DGT Associates
Surveying &
Engineering

1071 Worcester Rd.
Framingham, MA 01701
508.879.0030
www.dgtassociates.com

December 20, 2019

S-1428 / 25575

Boston Conservation Commission
Ms. Amelia Croteau, Executive Secretary
1 City Hall Square, Room 709
Boston, MA 02201

RE: #1550 River Street, Hyde Park

Dear Ms. Croteau:

Enclosed please find a set of plans, dated 12/20/19, that reflect comments received from Nicholas on December 19, 2019.

The following materials are enclosed (two copies at 11"x17", and two copies at 24"x36" for convenience):

Topographic Plan of Land, dated/stamped: 24 Oct 2018
Topographic Plan of Land, dated/stamped: 25 Nov 2019
NOI-1 Proposed Site Improvements Plan
NOI-2 Erosion & Sedimentation Control & Site Details
NOI-3 Existing Conditions Enlarged View of Resource Areas
NOI-4 Proposed Conditions Enlarged View of Restoration Area
NOI-5 Cross Sections
Exhibit Plan A Extent of BLSF (Pre-Existing)
Exhibit Plan B Extent of BLSF (Interim)
Exhibit Plan C Extent of BLSF (Proposed)

Also enclosed is a thumb drive that contains the entire revised Application, which I will also be emailing to Nicholas.

I certainly appreciate your help. If you need additional copies or information, please feel free to contact our office at (508) 879-0030.

Very truly yours,
DGT Associates

Bert E. Corey, P.E.
Engineering Group Manager

Enclosures
Cc: Elias Akiki

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December 17, 2019

S-1428 / 25575

Boston Conservation Commission
Ms. Amelia Croteau, Executive Secretary
1 City Hall Square, Room 709
Boston, MA 02201

RE: #1550 River Street, Hyde Park

Dear Ms. Croteau:

Enclosed please find the Notice of Intent with site plan and supporting documents that we are filing on behalf of Mr. Elias Akiki for the proposed work at the subject property.

The following materials are enclosed:

- WPA Form 3 - Notice of Intent, two copies (a signed original and 1 copy), which includes the following supporting documents:
  - Reduced Site Plans: "Proposed Site Improvements Plan" dated November 27, 2019 by DGT Associates, (11"x17"), two copies
  - Locus Map (USGS Quad), (8.5"x11"), two copies
  - FEMA Flood Map, two copies
  - NHESP printout from MassGIS database, two copies
  - Stormwater Report, two copies
  - Checklist for Stormwater Report, two copies
  - Project Narrative dated November 27, 2019 by DGT Associates, two copies
  - Abutter List obtained from City of Boston Assessor's website, Abutter Notification, and Affidavit of Service, two copies of each
- City of Boston Filing Fee of $50.00

We are sending a copy of this Notice of Intent including the supporting documentation to the Massachusetts Department of Environmental Protection, Northeast Regional Office. Once we receive a hearing date and time from your office, we will send the Notification to the abutters as required.

If you have any questions, or if you need additional copies or information, please feel free to contact our office at (508) 879-0030.

Very truly yours,
DGT Associates

Bert E. Corey, P.E.
Engineering Group Manager

Enclosures
Cc: Elias Akiki

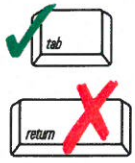
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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 (Hyde Park)
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):

1550 River Street — a. Street Address
Boston — b. City/Town
02136 — c. Zip Code

Latitude and Longitude:
42.248940 — d. Latitude
-71.130820 — e. Longitude

f. Assessors Map/Plat Number
Parcel ID - 1812146000 — g. Parcel /Lot Number

2. Applicant:

Elias — a. First Name
Akiki — b. Last Name
c. Organization
1035 Hyde Park Avenue — d. Street Address
Hyde Park — e. City/Town
MA — f. State
02136 — g. Zip Code
617-459-6585 — h. Phone Number
i. Fax Number
eliasskiki1@icloud.com — j. Email Address

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

a. First Name
b. Last Name
1550 River Street LLC — c. Organization
1035 Hyde Park Avenue — d. Street Address
Hyde Park — e. City/Town
MA — f. State
02136 — g. Zip Code
617-459-6585 — h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Fred — a. First Name
King — b. Last Name
DGT Associates — c. Company
1071 Worcester Road — d. Street Address
Framingham — e. City/Town
MA — f. State
01701 — g. Zip Code
508-879-0030 — h. Phone Number
i. Fax Number
fking@dgtassociates.com — j. Email address

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

$ 1,112.50 — a. Total Fee Paid
$ 1,112.50 — b. State Fee Paid
$ 50.00 (Boston Fee) — c. City/Town Fee Paid

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 (Hyde Park)
City/Town

A. General Information (continued)

6. General Project Description:

Parking Lot grading, repaving and improvements and restoration of altered BVW

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

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

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Suffolk	
c. Book	d. Page Number
59811	150

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:
MassDEP File Number
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Boston (Hyde Park)
City/Town

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☒ Bordering Vegetated Wetland	440 1. square feet	440 2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	21,748 1. square feet 0 3. cubic feet of flood storage lost	21,748 2. square feet 5,094 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☒ Riverfront Area	Mother Brook 1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☒ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 5,680 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.
4,686	NA	NA

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston (Hyde Park)
City/Town

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

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

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

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

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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

Provided by MassDEP:
MassDEP File Number
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Boston (Hyde Park)
City/Town

C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   Current MassGIS
   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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston (Hyde Park)
City/Town

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

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

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

(d) ☐ Vegetation cover type map of site

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

(f) OR Check One of the Following

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

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

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

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

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

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

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

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

North Shore - Hull to New Hampshire border:

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

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

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 (Hyde Park)
City/Town

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

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

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

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

b. ACEC

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

a. ☐ Yes ☒ No

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

a. ☐ Yes ☒ No

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

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

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

2. ☒ A portion of the site constitutes redevelopment

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

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

1. ☐ Single-family house

2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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Document Transaction Number

Boston (Hyde Park)
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.

Proposed Site Improvements Plan
a. Plan Title

DGT Associates
b. Prepared By

Bert E. Corey, P.E.
c. Signed and Stamped by

11/27/2019
d. Final Revision Date

1"=10'
e. Scale

See Attached List of Documents
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:

2399
2. Municipal Check Number

12/17/19
3. Check date

1351
4. State Check Number

12/6/19
5. Check date

Akiki and Sons Avenue Service Inc.
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 (Hyde Park)
City/Town

F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant — 2. Date: 12-6-19

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

5. Signature of Representative (if any) — 6. Date: 12/17/19

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:

1550 River Street	Hyde Park
a. Street Address	b. City/Town
	$ 1112.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Elias	Akiki	
a. First Name	b. Last Name	
c. Organization		
1035 Hyde Park Avenue		
d. Mailing Address		
Hyde Park	MA	02136
e. City/Town	f. State	g. Zip Code
617-459-6585		eliasskiki1@icloud.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name	
1550 River Street LLC		
c. Organization		
1035 Hyde Park Avenue		
d. Mailing Address		
Hyde Park	MA	02136
e. City/Town	f. State	g. Zip Code
617-459-6585		
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

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

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat. 2b - Parking Lot	1	$ 500	$ 500 x 1.5 = $750
Cat. 2g	2	$ 500	$ 1000 x 1.5 = $1,500

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

Total Project Fee:	$ 2,250 a. Total Fee from Step 5
State share of filing Fee:	$ 1,112.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$ 50.00 (Boston Fee) c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

NOTICE OF INTENT FILING

1550 RIVER STREET, HYDE PARK

LIST OF ATTACHMENTS

Attachment 1 **Narrative**

Attachment 2 **Abutter Notice**
Affidavit of Service
Assessor's Certified Abutter's List & Map

Attachment 3 **Locus Map – USGS Quad**
FEMA Floodplain Map
Natural Heritage Map

Attachment 4 **Wetland Delineation Report**

Attachment 5 **Stormwater Management Report (Executive Summary)**

Attachment 6 **Site Plan Set (Revised 12/20/19)**

Topographic Plan of Land, dated/stamped: 24 Oct 2018
Topographic Plan of Land, dated/stamped: 25 Nov 2019
NOI-1 Proposed Site Improvements Plan
NOI-2 Erosion & Sedimentation Control & Site Details
NOI-3 Existing Conditions Enlarged View of Resource Areas
NOI-4 Proposed Conditions Enlarged View of Restoration Area
NOI-5 Cross Sections
Exhibit Plan A Extent of BLSF (Pre-Existing)
Exhibit Plan B Extent of BLSF (Interim)
Exhibit Plan C Extent of BLSF (Proposed)

S-1428

ATTACHMENT 1

NOTICE OF INTENT FILING

Project Narrative

DGT Associates
Surveying & Engineering

1071 Worcester Rd.
Framingham, MA 01701
508.879.0030
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S-1428

PROJECT NARRATIVE

1550 RIVER STREET, HYDE PARK

GENERAL SITE DESCRIPTION

The project site is a 42,500 sq. ft. (0.98 acres) property at 1550 River Street in the Hyde Park district of Boston, Massachusetts. It is identified as on the Boston Assessor's Property ID 1812146000. The property is located in Zoning Sub-district "LI-1" Local Industrial. The property abuts commercial properties to the north and south, and Mother Brook located at the east side of the property. Mother Brook is a perennial stream that joins the Neponset River. Access to the site is provided by a driveway off River Street. The Existing Conditions Plan shows the current site features and topography.

The property contains a 2 story building with a paved driveway and currently a gravel/dirt parking area, which was formerly paved.

Wetland Resource Areas

Wetland resource areas on the site include: 25 ft. Riverfront Area associated with Mother Brook, Bordering Vegetated Wetlands (BVW), and Bordering Land Subject to Flooding (BLSF). Attachment 1 contains the Wetland Delineation Report for more detail. The mean annual high water line for the portion of Mother Brook adjacent to the site and the Bordering Vegetated Wetlands were evaluated and delineated by a qualified wetlands specialist on 10/18/2019 and survey located by DGT Associates as shown on the plan. The elevation of the estimated Mean Annual High Water was found to be 47.8.

The Riverfront Area, the BVW, BLSF, and the 100-Foot Buffer Zone under the Massachusetts Wetlands Protection Act are shown on the plans. The Riverfront Area and the Buffer Zone extend onto the rear parking area.

The property falls within a Zone AE special flood hazard area as shown on FEMA Flood Insurance Rate Map number 25025C0157, dated 3/16/2016. The elevation of the 100-year flood as determined by the Federal Flood Insurance Program is 45.6 based on the NAVD 1988 datum. This is equivalent to elevation 52.06 based on the Boston City datum that is shown on the survey plan.

According to the latest Massachusetts Division of Fisheries and Wildlife – Natural Heritage Endangered Species Program Mapping (NHESP), there are no areas on or near the site that are designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. Nor are

there any Certified or Potential Vernal Pools on or near the site. Attachment 2 contains a printout of the MassGIS – NHESP data layers.

Soil Maps provided by the Natural Resource Conservation Service (NRCS) indicate that the soils on site are classified as "Urban Land" on the west side where the building is located, and "Udorthents – Wet Substratum" on the east side where the parking area is. The depth to groundwater is shallow on the site based on the existing water surface of Mother Brook and its mean annual high water elevation.

PROJECT DESCRIPTION

The proposed work is shown on the plans titled "Proposed Site Improvements Plan" dated November 27, 2019.

It is the intent of the owner to remove the existing pavement on the rear parking / storage yard, regrade the area and repave. The owner of the property removed the pavement and regraded the area in preparation for paving without submitting a Notice of Intent and was contacted by the Boston Conservation Commission. The owner was informed that the project is subject to the Massachusetts Wetlands Protection Act, and as instructed, the owner stopped the project and installed a row of straw wattles at the limit of work to prevent sediment from entering Mother Brook. DGT Associates was retained to perform a wetland delineation and a topographic survey, as well as to prepare the Notice of Intent documents.

During the wetland delineation, several observations were made:

- The extent of the area to be paved was defined by recently placed and compacted gravel base. It appears that gravel base extended further into the southeast corner.
- Some vegetation above the brook along the east side of the site was removed.
- The drainage ditch at the southeast corner from the headwall to where it joins Mother Brook was cleaned and now well defined.
- Electrical conduits were installed in the gravel base from the building to the east side.
- There was no disturbance within the "bank" portion of Mother Brook.
- A small area of what was apparently BVW had been filled and altered. Based on the topographic information, this area was estimated at approximately 440 sq. ft.

The project as presently proposed will not increase in the area of impervious surface on the site over what previously existed. The extent of proposed pavement will correspond to the extent of previously paved area.

Other site improvements related to the proposed project include:

- Removal of trash and debris from the drainage ditch,
- Re-vegetate the area adjacent to Mother Brook,
- Installation of a new 6-foot high chain link fence.
- Remove the new fill within the BVW in the southeast former and restore it with wetland plantings.

- The regrading that occurred within the BLSF actually resulted in an increase in flood storage on an incremental and cumulative basis to meet the performance standards under the BLSF performance standards under 310 CMR 10.57. Computations are included in the performance standards section below..
- Installation of two (2) proprietary stormwater treatment units to remove total suspended solids from a large portion of the paved site.

The erosion and sedimentation controls that have been recently installed are being maintained for the project. In addition, as part of the Site Plan, erosion and sedimentation control performance standards will be incorporated into the project.

RIVERFRONT AREA NARRATIVE

The 25-foot Riverfront Area begins at the Mean Annual High Water Line of Mother Brook, and extends onto the east side of the site. A drainage ditch off the southeast corner (on abutting property) empties into Mother Brook and is also considered jurisdictional. A portion of the proposed re-pavement project coincides with the extent of the previously paved area and occurs within the Riverfront Area.

The existing building is located approximately 114 feet from the bank of Mother Brook, and the edge of the previously paved area is 16 feet from the bank of Mother Brook.

As a redevelopment project, specifically related to the replacement of previously paved surface, the proposed conditions must, at a minimum, be an improvement over the existing conditions.

RIVERFRONT AREA PERFORMANCE STANDARDS

This section describes how the project is designed to meet the performance standard for this Resource Area under 310 CMR 10.58 (4)(a) through (d)

(a) *Protection of Other Resource Areas – "The work shall meet the performance standards for all other resource areas within the riverfront Area…"*

Response: See the section "Bordering Vegetated Wetland Performance Standards" in this narrative.

(b) *Protection of Rare Species – "No Project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland vertebrate or invertebrate species…"*

Response: According to the latest Massachusetts Division of Fisheries and Wildlife – Natural Heritage Endangered Species Program Mapping (NHESP), there are no areas on or near the site that are designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. Nor are there any Certified or Potential Vernal Pools near the site.

(c) *Practicable and Substantially Equivalent Economic Alternatives – "There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40."*

Response: This area of the site was previously paved for the use as a towing yard, with vehicular storage. An alternative would be to leave the area as a gravel parking yard, however, this creates an opportunity for sediment to enter Mother Brook. The proposed use and purpose is equivalent to the existing conditions and is economically feasible.

Based on the proposed re-pavement plan that is to replace the previously paved area, there appears to be no other practicable and substantially equivalent economic alternative that would be of less impact on the site.

(d) *No Significant Adverse Impact – "The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area…"*

Per section 10.58(4)(d)2a, "Limiting alteration to the maximum extent feasible, and at a minimum, preserving or establishing a corridor of undisturbed vegetation of maximum feasible width …"

Response: The applicant is requesting to re-pave what was previously paved. Admittedly, the applicant was aggressive in preparing the base for the new pavement and the site contractor extended some of the base into a small area of BVW in the southeast corner and removed vegetation above the brook within the Riverfront. The proposed work includes removing the fill from the BVW and restoring this area with wetland vegetation. In addition, the area between the east edge of pavement and the bank of Mother Brook will be re-vegetated with native plants and seeded with New England Conservation/Wildlife Seed Mix.

Per section 10.58(4)(d)2b, "Provide stormwater management according to standards established by the Department."

Response: This project is a redevelopment that will not increase the impervious surfaces. Therefore, the project must meet the Massachusetts Stormwater Management requirements only to the extent practicable. The grading is such that the paved area drains to the east and to the bank of Mother Brook and will not change from the previous condition. As an improvement, two (2) proprietary stormwater treatment units to remove total suspended solids from a large portion of the site. These proposed units will improve the quality of the stormwater runoff from the site. Due to the shallow depth to groundwater and the poor fill soils at the site, recharge is not feasible at this location. The proposed improvements is a practicable BMP toward meeting the Stormwater requirements in this case.

Per section 10.58(4)(d)2c, "Preserving the capacity of the riverfront area to provide important habitat functions …"

Response: The subject property is a pre-developed commercial/industrial site that is being re-paved for the same use. Following re-pavement, from a wildlife habitat perspective, the site will be no different than existing conditions. Since the site is essentially fully developed for a commercial/industrial use, a wildlife habitat evaluation is not required. As described in the Wetland Delineation Report (Attachment 1), the site is not within any Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife and there are no vernal pools near the subject property.

Per section 10.58(4)(d)1d, "Proposed work shall not impair groundwater or surface water quality ..."

Response: In accordance with the MassDEP Stormwater Regulations, construction period erosion and sediment controls are incorporated in the project so that groundwater and surface water is not impaired during the re-pavement project. Proposed natural vegetation plantings within the 25 foot Riverfront area will also provide a net positive impact to the riverfront area on site when compared to existing conditions.

This section describes how the project (Redevelopment) is designed to meet the performance standard for this Resource Area under 310 CMR 10.58 (5)(a) through (h)

(a) *"At a minimum, proposed work shall result in an improvement over existing conditions …"*

Response: The applicant is requesting to re-pave what was previously paved. The project will not increase the impervious surfaces. The regrading that has already occurred within the BLSF resulted in an increase in flood storage on an incremental and cumulative basis to meet the performance standards under the BLSF performance standards under 310 CMR 10.57.

The area between the east edge of pavement and the bank of Mother Brook will be re-vegetated with native plants and seeded with New England Conservation/Wildlife Seed Mix. Proposed natural vegetation plantings within the 25 foot Riverfront area will also provide a net positive impact to the riverfront area on site when compared to existing conditions.

Two (2) proprietary stormwater treatment units to remove total suspended solids from a large portion of the site are proposed to improve the quality of the runoff.

In addition, the applicant has also removed a significant amount of trash and debris from a drainage ditch at the southeast corner of the site (off-locus).

(b) *"Stormwater management is provided according to the standards established by the Department."*

Response: See response above to address 10.58(4)(d)2b.

(c) *"… proposed work shall not be located closer … than existing conditions within 25 foot riverfront areas …"*

Response: The applicant is requesting to re-pave what was previously paved. The project will not increase the impervious surfaces. The extent of proposed pavement will correspond to the extent of previously paved area.

(d) *"Proposed work … shall be located outside the riverfront area and away from the river, except in accordance with 310 CMR 10.58(5)(f) of (g)."*

Response: See response above to address 310 CMR 10.58 (5)(c).

(e) *"The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area, except in accordance with 310 CMR 10.58(5)(f) of (g)."*

Response: The extent of proposed pavement will correspond to the extent of previously paved area and there will be no increase in degraded area.

(f) *"When an applicant proposes restoration on-site of degraded riverfront area …"*

Response: The proposed work includes removing the fill from the BVW and restoring this area with wetland vegetation. In addition, the area between the east edge of pavement and the bank of Mother Brook will be re-vegetated with native plants and seeded with New England Conservation/Wildlife Seed Mix.

(g) *"When an applicant proposed mitigation either on-site or in the riverfront area …"*

Response: See response above to address 310 CMR 10.58 (5)(g).

(h) *"The issuing authority shall include a continuing condition in the Certificate of Compliance for projects under 310 CMR 10.58(5)(f) or (g) prohibiting further alteration within the restored or mitigation area, except as may be required to maintain the area in restored ort mitigated condition. Prior to requesting the issuance of the Certificate of Compliance, the applicant shall demonstrate the restoration or mitigation has been successfully completed for at least two growing seasons.*

Response: Agreed.

BORDERING VEGETATED WETLAND PERFORMANCE STANDARDS

This section describes how the project is designed to meet the performance standard for this Resource Area under 310 CMR 10.55 (4)(a) through (e).

(a) *"… any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area."*

Response: The estimated 440 SF area of BVW that was altered will be restored to its former condition. Some of the proposed re-pavement work falls within the 100-Foot Wetland Buffer Zone. The applicant is requesting to re-pave to replace the aged pavement and to install a new 6' chain-link fence to replace the existing fence. The proposed work will not extend beyond what was previously paved and the altered buffer between the pavement and the Bank of Mother Brook will be revegetated with native plantings.

(b/c) *"… the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5000 square feet Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions …"*

Response: The proposed project will not result in the loss of any BVW. The portion of the BVW that was altered will be restored.

(d) *"… no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species …"*

Response: According to the latest Massachusetts Division of Fisheries and Wildlife – Natural Heritage Endangered Species Program Mapping (NHESP), there are no areas on or near the site that are designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. Nor are there any Certified or Potential Vernal Pools near the site.

(e) *"Any proposed work shall not destroy or otherwise impair any potion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern..."*

Response: The proposed work does not take place in an Area of Critical Environmental Concern.

BORDERING LAND SUBJECT TO FLOODING: PERFORMANCE STANDARDS

This section describes how the project is designed to meet the performance standard for this Resource Area under 310 CMR 10.57 (4)(a).

10.57 (4)(a) 1:
"Compensatory storage shall be provided for all flood storage volume…."

Response: The regrading that was performed within the BLSF for the parking area has resulted in an increase in flood storage at all elevations in one foot increments as required

by this Standard. Calculations are provided with this Notice of Intent submittal to demonstrate this. See the tables and information below:

24766 - S-1428 Flood Plain Calcs *Rainfall not specified*
Prepared by Schofield Brothers LLC Printed 12/13/2019
HydroCAD® 10.00-21 s/n 01078 © 2018 HydroCAD Software Solutions LLC Page 1

Summary for Pond 1P: Pre-Existing

Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	24,078 cf	**Custom Stage Data (Irregular)** listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
47.00	341	162.5	0	0	341
48.00	1,389	378.2	806	806	9,626
49.00	2,338	389.4	1,843	2,649	10,410
50.00	4,034	493.7	3,148	5,797	17,753
51.00	8,165	673.5	5,979	11,776	34,464
52.00	14,961	827.2	11,393	23,169	52,834
52.06	15,324	831.3	909	24,078	53,378

Summary for Pond 2P: Post Pavement Removal & Regrading

Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	34,939 cf	**Custom Stage Data (Irregular)** listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
47.00	370	163.9	0	0	370
48.00	1,460	439.8	855	855	13,628
49.00	2,281	434.5	1,855	2,710	14,200
50.00	4,278	498.9	3,228	5,938	19,006
51.00	13,687	752.7	8,539	14,477	44,292
52.00	24,788	902.1	18,965	33,442	63,983
52.06	25,137	903.3	1,498	34,939	64,164

Summary for Pond 3P: Post Pavement Installation

Volume	Invert	Avail.Storage	Storage Description
#1	47.00'	31,455 cf	**Custom Stage Data (Irregular)** listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
47.00	370	163.9	0	0	370
48.00	1,460	439.8	855	855	13,628
49.00	2,281	434.5	1,855	2,710	14,200
50.00	4,124	486.2	3,157	5,868	18,016
51.00	10,918	711.2	7,251	13,118	39,463
52.00	23,638	846.7	16,874	29,992	56,280
52.06	25,137	903.3	1,463	31,455	64,162

Elevation	Pre-Existing	Post-Pavement Removal & Regrading	Net Increase (cf)
52.06 - 52	909	1,498	589
52 - 51	11,393	18,965	7,572
51 - 50	5,979	8,539	2,560
50 - 49	3,148	3,228	80
49 - 48	1,843	1,855	12
48 - 47	806	855	49

Net Increase Total	10,862

Elevation	Pre-Existing	Post-Pavement Installation	Net Increase (cf)
52.06 - 52	909	1,463	554
52 - 51	11,393	16,874	5,481
51 - 50	5,979	7,251	1,272
50 - 49	3,148	3,157	9
49 - 48	1,843	1,855	12
48 - 47	806	855	49
		Net Increase Total	7,377

10.57 (4)(a) 2:

"Work within the BLSF….. shall not restrict flows so as to cause an increase in flood stage or velocity."

Response: The site is all open to the flood area and stream. No restrictions are proposed.

10.57 (4)(a) 3:

"Work in those portions of the BLSF found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions…".

Response: The portions of the site to the east of the parking lot that were vegetated and altered will be restored with native vegetation to mitigate any wildlife habitat impacts. There are no areas designated as Estimated Habitat of Rare Wildlife Habitat, Priority Habitat or Vernal Pools on or near the site.

S-1428

ATTACHMENT 2

NOTICE OF INTENT FILING

ABUTTERS INFORMATION
Abutter Notice
Affidavit of Service
Assessor's Abutter's List & Map from Website

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 Notice of Intent has been filed by the DGT Associates on behalf of Elias Akiki for site improvements (re-paving) and stormwater management within the property at 1550 River Street in Hyde Park, MA, Assessor's Parcel ID 1812146000.

The Notice of Intent, including Plans, may be examined at the Environment Department, Boston City Hall, Room 709, Boston, MA 02201, Monday through Friday, from 8 a.m. to 4 p.m. For more information, call the Boston Conservation Commission at 617-635-3850.

Copies of the Notice of Intent may be obtained from the applicant's representative, DGT Associates, 1071 Worcester Road, Framingham, MA 01701, Monday through Friday, from 8 a.m. to 5 p.m. Contact Phone 508-879-0030 (copies of plans and documents may be obtained at cost for printing).

The Boston Conservation Commission will hold a public hearing in the Piemonte Room, Boston City Hall, 1 City Hall Square, 5th Floor, Boston, MA 02201. Information regarding the date and time of the public hearing may be obtained from the Boston Conservation Commission at 617-635-3850.

You may also view boston.gov / public notices to confirm the hearing date and agenda items.

NOTE: Notice of the Public Hearing will be published at least five (5) days in advance in the The Herald and will be posted not less than 48 hours in advance of the public hearing in the Boston City Hall.

For more information call DGT Associates at 508-879-0030 or the Boston Conservation Commission at 617-635-3850 or the DEP Northeast Regional Office, 978-661-7600.

If this hearing is not closed, it will be continued to a date requested by the applicant without further abutter notification.

DGT Associates
Surveying &
Engineering

1071 Worcester Rd.
Framingham, MA 01701
508.879.0030
www.dgtassociates.com

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

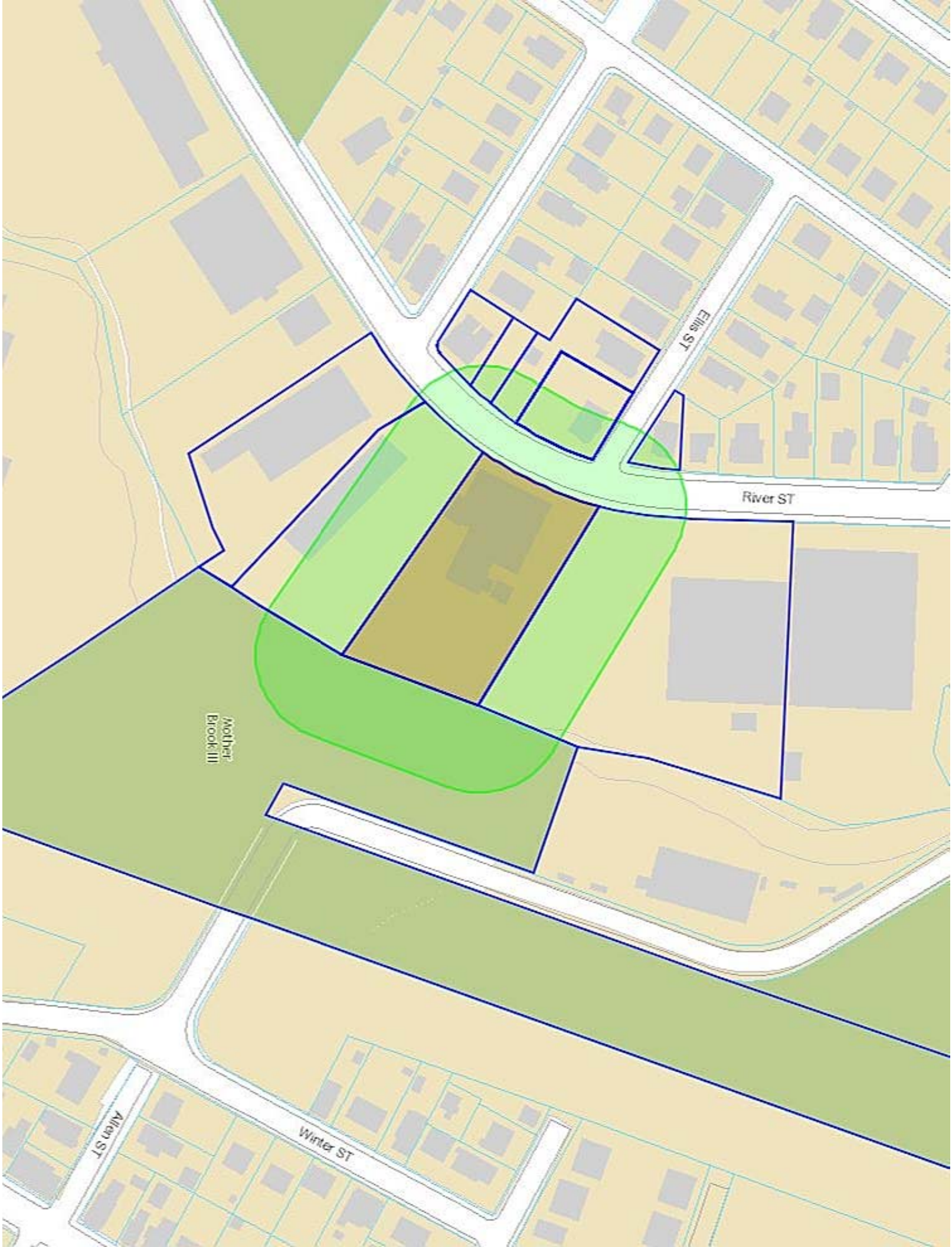
I, **Bert E. Corey** hereby certify under the pains and penalties of perjury that on **December 17, 2019** I gave notification to abutters in compliance with the second paragraph of the Massachusetts General Laws, Chapter 131, Section 40 and the DEP Guide to Abutter Notification in connection with the following matter:

A **Notice of Intent Application** was filed under the Massachusetts Wetlands Protection Act by **DGT Associates** with the **Boston** Conservation Commission on **December 17, 2019** for a property located at **1550 River Street, Hyde Park**.

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

Bert E Corey
Signature

12/17/19
Date


Ellis ST
River ST
Mother Brook III
Allen ST
Winter ST

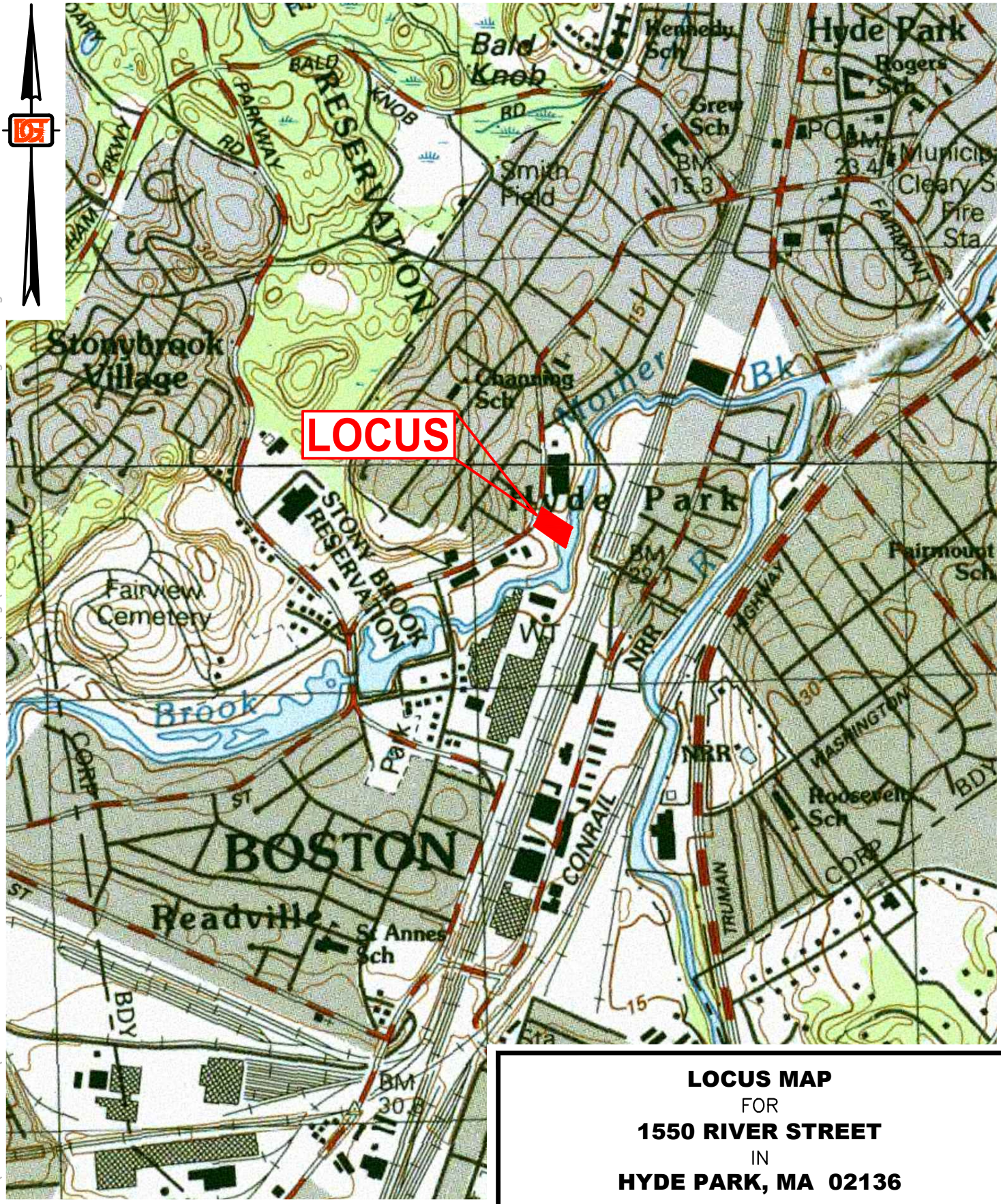
PID	OWNER	ADDRESSEE	MLG_ADDRESS	MLG_CITYSTATE	MLG_ZIPCODE	LOC_ADDRESS	LOC_CITY	LOC_ZIPCODE
1812114001	BASILE BRANDT	BASILE BRANDT	1539 RIVER ST	HYDE PARK MA	2136	1539 RIVER ST	HYDE PARK	2136
1812125000	ONE 545 RIVER ST	ONE 545 RIVER ST	1543 RIVER	HYDE PARK MA	2136	1543 1545 RIVER ST	HYDE PARK	2136
1812125002	CARDOSO EDSON	CARDOSO EDSON	1543-1545 RIVER ST	HYDE PARK MA	2136	1543 1545 RIVER ST #1	HYDE PARK	2136
1812125004	FAULKNER JAMES M III	FAULKNER JAMES M III	955 MASSACHUSETTS AV #250	CAMBRIDGE MA	2139	1543 1545 RIVER ST #2	HYDE PARK	2136
1812125006	JEREIDINI NASSIM	JEREIDINI NASSIM	39 JOAN RD	HYDE PARK MA	2136	1543 1545 RIVER ST #3	HYDE PARK	2136
1812126000	LEGROS PIERRE A	LEGROS PIERRE A	1557 RIVER ST	HYDE PARK MA	2136	RIVER ST	HYDE PARK	2136
1812128000	LEGROS PIERRE A	LEGROS PIERRE A	1557 RIVER ST	HYDE PARK MA	2136	1557 1559 RIVER ST	HYDE PARK	2136
1812140000	HS LAND TRUST LLC TS	HS LAND TRUST LLC TS	404 S HUNTINGTON AVE	JAMAICA PLAIN MA	2130	4 - 6 ELLIS ST	HYDE PARK	2136
1812145050	DALY MARY ELLEN TS	DALY MARY ELLEN TS	1560 RIVER ST	HYDE PARK MA	2136	1560 RIVER ST	HYDE PARK	2136
1812145100	KRUCZYNSKI ANTONI TS	KRUCZYNSKI ANTONI TS	1558 RIVER ST	HYDE PARK MA	2136	1558 RIVER ST	HYDE PARK	2136
1812146000	TUZZO VINCENT P TS	TUZZO VINCENT P TS	1035 HYDE PARK AV	HYDE PARK MA	2136	1550 RIVER ST	HYDE PARK	2136
1812146001	FIFTEEN-30 RIVER ST RLTY LLC	FIFTEEN-30 RIVER ST RLTY LLC	1530 RIVER ST	HYDE PARK MA	2136	1530 RIVER ST	HYDE PARK	2136
1812161000	CITY OF BOSTON	CITY OF BOSTON	RESERVATION RD	HYDE PARK MA	2136	RESERVATION RD	HYDE PARK	2136

S-1428

ATTACHMENT 3

NOTICE OF INTENT FILING

Locus Map – USGS Quad
FEMA Floodplain Map
Natural Heritage Map



G:\Carlson Jobs\24766-S-1428-00-TP 1550 River Street, Boston\Dwg\24766-S-1428-00-TP-Eng WP.dwg

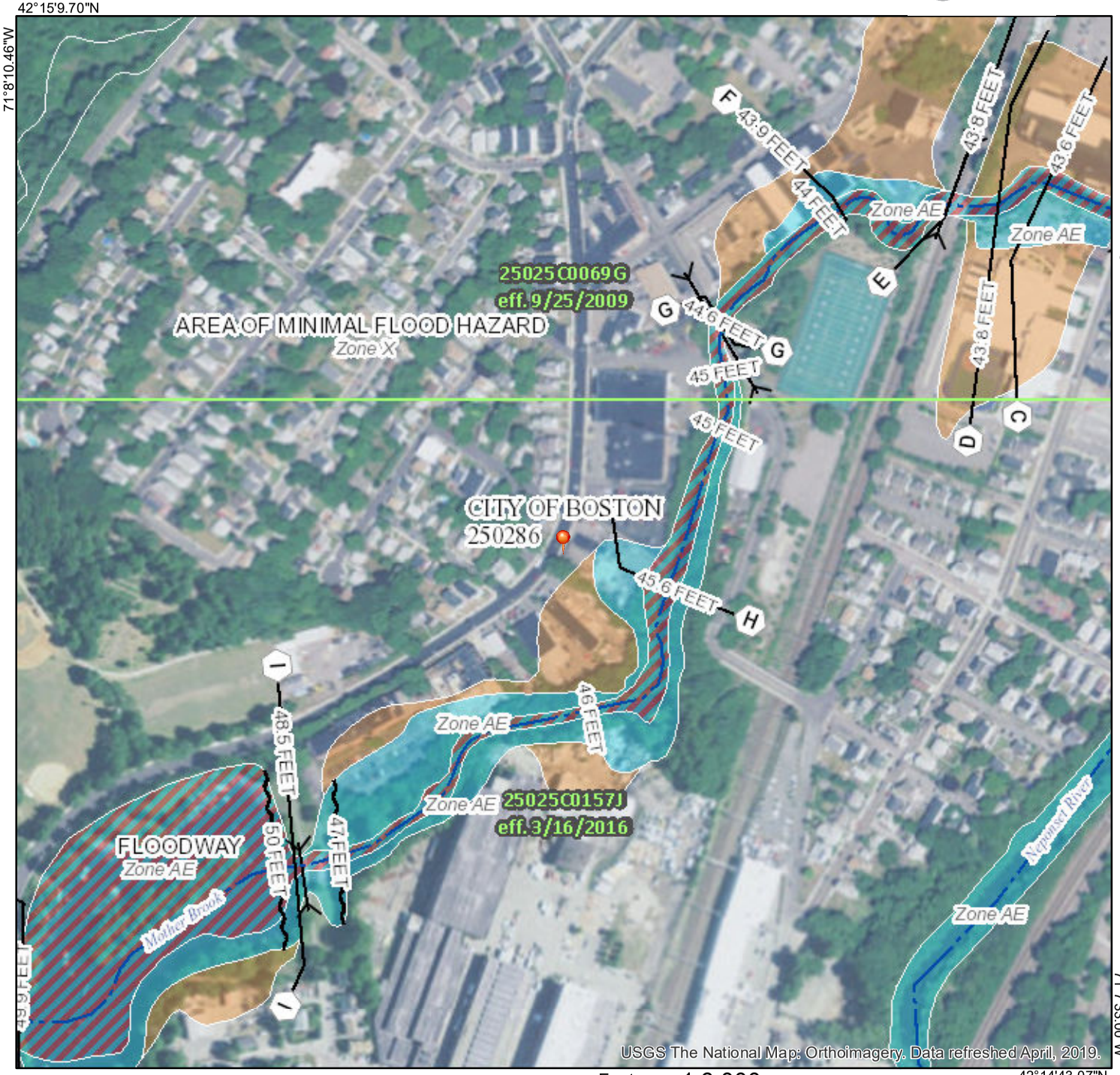
LOCUS MAP
FOR
1550 RIVER STREET
IN
HYDE PARK, MA 02136

DGT Associates
1071 Worcester Road
Framingham, MA 01701
508-879-0030
www.DGTassociates.com

DATE: 2019-12-03	**LOCUS**
DRAWN BY: KMR	
SCALE: 1" = 1,000'	24766 S-1428-00

National Flood Hazard Layer FIRMette

FEMA



Feet

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

1:6,000

Legend

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

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

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

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

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

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

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

N

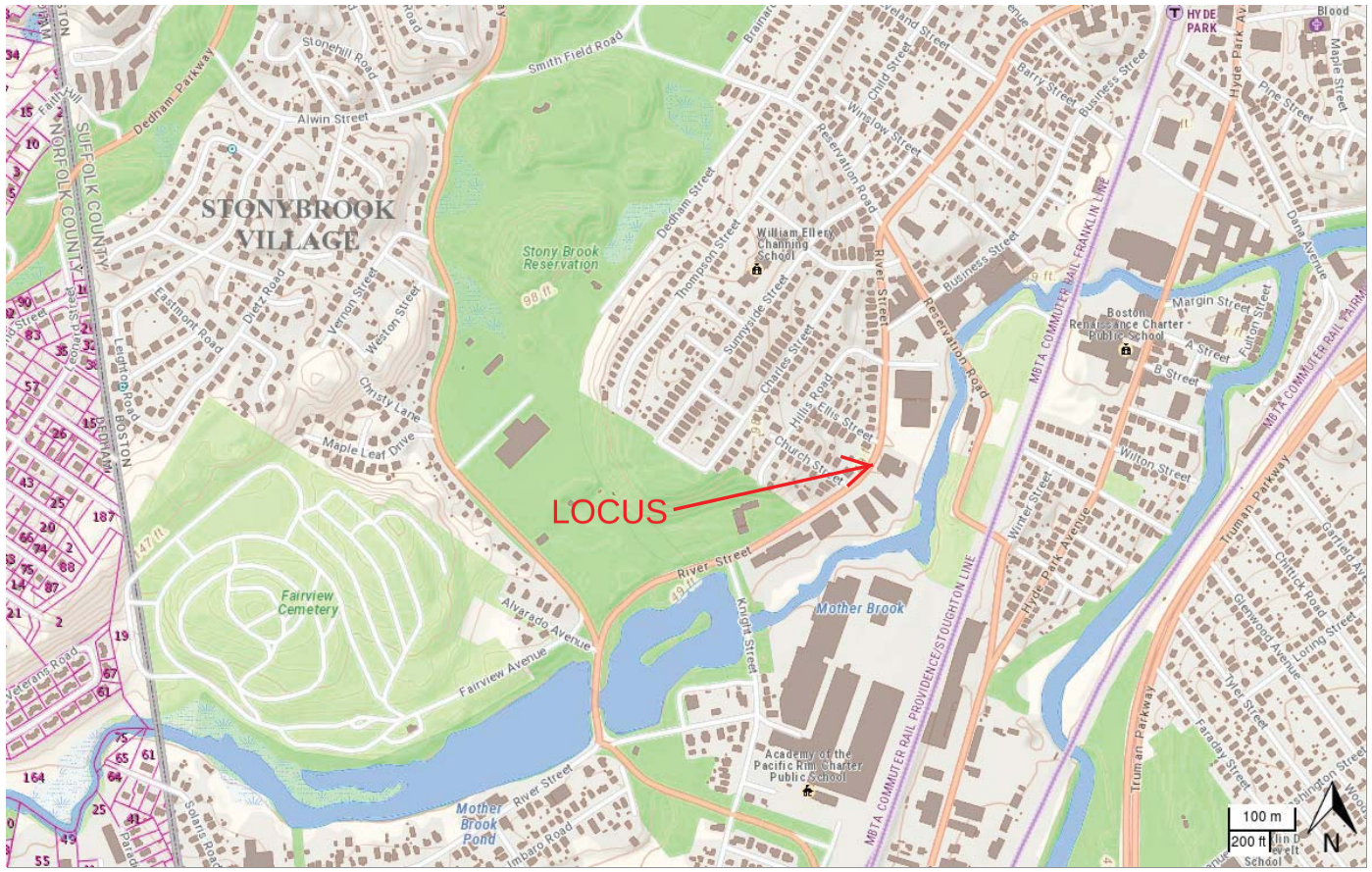
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/23/2019 at 12:30:28 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Natural Heritage Data Layers



Potential Vernal Pools

NHESP Certified Vernal Pools

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

Tax Parcels for Query

Detailed Features

Tax Parcels for Display

Structures

MassGIS Statewide Basemap
MassGIS Topographic Features Basemap

1550 RIVER STREET, HYDE PARK, MA

S-1428

ATTACHMENT 4

NOTICE OF INTENT FILING

Wetland Delineation Report

DGT Associates
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19F-022

Elias Akiki
Akiki & Sons Avenue Service
1035 Hyde Park Avenue
Hyde Park, MA 02136

October 29, 2019

RE: 1550 River Street, Hyde Park,
Wetland Resource Area Delineation

Dear Mr. Akiki:

On October 18, 2019, DGT Associates (DGT) performed a field delineation of wetlands resource area boundaries at the subject property under the jurisdiction of the Mass. Wetlands Protection Act. The delineation was performed by this writer, Fredric King, Senior Wetland Specialist.

This report summarizes our findings and contains our DEP Field Data Forms and documentation of our methodologies for the delineations made. Following the delineation, the delineation markers (survey flagging) were located by field survey. The Existing Conditions Topographic Plan prepared by DGT shows the wetlands flagging, resource area boundaries and the related jurisdictional buffer zones.

GENERAL SITE DESCRIPTION

General Property Description:
The topographic plan shows the topographic features, building, pavement, gravel parking areas, property lines, wetlands and other environmental boundaries and buffers.

The property is 42,500 sq. ft. in area located at 1550 River Street in the Hyde Park District of Boston, Massachusetts. It contains an industrial building, paved areas in front and on the north side, and the rear storage yard is presently a gravel surface. It is our understanding that the rear storage yard was paved and had recently been stripped of pavement in preparation for re-paving.

The rear 150 foot long property line abuts Mother Brook which flows northeasterly to the Neponset River about ½ mile downstream from the site. Mother Brook is a perennial stream and is classified as a "River" under the Mass. Wetlands Protection Act.

The bank of the brook is vegetated with shrub growth and herbaceous ground cover, and there is a narrow strip of vegetated wetland on the sloping area just above the "Bank" as defined in the Mass. Wetlands Protection Act Regulations.

There is also a drainage ditch at the southerly corner of the site that begins at a drainage pipe outfall and drains to Mother Brook. This drainage ditch appears to have been recently cleaned out by excavation.

The Wetland Resource Areas under the Mass. Wetlands Protection Act (WPA) at the site are associated with Mother Brook and include: Bordering Vegetated Wetlands; Bank; Land Under Water Bodies and Waterways; Land Subject to Flooding; and Riverfront Area.

The drain ditch at the south corner of the site contained water during the delineation work. The water was not flowing and appeared to be the back-water from Mother Brook. The bank of the ditch was continuous with the bank of Mother Brook and could be considered part of the brook bank. Due to this, the ditch

could possibly be classified as a Stream, and the banks of this ditch could be classified as part of the Resource Area under the Wetlands Protection Act.

The limits of these the various wetland resource areas and the associated buffer zones as mapped by DGT are shown on the topographic plan.

FIELD DELINEATIONS

The field delineation included the boundary of Bordering Vegetated Wetland (BVW), Bank of Mother Brook and the south drain ditch, and the Mean Annual High Water (MAHW) associated with Mother Brook. In this case, the 100 foot Buffer Zone under the Mass. Wetlands Protection Act are drawn from the edge of the BVW or the Bank as required. The MAHW marks the inner boundary of the 25 foot Riverfront Area (for Boston). The Bordering Land Subject to Flooding is determined from the 100 year Flood Level from the Federal Emergency Management Agency (FEMA) flood profile mapping.

BANK

The bank of the stream is the land surface that abuts and confines the body. The upper boundary of the bank of the streams was delineated in accordance with the definition under 310 CMR 10.54 (2)(c). This states that "*The upper boundary of a Bank is the first observable break in the slope or the mean annual flood level, whichever is lower.*" For a stream, this essentially is the limit of the normal flow channel.

In this case there is an observable break in the slope that is below the estimated mean annual flow level that is discussed later in this report. Above the first observable break in slope, the land continues to slope upward to a top of the higher bank. A portion of this upper slope is classified as a Bordering Vegetated Wetland as discussed later in this report.

The upper boundary of the "Bank" was marked with consecutively numbered pink survey ribbon. The flags were marked Bank 1 to Bank 24. Bank 1 is located on the abutting property to the south on Mother Brook. The flags then follow the bank of the drain ditch to the pipe outfall and then back to Mother Brook at Bank 12. Then the flags follow Mother Brook across the rear of the property downstream to flag Bank 24.

The southerly drain ditch contained water at the time of the delineation. The water appeared to be back-water from Mother Brook. Since the banks of this ditch were containing water from Mother Brook, it was our opinion that this was part of the Mother Brook Bank.

BORDERING VEGETATED WETLANDS (BVW)

Bordering Vegetated Wetlands are identified by the presence of a vegetation community comprised of 50 percent or more wetland plant species and the presence of wetland hydrology (i.e. hydric soils and/or other indicators of hydrology). Bordering Vegetated Wetlands are delineated in accordance with the methodology set forth in "Delineating Bordering Vegetated Wetlands under the Massachusetts Wetland Protection Act: A Handbook," dated March 1995, produced by the Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways.

During the delineation, the vegetation is continually observed as well as frequent soil observations with a hand soil auger. Two observation transects with sample plots were performed to help delineate the

boundary and for documentation of the boundary. The DEP field data forms are included in Attachment 3.

The BVW delineation was marked with blue survey ribbon (flagging), consecutively numbered for identification. The wetland boundary section along the Brook is numbered BVW-1 to BVW- 10. The flagging starts at the easterly rear corner of the site and ends at the south corner. No BVW was noted bordering the ditch in the southerly corner, but the area appears to have been recently altered near the ditch.

The BVW across the rear of the property is a narrow fringe of vegetated wetlands that borders on the "Bank" of Mother Brook. This area is the lower portion of the sloping area to the top of an upper embankment along the southern portion of the property.

The Wetland species observed included Red Maple, Button Bush (Cephalanthus occidentalis), Black Willow (Salix nigra), Glossy Buckthorn (Rhamnus frangula), Arrowwood (Viburnum dentatum), Common Greenbriar (Smilax rotundifolia), Sensitive Fern (Onoclea sensibilis), and Purple Loostrife (Lythrum salicaria). Japanese Knotweed (Polygonum cuspidatum) and Trembling Aspen (Polulus tremuloides) were observed on the upper fringe of the slope near the boundary of the BVW.

Transect T1 was performed at flag BVW 5 with two sample plots T1-P1 is the lower plot and T1-P2 is the upper plot. The upper plot is just above a fiber log sediment barrier and did not have any vegetation. Soils and hydrology were document at that plot.

Transect 2 only had one plot on the uphill side of a fiber log sediment barrier near BVW 9. The area had recently been stripped of vegetation and this was documented to determine if the lower portion of the stripped area was within the BVW. The conclusion was that the lower portion would be classified as a BVW by soils and hydrology. It did not appear that the grade was changed. The vegetation had been removed. Japanese Knotweed was observed re-sprouting from the existing roots on the slope.

RIVERFRONT BOUNDARY

ESTIMATED MEAN ANNUAL HIGH WATER FOR RIVERFRONT DETERMINATION

Per the Riverfront Regulations (310 CMR 10.58), the outer boundary of the Riverfront Area is drawn at 25 feet from the Mean Annual High Water Line (MAHW) of the River in the City of Boston. In this case we have determined the MAHW by the use of "Bankfull Indicators" in accordance with the Mass. DEP workshop document "Bankfull Indicators & Mean Annual High Water".

There were several areas along the stream where the indicators of MAHW were quite prominent. To determine the MAHW elevation we searched for a good location where there were clearly observable bankfull indicators and marked that location with a stake and orange flag. In this case, the clearest evidence was the upper limit of a scour areas on the upper bank where the flow of water had prevented herbaceous ground cover vegetation to grow, and debris and leaf litter were washed away. The upper elevation was staked and this elevation was then located by instrument survey. Based on this analysis, the MAHW was determined to be elevation 47.8 (Boston City Base). That elevation contour was then located on the ground by survey.

BORDERING LAND SUBJECT TO FLOODING (BLSF)

This line is determined by the Federal Flood Mapping by FEMA. Per that mapping, portions of the site are in a FEMA Flood Zone AE for this reach of Mother Brook. The elevation of the 1% frequency flood (100 year flood) is determined to be elevation 45.6 on the NAVD 1988 datum. This line is shown on the topographic plan and the elevation has been converted to Boston City Base (NAVD 88 + 6.46 = 52.06). This conversion is based on the Boston Planning and Development Agency's "Climate Resiliency Guidance" dated December 14, 2017.

TheFEMA Flood Map is included in Attachement 2

(Note that the delineations performed are based on best professional judgment and interpretation per the applicable guidelines. The delineation lines are not an official "Determination" under the applicable wetlands laws and regulations until accepted by the Conservation Commission or DEP through the filing of an Abbreviated Notice of Resource Area Delineation, Notice of Intent or Request for Determination. Until officially accepted, the delineation should be considered approximate.

DGT Associates

Fredric W. King

Fredric W. King. PE
Senior Engineer and Wetland Specialist

Attachments:
1. Site Photos
2. FEMA Flood Map
3. DEP Field Delineation Forms

Existing Conditions Topographic Plan (under separate cover)

ATTACHMENT 1 SITE PHOTOS 10/18/19

Looking south along rear of property.

Looking north along rear of property

North Corner of property at paved outfall from Storage/ parking area.

Stake at Estimated Mean Annual High Water.

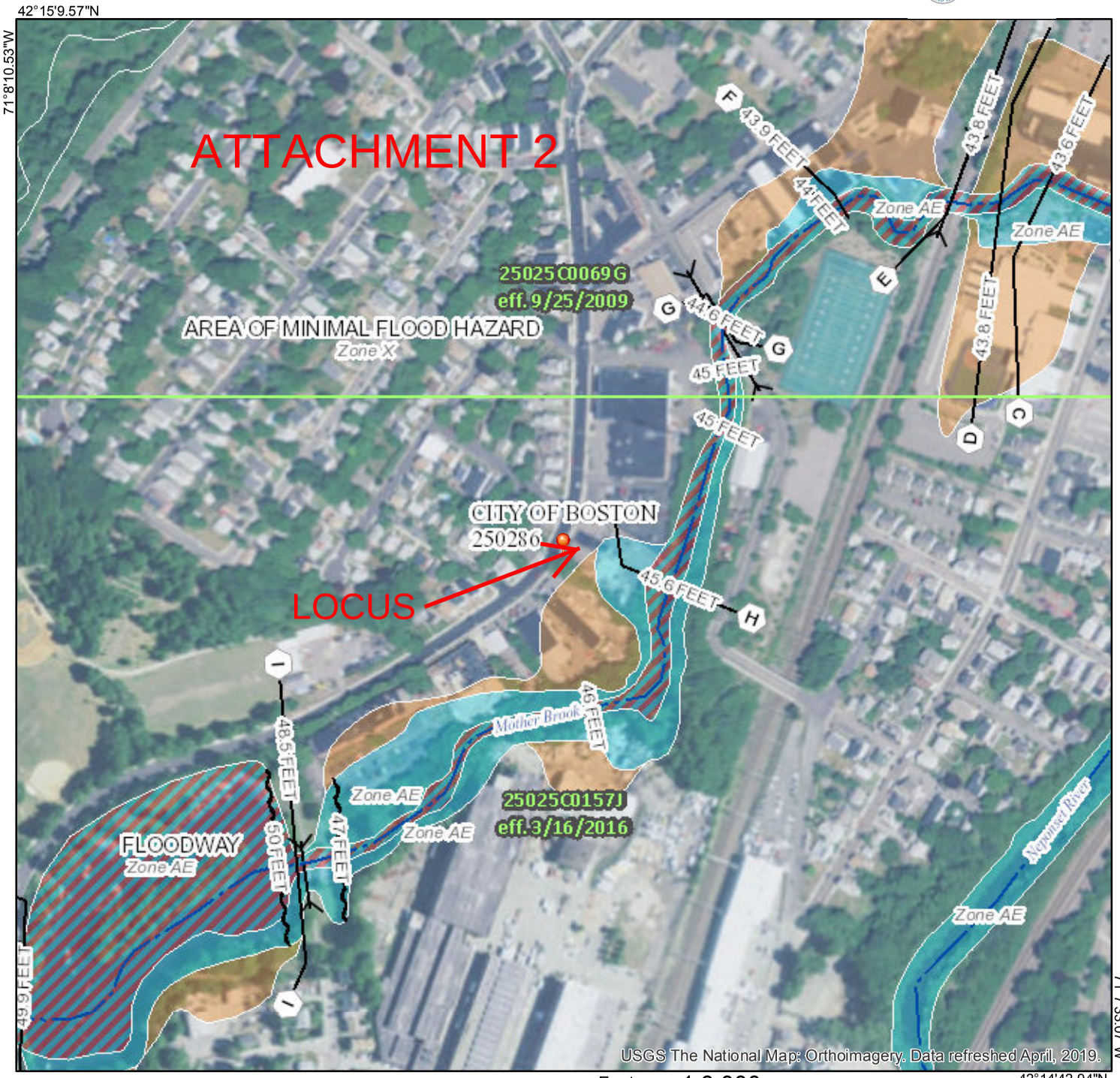
South drain ditch and outfall pipe.

South ditch looking toward Mother Brook.

Recently Filled Area at south corner or property.

National Flood Hazard Layer FIRMette

FEMA



Legend

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

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

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

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

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

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

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/20/2019 at 11:29:41 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.

19F-022

ATTACHMENT 3

DEP BVW DELINEATION

FIELD DATA FORMS

DEP Bordering Vegetated Wetlands (310 CMR 10.55) Delineation Field Data Form

Applicant: Elias Akiki Prepared by: Fred King Project location: 1550 River Street DEP File #:

Check all that apply: Hyde Park, MA

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Number: P1 Transect Number: T1 Date of Delineation: 10/18/19

A. Sample Layer and Plant Species (by common/scientific name)	B. Percent Cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Trees				
None				
Shrub/Sapling/Vine				
Black Willow (Salix nigra)	10.5	43.7	Yes	FACW+
Glossy Buckthorn (Rhamnus frangula)	10.5	43.7	Yes	FAC
Silky Dogwood (Cornus amomum)	3.0	12.5	No	FAC
Ground Cover				
Glossy Buckthorn (seedlings)	3.0	18.2	No	FAC
Black Willow (Seedlings)	3.0	18.2	No	FACW+
Spagnum Moss (Sphagnum spp)	10.5	63.6	Yes	OBL

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptations next to the asterisk.

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 **Number of dominant non-wetland indicator plants:** 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes X **No**

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

MA DEP; 3/95

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes X No

title/date: NRCS Soil Survey Norfolk and Suffolk Counties, Sept 1989

map number: 14

soil type mapped: Udorthents Wet Substratum

hydric soil inclusions: Yes

Are field observations consistent with soil survey? Yes X no

Remarks: NRCS indicates the area is filled land over wet substratum.

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
A - SL	0 - 4"	10 YR 3/2	None
B1 - FSL	4 – 12"	10 YR 2/1	7.5 YR 5/8 Com.
B2 – SL Gravelly	12 -16"	10 YR 2/1	7.5 YR 5/8 Many

Remarks: Near estimated mean annual high water (EMHW) of brook.

3. Other:

Conclusion: Is soil hydric? Yes X No

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated: _____
- ☐ Depth to free water in observation hole: _____
- ☐ Depth to soil saturation in observation hole: _____
- ☐ Water marks: _____
- ☐ Drift lines: _____
- ☐ Sediment deposits: _____
- ☒ Drainage patterns in BVW: At EMHW
- ☐ Oxidized rhizospheres: _____
- ☐ Water-stained leaves: _____
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____
- ☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ number of non-wetland indicator plants	X	
Wetland hydrology present: hydric soil present	X	
other indicators of hydrology Present	X	
Sample location is in a BVW	X	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetlands (310 CMR 10.55) Delineation Field Data Form

Applicant: Elias Akiki Prepared by: Fred King Project location: 1550 River Street DEP File #:

Hyde Park, MA

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Number: P2 Transect Number: T1 Date of Delineation: 10/18/19

A. Sample Layer and Plant Species (by common/scientific name)	B. Percent Cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Trees				
None				
Shrub/Sapling/Vine				
None				
Ground Cover				
None				

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptations next to the asterisk.

Vegetation conclusion: Inconclusive, use soils and signs of hydrology.

Number of dominant wetland indicator plants: 0 **Number of dominant non-wetland indicator plants:** Altered

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? **Yes** **No**

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

MA DEP; 3/95

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes X No

title/date: NRCS Soil Survey Norfolk and Suffolk Counties, Sept 1989

map number: 14

soil type mapped: Udorthents Wet Substratum

hydric soil inclusions: Yes

Are field observations consistent with soil survey? Yes X no

Remarks: NRCS indicates the area is filled land over wet substratum.

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
Fill – SL top soil	0 - 10"	10 YR 3/2	None
Fill Gravelly SL	10 – 15"	10 YR 3/3	None
Fill Gravelly SL	15 -18"	10 YR 2/1	10 YR 5/8 Some

Remarks: No water, Appears to be old fill.

3. Other:

Conclusion: Is soil hydric? Yes No X

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated: _____
- ☐ Depth to free water in observation hole: _____
- ☐ Depth to soil saturation in observation hole: _____
- ☐ Water marks: _____
- ☐ Drift lines: _____
- ☐ Sediment deposits: _____
- ☐ Drainage patterns in BVW: _____
- ☐ Oxidized rhizospheres: _____
- ☐ Water-stained leaves: _____
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____
- ☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ number of non-wetland indicator plants	☐	☐
Wetland hydrology present: hydric soil present	☐	☒
other indicators of hydrology Present	☐	☒
Sample location is in a BVW	☐	☒

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetlands (310 CMR 10.55) Delineation Field Data Form

Applicant: Elias Akiki Prepared by: Fred King Project location: 1550 River Street DEP File #:

Check all that apply: Hyde Park, MA

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation Observation Plot Number: P2 Transect Number: T1 Date of Delineation: 10/18/19

A. Sample Layer and Plant Species (by common/scientific name)	B. Percent Cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Trees				
None				
Note that this is a check of the soil conditions in an				
Altered area to check for hydric indicators. See pg. 2				
Shrub/Sapling/Vine				
None				
It appears that vegetation was recently cleared.				
Knotweed is starting to sprout from roots in slope.				
Ground Cover				
None				

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptations next to the asterisk.

Vegetation conclusion: Vegetation ha been removed from what appears to be an old fill slope.

Number of dominant wetland indicator plants: 0 **Number of dominant non-wetland indicator plants:** Altered

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? **Yes** **No**

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

MA DEP; 3/95

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes X No

title/date: NRCS Soil Survey Norfolk and Suffolk Counties, Sept 1989

map number: 14

soil type mapped: Udorthents Wet Substratum

hydric soil inclusions: Yes

Are field observations consistent with soil survey? Yes X no

Remarks: NRCS indicates the area is filled land over wet substratum.

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
Fill – SL top soil	0 - 4”	2.5 YR 3/1	2.5 YR 3/6 @ 4”
Fill Gravelly SL	4 – 8”	2.5 YR 2.5/1	Saturated @ 6”
Ab Gravelly SL (Buried A)	8 -14”	2.5 YR 2.5/1	2.5 YR 3/6 Many

Remarks: Water @ 12 “

3. Other: 8 inches of Fill over a buried A horizon. Looks to be old. Roots of Knotweed sprouting on slope.

Conclusion: Is soil hydric? Yes X No

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated: _____
- ☒ Depth to free water in observation hole: 12”
- ☒ Depth to soil saturation in observation hole: 6”
- ☐ Water marks: _____
- ☐ Drift lines: _____
- ☐ Sediment deposits: _____
- ☐ Drainage patterns in BVW: _____
- ☐ Oxidized rhizospheres: _____
- ☐ Water-stained leaves: _____
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____
- ☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ number of non-wetland indicator plants	☐	☒ X
Wetland hydrology present: hydric soil present	☒ X	☐
other indicators of hydrology Present	☒ X	☐
Sample location is in a BVW	☒ X	☐

Submit this form with the Request for Determination of Applicability or Notice of Intent.

S-1428

ATTACHMENT 5

NOTICE OF INTENT FILING

Stormwater Management Report
Section 1 Stormwater Management Narrative & Summary

(for full report and calculations see complete Stormwater Management Design and Runoff Calculations Report dated November 27, 2017 by DGT Associates)

S-1428

SECTION 1

STORMWATER NARRATIVE & SUMMARY

This report contains the hydrologic computations and design information relative to the existing and proposed stormwater runoff conditions for the proposed re-pavement project development at #1550 River Street in Hyde Park, MA.

It includes information on the proposed stormwater management system design and assessment of stormwater impacts of the proposed project.

The report also includes the following documents:

- Stormwater Summary Calculations (Section 2)
- Soils Information (Appendix 1)
- Long-Term Pollution Prevention Plan (Appendix 2)
- Stormwater Operation and Maintenance Plan (Appendix 5)

An Erosion and Sediment Control Plan is included as part of the site plan set. However, this project is not subject to the U.S. EPA's Construction General Permit under the NPDES Program. Therefore, a full Stormwater Pollution Prevention Plan (SWPPP) will not be required.

The hydrologic model for existing and proposed stormwater runoff conditions at the site are included in Sections 3 and 4 respectively. The watershed maps for the models are in Appendices 3 and 4.

General Project Description

It is the intent of the owner to remove the existing pavement on the rear parking / storage yard, regrade the area and repave. There is approximately 17,328 square feet of pavement that is to be replaced on the east side of the site.

The project as proposed will not increase in the area of impervious surface on the site over what previously existed. The extent of proposed pavement will correspond to the extent of previously paved area.

Other site improvements related to the proposed project include:

- Removal of trash and debris from the drainage ditch,
- Re-vegetate the area adjacent to Mother Brook,
- Installation of a new 6-foot high chain link fence.
- Remove the new fill within the BVW in the southeast former and restore it the with wetland plantings.
- The regrading that occurred within the BLSF actually resulted in a beneficial increase in flood storage volume on an incremental and cumulative basis to meet the performance standards under the BLSF performance standards under 310 CMR 10.57. Computations are included in the Notice of Intent Project Narrative.
- Installation of a proprietary stormwater treatment units to remove total suspended solids from a large portion of the paved site.

The erosion and sedimentation controls that have been recently installed are being maintained for the project. In addition, as part of the Site Plan, erosion and sedimentation control performance standards will be incorporated into the project.

Existing Site Description

The project site is a 42,500 sq. ft. (0.98 acres) property at 1550 River Street in the Hyde Park district of Boston, Massachusetts. It is identified as on the Boston Assessor's Property ID 1812146000. The property is located in Zoning Sub-district "LI-1" Local Industrial. The property abuts commercial properties to the north and south, and Mother Brook located at the east side of the property. Mother Brook is a perennial stream that joins the Neponset River. Access to the site is provided by a driveway off River Street. The Existing Conditions Plan shows the current site features and topography.

The site is currently developed with a 2 story commercial building with a paved driveway, and currently a gravel/dirt parking area, which was formerly paved.

The existing conditions of the site are shown on the "Existing Conditions Plan" in the site plan set and on the "Existing Conditions Watershed Map" included with this report.

Wetland Resource Areas

Wetland resource areas on the site include: 25 foot Riverfront Area associated with Mother Brook, Bordering Vegetated Wetlands (BVW), and Bordering Land Subject to Flooding (BLSF). The Wetland Delineation Report is included with the Notice of Intent for more detail. The Riverfront Area, the BVW, BLSF, and the 100-Foot Buffer Zone under the Massachusetts Wetlands Protection Act are shown on the Site Plan. The Riverfront Area and the Buffer Zone extend onto the rear parking area. The mean annual high water line for the portion of Mother Brook adjacent to the site is also shown on the Site Plan. The elevation of the estimated Mean Annual High Water was found to be 47.8.

The property falls within a Zone AE special flood hazard area as shown on FEMA Flood Insurance Rate Map number 25025C0157, dated 3/16/2016. The elevation of the 100-year flood as determined by the Federal Flood Insurance Program is 45.6 based on the NAVD 1988 datum. This is equivalent to elevation 52.06 based on the Boston City datum that is shown on the survey plan.

According to the latest Massachusetts Division of Fisheries and Wildlife – Natural Heritage Endangered Species Program Mapping (NHESP), there are no areas on or near the site that are designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. Nor are there any Certified or Potential Vernal Pools on or near the site.

Existing Stormwater Runoff

Assessment of stormwater runoff conditions is based on the topographic information shown on the Existing Conditions Plan and field reconnaissance by DGT Associates. Stormwater runoff flows to the east, travels across a vegetated bank of Mother Brook, and then into the brook itself. The area is described as subcatchments "E-1" and E-2" in

the hydrologic model. A portion of the abutting property (paved parking area) at the north side of the side travels onto the subject property, flows along the north side and enters Mother Brook. This off-site subcatchment is described as "E-3" in the hydrologic model.

The Stormwater Model includes Design Point 1 (DP-1) to describe the stormwater flow to Mother Brook. The peak rates of runoff and volumes to Mother Brook for existing and proposed conditions flows for the 2, 10, 25 and 100-year storms are shown on the summary table in Section 2 of this report.

Currently there are no stormwater management features.

Soils and Groundwater
Soil Maps provided by the Natural Resource Conservation Service (NRCS) indicate that the soils on site are classified as "Urban Land" on the west side where the building is located, and "Udorthents – Wet Substratum" on the east side where the parking area is. The depth to groundwater is shallow on the site based on the existing water surface of Mother Brook and its mean annual high water elevation. The site is also located within a floodplain.

Proposed Stormwater Management Design
The proposed project includes several stormwater Best Management Practices. Low Impact Development (LID) concepts have been considered for this project.

The following summarizes the features of the proposed stormwater management design:

1. Two proprietary stormwater treatment units provide removal of total suspended solids from the paved portion of the site to improve the quality of the runoff.

Because the site has shallow depth to groundwater and is within a floodplain, there are no infiltration facilities proposed.

The project site drains to Mother Brook. The U.S. EPA has recently prepared a "Waterbody Assessment and TMDL (Total Maximum Daily Load of various pollutants) Status" that show Mother Brook (segment MA73-28, and the Neponset River (segment MA73-02). The TMDL Status Map and information is included in Section 2. Mother Brook and the Neponset River are classified as Category 5.

Mother Brook has been determined by the EPA to have several impairments, including debris/floatables/trash, low flow alterations, color, DDT in fish tissue, mercury in fish tissue, dissolved oxygen, PCB in fish tissue, total phosphorous, and taste/odor. Mother Brook joins the Neponset River which also has several impairments including debris/floatables/trash, DDT in fish tissue, Escherichia coli, fecal coliform, foam/flocs/scum/oil slicks, unspecified metals, dissolved oxygen, PCB in fish tissue, and turbidity. An EPA TMDL No. 2592 is associated with the Neponset River for pathogens (bacteria).

It is required that BMPs be selected so that the site will not increase the impairment to the River. The treatment BMPs selected include two proprietary stormwater treatment systems (hydrodynamic separators). The site is almost entirely covered with impervious surface consisting of roof area and pavement. The proposed stormwater treatment systems are an improvement to the existing conditions as they provide debris, hydrocarbon, and TSS removal to the stormwater runoff from the site.

Proposed Stormwater Runoff

The existing and proposed subcatchment are similar due to the minimal amount of proposed site work. The proposed paved surface is described as subcatchments "P-1" and "P-2". Stormwater runoff from theses subcatchments is routed to proprietary stormwater treatment units (aka as water quality units). A third subcatchment "P-3" represents the bank of Mother Brook. The abutting property to the north remains unchanged and is described as "E-3" in the hydrologic model.

The peak rates of runoff and volumes to these locations for existing and proposed conditions flows for the 2, 10, 25 and 100-year storms are shown on the summary tables in Section 2 of this report. For simplicity, both the existing and proposed hydrologic models use a time of concentration equal to 5 minutes.

For all storm events, the peak flows and volumes are essentially the same to DP-1.

Watershed Modeling and Best Management Practices Design

The hydrologic analysis of the existing conditions and proposed watershed was based on the nationally recognized watershed modeling techniques developed by the USDA, Soil Conservation Service (SCS). The techniques and runoff models are described in the following SCS publications:

> "Urban Hydrology for Small Watersheds, Technical Release Number 55", 1986 and Technical Release 20.
>
> National Engineering Handbook, Hydrology, Section 4, 1972.
>
> "A Method for Estimating Volume and Rate of Runoff in Small Watersheds, Technical Release No. 149" 1973.
>
> "Hydrology Handbook for Conservation Commissions" March 2002, Mass. DEP.
>
> The watershed modeling was performed using computer software "HydroCAD" version 10.0 by Applied Microcomputer Systems, which is based on the publications referenced above.
>
> Best management practices were designed utilizing the following publications: DEP "Stormwater Management Standards Handbook", February, 2008
>
> Rainfall depths for 24-hour duration storms per the NOAA Atlas 14, Volume 10, Version 3 selected for the hydrologic analysis computations are as follows:
>
> 2 year storm 3.41 inches

10 year storm	5.33 inches
25 year storm	6.52 inches
100 year storm	8.37 inches

S-1428

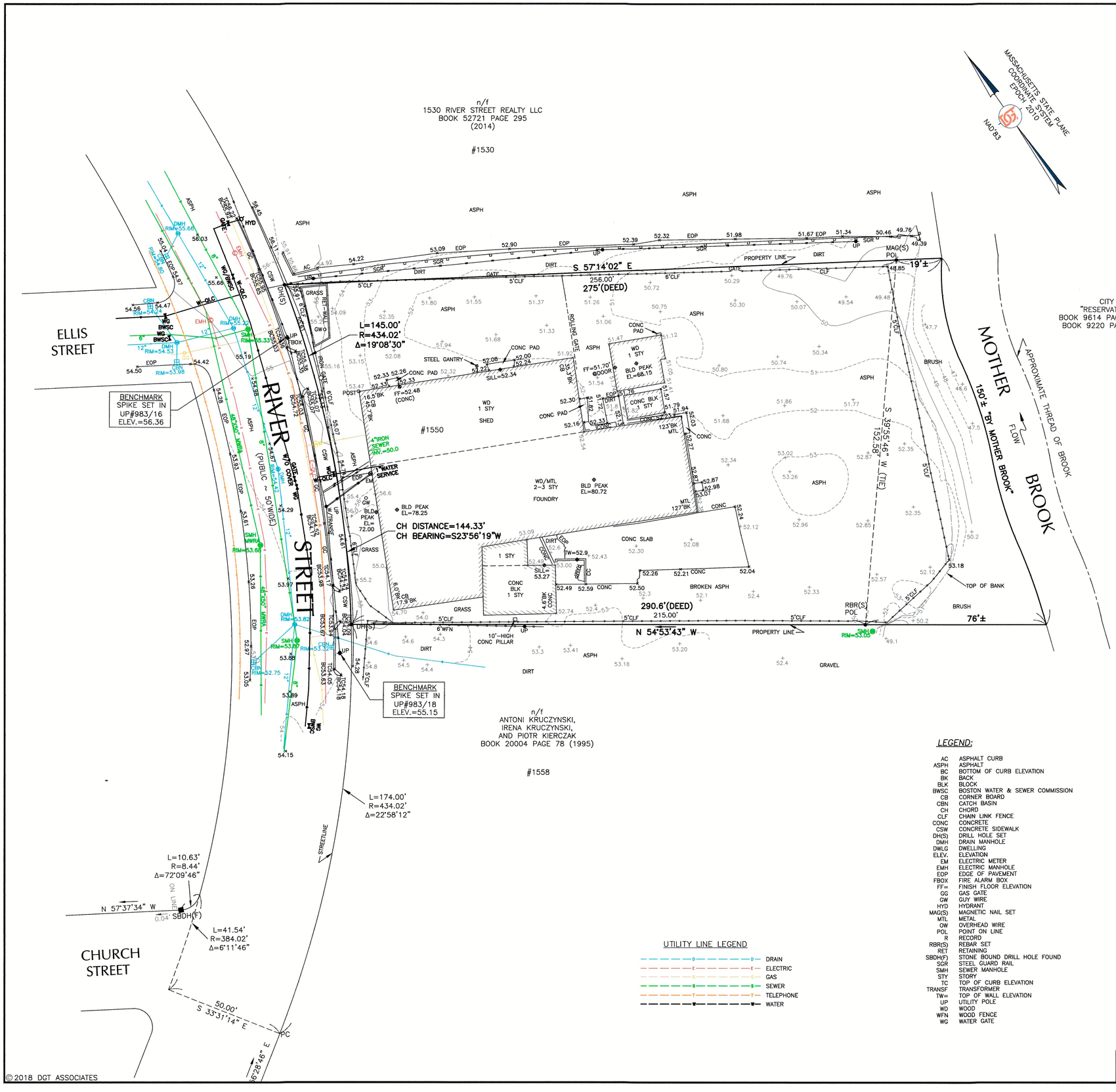
ATTACHMENT 6

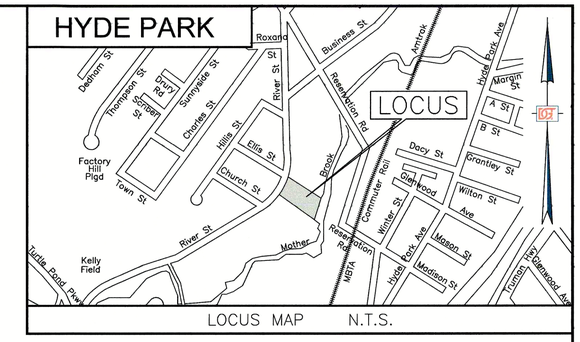
NOTICE OF INTENT FILING

Site Plan Set

Topographic Plan of Land, dated/stamped: 24 Oct 2018
Topographic Plan of Land, dated/stamped: 25 Nov 2019
NOI-1 Proposed Site Improvements Plan
NOI-2 Erosion & Sedimentation Control & Site Details
NOI-3 Existing Conditions Enlarged View of Resource Areas
NOI-4 Proposed Conditions Enlarged View of Restoration Area
NOI-5 Cross Sections

Exhibit Plan A	**Extent of BLSF (Pre-Existing)**
Exhibit Plan B	**Extent of BLSF (Interim)**
Exhibit Plan C	**Extent of BLSF (Proposed)**





REFERENCES:

OWNER OF RECORD:
n/f 1550 RIVER STREET LLC
BK 59811 PG 150 (2018) DEED
BK 4854 PG 591 (1926) PLAN

PARCEL ID: 1812146000

TOTAL LOCUS AREA = 42,500± SQ. FT. PER CITY OF BOSTON ASSESSORS

SUFFOLK COUNTY REGISTRY OF DEEDS
BOOK 2007 PAGE 445 (2007) PLAN
BOOK 19932 PAGE 243 (1995) PLAN
BOOK 7852 PAGE 587 (1964) PLAN

NORFOLK COUNTY REGISTRY OF DEEDS
PLAN BOOK 43 PLAN 2002 (1905)

CITY OF BOSTON ENGINEERING RECORDS
CITY NB 1296 PG 26-33
CITY NB 1190 PG 10-11
CITY NB 972 PG 1284
L-9389 (1966)

MASSACHUSETTS LAND COURT
LCC-26617B (1959)

UTILITY PLANS REFERENCES

BOSTON WATER SEWER COMMISSION
1. 'AS-BUILT PLAN'; PLAN 08-308-008_River_W01
2. 'AS-BUILT PLAN'; PLAN Z03-01

NOTES:

1. FIELD SURVEY PERFORMED: SEPTEMBER 10-13, 2018 AND OCTOBER 12, 2018.

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

3. THIS PLAN IS PREPARED FOR OUR CLIENT USE ONLY FOR THE SPECIFIC PURPOSE OF OBTAINING PERMITS AND LOCAL APPROVALS, AND IS NOT TO BE USED OR RELIED UPON AS A CONSTRUCTION DOCUMENT OR ANY OTHER USE BY OTHERS WITHOUT THE WRITTEN CONSENT OF DGT.

I HEREBY CERTIFY THAT:

THIS PLAN IS BASED ON AN ON-THE-GROUND SURVEY AND PRESENTS THE FACTS AS FOUND AT THE TIME OF THE SURVEY.

COMMONWEALTH OF MASSACHUSETTS
MICHAEL A. CLIFFORD
No 35394
REGISTERED
PROFESSIONAL LAND SURVEYOR

24-OCT-2018

PROFESSIONAL LAND SURVEYOR — DATE

LEGEND:

AC	ASPHALT CURB
ASPH	ASPHALT
BC	BOTTOM OF CURB ELEVATION
BK	BACK
BLK	BLOCK
BWSC	BOSTON WATER & SEWER COMMISSION
CB	CORNER BOARD
CBN	CATCH BASIN
CH	CHORD
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CSW	CONCRETE SIDEWALK
DH(S)	DRILL HOLE SET
DMH	DRAIN MANHOLE
DWLG	DWELLING
ELEV.	ELEVATION
EM	ELECTRIC METER
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
FBOX	FIRE ALARM BOX
FF=	FINISH FLOOR ELEVATION
GG	GAS GATE
GW	GUY WIRE
HYD	HYDRANT
MAG(S)	MAGNETIC NAIL SET
MTL	METAL
OW	OVERHEAD WIRE
POL	POINT ON LINE
R	RECORD
RBR(S)	REBAR SET
RET	RETAINING
SBDH(F)	STONE BOUND DRILL HOLE FOUND
SGR	STEEL GUARD RAIL
SMH	SEWER MANHOLE
STY	STORY
TC	TOP OF CURB ELEVATION
TRANSF	TRANSFORMER
TW=	TOP OF WALL ELEVATION
UP	UTILITY POLE
WD	WOOD
WFN	WOOD FENCE
WG	WATER GATE

UTILITY LINE LEGEND

D	DRAIN
E	ELECTRIC
G	GAS
S	SEWER
T	TELEPHONE
W	WATER

SCALE: 1" = 20'
0 10 20 40

BY:	DESCRIPTION:	DATE:	REV: 0
DRAWING NO.:	S1428-00TP.DWG		

1550 RIVER STREET

ZONING SUBDISTRICT LI-1/LOCAL INDUSTRIAL

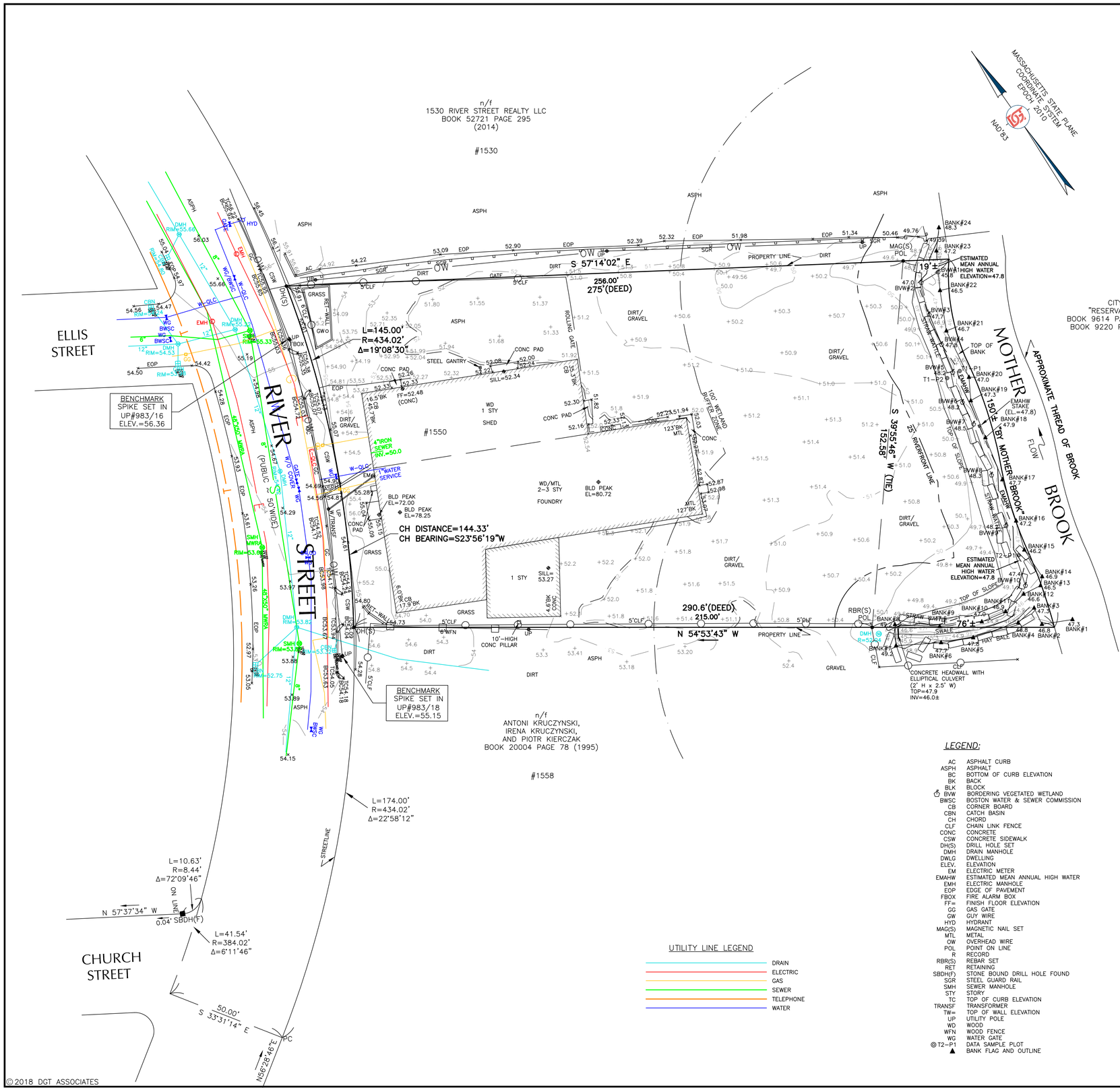
TOPOGRAPHIC PLAN OF LAND
IN
BOSTON, MASSACHUSETTS
SUFFOLK COUNTY - HYDE PARK DISTRICT

PREPARED FOR:
AKIKI & SONS AVENUE SERVICE, INC

PREPARED BY:

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

RESEARCH:	D.F. CLIFFORD
FIELD:	M.T. CLIFFORD
CALCULATION:	A. LALLY
DRAFTING:	A. LALLY, W. SHEN
CHECK:	M.A. CLIFFORD, PLS
PROJ. MANAGER:	B. TALEB
DATE:	12-OCT-2018
JOB NO.	S1428.00
CRD FILE	S-1428-ALL.CRD
SHEET NO.	01 OF 01



LOCUS MAP N.T.S.

UTILITY LINE LEGEND

- DRAIN
- ELECTRIC
- GAS
- SEWER
- TELEPHONE
- WATER

LEGEND:

AC	ASPHALT CURB
ASPH	ASPHALT
BC	BOTTOM OF CURB ELEVATION
BK	BACK
BLK	BLOCK
BVW	BORDERING VEGETATED WETLAND
BWSC	BOSTON WATER & SEWER COMMISSION
CB	CORNER BOARD
CBN	CATCH BASIN
CH	CHORD
CLF	CHAIN LINK FENCE
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DMH	DRAIN MANHOLE
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TC	TOP OF CURB ELEVATION
TRANSF	TRANSFORMER
TW=	TOP OF WALL ELEVATION
UP	UTILITY POLE
WD	WOOD
WFN	WOOD FENCE
WG	WATER GATE
◎ T2-P1	DATA SAMPLE PLOT
▲	BANK FLAG AND OUTLINE

REFERENCES:

OWNER OF RECORD:
n/f 1550 RIVER STREET LLC
BK 59811 PG 150 (2018) DEED
BK 4854 PG 591 (1926) PLAN

PARCEL ID: 1812146000

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2. 'AS–BUILT PLAN'; PLAN Z03–01

NOTES:

1. FIELD SURVEY PERFORMED: SEPTEMBER 10–13, 2018, OCTOBER 12, 2018, OCTOBER 15, 2019 AND OCTOBER 23, 2019.

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

3. THIS PLAN IS PREPARED FOR OUR CLIENT USE ONLY FOR THE SPECIFIC PURPOSE OF OBTAINING PERMITS AND LOCAL APPROVALS, AND IS NOT TO BE USED OR RELIED UPON AS A CONSTRUCTION DOCUMENT OR ANY OTHER USE BY OTHERS WITHOUT THE WRITTEN CONSENT OF DGT.

4. WETLAND RESOURCE AREA DELINEATIONS WERE PERFORMED BY DGT ASSOCIATES ON OCTOBER 18, 2019. NOTE THAT THE DELINEATIONS ARE BASED ON BEST PROFESSIONAL JUDGEMENT AND INTERPRETATIONS PER THE APPLICABLE REGULATIONS AND GUIDELINES. THE DELINEATION LINES SHOWN ARE NOT AN OFFICIAL "DETERMINATION" UNDER THE MASSACHUSETTS WETLANDS PROTECTION ACT UNTIL ACCEPTED BY THE CONSERVATION COMMISSION OR THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION THROUGH THE FILING OF A NOTICE OF INTENT, ABBREVIATED NOTICE OF WETLANDS AREA DELINEATION OR REQUEST FOR DETERMINATION.

5. THE FEMA FLOOD ELEVATION LINE (ELEV=52.06) IS ON THE BOSTON CITY BASE DATUM. PER THE BOSTON "CLIMATE RESILIANCY GUIDANCE" DATED 12/14/17, THE CONVERSION FROM NAVD 1988 TO BOSTON CITY BASE IS +6.46 FEET. THE FEMA FLOOD ELEVATION ON NAVD 1988 IS ELEV=56.6.

I HEREBY CERTIFY THAT:

THIS PLAN IS BASED ON AN ON–THE–GROUND SURVEY AND PRESENTS THE FACTS AS FOUND AT THE TIME OF THE SURVEY.

MICHAEL A. CLIFFORD No 35394

25-NOV-2019

PROFESSIONAL LAND SURVEYOR DATE

SCALE: 1" = 20'
0 10 20 40

1550 RIVER STREET

ZONING SUBDISTRICT LI-1/LOCAL INDUSTRIAL

TOPOGRAPHIC PLAN OF LAND
IN
BOSTON, MASSACHUSETTS
SUFFOLK COUNTY - HYDE PARK DISTRICT

PREPARED FOR:
AKIKI & SONS AVENUE SERVICE, INC

PREPARED BY:
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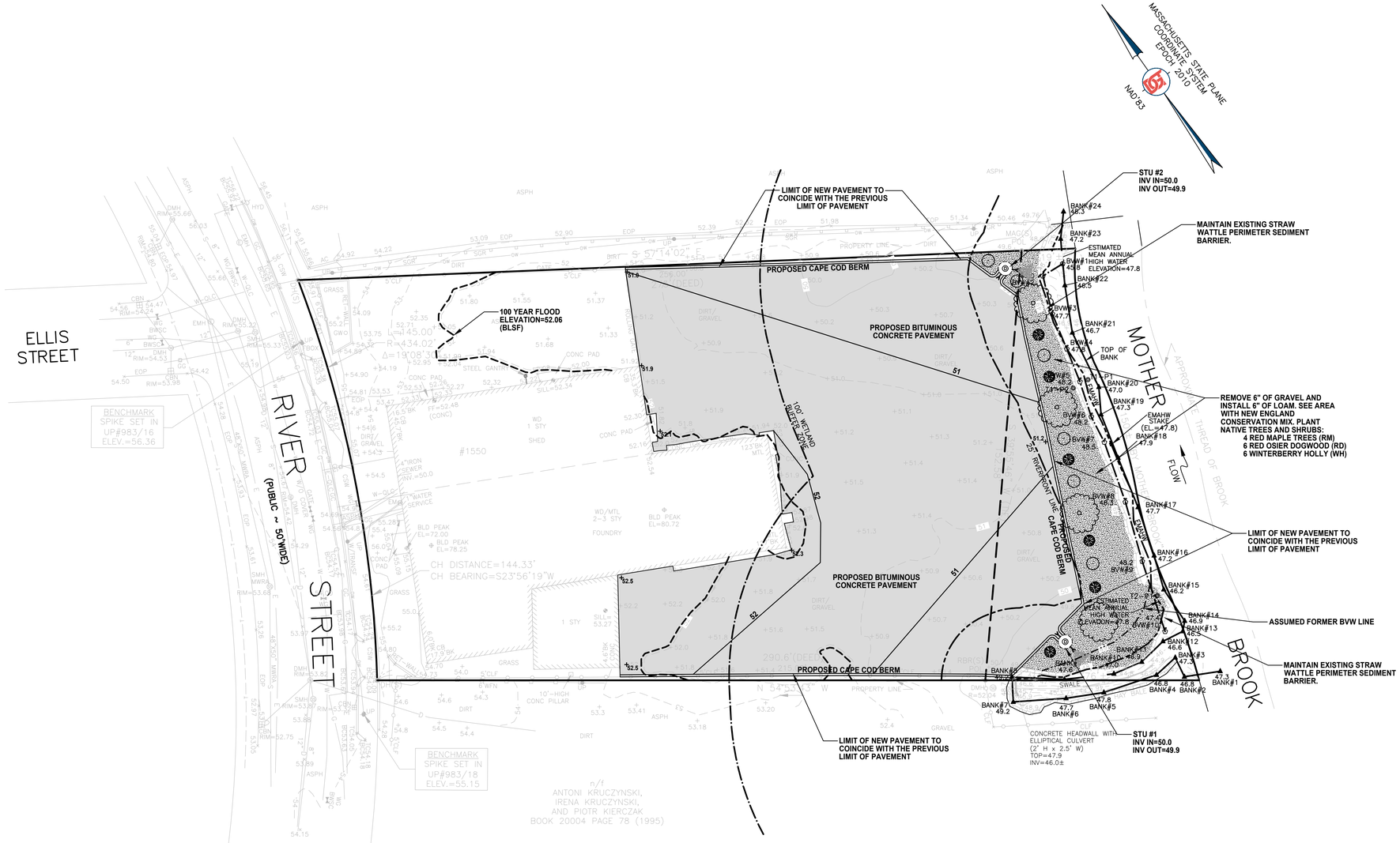
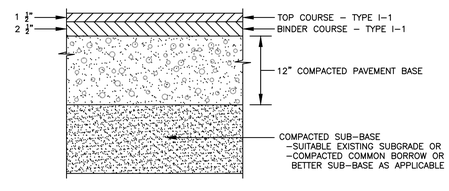
DRAFTING: A. LALLY, W. SHEN
CHECK: M.A. CLIFFORD, PLS
PROJ. MANAGER: B. TALEB
DATE: 12-OCT-2018
JOB NO. S1428.00
CRD FILE S–1428–ALL.CRD
SHEET NO. 01 OF 01

AL	WETLAND INFO	10/23/19	1
BY:	DESCRIPTION:	DATE:	REV: 0

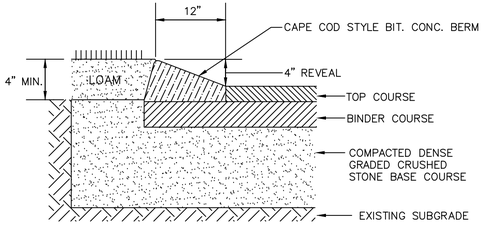
DRAWING NO.: S1428-00TP.DWG





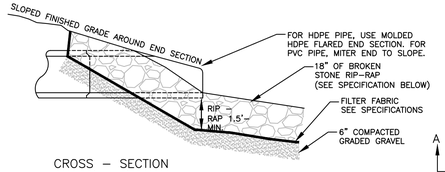
NOTES:
1. COMPACTED PAVEMENT BASE TO CONFORM TO MASS. HIGHWAY DEPT. SPEC. M 2.01.7.
2. COMPACTED COMMON BORROW (SEE EARTHWORK SPECIFICATIONS). NO STONES LARGER THAN 6 INCHES.
3. BITUMINOUS CONCRETE SHALL BE CLASS 1, TYPE 1–1.
4. AT AREAS OF LEDGE/BEDROCK, REMOVE LEDGE TO A DEPTH OF 18 INCHES MINIMUM BELOW PAVEMENT COURSE.
5. COMPACTED PAVEMENT BASE TO EXTEND 12 INCHES MINIMUM BEYOND THE EDGE OF PAVEMENT.

BITUMINOUS CONCRETE PAVEMENT
(NO SCALE)



NOTES:
1. BITUMINOUS CONCRETE SHALL BE CLASS 1, TYPE 1–1. SEE SPECIFICATIONS.

CAPE COD BERM DETAIL
(NO SCALE)



CROSS – SECTION
A – A

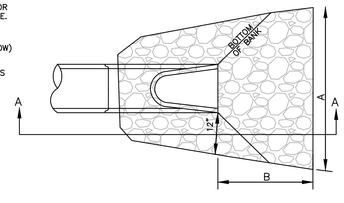
NOTE:

RIP–RAP SHALL CONSIST OF EVENLY GRADED 6" TO 12" ANGULAR BROKEN STONE, (AVG. STONE SIZE = 9") WITH A THICKNESS OF 18 INCHES. NOT MORE THAN 15 PERCENT OF THE STONE MAY BE SCATTERED SPALLS AND STONES LESS THAN 4" IN SIZE.

SIZE DESIGNATION REFERS TO MEAN SPHERICAL DIAMETER.

LENGTH OF RIP–RAP TO BE PER THIS DETAIL UNLESS OTHERWISE SHOWN ON THE PLANS.

PIPE SIZE (IN.)	A (MIN.)	B* (MIN.) SEE PLAN
12" OR LESS	6'	5'
15"	10'	6'



PLAN VIEW

PIPE END SECTION WITH RIP – RAP APRON DETAIL
(NO SCALE)

20 0 10 20 40 80
SCALE: 1" = 20'

DGT Associates
Surveying & Engineering

Framingham
Boston ● Worcester

1071 Worcester Road
Framingham, MA 01701
508-879-0030

www.DGTassociates.com

ISSUED FOR:

PERMITTING

COMMONWEALTH OF MASSACHUSETTS
BERT E. COREY
CIVIL
No. 48423
REGISTERED PROFESSIONAL ENGINEER
12/20/19

NO.	APP	DATE	DESCRIPTION
1	BEC	12/20/19	CONSERVATION COMMENTS

DATE: **NOVEMBER 27, 2019**

SCALE: **1" = 20'**

DRAFTED:	CHECKED:	APPROVED:
KMR	**BEC**	**BEC**

PROJECT TITLE:

PROPOSED SITE IMPROVEMENTS PLAN

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

PROPOSED SITE IMPROVEMENTS PLAN & SITE DETAILS

SHEET: **1 OF 5**

PROJECT NO.: **24766 S-1428-00**

NOI-1

G:\Carrison Jobs\24766-S-1428-00-TP 1550 River Street, Boston\Correspondence\To Client\2019-12-20 to Con Com (REV 1)\24766-S-1428-00-Tp-NOI REV1.dwg

GENERAL PERFORMANCE STANDARDS

1. THE CONTRACTOR SHALL INSTALL, ROUTINELY INSPECT AND MAINTAIN ALL SEDIMENT AND EROSION CONTROLS SUCH THAT THEY ARE IN PROPER WORKING ORDER AT ALL TIMES DURING THE CONSTRUCTION PROJECT UNTIL SUCH TIME AS ALL AREAS OF THE SITE TRIBUTARY TO THOSE EROSION CONTROLS ARE IN A PERMANENTLY STABILIZED CONDITION.
2. THE CONTRACTOR SHALL MANAGE THE SITE SUCH THAT EROSION AND SEDIMENT FROM RUNOFF AND WIND BLOWN DUST ARE CONTROLLED AND MINIMIZED AT ALL TIMES. THE EROSION CONTROLS SHOWN ON THIS PLAN INCLUDE THE INITIAL SETUP OF EROSION CONTROLS AND BASIC INFORMATION. TO MEET THE REQUIREMENT OF BEST MANAGEMENT PRACTICES. THE CONTRACTOR MUST MANAGE THE SITE PROPERLY WHICH MAY INCLUDE, BUT NOT BE LIMITED TO: MINIMIZING AREAS OF EXPOSED SOILS; INSTALLING TEMPORARY COVER; MAKE NECESSARY ADJUSTMENTS TO THE EROSION CONTROL INSTALLATIONS TO IMPROVE FUNCTION; INSTALL ADDITIONAL EROSION CONTROL WHERE NECESSARY.
3. THE EROSION CONTROL WORK SHOWN ON THIS PLAN ARE ALSO SUBJECT TO PERMITS AND APPROVALS BY THE MUNICIPAL CONSERVATION COMMISSION UNDER THE WETLANDS PROTECTION ACT AND THE MUNICIPAL WETLANDS BYLAW, AND MAY ALSO BE SUBJECT TO OTHER STATE AND LOCAL APPROVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE CONDITIONS AND REQUIREMENTS OF THOSE PERMITS.
4. DESIGN, INSTALLATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROLS SHALL BE IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES FOLLOWING THE GUIDELINES INCLUDED IN THE FOLLOWING:
   - "STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES, DEVELOPING POLLUTION PREVENTION PLANS AND BEST MANAGEMENT PRACTICES" U.S. ENVIRONMENTAL PROTECTION AGENCY, OCTOBER 1992.
   - "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, A GUIDE FOR PLANNERS, DESIGNERS AND MUNICIPAL OFFICIALS", MASS. EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS, MAY 2003.
   - U.S.D.A. NATURAL RESOURCES AND CONSEVATION SERVICES (NRCS) GUIDELINES.

FEDERAL NPDES PHASE II COMPLIANCE

1. THIS PROJECT IS NOT SUBJECT TO THE FEDERAL CLEAN WATER ACT REQUIREMENTS FOR CONSTRUCTION SITES ADMINISTERED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA).

PERIMETER SEDIMENT BARRIER AND LIMIT OF WORK

1. PRIOR TO ANY FURTHER DISTURBANCE OR ALTERATIONS OF ANY AREA ON THE SITE, THE EXISTING STRAW WATTLE SEDIMENT BARRIER SHALL BE CHECKED TO ENSURE IT IS IN GOOD WORKING CONDITION. IF NECESSARY, ANY REPAIRS SHALL BE MADE OR THE WATTLE SHALL BE REPLACED.
2. IN THOSE AREAS WHERE THE TOPOGRAPHY INDICATES THAT STORMWATER RUNOFF WILL BE CONCENTRATED (AT LOW POINTS), ADDITIONAL SEDIMENT BARRIER SHALL BE STAKED ON THE UPGRADIENT SIDE FOR ADDED FILTRATION AND PROTECTION. THE REQUIRED LOCATIONS FOR THE ADDITIONAL SEDIEMENT BARRER INSTALLATION WILL BE SELECTED BY THE ENGINEER AND / OR THE AUTHORIZED INSPECTOR. SEE DETAILS.
3. THE SEDIMENT BARRIER SHALL BE MAINTAINED IN PLACE UNTIL ALL AREAS UPGRADIENT FROM THE BARRIERS HAVE BEEN PERMANENTLY STABILIZED.
4. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED OR WHERE SPECIAL STABILIZATION MEASURES OR LANDSCAPE PLANTINGS ARE PROPOSED SHALL BE LOAMED AND SEEDED OR SODDED. SIX INCHES OF LOAM TOPSOIL (MIN. COMPACTED DEPTH) SHALL BE APPLIED UNLESS, OTHERWISE SPECIFIED. SEE LANDSCAPE PLAN AND OTHER PLANS AS APPLICABLE.
5. THE SEDIMENT BARRIER IS ALSO A LIMIT OF WORK. ALL AREAS OUTSIDE THE LIMIT ARE TO BE LEFT UNDISTURBED. DURING THE SITE WORK, ALL PERSONS AND EQUIPMENT SHALL STAY OUT OF THESE AREAS TO PRESERVE THE EXISTING VEGETATION AND SOIL COVER.

CONSTRUCTION ENTRANCE

1. THE EXISTING PAVED DRIVEWAY WILL SERVE AS THE CONSTRUCTION ENTRANCE AND EXIT FOR THE PROPOSED WORK. THIS DRIVEWAY SHALL REMAIN PAVED TO CONTROL THE TRACKING OF MUD OFF THE SITE. THE ENTRANCE SHALL BE MAINTAINED UNTIL THE SITE IS IN A STABILIZED CONDITION WHEN THE POSSIBILITY OF VEHICLES TRACKING MUD OFF SITE HAS BEEN ELIMINATED.
2. THE CONTRACTOR SHALL SWEEP THE MAIN ENTRY DRIVEWAY AND ADJACENT ROADWAYS WHEN MUD, DUST, DIRT, DEBRIS, ETC. HAS SHOWN SIGNS OF BUILDUP ON THE ROADWAYS AT THE ENTRANCE OF THE SITE. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THIS MATTER AND IMMEDIATE ATTENTION IS ALWAYS REQUIRED.

DEWATERING OF EXCAVATIONS

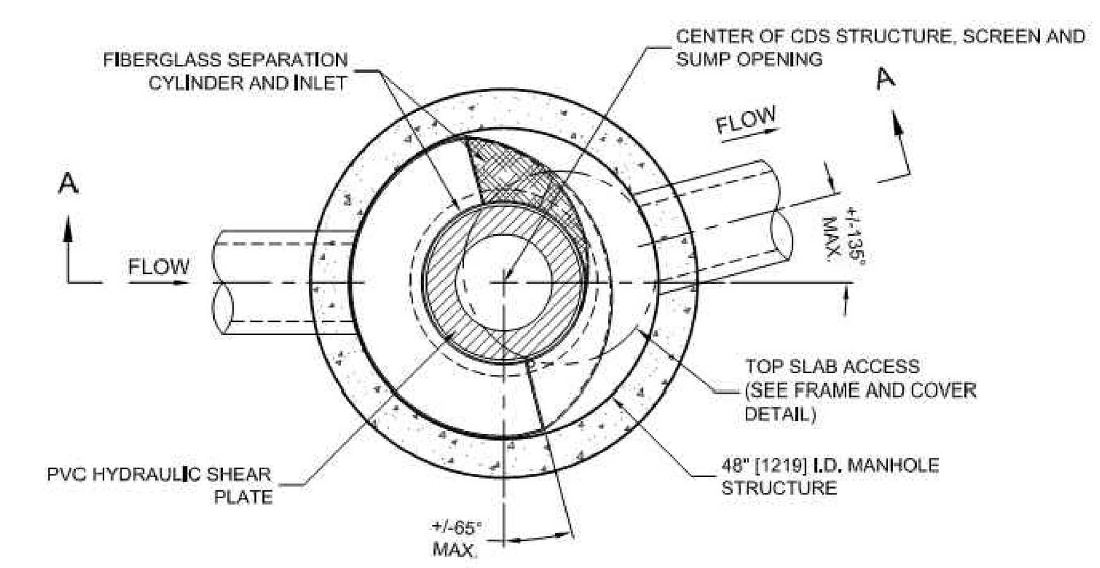
1. DISCHARGE FROM DEWATERING PUMPS OR TEMPORARY TRENCH OR EXCAVATION DRAINS SHALL NOT BE DISCHARGED DIRECTLY TO THE ON-SITE DRAINAGE SYSTEM OR WETLAND RESOURCE AREAS. DISCHARGES SHALL BE DIRECTED TO A TREATMENT SYSTEM CONSISTING OF A SEDIMENT BASIN, STRAW BALE SEDIMENT BASIN, FILTER BAG SYSTEM OR OTHER APPROVED METHOD TO FILTER THE DISCHARGE WATER AND PREVENT EROSION.
2. THE PUMP DISCHARGE SYSTEMS MUST BE GREATER THAN 100 FEET FROM WETLAND RESOURCES UNLESS APPROVED BY THE MUNICIPAL CONSERVATION COMMISSION AND IN ACCORDANCE WITH OTHER APPLICABLE LAWS AND REGULATIONS.
3. ALL DEWATERING DRAINAGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES MUST FIRST OBTAIN A DEWATERING DRAINAGE PERMIT. SUCH DISCHARGES SHALL COMPLY WITH THE MUNICIPAL REQUIREMENTS, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, MASSACHUSETTS DEP AND OTHER APPROPRIATE AGENCIES.
4. UNDER NO CIRCUMSTANCE SHALL DEWATERING DRAINAGE BE DISCHARGED INTO A SANITARY SEWER.

SOIL STOCKPILES

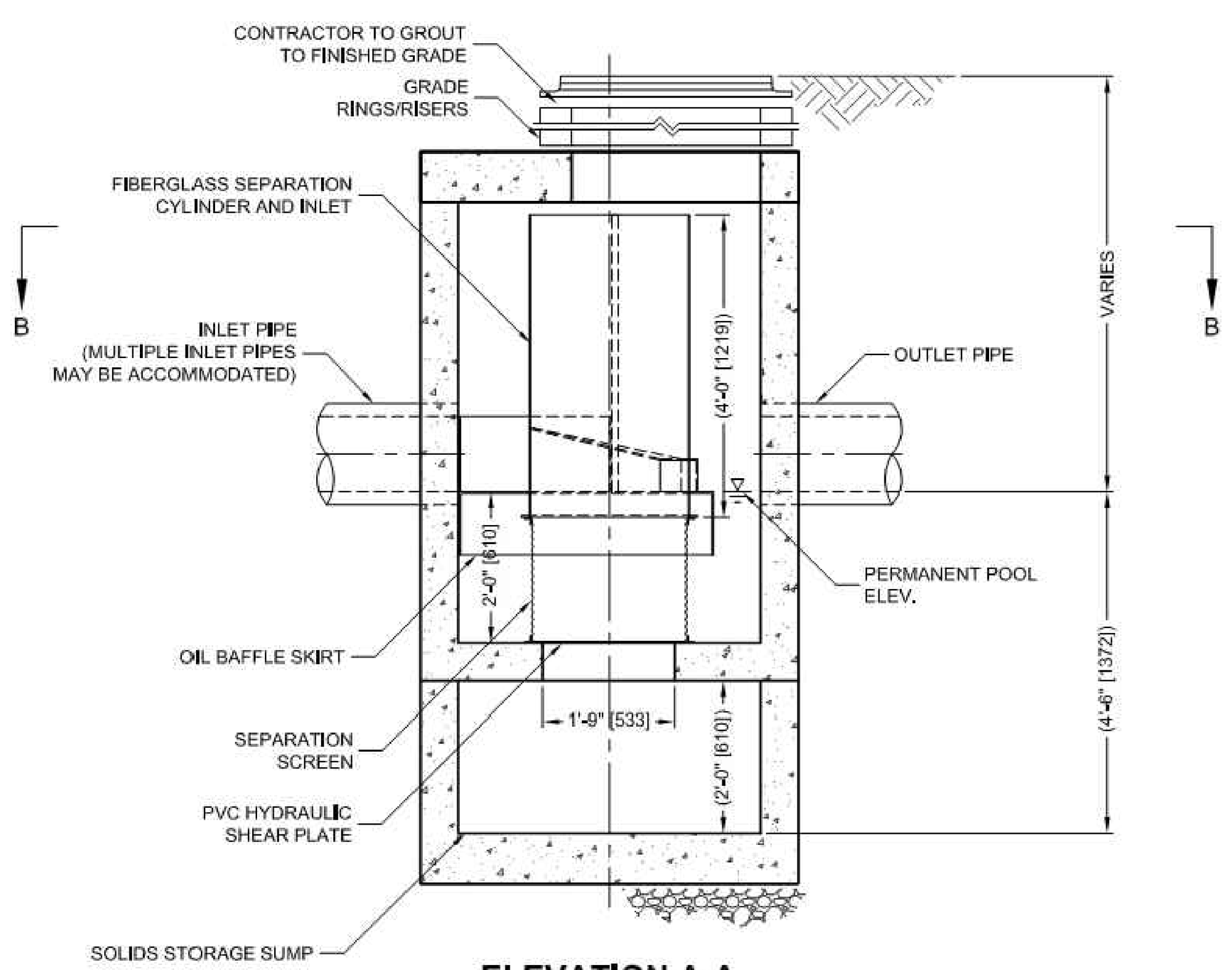
1. STOCKPILES OF SOIL MATERIALS SHALL BE PLACED WITHIN AREAS THAT ARE PROTECTED BY SEDIMENT BARRIER AS SHOWN ON THIS PLAN, OR SHALL BE SURROUNDED BY PROPER SILT FENCING, FIBER LOGS, OR STAKED STRAW BALES.
2. STOCKPILES THAT ARE TO BE IN PLACE FOR EXTENDED PERIODS OF TIME (MORE THAN 30 DAYS) SHALL BE COVERED OR OTHERWISE TEMPORARILY STABILIZED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

STORMWATER TREATMENT UNIT INLET PROTECTION

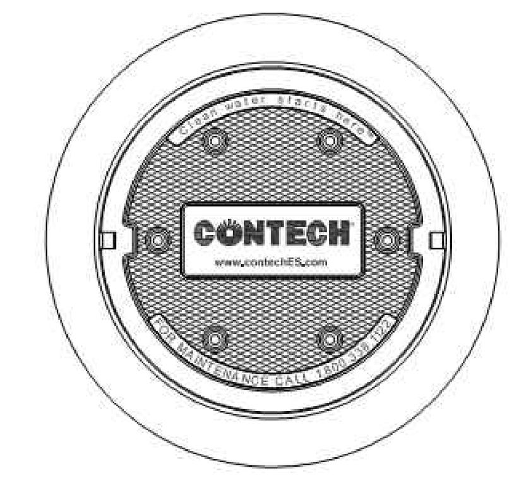
1. THE TWO (2) STORMWATER TREATMENT UNITS WITHIN THE WORK AREA THAT WILL RECEIVE RUNOFF FROM THE WORK AREA SHALL BE PROTECTED TO MINIMIZE THE SEDIMENT LOAD TO STRUCTURE.



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

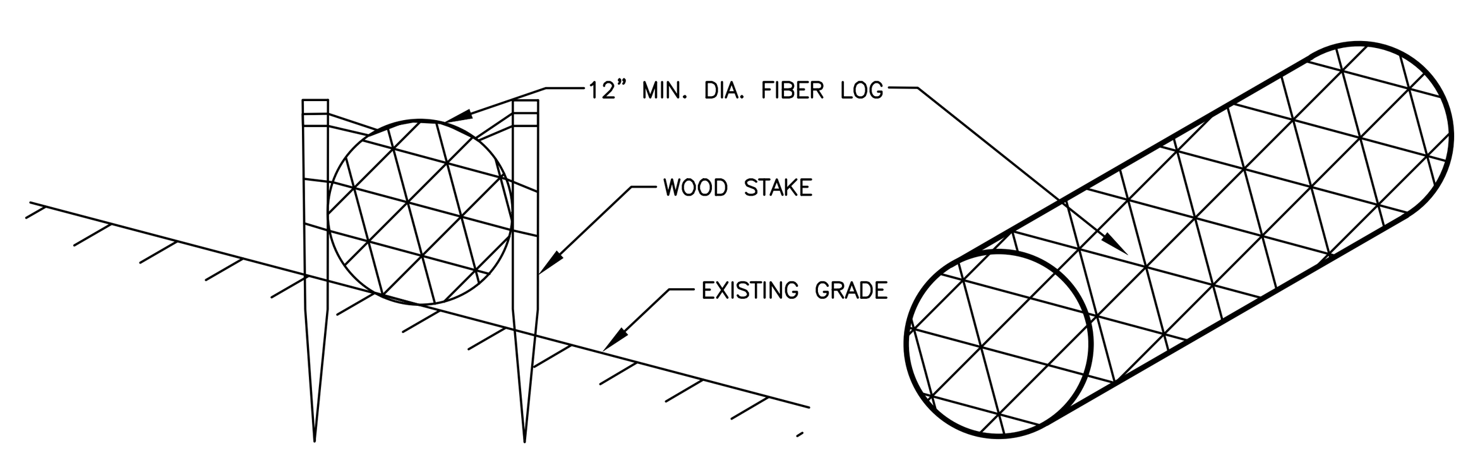
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

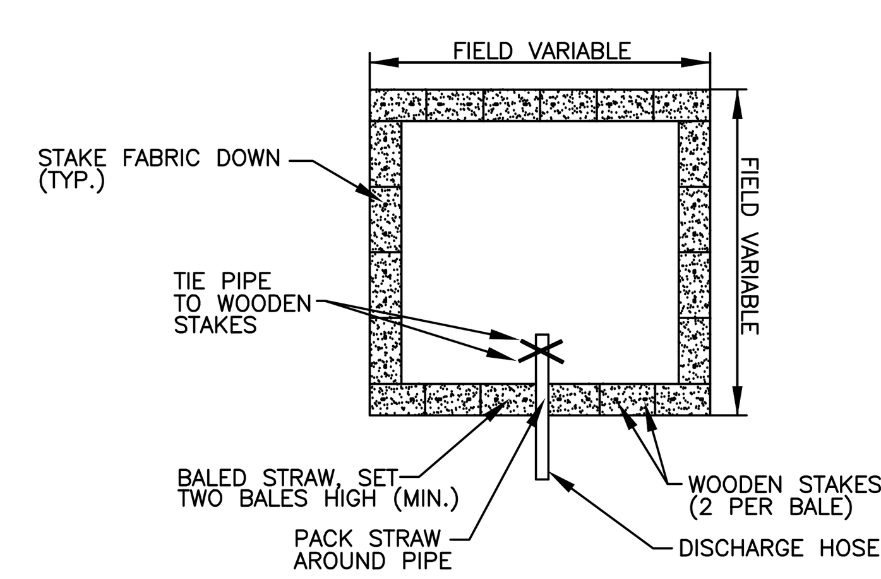
STORMWATER TREATMENT UNIT (STU) DETAIL
(NO SCALE)



INSTALLATION NOTES FOR FIBER LOGS:

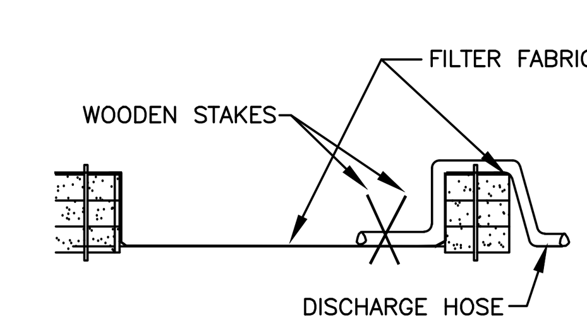
1. LAY THE FIBER LOG AT THE UPHILL BASE OF THE SILT FENCE.
2. INSTALL APPROXIMATELY 4-6 WOOD STAKES PER 10 FEET OF FIBER LOG THROUGH THE TWINE/NETTING ALONG THE FIBER LOG AS NEEDED TO HOLD THE LOG IN PLACE.
3. DRIVE THE STAKE INTO THE GROUND DEEP ENOUGH TO HOLD THE LOG.
4. IN PAVED AREAS, SECURE FIBER LOG WITH CONCRETE BLOCKS OR SAND BAGS.
5. FIBER LOG SHALL BE 12 INCHES (MIN) IN DIAMETER UNLESS OTHERWISE NOTED ON THE PLANS AND SHALL BE A COMPOST FILLED FILTER SOCK MEETING THE MUNICIPAL ENGINEERING DEPARTMENT STANDARDS.

FIBER LOG DETAIL
(NO SCALE)



NOTE: NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS

PLAN VIEW



CROSS-SECTION

DEWATERING OF EXCAVATIONS NOTES:
1. DISCHARGE FROM DEWATERING PUMPS OR TEMPORARY TRENCH OR EXCAVATION DRAINS SHALL NOT DISCHARGE DIRECTLY TO WETLANDS OR STORM DRAIN SYSTEMS. THE DISCHARGES SHALL BE DIRECTED INTO A CONSTRUCTED SEDIMENT BASIN OR A STRAW BALE SETTLING BASIN, STILLING BASIN, FILTER BAG, FRAC TANK OR SIMILAR DEVICE.
2. SETTLING BASINS MUST BE A MINIMUM OF 100 FEET FROM THE WETLAND RESOURCE AREAS.

STRAW BALE SETTLING BASIN DETAIL
(NO SCALE)

DGT Associates
Surveying & Engineering

Framingham
Boston • Worcester

1071 Worcester Road
Framingham, MA 01701
508-879-0030

www.DGTassociates.com

ISSUED FOR:

PERMITTING

COMMONWEALTH OF MASSACHUSETTS
BERT E. COREY
CIVIL
No. 48423
REGISTERED PROFESSIONAL ENGINEER

NO.	APP	DATE	DESCRIPTION
1	BEC	12/20/19	CONSERVATION COMMENTS

DATE: **NOVEMBER 27, 2019**

SCALE: **AS NOTED**

DRAFTED:	CHECKED:	APPROVED:
KMR	BEC	BEC

PROJECT TITLE:

PROPOSED SITE IMPROVEMENTS PLAN

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

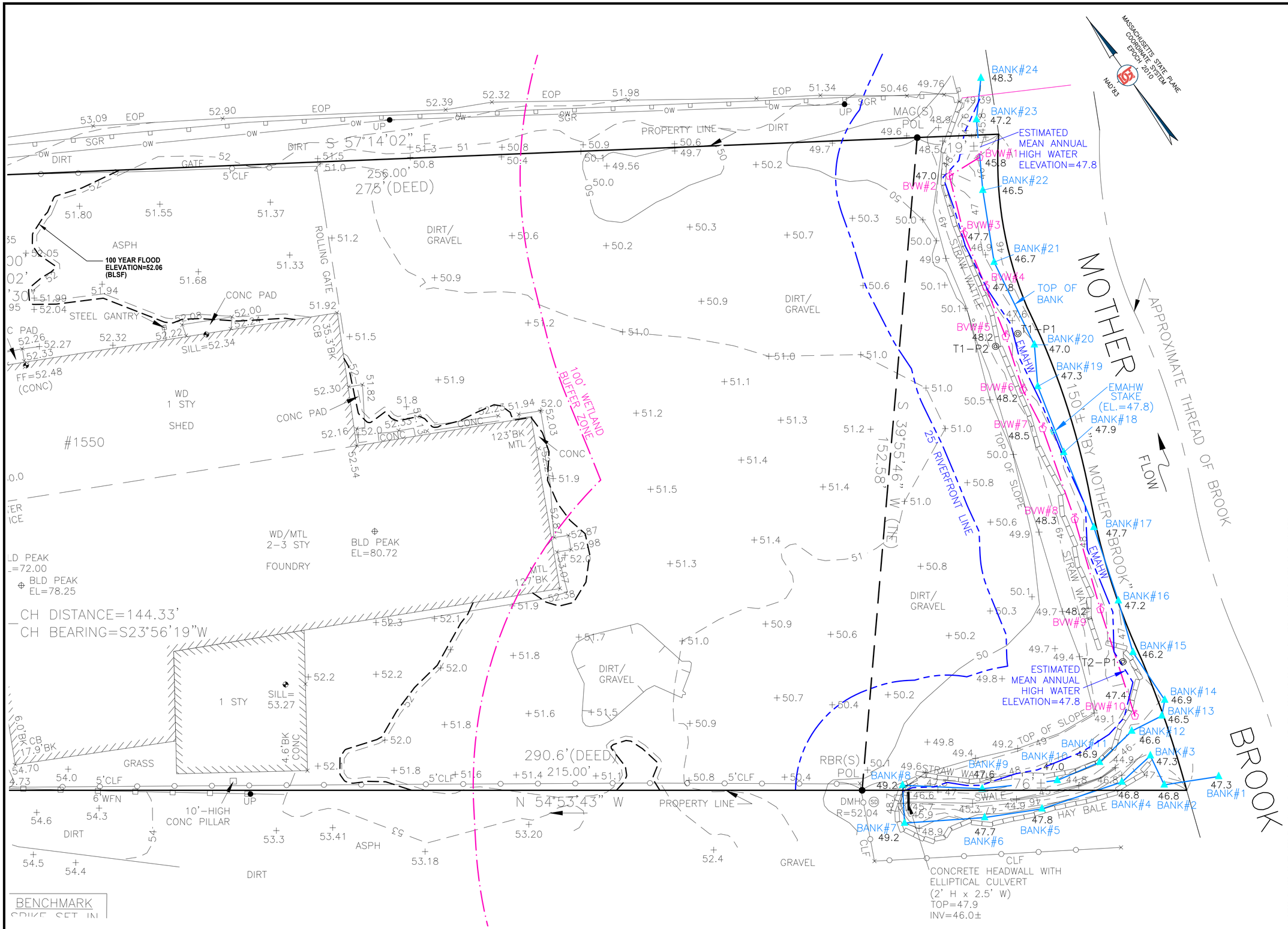
EROSION & SEDIMENTATION CONTROLS & SITE DETAILS

SHEET: 2 OF 5

PROJECT NO.: 24766 S-1428-00

NOI-2

G:\Carlson Jobs\24766-S-1428-00-TP 1550 River Street, Boston\Correspondence\To Client\2019-12-20 to Con Com (REV 1)\24766-S-1428-00-Tp-NOI REV1.dwg



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ISSUED FOR:

PERMITTING

BERT E. COREY CIVIL No. 48423 REGISTERED PROFESSIONAL ENGINEER
12/20/19

NO.	APP	DATE	DESCRIPTION
1	BEC	12/20/19	CONSERVATION COMMENTS

DATE: **NOVEMBER 27, 2019**

SCALE: **1" = 10'**

DRAFTED:	CHECKED:	APPROVED:
KMR	BEC	BEC

PROJECT TITLE:

PROPOSED SITE IMPROVEMENTS PLAN

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

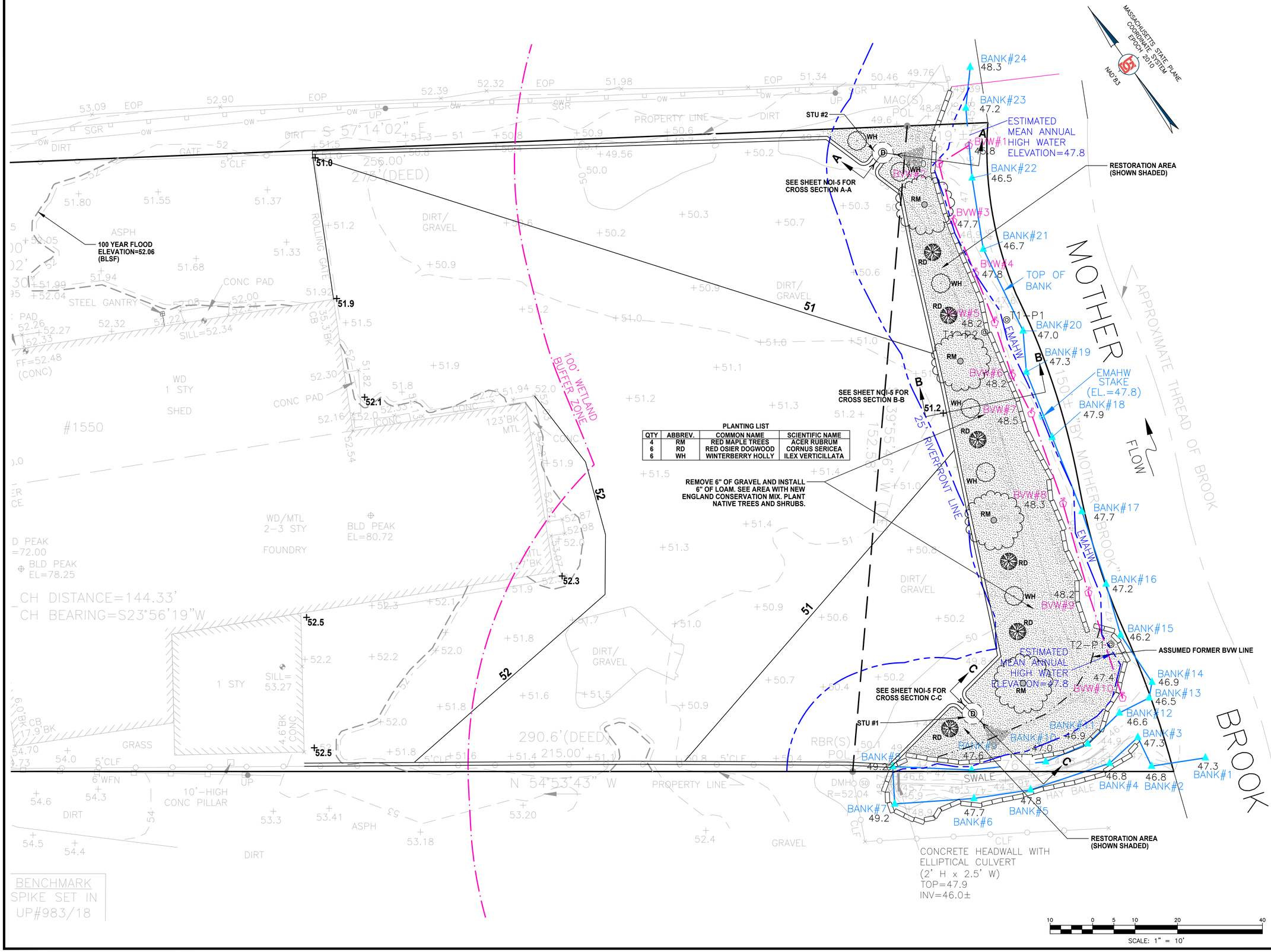
EXISTING CONDITIONS ENLARGED VIEW OF RESOURCE AREAS

SHEET: **3 OF 5**

PROJECT NO.: **24766 S-1428-00**

NOI-3

G:\Carlson_Data\24766-S-1428-00-TP 1550 River Street, Boston\Correspondence\To Client\2019-12-20 to Con Com (REV 1)\24766-S-1428-00-Tp-NOI REV1.dwg



QTY	ABBREV.	COMMON NAME	SCIENTIFIC NAME
4	RM	RED MAPLE TREES	ACER RUBRUM
6	RD	RED OSIER DOGWOOD	CORNUS SERICEA
6	WH	WINTERBERRY HOLLY	ILEX VERTICILLATA

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PERMITTING

BERT E. COREY CIVIL No. 48423 REGISTERED PROFESSIONAL ENGINEER
12/20/19

NO.	APP	DATE	DESCRIPTION
1	BEC	12/20/19	CONSERVATION COMMENTS

DATE: **NOVEMBER 27, 2019**

SCALE: **1" = 10'**

DRAFTED:	CHECKED:	APPROVED:
KMR	BEC	BEC

PROJECT TITLE:

PROPOSED SITE IMPROVEMENTS PLAN

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

PROPOSED CONDITIONS ENLARGED VIEW OF RESTORATION AREA

SHEET: **4 OF 5**

PROJECT NO.: **24766 S-1428-00**

NOI-4

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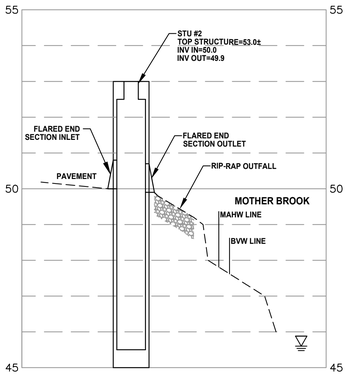
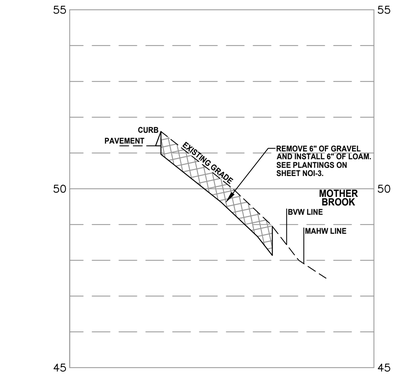
EXAMPLE PHOTOGRAPHS OF ABOVE GRADE STORMWATER TREATMENT UNITS



CROSS SECTION A–A



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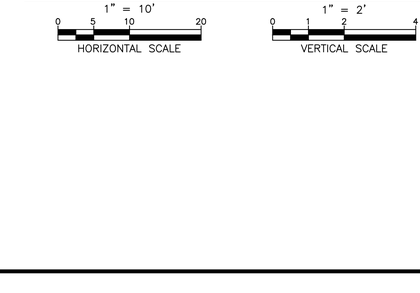
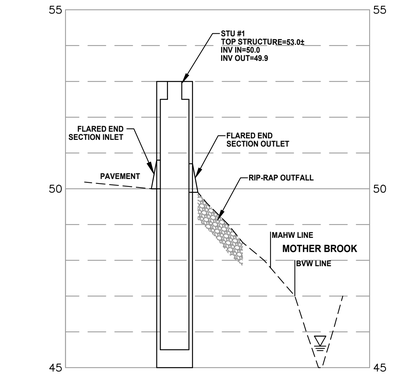
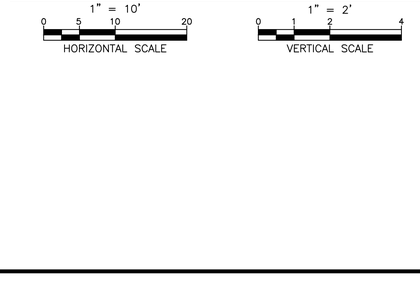




CROSS SECTION C–C



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PERMITTING

COMMONWEALTH OF MASSACHUSETTS
BERT E. COREY
CIVIL
No. 48423
REGISTERED PROFESSIONAL ENGINEER
12/20/19

NO.	APP	DATE	DESCRIPTION
1	BEC	12/20/19	CONSERVATION COMMENTS

DATE: **NOVEMBER 27, 2019**

SCALE: **AS NOTED**

DRAFTED:	CHECKED:	APPROVED:
KMR	**BEC**	**BEC**

PROJECT TITLE:

PROPOSED SITE IMPROVEMENTS PLAN

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

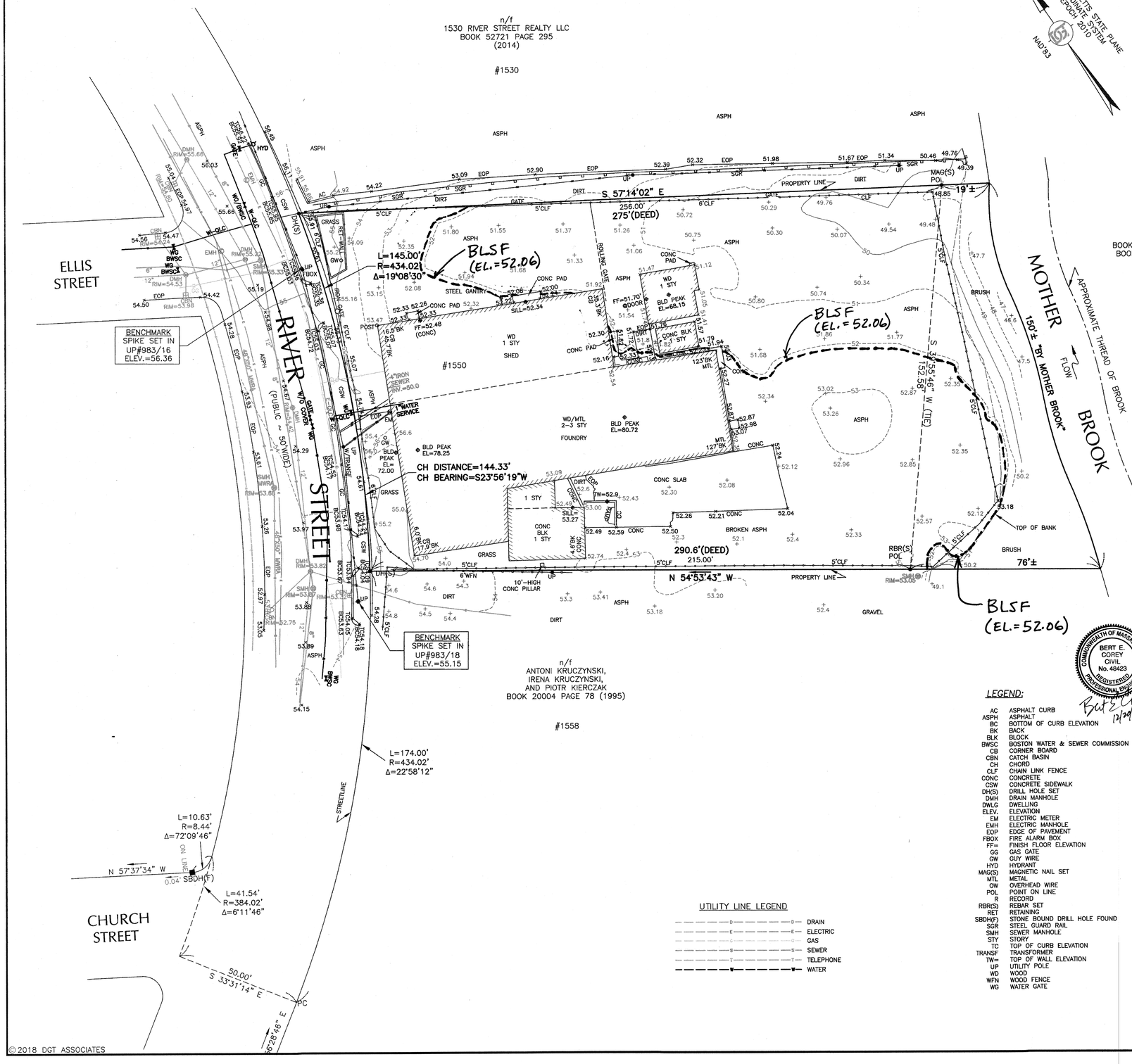
CROSS SECTIONS

SHEET: **5 OF 5**

PROJECT NO.: **24766 S-1428-00**

NOI-5

G:\Carlson Jobs\24766-S-1428-00-TP 1550 River Street, Boston\Correspondence\To Client\2019-12-20 to Con Com (REV 1)\24766-S-1428-00-Tp-NOI REV1.dwg



LOCUS MAP N.T.S.

REFERENCES:

OWNER OF RECORD:
n/f 1550 .RIVER STREET LLC
BK 59811 PG 150 (2018) DEED
BK 4854 PG 591 (1926) PLAN

PARCEL ID: 1812146000

TOTAL LOCUS AREA = 42,500± SQ. FT. PER CITY OF BOSTON ASSESSORS

SUFFOLK COUNTY REGISTRY OF DEEDS
BOOK 2007 PAGE 445 (2007) PLAN
BOOK 19932 PAGE 243 (1995) PLAN
BOOK 7852 PAGE 587 (1964) PLAN

NORFOLK COUNTY REGISTRY OF DEEDS
PLAN BOOK 43 PLAN 2002 (1905)

CITY OF BOSTON ENGINEERING RECORDS
CITY NB 1296 PG 26-33
CITY NB 1190 PG 10-11
CITY NB 972 PG 1284
L-9389 (1966)

MASSACHUSETTS LAND COURT
LCC-26617B (1959)

UTILITY PLANS REFERENCES

BOSTON WATER SEWER COMMISSION
1. 'AS-BUILT PLAN'; PLAN 08-308-008_River_W01
2. 'AS-BUILT PLAN'; PLAN Z03-01

NOTES:

1. FIELD SURVEY PERFORMED: SEPTEMBER 10-13, 2018 AND OCTOBER 12, 2018.

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

3. THIS PLAN IS PREPARED FOR OUR CLIENT USE ONLY FOR THE SPECIFIC PURPOSE OF OBTAINING PERMITS AND LOCAL APPROVALS, AND IS NOT TO BE USED OR RELIED UPON AS A CONSTRUCTION DOCUMENT OR ANY OTHER USE BY OTHERS WITHOUT THE WRITTEN CONSENT OF DGT.

I HEREBY CERTIFY THAT:

THIS PLAN IS BASED ON AN ON-THE-GROUND SURVEY AND PRESENTS THE FACTS AS FOUND AT THE TIME OF THE SURVEY.

MICHAEL A. CLIFFORD No. 35394

PROFESSIONAL LAND SURVEYOR 24.OCT.2018 DATE

BERT E. COREY CIVIL No. 48423

Bert E Corey 12/20/19

EXHIBIT PLAN A

EXTENT OF BLSF (PRE-EXISTING)
(100-YEAR FLOOD EL.=52.06)

B COREY 12/20/19

LEGEND:

AC	ASPHALT CURB
ASPH	ASPHALT
BC	BOTTOM OF CURB ELEVATION
BK	BACK
BLK	BLOCK
BWSC	BOSTON WATER & SEWER COMMISSION
CB	CORNER BOARD
CBN	CATCH BASIN
CH	CHORD
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CSW	CONCRETE SIDEWALK
DH(S)	DRILL HOLE SET
DMH	DRAIN MANHOLE
DWLG	DWELLING
ELEV.	ELEVATION
EM	ELECTRIC METER
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
FBOX	FIRE ALARM BOX
FF=	FINISH FLOOR ELEVATION
GG	GAS GATE
GW	GUY WIRE
HYD	HYDRANT
MAG(S)	MAGNETIC NAIL SET
MTL	METAL
OW	OVERHEAD WIRE
POL	POINT ON LINE
R	RECORD
RBR(S)	REBAR SET
RET	RETAINING
SBDH(F)	STONE BOUND DRILL HOLE FOUND
SGR	STEEL GUARD RAIL
SMH	SEWER MANHOLE
STY	STORY
TC	TOP OF CURB ELEVATION
TRANSF	TRANSFORMER
TW=	TOP OF WALL ELEVATION
UP	UTILITY POLE
WD	WOOD
WFN	WOOD FENCE
WG	WATER GATE

SCALE: 1" = 20'
0 10 20 40

BY:	DESCRIPTION:	DATE:	REV: 0
DRAWING NO.:	S1428-00TP.DWG		

1550 RIVER STREET

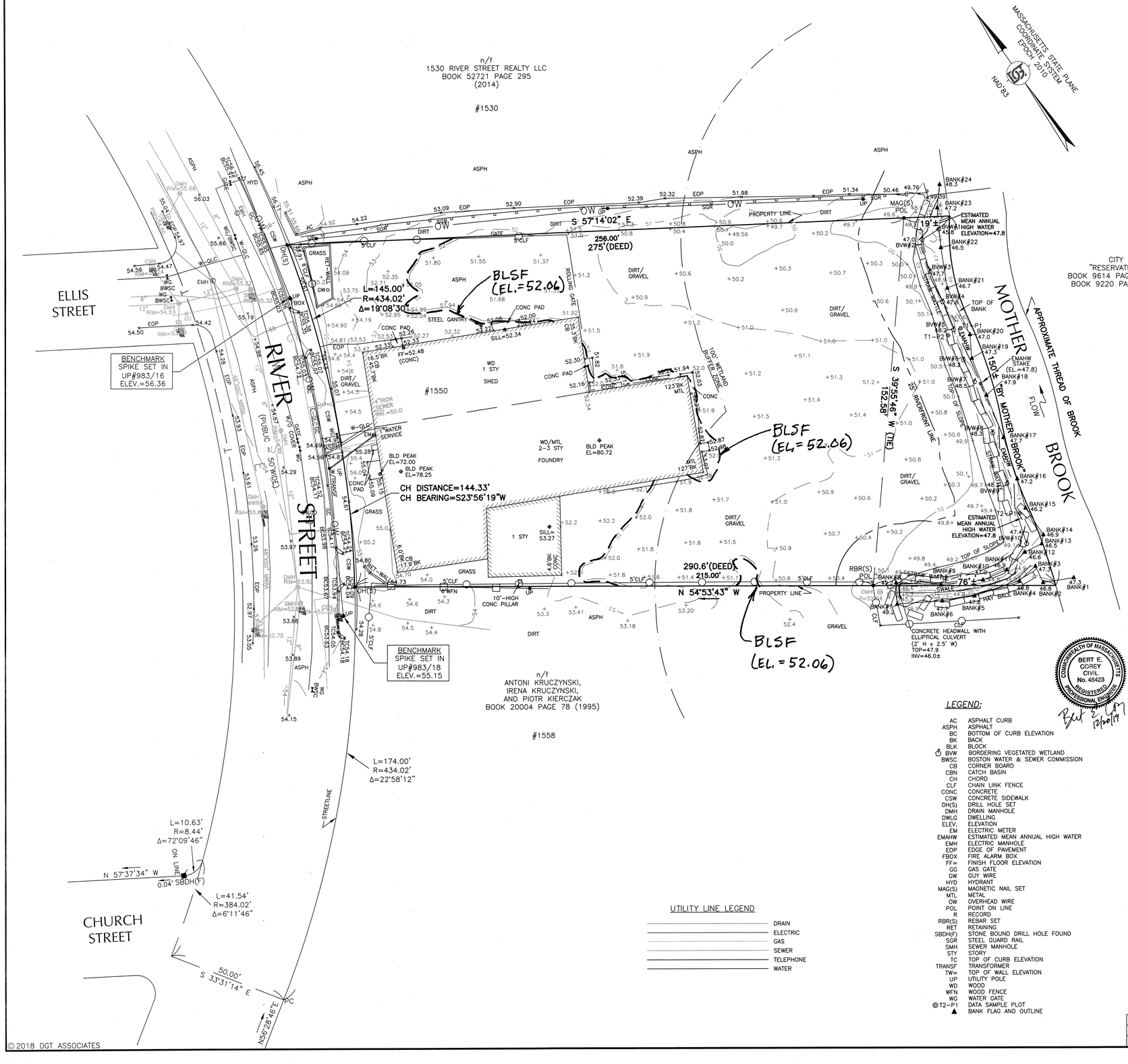
ZONING SUBDISTRICT LI-1/LOCAL INDUSTRIAL

TOPOGRAPHIC PLAN OF LAND
IN
BOSTON, MASSACHUSETTS
SUFFOLK COUNTY - HYDE PARK DISTRICT

PREPARED FOR:
AKIKI & SONS AVENUE SERVICE, INC

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

RESEARCH: D.F. CLIFFORD
FIELD: M.T. CLIFFORD
CALCULATION: A. LALLY
DRAFTING: A. LALLY, W. SHEN
CHECK: M.A. CLIFFORD, PLS
PROJ. MANAGER: B. TALEB
DATE: 12-OCT-2018
JOB NO. S1428.00
CRD FILE S-1428-ALL.CRD
SHEET NO. 01 OF 01



HYDE PARK

LOCUS MAP N.T.S.

REFERENCES:

OWNER OF RECORD:
n/f 1550 RIVER STREET LLC
BK 59811 PG 150 (2018) DEED
BK 4854 PG 591 (1926) PLAN

PARCEL ID: 1812146000

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1. 'AS-BUILT PLAN'; PLAN 08-308-008_River_W01
2. 'AS-BUILT PLAN'; PLAN Z03-01

NOTES:

1. FIELD SURVEY PERFORMED: SEPTEMBER 10-13, 2018, OCTOBER 12, 2018, OCTOBER 15, 2019 AND OCTOBER 23, 2019.

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

3. THIS PLAN IS PREPARED FOR OUR CLIENT USE ONLY FOR THE SPECIFIC PURPOSE OF OBTAINING PERMITS AND LOCAL APPROVALS, AND IS NOT TO BE USED OR RELIED UPON AS A CONSTRUCTION DOCUMENT OR ANY OTHER USE BY OTHERS WITHOUT THE WRITTEN CONSENT OF DGT.

4. WETLAND RESOURCE AREA DELINEATIONS WERE PERFORMED BY DGT ASSOCIATES ON OCTOBER 18, 2019. NOTE THAT THE DELINEATIONS ARE BASED ON BEST PROFESSIONAL JUDGEMENT AND INTERPRETATIONS PER THE APPLICABLE REGULATIONS AND GUIDELINES. THE DELINEATION LINES SHOWN ARE NOT AN OFFICIAL "DETERMINATION" UNDER THE MASSACHUSETTS WETLANDS PROTECTION ACT UNTIL ACCEPTED BY THE CONSERVATION COMMISSION OR THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION THROUGH THE FILING OF A NOTICE OF INTENT, ABBREVIATED NOTICE OF WETLANDS AREA DELINEATION OR REQUEST FOR DETERMINATION.

5. THE FEMA FLOOD ELEVATION LINE (ELEV=52.06) IS ON THE BOSTON CITY BASE DATUM. PER THE BOSTON "CLIMATE RESILIANCY GUIDANCE" DATED 12/14/17, THE CONVERSION FROM NAVD 1988 TO BOSTON CITY BASE IS +6.46 FEET. THE FEMA FLOOD ELEVATION ON NAVD 1988 IS ELEV=56.6.

I HEREBY CERTIFY THAT:

THIS PLAN IS BASED ON AN ON-THE-GROUND SURVEY AND PRESENTS THE FACTS AS FOUND AT THE TIME OF THE SURVEY.

MICHAEL A. CLIFFORD No 35394

25-NOV-2019

PROFESSIONAL LAND SURVEYOR DATE

SCALE: 1" = 20'
0 10 20 40

EXHIBIT PLAN B
EXTENT OF BLSF (INTERIM)
(100-YEAR FLOOD EL. = 52.06)

B. COREY 12/20/19

BERT E. COREY CIVIL No. 48423

Bert E Corey
12/20/19

LEGEND:

AC	ASPHALT CURB
ASPH	ASPHALT
BC	BOTTOM OF CURB ELEVATION
BK	BACK
BLK	BLOCK
BVW	BORDERING VEGETATED WETLAND
BWSC	BOSTON WATER & SEWER COMMISSION
CB	CORNER BOARD
CBN	CATCH BASIN
CH	CHORD
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CSW	CONCRETE SIDEWALK
DH(S)	DRILL HOLE SET
DMH	DRAIN MANHOLE
DWLG	DWELLING
ELEV.	ELEVATION
EM	ELECTRIC METER
EMAHW	ESTIMATED MEAN ANNUAL HIGH WATER
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
FBOX	FIRE ALARM BOX
FF=	FINISH FLOOR ELEVATION
GG	GAS GATE
GW	GUY WIRE
HYD	HYDRANT
MAG(S)	MAGNETIC NAIL SET
MTL	METAL
OW	OVERHEAD WIRE
POL	POINT ON LINE
R	RECORD
RBR(S)	REBAR SET
RET	RETAINING
SBDH(F)	STONE BOUND DRILL HOLE FOUND
SGR	STEEL GUARD RAIL
SMH	SEWER MANHOLE
STY	STORY
TC	TOP OF CURB ELEVATION
TRANSF	TRANSFORMER
TW=	TOP OF WALL ELEVATION
UP	UTILITY POLE
WD	WOOD
WFN	WOOD FENCE
WG	WATER GATE
◎ T2-P1	DATA SAMPLE PLOT
▲	BANK FLAG AND OUTLINE

AL	WETLAND INFO	10/23/19	1
BY:	DESCRIPTION:	DATE:	REV: 0

DRAWING NO.: S1428-00TP.DWG

1550 RIVER STREET

ZONING SUBDISTRICT LI-1/LOCAL INDUSTRIAL

TOPOGRAPHIC PLAN OF LAND
IN
BOSTON, MASSACHUSETTS
SUFFOLK COUNTY - HYDE PARK DISTRICT

PREPARED FOR:
AKIKI & SONS AVENUE SERVICE, INC

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RESEARCH:
D.F. CLIFFORD

FIELD:
M.T. CLIFFORD

CALCULATION:
A. LALLY

DRAFTING:
A. LALLY, W. SHEN

CHECK:
M.A. CLIFFORD, PLS

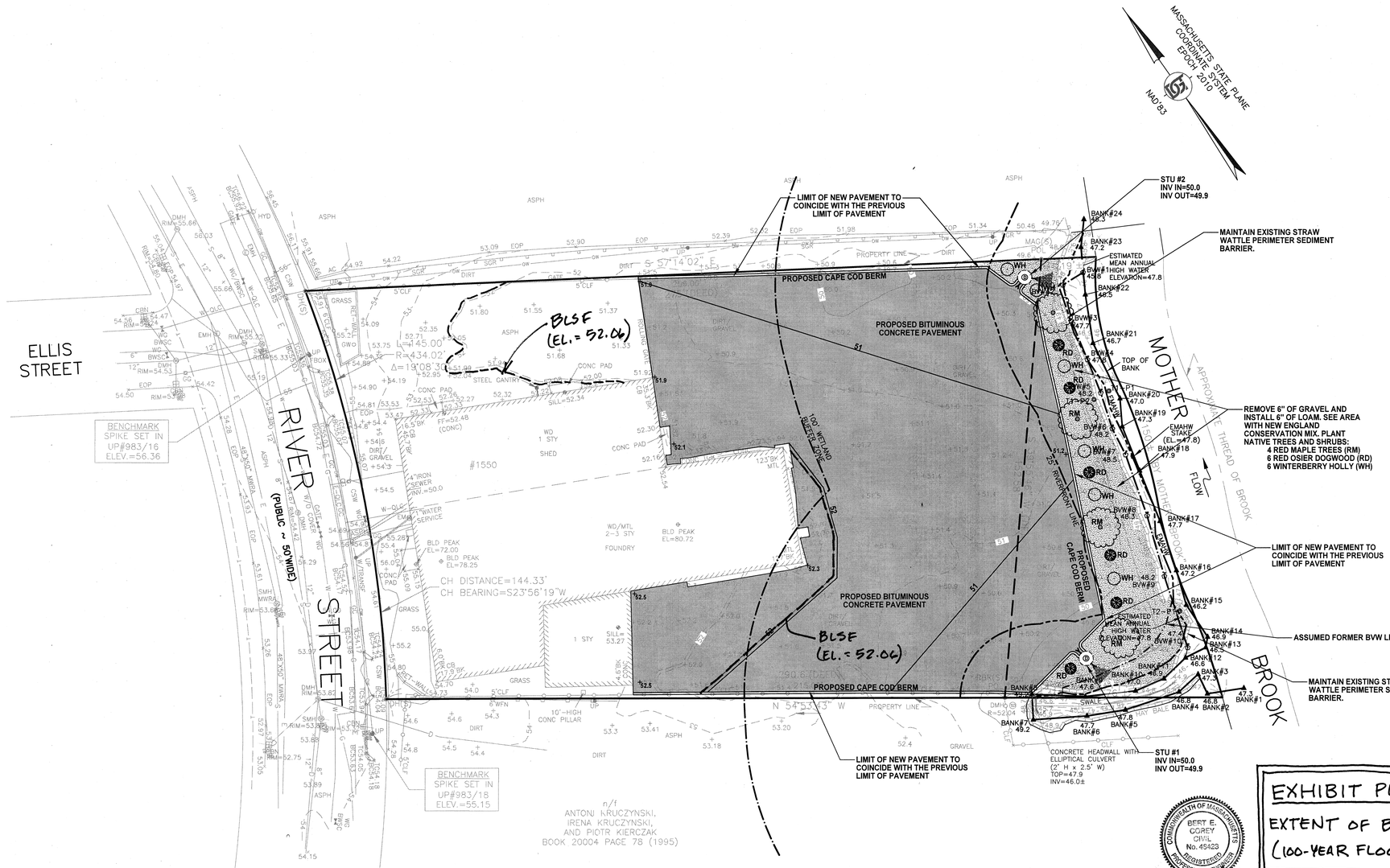
PROJ. MANAGER:
B. TALEB

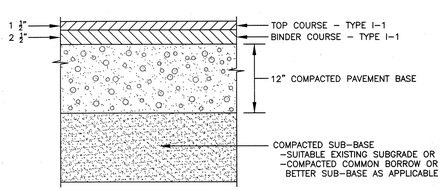
DATE:
12-OCT-2018

JOB NO.
S1428.00

CRD FILE
S-1428-ALL.CRD

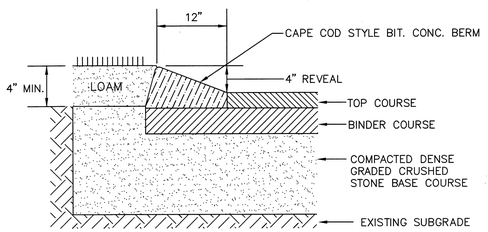
SHEET NO.
01 OF 01





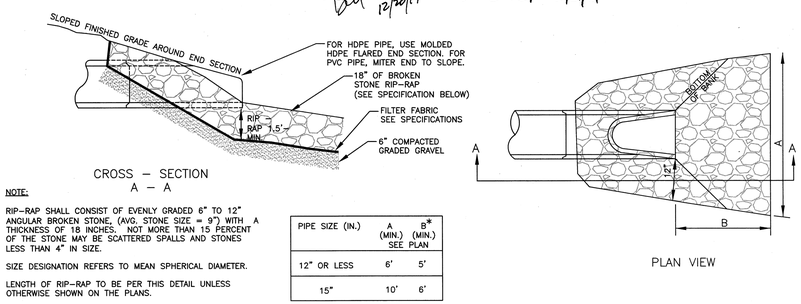
NOTES:
1. COMPACTED PAVEMENT BASE TO CONFORM TO MASS. HIGHWAY DEPT. SPEC. M 2.01.7.
2. COMPACTED COMMON BORROW (SEE EARTHWORK SPECIFICATIONS). NO STONES LARGER THAN 6 INCHES.
3. BITUMINOUS CONCRETE SHALL BE CLASS 1, TYPE 1–1.
4. AT AREAS OF LEDGE/BEDROCK, REMOVE LEDGE TO A DEPTH OF 18 INCHES MINIMUM BELOW PAVEMENT COURSE.
5. COMPACTED PAVEMENT BASE TO EXTEND 12 INCHES MINIMUM BEYOND THE EDGE OF PAVEMENT.

BITUMINOUS CONCRETE PAVEMENT
(NO SCALE)



NOTES:
1. BITUMINOUS CONCRETE SHALL BE CLASS 1, TYPE 1–1. SEE SPECIFICATIONS.

CAPE COD BERM DETAIL
(NO SCALE)



CROSS – SECTION
A – A

NOTE:

RIP–RAP SHALL CONSIST OF EVENLY GRADED 6" TO 12" ANGULAR BROKEN STONE, (AVG. STONE SIZE = 9") WITH A THICKNESS OF 18 INCHES. NOT MORE THAN 15 PERCENT OF THE STONE MAY BE SCATTERED SPALLS AND STONES LESS THAN 4" IN SIZE.

SIZE DESIGNATION REFERS TO MEAN SPHERICAL DIAMETER.

LENGTH OF RIP–RAP TO BE PER THIS DETAIL UNLESS OTHERWISE SHOWN ON THE PLANS.

PIPE SIZE (IN.)	A (MIN.)	B* (MIN.) SEE PLAN
12" OR LESS	6'	5'
15"	10'	6'

PLAN VIEW

PIPE END SECTION WITH RIP – RAP APRON DETAIL
(NO SCALE)

20 0 10 20 40 80
SCALE: 1" = 20'

EXHIBIT PLAN C
EXTENT OF BLSF (PROPOSED)
(100-YEAR FLOOD EL= 52.06)
B. COREY 12/10/19

BERT E. COREY CIVIL No. 48423 REGISTERED PROFESSIONAL ENGINEER
12/2/19

DGT Associates
Surveying & Engineering
Framingham
Boston • Worcester
1071 Worcester Road
Framingham, MA 01701
508-879-0030
www.DGTassociates.com

ISSUED FOR:
PERMITTING

BERT E. COREY CIVIL No. 48423 REGISTERED PROFESSIONAL ENGINEER
11/27/19

NO.	APP	DATE	DESCRIPTION

DATE: **NOVEMBER 27, 2019**
SCALE: **1" = 20'**

DRAFTED:	CHECKED:	APPROVED:
KMR	BEC	BEC

PROJECT TITLE:

PROPOSED SITE IMPROVEMENTS PLAN

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:
[redacted]

SHEET: 1 OF [redacted]
PROJECT NO.: 24766 S-1428-00

G:\Carlson Jobs\24766-S-1428-00-TP 1550 River Street, Boston\Correspondence\To Client\2019-12-11 WD Plan Set\24766-S-1428-00-Tp-NOI.dwg

DGT Associates
Surveying &
Engineering

1071 Worcester Rd
Framingham, MA 01701
508.879.0030
www.dgtassociates.com

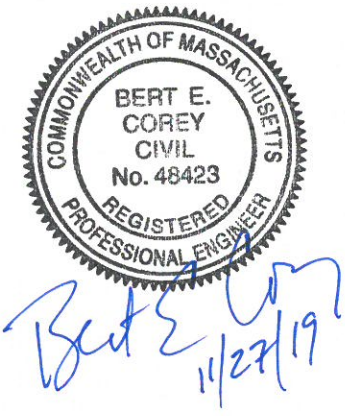
S-1428

STORMWATER MANAGEMENT DESIGN AND RUNOFF CALCULATIONS REPORT

for

1550 River Street
Hyde Park, Massachusetts 02136

Prepared by:
DGT Associates
1071 Worcester Road
Framingham, MA 01701
508-879-0030



November 27, 2019

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SECTION 1

STORMWATER MANAGEMENT REPORT

NARRATIVE AND SUMMARY

for

1550 River Street
Hyde Park, Massachusetts 02136

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SECTION 1

STORMWATER NARRATIVE & SUMMARY

This report contains the hydrologic computations and design information relative to the existing and proposed stormwater runoff conditions for the proposed re-pavement project development at #1550 River Street in Hyde Park, MA.

It includes information on the proposed stormwater management system design and assessment of stormwater impacts of the proposed project.

The report also includes the following documents:

- Stormwater Summary Calculations (Section 2)
- Soils Information (Appendix 1)
- Long-Term Pollution Prevention Plan (Appendix 2)
- Stormwater Operation and Maintenance Plan (Appendix 5)

An Erosion and Sediment Control Plan is included as part of the site plan set. However, this project is not subject to the U.S. EPA's Construction General Permit under the NPDES Program. Therefore, a full Stormwater Pollution Prevention Plan (SWPPP) will not be required.

The hydrologic model for existing and proposed stormwater runoff conditions at the site are included in Sections 3 and 4 respectively. The watershed maps for the models are in Appendices 3 and 4.

General Project Description

It is the intent of the owner to remove the existing pavement on the rear parking / storage yard, regrade the area and repave. There is approximately 17,328 square feet of pavement that is to be replaced on the east side of the site.

The project as proposed will not increase in the area of impervious surface on the site over what previously existed. The extent of proposed pavement will correspond to the extent of previously paved area.

Other site improvements related to the proposed project include:

- Removal of trash and debris from the drainage ditch,
- Re-vegetate the area adjacent to Mother Brook,
- Installation of a new 6-foot high chain link fence.
- Remove the new fill within the BVW in the southeast former and restore it the with wetland plantings.
- The regrading that occurred within the BLSF actually resulted in a beneficial increase in flood storage volume on an incremental and cumulative basis to meet the performance standards under the BLSF performance standards under 310 CMR 10.57. Computations are included in the Notice of Intent Project Narrative.
- Installation of a proprietary stormwater treatment units to remove total suspended solids from a large portion of the paved site.

The erosion and sedimentation controls that have been recently installed are being maintained for the project. In addition, as part of the Site Plan, erosion and sedimentation control performance standards will be incorporated into the project.

Existing Site Description

The project site is a 42,500 sq. ft. (0.98 acres) property at 1550 River Street in the Hyde Park district of Boston, Massachusetts. It is identified as on the Boston Assessor's Property ID 1812146000. The property is located in Zoning Sub-district "LI-1" Local Industrial. The property abuts commercial properties to the north and south, and Mother Brook located at the east side of the property. Mother Brook is a perennial stream that joins the Neponset River. Access to the site is provided by a driveway off River Street. The Existing Conditions Plan shows the current site features and topography.

The site is currently developed with a 2 story commercial building with a paved driveway, and currently a gravel/dirt parking area, which was formerly paved.

The existing conditions of the site are shown on the "Existing Conditions Plan" in the site plan set and on the "Existing Conditions Watershed Map" included with this report.

Wetland Resource Areas

Wetland resource areas on the site include: 25 foot Riverfront Area associated with Mother Brook, Bordering Vegetated Wetlands (BVW), and Bordering Land Subject to Flooding (BLSF). The Wetland Delineation Report is included with the Notice of Intent for more detail. The Riverfront Area, the BVW, BLSF, and the 100-Foot Buffer Zone under the Massachusetts Wetlands Protection Act are shown on the Site Plan. The Riverfront Area and the Buffer Zone extend onto the rear parking area. The mean annual high water line for the portion of Mother Brook adjacent to the site is also shown on the Site Plan. The elevation of the estimated Mean Annual High Water was found to be 47.8.

The property falls within a Zone AE special flood hazard area as shown on FEMA Flood Insurance Rate Map number 25025C0157, dated 3/16/2016. The elevation of the 100-year flood as determined by the Federal Flood Insurance Program is 45.6 based on the NAVD 1988 datum. This is equivalent to elevation 52.06 based on the Boston City datum that is shown on the survey plan.

According to the latest Massachusetts Division of Fisheries and Wildlife – Natural Heritage Endangered Species Program Mapping (NHESP), there are no areas on or near the site that are designated as Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. Nor are there any Certified or Potential Vernal Pools on or near the site.

Existing Stormwater Runoff

Assessment of stormwater runoff conditions is based on the topographic information shown on the Existing Conditions Plan and field reconnaissance by DGT Associates. Stormwater runoff flows to the east, travels across a vegetated bank of Mother Brook, and then into the brook itself. The area is described as subcatchments "E-1" and E-2" in

the hydrologic model. A portion of the abutting property (paved parking area) at the north side of the side travels onto the subject property, flows along the north side and enters Mother Brook. This off-site subcatchment is described as "E-3" in the hydrologic model.

The Stormwater Model includes Design Point 1 (DP-1) to describe the stormwater flow to Mother Brook. The peak rates of runoff and volumes to Mother Brook for existing and proposed conditions flows for the 2, 10, 25 and 100-year storms are shown on the summary table in Section 2 of this report.

Currently there are no stormwater management features.

Soils and Groundwater
Soil Maps provided by the Natural Resource Conservation Service (NRCS) indicate that the soils on site are classified as "Urban Land" on the west side where the building is located, and "Udorthents – Wet Substratum" on the east side where the parking area is. The depth to groundwater is shallow on the site based on the existing water surface of Mother Brook and its mean annual high water elevation. The site is also located within a floodplain.

Proposed Stormwater Management Design
The proposed project includes several stormwater Best Management Practices. Low Impact Development (LID) concepts have been considered for this project.

The following summarizes the features of the proposed stormwater management design:

1. Two proprietary stormwater treatment units provide removal of total suspended solids from the paved portion of the site to improve the quality of the runoff.

Because the site has shallow depth to groundwater and is within a floodplain, there are no infiltration facilities proposed.

The project site drains to Mother Brook. The U.S. EPA has recently prepared a "Waterbody Assessment and TMDL (Total Maximum Daily Load of various pollutants) Status" that show Mother Brook (segment MA73-28, and the Neponset River (segment MA73-02). The TMDL Status Map and information is included in Section 2. Mother Brook and the Neponset River are classified as Category 5.

Mother Brook has been determined by the EPA to have several impairments, including debris/floatables/trash, low flow alterations, color, DDT in fish tissue, mercury in fish tissue, dissolved oxygen, PCB in fish tissue, total phosphorous, and taste/odor. Mother Brook joins the Neponset River which also has several impairments including debris/floatables/trash, DDT in fish tissue, Escherichia coli, fecal coliform, foam/flocs/scum/oil slicks, unspecified metals, dissolved oxygen, PCB in fish tissue, and turbidity. An EPA TMDL No. 2592 is associated with the Neponset River for pathogens (bacteria).

It is required that BMPs be selected so that the site will not increase the impairment to the River. The treatment BMPs selected include two proprietary stormwater treatment systems (hydrodynamic separators). The site is almost entirely covered with impervious surface consisting of roof area and pavement. The proposed stormwater treatment systems are an improvement to the existing conditions as they provide debris, hydrocarbon, and TSS removal to the stormwater runoff from the site.

Proposed Stormwater Runoff

The existing and proposed subcatchment are similar due to the minimal amount of proposed site work. The proposed paved surface is described as subcatchments "P-1" and "P-2". Stormwater runoff from theses subcatchments is routed to proprietary stormwater treatment units (aka as water quality units). A third subcatchment "P-3" represents the bank of Mother Brook. The abutting property to the north remains unchanged and is described as "E-3" in the hydrologic model.

The peak rates of runoff and volumes to these locations for existing and proposed conditions flows for the 2, 10, 25 and 100-year storms are shown on the summary tables in Section 2 of this report. For simplicity, both the existing and proposed hydrologic models use a time of concentration equal to 5 minutes.

For all storm events, the peak flows and volumes are essentially the same to DP-1.

Watershed Modeling and Best Management Practices Design

The hydrologic analysis of the existing conditions and proposed watershed was based on the nationally recognized watershed modeling techniques developed by the USDA, Soil Conservation Service (SCS). The techniques and runoff models are described in the following SCS publications:

> "Urban Hydrology for Small Watersheds, Technical Release Number 55", 1986 and Technical Release 20.
>
> National Engineering Handbook, Hydrology, Section 4, 1972.
>
> "A Method for Estimating Volume and Rate of Runoff in Small Watersheds, Technical Release No. 149" 1973.
>
> "Hydrology Handbook for Conservation Commissions" March 2002, Mass. DEP.
>
> The watershed modeling was performed using computer software "HydroCAD" version 10.0 by Applied Microcomputer Systems, which is based on the publications referenced above.
>
> Best management practices were designed utilizing the following publications: DEP "Stormwater Management Standards Handbook", February, 2008
>
> Rainfall depths for 24-hour duration storms per the NOAA Atlas 14, Volume 10, Version 3 selected for the hydrologic analysis computations are as follows:
>
> 2 year storm 3.41 inches

10 year storm	5.33 inches
25 year storm	6.52 inches
100 year storm	8.37 inches

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SECTION 2

Stormwater Summary

MA DEP "Checklist for Stormwater Report"
Stormwater Standards Summary
Illicit Discharge Statement
Standard 1 & 4 Calculations

for

1550 River Street

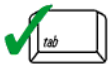
Hyde Park, Massachusetts 02136

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

Checklist for Stormwater Report

A. Introduction

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



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

The Stormwater Report must include:

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

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

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

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

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

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

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

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

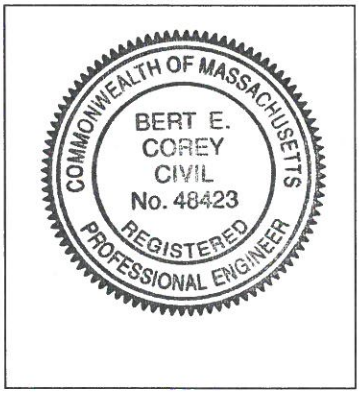
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



Bert E Cor 11/27/19

Signature and Date

Checklist

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

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

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

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

Standard 1: No New Untreated Discharges

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

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

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

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

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

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

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

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

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

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

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

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

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

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

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

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

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

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

Standard 4: Water Quality

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

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

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

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

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

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

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

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

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

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

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

☐ All exposure has been eliminated.

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

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

Standard 6: Critical Areas

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

Standard 9: Operation and Maintenance Plan

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

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

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

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

Standard 10: Prohibition of Illicit Discharges

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

☒ An Illicit Discharge Compliance Statement is attached;

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

1550 River Street, Hyde Park

Stormwater Standards Summary

MassDEP Stormwater Management Standards:

Standard 1: (Untreated Discharges)

There are no new stormwater conveyances proposed that discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Standard 2: (Peak rate control and flood protection)

There will be no increase in impervious area. Therefore, peak flows and volumes remain essentially unchanged. The results of the hydrologic model are include in the table below. The computations have been made for the 2, 10, 25 and 100-year design storm events.

TABLE 1 - Existing vs. Proposed Peak Flows and Volumes at Design Points

		DP#1 (Mother Brook)			
Storm Event	24 hr Rainfall	Peak Flow (cfs)		Volume (Acre feet)	
		Existing	Proposed	Existing	Proposed
2 year	3.41 in	5.88	5.80	0.457	0.458
10 year	5.33 in	9.33	9.23	0.742	0.742
25 year	6.52 in	11.46	11.35	0.919	0.918
100 year	8.37 in	14.77	14.66	1.195	1.192

Standard 3: (Recharge to Groundwater)

Published NRCS soil data indicates “Urban Land” on the west side where the building is located, and “Udorthents – Wet Substratum” on the east side where the parking area is. For hydrologic purposes, the soil is classified as HSG “D.”

The depth to groundwater is shallow at the site based on the existing water surface of Mother Brook and its mean annual high water elevation.

The property falls within a Zone AE special flood hazard area. The elevation of the 100-year flood as determined by the Federal Flood Insurance Program is 45.6 based on the NAVD 1988 datum. This is equivalent to elevation 52.06 based on the Boston City datum.

Because this site has shallow depth to groundwater and is within a floodplain, there are no infiltration facilities proposed.

Standard 4: (TSS Removal)

As an improvement over existing conditions, the project includes two (2) proprietary stormwater treatment units (CDS Model 4) to provide Total Suspended Solids (TSS)

removal as well as trash/debris/oil removal. They are sized to handle the contributing impervious area to be treated. The CDS Model 4 units selected are an approved proprietary treatment BMP under the "Technology Acceptance and Reciprocity Partnership" (TARP). The design sheet and performance documentation is included at the end of this section. The New Jersey DEP Certification letter for the CDS technology is included in this Section 2.

A TSS removal of 50% is used in the design. TSS Removal Calculation Worksheets for each treatment train are included at the end of this section. Base on the manufacturer's performance calculations, the predicted net annual removal is 92.48% and 86.36% for stormwater treatment unit #1 and #2, respectively.

In compliance with Standard 4, a Long-Term Pollution Prevention Plan is included in Appendix 2.

Standard 5: (Land Use with Higher Potential Pollutant Load - LUHPPL)

Due to the nature of the business that occupies this site, which includes towing of vehicles, proprietary stormwater treatment units are proposed to provide a significant improvement of stormwater quality over existing conditions.

Standard 6: (Critical Areas)

Stormwater does not discharge near or to a Critical Area (such as a Zone II, Interim Wellhead Protection Areas, Shellfish Growing Areas, Bathing Beaches, Outstanding Resource Waters, Special Resource Waters, or Cold-Water Fisheries). However, the project site is located in the Town of Natick Aquifer Protection Zone.

Standard 7: (Redevelopment)

The project is a redevelopment project. The project fully complies with Standard 2, and meets to the maximum extent practicable the Standards 1, 3 and 4.

The project slightly reduces the peak flows and volume to Mother Brook due to the slight reduction in impervious area.

Also, as part of the proposed work for this project, the applicant has removed a large quantity of trash, debris and sediment from the drainage ditch at the south corner of the site.

Standard 8: (Erosion, Sediment Control)

Erosion and sediment control BMPs are included in the Erosion and Sediment Control Plan as part of the Site Plan set.

Standard 9: (Operation & Maintenance)

An Operation and Maintenance Plan for the stormwater treatment systems (CDS Model 4 units) is included in Appendix 5.

Standard 10: (Illicit Discharges)

An Illicit Discharge Statement is included with this Stormwater Report.

DGT Associates
Surveying &
Engineering

1071 Worcester Rd
Framingham, MA 01701
508.879.0030
www.dgtassociates.com

November 27, 2019

Job No.: S-1428

Boston Conservation Commission
Ms. Amelia Croteau, Executive Secretary
1 City Hall Square, Room 709
Boston, MA 02201

RE: Illicit Discharge Compliance Statement

The following statements are made regarding the proposed site development at #1550 River Street in Hyde Park, MA:

- There are no illicit discharges designed or proposed.
- Sewage generated from the building will continue to enter the City of Boston public sewer.
- The design of the proposed stormwater system includes no proposed illicit discharges and no illicit discharge connections.
- A Long-Term Pollution Prevention Plan for the stormwater system has been included in the Stormwater Report.

Please feel free to contact me if you have any questions.

Sincerely yours,
DGT Associates

Bert E. Corey, P.E.
Engineering Group Manager

Standard 1 & 4 Calculations

Scour Calculations
Stormwater Treatment Units - Performance Calculations
TARP Certification (NJ DEP)
TSS Removal Calculations
TMDL Data

Scour Calculations

The outlets from both STU #1 and STU #2 discharge into stone lined swales. In this case the flows at all storms up to a 100-year event are designed to be less than the permissible velocity to ensure no scour or erosion. The following calculations provide compliance with Standard 1 for the discharges from the two discharge points:

STU #1 Outlet

3 ft wide by 0.5 ft deep channel
Swale Length = 6 feet
Swale Slope = 0.0667

	2 Year	10 Year	25 Year	100 Year
Maximum Velocity	2.53 ft/sec	3.00 ft/sec	3.24 ft/sec	3.55 ft/sec

STU #2 Outlet

3 ft wide by 0.5 ft deep channel
Swale Length = 6 feet
Swale Slope = 0.0667

	2 Year	10 Year	25 Year	100 Year
Maximum Velocity	3.04 ft/sec	3.60 ft/sec	3.88 ft/sec	4.24 ft/sec

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

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth>2.97"
Tc=5.0 min CN=98 Runoff=1.17 cfs 0.086 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth>2.97"
Tc=5.0 min CN=98 Runoff=1.57 cfs 0.116 af

Reach 1R: Scour Calc Avg. Flow Depth=0.15' Max Vel=2.53 fps Inflow=1.17 cfs 0.086 af
n=0.040 L=6.0' S=0.0667 '/' Capacity=7.48 cfs Outflow=1.16 cfs 0.086 af

Reach 2R: Scour Calc Avg. Flow Depth=0.17' Max Vel=3.04 fps Inflow=1.57 cfs 0.116 af
n=0.040 L=6.0' S=0.0833 '/' Capacity=8.37 cfs Outflow=1.57 cfs 0.116 af

Total Runoff Area = 0.821 ac Runoff Volume = 0.203 af Average Runoff Depth = 2.97"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.821 ac

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

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth>4.72"
Tc=5.0 min CN=98 Runoff=1.83 cfs 0.137 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth>4.72"
Tc=5.0 min CN=98 Runoff=2.47 cfs 0.185 af

Reach 1R: Scour Calc Avg. Flow Depth=0.20' Max Vel=3.00 fps Inflow=1.83 cfs 0.137 af
n=0.040 L=6.0' S=0.0667 '/' Capacity=7.48 cfs Outflow=1.83 cfs 0.137 af

Reach 2R: Scour Calc Avg. Flow Depth=0.23' Max Vel=3.60 fps Inflow=2.47 cfs 0.185 af
n=0.040 L=6.0' S=0.0833 '/' Capacity=8.37 cfs Outflow=2.47 cfs 0.185 af

Total Runoff Area = 0.821 ac Runoff Volume = 0.323 af Average Runoff Depth = 4.72"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.821 ac

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

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth>5.80"
Tc=5.0 min CN=98 Runoff=2.25 cfs 0.169 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth>5.80"
Tc=5.0 min CN=98 Runoff=3.03 cfs 0.228 af

Reach 1R: Scour Calc Avg. Flow Depth=0.23' Max Vel=3.24 fps Inflow=2.25 cfs 0.169 af
n=0.040 L=6.0' S=0.0667 '/' Capacity=7.48 cfs Outflow=2.24 cfs 0.169 af

Reach 2R: Scour Calc Avg. Flow Depth=0.26' Max Vel=3.88 fps Inflow=3.03 cfs 0.228 af
n=0.040 L=6.0' S=0.0833 '/' Capacity=8.37 cfs Outflow=3.03 cfs 0.228 af

Total Runoff Area = 0.821 ac Runoff Volume = 0.397 af Average Runoff Depth = 5.80"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.821 ac

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

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth>7.48"
Tc=5.0 min CN=98 Runoff=2.89 cfs 0.218 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth>7.48"
Tc=5.0 min CN=98 Runoff=3.90 cfs 0.294 af

Reach 1R: Scour Calc Avg. Flow Depth=0.27' Max Vel=3.55 fps Inflow=2.89 cfs 0.218 af
n=0.040 L=6.0' S=0.0667 '/' Capacity=7.48 cfs Outflow=2.88 cfs 0.217 af

Reach 2R: Scour Calc Avg. Flow Depth=0.30' Max Vel=4.24 fps Inflow=3.90 cfs 0.294 af
n=0.040 L=6.0' S=0.0833 '/' Capacity=8.37 cfs Outflow=3.89 cfs 0.293 af

Total Runoff Area = 0.821 ac Runoff Volume = 0.511 af Average Runoff Depth = 7.48"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.821 ac

Hydrodynamic Separation Product Calculator

1550 River Street in Hyde Park

STU #1

CDS 2015-4

Project Information					
Project Name	1550 River Street in Hyde Park			**Option #**	A
Country	UNITED_STATES	**State**	Massachusetts	**City**	Hyde Park

Contact Information			
First Name	Kevin	**Last Name**	Riopelle
Company	DGT Associates	**Phone #**	508-879-0030
Email	kriopelle@dgtassociates.com		

Design Criteria					
Site Designation	STU #1			**Sizing Method**	Net Annual
Screening Required?	Yes	**Drainage Area (ac)**	0.35	**Peak Flow (cfs)**	2.24
Groundwater Depth (ft)	0 - 5	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	>15
Multiple Inlets?	No	**Grate Inlet Required?**	No	**Pipe Size (in)**	10.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A	**180° between inlet and outlet?**	No
Runoff Coefficient	0.97	**Rainfall Station**	69 - Boston Airport, MA	**TC (Min)**	5

Treatment Selection					
Treatment Unit	CDS	**System Model**	2015-4		
Target Removal	80%	**Particle Size Distribution (PSD)**	125	**Predicted Net Annual Removal**	92.48%

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

1550 River Street in Hyde Park

STU #1

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0200	10.17%	10.17%	10.17%	0.0068	0.0068	0.97%	100.00%	10.17%
0.0400	9.65%	19.82%	9.65%	0.0136	0.0136	1.94%	100.00%	9.65%
0.0600	9.45%	29.27%	9.45%	0.0204	0.0204	2.91%	100.00%	9.45%
0.0800	7.74%	37.01%	7.74%	0.0272	0.0272	3.89%	100.00%	7.74%
0.1000	8.57%	45.58%	8.57%	0.0340	0.0340	4.86%	100.00%	8.57%
0.1200	6.30%	51.88%	6.30%	0.0407	0.0407	5.81%	100.00%	6.30%
0.1400	4.66%	56.54%	4.66%	0.0475	0.0475	6.79%	100.00%	4.66%
0.1600	4.64%	61.18%	4.64%	0.0543	0.0543	7.76%	99.86%	4.63%
0.1800	3.54%	64.72%	3.54%	0.0611	0.0611	8.73%	99.66%	3.53%
0.2000	4.34%	69.06%	4.34%	0.0679	0.0679	9.70%	99.47%	4.32%
0.2500	8.00%	77.06%	8.00%	0.0849	0.0849	12.13%	98.98%	7.92%
0.3000	5.59%	82.65%	5.59%	0.1019	0.1019	14.56%	98.50%	5.51%
0.3500	4.37%	87.02%	4.37%	0.1188	0.1188	16.97%	98.01%	4.28%
0.4000	2.53%	89.55%	2.53%	0.1358	0.1358	19.40%	97.53%	2.47%
0.4500	2.53%	92.08%	2.53%	0.1528	0.1528	21.83%	97.04%	2.46%
0.5000	1.38%	93.46%	1.38%	0.1698	0.1698	24.26%	96.56%	1.33%
0.7500	5.04%	98.50%	5.04%	0.2546	0.2546	36.37%	94.13%	4.74%
1.0000	1.01%	99.51%	1.01%	0.3395	0.3395	48.50%	91.71%	0.93%
1.5000	0.00%	99.51%	0.00%	0.5093	0.5093	72.76%	86.85%	0.00%
2.0000	0.00%	99.51%	0.00%	0.6790	0.6790	97.00%	82.00%	0.00%
3.0000	0.48%	99.99%	0.33%	1.0185	0.7000	100.00%	55.95%	0.27%
								98.93%
							Removal Efficiency Adjustment[2] =	6.45%
							Predicted % Annual Rainfall Treated =	93.39%
							Predicted Net Annual Load Removal Efficiency =	92.48%

1 - Based on 10 years of hourly precipitation data from NCDC Station 770, Boston WSFO AP, Suffolk County, MA

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Hydrodynamic Separation Product Calculator

1550 River Street in Hyde Park

STU #2

CDS 2015-4

Project Information					
Project Name	1550 River Street in Hyde Park			**Option #**	A
Country	UNITED_STATES	**State**	Massachusetts	**City**	Hyde Park

Contact Information			
First Name	Kevin	**Last Name**	Riopelle
Company	DGT Associates	**Phone #**	508-879-0030
Email	kriopelle@dgtassociates.com		

Design Criteria					
Site Designation	STU #2			**Sizing Method**	Net Annual
Screening Required?	Yes	**Drainage Area (ac)**	1.33	**Peak Flow (cfs)**	8.53
Groundwater Depth (ft)	0 - 5	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	>15
Multiple Inlets?	No	**Grate Inlet Required?**	No	**Pipe Size (in)**	10.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A	**180° between inlet and outlet?**	No
Runoff Coefficient	0.98	**Rainfall Station**	69 - Boston Airport, MA	**TC (Min)**	5

Treatment Selection					
Treatment Unit	CDS	**System Model**	2015-4		
Target Removal	80%	**Particle Size Distribution (PSD)**	125	**Predicted Net Annual Removal**	86.36%

CONTECH ENGINEERED SOLUTIONS

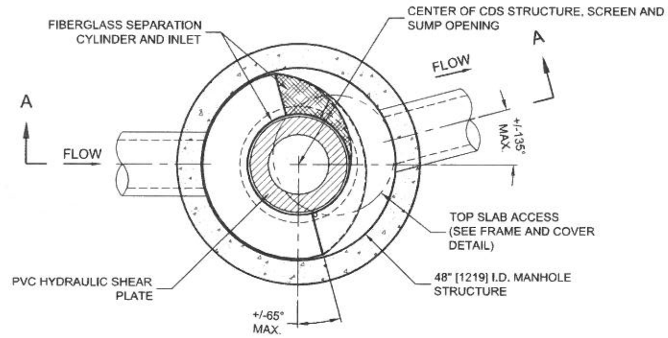
Hydrodynamic Separation Product Calculator

1550 River Street in Hyde Park

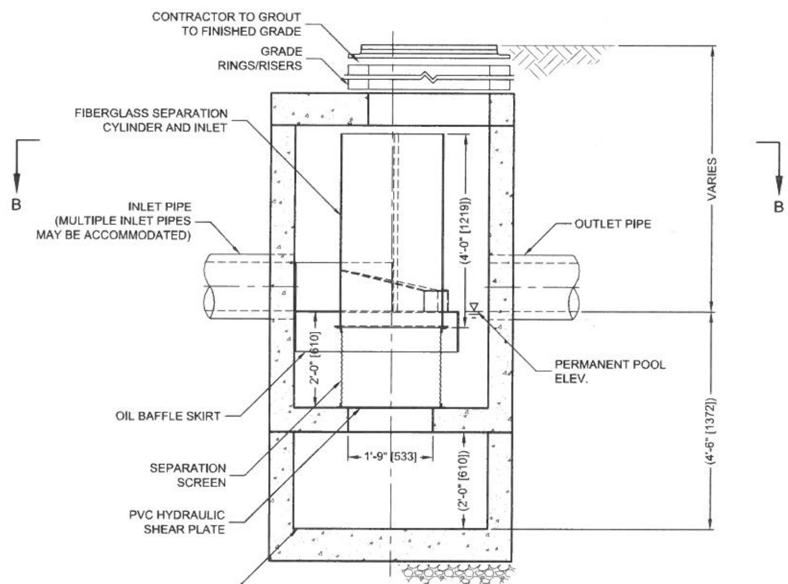
STU #2

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0200	10.17%	10.17%	10.17%	0.0261	0.0261	3.73%	100.00%	10.17%
0.0400	9.65%	19.82%	9.65%	0.0521	0.0521	7.44%	99.92%	9.64%
0.0600	9.45%	29.27%	9.45%	0.0782	0.0782	11.17%	99.17%	9.37%
0.0800	7.74%	37.01%	7.74%	0.1043	0.1043	14.90%	98.43%	7.62%
0.1000	8.57%	45.58%	8.57%	0.1303	0.1303	18.61%	97.69%	8.37%
0.1200	6.30%	51.88%	6.30%	0.1564	0.1564	22.34%	96.94%	6.11%
0.1400	4.66%	56.54%	4.66%	0.1825	0.1825	26.07%	96.19%	4.48%
0.1600	4.64%	61.18%	4.64%	0.2085	0.2085	29.79%	95.45%	4.43%
0.1800	3.54%	64.72%	3.54%	0.2346	0.2346	33.51%	94.70%	3.35%
0.2000	4.34%	69.06%	4.34%	0.2607	0.2607	37.24%	93.96%	4.08%
0.2500	8.00%	77.06%	8.00%	0.3259	0.3259	46.56%	92.09%	7.37%
0.3000	5.59%	82.65%	5.59%	0.3910	0.3910	55.86%	90.23%	5.04%
0.3500	4.37%	87.02%	4.37%	0.4562	0.4562	65.17%	88.37%	3.86%
0.4000	2.53%	89.55%	2.53%	0.5214	0.5214	74.49%	86.50%	2.19%
0.4500	2.53%	92.08%	2.53%	0.5865	0.5865	83.79%	84.64%	2.14%
0.5000	1.38%	93.46%	1.38%	0.6517	0.6517	93.10%	82.78%	1.14%
0.7500	5.04%	98.50%	3.61%	0.9776	0.7000	100.00%	58.29%	2.94%
1.0000	1.01%	99.51%	0.54%	1.3034	0.7000	100.00%	43.72%	0.44%
1.5000	0.00%	99.51%	0.00%	1.9551	0.7000	100.00%	29.14%	0.00%
2.0000	0.00%	99.51%	0.00%	2.6068	0.7000	100.00%	21.86%	0.00%
3.0000	0.48%	99.99%	0.09%	3.9102	0.7000	100.00%	14.57%	0.07%
								92.81%
							Removal Efficiency Adjustment[2] =	6.45%
							Predicted % Annual Rainfall Treated =	91.25%
							Predicted Net Annual Load Removal Efficiency =	86.36%
1 - Based on 10 years of hourly precipitation data from NCDC Station 770, Boston WSFO AP, Suffolk County, MA								
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.								



PLAN VIEW B-B
N.T.S.

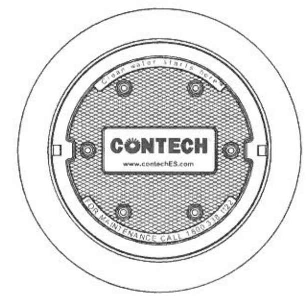


ELEVATION A-A
N.T.S.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Nonpoint Pollution Control
Division of Water Quality
401-02B
Post Office Box 420
Trenton, New Jersey 08625-0420
609-633-7021 Fax: 609-777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

March 21, 2017

Derek M. Berg
Contech Engineered Solutions, LLC
71 US Route 1, Suite F
Scarborough, ME 04074

Re: Revised MTD Lab Certification
Continuous Deflective Separator (CDS®) Stormwater Treatment Device by Contech Engineered Solutions, LLC
On-line Installation

TSS Removal Rate 50%

Dear Mr. Berg:

This revised certification letter supersedes the Department's prior certification dated January 9, 2015. This revision was completed to reflect the updated Manufactured Treatment Device (MTD) scaling methodology as agreed upon by the manufacturers' working group on September 19, 2016. In part, the updated scaling for hydrodynamic MTDs is based on the depth of the reference (tested) MTD from the top of the false floor utilized during removal efficiency testing, not from the physical bottom of the unit. Based on the above decision, Table A-2 of the NJCAT Technology Verification report located at http://www.njcat.org/uploads/newDocs/CDSVerificationReportFinal1.pdf has been revised, and Table 1 noted below has been added.

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7 (c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Contech Engineered Solutions, LLC has requested an MTD Laboratory Certification for the CDS® Stormwater Treatment Device.

The verification is subject to the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification

Appendix dated September 2014 (Revised January 2017) for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The NJDEP certifies the use of the CDS® Stormwater Treatment Device by Contech Engineered Solutions, LLC at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The CDS® Stormwater Treatment Device shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.

3. This CDS® Stormwater Treatment Device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual which can be found on-line at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the CDS® Stormwater Treatment Device. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at http://www.conteches.com/products/stormwater-management/treatment/cds.aspx#1822141-technical-info for any changes to the maintenance requirements.

6. Sizing Requirements:

   The example below demonstrates the sizing procedure for the CDS®:

   Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using a CDS®. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

   Maximum Treatment Flow Rate (MTFR) Evaluation:

   The site runoff (Q) was based on the following:
   time of concentration = 10 minutes
   i=3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
   c=0.99 (runoff coefficient for impervious)
   Q=ciA=0.99x3.2x0.25=0.79 cfs

   Given the site runoff is 0.79 cfs and based on Table 1 below, the CDS® Model CDS-4 with an MTFR of 0.93 cfs would be the smallest model approved that could be used for this site that could remove 50% of the TSS from the impervious area without exceeding the MTFR.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1 and A-2.

Table 1 CDS Models

CDS Model	Manhole Diameter (ft.)	Treatment Chamber Depth (ft.)	MTFR (cfs)
CDS-3	3	3.50	0.52
CDS-4	4	3.50	0.93
CDS-5	5	3.75	1.5
CDS-6	6	4.50	2.1
CDS-7	7	5.25	2.8
CDS-8	8	6.00	3.7
CDS-10	10	7.50	5.8
CDS-12	12	9.00	8.4

- Treatment Chamber Depth is defined as the depth below the invert to the top of the false floor installed at 50% sediment depth.

A detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Mr. Shashi Nayak of my office at (609) 633-7021.

Sincerely,

James J. Murphy, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

c: Chron File
Richard Magee, NJCAT
Vince Mazzei, NJDEP - DLUR
Ravi Patraju, NJDEP - BES
Gabriel Mahon, NJDEP - BNPC
Shashi Nayak, NJDEP – BNPC

DGT Associates
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Stormwater Treatment Unit Design

1550 River Street, Hyde Park, MA

Computational method to convert Water Quality Volume (WQV) to Equivalent Peak Water Quality Flow Rate (WQF)

Reference: MassDEP Notice dated November 1, 2010

$WQF = (q_u)(A)(WQV)$

Where q_u = unit peak discharge (cfs / (mi^2 x in x s))
A = impervious surface drainage area (mi^2)
WQV = water quality volume (1.0 inch)
WQF = water quality flow rate (cfs)

T_c = 5.0 minutes (for all subcatchments)
From Figure 2: q_u = 773 cfs / (mi^2 x in x s)

Stormwater Treatment Unit	q_u	A (sf)	A (mi^2)	WQV (in)	WQF (cfs)	Unit Proposed
STU #1	773	15,215	0.0005	1.0	0.42	CDS-4
STU #2	773	20,527	0.0007	1.0	0.57	CDS-4

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Stormwater Treatment Unit #1 at SE corner of site

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Proprietary Treatment Practice	**0.50**	**1.00**	**0.50**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**

Total TSS Removal = **50%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: **1550 River Street, Hyde Park**
Prepared By: **BEC**
Date: **11/27/2019**

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Stormwater Treatment Unit #2 at NE corner of site

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Proprietary Treatment Practice	**0.50**	**1.00**	**0.50**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**
	0.00	**0.50**	**0.00**	**0.50**

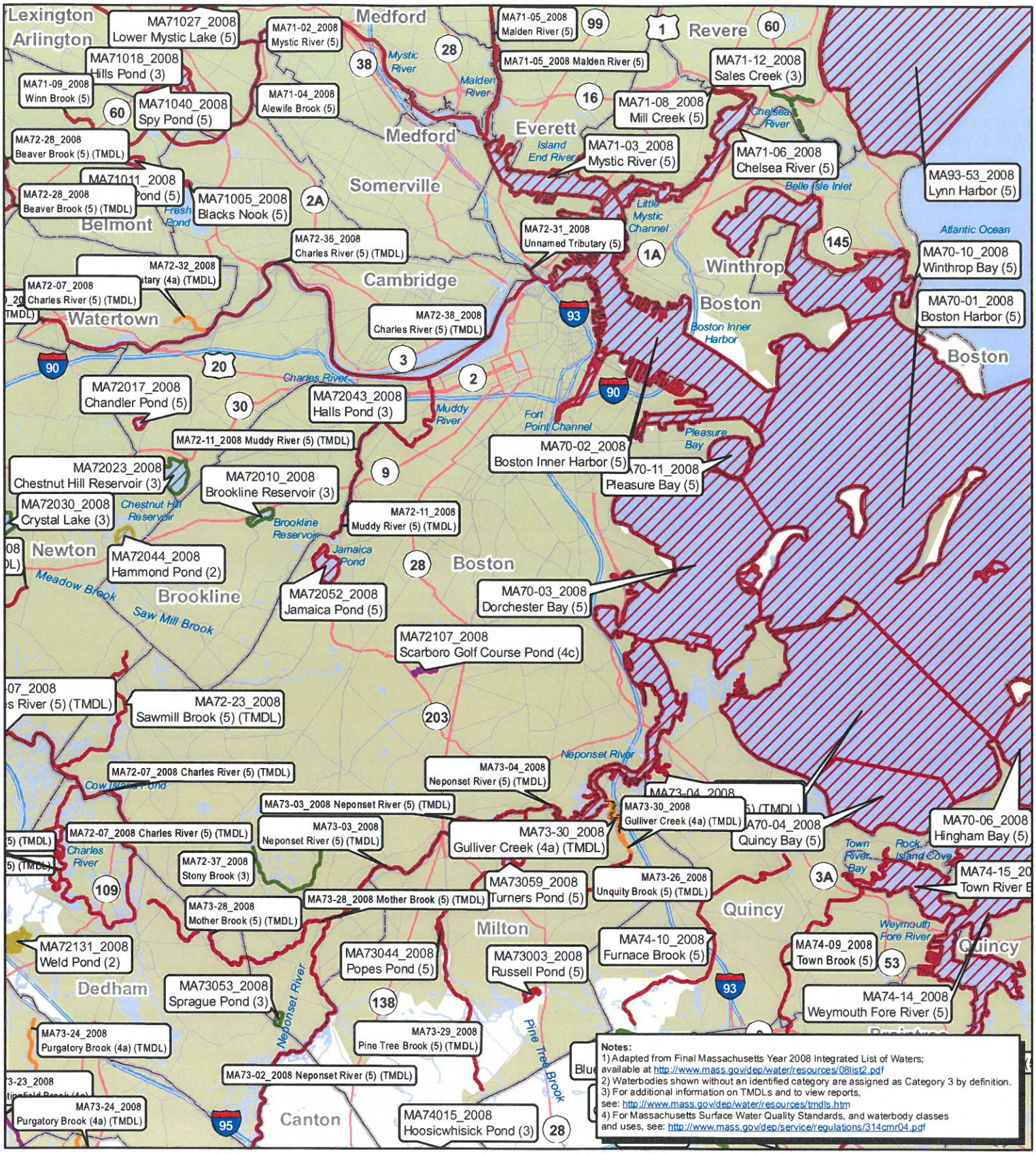
Total TSS Removal = **50%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: **1550 River Street, Hyde Park**
Prepared By: **BEC**
Date: **11/27/2019**

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1



Waterbody Assessment and TMDL Status
Boston, MA

N

0 0.5 Miles

EPA

Map produced by EPA Region I GIS Center
Map Tracker ID 6678, February 25, 2010
Data Sources: TeleAtlas, Census Bureau, USGS, MassDEP

Waterbody Label

State ID,
Waterbody Name (Category)
(TMDL(s) approved for this waterbody)

See companion table for a listing of pollutants, non-pollutants, and TMDLs for each waterbody

Assessment of Waterbody Segment

- Category 2: Attaining some uses; other uses not assessed
- Category 3: Insufficient information to make assessments for any use.
- Category 4a: TMDL is completed and approved for one or more pollutants
- Category 4c: Impairment not caused by a pollutant.
- Category 5: Impaired or threatened for one or more uses and requiring a TMDL.

- Waterbodies
- Swamp/Marsh
- MS4 Urbanized Areas (2000 Census)
- Municipal Boundaries

Category 5 waters listed alphabetically by major watershed
The 303(d) List – "Waters requiring a TMDL"

WATER BODY	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT	EPA TMDL NO.
					PCB in Fish Tissue	
					Phosphorus (Total)	
					Taste and Odor	
Neponset Reservoir	MA73034	Foxborough.	312	ACRES	(Non-Native Aquatic Plants*)	
					Excess Algal Growth	
					Turbidity	
Neponset River	MA73-01	Outlet of Neponset Reservoir, Foxborough to confluence with East Branch, Canton. (through former pond segments Crackrock Pond MA73010 and Bird Pond MA73002).	13.2	MILES	DDT in Fish Tissue	
					Escherichia coli	54840
					Other (Unspecified Metals)	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Phosphorus (Total)	
Neponset River	MA73-02	Confluence with East Branch, Canton to confluence with Mother Brook, Boston.	7.7	MILES	(Debris/Floatables/Trash*)	
					DDT in Fish Tissue	
					Escherichia coli	2592
					Fecal Coliform	2592
					Foam/Flocs/Scum/Oil Slicks	
					Other (Unspecified Metals)	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Turbidity	
Neponset River	MA73-03	Confluence with Mother Brook, Boston to Milton Lower Falls Dam (Neponset River Baker Chocolate Dam, NAT ID: MA01093), Milton/Boston.	3.7	MILES	(Debris/Floatables/Trash*)	
					DDT in Fish Tissue	
					Enterococcus	2592
					Escherichia coli	2592
					Fecal Coliform	2592
					Foam/Flocs/Scum/Oil Slicks	
					Other (Unspecified Metals)	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Polychlorinated biphenyls	
Neponset River	MA73-04	Milton Lower Falls Dam (Neponset River Baker Chocolate Dam, NAT ID: MA01093), Milton/Boston to mouth at Dorchester Bay, Boston/Quincy.	0.67	SQUARE MILES	(Debris/Floatables/Trash*)	
					Enterococcus	2592
					Fecal Coliform	2592
					Other (Contaminants in Shellfish)	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Turbidity	
Pequid Brook	MA73-22	Headwaters east of York Street, Canton to mouth at inlet of Forge Pond, Canton (excluding the approximately 1.3 miles through Reservoir Pond, segment MA73048).	2.8	MILES	Oxygen, Dissolved	
Pine Tree Brook	MA73-29	Headwaters, outlet of Hillside Pond, Milton through Pope's Pond (formerly segment MA73044) to confluence Neponset River, Milton.	4.6	MILES	(Physical substrate habitat alterations*)	

Category 5 waters listed alphabetically by major watershed
The 303(d) List – "Waters requiring a TMDL"

WATER BODY	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT	EPA TMDL NO.
East Branch	MA73-05	East Branch Neponset River - Headwaters, outlet of Forge Pond, Canton through East Branch Pond to mouth at confluence with Neponset River, Canton (locally known as Canton River).	2.6	MILES	(Low flow alterations*)	
					Aquatic Macroinvertebrate Bioassessments	
					DDT in Fish Tissue	
					Escherichia coli	2592
					Fecal Coliform	2592
					Other (Unspecified Metals)	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Temperature, water	
Forge Pond	MA73020	Canton.	19	ACRES	Turbidity	
Ganawatte Farm Pond	MA73037	Walpole/Sharon/Foxborough.	29	ACRES	Aquatic Plants (Macrophytes)	
					Oxygen, Dissolved	
					Secchi disk transparency	
Germany Brook	MA73-15	Headwaters, east of Winter Street, Norwood to inlet of Ellis Pond, Norwood.	2	MILES	Escherichia coli	2592
					Fecal Coliform	2592
					pH, High	
					Phosphorus (Total)	
Gulliver Creek	MA73-30	From confluence Unquity Brook, Milton to confluence Neponset River, Milton (Note: Unquity Brook culverted, confluence not visible on quad).	0.02	SQUARE MILES	Fecal Coliform	2592
					Other (Contaminants in Fish and Shellfish)	
					PCB in Fish Tissue	
Hawes Brook	MA73-16	Headwaters, outlet of Ellis Pond, Norwood to mouth at confluence with Neponset River, Norwood.	1.1	MILES	Escherichia coli	2592
					Fecal Coliform	2592
					Taste and Odor	
Massapoag Brook	MA73-21	Headwaters, outlet Hammer Shop Pond, Sharon, through Manns Pond (formerly segment MA73028), Trowel Shop Pond, and Shephard Pond to mouth at inlet of Forge Pond, Canton.	4.2	MILES	(Non-Native Aquatic Plants*)	
					Aquatic Macroinvertebrate Bioassessments	
					Phosphorus (Total)	
Memorial Pond	MA73012	Walpole.	8	ACRES	Aquatic Plants (Macrophytes)	
					Turbidity	
Mill Brook	MA73-08	From headwaters (perennial portion) north of Hartford Street, Medfield to mouth at inlet of Jewells Pond, Medfield.	2.3	MILES	(Low flow alterations*)	
					Aquatic Macroinvertebrate Bioassessments	
					Oxygen, Dissolved	
Mine Brook	MA73-09	Headwaters, outlet of Jewells Pond, Medfield, to the inlet of Turner Pond, Walpole.	3	MILES	Oxygen, Dissolved	
Mother Brook	MA73-28	Headwaters at the Charles River Diversion control structure, Dedham to mouth at confluence with Neponset River, Boston [Reported as MA72-13 until May 3, 2000].	3.7	MILES	(Debris/Floatables/Trash*)	
					(Low flow alterations*)	
					Color	
					DDT in Fish Tissue	
					Mercury in Fish Tissue	
					Oxygen, Dissolved	

S-1428

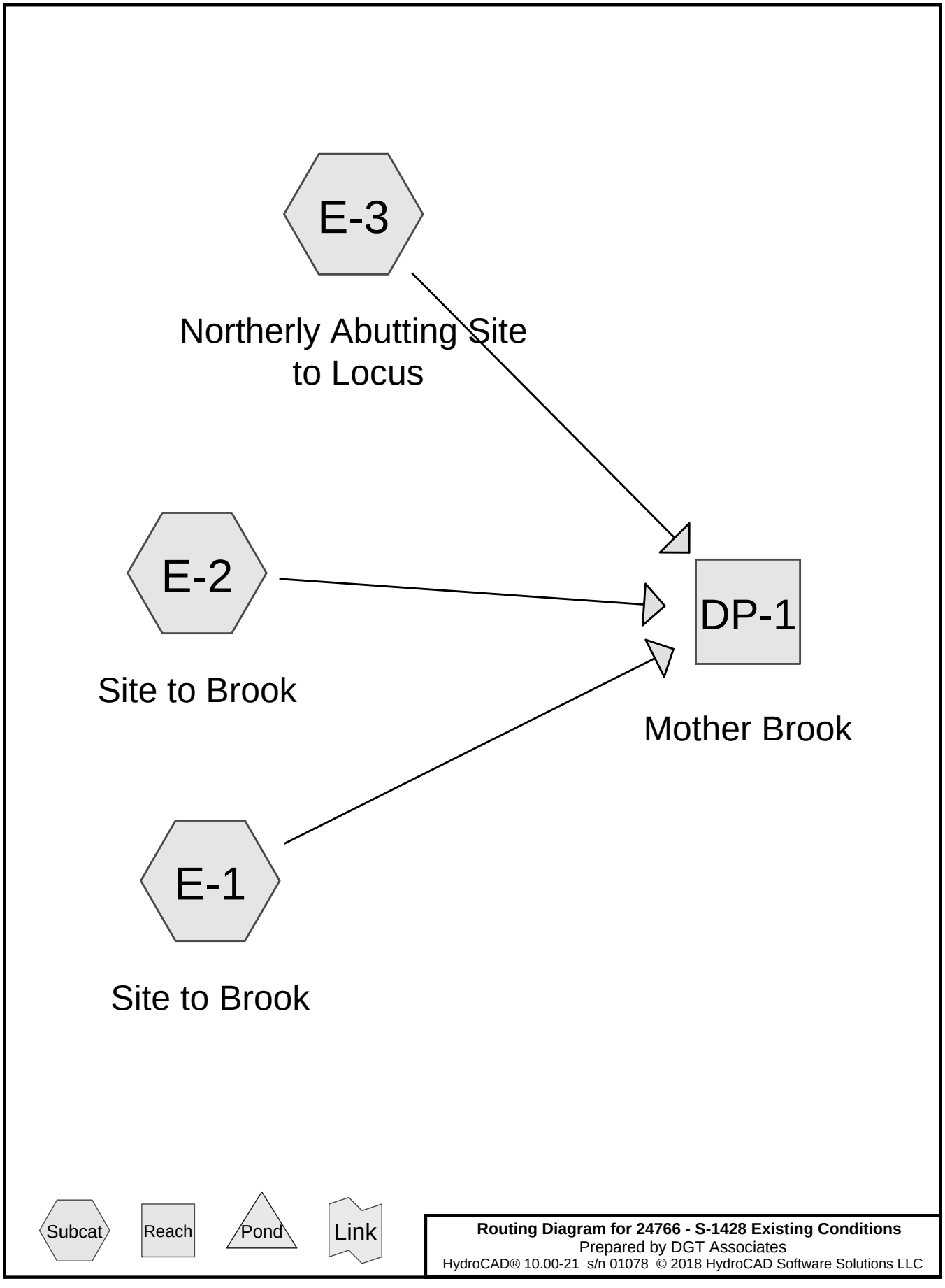
SECTION 3

Existing Conditions Stormwater Model showing Stormwater Flows and Flood Routing Computations using HydroCAD version 10.00

for

1550 River Street

Hyde Park, Massachusetts 02136



Routing Diagram for 24766 - S-1428 Existing Conditions
Prepared by DGT Associates

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.102	80	>75% Grass cover, Good, HSG D (E-1, E-2)
1.689	98	Paved parking, HSG D (E-1, E-2, E-3)
1.791	**97**	**TOTAL AREA**

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Site to Brook Runoff Area=15,873 sf 86.80% Impervious Runoff Depth=2.96"
Tc=5.0 min CN=96 Runoff=1.18 cfs 0.090 af

Subcatchment E-2: Site to Brook Runoff Area=24,932 sf 90.54% Impervious Runoff Depth=2.96"
Tc=5.0 min CN=96 Runoff=1.85 cfs 0.141 af

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=3.18"
Tc=5.0 min CN=98 Runoff=2.85 cfs 0.226 af

Reach DP-1: Mother Brook Inflow=5.88 cfs 0.457 af
Outflow=5.88 cfs 0.457 af

Total Runoff Area = 1.791 ac Runoff Volume = 0.457 af Average Runoff Depth = 3.06"
5.71% Pervious = 0.102 ac 94.29% Impervious = 1.689 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Site to Brook Runoff Area=15,873 sf 86.80% Impervious Runoff Depth=4.86"
Tc=5.0 min CN=96 Runoff=1.89 cfs 0.148 af

Subcatchment E-2: Site to Brook Runoff Area=24,932 sf 90.54% Impervious Runoff Depth=4.86"
Tc=5.0 min CN=96 Runoff=2.96 cfs 0.232 af

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=5.09"
Tc=5.0 min CN=98 Runoff=4.49 cfs 0.362 af

Reach DP-1: Mother Brook Inflow=9.33 cfs 0.742 af
Outflow=9.33 cfs 0.742 af

Total Runoff Area = 1.791 ac Runoff Volume = 0.742 af Average Runoff Depth = 4.97"
5.71% Pervious = 0.102 ac 94.29% Impervious = 1.689 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Site to Brook Runoff Area=15,873 sf 86.80% Impervious Runoff Depth=6.05"
Tc=5.0 min CN=96 Runoff=2.32 cfs 0.184 af

Subcatchment E-2: Site to Brook Runoff Area=24,932 sf 90.54% Impervious Runoff Depth=6.05"
Tc=5.0 min CN=96 Runoff=3.65 cfs 0.288 af

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=6.28"
Tc=5.0 min CN=98 Runoff=5.50 cfs 0.447 af

Reach DP-1: Mother Brook Inflow=11.46 cfs 0.919 af
Outflow=11.46 cfs 0.919 af

Total Runoff Area = 1.791 ac Runoff Volume = 0.919 af Average Runoff Depth = 6.16"
5.71% Pervious = 0.102 ac 94.29% Impervious = 1.689 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-1: Site to Brook Runoff Area=15,873 sf 86.80% Impervious Runoff Depth=7.89"
Tc=5.0 min CN=96 Runoff=2.99 cfs 0.240 af

Subcatchment E-2: Site to Brook Runoff Area=24,932 sf 90.54% Impervious Runoff Depth=7.89"
Tc=5.0 min CN=96 Runoff=4.70 cfs 0.376 af

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=8.13"
Tc=5.0 min CN=98 Runoff=7.07 cfs 0.579 af

Reach DP-1: Mother Brook Inflow=14.77 cfs 1.195 af
Outflow=14.77 cfs 1.195 af

Total Runoff Area = 1.791 ac Runoff Volume = 1.195 af Average Runoff Depth = 8.00"
5.71% Pervious = 0.102 ac 94.29% Impervious = 1.689 ac

Summary for Subcatchment E-1: Site to Brook

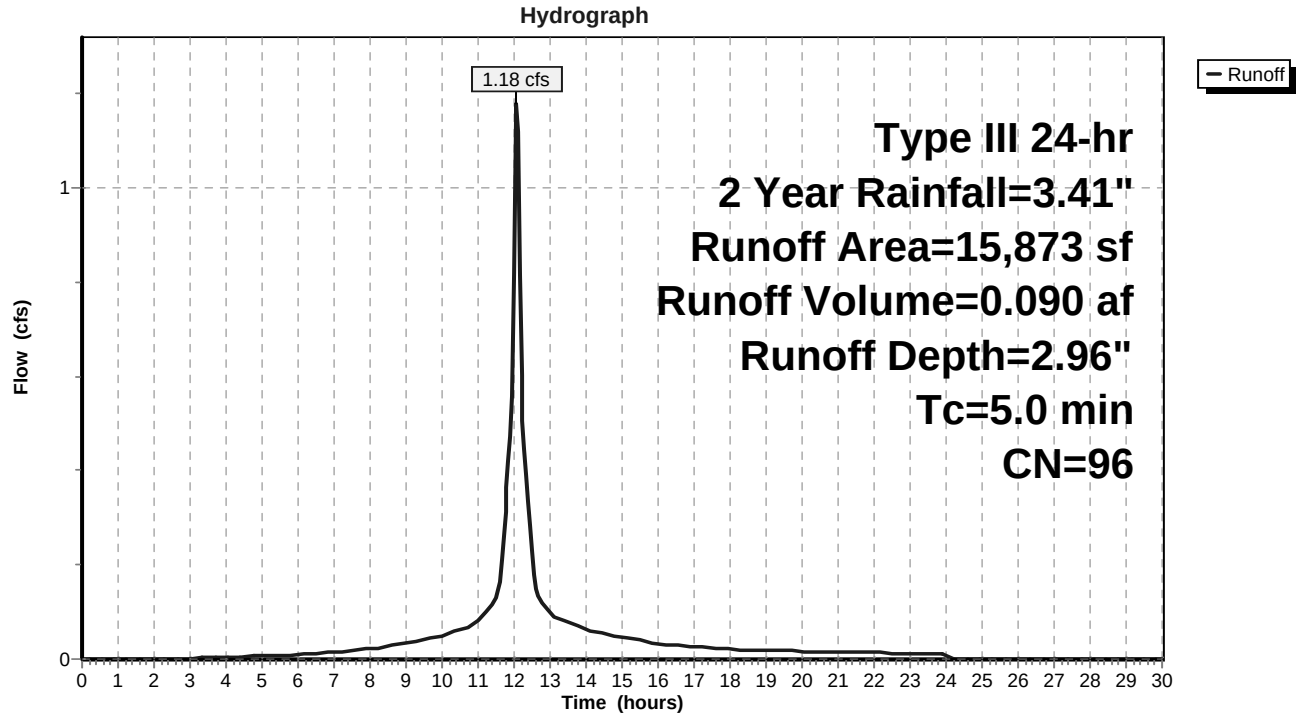
Runoff = 1.18 cfs @ 12.07 hrs, Volume= 0.090 af, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
13,777	98	Paved parking, HSG D
2,096	80	>75% Grass cover, Good, HSG D
15,873	96	Weighted Average
2,096		13.20% Pervious Area
13,777		86.80% Impervious Area

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

Subcatchment E-1: Site to Brook



Summary for Subcatchment E-2: Site to Brook

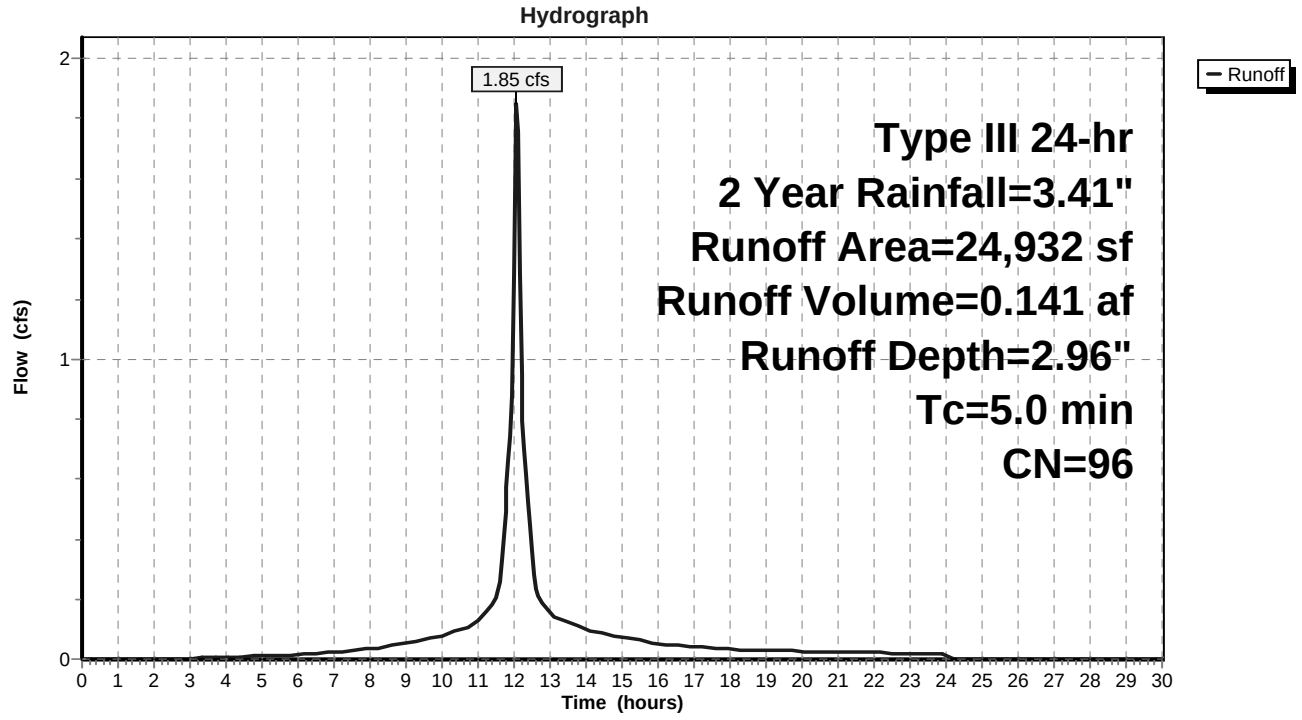
Runoff = 1.85 cfs @ 12.07 hrs, Volume= 0.141 af, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
22,573	98	Paved parking, HSG D
2,359	80	>75% Grass cover, Good, HSG D
24,932	96	Weighted Average
2,359		9.46% Pervious Area
22,573		90.54% Impervious Area

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

Subcatchment E-2: Site to Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

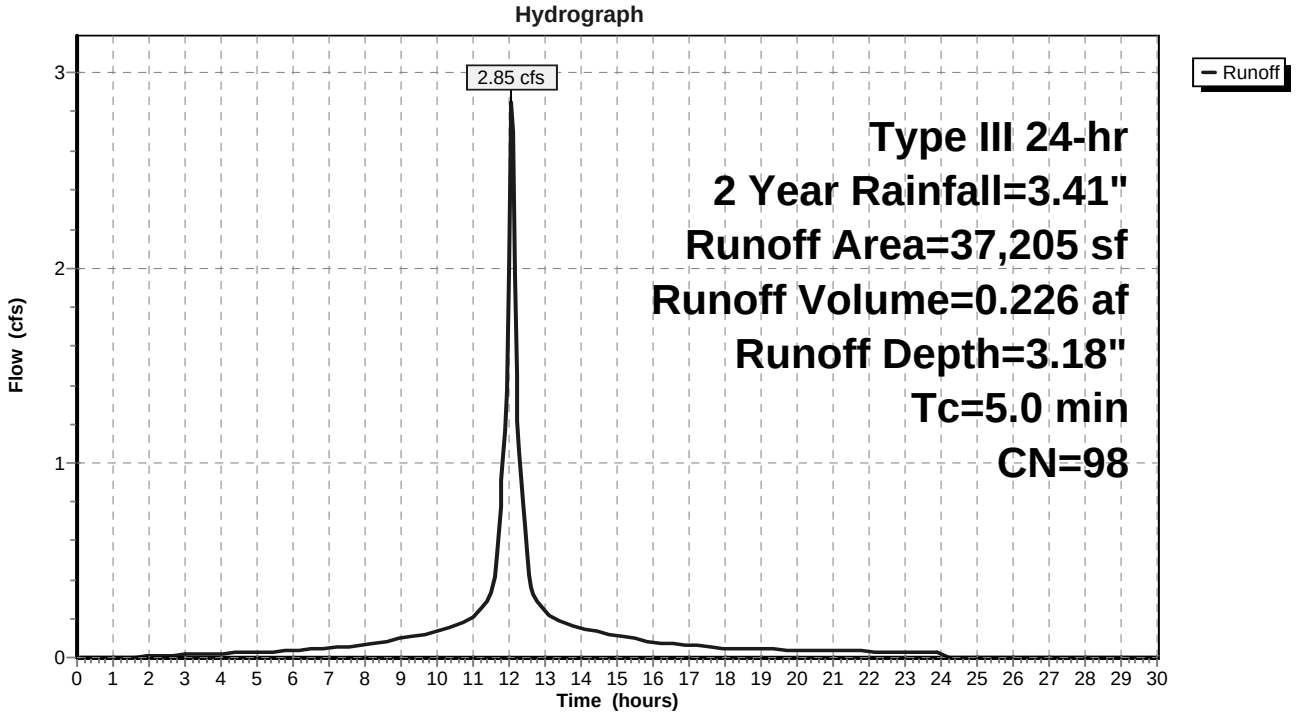
Runoff = 2.85 cfs @ 12.07 hrs, Volume= 0.226 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus

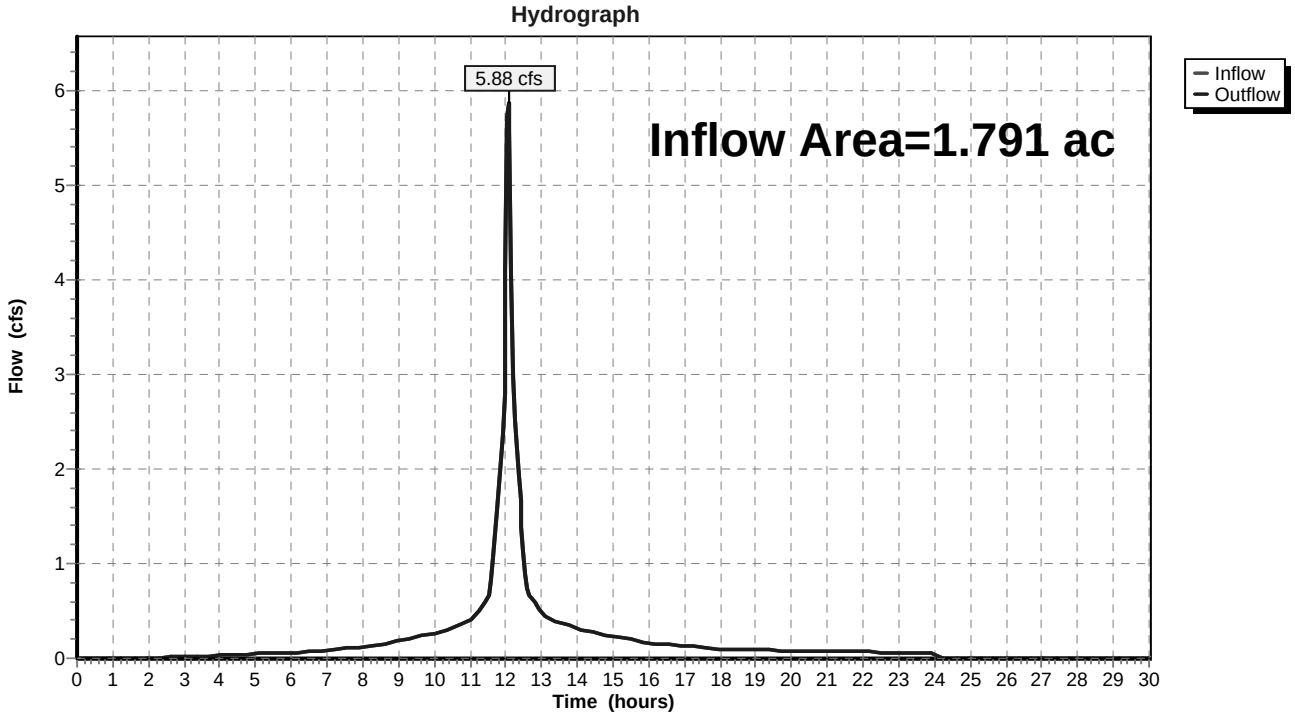


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 94.29% Impervious, Inflow Depth = 3.06" for 2 Year event
Inflow = 5.88 cfs @ 12.07 hrs, Volume= 0.457 af
Outflow = 5.88 cfs @ 12.07 hrs, Volume= 0.457 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



Summary for Subcatchment E-1: Site to Brook

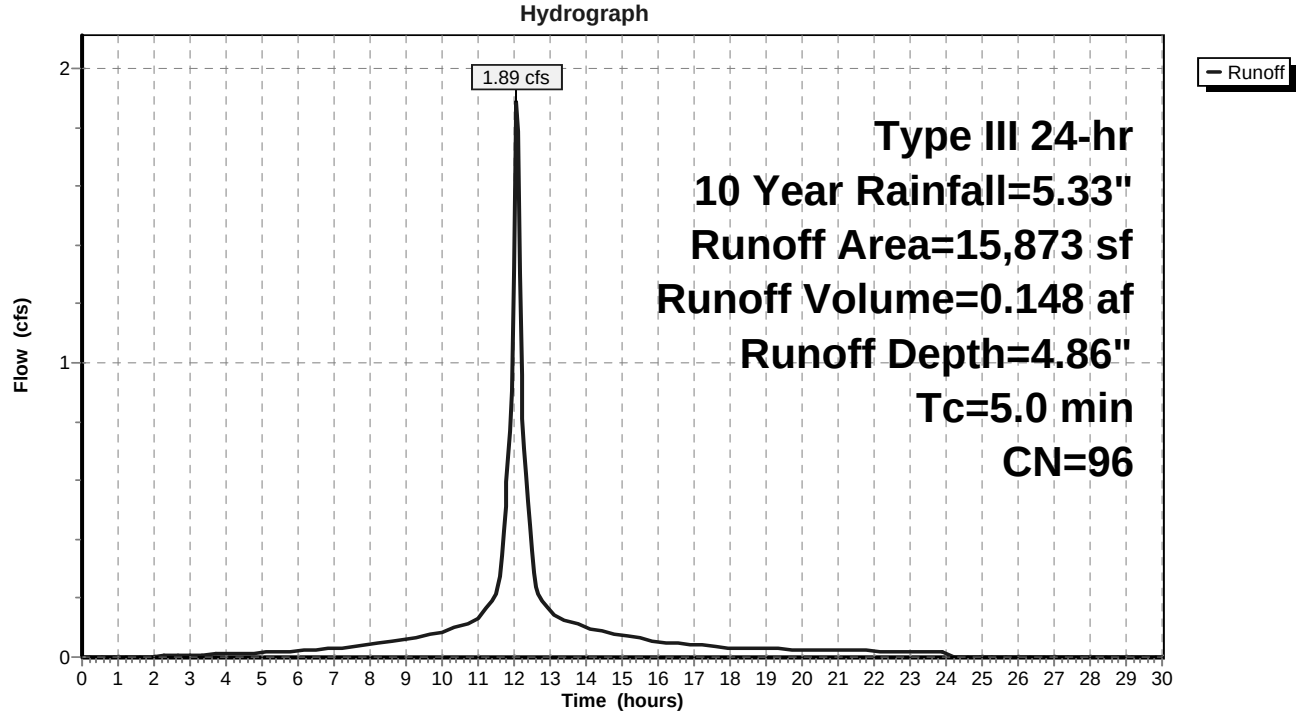
Runoff = 1.89 cfs @ 12.07 hrs, Volume= 0.148 af, Depth= 4.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
13,777	98	Paved parking, HSG D
2,096	80	>75% Grass cover, Good, HSG D
15,873	96	Weighted Average
2,096		13.20% Pervious Area
13,777		86.80% Impervious Area

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

Subcatchment E-1: Site to Brook



Summary for Subcatchment E-2: Site to Brook

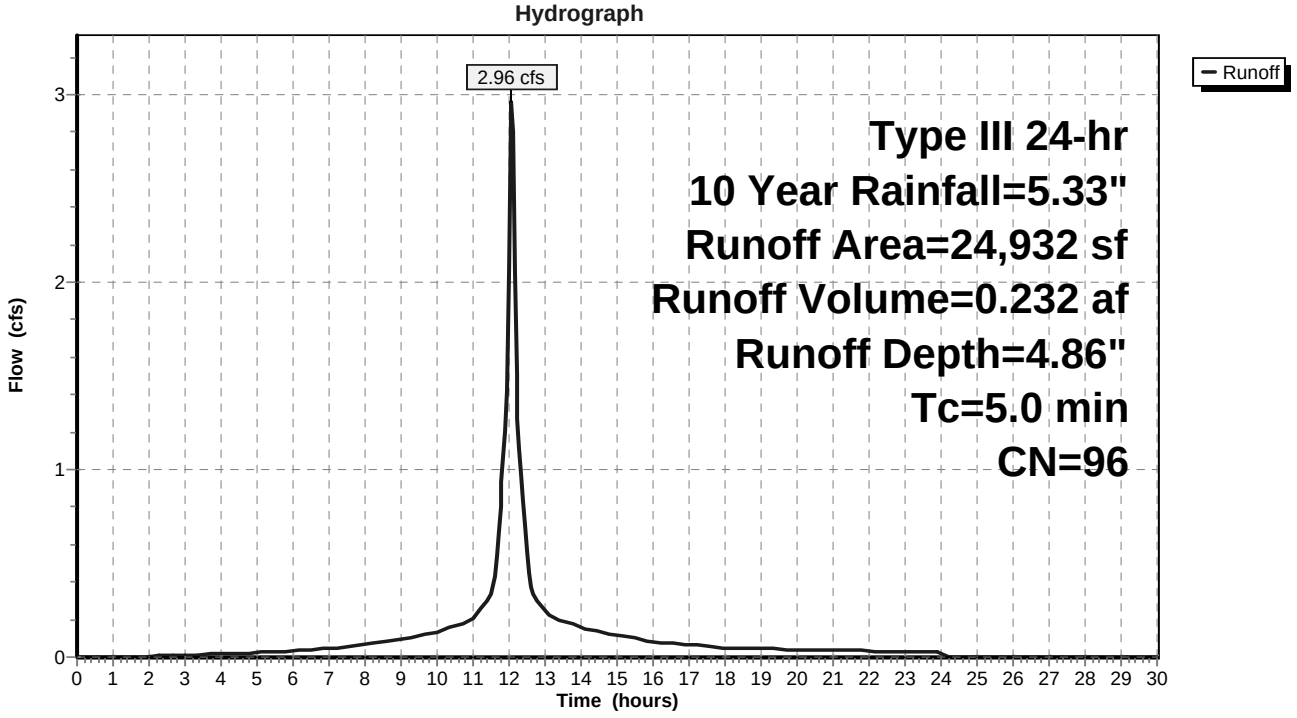
Runoff = 2.96 cfs @ 12.07 hrs, Volume= 0.232 af, Depth= 4.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
22,573	98	Paved parking, HSG D
2,359	80	>75% Grass cover, Good, HSG D
24,932	96	Weighted Average
2,359		9.46% Pervious Area
22,573		90.54% Impervious Area

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

Subcatchment E-2: Site to Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

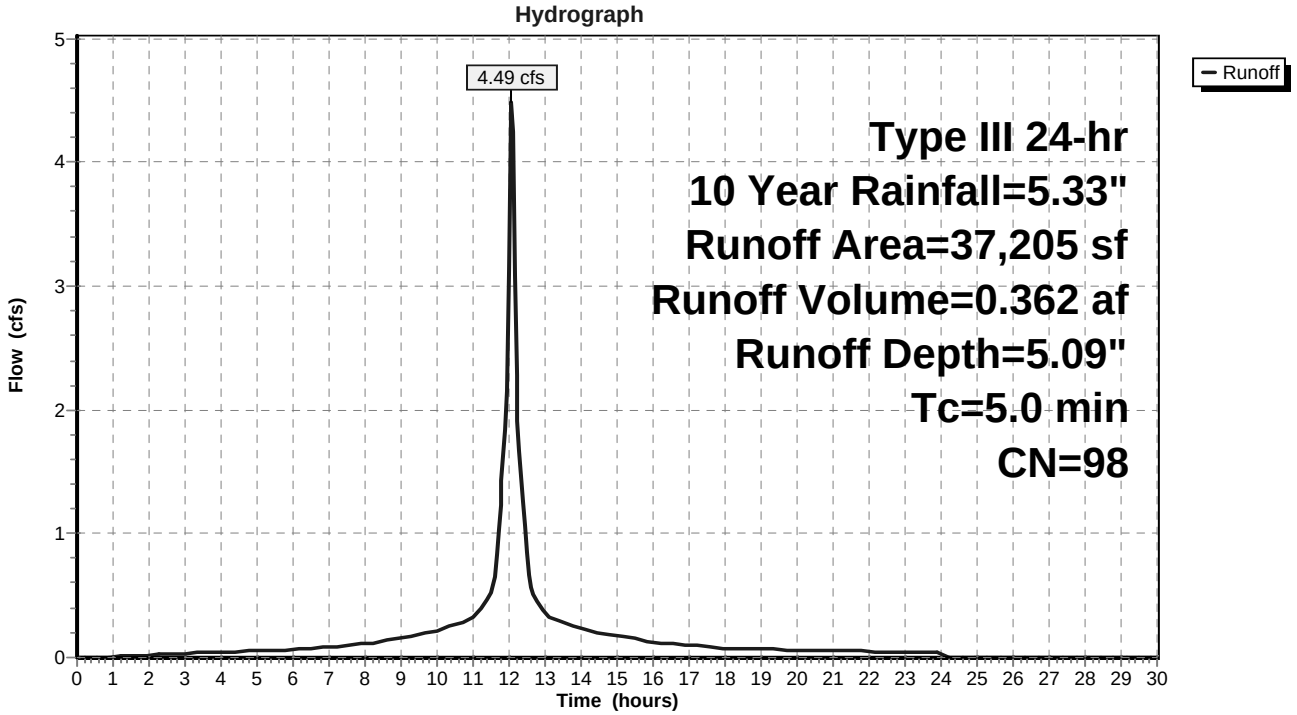
Runoff = 4.49 cfs @ 12.07 hrs, Volume= 0.362 af, Depth= 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus

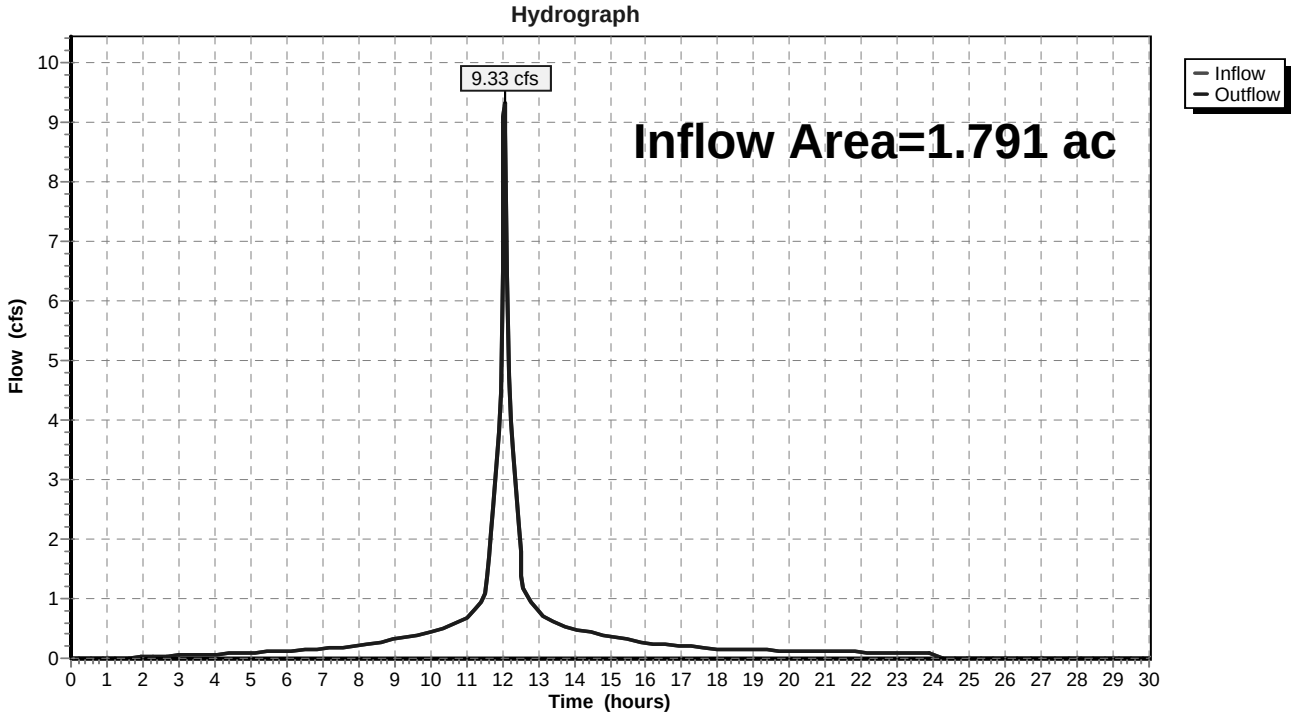


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 94.29% Impervious, Inflow Depth = 4.97" for 10 Year event
Inflow = 9.33 cfs @ 12.07 hrs, Volume= 0.742 af
Outflow = 9.33 cfs @ 12.07 hrs, Volume= 0.742 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



Summary for Subcatchment E-1: Site to Brook

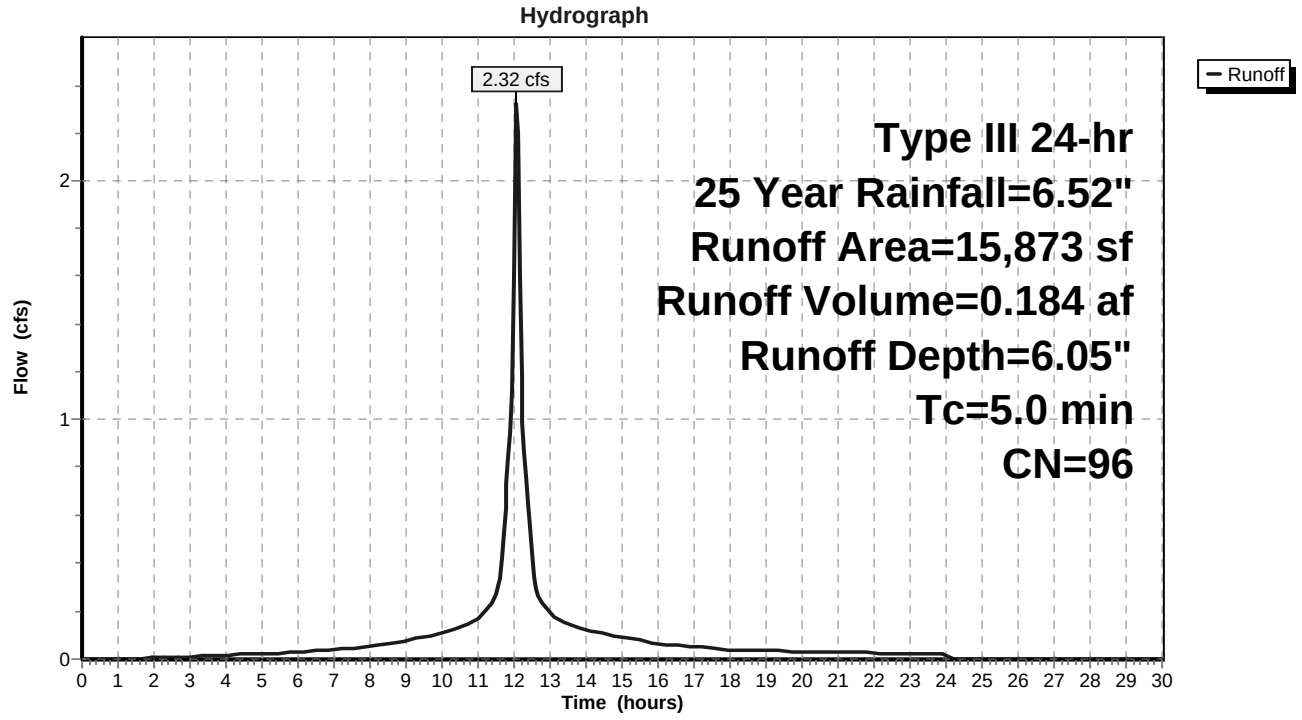
Runoff = 2.32 cfs @ 12.07 hrs, Volume= 0.184 af, Depth= 6.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
13,777	98	Paved parking, HSG D
2,096	80	>75% Grass cover, Good, HSG D
15,873	96	Weighted Average
2,096		13.20% Pervious Area
13,777		86.80% Impervious Area

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

Subcatchment E-1: Site to Brook



Summary for Subcatchment E-2: Site to Brook

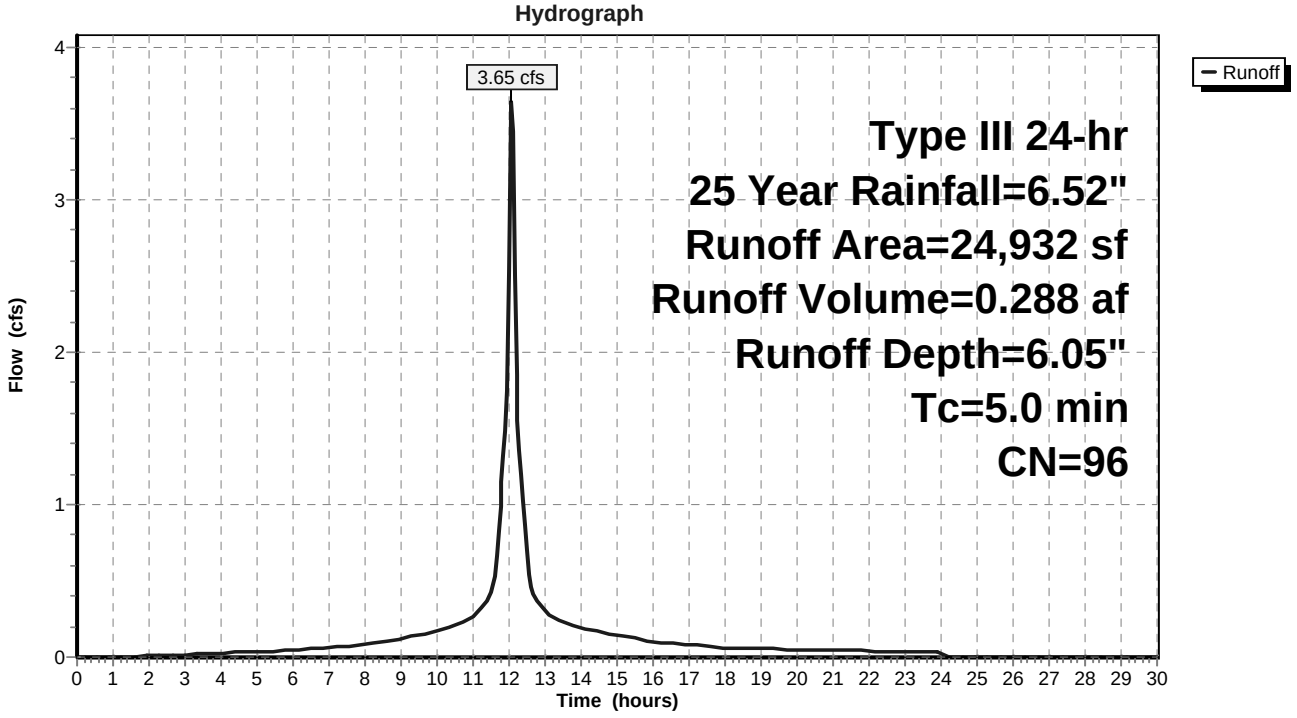
Runoff = 3.65 cfs @ 12.07 hrs, Volume= 0.288 af, Depth= 6.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
22,573	98	Paved parking, HSG D
2,359	80	>75% Grass cover, Good, HSG D
24,932	96	Weighted Average
2,359		9.46% Pervious Area
22,573		90.54% Impervious Area

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

Subcatchment E-2: Site to Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

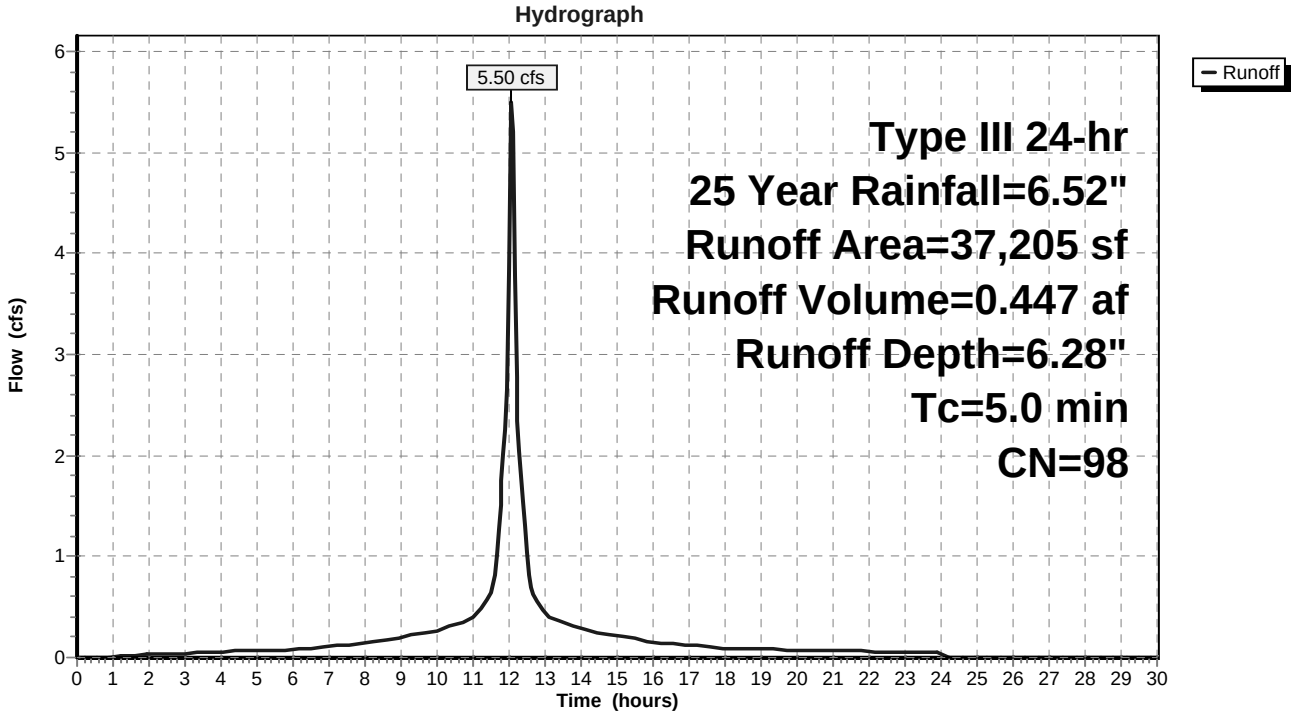
Runoff = 5.50 cfs @ 12.07 hrs, Volume= 0.447 af, Depth= 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus

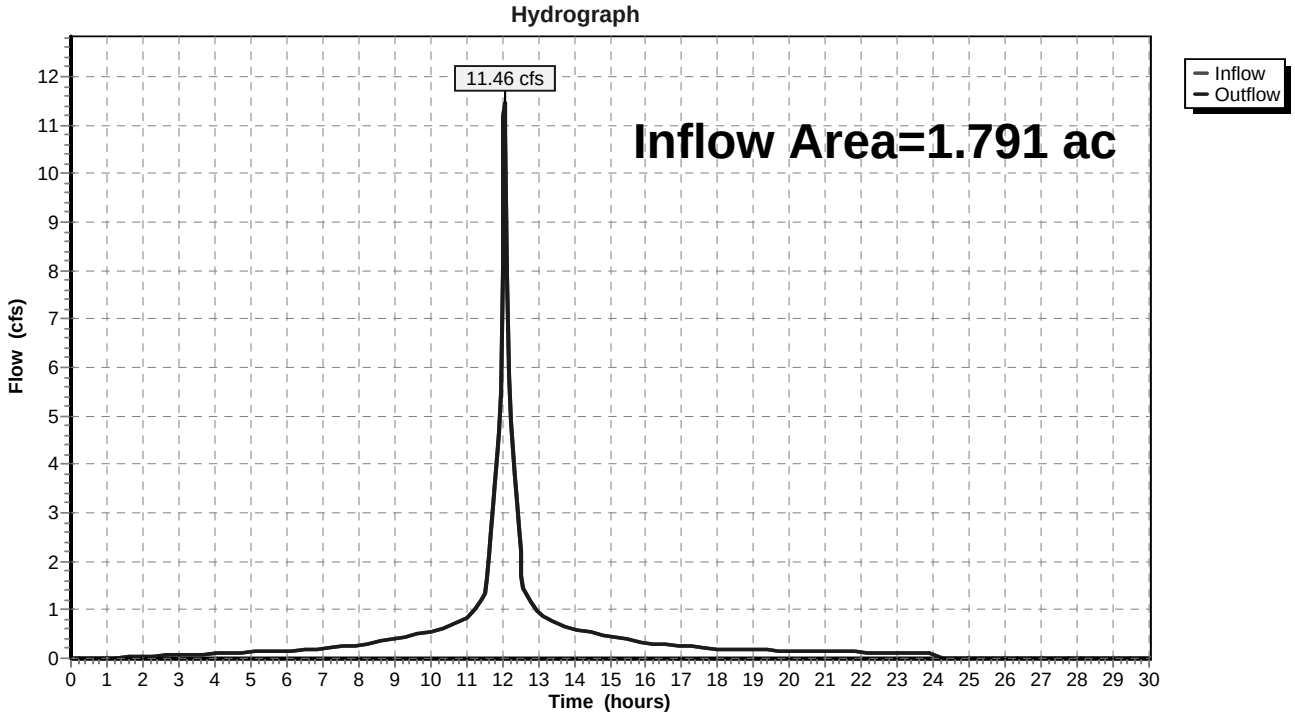


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 94.29% Impervious, Inflow Depth = 6.16" for 25 Year event
Inflow = 11.46 cfs @ 12.07 hrs, Volume= 0.919 af
Outflow = 11.46 cfs @ 12.07 hrs, Volume= 0.919 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



Summary for Subcatchment E-1: Site to Brook

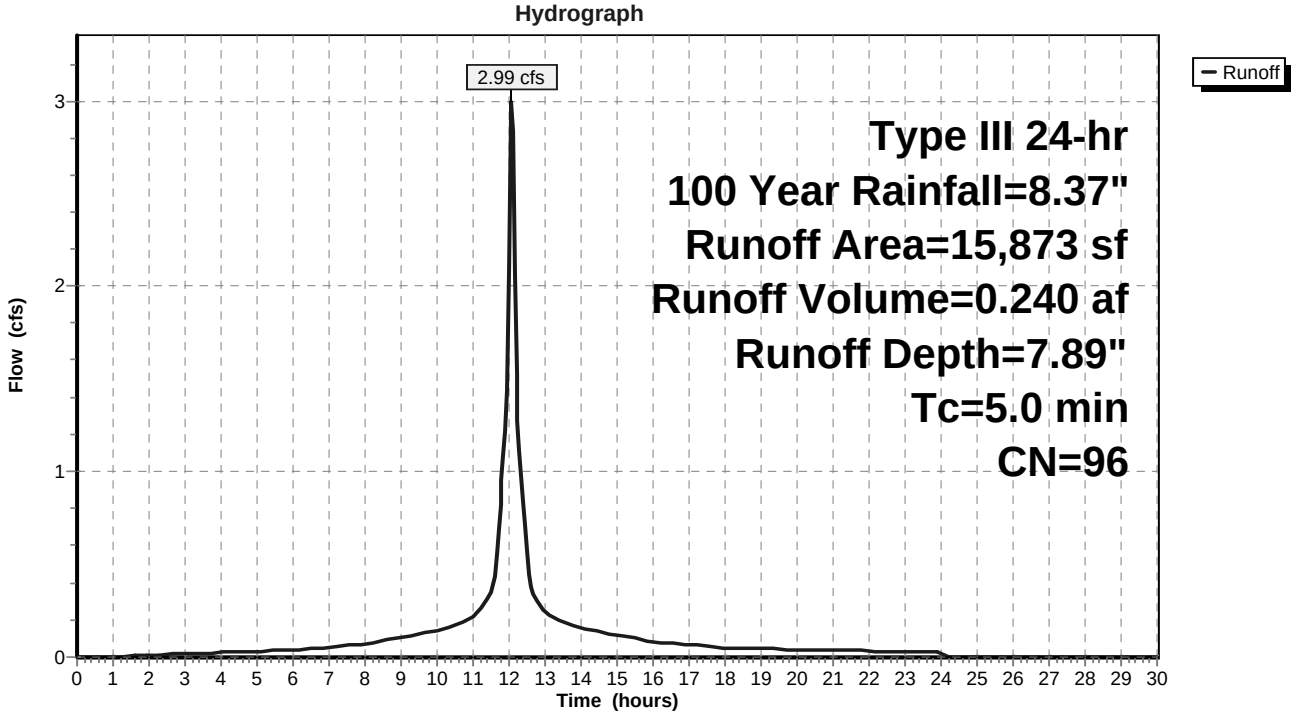
Runoff = 2.99 cfs @ 12.07 hrs, Volume= 0.240 af, Depth= 7.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
13,777	98	Paved parking, HSG D
2,096	80	>75% Grass cover, Good, HSG D
15,873	96	Weighted Average
2,096		13.20% Pervious Area
13,777		86.80% Impervious Area

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

Subcatchment E-1: Site to Brook



Summary for Subcatchment E-2: Site to Brook

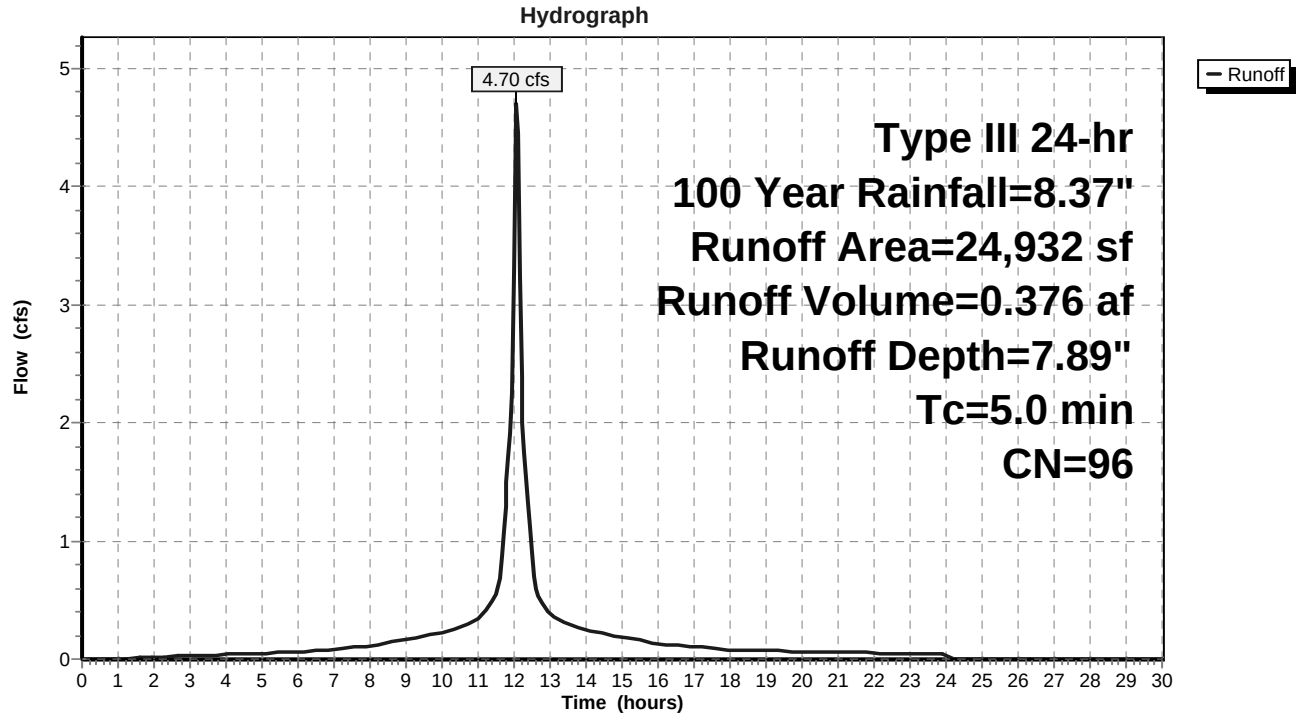
Runoff = 4.70 cfs @ 12.07 hrs, Volume= 0.376 af, Depth= 7.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
22,573	98	Paved parking, HSG D
2,359	80	>75% Grass cover, Good, HSG D
24,932	96	Weighted Average
2,359		9.46% Pervious Area
22,573		90.54% Impervious Area

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

Subcatchment E-2: Site to Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

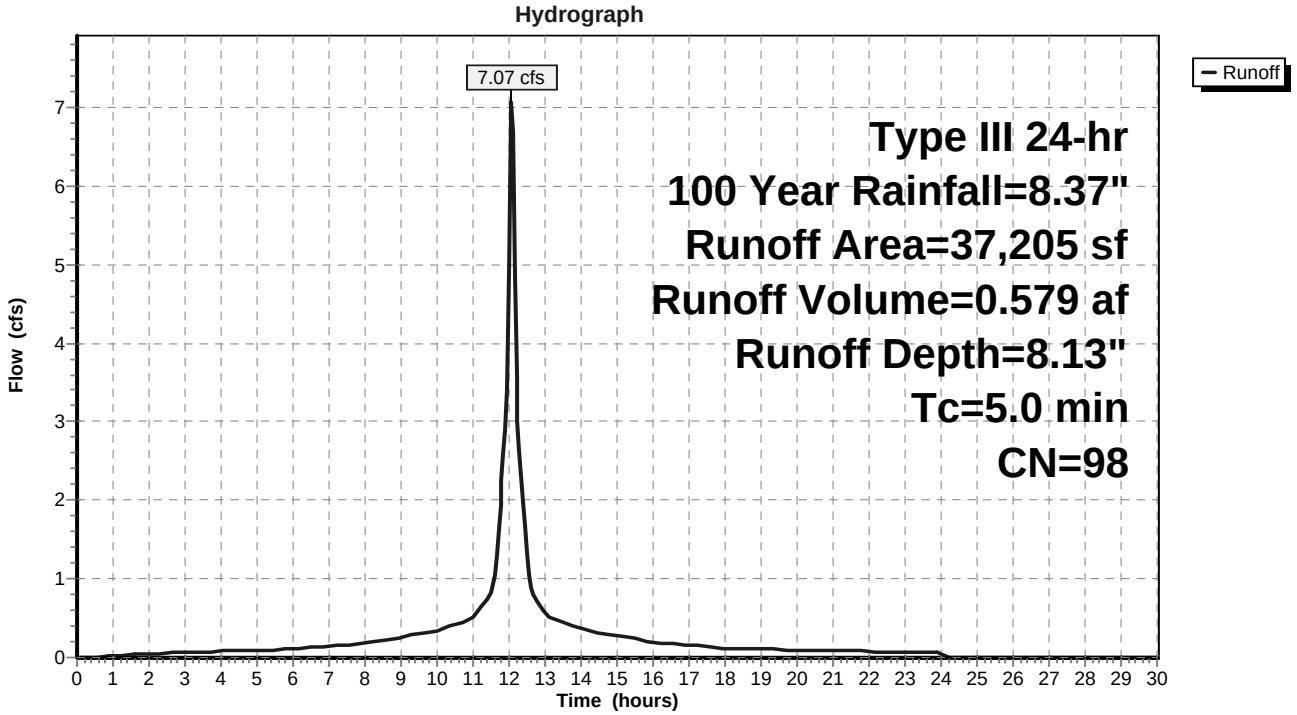
Runoff = 7.07 cfs @ 12.07 hrs, Volume= 0.579 af, Depth= 8.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus

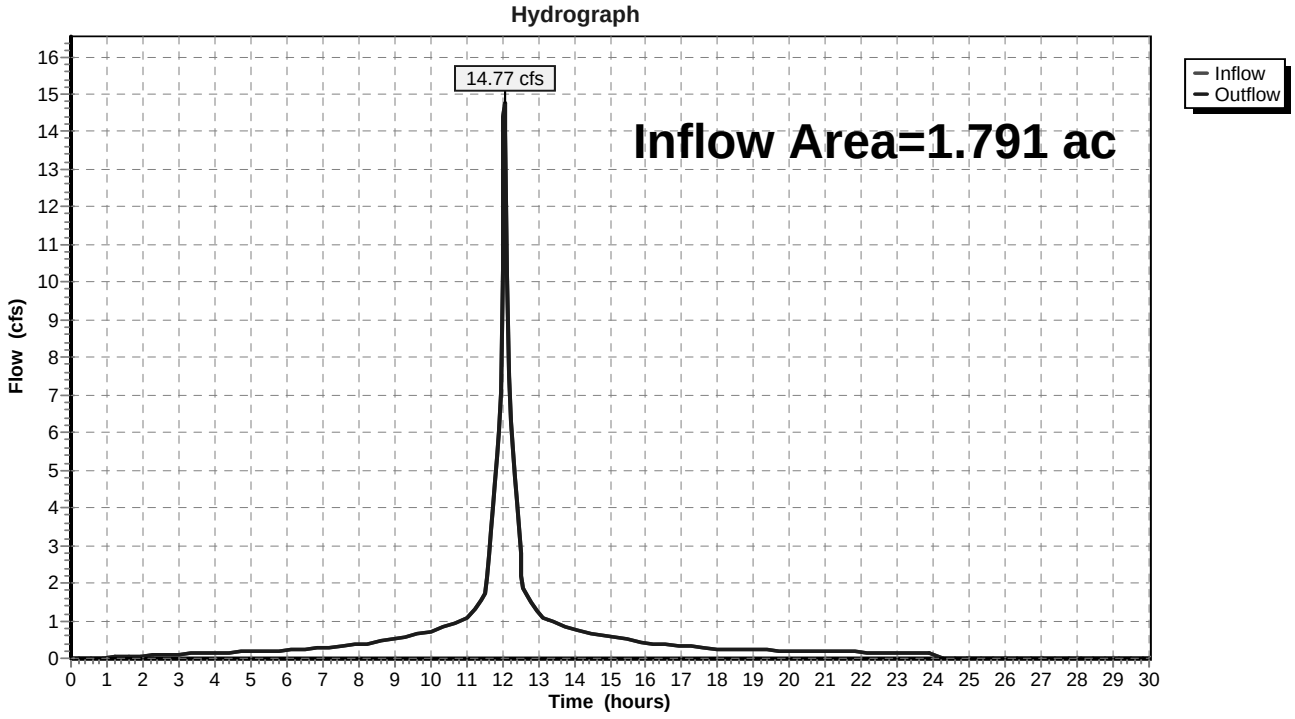


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 94.29% Impervious, Inflow Depth = 8.00" for 100 Year event
Inflow = 14.77 cfs @ 12.07 hrs, Volume= 1.195 af
Outflow = 14.77 cfs @ 12.07 hrs, Volume= 1.195 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



S-1428

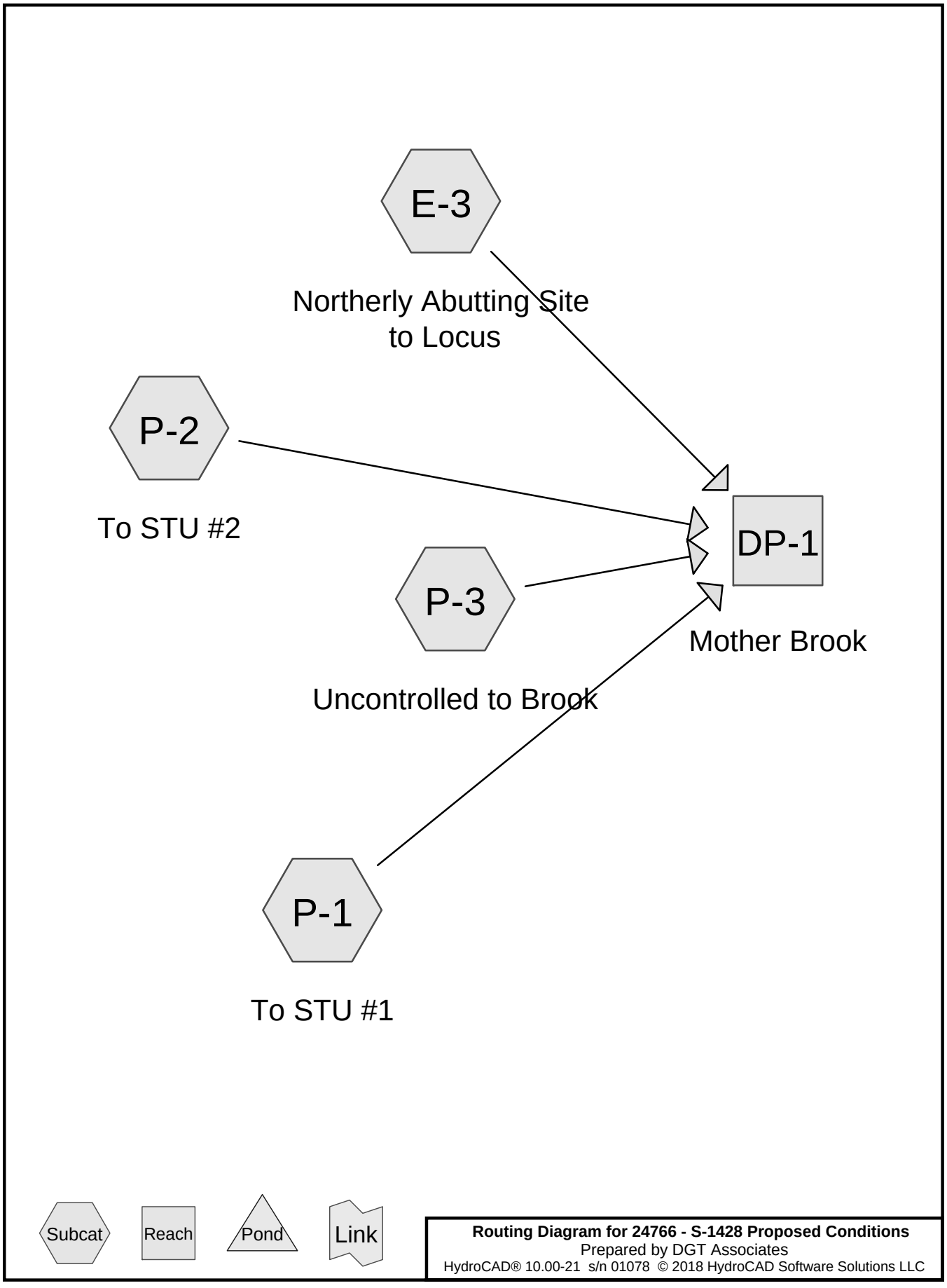
SECTION 4

Proposed Conditions Stormwater Model showing Stormwater Flows and Flood Routing Computations using HydroCAD version 10.00

for

1550 River Street

Hyde Park, Massachusetts 02136



Routing Diagram for 24766 - S-1428 Proposed Conditions
Prepared by DGT Associates

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.116	80	>75% Grass cover, Good, HSG D (P-3)
1.675	98	Paved parking, HSG D (E-3, P-1, P-2)
1.791	**97**	**TOTAL AREA**

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=3.18"
Tc=5.0 min CN=98 Runoff=2.85 cfs 0.226 af

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth=3.18"
Tc=5.0 min CN=98 Runoff=1.17 cfs 0.092 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth=3.18"
Tc=5.0 min CN=98 Runoff=1.57 cfs 0.125 af

Subcatchment P-3: Uncontrolled to Brook Runoff Area=5,063 sf 0.00% Impervious Runoff Depth=1.57"
Tc=5.0 min CN=80 Runoff=0.21 cfs 0.015 af

Reach DP-1: Mother Brook Inflow=5.80 cfs 0.458 af
Outflow=5.80 cfs 0.458 af

Total Runoff Area = 1.791 ac Runoff Volume = 0.458 af Average Runoff Depth = 3.07"
6.49% Pervious = 0.116 ac 93.51% Impervious = 1.675 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=5.09"
Tc=5.0 min CN=98 Runoff=4.49 cfs 0.362 af

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth=5.09"
Tc=5.0 min CN=98 Runoff=1.83 cfs 0.148 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth=5.09"
Tc=5.0 min CN=98 Runoff=2.47 cfs 0.200 af

Subcatchment P-3: Uncontrolled to Brook Runoff Area=5,063 sf 0.00% Impervious Runoff Depth=3.18"
Tc=5.0 min CN=80 Runoff=0.43 cfs 0.031 af

Reach DP-1: Mother Brook Inflow=9.23 cfs 0.742 af
Outflow=9.23 cfs 0.742 af

Total Runoff Area = 1.791 ac Runoff Volume = 0.742 af Average Runoff Depth = 4.97"
6.49% Pervious = 0.116 ac 93.51% Impervious = 1.675 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=6.28"
Tc=5.0 min CN=98 Runoff=5.50 cfs 0.447 af

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth=6.28"
Tc=5.0 min CN=98 Runoff=2.25 cfs 0.183 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth=6.28"
Tc=5.0 min CN=98 Runoff=3.03 cfs 0.247 af

Subcatchment P-3: Uncontrolled to Brook Runoff Area=5,063 sf 0.00% Impervious Runoff Depth=4.25"
Tc=5.0 min CN=80 Runoff=0.58 cfs 0.041 af

Reach DP-1: Mother Brook Inflow=11.35 cfs 0.918 af
Outflow=11.35 cfs 0.918 af

Total Runoff Area = 1.791 ac Runoff Volume = 0.918 af Average Runoff Depth = 6.15"
6.49% Pervious = 0.116 ac 93.51% Impervious = 1.675 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E-3: Northerly Abutting Runoff Area=37,205 sf 100.00% Impervious Runoff Depth=8.13"
Tc=5.0 min CN=98 Runoff=7.07 cfs 0.579 af

Subcatchment P-1: To STU #1 Runoff Area=15,215 sf 100.00% Impervious Runoff Depth=8.13"
Tc=5.0 min CN=98 Runoff=2.89 cfs 0.237 af

Subcatchment P-2: To STU #2 Runoff Area=20,527 sf 100.00% Impervious Runoff Depth=8.13"
Tc=5.0 min CN=98 Runoff=3.90 cfs 0.319 af

Subcatchment P-3: Uncontrolled to Brook Runoff Area=5,063 sf 0.00% Impervious Runoff Depth=5.97"
Tc=5.0 min CN=80 Runoff=0.80 cfs 0.058 af

Reach DP-1: Mother Brook Inflow=14.66 cfs 1.192 af
Outflow=14.66 cfs 1.192 af

Total Runoff Area = 1.791 ac Runoff Volume = 1.192 af Average Runoff Depth = 7.99"
6.49% Pervious = 0.116 ac 93.51% Impervious = 1.675 ac

Summary for Subcatchment E-3: Northerly Abutting Site to Locus

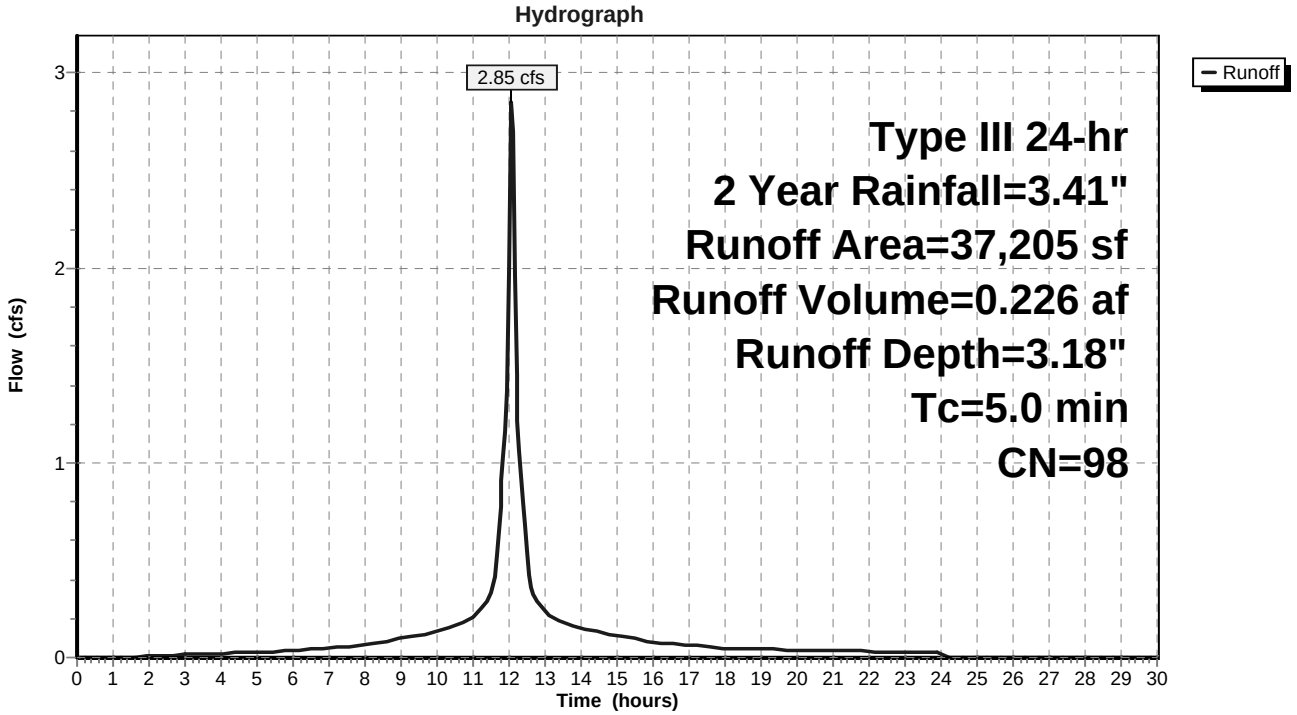
Runoff = 2.85 cfs @ 12.07 hrs, Volume= 0.226 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus



Summary for Subcatchment P-1: To STU #1

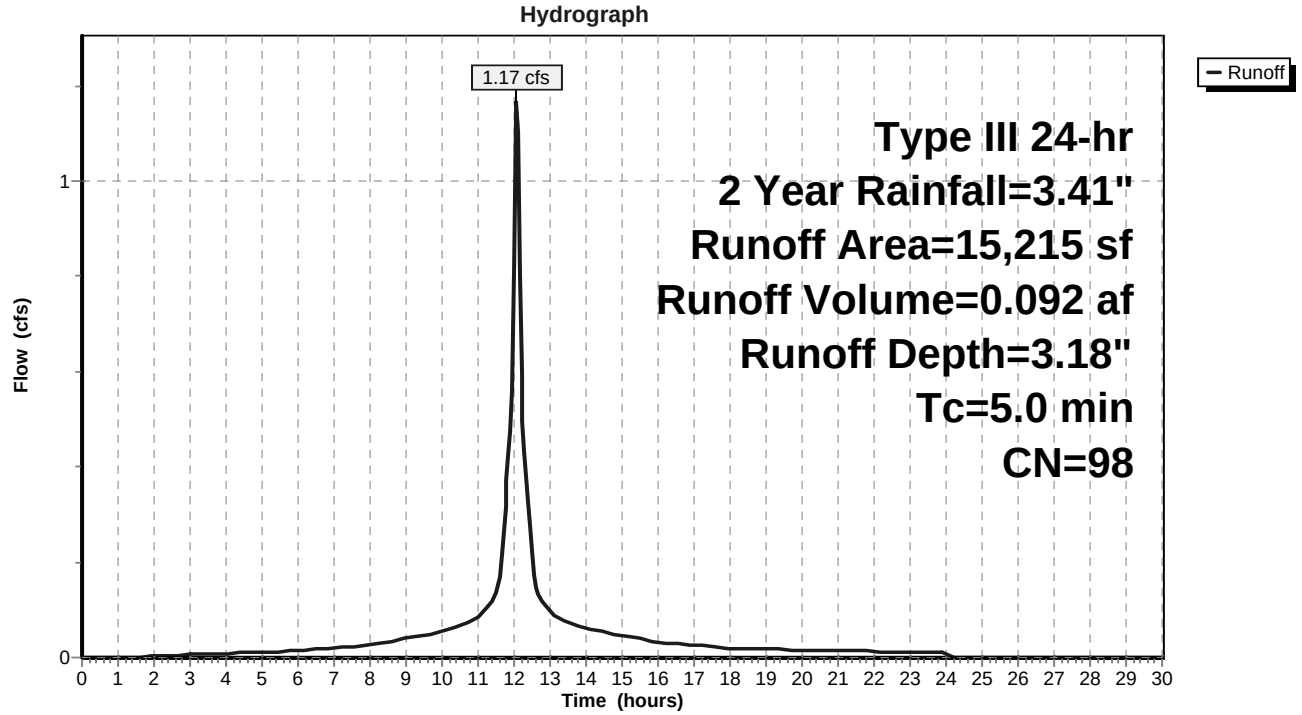
Runoff = 1.17 cfs @ 12.07 hrs, Volume= 0.092 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
15,215	98	Paved parking, HSG D
15,215		100.00% Impervious Area

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

Subcatchment P-1: To STU #1



Summary for Subcatchment P-2: To STU #2

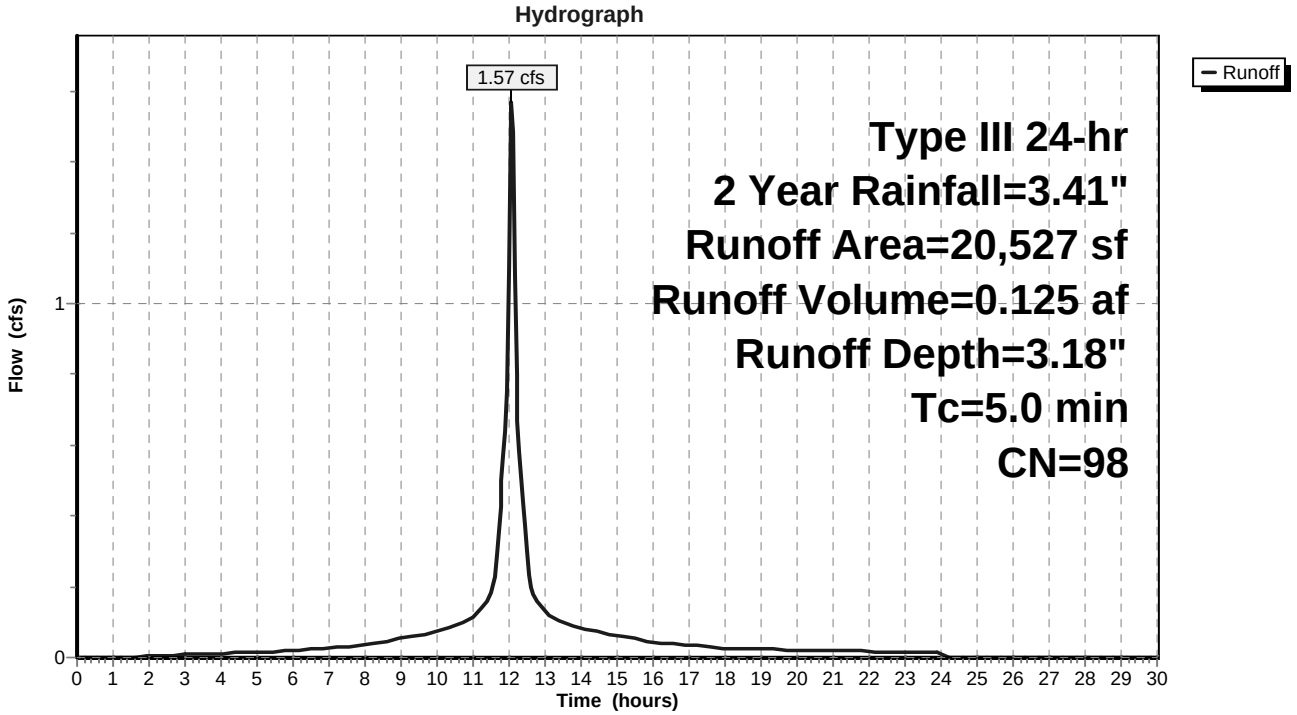
Runoff = 1.57 cfs @ 12.07 hrs, Volume= 0.125 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
20,527	98	Paved parking, HSG D
20,527		100.00% Impervious Area

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

Subcatchment P-2: To STU #2



Summary for Subcatchment P-3: Uncontrolled to Brook

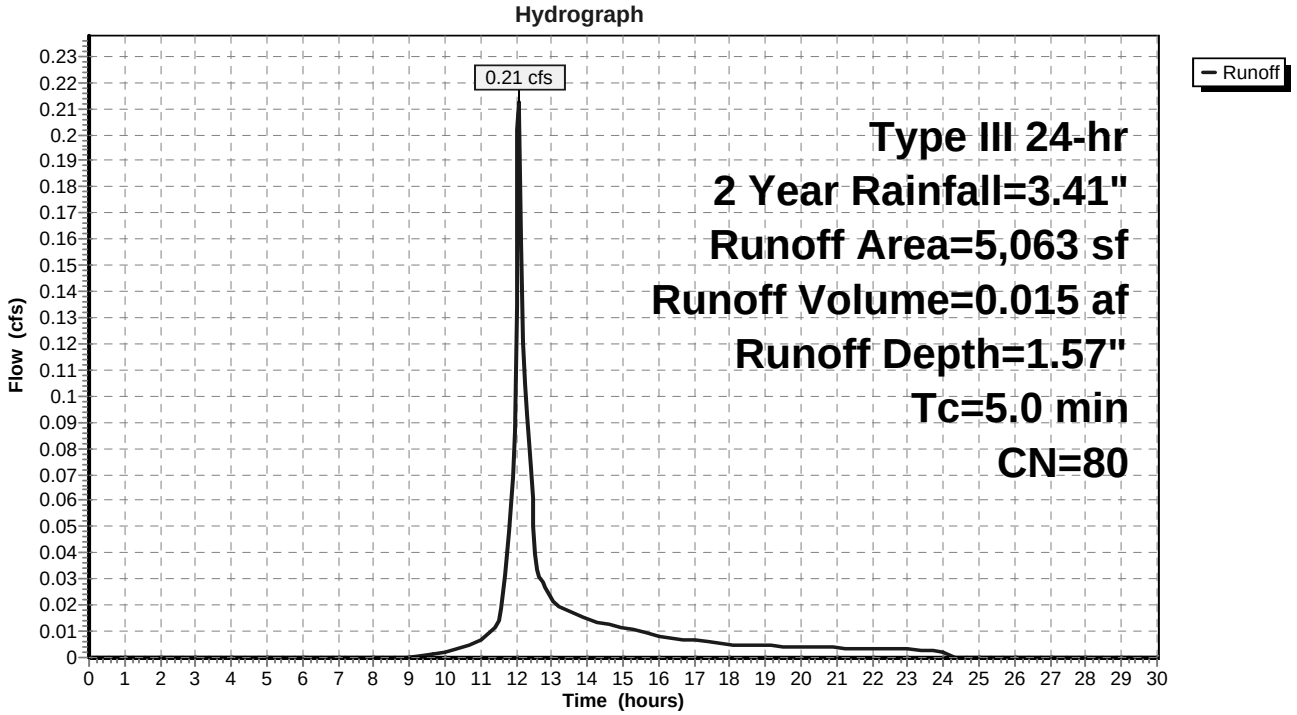
Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.015 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Rainfall=3.41"

Area (sf)	CN	Description
5,063	80	>75% Grass cover, Good, HSG D
5,063		100.00% Pervious Area

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

Subcatchment P-3: Uncontrolled to Brook

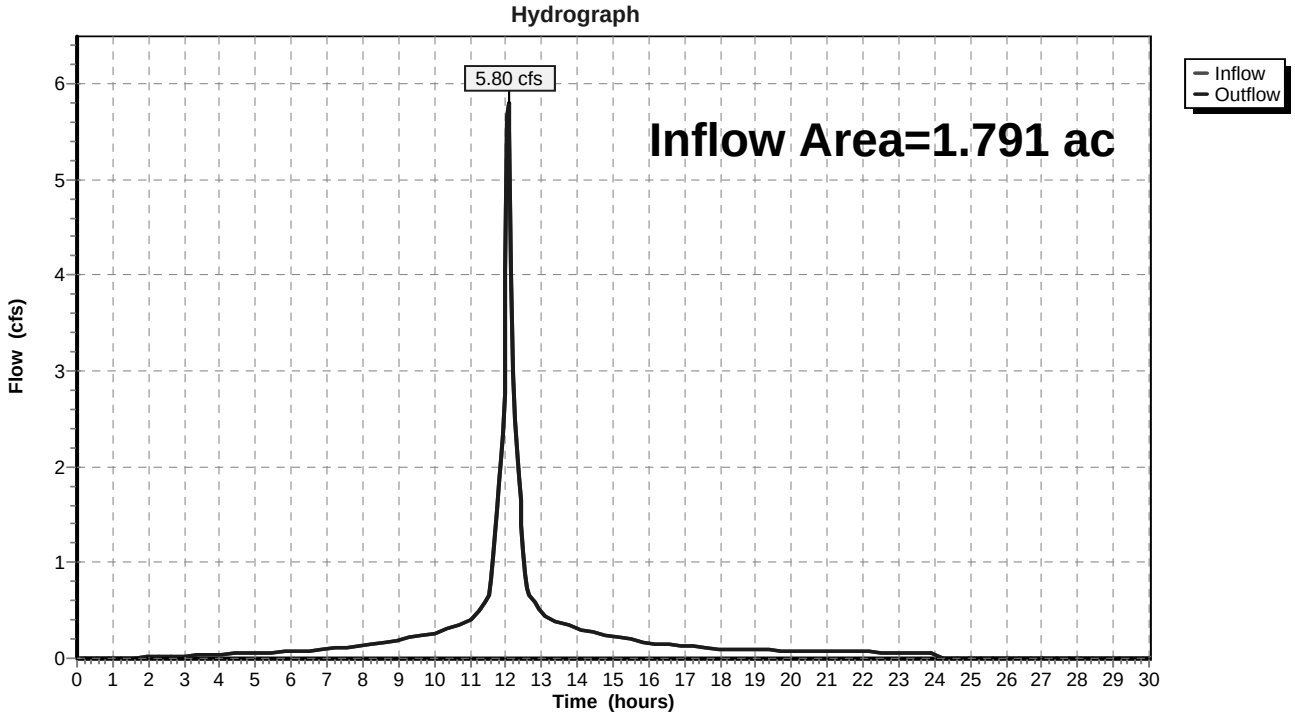


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 93.51% Impervious, Inflow Depth = 3.07" for 2 Year event
Inflow = 5.80 cfs @ 12.07 hrs, Volume= 0.458 af
Outflow = 5.80 cfs @ 12.07 hrs, Volume= 0.458 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

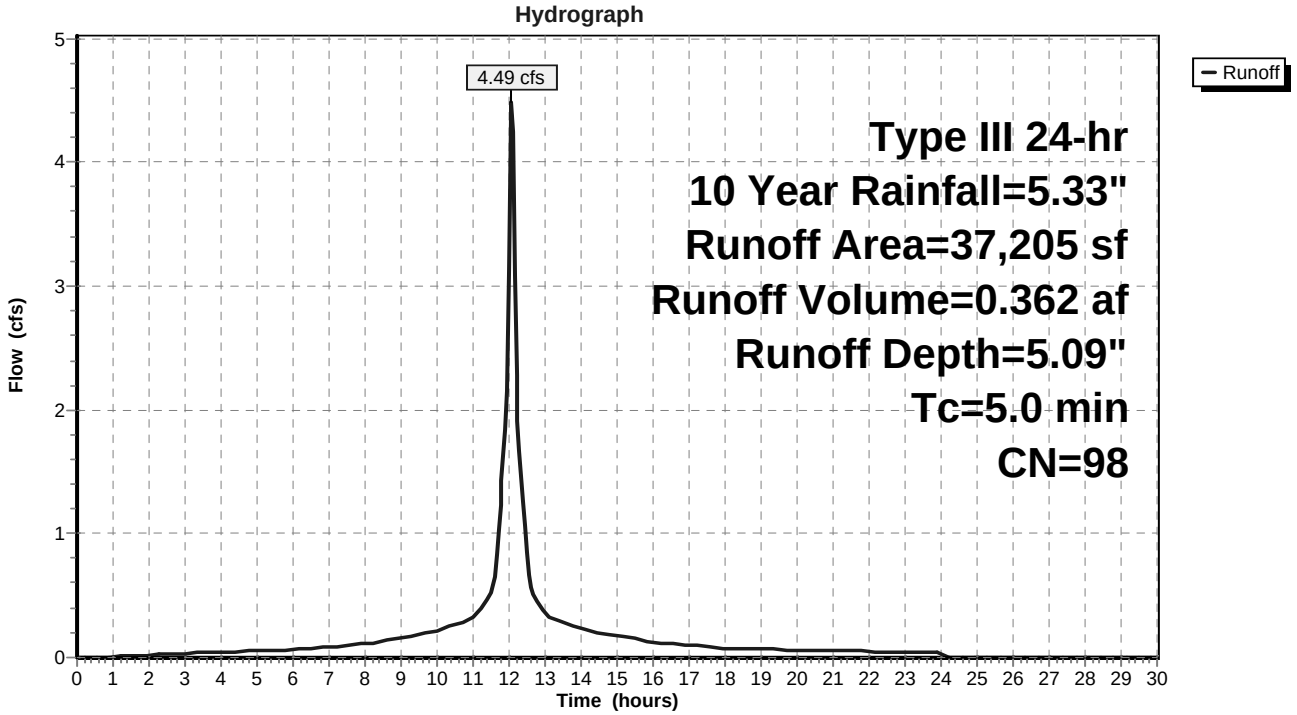
Runoff = 4.49 cfs @ 12.07 hrs, Volume= 0.362 af, Depth= 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus



Summary for Subcatchment P-1: To STU #1

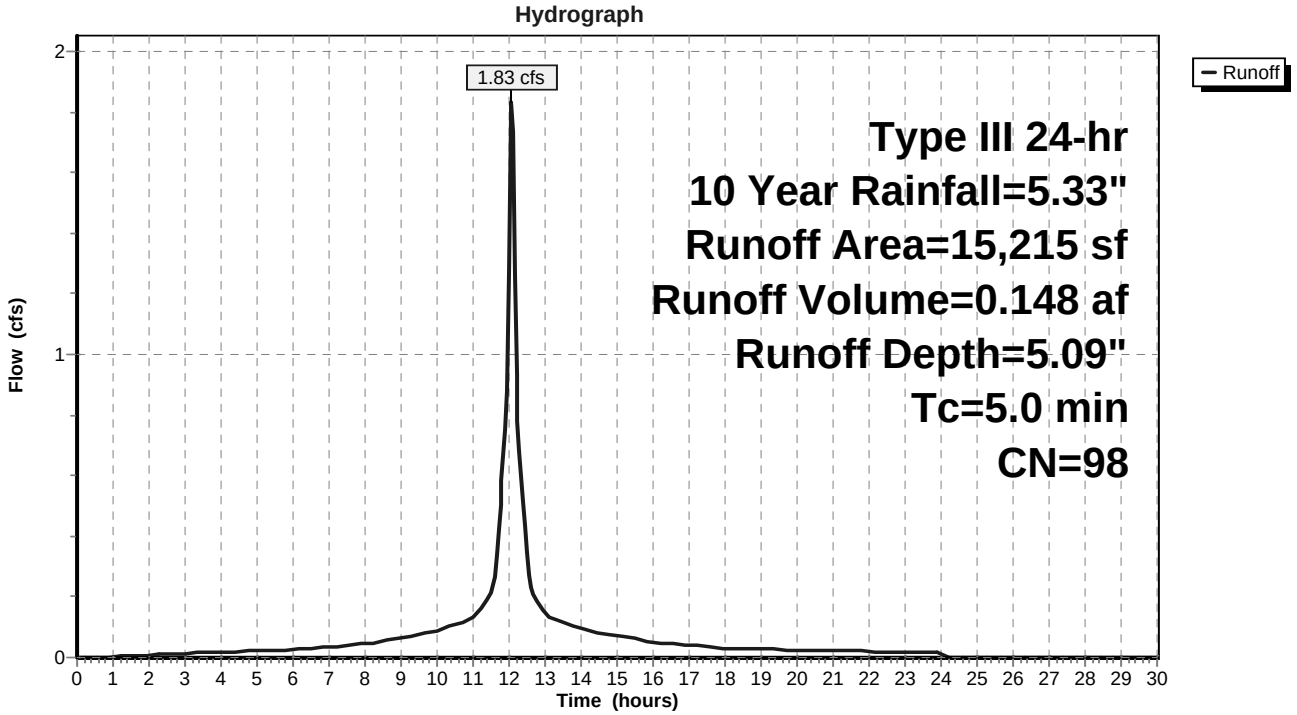
Runoff = 1.83 cfs @ 12.07 hrs, Volume= 0.148 af, Depth= 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
15,215	98	Paved parking, HSG D
15,215		100.00% Impervious Area

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

Subcatchment P-1: To STU #1



Summary for Subcatchment P-2: To STU #2

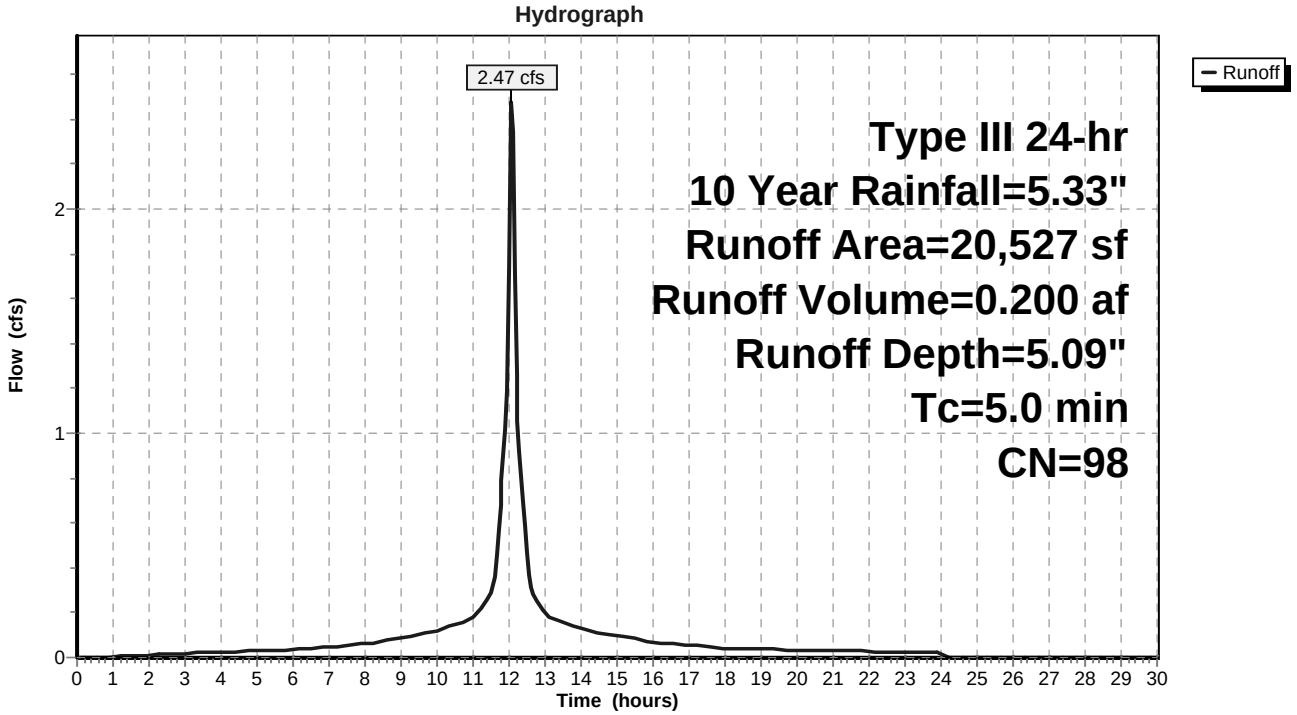
Runoff = 2.47 cfs @ 12.07 hrs, Volume= 0.200 af, Depth= 5.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
20,527	98	Paved parking, HSG D
20,527		100.00% Impervious Area

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

Subcatchment P-2: To STU #2



Summary for Subcatchment P-3: Uncontrolled to Brook

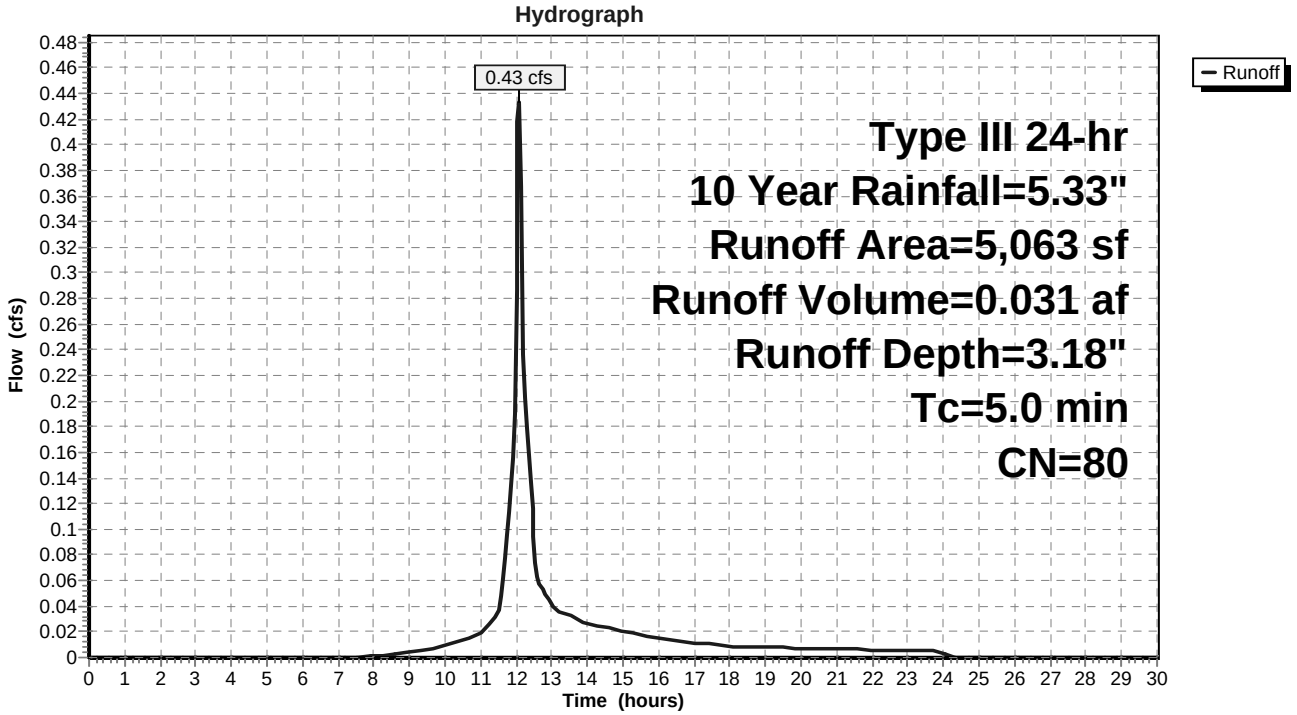
Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.031 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Rainfall=5.33"

Area (sf)	CN	Description
5,063	80	>75% Grass cover, Good, HSG D
5,063		100.00% Pervious Area

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

Subcatchment P-3: Uncontrolled to Brook

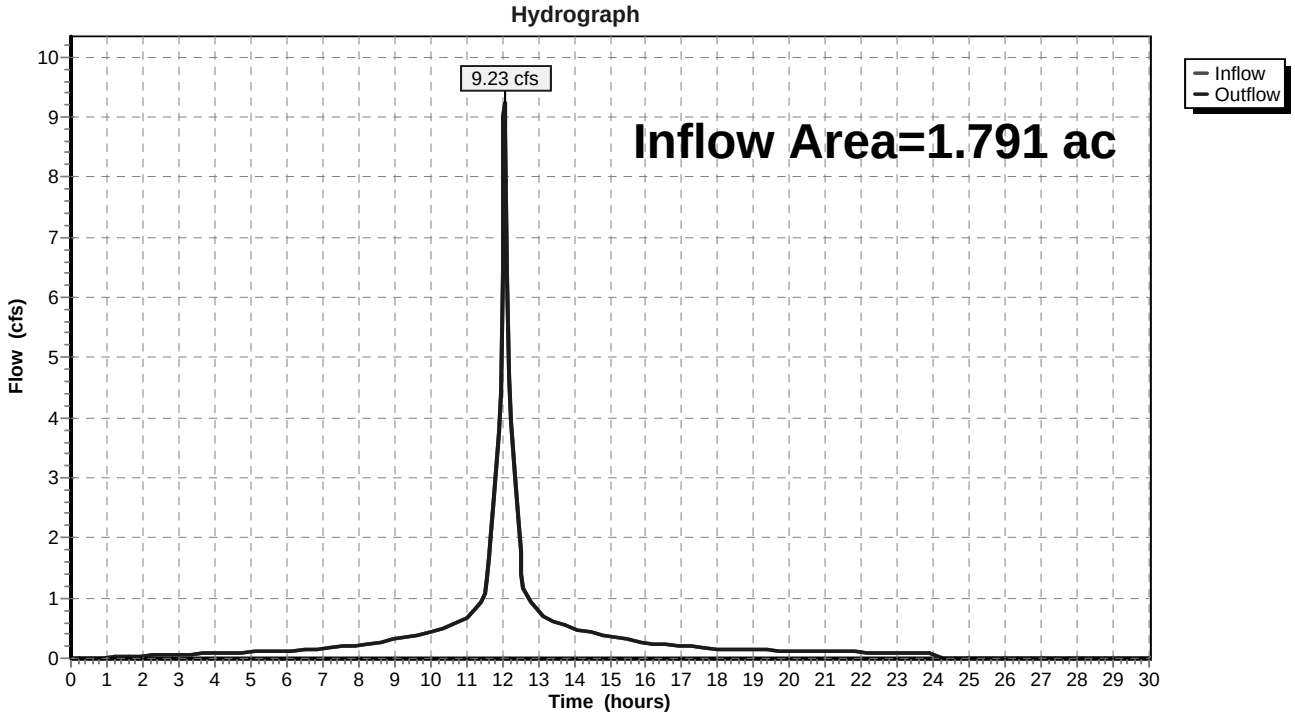


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 93.51% Impervious, Inflow Depth = 4.97" for 10 Year event
Inflow = 9.23 cfs @ 12.07 hrs, Volume= 0.742 af
Outflow = 9.23 cfs @ 12.07 hrs, Volume= 0.742 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

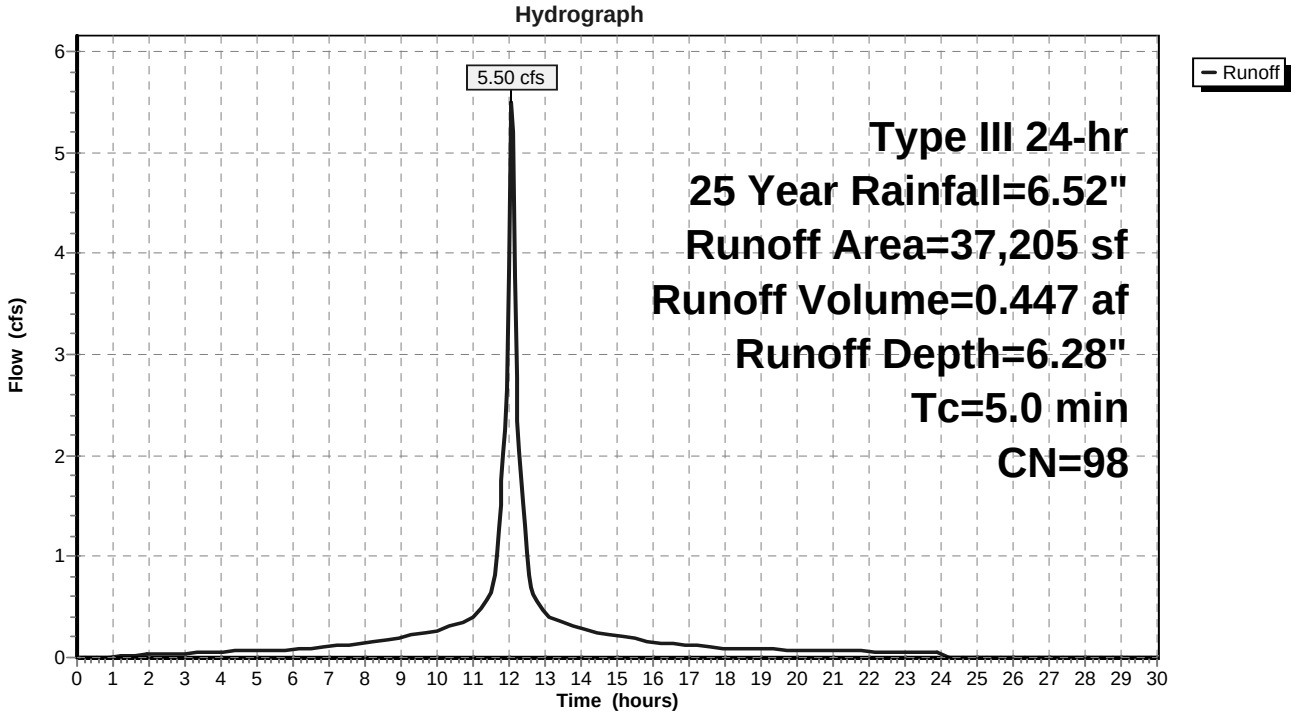
Runoff = 5.50 cfs @ 12.07 hrs, Volume= 0.447 af, Depth= 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus



Summary for Subcatchment P-1: To STU #1

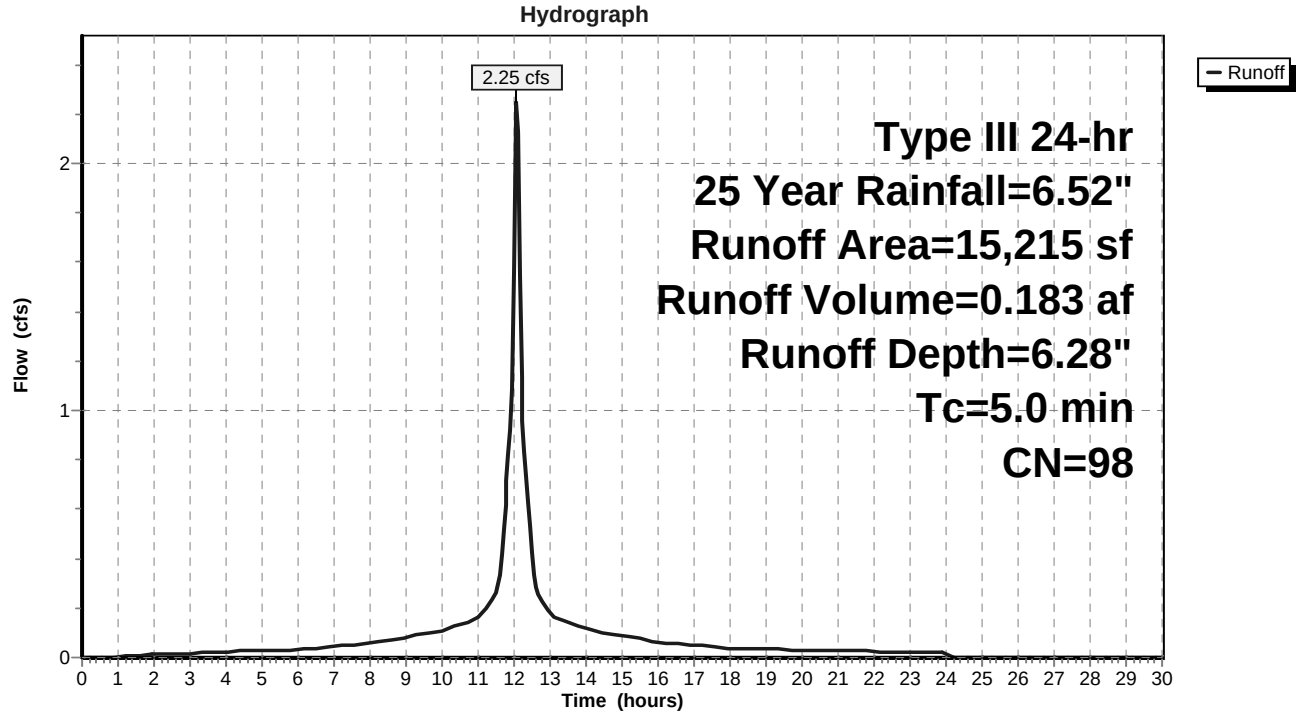
Runoff = 2.25 cfs @ 12.07 hrs, Volume= 0.183 af, Depth= 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
15,215	98	Paved parking, HSG D
15,215		100.00% Impervious Area

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

Subcatchment P-1: To STU #1



Summary for Subcatchment P-2: To STU #2

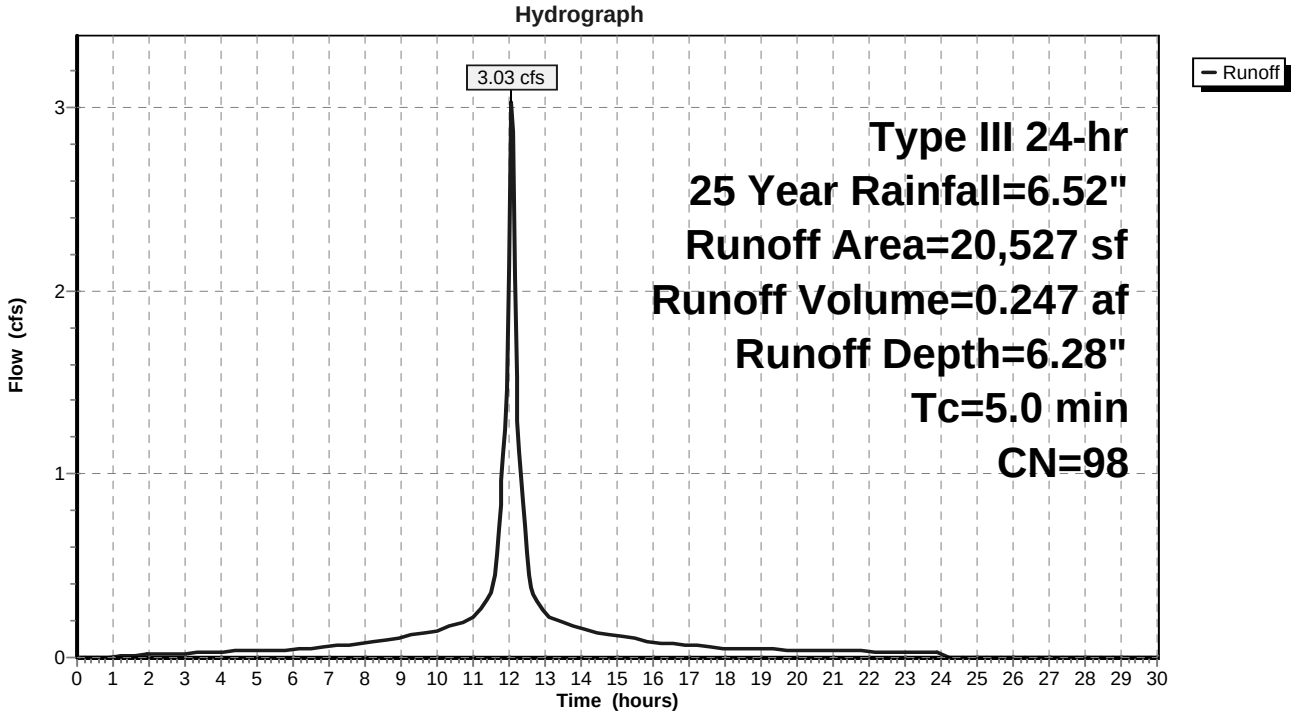
Runoff = 3.03 cfs @ 12.07 hrs, Volume= 0.247 af, Depth= 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
20,527	98	Paved parking, HSG D
20,527		100.00% Impervious Area

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

Subcatchment P-2: To STU #2



Summary for Subcatchment P-3: Uncontrolled to Brook

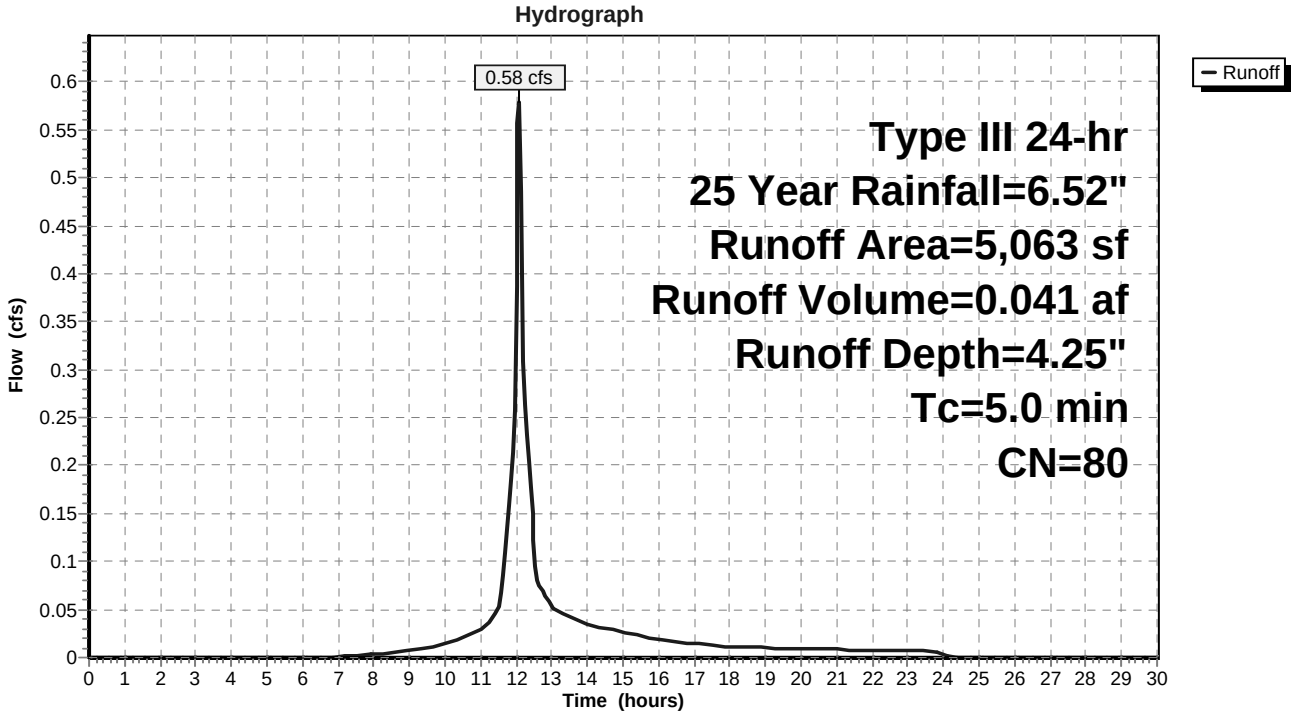
Runoff = 0.58 cfs @ 12.07 hrs, Volume= 0.041 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Year Rainfall=6.52"

Area (sf)	CN	Description
5,063	80	>75% Grass cover, Good, HSG D
5,063		100.00% Pervious Area

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

Subcatchment P-3: Uncontrolled to Brook

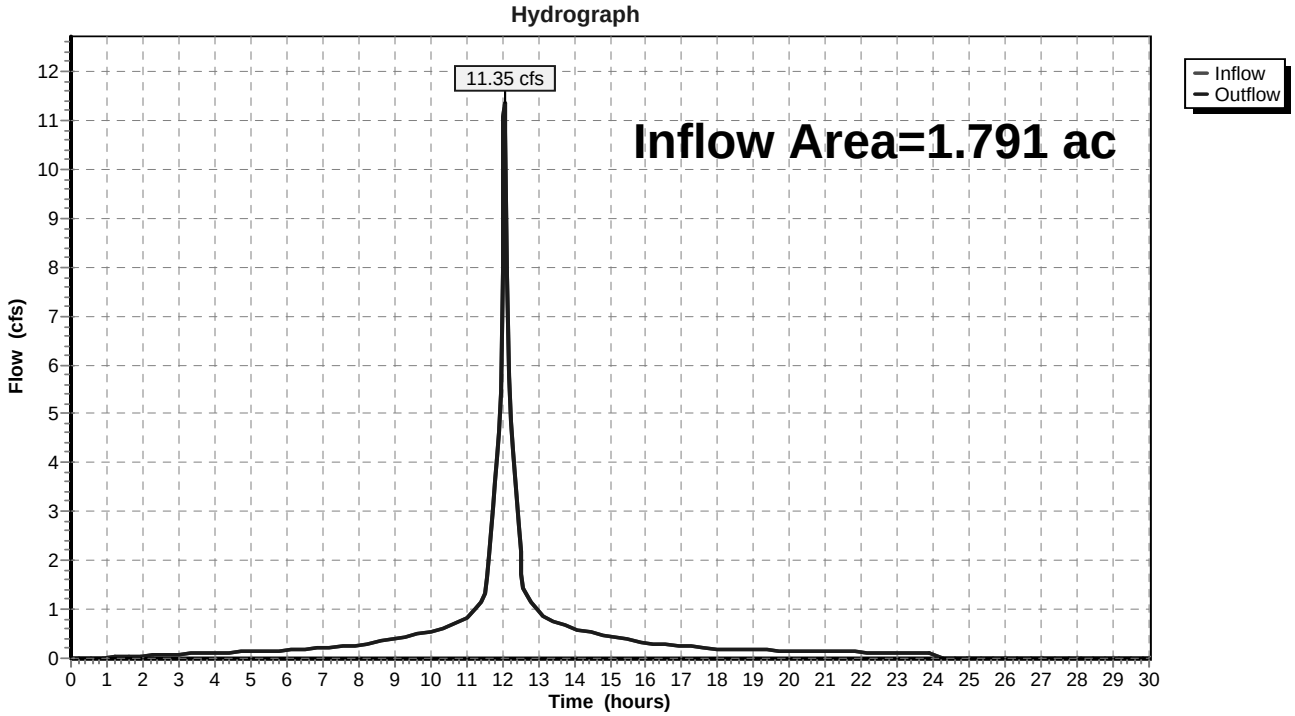


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 93.51% Impervious, Inflow Depth = 6.15" for 25 Year event
Inflow = 11.35 cfs @ 12.07 hrs, Volume= 0.918 af
Outflow = 11.35 cfs @ 12.07 hrs, Volume= 0.918 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



Summary for Subcatchment E-3: Northerly Abutting Site to Locus

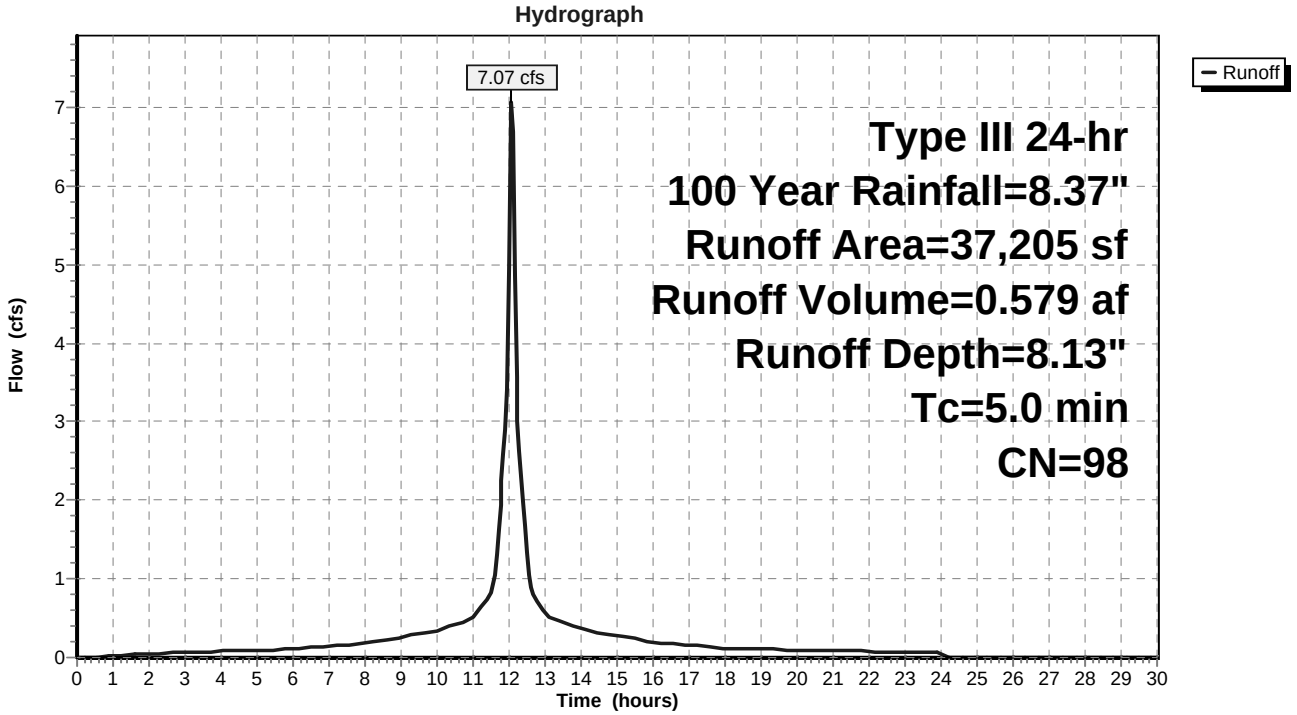
Runoff = 7.07 cfs @ 12.07 hrs, Volume= 0.579 af, Depth= 8.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
37,205	98	Paved parking, HSG D
37,205		100.00% Impervious Area

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

Subcatchment E-3: Northerly Abutting Site to Locus



Summary for Subcatchment P-1: To STU #1

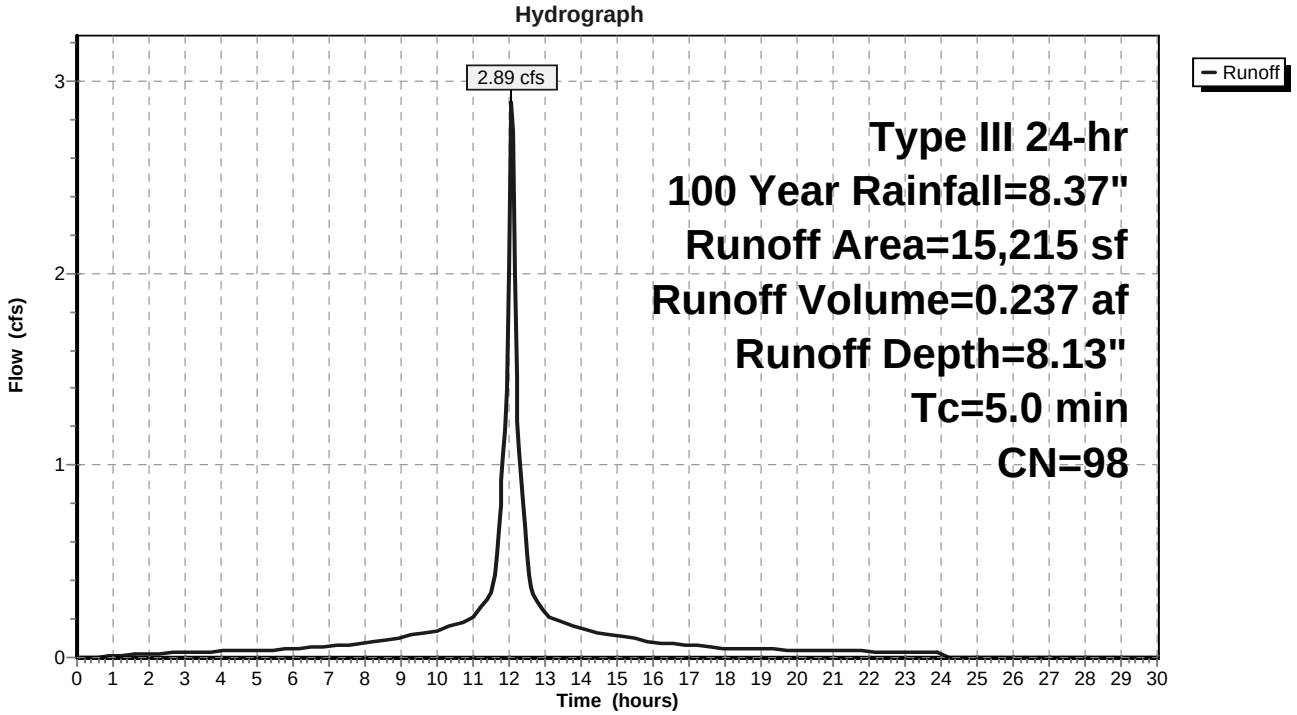
Runoff = 2.89 cfs @ 12.07 hrs, Volume= 0.237 af, Depth= 8.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
15,215	98	Paved parking, HSG D
15,215		100.00% Impervious Area

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

Subcatchment P-1: To STU #1



Summary for Subcatchment P-2: To STU #2

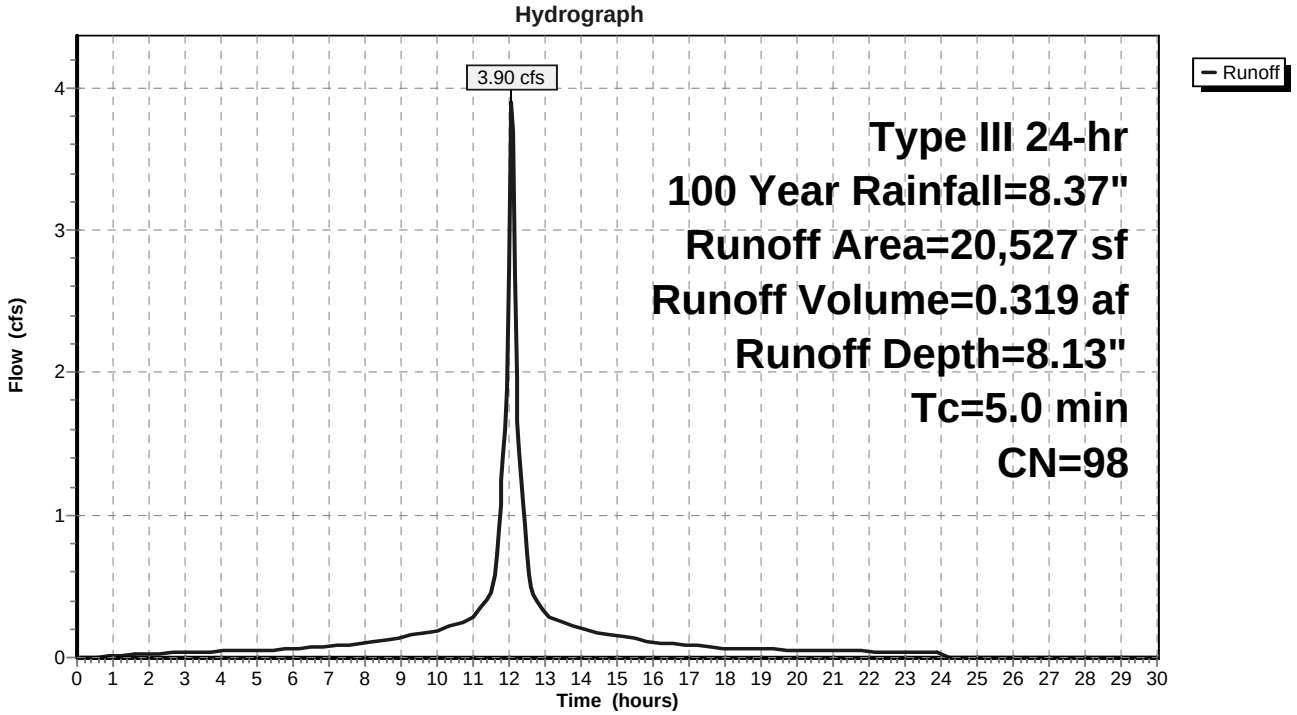
Runoff = 3.90 cfs @ 12.07 hrs, Volume= 0.319 af, Depth= 8.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
20,527	98	Paved parking, HSG D
20,527		100.00% Impervious Area

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

Subcatchment P-2: To STU #2



Summary for Subcatchment P-3: Uncontrolled to Brook

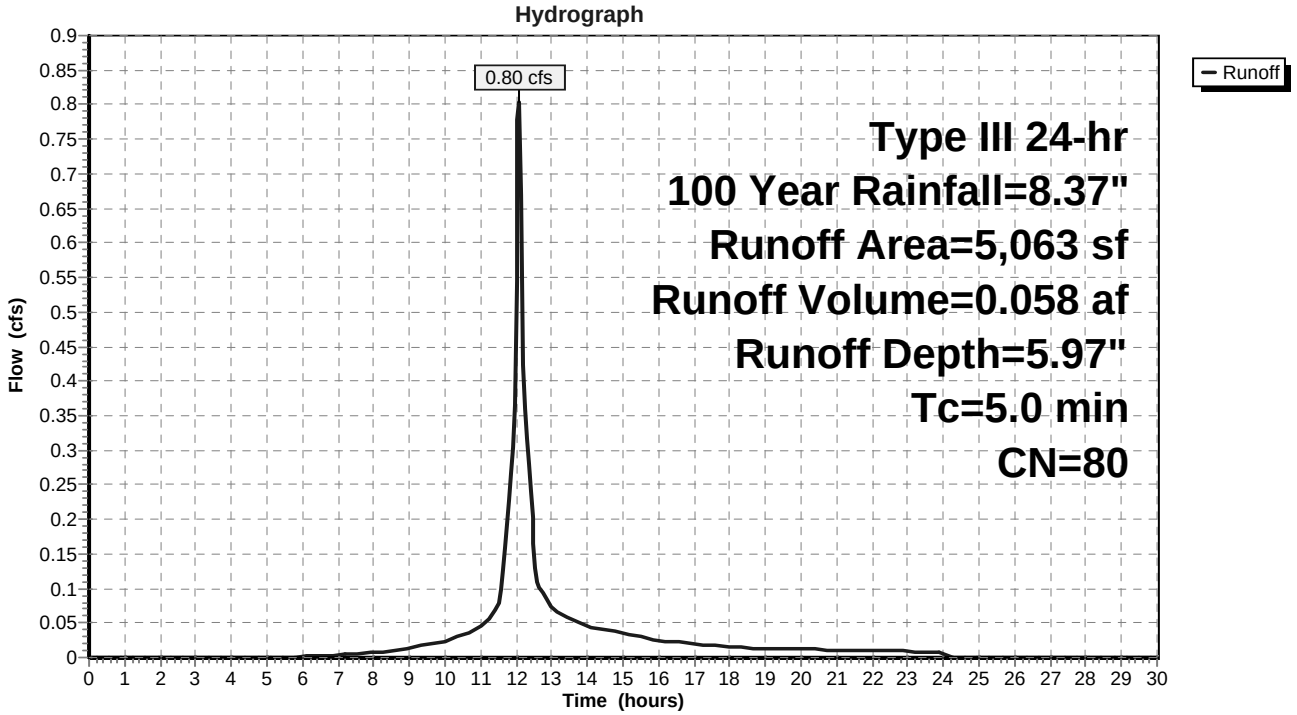
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 0.058 af, Depth= 5.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Year Rainfall=8.37"

Area (sf)	CN	Description
5,063	80	>75% Grass cover, Good, HSG D
5,063		100.00% Pervious Area

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

Subcatchment P-3: Uncontrolled to Brook

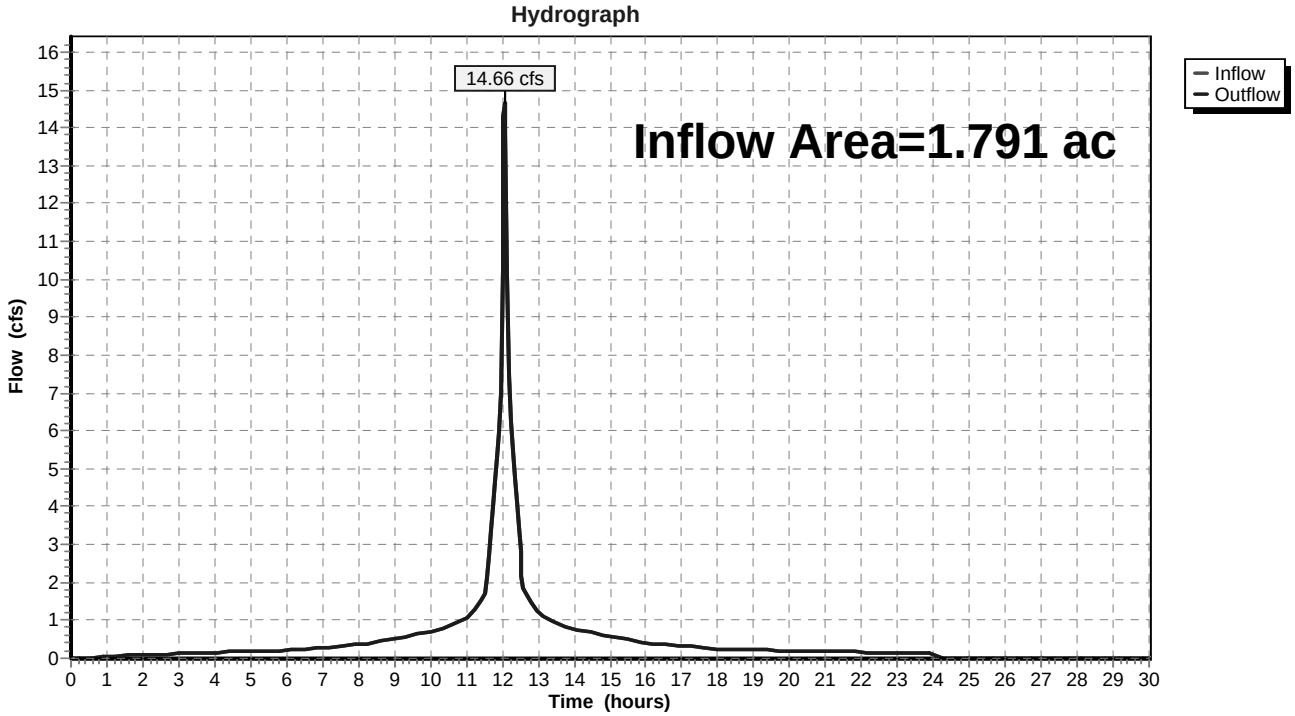


Summary for Reach DP-1: Mother Brook

Inflow Area = 1.791 ac, 93.51% Impervious, Inflow Depth = 7.99" for 100 Year event
Inflow = 14.66 cfs @ 12.07 hrs, Volume= 1.192 af
Outflow = 14.66 cfs @ 12.07 hrs, Volume= 1.192 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach DP-1: Mother Brook



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APPENDIX 1

NRCS Soil Data

for

1550 River Street
Hyde Park, Massachusetts 02136

Soil Map—Norfolk and Suffolk Counties, Massachusetts

Map Scale: 1:1,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 15, Sep 12, 2019

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

Date(s) aerial images were photographed: Aug 31, 2019—Sep 24, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
602	Urban land, 0 to 15 percent slopes	4.8	50.3%
623C	Woodbridge-Urban land complex, 3 to 15 percent slopes	0.1	0.9%
655	Udorthents, wet substratum	4.7	48.9%
Totals for Area of Interest		**9.6**	**100.0%**

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Norfolk and Suffolk Counties, Massachusetts

602—Urban land, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: vkyj
Mean annual precipitation: 32 to 50 inches

Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Urban land: 99 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting
Parent material: Excavated and filled land

Minor Components

Rock outcrops
Percent of map unit: 1 percent
Hydric soil rating: Unranked

623C—Woodbridge-Urban land complex, 3 to 15 percent slopes

Map Unit Setting
National map unit symbol: 2w68b
Elevation: 0 to 550 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Woodbridge and similar soils: 58 percent
Urban land: 28 percent
Minor components: 14 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge

Setting
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile
Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 18 inches: fine sandy loam

Bw2 - 18 to 30 inches: fine sandy loam
Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Paxton

Percent of map unit: 9 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury

Percent of map unit: 5 percent

Landform: Ground moraines, drumlins, depressions, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

655—Udorthents, wet substratum

Map Unit Setting

National map unit symbol: vkyd
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Riser, tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Excavated and filled sandy and gravelly human transported material over highly-decomposed herbaceous organic material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Urban land

Percent of map unit: 3 percent
Hydric soil rating: Unranked

Ipswich

Percent of map unit: 2 percent
Landform: Marshes

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 15, Sep 12, 2019

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APPENDIX 2

Long-Term Pollution Prevention Plan

Attachment 1
MassDEP Snow Disposal Guidance

for

1550 River Street
Hyde Park, Massachusetts 02136

S-1428

LONG-TERM POLLUTION PREVENTION PLAN

For

1550 River Street
Hyde Park, Massachusetts 02136

Long-Term Pollution Prevention Plan November 27, 2019
1550 River Street
Hyde Park, MA 02136

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1.0 INTRODUCTION

This document is a Long-Term Pollution Prevention Plan (LTPPP) prepared by DGT Associates for 1550 River Street in Hyde Park, Massachusetts. The plan has been prepared to provide the detailed information on practices for pollution prevention and source control to be implemented at the property following construction.

The property owner will implement this Long-Term Pollution Prevention Plan and proactively conduct operations at the site in an environmentally responsible manner.

Compliance with this Long-Term Pollution Prevention Plan does not in any way dismiss the owner from compliance with other applicable Federal, State or local laws.

1.1 LONG-TERM POLLUTION PREVENTION PLAN - IMPLEMENTATION

The owner is responsible for the implementation of the Long-Term Pollution Prevention Plan and will reevaluate and amend this Long-Term Pollution Prevention Plan whenever an improvement or modification to operations can be implemented.

1.2 AVAILABILITY OF PLAN DOCUMENTS

The owner shall maintain a copy of the Long-Term Pollution Prevention Plan and related inspection reports, amendments, etc. at their offices. Copies will be made available for review to authorized personnel of the City of Boston Conservation Commission, and other authorized public officials upon request.

2.0 LONG-TERM POLLUTION PREVENTION PLAN RESPONSIBILITIES

2.1 RESPONSIBLE PARTY AND CONTACT INFORMATION

At the completion of the project, the site will be the responsibility of the owner/applicant. Presently, the responsible party for the implementation of the Long-Term Pollution Prevention Plan is:

1550 River Street LLC
1035 Hyde Park Avenue
Hyde Park, MA 02136

2.2 RESPONSIBILTIES FOR IMPLEMENTATION

The following responsibilities for the implementation of the Long-Term Pollution Prevention Plan are as follows:

- Oversee property management activities on the site.
- Oversee inspection, monitoring, and reporting compliance.
- Ensure property management contracts include both this Long-Term Pollution Prevention Plan as well as the Stormwater Operations and Maintenance Plan, and any other requirements issued by the City of Boston Conservation Commission to

assure compliance with this Long-Term Pollution Prevent Plan and the Operations and Maintenance Plan.
- Provide training, if necessary, to those responsible for the inspection, monitoring, and maintenance of the site.
- Identify other potential pollutant sources or deficiencies in the BMP's (Best Management Practices) and amend the Long-Term Pollution Prevention Plan as appropriate to address those issues.

3.0 PROJECT DESCRIPTION

3. 1 EXISTING SITE DESCRIPTION

The project site is a 42,500 sq. ft. (0.98 acres) property at 1550 River Street in the Hyde Park district of Boston, Massachusetts. It is identified as on the Boston Assessor's Property ID 1812146000. The property is located in Zoning Sub-district "LI-1" Local Industrial. The property abuts commercial properties to the north and south, and Mother Brook located at the east side of the property. Mother Brook is a perennial stream that joins the Neponset River. Access to the site is provided by a driveway off River Street.

The property falls within a Zone AE special flood hazard area as shown on FEMA Flood Insurance Rate Map number 25025C0157, dated 3/16/2016. The elevation of the 100-year flood as determined by the Federal Flood Insurance Program is 45.6 based on the NAVD 1988 datum. This is equivalent to elevation 52.06 based on the Boston City datum that is shown on the survey plan.

3. 2 PROPOSED PROJECT

The owner proposes to remove the existing pavement on the rear parking / storage yard, regrade the area and repave. There is approximately 17,328 square feet of pavement that is to be replaced on the east side of the site.

The project as proposed will not increase in the area of impervious surface on the site over what previously existed. The extent of proposed pavement will correspond to the extent of previously paved area.

Other site improvements related to the proposed project include:
- Removal of trash and debris from the drainage ditch,
- Re-vegetate the area adjacent to Mother Brook,
- Installation of a new 6-foot high chain link fence.
- Remove the new fill within the BVW in the southeast former and restore it the with wetland plantings.
- The regrading that occurred within the BLSF actually resulted in an increase in flood storage on an incremental and cumulative

basis to meet the performance standards under the BLSF performance standards under 310 CMR 10.57. Computations are included.

- Installation of a proprietary stormwater treatment units to remove total suspended solids from a large portion of the paved site.

Maintenance requirements for the stormwater management features are included in the Stormwater Operations and Maintenance Plan (Appendix 5).

4.0 PRACTICES FOR SOURCE CONTROL AND POLLUTION PREVENTION

4.1 Good Housekeeping:
Good housekeeping procedures to reduce the possibility of accidental releases and to reduce safety hazards will include but not be limited to the following:

- Proper handling and storage of solid wastes,
- Proper handling, storage and inventory of chemicals, and
- Prompt cleanup and removal of de minimus releases.
- The owner of the facility will contract for solid waste disposal and recycling.

4.2 Storage and Proper Disposal of Hazardous Chemicals:
The owner / property manager should be aware of not only the potential hazards of various chemicals to the human body but also to the environment. Tenants need to be instructed on the proper disposal of hazardous waste and should use the City programs for the disposal of various chemicals, including automobile fluids, paints, solvents, cleaners, etc.

4.3 Vehicle Washing:
The washing of personal vehicles on the property is not allowed. The owner should communicate the impacts of outdoor washing of vehicles on the stormwater drainage system. High loads of nutrients, metals, and hydrocarbons can enter the stormwater drainage system and have negative impacts on downstream environments. The use of commercial car wash facilities equipped for the washing of vehicles and equipment should be encouraged. Employees should assess the integrity of vehicle fluid systems for personal vehicles that could leak significant materials on the property and into the storm drainage system. The property manager shall be observant at all times to look for evidence of leaks from vehicles and notify the vehicle owner to repair the leaks.

4.4 Routine Inspections and Maintenance of Stormwater BMP's:
Detailed information regarding stormwater BMPs, including descriptions and maintenance requirements is contained in the Stormwater Operation and Maintenance Plan (Appendix 5).

4.5 Spill Prevention and Response:
The property manager will implement release response procedures for releases of significant materials such as fuels, oils, or chemical materials onto the ground or other area that could reasonably be expected to discharge to surface or groundwater.

Reportable quantities will immediately be reported to the applicable Federal, State and local agencies as required by law.

Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and disposed of in accordance with Federal, State and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the size and location of the release, and the ability of the Contractor to perform the required response.

Reportable quantities are established under the following:

1. 40 CFR Part 110 addressing the discharge of oil in such quantities as may be harmful pursuant to Section 311 (b) (4) of the Clean Water Act.
2. 40 CFR Part 117 addresses the determination of such quantities of hazardous substances that may be harmful pursuant to Section 311 (b) (3) of the Clean Water Act.
3. 40 CFR Part 302 addresses the designation, reportable quantities, and notification requirements for the release of substances designated under section 311 (b) (2) (A) of the Clean Water Act.

4.6 Maintenance of Lawns and Landscaped Areas:
There are no lawns or landscaped areas on the property.

4.7 Storage of Fertilizers, Herbicides, and Pesticides:
These chemicals should be stored inside or under cover with adequate containment.

4.8 Pet Waste Management:
Although there are no pets on the property, the owner should maintain the property free of pet waste.

4.9 Operation and Maintenance of Sewer System
The sewage collection system at the building connects to the public sewer in River Street. Many common chemicals can be a threat to the environment if disposed improperly. Hazardous chemicals must NOT be “poured down the drain.”

4.10 Solid Waste Management:
All waste materials are to be stored in securely lidded containers as applicable to the material. Said containers will be monitored by the property owner and emptied by a licensed waste disposal contractor on a regular basis.

4.11 Snow Disposal and Use of Deicing Chemicals:
Maintenance personnel and any contractors selected for snow plowing and deicing shall be made fully aware of the requirements of this section. During typical snow plowing operations, snow shall be pushed to the shoulders of the driveway entrance. If the plowed snow is impacting public safety, the snow shall be removed from the site and properly disposed of in accordance with the MassDEP Snow Disposal Guidance. (See Attachment 1).

Care must be taken to avoid damage of structures.

Deicing materials shall consist of sand and calcium chloride for roadway deicing, and are typically not stored at the site. These materials are supplied during snow plowing and deicing operations. Small amounts to handle individual walkways can be stored on site under cover and on an impervious surface or in proper containers within the building.

Alternatives to sodium chloride (commonly used salt) such as sand or calcium chloride, and reduced applications, should be considered and implemented if public safety is not jeopardized.

Before winter begins, the property manager and the contractor should review snow plowing and deicing procedures. After winter but no later than May 15, the debris left from snow plowing and any damage should be repaired.

4.12 Sweeping
Sweeping a minimum of two (2) times per year is recommended. Frequency should be based on the time of year as well as the weather. The first sweeping should be during the month of March before the spring rains wash off the residual sand from winter applications. This will allow for the highest removal of dirt and pollutants before they are washed into the BMP's of the Stormwater Management System. The second sweeping should take place during the month of November to allow for the removal of leaves, twigs, and other debris caused by the late year storms and before the snow arrives. Any other sweeping should be determined by the property manager on an as needed basis. Once removed from paved surfaces, the sweepings must be handled and disposed of properly.

4.13 Stormwater System:
In conjunction with the Long-Term Pollution Prevention Plan, the requirements of the Stormwater Operations and Maintenance Plan (Appendix 5) shall be implemented and the owner will oversee the inspections and

preparation of the required inspection reports for compliance with that document.

5.0 INSPECTIONS AND REPORT PREPARATION

The owner shall maintain inspection and maintenance logs of the maintenance and repair of the site for items as contained in this Long Term Pollution Prevention Plan and Stormwater Operation and Maintenance Plan. Generally, forms need to be completed when inspections, maintenance and repairs are performed and typically on a monthly basis.

6.0 COORDINATION WITH OTHER PERMITS AND REQUIREMENTS

Conditions of approvals from various City offices affecting the long term management of the property shall be considered part of this Long-Term Pollution Prevention Plan. The owner and property manager shall become familiar with those documents and perform their work in compliance thereto.

Attachment 1

MassDEP SNOW DISPOSAL GUIDANCE

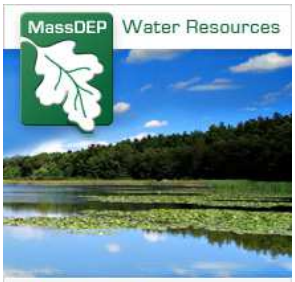
Snow Disposal Guidance

Snow Disposal - Storm Preparation

The snow disposal guidelines below offer information on the proper steps to take when locating sites and coming up with options for disposing of snow. Finding a place to dispose of collected snow poses a challenge to municipalities and businesses as they clear roads, parking lots, bridges, and sidewalks. Public safety is of the utmost importance. However, care must be taken to ensure that collected snow, which may be contaminated with road salt, sand, litter, and automotive pollutants such as oil, is disposed of in a manner that will minimize threats to nearby waterbodies. This guidance describes appropriate measures to be taken, including in cases of emergency when other options are not available.

If you have questions on MassDEP's snow disposal guidance, you may contact one of MassDEP's Regional Offices:

Northeast Regional Office, Wilmington, 978-694-3249
Southeast Regional Office, Lakeville, 508-946-2714
Central Regional Office, Worcester, 508-767-2722
Western Regional Office, Springfield, 413-784-1100.



A to Z Quick Links

Water Resources Index

Effective Date: March 8, 2001

Guideline No. BRPG01-01

Applicability: Applies to all federal, state, regional and local agencies, as well as to private businesses.

Supersedes: BRP Snow Disposal Guideline BRPG97-1 issued 12/19/97, and all previous snow disposal guidance

Approved by: Glenn Haas, Assistant Commissioner for Resource Protection

PURPOSE: To provide guidelines to all government agencies and private businesses regarding snow disposal site selection, site preparation and maintenance, and emergency snow disposal options that are acceptable to the Department of Environmental Protection, Bureau of Resource Protection.

APPLICABILITY: These Guidelines are issued by the Bureau of Resource Protection on behalf of all Bureau Programs (including Drinking Water Supply, Wetlands and Waterways, Wastewater Management, and Watershed Planning and Permitting). They apply to public agencies and private businesses disposing of snow in the Commonwealth of Massachusetts.

INTRODUCTION

Finding a place to dispose of collected snow poses a challenge to municipalities and businesses as they clear roads, parking lots, bridges, and sidewalks. While we are all aware of the threats to public safety caused by snow, collected snow that is contaminated with road salt, sand, litter, and automotive pollutants such as oil also threatens public health and the environment.

As snow melts, road salt, sand, litter, and other pollutants are transported into surface water or through the soil where they may eventually reach the groundwater. Road salt and other pollutants can contaminate water supplies and are toxic to aquatic life at certain levels. Sand washed into waterbodies can create sand bars or fill in wetlands and ponds, impacting aquatic life, causing flooding, and affecting our use of these resources.

There are several steps that communities can take to minimize the impacts of snow disposal on public health and the environment. These steps will help communities avoid the costs of a contaminated water supply, degraded waterbodies, and flooding. Everything we do on the land has the potential to impact our water resources. Given the authority of local government over the use of the land, municipal officials and staff have a critically important role to play in protecting our water resources.

The purpose of these guidelines is to help municipalities and businesses select, prepare, and maintain appropriate snow disposal sites before the snow begins to accumulate through the winter.

RECOMMENDED GUIDELINES

These snow disposal guidelines address: (1) site selection; (2) site preparation and maintenance; and (3) emergency snow disposal.

1. SITE SELECTION

The key to selecting effective snow disposal sites is to locate them adjacent to or on pervious surfaces in upland areas away from water resources and wells. At these locations, the snow meltwater can filter in to the soil, leaving behind sand and debris which can be removed in the springtime. The following areas should be avoided:

- Avoid dumping of snow into any waterbody, including rivers, the ocean, reservoirs, ponds, or wetlands. In addition to water quality impacts and flooding, snow disposed of in open water can cause navigational hazards when it freezes into ice blocks.
- Do not dump snow within a Zone II or Interim Wellhead Protection Area (IWPA) of a public water supply well or within 75 feet of a private well, where road salt may contaminate water supplies.
- Avoid dumping snow on MassDEP-designated high and medium-yield aquifers where it may contaminate groundwater (see the next page for information on ordering maps from MassGIS showing the locations of aquifers, Zone II's, and IWPAs in your community).
- Avoid dumping snow in sanitary landfills and gravel pits. Snow meltwater will create more contaminated leachate in landfills posing a greater risk to groundwater, and in gravel pits, there is little opportunity for pollutants to be filtered out of the meltwater because groundwater is close to the land surface.
- Avoid disposing of snow on top of storm drain catch basins or in stormwater drainage swales or ditches. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A high volume of sand, sediment, and litter released from melting snow also may be quickly transported through the system into surface water.

Site Selection Procedures

a. It is important that the municipal Department of Public Works or Highway Department, Conservation Commission, and Board of Health work together to select appropriate snow disposal sites. The following steps should be taken:
b. Estimate how much snow disposal capacity is needed for the season so that an adequate number of disposal sites can be selected and prepared.
c. Identify sites that could potentially be used for snow disposal such as municipal open space (e.g., parking lots or parks).
d. Sites located in upland locations that are not likely to impact sensitive environmental resources should be selected first.
e. If more storage space is still needed, prioritize the sites with the least environmental impact (using the site selection criteria, and local or MassGIS maps as a guide).

MassGIS Maps of Open Space and Water Resources

If local maps do not show the information you need to select appropriate snow disposal sites, you may order maps from MassGIS (Massachusetts Geographic Information System) which show publicly owned open spaces and approximate locations of sensitive environmental resources (locations should be field-verified where possible). Different coverages or map themes depicting sensitive environmental resources are available from MassGIS on the map you order. At a minimum, you should order the Priority Resources Map. The Priority Resources Map includes aquifers, public water supplies, MassDEP-approved Zone II's, Interim Wellhead Protection Areas, Wetlands, Open Space, Areas of Critical Environmental Concern, NHESP Wetlands Habitats, MassDEP Permitted Solid Waste facilities, Surface Water Protection areas (Zone A's) and base map features. The cost of this map is $25.00. Other coverages or map themes you may consider, depending on the location of your city or town, include Outstanding Resource Waters and MassDEP Eelgrass Resources. These are available at $25.00 each, with each map theme being depicted on a separate map. Maps should be ordered from MassGIS . Maps may also be ordered by fax at 617-626-1249 (order form available from the MassGIS web site) or mail. For further information, contact MassGIS at 617-626-1189.

2. SITE PREPARATION AND MAINTENANCE

In addition to carefully selecting disposal sites before the winter begins, it is important to prepare and maintain these sites to maximize their effectiveness. The following maintenance measures should be undertaken for all snow disposal sites:

- A silt fence or equivalent barrier should be placed securely on the downgradient side of the snow disposal site.
- To filter pollutants out of the meltwater, a 50-foot vegetative buffer strip should be maintained during the growth season between the disposal site and adjacent waterbodies.
- Debris should be cleared from the site prior to using the site for snow disposal.
- Debris should be cleared from the site and properly disposed of at the end of the snow season and no later than May 15.

3. EMERGENCY SNOW DISPOSAL

As mentioned earlier, it is important to estimate the amount of snow disposal capacity you will need so that an adequate number of upland disposal sites can be selected and prepared.

If despite your planning, upland disposal sites have been exhausted, snow may be disposed of near waterbodies. A vegetated buffer of at least 50 feet should still be maintained between the site and the waterbody in these situations. Furthermore, it is essential that the other guidelines for preparing and maintaining snow disposal sites be followed to minimize the threat to adjacent waterbodies.

Under extraordinary conditions, when all land-based snow disposal options are exhausted, disposal of snow that is not obviously contaminated with road salt, sand, and other pollutants may be allowed in certain waterbodies under certain conditions. In these dire situations, notify your Conservation Commission and the appropriate MassDEP Regional Service Center before disposing of snow in a waterbody.

Use the following guidelines in these emergency situations:

- Dispose of snow in open water with adequate flow and mixing to prevent ice dams from forming.
- Do not dispose of snow in saltmarshes, vegetated wetlands, certified vernal pools, shellfish beds, mudflats, drinking water reservoirs and their tributaries, Zone IIs or IWPAs of public water supply wells, Outstanding Resource Waters, or Areas of Critical Environmental Concern.
- Do not dispose of snow where trucks may cause shoreline damage or erosion.
- Consult with the municipal Conservation Commission to ensure that snow disposal in open water complies with local ordinances and bylaws.

FOR MORE INFORMATION

If you have questions on MassDEP's snow disposal guidance, you may contact one of MassDEP's Regional Offices:

Northeast Regional Office, Wilmington, 978-694-3249
Southeast Regional Office, Lakeville, 508-946-2714
Central Regional Office, Worcester, 508-767-2722
Western Regional Office, Springfield, 413-784-1100.

Did you find the information you were looking for on this page? *

○ Yes
○ No

Send Feedback

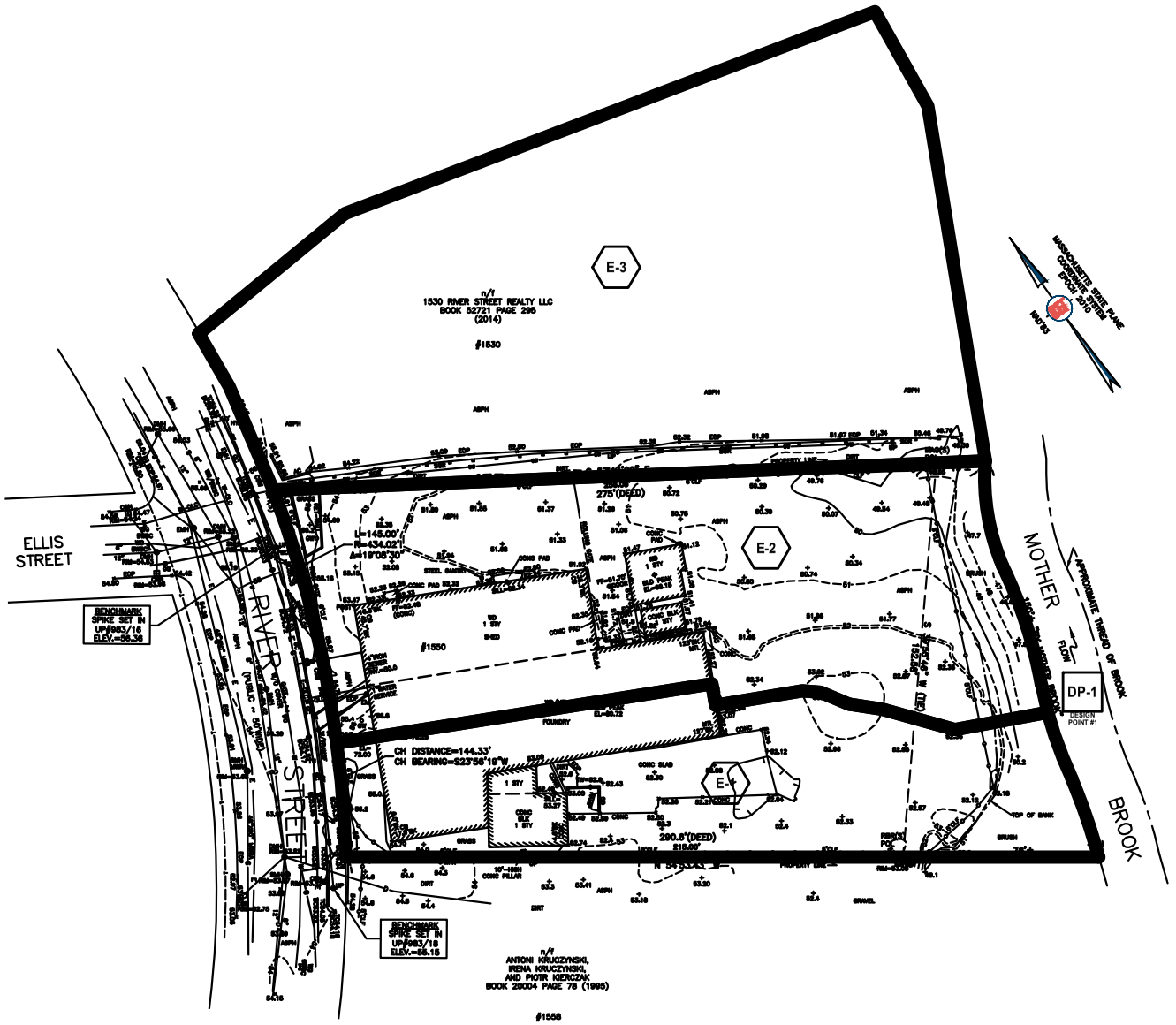
S-1428

APPENDIX 3

Existing Conditions Watershed Map, WSD-EX

for

1550 River Street
Hyde Park, Massachusetts 02136



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ISSUED FOR:
PERMITTING

NO.	APP	DATE	DESCRIPTION

DATE: NOVEMBER 27, 2019
SCALE: 1" = 20'

DRAFTED:	CHECKED:	APPROVED:
KMR	BEC	BEC

PROJECT TITLE:

WATERSHED MAP

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

EXISTING CONDITIONS WATERSHED MAP

SHEET: 1 OF 1
PROJECT NO.: 24766 S-1428-00

WSD-EX

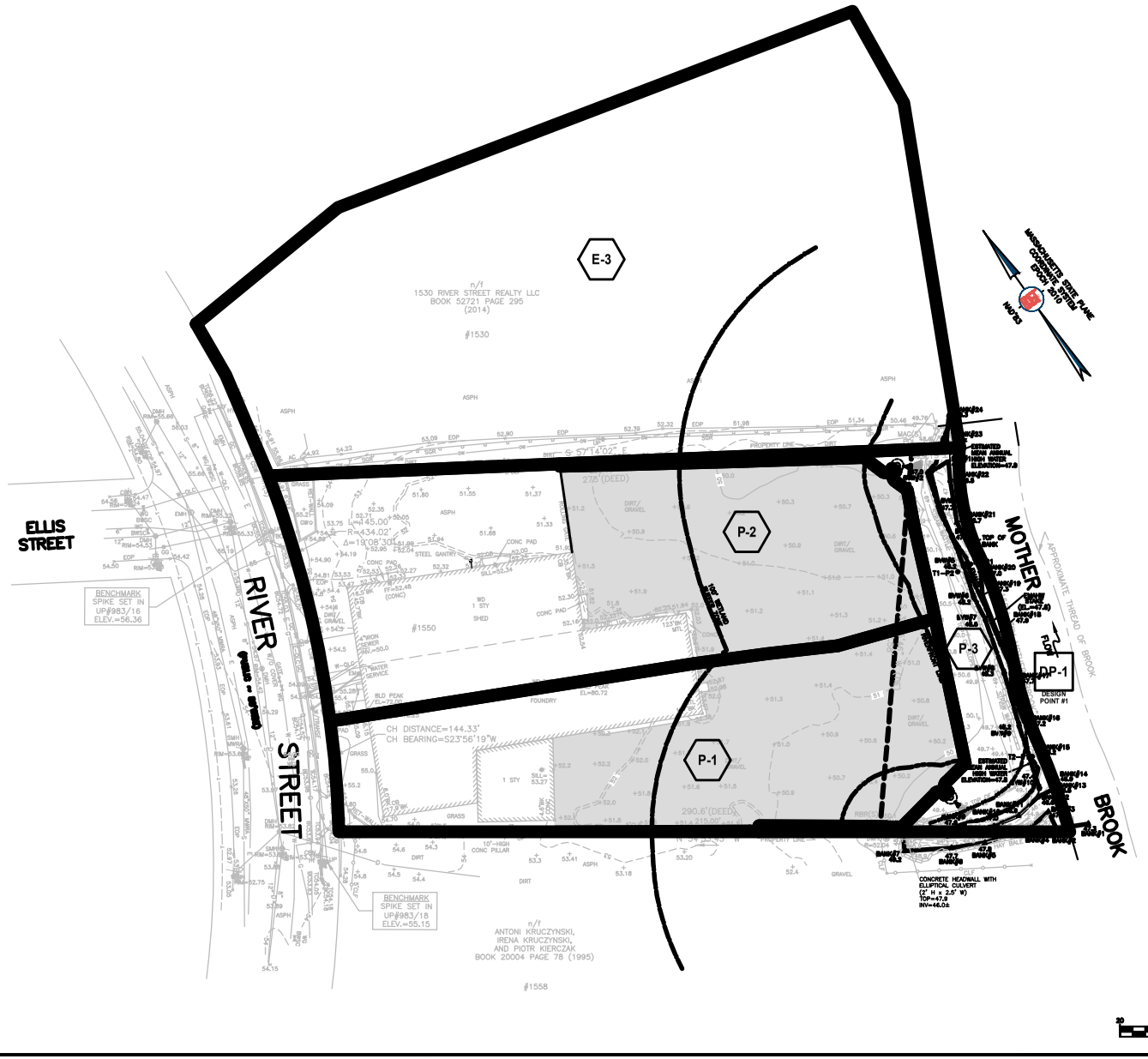
S-1428

APPENDIX 4

Proposed Conditions Watershed Map, WSD-PR

for

1550 River Street
Hyde Park, Massachusetts 02136



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NO.	APP	DATE	DESCRIPTION

DATE: NOVEMBER 27, 2019
SCALE: 1" = 20'

DRAFTED:	CHECKED:	APPROVED:
KMR	BEC	BEC

PROJECT TITLE:

WATERSHED MAP

1550 RIVER STREET
HYDE PARK, MASSACHUSETTS 02136

SHEET TITLE:

PROPOSED CONDITIONS WATERSHED MAP

SHEET: 1 OF 1
PROJECT NO.: 24766 S-1428-00

WSD-PR

S-1428

APPENDIX 5

Stormwater Operation and Maintenance Plan

for

1550 River Street

Hyde Park, Massachusetts 02136

S-1428

STORMWATER OPERATION & MAINTENANCE PLAN

for

1550 River Street
Hyde Park, Massachusetts 02136

S-1428

STORMWATER
OPERATION AND MAINTENANCE PLAN

#1550 RIVER STREET, HYDE PARK, MASSACHUSETTS 02136

Construction Period Maintenance

It is important that the General Contractor follow the Construction Period Erosion and Sediment Control Plan as detailed on the Project Site Plans to minimize the introduction of sediments into the wetland resource areas, abutting properties, and to post-development stormwater BMP's resulting from the land disturbance activities during construction.

The proposed stormwater management structures shall be protected from sediment using the erosion and sedimentation controls specified in the Project Site Plans.

Inspections shall be conducted by the general contractor on a bi-weekly basis (every two weeks), or following significant storm events (rainfall of 0.5" or more) that can affect the sediment and erosion control practices implemented at the site. The purpose of the inspections are to evaluate the effectiveness on the controls and any required maintenance activities. If an erosion/sedimentation control measure is found to be inadequate for properly controlling sediment, an adequate measure shall be designed and implemented. A copy of the written inspection shall be kept on file at the construction site.

Post Construction and Long-Term Maintenance

In order for the stormwater management system to function properly as designed, the system must be inspected on a regular basis and routine maintenance performed. The responsibility for the maintenance and operation of the system will be as follows:

1550 River Street LLC
1035 Hyde Park Avenue
Hyde Park, MA 02136

Routine inspections and some of the routine maintenance tasks will be performed by the owner's maintenance personnel or hired outside contractors utilized for some items such as the removal of trapped oils and other hydrocarbons, and sediment from the stormwater treatment units. For non-routine repairs please refer to the below referenced material.

The system contains the following Stormwater Best Management Practices (BMPs):

Stormwater Treatment Units (aka Water Quality Units, "CDS" Units)

OPERATION AND MAINTENANCE MANUAL AND TRAINING
Upon completion of the construction project, a complete as-built plan of the system components will be prepared and will be a part of this O&M Plan. This O&M Plan

includes a description of the purpose and function of each component, inspection and maintenance tasks and schedules, check lists, and report forms. The Plan should be used as the management document for the system. All maintenance personnel shall be trained in the specifics of the entire stormwater treatments units in order to be able to perform the inspections, documentation and the maintenance required. The design engineer will be available to provide a training session for the supervisors and personnel if necessary.

INSPECTIONS AND MAINTENANCE

The following pages describe the inspection, routine maintenance and non routine maintenance which are required for each BMP. The inspection and maintenance requirements are based on the recommendations from the MassDEP Stormwater Management Standards Handbook, February 2008 and the manufacturer's specifications.

The recommended procedures below should be followed strictly for at least the first two years of the system operation. During that period, the observations and experience gained from the monitoring and maintenance will provide the information necessary so that adjustments can be made for the most efficient operation and maintenance of the system.

NON-STORMWATER DISCHARGES

This is to provide notice to the owner and operator(s) of the subject property and stormwater system that the discharge of any non-stormwater to the subject stormwater management system is prohibited. Also, there shall be no modifications to the stormwater system for the purpose of discharging non-stormwater to the system. Non-stormwater discharges are any liquid or materials that are not the result of natural rainfall runoff or runoff from snow and ice melt. The purpose of this is to protect groundwater and surface water quality as well as to assure compliance with applicable laws.

CONFINED SPACE ENTRY

Note that any inspections or maintenance activity of underground piping, chambers, deep manholes, etc that requires entry into the system must be in accordance with OSHA confined space regulations.

STORMWATER TREATMENT UNITS

INSPECTIONS

These units should be inspected on a monthly basis and after major storm events for the first year. Remove the cover and inspect the general condition of the unit including the amount of floating debris and the presence of hydrocarbons if any. If the inspection finds a large presence of hydrocarbons, such as a layer of floating oil or a strong odor of gasoline, it should be removed immediately. Measure the amount of sediment that has collected using a measuring stick or "Sludge Judge" measuring tube. Pipe inlets and outlets should be clear of debris. After the first year, the number of inspections may be reduced based on the experience during the first year monitoring but not less than 2 times per year. Two of the inspections must include one at the end of the foliage season and one at the end of the snow season.

ROUTINE MAINTENANCE

The units should be cleaned a minimum of two times during the first year or when the sediment level exceeds 75% of the storage capacity. The can be easily obtained by measuring the distance to the top of water and to the top of sediment. If the difference between these two measurements ids less than 3.0 feet, the sediment should be removed. A copy of the manufacturer's chart is provided attached to the end of this section. Cleaning consists of the removal of floating hydrocarbons and accumulated sediment, and clearing the inlet pipes. The removal of hydrocarbons must be performed by a hazardous waste disposal contractor. Removal of the sediment is by a standard vacuum truck.

NON-ROUTINE MAINTENANCE

These are structural repairs and replacement of system components. Typical items for this BMP may include:

Repairing the inlet or outlet pipes.
Filling cracks in the concrete
Resetting of covers.

MAINTENANCE EQUIPMENT

Hand tools for opening covers
Measuring stick or "Sludge Judge".
Vacuum pumping truck (haz-mat contractor for hydrocarbon removal)
Contracted vacuum pumping truck (for sediment removal)

STORMWATER MANAGEMENT SYSTEM

INSPECTION AND MAINTENANCE FORMS

CONTENTS:

STORMWATER TREATMENT UNITS

Routine Inspection Checklist - Inspected Semi-Annually Date _____

	Structural Integrity	Sediment Depth	Hydrocarbons*	Inlet/Outlet Pipe	Floating Debris	Comments
STU #1						
STU #2						

* Presence of hydrocarbons is a clearly visible layer of oil, gasoline, grease, hydraulic fluid, etc., floating on the surface or a strong odor of gas or oil

STORMWATER MAINTENANCE / REPAIR RECORD FORM

Date of Maintenance: ________________ Performed By: ________________________

Maintenance / repair tasks were performed on the following on-site BMP structures:

Stormwater Structure Work Performed

Other Comments:

CONTECH®
ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide

CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.

CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.