



**NOTICE OF INTENT**

**EMMANUEL COLLEGE  
ROBERTO CLEMENTE FIELD PROJECT  
BOSTON, MASSACHUSETTS**

**April 1, 2019**

**Prepared for:**

Emmanuel College  
400 The Fenway  
Boston, MA

**Prepared by:**

Gale Associates, Inc.  
163 Libbey Industrial Parkway  
Weymouth, MA 02189  
Gale JN 717890

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EMMANUEL COLLEGE  
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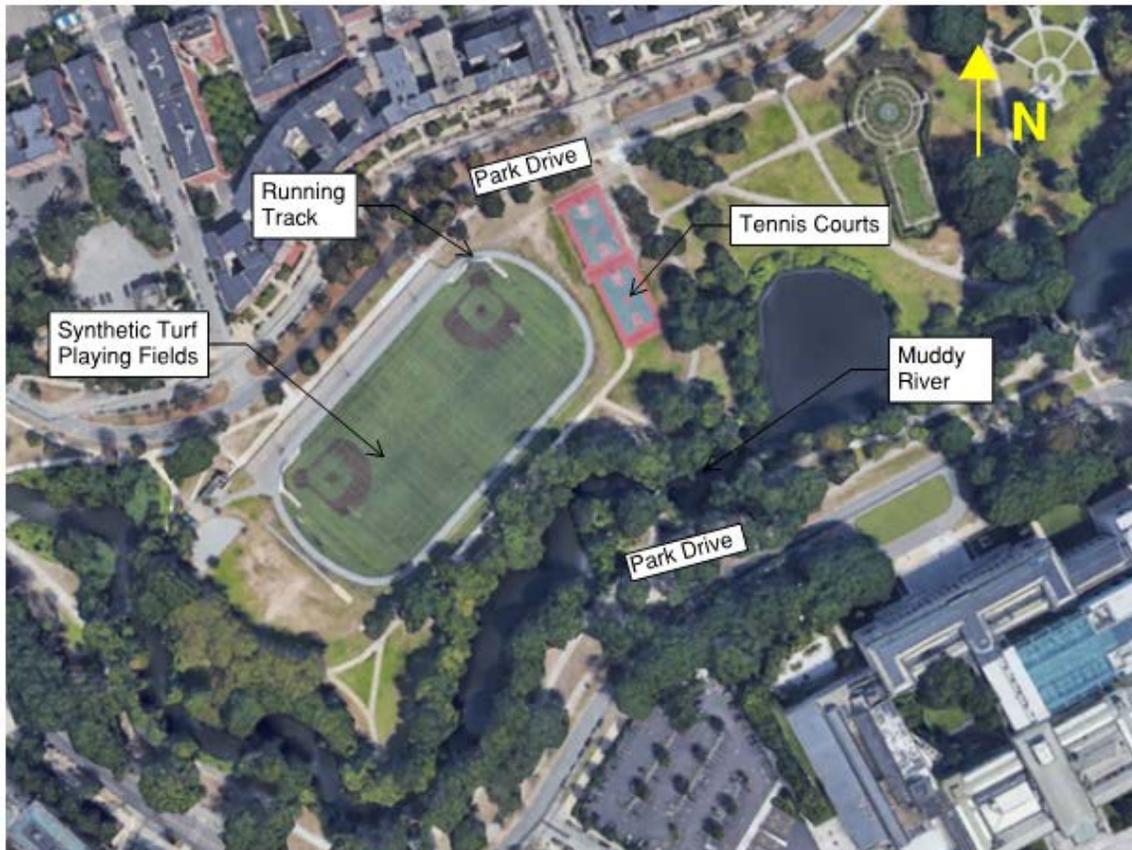
Attachments

- 1. Notice of Intent (WPA Form 3 – MassDEP)
- 2. FIMA Flood Insurance Rate Map # 25025C0078G
- 3. Affidavit of Services Form  
Abutter Notification Form  
100' Certified Abutter List
- 4. Project Plans
- 5. Project Specifications

## 1.0 PROJECT NARRATIVE

Boston Parks and Recreation Department (BPRD), in partnership with Emmanuel College (Emmanuel), proposes to renovate the existing synthetic turf field at Roberto Clemente Field. The proposed renovations will consist of the removal of the existing synthetic turf surface and replacing with new synthetic turf, the installation of a shock pad below the carpet for added player safety, and the resurfacing of the existing running track around the field. This Notice of Intent is being filed because work is proposed within the Bordering Land Subject to Flooding (BLSF), the 100- Foot Buffer Zone to Bordering Vegetated Wetland (BVW) and Inland Bank.

## 2.0 EXISTING CONDITIONS



*Figure 1- Existing Conditions Map*

The playing field and track are part of the Back-Bay Fens Park, owned by the City of Boston, Massachusetts. The synthetic turf playing field and track are proposed to be resurfaced. The field and track are generally considered to be “flat,” with the elevation of the field ranging between 11- and 12-feet Boston City Base (BCB) (4.54 and 5.54 feet North American Vertical Datum 1988 (NAVD)). The project is generally bounded

by the Muddy River to the south and west, tennis courts to the east, and Park Drive to the North. Figure 1 depicts existing conditions of the site.

### **Wetland Resources**

Five (5) State jurisdictional wetland resources were delineated in the Muddy River Area: Land Under Water, Inland Bank, Bordering Vegetated Wetland (BVW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RFA); all associated with the Muddy River. The delineation was obtained from the Muddy River Restoration Project, prepared by CDM Smith dated May 2018 and provided to Gale by BPRD. The boundaries are presented on the attached plans for this NOI. Existing conditions for each resource area are described below and are summarized per our understanding of the original 2008 NOI application and current available data from GIS and FEMA.



*Figure 2- Wetland Resources Map*

### **Land Under Water**

Land Under Water is defined as: *“the land beneath any creek, river, stream pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock.”* Land Under Water near the project site is associated with the Muddy River and is assumed to be a mixture of organic muck and fine sediments.

### ***Inland Bank***

Bank is defined as “the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or in the absence of these, it occurs between a water body and an upland.” The top of Inland Bank extends to the mean annual flood level in the Muddy River which is 8.5 Boston City Base (BCB). The 100-foot buffer Zone to the Inland Bank in the area is characterized by vegetated area, maintained lawn, public roadways and gravel pathways.

### ***Bordering Vegetated Wetlands***

Bordering Vegetated Wetlands (BVW) are wetlands that border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps, and bogs. Bordering Vegetated Wetlands are areas where soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of a BVW is the line within which is 50% or more of the vegetation consists of wetland indicator plants and saturated or inundated conditions exist.

### ***Bordering Land Subject to Flooding***

The boundary of Bordering Land Subject to Flooding (BLSF) is “the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm.” Said Boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program. The 100-year flood elevation for the Muddy River at this location ranges from 14.46 feet to 15.46 feet BCB (8-9 feet NAVD 88) in the project area. Please see the FIRM Map below in Figure 3. The entire project site is within BLSF.

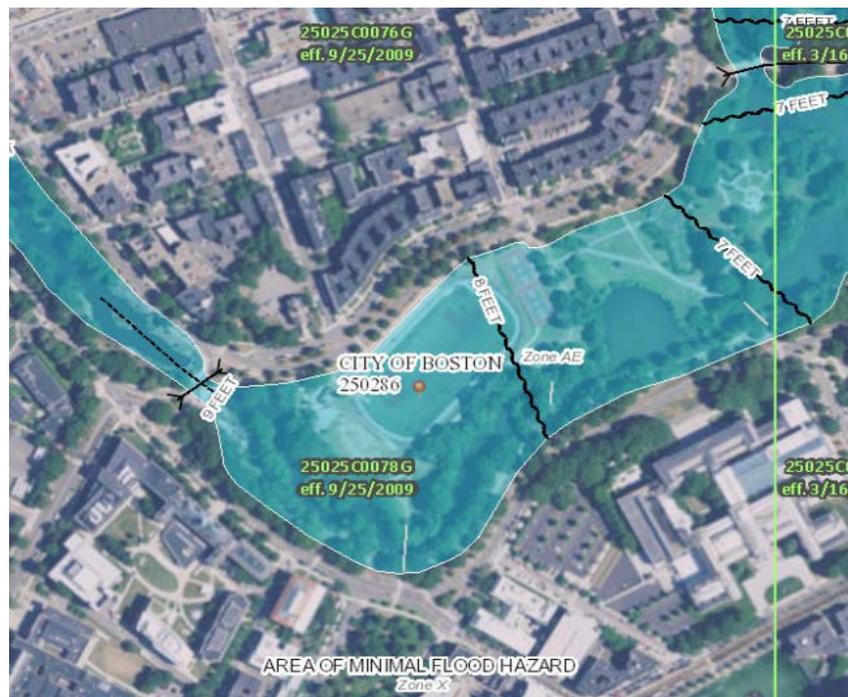


Figure 3- FIRM Flood Map

### **3.0 WORK PROPOSED**

BPRD and Emmanuel are proposing the following work:

- Replacement of the synthetic turf playing surface including the salvage and reuse of the existing sand and rubber infill, fine grading of the base stone, the installation of a shock pad for enhanced player safety.
- The resurfacing of the existing rubber track and repair of cracks.

The proposed project scope lies within the footprint of the existing field facility and there is no alteration to the BVW or Riverfront Area proposed. Work will occur within the BLSF and the 100-foot buffer zone to the BVW and Inland Bank; however, the field is being replaced in kind and the stormwater management system is not changing, therefore a Stormwater Management Report has not been submitted. The only change to the original design is that a shockpad is proposed to be added to the subbase of the synthetic turf. The proposed shockpad is a highly permeable 17mm (0.7 inch) thick polypropylene extruded pad with a void ratio of 20 percent.

According to the NOI submitted by CDM, the subbase of the existing turf is composed of 12 inches of crushed stone base, and the infilled artificial surface was installed directly on top of the crushed stone. The existing field has a 2.5-inch pile height. Gale proposes to use a shorter 2-inch pile height to allow for the shock pad to sit on top of the existing stone base and hence keep all elevations, stormwater and compensatory flood volumes unchanged. Please refer to Detail 5 & 6 on Sheet 501 in the plan set, enclosed.



April 23, 2019

Gale Associates, Inc.

163 Libbey Parkway | Weymouth, MA 02189

P 781.335.6465 F 781.335.6467

www.galeassociates.com

City of Boston Conservation Commission  
Boston City Hall, Room 709  
Boston, Massachusetts 02201

Re: Notice of Intent-Supplemental Information Requested  
Roberto Clemente Field Improvements  
Gale JN 717890

Dear Conservation Commission Members:

Gale Associates, Inc. (Gale) is pleased to submit the supplemental information for the above referenced project, as requested by the City of Boston Conservation Commission (CBCC). The Roberto Clemente Field project at Emmanuel College proposes work within the Bordering Land Subject to Flooding (BLSF) and the 100-ft Buffer Zone of a Bordering Vegetated Wetland (BVW).

On April 18, 2019, the CBCC requested a narrative describing how the project does or does not meet the performance standards of each resource area, and a revised plan set showing the BLSF delineated by CDM Smith in the RDA dated February 2018. The plan set is enclosed with this letter.

The following narrative describes the performance standards detailed in the Wetland Protection Act, 310 CMR: Department of Environmental Protection, Wetlands Protection, for the resource areas described above, and how the project meets the requirements of each.

#### **10.57: Bordering Land Subject to Flooding (BLSF)**

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

The proposed project does not result in flood storage volume being lost or altered. The proposed conditions maintain existing elevations and flood storage capacity.

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

The *proposed* project does not restrict flow, so as to cause an increase in flood stage or velocity. As described in the Stormwater Management Report, the stormwater drainage is not altered in this project.

3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for*

**CELEBRATING 50 YEARS**



*which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

The proposed project will temporarily alter approximately 137,000SF within the BLSF; however, the project is not anticipated to disturb wildlife. Furthermore, the project is not within the area of critical habitat or in close proximity to a vernal pool.

### **10.55 Bordering Vegetated Wetlands (BVW)**

1. *General Performance Standards. (a) Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.*

Work is not proposed within the BVW.

2. *"Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost...."*

Work is not proposed within the BVW. There is no loss of BVW.

3. *"Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of a portion of Bordering Vegetated Wetland...."*

Work is not proposed within the BVW. There is no loss of BVW.

4. *"Notwithstanding the provisions of 310 CMR 10.55(4)(a),(b) and (c), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59."*

The Roberto Clemente Field project is not within a specified habitat of rare vertebrate or invertebrate species; therefore they will not have an adverse effect on specified habitats.

*(e) "Any proposed work shall not destroy or otherwise impair any portion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern designated by the Secretary of Energy and Environmental Affairs under M.G.L. c. 21A, § 2(7) and 301 CMR 12.00: Areas of Critical Environmental Concern."*

The BVW is not within an Area of Critical Environmental concern.



We understand that the next public hearing is scheduled for May 1, 2019. We request that this project be placed on your Agenda.

Please call me at (781) 335-6465 or email at [jmp@gainc.com](mailto:jmp@gainc.com), if you want to schedule a site visit. Please do not hesitate to contact me, if you have any questions regarding the NOI and corresponding Stormwater Report. We look forward to working with you on this project.

Best regards,

GALE ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "John M. Perry".

John M. Perry, P.E.  
Chief Civil Engineer

A handwritten signature in blue ink, appearing to read "Margaret J. Laracy".

Margaret J. Laracy, EIT  
Senior Staff Engineer

Enclosures:

Revised Roberto Clemente Field Plans, dated 4/23/19



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

**WPA Form 3 – Notice of Intent**

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston

City/Town

**Important:**

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



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

**A. General Information**

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

Killamock Street and Park Drive

a. Street Address

Boston

b. City/Town

c. Zip Code

Latitude and Longitude:

42°20'26.441" N

71°5'50.981" W

d. Latitude

e. Longitude

N/A

0504175000

f. Assessors Map/Plat Number

g. Parcel /Lot Number

2. Applicant:

Sr. Anne M.

a. First Name

Donovan, SND

b. Last Name

Emmanuel College

c. Organization

400 The Fenway

d. Street Address

Boston

e. City/Town

MA

f. State

02115

g. Zip Code

(617) 735-9822

h. Phone Number

(617) 735-9808

i. Fax Number

donovan@emmanuel.edu

j. Email Address

3. Property owner (required if different from applicant):

Check if more than one owner

Christoper R.

a. First Name

Cook

b. Last Name

City of Boston- Parks and Recreation

c. Organization

1010 Mass Ave. Third Floor

d. Street Address

Boston

e. City/Town

MA

f. State

02218

g. Zip Code

617.635.4505

h. Phone Number

i. Fax Number

parks@boston.gov

j. Email address

4. Representative (if any):

John

a. First Name

Perry

b. Last Name

Gale Associates, Inc.

c. Company

163 Libbey Parkway

d. Street Address

Weymouth

e. City/Town

MA

f. State

02189

g. Zip Code

781.335.6465

h. Phone Number

781.335.6467

i. Fax Number

jmp@gainc.com

j. Email address

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

N/A - fee exempt

a. Total Fee Paid

N/A - fee exempt

b. State Fee Paid

N/A - fee exempt

c. City/Town Fee Paid



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**A. General Information (continued)**

6. General Project Description:

Replacement of the artificial turf at Roberto Clemente Field, and the addition of a shock pad below the turf. Scope also includes the resurfacing of the 3 lane track.

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

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

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

- 1.  Yes  No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

Suffolk	
a. County	b. Certificate # (if registered land)
08782	704
c. Book	d. Page Number

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

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

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



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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	137,000	137,000
	1. square feet	2. square feet
	0	0
e. <input type="checkbox"/> Isolated Land Subject to Flooding	3. cubic feet of flood storage lost	4. cubic feet replaced
	1. square feet	
f. <input type="checkbox"/> Riverfront Area	2. cubic feet of flood storage lost	3. cubic feet replaced
	1. Name of Waterway (if available) - <b>specify coastal or inland</b>	

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

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

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

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



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

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

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

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

	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	
	_____	
	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	_____	
	1. cubic yards dredged	
l. <input type="checkbox"/> 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



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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](http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm).

- a.  Yes  No **If yes, include proof of mailing or hand delivery of NOI to:**

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

b. Date of map \_\_\_\_\_

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

- c. Submit Supplemental Information for Endangered Species Review\*

1.  Percentage/acreage of property to be altered:
  - (a) within wetland Resource Area \_\_\_\_\_ percentage/acreage
  - (b) outside Resource Area \_\_\_\_\_ percentage/acreage
2.  Assessor's Map or right-of-way plan of site

2.  Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work \*\*
  - (a)  Project description (including description of impacts outside of wetland resource area & buffer zone)
  - (b)  Photographs representative of the site

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

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



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

(c)  MESA filing fee (fee information available at [http://www.mass.gov/dfwele/dfw/nhosp/regulatory\\_review/mesa/mesa\\_fee\\_schedule.htm](http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/mesa/mesa_fee_schedule.htm)). Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

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

(d)  Vegetation cover type map of site

(e)  Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

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

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

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

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

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

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

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

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

North Shore - Hull to New Hampshire border:

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

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



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

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

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
- a.  Yes  No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
- 
- b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
- a.  Yes  No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
- a.  Yes  No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
- a.  Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
1.  Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
  2.  A portion of the site constitutes redevelopment
  3.  Proprietary BMPs are included in the Stormwater Management System.
- b.  No. Check why the project is exempt:
1.  Single-family house
  2.  Emergency road repair
  3.  Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

**D. Additional Information**

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

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

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

1.  USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2.  Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

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

## 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.

Roberto Clemente Field Emmanuel College - Permit Set

a. Plan Title

Gale Associates, Inc.

John M. Perry, P.E.

b. Prepared By

c. Signed and Stamped by

April 1, 2019

1" = 30'

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8.  Attach NOI Wetland Fee Transmittal Form

9.  Attach Stormwater Report, if needed.

## E. Fees

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

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

2. Municipal Check Number

016783

3. Check date

4/1/19

4. State Check Number

Bruce

5. Check date

White

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:

MassDEP File Number
Document Transaction Number
Boston
City/Town

**F. Signatures and Submittal Requirements**

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

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

<i>St Anne M. Donovan, S20</i>	<i>3/28/19</i>
1. Signature of Applicant	2. Date
<i>[Signature]</i>	<i>3/28/19</i>
3. Signature of Property Owner (if different)	4. Date
<i>[Signature]</i>	<i>4/01/19</i>
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 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:

Killamock Street and Park Drive  
 a. Street Address  
 Boston  
 b. City/Town  
 \_\_\_\_\_  
 c. Check number  
 \_\_\_\_\_  
 d. Fee amount

2. Applicant Mailing Address:

Sr. Anne M.  
 a. First Name  
 Emmanuel College  
 c. Organization  
 400 The Fenway  
 d. Mailing Address  
 Boston  
 e. City/Town  
 MA  
 f. State  
 02155  
 g. Zip Code  
 (617) 735-9822  
 h. Phone Number  
 (617) 735-9808  
 i. Fax Number  
 donovan@emmanuel.edu  
 j. Email Address

3. Property Owner (if different):

Christopher R.  
 a. First Name  
 City of Boston - Parks and Recreation  
 c. Organization  
 1010 Mass Ave. Third Floor  
 d. Mailing Address  
 Boston  
 e. City/Town  
 MA  
 f. State  
 02218  
 g. Zip Code  
 617.635.4505  
 h. Phone Number  
 \_\_\_\_\_  
 i. Fax Number  
 parks@boston.gov  
 j. Email Address

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

**B. Fees**

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

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

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

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

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

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

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



**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
Category 1 - Site Work	1	\$110	\$110
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Step 5/Total Project Fee:** \_\_\_\_\_

**Step 6/Fee Payments:**

Total Project Fee:	<u>\$110</u>
State share of filing Fee:	<u>\$42.50</u>
City/Town share of filing Fee:	<u>Exempt</u>
	a. Total Fee from Step 5
	b. 1/2 Total Fee <b>less</b> \$12.50
	c. 1/2 Total Fee <b>plus</b> \$12.50

**C. Submittal Requirements**

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

Department of Environmental Protection  
 Box 4062  
 Boston, MA 02211

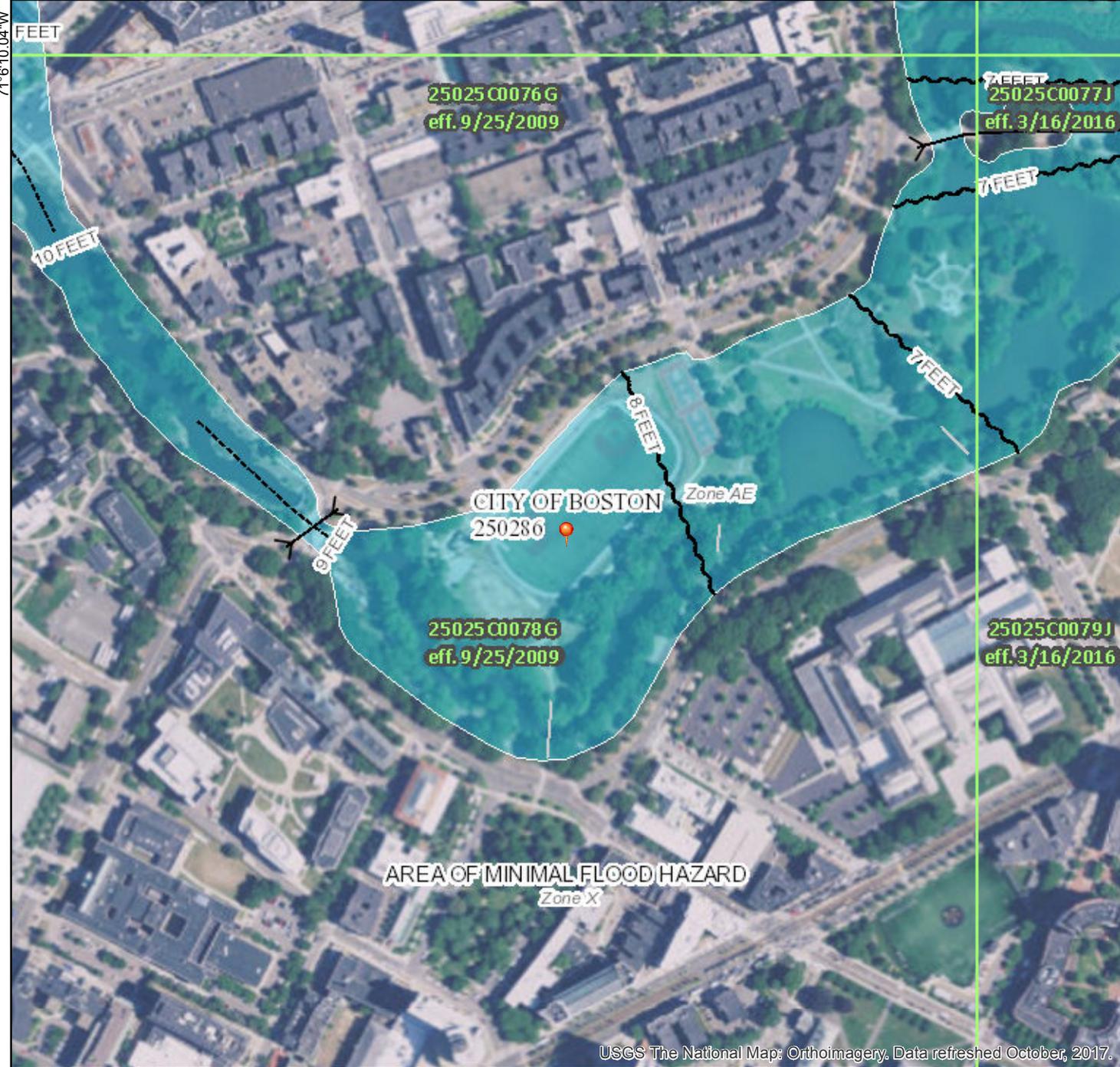
- b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

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

# National Flood Hazard Layer FIRMMette



42°20'38.87"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017. 0 250 500 1,000 1,500 2,000 Feet 1:6,000 42°20'12.28"N

## Legend

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

- |                                    |  |   |
|------------------------------------|--|---|
| <b>SPECIAL FLOOD HAZARD AREAS</b>  |  | Without Base Flood Elevation (BFE)<br>Zone A, V, A99  |
|                                    |  | With BFE or Depth Zone AE, AO, AH, VE, AR   |
|                                    |  | Regulatory Floodway   |
| <b>OTHER AREAS OF FLOOD HAZARD</b> |  | 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  |
| <b>OTHER AREAS</b>                 |  | NO SCREEN Area of Minimal Flood Hazard Zone X   |
|                                    |  | Effective LOMRs   |
|                                    |  | Area of Undetermined Flood Hazard Zone D  |
| <b>GENERAL STRUCTURES</b>          |  | Channel, Culvert, or Storm Sewer  |
|                                    |  | Levee, Dike, or Floodwall   |
| <b>OTHER FEATURES</b>              |  | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation   |
|                                    |  | 17.5  |
|                                    |  | Coastal Transect  |
|                                    |  | Base Flood Elevation Line (BFE)   |
|                                    |  | Limit of Study  |
|                                    |  | Jurisdiction Boundary   |
|                                    |  | Coastal Transect Baseline   |
|                                    |  | Profile Baseline  |
|                                    |  | Hydrographic Feature  |
| <b>MAP PANELS</b>                  |  | Digital Data Available  |
|                                    |  | No Digital Data Available   |
|                                    |  | Unmapped  |

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 2/12/2019 at 9:55:23 AM 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.



71°53'25.97"W

Parcel ID	Parcel Address	Parcel City	Parcel State	Parcel Zip	Owner Name	Owner Address	Owner City	Owner State	Owner Zip
0504271000	107 Park Drive	Boston	MA	02215	Community Resources	500 Harrison Ave	Boston	MA	02118
0504272000	111 Park Drive	Boston	MA	02215	Guarini Rosalyn E Trust	896 Beacon Street	Boston	MA	02215
0504273000	117 Park Drive	Boston	MA	02215	Levenson Norman A MTGEE	896 Beacon Street	Boston	MA	02215
0504274000	121 Park Drive	Boston	MA	02215	Hemenway Park Drive LLC	625 Mt auburn St, Suite 210	Cambridge	MA	02138
0504275000	125 Park Drive	Boston	MA	02215	Lisa Simon	125 Park Drive #125-25	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Paul Etal Milone	4 Winslow Sq Lane	Marblehead	MA	01945
0504275000	125 Park Drive	Boston	MA	02215	Curt F Bletzer	300 Market Street	Brighton	MA	02135
0504275000	125 Park Drive	Boston	MA	02215	Norberto Tecson	125 Park Drive #3	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Sridhar Vajapeyam	125 Park Drive #125-4	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Ernesto Schirmacher	3 Plowshare Ct	Mansfield	MA	02048
0504275000	125 Park Drive	Boston	MA	02215	Alexander Grace	125 Park Drive #8	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Daniel S Lee	21 Hammon Pond PW #3	Chestnut Hill	MA	02467
0504275000	125 Park Drive	Boston	MA	02215	John J Donovan	125 Park Drive #125-12	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Alexander Bresler	120 Pond St	Osterville	MA	02655
0504275000	125 Park Drive	Boston	MA	02215	Riccardo Barcieri	125 Park Drive #125-14	Boston	Ma	02215
0504275000	125 Park Drive	Boston	MA	02215	Ross Ozer	5 Copley St	Newton	MA	02458
0504275000	125 Park Drive	Boston	MA	02215	Hsiu-Lien Han	125 Park Dr #125-18	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Yevgeny Y Lobkov	125 Park Drive #125-21	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Michael T Curry	125 Park Drive #22	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Alexander Bresler	120 Pond St	Osterville	MA	02655
0504275000	125 Park Drive	Boston	MA	02215	Bonnie Thryselius	125 Park Drive #125-24	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Donald W Hastie	38 Sprague St	Dedham	MA	02026
0504275000	125 Park Drive	Boston	MA	02215	Tiberiu Popa	78 Arborway	Jamaica Plain	MA	02130
0504275000	125 Park Drive	Boston	MA	02215	Bruce Ring	15 Wedgewood Drive	North Easton	MA	02356
0504275000	125 Park Drive	Boston	MA	02215	Sylvia B Delgado	125 Park Drive #35	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Chantao Anthony Liang	75 Thurston Rd	Newton	MA	02464
0504275000	125 Park Drive	Boston	MA	02215	Donald W Hastie	38 Sprague St	Dedham	MA	02026
0504275000	125 Park Drive	Boston	MA	02215	David TS Tong	20 Darby Drive	Mansfield	MA	02048
0504275000	125 Park Drive	Boston	MA	02215	Dianne S Lemmon	125 Park Drive #43	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Dawn Enterprise LLC	265 Hanks Hill Rd	Storrs	CT	06268
0504275000	125 Park Drive	Boston	MA	02215	Qin Dehao	3 Crestwood Drive	Andover	MA	01810
0504275000	125 Park Drive	Boston	MA	02215	Anne N Brooks	131 Park Drive #2	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Fenway By the Park Condo TR	125 Park Drive	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Kevin M Mann	125 Park Drive #125B1	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Therea M Patch	PO Box 397	North Troy	VT	05859

Parcel ID	Parcel Address	Parcel City	Parcel State	Parcel Zip	Owner Name	Owner Address	Owner City	Owner State	Owner Zip
0504275000	125 Park Drive	Boston	MA	02215	Maryanne Polanski	12 Lattimer St	Marblehead	MA	01945
0504275000	125 Park Drive	Boston	MA	02215	Craig D Smith	125 Park Drive #125-9	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Benjamin Seisler	125 Park Drive #125-10	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Ross J Ozer	125 Park Drive #125-16	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Vikramjit Chaudhary	1087 May St	Naugatuck	CT	06770
0504275000	125 Park Drive	Boston	MA	02215	Jianzhuang Yang	24 Saint Paul St #5	Brookline	MA	02446
0504275000	125 Park Drive	Boston	MA	02215	Kristina J Ellison	125 Park Drive #20	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Murray Smith	2522 Round Pointe Dr	Haverstraw	NY	10927
0504275000	125 Park Drive	Boston	MA	02215	Iliia Droujinine	125 Park Drive #27	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	FUNG YIN NAM DALTON	125 Park Drive #28	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Phaedra Thomas	125 Park Drive #125-29	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Shilpa Hattangadi	125 Park Drive #32	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Curt F Bletzer	300 Market Street	Brighton	MA	02135
0504275000	125 Park Drive	Boston	MA	02215	Dawn Enterprise LLC	265 Hanks Hill Rd	Storrs	Ct	06268
0504275000	125 Park Drive	Boston	MA	02215	John M Bossert	500 W Middlefield Rd #5	Mountain View	CA	94043
0504275000	125 Park Drive	Boston	MA	02215	Harsh Agarwal	125 Park Drive #41	Boston	Ma	02215
0504275000	125 Park Drive	Boston	MA	02215	Martin P Thornton	125 Park Dr #42	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Matthew Shanaman	15424 W Becker Ln	Surprise	AZ	85379
0504275000	125 Park Drive	Boston	MA	02215	Frank L Fragomeni	7 Rutland Sq	Boston	MA	02118
0504275000	125 Park Drive	Boston	MA	02215	Zhong-Hua Yan	39 Philip Rd	Lexington	MA	02421
0504275000	125 Park Drive	Boston	MA	02215	Nancy Mei Chai Wong	10666 Mira Lago Terrace	San Diego	CA	92131
0504275000	125 Park Drive	Boston	MA	02215	David Woo	131 Park Drive #8	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Mark S Trent	131 Park Drive #131-9	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Behnam, Tabrizi	102 Brown Rd	Harvard	MA	01451
0504275000	125 Park Drive	Boston	MA	02215	Chii-Ell Etal Tsai	14 Robbin Rd	Canton	MA	02021
0504275000	125 Park Drive	Boston	MA	02215	Marina Gayl	131 Park Drive #16	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Frank L Westerhoff III TS	PO Box 620049	Newton	MA	02462
0504275000	125 Park Drive	Boston	MA	02215	Sharon A Steinberg	1635 Norfolk St #1	Houston	TX	77006
0504275000	125 Park Drive	Boston	MA	02215	Claudia Moreno	131 Park Drive #23	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	William T Faucon	131 Park Drive #26	Boston	Ma	02215
0504275000	125 Park Drive	Boston	MA	02215	Tatiana Lucente Stabile TS	131 Park Drive #27	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Walker M Platt JR	41 Park Drive	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Yifu Xie	131 Park Drive #29	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Ross J Ozer	131 Park Drive #33	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Maria Oconnor	131 Park Drive #131-34	Boston	MA	02215

Parcel ID	Parcel Address	Parcel City	Parcel State	Parcel Zip	Owner Name	Owner Address	Owner City	Owner State	Owner Zip
0504275000	125 Park Drive	Boston	MA	02215	Mary Jo Evans Narby	131 Park Drive #131-37	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Gregg Aronoff	12 Sandy Drive	Acton	Ma	01720
0504275000	125 Park Drive	Boston	MA	02215	Chii-Ell Etal Tsai	14 Robbin Rd	Canton	MA	02021
0504275000	125 Park Drive	Boston	MA	02215	Marion A Gringas	127 South Twyckenham Dr	South Bend	IN	46617
0504275000	125 Park Drive	Boston	MA	02215	Park Drive Ring Realty Trust	15 Wedgewood Drive	N Easton	MA	02356
0504275000	125 Park Drive	Boston	MA	02215	Walter Rozamus Leonard JR	131 Park Drive #G2	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Dale Qin	3 Crestwood Drive	Andover	MA	01810
0504275000	125 Park Drive	Boston	MA	02215	Curt F Bletzer	300 Market Street	Brighton	MA	02135
0504275000	125 Park Drive	Boston	MA	02215	Nejat Lalehpour	131 Park Drive #11	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	George A Ryan JR	131 Park Drive #12A	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Shu Jin	131 Park Drive #14	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Elliot S Ring	131 Park Drive	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Manivakkam P Krishanan	1402 Harrier Ct	Sunnyvale	CT	94087
0504275000	125 Park Drive	Boston	MA	02215	Ian Klein	96 Dana Place	Needham	MA	02494
0504275000	125 Park Drive	Boston	MA	02215	Frank L Westerhoff	PO Box 620049	Newton	MA	02462
0504275000	125 Park Drive	Boston	MA	02215	James Gao Liu	35 Mercury Dr	Shrewsbury	MA	01545
0504275000	125 Park Drive	Boston	MA	02215	Lynd Matt	131 Park Drive #30	Boston	Ma	02215
0504275000	125 Park Drive	Boston	MA	02215	Sanjeev Sharma	2061 Washington St	Newton	MA	02462
0504275000	125 Park Drive	Boston	MA	02215	Michael Bernier	131 Park Drive #32	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Humberto Bernal	131 Park Drive #131-35	Boston	Ma	02215
0504275000	125 Park Drive	Boston	MA	02215	Jaw Investment Properties	300 Boylston St #518	Boston	MA	02116
0504275000	125 Park Drive	Boston	MA	02215	Katja Woltmann	131 Park Drive #131-41	Boston	MA	02215
0504275000	125 Park Drive	Boston	MA	02215	Long Term Rentals LLC	13 Jones Road	Pelham	NH	03076
0504275000	125 Park Drive	Boston	MA	02215	George Draper	444 East Side Road	Sorrento	ME	04677
0504275000	125 Park Drive	Boston	MA	02215	David E Sherf	131 Park Drive #G3	Boston	MA	02215
0504277000	137 Park Drive	Boston	MA	02215	Joy S Gilbert Trst	11 Tetlow	Boston	MA	02115
0504278000	143 Park Drive	Boston	MA	02215	Joy S Gilbert Trst	11 Tetlow	Boston	MA	02115
0504279000	149 Park Drive	Boston	MA	02215	Parkside Tower LLC	625 Mt Auburn St Ste 210	Cambridge	MA	02138
0504280000	151 Park Drive	Boston	MA	02138	Parkside Tower LLC	625 Mt Auburn St Ste 210	Cambridge	MA	02138
2100001000	165 Park Drive	Boston	MA	02215	Parish of Holy Trinity	165 Park Drive	Boston	MA	02215
2100002000	Park Drive	Boston	MA	02215	Presidents & Fellows	Park Dr	Boston	MA	02215
2100016000	Kilmarnock St	Boston	MA	02215	Stanhope Garage Inc.	76 Seattle St	Allston	MA	02134

NOTIFICATION TO ABUTTERS UNDER THE  
MASSACHUSETTS WETLANDS PROTECTION ACT

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

- A. The name of the applicant is **the City of Boston Parks and Recreation Department.**
- B. The applicant has filed a **Notice of Intent** with the **Boston Conservation Commission** seeking permission to remove, fill, dredge or alter an Area Subject to Protection under the Wetlands Protection Act (MGL chp. 131, Sec. 40)\*
- C. The address of the lot(s) where the activity is proposed is **Clemente Field on Park Drive.**
- D. The **Notice of Intent** may be examined at the **Boston Environment Department** at the **Boston City Hall, One City Hall Plaza, Room 709, Boston, Massachusetts 02201** between the hours of **8:00 AM** and **4:00 PM** Monday through Friday.
- E. Information about the Notice of Intent may be obtained from **Gale Associates, Inc., 163 Libbey Industrial Parkway, Weymouth, MA 02189, Attn: John Perry** or by calling **(781) 335-6465** between **9 AM** and **5 PM** Monday through Friday.
- F. **We understand that the hearing will be held on Wednesday, May 1, 2019 at 6:00 PM in Boston City Hall, 5<sup>th</sup> Floor, in the Piemonte Room.**
- G. You may contact your local Conservation Commission or the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact the **Boston Conservation Commission**, please go to <https://www.boston.gov/public-notices> call the **Northeast Regional Office at 978-694-3200.**

*\*This project involves work in the Bordering Land Subject to Flooding and the 100-foot Buffer to Bordering Vegetated Wetlands or Inland Bank. The project consists of the replacement of the fiber and carpet at the synthetic turf field as well as the installation of a shockpad below grade. The scope also includes the resurfacing of the track around the synthetic turf fields.*

## Affidavit of Service

Under the Massachusetts Wetlands Protection Act

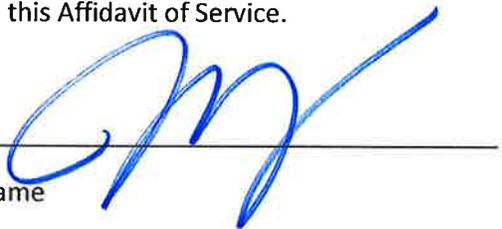
(to be submitted to the Massachusetts Department of Environmental Protection and the Conservation Commission when filing a Notice of Intent)

I, John M. Perry, P.E., hereby certify under the pains and penalties of perjury that on April 3, 2019, I gave notification 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:

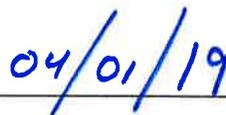
A Notice of Intent filed under the Massachusetts Wetlands Protection Act by the City of Boston with the Boston Conservation Commission on April 17, 2019 for the Emmanuel College Roberto Clemente Field Project.

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

Name

A handwritten signature in blue ink, appearing to be 'J.M. Perry', written over a horizontal line.

Date

A handwritten date '04/01/19' in blue ink, written over a horizontal line.



# Checklist for Stormwater Report

## A. Introduction

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



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

The Stormwater Report must include:

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

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

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

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

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

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



# Checklist for Stormwater Report

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## 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

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Signature and Date

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## 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

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## Checklist (continued)

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

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
  - Credit 1
  - Credit 2
  - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): infiltration under artificial field

### Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - Static
  - Simple Dynamic
  - Dynamic Field<sup>1</sup>
- 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.

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<sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

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

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
  - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
    - is within the Zone II or Interim Wellhead Protection Area
    - is near or to other critical areas
    - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
    - involves runoff from land uses with higher potential pollutant loads.
  - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
  - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
  - The ½" or 1" Water Quality Volume or
  - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



# Checklist for Stormwater Report

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## Checklist (continued)

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

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
  - Limited Project
  - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - Bike Path and/or Foot Path
- Redevelopment Project
- Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

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

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

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# Checklist for Stormwater Report

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## Checklist (continued)

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

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - Name of the stormwater management system owners;
  - Party responsible for operation and maintenance;
  - Schedule for implementation of routine and non-routine maintenance tasks;
  - Plan showing the location of all stormwater BMPs maintenance access areas;
  - Description and delineation of public safety features;
  - Estimated operation and maintenance budget; and
  - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.



**STORMWATER MANAGEMENT REPORT**

**ROBERTO CLEMENTE FIELD  
TURF REPLACEMENT PROJECT  
EMMANUEL COLLEGE  
BOSTON, MASSACHUSETTS**

**April 16, 2019**

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Reviewed by:

John M. Perry, PE  
Chief Civil Engineer



# **STORMWATER MANAGEMENT REPORT**

## **ROBERTO CLEMENTE FIELD TURF REPLACEMENT PROJECT EMMANUEL COLLEGE BOSTON, MASSACHUSETTS**

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Attachment 7: Operation and Maintenance & Erosion and Sediment Control Plan

Attachment 8: Illicit Discharge Statement

Attachment 9: Stormwater Pollution Prevention Plan



# Checklist for Stormwater Report

## A. Introduction

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



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

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.<sup>1</sup> This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
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In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

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

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

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

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



# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

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

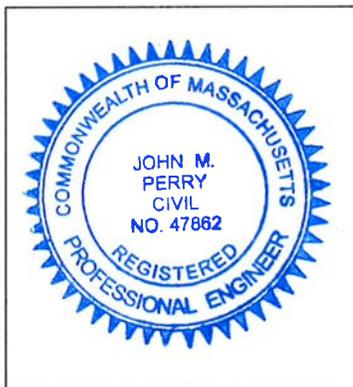
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that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

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

### Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



   
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

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## Checklist (continued)

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

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
  - Credit 1
  - Credit 2
  - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
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- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): infiltration under artificial field

### Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



# Checklist for Stormwater Report

---

## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

### Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
  - Static
  - Simple Dynamic
  - Dynamic Field<sup>1</sup>
- 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
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  - 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.

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<sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



# Checklist for Stormwater Report

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## Checklist (continued)

### Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

### Standard 4: Water Quality

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

- Good housekeeping practices;
  - Provisions for storing materials and waste products inside or under cover;
  - Vehicle washing controls;
  - Requirements for routine inspections and maintenance of stormwater BMPs;
  - Spill prevention and response plans;
  - Provisions for maintenance of lawns, gardens, and other landscaped areas;
  - Requirements for storage and use of fertilizers, herbicides, and pesticides;
  - Pet waste management provisions;
  - Provisions for operation and management of septic systems;
  - Provisions for solid waste management;
  - Snow disposal and plowing plans relative to Wetland Resource Areas;
  - Winter Road Salt and/or Sand Use and Storage restrictions;
  - Street sweeping schedules;
  - Provisions for prevention of illicit discharges to the stormwater management system;
  - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
  - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
  - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
  - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
    - is within the Zone II or Interim Wellhead Protection Area
    - is near or to other critical areas
    - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
    - involves runoff from land uses with higher potential pollutant loads.
  - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
  - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



# Checklist for Stormwater Report

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## 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 proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

### Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



# Checklist for Stormwater Report

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## Checklist (continued)

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

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
  - Limited Project
  - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
  - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
  - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
  - Bike Path and/or Foot Path
- Redevelopment Project
- Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

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

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

- Narrative;
  - Construction Period Operation and Maintenance Plan;
  - Names of Persons or Entity Responsible for Plan Compliance;
  - Construction Period Pollution Prevention Measures;
  - Erosion and Sedimentation Control Plan Drawings;
  - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
  - Vegetation Planning;
  - Site Development Plan;
  - Construction Sequencing Plan;
  - Sequencing of Erosion and Sedimentation Controls;
  - Operation and Maintenance of Erosion and Sedimentation Controls;
  - Inspection Schedule;
  - Maintenance Schedule;
  - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# Checklist for Stormwater Report

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## Checklist (continued)

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

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

### Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
  - Name of the stormwater management system owners;
  - Party responsible for operation and maintenance;
  - Schedule for implementation of routine and non-routine maintenance tasks;
  - Plan showing the location of all stormwater BMPs maintenance access areas;
  - Description and delineation of public safety features;
  - Estimated operation and maintenance budget; and
  - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
  - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
  - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

### Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

## 2.0 PROJECT DESCRIPTION

Boston Parks and Recreation Department (BPRD), in partnership with Emmanuel College (Emmanuel), proposes to renovate the existing synthetic turf field at Roberto Clemente Field. The proposed renovations will consist of the removal of the existing synthetic turf surface and replacing with new synthetic turf, the installation of a shock pad below the carpet for added player safety, and the resurfacing of the existing running track around the field. This Stormwater Management Report is being filed concurrently to the Notice of Intent because work is proposed within the Bordering Land Subject to Flooding (BLSF), the 100-foot buffer zone to Bordering Vegetated Wetland (BVW) and Inland Bank. The Notice of Intent (NOI) is being filed with the City of Boston Conservation Commission and the Massachusetts Department of Environmental Protection (MA DEP) for the proposed work.

**It should be noted that this project was permitted, with a Stormwater Management Report, in 2008 under the current MA DEP Stormwater Standards and no portion of the turf replacement project or track resurfacing will change the drainage patterns, peak flows, site elevations or flood storage.**

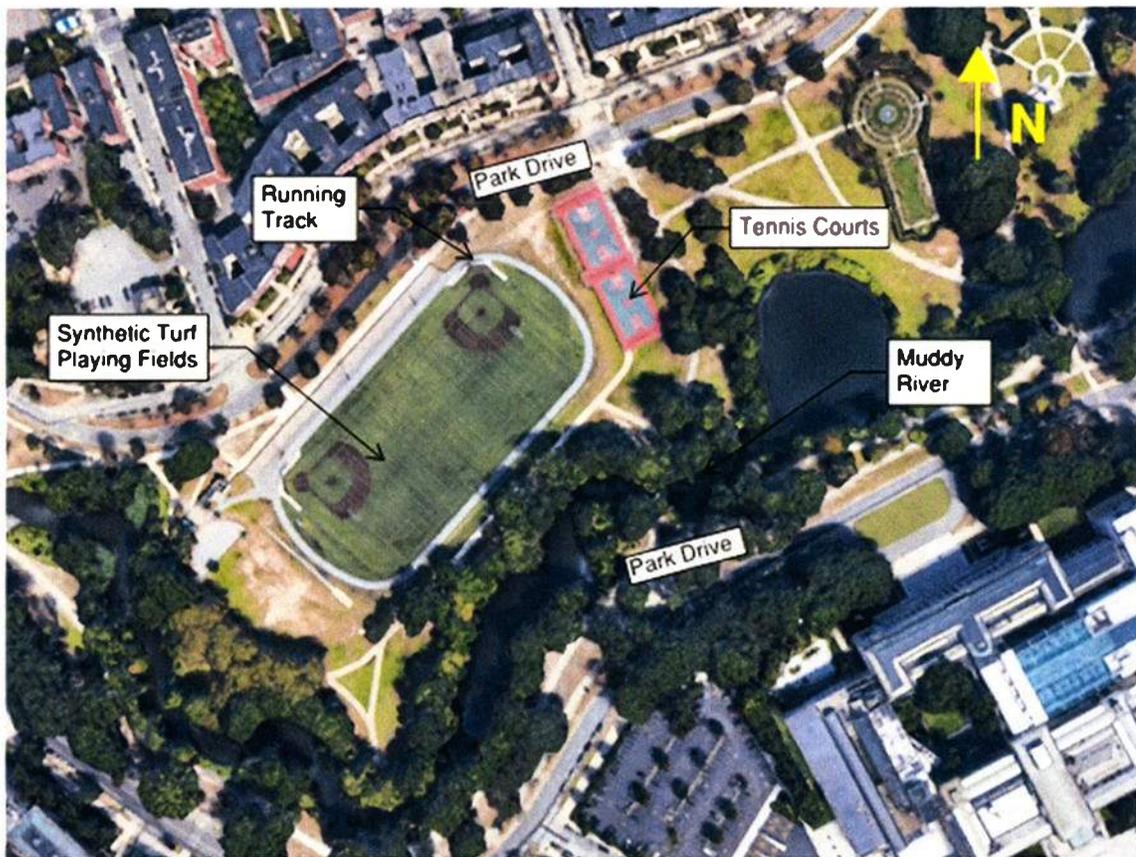


Figure 1- Existing Conditions Map

The playing field and track are part of the Back-Bay Fens Park, owned by the City of Boston, Massachusetts. The synthetic turf playing field and track are proposed to be resurfaced. The field and track are generally considered to be “flat,” with the elevation of the field ranging between 11- and 12-feet Boston City Base (BCB) (4.54 and 5.54 feet North American Vertical Datum 1988 (NAVD)). The project is generally bounded by the Muddy River to the south and west, tennis courts to the east, and Park Drive to the North. Figure 1 depicts existing conditions of the site.

**3.0 WETLANDS AND ENVIRONMENTAL RESOURCE AREAS ANALYSIS**

Five (5) State jurisdictional wetland resources were delineated in the Muddy River Area: Land Under Water, Inland Bank, Bordering Vegetated Wetland (BVW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RFA); all associated with the Muddy River. The delineation was obtained from the Muddy River Restoration Project, prepared by CDM Smith dated May 2018 and provided to Gale by BPRD. The boundaries are presented on the attached plans for this NOI. Existing conditions for each resource area are described below and are summarized per our understanding of the original 2008 NOI application and current available data from GIS and FEMA.

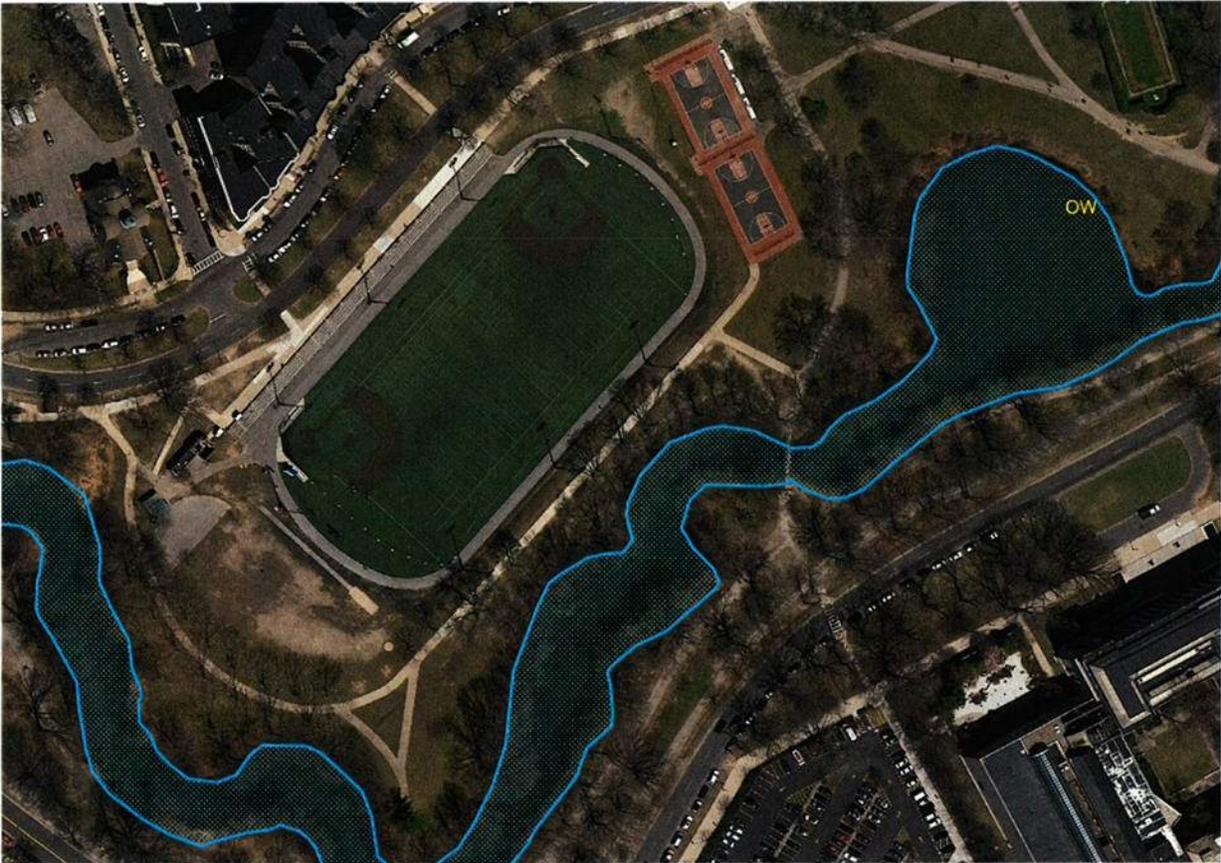


Figure 2- Wetland Resources Map

## **Regulatory Implications:**

Due to its adjacency to the Muddy River, the project falls within MassDEP State and local buffer and protection zones. The following is a summary of the buffer and protection zones within the project parcel, and if applicable, the scope of the project that is proposed in the specific zone:

### 1) Land Under Water

Land Under Water is defined as: *“the land beneath any creek, river, stream pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock.”* Land Under Water near the project site is associated with the Muddy River and is assumed to be a mixture of organic muck and fine sediments. There is no work proposed within the Land Under Water.

### 2) Inland Bank

Bank is defined as *“the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or in the absence of these, it occurs between a water body and an upland.”* The top of Inland Bank extends to the mean annual flood level in the Muddy River which is 8.5 Boston City Base (BCB). The 100-foot buffer zone to the Inland Bank in the area is characterized by vegetated area, maintained lawn, public roadways and gravel pathways. Portions of the proposed improvements, including the resurfacing of the track, the turf replacement at the synthetic turf field, and electrical upgrades are proposed within the 100' buffer zone to the inland bank.

### 3) Riverfront Area (310 CMR 10.58)

In the City of Boston, the Riverfront Area is defined as the area of land within 25 feet of the annual mean low water. The project site is near, but not within, the Riverfront Area of the Muddy River. Near the project site, the Riverfront Area consists of vegetated areas, gravel pathways, and maintained lawn. There is no work proposed within the Riverfront Area.

### 4) 100' Bordering Vegetated Wetland (BVW) Buffer (310 CMR 10.55).

Bordering Vegetated Wetlands (BVW) are wetlands that border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps, and bogs. Bordering Vegetated Wetlands are areas where soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of a BVW is the line within which is 50% or more of the vegetation consists of wetland indicator plants and saturated or inundated conditions exist.

Portions of the proposed improvements, including the resurfacing of the track, the turf replacement at the synthetic turf field, and electrical upgrades are proposed within the 100' BVW buffer zone. The amount of disturbed or improved areas within the buffer zone is equal to approximately 0.08 acres. As discussed in Section 6.2.2, the proposed improvements will not affect the peak flows of the runoff into the Muddy River from within the 100' BVW buffer.

5) Bordering Land Subject to Flooding

The boundary of Bordering Land Subject to Flooding (BLSF) is *"the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm."* Said Boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program. The 100-year flood elevation for the Muddy River at this location ranges from 14.46 feet to 15.46 feet BCB (8-9 feet NAVD 88) in the project area. Please see the FIRM Map below in Attachment 3. The entire project site is within BLSF.

6) Natural Heritage and Endangered Species Program (NHESP)

According to the 13<sup>th</sup> edition of the Massachusetts Natural Heritage Atlas (valid from October 1, 2008) published by the Natural Heritage and Endangered Species Program (NHESP), the property is not located within an *Estimated or Priority Habitat for Rare Species*. According to the MassGIS data layers, there are no certified or potential vernal pools on or in the vicinity of the site. Please reference Attachment 2 for the NHESP Map.

#### **4.0 SOILS INVESTIGATION**

A Soils Report is provided as Attachment 4. Information was taken from the USDA Natural Resources Conservation Service (NRCS) Soil Survey Report. The NRCS soils mapping indicates that the majority of the project site is defined as "653 Udorthents – sandy". A small portion of the site is defined as "6A – Scarborough mucky fine sandy loam" and "51A- Swansea Muck."

#### **5.0 STORMWATER MANAGEMENT CONCEPT**

Currently, the entire athletic complex consists of a synthetic turf field, an impervious track, gravel walking trails, and well-maintained grass area. Stormwater ultimately discharges to the Muddy River (Design Point 1) via two (2) existing outfalls.

In general, synthetic turf fields drain stormwater runoff vertically, as opposed to natural grass fields, which tend to sheet flow runoff. The synthetic turf and underdrainage acts as an infiltration basin with stormwater storage below the carpet. The proposed synthetic turf field is a permeable carpet that is designed to be installed on top of 17 mm polypropylene shock pad, with 20% void space, an engineered stone base with a 10-inch average depth, and 35% void space for stormwater storage. Stormwater that enters the synthetic turf carpet will drain vertically into the stone base and will provide the opportunity to recharge into the existing subsurface soils. In the event of a significant storm, the stormwater that does not infiltrate immediately into subsurface

soils is stored within the void space of the stone base. The stormwater is also collected via under drains which are installed within the stone base. These drains convey water away from the field of play towards the perimeter collector pipe which provides additional storage of stormwater. The complex has been designed so that post-development peak rates of runoff do not exceed pre-development peak rates for the 2-, 10-, and 100-year storm events.

To gain an understanding of the site hydrology in its current condition, Gale completed an on-site assessment and reviewed as-built plans for the athletic complex. The following section describes the watershed analysis and current hydrologic condition of the site.

### **5.1 Pre-Development Condition**

The project site within the limit of work is comprised of two (2) sub-watershed areas. The sub-watersheds reflect the contributing areas of runoff to the design point. Existing topography was used to determine the watershed areas. Refer to Sheet EWS under Attachment 5 for the Existing Watershed Map.

The two (2) existing watershed areas are described below.

#### Existing Watershed Area 1:

EWS-1 generally includes runoff from the existing synthetic turf field, and perimeter track. The runoff from the watershed drains vertically into the stone base of the field and infiltrates into the underlying soils, as explained above. Runoff that does not infiltrate will discharge to DP-1 via the existing outfall pipes.

Although synthetic turf is highly permeable, the synthetic turf field area is given a CN of 98 to model the area as a pond. Runoff from the turf field area and surrounding walkways enters the turf base stone directly. The voids in the turf base stone act as storage area while allowing infiltration into the subsurface soils. The sub-watershed area is approximately 2.70 acres of athletic field and 0.39 acres of impervious area. The sub-watershed has a weighted CN of 98. The time of concentration (Tc) for EWS-1 is assumed to be six (6) minutes.

#### Sub-Watershed Area 2 (EWS-2):

EWS-2 includes runoff from the natural grass area surrounding the field. The runoff from this watershed enters the closed drainage system at two catch basins before ultimately discharging at Design Point 1.

The curve number for EWS-2 is calculated based on the groundcover and slopes of contributory land in its existing condition. As described in a previous section, soils are categorized as HSG "B". The total calculated curve number for all areas within EWS-2 is

72. The total contributory area in EWS-2 is 1.124 acres. The time of concentration (Tc) for EWS-2 is assumed to be six (6) minutes.

## **5.2 Post-Development Condition**

The proposed project scope does not alter the Stormwater Management System in any way.

### **5.2.1 Post-Development Watershed Areas**

The proposed development maintains the existing grading and drainage. The post-development condition has been analyzed to determine the watershed areas and hydrology as it relates to the Design Point (the Muddy River) which is consistent with the design point analysis completed for the pre-development condition. Refer to Sheet PWS under Attachment 5 for the Post-Development Watershed Map.

#### Sub-Watershed Area 1 (PWS-1):

PWS-1 generally includes runoff from the existing synthetic turf field, and perimeter track. The runoff from the watershed drains vertically into the stone base of the field and infiltrates into the underlying soils, as explained above.

Although synthetic turf is highly permeable, the synthetic turf field area is given a CN of 98 to model the area as a pond. Runoff from the turf field area and surrounding walkways enters the turf base stone directly. The voids in the turf base stone act as storage area while allowing infiltration into the subsurface soils. The sub-watershed area is approximately 2.70 acres of athletic field and 0.39 acres of impervious area. The sub-watershed has a weighted CN of 98. The time of concentration (Tc) for PWS-1 is assumed to be six (6) minutes.

#### Sub-Watershed Area 2 (PWS-2):

PWS-2 includes runoff from the well-maintained natural grass area surrounding the field. The runoff from this watershed enters the closed drainage system at two catch basins before ultimately discharging at Design Point 1.

The curve number for PWS-2 is calculated based on the groundcover and slopes of contributory land in its existing condition. As described in a previous section, soils are categorized as HSG "B". The total calculated curve number for all areas within PWS-2 is 72. The total contributory area in PWS-2 is 1.124 acres. The time of concentration (Tc) for PWS-2 is assumed to be six (6) minutes.

The proposed project maintains the existing peak flows. Use of synthetic turf will continue to provide vertical drainage, recharge to groundwater, and stormwater storage.

## **6.0 COMPLIANCE WITH STORMWATER STANDARDS (MASWMS)**

### **6.1 Untreated Stormwater (Standard 1)**

The project is designed so that stormwater conveyances (outfalls/discharges) remain unchanged, and do not discharge untreated stormwater into or cause erosion to wetlands. No new untreated stormwater is proposed to discharge at the wetlands. No new outfalls are proposed.

### **6.2 Post-Development Peak Rates (Standard 2)**

A Hydrologic Study was performed to determine the rate of runoff for the 2-, 10- and 100-year storm events under pre-development (existing) conditions. Post-development rates were then computed in a similar manner. The design points where the peak rates were compared were taken as amount sheet flowing into the wetland area, representing the most downstream point within the limit of disturbance. From these analyses, it was determined that the proposed project and its Stormwater Management System would not increase the peak runoff rates above existing levels. It is the intent of the Stormwater Management System to minimize impacts to drainage patterns, downstream property and wetlands, while simultaneously providing water quality treatment to runoff prior to its release from the site or its discharge to wetlands.

The U.S.D.A. Soil Conservation Service (SCS) Technical Release 55 (TR-55), 1986, was used as the procedure for estimating runoff. A HydroCAD SCS TR-20-based computer program was used for estimating peak discharges. TR-55 is a generally accepted model for use on small sites, and begins with a rainfall amount uniformly imposed on the watershed over a specified time distribution. Mass rainfall is converted to mass runoff by using a runoff curve number (CN). The CN is based on soils, plant cover, impervious areas, interception and surface storage. Runoff is then transformed into a hydrograph that depends on runoff travel time through segments of the watershed.

Stormwater management computations for the full-build were performed using SCS-based HydroCAD, as well as for existing and proposed conditions curve numbers, times of concentrations and unit hydrograph computations.

#### **6.2.1 Proposed Conditions**

The post-development curve numbers remain the same as in pre-development. In the Hydro-CAD software, synthetic turf is modeled with a CN of 98, to model the direct contribution of stormwater into the dynamic base stone beneath the synthetic turf fields. The dynamic base stone serves to collect, detain and control the release of the majority of the stormwater runoff, to not increase the peak rates of runoff. The stone base will allow recharge and will promote infiltration to the maximum extent feasible.

### 6.2.2 Peak Rate Summary

Table 6.2.3 shows the peak rate of runoff for the existing site as well as for the developed site at 2, 10 and 100-year design storms.

**TABLE 6.2.3**

Analysis Point	Design Storm	Existing Runoff (CFS)	Proposed Runoff (CFS)	Change (CFS)
DP-1 (Wetlands)	2-yr	5.51	5.51	0.00
	10-yr	6.87	6.87	0.00
	100-yr	9.08	9.08	0.00

### 6.3 Recharge to Groundwater (Standard 3)

It should be noted that the 2008 approved permit documents explain how the project is meeting Standard 3 in general terms. Gale offers the following additional detail. It should also be noted that since this is a redevelopment project, Standard 3 needs to be met to the extent feasible. The project controls the stormwater runoff from the site by attenuating and treating the runoff by the use of proposed synthetic turf base stone. After permeating through the engineered dynamic base stone, the runoff will have the opportunity to infiltrate into the soils beneath the fields, with minimal stormwater draining through perforated flat panel under drains and perforated collector pipes. The flow from the dynamic base stone is constrained by the outlet control structure that allows the storage to stage prior to releasing in the River. Also, the flat panel drains are spaced at 20' on-center, which leaves ample opportunity for groundwater recharge, rather than downstream conveyance.

Required Recharge Volume for the site was calculated in accordance with the Standards:

$$Rv = F * \text{impervious area}$$

$$Rv = (0.35/12) * 0.41\text{ac} = 0.012 \text{ Ac-ft} = 521 \text{ CF}$$

Rv = Required Recharge Volume

F = Target Depth Factor (0.35 inches for soils of Hydrologic Soil Group B)

Impervious Area = sidewalks, track, concrete (17,990 SF or 0.41 Ac.)

Required minimum surface area of the bottom of the infiltration structure was calculated in accordance with the Simple Dynamic Method, as outlined in the Massachusetts Stormwater Management Standards:

$$A = Rv / (D + KT)$$

$$A = 521 \text{ CF} / (1.00 \text{ ft} + 0.085 \text{ ft/h} * 2\text{h}) = 445 \text{ SF}$$

A = Minimum required surface area of the bottom of the infiltration structure  
Rv = Required Recharge Volume  
D = Depth of the Infiltration Facility = 12 inches = 1.00 ft  
K = Saturated Hydraulic Conductivity = 1.02 in/h = 0.085 ft/h  
T = Allowable drawdown during the peak of the storm (2h)

The synthetic turf field base stone is used to meet this standard, as it is separated by a minimum of two feet (2') from the Estimated Seasonal High Groundwater (ESHGW) table and therefore will provide infiltration capabilities. The synthetic turf field is approximately 117,600 SF in surface area. This amount of infiltrative surface area allows for the vertical transport of stormwater into the underlying base stone, which contains 30% voids equivalent to storage area.

#### **6.4 Water Quality (Standard 4)**

There is no increase in impervious area from the existing condition. Also, the area within the limit of work has a low potential for accumulation of total suspended solids (TSS).

The proposed synthetic turf is not subject to fertilization, sedimentation, irrigation or rigorous maintenance, thus lessening the ability to acquire TSS. Runoff generated by the synthetic turf field will travel vertically, through approximately ten inches (10") of engineered stone base, where it will infiltrate into the soils below. The perforated pipes are embedded within stone trenches. The track also has a very limited potential for TSS loading.

#### **6.5 Land Uses with Higher Potential Pollutant Loads (Standard 5)**

The proposed project does not qualify for a LUHPPL. No untreated runoff will leave the site or discharge into the adjacent wetlands.

#### **6.6 Critical Areas (Standard 6)**

The site does not lie within a critical area and is not listed in the DEP ACEC's List, Latest Edition.

#### **6.7 Redevelopment (Standard 7)**

This project is a redevelopment project because it is a rehabilitation of a previously developed site and the redevelopment results in no increase in impervious area.

Because the project is a redevelopment, it is only required to meet Standards 2 and 3 to the maximum extent practicable; however, both Standards 2 and 3 are met, as demonstrated in Sections 6.2 and 6.3.

**6.8 Erosion and Sedimentation Controls (Standard 8)**

An Erosion and Sedimentation Control Plan is provided as part of the Notice of Intent Application to the Conservation Commission.

Also, the project will be covered by a NPDES Construction General Permit and SWPPP Plan which are provided with this report.

**6.9 Operation and Maintenance Plan (Standard 9)**

An Operation and Maintenance Plan is provided as part of the Notice of Intent Application to the Conservation Commission. See Attachment 7 for the Operation and Maintenance & Erosion and Sediment Control Plan.

**6.10 Prohibition of Illicit Discharges (Standard 10)**

There are no illicit discharges to the proposed Stormwater Management System. A template for an illicit discharge compliance statement has been provided as part of the Notice of Intent Application to the Conservation Commission. A completed statement will be submitted prior to the discharge of stormwater to the post-construction Stormwater Management System. Refer to Attachment 8.

**7.0 PRESERVATION OF WETLANDS**

An important component to any project near environmentally sensitive areas is the demonstration of impact mitigation or preservation. Mitigation measures may include the use of best management practices and low-impact development techniques.

Mitigation measures associated with the proposed project include:

- a) Maintained groundwater recharge opportunities presented by the engineered base stone of the proposed synthetic turf field.

**8.0 ALTERNATIVE ANALYSIS**

Roberto Clemente Field will be redeveloped in place, with all materials being reused to the extent feasible. Other sites within the Emmanuel College campus are not feasible due to their already constrained space. Also, to locate this project in another location would be a significant expense and would disrupt the local neighborhood since this is a public park and the field is heavily used by residents, public schools, Emmanuel College and others. The portions of the project that are within the resource areas, once renovated will remain the same surface.

## **9.0 SUMMARY**

The Roberto Clemente Turf Replacement Project is intended to improve the quality of athletic and recreational surfaces for students and athletes. The proposed shock pad provides improved athlete safety. The project also re-uses the existing crumb rubber and sand infill, supporting the reuse initiative.

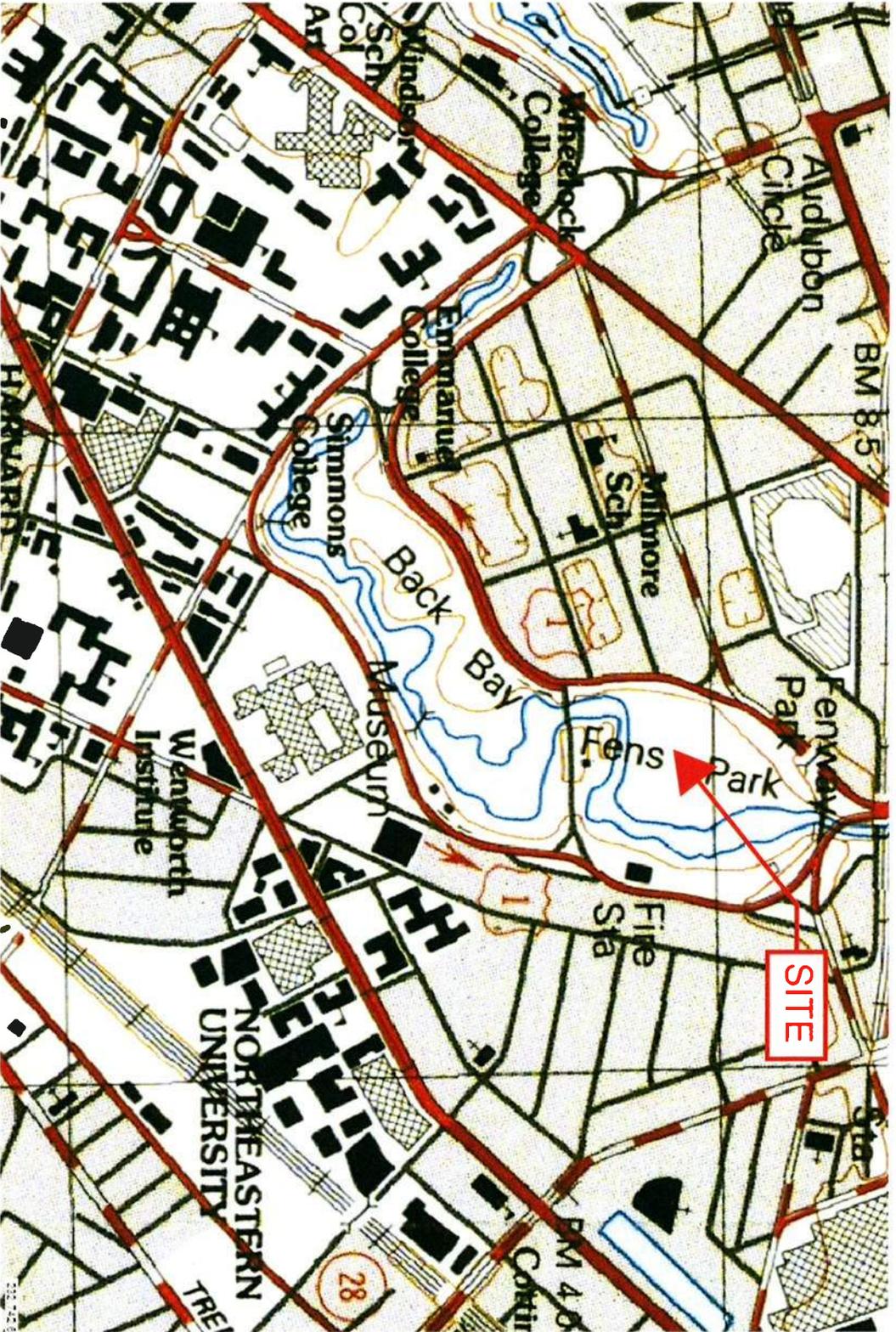
The project, as proposed, is the “best fit” for this site, and an improvement to the adjacent resource areas. The project proves to be a betterment to the environment by continuing to exceed all the Massachusetts Stormwater Management Standards.

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**Attachment 1**  
**Quadrangle Map**

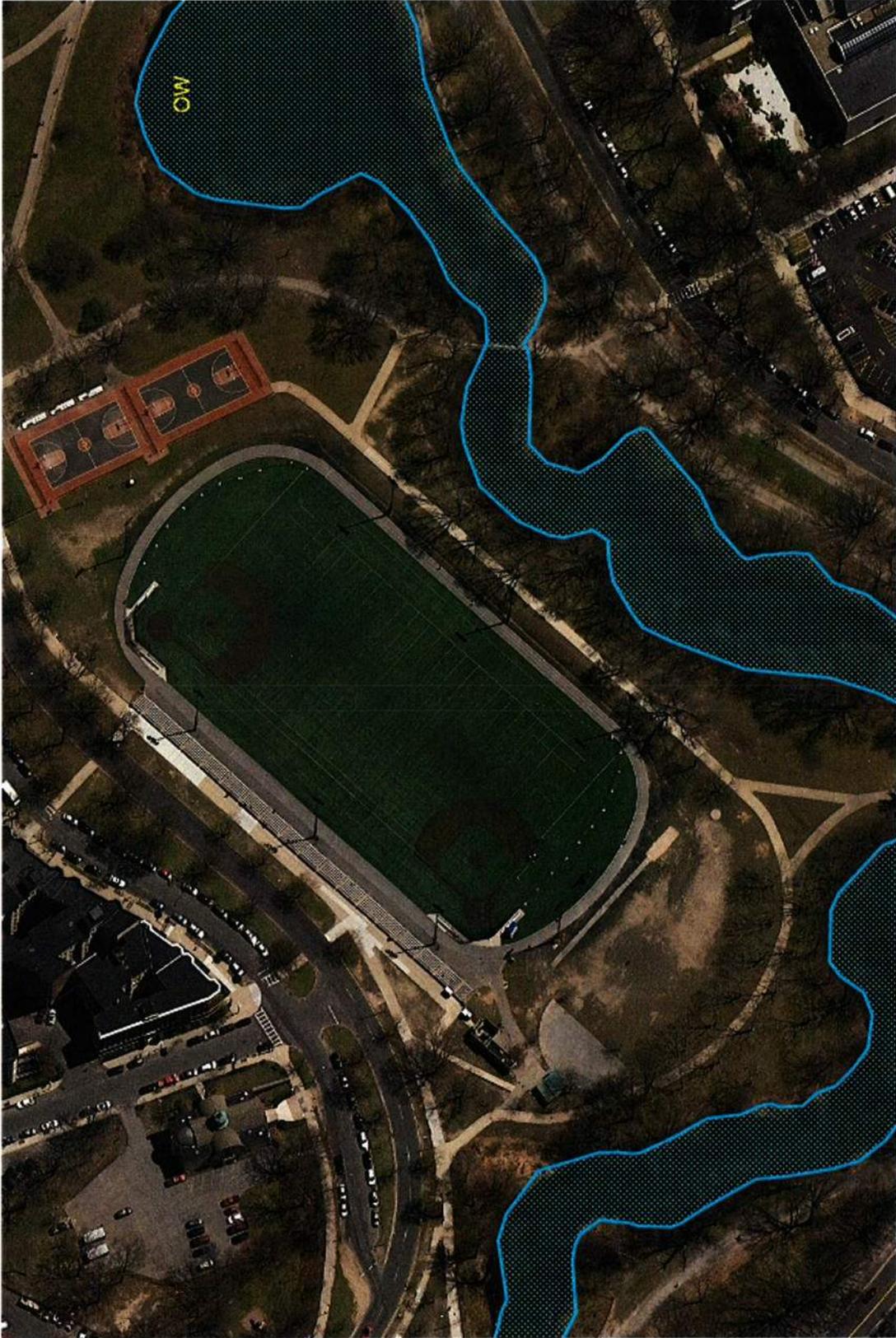
**Quadrangle Map**

Roberto Clemente Field - Emmanuel College



**Attachment 2**  
**Natural Heritage Data Map**

**Natural Heritage Map**  
Roberto Clemente Field- Emmanuel College

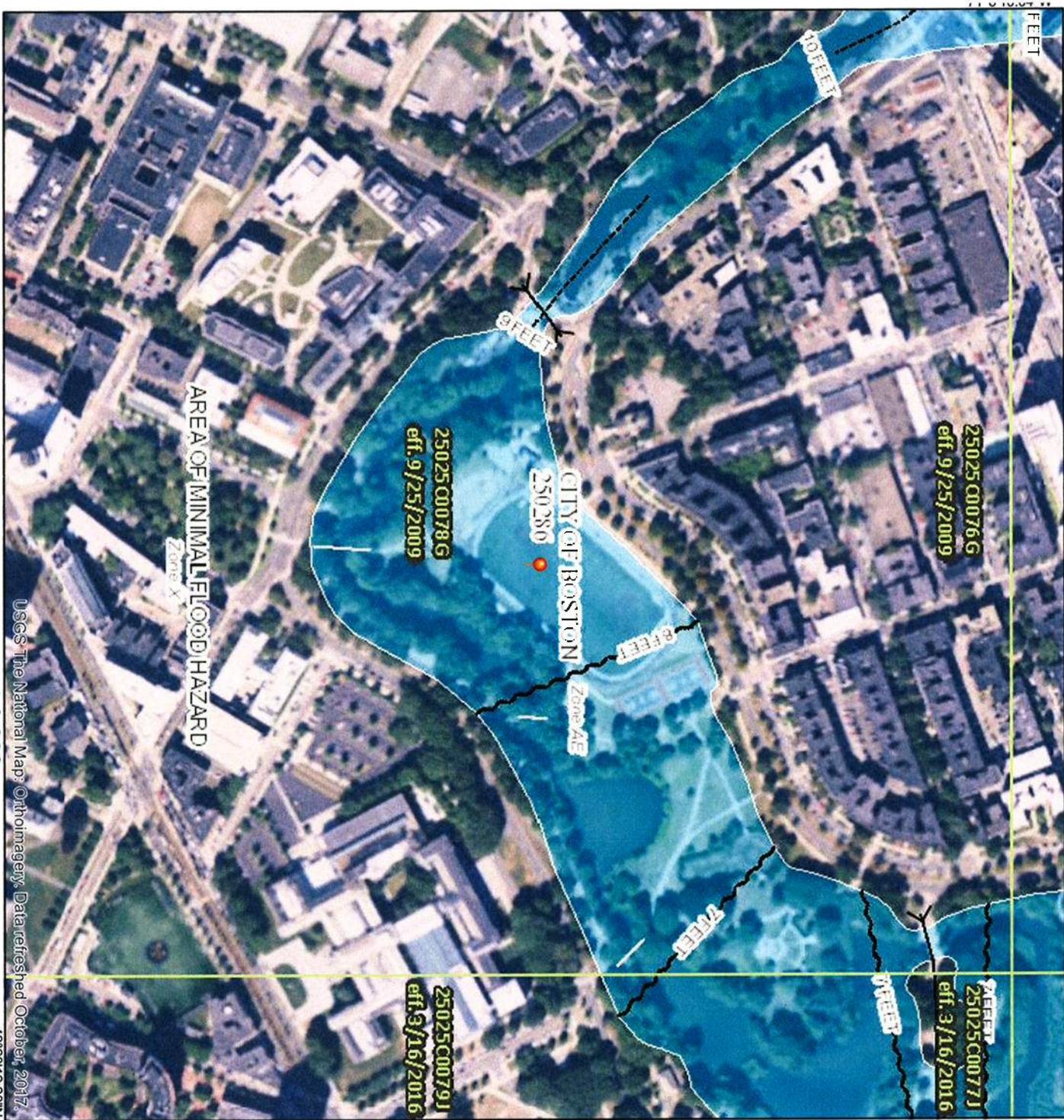


**Attachment 3**  
**FEMA Flood Map**

# National Flood Hazard Layer FIRMette



42°20'38.87"N



## Legend

SEE FIG 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

0.2% Annual Chance Flood Hazard. Area 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

**OTHER AREAS OF FLOOD HAZARD**

- Area with Reduced Flood Risk due to Levee. See Notes, Zone X
- Area with Flood Risk due to Levee, Zone D

**OTHER AREAS**

- Area of Minimal Flood Hazard Zone X
- Effective LOMRS
- Area of Undetermined Flood Hazard Zone D

**OTHER AREAS GENERAL STRUCTURES**

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

**OTHER FEATURES**

- Cross Sections with 1% Annual Chance 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

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 2/12/2019 at 9:55:23 AM 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 unmoderized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery, Data refreshed October, 2017.

Feet 1:6,000

0 250 500 1 000 1 500 2 000

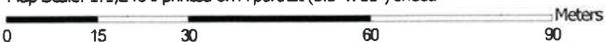
71°53'25.99\"/>

**Attachment 4**  
**Soils Report**

Soil Map—Norfolk and Suffolk Counties, Massachusetts



Map Scale: 1:1,240 if printed on A portrait (8.5" x 11") sheet.



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

## MAP LEGEND

 Area of Interest (AOI)	 Area of Interest (AOI)	 Spoil Area
<b>Soils</b>	 Soil Map Unit Polygons	 Stony Spot
 Soil Map Unit Lines	 Very Stony Spot	 Wet Spot
 Soil Map Unit Points	 Other	 Special Line Features
<b>Special Point Features</b>	 Blowout	<b>Water Features</b>
 Borrow Pit	 Clay Spot	 Streams and Canals
 Closed Depression	 Gravel Pit	<b>Transportation</b>
 Gravelly Spot	 Landfill	 Rails
 Lava Flow	 Marsh or swamp	 Interstate Highways
 Mine or Quarry	 Miscellaneous Water	 US Routes
 Perennial Water	 Rock Outcrop	 Major Roads
 Saline Spot	 Sandy Spot	 Local Roads
 Severely Eroded Spot	 Sinkhole	<b>Background</b>
 Slide or Slip	 Sodic Spot	 Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

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

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

Date(s) aerial images were photographed: Aug 10, 2014—Aug 11, 2014

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

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
603	Urban land, wet substratum, 0 to 3 percent slopes	0.0	0.5%
655	Udorthents, wet substratum	3.4	99.5%
<b>Totals for Area of Interest</b>		<b>3.4</b>	<b>100.0%</b>

**Attachment 5**  
**Pre & Post Development Conditions Map**

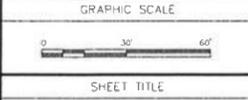
**PERMIT**

PROJECT: **ROBERTO CLEMENTE FIELD  
 EMMANUEL COLLEGE  
 PARK DRIVE  
 BOSTON, MA**

OWNER: **BOSTON PARKS AND RECREATION  
 1010 MASSACHUSETTS AVENUE  
 BOSTON, MA**

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	717890_C001
DESIGNED BY	JTS/BJB
DRAWN BY	KFR
CHECKED BY	JMP/CEO/PS
DATE	APRIL 1, 2019
DRAWING SCALE	1"=30'

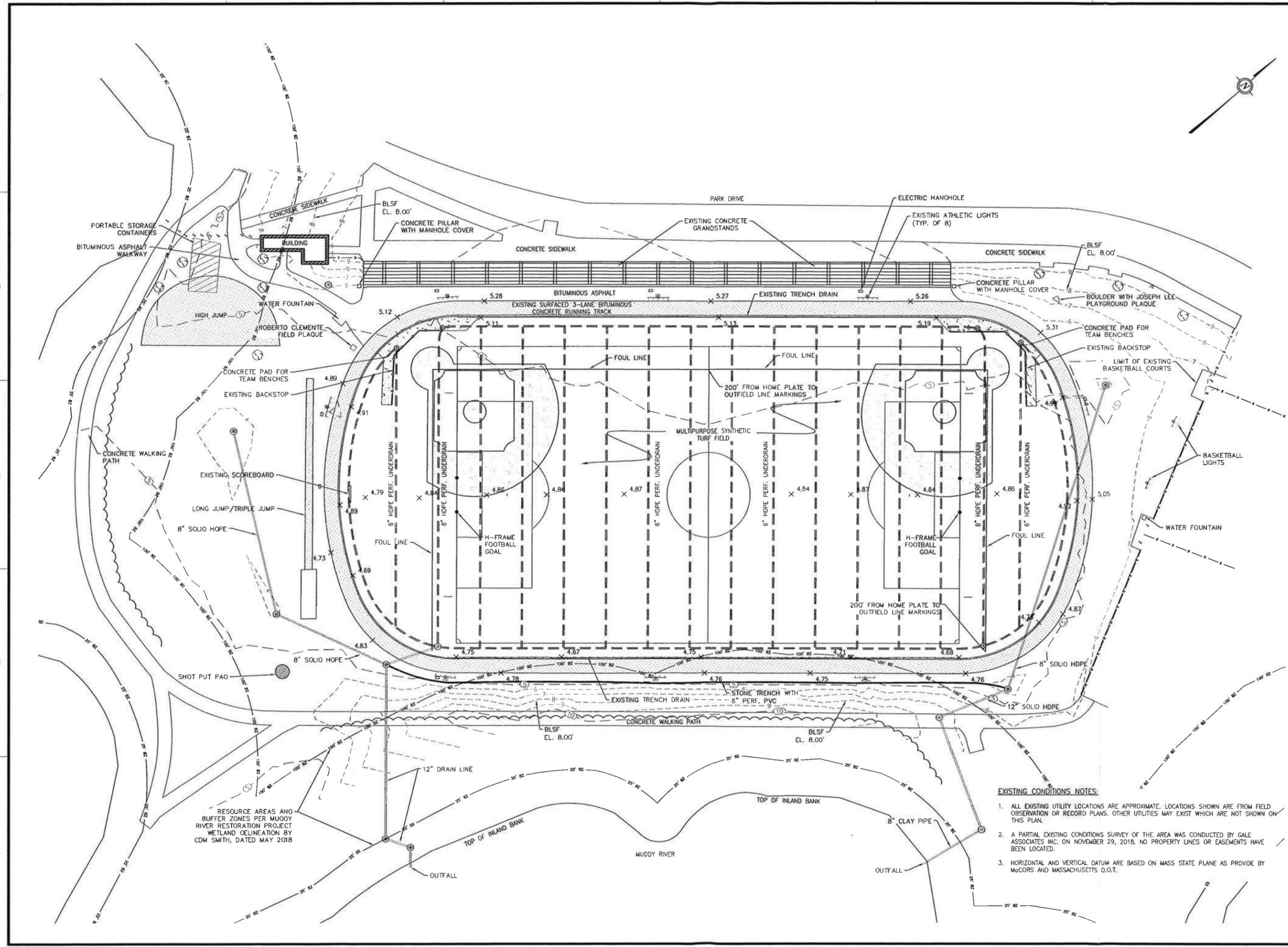


SHEET TITLE

**EXISTING CONDITIONS**

DRAWING NO. **C001**

PROJECT NO. 717890



- EXISTING CONDITIONS NOTES:**
- ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. LOCATIONS SHOWN ARE FROM FIELD OBSERVATION OR RECORD PLANS. OTHER UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THIS PLAN.
  - A PARTIAL EXISTING CONDITIONS SURVEY OF THE AREA WAS CONDUCTED BY GALE ASSOCIATES INC. ON NOVEMBER 29, 2018. NO PROPERTY LINES OR EASEMENTS HAVE BEEN LOCATED.
  - HORIZONTAL AND VERTICAL DATUM ARE BASED ON MASS STATE PLANE AS PROVIDED BY McCORS AND MASSACHUSETTS O.O.T.

**PERMIT**

PROJECT: **ROBERTO CLEMENTE FIELD**  
**EMMANUEL COLLEGE**  
**PARK DRIVE**  
**BOSTON, MA**

OWNER: **BOSTON PARKS AND RECREATION**  
**1010 MASSACHUSETTS AVENUE**  
**BOSTON, MA**

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	717890_C101
DESIGNED BY	JTS/B.B
DRAWN BY	JTS
CHECKED BY	JMP/CED/PS
DATE	APRIL 1, 2019
DRAWING SCALE	1"=30'-0"

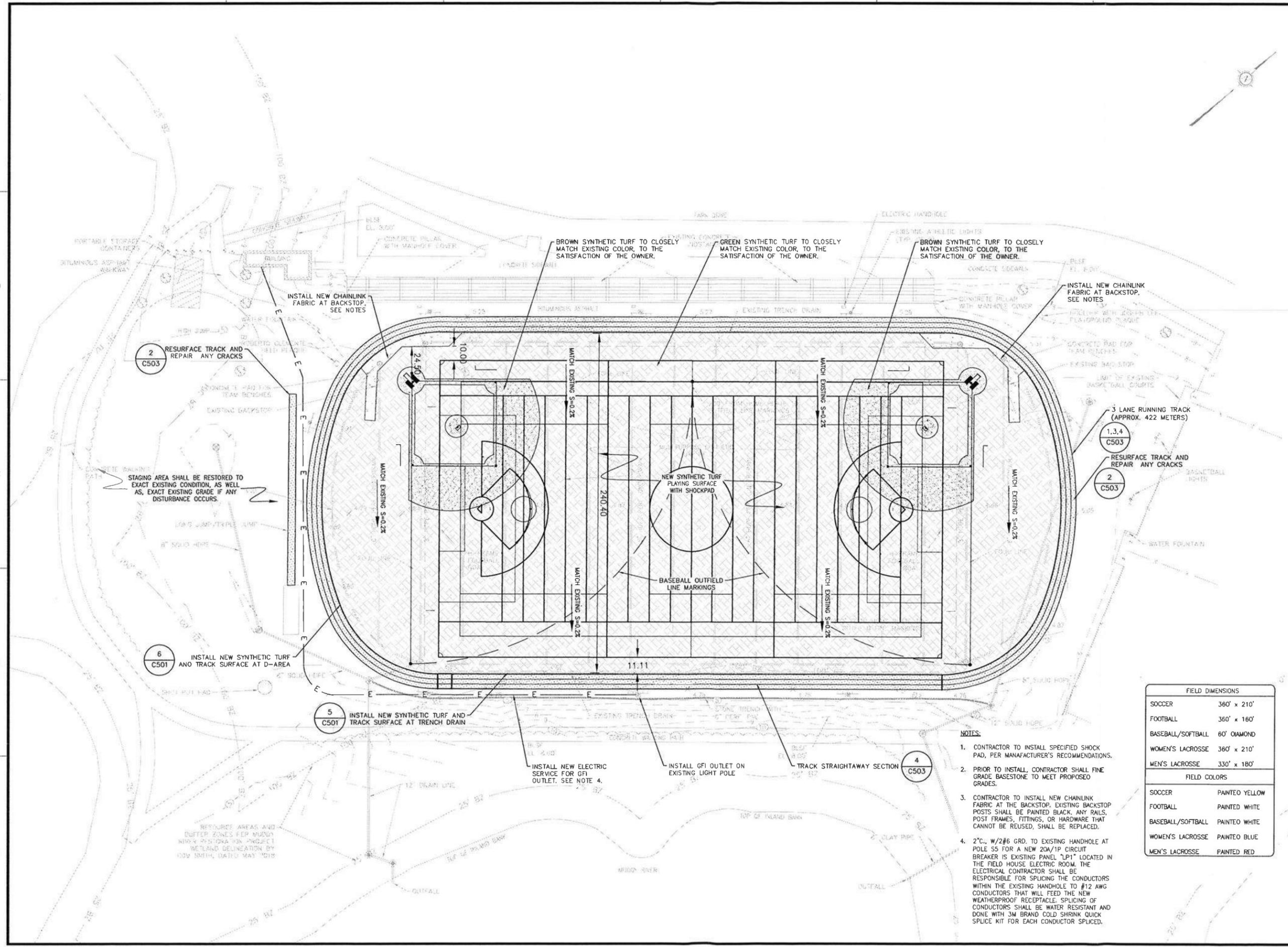


SHEET TITLE

**SITE PLAN**

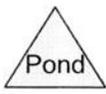
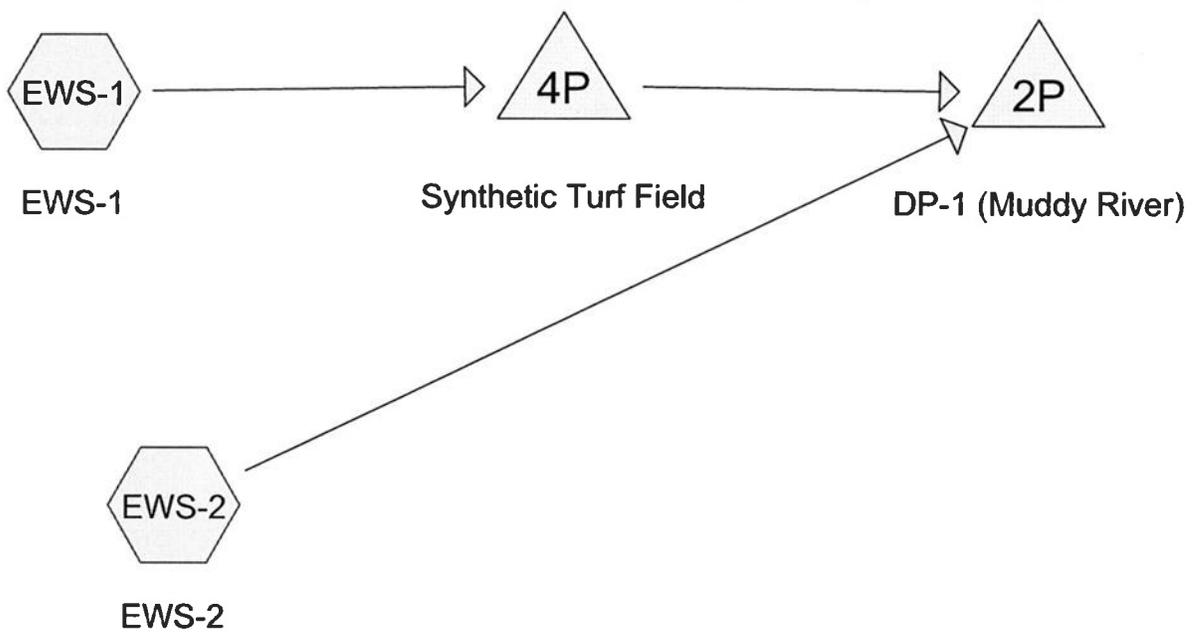
DRAWING NO. **C101**

PROJECT NO 717890



- NOTES:**
- CONTRACTOR TO INSTALL SPECIFIED SHOCK PAD, PER MANUFACTURER'S RECOMMENDATIONS.
  - PRIOR TO INSTALL, CONTRACTOR SHALL FINE GRADE BASESTONE TO MEET PROPOSED GRADES.
  - CONTRACTOR TO INSTALL NEW CHAINLINK FABRIC AT THE BACKSTOP. EXISTING BACKSTOP POSTS SHALL BE PAINTED BLACK. ANY RAILS, POST FRAMES, FITTINGS, OR HARDWARE THAT CANNOT BE REUSED, SHALL BE REPLACED.
  - 2"x. W/2#6 GRD. TO EXISTING HANDHOLE AT POLE S5 FOR A NEW 20A/1P CIRCUIT BREAKER IS EXISTING PANEL "LP1" LOCATED IN THE FIELD HOUSE ELECTRICAL ROOM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SPLICING THE CONDUCTORS WITHIN THE EXISTING HANDHOLE TO #12 AWG CONDUCTORS THAT WILL FEED THE NEW WEATHERPROOF RECEPTACLE. SPLICING OF CONDUCTORS SHALL BE WATER RESISTANT AND DONE WITH 3M BRAND COLD SHRINK QUICK SPLICE KIT FOR EACH CONDUCTOR SPLICED.

**Attachment 6**  
**Pre & Post Development Hydrology**



**Drainage Diagram for 717890\_Existing**  
Prepared by Hewlett-Packard Company, Printed 4/16/2019  
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# 717890\_Existing

Prepared by Hewlett-Packard Company

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## Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.000	69	50-75% Grass cover, Fair, HSG B (EWS-2)
0.038	98	Concrete (EWS-1)
2.700	98	Synthetic Turf (EWS-1)
0.348	98	Track surfacing (EWS-1)
0.124	98	Track surfacing, pavementm concrete (EWS-2)
<b>4.210</b>	91	<b>TOTAL AREA</b>

**717890\_Existing**

Type III 24-hr 2-Year Rainfall=3.20"

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Printed 4/16/2019

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentEWS-1: EWS-1** Runoff Area=134,453 sf 100.00% Impervious Runoff Depth>2.91"  
Tc=6.0 min CN=98 Runoff=9.36 cfs 0.749 af

**SubcatchmentEWS-2: EWS-2** Runoff Area=48,930 sf 11.00% Impervious Runoff Depth>0.93"  
Tc=6.0 min CN=72 Runoff=1.11 cfs 0.087 af

**Pond 2P: DP-1 (Muddy River)** Inflow=5.51 cfs 0.545 af  
Primary=5.51 cfs 0.545 af

**Pond 4P: Synthetic Turf Field** Peak Elev=3.90' Storage=984 cf Inflow=9.36 cfs 0.749 af  
Discarded=2.78 cfs 0.291 af Primary=4.41 cfs 0.458 af Outflow=7.18 cfs 0.749 af

**Total Runoff Area = 4.210 ac Runoff Volume = 0.836 af Average Runoff Depth = 2.38"**  
**23.75% Pervious = 1.000 ac 76.25% Impervious = 3.210 ac**

**Summary for Subcatchment EWS-1: EWS-1**

Runoff = 9.36 cfs @ 12.09 hrs, Volume= 0.749 af, Depth> 2.91"

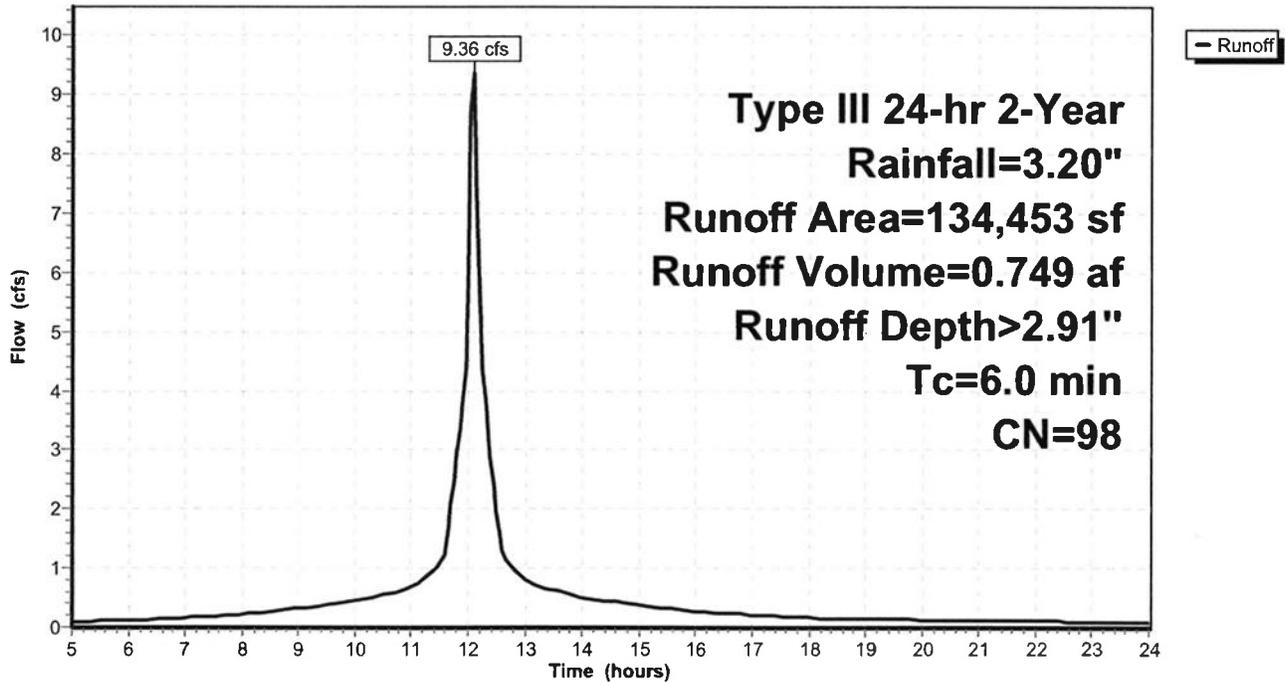
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
* 15,178	98	Track surfacing
* 117,600	98	Synthetic Turf
* 1,675	98	Concrete
134,453	98	Weighted Average
134,453		100.00% Impervious Area

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

**Subcatchment EWS-1: EWS-1**

Hydrograph



**Summary for Subcatchment EWS-2: EWS-2**

Runoff = 1.11 cfs @ 12.10 hrs, Volume= 0.087 af, Depth> 0.93"

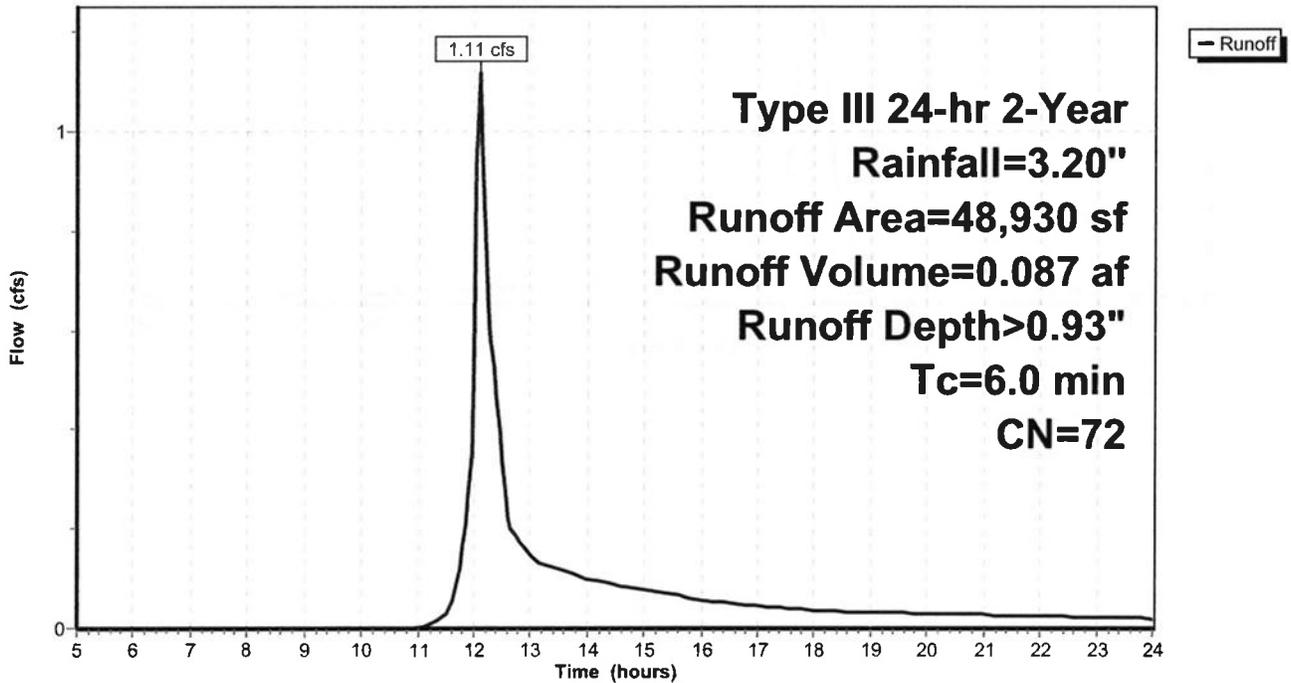
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
* 5,382	98	Track surfacing, pavementm concrete
43,548	69	50-75% Grass cover, Fair, HSG B
48,930	72	Weighted Average
43,548		89.00% Pervious Area
5,382		11.00% Impervious Area

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

**Subcatchment EWS-2: EWS-2**

Hydrograph



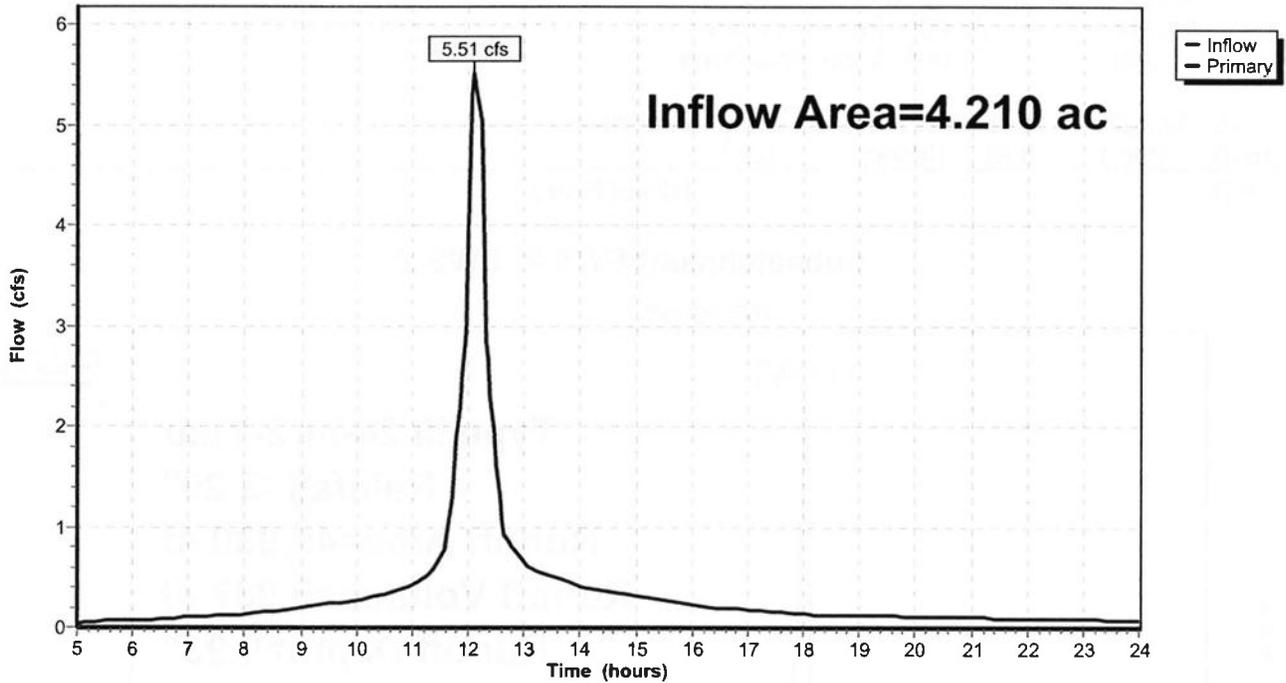
### Summary for Pond 2P: DP-1 (Muddy River)

Inflow Area = 4.210 ac, 76.25% Impervious, Inflow Depth > 1.55" for 2-Year event  
Inflow = 5.51 cfs @ 12.10 hrs, Volume= 0.545 af  
Primary = 5.51 cfs @ 12.10 hrs, Volume= 0.545 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

### Pond 2P: DP-1 (Muddy River)

Hydrograph



**Summary for Pond 4P: Synthetic Turf Field**

Inflow Area = 3.087 ac, 100.00% Impervious, Inflow Depth > 2.91" for 2-Year event  
 Inflow = 9.36 cfs @ 12.09 hrs, Volume= 0.749 af  
 Outflow = 7.18 cfs @ 12.15 hrs, Volume= 0.749 af, Atten= 23%, Lag= 4.0 min  
 Discarded = 2.78 cfs @ 12.05 hrs, Volume= 0.291 af  
 Primary = 4.41 cfs @ 12.15 hrs, Volume= 0.458 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 3.90' @ 12.15 hrs Surf.Area= 117,600 sf Storage= 984 cf

Plug-Flow detention time= 1.1 min calculated for 0.747 af (100% of inflow)  
 Center-of-Mass det. time= 0.9 min ( 766.7 - 765.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	3.87'	35,280 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) 117,600 cf Overall x 30.0% Voids
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.87	117,600	0	0
4.87	117,600	117,600	117,600

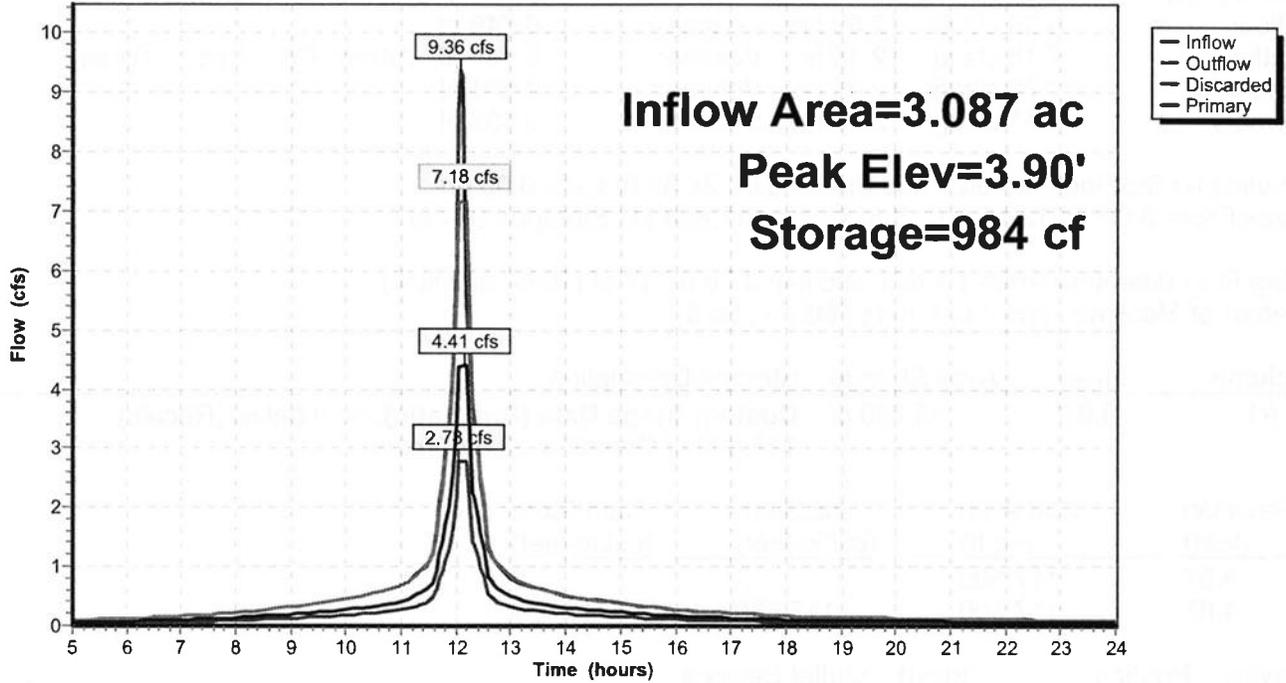
Device	Routing	Invert	Outlet Devices
#1	Discarded	3.87'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	2.04'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=2.78 cfs @ 12.05 hrs HW=3.88' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 2.78 cfs)

**Primary OutFlow** Max=4.41 cfs @ 12.15 hrs HW=3.90' (Free Discharge)  
 ↳2=Orifice/Grate (Orifice Controls 4.41 cfs @ 5.61 fps)

### Pond 4P: Synthetic Turf Field

Hydrograph



**717890\_Existing**

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Type III 24-hr 10-Year Rainfall=4.60"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentEWS-1: EWS-1**

Runoff Area=134,453 sf 100.00% Impervious Runoff Depth>4.25"  
Tc=6.0 min CN=98 Runoff=13.55 cfs 1.094 af

**SubcatchmentEWS-2: EWS-2**

Runoff Area=48,930 sf 11.00% Impervious Runoff Depth>1.89"  
Tc=6.0 min CN=72 Runoff=2.41 cfs 0.177 af

**Pond 2P: DP-1 (Muddy River)**

Inflow=6.87 cfs 0.848 af  
Primary=6.87 cfs 0.848 af

**Pond 4P: Synthetic Turf Field**

Peak Elev=3.97' Storage=3,363 cf Inflow=13.55 cfs 1.094 af  
Discarded=2.78 cfs 0.423 af Primary=4.51 cfs 0.671 af Outflow=7.29 cfs 1.094 af

**Total Runoff Area = 4.210 ac Runoff Volume = 1.271 af Average Runoff Depth = 3.62"**  
**23.75% Pervious = 1.000 ac 76.25% Impervious = 3.210 ac**

**Summary for Subcatchment EWS-1: EWS-1**

Runoff = 13.55 cfs @ 12.09 hrs, Volume= 1.094 af, Depth> 4.25"

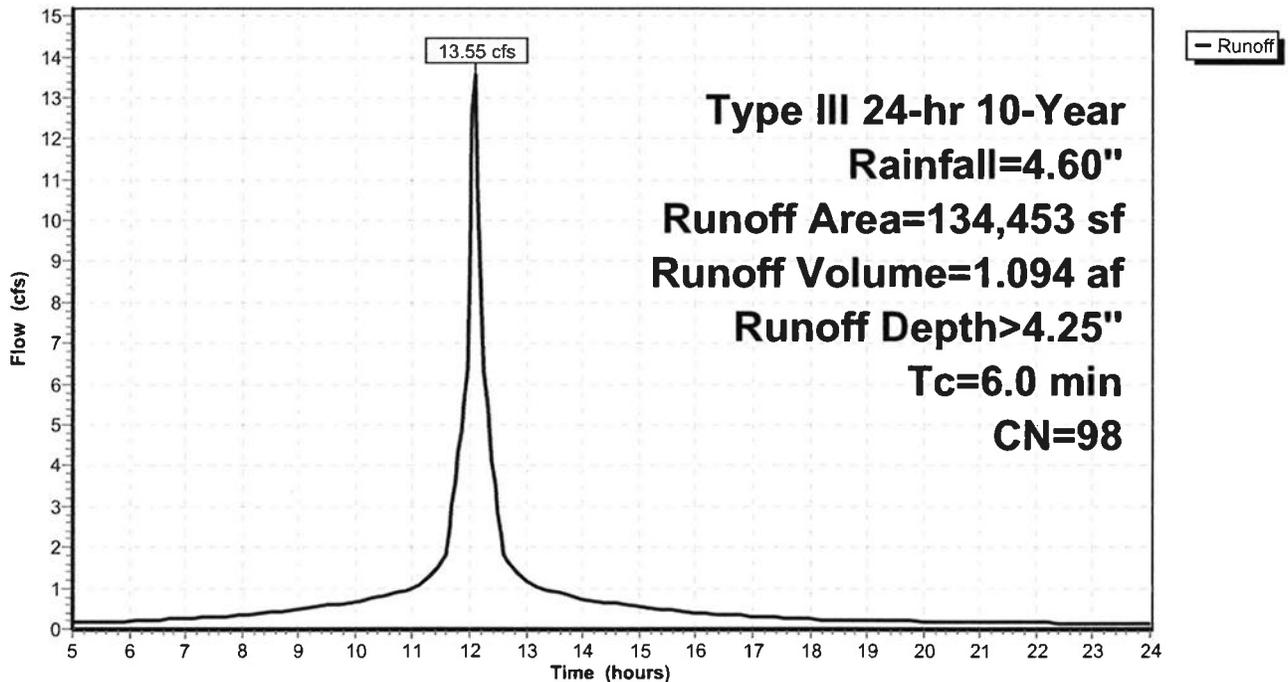
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.60"

	Area (sf)	CN	Description
*	15,178	98	Track surfacing
*	117,600	98	Synthetic Turf
*	1,675	98	Concrete
	134,453	98	Weighted Average
	134,453		100.00% Impervious Area

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

**Subcatchment EWS-1: EWS-1**

Hydrograph



**Summary for Subcatchment EWS-2: EWS-2**

Runoff = 2.41 cfs @ 12.10 hrs, Volume= 0.177 af, Depth> 1.89"

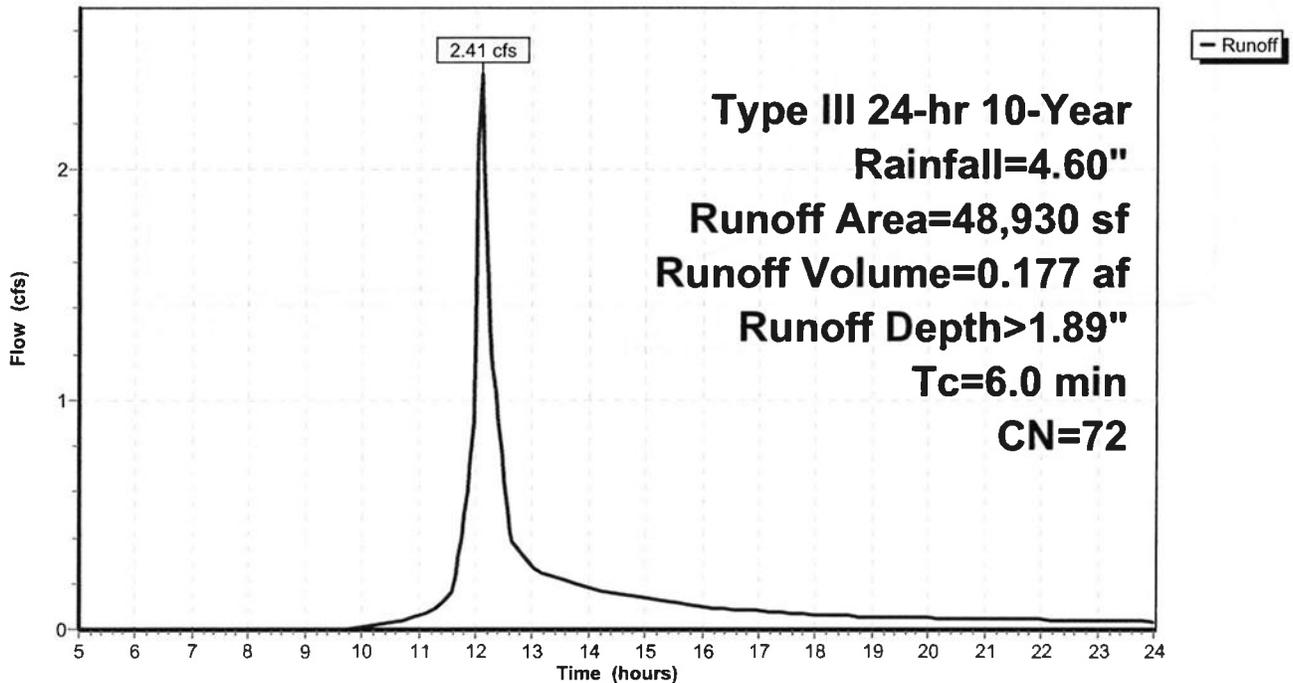
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.60"

Area (sf)	CN	Description
* 5,382	98	Track surfacing, pavementm concrete
43,548	69	50-75% Grass cover, Fair, HSG B
48,930	72	Weighted Average
43,548		89.00% Pervious Area
5,382		11.00% Impervious Area

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

**Subcatchment EWS-2: EWS-2**

Hydrograph



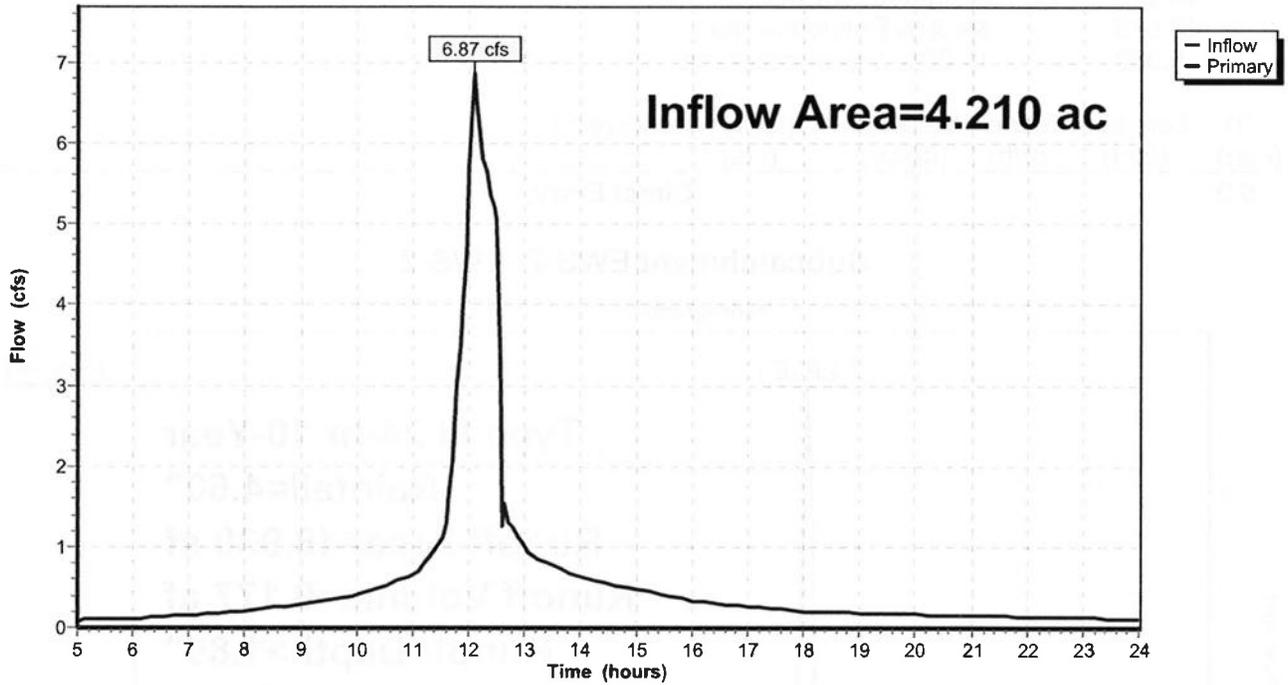
### Summary for Pond 2P: DP-1 (Muddy River)

Inflow Area = 4.210 ac, 76.25% Impervious, Inflow Depth > 2.42" for 10-Year event  
Inflow = 6.87 cfs @ 12.10 hrs, Volume= 0.848 af  
Primary = 6.87 cfs @ 12.10 hrs, Volume= 0.848 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

### Pond 2P: DP-1 (Muddy River)

Hydrograph



**Summary for Pond 4P: Synthetic Turf Field**

Inflow Area = 3.087 ac, 100.00% Impervious, Inflow Depth > 4.25" for 10-Year event  
 Inflow = 13.55 cfs @ 12.09 hrs, Volume= 1.094 af  
 Outflow = 7.29 cfs @ 12.22 hrs, Volume= 1.094 af, Atten= 46%, Lag= 8.0 min  
 Discarded = 2.78 cfs @ 12.00 hrs, Volume= 0.423 af  
 Primary = 4.51 cfs @ 12.22 hrs, Volume= 0.671 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 3.97' @ 12.22 hrs Surf.Area= 117,600 sf Storage= 3,363 cf

Plug-Flow detention time= 2.2 min calculated for 1.091 af (100% of inflow)  
 Center-of-Mass det. time= 2.0 min ( 764.6 - 762.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	3.87'	35,280 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) 117,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.87	117,600	0	0
4.87	117,600	117,600	117,600

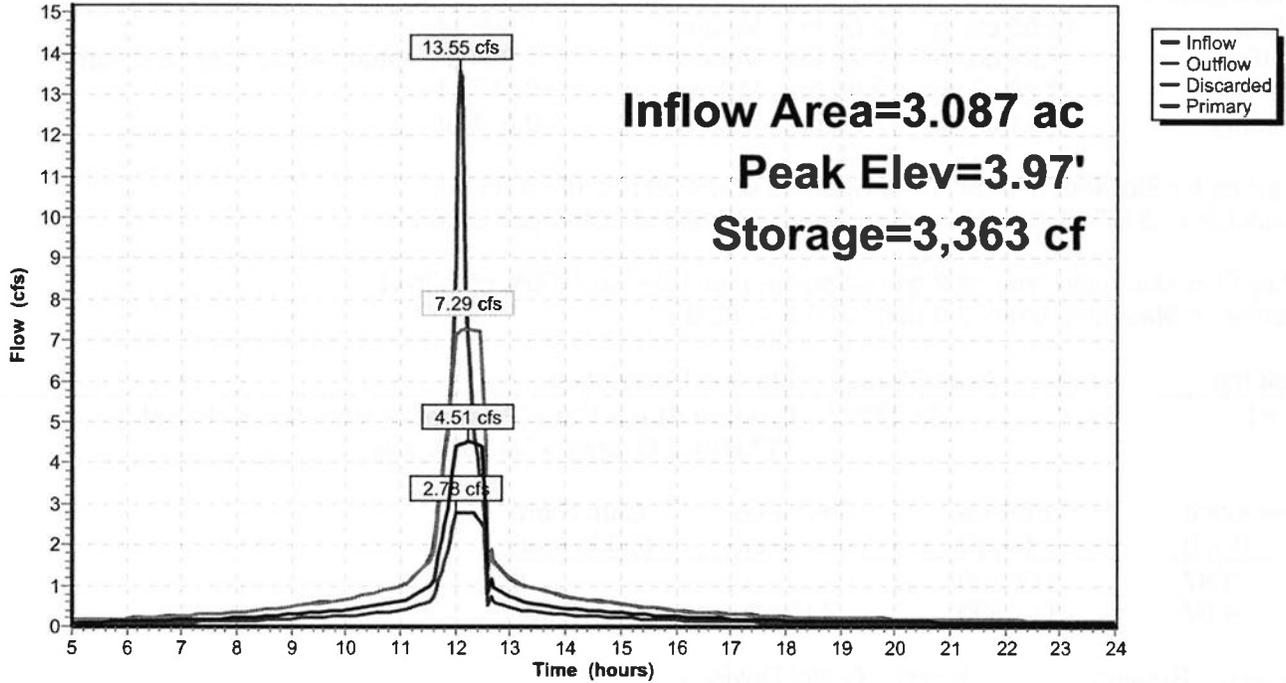
Device	Routing	Invert	Outlet Devices
#1	Discarded	3.87'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	2.04'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=2.78 cfs @ 12.00 hrs HW=3.88' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 2.78 cfs)

**Primary OutFlow** Max=4.51 cfs @ 12.22 hrs HW=3.96' (Free Discharge)  
 ↳2=Orifice/Grate (Orifice Controls 4.51 cfs @ 5.75 fps)

### Pond 4P: Synthetic Turf Field

Hydrograph



**717890\_Existing**

Type III 24-hr 100-Year Rainfall=6.60"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentEWS-1: EWS-1**

Runoff Area=134,453 sf 100.00% Impervious Runoff Depth>6.16"  
Tc=6.0 min CN=98 Runoff=19.51 cfs 1.584 af

**SubcatchmentEWS-2: EWS-2**

Runoff Area=48,930 sf 11.00% Impervious Runoff Depth>3.49"  
Tc=6.0 min CN=72 Runoff=4.51 cfs 0.326 af

**Pond 2P: DP-1 (Muddy River)**

Inflow=9.08 cfs 1.302 af  
Primary=9.08 cfs 1.302 af

**Pond 4P: Synthetic Turf Field**

Peak Elev=4.11' Storage=8,347 cf Inflow=19.51 cfs 1.584 af  
Discarded=2.78 cfs 0.608 af Primary=4.73 cfs 0.976 af Outflow=7.51 cfs 1.584 af

**Total Runoff Area = 4.210 ac Runoff Volume = 1.911 af Average Runoff Depth = 5.45"  
23.75% Pervious = 1.000 ac 76.25% Impervious = 3.210 ac**

**717890\_Existing**

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Type III 24-hr 100-Year Rainfall=6.60"

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**Summary for Subcatchment EWS-1: EWS-1**

Runoff = 19.51 cfs @ 12.09 hrs, Volume= 1.584 af, Depth> 6.16"

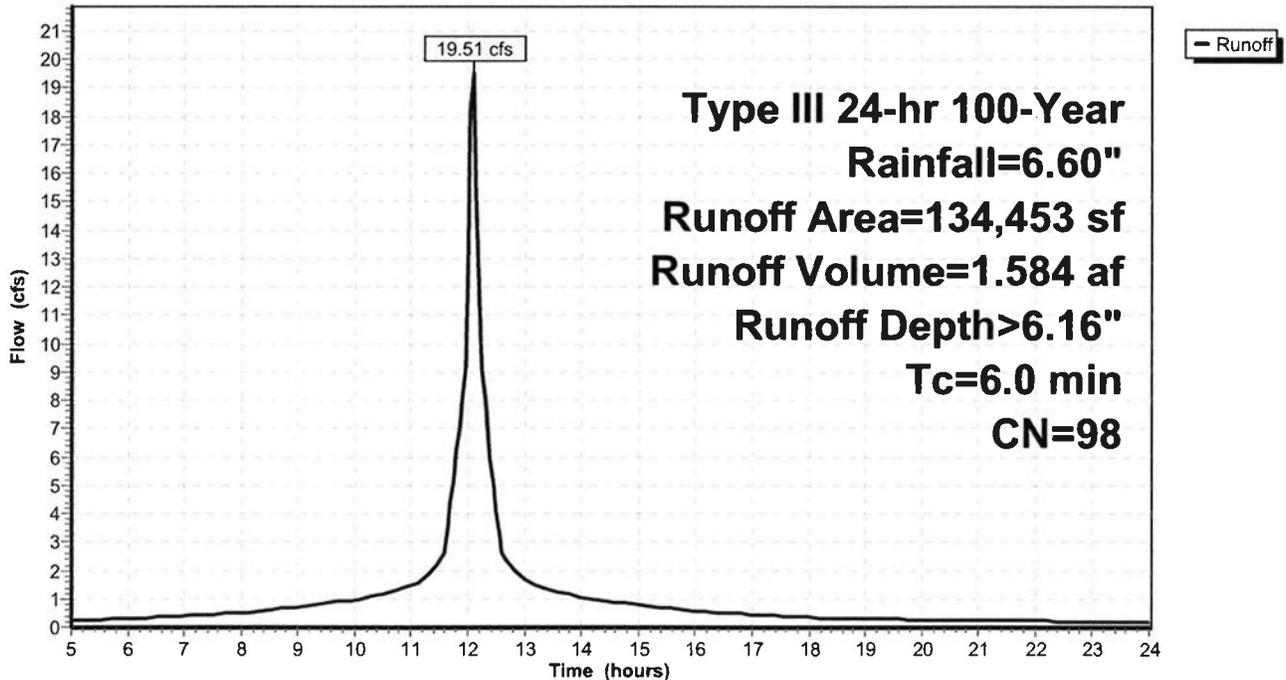
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-Year Rainfall=6.60"

	Area (sf)	CN	Description
*	15,178	98	Track surfacing
*	117,600	98	Synthetic Turf
*	1,675	98	Concrete
	134,453	98	Weighted Average
	134,453		100.00% Impervious Area

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

**Subcatchment EWS-1: EWS-1**

Hydrograph



**Summary for Subcatchment EWS-2: EWS-2**

Runoff = 4.51 cfs @ 12.09 hrs, Volume= 0.326 af, Depth> 3.49"

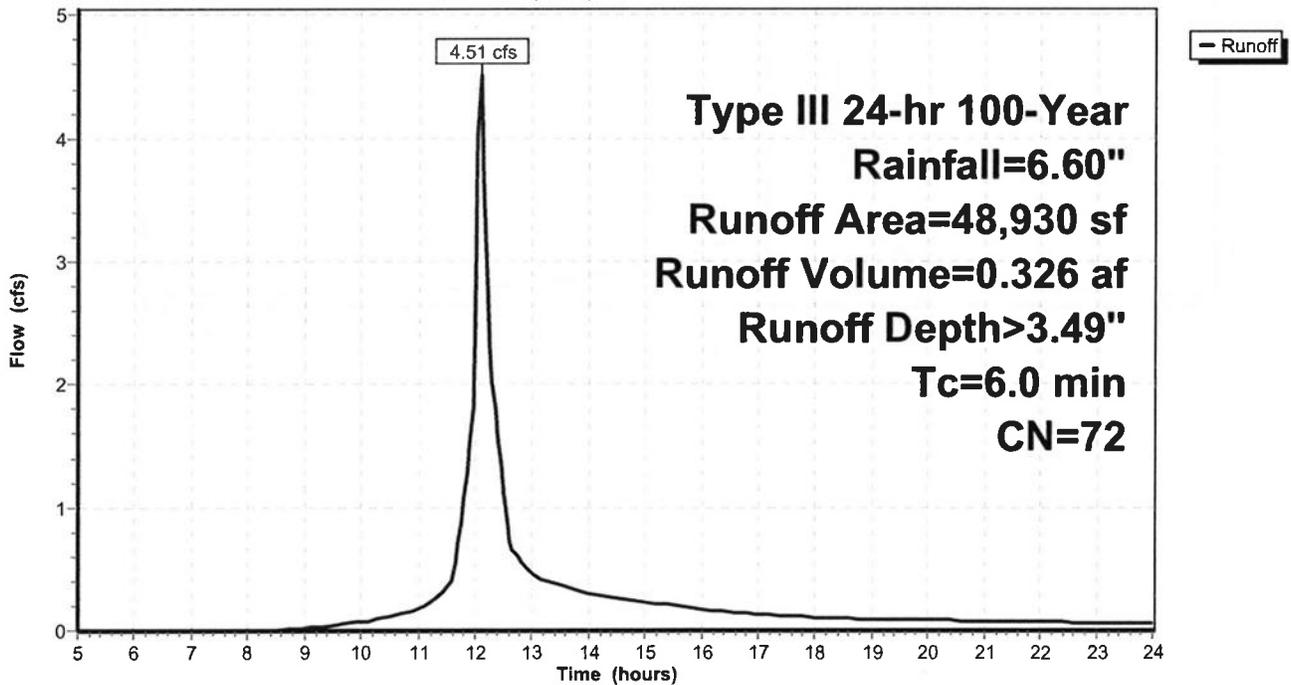
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.60"

Area (sf)	CN	Description
* 5,382	98	Track surfacing, pavementm concrete
43,548	69	50-75% Grass cover, Fair, HSG B
48,930	72	Weighted Average
43,548		89.00% Pervious Area
5,382		11.00% Impervious Area

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

**Subcatchment EWS-2: EWS-2**

Hydrograph



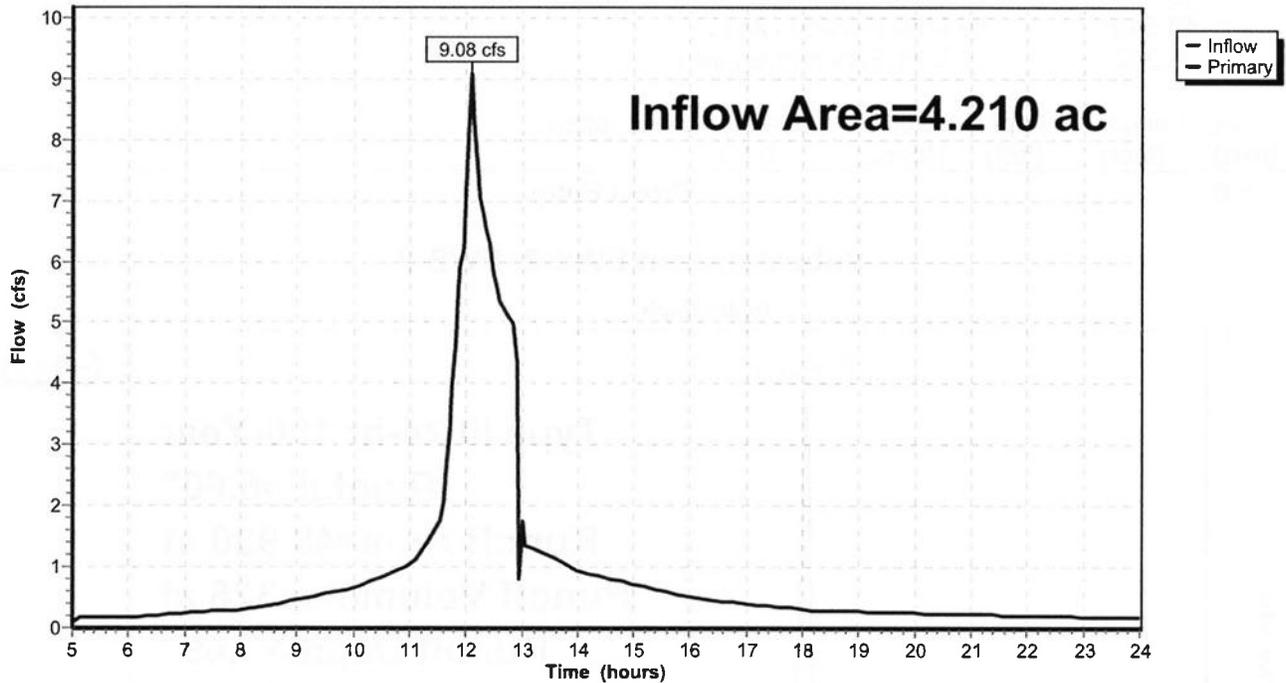
### Summary for Pond 2P: DP-1 (Muddy River)

Inflow Area = 4.210 ac, 76.25% Impervious, Inflow Depth > 3.71" for 100-Year event  
Inflow = 9.08 cfs @ 12.10 hrs, Volume= 1.302 af  
Primary = 9.08 cfs @ 12.10 hrs, Volume= 1.302 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

### Pond 2P: DP-1 (Muddy River)

Hydrograph



**Summary for Pond 4P: Synthetic Turf Field**

Inflow Area = 3.087 ac, 100.00% Impervious, Inflow Depth > 6.16" for 100-Year event  
 Inflow = 19.51 cfs @ 12.09 hrs, Volume= 1.584 af  
 Outflow = 7.51 cfs @ 12.32 hrs, Volume= 1.584 af, Atten= 62%, Lag= 13.9 min  
 Discarded = 2.78 cfs @ 11.90 hrs, Volume= 0.608 af  
 Primary = 4.73 cfs @ 12.32 hrs, Volume= 0.976 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 4.11' @ 12.32 hrs Surf.Area= 117,600 sf Storage= 8,347 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 4.8 min ( 765.4 - 760.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	3.87'	35,280 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) 117,600 cf Overall x 30.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.87	117,600	0	0
4.87	117,600	117,600	117,600

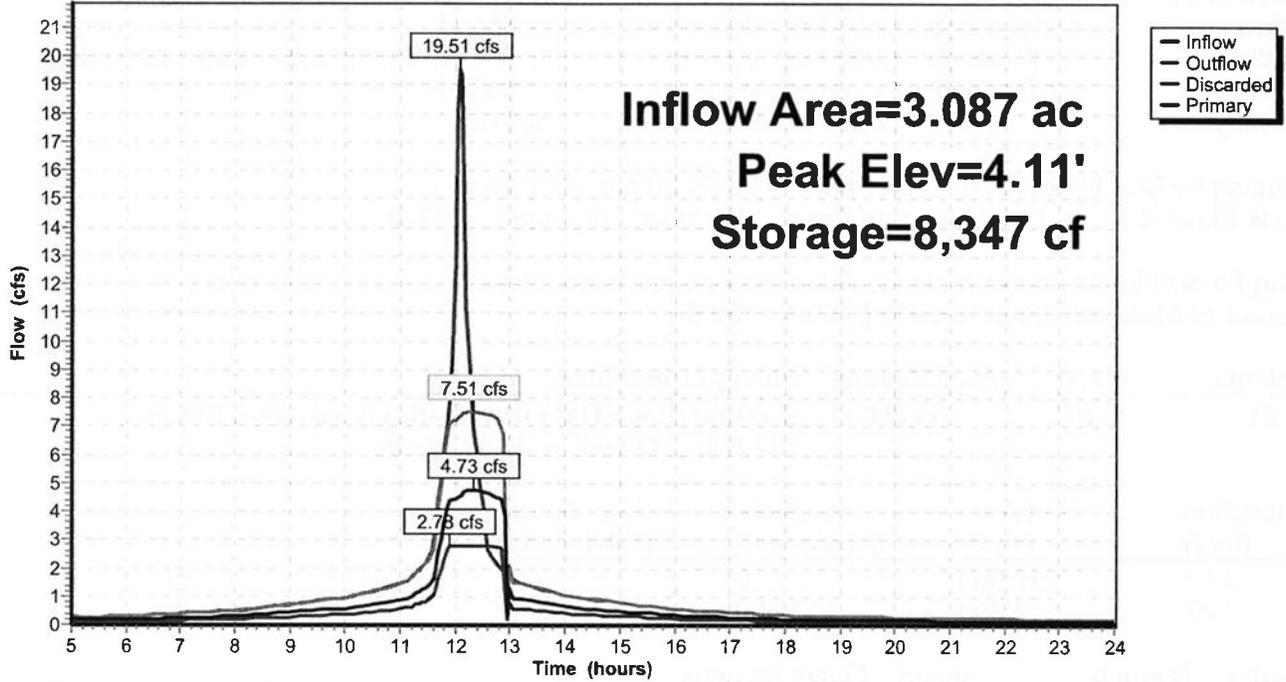
Device	Routing	Invert	Outlet Devices
#1	Discarded	3.87'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	2.04'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

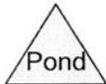
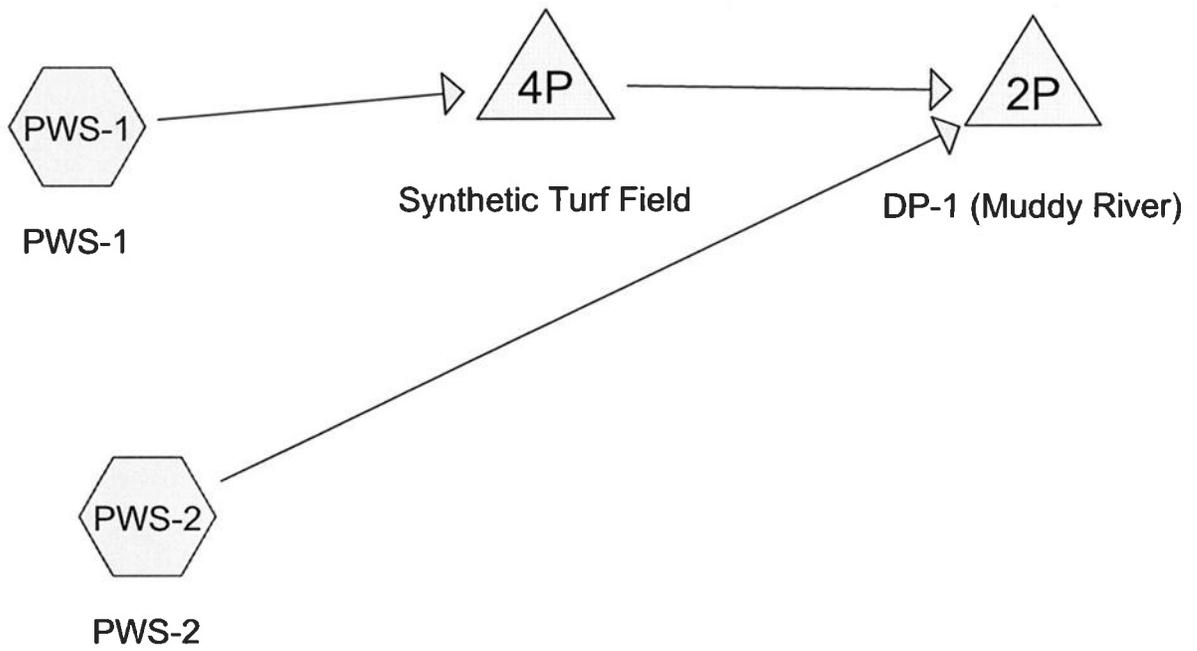
**Discarded OutFlow** Max=2.78 cfs @ 11.90 hrs HW=3.88' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 2.78 cfs)

**Primary OutFlow** Max=4.73 cfs @ 12.32 hrs HW=4.11' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 4.73 cfs @ 6.03 fps)

### Pond 4P: Synthetic Turf Field

Hydrograph





**Drainage Diagram for 717890\_Proposed**  
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**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
1.000	69	50-75% Grass cover, Fair, HSG B (PWS-2)
0.038	98	Concrete (PWS-1)
2.700	98	Synthetic Turf (PWS-1)
0.348	98	Track surfacing (PWS-1)
0.124	98	Track surfacing, pavementm concrete (PWS-2)
<b>4.210</b>	91	<b>TOTAL AREA</b>

Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPWS-1: PWS-1**

Runoff Area=3.086 ac 100.00% Impervious Runoff Depth>2.91"  
Tc=6.0 min CN=98 Runoff=9.36 cfs 0.749 af

**SubcatchmentPWS-2: PWS-2**

Runoff Area=1.124 ac 11.03% Impervious Runoff Depth>0.93"  
Tc=6.0 min CN=72 Runoff=1.12 cfs 0.087 af

**Pond 2P: DP-1 (Muddy River)**

Inflow=5.51 cfs 0.545 af  
Primary=5.51 cfs 0.545 af

**Pond 4P: Synthetic Turf Field**

Peak Elev=3.90' Storage=995 cf Inflow=9.36 cfs 0.749 af  
Discarded=2.78 cfs 0.290 af Primary=4.41 cfs 0.458 af Outflow=7.18 cfs 0.749 af

**Total Runoff Area = 4.210 ac Runoff Volume = 0.836 af Average Runoff Depth = 2.38"**  
**23.75% Pervious = 1.000 ac 76.25% Impervious = 3.210 ac**

**Summary for Subcatchment PWS-1: PWS-1**

Runoff = 9.36 cfs @ 12.09 hrs, Volume= 0.749 af, Depth> 2.91"

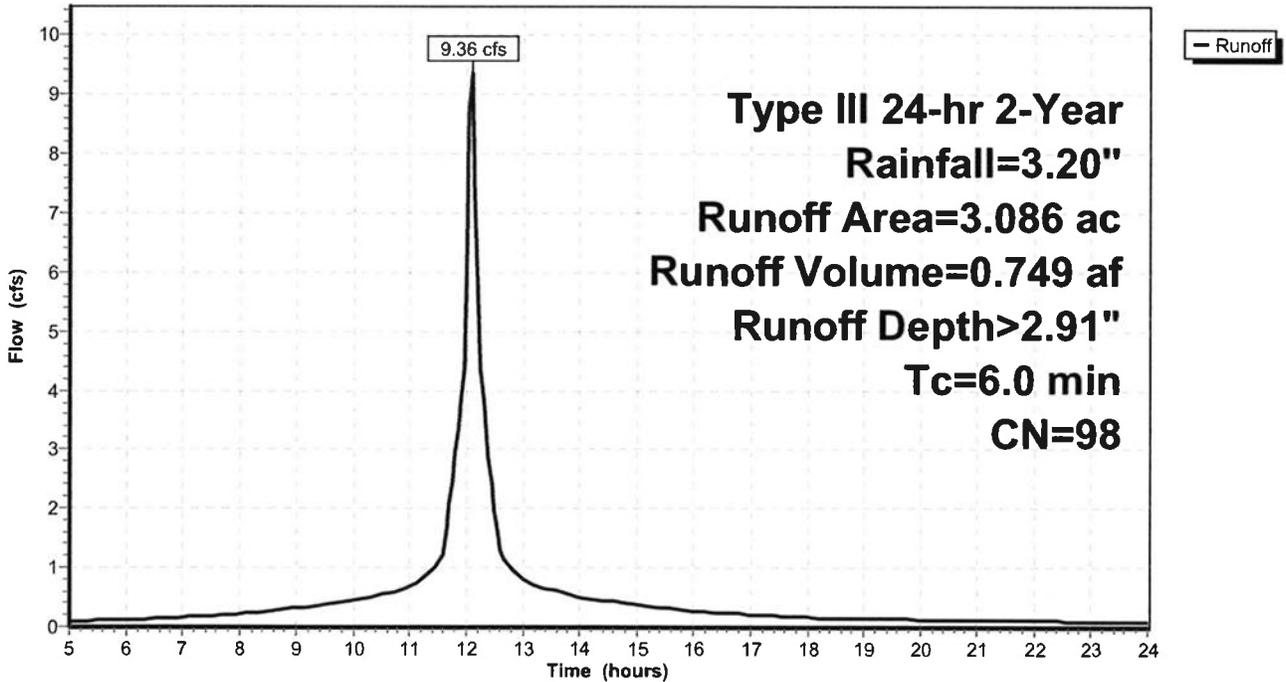
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
* 0.348	98	Track surfacing
* 2.700	98	Synthetic Turf
* 0.038	98	Concrete
3.086	98	Weighted Average
3.086		100.00% Impervious Area

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

**Subcatchment PWS-1: PWS-1**

Hydrograph



**Summary for Subcatchment PWS-2: PWS-2**

Runoff = 1.12 cfs @ 12.10 hrs, Volume= 0.087 af, Depth> 0.93"

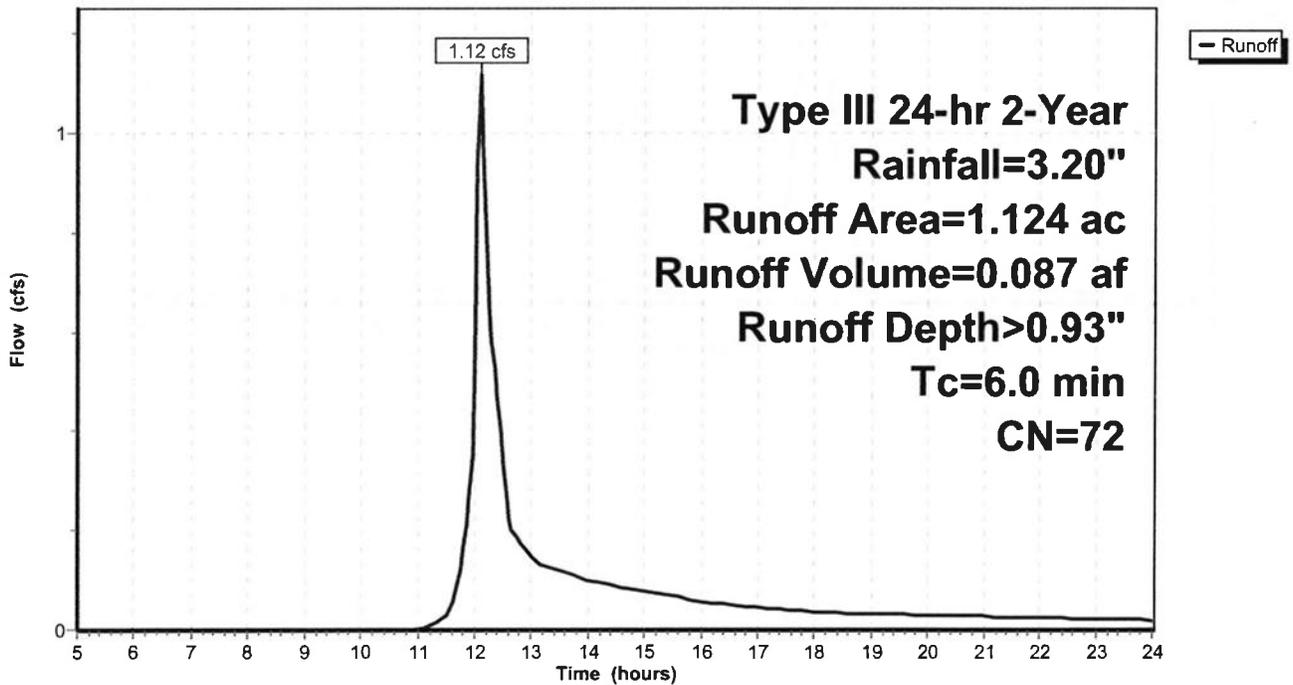
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
* 0.124	98	Track surfacing, pavementm concrete
1.000	69	50-75% Grass cover, Fair, HSG B
1.124	72	Weighted Average
1.000		88.97% Pervious Area
0.124		11.03% Impervious Area

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

**Subcatchment PWS-2: PWS-2**

Hydrograph



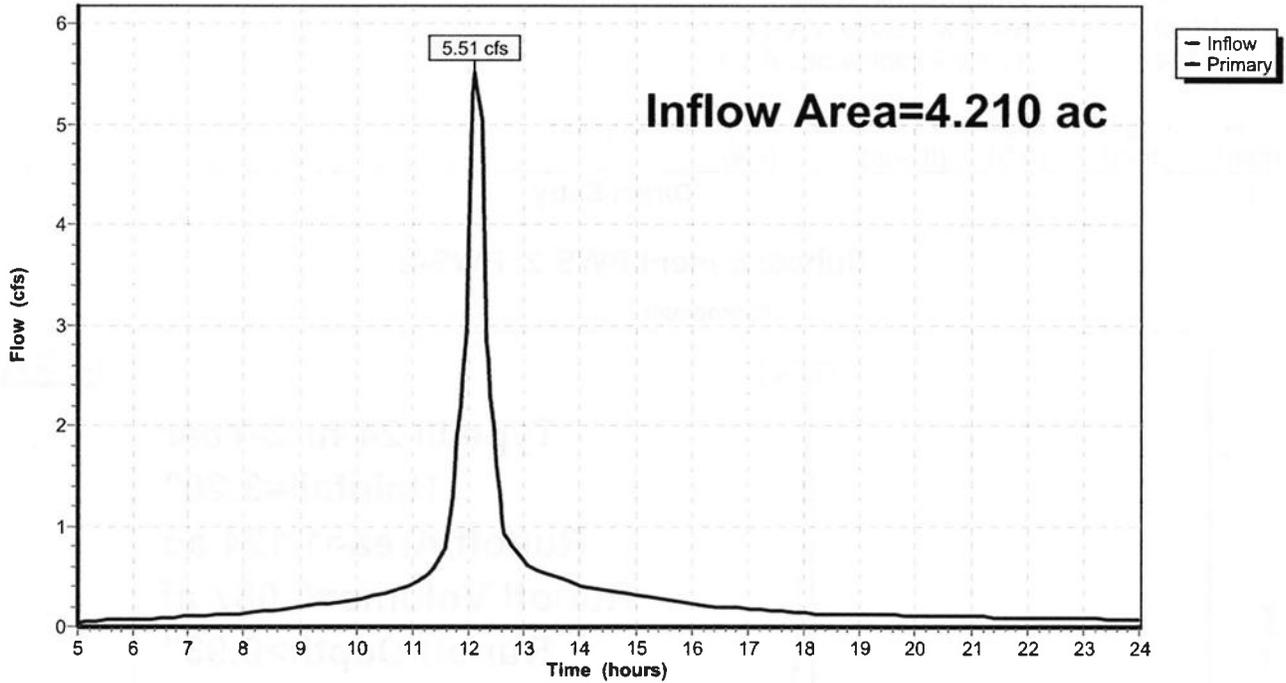
### Summary for Pond 2P: DP-1 (Muddy River)

Inflow Area = 4.210 ac, 76.25% Impervious, Inflow Depth > 1.55" for 2-Year event  
Inflow = 5.51 cfs @ 12.10 hrs, Volume= 0.545 af  
Primary = 5.51 cfs @ 12.10 hrs, Volume= 0.545 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

### Pond 2P: DP-1 (Muddy River)

Hydrograph



**Summary for Pond 4P: Synthetic Turf Field**

Inflow Area = 3.086 ac, 100.00% Impervious, Inflow Depth > 2.91" for 2-Year event  
 Inflow = 9.36 cfs @ 12.09 hrs, Volume= 0.749 af  
 Outflow = 7.18 cfs @ 12.15 hrs, Volume= 0.749 af, Atten= 23%, Lag= 4.0 min  
 Discarded = 2.78 cfs @ 12.05 hrs, Volume= 0.290 af  
 Primary = 4.41 cfs @ 12.15 hrs, Volume= 0.458 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 3.90' @ 12.15 hrs Surf.Area= 117,600 sf Storage= 995 cf

Plug-Flow detention time= 1.1 min calculated for 0.747 af (100% of inflow)  
 Center-of-Mass det. time= 0.9 min ( 766.7 - 765.8 )

Volume	Invert	Avail.Storage	Storage Description	
#1	3.87'	36,221 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.87	117,600	0.0	0	0
4.87	117,600	30.0	35,280	35,280
4.91	117,600	20.0	941	36,221

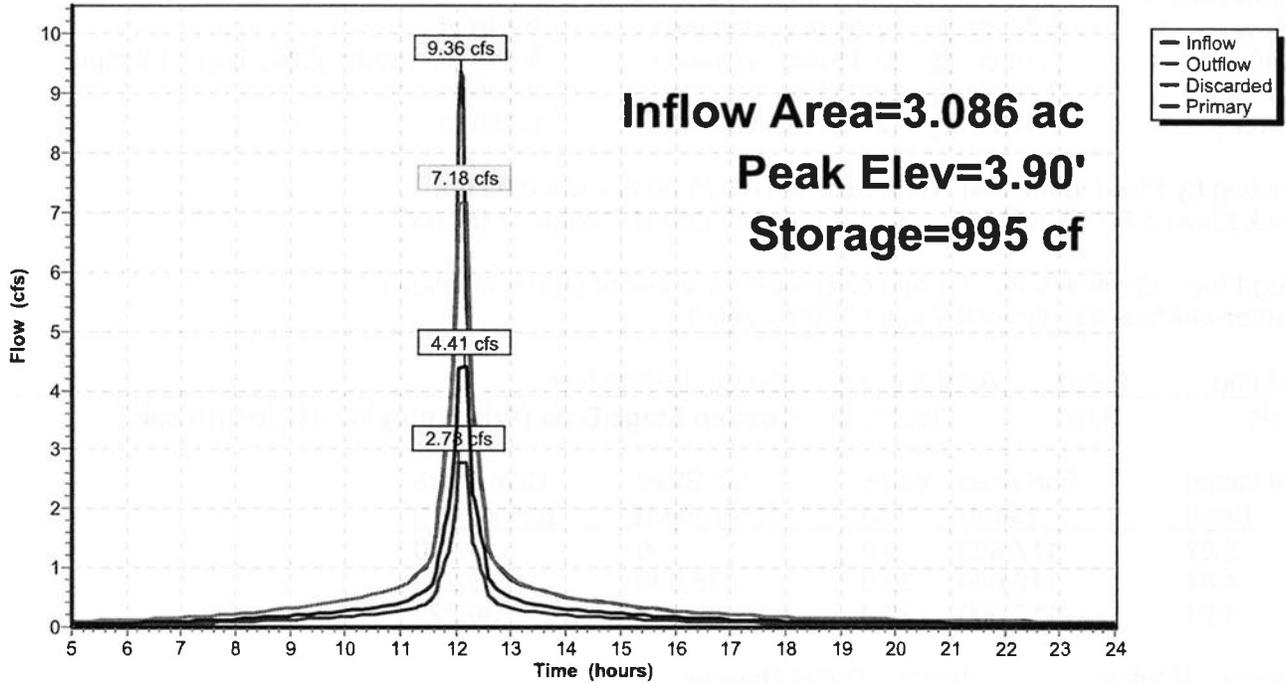
Device	Routing	Invert	Outlet Devices
#1	Discarded	3.87'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	2.04'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=2.78 cfs @ 12.05 hrs HW=3.88' (Free Discharge)  
 ↳1=Exfiltration (Exfiltration Controls 2.78 cfs)

**Primary OutFlow** Max=4.41 cfs @ 12.15 hrs HW=3.90' (Free Discharge)  
 ↳2=Orifice/Grate (Orifice Controls 4.41 cfs @ 5.61 fps)

### Pond 4P: Synthetic Turf Field

Hydrograph



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Type III 24-hr 10-Year Rainfall=4.60"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPWS-1: PWS-1**

Runoff Area=3.086 ac 100.00% Impervious Runoff Depth>4.25"  
Tc=6.0 min CN=98 Runoff=13.55 cfs 1.094 af

**SubcatchmentPWS-2: PWS-2**

Runoff Area=1.124 ac 11.03% Impervious Runoff Depth>1.89"  
Tc=6.0 min CN=72 Runoff=2.41 cfs 0.177 af

**Pond 2P: DP-1 (Muddy River)**

Inflow=6.87 cfs 0.848 af  
Primary=6.87 cfs 0.848 af

**Pond 4P: Synthetic Turf Field**

Peak Elev=3.97' Storage=3,373 cf Inflow=13.55 cfs 1.094 af  
Discarded=2.78 cfs 0.423 af Primary=4.52 cfs 0.671 af Outflow=7.29 cfs 1.094 af

**Total Runoff Area = 4.210 ac Runoff Volume = 1.271 af Average Runoff Depth = 3.62"**  
**23.75% Pervious = 1.000 ac 76.25% Impervious = 3.210 ac**

**Summary for Subcatchment PWS-1: PWS-1**

Runoff = 13.55 cfs @ 12.09 hrs, Volume= 1.094 af, Depth> 4.25"

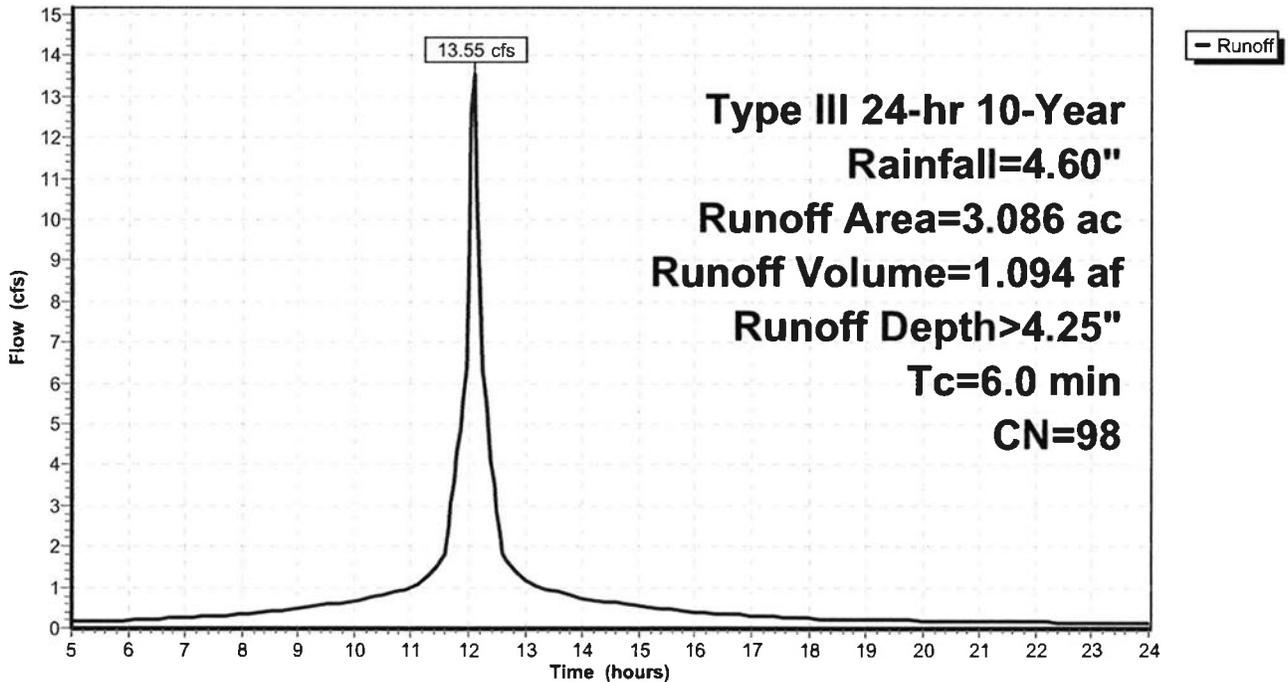
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.60"

Area (ac)	CN	Description
* 0.348	98	Track surfacing
* 2.700	98	Synthetic Turf
* 0.038	98	Concrete
3.086	98	Weighted Average
3.086		100.00% Impervious Area

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

**Subcatchment PWS-1: PWS-1**

Hydrograph



**Summary for Subcatchment PWS-2: PWS-2**

Runoff = 2.41 cfs @ 12.10 hrs, Volume= 0.177 af, Depth> 1.89"

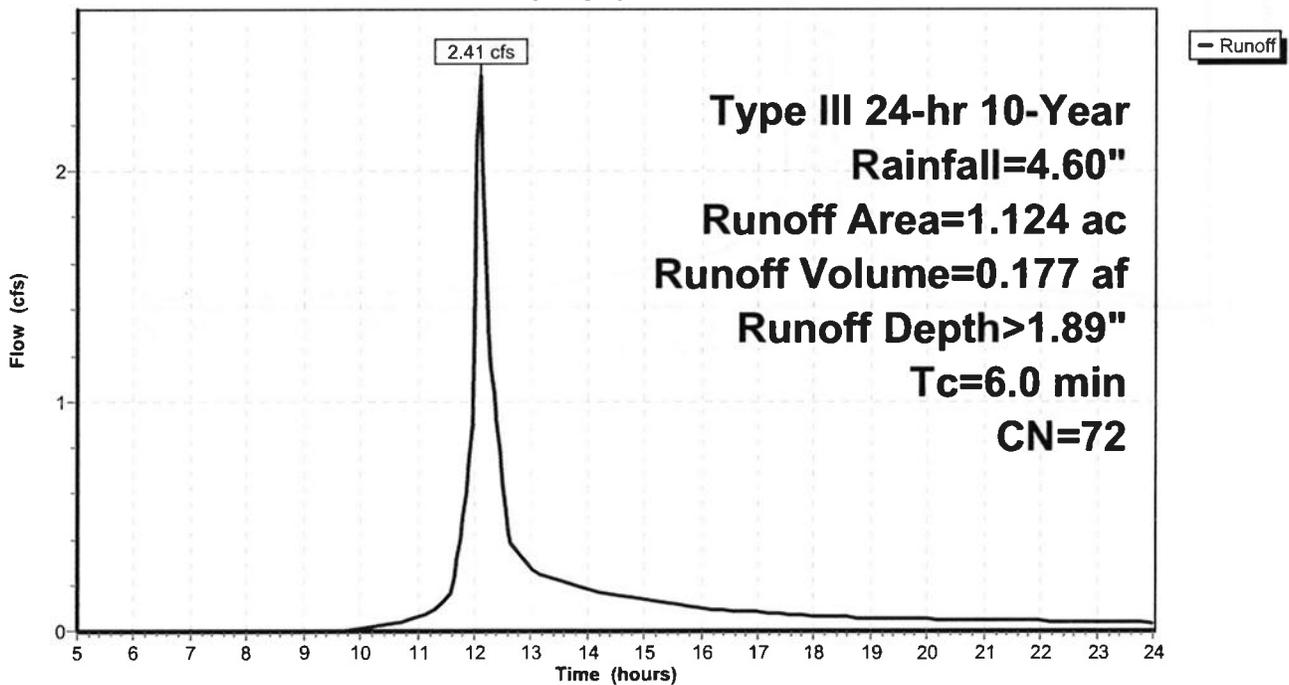
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.60"

Area (ac)	CN	Description
* 0.124	98	Track surfacing, pavementm concrete
1.000	69	50-75% Grass cover, Fair, HSG B
1.124	72	Weighted Average
1.000		88.97% Pervious Area
0.124		11.03% Impervious Area

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

**Subcatchment PWS-2: PWS-2**

Hydrograph



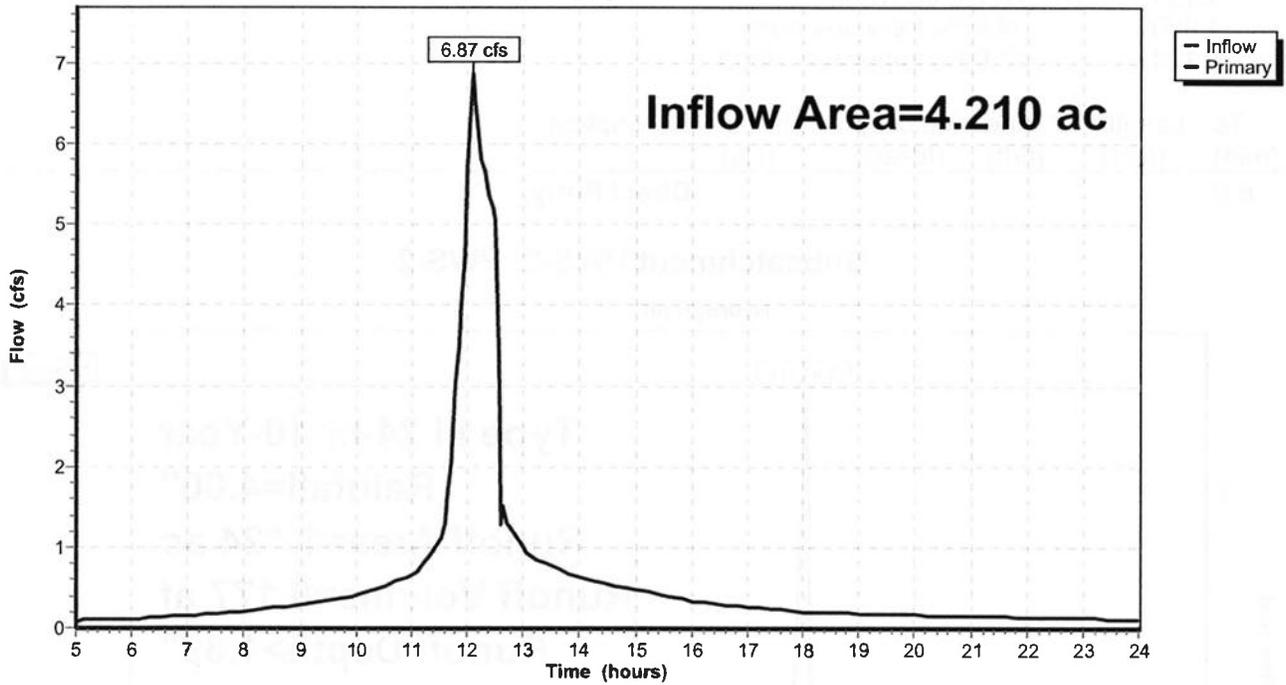
### Summary for Pond 2P: DP-1 (Muddy River)

Inflow Area = 4.210 ac, 76.25% Impervious, Inflow Depth > 2.42" for 10-Year event  
Inflow = 6.87 cfs @ 12.10 hrs, Volume= 0.848 af  
Primary = 6.87 cfs @ 12.10 hrs, Volume= 0.848 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

### Pond 2P: DP-1 (Muddy River)

Hydrograph



**Summary for Pond 4P: Synthetic Turf Field**

Inflow Area = 3.086 ac, 100.00% Impervious, Inflow Depth > 4.25" for 10-Year event  
 Inflow = 13.55 cfs @ 12.09 hrs, Volume= 1.094 af  
 Outflow = 7.29 cfs @ 12.22 hrs, Volume= 1.094 af, Atten= 46%, Lag= 8.0 min  
 Discarded = 2.78 cfs @ 12.00 hrs, Volume= 0.423 af  
 Primary = 4.52 cfs @ 12.22 hrs, Volume= 0.671 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 3.97' @ 12.22 hrs Surf.Area= 117,600 sf Storage= 3,373 cf

Plug-Flow detention time= 2.2 min calculated for 1.091 af (100% of inflow)  
 Center-of-Mass det. time= 2.0 min ( 764.6 - 762.6 )

Volume	Invert	Avail.Storage	Storage Description	
#1	3.87'	36,221 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.87	117,600	0.0	0	0
4.87	117,600	30.0	35,280	35,280
4.91	117,600	20.0	941	36,221

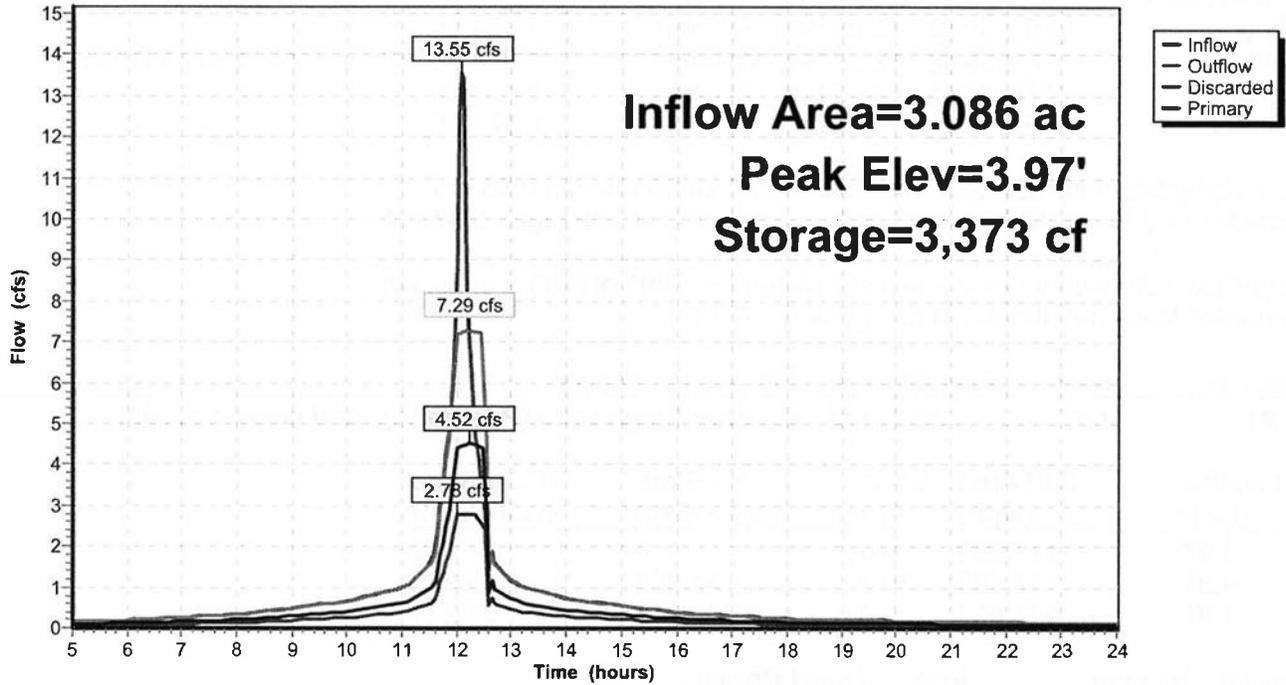
Device	Routing	Invert	Outlet Devices
#1	Discarded	3.87'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	2.04'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=2.78 cfs @ 12.00 hrs HW=3.88' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 2.78 cfs)

**Primary OutFlow** Max=4.51 cfs @ 12.22 hrs HW=3.96' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 4.51 cfs @ 5.75 fps)

### Pond 4P: Synthetic Turf Field

Hydrograph



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Type III 24-hr 100-Year Rainfall=6.60"

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Time span=5.00-24.00 hrs, dt=0.05 hrs, 381 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPWS-1: PWS-1**

Runoff Area=3.086 ac 100.00% Impervious Runoff Depth>6.16"  
Tc=6.0 min CN=98 Runoff=19.50 cfs 1.584 af

**SubcatchmentPWS-2: PWS-2**

Runoff Area=1.124 ac 11.03% Impervious Runoff Depth>3.49"  
Tc=6.0 min CN=72 Runoff=4.51 cfs 0.327 af

**Pond 2P: DP-1 (Muddy River)**

Inflow=9.08 cfs 1.303 af  
Primary=9.08 cfs 1.303 af

**Pond 4P: Synthetic Turf Field**

Peak Elev=4.11' Storage=8,356 cf Inflow=19.50 cfs 1.584 af  
Discarded=2.78 cfs 0.608 af Primary=4.73 cfs 0.976 af Outflow=7.51 cfs 1.584 af

**Total Runoff Area = 4.210 ac Runoff Volume = 1.911 af Average Runoff Depth = 5.45"**  
**23.75% Pervious = 1.000 ac 76.25% Impervious = 3.210 ac**

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Type III 24-hr 100-Year Rainfall=6.60"

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**Summary for Subcatchment PWS-1: PWS-1**

Runoff = 19.50 cfs @ 12.09 hrs, Volume= 1.584 af, Depth> 6.16"

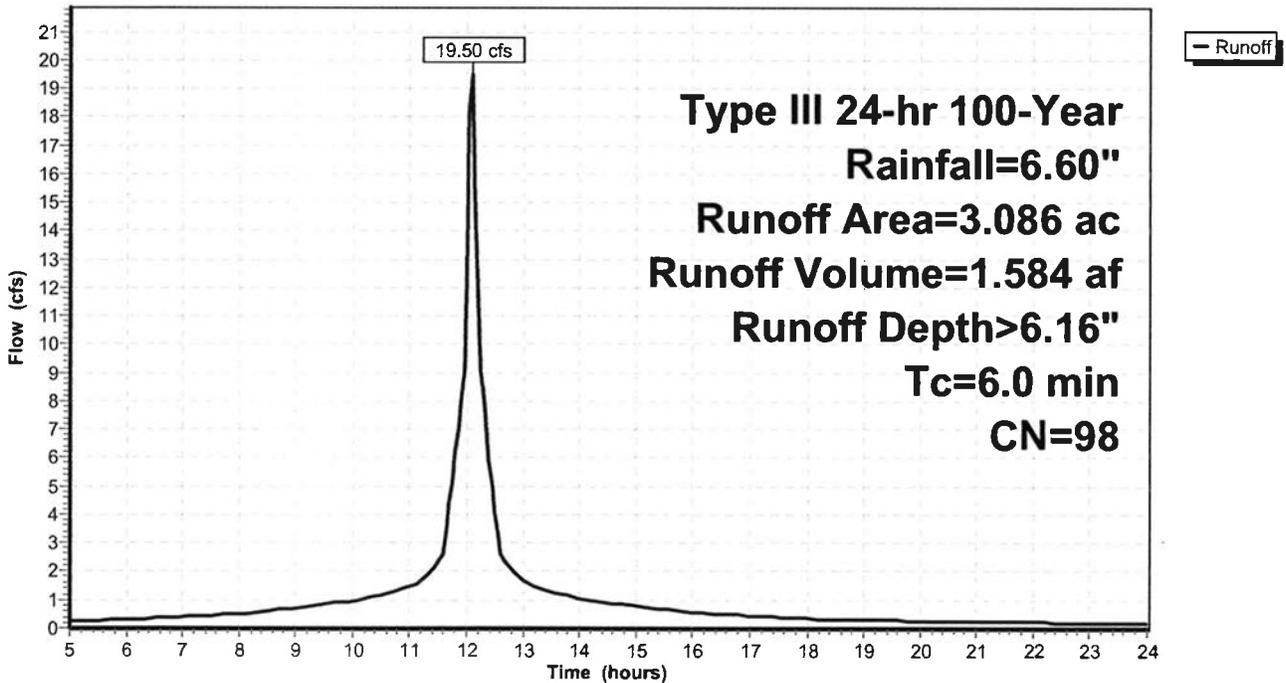
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-Year Rainfall=6.60"

Area (ac)	CN	Description
* 0.348	98	Track surfacing
* 2.700	98	Synthetic Turf
* 0.038	98	Concrete
3.086	98	Weighted Average
3.086		100.00% Impervious Area

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

**Subcatchment PWS-1: PWS-1**

Hydrograph



**Summary for Subcatchment PWS-2: PWS-2**

Runoff = 4.51 cfs @ 12.09 hrs, Volume= 0.327 af, Depth> 3.49"

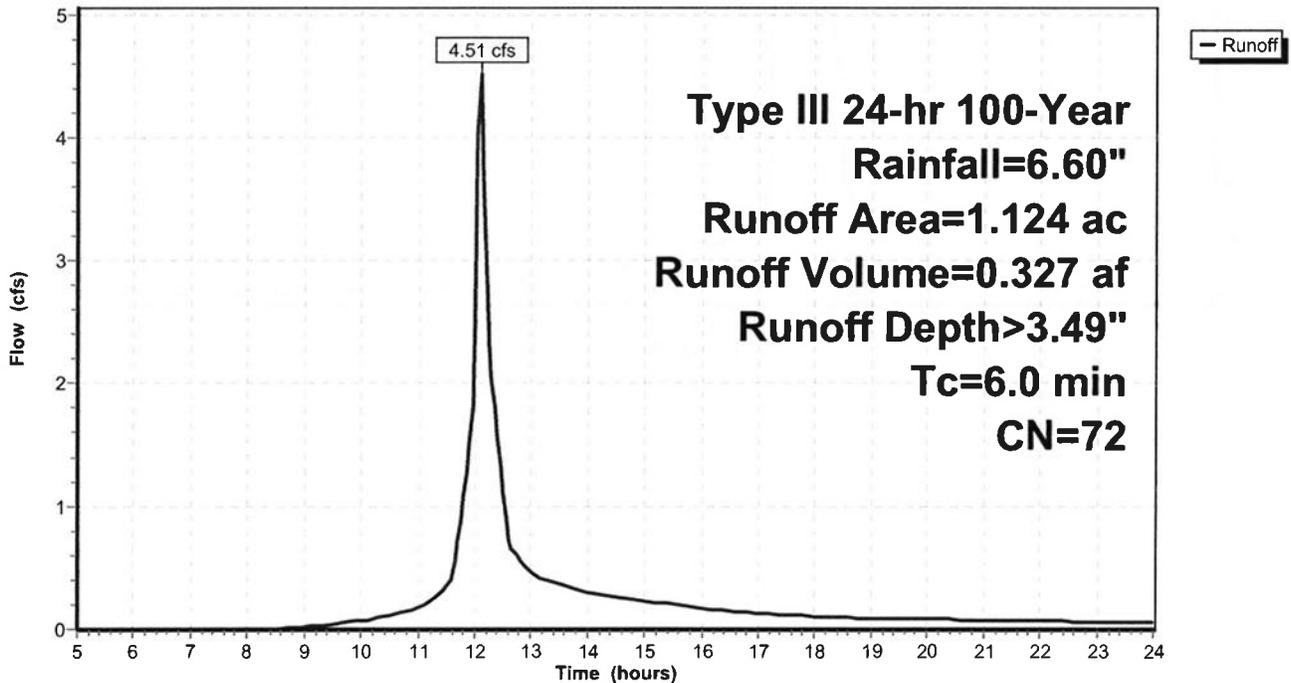
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-Year Rainfall=6.60"

Area (ac)	CN	Description
* 0.124	98	Track surfacing, pavementm concrete
1.000	69	50-75% Grass cover, Fair, HSG B
1.124	72	Weighted Average
1.000		88.97% Pervious Area
0.124		11.03% Impervious Area

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

**Subcatchment PWS-2: PWS-2**

Hydrograph



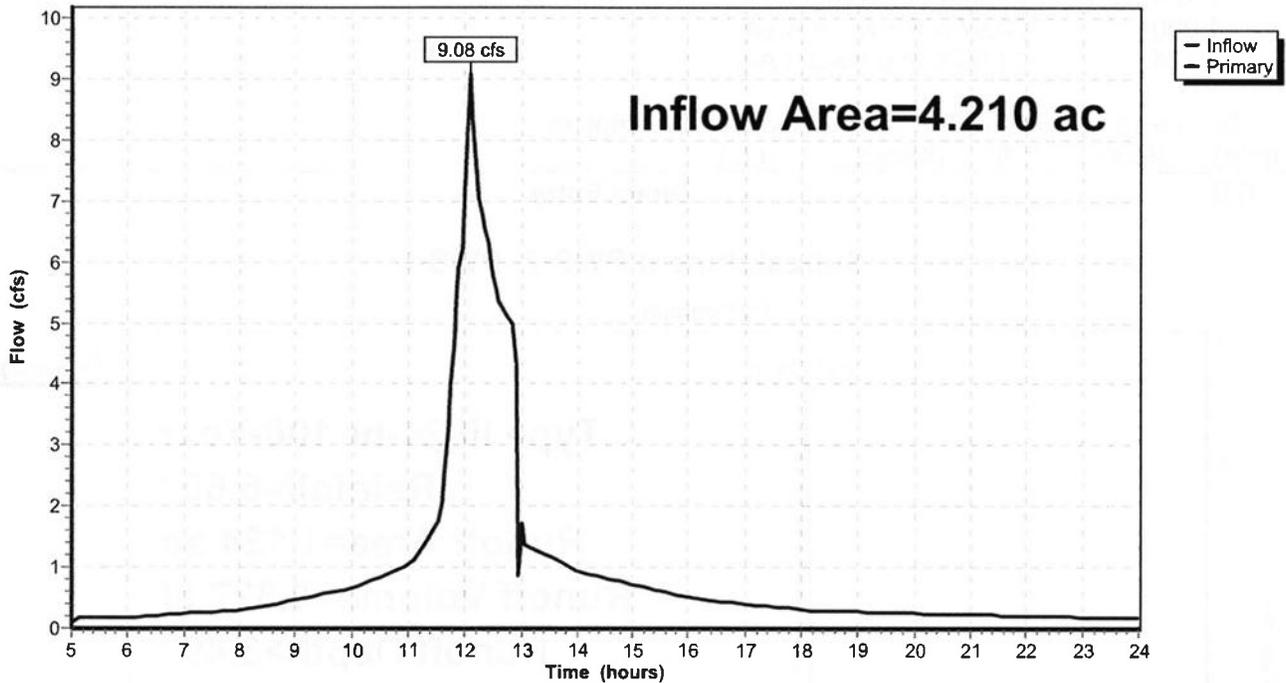
### Summary for Pond 2P: DP-1 (Muddy River)

Inflow Area = 4.210 ac, 76.25% Impervious, Inflow Depth > 3.71" for 100-Year event  
Inflow = 9.08 cfs @ 12.10 hrs, Volume= 1.303 af  
Primary = 9.08 cfs @ 12.10 hrs, Volume= 1.303 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs

### Pond 2P: DP-1 (Muddy River)

Hydrograph



**Summary for Pond 4P: Synthetic Turf Field**

Inflow Area = 3.086 ac, 100.00% Impervious, Inflow Depth > 6.16" for 100-Year event  
 Inflow = 19.50 cfs @ 12.09 hrs, Volume= 1.584 af  
 Outflow = 7.51 cfs @ 12.32 hrs, Volume= 1.584 af, Atten= 61%, Lag= 13.9 min  
 Discarded = 2.78 cfs @ 11.90 hrs, Volume= 0.608 af  
 Primary = 4.73 cfs @ 12.32 hrs, Volume= 0.976 af

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 4.11' @ 12.32 hrs Surf.Area= 117,600 sf Storage= 8,356 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 4.8 min ( 765.4 - 760.6 )

Volume	Invert	Avail.Storage	Storage Description	
#1	3.87'	36,221 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
3.87	117,600	0.0	0	0
4.87	117,600	30.0	35,280	35,280
4.91	117,600	20.0	941	36,221

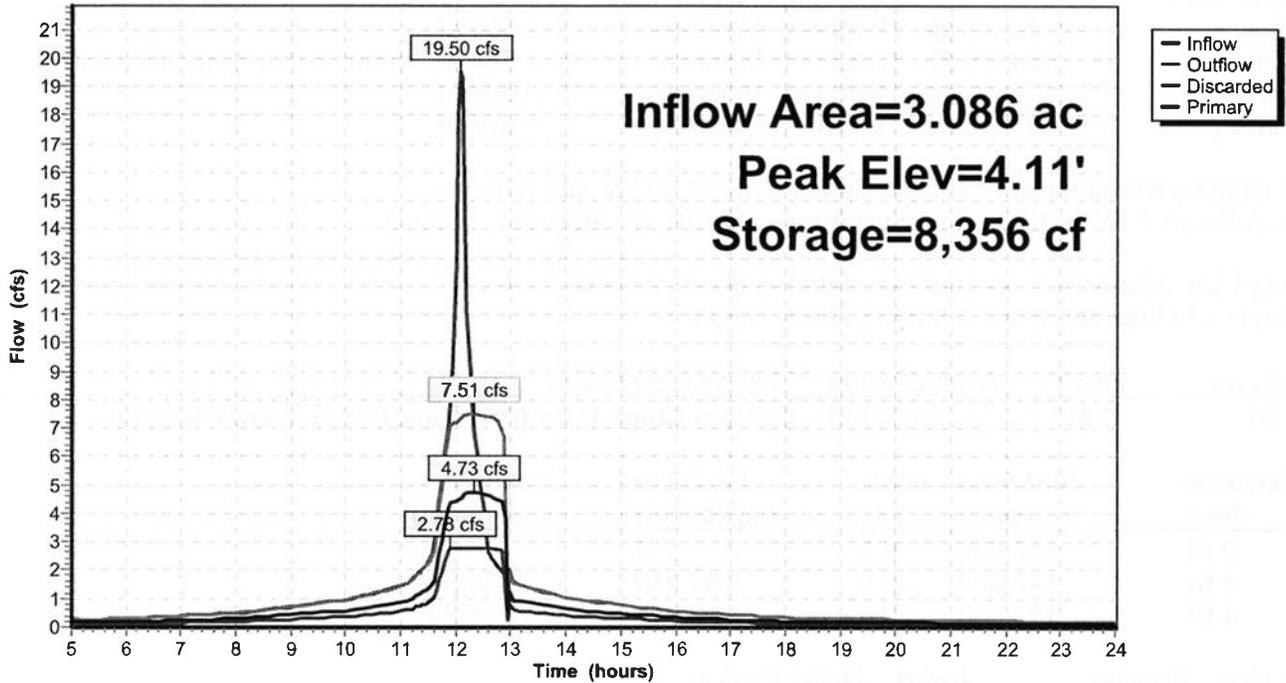
Device	Routing	Invert	Outlet Devices
#1	Discarded	3.87'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	2.04'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=2.78 cfs @ 11.90 hrs HW=3.88' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 2.78 cfs)

**Primary OutFlow** Max=4.73 cfs @ 12.32 hrs HW=4.11' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 4.73 cfs @ 6.03 fps)

### Pond 4P: Synthetic Turf Field

Hydrograph



**Attachment 7**

**Operation & Maintenance &  
Erosion & Sediment Control Plan**

# **OPERATION & MAINTENANCE PLAN**

**ROBERTO CLEMENTE FIELD**  
**EMMANUEL COLLEGE**  
**BOSTON, MA 02115**

**APRIL 2019**

## **TABLE OF CONTENTS**

SECTION 1	CONSTRUCTION ACTIVITIES
SECTION 2	POST-DEVELOPMENT ACTIVITIES PART A – GENERAL PART B – BMP MANAGEMENT
SECTION III	LONG TERM POLLUTION PREVENTION PLAN (INSPECTION & MAINTENANCE LOGS INCLUDED)
SECTION IV	ILLICIT DISCHARGE STATEMENT

# **OPERATION & MAINTENANCE PLAN**

## **ROBERTO CLEMENTE FIELD** **EMMANUEL COLLEGE** **BOSTON, MA 02115**

**APRIL 2019**

### **Basic Information**

Project Address: 400 The Fenway, Boston, MA  
Owner: Christopher Cook – City of Boston- Parks and Recreation  
Operator: Emmanuel College  
Town: Boston, MA

### **SECTION I: CONSTRUCTION ACTIVITIES**

1. Contact the Owner in writing at least seven (7) days prior to the start of construction.
2. Place the site sign (with contact numbers) prior to any work on site.
3. Install the erosion control BMPs, as shown on the construction documents.
4. The silt fence and silt sock line shall be inspected on a weekly basis; any breaks in the line shall be repaired as soon as possible.
5. All erosion and sedimentation controls shall be in accordance with the DEP's Erosion and Sedimentation Control Guidelines and the USDA SCS Erosion and Sedimentation Control during site development.
6. All stockpile areas are to be protected by silt fence and silt socks, and shall be covered with a tarp to prevent moisture intrusion and dust concerns.
7. All disturbed areas shall be stabilized with mulch or seed immediately upon completion of construction activity. In no case, shall an area be left unstabilized for more than 14 days after the construction activity in that area has ceased.
8. All erosion control measures shall be inspected after any rainfall of 0.5" or greater.
9. All catch basins are to be ringed with silt socks and covered with a sediment filter until all up-gradient disturbed areas are stabilized.
10. All outlet orifices are to be ringed with silt socks until the detention structure or infiltration area is stabilized.
11. All slopes greater than 3:1 shall be stabilized with an erosion control blanket.
12. The contractor shall keep additional silt fence and straw bales on site to mitigate any emergency condition.
13. All drainage structures (catch basins, manholes, outlet control structures and detention systems) should be cleaned at the end of construction and at any time the sediment within the structures equals 12" deep.
14. The contractor shall only disturb the minimum area necessary.
15. All illicit discharges are prohibited.

# **OPERATION & MAINTENANCE PLAN**

## **ROBERTO CLEMENTE FIELD** **EMMANUEL COLLEGE** **BOSTON, MA 02115**

**APRIL 2019**

### **SECTION II: POST-DEVELOPMENT ACTIVITIES**

#### **PART A - GENERAL**

- It shall be the responsibility of municipal employees to implement the procedures outlined herein.
- The entire project area shall be stabilized with vegetation upon completion of construction and prior to the removal of the erosion control devices.
- The closed drainage system shall be inspected every 6 months and any excess sediment within the structures or detention systems shall be properly disposed of.
- Any problems found with the drainage system shall be repaired in a timely manner.
- The Owner shall employ a qualified professional to perform frequent maintenance, as described herein.
- All maintenance personnel shall be trained annually on the operation and maintenance procedures. A training log shall be maintained for records to document the annual training of employees.
- Inspection logs are included with this O&M plan. The qualified professional shall provide the Owner with maintenance logs after each inspection or corrective action. The Owner shall keep record of these logs for at least three (3) years and shall provide copies to the Town, if requested.
- In the event that an infiltration BMP (synthetic turf field) fails to drain within 72-hours of a storm event, a qualified professional should be consulted to determine what corrective actions may be necessary.
- All illicit discharges are prohibited.

#### **PART B - BMP MANAGEMENT**

Each Best Management Practice shall be maintained per the below requirements:

##### **SYNTHETIC TURF FIELD**

- Perform preventative maintenance twice a year.
- Inspect cleanouts and drain manholes after every major storm during the first 3 months of operation and twice a year thereafter, and also when there are discharges.

# **OPERATION & MAINTENANCE PLAN**

## **ROBERTO CLEMENTE FIELD** **EMMANUEL COLLEGE** **BOSTON, MA 02115**

**APRIL 2019**

### **SECTION III – LONG TERM POLLUTION PREVENTION PLAN**

#### **GOOD HOUSEKEEPING PRACTICES**

- Prevent or reduce pollutant runoff from the project development through the use of street sweeping, landscaping maintenance, trash clean up, erosion control measures and frequent site cleaning.

#### **STORING MATERIALS AND WASTE PRODUCTS**

- All materials stored on site shall be stored in a neat and orderly fashion, in their appropriate containers, and under a roof or other secure enclosure. Waste products should be placed in secure receptacles until they are emptied by a licensed solid waste management company.

#### **ROUTINE INSPECTIONS AND MAINTENANCE OF STORMWATER BMPS:**

- Follow the guidelines outlined above.

#### **MAINTENANCE OF LAWNS, GARDENS AND OTHER LANDSCAPED AREAS**

- The owner will be responsible for these activities.

#### **PET WASTE MANAGEMENT:**

- Waste products shall be placed in secure receptacles until they are emptied by a licensed solid waste management company.

#### **PROPER MANAGEMENT OF DEICING CHEMICALS AND SNOW:**

- Snow disposal shall be in accordance with the Department of Environmental Protection, Bureau of Resource Protection, Snow Disposal Guidelines, Guideline No. BRPG01-01. In general, snow will be plowed in accordance with standard operating procedures. Whenever possible, the use of environmentally friendly alternatives (e.g. calcium chloride and sand instead of salt for melting ice), will be considered.

#### **STREET SWEEPING:**

- Street sweeping shall be performed at least four (4) times per year, primarily in spring and fall.

**OPERATION & MAINTENANCE PLAN**  
**ROBERTO CLEMENTE FIELD**  
**EMMANUEL COLLEGE**

**INSPECTION & MAINTENANCE LOG**

Inspected by: \_\_\_\_\_ Date: \_\_\_\_\_.

Days since last rainfall: \_\_\_\_\_ Amount of last Rainfall: \_\_\_\_\_ Inches

**BMP Being Inspected:**  
**SYNTHETIC TURF FIELD**

Description or sketch of BMP Location:

Opened inspection ports or manhole covers	YES	NO
Standing water observed	YES	NO
Depth of standing water (inches)		Not Applicable
Sediment observed	YES	NO
Depth of sediment (inches)		Not Applicable

Corrective Actions taken:

Other Remarks:

**Attachment 8**  
**Illicit Discharge Statement**

**OPERATION & MAINTENANCE PLAN**  
**ROBERTO CLEMENTE FIELD**  
**EMMANUEL COLLEGE**

**SECTION IV – ILLICIT DISCHARGE STATEMENT**

Standard 10 of the Massachusetts Stormwater Regulations prohibits illicit discharges to stormwater management systems. The stormwater management system is the system for conveying, treating and infiltrating stormwater on site, including stormwater best management practices and any pipes intended to transport stormwater to the ground water, a surface water, or municipal separate storm sewer system.

Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated ground water, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing, and water used to clean residential buildings without detergents.

I, \_\_\_\_\_ (print name), certify that I have conducted a proper site investigation and verify that to the best of my knowledge there are no illicit discharges located at the ROBERTO CLEMENTE FIELD.

Signature \_\_\_\_\_

Date \_\_\_\_\_

**Attachment 9**  
**Stormwater Pollution Prevention Plan**

Stormwater Pollution Prevention Plan (SWPPP)  
Roberto Clemente Field  
Emmanuel College  
Boston, MA  
Gale JN 717890

## **STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**

### **FOR TURF REPLACEMENT ACTIVITIES AT:**

ROBERTO CLEMENTE FIELD  
PARK DRIVE  
BOSTON, MA

### **SWPPP PREPARED FOR:**

EMMANUEL COLLEGE  
400 THE FENWAY  
BOSTON, MA

### **SWPPP PREPARED BY:**

GALE ASSOCIATES, INC.  
163 LIBBEY INDUSTRIAL PARKWAY  
WEYMOUTH, MA, 02189  
781-335-6465  
JOHN PERRY  
CHIEF CIVIL ENGINEER  
JMP@GAINC.COM

**SWPPP PREPARATION DATE:** FEBURARY 2019

### **ESTIMATED PROJECT DATES:**

**PROJECT START DATE:** TBD

**PROJECT COMPLETION DATE:** TBD

## **TABLE OF CONTENTS**

### **SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES**

### **SECTION 2: SITE EVALUATION, ASSESSMENT AND PLANNING**

### **SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS**

### **SECTION 4: EROSION AND SEDIMENT CONTROLS**

### **SECTION 5: POLLUTION PREVENTION STANDARDS**

### **SECTION 6: INSPECTION AND CORRECTIVE ACTION**

### **SECTION 7: TRAINING**

### **SECTION 8: CERTIFICATION AND NOTIFICATION**

### **SWPPP APPENDICES**



**SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING**

**2.1 PROJECT/SITE INFORMATION**

**Project Name and Address**

Project/Site Name: Roberto Clemente Field

Project Street/Location: Park Drive

City: Boston

State: MA

ZIP Code: 02115

County or Similar Subdivision: Suffolk County

Latitude:

Longitude:

42 ° 20' 26.441" N (degrees, minutes, seconds)

71 ° 5' 50.981" W (degrees, minutes, seconds)

**Method for determining latitude/longitude:**

USGS topographic map (specify scale: \_\_\_\_\_)

EPA Web site

GPS

Other (please specify): Google Earth

Horizontal Reference Datum:

NAD 27    NAD 83 or WGS 84    Unknown

If you used a U.S.G.S topographic map, what was the scale?

**Additional Project Information**

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

Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the 2012 CGP?  Yes    No

**2.2 DISCHARGE INFORMATION**

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

Are there any surface waters that are located within 50 feet of your construction disturbances?

Yes  No

**Table 1 – Names of Receiving Waters**

<b>1. Muddy River</b>
-----------------------

**Table 2 – Impaired Waters / TMDLs**

	Is this surface water listed as "impaired"?	If you answered yes, then answer the following:			
		What pollutant(s) are causing the impairment?	Has a TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
<b>1.</b>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Pathogens	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	N/A	N/A

Describe the method(s) you used to determine whether or not your project/site discharges to an impaired water: EPA's list of impaired waters

**Table 3 – Tier 2, 2.5, or 3 Waters**

	Is this surface water designated as a Tier 2, Tier 2.5, or Tier 3 water? (see Appendix F)	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
<b>1.</b>	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	N/A

### 2.3 NATURE OF THE CONSTRUCTION ACTIVITY GENERAL DESCRIPTION OF PROJECT

The project scope is the replacement of a synthetic turf field that will provide a durable, multipurpose, all-weather athletic surface. Site work will also include replacing the track surfacing for the existing three-lane running track. The stormwater management will not be altered, using the existing drainage system that is in place.

#### Size of Construction Project

Size of Property: 8.1 ± Acres

Total Area Expected to be Disturbed by Construction Activities: 2.7± Ac.

Maximum Area Expected to be Disturbed at Any One Time: 2.7 ± Ac.

#### Type of Construction Site

Single-Family Residential     Multi-Family Residential     Commercial     Industrial  
 Institutional     Highway or Road     Utility     Other: Recreational Playing 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?

Yes     No

#### Pollutant-Generating Activities

List and describe all pollutant-generating activities and indicate for each activity the type of pollutant that will be generated. Take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed during construction.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents
Construction Vehicles	Oil, Grease
Glue/Solvents	Polymer, Epoxies

**Construction Support Activities**

Construction Support Activities include the following:

Material / Construction Equipment / Vehicle Staging Areas

**2.4 SEQUENCE AND ESTIMATED DATES OF CONSTRUCTION ACTIVITIES**

**Construction Phasing:**

Phase 1: Replacement of turf and track surfacing (Estimated May 2019 to August 2019)

**Construction Sequencing:**

The sequencing for each phase shall generally be as follows:

- Install erosion control measures to include straw wattles and inlet protection.
- Removal of existing track surfacing and synthetic turf.
- Fine grading of existing top stone to match existing, crack repair at track asphalt.
- Installation of new synthetic turf, shock pad and infill.
- Installation of new track surfacing and stripping.
- Final clean-up.

**2.5 STORMWATER DISCHARGES**

**List of Allowable Non-Stormwater Discharges Present at the Site**

Type of Allowable Non-Stormwater Discharge	Likely to be Present at Your Site?
Discharges from emergency fire-fighting activities	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Fire hydrant flushings	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Landscape irrigation	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Waters used to wash vehicles and equipment	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Water used to control dust	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Potable water including uncontaminated water line flushings	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Routine external building wash down	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Pavement wash waters	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Uncontaminated air conditioning or compressor condensate	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Uncontaminated, non-turbid discharges of ground water or spring water	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Foundation or footing drains	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Construction dewatering water	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

**2.6 SITE MAPS**

Please find site Maps in Appendix A

### **SECTION 3: DOCUMENTATION OF COMPLIANCE WITH FEDERAL REQUIREMENTS**

#### **3.1 ENDANGERED SPECIES PROTECTION**

The Roberto Clemente Field Project falls under criterion A which is defined as follows:

“Criterion A. - No federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site’s “action area” as defined in Appendix A of this permit.”

Refer to Appendix K which shows the supporting documentation from MassGIS (Oliver) Natural Heritage and Endangered Species (NHESP) delineations.

#### **3.2 HISTORIC PRESERVATION**

Step 1: No new stormwater controls will be installed on site.

#### **3.3 SAFE DRINKING WATER ACT UNDERGROUND INJECTION CONTROL REQUIREMENTS**

No new controls will be installed on site.

### **SECTION 4: EROSION AND SEDIMENT CONTROLS**

1. Erosion control barriers, straw wattles and inlet protection, will be installed prior to start of work.

#### **4.1 NATURAL BUFFERS OR EQUIVALENT SEDIMENT CONTROLS**

##### **Buffer Compliance Alternatives**

Are there any surface waters within 50 feet of your project’s earth disturbances?

YES  NO

- It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore I will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

##### **Buffer Exceptions**

No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.

#### **4.2 PERIMETER CONTROLS**

Straw wattles will be installed as shown on the Erosion Control Plan.

##### **Installation**

Erosion control should be installed before construction begins.

##### **Maintenance Requirements**

- a) Erosion controls should be inspected immediately after each rainfall event of 0.5 greater, and at least daily during prolonged rainfall. Inspect the depth of sediment, fabric tears, and to see that the stakes are firmly in the ground. Repair or replace as necessary.
- b) Remove sediment deposits promptly after storm events to provide adequate storage volume for the next rain. Sediment will be removed from behind the erosion control when it becomes at ½ foot deep. Take care to avoid undermining during cleanout.
- c) Remove all erosion control materials after the contributing drainage area has been properly stabilized. Sediment deposits remaining after the sock has been removed should be graded and to conform with the existing topography and vegetated.

#### **4.3 SEDIMENT TRACK-OUT**

A stabilized construction entrance will be constructed at the entrance of the construction site. If washing is required. It shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.

##### **Track-Out Control Description:**

A stabilized construction entrance shall be constructed where designated on the plans. It should be constructed with filter fabric on the existing grade topped with 8" minimum of 1.5" crushed stone. See detail in drawing set for more information.

##### **Installation:**

Beginning of project before construction begins.

##### **Maintenance Requirements:**

The entrance will be maintained in a condition that will prevent tracking or flowing of sediment onto adjacent properties. This may require periodic topdressing with additional stone or replacement stone.

The construction entrance and sediment disposal area shall be inspected weekly and after heavy rains or heavy use.

Mud and sediment tracked or washed onto public road shall be immediately removed.

Once mud and soil particles clog the voids in the gravel and the effectiveness of the gravel pad is no longer satisfactory, the pad must be top dressed with new stone. Replacement of the entire pad may be necessary when the pad becomes completely clogged.

If washing facilities are used, the sediment traps should be cleaned out as often as necessary to assure that adequate trapping efficiency and storage volume is available.

The pad shall be reshaped as needed for drainage and runoff control.

Broken road pavement on adjacent access roadways shall be repaired immediately.

All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary practices are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil areas resulting from removal shall be permanently stabilized.

#### **4.4 STOCKPILED SEDIMENT OR SOIL**

There shall be no sediment or soil stockpiled on site.

#### **4.5 MINIMIZE DUST**

Due to nature of project there shall be no unstabilized soil resulting in dust.

#### **4.6 MINIMIZE THE DISTURBANCE OF STEEP SLOPES**

No disturbance to steep slopes shall occur on site.

#### **4.7 TOPSOIL**

No topsoil shall be removed onsite.

#### **4.8 SOIL COMPACTION**

No soil compaction shall occur onsite, with exception of synthetic turf basestone.

#### **4.9 STORM DRAIN INLETS**

Inlet protection silt sacks will be used as necessary to prevent sediment from entering drainage structures.

##### **Maintenance Requirements:**

All trapping devices and the structures they protect should be inspected after every rain storm and repairs made as necessary.

Sediment should be removed from the trapping devices after the sediment has reached a maximum depth of one-half the depth of the trap.

Structural or vegetative means.

The silt sack must be replaced if it is ripped or torn in any way.

Temporary traps should be removed and the area repaired as soon as the contributing drainage area to the inlet has been completely stabilized.

#### **4.10 CONSTRUCTED STORMWATER CONVEYANCE CHANNELS**

No conveyance channels will be used as part of this project.

#### **4.11 SEDIMENT BASINS**

No sediment basins shall be used as part of this project.

#### **4.12 CHEMICAL TREATMENT**

No chemical treatment anticipated on this project.

#### **4.13 DEWATERING PRACTICES**

Dewatering practices are not anticipated to be needed.

#### **4.15 SITE STABILIZATION**

Temporary stabilization is not anticipated to be needed.

#### **4.16 CONCRETE WASHOUT BASINS**

Washout areas are not anticipated as being needed.

### **SECTION 5: POLLUTION PREVENTION STANDARDS**

#### **5.1 POTENTIAL SOURCES OF POLLUTION**

The materials expected to be present during construction on the site are as follows:

- Sand / Infill Material
- Construction Fencing
- Track Surfacing
- Turf Carpet and Shock Pad

The following are the material management's practices that will be used to reduce the risk of spills and contamination to the Stormwater management system:

Trash removal, designated trash storage areas, pavement sweeping and deicing agents on the site will reduce the pollutant load going into the site's stormwater management system.

Daily loose trash removal will prevent litter, construction debris and construction chemicals exposed to stormwater from becoming a source of pollution. All loose trash will be placed in appropriate storage containers until properly disposed of.

All waste materials will be collected and stored in securely sealed metal dumpsters leased from a licensed solid waste management company. The dumpster will meet all local and state solid waste management regulations. The dumpster will be emptied as necessary. No trash or construction debris will be buried on the site. All personnel will be instructed regarding the correct procedure for waste disposal and notices stating these practices will be posted in the office trailer. The construction superintendent will be responsible for adherence to these procedures.

All hazardous waste materials such as petroleum products and solvents will be disposed of in the manner specified by the manufacturer or local and state regulations. Construction personnel will be instructed in these practices and the construction superintendent will be responsible for adherence to these procedures.

All sanitary waste will be collected from portable units by a licensed contractor and disposed of in compliance with state and local regulations.

## **5.2 SPILL PREVENTION AND RESPONSE**

All employees will be instructed regarding the following spill prevention practices. Notice of the practices will be posted at the job site and the site construction supervisor will hold responsibility for ensuring that the procedures are followed

The following good housekeeping practices will be followed onsite during the construction project:

### **Good Housekeeping**

An effort will be made to store only the amount of material required to do the job.

All material stored onsite will be stored in a neat, orderly manner in their appropriate containers and if possible, under a roof or other enclosure.

Products will be kept in their original containers with the original manufacturer's label.

Substances will not be mixed with one another unless recommended by the manufacturer

Whenever possible, all of a product will be used up before disposing of the container.

Manufacturer's recommendations for proper use and disposal will be followed.

The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.

## **5.3 FUELING AND MAINTENANCE OF EQUIPMENT OR VEHICLES**

Fueling and Maintenance of Equipment will be done in designated areas that are at least 100-feet away from any environmental resource areas.

## **5.4 WASHING OF EQUIPMENT AND VEHICLES**

Washing of equipment and vehicles will be done in designated areas that are at least 100-feet away from any environmental resource areas.

## **5.5 STORAGE, HANDLING, AND DISPOSAL OF CONSTRUCTION PRODUCTS, MATERIALS, AND WASTES**

The following material management practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. These include good housekeeping practices and guidelines for the handling of hazardous products.

- a) Only enough products to do the particular job will be stored on the site. All of a product will be used before disposing of the container.
- b) Materials stored on the site will be stored in a neat and orderly manner in the original containers with labels under a roofed enclosure, if possible.

- c) Substances will not be mixed unless recommended by the manufacturer.
- d) The manufacturer's recommendations for proper use and disposal will be followed.
- e) The construction superintendent will inspect the storage area daily to ensure proper use and disposal of materials.
- f) A copy of all Material Safety Data Sheets for products will be kept in the office trailer.

- **Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals**

All construction vehicles will be monitored for leaks and will receive regular preventive maintenance. No handling of petroleum products will occur within 100 feet of a water body or wetlands. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Asphalt substances will be applied according to manufacturer's recommendations. No storing of petroleum or asphaltic substances will be stored within 100 feet of a water body or wetlands.

- **Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials**

No fertilizers will be used for this project.

- **Hazardous or Toxic Waste**

All containers of solvents, paints and hazardous substances will be tightly sealed and stored when not required for use. Excess materials not used will not be discharged to the storm drain system but will be properly disposed of according to manufacturer's instructions and local, state and federal regulations. No storage of these materials will occur within 100 feet of a water body or wetlands.

- **Washing of Applicators and Containers used for Paint, Concrete or Other Materials**

Concrete trucks will not be allowed to wash out or discharge excess concrete or drum water within 100 feet of a water body or wetlands and shall not discharge to the Stormwater Management System.

## **SECTION 6: INSPECTION AND CORRECTIVE ACTION**

All of the erosion controls will be inspected at the intervals specified above and in Appendix E of this SWPPP. Prior to commencement of construction, the contractor shall provide the owner with the name and qualifications of the individual responsible for the inspections. The contractor shall

keep a copy of this plan on-site at all times. The inspector shall keep detailed records of the inspections and maintenance required and performed. If requested or required, these reports shall be provided to the Milton DPW. Disturbed areas and storage areas exposed to precipitation shall be inspected for evidence of or potential for pollutants entering the drainage system. Control measures shall be observed to ensure they are working properly; discharge locations and points shall be inspected to ascertain whether controls are preventing significant impacts to resource areas. Inspections shall note when major grading activities occur, when construction activities temporarily cease on a portion of the site, when construction activities permanently cease on a portion of the site and when stabilization measures are initiated on the site. Based on results of inspections, changes in the plan as necessary shall be made within seven days of the inspection and implemented in the field before the next rainfall, if possible.

The Inspector shall inspect the entire work site at least once every 14 calendar days or within 24 hours of the end of any storm of one-half inch or greater, or more frequently if required by the inspection forms located in Appendix E of this SWPPP, in accordance with Part IV.D.4 of the General Permits requirements enclosed as Appendix A. The inspector shall sign reports and file reports as described in the following paragraph.

A report summarizing the scope of the inspection, names and qualifications of personnel making the inspection, the dates of the inspection, and major observations relating to the implementation of the SWPPP shall be made and retained as part of the SWPPP for at least three years from the date that the site is finally stabilized. Major observations should include: the locations of the discharges of sediment or other pollutants from the site; locations of BMPs that need to be maintained; locations of BMPs that failed to operate as designed or proved inadequate for a particular location; and locations where additional BMPs are needed that did not exist at the time of inspection. Actions taken in accordance with Part IV.D.4b of the General Permit shall be made and retained as part of the SWPPP for at least three years from the date that the site is finally stabilized. Such reports shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the SWPPP and the General Permit. The report shall be signed in accordance with Part VI.G of the General Permit.

## **SECTION 7: TRAINING**

The following personnel have been trained in the following:

- Location of all Stormwater Controls onsite and how to maintain them
- Procedure to follow with the Construction General Permit Pollution Prevention Requirements
- When and how to conduct inspections and take corrective action.

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 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 L - HISTORIC PROPERTIES DOCUMENTATION**

**APPENDIX M – RAINFALL GAUGE RECORDING**

**APPENDIX A**

**SITE MAPS**

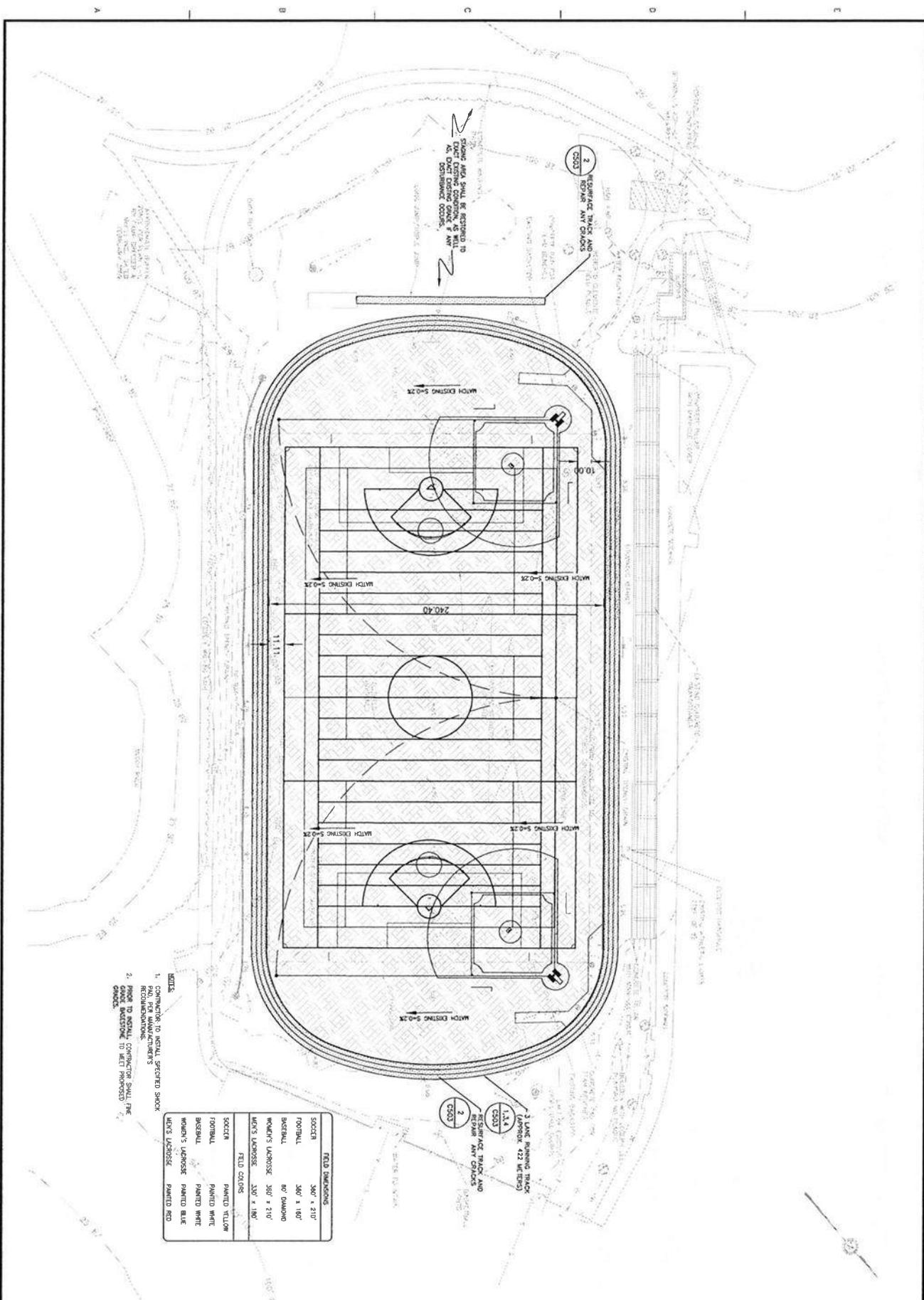
INSERT SITE MAPS CONSISTENT WITH TEMPLATE SECTION 2.6











- NOTES:
- CONTRACTOR TO INSTALL SPECIFIED SPOCK PAV. FOR MAINTENANCE RECOMMENDATIONS.
  - PROVE TO INSTALL CONTRACTOR SHALL FINE GRADDS TO MATCH TO LEFT PROPOSED

FIELD DIMENSIONS	
SOCICR	360' x 210'
FOOTBALL	360' x 180'
BASEBALL	60' DIAMOND
WOMEN'S LACROSSE	360' x 210'
WOMEN'S LACROSSE	330' x 180'
FIELD COLORS	
SOCICR	PAINTED YELLOW
FOOTBALL	PAINTED WHITE
BASEBALL	PAINTED WHITE
WOMEN'S LACROSSE	PAINTED BLUE
WOMEN'S LACROSSE	PAINTED RED

**GALE**

GALE CONSULTANTS, INC.  
100 STATE STREET, SUITE 200  
BOSTON, MA 02109  
TEL: 617.552.0888 FAX: 617.552.0881  
WWW.GALECONSULTANTS.COM

Project: Roberto Clemente Field  
Client: Emmanuel College  
Date: 08/20/2013

PROJECT

**ROBERTO CLEMENTE FIELD  
EMMANUEL COLLEGE  
PARK DRIVE  
BOSTON, MA**

OWNER

**EMMANUEL COLLEGE  
400 THE FENWAY  
BOSTON, MA**

PERMIT

NO.	DATE	DESCRIPTION

CLIENT	EMMANUEL COLLEGE
DESIGNED BY	JAY/AMB
DRAWN BY	JMS
CHECKED BY	AMB
DATE	FEB. 14, 2010
DRAWING SCALE	1"=50'-0"
SHEET SCALE	GRAPHIC SCALE

SHEET TITLE

SITE PLAN

DRAWING NO.

C101

PROJECT NO. 201008







Stormwater Pollution Prevention Plan (SWPPP)  
Roberto Clemente Field  
Emmanuel College  
Boston, MA  
Gale JN 717890

**APPENDIX B**

**COPY OF 2012 CGP**

**INSERT COPY OF 2012 CGP (TO BE COMPLETED BY CONTRACTOR)**

Stormwater Pollution Prevention Plan (SWPPP)  
Roberto Clemente Field  
Emmanuel College  
Boston, MA  
Gale JN 717890

**APPENDIX C**

**COPY OF NOI AND EPA AUTHORIZATION EMAIL**

INSERT COPY OF NOI AND EPA'S AUTHORIZATION EMAIL PROVIDING COVERAGE UNDER THE CGP

(TO BE COMPLETED BY CONTRACTOR)

Stormwater Pollution Prevention Plan (SWPPP)  
Roberto Clemente Field  
Emmanuel College  
Boston, MA  
Gale JN 717890

**APPENDIX D**

**COPY OF INSPECTION FORM**

INSERT COPY OF ANY INSPECTION FORMS YOU WILL USE TO PREPARE INSPECTION REPORTS

**General Information**  
(see reverse for instructions)

<b>Name of Project</b>		<b>NPDES ID No.</b>		<b>Inspection Date</b>	
<b>Weather conditions during inspection</b>		<b>Inspection start time</b>		<b>Inspection end time</b>	

**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** (Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply)

**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

**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:**

- Twice during first month, no more than 14 calendar days apart; then once per month after first month; (for stabilized areas)
- Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of a 0.25" rain (for stabilized areas on "linear construction sites")
- 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):

**Was this inspection triggered by the occurrence of runoff from snowmelt sufficient to cause a discharge?**  Yes  No

**Unsafe Conditions for Inspection**

**Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.5?**  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 2.2)**

(see reverse for instructions)

Type/Location of E&S Control [Add an additional sheet if necessary]	Maintenance Needed?*	Corrective Action Required?*	Date on Which Maintenance or Corrective Action First Identified?	Notes
1.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
4.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
6.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
8.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
9.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
10.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		

\* **Note:** The permit differentiates between conditions requiring routine maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition. Corrective actions are triggered only for specific conditions, which include: 1) A stormwater control needs repair or replacement (beyond routine maintenance) if it is not operating as intended; 2) A stormwater control necessary to comply with the permit was never installed or was installed incorrectly; 3) 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; 4) One of the prohibited discharges in Part 1.3 is occurring or has occurred; or 5) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.8. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at <https://www.epa.gov/npdes/stormwater-discharges-construction-activities#resources>. See Part 5 of the permit for more information.

**Condition and Effectiveness of Pollution Prevention (P2) Practices (CGP Part 2.3)**

*(see reverse for instructions)*

Type/Location of P2 Practices [Add an additional sheet if necessary]	Maintenance Needed?*	Corrective Action Required?*	Date on Which Maintenance or Corrective Action First Identified?	Notes
1.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
3.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
4.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
5.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
6.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
7.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
8.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
9.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
10.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		

\* **Note:** The permit differentiates between conditions requiring routine maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition. Corrective actions are triggered only for specific conditions, which include: 1) A stormwater control needs repair or replacement (beyond routine maintenance) if it is not operating as intended; 2) A stormwater control necessary to comply with the permit was never installed or was installed incorrectly; 3) 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; 4) One of the prohibited discharges in Part 1.3 is occurring or has occurred; or 5) EPA requires corrective actions as a result of a permit violation found during an inspection carried out under Part 4.8. If a condition on your site requires a corrective action, you must also fill out a corrective action form found at <https://www.epa.gov/hpdes/stormwater-discharges-construction-activities#resources>. See Part 5 of the permit for more information.

**Stabilization of Exposed Soil (CGP Part 2.2.14)**

*(see reverse for instructions)*

Stabilization Area [Add an additional sheet if necessary]	Stabilization Method	Have You Initiated Stabilization?	Notes
1.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	
2.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	
3.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	
4.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	
5.		<input type="checkbox"/> YES <input type="checkbox"/> NO If yes, provide date:	

**Description of Discharges (CGP Part 4.6.6)**

*(see reverse for instructions)*

**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 [Add an additional sheet if necessary]	Observations
1.	Describe the discharge:  At points of discharge and the channels and banks of waters of the U.S. in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> Yes <input type="checkbox"/> 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:
2.	Describe the discharge:  At points of discharge and the channels and banks of waters of the U.S. in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? <input type="checkbox"/> Yes <input type="checkbox"/> 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 Signature and Certification**  
(see reverse for instructions)

"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."

**Signature of Contractor or Subcontractor:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name and Affiliation:** \_\_\_\_\_

**Operator Signature and Certification**  
(see reverse for instructions)

"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."

**Signature of Operator or "Duly Authorized Representative":** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name and Affiliation:** \_\_\_\_\_

Stormwater Pollution Prevention Plan (SWPPP)  
Roberto Clemente Field  
Emmanuel College  
Boston, MA  
Gale JN 717890

**APPENDIX E**

**COPY OF CORRECTIVE ACTION FORM**

INSERT COPY OF CORRECTIVE ACTION FORMS YOU WILL USE



**Section C –Signature and Certification (CGP Part 5.4.3)**

**Section C.1 – Contractor or Subcontractor Signature and Certification**

"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."

**Signature of Contractor or Subcontractor:** \_\_\_\_\_

**Date:**

**Printed Name and Affiliation:** \_\_\_\_\_

**Section C.2 – Operator Signature and Certification**

"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."

**Signature of Operator or "Duly Authorized Representative":** \_\_\_\_\_

**Date:**

**Printed Name and Affiliation:** \_\_\_\_\_

**APPENDIX F**

**SAMPLE SWPPP AMENDMENT LOG**

**Instructions (see CGP Part 7.4):**

- Create a log here of changes and updates to the SWPPP. You may use the table below to track these modifications.
- SWPPP modifications are required pursuant to CGP Part 7.4.1 in the following circumstances:
  - ✓ Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater control measures, pollution prevention measures, or other activities at your site that are no longer accurately reflected in your SWPPP;
  - ✓ To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
  - ✓ If inspections or investigations determine that SWPPP modifications are necessary for compliance with this permit;
  - ✓ Where EPA determines it is necessary to impose additional requirements on your discharge; and
  - ✓ To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater control measures implemented at the site.
- If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

**APPENDIX G**

**SAMPLE 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 I**

**SAMPLE 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
- Emergency Procedures
- Stabilization Controls
- Inspections/Corrective Actions
- Pollution Prevention Measures

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**

**SAMPLE 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, 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 Construction General Permit (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 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:** \_\_\_\_\_

Stormwater Pollution Prevention Plan (SWPPP)  
Roberto Clemente Field  
Emmanuel College  
Boston, MA  
Gale JN 717890

**APPENDIX K**

**ENDANGERED SPECIES DOCUMENTATION**

INSERT DOCUMENTATION CONSISTENT WITH SWPPP TEMPLATE SECTION 3.1



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 www.galinc.com  
 Boston Baltimore Orlando San Francisco

NATURAL HERITAGE MAP

EMMANUEL COLLEGE  
 400 THE FENWAY  
 BOSTON, MA

PROJ. NO:  
 717890

DRAWN  
 JTS

REVIEWED

CADD FILE  
 717890

DATE: 2/19/2019

SCALE: N.T.S.

REVISION:

NATH1

SHEET 1 OF 1

**APPENDIX L**

**HISTORIC PROPERTIES DOCUMENTATION**

INSERT DOCUMENTATION CONSISTENT WITH SWPPP TEMPLATE SECTION 3.2

**APPENDIX M**

**RAINFALL GAUGE RECORDING**

Month/Year			Month/Year			Month/Year		
Day	Start Time	End Time	Day	Start Time	End Time	Day	Start Time	End Time
1			1			1		
2			2			2		
3			3			3		
4			4			4		
5			5			5		
6			6			6		
7			7			7		
8			8			8		
9			9			9		
10			10			10		
11			11			11		
12			12			12		
13			13			13		
14			14			14		
15			15			15		
16			16			16		
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18			18			18		
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20			20			20		
21			21			21		
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23			23			23		
24			24			24		
25			25			25		
26			26			26		
27			27			27		
28			28			28		
29			29			29		
30			30			30		
31			31			31		

# ROBERTO CLEMENTE FIELD

## EMMANUEL COLLEGE

### BOSTON, MA

PREPARED FOR:  
**EMMANUEL COLLEGE**  
 400 THE FENWAY  
 BOSTON, MA

ENGINEER:  
**GALE ASSOCIATES INC.**  
 163 LIBBEY PARKWAY  
 WEYMOUTH, MA 02189  
 P: 781.335.6465

DRAWING NUMBER	DRAWING DESCRIPTION
CIVIL	
G001	COVER SHEET
G002	NOTES AND ABBREVIATIONS
C001	EXISTING CONDITIONS PLAN
C002	DEMOLITION AND EROSION CONTROL PLAN
C101	SITE PLAN
C501	DETAIL SHEET 1 OF 3
C502	DETAIL SHEET 2 OF 3
C503	DETAIL SHEET 3 OF 3
EWS	EXISTING WATERSHED MAP
PWS	PROPOSED WATERSHED MAP



SITE MAP  
SCALE: N.T.S.



LOCATION MAP  
SCALE: N.T.S.



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 Boston Baltimore Orlando Connecticut

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**PERMIT**

PROJECT ROBERTO CLEMENTE FIELD EMMANUEL COLLEGE PARK DRIVE BOSTON, MA	OWNER BOSTON PARKS AND RECREATION 1010 MASSACHUSETTS AVENUE BOSTON, MA
---	---

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	717890_G001
DESIGNED BY	JTS/BJB
DRAWN BY	JTS
CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
DRAWING SCALE	

GRAPHIC SCALE

SHEET TITLE  
  
**COVER SHEET**

	DRAWING NO.
	<b>G001</b>
PROJECT NO. 717890	







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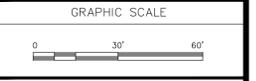
**PERMIT**

PROJECT  
**ROBERTO CLEMENTE FIELD  
EMMANUEL COLLEGE  
PARK DRIVE  
BOSTON, MA**

OWNER  
**BOSTON PARKS AND RECREATION  
1010 MASSACHUSETTS AVENUE  
BOSTON, MA**

REVISIONS		
NO.	DATE	DESCRIPTION

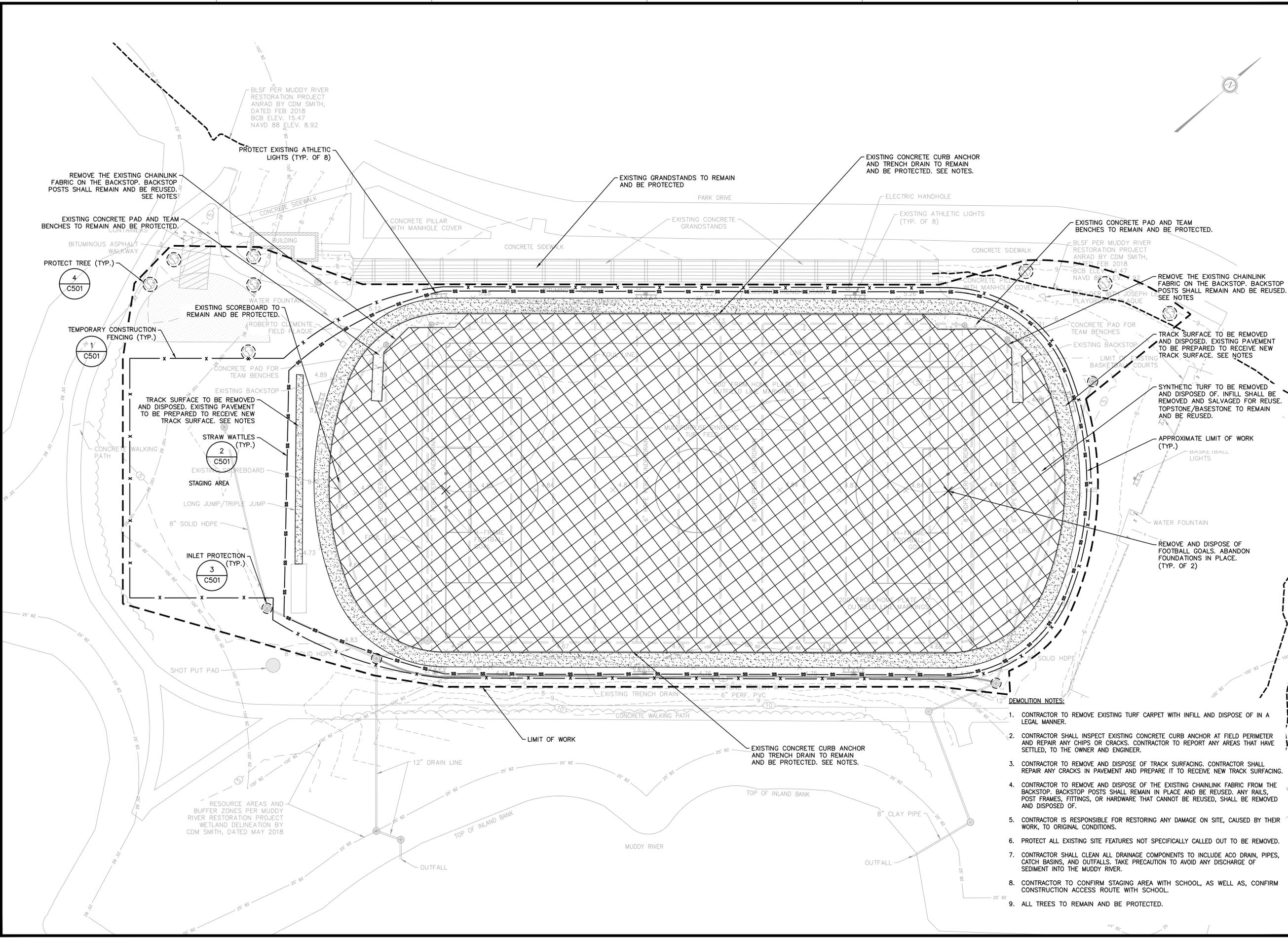
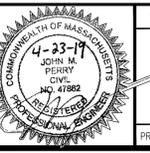
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DESIGNED BY	JTS/BJB
DRAWN BY	JTS
CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
DRAWING SCALE	1"=30'



SHEET TITLE

**DEMOLITION AND  
EROSION CONTROL  
PLAN**

DRAWING NO.	<b>C002</b>
PROJECT NO.	717890



- DEMOLITION NOTES:**
- CONTRACTOR TO REMOVE EXISTING TURF CARPET WITH INFILL AND DISPOSE OF IN A LEGAL MANNER.
  - CONTRACTOR SHALL INSPECT EXISTING CONCRETE CURB ANCHOR AT FIELD PERIMETER AND REPAIR ANY CHIPS OR CRACKS. CONTRACTOR TO REPORT ANY AREAS THAT HAVE SETTLED, TO THE OWNER AND ENGINEER.
  - CONTRACTOR TO REMOVE AND DISPOSE OF TRACK SURFACING. CONTRACTOR SHALL REPAIR ANY CRACKS IN PAVEMENT AND PREPARE IT TO RECEIVE NEW TRACK SURFACING.
  - CONTRACTOR TO REMOVE AND DISPOSE OF THE EXISTING CHAINLINK FABRIC FROM THE BACKSTOP. BACKSTOP POSTS SHALL REMAIN IN PLACE AND BE REUSED. ANY RAILS, POST FRAMES, FITTINGS, OR HARDWARE THAT CANNOT BE REUSED, SHALL BE REMOVED AND DISPOSED OF.
  - CONTRACTOR IS RESPONSIBLE FOR RESTORING ANY DAMAGE ON SITE, CAUSED BY THEIR WORK, TO ORIGINAL CONDITIONS.
  - PROTECT ALL EXISTING SITE FEATURES NOT SPECIFICALLY CALLED OUT TO BE REMOVED.
  - CONTRACTOR SHALL CLEAN ALL DRAINAGE COMPONENTS TO INCLUDE ACO DRAIN, PIPES, CATCH BASINS, AND OUTFALLS. TAKE PRECAUTION TO AVOID ANY DISCHARGE OF SEDIMENT INTO THE MUDDY RIVER.
  - CONTRACTOR TO CONFIRM STAGING AREA WITH SCHOOL, AS WELL AS, CONFIRM CONSTRUCTION ACCESS ROUTE WITH SCHOOL.
  - ALL TREES TO REMAIN AND BE PROTECTED.

E:\717890\plus\07-Permit Drawings\01-Conservation\717890\_C002.dwg, 4/23/2019 10:36:57 AM, mjf, DWG To PDF.pc3





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PROJECT  
**ROBERTO CLEMENTE FIELD**  
**EMMANUEL COLLEGE**  
**PARK DRIVE**  
**BOSTON, MA**

OWNER  
**BOSTON PARKS AND RECREATION**  
**1010 MASSACHUSETTS AVENUE**  
**BOSTON, MA**

REVISIONS		
NO.	DATE	DESCRIPTION

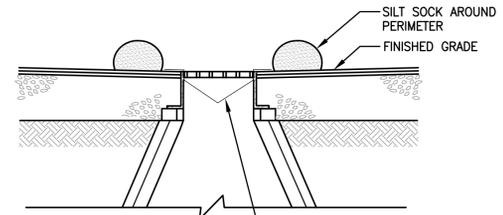
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DESIGNED BY	JTS/BJB
DRAWN BY	JTS
CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

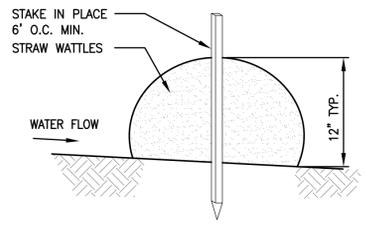
**DETAIL SHEET**  
**1 OF 3**

	DRAWING NO.
	<b>C501</b>
PROJECT NO. 717890	



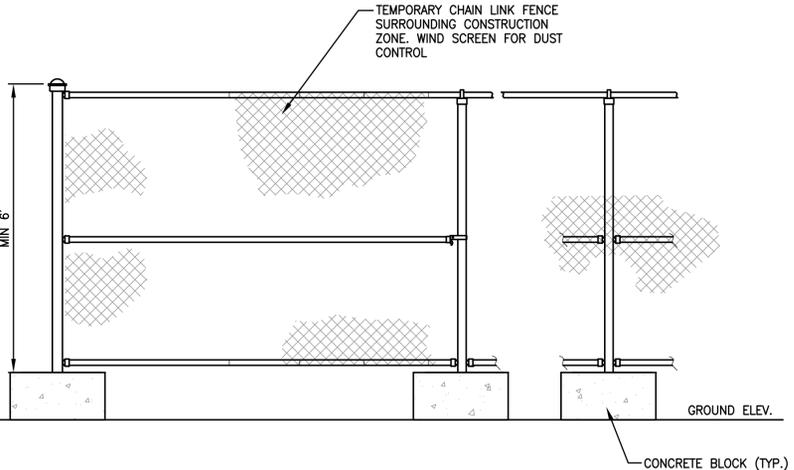
DURING CONSTRUCTION, INSTALL AND MAINTAIN INLET BASKETS TO TRAP SEDIMENT IN RUNOFF. INSPECTION SHALL TAKE PLACE AFTER EACH HEAVY RAIN EVENT AND REPLACEMENT SHALL BE PER THE DIRECTION OF THE OWNER'S REPRESENTATIVE

**3 INLET PROTECTION**  
 N.T.S.

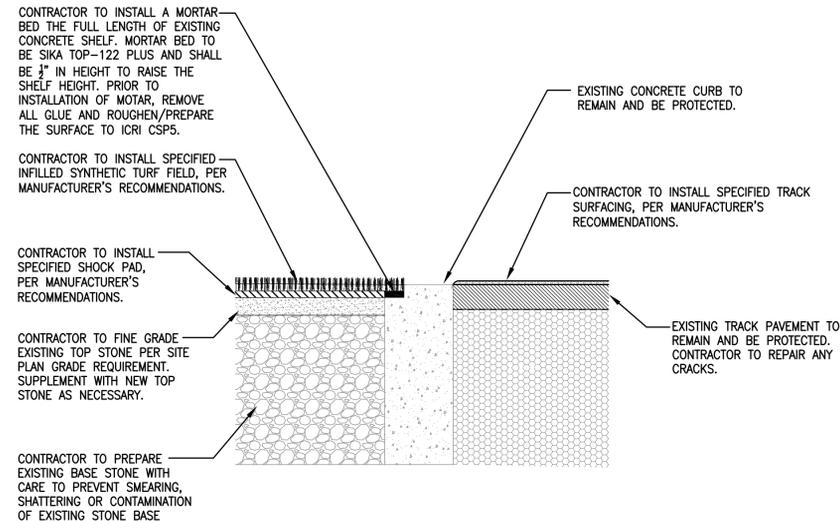


- NOTES:**
1. THE CONTRACTOR SHALL MAINTAIN THE EROSION CONTROL BERM IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE ROUTINELY INSPECTED.
  2. WHERE THE BERM REQUIRES REPAIR, IT SHALL BE ROUTINELY REPAIRED.
  3. THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE BERM WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE BERM, OR AS DIRECTED BY THE ENGINEER.

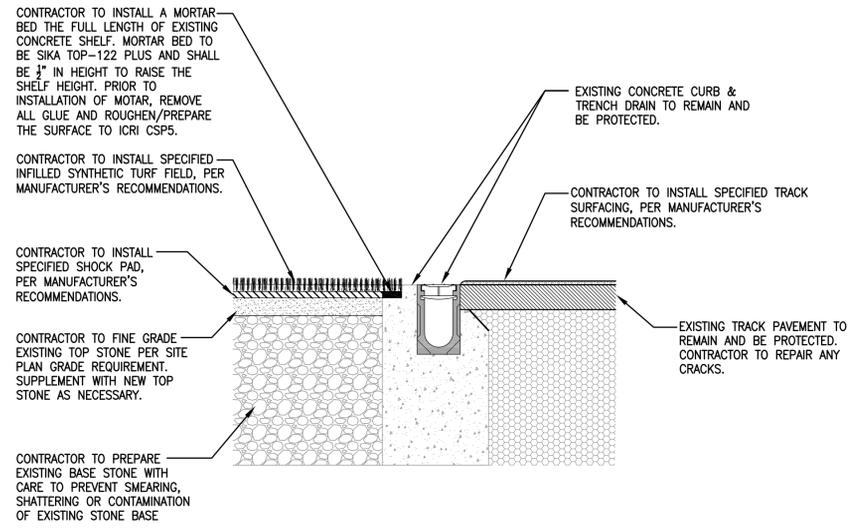
**2 STRAW WATTLE EROSION CONTROL**  
 N.T.S.



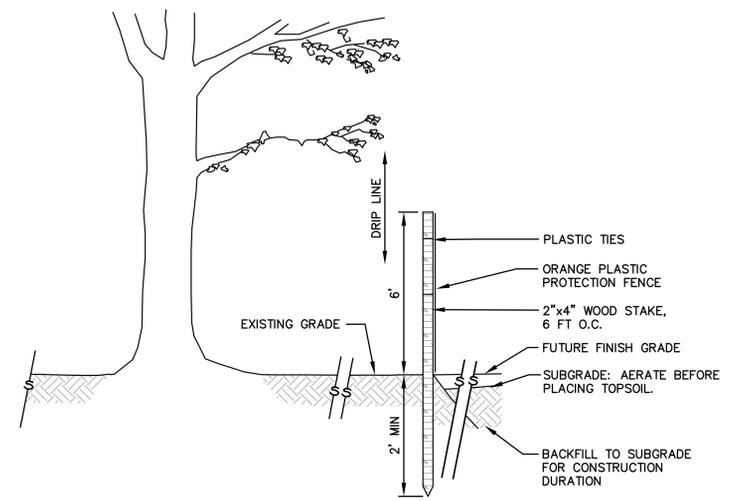
**1 TEMPORARY CONSTRUCTION FENCE**  
 N.T.S.



**6 NEW TURF & TRACK SURFACE INSTALLATION (D-AREA)**  
 N.T.S.

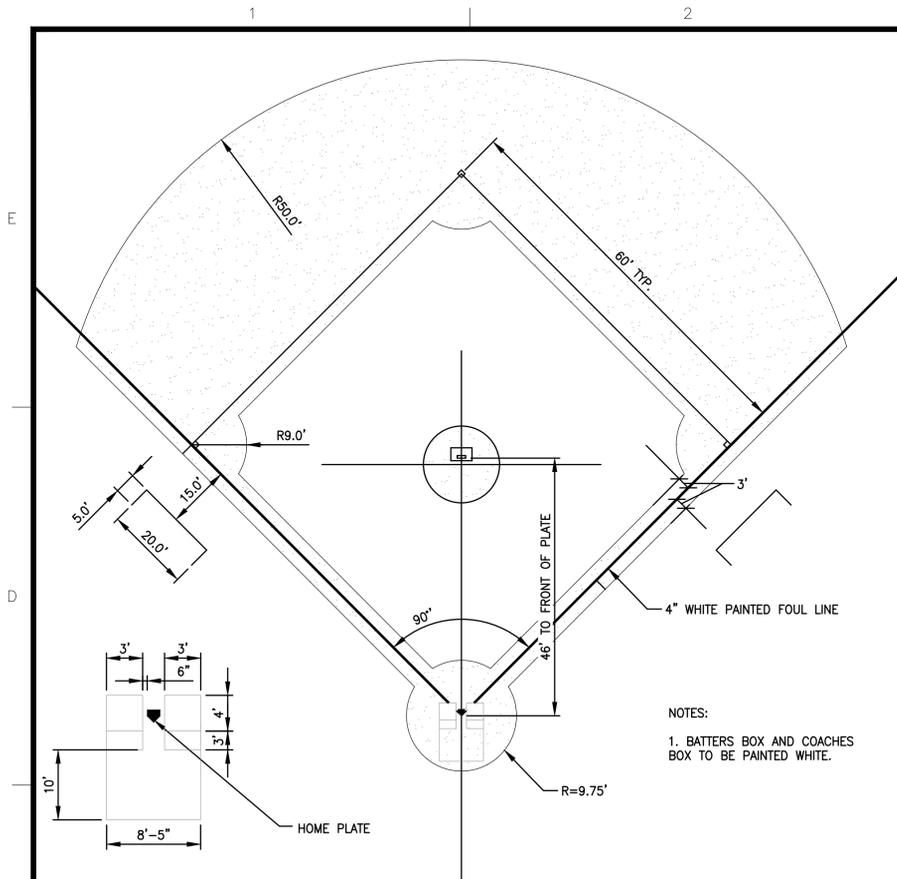


**5 NEW TURF & TRACK SURFACE INSTALLATION (TRENCH DRAIN)**  
 N.T.S.



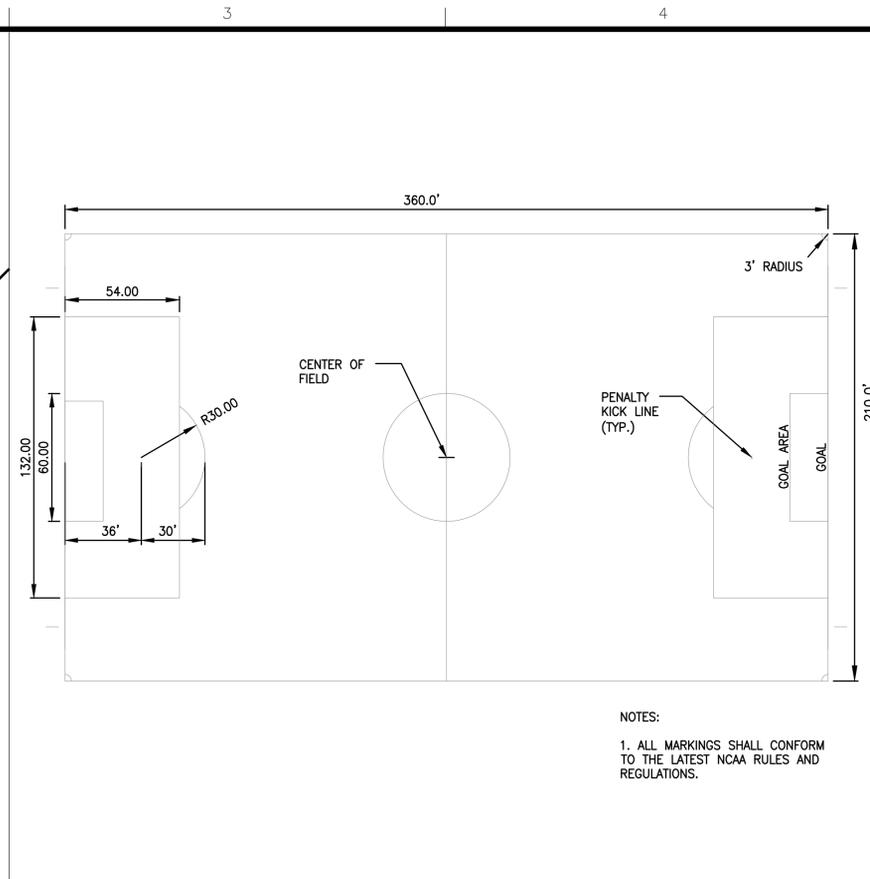
**4 TREE PROTECTION AND BACKFILL MEASURES**  
 N.T.S.

F:\717890\Drawings\07-Permit Drawings\01-Conservation\717890\_C500s.dwg, 4/23/2019 10:50:04 AM, mjj, Adobe PDF, pc3



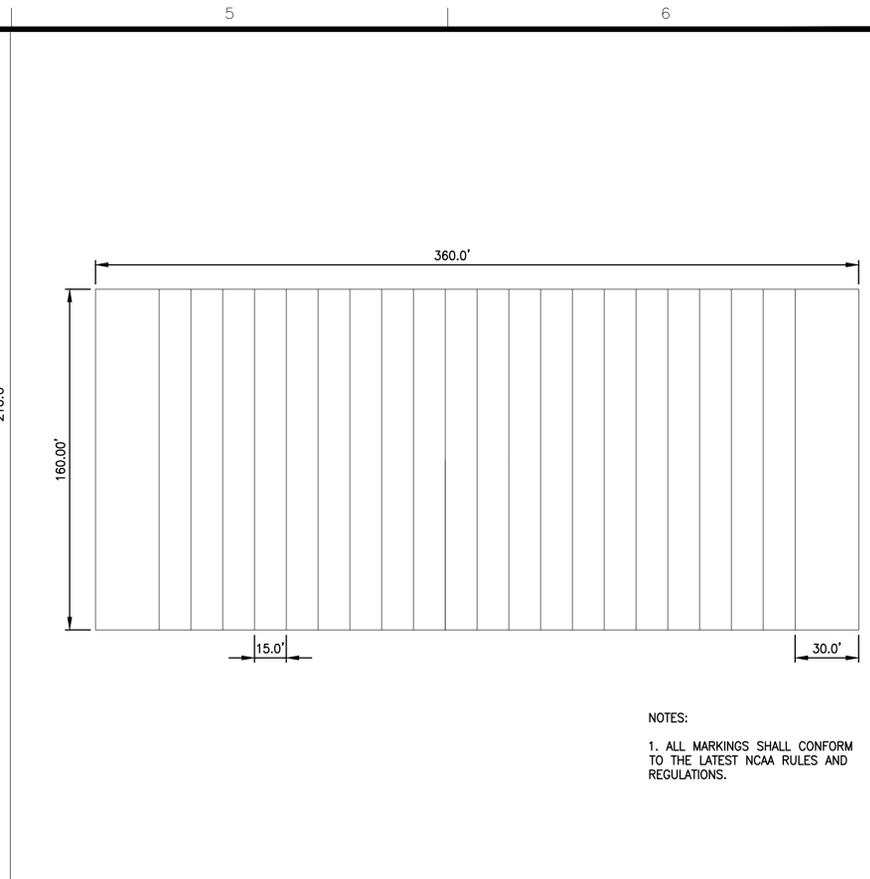
NOTES:  
1. BATTERS BOX AND COACHES BOX TO BE PAINTED WHITE.

1 BASEBALL/SOFTBALL FIELD LAYOUT  
N.T.S.



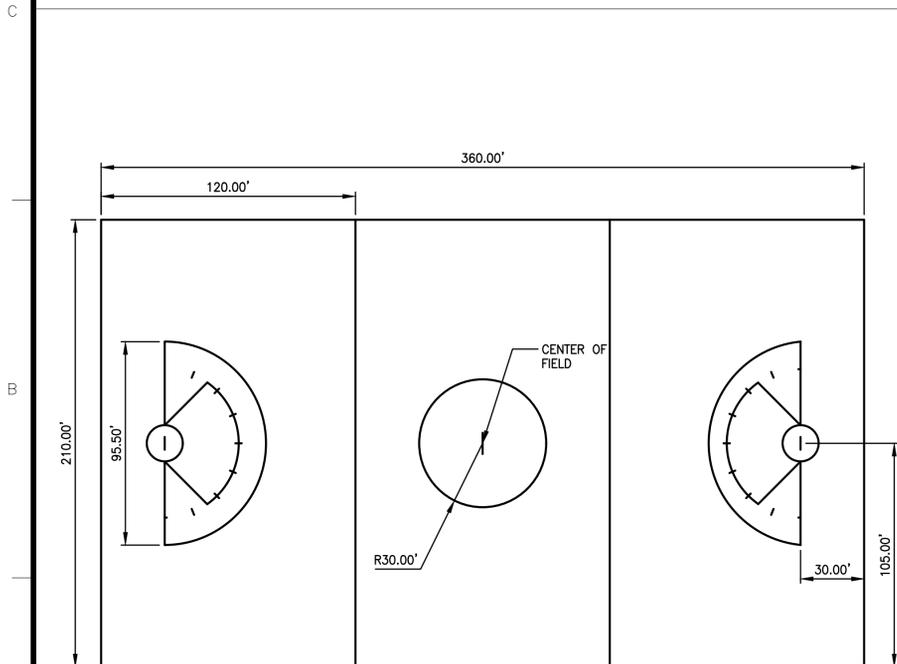
NOTES:  
1. ALL MARKINGS SHALL CONFORM TO THE LATEST NCAA RULES AND REGULATIONS.

2 SOCCER STRIPING DETAIL (PAINTED YELLOW)  
N.T.S.



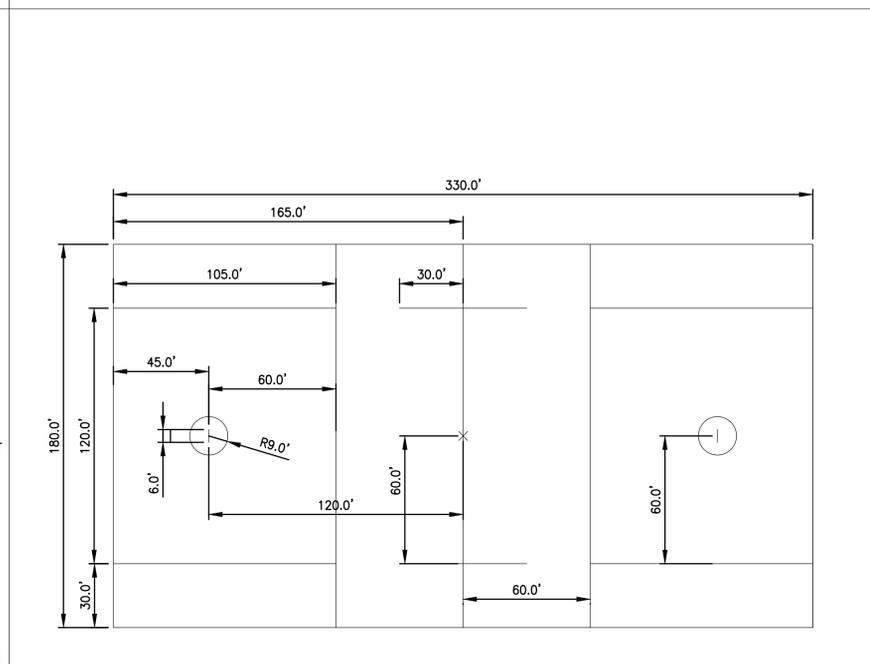
NOTES:  
1. ALL MARKINGS SHALL CONFORM TO THE LATEST NCAA RULES AND REGULATIONS.

3 FOOTBALL STRIPING DETAIL (PAINTED WHITE)  
N.T.S.



NOTES:  
1. ALL MARKINGS SHALL CONFORM TO THE LATEST NCAA RULES AND REGULATIONS.

4 WOMEN'S LACROSSE STRIPING DETAIL (PAINTED BLUE)  
N.T.S.



NOTES:  
1. ALL MARKINGS SHALL CONFORM TO THE LATEST NCAA RULES AND REGULATIONS.

5 MEN'S LACROSSE STRIPING DETAIL (PAINTED RED)  
N.T.S.



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CADD FILE	717890_C500s
DESIGNED BY	JTS/BJB
DRAWN BY	JTS
CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
DRAWING SCALE	N.T.S.

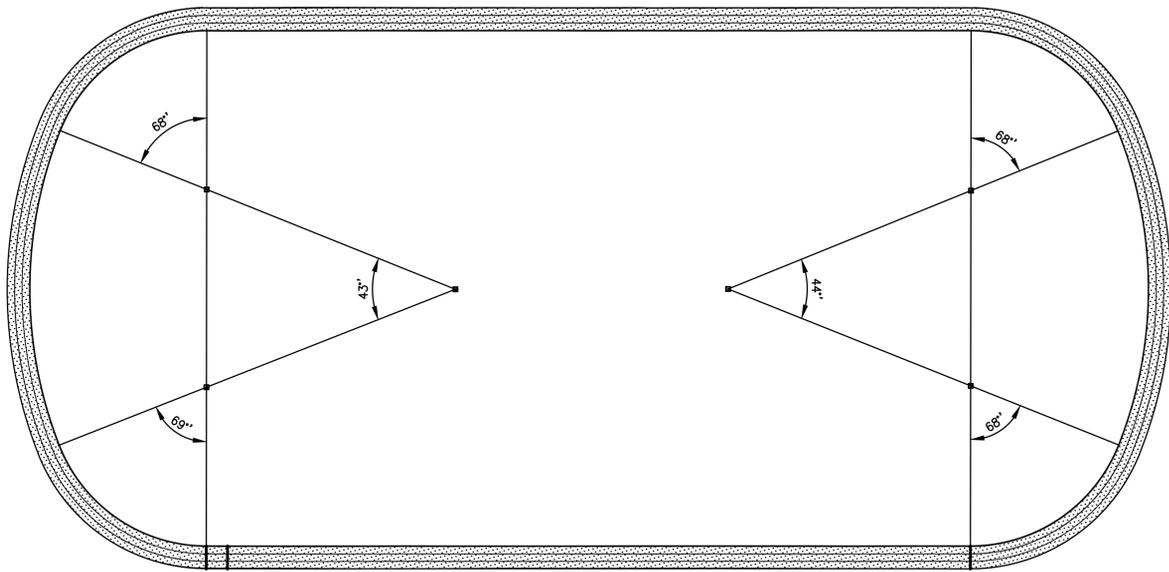
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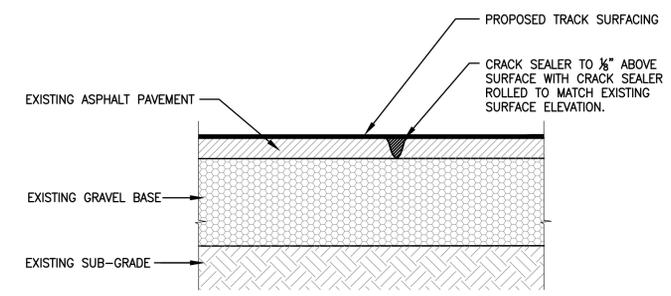
DETAIL SHEET  
2 OF 3

	DRAWING NO.	C502
	PROJECT NO.	717890

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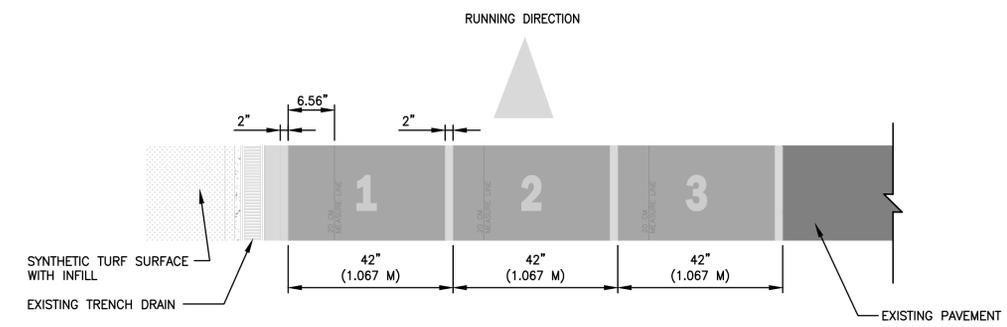


**1 DOUBLE BEND TRACK LAYOUT (APPROX. 422 METERS)**  
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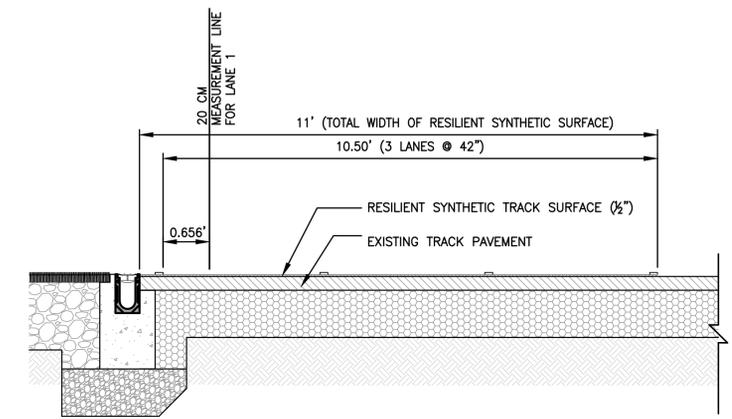


NOTES:  
1. ALL CRACKS TO BE CLEANED AND REPAIRED.  
2. CRACK EQUAL TO OR LESS THEN 3/4"

**2 CRACK REPAIR DETAIL**  
N.T.S.



**3 STRAIGHT AWAY SECTION (PLAN VIEW)**  
N.T.S.



**4 SYNTHETIC TRACK STRAIGHT AWAY SECTION**  
N.T.S.



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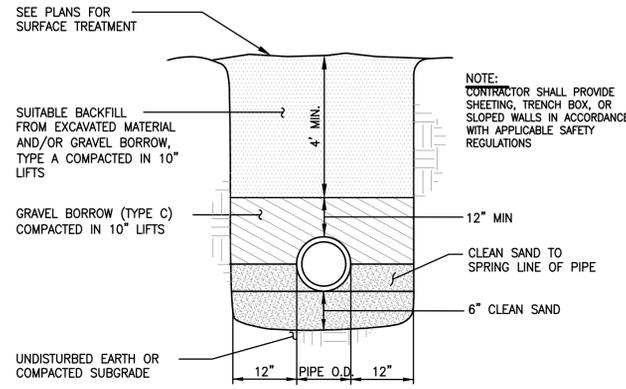
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CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

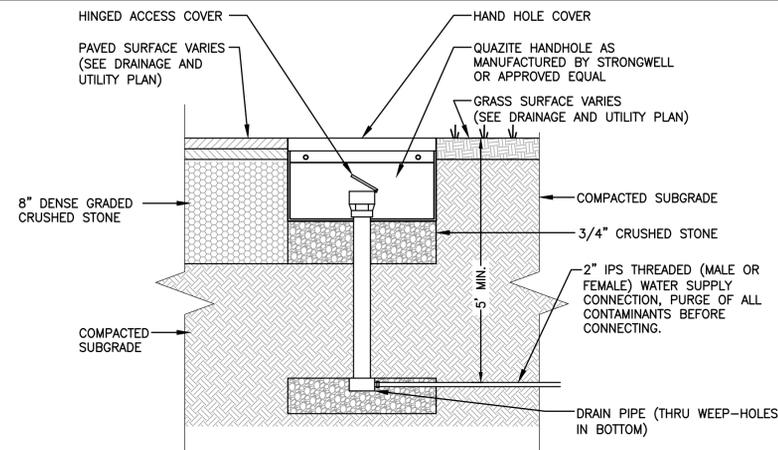
SHEET TITLE  
**DETAIL SHEET  
3 OF 3**

	DRAWING NO.
	<b>C503</b>
PROJECT NO. 717890	

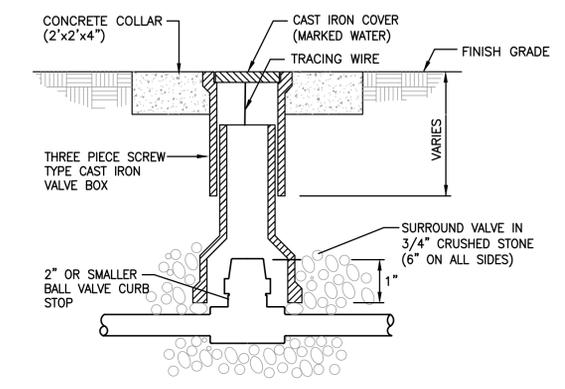
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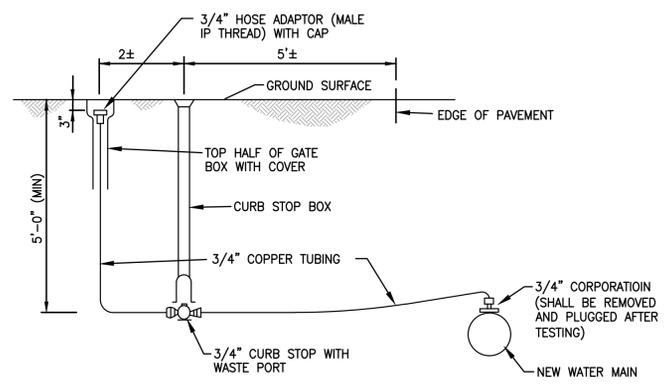
**1 WATER LINE TRENCH DETAIL**  
N.T.S.



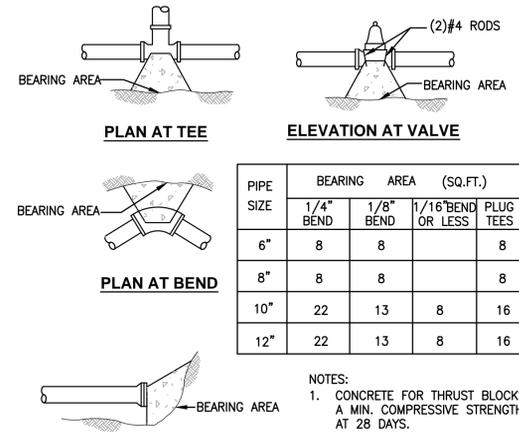
**2 QUICK CONNECT / QUICK COUPLING**  
N.T.S.



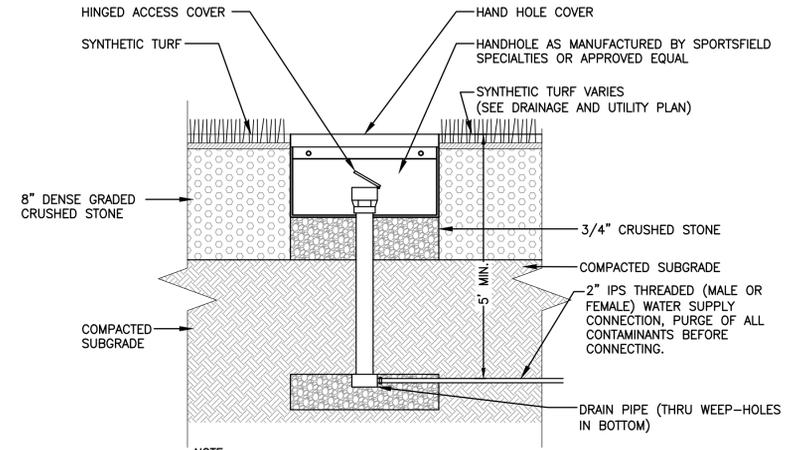
**3 2\"/>**



**4 WATER MAIN TEST CONNECTIONS**  
N.T.S.



**5 TYPICAL THRUST BLOCK DETAILS**  
N.T.S.



**6 WATER COUPLING/DISCONNECT IN SYNTHETIC TURF**  
N.T.S.



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DATE	APRIL 23, 2019
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

DETAIL SHEET  
4 OF 6

DRAWING NO. **C504**  
PROJECT NO. 717890

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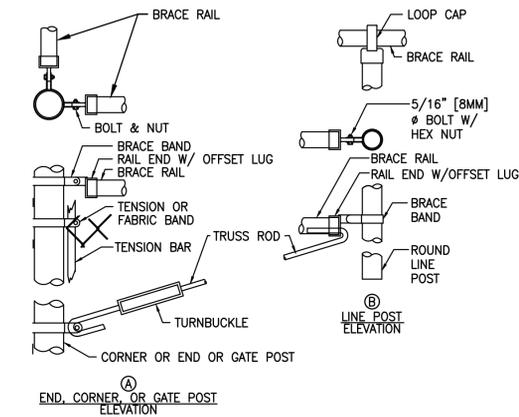
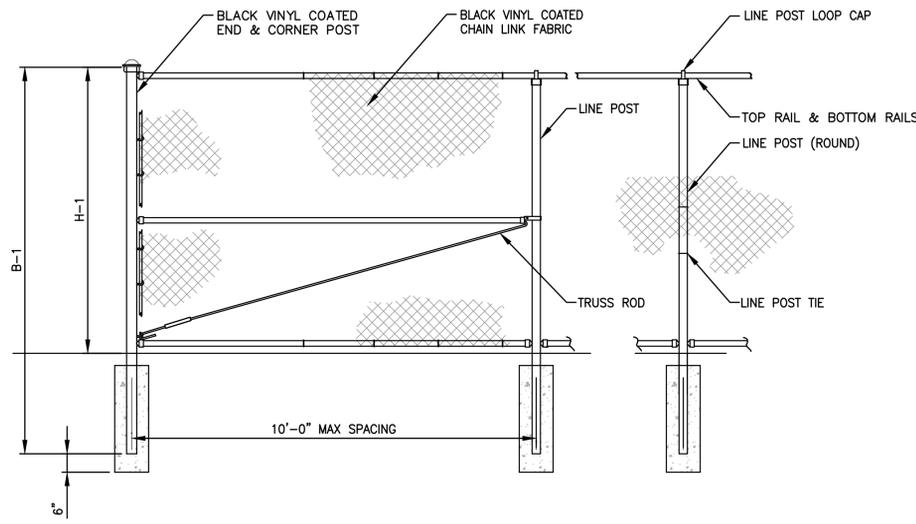
FENCE HEIGHT	END & CORNER POSTS		LINE POSTS	
	NOMINAL HEIGHT	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	B-2 BAR LENGTH
4'-0"	7'-0"	4'-0 5/8"	6'-8"	3'-8 7/8"
6'-0"	9'-0"	6'-0 5/8"	8'-8"	5'-8 7/8"
8'-0"	11'-0"	8'-0 5/8"	10'-8"	7'-8 7/8"

SINGLE OR DOUBLE LEAF GATES		
NOM HEIGHT (H)	UPRIGHT HT (U)	FRAME HT (F)
4'-0"	3'-10"	3'-8 1/2"
6'-0"	5'-10"	5'-8 1/2"
8'-0"	7'-10"	7'-8 1/2"

SINGLE LEAF GATES		
OPENING	GATE POSTS	HINGE SPACE (S)
FACE TO FACE	SQ & RND SIZES	POST TO UPRIGHT
3'-0" THROUGH 6'-0"	2 1/2" SQ OR 3" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4" [57MM]

DOUBLE LEAF GATES		
OPENING	GATE POSTS	HINGE SPACE (S)
FACE TO FACE	SQ & RND SIZES	POST TO UPRIGHT
14'-0" THROUGH 24'-0"	3" SQ OR 4" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4" [57MM]

- NOTES:
- ALL CHAIN LINK FENCE FABRIC SHALL BE KNUCKLED (TOP AND BOTTOM)
  - ALL CHAIN LINK FENCE POSTS, FABRIC, TIES AND MATERIALS SHALL BE BLACK PVC COATED.
  - CENTER UPRIGHT REQUIRED ON GATE LEAVES 8'-0" & WIDER. CENTER RAIL REQUIRED ON GATE LEAVE 6'-0" & HIGHER.
  - CONCRETE FOOTINGS SHALL BE FOUR (4) X THE POST DIAMETER, OR AS DESIGNATED ON INDIVIDUAL DETAILS.
  - FENCE CAP SHALL ON BASEBALL OUTFIELD FENCE SHALL BE PROVIDED FROM FOUL POLE TO FOUL POLE.
  - ALL CHAIN LINK FABRICK SHALL BE INSTALLED ON THE FIELD SIDE OF THE FENCE.



**1 CHAIN LINK FENCE AND GATE NOTES**

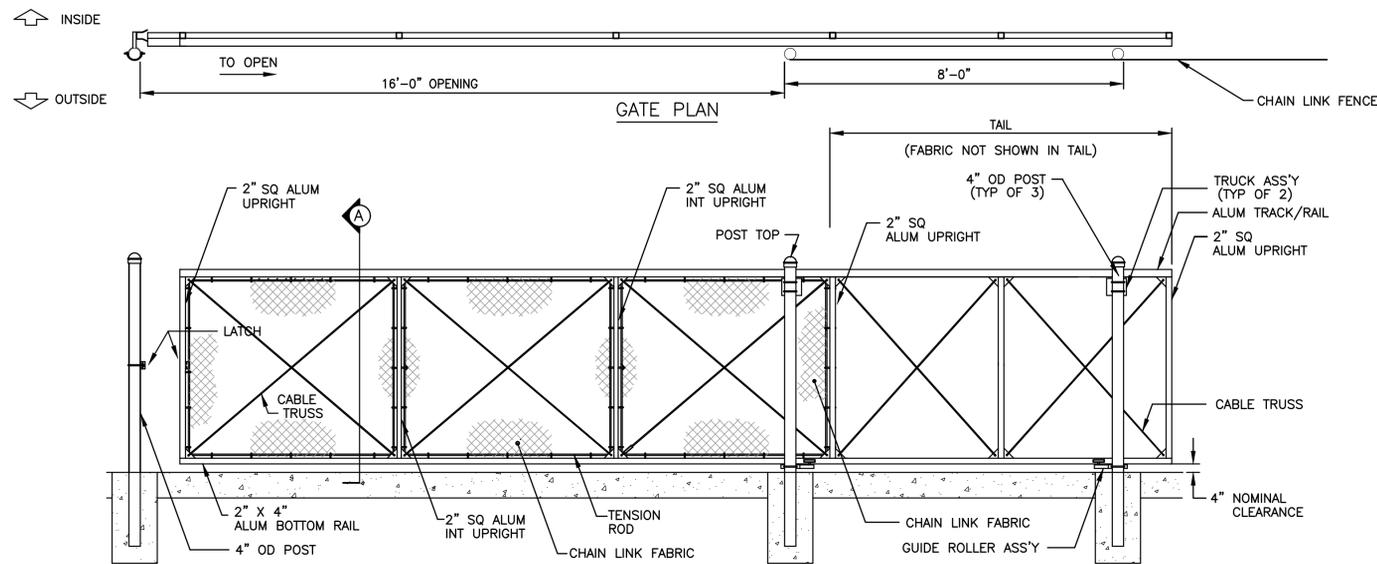
N.T.S.

**2 CHAIN LINK FENCE**

N.T.S.

**3 CHAIN LINK FENCE & GATE CONNECTION DETAIL**

N.T.S.

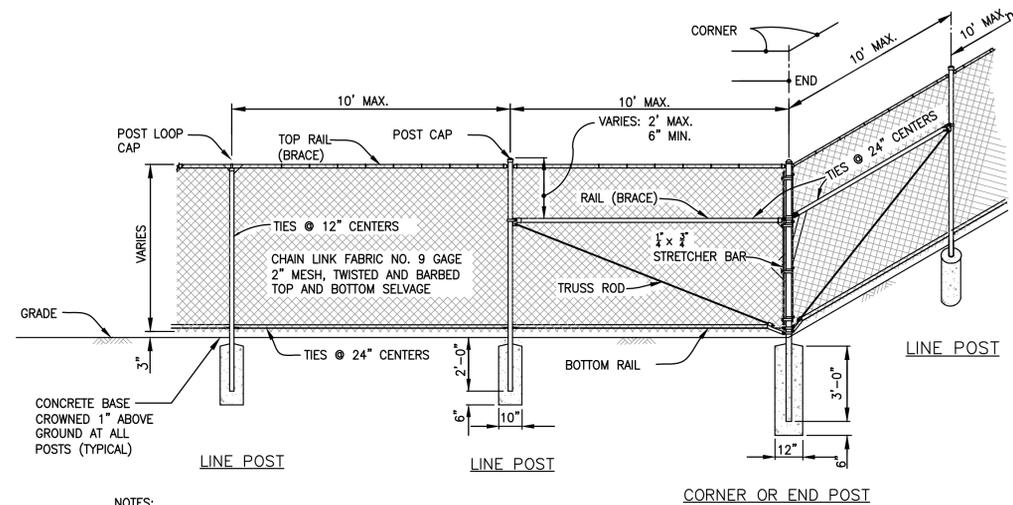


- NOTES:
- FOOTING WIDTH TO BE (4) X POST WIDTH. MIN DEPTH TO BE 36".
  - ALL FENCING TO BE BLACK VINYL COATED.

NOM HEIGHT (H)	4'-0"
OPENING	6'-0" THROUGH 30'-0"

**4 CANTILEVER SLIDING GATE ELEVATION**

N.T.S.



- NOTES:
- ALL CHAIN LINK FENCE FABRIC SHALL BE KNUCKLED (TOP AND BOTTOM)
  - ALL CHAIN LINK FENCE POSTS, FABRIC, TIES AND MATERIALS SHALL BE BLACK PVC COATED.
  - CONCRETE FOOTINGS SHALL BE FOUR (4) X THE POST DIAMETER, OR AS DESIGNATED ON INDIVIDUAL DETAILS.
  - HOLD TOP OF CONCRETED FOOTING 6" BELOW GRADE

**4 CHAIN LINK FENCE CORNER DETAIL**

N.T.S.



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DRAWN BY	HAM
CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
DRAWING SCALE	N.T.S.

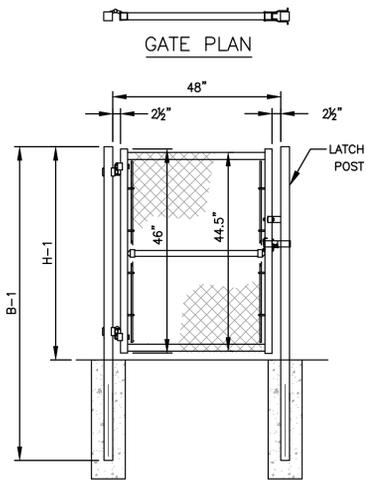
GRAPHIC SCALE

SHEET TITLE

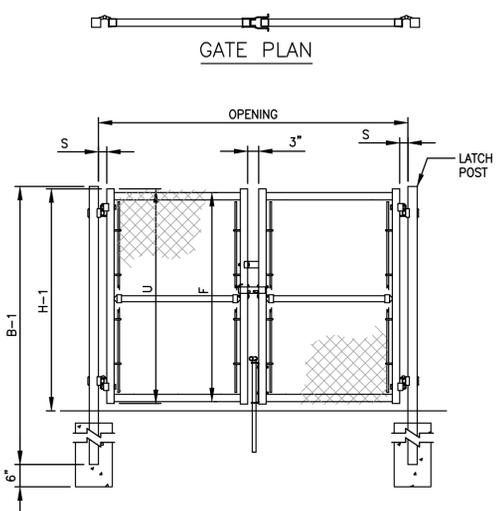
DETAIL SHEET  
5 OF 6

DRAWING NO. **C505**

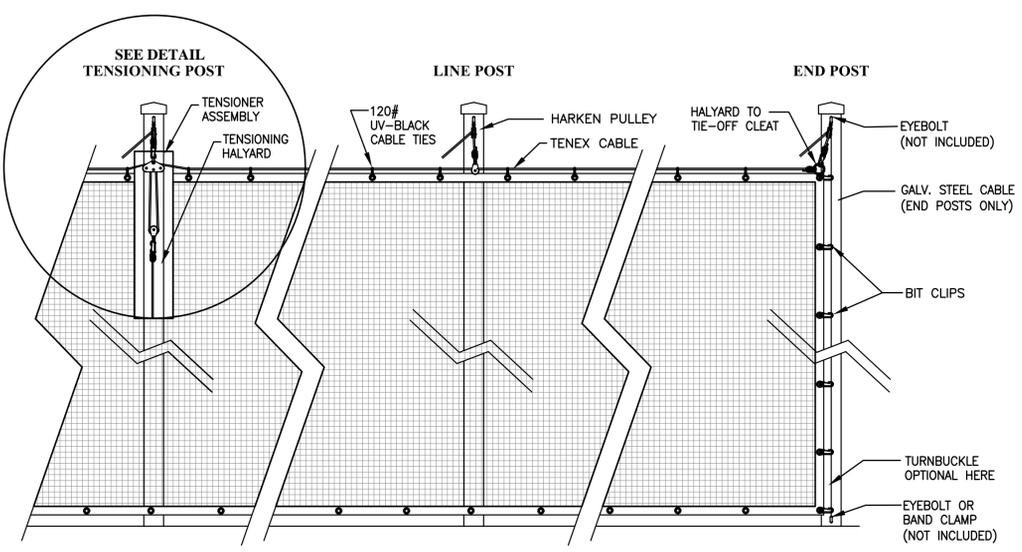
PROJECT NO. 717890



1 4' WIDE SINGLE LEAF GATE DETAIL  
N.T.S.

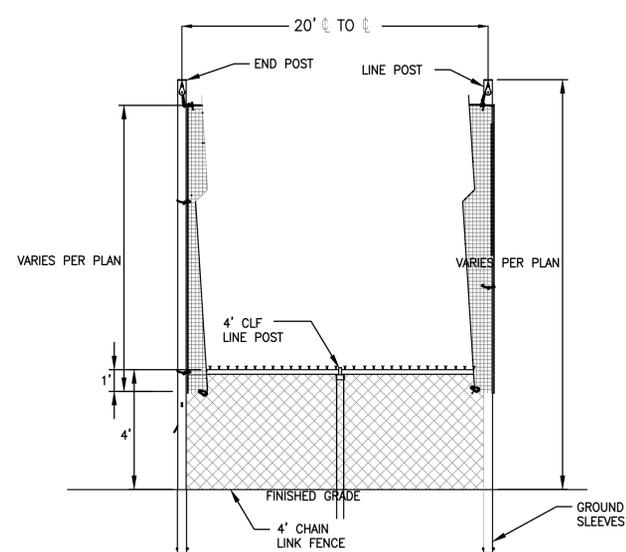


2 DOUBLE GATE DETAIL  
N.T.S.



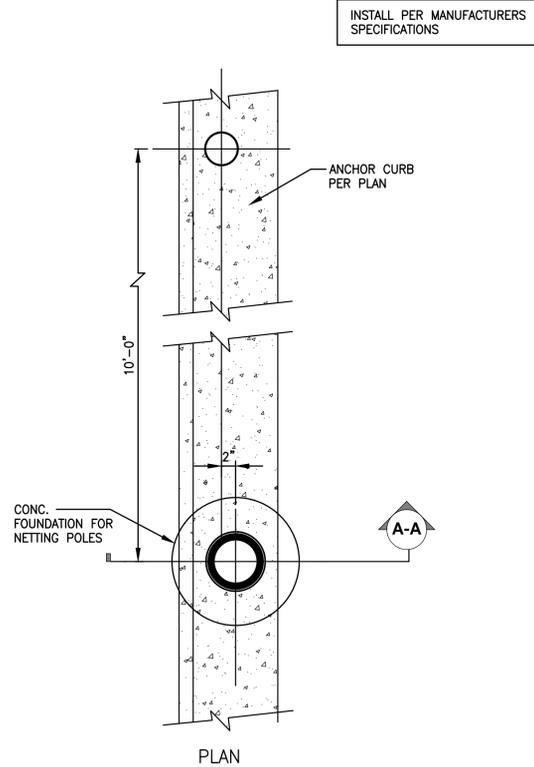
- NOTES:
- #504 KNOTLESS NYLON ~ 180-LB. BREAK STRENGTH
  - 1-3/4" SQUARE MESH BLACK - UV TREATED
  - VINYL HEMS AND GROMMETS SPACED EVERY FOOT ON ALL SIDES OF EACH PANEL
  - POST SHALL BE 4.00" OD ALUMINUM BLACK VINYL COATED SPACED 20' O.C., AND END POSTS SHALL BE 3.50" SCH. 40 STEEL BLACK VINYL COATED.

3 SAFETY NETTING SYSTEM  
N.T.S.

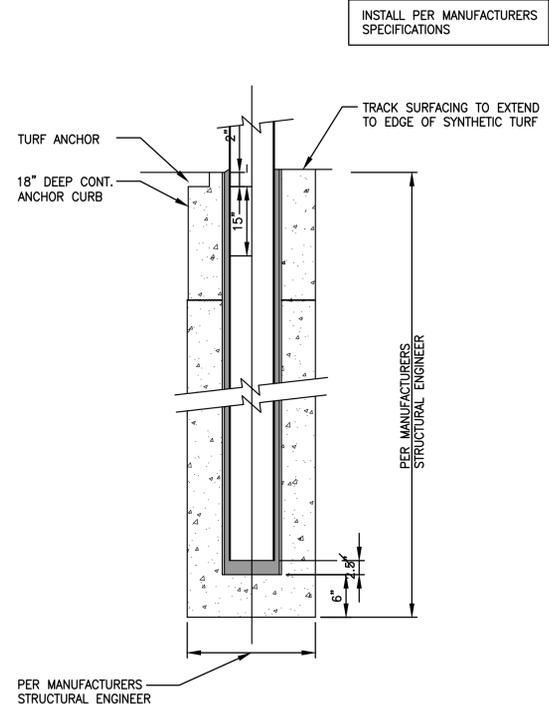


- NOTES:
- NETTING SHALL OVERLAP WITH THE CHAIN LINK FENCE A MINIMUM OF 1-FOOT AND SHALL BE SECURED TO THE FENCING FABRIC WITH QUICK CLIP SPRING HOOKS.
  - NETTING SHALL OVERLAP THE CHAIN LINK FENCE ON THE PLAYING FIELD SIDE OF THE FENCE FABRIC.

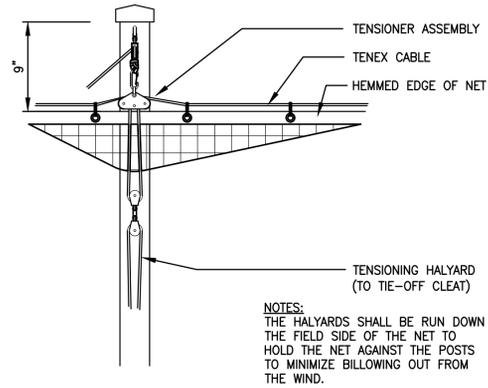
4 FENCING AND SAFETY NETTING DETAIL  
N.T.S.



5 SAFETY NETTING POST FOUNDATION DETAIL  
N.T.S.



6 SECTION AT SAFETY NETTING SYSTEM FOUNDATION  
N.T.S.



7 TENSIONING POST DETAIL  
N.T.S.

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DRAWING SCALE	N.T.S.

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SHEET TITLE

DETAIL SHEET  
6 OF 6

DRAWING NO. C506  
PROJECT NO. 717890  
Professional Engineer Seal: JOHN M. PERRY, CIVIL, No. 47862, State of Massachusetts, Expiration Date 12/31/2020

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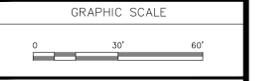
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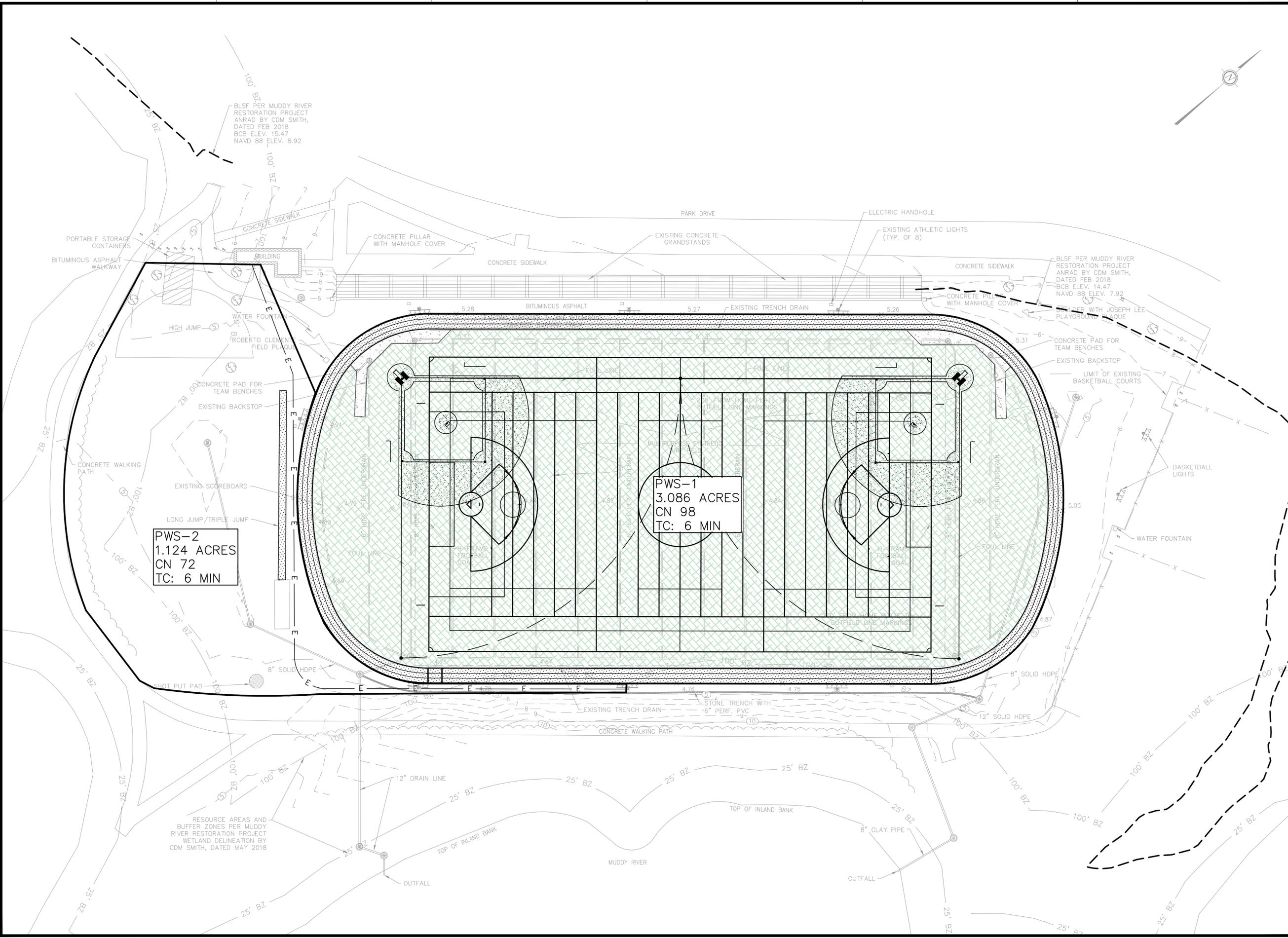
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DESIGNED BY	JTS/BJB
DRAWN BY	JTS
CHECKED BY	JMP/CED/PS
DATE	APRIL 23, 2019
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SHEET TITLE

**PROPOSED WATERSHED MAP**

	DRAWING NO.	<b>PWS</b>
	PROJECT NO.	717890



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