523000	CALVIN RD	JAMAICA PLAIN	02130	RIOLES MICHAEL M	RIOLES MICHAEL M		20 CALVIN RD	JAMAICA PLAIN	02130
116	136348	1902348006	1902348006	1902348006	6 SLOCUM RD	JAMAICA PLAIN	02130	DEVINE WILLIAM A	DEVINE WILLIAM A		6 SLOCUM RD	JAMAICA PLAIN	02130
117	136514	1902436000	1902436000	1902436000	11 HOPKINS RD	JAMAICA PLAIN	02130	ARBELAEZ SARAH C	ARBELAEZ SARAH C	ARBELAEZ CHRISTIAN	11 HOPKINS RD	JAMAICA PLAIN	02130

118	136248	1902312000	1902312000	1902312000	431 POND ST	JAMAICA PLAIN	02130	ARMENIAN WOMENS WELFARE ASSC	ARMENIAN WOMENS WELFARE ASSC		431 POND	JAMAICA PLAIN	02130
119	136288	1902335000	1902335000	1902335000	345 POND ST	JAMAICA PLAIN	02130	FARRELL KATHLEEN M	FARRELL KATHLEEN M		345 POND ST	JAMAICA PLAIN	02130
120	136829	1902716000	1902716000	1902716000	51 LILA RD	JAMAICA PLAIN	02130	GOODMAN ROBERT F	GOODMAN ROBERT F		51 LILA RD	JAMAICA PLAIN	02130
121	136629	1902516000	1902516000	1902516000	57 LOUDERS LA	JAMAICA PLAIN	02130	CANNISTRARO VINCENT	CANNISTRARO VINCENT		87 HILLS FERRY RD	NASHUA	03064
122	136351	1902349001	1902349001	1902349001	1 MOSSDALE RD	JAMAICA PLAIN	02130	PAMELA T ASSAD TRUST 1998	PAMELA T ASSAD TRUST 1998		1 MOSSDALE RD	JAMAICA PLAIN	02130
123	136374	1902349024	1902349024	1902349024	6 DRIFTWOOD RD	JAMAICA PLAIN	02130	FERNANDO DILINIE	FERNANDO DILINIE		6 DRIFTWOOD ROAD	JAMAICA PLAIN	02130
124	136560	1902464000	1902464000	1902464000	166 MOSS HILL RD	JAMAICA PLAIN	02130	SELKOE DENNIS J ETAL	SELKOE DENNIS J ETAL		166 MOSS HILL RD	JAMAICA PLAIN	02130
125	136297	1902344000	1902344000	1902344000	265 MOSS HILL RD	JAMAICA PLAIN	02130	KELLEY CORNELIA A ETAL	KELLEY CORNELIA A ETAL		265 MOSS HILL RD	JAMAICA PLAIN	02130
126	136763	1902653000	1902653000	1902653000	68 LOUDERS LA	JAMAICA PLAIN	02130	GABRIELA DULCE COHEN	GABRIELA DULCE COHEN		68 LOUDERS LA	JAMAICA PLAIN	02130
127	136291	1902338000	1902338000	1902338000	36 NEILLIAN CR	JAMAICA PLAIN	02130	36 NEILLIAN LLC	36 NEILLIAN LLC		209 BULLARD ST	WALPOLE	02081
128	136628	1902514010	1902514010	1902514010	55 LOUDERS LA	JAMAICA PLAIN	02130	SAUVAGEOT REALTY TRUST	SAUVAGEOT REALTY TRUST		55 LOUDERS LA	JAMAICA PLAIN	02130
129	136634	1902518001	1902518001	1902518001	LOUDERS LA	JAMAICA PLAIN	02130	DAUGHTERS OF ST PAUL	DAUGHTERS OF ST PAUL		50 ST PAUL AV	JAMAICA PLAIN	02130
130	136373	1902349023	1902349023	1902349023	10 DRIFTWOOD RD	JAMAICA PLAIN	02130	NAN D STROMBERG TRUST	NAN D STROMBERG TRUST		10 DRIFTWOOD RD	JAMAICA PLAIN	02130
131	136353	1902349003	1902349003	1902349003	7 MOSSDALE RD	JAMAICA PLAIN	02130	GEORGENES CHARLES LT	GEORGENES CHARLES LT		7 MOSSDALE RD	JAMAICA PLAIN	02130
132	136511	1902433000	1902433000	1902433000	464 POND ST	JAMAICA PLAIN	02130	DEXTER SCHOOL	DEXTER SCHOOL		20 NEWTON ST	BROOKLINE	02445
133	136760	1902650000	1902650000	1902650000	80 LOUDERS LA	JAMAICA PLAIN	02130	MORRIS EMILY J	MORRIS EMILY J		80 LOUDERS LA	JAMAICA PLAIN	02130
134	136296	1902343000	1902343000	1902343000	29 AVON ST	JAMAICA PLAIN	02130	TOWN OF BROOKLINE	TOWN OF BROOKLINE		29 AVON	JAMAICA PLAIN	02130
135	136290	1902337000	1902337000	1902337000	411 POND ST	JAMAICA PLAIN	02130	LEBOEUF NICOLE R	LEBOEUF NICOLE R		411 POND ST	JAMAICA PLAIN	02130
136	136645	1902529000	1902529000	1902529000	109 WESTCHESTER RD	JAMAICA PLAIN	02130	CORREIA CATHERINE ELIZABETH	CORREIA CATHERINE ELIZABETH		109 WESTCHESTER RD	JAMAICA PLAIN	02130
137	136382	1902349032	1902349032	1902349032	239 MOSS HILL RD	JAMAICA PLAIN	02130	KELLEY SUZANNE	KELLEY SUZANNE		239 MOSS HILL RD	JAMAICA PLAIN	02130
138	136631	1902516002	1902516002	1902516002	LOUDERS LA	JAMAICA PLAIN	02130	FUESSLER ROLF A	FUESSLER ROLF A		73 LOUDERS LANE	JAMAICA PLAIN	02130
139	136401	1902349051	1902349051	1902349051	169 MOSS HILL RD	JAMAICA PLAIN	02130	KILROY THOMAS M ETAL	KILROY THOMAS M ETAL		169 MOSS HILL RD	JAMAICA PLAIN	02130
140	136850	1902737000	1902737000	1902737000	9 CALVIN RD	JAMAICA PLAIN	02130	ARIYABUDDHIPHONGS KIM D	ARIYABUDDHIPHONGS KIM D		9 CALVIN RD	JAMAICA PLAIN	02130
141	136726	1902621000	1902621000	1902621000	ELWELL RD	JAMAICA PLAIN	02130	BLOOSTEIN MARC J	BLOOSTEIN MARC J		50 CONGRESS ST RM 540	BOSTON	02109

AFFIDAVIT OF SERVICE
FOR ABUTTER NOTIFICATION

Under the Massachusetts Wetlands Protection Act
and Boston Wetlands Ordinance

I, William H. McCarthy, Jr., Esq., hereby certify under pains and penalties of perjury that that at least one week prior to the public hearing, I gave notice to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following matter:

A Notice of Intent was filed under the Massachusetts Wetlands Protection Act and/or the Boston Wetlands Ordinance by Showa Boston Institute for Language and Culture, Inc. ("Showa") for Construction of a new synthetic turf field in the location of Showa's current natural grass playing field on the lower southwest side of the campus located at 420 Pond St., Boston (Jamaica Plain), MA 02130.

The Abutter Notification For, the list of abutters to whom it was given, and their addresses are attached to this Affidavit of Service.

_____	May 3, 2021
Name	Date

NOTIFICATION TO ABUTTERS
BOSTON CONSERVATION COMMISSION

In accordance with the Massachusetts Wetlands Protection Act, Massachusetts General Laws Chapter 131, Section 40, and the Boston Wetlands Ordinance, you are hereby notified as an abutter to a project filed with the Boston Conservation Commission.

A. **SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE, INC. ("SHOWA")** has filed a Notice of Intent with the Boston Conservation Commission seeking permission to alter an Area Subject toProtection under the Wetlands Protection Act (General Laws Chapter 131, section 40) and Boston Wetlands Ordinance.

B. The address of the lot where the activity is proposed is **420 POND STREET, BOSTON (JAMAICA PLAIN), MA.**

C. The project involves **the conversion of the existing natural grass field to synthetic turf. The field is located on the lower southwest side of the Showa campus, abutting the property of the Daughters of St. Paul. The use of the field will not change, and no lighting or nighttime use is proposed.**

D. Copies of the Notice of Intent may be obtained by contacting the Boston Conservation Commission at **CC@boston.gov**.

E. Copies of the Notice of Intent may be obtained from **Showa's Authorized Representative, William H. McCarthy, Jr., Esq., 5 Cross Rd., Orleans, MA 02653, Tel: (617) 877-4107, billmccarthylaw@verizon.net between the hours of 9am-5pm, Mon. through Fri.**

F. In accordance with the Commonwealth of Massachusetts Executive Order Suspending Certain Provisions of the Open Meeting Law, the public hearing will take place **virtually** at https://zoom.us/j/6864582044. If you are unable to access the internet, you can call 1-929-205-6099, enter Meeting ID 686 458 2044 # and use # as your participant ID.

G. Information regarding the date and time of the public hearing may be obtained from the **Boston Conservation Commission** by emailing **CC@boston.gov** or calling **(617) 635-3850** between the hours of **9 AM to 5 PM, Monday through Friday.**

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

NOTE: Notice of the public hearing, including its date, tine, and place, will be posted on www.boston.gov/public-notices and in Boston City Hall not less than forty-eight (48) hours in advance.

NOTE: If you would like to provide comments, you may attend the public hearing or send written comments to CC@boston.gov or Boston City Hall, Environment Department, Room 709, 1 City Hall Square, Boston, MA 02201

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

NOTIFICACIÓN PARA PROPIETARIOS Y/O VECINOS COLINDANTES
COMISIÓN DE CONSERVACIÓN DE BOSTON

De conformidad con la Ley de protección de los humedales de Massachusetts, el Capítulo 131, Sección 40 de las Leyes Generales de Massachusetts y la Ordenanza sobre los humedales de Boston, por la presente queda usted notificado como propietario o vecino colindante de un proyecto presentado ante la Comisión de Conservación de Boston.

A. **SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE, INC. ("SHOWA")** ha presentado una solicitud a la Comisión de Conservación de Boston pidiendo permiso para modificar una zona sujeta a protección en virtud de la Ley de protección de los humedales (Leyes generales, capítulo 131, sección 40) y la Ordenanza sobre los humedales de Boston.

B. La dirección del lote donde se propone la actividad es **420 POND STREET, BOSTON (JAMAICA PLAIN), MA.**

C. El proyecto **implica la conversión del campo de césped natural existente en césped sintético. El campo está ubicado en el lado suroeste inferior del campus de Showa, colindando con la propiedad de las Hijas de St. Paul. El uso del campo no cambiará y no se propone ningún uso de iluminación o nocturno.**

D. Se pueden obtener copias del Aviso de Intención comunicándose con la Comisión de Conservación de Boston en CC@boston.gov.

E. Las copias de la notificación de intención pueden obtenerse en **Showa's Authorized Representative, William H. McCarthy, Jr., Esq., 5 Cross Rd., Orleans, MA 02653, Tel: (617) 877-4107, billmccarthylaw@verizon.net entre las 9am-5pm, lunes a viernes.**

F. De acuerdo con el Decreto Ejecutivo de le Mancomunidad de Massachusetts que suspende ciertas disposiciones de la Ley de reuniones abiertas, la audiencia pública se llevará a cabo virtualmente en https://zoom.us/j/6864582044. Si no puede acceder a Internet, puede llamar al 1-929-205-6099, ingresar ID de reunión 686 458 2044 # y usar # como su ID de participante.

G. La información relativa a la fecha y hora de la audiencia pública puede solicitarse a la **Comisión de Conservación de Boston** por correo electrónico a **CC@boston.gov** o llamando al **(617) 635-4416** entre las **9 AM y las 5 PM, de lunes a viernes.**

NOTA: La notificación de la audiencia pública, incluida su fecha, hora y lugar, se publicará en el **Boston Herald** con al menos cinco (5) días de antelación.

NOTA: La notificación de la audiencia pública, incluida su fecha, hora y lugar, se publicará en www.boston.gov/public-notices y en el Ayuntamiento de Boston con no menos de cuarenta y ocho (48) horas de antelación. Si desea formular comentarios, puede asistir a la audiencia pública o enviarlos por escrito a CC@boston.gov o al Ayuntamiento de Boston, Departamento de Medio Ambiente, Sala 709, 1 City Hall Square, Boston, MA 02201.

NOTA: También puede comunicarse con la Comisión de Conservación de Boston o con la Oficina Regional del Noreste del Departamento de Protección Ambiental para obtener más información sobre esta solicitud o la Ley de Protección de Humedales. Para comunicarse con el DEP, llame a la Región Noreste: (978) 694-3200.

NOTA: si tiene previsto asistir a la audiencia pública y necesita servicios de interpretación, sírvase informar al personal en CC@boston.gov antes de las 12 PM del día anterior a la audiencia.

BABEL NOTICE

English:

IMPORTANT! This document or application contains **important information** about your rights, responsibilities and/or benefits. It is crucial that you understand the information in this document and/or application, and we will provide the information in your preferred language at no cost to you. If you need them, please contact us at cc@boston.gov or 617-635-3850.

Spanish:

¡IMPORTANTE! Este documento o solicitud contiene **información importante** sobre sus derechos, responsabilidades y/o beneficios. Es fundamental que usted entienda la información contenida en este documento y/o solicitud, y le proporcionaremos la información en su idioma preferido sin costo alguno para usted. Si los necesita, póngase en contacto con nosotros en el correo electrónico cc@boston.gov o llamando al 617-635-3850.

Haitian Creole:

AVI ENPÒTAN! Dokiman oubyen aplikasyon sa genyen **enfòmasyon ki enpòtan** konsènan dwa, responsablite, ak/oswa benefis ou yo. Li enpòtan ke ou konprann enfòmasyon ki nan dokiman ak/oubyen aplikasyon sa, e n ap bay enfòmasyon an nan lang ou prefere a, san ou pa peye anyen. Si w bezwen yo, tanpri kontakte nou nan cc@boston.gov oswa 617-635-3850.

Traditional Chinese:

非常重要！這份文件或是申請表格包含關於您的權利，責任，和／或福利的重要信息。請您務必完全理解這份文件或申請表格的全部信息，這對我們來說十分重要。我們會免費給您提供翻譯服務。如果您有需要請聯系我們的郵箱 cc@boston.gov 電話# 617-635-3850..

Vietnamese:

QUAN TRỌNG! Tài liệu hoặc đơn yêu cầu này chứa **thông tin quan trọng** về các quyền, trách nhiệm và/hoặc lợi ích của bạn. Việc bạn hiểu rõ thông tin trong tài liệu và/hoặc đơn yêu cầu này rất quan trọng, và chúng tôi sẽ cung cấp thông tin bằng ngôn ngữ bạn muốn mà không tính phí. Nếu quý vị cần những dịch vụ này, vui lòng liên lạc với chúng tôi theo địa chỉ cc@boston.gov hoặc số điện thoại 617-635-3850.

Simplified Chinese:

非常重要！这份文件或是申请表格包含关于您的权利，责任，和／或福利的重要信息。请您务必完全理解这份文件或申请表格的全部信息，这对我们来说十分重要。我们会免费给您提供翻译服务。如果您有需要请联系我们的邮箱 cc@boston.gov 电话# 617-635-3850.

CITY of BOSTON

Cape Verdean Creole:

INPURTANTI! Es dukumentu ó aplikason ten **informason inpurtanti** sobri bu direitus, rasponsabilidadis i/ó benefísius. Ê krusial ki bu intendi informason na es dukumentu i/ó aplikason ó nu ta da informason na língua di bu preferênsia sen ninhun kustu pa bó. Si bu prisiza del, kontata-nu na cc@boston.gov ó 617-635-3850.

Arabic:

مهم! يحتوي هذا المستند أو التطبيق على معلومات مهمة حول حقوقك ومسؤولياتك أو فوائدك. من الأهمية أن تفهم المعلومات الواردة في هذا المستند أو التطبيق. سوف نقدم المعلومات بلغتك المفضلة دون أي تكلفة عليك. إذا كنت في حاجة إليها، يرجى الاتصال بنا على cc@boston.gov أو 617-635-3850.

Russian:

ВАЖНО! В этом документе или заявлении содержится **важная информация** о ваших правах, обязанностях и/или льготах. Для нас очень важно, чтобы вы понимали приведенную в этом документе и/или заявлении информацию, и мы готовы бесплатно предоставить вам информацию на предпочитаемом вами языке. Если Вам они нужны, просьба связаться с нами по адресу электронной почты cc@boston.gov, либо по телефону 617-635-3850.

Portuguese:

IMPORTANTE! Este documento ou aplicativo contém **Informações importantes** sobre os seus direitos, responsabilidades e/ou benefícios. É importante que você compreenda as informações contidas neste documento e/ou aplicativo, e nós iremos fornecer as informações em seu idioma de preferência sem nenhum custo para você. Se precisar deles, fale conosco: cc@boston.gov ou 617-635-3850.

French:

IMPORTANT ! Ce document ou cette demande contient des **informations importantes** concernant vos droits, responsabilités et/ou avantages. Il est essentiel que vous compreniez les informations contenues dans ce document et/ou cette demande, que nous pouvons vous communiquer gratuitement dans la langue de votre choix. Si vous en avez besoin, veuillez nous contacter à cc@boston.gov ou au 617-635-3850.

CITY of BOSTON

CERTIFICATE OF INTERPRETATION

I, Erika Victoria Perez Esteban, hereby certify that I am competent in both the Spanish and English languages, and that I translated the required information and read the attached document, **Notification to Abutters Boston Conservation Commission** into Spanish. And that is true and accurate to the best of my abilities.

Date: May 7th, 2021

(Signature of Translator)
12 Rockland Street
Boston, MA 02119
857-385-6243

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.

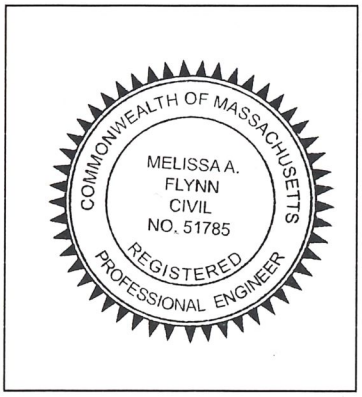
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



5/4/21

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 — Project only impacts Wetlands Buffer Zone.
- ☐ 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

There is no added impervious area, so the groundwater recharge volume is zero; therefore, this standard is not applicable to this project.

☐ 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 There is no added impervious area; therefore, this standard is not applicable to this project.

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) This standard is not applicable to this project.

☐ 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 This standard is not applicable to this project.

☐ 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)

This standard is not applicable to this project.

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:

Due to the limited scope of stormwater management improvements, the O&M requirements have been incorporated into the Long Term Pollution Prevention Plan for the site.

- ☐ 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 Management Report

SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE

BRITISH INTERNATIONAL SCHOOL OF BOSTON

ATHLETIC FIELD RENOVATIONS

Boston (Jamaica Plain), Massachusetts

SMRT

Submitted by:
SMRT Architects and Engineers
May 4, 2021
Project # 21057
smrtinc.com

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1. PROJECT DESCRIPTION

The project consists of constructing a new synthetic turf field at the location of the existing natural grass field at Showa Boston Institute's Jamaica Plain campus. The campus covers an area of approximately 30 acres, including buildings, access, circulation, parking infrastructure, playground, playing field, and basketball courts. The British International School of Boston is a tenant on the Showa campus. The proposed project is located at the southwest portion of the campus.

The proposed improvements are very limited in scope. There are no additional site improvements to the campus besides the construction of the new synthetic turf field and new chain link fencing along the south sideline.

- The proposed field playing dimensions of 180' x 330' will allow for regulation play of field hockey, soccer, and boy's lacrosse. A safety runout area of 10' at the sidelines and 15' at the endlines are provided; therefore, the overall dimensions of the turf field surfacing is 200' x 360'. To accommodate this playing dimension, several of the existing granite blocks will be utilized for small retaining walls at the northeast and southeast corners of the field.
- The existing 5-6' high chain link fence along the southern edge will be replaced with 42" high chain link with 12' high ball safety netting installed above the fence.
- No stormwater quality treatment facilities are required for the project. A small rip rap plunge pool will be installed at the southwest corner of the field. Any stormwater runoff that does not infiltrate directly into the ground under the field will outlet to this rip rap plunge pool before entering the intermittent stream / drainage ditch to the south.

Approximately 2.0 acres will be disturbed due to the construction of the turf field. Construction staging and stocking will be located immediately adjacent to the construction site. Construction vehicles will enter the campus from Pond Street. The access gate at Louders Lane will not be used for construction.

Regulatory Requirements

- The project will comply with the following regulatory agency requirements.
  - City of Boston
    - Boston Wetlands Regulations (approved 8/19/2020)
    - Boston Wetland Ordinance (filed on December 11, 2019)
    - Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains of the Boston Water and Sewer Commission (BWSC)
  - Massachusetts Department of Environmental Protection (MassDEP)
    - Massachusetts Stormwater Handbook (latest addition)
  - National Pollution Discharge Elimination System (NPDES)
    - Construction General Permit / Stormwater Pollution Prevention Plan (SWPPP)

2. STORMWATER NARRATIVE

Introduction

The stormwater design for the proposed project will be in accordance with the Stormwater Management Standards of the Massachusetts Department of Environmental Protection (MassDEP) and the City of Boston Wetland Regulations.

Site Topography

The proposed project is located at the existing natural grass playing field.

- To the north is a significant wooded slope up to a parking area and driveway. The grade change is approximately 40' from the top of the hill to the playing field.
- To the west is relatively flat. The grade slopes gently from the field to the upstream end of the wetlands.
- To the south, the slope drops off quickly to an intermittent stream / drainage ditch. The stream flows west to east.
  - The grade change at the southwest corner of the field to the intermittent stream is about 3'.
  - The grade change at the southeast corner of the field to the intermittent stream is about 18'. The slope down to the stream at this corner is approximately 2:1 and a large portion of the slope has stone armoring.
- To the east, the grade gently slopes to the east and eventually drains south to the intermittent stream.

Site Surficial Soils

Based on review of USDA Soil Survey of Norfolk and Suffolk Counties, Massachusetts, soils within the watershed consist of Hydrologic Soil Groups (HSG) A, B, and C/D soils:

- Udorthents, loamy (HSG A)
- Newport-Urban land complex, 3 to 15% slopes (HSG B)
- Woodbridge (fine sandy loam), 0 to 8 percent slopes, very stony (HSG C/D)

Much of the area to be disturbed by the proposed project is located within HSG A per the NRCS mapping. The sloped wooded land to the north is HSG B. The slope to the south and the intermittent stream / drainage ditch is classified as HSG C/D.

The Natural Resource Conservation Service (NRCS), as part of their soil classification system, assigns each soil series to a Hydrologic Soil Group (HSG). The HSG is a four-letter index intended to indicate the minimum rate of infiltration obtained after prolonged wetting, and to indicate the relative potential for a soil type to generate runoff.

- 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 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.

The NRCS soil classification map is included in Appendix B.

A geotechnical report was completed by McPhail Associates, LLC for a recent project on campus. This report was completed for a stormwater infiltration system that was to be constructed on the east side of the existing basketball courts. The borings and permeability tests completed are approximately 230 feet away from the proposed project area (for reference, the borings are shown on Sheets C-120 and C-121). From field observation, the soils to the east and west of the basketball courts are very similar in nature, so the design team believes the findings in the report are also applicable to the soils where the synthetic turf is being installed.

This report shows that the soils within this area of campus are not as well-draining as the NRCS Hydrologic Soil Group map represents. For purposes of the HydroCAD analysis, the NRCS HSG mapping was used for the classification of the soils in each subcatchment area. By using the more well-draining curve number (HSG A), the pre-development peak flow rate is much lower than if a less well-draining curve number was used; and therefore, provides a more conservative comparison to the post-development peak flow rates.

McPhail Associates performed in-situ permeability tests at the boring locations. The report recommends a coefficient of permeability of 1.4 to 0.14 ft/day (16.8 in/hr to 1.68 in/hr) to be used. The lower limit of this range with a factor of safety of 2 (0.84 in/hr) was used for the infiltration rate underneath the proposed synthetic turf field.

Receiving Waters

Stormwater runoff from the site drains to the intermittent stream / drainage ditch to the south of the project area. The project does not directly connect into any BWSC closed storm drain system.

Flood zone info:

The flood map for the selected area is FIRM Flood Insurance Rate Map for Suffolk County, Massachusetts, City of Boston Number 250286, Panel Number 0067G, effective date 9/25/2009. The proposed project area is out of the flood hazard areas.

Methodology and Modeling Assumptions

Runoff and routing calculations have been performed for the pre-development and post-development scenarios using the HydroCAD software system. Time of concentration and runoff curve number calculations have been developed using the method described in NRCS Technical Release 55 – Urban Hydrology for Small Watersheds (TR-55). Time of concentration calculations have been amended where the value given by the TR-55 method is less than five minutes. In these cases, a standard minimum value of five minutes has been used to keep this parameter within the acceptable working range of the model.

Design rainfall events have been modeled using the SCS Type III hydrograph for 24-hour duration storms. The rainfall depth for each return period is taken from Technical Paper 40 – Rainfall Frequency Atlas for the United States, issued by the US Weather Bureau, as adjusted by Massachusetts Department of Environmental Protection, Hydrology Handbook for Conservation Commissioners. The rainfall depth values for Suffolk County, standard design storm frequencies are given in the table below.

24-Hour Rainfall Depths for Suffolk County, MA at Design Storm Frequencies

Hydrology Handbook for Conservation Commissioners – Mass DEP

Frequency	2-Year	10-Year	25-Year	100-Year
Rainfall Depth	3.2 in	4.6 in	5.5 in	6.6 in

3. STORMWATER MODELING RESULTS

The stormwater quantity analysis compares existing and proposed conditions where the improvements will alter existing cover conditions and hence the hydrological behavior of the area. For purposes of this report, the entire watershed that drains to the intermittent stream / drainage ditch was not analyzed. Only the portion of the watershed area that contains the project disturbance was analyzed in the stormwater modeling.

Pre-Development Conditions

One design point has been selected to analyze the impact on the existing watershed. The design point is the intermittent stream / drainage ditch to the south of the project site which flows to the southeast.

One subcatchment is used for the pre-development analysis. The area includes the hill to the north of the field, the playing field area, and the southern slope.

A Pre-Development Drainage Plan and HydroCAD report are included in Appendix D.

Post-Development Conditions

The same drainage area and design point are used in the post-development model as the pre-development model. The only change in coverage is the construction of a new synthetic turf field.

The synthetic turf field is included in the model as Direct Entry (CN 98) since there is no depression storage, or evapotranspiration loss of rainfall that lands on the structure. Rainfall will drain directly through the surface of the field to the underlying base layer of highly porous crushed stone. The stone base will act as a large storage reservoir, detaining rainfall that enters the structure, before allowing it to infiltrate to underlying soils or outlet to the 12" culvert pipe. It should be noted that the stone layer extends 6 inches beneath the field underdrain piping, providing significant storage/infiltration volume prior to *any* stormwater discharging to the piped drainage system. The stone base layer is modeled as a pond with 33% voids. As noted above, a value of 0.84 in/hr has been utilized to represent infiltration to underlying soils below the new field based on the in-situ permeability testing completed next to the field area. The provision of significant storage beneath the field underdrain panels allows the rainfall landing on the field from all except the most severe storms will drain to the underlying soils, with minimal contribution to surface runoff. The piped underdrain system is designed to convey excess rainfall from the largest storm events to the rip rap plunge pool at the southwest corner of the field. The underdrains are modeled as multiple vertical orifices that discharge to the larger collector pipes that collect and convey stormwater around the perimeter of the proposed turf field.

The post-development project area has been divided into four subcatchment areas:

- SC-1A includes the areas to the west and south of the synthetic turf field. Stormwater runoff from this area travels overland to intermittent stream / drainage ditch.
- SC-1B includes the steep wooded slope to the north of the synthetic turf field. Stormwater runoff is collected by a 2' wide stone trench along the northern sideline of the field. The trench connects to the field collector pipe system which outlets to a rip rap plunge pool at the southwest corner of the field which then outlets to the intermittent stream / drainage ditch.
- SC-1C includes the eastern portion of the steep wooded slope and the lawn area to the east of the field. Stormwater runoff flows overland to the intermittent stream / drainage ditch.
- SC-1D includes the synthetic turf field. As described above, the runoff drains vertically through the synthetic turf field into the stone base. The runoff either infiltrates directly under the field or is stored in the voids of the stone base material until the stormwater enters the field panel drains. The panel

drains flow to the collector pipe, which outlets to the riprap plunge pool.

A Post-Development Drainage Plan and HydroCAD report are included in Appendix E.

Stormwater Modeling Summary

Stormwater modeling evaluated the peak flow rate for the 2-year, 10-year, 25-year and 100-year storms at the design point. Refer to Section 4 for discussion regarding pre- and post-development rates.

A summary of the pre-development and post-development peak flow rate is provided in the table below:

Runoff Summary- Peak Flow (cfs)

Analysis Point	Design Storm Event Return Period											
	2-Year			10-Year			25-Year			100-Year		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
DP-1	0.0	0.1	**+0.1**	0.7	0.5	**-0.2**	1.6	1.0	**-0.6**	3.2	1.8	**-1.4**

4. STORMWATER MANAGEMENT COMPLIANCE

Design Criteria

The project has been designed in accordance with the Massachusetts Stormwater Standards and the City of Boston Regulations.

There is no new impervious cover proposed as part of the improvement, so no stormwater quality treatment facilities are required for this project. Except for the 2-year design storm that increases by 0.1 cfs in the post-development condition, all the post-development peak flow rates are reduced from the pre-development rates.

The following is a breakdown of how the project meets each of the MassDEP Stormwater Standards.

MassDEP Standard 1 – Untreated Stormwater

No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

No new untreated discharges are proposed as part of the project. The rip rap plunge pool at the outlet of the field will dissipate the stormwater runoff before the runoff reaches the intermittent stream / drainage ditch.

MassDEP Standard 2 – Post-Development Peak Discharge Rates

Stormwater Management Systems shall be designed so that peak post-development discharge rates do not exceed pre-development discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

As indicated in the table in Section 3, the proposed development reduces the peak flow rate of runoff from the overall site for the 10-year, 25-year and 100-year storms. Only the 2-year storm has a very slight increase of 0.1 cfs. It is anticipated that the very slight increase in flow will have a negligible impact on the existing stormwater management system; and therefore meets the requirements of Standard 2.

MassDEP Standard 3 – Recharge to Groundwater

Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

There is no added impervious area, so the groundwater recharge volume is zero; therefore, this standard is not applicable to this project.

MassDEP Standard 4 – Water Quality Treatment

Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

a. *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*

b. *Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
c. *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

Requirement (a):
Due to the very limited scope of stormwater management improvements of this project, the stormwater maintenance, operation, and inspection requirements have been incorporated into the Long-Term Pollution Prevention Plan (included in Appendix F).

Requirement (b):
As noted in Standard 3, there is no added impervious area due to this project; therefore, the water quality volume is zero and this portion of the standard is not applicable.

Requirement (c):
With no runoff from impervious areas proposed for this project, pretreatment facilities are not required.

MassDEP Standard 5 – Higher Potential Pollutant Loads

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

This standard is not applicable to this project.

MassDEP Standard 6 – Protection of Critical Area

Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "stormwater discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

This standard is not applicable to this project.

MassDEP Standard 7 – Redevelopment

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

This standard is not applicable to this project.

MassDEP Standard 8 – Erosion/Sediment Control

A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

A Stormwater Pollution Prevention Plan (SWPPP) has been developed for this project and will be implemented.

This project involves disturbance of greater than 1 acre and as such stormwater discharges from construction activities are regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit. Refer to the Erosion and Sediment Control sheets of the Permitting Drawings.

The SWPPP is included in the City Permit package and will also be included in the NPDES Notice of Intent (NOI).

MassDEP Standard 9 – Operation/Maintenance Plan

A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Due to the limited scope of stormwater management improvements on this project, the stormwater operations, inspections, and maintenance requirements have been incorporated into the Long-Term Pollution Prevention Plan for the site (Appendix F).

MassDEP Standard 10 – Prohibition of Illicit Discharges

All illicit discharges to the stormwater management system are prohibited.

Illicit discharges to the site will be mitigated through the implementation of the Long-Term Pollution Prevention Plan, included in Appendix F, which includes measures for the following:

- Good housekeeping,
- No materials, fertilizers, herbicides, pesticides, or other waste products will be stored onsite, and
- Routine maintenance and inspection.

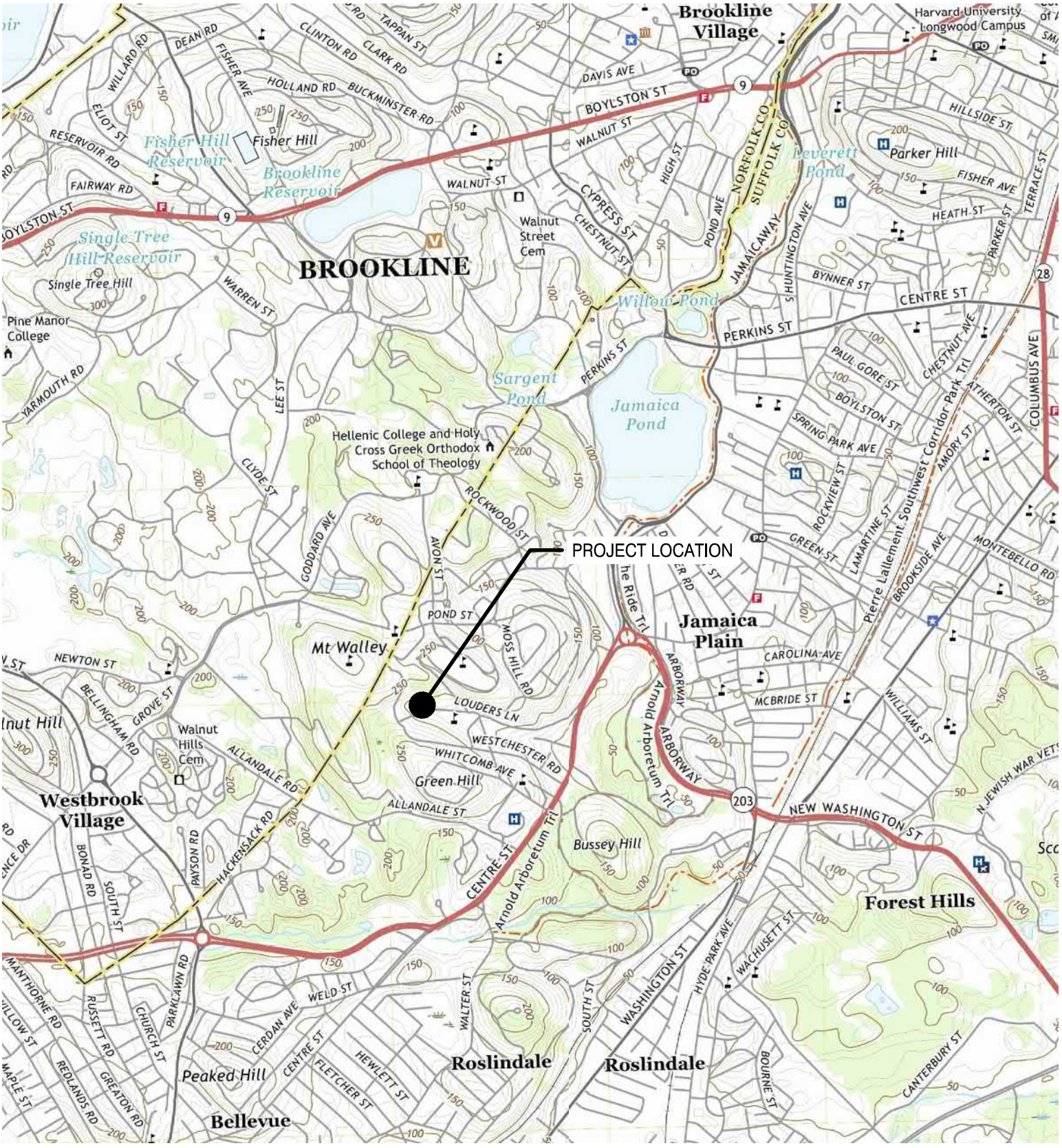
5. CONCLUSIONS

The proposed project at the Showa Boston Institute campus will not have an adverse effect (short-term or long-term) on the adjacent natural resources. The project disturbance is within the 100-foot MassDEP wetland buffer; however, no structures or impervious cover is proposed within the buffer. The synthetic turf system drains vertically which will closely mimic the existing condition of the site.

The project meets the Massachusetts Stormwater Standards:

- Besides the slight increase of the 2-year storm peak flow, the proposed synthetic turf field work reduces the peak flow at intermittent stream / drainage ditch for the 10-year, 25-year, and 100-year storm events from the pre-development to the post-development condition.
- The project will control any construction-related impacts on the site through the development of the NPDES SWPPP.
- A long-term pollution prevention plan will be implemented to ensure the local and state standards are upheld after construction is complete.

Figures



SMRT PROJECT NO. 21057

0 1000' 2000' 4000

SCALE: 1" = 2000'

Figure 1- USGS Locus Map- Boston South Quadrangle 2021

Showa Boston Institute for Language and Culture
British International School of Boston - Boston (Jamaica Plain), MA

N

SMRT

MassDEP Stormwater Checklist

Appendix A

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.

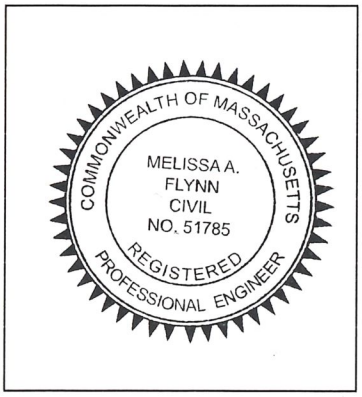
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



5/4/21

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 — Project only impacts Wetlands Buffer Zone.
- ☐ 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

There is no added impervious area, so the groundwater recharge volume is zero; therefore, this standard is not applicable to this project.

☐ 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 There is no added impervious area; therefore, this standard is not applicable to this project.

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) This standard is not applicable to this project.

☐ 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 This standard is not applicable to this project.

☐ 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)

This standard is not applicable to this project.

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:

Due to the limited scope of stormwater management improvements, the O&M requirements have been incorporated into the Long Term Pollution Prevention Plan for the site.

- ☐ 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;

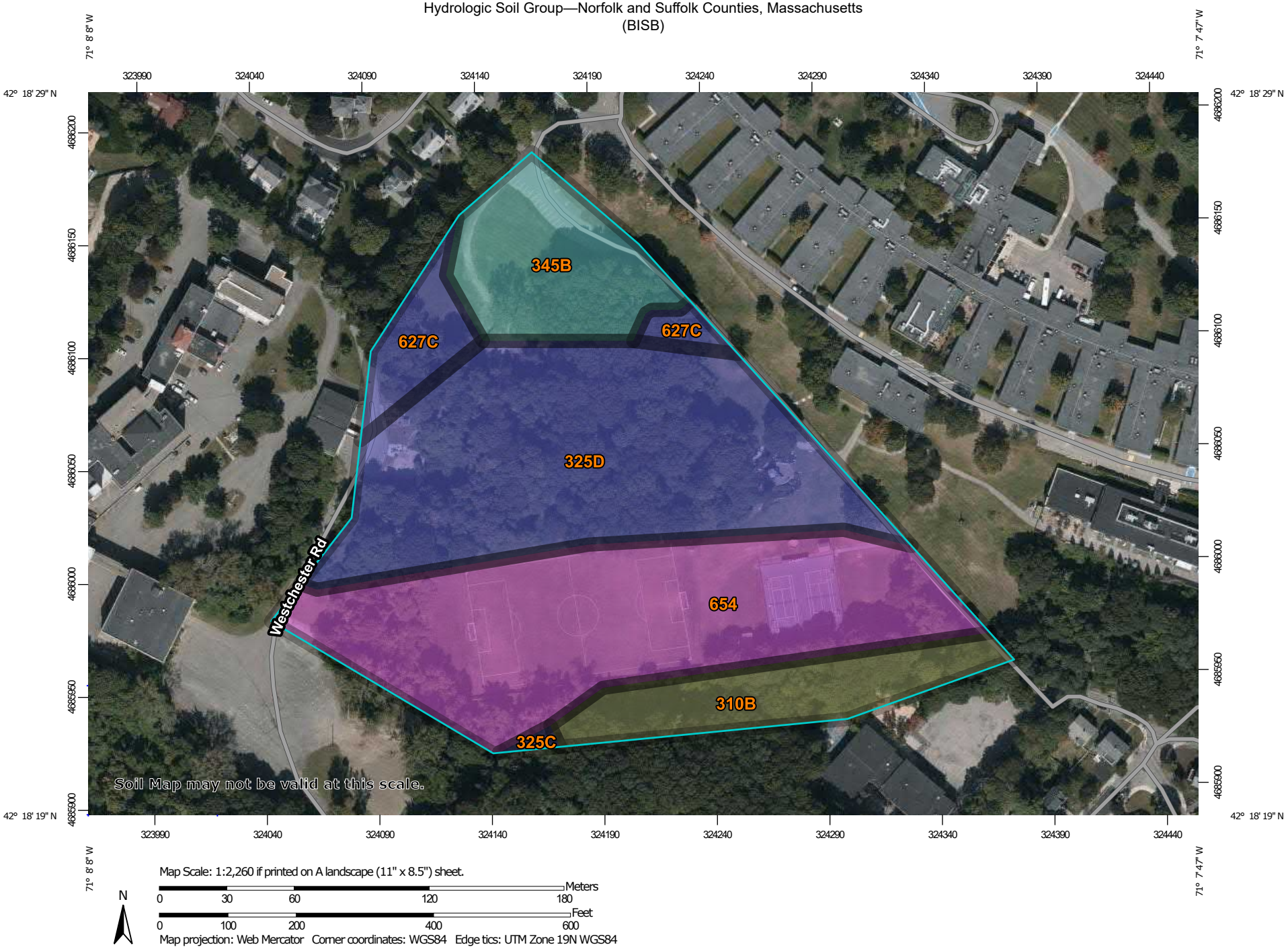
☐ An Illicit Discharge Compliance Statement is attached;

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

Soils Information Appendix B

- NRCS Soil Classification Map
- Geotechnical Investigations Report by McPhail Associates LLC

Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts
(BISB)



Map Scale: 1:2,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 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
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	1.2	9.9%
325C	Newport silt loam, 8 to 15 percent slopes	B	0.0	0.3%
325D	Newport silt loam, 15 to 25 percent slopes	B	4.5	37.3%
345B	Pittstown silt loam, 2 to 8 percent slopes	C	1.4	11.7%
627C	Newport-Urban land complex, 3 to 15 percent slopes	B	0.7	5.5%
654	Udorthents, loamy	A	4.2	35.3%
Totals for Area of Interest			**12.0**	**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

GEOTECHNICAL ENGINEERING REPORT

SHOWA STORMWATER INFILTRATION SYSTEM

BOSTON, MASSACHUSETTS

OCTOBER 28, 2019

Prepared For:

MDS/Miller Dyer Spears
99 Chauncy Street, 8th Floor
Boston, MA 02111

2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

PROJECT NO. 6871

October 28, 2019

MDS/Miller Dyer Spears
99 Chauncy Street, 8th Floor
Boston, MA 02111

Attention: Mr. James Loftus, AIA

Reference: Showa Stormwater Management System; Boston, Massachusetts
Geotechnical Engineering Report

Ladies and Gentlemen:

This letter summarizes the results of our subsurface exploration program and in-situ soil permeability testing for the proposed Showa Stormwater Management System to be located on the Showa Campus in Boston, Massachusetts. The purposes of the subsurface exploration program permeability testing were to document the subsurface soil and groundwater conditions at the site and to estimate the range of permeability of the site soils for design of the stormwater management system. Refer to the Project Location Plan (Figure 1) for the general site location.

This report was prepared in accordance with our proposal dated August 28, 2019 and the subsequent authorization of MDS. These services are subject to the limitations contained in Appendix A.

Available Information

Available information provided to McPhail Associates, LLC (McPhail) includes:

- A 30-scale drawing titled "Conceptual Recharge System Location Coordination" dated September 6, 2019 prepared by Nitsch Engineering, Inc.

Elevations as referenced herein are in feet and refer to Boston City Base (BCB) datum, which is 5.65 feet below the National Geodetic Vertical Datum of 1929 (NGVD).

Existing Conditions and Proposed Site Development

The Showa campus, located at 420 Pond Street in Jamaica Plain, Massachusetts, occupies an approximate 40-acre hillside. The campus includes landscaped and wooded areas, paved driveways, parking lots, and various pedestrian walkways. The southern portion of the campus is occupied by a landscaped soccer field, tennis and basketball courts, a playground, and various open space.

It is understood that a stormwater management system to be designed by others is proposed to be located approximately 90 feet to the east of the existing tennis/basketball courts in a landscaped area on the Showa campus.

Investigation Procedures

On October 15, 2019, three (3) borings were performed at the site by Carr-Dee Corp. (Carr-Dee) of Medford, Massachusetts under contract to McPhail. The approximate exploration locations are indicated on the enclosed **Figure 2** which is based on the above referenced Site Plan.

The borings were performed within the approximate proposed location of the stormwater management system to assess the subsurface soil and groundwater conditions and to perform in-situ permeability testing. The borings were performed utilizing track-mounted drilling equipment and advanced using 4-inch I.D. casing and wet rotary drilling techniques. Standard 2-inch O.D. split-spoon samples and standard penetration tests (SPT) were obtained in accordance with the standard procedures in ASTM D1586. Each of the borings were terminated within a natural glacial till deposit at depths ranging from about 7 to 12 feet below the existing ground surface. In-situ borehole permeability tests were performed within each borehole, as described herein. Additionally, groundwater observation wells were installed in completed boreholes B-1 and B-2. Boring logs prepared by Carr-Dee are presented in **Appendix B** following the text of this report.

The borings were monitored by a McPhail representative who performed field layout, prepared field logs, obtained and visually classified soil samples, monitored groundwater conditions in the completed boreholes, made minor relocations of the explorations, and determined the required exploration depths based upon the actual subsurface conditions encountered.

Field locations of the explorations were determined by taping from existing site features indicated on the above referenced Site Plan. The existing ground surface elevation at each boring location was determined by a level survey performed by our field staff utilizing vertical control information on the Site Plan.

Subsurface Conditions

A detailed description of the subsurface conditions encountered in the explorations is documented on the boring logs provided in **Appendix B** of this report. General descriptions of the soil layers present at site are provided below.

Fill

In general, the explorations indicate that the site consists of an approximate 6-inch thick layer of topsoil that is underlain by a layer of fill which was observed to consist of a dense to

very dense, brown, well-graded mixture of silt, sand, and gravel containing varying amounts of brick, ash, and cinders

Glacial Till Deposit

Underlying the fill, a deposit of glacial till was encountered. The glacial till generally consists of a dense to very dense, grey and brown, well-graded mixture of silt, sand, and gravel. In borings B-1 and B-2, blow counts of under 10 blows per foot were observed in the glacial till deposit 10 feet below ground. Due to potential disturbance during drilling, these blows are not believed to be indicative of the density of this deposit.

Groundwater

Groundwater was not encountered within the boreholes during the drilling process. Following a brief period of heavy precipitation, the groundwater levels in the completed observation wells were measured prior to development of the wells. The groundwater level was observed to be at 5.9 feet below ground surface in borehole B-1 and 0.9 feet below ground surface in borehole B-2, corresponding to Elevation +195.7 and Elevation +199.4, respectively. Following a second round of precipitation, the groundwater levels were measured to be 1.5 feet and 0.4 feet below ground surface in boreholes B-1 and B-2, respectively. Based on the variable groundwater levels measured in the observation wells, groundwater is considered to be perched on the surface of the glacial till deposit.

It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, runoff particularly during or following periods of heavy precipitation, and alterations of existing drainage patterns. Groundwater monitoring reports are presented in **Appendix D**.

In-Situ Permeability Testing

On October 15, 2019, three (3) in-situ, constant head permeability tests were performed at the site in the vicinity of the proposed infiltration system. Two (2) of the permeability tests were conducted as open-end tests and the other was conducted as a packer test, in general accordance with the U.S. Bureau of Reclamation, Designation E-18 and 7310 (USBR Method E-18 and method 7310). The general procedures are described below.

In boreholes B-2 and B-3, open-end tests were performed within the layer of fill using the following general procedure. The borehole was advanced inside a 4-inch I.D. steel casing. Once the desired test depth was reached, the soil was carefully cleaned out to the bottom of the casing using wet rotary drilling techniques. Clean water was then introduced into the borehole to a pre-determined level. The flow rate of the water was subsequently adjusted until a relatively constant head could be maintained in the casing at a relatively constant flow rate (steady state). The coefficient of permeability (k) of the soil was then calculated as:

$$k = \frac{q}{5.5rh}$$

where: q = constant rate of flow into the borehole;
r = inside radius of casing;
h = head of water used to maintain steady state.
(Note: Any consistent units may be used.)

At borehole B-1, the borehole was initially advanced inside of a 4-inch I.D. casing to a depth of four (4) feet below ground surface. An open-end constant head permeability test was attempted at this depth, and only negligible water infiltration was observed. Therefore, the borehole was advanced using wet rotary drilling techniques to a depth of 10 feet below ground surface, or 6 feet below the bottom of the 4-inch I.D. casing. Clean water was then introduced into the borehole to a pre-determined level. The flow rate of the water was subsequently adjusted until a relatively constant head could be maintained in the casing at a relatively constant flow rate (steady state). The coefficient of permeability (k) of the soil was then calculated as:

$$k = \frac{q}{2\pi Lh} * \ln\left(\frac{L}{r}\right)$$

where: q = constant rate of flow into the borehole;
r = inside radius of casing;
L = length of the section of borehole being tested;
h = head of water used to maintain steady state.
(Note: Any consistent units may be used.)

Laboratory Testing

At the completion of the field work, soil samples obtained from the borings were returned to our laboratory for more detailed classification, analysis and testing. The laboratory testing consisted of sieve and hydrometer analyses to determine the soil gradations to confirm the visual classifications of the site soils. The soil gradations were also used to estimate the coefficient of permeability for site soils. Laboratory test procedures were in general accordance with applicable ASTM Standards. Results of the sieve and hydrometer analyses of the fill and glacial till deposits appear on **Figures 3** and **4** following the text of this report.

Using the above-referenced laboratory-derived grain-size distributions, the coefficient of permeability of the fill and glacial till deposits were estimated using the Kozeny-Carman formula. This method involves the use of additional parameters such as void ratio and particle shape, which are estimated from the boring data and the representative soil samples.

Permeability Test Results and Recommendations

The results of the constant head, in-situ permeability tests indicate a coefficient of permeability (k) in the fill deposit ranging from about $1.78x10^{-3}$ to $1.78x10^{-5}$ centimeters per second (cm/s) or 5.1 to 0.05 feet per day (ft/day). Additionally, the permeability test performed in the glacial till indicates a coefficient of permeability of approximately $5.4x10^{-6}$ cm/s or $1.5x10^{-2}$ ft/day.

The results of the Kozeny-Carman formula applied using the grain-size distributions obtained from laboratory analysis indicate a coefficient of permeability in the fill deposit ranging from about $1.5x10^{-4}$ to $4.6x10^{-5}$ centimeters per second (cm/s) or 0.42 to 0.13 feet per day (ft/day). Additionally, this approach indicates a coefficient of permeability in the glacial till deposit ranging from about $6.5x10^{-6}$ to $3.2x10^{-6}$ cm/s or $1.8x10^{-2}$ to $9.2x10^{-3}$ ft/day. The values obtained through permeability testing and laboratory analysis are in general agreement and are consistent with published values for these soil types.

In consideration of the above, a coefficient of permeability in the range of $5x10^{-4}$ to $5x10^{-5}$ cm/s (1.4 to 0.14 ft/day) is recommended for the fill deposit. A coefficient of permeability $5x10^{-6}$ cm/s ($1.4x10^{-2}$ ft/day) is recommended for the glacial till deposit.

It should be noted that the existing fill deposit is heterogeneous in composition and variable in density, thus, it is anticipated that the coefficient of permeability in the fill deposit will be highly variable and the results of the permeability testing may not be representative of the entire fill deposit. Also, the top of the glacial till deposit was observed to range between 2.5 feet and 5 feet below ground surface, which is roughly coincident with the depth of the bottom of the proposed recharge system. It is anticipated that near the interface between the fill deposit and the glacial till deposit, the lower coefficient of permeability of the glacial till deposit will limit water infiltration into this layer. Therefore, it is recommended that a lower bound estimate of the coefficient of permeability be used for design in the fill deposit.

We trust that the above is sufficient for your present requirements. Should you have any questions concerning the recommendations presented herein, please do not hesitate to call us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Nathan Davis, PhD

Chris M. Erikson, P.E.
NTD/cme
N:\Working Documents\Reports\6871 - GER 101519.docx

FIGURE 1

McPHAIL ASSOCIATES, LLC
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www.mcphailgeo.com

N

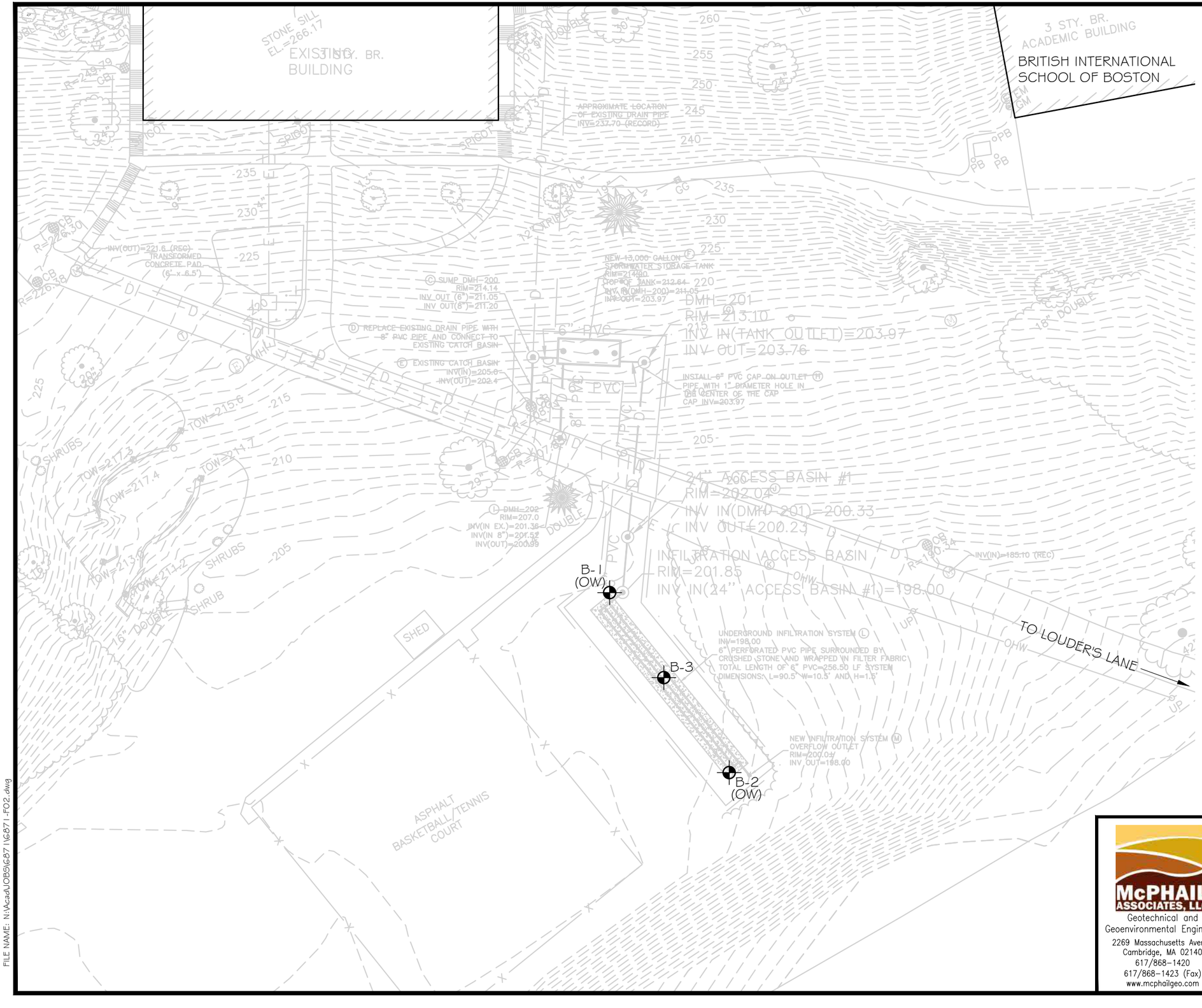
SCALE 1:25,000

PROJECT LOCATION PLAN

SHOWA STORMWATER MANAGEMENT SYSTEM

JAMAICA PLAIN MASSACHUSETTS

FIGURE 2



LEGEND

⊕ — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. ON OCTOBER 15, 2019 FOR McPHAIL ASSOCIATES, LLC

(OW) — INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BOREHOLE

GRAPHIC SCALE

40 0 40 80

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SHOWA STORMWATER MANAGEMENT SYSTEM

JAMAICA PLAIN MASSACHUSETTS

SUBSURFACE EXPLORATION PLAN

FOR

MDS / MILLER DYER SPEARS

BY

McPHAIL ASSOCIATES, LLC

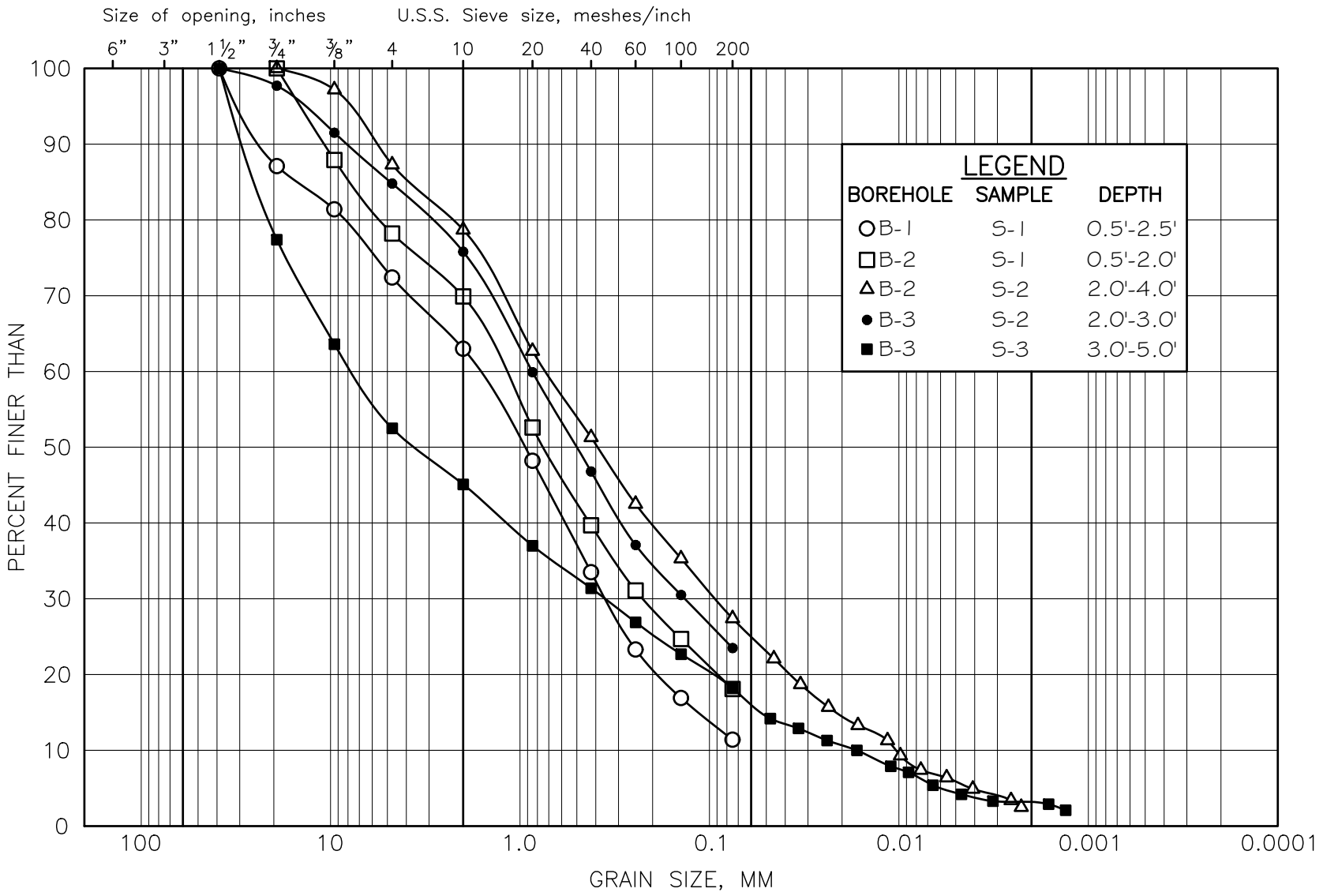
Date: OCTOBER 2019	Dwn: M.B.S.	Chkd: N.T.D.	Scale: 1" = 40'
Project No: 6871			

FILE NAME: N:\Acad\JOBS\6871\6871-F02.dwg

FILE NAME: N:\Acad\JOBS\6871\6871-F03_Sieve.dwg

PROJECT No. 6871

M.I.T. GRAIN SIZE SCALE



COBBLE SIZE	GRAVEL SIZE			SAND SIZE			FINE GRAINED	
	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	SILT SIZE	CLAY SIZE

McPHAIL ASSOCIATES, LLC

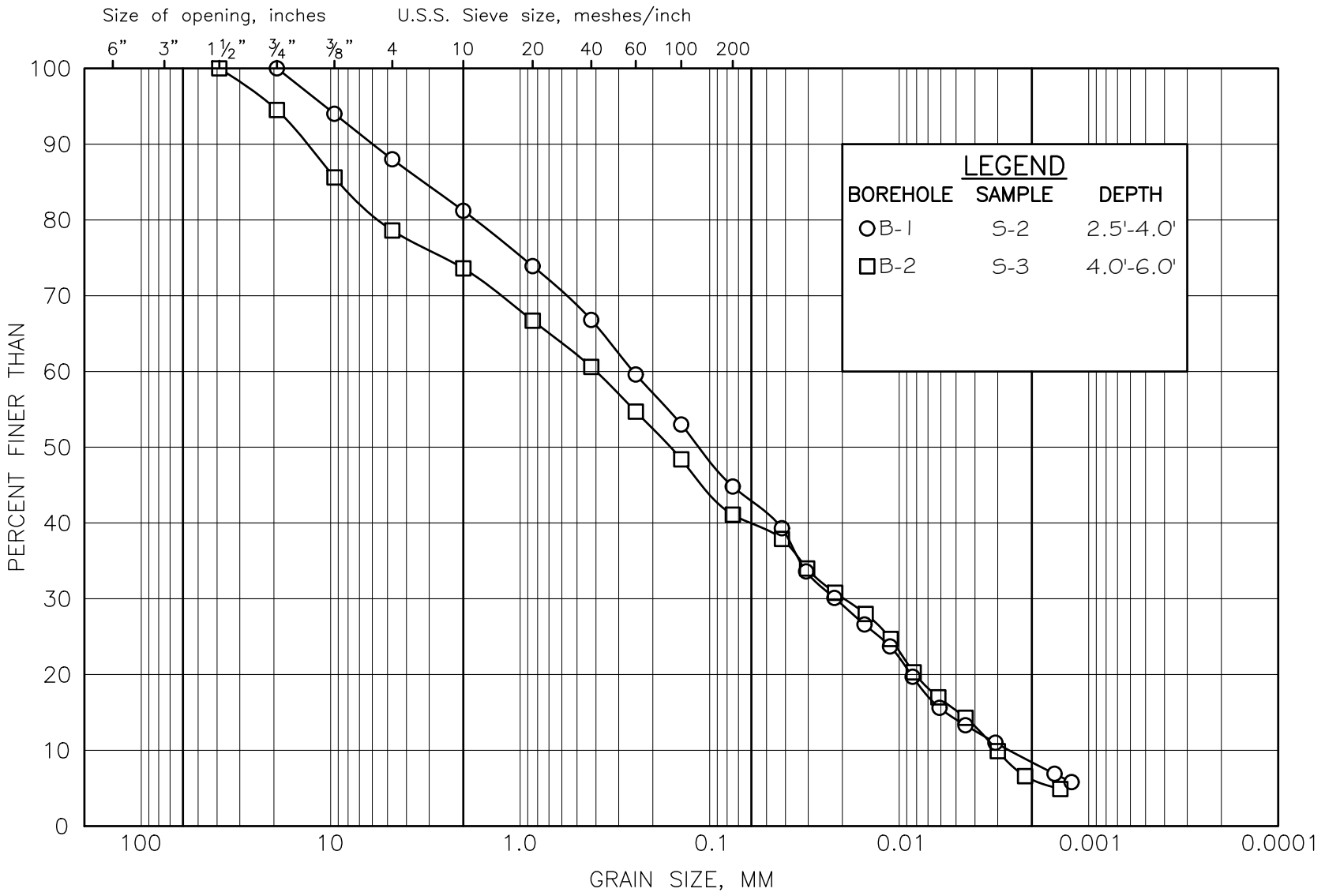
GRAIN SIZE DISTRIBUTION
FILL

FIGURE 3

FILE NAME: N:\Acad\JOBS\6871\6871-F04_Sieve.dwg

PROJECT No. 6871

M.I.T. GRAIN SIZE SCALE



COBBLE SIZE	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	SILT SIZE	CLAY SIZE
	GRAVEL SIZE			SAND SIZE			FINE GRAINED	

McPHAIL ASSOCIATES, LLC

GRAIN SIZE DISTRIBUTION
GLACIAL TILL

FIGURE 4

TABLE 1

Showa Infiltration System
Project No. 6871

Constant Head Borehole Permeability Test Summary

Borehole	Test Depth (ft)	Soil Strata	Head (ft)	Flow Rate, q (cm^3/s)	Permeability, k (cm/s)	(ft/day)
B-1	4-10	Glacial Till	7.83	4.17E-01	5.44E-06	1.54E-02
B-2	4	Fill	5.5	8.33E+00	1.78E-03	5.05E+00
B-3	3	Fill	5.5	8.33E-02	1.78E-05	5.05E-02

APPENDIX A:

LIMITATIONS

LIMITATIONS

This report has been prepared on behalf of and for the exclusive use of MDS/Miller Dyer Spears for specific application to the proposed Showa stormwater management system to be located on the Showa campus in Boston, Massachusetts in accordance with generally accepted soil and geotechnical engineering practices. No other warranty, expressed or implied, is made.

The analyses and recommendations presented in this report are based upon the data obtained from the subsurface explorations and permeability tests performed at the approximate locations indicated on the enclosed plan. If variations in the nature and extent of subsurface conditions between the widely spaced explorations become evident during the course of construction, it will be necessary for a re-evaluation of the recommendations of this report to be made after performing on-site observations during the construction period and noting the characteristics of any variations.

APPENDIX B:

CARR-DEE BORING LOGS
B-1 THROUGH B-3

CARR-DEE CORP.

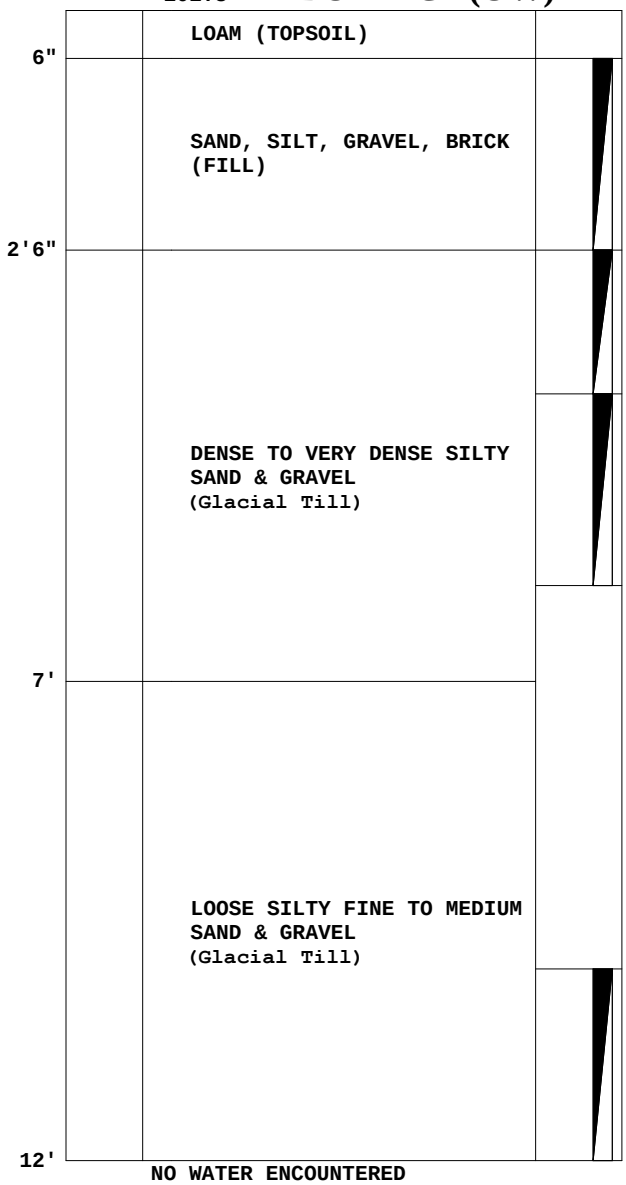
37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: MCPHAIL ASSOC. LLC, 2269 MASS. AVE., CAMBRIDGE, MA Date: 10-16-2019 Job No.: 2019-203

Location: SHOWA INSTITUTE, 420 POND STREET, BOSTON, MA Scale: 1 in.= 2 ft.

GROUND SURFACE +201.8

BORING 1(OW)

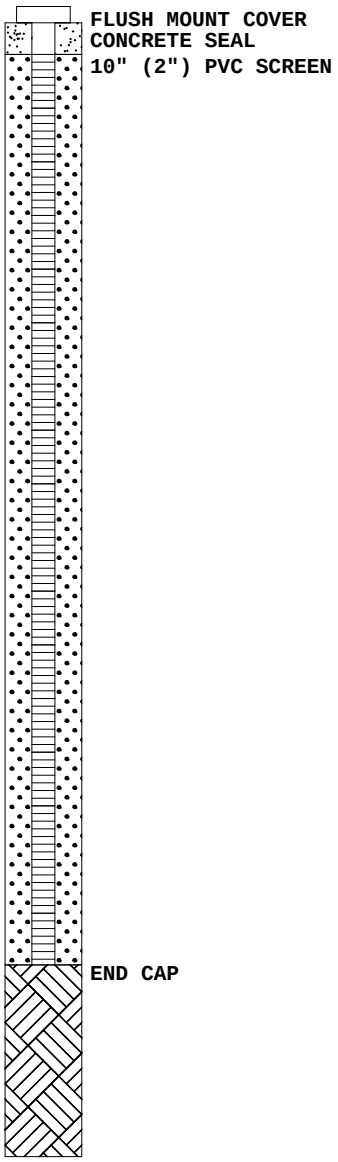


S#1, 6" to 2'6" (8-15-19-13) RECOVERED 12 in.

S#2, 2'6" to 4' (20-21-20) RECOVERED 10 in.

S#3, 4' to 6' (13-45-54-13) RECOVERED 6 in.

S#4, 10' to 12' (5-4-4-8) RECOVERED 3 in.



NO WATER ENCOUNTERED
SIZE OF CASING: HW, LENGTH: 4'0"
DRILLER: J.A. DESIMONE, INSPECTOR: J. MILLER
DATE STARTED & COMPLETED: 10-15-2019

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

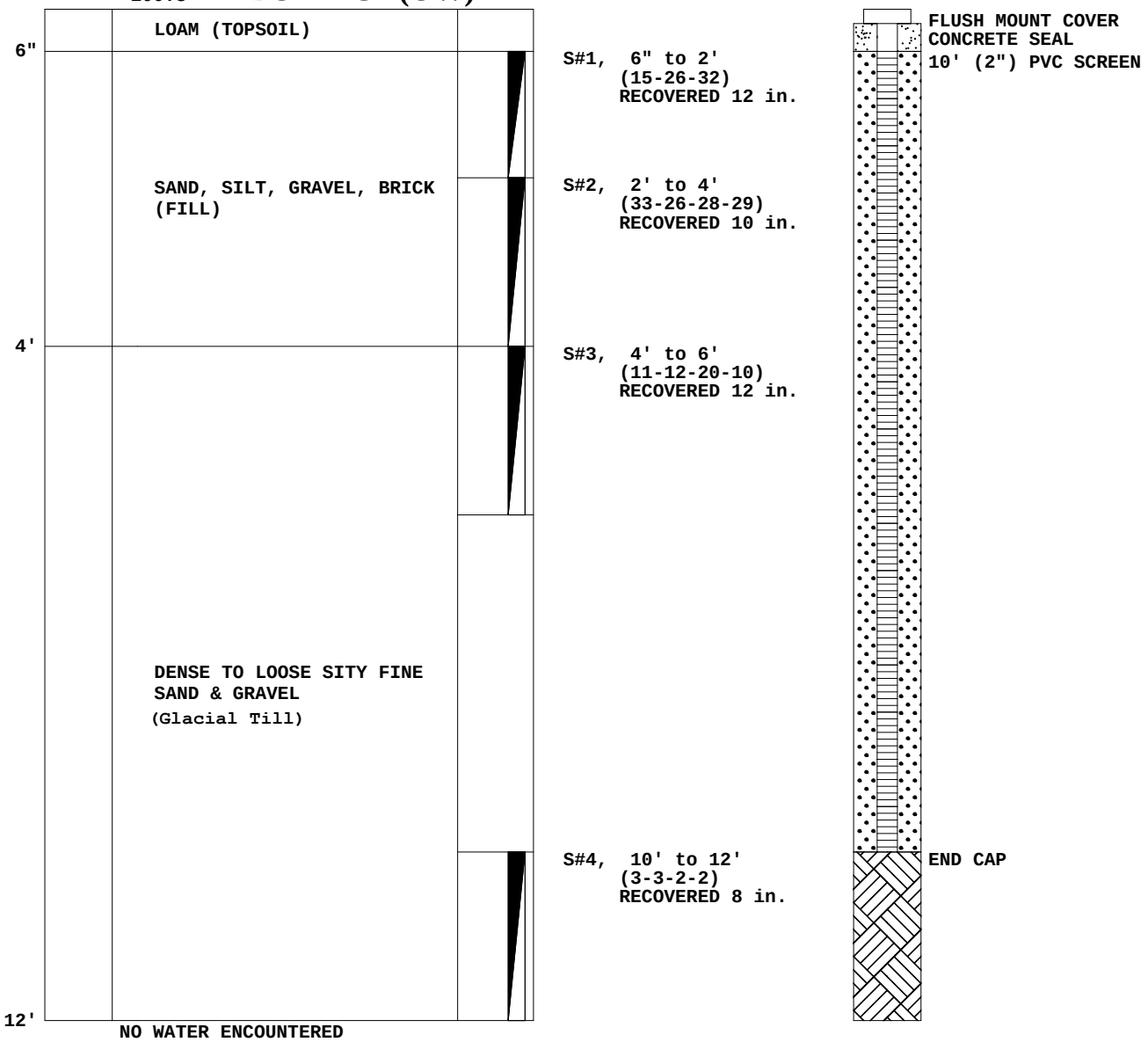
37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: MCPHAIL ASSOC. LLC, 2269 MASS. AVE., CAMBRIDGE, MA Date: 10-16-2019 Job No.: 2019-203

Location: SHOWA INSTITUTE, 420 POND STREET, BOSTON, MA Scale: 1 in.= 2 ft.

GROUND SURFACE +200.3

BORING 2(OW)



NO WATER ENCOUNTERED
SIZE OF CASING: HW, LENGTH: 4'0"
DRILLER: J.A. DESIMONE, INSPECTOR: J. MILLER
DATE STARTED & COMPLETED: 10-15-2019

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

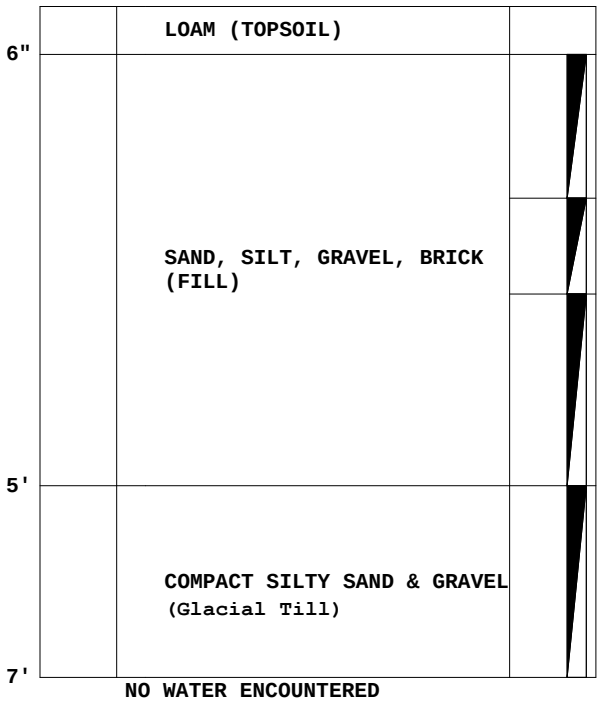
37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: MCPHAIL ASSOC. LLC, 2269 MASS. AVE., CAMBRIDGE, MA Date: 10-16-2019 Job No.: 2019-203

Location: SHOWA INSTITUTE, 420 POND STREET, BOSTON, MA Scale: 1 in.= 2 ft.

GROUND SURFACE +200.9

BORING 3



S#1, 6" to 2' (7-8-61) RECOVERED 12 in.

S#2, 2' to 3' (13-16) RECOVERED 6 in.

S#3, 3' to 5' (17-12-19-24) RECOVERED 3 in.

S#4, 5' to 7' (16-12-15-12) RECOVERED 12 in.

NO WATER ENCOUNTERED
SIZE OF CASING: HW, LENGTH: 3'0"
DRILLER: J.A. DESIMONE, INSPECTOR: J. MILLER
DATE STARTED & COMPLETED: 10-15-2019

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

APPENDIX C:

CONSTANT HEAD BOREHOLE PERMEABILTY TEST RESULTS PREPARED BY MCPHAIL

CONSTANT HEAD
BOREHOLE PERMEABILITY TEST
Field Data

Borehole:	B-1	Project:	Showa Infiltration System
Test Depth:	4-10 feet	Project No.	6871.2.00
Casing Radius:	2 inch	Driller:	Carr-Dee Corp.
Head (h):	7.83 feet	Engineer:	John D. Miller
Soil Strata:	Glacial Till	Date:	10/15/2019

Water Volume Increment (cm^3)	Elapsed Time (h:m:s)	Time Increment (h:m:s)	Time Increment (s)	Flow Rate, q (cm^3/s)	Permeability, k (cm/s)
100	0:01:00	0:01:00	60	1.67E+00	2.18E-05
35	0:02:00	0:01:00	60	5.83E-01	7.62E-06
25	0:03:00	0:01:00	60	4.17E-01	5.44E-06
30	0:04:00	0:01:00	60	5.00E-01	6.53E-06
35	0:05:00	0:01:00	60	5.83E-01	7.62E-06
35	0:06:00	0:01:00	60	5.83E-01	7.62E-06
30	0:07:00	0:01:00	60	5.00E-01	6.53E-06
30	0:08:00	0:01:00	60	5.00E-01	6.53E-06
30	0:09:00	0:01:00	60	5.00E-01	6.53E-06
30	0:10:00	0:01:00	60	5.00E-01	6.53E-06
125	0:15:00	0:05:00	300	4.17E-01	5.44E-06
125	0:20:00	0:05:00	300	4.17E-01	5.44E-06
125	0:25:00	0:05:00	300	4.17E-01	5.44E-06
125	0:30:00	0:05:00	300	4.17E-01	5.44E-06

CONSTANT HEAD
BOREHOLE PERMEABILITY TEST
Field Data

Borehole:	B-2	Project:	Showa Infiltration System
Test Depth:	4 feet	Project No.	6871.2.00
Casing Radius:	2 inch	Driller:	Carr-Dee Corp.
Head (h):	5.5 feet	Engineer:	John D. Miller
Soil Strata:	Fill	Date:	10/15/2019

Water Volume Increment (cm^3)	Elapsed Time (h:m:s)	Time Increment (h:m:s)	Time Increment (s)	Flow Rate, q (cm^3/s)	Permeability, k (cm/s)
1000	0:01:00	0:01:00	60	1.67E+01	3.56E-03
1000	0:02:00	0:01:00	60	1.67E+01	3.56E-03
750	0:03:00	0:01:00	60	1.25E+01	2.67E-03
750	0:04:00	0:01:00	60	1.25E+01	2.67E-03
750	0:05:00	0:01:00	60	1.25E+01	2.67E-03
700	0:06:00	0:01:00	60	1.17E+01	2.49E-03
700	0:07:00	0:01:00	60	1.17E+01	2.49E-03
700	0:08:00	0:01:00	60	1.17E+01	2.49E-03
700	0:09:00	0:01:00	60	1.17E+01	2.49E-03
700	0:10:00	0:01:00	60	1.17E+01	2.49E-03
700	0:11:00	0:01:00	60	1.17E+01	2.49E-03
700	0:12:00	0:01:00	60	1.17E+01	2.49E-03
700	0:13:00	0:01:00	60	1.17E+01	2.49E-03
650	0:14:00	0:01:00	60	1.08E+01	2.31E-03
650	0:15:00	0:01:00	60	1.08E+01	2.31E-03
600	0:16:00	0:01:00	60	1.00E+01	2.13E-03
600	0:17:00	0:01:00	60	1.00E+01	2.13E-03
600	0:18:00	0:01:00	60	1.00E+01	2.13E-03
600	0:19:00	0:01:00	60	1.00E+01	2.13E-03
600	0:20:00	0:01:00	60	1.00E+01	2.13E-03
600	0:21:00	0:01:00	60	1.00E+01	2.13E-03
550	0:22:00	0:01:00	60	9.17E+00	1.96E-03
550	0:23:00	0:01:00	60	9.17E+00	1.96E-03
550	0:24:00	0:01:00	60	9.17E+00	1.96E-03
550	0:25:00	0:01:00	60	9.17E+00	1.96E-03
550	0:26:00	0:01:00	60	9.17E+00	1.96E-03
500	0:27:00	0:01:00	60	8.33E+00	1.78E-03
500	0:28:00	0:01:00	60	8.33E+00	1.78E-03
500	0:29:00	0:01:00	60	8.33E+00	1.78E-03
500	0:30:00	0:01:00	60	8.33E+00	1.78E-03
500	0:31:00	0:01:00	60	8.33E+00	1.78E-03
500	0:32:00	0:01:00	60	8.33E+00	1.78E-03
500	0:33:00	0:01:00	60	8.33E+00	1.78E-03
500	0:34:00	0:01:00	60	8.33E+00	1.78E-03
500	0:35:00	0:01:00	60	8.33E+00	1.78E-03

CONSTANT HEAD
BOREHOLE PERMEABILITY TEST
Field Data

Borehole:	B-3	Project:	Showa Infiltration System
Test Depth:	3 feet	Project No.	6871.2.00
Casing Radius:	2 inch	Driller:	Carr-Dee Corp.
Head (h):	5.5 feet	Engineer:	John D. Miller
Soil Strata:	Fill	Date:	10/15/2019

Water Volume Increment (cm^3)	Elapsed Time (h:m:s)	Time Increment (h:m:s)	Time Increment (s)	Flow Rate, q (cm^3/s)	Permeability, k (cm/s)
35	0:01:00	0:01:00	60	5.83E-01	1.25E-04
25	0:02:00	0:01:00	60	4.17E-01	8.90E-05
20	0:03:00	0:01:00	60	3.33E-01	7.12E-05
10	0:04:00	0:01:00	60	1.67E-01	3.56E-05
10	0:05:00	0:01:00	60	1.67E-01	3.56E-05
25	0:10:00	0:05:00	300	8.33E-02	1.78E-05
25	0:15:00	0:05:00	300	8.33E-02	1.78E-05
25	0:20:00	0:05:00	300	8.33E-02	1.78E-05
25	0:25:00	0:05:00	300	8.33E-02	1.78E-05
25	0:30:00	0:05:00	300	8.33E-02	1.78E-05

APPENDIX D:

GROUNDWATER MONITORING REPORT

GROUNDWATER MONITORING REPORT

Well I.D. B-1 (OW)	**Elevation of Road Box** +201.6	**Job. No.** 6871.2.00	
		Job Name Showa Infiltration System	

Date	Time	Elapsed Time	Depth of Water from Road Box	Elevation of Water	Remarks	Read By
		Days	Feet	Feet		
10/15/2019	11:00	Initial			Well installed, full of water from drilling and permeability test	JDM
10/17/2019	16:00	2	5.9	+195.7	Well gauged and developed	PB
10/17/2019	16:20	2	9.5	+192.1	Well was very slow to recharge after developing	PB
10/23/2019	17:00	8	1.5	+200.1	Well gauged	PB

GROUNDWATER MONITORING REPORT

Well I.D. B-2 (OW)	**Elevation of Road Box** +200.3	**Job. No.** 6871.2.00	
		Job Name Showa Infiltration System	

Date	Time	Elapsed Time	Depth of Water from Road Box	Elevation of Water	Remarks	Read By
		Days	Feet	Feet		
10/15/2019	13:00	Initial			Well installed, full of water from drilling and permeability test	JDM
10/17/2019	16:00	2	0.9	+199.4	Well gauged and developed	PB
10/17/2019	16:20	2	9.5	+190.8	Well was very slow to recharge after developing	PB
10/23/2019	17:00	8	0.4	+199.9	Well gauged	PB

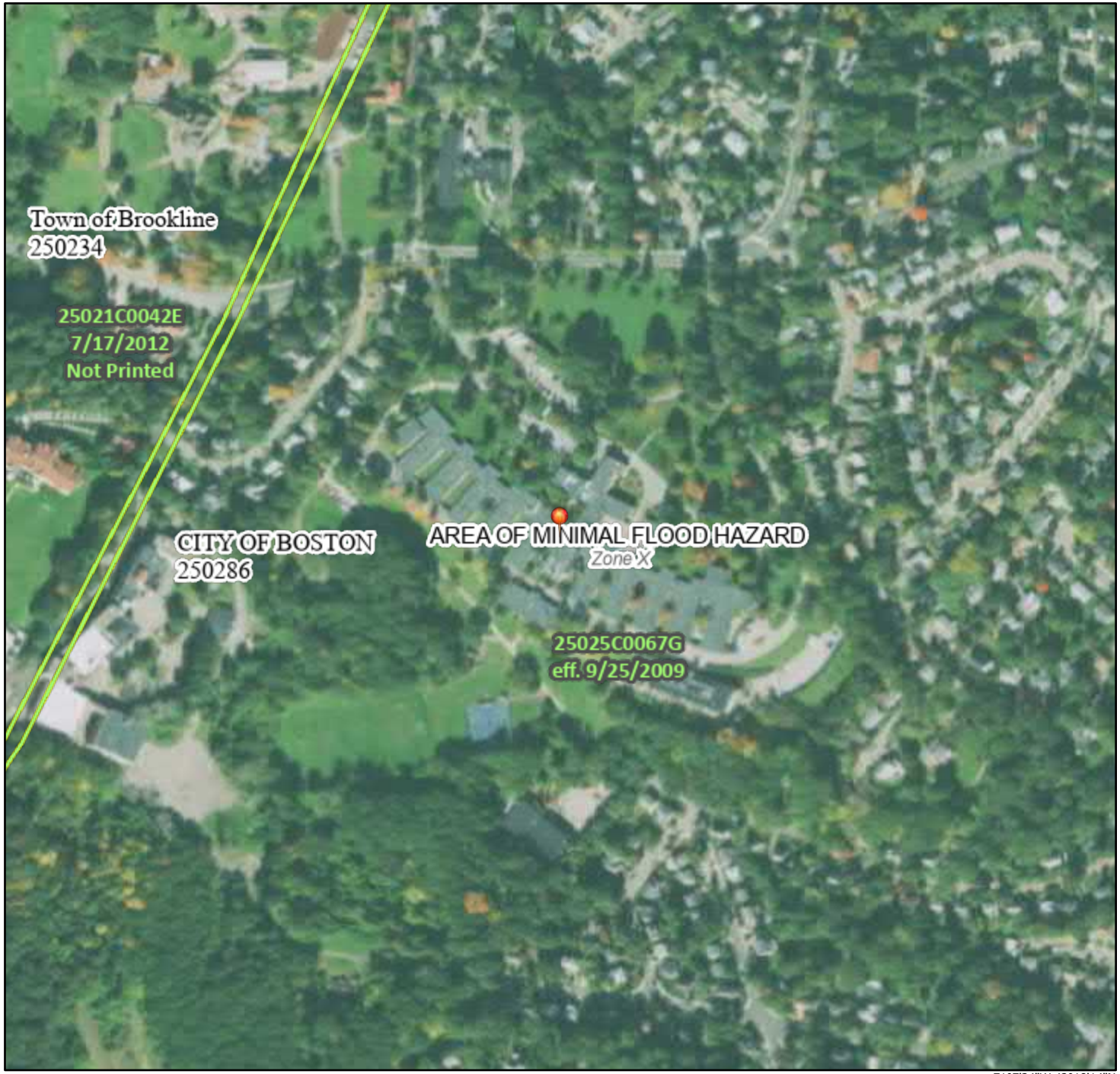
FEMA Flood Insurance Rate Map

Appendix B

National Flood Hazard Layer FIRMette

FEMA

71°8'11"W 42°18'41"N



71°7'34"W 42°18'14"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

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

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

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

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

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

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/25/2021 at 2:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Pre-Development Drainage Analysis Appendix D

- Pre-Development Watershed Map (Sheet C-120)
- Pre-Development HydroCAD Report

FOR SWSC USE ONLY

REV	DESCRIPTION	DATE
0	ISSUED FOR PERMITTING	5-4-21

ISSUED FOR PERMITTING
5-4-21

CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
200 Brickstone Square, Suite 303
Andover, Massachusetts 01810
1.877.700.7678
www.smrtinc.com

SMRT Architecture • Engineering • Planning

SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

PRE-DEVELOPMENT WATERSHED MAP

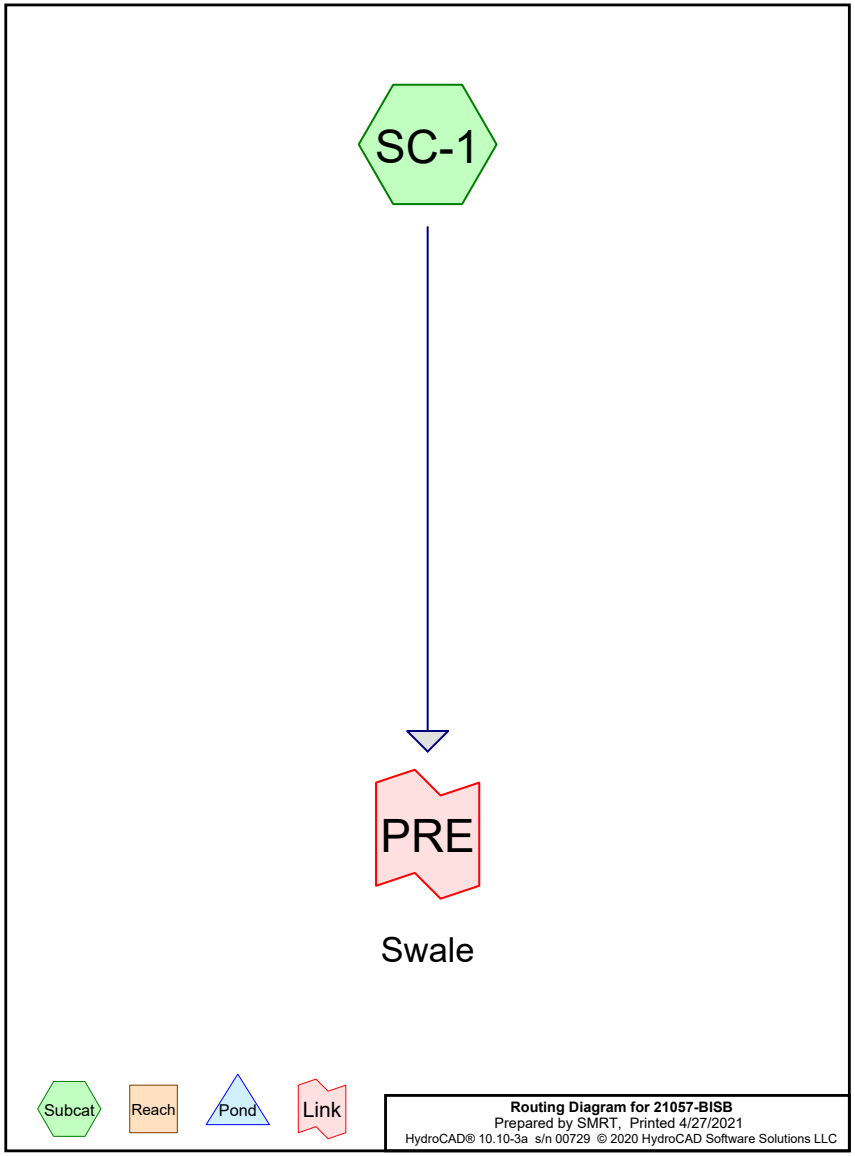
SHEET TITLE:

0 30' 60' 90'

SCALE: 1"=30'

PROJECT MANAGER:	RFW	PROJECT NO:	21057
A/E OF RECORD:	MAF		
JOB CAPTAIN:	--		
DRAWN BY:	MAF		
SMRT FILE:	C-120.dwg	SHEET No.	C-120

24x36



Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 Year	Type III 24-hr		Default	24.00	1	3.20	2
2	10 Year	Type III 24-hr		Default	24.00	1	4.60	2
3	25 Year	Type III 24-hr		Default	24.00	1	5.50	2
4	100 Year	Type III 24-hr		Default	24.00	1	6.60	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.451	39	>75% Grass cover, Good, HSG A (SC-1)
0.114	61	>75% Grass cover, Good, HSG B (SC-1)
0.178	80	>75% Grass cover, Good, HSG D (SC-1)
0.009	98	Roofs (SC-1)
1.454	55	Woods, Good, HSG B (SC-1)
4.206	**47**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.451	HSG A	SC-1
1.569	HSG B	SC-1
0.000	HSG C	
0.178	HSG D	SC-1
0.009	Other	SC-1
4.206		**TOTAL AREA**

Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1: Runoff Area=183,218 sf 0.22% Impervious Runoff Depth=0.07"
Flow Length=603' Tc=17.8 min CN=47 Runoff=0.0 cfs 0.026 af

Link PRE: Swale Inflow=0.0 cfs 0.026 af
Primary=0.0 cfs 0.026 af

Total Runoff Area = 4.206 ac Runoff Volume = 0.026 af Average Runoff Depth = 0.07"
99.78% Pervious = 4.197 ac 0.22% Impervious = 0.009 ac

Summary for Subcatchment SC-1:

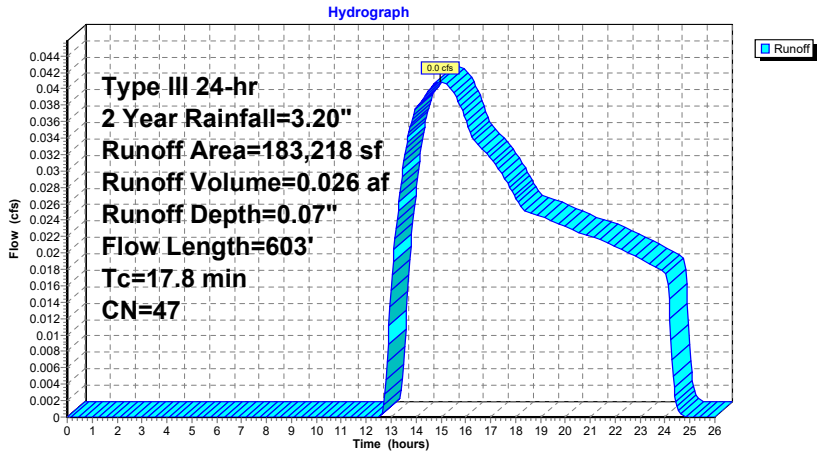
Runoff = 0.0 cfs @ 14.98 hrs, Volume= 0.026 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.20"

	Area (sf)	CN	Description
*	408	98	Roofs
	106,745	39	>75% Grass cover, Good, HSG A
	4,986	61	>75% Grass cover, Good, HSG B
	7,740	80	>75% Grass cover, Good, HSG D
	63,339	55	Woods, Good, HSG B
	183,218	47	Weighted Average
	182,810		99.78% Pervious Area
	408		0.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1:

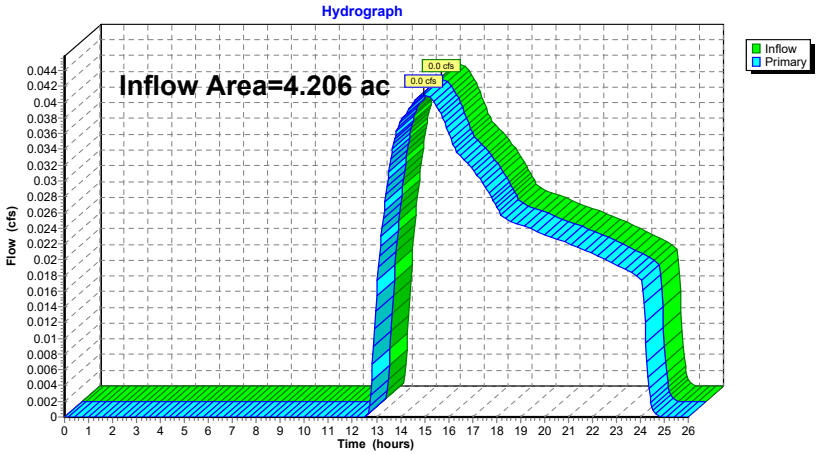


Summary for Link PRE: Swale

Inflow Area = 4.206 ac, 0.22% Impervious, Inflow Depth = 0.07" for 2 Year event
Inflow = 0.0 cfs @ 14.98 hrs, Volume= 0.026 af
Primary = 0.0 cfs @ 14.98 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link PRE: Swale



Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1: Runoff Area=183,218 sf 0.22% Impervious Runoff Depth=0.40"
Flow Length=603' Tc=17.8 min CN=47 Runoff=0.7 cfs 0.141 af

Link PRE: Swale Inflow=0.7 cfs 0.141 af
Primary=0.7 cfs 0.141 af

Total Runoff Area = 4.206 ac Runoff Volume = 0.141 af Average Runoff Depth = 0.40"
99.78% Pervious = 4.197 ac 0.22% Impervious = 0.009 ac

Summary for Subcatchment SC-1:

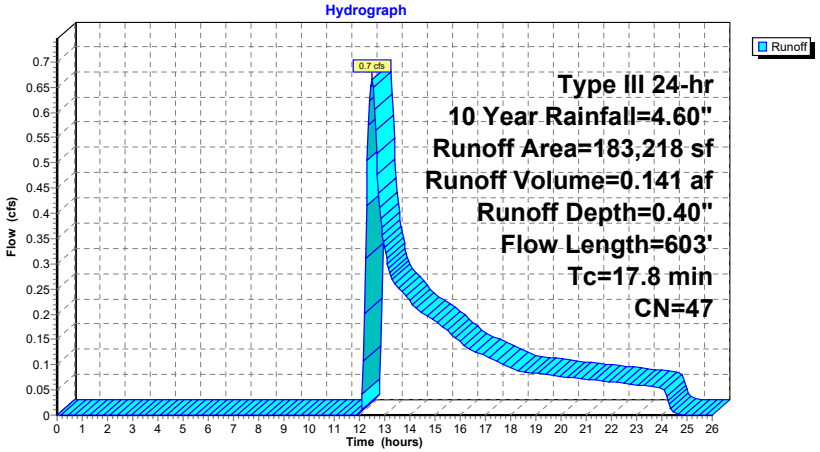
Runoff = 0.7 cfs @ 12.49 hrs, Volume= 0.141 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	408	98	Roofs
	106,745	39	>75% Grass cover, Good, HSG A
	4,986	61	>75% Grass cover, Good, HSG B
	7,740	80	>75% Grass cover, Good, HSG D
	63,339	55	Woods, Good, HSG B
	183,218	47	Weighted Average
	182,810		99.78% Pervious Area
	408		0.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1:

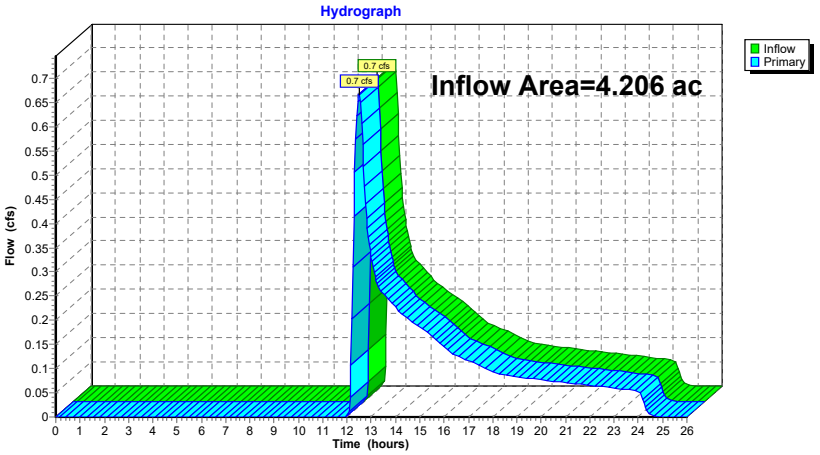


Summary for Link PRE: Swale

Inflow Area = 4.206 ac, 0.22% Impervious, Inflow Depth = 0.40" for 10 Year event
Inflow = 0.7 cfs @ 12.49 hrs, Volume= 0.141 af
Primary = 0.7 cfs @ 12.49 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link PRE: Swale



Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1: Runoff Area=183,218 sf 0.22% Impervious Runoff Depth=0.73"
Flow Length=603' Tc=17.8 min CN=47 Runoff=1.6 cfs 0.254 af

Link PRE: Swale Inflow=1.6 cfs 0.254 af
Primary=1.6 cfs 0.254 af

Total Runoff Area = 4.206 ac Runoff Volume = 0.254 af Average Runoff Depth = 0.73"
99.78% Pervious = 4.197 ac 0.22% Impervious = 0.009 ac

Summary for Subcatchment SC-1:

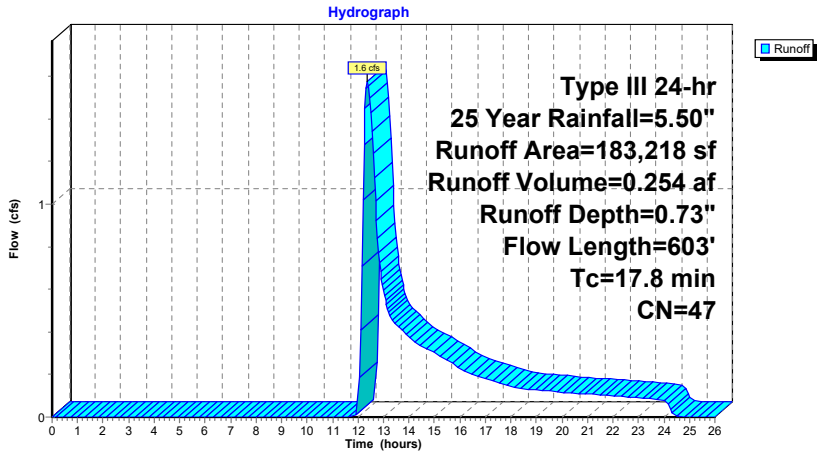
Runoff = 1.6 cfs @ 12.37 hrs, Volume= 0.254 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=5.50"

	Area (sf)	CN	Description
*	408	98	Roofs
	106,745	39	>75% Grass cover, Good, HSG A
	4,986	61	>75% Grass cover, Good, HSG B
	7,740	80	>75% Grass cover, Good, HSG D
	63,339	55	Woods, Good, HSG B
	183,218	47	Weighted Average
	182,810		99.78% Pervious Area
	408		0.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1:

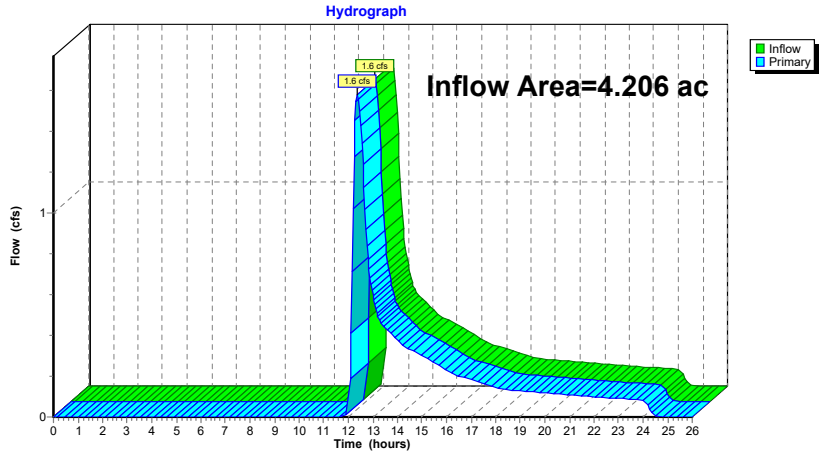


Summary for Link PRE: Swale

Inflow Area = 4.206 ac, 0.22% Impervious, Inflow Depth = 0.73" for 25 Year event
Inflow = 1.6 cfs @ 12.37 hrs, Volume= 0.254 af
Primary = 1.6 cfs @ 12.37 hrs, Volume= 0.254 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link PRE: Swale



Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1: Runoff Area=183,218 sf 0.22% Impervious Runoff Depth=1.21"
Flow Length=603' Tc=17.8 min CN=47 Runoff=3.2 cfs 0.424 af

Link PRE: Swale Inflow=3.2 cfs 0.424 af
Primary=3.2 cfs 0.424 af

Total Runoff Area = 4.206 ac Runoff Volume = 0.424 af Average Runoff Depth = 1.21"
99.78% Pervious = 4.197 ac 0.22% Impervious = 0.009 ac

Summary for Subcatchment SC-1:

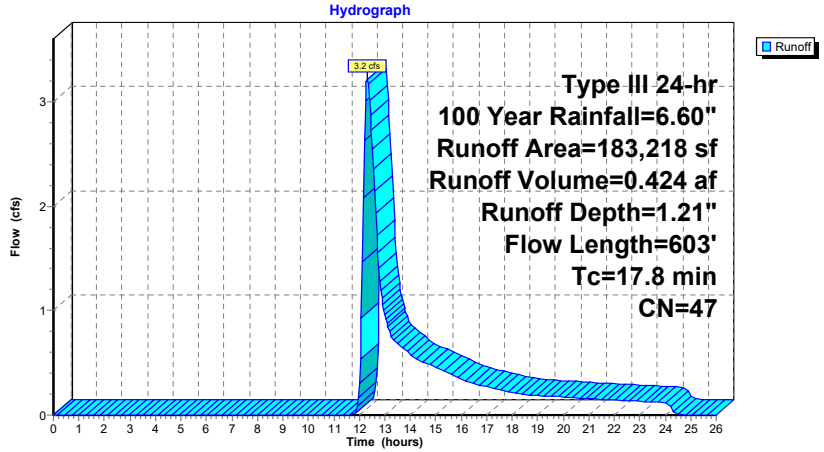
Runoff = 3.2 cfs @ 12.31 hrs, Volume= 0.424 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=6.60"

	Area (sf)	CN	Description
*	408	98	Roofs
	106,745	39	>75% Grass cover, Good, HSG A
	4,986	61	>75% Grass cover, Good, HSG B
	7,740	80	>75% Grass cover, Good, HSG D
	63,339	55	Woods, Good, HSG B
	183,218	47	Weighted Average
	182,810		99.78% Pervious Area
	408		0.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1:

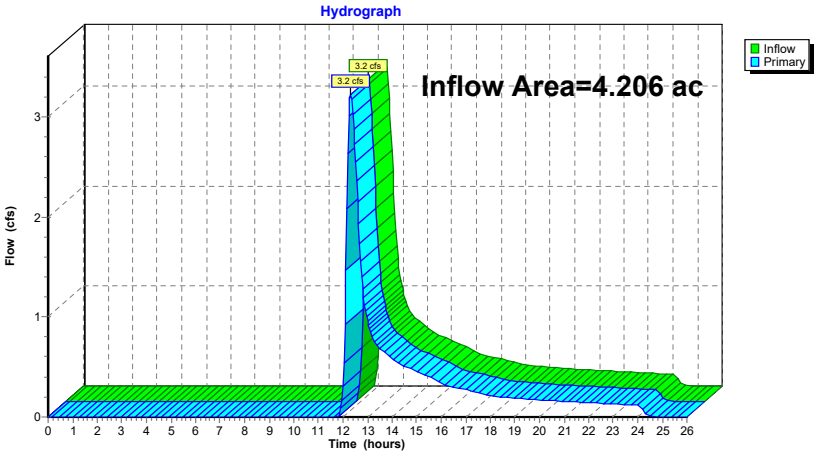


Summary for Link PRE: Swale

Inflow Area = 4.206 ac, 0.22% Impervious, Inflow Depth = 1.21" for 100 Year event
Inflow = 3.2 cfs @ 12.31 hrs, Volume= 0.424 af
Primary = 3.2 cfs @ 12.31 hrs, Volume= 0.424 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link PRE: Swale



Post-Development Drainage Analysis Appendix E

- Post-Development Watershed Map (Sheet C-121)
- Post-Development HydroCAD Report

FOR SWSC USE ONLY

SC-1A

SC-1B

SC-1C

SC-1D

SHEET FLOW
L=60 LF
S=0.167

S/C FLOW
L=164 LF
S=0.235

PIPE CHANNEL FLOW
(10" HDPE)
L=388 LF
S=0.235

SHEET FLOW
L=60 LF
S=0.018

S/C FLOW
L=113 LF
S=0.029

S/C FLOW
L=430 LF
S=0.042

SHEET FLOW
L=60 LF
S=0.0125

SHEET FLOW
L=167 LF
S=0.0251

S/C FLOW
L=24 LF
S=0.583

S/C FLOW
L=19 LF
S=0.121

DESIGN POINT
DP-1

MIN. Tc = 5 min.

HYDROLOGIC SOIL GROUP B
HYDROLOGIC SOIL GROUP A

HYDROLOGIC SOIL GROUP A
HYDROLOGIC SOIL GROUP C/D

MCPHAIL TEST PITS,
TYP. OF 3

B-1

B-2

B-3

100 FOOT BUFFER LINE

REV	DESCRIPTION	DATE
0	ISSUED FOR PERMITTING	5-4-21

ISSUED FOR PERMITTING
5-4-21
CURRENT ISSUE STATUS:

PROJECT NORTH:

SMRT Architects and Engineers
200 Brickstone Square, Suite 303
Andover, Massachusetts 01810
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SHOWA BOSTON INSTITUTE FOR LANGUAGE AND CULTURE
BRITISH INTERNATIONAL SCHOOL OF BOSTON
ATHLETIC FIELD RENOVATIONS

420 POND ST, BOSTON (JAMAICA PLAIN), MASSACHUSETTS

POST-DEVELOPMENT
WATERSHED MAP

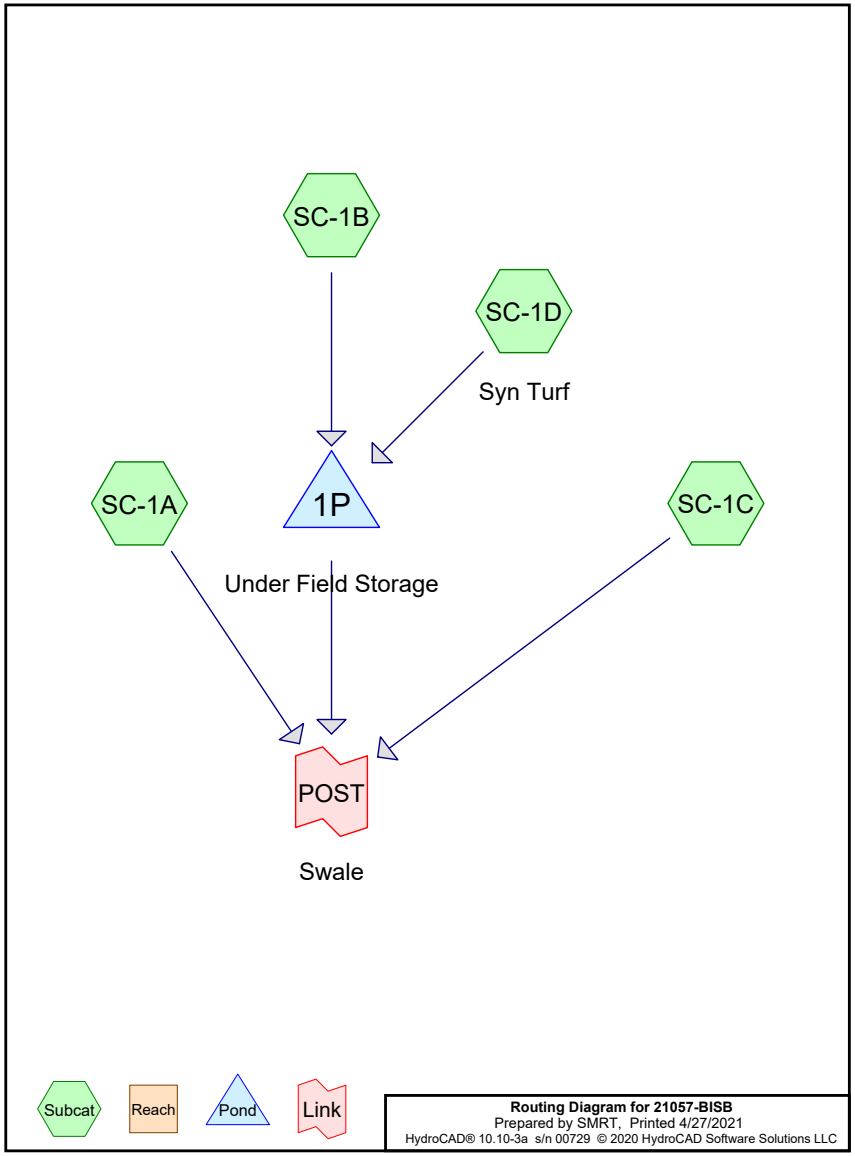
SHEET TITLE:

SCALE: 1"=20'

PROJECT MANAGER:	RFW
A/E OF RECORD:	MAF
JOB CAPTAIN:	--
DRAWN BY:	MAF
SMRT FILE:	C-121.dwg

PROJECT NO: 21057

C-121
SHEET No.



Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 Year	Type III 24-hr		Default	24.00	1	3.20	2
2	10 Year	Type III 24-hr		Default	24.00	1	4.60	2
3	25 Year	Type III 24-hr		Default	24.00	1	5.50	2
4	100 Year	Type III 24-hr		Default	24.00	1	6.60	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.652	39	>75% Grass cover, Good, HSG A (SC-1A, SC-1C)
1.312	61	>75% Grass cover, Good, HSG B (SC-1B, SC-1C)
0.178	80	>75% Grass cover, Good, HSG D (SC-1A, SC-1C)
0.009	98	Roofs (SC-1C)
1.653	98	Synthetic Turf (SC-1D)
0.402	55	Woods, Good, HSG B (SC-1A, SC-1C)
4.206	**72**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.652	HSG A	SC-1A, SC-1C
1.714	HSG B	SC-1A, SC-1B, SC-1C
0.000	HSG C	
0.178	HSG D	SC-1A, SC-1C
1.662	Other	SC-1C, SC-1D
4.206		**TOTAL AREA**

Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1A: Runoff Area=25,866 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=603' Tc=17.8 min CN=49 Runoff=0.0 cfs 0.005 af

SubcatchmentSC-1B: Runoff Area=49,079 sf 0.00% Impervious Runoff Depth=0.44"
Flow Length=1,052' Tc=11.1 min CN=61 Runoff=0.3 cfs 0.042 af

SubcatchmentSC-1C: Runoff Area=36,273 sf 1.12% Impervious Runoff Depth=0.22"
Flow Length=270' Tc=9.1 min CN=54 Runoff=0.1 cfs 0.016 af

SubcatchmentSC-1D: Syn Turf Runoff Area=72,000 sf 100.00% Impervious Runoff Depth=2.97"
Tc=5.0 min CN=98 Runoff=5.2 cfs 0.409 af

Pond 1P: Under Field Storage Peak Elev=200.14' Storage=3,406 cf Inflow=5.4 cfs 0.450 af
Discarded=1.4 cfs 0.451 af Primary=0.0 cfs 0.000 af Outflow=1.4 cfs 0.451 af

Link POST: Swale Inflow=0.1 cfs 0.021 af
Primary=0.1 cfs 0.021 af

Total Runoff Area = 4.206 ac Runoff Volume = 0.471 af Average Runoff Depth = 1.34"
60.48% Pervious = 2.544 ac 39.52% Impervious = 1.662 ac

Summary for Subcatchment SC-1A:

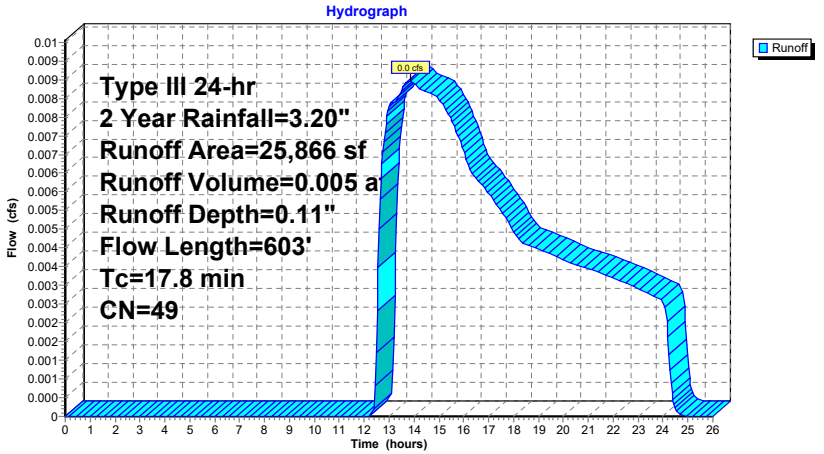
Runoff = 0.0 cfs @ 13.85 hrs, Volume= 0.005 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.20"

Area (sf)	CN	Description
18,604	39	>75% Grass cover, Good, HSG A
5,995	80	>75% Grass cover, Good, HSG D
1,267	55	Woods, Good, HSG B
25,866	49	Weighted Average
25,866		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1A:



Summary for Subcatchment SC-1B:

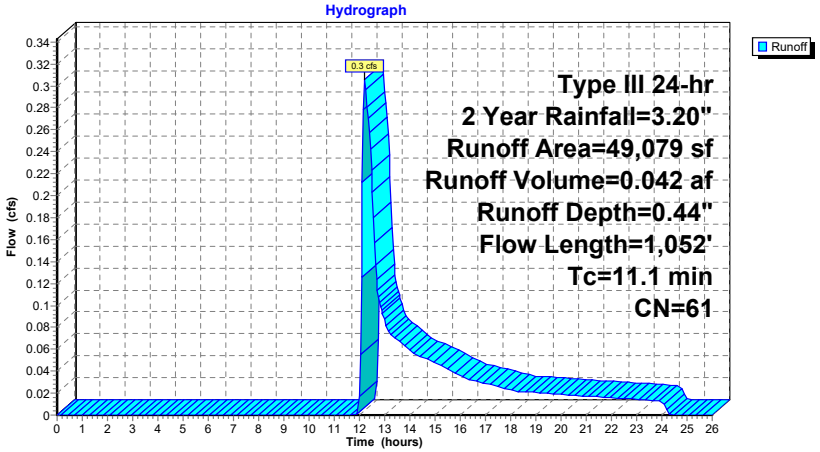
Runoff = 0.3 cfs @ 12.22 hrs, Volume= 0.042 af, Depth= 0.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.20"

Area (sf)	CN	Description
49,079	61	>75% Grass cover, Good, HSG B
49,079		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	60	0.1670	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.4	164	0.2350	7.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	388	0.0050	2.84	1.55	**Pipe Channel, 10" HDPE** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	10	0.0050	3.21	2.52	**Pipe Channel, 12" HDPE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.1	1,052	Total			

Subcatchment SC-1B:



Summary for Subcatchment SC-1C:

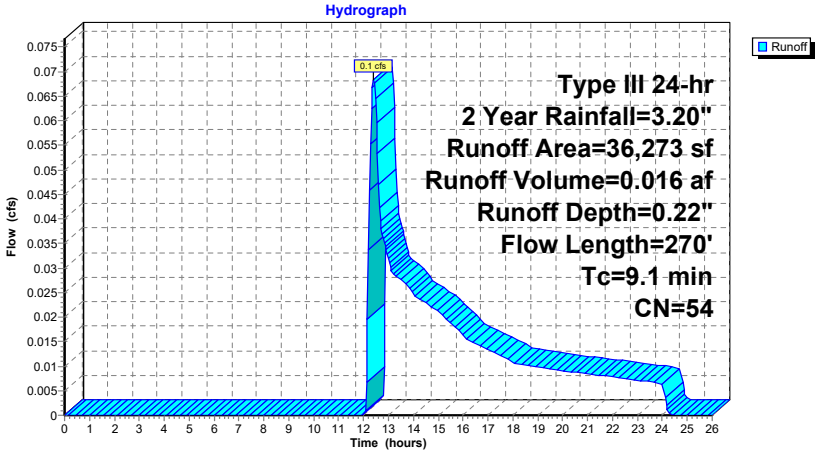
Runoff = 0.1 cfs @ 12.41 hrs, Volume= 0.016 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.20"

	Area (sf)	CN	Description
*	408	98	Roofs
	9,793	39	>75% Grass cover, Good, HSG A
	8,081	61	>75% Grass cover, Good, HSG B
	1,745	80	>75% Grass cover, Good, HSG D
	16,246	55	Woods, Good, HSG B
	36,273	54	Weighted Average
	35,865		98.88% Pervious Area
	408		1.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	60	0.0125	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	167	0.0251	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	24	0.5830	12.29		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	19	0.1210	5.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.1	270	Total			

Subcatchment SC-1C:



Summary for Subcatchment SC-1D: Syn Turf

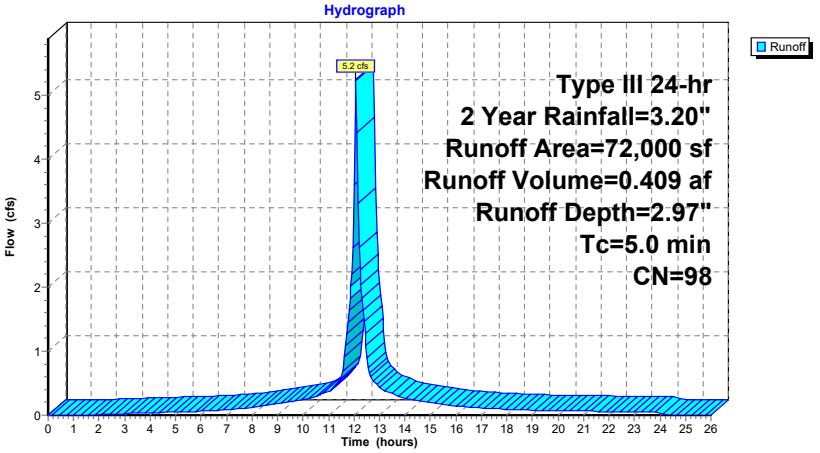
Runoff = 5.2 cfs @ 12.07 hrs, Volume= 0.409 af, Depth= 2.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 2 Year Rainfall=3.20"

	Area (sf)	CN	Description
*	72,000	98	Synthetic Turf
	72,000		100.00% Impervious Area

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

Subcatchment SC-1D: Syn Turf



Summary for Pond 1P: Under Field Storage

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=130)

Inflow Area = 2.780 ac, 59.47% Impervious, Inflow Depth = 1.94" for 2 Year event
Inflow = 5.4 cfs @ 12.08 hrs, Volume= 0.450 af
Outflow = 1.4 cfs @ 11.92 hrs, Volume= 0.451 af, Atten= 74%, Lag= 0.0 min
Discarded = 1.4 cfs @ 11.92 hrs, Volume= 0.451 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs / 5
Peak Elev= 200.14' @ 12.46 hrs Surf.Area= 72,000 sf Storage= 3,406 cf
Flood Elev= 201.00' Surf.Area= 144,000 sf Storage= 23,760 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.9 min (781.6 - 770.7)

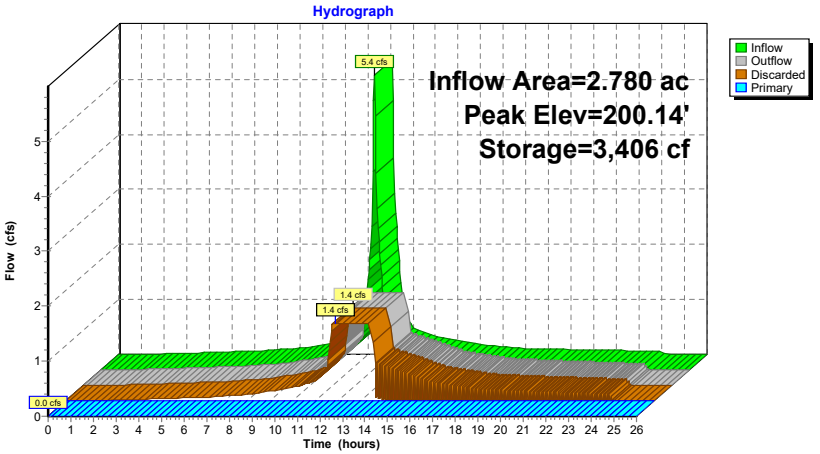
Volume	Invert	Avail.Storage	Storage Description
#1	200.00'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Crushed Stone** 36,000 cf Overall x 33.0% Voids
#2	200.50'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Dynamic Stone** 36,000 cf Overall x 33.0% Voids
		23,760 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	198.67'	**12.0" Round Outlet Pipe** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.67' / 198.62' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	200.50'	**3.0" Vert. Orifice/Grate X 18.00** C= 0.600 Limited to weir flow at low heads
#3	Discarded	200.00'	**0.840 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.4 cfs @ 11.92 hrs HW=200.01' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.4 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=200.00' TW=0.00' (Dynamic Tailwater)
└**1=Outlet Pipe** (Passes 0.0 cfs of 2.9 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.0 cfs)

Pond 1P: Under Field Storage

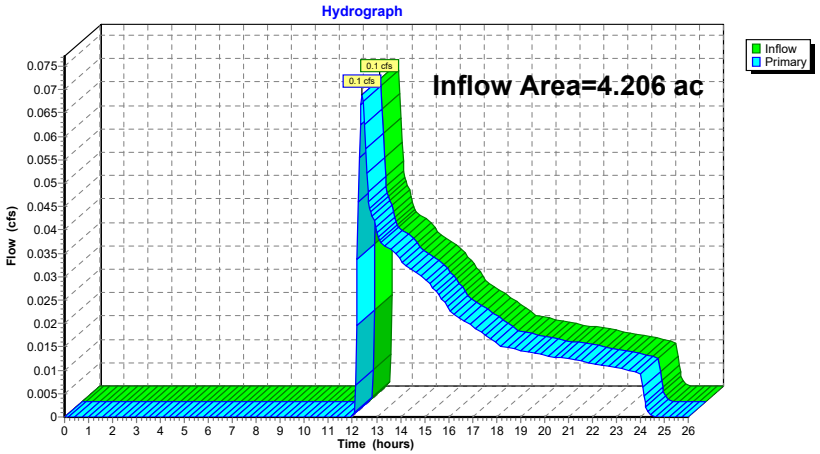


Summary for Link POST: Swale

Inflow Area = 4.206 ac, 39.52% Impervious, Inflow Depth = 0.06" for 2 Year event
Inflow = 0.1 cfs @ 12.41 hrs, Volume= 0.021 af
Primary = 0.1 cfs @ 12.41 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link POST: Swale



Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1A: Runoff Area=25,866 sf 0.00% Impervious Runoff Depth=0.49"
Flow Length=603' Tc=17.8 min CN=49 Runoff=0.1 cfs 0.024 af

SubcatchmentSC-1B: Runoff Area=49,079 sf 0.00% Impervious Runoff Depth=1.14"
Flow Length=1,052' Tc=11.1 min CN=61 Runoff=1.1 cfs 0.107 af

SubcatchmentSC-1C: Runoff Area=36,273 sf 1.12% Impervious Runoff Depth=0.73"
Flow Length=270' Tc=9.1 min CN=54 Runoff=0.4 cfs 0.051 af

SubcatchmentSC-1D: Syn Turf Runoff Area=72,000 sf 100.00% Impervious Runoff Depth=4.36"
Tc=5.0 min CN=98 Runoff=7.6 cfs 0.601 af

Pond 1P: Under Field Storage Peak Elev=200.33' Storage=7,784 cf Inflow=8.3 cfs 0.708 af
Discarded=1.4 cfs 0.708 af Primary=0.0 cfs 0.000 af Outflow=1.4 cfs 0.708 af

Link POST: Swale Inflow=0.5 cfs 0.075 af
Primary=0.5 cfs 0.075 af

Total Runoff Area = 4.206 ac Runoff Volume = 0.783 af Average Runoff Depth = 2.23"
60.48% Pervious = 2.544 ac 39.52% Impervious = 1.662 ac

Summary for Subcatchment SC-1A:

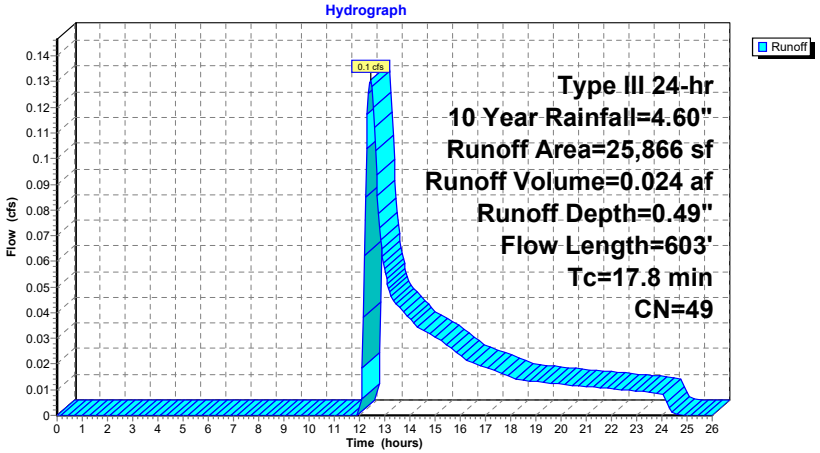
Runoff = 0.1 cfs @ 12.44 hrs, Volume= 0.024 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=4.60"

Area (sf)	CN	Description
18,604	39	>75% Grass cover, Good, HSG A
5,995	80	>75% Grass cover, Good, HSG D
1,267	55	Woods, Good, HSG B
25,866	49	Weighted Average
25,866		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1A:



Summary for Subcatchment SC-1B:

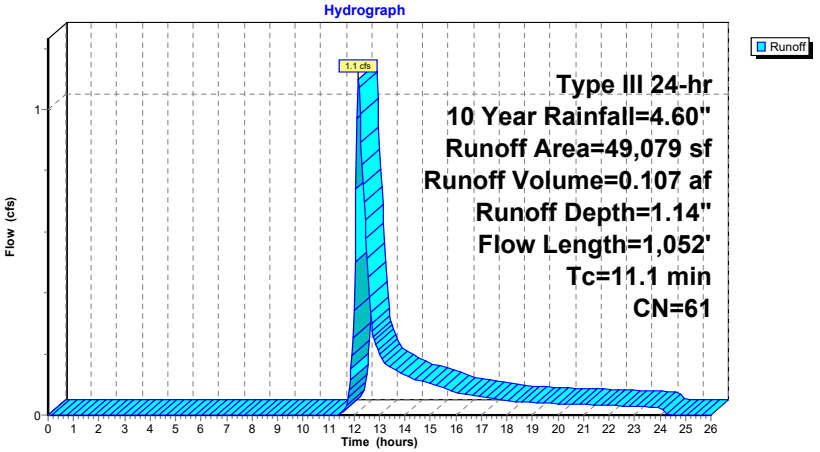
Runoff = 1.1 cfs @ 12.17 hrs, Volume= 0.107 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=4.60"

Area (sf)	CN	Description
49,079	61	>75% Grass cover, Good, HSG B
49,079		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	60	0.1670	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.4	164	0.2350	7.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	388	0.0050	2.84	1.55	**Pipe Channel, 10" HDPE** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	10	0.0050	3.21	2.52	**Pipe Channel, 12" HDPE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.1	1,052	Total			

Subcatchment SC-1B:



Summary for Subcatchment SC-1C:

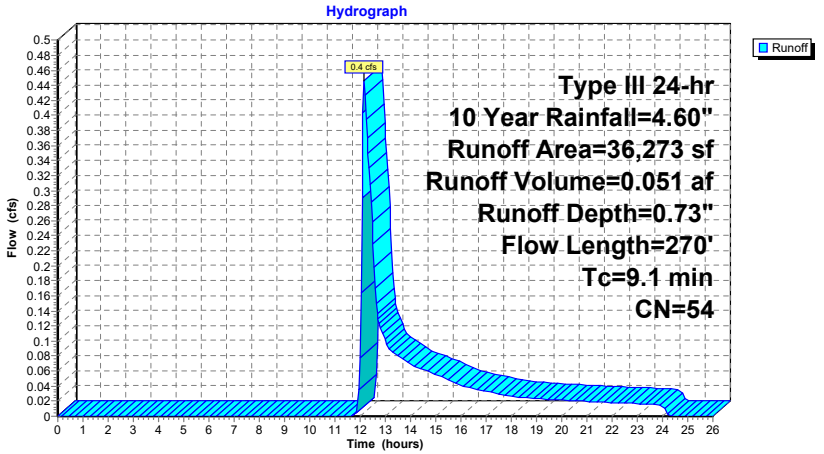
Runoff = 0.4 cfs @ 12.17 hrs, Volume= 0.051 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	408	98	Roofs
	9,793	39	>75% Grass cover, Good, HSG A
	8,081	61	>75% Grass cover, Good, HSG B
	1,745	80	>75% Grass cover, Good, HSG D
	16,246	55	Woods, Good, HSG B
	36,273	54	Weighted Average
	35,865		98.88% Pervious Area
	408		1.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	60	0.0125	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	167	0.0251	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	24	0.5830	12.29		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	19	0.1210	5.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.1	270	Total			

Subcatchment SC-1C:



Summary for Subcatchment SC-1D: Syn Turf

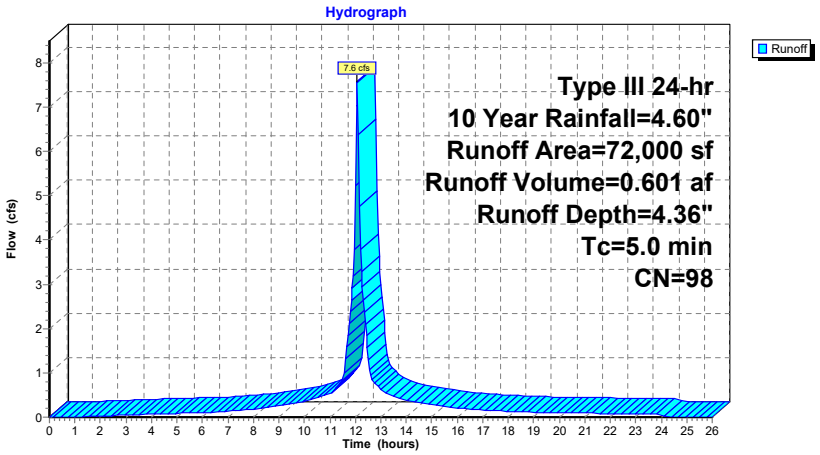
Runoff = 7.6 cfs @ 12.07 hrs, Volume= 0.601 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 10 Year Rainfall=4.60"

	Area (sf)	CN	Description
*	72,000	98	Synthetic Turf
	72,000		100.00% Impervious Area

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

Subcatchment SC-1D: Syn Turf



Summary for Pond 1P: Under Field Storage

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=110)

Inflow Area = 2.780 ac, 59.47% Impervious, Inflow Depth = 3.06" for 10 Year event
Inflow = 8.3 cfs @ 12.08 hrs, Volume= 0.708 af
Outflow = 1.4 cfs @ 11.80 hrs, Volume= 0.708 af, Atten= 83%, Lag= 0.0 min
Discarded = 1.4 cfs @ 11.80 hrs, Volume= 0.708 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs / 5
Peak Elev= 200.33' @ 12.59 hrs Surf.Area= 72,000 sf Storage= 7,784 cf
Flood Elev= 201.00' Surf.Area= 144,000 sf Storage= 23,760 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 31.0 min (799.8 - 768.8)

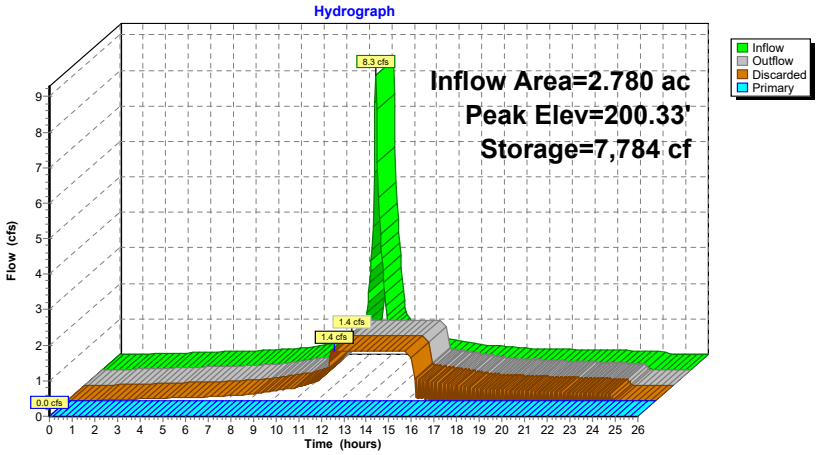
Volume	Invert	Avail.Storage	Storage Description
#1	200.00'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Crushed Stone** 36,000 cf Overall x 33.0% Voids
#2	200.50'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Dynamic Stone** 36,000 cf Overall x 33.0% Voids
		23,760 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	198.67'	**12.0" Round Outlet Pipe** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.67' / 198.62' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	200.50'	**3.0" Vert. Orifice/Grate X 18.00** C= 0.600 Limited to weir flow at low heads
#3	Discarded	200.00'	**0.840 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.4 cfs @ 11.80 hrs HW=200.01' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.4 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=200.00' TW=0.00' (Dynamic Tailwater)
└**1=Outlet Pipe** (Passes 0.0 cfs of 2.9 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.0 cfs)

Pond 1P: Under Field Storage

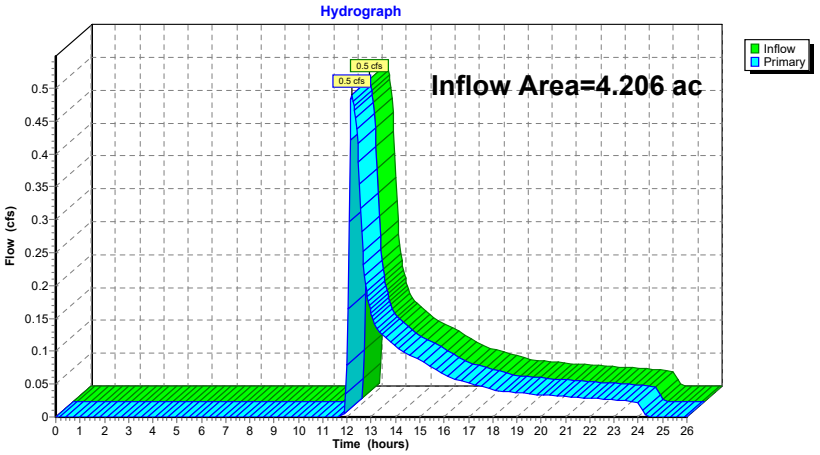


Summary for Link POST: Swale

Inflow Area = 4.206 ac, 39.52% Impervious, Inflow Depth = 0.21" for 10 Year event
Inflow = 0.5 cfs @ 12.20 hrs, Volume= 0.075 af
Primary = 0.5 cfs @ 12.20 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link POST: Swale



Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1A: Runoff Area=25,866 sf 0.00% Impervious Runoff Depth=0.85"
Flow Length=603' Tc=17.8 min CN=49 Runoff=0.3 cfs 0.042 af

SubcatchmentSC-1B: Runoff Area=49,079 sf 0.00% Impervious Runoff Depth=1.68"
Flow Length=1,052' Tc=11.1 min CN=61 Runoff=1.7 cfs 0.158 af

SubcatchmentSC-1C: Runoff Area=36,273 sf 1.12% Impervious Runoff Depth=1.17"
Flow Length=270' Tc=9.1 min CN=54 Runoff=0.8 cfs 0.081 af

SubcatchmentSC-1D: Syn Turf Runoff Area=72,000 sf 100.00% Impervious Runoff Depth=5.26"
Tc=5.0 min CN=98 Runoff=9.1 cfs 0.725 af

Pond 1P: Under Field Storage Peak Elev=200.47' Storage=11,056 cf Inflow=10.3 cfs 0.882 af
Discarded=1.4 cfs 0.883 af Primary=0.0 cfs 0.000 af Outflow=1.4 cfs 0.883 af

Link POST: Swale Inflow=1.0 cfs 0.123 af
Primary=1.0 cfs 0.123 af

Total Runoff Area = 4.206 ac Runoff Volume = 1.006 af Average Runoff Depth = 2.87"
60.48% Pervious = 2.544 ac 39.52% Impervious = 1.662 ac

Summary for Subcatchment SC-1A:

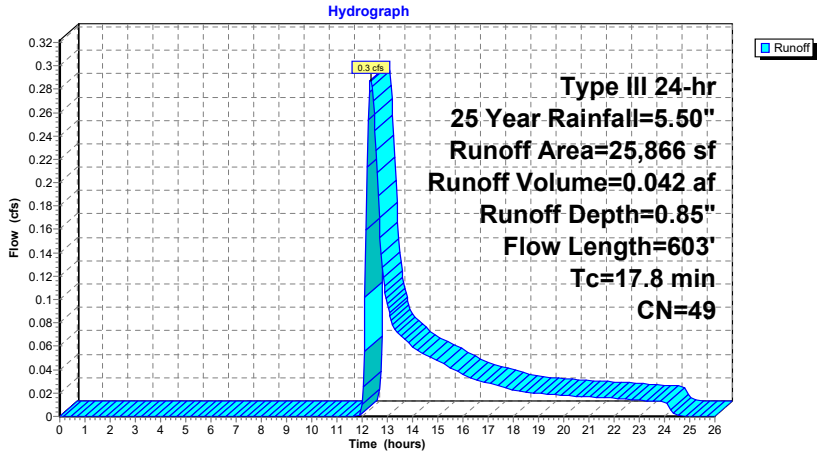
Runoff = 0.3 cfs @ 12.34 hrs, Volume= 0.042 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=5.50"

Area (sf)	CN	Description
18,604	39	>75% Grass cover, Good, HSG A
5,995	80	>75% Grass cover, Good, HSG D
1,267	55	Woods, Good, HSG B
25,866	49	Weighted Average
25,866		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1A:



Summary for Subcatchment SC-1B:

[47] Hint: Peak is 112% of capacity of segment #3

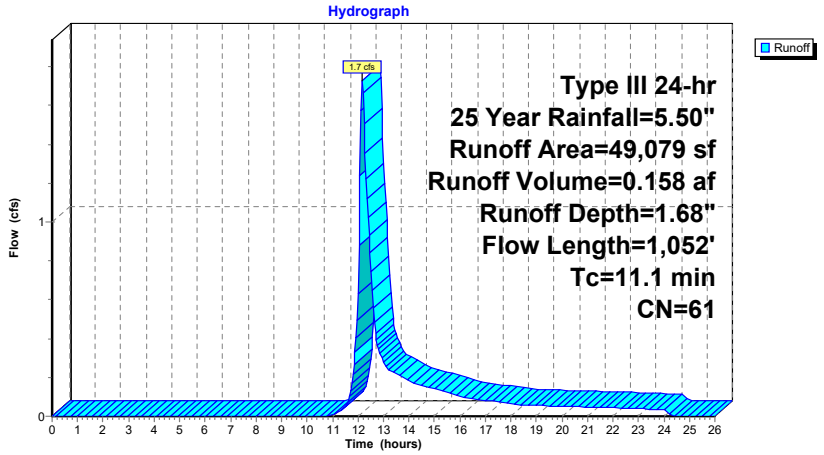
Runoff = 1.7 cfs @ 12.17 hrs, Volume= 0.158 af, Depth= 1.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=5.50"

Area (sf)	CN	Description
49,079	61	>75% Grass cover, Good, HSG B
49,079		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	60	0.1670	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.4	164	0.2350	7.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	388	0.0050	2.84	1.55	**Pipe Channel, 10" HDPE** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	10	0.0050	3.21	2.52	**Pipe Channel, 12" HDPE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.1	1,052	Total			

Subcatchment SC-1B:



Summary for Subcatchment SC-1C:

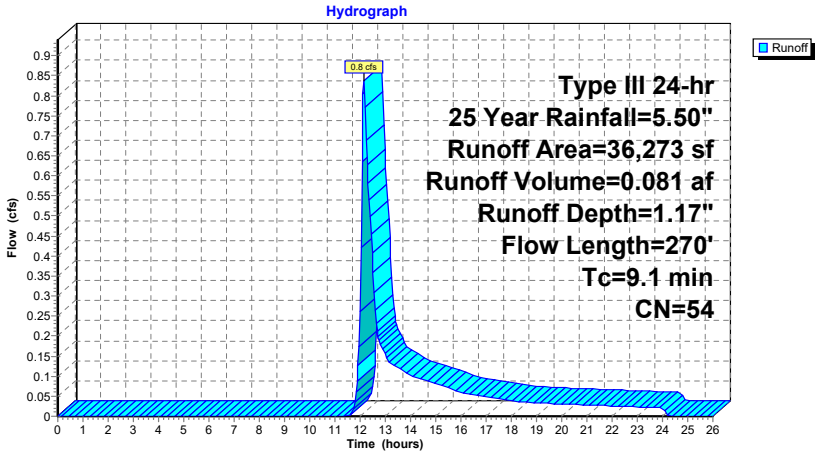
Runoff = 0.8 cfs @ 12.15 hrs, Volume= 0.081 af, Depth= 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=5.50"

	Area (sf)	CN	Description
*	408	98	Roofs
	9,793	39	>75% Grass cover, Good, HSG A
	8,081	61	>75% Grass cover, Good, HSG B
	1,745	80	>75% Grass cover, Good, HSG D
	16,246	55	Woods, Good, HSG B
	36,273	54	Weighted Average
	35,865		98.88% Pervious Area
	408		1.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	60	0.0125	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	167	0.0251	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	24	0.5830	12.29		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	19	0.1210	5.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.1	270	Total			

Subcatchment SC-1C:



Summary for Subcatchment SC-1D: Syn Turf

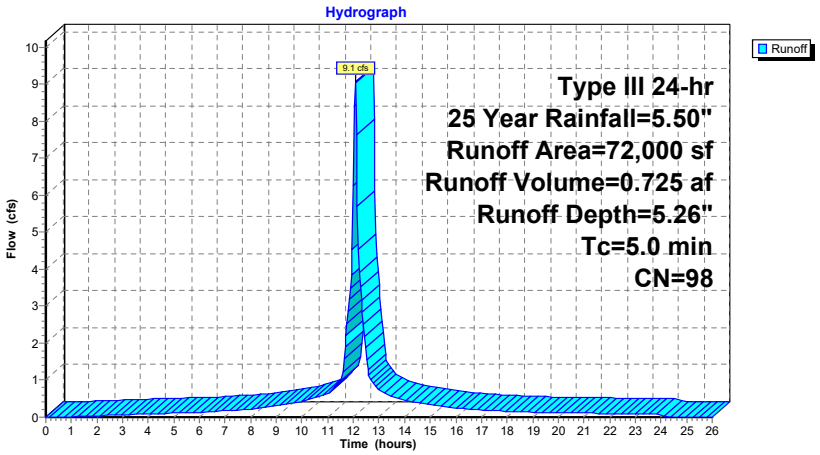
Runoff = 9.1 cfs @ 12.07 hrs, Volume= 0.725 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 25 Year Rainfall=5.50"

	Area (sf)	CN	Description
*	72,000	98	Synthetic Turf
	72,000		100.00% Impervious Area

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

Subcatchment SC-1D: Syn Turf



Summary for Pond 1P: Under Field Storage

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=94)

Inflow Area = 2.780 ac, 59.47% Impervious, Inflow Depth = 3.81" for 25 Year event
Inflow = 10.3 cfs @ 12.08 hrs, Volume= 0.882 af
Outflow = 1.4 cfs @ 11.76 hrs, Volume= 0.883 af, Atten= 86%, Lag= 0.0 min
Discarded = 1.4 cfs @ 11.76 hrs, Volume= 0.883 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs / 5
Peak Elev= 200.47' @ 12.70 hrs Surf.Area= 72,000 sf Storage= 11,056 cf
Flood Elev= 201.00' Surf.Area= 144,000 sf Storage= 23,760 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 49.2 min (817.1 - 767.9)

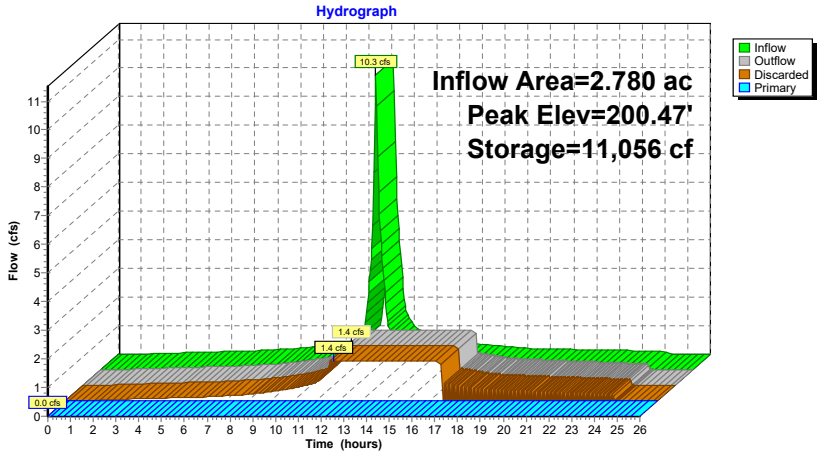
Volume	Invert	Avail.Storage	Storage Description
#1	200.00'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Crushed Stone** 36,000 cf Overall x 33.0% Voids
#2	200.50'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Dynamic Stone** 36,000 cf Overall x 33.0% Voids
		23,760 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	198.67'	**12.0" Round Outlet Pipe** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.67' / 198.62' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	200.50'	**3.0" Vert. Orifice/Grate X 18.00** C= 0.600 Limited to weir flow at low heads
#3	Discarded	200.00'	**0.840 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.4 cfs @ 11.76 hrs HW=200.02' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.4 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=200.00' TW=0.00' (Dynamic Tailwater)
└**1=Outlet Pipe** (Passes 0.0 cfs of 2.9 cfs potential flow)
└**2=Orifice/Grate** (Controls 0.0 cfs)

Pond 1P: Under Field Storage

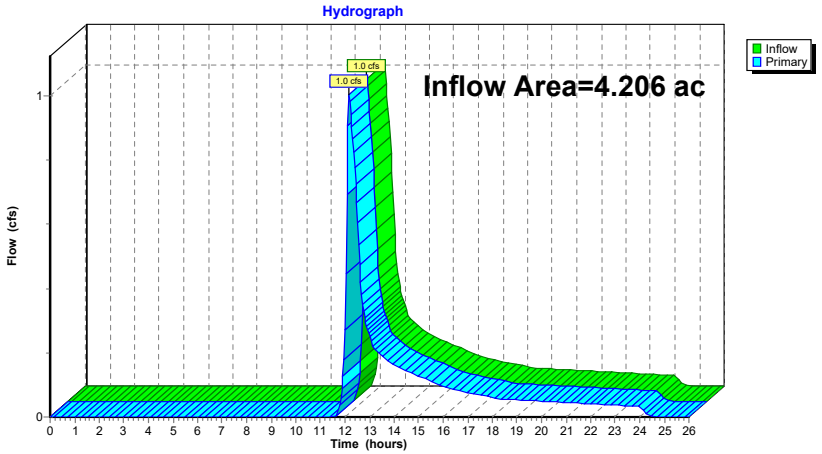


Summary for Link POST: Swale

Inflow Area = 4.206 ac, 39.52% Impervious, Inflow Depth = 0.35" for 25 Year event
Inflow = 1.0 cfs @ 12.17 hrs, Volume= 0.123 af
Primary = 1.0 cfs @ 12.17 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link POST: Swale



Time span=0.00-26.00 hrs, dt=0.04 hrs, 651 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentSC-1A: Runoff Area=25,866 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=603' Tc=17.8 min CN=49 Runoff=0.5 cfs 0.068 af

SubcatchmentSC-1B: Runoff Area=49,079 sf 0.00% Impervious Runoff Depth=2.42"
Flow Length=1,052' Tc=11.1 min CN=61 Runoff=2.6 cfs 0.227 af

SubcatchmentSC-1C: Runoff Area=36,273 sf 1.12% Impervious Runoff Depth=1.79"
Flow Length=270' Tc=9.1 min CN=54 Runoff=1.4 cfs 0.124 af

SubcatchmentSC-1D: Syn Turf Runoff Area=72,000 sf 100.00% Impervious Runoff Depth=6.36"
Tc=5.0 min CN=98 Runoff=10.9 cfs 0.876 af

Pond 1P: Under Field Storage Peak Elev=200.57' Storage=13,460 cf Inflow=12.8 cfs 1.103 af
Discarded=2.8 cfs 1.100 af Primary=0.2 cfs 0.004 af Outflow=3.0 cfs 1.104 af

Link POST: Swale Inflow=1.8 cfs 0.196 af
Primary=1.8 cfs 0.196 af

Total Runoff Area = 4.206 ac Runoff Volume = 1.295 af Average Runoff Depth = 3.69"
60.48% Pervious = 2.544 ac 39.52% Impervious = 1.662 ac

Summary for Subcatchment SC-1A:

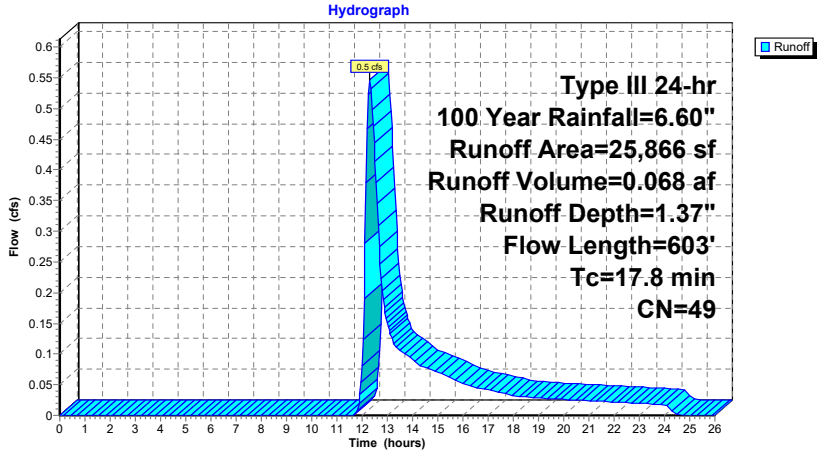
Runoff = 0.5 cfs @ 12.30 hrs, Volume= 0.068 af, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=6.60"

Area (sf)	CN	Description
18,604	39	>75% Grass cover, Good, HSG A
5,995	80	>75% Grass cover, Good, HSG D
1,267	55	Woods, Good, HSG B
25,866	49	Weighted Average
25,866		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	60	0.0180	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.7	113	0.0290	2.74		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
17.8	603	Total			

Subcatchment SC-1A:



Summary for Subcatchment SC-1B:

[47] Hint: Peak is 167% of capacity of segment #3
[47] Hint: Peak is 103% of capacity of segment #4

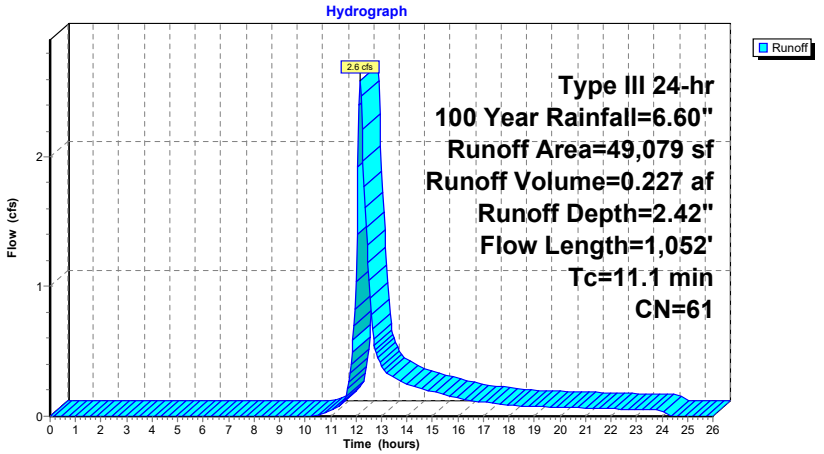
Runoff = 2.6 cfs @ 12.16 hrs, Volume= 0.227 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=6.60"

Area (sf)	CN	Description
49,079	61	>75% Grass cover, Good, HSG B
49,079		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	60	0.1670	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
0.4	164	0.2350	7.80		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.3	388	0.0050	2.84	1.55	**Pipe Channel, 10" HDPE** 10.0" Round Area= 0.5 sf Perim= 2.6' r= 0.21' n= 0.013 Corrugated PE, smooth interior
0.1	10	0.0050	3.21	2.52	**Pipe Channel, 12" HDPE** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
2.2	430	0.0420	3.30		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.1	1,052	Total			

Subcatchment SC-1B:



Summary for Subcatchment SC-1C:

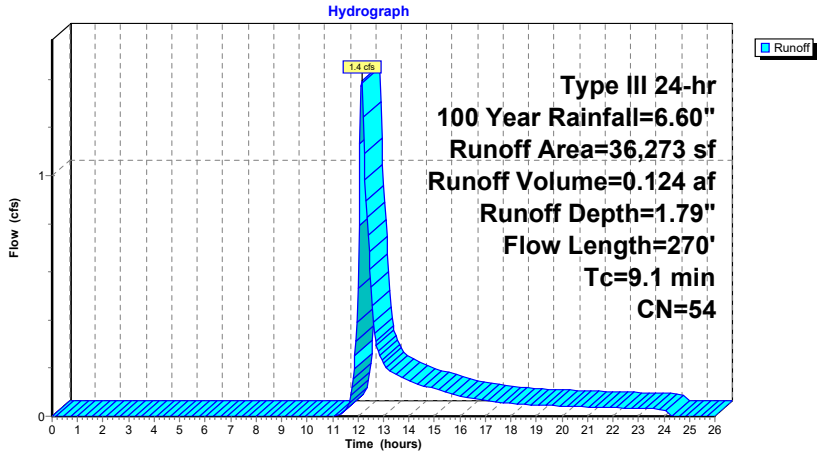
Runoff = 1.4 cfs @ 12.14 hrs, Volume= 0.124 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=6.60"

	Area (sf)	CN	Description
*	408	98	Roofs
	9,793	39	>75% Grass cover, Good, HSG A
	8,081	61	>75% Grass cover, Good, HSG B
	1,745	80	>75% Grass cover, Good, HSG D
	16,246	55	Woods, Good, HSG B
	36,273	54	Weighted Average
	35,865		98.88% Pervious Area
	408		1.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	60	0.0125	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.1	167	0.0251	2.55		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	24	0.5830	12.29		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	19	0.1210	5.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.1	270	Total			

Subcatchment SC-1C:



Summary for Subcatchment SC-1D: Syn Turf

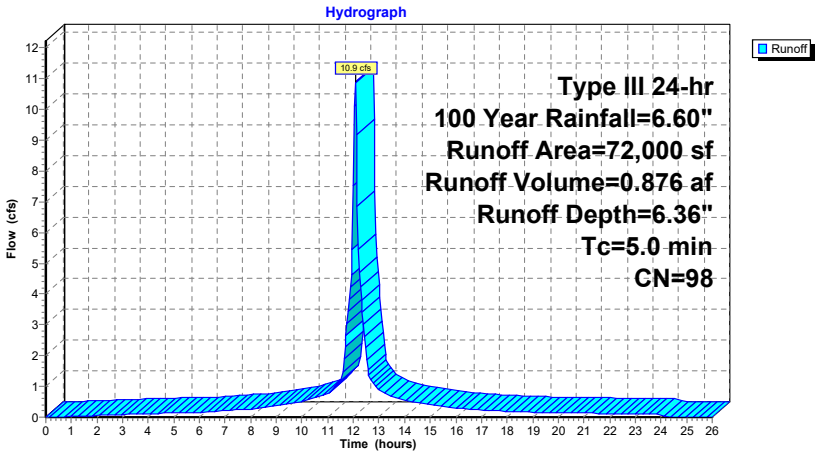
Runoff = 10.9 cfs @ 12.07 hrs, Volume= 0.876 af, Depth= 6.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs
Type III 24-hr 100 Year Rainfall=6.60"

	Area (sf)	CN	Description
*	72,000	98	Synthetic Turf
	72,000		100.00% Impervious Area

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

Subcatchment SC-1D: Syn Turf



Summary for Pond 1P: Under Field Storage

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=85)

Inflow Area = 2.780 ac, 59.47% Impervious, Inflow Depth = 4.76" for 100 Year event
Inflow = 12.8 cfs @ 12.08 hrs, Volume= 1.103 af
Outflow = 3.0 cfs @ 12.52 hrs, Volume= 1.104 af, Atten= 77%, Lag= 26.2 min
Discarded = 2.8 cfs @ 12.28 hrs, Volume= 1.100 af
Primary = 0.2 cfs @ 12.52 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs / 5
Peak Elev= 200.57' @ 12.52 hrs Surf.Area= 144,000 sf Storage= 13,460 cf
Flood Elev= 201.00' Surf.Area= 144,000 sf Storage= 23,760 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 52.6 min (819.4 - 766.8)

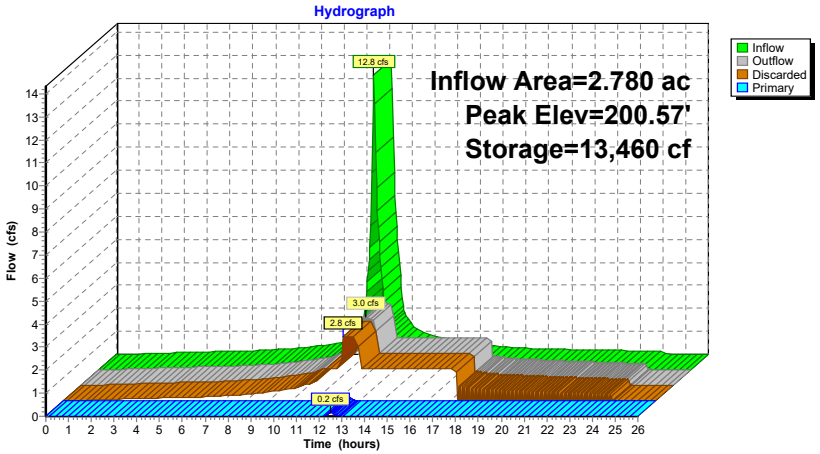
Volume	Invert	Avail.Storage	Storage Description
#1	200.00'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Crushed Stone** 36,000 cf Overall x 33.0% Voids
#2	200.50'	11,880 cf	**200.00'W x 360.00'L x 0.50'H 6" Dynamic Stone** 36,000 cf Overall x 33.0% Voids
		23,760 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	198.67'	**12.0" Round Outlet Pipe** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 198.67' / 198.62' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	200.50'	**3.0" Vert. Orifice/Grate X 18.00** C= 0.600 Limited to weir flow at low heads
#3	Discarded	200.00'	**0.840 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=2.8 cfs @ 12.28 hrs HW=200.51' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 2.8 cfs)

Primary OutFlow Max=0.2 cfs @ 12.52 hrs HW=200.57' TW=0.00' (Dynamic Tailwater)
└**1=Outlet Pipe** (Passes 0.2 cfs of 4.5 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.2 cfs @ 0.88 fps)

Pond 1P: Under Field Storage

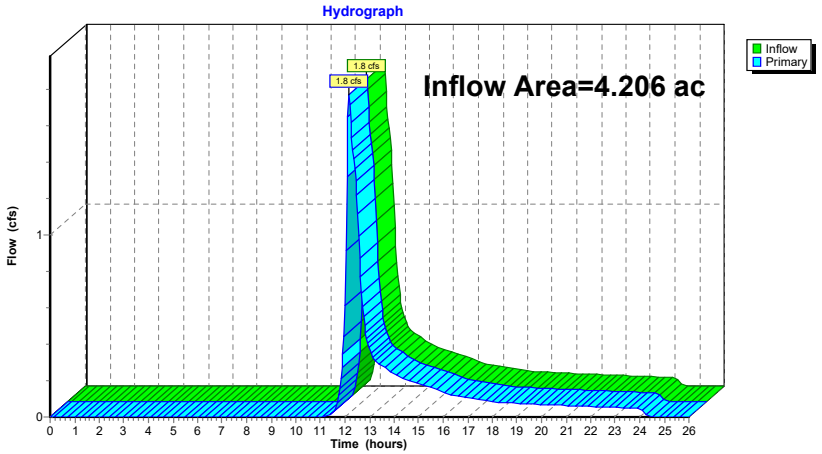


Summary for Link POST: Swale

Inflow Area = 4.206 ac, 39.52% Impervious, Inflow Depth = 0.56" for 100 Year event
Inflow = 1.8 cfs @ 12.17 hrs, Volume= 0.196 af
Primary = 1.8 cfs @ 12.17 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.04 hrs

Link POST: Swale



LONG-TERM POLLUTION PREVENTION PLAN

Showa Boston institute for Language and Culture
British International School of Boston
Boston (Jamaica Plain), Massachusetts

During construction activities, the maintenance of all stormwater and erosion control measures will be the direct responsibility of the Contractor undertaking the work. All work shall conform to the terms and conditions of all relevant local, State and/or Federal permits. After acceptance by the Owner, the maintenance of all field-related stormwater management facilities will be the responsibility of the Owner. Notwithstanding any other schedule noted below, general inspections should be conducted by facilities staff monthly during wet weather conditions from March to November.

Housekeeping Practices

Housekeeping practices should be conducted year-round on an as needed basis. This includes but is not limited to the follow:

- Maintain grass cover in lawn areas to prevent soil erosion into the stormwater system.
- Repair erosion within lawn / landscape areas in a timely manner.

Provisions for Storing Materials

No materials or waste products should be stored in any outdoor/uncovered areas. Any waste materials removed from the site should be disposed of according to local and state regulations.

Vehicle Washing Controls

Washing of vehicles is not allowed.

Spill Prevention and Response Plans

We do not anticipate the outdoor handling of chemicals that may require a spill prevention and response plan.

Provisions for Maintenance of Lawns

The maintenance of the lawn surrounding the synthetic turf field will be incorporated in the campus-wide landscape maintenance. Additional provisions around the field are not required.

Requirements for Storage and Use of Fertilizers, Herbicides and Pesticides

All storage of fertilizers, herbicides and pesticides shall be inside, under cover away from exposure to the elements. Use of such materials shall be in accordance with local and state regulations.

Pet Waste Management Provisions

Any pet waste should be collected and disposed of properly so as to not allow it to enter the stormwater system.

Provisions for Solid Waste Management

Solid waste management is not included as part of this project.

Provisions for Prevention of Illicit discharges to the Stormwater Management System

Due to the nature of the project, there is minimal potential for an illicit discharge to the stormwater management system.

Documentation that Stormwater BMP's are Designed to Provide for Shutdown and Containment in the Event of a Spill.

Due to the nature of the proposed project the BMP's have not been designed for shutdown.

Training for Staff or Personnel Involved in with Implementing the Long Term Pollution Prevention Plan

The Owner will be responsible for training the personnel responsible for implementing and maintaining the Long-Term Pollution Prevention Plan.

Requirements for Routine Inspections and Maintenance of Stormwater BMPs

The stormwater management features to this project are limited to stone trench along the north sideline and the 12" outlet pipe / rip rap plunge pool at the southwest corner of the field. Please find the following guidance for those features:

Stone Trench & Rip Rap Plunge Pool

Stone trenches and rip rap areas shall be inspected twice a year (once in the spring and once in the fall after field activities have concluded for the season). Inspections shall also occur after a major rainfall event to assure that debris and/or sediments do not reduce the effectiveness of the drainage system. Debris noticed during an inspection shall be removed at that time, or within 24-hours of the inspection. Any sign of erosion or blockage shall be immediately repaired and stabilized to ensure the stability of the structure and proper function. Maintenance shall include, but not be limited to, mowing, trimming and removal vegetation as required to prevent vegetation from blocking or diverting storm flows, replacement of riprap to prevent scour, and removing vegetation and debris from stone/rip rap areas.

With time, additional riprap may be added to maintain design depths and grades. Vegetation growing through riprap and accumulated sediments and debris should be removed on a bi-annual basis.

Drainage Pipes

Piped drainage systems shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the outlet and within the conduit. Repair any erosion damage at the pipe outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means. However, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments into the stone base of the field.

Specific synthetic turf field operations, inspections, and maintenance procedures shall be provided by the turf manufacturer.

STORMWATER FACILITIES - OPERATION, INSPECTION AND MAINTENANCE INSPECTION REPORT

Project: Showa Boston Institute for Language and Culture
British International School of Boston – Athletic Field
Boston (Jamaica Plain), Massachusetts

Inspector: **Qualifications:**

Date/Time:

Inspection Type: □ Annual/Biannual/_____

□ Storm Event-Storm start date & rainfall (inches):

Weather conditions (at time of inspection):

General Observations:

Outstanding Issues from Previous Report:

BMP's	Functional?	Condition?	Notes
Stone Trench:	□ Yes □ No		_____
Rip Rap Plunge Pool:	□ Yes □ No		_____
Drainage Pipes:	□ Yes □ No		_____
Other:			

HOUSEKEEPING	Observed?	Condition?	Notes
Contaminants/Chemicals:	□ Yes □ No		_____
Dumpster(s)/Litter Control:	□ Yes □ No		_____
Other:			

CORRECTIVE ACTIONS, FOLLOW UP, SCHEDULE, RESPONSIBLE PARTIES AND GENERAL NOTES

Inspector's Name and Signature: _____

Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Showa Boston Institute of Language and Culture
Boston International School of Boston
420 Pond Street
Boston (Jamacia Plain), MA 02130-3403

SWPPP Prepared For:

Showa Boston Institute of Language and Culture
ATTN: Frank Schwartz, President
420 Pond Street
Boston (Jamacia Plain), MA 02130-3403

SWPPP Prepared By:

SMRT Architects and Engineers
Melissa Flynn, PE
200 Brickstone Square, Suite 303
Andover, MA 01810
978-289-6037
mflynn@smrtinc.com

SWPPP Preparation Date:

05/04/2021

Estimated Project Dates:

Project Start Date: 06/01/2021

Project Completion Date: 09/01/2021

Contents

SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s):

AstroTurf Corporation
Bob Lord, New England Regional Sales Manager
32 Samuel Harrington Road
Westboro, MA 01581
774-513-0020
blord@astroturf.com
Synthetic Turf Manufacturer / General Contractor

Subcontractor(s):

David W. White Sports Construction
Phil Lasker
635 River Road
Bow, NH 03304
603-226-8873
phil@dwwsport.com
Site Contractor

Emergency 24-Hour Contact:

AstroTurf Corporation
Bob Lord: 774-513-0020
Dave Wheaton: 413-426-3789

1.2 Stormwater Team

Stormwater Team		
Name and/or position, and contact	Responsibilities	I Have Read the CGP and Understand the Applicable Requirements
SMRT Architects and Engineers Melissa Flynn, PE 978-289-6037 mflynn@smrtinc.com	Development of SWPPP	☒ Yes Date: 4/25/2021
David W. White Sports Construction Phil Lasker 603-226-8873 phil@dwwsport.com	Site Contractor	☐ Yes Date: Click here to enter a date.

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Project/Site Information

Project Name and Address

Project/Site Name:
Showa Boston Institute of Language and Culture
British International School of Boston
Athletic Field Renovation

Project Street/Location: 420 Pond Street
City: Boston (Jamaica Plain)
State: MA
ZIP Code: 02130-3403
County or Similar Subdivision: Suffolk County

Business days and hours for the project: **7:00am – 5:00pm Monday to Friday**.
Any weekend work must approved in advance by the Boston Inspection Services Department.

Project Latitude/Longitude

Latitude: 42.306313° N (decimal degrees)

Longitude: - 71.133205 ° W (decimal degrees)

Latitude/longitude data source:

☐ Map ☐ GPS ☒ Other (please specify): Google Earth

Horizontal Reference Datum:

☐ NAD 27 ☐ NAD 83 ☐ WGS 84

Additional Project Information

Are you requesting permit coverage as a "federal operator" as defined in Appendix A of the 2017 CGP? ☐ Yes ☒ No

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe? ☐ Yes ☒ No

If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property:

If you are conducting earth-disturbing activities in response to a public emergency, document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services: NOT APPLICABLE

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ Yes ☒ No

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? ☐ Yes ☒ No

The project discharges to an unnamed intermittent stream / drainage ditch to the south of the site.

2.3 Nature of the Construction Activities

General Description of Project
The project consists of the converting a natural grass playing field to synthetic turf. No additional impervious cover or structures are proposed as part of the project.

Size of Construction Site

Size of Property	30 acres
Total Area Expected to be Disturbed by Construction Activities	2.00 acres
Maximum Area Expected to be Disturbed at Any One Time	2.00 acres

Type of Construction Site *(check all that apply)*:

☐ Single-Family Residential ☐ Multi-Family Residential ☐ Commercial ☐ Industrial
☐ Institutional ☐ Highway or Road ☐ Utility ☒ Other: Educational- Synthetic Turf Field

Will there be demolition of any structure built or renovated before January 1, 1980? ☐ Yes ☒ No

If yes, do any of the structures being demolished have at least 10,000 square feet of floor space? ☐ Yes ☐ No ☒ N/A

Was the pre-development land use used for agriculture (see Appendix A for definition of "agricultural land")? ☐ Yes ☒ No

Pollutant-Generating Activities

The following are potential pollutant-generating activities, and best management practices and good housekeeping practices will be implemented to avoid all potential spills or leaks.

Pollutant-Generating Activity (e.g., paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations)	**Pollutants or Pollutant Constituents** (e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels)
Vehicle and equipment operation and maintenance	Fuels, oils, other contaminants

Construction Support Activities

Contact information for construction support activity: MATERIAL STORAGE AREAS

David W. White Sports Construction
Phil Lasker
603-226-8873
phil@dwwsport.com

2.4 Sequence and Estimated Dates of Construction Activities

Estimated Start Date of Construction Activities	6/1/2021
Estimated End Date of Construction Activities	9/1/2021
Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be Stabilized	9/1/2021
Estimated Date(s) when Stormwater Controls will be Removed	9/1/2021

2.5 Authorized Non-Stormwater Discharges

List of Authorized Non-Stormwater Discharges Present at the Site

Type of Authorized Non-Stormwater Discharge	**Likely to be Present at Your Site?**
Discharges from emergency fire-fighting activities	☐ Yes ☒ No
Fire hydrant flushings	☐ Yes ☒ No
Landscape irrigation	☐ Yes ☒ No

Waters used to wash vehicles and equipment	☒ Yes ☐ No
Water used to control dust	☒ Yes ☐ No
Potable water including uncontaminated water line flushings	☐ Yes ☒ No
External building washdown (soaps/solvents are not used and external surfaces do not contain hazardous substances)	☐ Yes ☒ No
Pavement wash waters	☐ Yes ☒ No
Uncontaminated air conditioning or compressor condensate	☐ Yes ☒ No
Uncontaminated, non-turbid discharges of ground water or spring water	☐ Yes ☒ No
Foundation or footing drains	☐ Yes ☒ No
Construction dewatering water	☒ Yes ☐ No

(Note: You are required to identify the likely locations of these authorized non-stormwater discharges on your site map. See Section 2.6, below, of the SWPPP Template.)

2.6 Site Maps

Refer to Issued for Permitting Plan Set 5-4-2021 (under separate cover)

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

No Endangered Species are expected to occur at the project location based on review of the US Fish & Wildlife Services IPaC resource list. Some migratory birds may be present in the area. The SWPPP Preparer has reached out to the local FWS office to confirm that the project will not impact any of these birds. The final SWPPP submitted to NDPES shall include the final correspondence.

Eligibility Criterion

Under which criterion listed in Appendix D are you eligible for coverage under this permit?

☐ **Criterion A**: No ESA-listed species and/or designated critical habitat present in action area. Using the process outlined in Appendix D of this permit, you certify that ESA-listed species and designated critical habitat(s) under the jurisdiction of the USFWS or NMFS are not likely to occur in your site's "action area" as defined in Appendix A of this permit.

Basis statement content/Supporting documentation: A basis statement supporting the selection of Criterion A should identify the USFWS and NMFS information sources used. Attaching aerial image(s) of the site to your NOI is helpful to EPA, USFWS, and NMFS in confirming eligibility under this criterion. Please Note: NMFS' jurisdiction includes ESA-listed marine and estuarine species that spawn in inland rivers. Check the applicable source(s) of information you relied upon:

☐ Specific communication with staff of the USFWS and/or NMFS. INSERT DATE OF COMMUNICATION AND WHO YOU SPOKE WITH

☐ Species list from USFWS and/or NMFS. See the CGP ESA webpage, Step 2 for available websites. INSERT SPECIFIC DOCUMENT AND/OR WEBSITE RELIED UPON

☐ **Criterion B:** Eligibility requirements met by another operator under the 2017 CGP. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your "action area" under eligibility Criterion A, C, D, E, or F of the 2017 CGP and you have confirmed that no additional ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS not considered in the that certification may be present or located in the "action area." To certify your eligibility under this criterion, there must be no lapse of NPDES permit coverage in the other CGP operator's certification. By certifying eligibility under this criterion, you agree to comply with any conditions upon which the other CGP operator's certification was based. You must include in your NOI the NPDES ID from the other 2017CGP operator's notification of authorization under this permit. If your certification is based on another 2017 CGP operator's certification under criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in criterion C in your NOI form.

Basis statement content/Supporting documentation: A basis statement supporting the selection of Criterion B should identify the eligibility criterion of the other CGP NOI, the authorization date, and confirmation that the authorization is effective.

- ✓ Provide the 9-digit NPDES ID number from the other operator's NOI under the 2017 CGP: __ __ __ __ __ __ __ __ __
- ✓ Authorization date of the other 2017 CGP operator: INSERT AUTHORIZATION DATE OF OTHER OPERATOR
- ✓ Eligibility criterion of the other 2017 CGP operator: ☐A ☐C ☐D ☐E ☐F
- ✓ Provide a brief summary of the basis the other operator used for selecting criterion A, C, D, E, or F: INSERT TEXT HERE

☐ **Criterion C:** Discharges not likely to adversely affect ESA-listed species and/or designated critical habitat. ESA-listed species and/or designated critical habitat(s) under the jurisdiction of the USFWS and/or NMFS are likely to occur in or near your site's "action area," and you certify to EPA that your site's discharges and discharge-related activities are not likely to adversely affect ESA-listed threatened or endangered species and/or designated critical habitat. This certification may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect ESA-listed species and/or designated critical habitat. To certify your eligibility under this criterion, indicate 1) the ESA-listed species and/or designated habitat located in your "action area" using the process outlined in Appendix D of this permit; 2) the distance between the site and the listed species and/or designated critical habitat in the action area (in miles); and 3) a rationale describing specifically how adverse effects to ESA-listed species will be avoided from the discharges and discharge-related activities. You must also include a copy of your site map from your SWPPP showing the upland and in-water extent of your "action area" with this NOI.

Basis statement content/Supporting documentation: A basis statement supporting the selection of Criterion C should identify the information resources and expertise (e.g., state or federal biologists) used to arrive at this conclusion. Any supporting documentation should explicitly state that both ESA-listed species and designated critical habitat under the jurisdiction of the USFWS and/or NMFS were considered in the evaluation.

- ✓ Resources used to make determination: INSERT RESOURCES YOU USED TO DETERMINE THAT DISCHARGES ARE NOT LIKELY TO ADVERSELY AFFECT ESA-LISTED SPECIES OR DESIGNATED CRITICAL HABITAT
- ✓ ESA-listed Species/Critical Habitat in action area: INSERT LIST OF ESA-LISTED SPECIES OR DESIGNATED CRITICAL HABITAT LOCATED IN YOUR ACTION AREA
- ✓ Distance between site and ESA-listed Species/Critical Habitat: INSERT DISTANCE BETWEEN YOUR SITE AND THE ESA-LISTED SPECIES OR CRITICAL HABITAT (in miles)
- ✓ How adverse effects will be avoided: DESCRIBE SPECIFICALLY HOW ADVERSE EFFECTS TO ESA-LISTED SPECIES WILL BE AVOIDED FROM THE DISCHARGES AND DISCHARGE-RELATED ACTIVITIES

☐ **Criterion D**: Coordination with USFWS and/or NMFS has successfully concluded.
Coordination between you and the USFWS and/or NMFS has concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS, and resulted in a written concurrence from USFWS and/or NMFS that your site's discharges and discharge-related activities are not likely to adversely affect listed

species and/or critical habitat. You must include copies of the correspondence with the participating agencies in your SWPPP and this NOI.

Basis statement content/Supporting documentation: A basis statement supporting the selection of Criterion D should identify whether USFWS or NMFS or both agencies participated in coordination, the field office/regional office(s) providing that coordination, and the date that coordination concluded.

- ✓ Agency coordinated with: ☐USFWS ☐ NMFS
- ✓ Field/regional office(s) providing coordination: INSERT FIELD/REGIONAL OFFICE(S) PROVIDING COORDINATION
- ✓ Date coordination concluded: INSERT DATE COORDINATION CONCLUDED
- ✓ Attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding coordination activities.

☐ **Criterion E:** ESA Section 7 consultation has successfully concluded. Consultation between a Federal Agency and the USFWS and/or NMFS under section 7 of the ESA has concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS. To certify eligibility under this criterion, Indicate the result of the consultation:

- ☐ Biological opinion from USFWS and/or NMFS that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or
- ☐ Written concurrence from USFWS and/or NMFS with a finding that the site's discharges and discharge-related activities are not likely to adversely affect ESA-listed species and/or designated critical habitat. You must include copies of the correspondence between yourself and the USFWS and/or NMFS in your SWPPP and this NOI.

Basis statement content/Supporting documentation: A basis statement supporting the selection of Criterion E should identify the federal action agency(ies) involved, the field office/regional office(s) providing that consultation, any tracking numbers of identifiers associated with that consultation (e.g., IPaC number, PCTS number), and the date the consultation was completed.

- ✓ Federal agency(ies) involved: INSERT FEDERAL AGENCY(IES) INVOLVED
- ✓ Field/regional office(s) providing consultation: INSERT FIELD/REGIONAL OFFICE(S) PROVIDING CONSULTATION
- ✓ Tracking numbers associated with consultation: INSERT CONSULTATION TRACKING NUMBER(S)
- ✓ Date consultation completed: INSERT DATE CONSULTATION COMPLETED
- ✓ Attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation.

☐ **Criterion F:** Issuance of section 10 permit. Potential take is authorized through the issuance of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization

addresses the effects of the site's discharges and discharge-related activities on ESA-listed species and designated critical habitat. You must include copies of the correspondence between yourself and the participating agencies in your SWPPP and your NOI.

Basis statement content/Supporting documentation: A basis statement supporting the selection of Criterion F should identify whether USFWS or NMFS or both agencies provided a section 10 permit, the field office/regional office(s) providing permit(s), any tracking numbers of identifiers associated with that consultation (e.g., IPaC number, PCTS number), and the date the permit was granted.

- ✓ Agency providing section 10 permit: ☐USFWS ☐NMFS
- ✓ Field/regional office(s) providing permit: INSERT FIELD/REGIONAL OFFICE(S) PROVIDING PERMIT
- ✓ Tracking numbers associated with consultation: INSERT CONSULTATION TRACKING NUMBER(S)
- ✓ Date permit granted: INSERT DATE PERMIT GRANTED
- ✓ Attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service.

3.2 Historic Preservation

There are no historic properties on site.

3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? - **NO**

☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

SECTION 4: EROSION AND SEDIMENT CONTROLS

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? ☐ YES ☒ NO

4.2 Perimeter Controls

Specific Perimeter Controls

Silt Fence / Wattle Barrier	
Description: Silt fence / wattle barrier is a temporary sediment barrier consisting of filter fabric attached to supporting posts and entrenched into the soil. A second line of protection is provided by the straw or haybale barrier. This barrier is installed across or at the toe of a slope, to intercept and retain small amounts of sediment from disturbed or unprotected areas.	
Installation	TBD- Prior to any land disturbance.
Maintenance Requirements	• Fences should be inspected and maintained immediately after each rainfall and at least daily during prolonged rainfall; • Sediment deposition should be removed, at a minimum, when deposition accumulates to one-half the height of the fence, and moved to an appropriate location so the sediment is not readily transported back toward the silt fence. • Silt fences should be repaired immediately if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers should be replaced with a temporary check dam. • Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric should be replaced promptly. • Any sediment deposits remaining in place after the silt fence is no longer required should be dressed to conform to the existing grade, prepared and seeded. • If there is evidence of end flow on properly installed barriers, extend barriers uphill or consider replacing them with other measures, such as temporary diversions and sediment traps. • Silt fences have a useful life of one season. On longer construction projects, silt fence should be replaced periodically as required to maintain effectiveness.
Design Specifications	See Sheet CE101 for installation locations and Sheet CE501 for construction details.

4.3 Sediment Track-Out

Temporary Construction Entrance	
Description: A stabilized construction exit consists of a pad of stone aggregate placed on a geotextile filter fabric, located at any point where traffic will be leaving a construction site to an existing access road way or other paved surface. Its purpose is to reduce or eliminate the tracking of sediment onto public roads by construction vehicles.	
Installation	TBD- Prior to any land disturbance.
Maintenance Requirements	• The exit should be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. • When the control pad becomes ineffective, the stone should be removed along with the collected soil material, regraded on site, and stabilized. The entrance should then be reconstructed. • The contractor should sweep the pavement at exits whenever soil materials are tracked onto the adjacent pavement or traveled way. • When wheel washing is required, it should be conducted on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment should be prevented from entering storm drains, ditches, or waterways.
Design Specifications	Temporary Construction Entrance shall meet Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Area, Part III requirements. See Sheet CE101 for installation location and Sheet CE501 for construction detail.

4.4 Stockpiled Sediment or Soil

Silt Fence	
Description: Silt fence is a temporary sediment barrier consisting of filter fabric attached to supporting posts and entrenched into the soil. This barrier is installed across or at the toe of a slope, to intercept and retain small amounts of sediment from disturbed or unprotected areas.	
Installation	If stockpile is to remain for more than 14 days.
Maintenance Requirements	Same requirements as noted in Section 4.2 of SWPPP.

4.5 Minimize Dust

Specific Dust Controls

Description: Dust control consists of applying various measures to prevent blowing and movement of dust from exposed soil surfaces. This practice is applicable to areas subject to dust blowing and soil movement where on-site and off-site damage is likely to occur if preventive measures are not taken. Typical dust control measures include traffic control, Construction phasing, and maintenance of existing vegetation to limit exposure of soils and prevent conditions that result in dry soils and dust; application of water, calcium chloride, and temporary stabilization practices to control mobilization of dust by equipment operation or wind; and pavement sweeping to prevent accumulation of dust-producing sediment.	
Installation	As required

Maintenance Requirements	When temporary dust control measures are used, repetitive treatment should be applied as needed to accomplish control.
Design Specifications	Water Application: • Moisten exposed soil surfaces periodically with adequate water to control dust. • Avoid excessive application of water that would result in mobilizing sediment and subsequent deposition in natural waterbodies Stone Application: • Cover surface with crushed stone or coarse gravel. • In areas adjacent to waterways, use only chemically stable or washed aggregate. Other Commercial Products: • The use of other commercial products (i.e., tackifiers) to stabilize exposed surfaces for dust control will be subject to acceptance by NHDES on a project-specific basis. Other Practices: • Apply other temporary and permanent stabilization practices as specified in this manual. • Calcium chloride cannot be applied in watersheds with chloride-impaired waterbodies. Elsewhere, it should only be used when other methods are not practical, and following these guidelines: o For dry application, use a commercial chemical product that is either loose dry granules or flakes, fine enough to feed through a spreader at a rate that will keep the surface moist but not cause pollution or plant damage. o For liquid applications, the application rate will vary depending on the relative quality of materials in a given road surface. Some calcium chloride suppliers may require a road sample before recommending an application rate. Typically, 30% calcium chloride is recommended for most gravel roads.

4.6 Minimize Steep Slope Disturbances

Rip Rap Material	
Description: Slopes of 2:1 or greater to receive rip rap material.	
Installation	As soon as subgrade slopes are established.
Maintenance Requirements	Vegetation growing through riprap and any accumulated sediment to be removed.
Design Specifications	Size of rip rap material to match existing stone armor on slope.

4.15 Site Stabilization

Total Amount of Land Disturbance Occurring at Any One Time

☒ *Five Acres or less*

☐ *More than Five Acres*

Installation of synthetic turf base stone shall constitute stabilized condition for the field area.

Rip Rap Material	
Description: Slopes of 2:1 or greater to receive rip rap material.	
Installation	As soon as subgrade slopes are established.
Maintenance Requirements	Vegetation growing through riprap and any accumulated sediment to be removed.
Design Specifications	Size of rip rap material to match existing stone armor on slope.

Erosion Control Blanket	
☒ *Vegetative* ☐ *Non-Vegetative* ☐ *Temporary* ☒ *Permanent*	
Description: Vegetative slopes of 3:1 or greater shall receive erosion control blanket. Erosion control blanket shall be 100% biodegradable double mesh ne blanket with 100% coconut fiber matrix and organic jute netting.	
Installation	TBD
Maintenance Requirements	Establishment of seed mix shall be monitored.
Design Specifications	Per manufacturer's recommendations.

SECTION 5: POLLUTION PREVENTION STANDARDS

5.1 Potential Sources of Pollution

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Preventative Measures**
Areas of exposed soil	Exposed soils washed into drainage system and receiving waters during storm events	Details of the soil erosion measures to be taken during construction are given on the accompanying plan sheets, and in the preceding sections of this report. The measures outlined will minimize the potential for soil erosion and protect downstream areas from the detrimental impacts of sediment-laden runoff.
Temporary Soil Stockpiles	Soil washing into the drainage system and receiving waters during storm events.	Soil stockpiling will be minimized by the careful management of site grading tasks. Sediment control barriers, constructed around soil stockpiles, will provide effective containment of sediments during rainfall events. The potential for slumping, or destabilization will be minimized by stockpiling soil in a manner which is stable under all moisture conditions.
Temporary Soil Stockpiles	Wind erosion of soils	Temporary mulching, vegetative cover, and water dousing will be employed to minimize the potential for airborne dust from construction activities.
Stored Construction Materials	Leakage of stored materials entering the drainage system and hence downstream receiving waters	The Contractor shall ensure that all materials stored on site are placed in suitable leak-proof containers. Materials such as cement and asphalt shall be stored in covered, weatherproof facilities only. Diesel, or other fuel stored on site shall be stored in approved containers, with containment areas where required. All site materials storage facilities shall be clearly labeled and adequate measures shall be taken to ensure that spills can be isolated within the storage area.
Concrete Construction	Excess concrete washings entering the drainage system	All excess concrete from construction activities shall be collected and disposed of off-site. Washing down of concrete trucks shall only be allowed on site in designated collection areas. These areas shall provide containment, storage and recovery facilities for concrete washings.

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Preventative Measures**
Oil, gasoline, or hydraulic fluid leaks from construction equipment	Oil or fluid leaks entering the drainage system.	The potential for fuel or fluid leaks from site construction plant will be minimized by the formation of and adherence to a Schedule of Maintenance for all construction equipment used on the site. The Contractor shall be responsible for the production of and adherence to a Schedule of Maintenance for construction equipment.
Construction waste	Contamination of site areas, or surrounding areas with construction waste.	All waste from construction activities will be collected and disposed of off-site. The Contractor shall be responsible for maintaining the site in an orderly condition, and disposing of waste in a timely manner.
Site toilet facilities	Leaks and or overflows from temporary site toilets.	The Contractor shall ensure that temporary site toilets are maintained in good working order.

SECTION 6: INSPECTION, MAINTENANCE, AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Personnel Responsible for Inspections
Inspections shall be conducted by a Contractor representative who is a "qualified person" knowledgeable in the principles and practices of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

Inspection Schedule
At a minimum, inspections shall be conducted at the site prior to commencement of land clearing activities, after every storm event with precipitation of 0.25 inches or greater during construction, weekly during construction, at the completion of construction activities, after the removal of any temporary BMPs, and at the direction of the engineer or owner.

Inspection Report Forms
Example inspection forms are included in Appendix D.

Standard Frequency:
☐ Every 7 days ☐ Every 14 days and within 24 hours of a 0.25" rain or the occurrence of runoff from snowmelt sufficient to cause a discharge
For frozen conditions where earth-disturbing activities are being conducted ☐ Once per month Insert beginning and ending dates of frozen conditions on your site: ▪ Beginning date of frozen conditions: ▪ Ending date of frozen conditions:

6.3 Delegation of Authority

The Contractor shall identify the individual(s) or positions within their company who have been delegated authority to sign inspection reports. Delegated authority shall sign the Delegation of Authority Form included in Appendix J.

Duly Authorized Representative(s) or Position(s):
Insert Company or Organization Name
Insert Name
Insert Position
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

SECTION 7: TRAINING

Complete the table below to provide documentation that the personnel required to be trained in CGP Part 6 completed the appropriate training

The following personnel, at a minimum, must be receive training, and therefore should be listed out individually in the table below:

- Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention measures);
- Personnel who are responsible for conducting inspections as required in Section 4; and
- Personnel who are responsible for taking corrective actions as required in Section 5.

CGP Part 6 requires that the required personnel must be trained to understand the following if related to the scope of their job duties:

- The location of all stormwater controls on the site required by this permit, and how they are to be maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

Table 7-1: Documentation for Completion of Training

Name	Date Training Completed

SECTION 8: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

SWPPP APPENDICES

Appendix A – Site Maps

Appendix B – Copy of 2017 CGP

Appendix C – NOI and EPA Authorization Email

Appendix D – Inspection Form

Appendix E – Corrective Action Form

Appendix F – SWPPP Amendment Log

Appendix G – Subcontractor Certifications/Agreements

Appendix H – Grading and Stabilization Activities Log

Appendix I – Training Log

Appendix J – Delegation of Authority

Appendix K – Endangered Species Documentation

Appendix A – Site Maps

Under Separate Cover – Refer to Issued for Permitting Site Plan Set

Appendix B – Copy of 2017 CGP

The 2017 CGP is available at https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents.

Appendix C – Copy of NOI and EPA Authorization email

CONTRACTOR TO INSERT COPY OF NOI AND EPA'S AUTHORIZATION EMAIL PROVIDING COVERAGE UNDER THE CGP

Appendix D – Copy of Inspection Form

General Information					
Name of Project	Showa Boston Institute of Language and Culture British International School of Boston Athletic Field Renovation	**CGP Tracking No.**		**Inspection Date**	
Inspector Name, Title & Contact Information					
Present Phase of Construction					
Inspection Location (if multiple inspections are required, specify location where this inspection is being conducted)					

Inspection Frequency

Standard Frequency: ☒ Weekly ☐ Every 14 days and within 24 hours of a 0.25" rain

Increased Frequency: ☐ Every 7 days and within 24 hours of a 0.25" rain (for areas of sites discharging to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3)

Reduced Frequency:

- ☐ Once per month (for stabilized areas)
- ☐ Once per month and within 24 hours of a 0.25" rain (for arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought)
- ☐ Once per month (for frozen conditions where earth-disturbing activities are being conducted)

Was this inspection triggered by a 0.25" storm event? ☐ Yes ☐ No

If yes, how did you determined whether a 0.25" storm event has occurred?

☐ Rain gauge on site ☐ Weather station representative of site. Specify weather station source:

Total rainfall amount that triggered the inspection (in inches)**:**

Unsafe Conditions for Inspection

Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.1.5? ☐ Yes ☐ No

If "yes", complete the following:

- Describe the conditions that prevented you from conducting the inspection in this location:

- Location(s) where conditions were found:

Condition and Effectiveness of Erosion and Sediment (E&S) Controls (CGP Part 2.1)				
Type/Location of E&S Control	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?***	**Date on Which Maintenance or Corrective Action First Identified?**	**Notes**
1. Silt fence/wattle barrier	☐Yes ☐No	☐Yes ☐No		
2. Silt sacks	☐Yes ☐No	☐Yes ☐No		
3. Erosion control blanket	☐Yes ☐No	☐Yes ☐No		
4. Temporary construction entrance	☐Yes ☐No	☐Yes ☐No		
5. Rip rap material on slopes	☐Yes ☐No	☐Yes ☐No		
6.	☐Yes ☐No	☐Yes ☐No		
7.	☐Yes ☐No	☐Yes ☐No		
8.	☐Yes ☐No	☐Yes ☐No		
9.	☐Yes ☐No	☐Yes ☐No		
10.	☐Yes ☐No	☐Yes ☐No		

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1; 3) One of the prohibited discharges in Part 2.3.1 is occurring or has occurred; or 4) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.2. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at www.epa.gov/npdes/stormwater/swppp. See Part 5 of the permit for more information.

If repairs, maintenance, or corrective action is required, briefly note the reason. If repairs, maintenance, or corrective action have been completed, make a note of the date it was completed and what was done. *If corrective action is required, note that you will need to complete a separate corrective action report describing the condition and your work to fix the problem*.

Condition and Effectiveness of Pollution Prevention (P2) Practices (CGP Part 2.3)				
Type/Location of P2 Practices	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?***	**Date on Which Maintenance or Corrective Action First Identified?**	**Notes**
1.	☐Yes ☐No	☐Yes ☐No		
2.	☐Yes ☐No	☐Yes ☐No		
3.	☐Yes ☐No	☐Yes ☐No		
4.	☐Yes ☐No	☐Yes ☐No		
5.	☐Yes ☐No	☐Yes ☐No		
6.	☐Yes ☐No	☐Yes ☐No		
7.	☐Yes ☐No	☐Yes ☐No		
8.	☐Yes ☐No	☐Yes ☐No		
9.	☐Yes ☐No	☐Yes ☐No		
10.	☐Yes ☐No	☐Yes ☐No		

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1; 3) One of the prohibited discharges in Part 2.3.1 is occurring or has occurred; or 4) EPA

requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.2. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at www.epa.gov/npdes/stormwater/swppp. See Part 5 of the permit for more information.

Stabilization of Exposed Soil (CGP Part 2.2)			
Stabilization Area	**Stabilization Method**	**Have You Initiated Stabilization?**	**Notes**
1.		☐ YES ☐ NO If yes, provide date:	
2.		☐ YES ☐ NO If yes, provide date:	
3.		☐ YES ☐ NO If yes, provide date:	
4.		☐ YES ☐ NO If yes, provide date:	
5.			

Description of Discharges (CGP Part 4.1.6.6)	
Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? ☐ Yes ☐ No **If "yes", provide the following information for each point of discharge:**	
Discharge Location	**Observations**
1. **Rip Rap Plunge Pool**	Describe the discharge: At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:

Contractor or Subcontractor Certification and Signature
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." **Signature of Contractor or Subcontractor:** _____ **Date:** **Printed Name and Affiliation:** _____

Certification and Signature by Permittee
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." **Signature of Permittee or "Duly Authorized Representative":** _____ **Date:** **Printed Name and Affiliation:** _____

Appendix E – Copy of Corrective Action Form

Corrective Action Report for: Showa Boston Institute of Language and Culture – British International School of Boston- Athletic Field Renovation
Date:

Section A – Initial Report (CGP Part 5.4.1)
(Complete this section within 24 hours of discovering the condition that triggered corrective action)

Date problem first discovered:

Time discovered:

Name and contact information of individual completing this form:

What site conditions triggered the requirement to conduct corrective action *(check the box that applies)*:

- ☐ A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in Part 2 and/or 3
- ☐ The stormwater controls that have been installed and maintained are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in Part 3.1 of the permit
- ☐ A Part 2.3.1 prohibited discharge has occurred or is occurring
- ☐ EPA requires corrective action as a result of permit violations found during an EPA inspection carried out under Part 4.2

Provide a description of the problem:

Deadline for completing corrective action:

If your estimated date of completion falls after the 7-day deadline, explain (1) why you believe it is infeasible to complete work within 7 days, and (2) why the date you have established for making the new or modified stormwater control operational is the soonest practicable timeframe:

Section B – Corrective Action Progress (CGP Part 5.4.2)
(Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)

Section B.1 – Why the Problem Occurred

Cause(s) of Problem (insert additional rows if applicable)	How This Was Determined and the Date You Determined the Cause
1. 2.	

Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem

List of Stormwater Control Modification(s) Needed to Correct Problem (insert additional rows if applicable)	Date of Completion	SWPPP Update Necessary?	Notes
1.		☐Yes ☐No	
2.		☐Yes ☐No	

Corrective Action Report for: Showa Boston Institute of Language and Culture – British International School of Boston- Athletic Field Renovation
Date:

Section C – Certification and Signature (CGP Part 5.4.3)
Section C.1 – Certification and Signature by Contractor or Subcontractor

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Contractor or Subcontractor: _____ **Date:**

Printed Name and Affiliation: _____

Section C.2 – Certification and Signature by Permittee

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Permittee or "Duly Authorized Representative": _____ **Date:**

Printed Name and Affiliation: _____

Appendix F – SWPPP Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix G – Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix H – Grading and Stabilization Activities Log

Date Grading Activity Initiated	**Description of Grading Activity**	**Description of Stabilization Measure and Location**	**Date Grading Activity Ceased** (Indicate Temporary or Permanent)	**Date When Stabilization Measures Initiated**
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE
INSERT DATE			INSERT DATE ☐ Temporary ☐ Permanent	INSERT DATE

Appendix I – SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ☐ **Sediment and Erosion Controls**
- ☐ **Stabilization Controls**
- ☐ **Pollution Prevention Measures**
- ☐ **Emergency Procedures**
- ☐ **Inspections/Corrective Actions**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Appendix J – Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit (CGP), at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's CGP, and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix K – Endangered Species Documentation

Melissa Flynn

From: Melissa Flynn
Sent: Tuesday, April 27, 2021 4:01 PM
To: David_Simmons@fws.gov
Cc: Jeannine_Dube@fws.gov; Donna_Watt@fws.gov
Subject: Migratory Birds- IPaC Project Review- Jamaica Plain Project
Attachments: IPaC US FWS- Showa Campus- Jamaica Plain.pdf; Showa-Aerial Plan View.pdf

Categories: Filed by Newforma

Good afternoon, David,

I'm working on a project at the Showa Boston Institute in Boston (Jamaica Plain). I'm preparing the SWPPP for our permitting efforts and I was going thru the threatened and endangered species requirements. Using the IPaC website, it was determined that the project did not have any species on the endangered species list, but 21 migratory birds of conservation concern were identified (attached). The instructions on the IPac website say to contact the local US Fish and Wildlife Service field office, which is how I got your email.

The project is very straight forward. We are proposing to convert the natural grass playing field to synthetic turf. I've attached an aerial of the campus with the proposed project outlined. We are not proposing any added impervious area or tree clearing as part of the project. There will be earthwork associated with the construction of the field (removal of topsoil and installation of a stone base under the synthetic turf surfacing), but that is really the only earthwork disturbance associated with this project. Pending all permit approvals, the intent is to construct this field this summer (start in June with completion by September).

Please let me know the next steps required by your office to review any potential impact on the migratory birds listed in our report. I can be reached at this email or at 508-843-3057 if it is easier to discuss over the phone.

I look forward to hearing from you!

Thank you!

Melissa A. Flynn, PE
Civil Engineer
Licensed in CT, MA, ME, NH, & RI

SMRT

SMRT Architects and Engineers
p: 877.700.7678 | **d:** 978.289.6037 | **c:** 508.843.3057
smrtinc.com

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Suffolk County, Massachusetts

Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office

of the National Oceanic and Atmospheric Administration within the Department of Commerce.

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10

Cerulean Warbler Dendroica cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 29 to Jul 20
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Kentucky Warbler Oporornis formosus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl asio otus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds elsewhere
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Red-throated Loon Gavia stellata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

Ruddy Turnstone Arenaria interpres morinella This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Owl Bubo scandiacus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

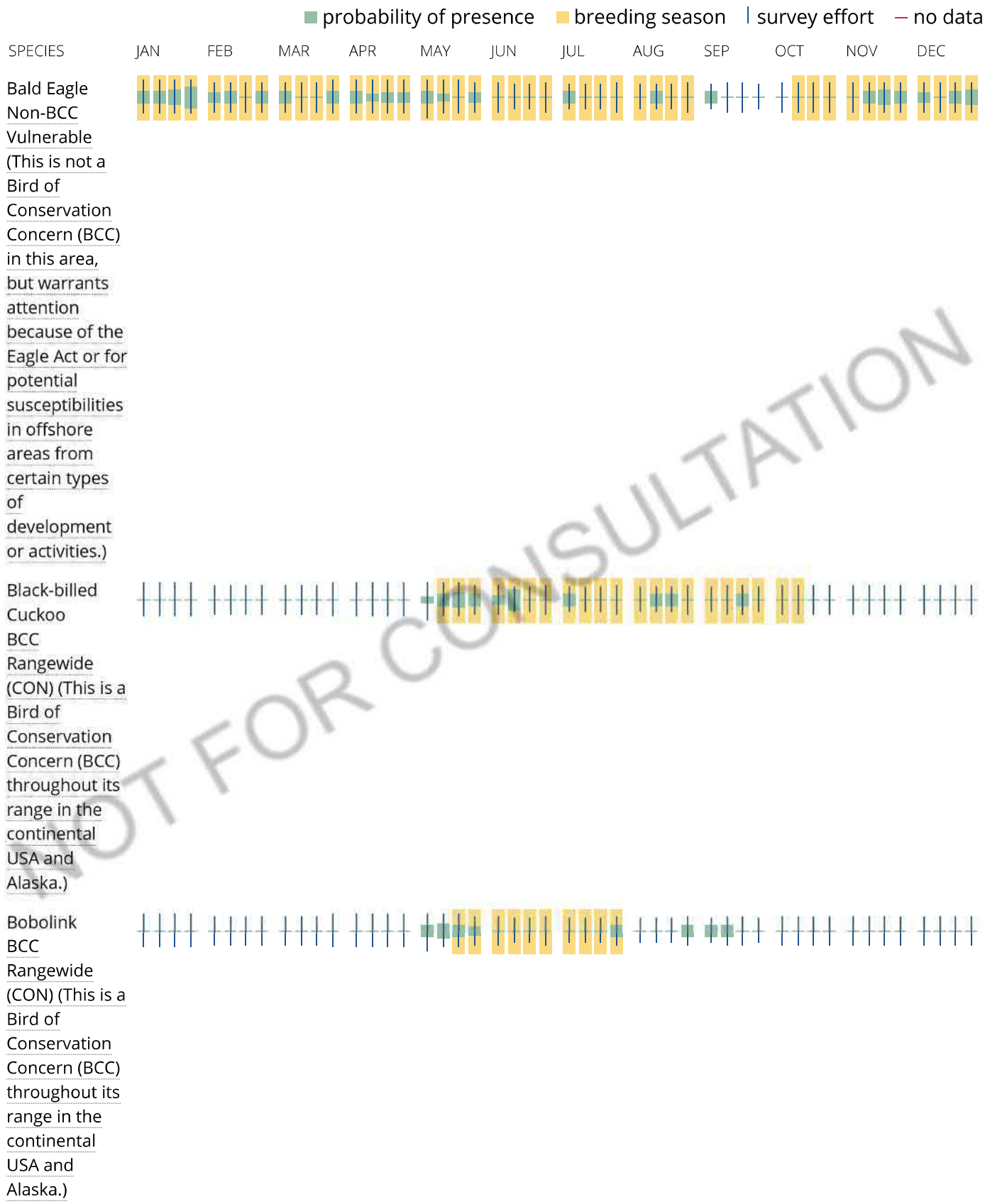
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

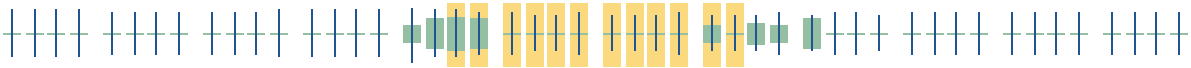
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are

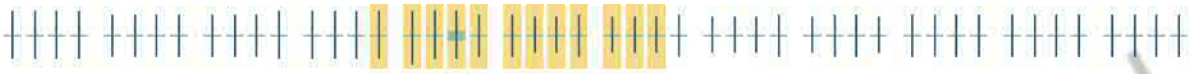
based on all years of available data, since data in these areas is currently much more sparse.



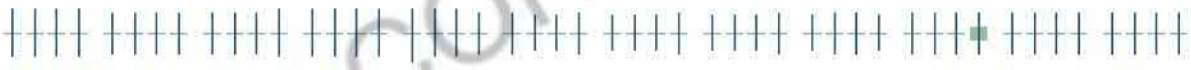
Canada Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



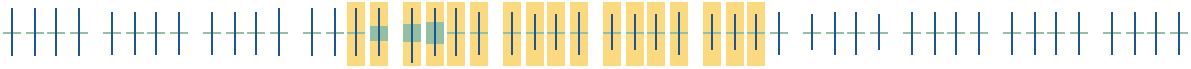
Cerulean Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Evening Grosbeak BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Kentucky Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

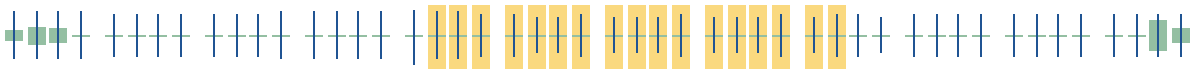


Lesser Yellowlegs BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

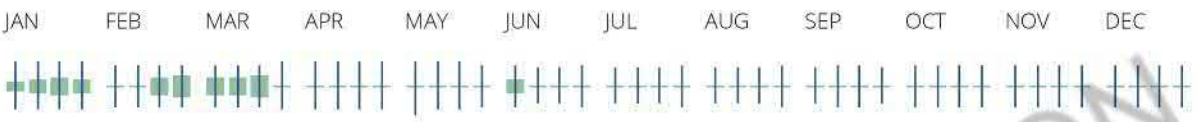
Long-eared Owl BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

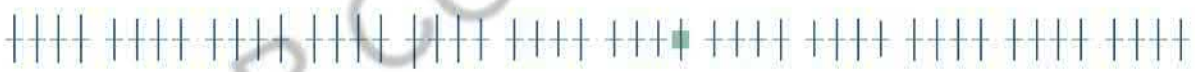
Prothonotary Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Red-throated Loon BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



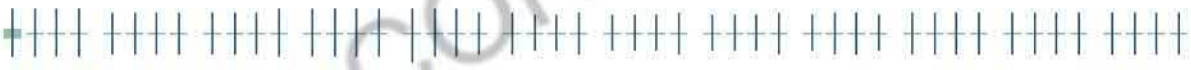
Ruddy Turnstone BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Rusty Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Semipalmated Sandpiper BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

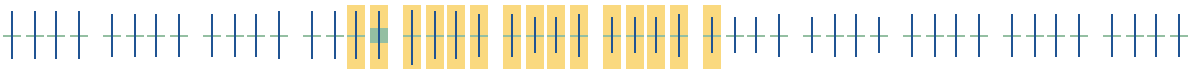
Short-billed Dowitcher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Snowy Owl BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

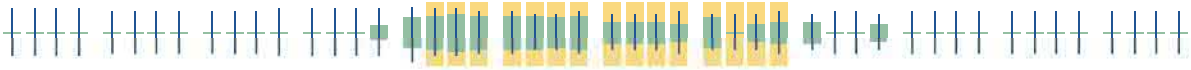


Whimbrel BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willet BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design

or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.