Bay Colony Group, Inc.
Professional Civil Engineers & Land Surveyors

4 School Street, PO Box 9136
Foxborough, Massachusetts 02035
Telephone (508) 543-3939 • Fax (508) 543-8866
E-mail: mailbox@baycolonygroup.com

NOTICE OF INTENT
WETLANDS PROTECTION ACT
MASS G.L.C. 131, SECTION 40

Trowel Shop Pond Condominiums
303 North Main Street
Sharon, MA

February, 2024

PREPARED FOR: Trowel Shop Pond, LLC
1 Richard Road
Marblehead, MA 01945

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February 15, 2024

Ms. Peg Arguimbau, Chair
Sharon Conservation Commission
90 South Main Street
Sharon, MA 02067

RE: 303 North Main Street Sharon, MA

Dear Ms. Arguimbau:

On behalf of my client, Trowel Shop Pond, LLC, I am submitting herewith a Notice of Intent (NOI) pursuant to Chapter 131, S.40, Wetlands Protection Act (WPA) and the Sharon Wetlands Protection Bylaw (SWPB) for the construction of a five building multi-family residential project with associated driveways, septic systems, and utilities that lies partially within the buffer zone to a Bordering Vegetated Wetland (BVW) and the local buffer zone of an Isolated Vegetated Wetland (IVW).

Enclosed please find 2 copies of the Notice of Intent (NOI) that includes the site plan, a wetland report by Pare Corp., a storm water management report; and extracts from the MASS GIS database, FEMA Flood Insurance Rate Map, and the USGS quadrangle for the site. All abutters and abutters to abutters within 100 feet of the project have been notified about the proposed work by certified mail. In addition, we are enclosing a check in the amount of $537.50 based on the State fee of $1,050, a check in the amount of $3,525 based on the Town fee of $30/acre, and a check in the amount of $275 for the advertising fund.

The proposed project will involve the demolition of an existing automobile service station and a single-family home and the construction of five 3-unit townhouse condominium buildings that each contain 9 bedrooms. A 638' long, 22' wide private driveway will provide access to the buildings. There is BVW on the south side of the property adjacent to Trowel Pond as well as Bordering Land Subject to Flooding (BLSF). In the central part of the site there is an IVW that captures most of the runoff from that portion of the property that is being developed. The IVW is non-jurisdictional under the WPA but falls under the Sharon Wetlands Protection Bylaw. The resource areas were flagged by Pare Corporation in June 2021 and the flagging was reviewed and approved by John Thomas, the Conservation Agent at the time. A copy of the wetland delineation report is included in **Appendix A** of the NOI. The central portion of the property where most of the construction will occur is located on a plateau. The land then rises to the east and west and falls off to the south toward Trowel Pond.

The property does not contain any storm water elements. The garage area drains toward North Main Street and most of the portion of the site to be developed drains to the IVW in the center of the property. Soil testing was conducted under the area where a proposed surface infiltration basin is to be located to determine the estimated high ground water and the permeability of the soil. A laboratory analysis found that the soil is SANDY LOAM and a permeability rate of 1.02 inches/hour was used in accordance with Table 2.3.3. of Volume 3 of the DEP Stormwater Standards. The results are included in the Storm Water Management Report **Appendix C**. The top 12" of material in the basin will be removed and replaced with a mixture of sand/mulch/parent material after the site has been stabilized. The basin will accommodate and infiltrate all storms up to and including the 100-year storm event and a low flow pipe has been designed to ensure that the IVW receives an appropriate amount of water. At its closest point the storm water basin is about 50' from the IVW and all the basin lies within the 100' IVW buffer zone, but none of it lies within WPA jurisdictional areas. The new catch basins will be of the deep sump type with water quality hoods and a Stormcepter will be used just prior to discharge to the basin to ensure that at least 44% TSS removal prior to the basin will be attained. The roof runoff will be discharged through a separate system directly into the basin so that the "clean" roof runoff will not mix with the "dirty" driveway runoff.

About 100 sf of Building 8 lies within 100' of the BVW and it is about 97' away at its closest point. About 6,050 sf of grading will take place in the BVW 100' buffer zone and it will be about 65' away at its closest point. About 160 sf of Building 1 and about 24,150 sf of grading to construct the storm water basin and Building 1 lies within 100' of the IVW. As previously noted, the storm water basin is about 50' from the IVW at its closest point and Building 1 is about 90' from the IVW at its closest point. The Zoning Board of Appeals voted to allow alteration of land within the 100' buffer zone of applicable resource areas.

Sediment control will be managed through the use of mulch filled silt socks that will be installed between the wetland resource areas and the construction activities. The barriers will remain in place until the ground cover has been reestablished in disturbed areas.

Each of the buildings will be serviced by an individual sewage disposal system constructed in accordance with 310 CMR 15.00 (Title 5) and the Sharon Board of Health regulations as amended by the Comprehensive Permit. As a mitigation element of the Comprehensive Permit the systems will include a FAST secondary treatment system that has been approved by the MassDEP for nitrogen reduction. None of the systems are within jurisdictional areas of the WPA nor SWPB.

The Proponent has agreed to donate about 6.27 acres of land to the Town of Sharon that can be combined with other land owned by the Town around Trowel Shop Pond. The currently Town-owned open space around the site appears to total about 127 acres from North Main Street to Huntington Avenue. The proposed donation will be contiguous to that land and will protect land near Trowel Shop Pond from development.

It is our opinion that the project meets the criteria outlined in the "Rules and Regulations of the Sharon Conservation Commission". The project will take place in several areas that have been previously developed. The roof recharge system will improve the existing condition by recharging "clean" roof runoff back into the ground water regime below the site. Approximate 53% of the property will be retained as dedicated open space and the work, and its natural and consequential

impacts and effects, will have no significant impacts on any of the interests protected by the WPA and SWPB.

Thank you for your consideration and we look forward to working with you on this project.

Very truly yours,

BAY COLONY GROUP, INC.

William R. Buckley, Jr., P.E.
Project Manager

Enclosure

List of Documents

Previous Page – Letter to Conservation Commission

WPA Form 3 – Notice of Intent

Wetland Fee Transmittal Form
Copies of checks
Form of Notification to Abutters
List of Abutters

List of Appendices

Appendix A – Wetland Delineation Report by Pare Corporation, June 24, 2021 (includes USGS map, MassGIS map, and FEMA Flood Insurance Rate Map)

Appendix B –
Checklist for Stormwater Report
Storm Water Management Report by Bay Colony Group, Inc. dated February, 2024

List of Enclosures

- "Comprehensive Permit Plan of Trowel Shop Pond Condominiums Sharon, MA" dated February 14, 2024, Scale: As Noted, by Bay Colony Group, Inc. Four School Street Foxborough, MA 02035, 508-543-3939

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

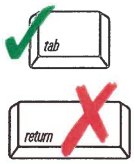
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Sharon
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):

299 & 303 North Street — a. Street Address
Sharon — b. City/Town
02067 — c. Zip Code

Latitude and Longitude:
42°-08'-07.5" — d. Latitude
71°-09'-45.8" — e. Longitude

121 — f. Assessors Map/Plat Number
060 & 061 — g. Parcel /Lot Number

2. Applicant:

Elena — a. First Name
Lande — b. Last Name
Trowel Shop Pond, LLC — c. Organization
1 Richard Road — d. Street Address
Marblehead — e. City/Town
MA — f. State
01945 — g. Zip Code
h. Phone Number
i. Fax Number
elenalande@gmail.com — j. Email Address

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

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

William — a. First Name
Buckley, Jr. — b. Last Name
Bay Colony Group, Inc. — c. Company
4 School Street — d. Street Address
Foxborough — e. City/Town
MA — f. State
02035 — g. Zip Code
508.543.3939 — h. Phone Number
508.543.8866 — i. Fax Number
billbuckley@baycolonygroup.com — j. Email address

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

$1,050.00 — a. Total Fee Paid
$512.50 — b. State Fee Paid
$537.50 — 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:

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Sharon
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A. General Information (continued)

6. General Project Description:

Construction of a multi-family complex that lies partially within the buffer zone to a bordering vegetated wetland.

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)
Norfolk	
c. Book	d. Page Number
40445/109	40445/113

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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Sharon
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
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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

a. ☐ Yes ☒ No

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

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

2024 MassMapper
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 https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

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

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

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

(d) ☐ Vegetation cover type map of site

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

(f) OR Check One of the Following

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

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

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

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

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

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

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

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

North Shore - Plymouth to New Hampshire border:

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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Sharon
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
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D. Additional Information (cont'd)

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

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

Comprehensive Permit Plan of Trowel Shop Condominiums Sharon, MA
a. Plan Title

Bay Colony Group, Inc.
b. Prepared By

William Buckley, Jr/Richard Leslie
c. Signed and Stamped by

2/14/2024
d. Final Revision Date

varies
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

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

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

233
2. Municipal Check Number

2/14/24
3. Check date

234
4. State Check Number

2/14/24
5. Check date

Yuriy & Elena
6. Payor name on check: First Name

Lande
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

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.

Yuriy Lande

1. Signature of Applicant

2.22.24

2. Date

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any)

2/22/2024

6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

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

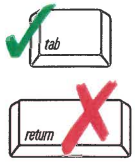
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

A. Applicant Information

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



1. Location of Project:

299 & 303 North Main Street	Sharon
a. Street Address	b. City/Town
234	$512.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Elena		Lande	
a. First Name		b. Last Name	
Trowel Shop Pond, LLC			
c. Organization			
1 Richard Rod			
d. Mailing Address			
Marblehead	MA	01945	
e. City/Town	f. State	g. Zip Code	
		elenalande@gmail.com	
h. Phone Number	i. Fax Number	j. Email Address	

3. Property Owner (if different):

a. First Name		b. Last Name	
c. Organization			
d. Mailing Address			
e. City/Town		f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address	

B. Fees

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

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
3b - Multi family building & site prep	1	$1,050	$1,050

Step 5/Total Project Fee: $1,050

Step 6/Fee Payments:

Total Project Fee:	$1,050 a. Total Fee from Step 5
State share of filing Fee:	$512.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$537.50 c. 1/2 Total Fee **plus** $12.50

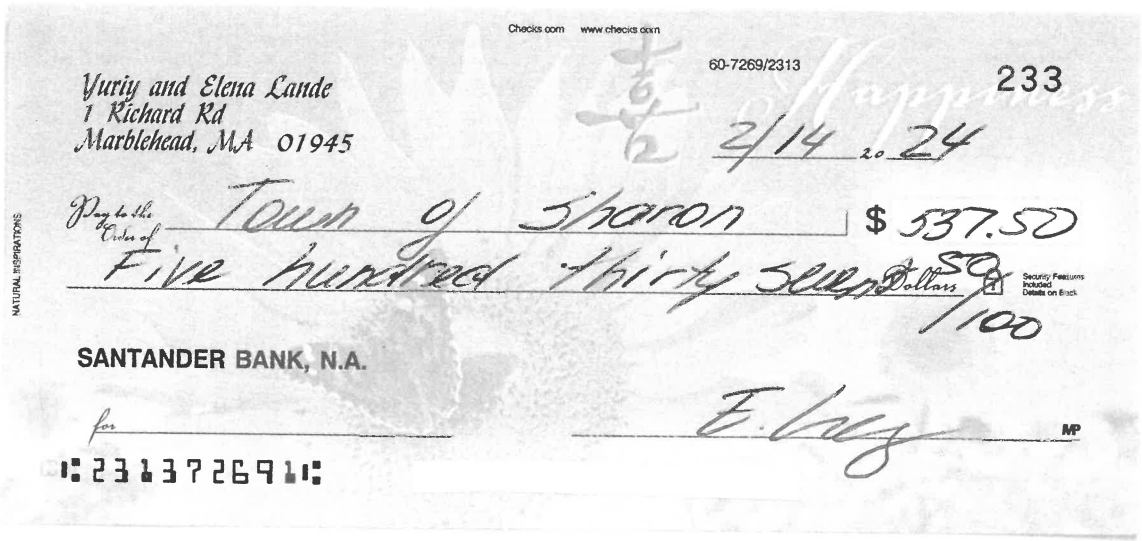
C. Submittal Requirements

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.)



Checks.com www.checks.com

Yuriy and Elena Lande
1 Richard Rd
Marblehead, MA 01945

60-7269/2313

233

幸福 Happiness

2/14 20 24

Pay to the Order of Town of Sharon $ 537.50

Five hundred thirty seven 50/100 Dollars

Security Features Included Details on Back

SANTANDER BANK, N.A.

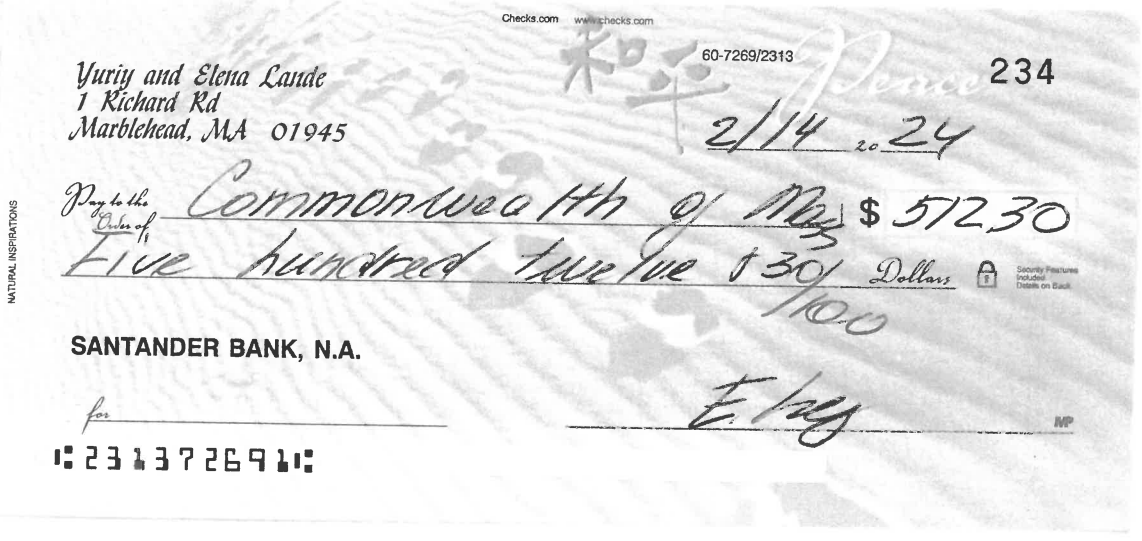
for

E. Lng

MP

NATURAL INSPIRATIONS

⑆231372691⑆



Checks.com www.checks.com

Yuriy and Elena Lande
1 Richard Rd
Marblehead, MA 01945

60-7269/2313

234

和平 Peace

2/14 20 24

Pay to the Order of Commonwealth of Mass $ 572.30

Five hundred twelve 30/100 Dollars

Security Features Included Details on Back

SANTANDER BANK, N.A.

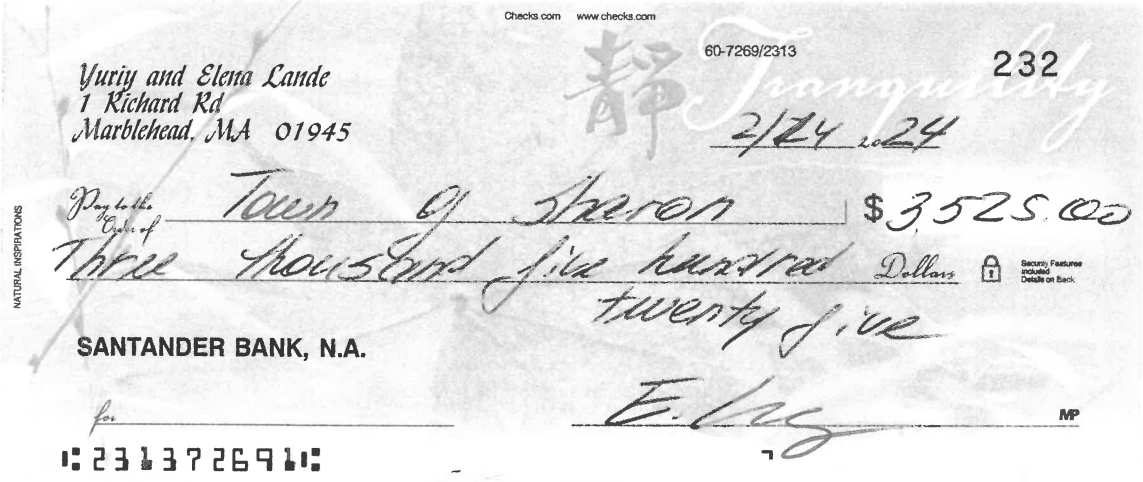
for

E. Lng

MP

NATURAL INSPIRATIONS

⑆231372691⑆



Checks.com www.checks.com

Yuriy and Elena Lande
1 Richard Rd
Marblehead, MA 01945

60-7269/2313

232

静 Tranquility

2/14 20 24

Pay to the Order of Town of Sharon $ 3525.00

Three thousand five hundred twenty five Dollars

Security Features Included Details on Back

SANTANDER BANK, N.A.

for

E. Lng

MP

NATURAL INSPIRATIONS

⑆231372691⑆

Notification to Abutters

Under the Massachusetts Wetlands Protection Act and Town of Sharon Wetlands Bylaw and Regulations

In accordance with the second paragraph of Massachusetts General laws Chapter 131, Section 40, and the Town of Sharon Wetland Bylaw and Regulations you are hereby notified of the following.

A. The name of the applicant is Trowel Shop Pond, LLC

B. The applicant has filed a Notice of Intent with the Conservation Commission for the municipality of Sharon seeking permission to do work in an Area subject to Protection Under the Wetlands Protection Act. (General Laws Chapter 131, section 40) Work proposed is Construction of 5 multi-family buildings with driveway and utilities that lie partially within the buffer zone to a bordering vegetated wetland or see attached.

C. The address of the lot where the activity is proposed is 303 North Main Street

D. Copies of the application may be obtained by request by emailing the Sharon Conservation Commission at sharonconcom@townofsharon.org

E. Information regarding the date, time and place of the Public Hearing may be obtained from the town website: https://www.townofsharon.net/conservation-commission or by calling this telephone number: 781-784-1511 between the hours of 8:30 a.m. and 4:30 p.m., Monday through Thursday, and Friday 8:30 a.m. to 12:30 p.m

NOTE: Notice of the Public Hearing, including its date, time and place will be published at least five (5) days in advance in the Patriot Ledger.

NOTE: Notice of the Public Hearing, including its date, time and place will be posted on the Town's web site and in the Town Hall not less than forty-eight (48) hours in advance.

TOWN OF SHARON

OFFICE OF THE

BOARD OF ASSESSORS

ELLEN W. ABELSON
RICHARD B. GORDEN, M.A.A.
ANNE M. CARNEY

90 SOUTH MAIN ST.
SHARON, MASSACHUSETTS 02067

TEL. (781) 784-1500 ext 1207

February 14, 2024

Re: 299/303 NORTH MAIN STREET
Parcel # 121-061-000/121-060-000

TO WHOM IT MAY CONCERN:

I, Jeffery L. Funk, Administrative Assessor of the Town of Sharon, hereby certify that attached is a list of abutters in the Town of Sharon within 100'radius of the above mentioned location in the Town of Sharon. This list is compiled from the record of the Board of Assessors most recent tax assessment.

BOARD OF ASSESSORS

Jeffery L. Funk, M.A.A.

Enclosure

Town of Sharon

90 South Main Street
Sharon, MA 02067

Tel. 781 784-1500 x1207
aoffice@townofsharon.org

Request for abutter's list

Name of organization: Bay Colony Group, Inc.

Person filing request: Christine Leslie **Title:** Office Manager

Address: 4 SCHOOL STREET, PO BOX 9136

Telephone # 508-543-3939 **Email:** cleslie@baycolonygroup.com

Subject property: Map 121 parcels 60 & 61

Abutters within 100 **feet**

Planning Board 500'

Zoning Board of Appeals 300'

Conservation 100'

Board of Health 200'

Historical Commission 200'

Liquor License – Direct Abutters and Churches and Schools within 500'

$ 9.00

Fee: $0.50 per abutter; $6.00 minimum

Date: 2/13/2024

Please allow ten (10) days for completion of this request.

This form can be submitted electronically, sent via regular mail or in person at the Assessor's Office.

Once the form is received and abutters list is completed the Assessor's Office will notify you via email or phone with fee and pick up date.

100 foot Abutters List Report

Sharon, MA
February 14, 2024

Subject Properties:

Parcel Number: 121-60
CAMA Number: 121-60
Property Address: 303 NORTH MAIN ST

Mailing Address: TROWEL SHOP POND, LLC
1 RICHARD RD
MARBLEHEAD, MA 01945

Parcel Number: 121-61
CAMA Number: 121-61
Property Address: 299 NORTH MAIN ST

Mailing Address: TROWEL SHOP POND, LLC
1 RICHARD RD
MARBLEHEAD, MA 01945

Abutters:

Parcel Number: 113-4
CAMA Number: 113-4
Property Address: 27 GABRIEL RD

Mailing Address: KEENAN, PATRICIA DANIEL
27 GABRIEL RD
SHARON, MA 02067

Parcel Number: 120-27-2
CAMA Number: 120-27-2
Property Address: 291 R NORTH MAIN ST

Mailing Address: BLACKOWICZ, MICHAEL
291 R NORTH MAIN ST
SHARON, MA 02067

Parcel Number: 120-29
CAMA Number: 120-29
Property Address: 265 NORTH MAIN ST

Mailing Address: TOWN OF SHARON
90 SOUTH MAIN ST
SHARON, MA 02067

Parcel Number: 121-49
CAMA Number: 121-49
Property Address: 25 GABRIEL RD

Mailing Address: O'REILLY JR., JOESEPH P.
25 GABRIEL RD
SHARON, MA 02067

Parcel Number: 121-50
CAMA Number: 121-50
Property Address: 23 GABRIEL RD

Mailing Address: LETENDRE, ROBERT E
23 GABRIEL RD
SHARON, MA 02067

Parcel Number: 121-51
CAMA Number: 121-51
Property Address: 21 GABRIEL RD

Mailing Address: ADAMS, WALKER
21 GABRIEL RD
SHARON, MA 02067

Parcel Number: 121-52
CAMA Number: 121-52
Property Address: 19 GABRIEL RD

Mailing Address: MATLOFF, DANIEL A.
19 GABRIEL RD
SHARON, MA 02067

Parcel Number: 121-53
CAMA Number: 121-53
Property Address: 17 GABRIEL RD

Mailing Address: SONG, YUANWEI
17 GABRIEL RD
SHARON, MA 02067

Parcel Number: 121-54
CAMA Number: 121-54
Property Address: 13 GABRIEL RD

Mailing Address: CHO, VINCENT
13 GABRIEL RD
SHARON, MA 02067

100 foot Abutters List Report

Sharon, MA
February 14, 2024

Parcel Number:	121-55	Mailing Address:	RIVARD, GLENN P
CAMA Number:	121-55		11 GABRIEL RD
Property Address:	11 GABRIEL RD		SHARON, MA 02067
Parcel Number:	121-56	Mailing Address:	HAQUE, AFTAB F
CAMA Number:	121-56		9 GABRIEL RD
Property Address:	9 GABRIEL RD		SHARON, MA 02067
Parcel Number:	121-57	Mailing Address:	MALENKOVICH, ARTHUR
CAMA Number:	121-57		7 GABRIEL RD
Property Address:	7 GABRIEL RD		SHARON, MA 02067
Parcel Number:	121-58	Mailing Address:	SCHRANK, NOAH H.
CAMA Number:	121-58		5 GABRIEL RD
Property Address:	5 GABRIEL RD		SHARON, MA 02067
Parcel Number:	121-59	Mailing Address:	KALISH, PADDY
CAMA Number:	121-59		315 NORTH MAIN ST
Property Address:	315 NORTH MAIN ST		SHARON, MA 02067
Parcel Number:	121-62	Mailing Address:	FROST, DANIEL
CAMA Number:	121-62		293 NORTH MAIN ST
Property Address:	293 NORTH MAIN ST		SHARON, MA 02067
Parcel Number:	121-63	Mailing Address:	SWANSON, EVELYN TR
CAMA Number:	121-63		298 NORTH MAIN ST
Property Address:	298 NORTH MAIN ST		SHARON, MA 02067
Parcel Number:	121-64	Mailing Address:	BRACONI, MAUREEN F
CAMA Number:	121-64		306 NORTH MAIN ST
Property Address:	306 NORTH MAIN ST		SHARON, MA 02067
Parcel Number:	121-65	Mailing Address:	OLIVER, RUTH J
CAMA Number:	121-65		312 NORTH MAIN ST
Property Address:	312 NORTH MAIN ST		SHARON, MA 02067

Appendix A
Wetland Delineation Report by Pare Corporation June24, 2021

June 24, 2021

Mr. William Buckley, PE
Bay Colony Group, Inc.
4 School Street
Foxborough, MA 02035

Re: Wetland Delineation
303 N Main Street
Sharon, MA
Pare Project No. 18170.17

Dear Mr. Buckley,

Pare Corporation (Pare) delineated the wetland resources on or affecting a parcel of land located at 303 N Main Street in Sharon. Wetlands were delineated to establish the jurisdictional limits (wetland edges and 100-foot Buffer Zones) that could potentially affect future development on the property. Pare's investigation and delineation of wetlands was completed on October 6 and November 3, 2020, with additional delineations on June 24, 2021.

The following sections describe the delineated wetlands, discuss the delineation methodology, and summarize a review of available published mapping for the site. Attached to this report are the following materials: Site Location Map, an Annotated Aerial Photograph, an excerpt from the FEMA Flood Insurance Rate Map for the area, annotated photographs of the site wetlands, and completed BVW Data Forms.

METHODOLOGY

Wetland edges were delineated in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00, referred to as the Regulations), and the methodology specified in the publication entitled Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act (Jackson, 1995). The delineation is generally consistent with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: North Central and Northeast Region, Version 2.0 (U.S. Army Corps of Engineers, January 2012).

Pare investigated the entire site for the presence of wetlands. Consecutively numbered pink field flags were placed at appropriate intervals along the wetland/upland border. Primary parameters evaluated in wetland delineation included vegetation and soils, and visual indicators of wetland hydrology such as saturated soils and shallow root systems on trees. Wetlands identified on the subject property included a **Bordering Vegetated Wetland (BVW)**, as well as an **Isolated Vegetated Wetland (IVW)** that is jurisdictional under the Sharon Wetlands Protection Bylaw. The wetlands are described in the following sections.

WETLAND DESCRIPTIONS

Bordering Vegetated Wetland

A forested wetland complex bordering Trowel Shop Pond encroaches onto the south portion of the property. The wetland is classified as a **Bordering Vegetated Wetland (BVW)** as defined under 310 CMR 10.55(2). The wetland has an associated **100-foot Buffer Zone.**

Flag series B-1 to B-25 defines the north edge of the wetland, beginning at the eastern property boundary and extending west. The series is generally located mid-slope along a gradual wooded slope dominated by deciduous trees. The wetland appears to have a transitional hydrology, ranging from seasonally saturated areas along the wetland/upland border to a seasonally flooded interior, as indicated by water staining and mound-and-pool microrelief. The wetland appears to be primarily groundwater fed, although the wetland interior may receive overflow from Trowel Shop Pond when water levels are high. The wetland is dominated by Red Maple trees and has a dense shrub understory dominated by Sweet Pepperbush and Highbush Blueberry. Vegetation identified within the BVW included, but was not limited to, the following species:

Common Name	Scientific Name	Indicator Status
Red Maple	*Acer rubrum*	FAC
White Oak	*Quercus alba*	FACU
White Pine	*Pinus strobus*	FACU
Sweet Pepperbush	*Clethra alnifolia*	FAC
Highbush Blueberry	*Vaccinium corymbosum*	FACW
Glossy Buckthorn	*Frangula alnus*	FAC
Winterberry	*Ilex verticillata*	FACW
Witch Hazel	*Hamamelis virginiana*	FAC
Huckleberry	*Gaylussacia baccata*	FACU
Greenbriar	*Smilax rotundifolia*	FAC
Virginia Creeper	*Parthenocissus quinquefolia*	FACU
Poison Ivy	*Toxicodendron radicans*	FAC
New York Fern	*Thelypteris noveboracensis*	FAC
Cinnamon Fern	*Osmunda cinnamomea*	FACU

Isolated Vegetated Wetland

A forested wetland occupies a narrow low-lying area at the northeast side of the parcel. No hydrologic connections with other wetlands were observed. The wetland has a surface area of approximately 3,806 square feet, and water staining indicates that flooding does not exceed one foot. Therefore, the area is too small to qualify as an Isolated Land Subject to Flooding (ILSF) under the Wetlands Protection Act Regulations. However, the area appears to qualify as an **Isolated Freshwater Wetland** under the Sharon Wetlands Protection Bylaw, which protects wetlands larger than 2,000 square feet. The wetland has an associated **100-foot Buffer Zone** under the Bylaw.

Flag series A-1 to A-14 defines the perimeter of the wetland, beginning and ending at its southeast end. The series follows a gradual wooded slope. Most of the wetland appears to have a seasonally saturated to seasonally flooded hydrology, as indicated by water staining on the ground surface and mound-and-pool microrelief. The wetland appears to be fed by a combination of groundwater and surface runoff from surrounding uplands, including the residential properties along Gabriel Road to the east. The wetland is dominated by Red Maple trees and has a variable shrub understory that includes Highbush Blueberry, Spicebush, Glossy Buckthorn, Winterberry, and Witch Hazel. Vegetation identified within the BVW included, but was not limited to, the following species:

Common Name	Scientific Name	Indicator Status
Red Maple	*Acer rubrum*	FAC
Yellow Birch	*Betula alleghaniensis*	FAC
White Pine	*Pinus strobus*	FACU
Highbush Blueberry	*Vaccinium corymbosum*	FACW
Glossy Buckthorn	*Frangula alnus*	FAC
Winterberry	*Ilex verticillata*	FACW
Spicebush	*Lindera benzoin*	FACW
Witch Hazel	*Hamamelis virginiana*	FAC
Sweet Pepperbush	*Clethra alnifolia*	FAC
Greenbriar	*Smilax rotundifolia*	FAC
Virginia Creeper	*Parthenocissus quinquefolia*	FACU
Poison Ivy	*Toxicodendron radicans*	FAC
Royal Fern	*Osmunda regalis*	OBL
Cinnamon Fern	*Osmunda cinnamomea*	FACU

REVIEW OF PUBLISHED MAPPING

Per review of published mapping and the relevant MassGIS data layers on November 25, 2020:

- No certified or potential vernal pools are located on or near the property. (MassGIS CVP_PT.shp and pvpx1.shp).
- The site is located entirely outside of Priority and Estimated Habitats of Rare Species (MassGIS WHAB_POLY.shp and PRIHAB_POLY.shp - 2017).
- The site is not located within Areas of Critical Environmental Concern (acecs_arc.shp, 2009).
- The site is not located within Outstanding Resource Waters (ORW_POLY.shp, 2010).
- According to the FEMA Flood Insurance Rate Map (FIRM) for Norfolk County (Community Panel No. 25021C0193E, revised July 17, 2012), an area of 100-year Floodplain (defined under 310 CMR 10.57 as **Bordering Land Subject to Flooding**) associated with Trowel Shop Pond encroaches onto the southern portion of the property. The Floodplain is mapped as Zone A with no designated flood elevation. The Floodplain is mostly confined to the B-series BVW, although it extends slightly upslope from the wetland edge into the upland between flags B-6 and B-14. An excerpt from the FIRM is attached as Figure 3.

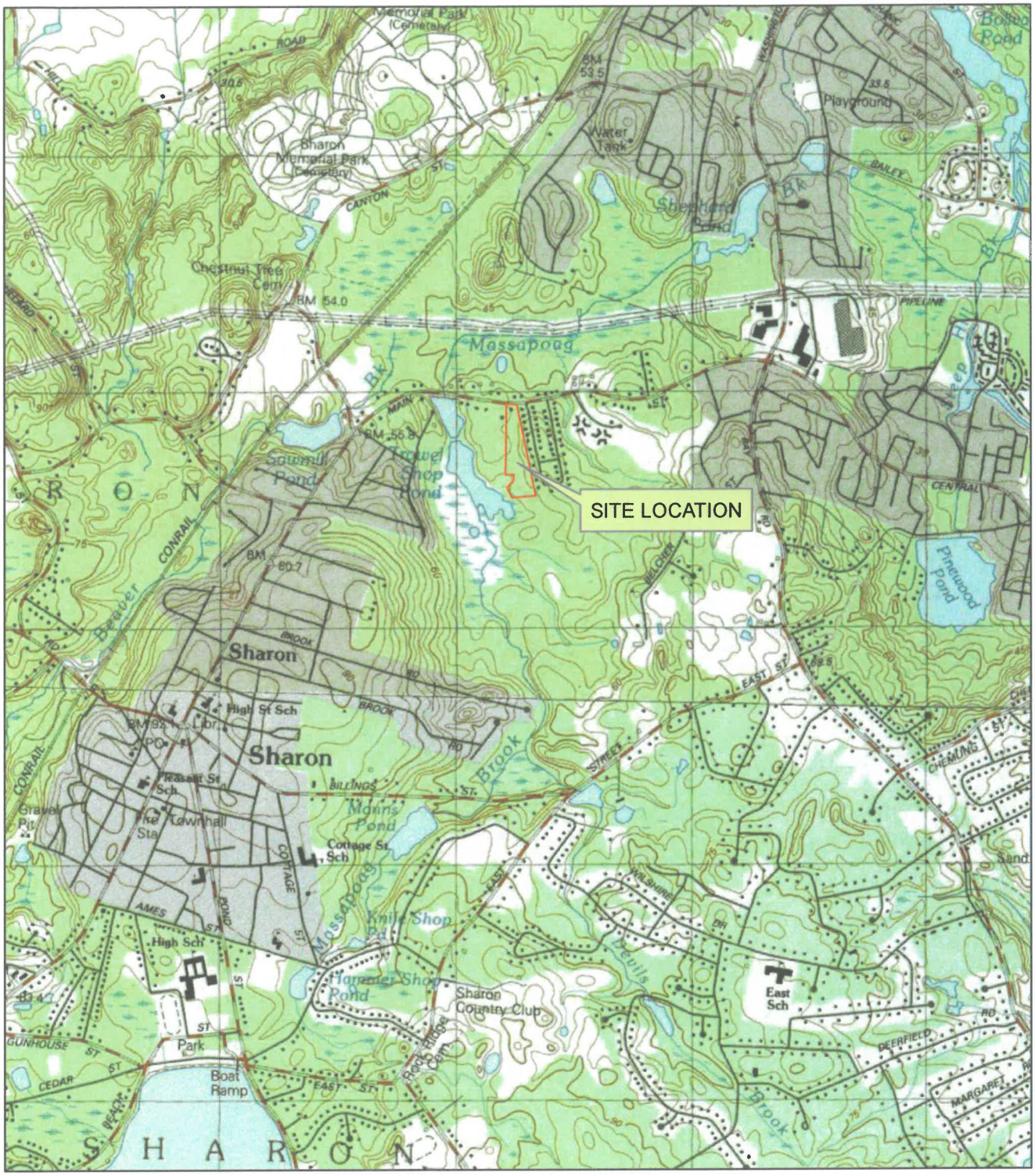
Thank you very much for the opportunity to assist you with this project. If you have any questions regarding permitting or other issues, or require further assistance, please do not hesitate to call.

Sincerely,

Lauren H. Gluck, P.W.S.
Senior Environmental Scientist

Attachments

Z:\JOBS\18 Jobs\18170.17 BCG - 303 North Main Street, Sharon MA\Report\Wetland Field Report.doc



MASS GIS

SITE LOCATION MAP

SCALE:1"=2,000'

N
W E
S

8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
(401) 334-4100

10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
(508) 543-1755

PARE PROJECT No. 18170.17 OCTOBER 2020

FIGURE 1

303 N MAIN ST.
SHARON, MA

MASS GIS

ANNOTATED AERIAL PHOTOGRAPH

SCALE:1"=200'

N
W E
S

8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
(401) 334-4100

10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
(508) 543-1755

PARE PROJECT No. 18170.17 OCTOBER 2020

FIGURE 2

303 N MAIN ST.
SHARON, MA

National Flood Hazard Layer FIRMette

FEMA

71°10'4"W 42°8'23"N

71°9'26"W 42°7'56"N

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

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
- 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 8/18/2020 at 10:07 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.

Photo 1: Typical view of B-series BVW edge at south end of site.

Photo 2: Interior of B-series isolated wetland at northeast side of site.

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

Applicant: _____ **Prepared by:** Pare Corporation **Project location:** 303 North Main St, Sharon **DEP File #:** None
L. Gluck

Check all that apply:

__ Vegetation alone presumed adequate to delineate BVW boundary: fill out section I only.
X 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. Observation Plot Number: 1 Transect Number: A (Wetland Station) 5'± D/G WF A-8 Date of Delineation: June 24, 2021

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 *
Tree	Red Maple (*Acer rubrum)*	26-50 (38.0)	48	Y	FAC*
	Hickory (*Carya sp.*)	16-25 (20.5)	26	Y	Assume FACU
	Slippery Elm (*Ulmus rubra*)	6-15 (10.5)	13	N	
	Norway Maple (*Acer platanoides*)	6-15 (10.5)	13	N	
	Total	79.5	100		
Sapling	none				
	Total				
Shrub	Witch Hazel (*Hamamelis virginiana*)	26-50 (38.0)	48	Y	FAC*
	Spicebush (*Lindera benzoin*)	16-25 (20.5)	26	Y	FACW*
	Glossy Buckthorn (*Frangula alnus*)	6-15 (10.5)	13	N	
	Foxgrape (*Vitis labrusca*)	6-15 (10.5)	13	N	
	Total	79.5	100		
Herb	Poison Ivy (*Toxicodendron radicans*)	16-25 (20.5)	49	Y	FAC*
	Skunk Cabbage (*Symplocarpus foetidus*)	6-15 (10.5)	25	Y	OBL*
	Virginia Creeper (*Parthenocissus quinquefolia*)	6-15 (10.5)	25	Y	FACU
	Total	41.5	99**		

**Total does not equal 100 due to rounding

*Use an asterisk to mark wetland indicator plants 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 adaptations, describe the adaptation next to the asterisk.

Vegetation Conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 2

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.

Section II. Indicators of Hydrology

Hydric Soil Interpretation
1. Soil Survey

Is there a published soil survey for this site? ☒ Yes ☐ No
Title/Date: Soil Survey of Norfolk and Suffolk County, Massachusetts, 2019
Map Number: Accessed via Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/

Soil type mapped: 420B – Canton fine sandy loam, 3 to 8 percent slopes

Hydric Soil Inclusions: Swansea

Are field observations consistent with soil survey? ☒ Yes ☐ No

Remarks:

2. Soil Description

Horizon	Depth (in)	Matrix Color	Mottles Color
O	2-0"	10YR 2/1	
A	0-8"	10YR 2/1	
B	6-12+"	10YR 4/4	10YR 2/1 & 7.5YR 5/8

Remarks: dark streaking prominent in B horizon

3. Other:

Conclusion: Is soil hydric? ☒ Yes ☐ 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:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☒ Other: buttressed tree roots

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 Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: _____ **Prepared by:** Pare Corporation **Project location:** 303 North Main St, Sharon **DEP File #:** None
L. Gluck

Check all that apply:
__ Vegetation alone presumed adequate to delineate BVW boundary: fill out section I only.
X 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. Observation Plot Number: 1 Transect Number: A (Upland Station) 5'± U/G WF A-8 Date of Delineation: June 24, 2021

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 *
Tree	Red Maple (*Acer rubrum*)	16-25 (20.5)	40	Y	FAC*
	Norway Maple (*Acer platanoides*)	16-25 (20.5)	40	Y	UPL
	Hickory (*Carya sp.*)	6-15 (10.5)	20	Y	Assume FACU
	Total	51.5	100		
Sapling	White Pine (*Pinus strobus*)	16-25 (20.5)	87	Y	FACU
	Wild Black Cherry (*Prunus serotina*)	0-5 (3.0)	13	N	
	Total	23.5	100		
Shrub	Barberry (*Berberis thunbergii*)	26-50 (38.0)	42	Y	FACU
	Witch Hazel (*Hamamelis virginiana*)	16-25 (20.5)	23	Y	FAC*
	Foxgrape (*Vitis labrusca*)	6-15 (10.5)	12	N	
	Glossy Buckthorn (*Frangula alnus*)	6-15 (10.5)	12	N	
	Oriental Bittersweet (*Celastrus orbiculatus*)	6-15 (10.5)	12	N	
	Total	90.0	101**		
Herb	Poison Ivy (*Toxicodendron radicans*)	16-25 (20.5)	33	Y	FAC*
	Wild Sarsaparilla (*Aralia nudicaulis*)	16-25 (20.5)	33	Y	FACU
	Virginia Creeper (*Parthenocissus quinquefolia*)	16-25 (20.5)	33	Y	FACU
	Total	61.5	99**		

**Total does not equal 100 due to rounding

*Use an asterisk to mark wetland indicator plants 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 adaptations, describe the adaptation next to the asterisk.

Vegetation Conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 6

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.

Section II. Indicators of Hydrology

Hydric Soil Interpretation
1. Soil Survey

Is there a published soil survey for this site? ☒ Yes ☐ No
Title/Date: Soil Survey of Norfolk and Suffolk County, Massachusetts, 2019
Map Number: Accessed via Web Soil Survey http://websoilsurvey.nrcs.usda.gov/

Soil type mapped: 420B – Canton fine sandy loam, 3 to 8 percent slopes

Hydric Soil Inclusions: Swansea

Are field observations consistent with soil survey? ☒ Yes ☐ No

Remarks:

2. Soil Description

Horizon	Depth (in)	Matrix Color	Mottles Color
O	1-0"	7.5YR 2.5/2	
A	0-4"	10YR 2/2	
B	4-12+"	10YR 4/3	

Remarks:

3. Other:

Conclusion: Is soil hydric? Yes ☒ 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:
- ☐ 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 Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: _____ **Prepared by:** Pare Corporation **Project location:** 303 North Main St, Sharon **DEP File #:** None
L. Gluck

Check all that apply:

__ Vegetation alone presumed adequate to delineate BVW boundary: fill out section I only.
X 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. Observation Plot Number: 1 Transect Number: B (Wetland Station) 5'± D/G WF B-11 Date of Delineation: November 3, 2020

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 *
Tree	White Pine (*Pinus strobus*)	6-15 (10.5)	18	N	
	Red Maple (*Acer rubrum)*	26-50 (38.0)	64	Y	FAC*
	White Oak (*Quercus alba*)	6-15 (10.5)	18	N	
	Total	59.0	100		
Sapling	White Pine (*Pinus strobus*)	6-15 (10.5)	100	Y	FACU
	Total	10.5	100		
Shrub	Witch Hazel (*Hamamelis virginiana*)	16-25 (20.5)	19	N	
	Highbush Blueberry (*Vaccinium corymbosum*)	26-50 (38.0)	35	Y	FACW*
	Sweet Pepperbush (*Clethra alnifolia*)	16-25 (20.5)	19	N	
	Huckleberry (*Glayussacia baccata*)	16-25 (20.5)	19	N	
	Glossy Buckthorn (*Frangula alnus*)	6-15 (10.5)	10	N	
	Total	110.0	102**		
Herb	New York Fern (*Thelypteris noveboracensis*)	16-25 (20.5)	49	Y	FAC*
	Virginia Creeper (*Parthenocissus quinquefolia*)	6-15 (10.5)	25	Y	FACU
	Glossy Buckthorn seedling (*Frangula alnus*)	6-15 (10.5)	25	Y	FAC*
	Total	41.5	99**		

**Total does not equal 100 due to rounding

*Use an asterisk to mark wetland indicator plants 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 adaptations, describe the adaptation next to the asterisk.

Vegetation Conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 2

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.

Section II. Indicators of Hydrology

Hydric Soil Interpretation
1. Soil Survey

Is there a published soil survey for this site? [Yes] No
Title/Date: Soil Survey of Norfolk and Suffolk County, Massachusetts, 2019
Map Number: Accessed via Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/

Soil type mapped: 71B – Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony

Hydric Soil Inclusions: Whitman, extremely stony

Are field observations consistent with soil survey? [Yes] No

Remarks:

2. Soil Description

Horizon	Depth (in)	Matrix Color	Mottles Color
O	2-0"	7.5YR 2.5/2	
A	0-8"	10YR 2/1	
B	8-12+"	10YR 4/1	

Remarks:

3. Other:

Conclusion: Is soil hydric? [Yes] 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:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☒ Other: buttressed tree roots; microrelief

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 Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: _____ **Prepared by:** Pare Corporation **Project location:** 303 North Main St, Sharon **DEP File #:** None
L. Gluck

Check all that apply:
__ Vegetation alone presumed adequate to delineate BVW boundary: fill out section I only.
X 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. Observation Plot Number: 1 Transect Number: B (Upland Station) 5'± U/G WF B-11 Date of Delineation: November 3, 2020

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 *
Tree	White Oak (*Quercus alba*)	16-25 (20.5)	33	Y	FACU
	White Pine (*Pinus strobus*)	16-25 (20.5)	33	Y	FACU
	Red Maple (*Acer rubrum*)	16-25 (20.5)	33	Y	FAC*
	Total	61.5	99**		
Sapling	White Pine (*Pinus strobus*)	26-50 (38.0)	100	Y	FACU
	Total	38.0	100		
Shrub	Huckleberry (*Glayussacia baccata*)	26-50 (38.0)	65	Y	FACU
	Witch Hazel (*Hamamelis virginiana*)	16-25 (20.5)	35	Y	FAC*
	Total	58.5	100		
Herb	Princess Pine (*Lycopodium obscurum*)	16-25 (20.5)	40	Y	FACU
	Canada Mayflower (*Maianthemum canadense*)	6-15 (10.5)	20	Y	FACU
	White Pine seedling (*Pinus strobus*)	16-25 (20.5)	40	Y	FACU
	Total	51.5	100		

**Total does not equal 100 due to rounding
*Use an asterisk to mark wetland indicator plants 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 adaptations, describe the adaptation next to the asterisk.

Vegetation Conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 7
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.

Section II. Indicators of Hydrology

Hydric Soil Interpretation
1. Soil Survey

Is there a published soil survey for this site? ☒ Yes ☐ No
Title/Date: Soil Survey of Norfolk and Suffolk County, Massachusetts, 2019
Map Number: Accessed via Web Soil Survey http://websoilsurvey.nrcs.usda.gov/

Soil type mapped: 71B – Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony

Hydric Soil Inclusions: Whitman, extremely stony

Are field observations consistent with soil survey? ☒ Yes ☐ No

Remarks:

2. Soil Description

Horizon	Depth (in)	Matrix Color	Mottles Color
O	1-0"	10YR 2/2	
A	0-3"	10YR 3/2	
B	3-12+"	10YR 4/4	

Remarks:

3. Other:

Conclusion: Is soil hydric? Yes ☒ 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:

☐ 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

Appendix B
Checklist for Stormwater Report
Storm Water Management Report February, 2024

Stormwater Report

A Stormwater Report must be submitted with the permit application to document compliance with the Stormwater Management Standards. The Stormwater Report must be organized into sections that correspond to the categories listed in the Checklist (e.g., Project Type, LID Practices, Standard 1 etc.). 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 by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- 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[1]
- Operation and Maintenance Plan required by Standard 9
- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (attached) that certifies that the Stormwater Report contains all required submittals.[2]

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

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[1] 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.

[2] 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.

not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

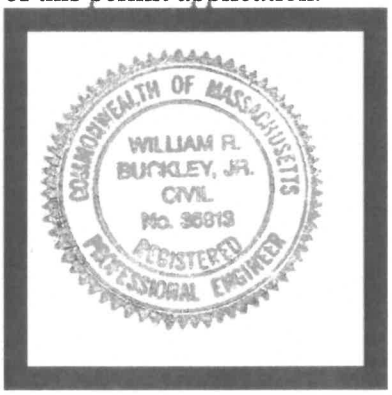
Stormwater Checklist and Certification

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 to comprise 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

9/21/2021

Signature, Date

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

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 Separate roof runoff from other drainage

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.

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: Circle the method used.
☐Static ☑Simple Dynamic ☐Dynamic Field[3]

☐ 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.
☑ 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;

[3] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

- 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.

☑ 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.

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.
- ☐ 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.

☐ 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.

Bay Colony Group, Inc.
Professional Civil Engineers & Land Surveyors

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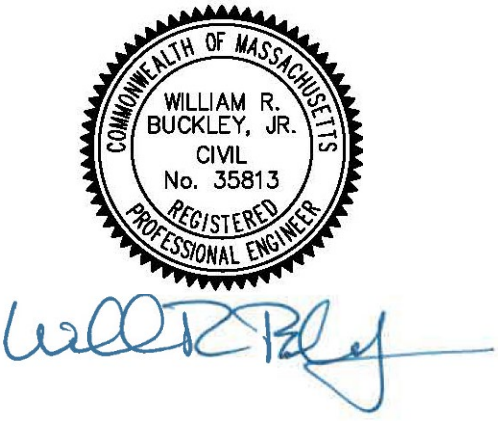
Utility and Storm Water Management Report
Trowel Shop Pond Condominiums
Sharon, MA

November, 2021
last revised February, 2024



Prepared for:

Trowel Shop Pond, LLC
1 Richard Road
Marblehead, MA 01945

Table of Contents:

1.0 Introduction. The project site is located at 299 & 303 North Main Street on the south side of North Main Street about 135' west of the intersection of Gabriel Road on 11.75 acres of land that currently contains a single-family home, automobile service station, and several accessory buildings. The land is a rectangular shaped parcel of land that contains 166' of frontage on North Main Street, then runs south about 1,200' and widens to about 650' where it meets Trowel Shop Pond. **(Sheet 2).** The proposed development project involves the construction of a multi-family condominium project consisting of five 3-unit buildings containing a total of 15 3-bedroom homes for a total of 45 bedrooms. A 652' long, 20' wide driveway, with a 42' diameter cul-de-sac at the end will be constructed to provide access to the project.

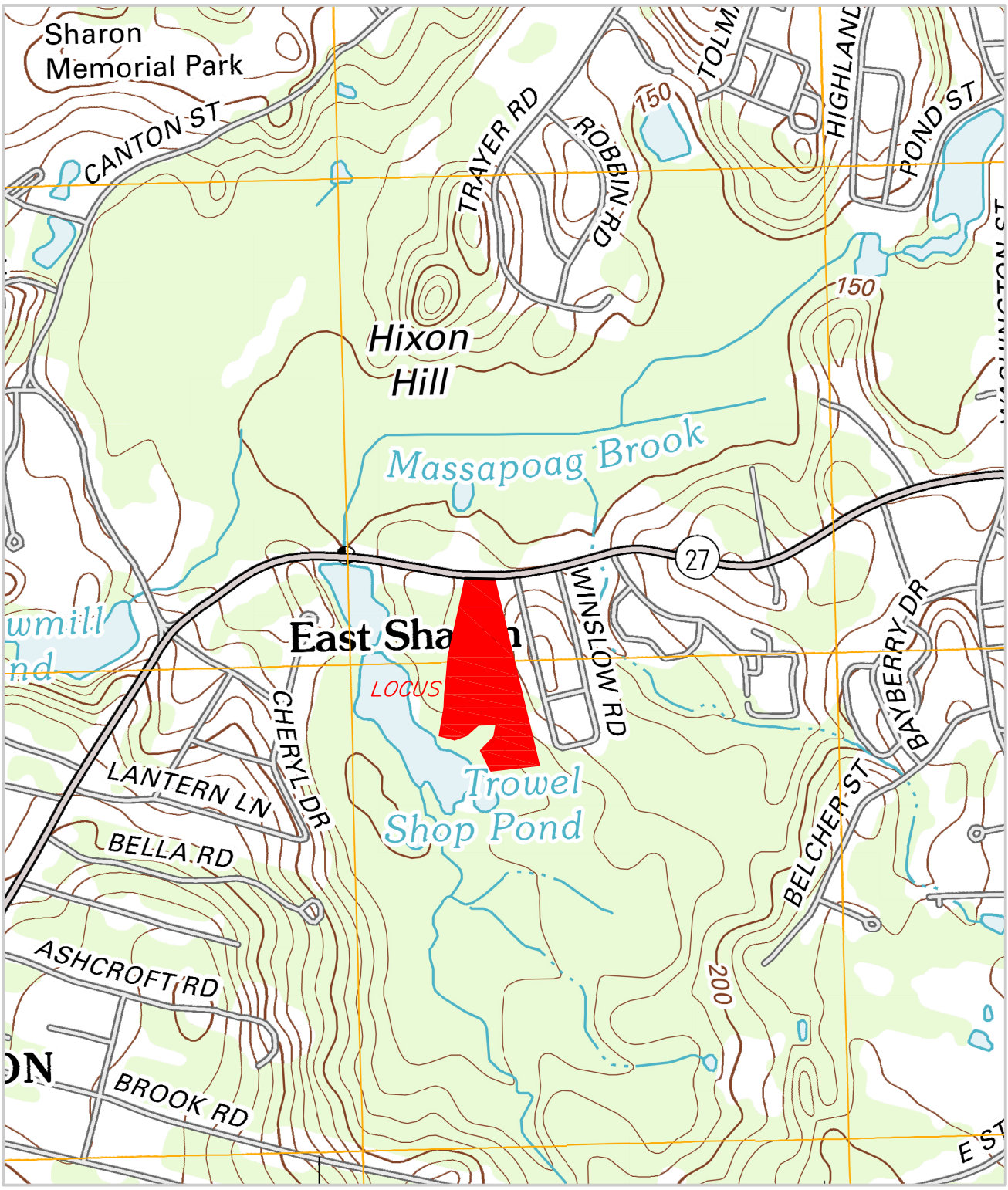
2.0 Water. The project will be served by municipal water that is available from a 12" water main on North Main Street. Flow testing has not been conducted, but will be done for the development of the construction documents. A new 8" main will connect to the existing 12" main and will be constructed the length of the driveway to a hydrant at the end of the cul-de-sac. A total of 3 hydrants are proposed, one at the entrance, one at the end of the driveway, and one approximately halfway down the driveway. Flow tests will be conducted in the spring by the Fire Protection Engineer as part of the design of the sprinkler system within the buildings.

3.0 Sewage Disposal. Each of the project buildings will be served by their own septic system designed in accordance with 310 CMR 15.00 (Title 5). Each building will contain 9 bedrooms, which will generate 990 gpd of flow, for a total flow of 4,950 gpd for project. Preliminary soil testing has been conducted throughout the site and the soils were found to be suitable for on-site sewage disposal. Ground water was found from 7.5' to 11.5' on the site with percolation rates ranging from 2-14 mpi. Soil logs are included in **Appendix C.**

4.0 Storm Water Management

Modifications. Several modifications were made to the storm water report in accordance with comments received from the review by Professional Services Corporation, PC. They include the widening of the roadway by 2' which increased the amount of impervious area. A low flow outflow pipe was added to the basin to ensure that adequate runoff is discharged to the basin to ensure that it does not dry out **Appendix A**. The modification resulted in the wetland obtaining the approximately same volume of runoff while not increasing the rate of runoff to the wetland or increasing the elevation above the existing condition **Appendix A & Table 2**. Additional data on the Stormceptor sizing has been added **Appendix B.** A draft O&M Plan has been added in **Appendix D.** Additional soil testing results (TP #D3 & D4) in the storm water basin have been added to **Appendix C**

Existing Conditions. There is one catch basin located on the northwest corner of the property adjacent to North Main Street that drains into the North Main Street storm drain system. There are no other storm water structures on the property. About 1.02 acres of the Project flows to North Main Street. About 4.42 acres of the site and surrounding area flow toward the middle of the property into an isolated wetland that is adjacent to the east



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USGS QUADRANGLE EXTRACT
TROWEL SHOP POND CONDOMINIUMS
SHARON, MA
NORWOOD QUADRANGLE
SCALE: 1"= 1000'

property line. About 2.02 acres of the site flows to the south toward a bordering vegetated wetland adjacent to Trowel Shop Pond off the south edge of the property. The property is largely wooded, but there are areas of grass gardens, gravel parking, paved parking, and the aforementioned structures. According to the Soil Conservation Service soil maps of the area, the upland soils consist of B and D type soils. The majority of the soils are Canton, which is a B soil. The remainder are Ridgebury soils, which are a D soil. In the area of the proposed storm water basin, we conducted a sieve analysis of the soil in order to confirm the field observation of SANDY LOAM. See **Appendix C** for soil logs and report.

Methodology The MA DEP Stormwater Standards were used to prepare the preliminary storm water design for the site. An analysis of the existing conditions for the 2 year, 10 year, and 100 year storm events was prepared to provide a baseline for the design. We propose to use an infiltration basin for stormwater management and are assuming the RAWLS rate for SANDY LOAM of 1.02 inches/hour of infiltration. Pretreatment will take place within deep sump catch basins with hoods, within water quality structures, then within forebays, and finally the infiltration basin.

Because of the topography, the basin will be adjacent to the driveway and the existing isolated wetland in the middle of the site. The basin will be about 4' deep and will contain an emergency overflow structure above the 100-year storm event elevation. It is designed to capture and infiltrate the 100-year event without overflow or surcharge into the driveway and with 1' of freeboard.

About 100' of the driveway is sloped toward North Main Street and the runoff from that section will be captured in a catch basin with a water quality structure and directed into the existing DMH at the northwest corner of the property.

Each of the homes will have a roof drain system that will capture the runoff from the downspouts and direct it through a separate drain system into the infiltration basin. This will prevent the clean roof runoff from mixing with the runoff from pavement. Separation of the different types of runoff is an LID element.

The system will meet the DEP Stormwater Standards and a brief outline of each of the standards follows. This preliminary analysis is meant to assist the Town's review of the comprehensive permit documents at this stage of the project. See **Appendix A** for the preliminary design calculations. A more detailed analysis will be prepared for the construction documents.

A summary of the DEP Stormwater Management Standards follows.

DEP STORMWATER MANAGEMENT STANDARDS

Standard #1: NO UNTREATED DISCHARGE OR EROSION TO WETLANDS

No untreated stormwater from the proposed project area will be discharged to resource areas. Runoff from all pavement will be discharged to deep sump catch basins equipped with water

quality structures, which will then go through a forebay and then to the infiltration basin. This treatment train will achieve a TSS removal rate which exceeds the DEP standard of 80%.

Table 1 – Pre- and Post- Development Runoff Conditions

Condition		2-year (cfs)	10-year (cfs)	100-year (cfs)
Existing Conditions	N. Main Street	1.2	2.3	3.9
	Isolated Wetland	1.4	4.5	9.9
	BVW	0.7	2.2	4.8
	Total	**3.3**	**9.0**	**18.6**
Proposed Conditions	N. Main Street	0.2	0.7	1.6
	Isolated Wetland	0.6	2.1	4.7
	BVW	0.7	2.2	4.5
	Total	**1.5**	**5.0**	**10.8**

Standard #2: PEAK RATE ATTENUATION

Stormwater controls have been designed for 2, 10, and 100-year storms. The post-development peak discharge rates with flood control do not exceed pre-development rates on the site at the discharge points for the 2, 10 and 100-year. See Table 1 for the results of the preliminary analysis.

Because the site contains an isolated wetland it is necessary to determine if, after construction, the water elevation in the wetland is equal to or less than the existing condition. We also determined that the 6" level outfall will allow the isolated wetland to retain the approximate same volume of runoff from pre- to post-development conditions. See Table 2 for the pre- and post-development rates, elevations and volumes and Appendix A for the detailed calculations.

Table 2 – Pre- and Post-Development Conditions in Isolated Wetland

		2-year	10-year	100-year
Existing	Elevation (ft)	162.6	163.2	163.8
	Rate (cfs)	1.4	4.5	9.9
	Volume (ac-ft)	0.19	0.49	0.98
Developed	Elevation (ft)	162.5	163.1	163.8
	Rate (cfs)	0.6	2.1	4.7
	Volume (ac-ft)	0.17	0.51	1.00

Standard #3: STORMWATER RECHARGE

1) The proposed project is located on a plot with hydrologic class B and D soils based on the NRCS soil map. The target depth factor for a B soil is 0.35 inches which is where all of the proposed impervious area is located. Soil textural analyses have been conducted

throughout the site to confirm that the site contains generally SANDY LOAM and additional testing was done in the area of the proposed drainage system to confirm the soils classification. The appropriate RAWLS rate for SANDY LOAM of 1.02 inches/hour will be used to ensure that the amount of recharge meets the standard. **(Appendix B)**

2) The infiltration BMP that will be used will be an infiltration basin. The roof drain systems will include direct piping from the roofs to the infiltration basin so that the water is considered "clean" and does not require pretreatment.

3) Using the RAWLS rates for SANDY LOAM demonstrates that the drawdown of the Required Recharge Volume will take less than the required 72 hours dewatering standard. **(Appendix B)**

4) Capture area adjustment is necessary since not all of the impervious areas will go to the infiltration basin. It is estimated that 94% of the impervious area will be directed to the basin, which meets the 65% standard and that the additional required volume in the infiltration basin is available. **(Appendix B)**

5) A mounding analysis is not required since the bottom of the system is more than 4' above the estimated high ground water elevation.

Standard # 4: WATER QUALITY

1) The required water quality volume is based on 0.55 acres of impervious area, not including roof runoff, and 0.5 inch water quality depth, which yields a water quality volume of 0.0229 acre-feet.

2) The BMPs used for the proposed project to enhance water quality include: deep sump catch basins, water quality structures, forebay, and an infiltration basin.

3) Using deep sump catch basins and assuming Stormceptors in the treatment train, the actual TSS removal is no less than 80% before it exits the site and 97% in the infiltration basin. The weighted TSS removal for the site is 95%, which meets the TSS removal rate requirement. **(Table 3 & Appendix B)**

Standard # 5: LAND USES WITH HIGHER POTENTIAL POLLUTION LOADS

The site will consist of a typical residential use which is not considered to have a high potential pollutant load. The site will be compatible with the surrounding environment, which is a residential area.

Standard #6: CRITICAL AREAS

The site does not lie within a critical area as defined within the Massachusetts Stormwater Handbook.

Standard #7: REDEVELOPMENT

The proposed activity is a combination new development/redevelopment project. The project meets all the DEP Stormwater Standards for new development.

Table 3 – TSS Removal Table

DB-1

Impervious Area =		0.48	acres	
Runoff depth to be treated =		0.50	inches	
Runoff volume to be treated =		0.0200	ac-ft	
BMP	*TSS Removal Rate*	*Starting TSS Load*	*Amount Removed*	*Remaining Load*
Deep Sump and Hooded CB	0.25	1.00	0.25	0.75
Stormcepter	0.8	0.75	0.60	0.15
Infiltration Basin w/forebay	0.8	0.15	0.12	0.03
TOTAL TSS REMOVED =				**97 %**

DA

Impervious Area =		0.07	acres	
Runoff depth to be treated =		0.50	inches	
Runoff volume to be treated =		0.0029	ac-ft	
BMP	*TSS Removal Rate*	*Starting TSS Load*	*Amount Removed*	*Remaining Load*
Stormcepter	0.8	1.00	0.8	0.20
TOTAL TSS REMOVED =				**80 %**

Weighted TSS Removal= **95%**

Standard #8: CONSTRUCTION PERIOD CONTROLS

Silt sock barriers will be installed at the downgradient limit of work in areas that might discharge to the wetlands or to abutters before any excavation starts. A stone pad shall be spread at the entrance from the existing roadway to the project site to prevent mud from escaping the site during construction. A Draft Stormwater Pollution Prevention Plan will be developed in accordance with the EPA General Permit for Construction Activities. A final SWPPP will be prepared once the construction schedule is finalized and the contractors are chosen.

Standard #9: OPERATION AND MAINTENANCE PLAN

A Draft Operation and Maintenance Plan and Long-Term Pollution Prevention Plan are included in **Appendix D**.

Standard # 10: ILLICIT DISCHARGES TO DRAINAGE SYSTEM

A certification regarding illicit discharges will be signed by owner prior to the start of construction. The current owner will not be constructing the project.

Appendix D: OPERATION AND MAINTENANCE PLAN FOR STORMWATER BMPs

	During Construction	**Post-construction**
BMP Owner:	**Developer**	**Condo Assoc**
Party of Plan Responsibility:	**Developer**	**Condo Assoc**

References:

- Site Development Plan
- Stormwater Pollution Prevention Plan for Construction Activities – Trowel Pond Shop Condominiums (to be published)

Operation and Maintenance – During Construction

Item 1: During construction, weekly inspection of the crushed stone construction entrance pad and erosion control silt socks shall be conducted by a qualified staff member of the responsible party or an independent sediment and erosion control expert hired by the responsible party. Any displaced barriers shall be restored or repaired immediately. All barriers shall be installed, where possible, a minimum of 50' from the edge of the bordering vegetated wetlands and, where possible, 5 ft from the property line.

Item 2: The catch basins within the project site shall be set to base course grade so that they are functional throughout the project. They shall be inspected before and after rain storms, if the basins are filled with sediment to half of its depth, these basins shall be cleaned out with an orange peel bucket or some other means. Silt sacks shall be installed within the catch basins to ensure that siltation does not enter the catch basin. Any debris in basins should be cleaned out. The roadway will be swept as necessary.

Item 3: Inspect storm water basin after every major storm (1.0 inches in 24 hours) and if necessary, take corrective action. At least twice a year, mow the buffer area, side slopes, and emergency spillway. Remove trash and debris at the same time

Item 5: Sediment basins shall be inspected after every storm and weekly. Clean out sediment when it reaches half of the depth of the basin. Scarify basement bottom after each clean out. Repair any damage to the sides and rip-rap outlet structure.

Operation and Maintenance – Post Construction

Item 1: The catch basins shall be inspected four times a year: beginning of summer, after leaf fall, before the arrival of hurricane season, and in the early or mid-spring after the snow melt and road sweeping. Any debris in basins should be cleaned out. The roadway will be swept twice a year: once after leaf fall, the other in the spring after snow melt.

Item 2: Inspect the storm water basin at least once per year for the following:

- Signs of differential settlement
- Cracking
- Erosion
- Leakage in the embankments
- Tree growth on the embankments
- Condition of riprap
- Damage to the emergency spillway
- Emergence of invasive species

If necessary, restore infiltration of the basin through aeration or some other suitable method.

Item 3: Stormceptor Separator: Inspect Stormceptor structure in accordance with the latest manufacturer's maintenance manual, which can be found at Stormceptor-STC-Maintenance-Guide.pdf (conteches.com)

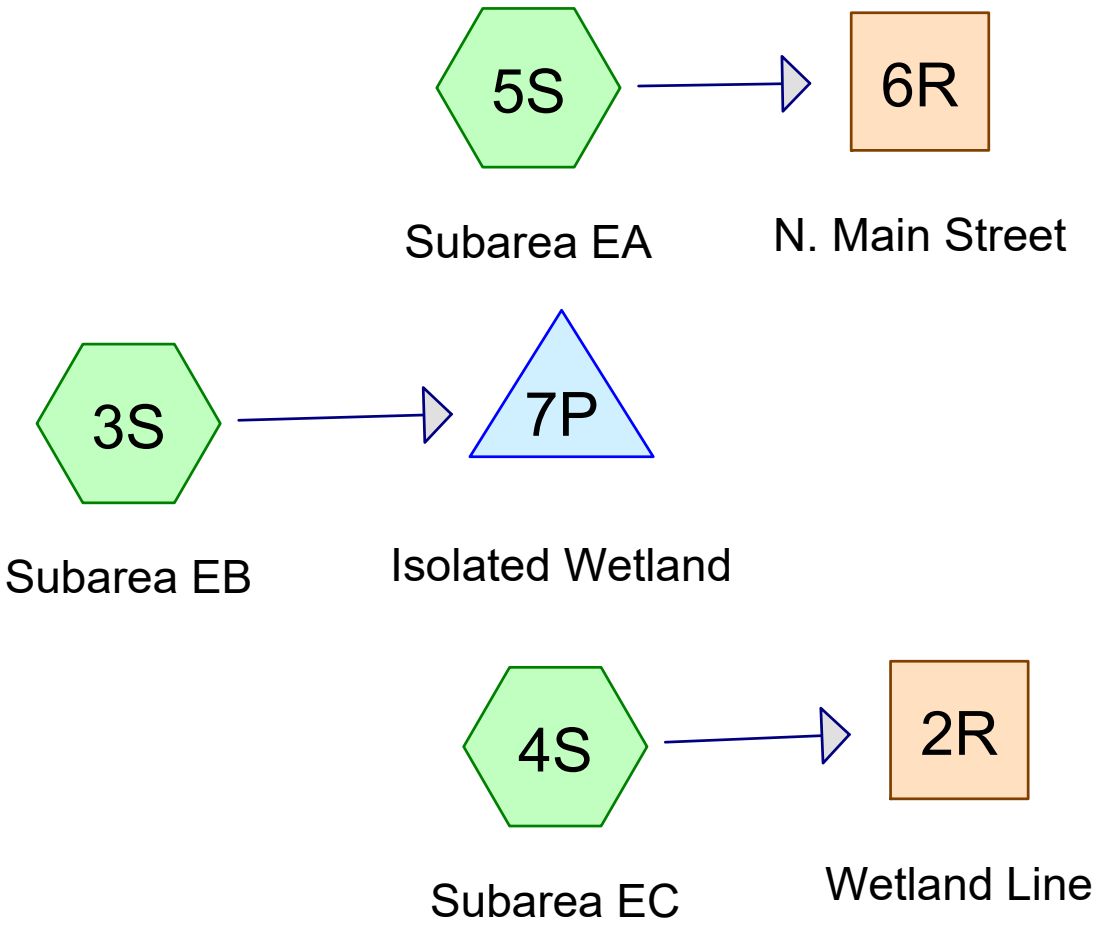
Item 4: Estimated Operations and Maintenance Budget: The following is an estimate of the O&M Budget, post construction.

Inspections – infiltration basin, Cascade, catch basins (3 times per year): $420
Cleaning catch basins (4 times per year): $1,500
Mowing/cleaning basin (2 times per year): $320
Lot Sweeping (2 times per year): $800

Long Term Pollution Prevention Plan

Item 1 - Good housekeeping practices: The site is to be kept clean of trash and debris. No trash or uncovered materials is to be left outside.
Item 2 - Provisions for storing materials and waste products inside or under cover: All waste materials will be stored in enclosed trash containers and removed by a licensed solid waste company. No waste products will be stored outside unless in trash containers.
Item 3 - Vehicle washing controls: Vehicles will not be washed on this site.
Item 4 - Requirements for routine inspections and maintenance of stormwater BMPs: Refer to the maintenance schedule provided in the Operation and Maintenance Plan – Post Construction. .
Item 5 - Spill prevention and response plans: A spill prevention and response plan will be developed and implemented by the condominium association.
Item 6 - Provisions for maintenance of planters, gardens, parks and other landscaped areas: Condo Association will maintain surrounding landscaped area with the purpose of retaining the landscaped as designed.
Item 7 - Requirements for storage and use of fertilizers, herbicides, and pesticides: If present, fertilizers, herbicides and pesticides shall be stored in their appropriate containers within the buildings. They shall be handled and used in accordance with the manufacturer's recommendations. It is anticipated that a landscape contractor will have the responsibility of maintaining the property and these materials will be stored off site.
Item 8 - Pet waste management provisions: Owners will be responsible for removal of waste to trash receptacles.
Item 9 - Provisions for solid waste management: If present, solid waste material shall be placed in outdoor enclosed containers until emptied by licensed waste management company.
Item 10 - Snow disposal and plowing plans: A snow removal plan will be developed and implemented by the Condo Association - see draft plan.
Item 11 - Winter Road Salt/or Sand Use and Storage restriction: See item above.
Item 12 - Sweeping schedules: See Operations and Maintenance Plan – Post Construction.
Item 13 - Training for staff or personnel involved with the implementing Long Term Pollution Prevention Plan: The Condo Association will be responsible for training subcontractors to the implement the plan.
Item 14 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan: TBD

APPENDIX A – Preliminary Pre- and Post-DEVELOPMENT ANALYSIS and DETENTION BASIN ANALYSIS

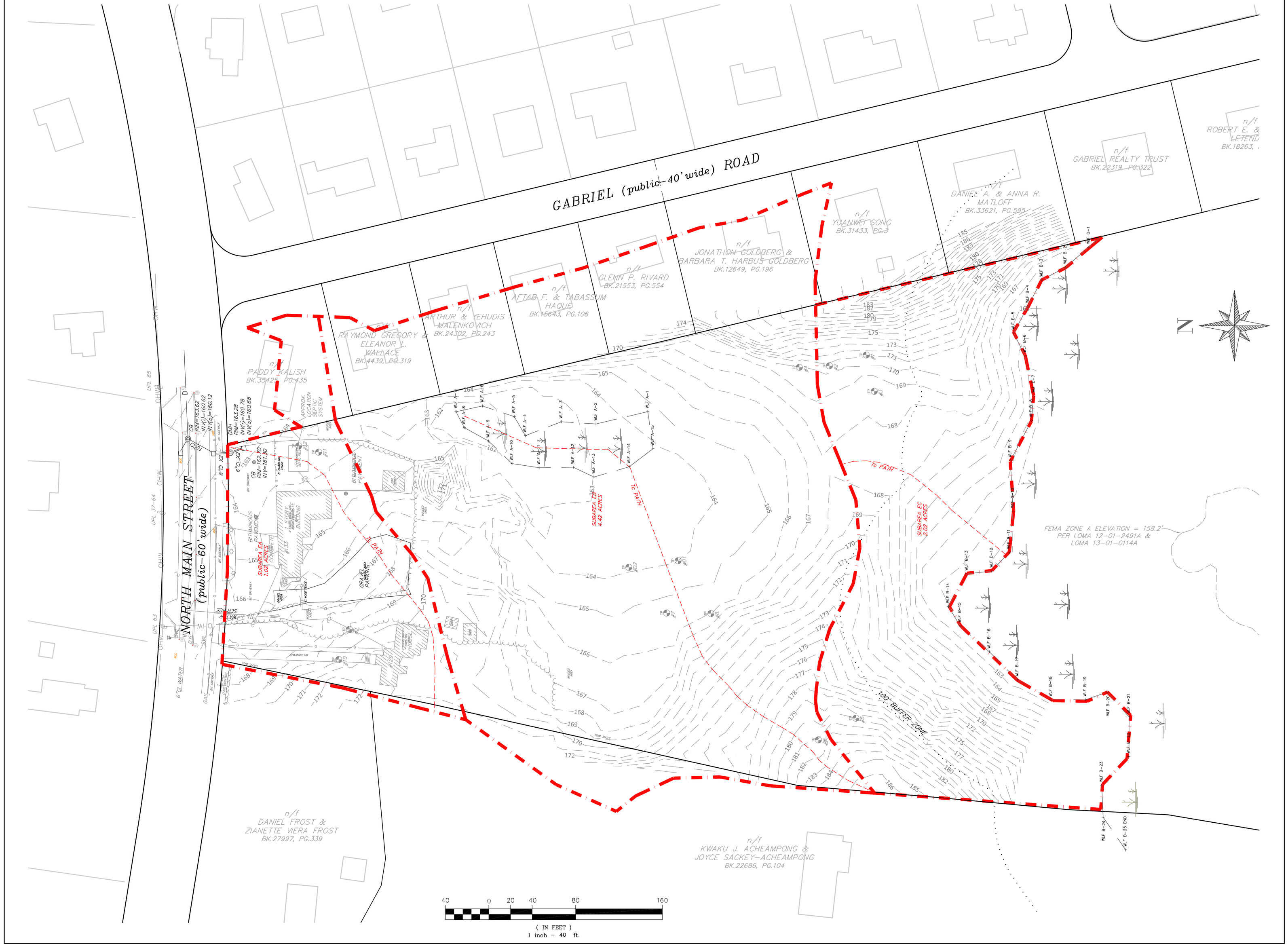


Subcat Reach Pond Link

Routing Diagram for 20-0179 Ex
Prepared by Bay Colony Group, Inc., Printed 11/15/2021

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.20	2
2	10-Year	Type III 24-hr		Default	24.00	1	4.70	2
3	100-Year	Type III 24-hr		Default	24.00	1	6.70	2



PROJECT:

Trowel Shop Pond Condominiums
299 & 303 NORTH MAIN STREET

Sharon
Massachusetts

PREPARED FOR:

Yuriy Lande
1 Richard Road
Marblehead, MA 01945

Bay Colony Group, Inc.
Professional Civil Engineers & Professional Land Surveyors
FOUR SCHOOL STREET
P.O. BOX 9136
FOXBOROUGH, MA 02035
508-543-3939

REFERENCES:

STAMP

DRAWING TITLE

Existing Subareas

SCALE: 1" = 40'

NOVEMBER 11, 2021	SHEET NUMBER
20-0179J	**Ex**

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.09	96	Gravel surface, HSG B (3S)
0.29	98	Paved parking, HSG B (5S)
0.06	98	Paved roads w/curbs & sewers, HSG B (3S)
0.23	98	Roofs, HSG B (3S, 5S)
1.15	55	Woods, Good, HSG B (4S)
1.38	77	Woods, Good, HSG D (3S, 4S)
0.63	65	Woods/grass comb., Fair, HSG B (5S)
3.63	58	Woods/grass comb., Good, HSG B (3S)
7.46	**65**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.00	HSG A	
6.08	HSG B	3S, 4S, 5S
0.00	HSG C	
1.38	HSG D	3S, 4S
0.00	Other	
7.46		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 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 3S: Subarea EB Runoff Area=4.42 ac 4.30% Impervious Runoff Depth>0.52"
Flow Length=550' Tc=16.3 min CN=63 Runoff=1.4 cfs 0.190 af

Subcatchment 4S: Subarea EC Runoff Area=2.02 ac 0.00% Impervious Runoff Depth>0.56"
Flow Length=182' Tc=15.6 min CN=64 Runoff=0.7 cfs 0.094 af

Subcatchment 5S: Subarea EA Runoff Area=1.02 ac 38.24% Impervious Runoff Depth>1.27"
Flow Length=338' Tc=13.8 min CN=78 Runoff=1.2 cfs 0.108 af

Reach 2R: Wetland Line Inflow=0.7 cfs 0.094 af
Outflow=0.7 cfs 0.094 af

Reach 6R: N. Main Street Inflow=1.2 cfs 0.108 af
Outflow=1.2 cfs 0.108 af

Pond 7P: Isolated Wetland Peak Elev=162.55' Storage=2,578 cf Inflow=1.4 cfs 0.190 af
Outflow=0.3 cfs 0.181 af

Total Runoff Area = 7.46 ac Runoff Volume = 0.392 af Average Runoff Depth = 0.63"
92.23% Pervious = 6.88 ac 7.77% Impervious = 0.58 ac

Summary for Subcatchment 3S: Subarea EB

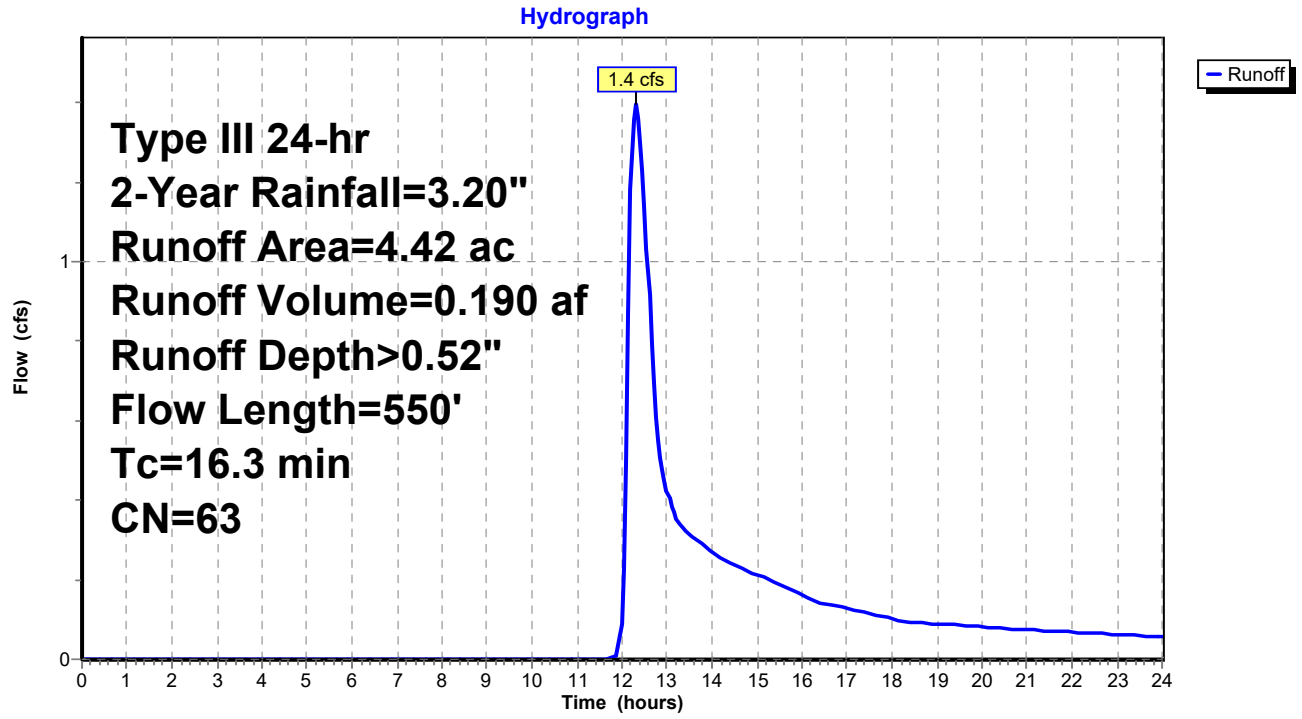
Runoff = 1.4 cfs @ 12.30 hrs, Volume= 0.190 af, Depth> 0.52"
Routed to Pond 7P : Isolated Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.06	98	Paved roads w/curbs & sewers, HSG B
0.13	98	Roofs, HSG B
0.09	96	Gravel surface, HSG B
3.63	58	Woods/grass comb., Good, HSG B
0.51	77	Woods, Good, HSG D
4.42	63	Weighted Average
4.23		95.70% Pervious Area
0.19		4.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
8.4	500	0.0390	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	550	Total			

Subcatchment 3S: Subarea EB



Summary for Subcatchment 4S: Subarea EC

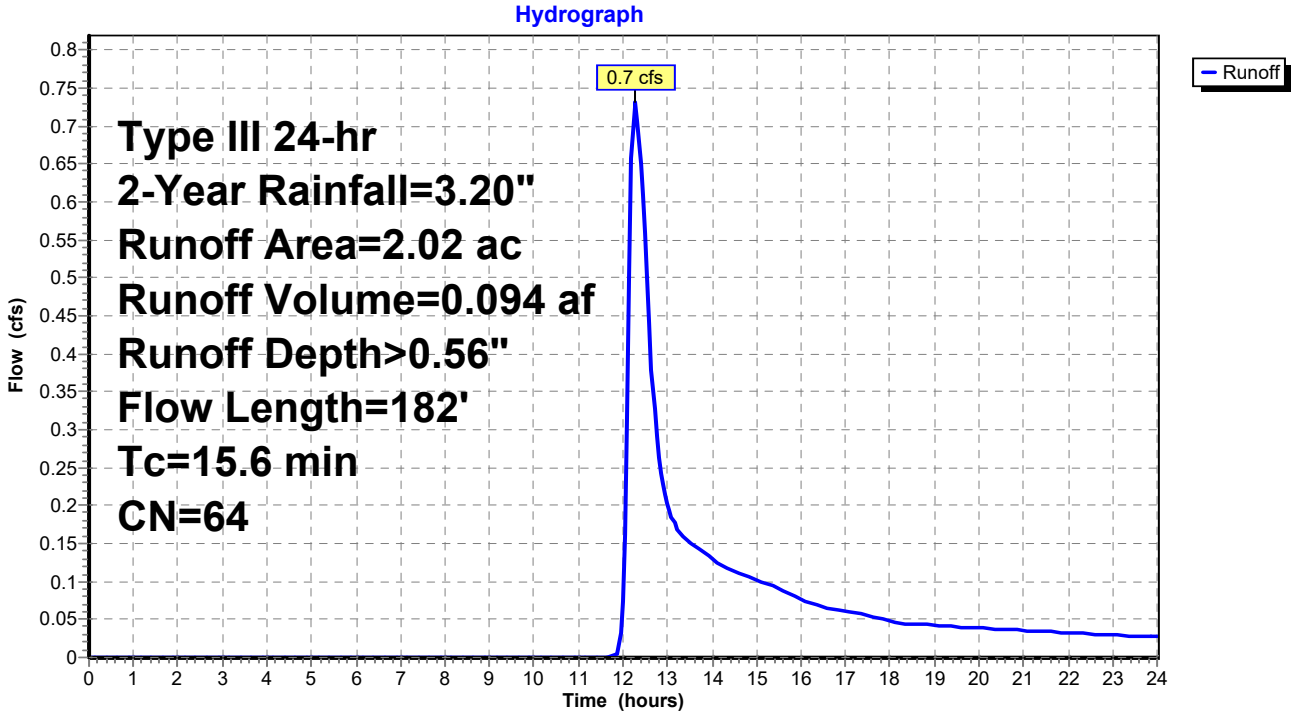
Runoff = 0.7 cfs @ 12.27 hrs, Volume= 0.094 af, Depth> 0.56"
Routed to Reach 2R : Wetland Line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
1.15	55	Woods, Good, HSG B
0.87	77	Woods, Good, HSG D
2.02	64	Weighted Average
2.02		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0150	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	132	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	182	Total			

Subcatchment 4S: Subarea EC



Summary for Subcatchment 5S: Subarea EA

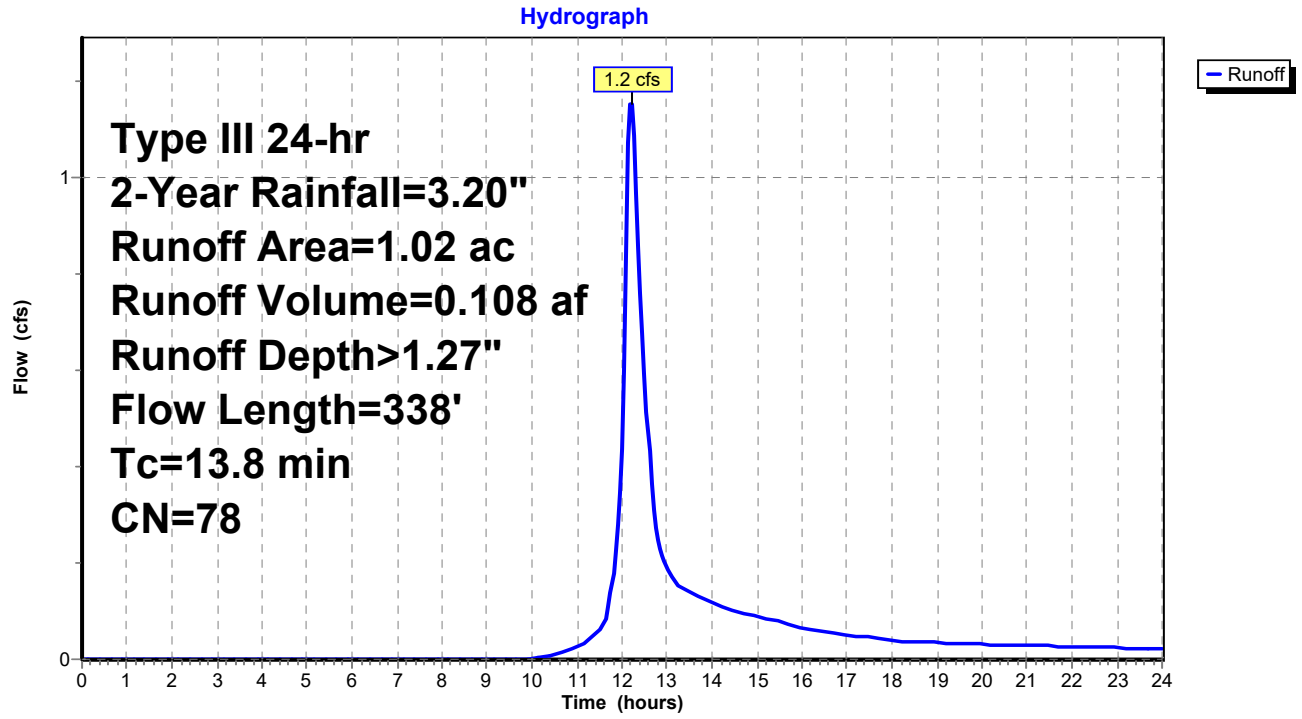
Runoff = 1.2 cfs @ 12.20 hrs, Volume= 0.108 af, Depth> 1.27"
Routed to Reach 6R : N. Main Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.29	98	Paved parking, HSG B
0.10	98	Roofs, HSG B
0.63	65	Woods/grass comb., Fair, HSG B
1.02	78	Weighted Average
0.63		61.76% Pervious Area
0.39		38.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.3	183	0.0360	1.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	105	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
13.8	338	Total			

Subcatchment 5S: Subarea EA

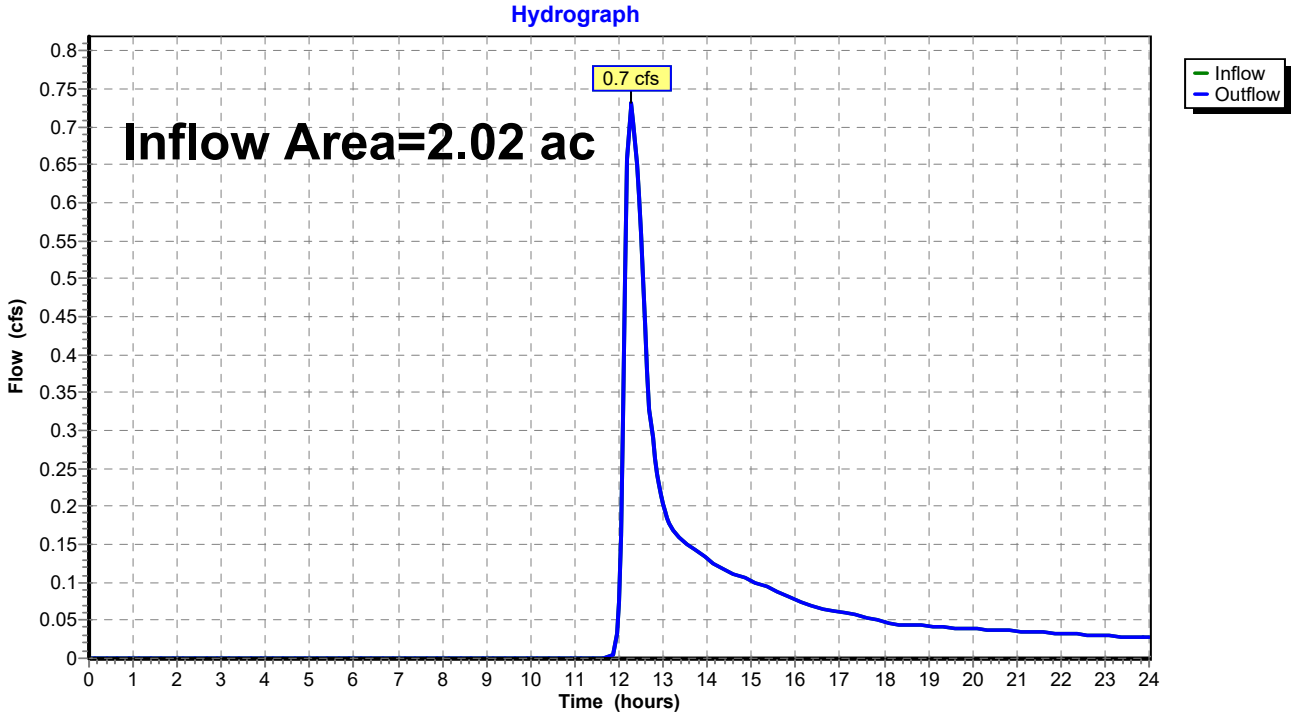


Summary for Reach 2R: Wetland Line

Inflow Area = 2.02 ac, 0.00% Impervious, Inflow Depth > 0.56" for 2-Year event
Inflow = 0.7 cfs @ 12.27 hrs, Volume= 0.094 af
Outflow = 0.7 cfs @ 12.27 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 2R: Wetland Line

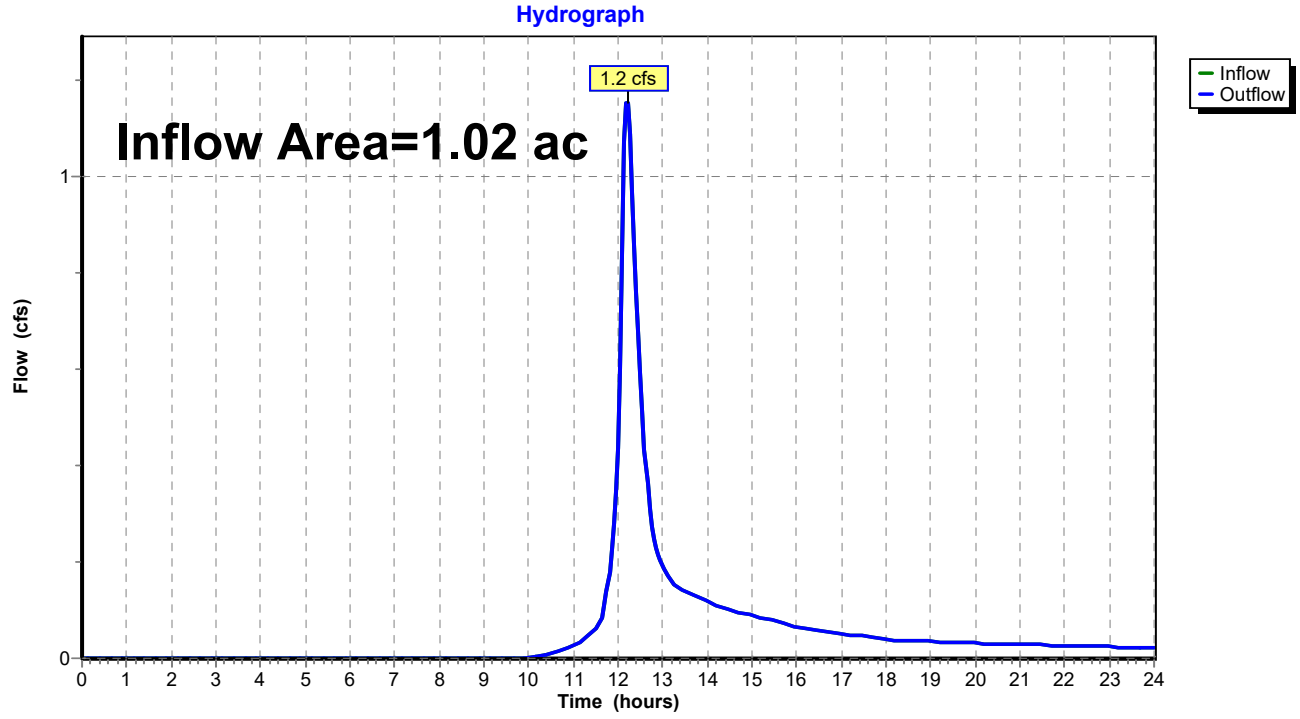


Summary for Reach 6R: N. Main Street

Inflow Area = 1.02 ac, 38.24% Impervious, Inflow Depth > 1.27" for 2-Year event
Inflow = 1.2 cfs @ 12.20 hrs, Volume= 0.108 af
Outflow = 1.2 cfs @ 12.20 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: N. Main Street



Summary for Pond 7P: Isolated Wetland

Inflow Area = 4.42 ac, 4.30% Impervious, Inflow Depth > 0.52" for 2-Year event
Inflow = 1.4 cfs @ 12.30 hrs, Volume= 0.190 af
Outflow = 0.3 cfs @ 13.88 hrs, Volume= 0.181 af, Atten= 80%, Lag= 94.6 min
Discarded = 0.3 cfs @ 13.88 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 162.55' @ 13.88 hrs Surf.Area= 6,335 sf Storage= 2,578 cf

Plug-Flow detention time= 130.4 min calculated for 0.181 af (95% of inflow)
Center-of-Mass det. time= 105.9 min (1,017.1 - 911.2)

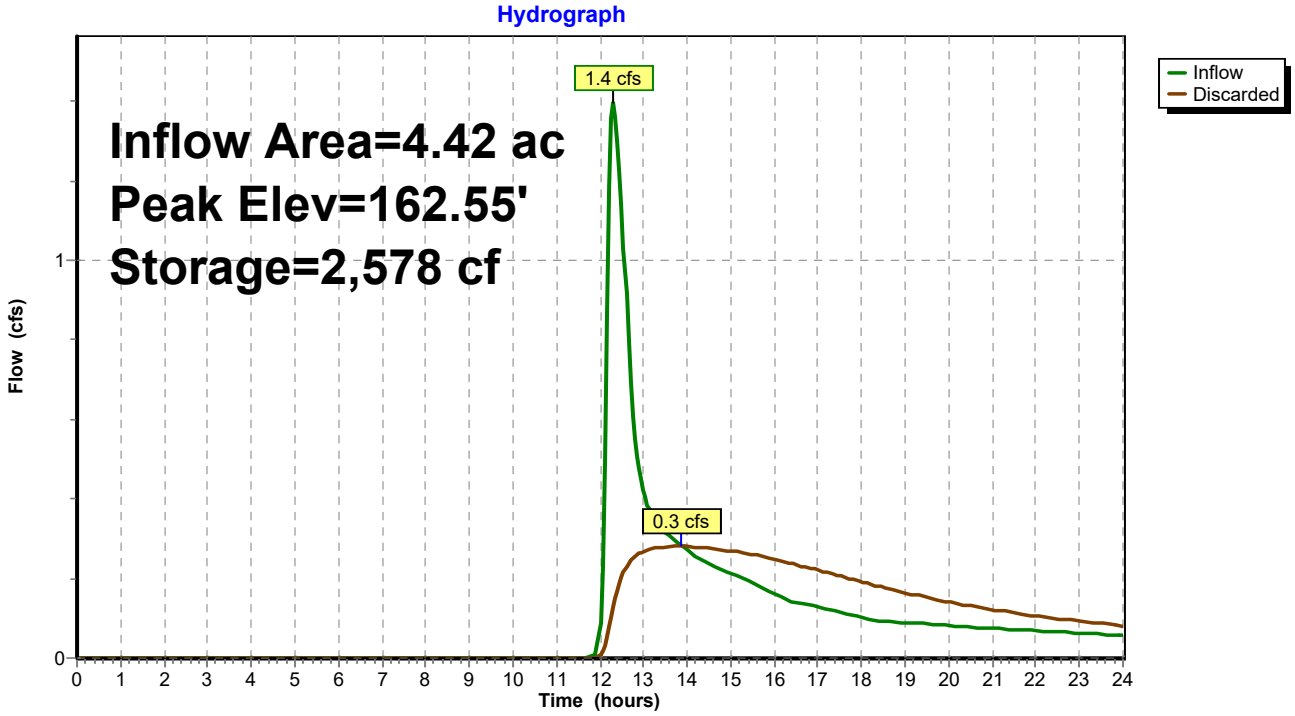
Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	26,477 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.50	0	0.0	0	0	0
162.00	2,098	196.0	350	350	3,057
163.00	11,415	520.0	6,136	6,485	21,522
164.00	30,042	744.0	19,992	26,477	44,062

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.50'	**1.020 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 156.00'

Discarded OutFlow Max=0.3 cfs @ 13.88 hrs HW=162.55' (Free Discharge)
1=Exfiltration (Controls 0.3 cfs)

Pond 7P: Isolated Wetland



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 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 3S: Subarea EB Runoff Area=4.42 ac 4.30% Impervious Runoff Depth>1.32"
Flow Length=550' Tc=16.3 min CN=63 Runoff=4.5 cfs 0.485 af

Subcatchment 4S: Subarea EC Runoff Area=2.02 ac 0.00% Impervious Runoff Depth>1.38"
Flow Length=182' Tc=15.6 min CN=64 Runoff=2.2 cfs 0.233 af

Subcatchment 5S: Subarea EA Runoff Area=1.02 ac 38.24% Impervious Runoff Depth>2.45"
Flow Length=338' Tc=13.8 min CN=78 Runoff=2.3 cfs 0.208 af

Reach 2R: Wetland Line Inflow=2.2 cfs 0.233 af
Outflow=2.2 cfs 0.233 af

Reach 6R: N. Main Street Inflow=2.3 cfs 0.208 af
Outflow=2.3 cfs 0.208 af

Pond 7P: Isolated Wetland Peak Elev=163.16' Storage=8,568 cf Inflow=4.5 cfs 0.485 af
Outflow=0.6 cfs 0.447 af

Total Runoff Area = 7.46 ac Runoff Volume = 0.926 af Average Runoff Depth = 1.49"
92.23% Pervious = 6.88 ac 7.77% Impervious = 0.58 ac

Summary for Subcatchment 3S: Subarea EB

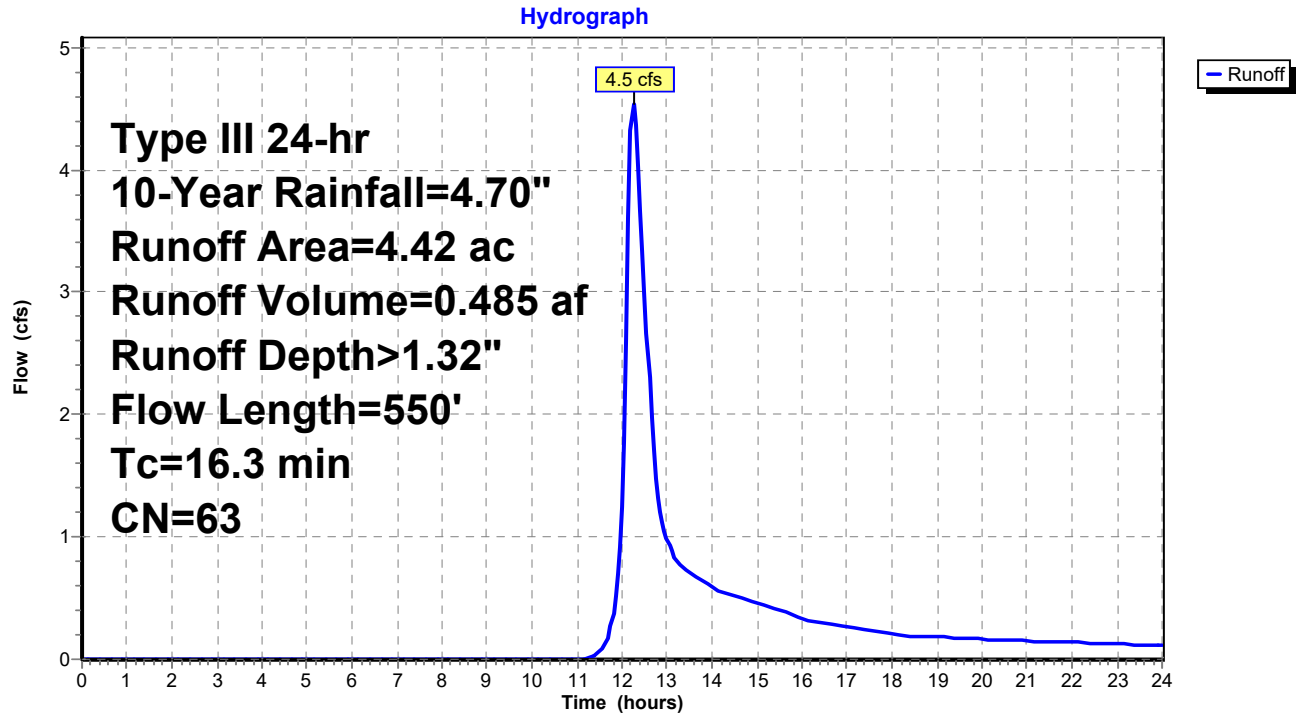
Runoff = 4.5 cfs @ 12.25 hrs, Volume= 0.485 af, Depth> 1.32"
Routed to Pond 7P : Isolated Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
0.06	98	Paved roads w/curbs & sewers, HSG B
0.13	98	Roofs, HSG B
0.09	96	Gravel surface, HSG B
3.63	58	Woods/grass comb., Good, HSG B
0.51	77	Woods, Good, HSG D
4.42	63	Weighted Average
4.23		95.70% Pervious Area
0.19		4.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
8.4	500	0.0390	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	550	Total			

Subcatchment 3S: Subarea EB



Summary for Subcatchment 4S: Subarea EC

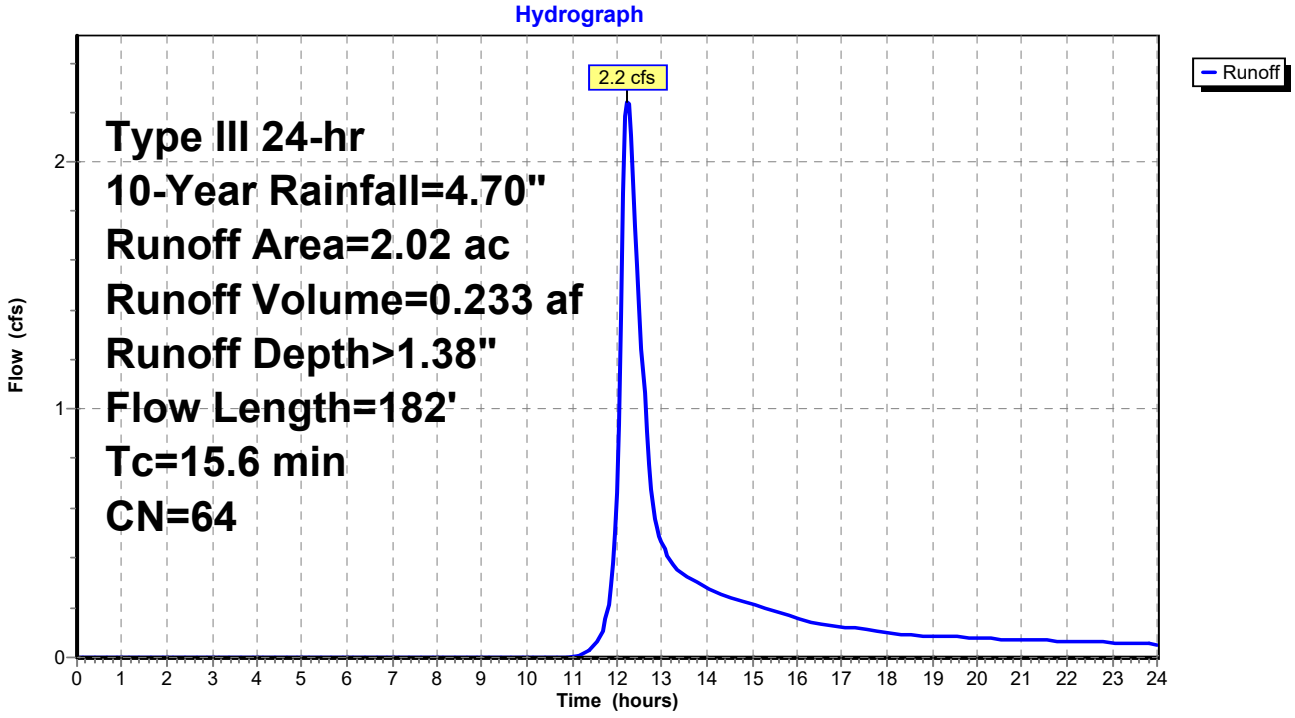
Runoff = 2.2 cfs @ 12.24 hrs, Volume= 0.233 af, Depth> 1.38"
Routed to Reach 2R : Wetland Line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
1.15	55	Woods, Good, HSG B
0.87	77	Woods, Good, HSG D
2.02	64	Weighted Average
2.02		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0150	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	132	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	182	Total			

Subcatchment 4S: Subarea EC



Summary for Subcatchment 5S: Subarea EA

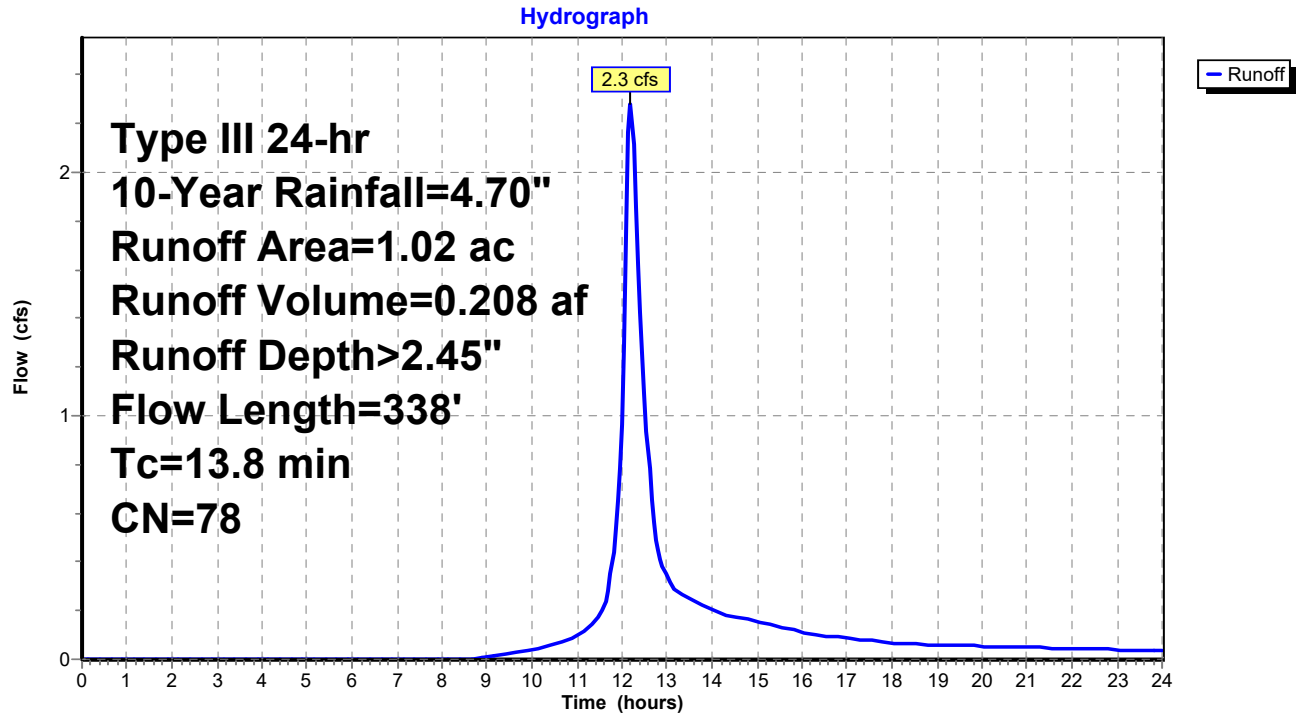
Runoff = 2.3 cfs @ 12.20 hrs, Volume= 0.208 af, Depth> 2.45"
Routed to Reach 6R : N. Main Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
0.29	98	Paved parking, HSG B
0.10	98	Roofs, HSG B
0.63	65	Woods/grass comb., Fair, HSG B
1.02	78	Weighted Average
0.63		61.76% Pervious Area
0.39		38.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.3	183	0.0360	1.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	105	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
13.8	338	Total			

Subcatchment 5S: Subarea EA

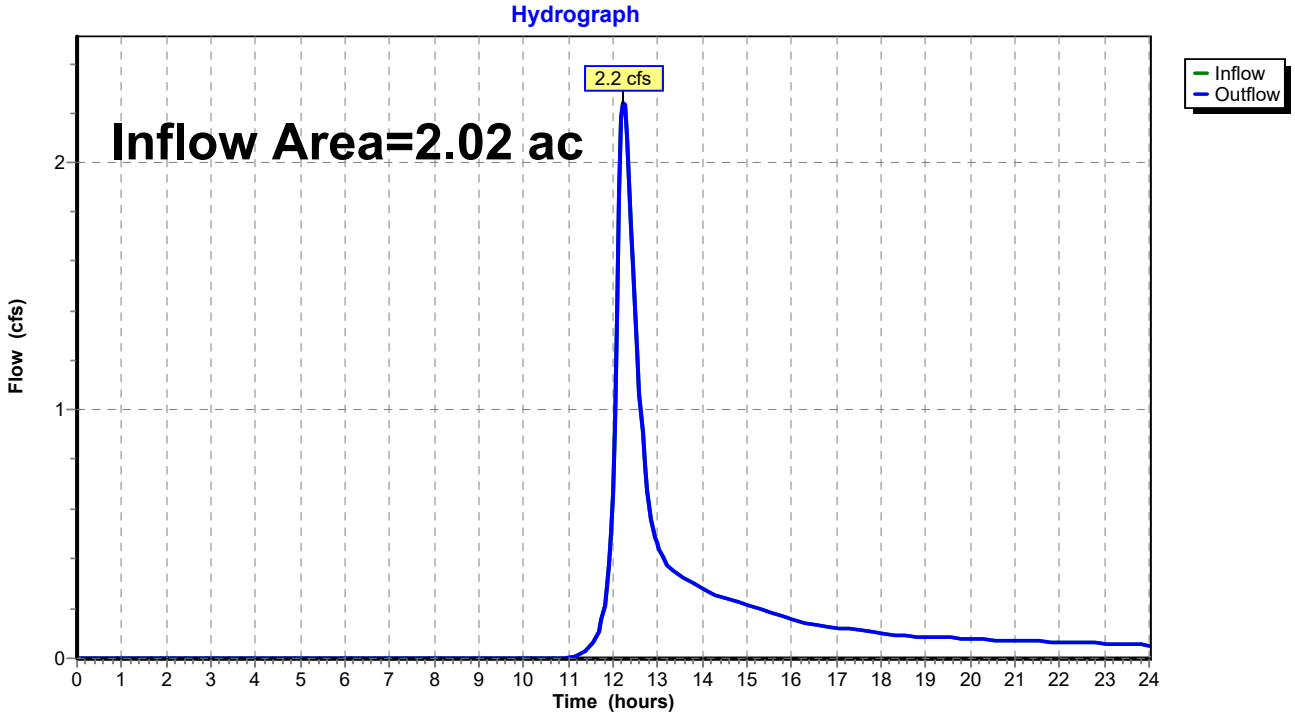


Summary for Reach 2R: Wetland Line

Inflow Area = 2.02 ac, 0.00% Impervious, Inflow Depth > 1.38" for 10-Year event
Inflow = 2.2 cfs @ 12.24 hrs, Volume= 0.233 af
Outflow = 2.2 cfs @ 12.24 hrs, Volume= 0.233 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 2R: Wetland Line

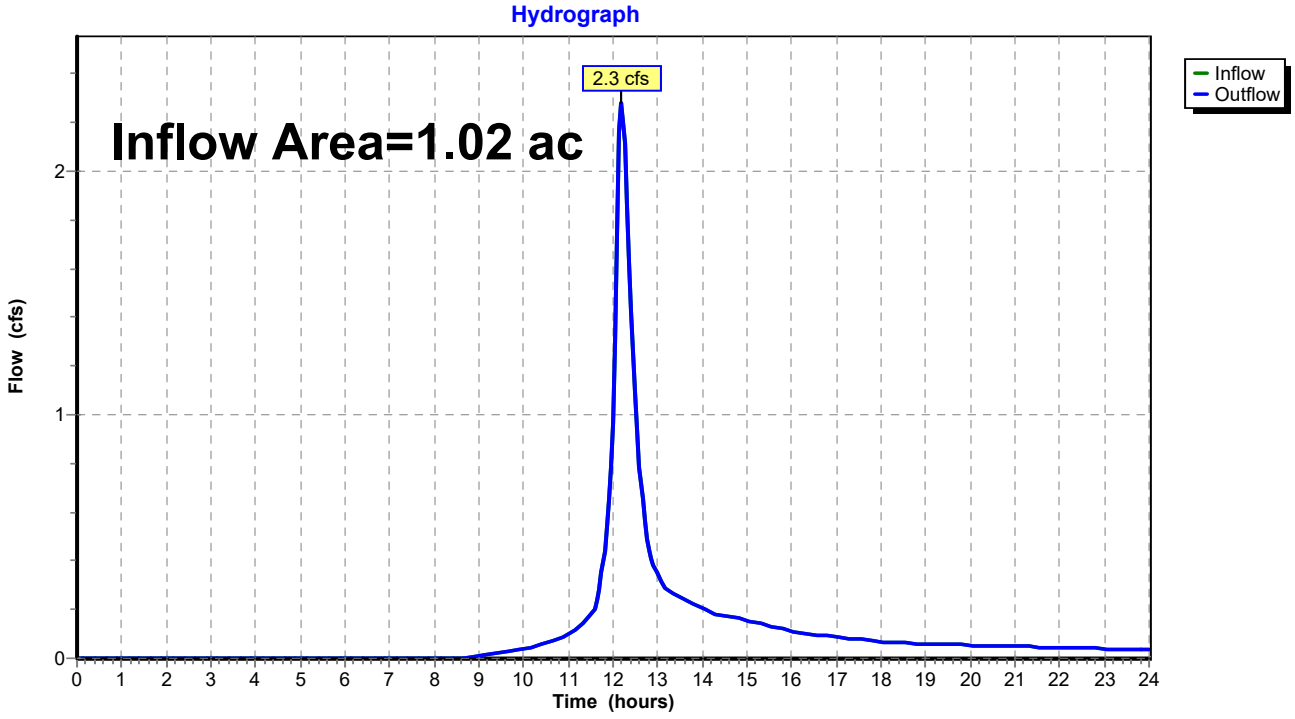


Summary for Reach 6R: N. Main Street

Inflow Area = 1.02 ac, 38.24% Impervious, Inflow Depth > 2.45" for 10-Year event
Inflow = 2.3 cfs @ 12.20 hrs, Volume= 0.208 af
Outflow = 2.3 cfs @ 12.20 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: N. Main Street



Summary for Pond 7P: Isolated Wetland

Inflow Area = 4.42 ac, 4.30% Impervious, Inflow Depth > 1.32" for 10-Year event
Inflow = 4.5 cfs @ 12.25 hrs, Volume= 0.485 af
Outflow = 0.6 cfs @ 13.80 hrs, Volume= 0.447 af, Atten= 86%, Lag= 93.0 min
Discarded = 0.6 cfs @ 13.80 hrs, Volume= 0.447 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 163.16' @ 13.80 hrs Surf.Area= 13,879 sf Storage= 8,568 cf

Plug-Flow detention time= 182.7 min calculated for 0.447 af (92% of inflow)
Center-of-Mass det. time= 143.6 min (1,021.4 - 877.8)

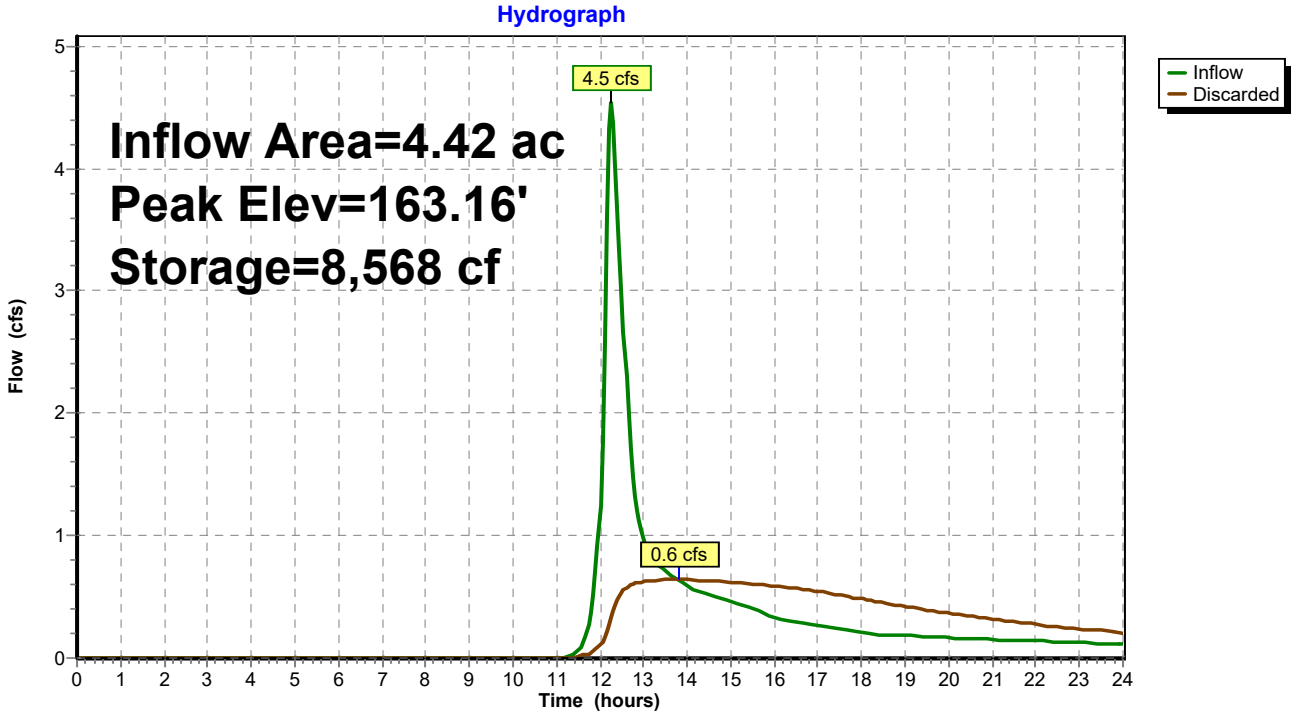
Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	26,477 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.50	0	0.0	0	0	0
162.00	2,098	196.0	350	350	3,057
163.00	11,415	520.0	6,136	6,485	21,522
164.00	30,042	744.0	19,992	26,477	44,062

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.50'	**1.020 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 156.00'

Discarded OutFlow Max=0.6 cfs @ 13.80 hrs HW=163.16' (Free Discharge)
1=Exfiltration (Controls 0.6 cfs)

Pond 7P: Isolated Wetland



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 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 3S: Subarea EB Runoff Area=4.42 ac 4.30% Impervious Runoff Depth>2.67"
Flow Length=550' Tc=16.3 min CN=63 Runoff=9.9 cfs 0.983 af

Subcatchment 4S: Subarea EC Runoff Area=2.02 ac 0.00% Impervious Runoff Depth>2.77"
Flow Length=182' Tc=15.6 min CN=64 Runoff=4.8 cfs 0.466 af

Subcatchment 5S: Subarea EA Runoff Area=1.02 ac 38.24% Impervious Runoff Depth>4.19"
Flow Length=338' Tc=13.8 min CN=78 Runoff=3.9 cfs 0.356 af

Reach 2R: Wetland Line Inflow=4.8 cfs 0.466 af
Outflow=4.8 cfs 0.466 af

Reach 6R: N. Main Street Inflow=3.9 cfs 0.356 af
Outflow=3.9 cfs 0.356 af

Pond 7P: Isolated Wetland Peak Elev=163.79' Storage=20,632 cf Inflow=9.9 cfs 0.983 af
Outflow=1.0 cfs 0.843 af

Total Runoff Area = 7.46 ac Runoff Volume = 1.805 af Average Runoff Depth = 2.90"
92.23% Pervious = 6.88 ac 7.77% Impervious = 0.58 ac

Summary for Subcatchment 3S: Subarea EB

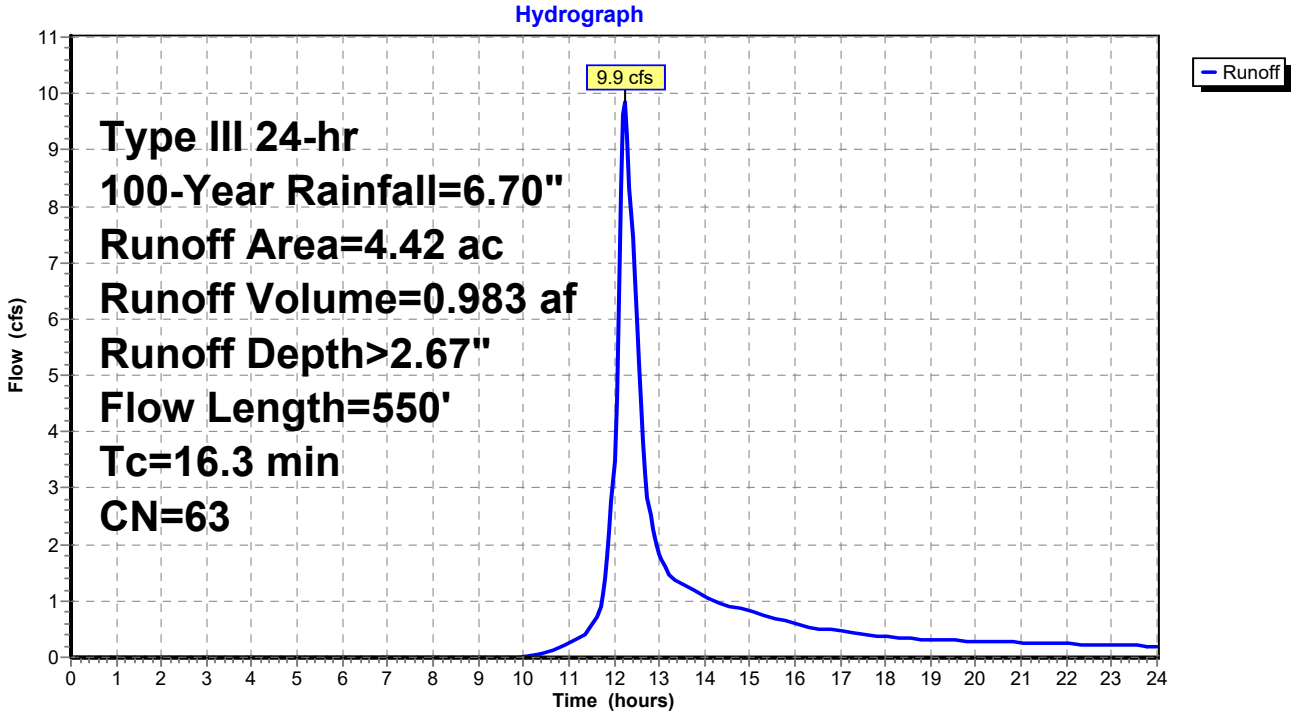
Runoff = 9.9 cfs @ 12.24 hrs, Volume= 0.983 af, Depth> 2.67"
Routed to Pond 7P : Isolated Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
0.06	98	Paved roads w/curbs & sewers, HSG B
0.13	98	Roofs, HSG B
0.09	96	Gravel surface, HSG B
3.63	58	Woods/grass comb., Good, HSG B
0.51	77	Woods, Good, HSG D
4.42	63	Weighted Average
4.23		95.70% Pervious Area
0.19		4.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
8.4	500	0.0390	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	550	Total			

Subcatchment 3S: Subarea EB



Summary for Subcatchment 4S: Subarea EC

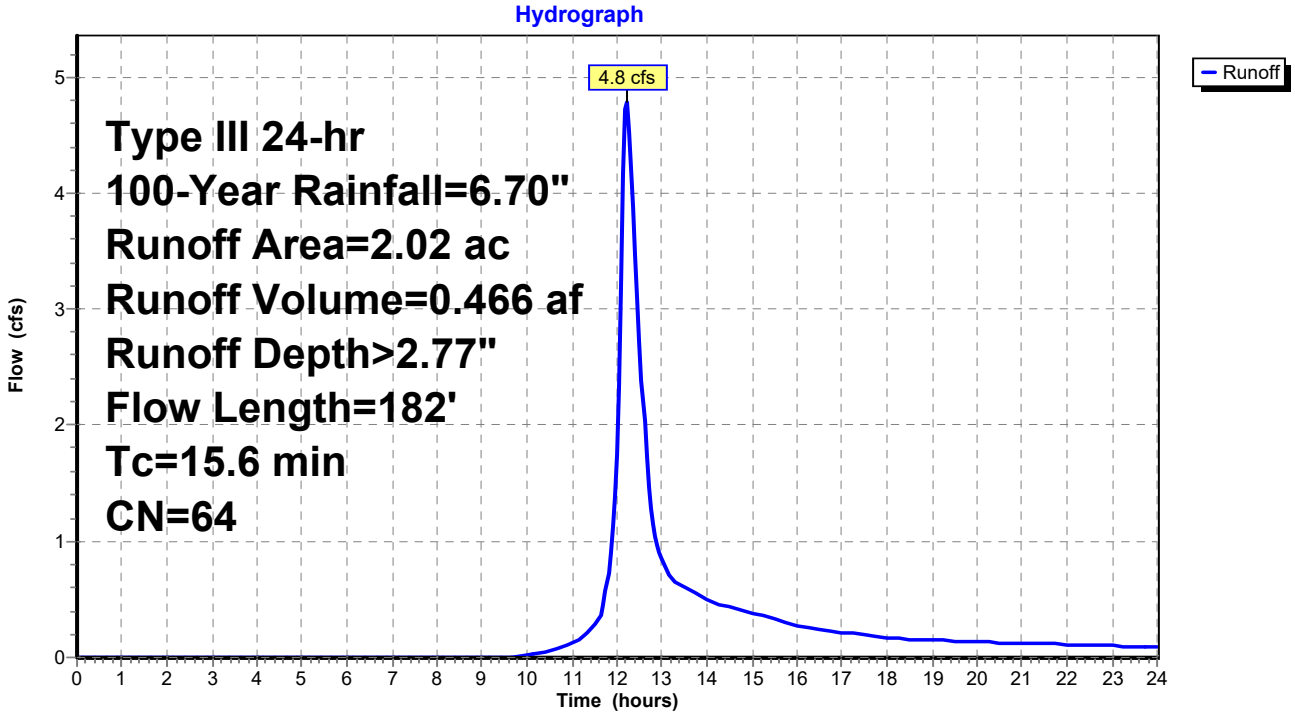
Runoff = 4.8 cfs @ 12.22 hrs, Volume= 0.466 af, Depth> 2.77"
Routed to Reach 2R : Wetland Line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
1.15	55	Woods, Good, HSG B
0.87	77	Woods, Good, HSG D
2.02	64	Weighted Average
2.02		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.8	50	0.0150	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.8	132	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	182	Total			

Subcatchment 4S: Subarea EC



Summary for Subcatchment 5S: Subarea EA

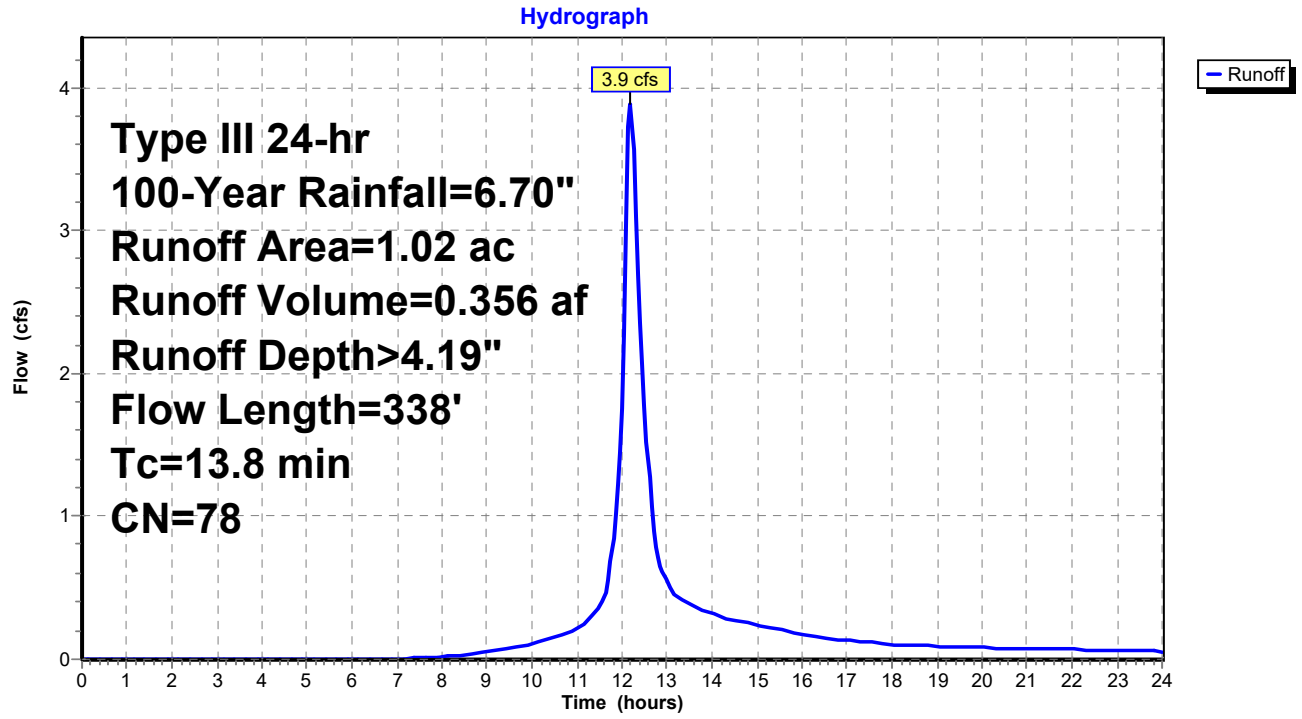
Runoff = 3.9 cfs @ 12.19 hrs, Volume= 0.356 af, Depth> 4.19"
Routed to Reach 6R : N. Main Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
0.29	98	Paved parking, HSG B
0.10	98	Roofs, HSG B
0.63	65	Woods/grass comb., Fair, HSG B
1.02	78	Weighted Average
0.63		61.76% Pervious Area
0.39		38.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.3	183	0.0360	1.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	105	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
13.8	338	Total			

Subcatchment 5S: Subarea EA

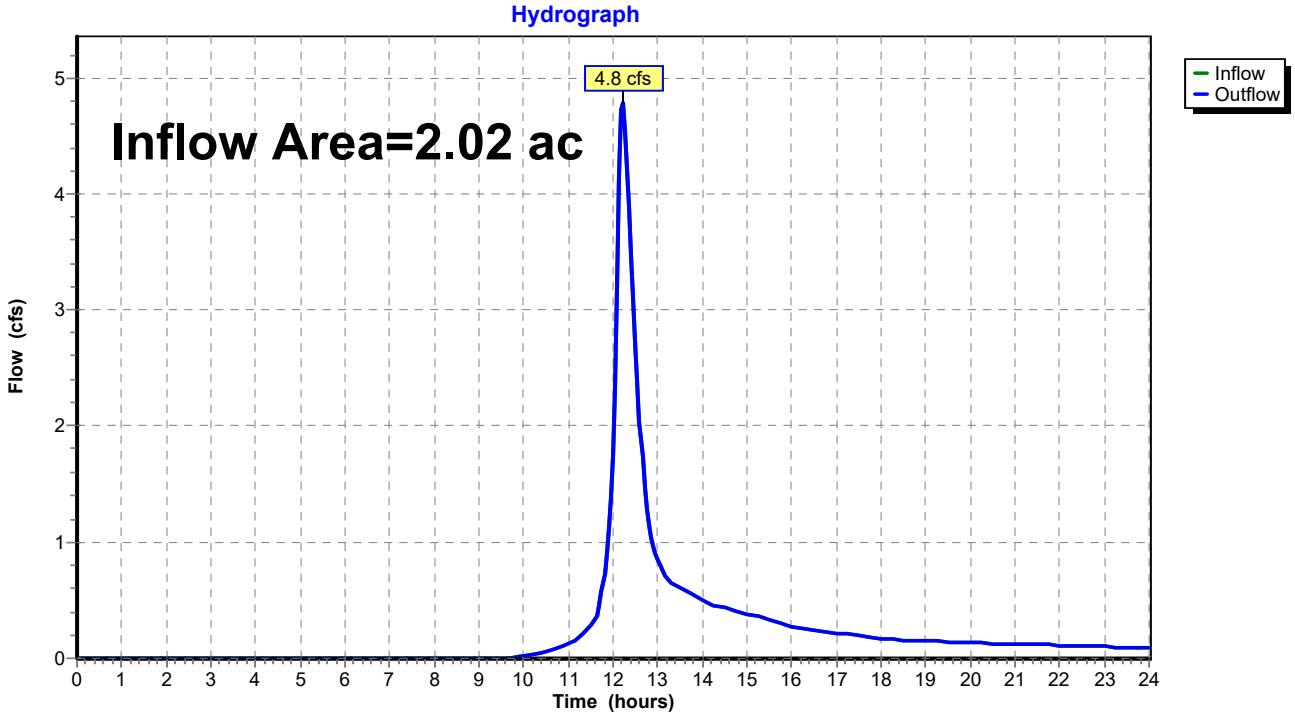


Summary for Reach 2R: Wetland Line

Inflow Area = 2.02 ac, 0.00% Impervious, Inflow Depth > 2.77" for 100-Year event
Inflow = 4.8 cfs @ 12.22 hrs, Volume= 0.466 af
Outflow = 4.8 cfs @ 12.22 hrs, Volume= 0.466 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 2R: Wetland Line

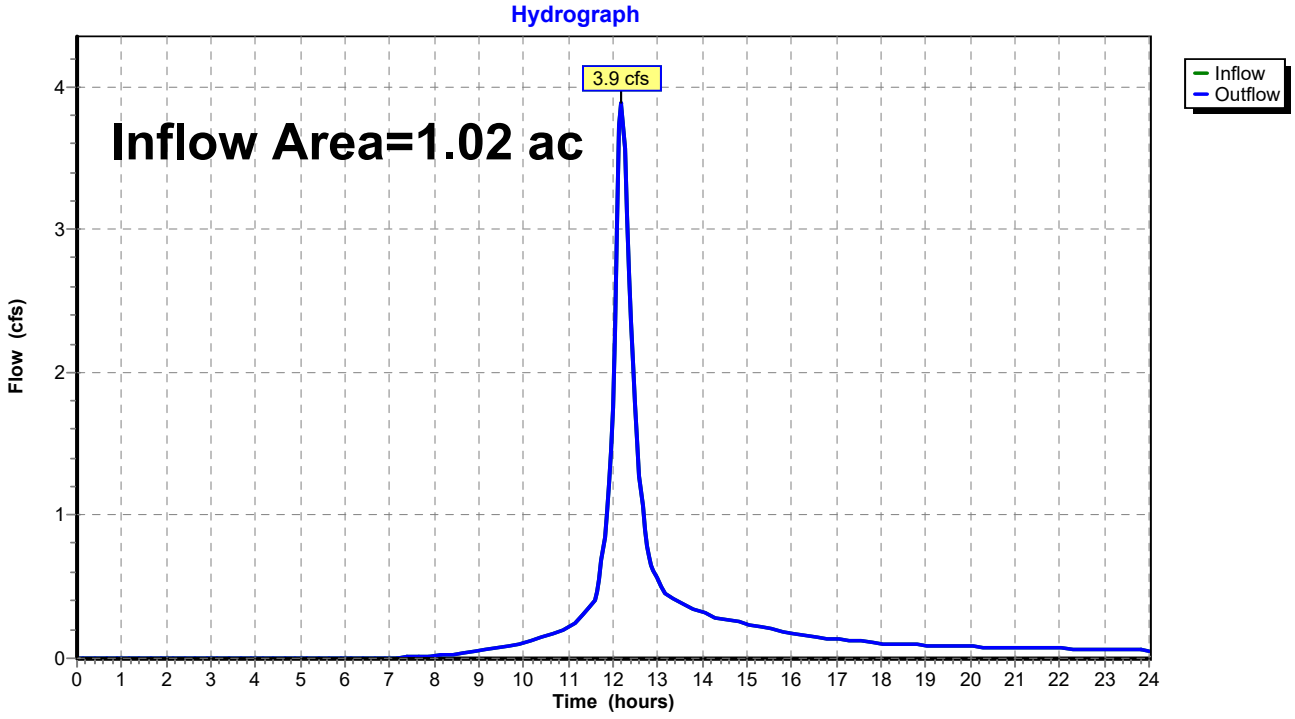


Summary for Reach 6R: N. Main Street

Inflow Area = 1.02 ac, 38.24% Impervious, Inflow Depth > 4.19" for 100-Year event
Inflow = 3.9 cfs @ 12.19 hrs, Volume= 0.356 af
Outflow = 3.9 cfs @ 12.19 hrs, Volume= 0.356 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: N. Main Street



Summary for Pond 7P: Isolated Wetland

Inflow Area = 4.42 ac, 4.30% Impervious, Inflow Depth > 2.67" for 100-Year event
Inflow = 9.9 cfs @ 12.24 hrs, Volume= 0.983 af
Outflow = 1.0 cfs @ 14.10 hrs, Volume= 0.843 af, Atten= 89%, Lag= 112.0 min
Discarded = 1.0 cfs @ 14.10 hrs, Volume= 0.843 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 163.79' @ 14.10 hrs Surf.Area= 25,371 sf Storage= 20,632 cf

Plug-Flow detention time= 249.3 min calculated for 0.843 af (86% of inflow)
Center-of-Mass det. time= 186.6 min (1,042.9 - 856.3)

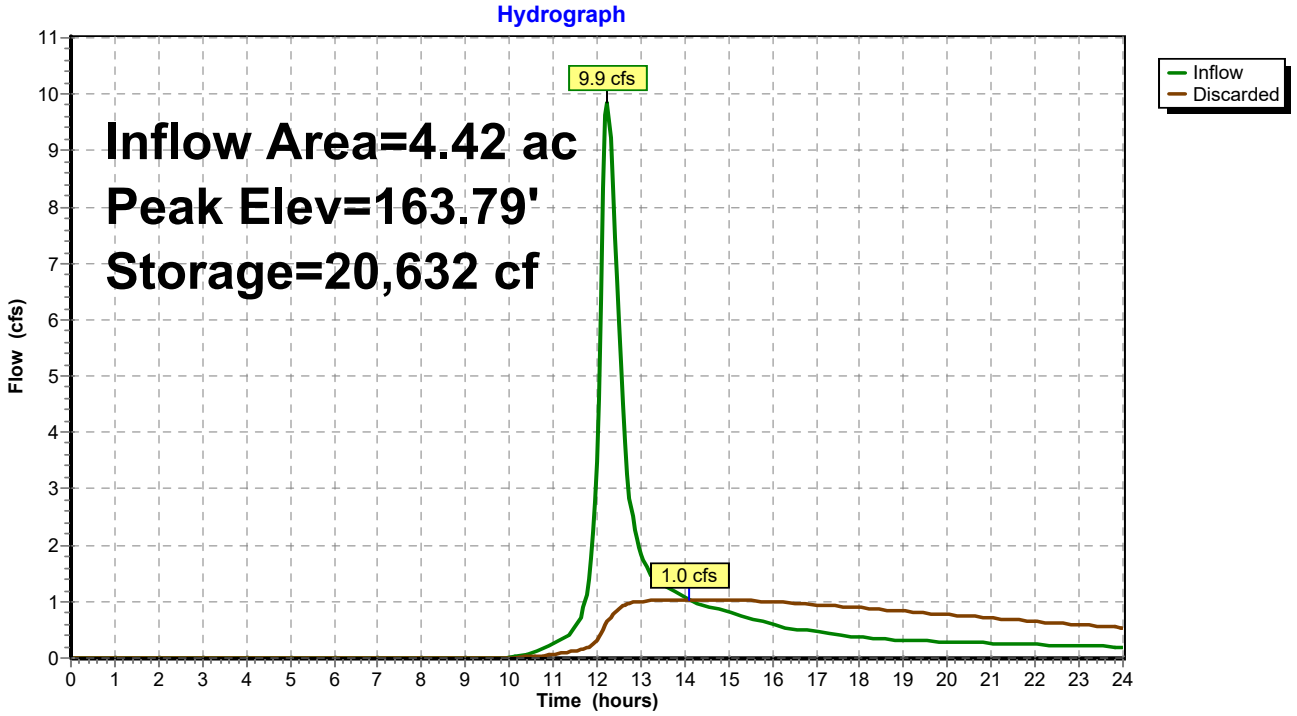
Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	26,477 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.50	0	0.0	0	0	0
162.00	2,098	196.0	350	350	3,057
163.00	11,415	520.0	6,136	6,485	21,522
164.00	30,042	744.0	19,992	26,477	44,062

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.50'	**1.020 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 156.00'

Discarded OutFlow Max=1.0 cfs @ 14.10 hrs HW=163.79' (Free Discharge)
1=Exfiltration (Controls 1.0 cfs)

Pond 7P: Isolated Wetland



Events for Subcatchment 3S: Subarea EB

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.20	1.4	0.190	0.52
10-Year	4.70	4.5	0.485	1.32
100-Year	**6.70**	**9.9**	**0.983**	**2.67**

Events for Subcatchment 4S: Subarea EC

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.20	0.7	0.094	0.56
10-Year	4.70	2.2	0.233	1.38
100-Year	**6.70**	**4.8**	**0.466**	**2.77**

Events for Subcatchment 5S: Subarea EA

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.20	1.2	0.108	1.27
10-Year	4.70	2.3	0.208	2.45
100-Year	**6.70**	**3.9**	**0.356**	**4.19**

Events for Reach 2R: Wetland Line

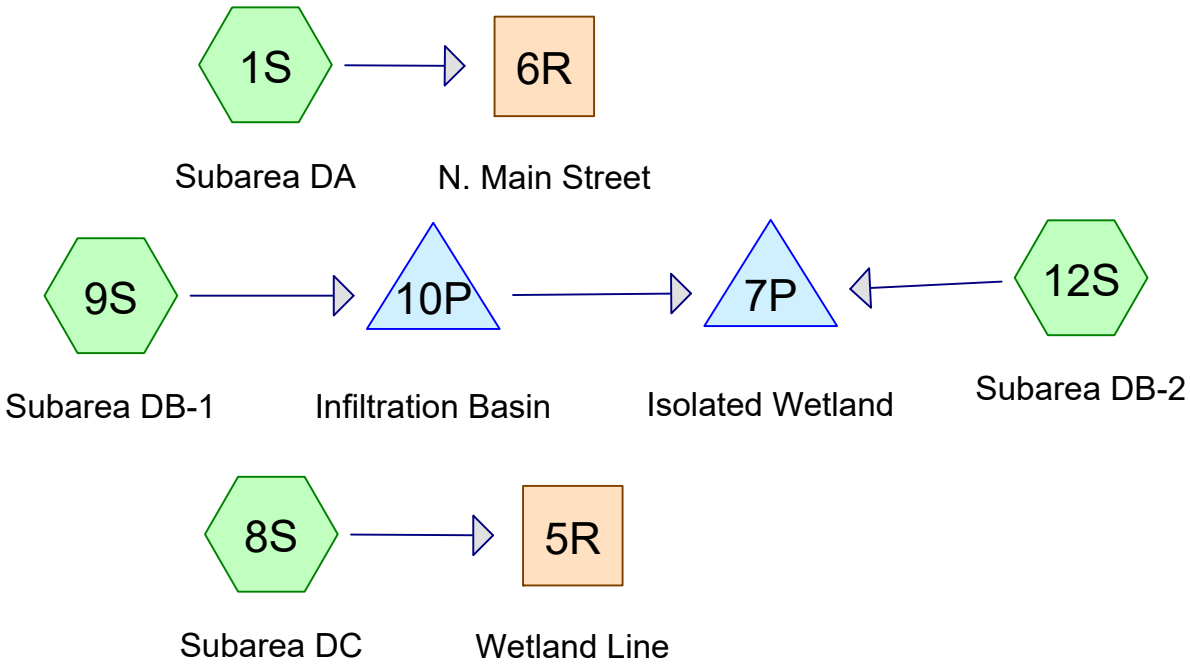
Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	0.7	0.7	**0.00**	**0**
10-Year	2.2	2.2	0.00	0
100-Year	**4.8**	**4.8**	0.00	0

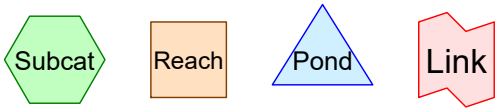
Events for Reach 6R: N. Main Street

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	1.2	1.2	**0.00**	**0**
10-Year	2.3	2.3	0.00	0
100-Year	**3.9**	**3.9**	0.00	0

Events for Pond 7P: Isolated Wetland

Event	Inflow (cfs)	Discarded (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	1.4	0.3	162.55	2,578
10-Year	4.5	0.6	163.16	8,568
100-Year	**9.9**	**1.0**	**163.79**	**20,632**





Routing Diagram for 20-0179 Pr v2
Prepared by Bay Colony Group Inc, Printed 11/17/2022

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.20	2
2	10-Year	Type III 24-hr		Default	24.00	1	4.70	2
3	100-Year	Type III 24-hr		Default	24.00	1	6.70	2

PROJECT:

Trowel Shop Pond Condominiums
299 & 303 NORTH MAIN STREET

Sharon
Massachusetts

PREPARED FOR:

Yuriy Lande
1 Richard Road
Marblehead, MA 01945

Bay Colony Group, Inc.
Professional Civil Engineers & Professional Land Surveyors

FOUR SCHOOL STREET
P.O. BOX 9136
FOXBOROUGH, MA 02035
508-543-3939

REFERENCES:

PROPERTY INFORMATION

ZONING DISTRICT: SRD-A
REQUIRED AREA: 40,000 SF
REQUIRED WIDTH: 150'
FRONT YARD: 30'
SIDE/REAR YARD: 20'

ASSESSORS MAP 121, PARCEL 060
AREA: 8.24± ACRES
ASSESSORS MAP 121, PARCEL 61
AREA: 3.26± ACRES

STAMP

DRAWING TITLE

Developed Subareas

SCALE: 1" = 40'

NOVEMBER 11, 2021	SHEET NUMBER
20-0179J	**Pr**

40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.06	61	>75% Grass cover, Good, HSG B (8S)
0.16	80	>75% Grass cover, Good, HSG D (8S)
0.58	98	Paved parking, HSG B (1S, 9S)
0.63	98	Roofs, HSG B (9S, 12S)
0.91	55	Woods, Good, HSG B (8S)
0.63	77	Woods, Good, HSG D (8S)
3.90	58	Woods/grass comb., Good, HSG B (1S, 9S, 12S)
0.59	79	Woods/grass comb., Good, HSG D (9S)
7.46	**68**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.00	HSG A	
6.08	HSG B	1S, 8S, 9S, 12S
0.00	HSG C	
1.38	HSG D	8S, 9S
0.00	Other	
7.46		**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	97.0	0.0100	0.013	0.0	12.0	0.0
2	10P	164.00	164.00	24.0	0.0000	0.013	0.0	6.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 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 1S: Subarea DA Runoff Area=0.59 ac 11.86% Impervious Runoff Depth>0.52"
Flow Length=288' Tc=9.9 min CN=63 Runoff=0.2 cfs 0.025 af

Subcatchment 8S: Subarea DC Runoff Area=1.76 ac 0.00% Impervious Runoff Depth>0.60"
Flow Length=148' Tc=13.8 min CN=65 Runoff=0.7 cfs 0.088 af

Subcatchment 9S: Subarea DB-1 Runoff Area=3.49 ac 29.80% Impervious Runoff Depth>0.98"
Flow Length=280' Tc=10.1 min CN=73 Runoff=3.2 cfs 0.285 af

Subcatchment 12S: Subarea DB-2 Runoff Area=1.62 ac 6.17% Impervious Runoff Depth>0.41"
Flow Length=364' Slope=0.0700 '/' Tc=9.0 min CN=60 Runoff=0.4 cfs 0.055 af

Reach 5R: Wetland Line Inflow=0.7 cfs 0.088 af
Outflow=0.7 cfs 0.088 af

Reach 6R: N. Main Street Inflow=0.2 cfs 0.025 af
Outflow=0.2 cfs 0.025 af

Pond 7P: Isolated Wetland Peak Elev=162.53' Storage=2,456 cf Inflow=0.6 cfs 0.172 af
Outflow=0.3 cfs 0.169 af

Pond 10P: Infiltration Basin Peak Elev=164.64' Storage=4,456 cf Inflow=3.2 cfs 0.285 af
Discarded=0.2 cfs 0.165 af Primary=0.3 cfs 0.117 af Outflow=0.5 cfs 0.283 af

Total Runoff Area = 7.46 ac Runoff Volume = 0.453 af Average Runoff Depth = 0.73"
83.78% Pervious = 6.25 ac 16.22% Impervious = 1.21 ac

Summary for Subcatchment 1S: Subarea DA

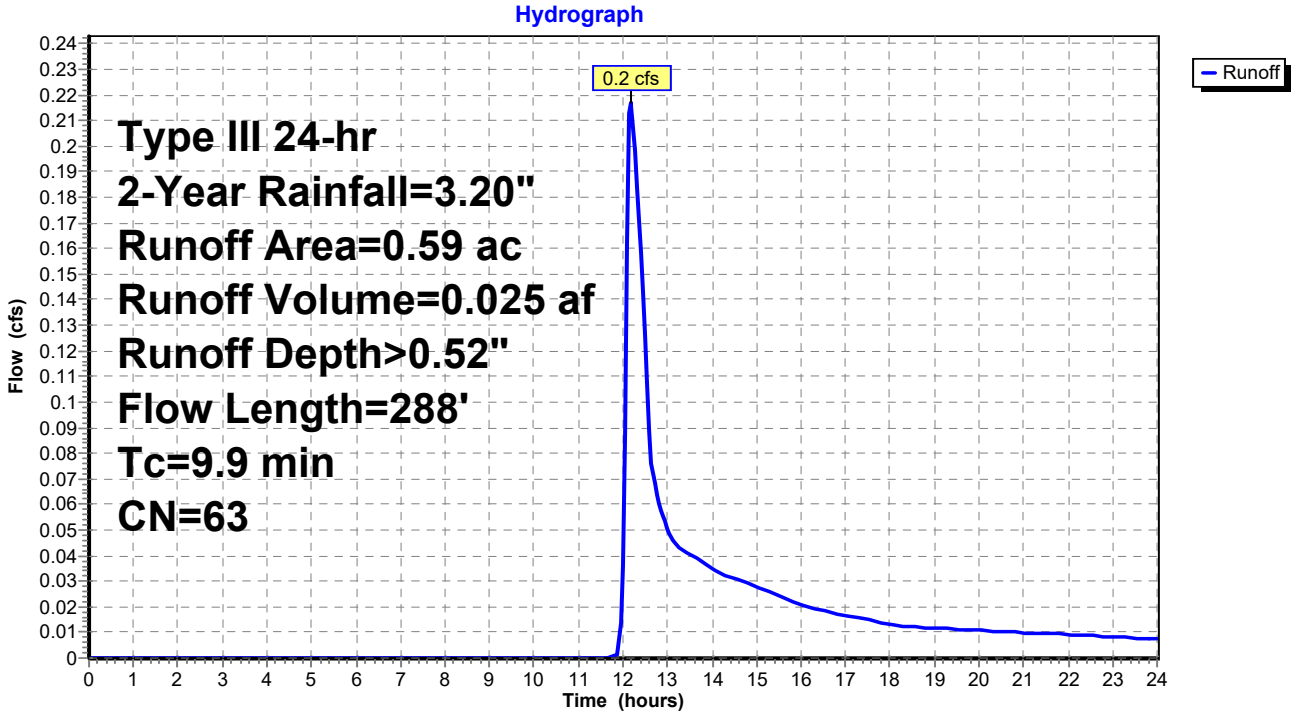
Runoff = 0.2 cfs @ 12.18 hrs, Volume= 0.025 af, Depth> 0.52"
Routed to Reach 6R : N. Main Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.07	98	Paved parking, HSG B
0.52	58	Woods/grass comb., Good, HSG B
0.59	63	Weighted Average
0.52		88.14% Pervious Area
0.07		11.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.1	46	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	95	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	97	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.9	288	Total			

Subcatchment 1S: Subarea DA



Summary for Subcatchment 8S: Subarea DC

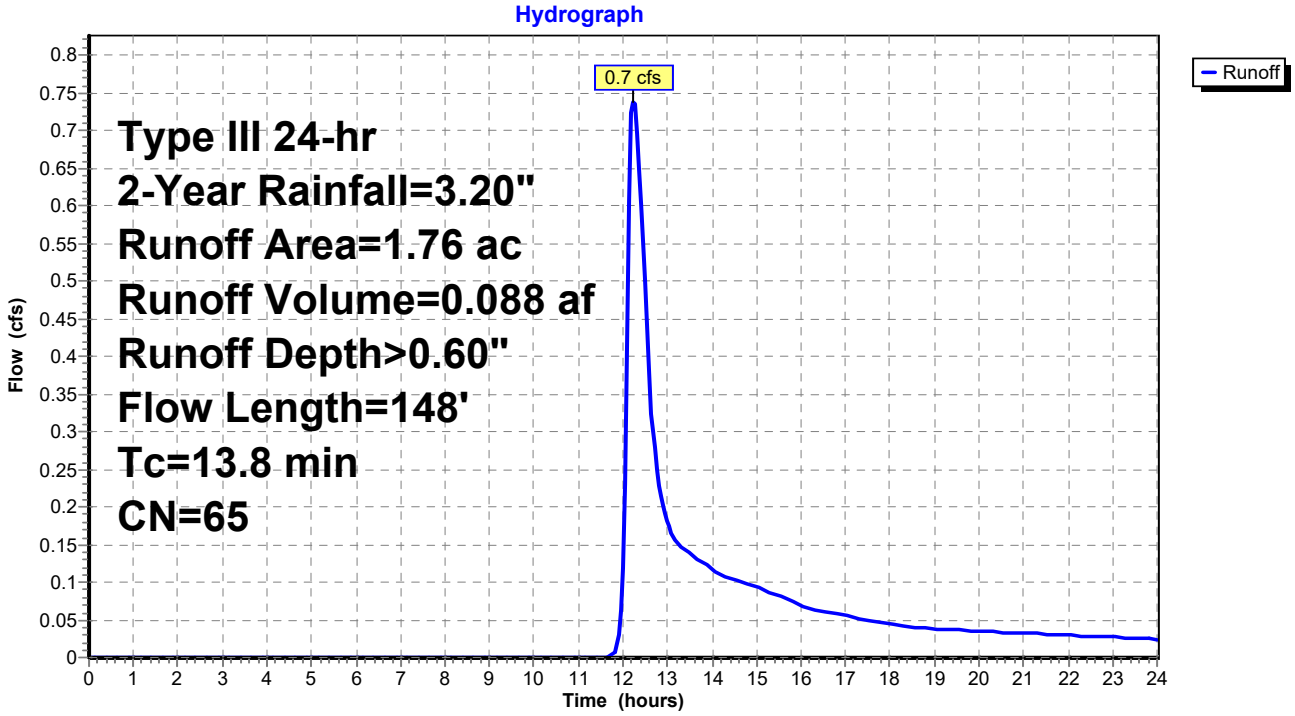
Runoff = 0.7 cfs @ 12.24 hrs, Volume= 0.088 af, Depth> 0.60"
Routed to Reach 5R : Wetland Line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.06	61	>75% Grass cover, Good, HSG B
0.16	80	>75% Grass cover, Good, HSG D
0.91	55	Woods, Good, HSG B
0.63	77	Woods, Good, HSG D
1.76	65	Weighted Average
1.76		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.5	98	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	148	Total			

Subcatchment 8S: Subarea DC



Summary for Subcatchment 9S: Subarea DB-1

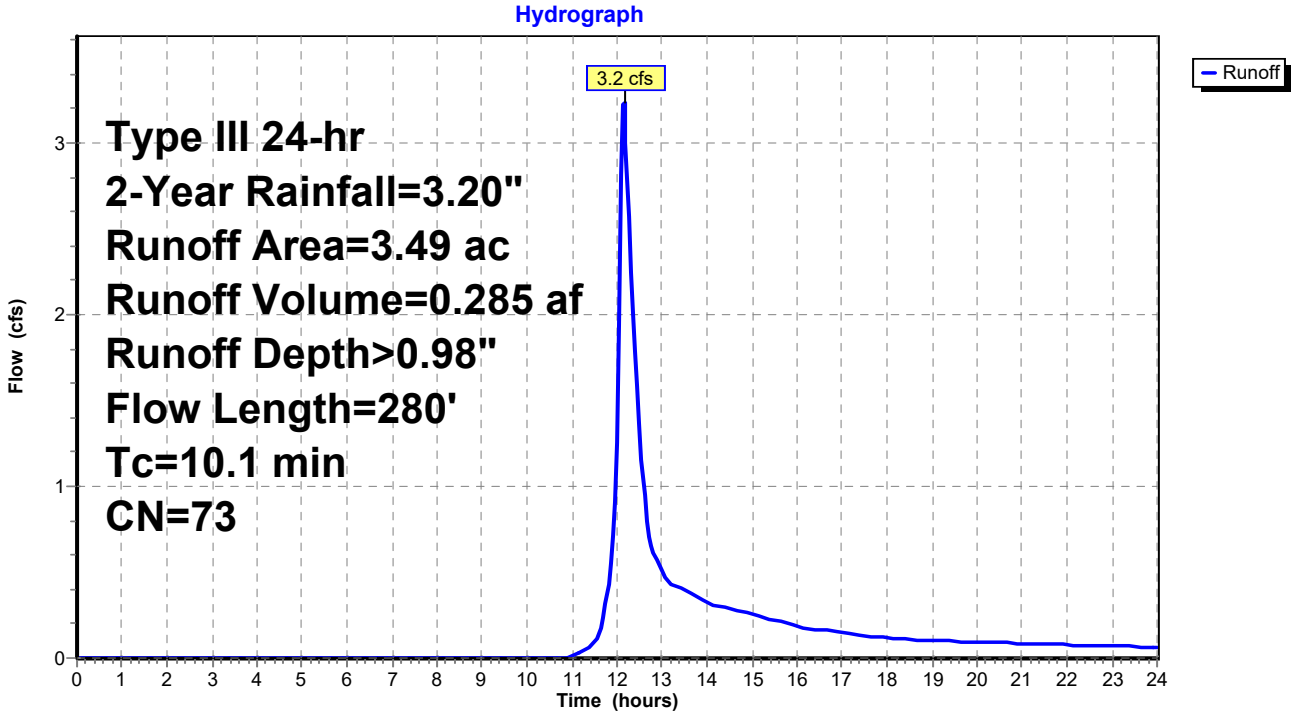
Runoff = 3.2 cfs @ 12.16 hrs, Volume= 0.285 af, Depth> 0.98"
Routed to Pond 10P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.51	98	Paved parking, HSG B
0.53	98	Roofs, HSG B
1.86	58	Woods/grass comb., Good, HSG B
0.59	79	Woods/grass comb., Good, HSG D
3.49	73	Weighted Average
2.45		70.20% Pervious Area
1.04		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
2.0	210	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	280	Total			

Subcatchment 9S: Subarea DB-1



Summary for Subcatchment 12S: Subarea DB-2

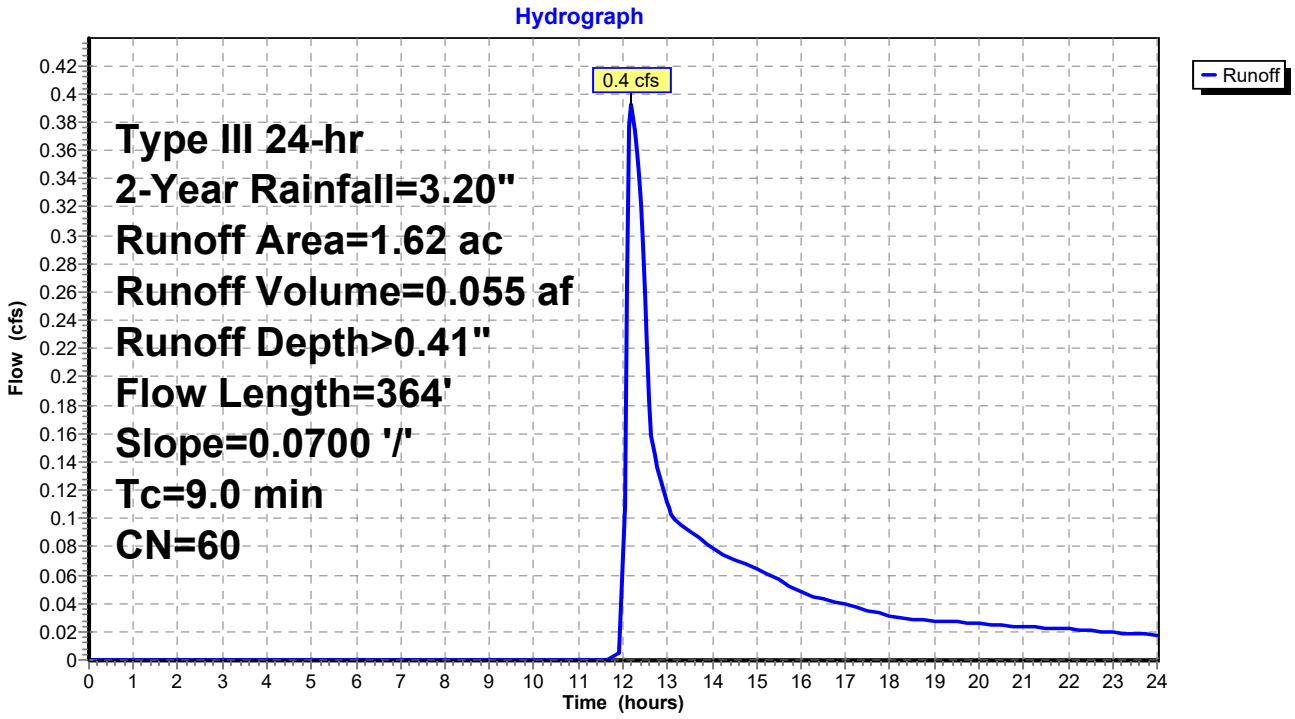
Runoff = 0.4 cfs @ 12.20 hrs, Volume= 0.055 af, Depth> 0.41"
Routed to Pond 7P : Isolated Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (ac)	CN	Description
0.10	98	Roofs, HSG B
1.52	58	Woods/grass comb., Good, HSG B
1.62	60	Weighted Average
1.52		93.83% Pervious Area
0.10		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0700	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
4.0	314	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	364	Total			

Subcatchment 12S: Subarea DB-2

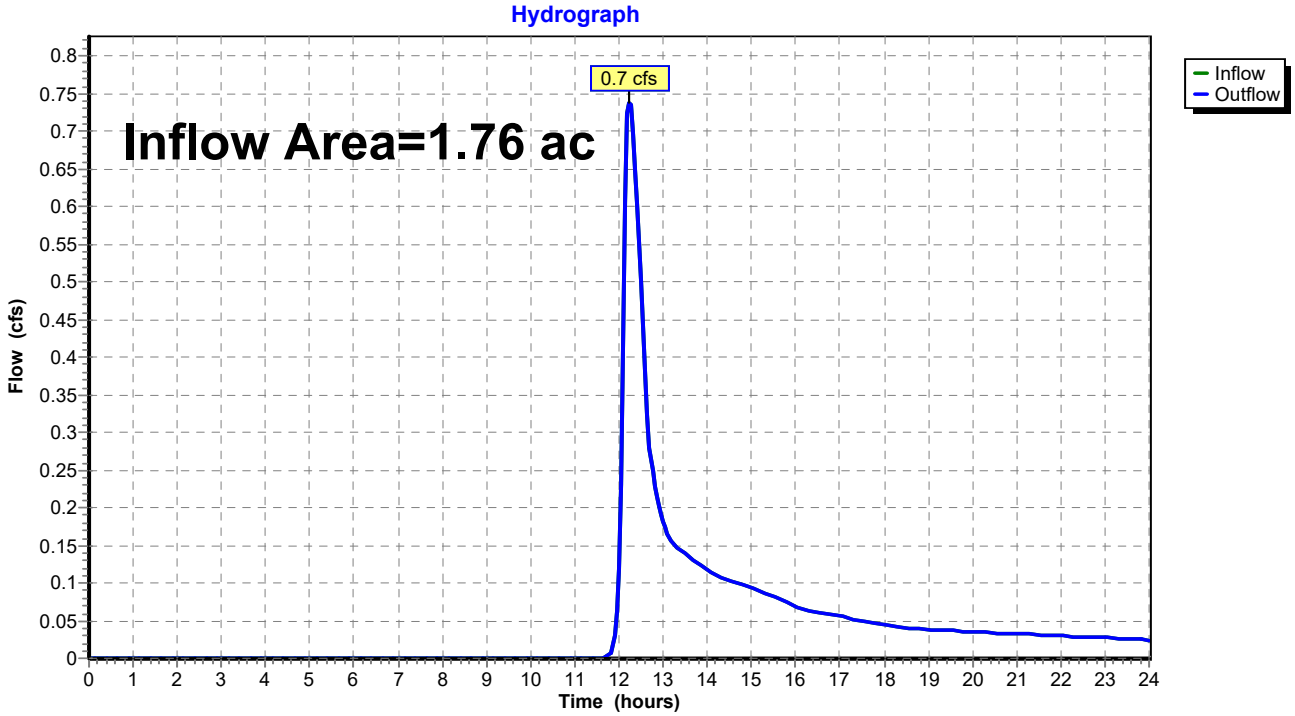


Summary for Reach 5R: Wetland Line

Inflow Area = 1.76 ac, 0.00% Impervious, Inflow Depth > 0.60" for 2-Year event
Inflow = 0.7 cfs @ 12.24 hrs, Volume= 0.088 af
Outflow = 0.7 cfs @ 12.24 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 5R: Wetland Line

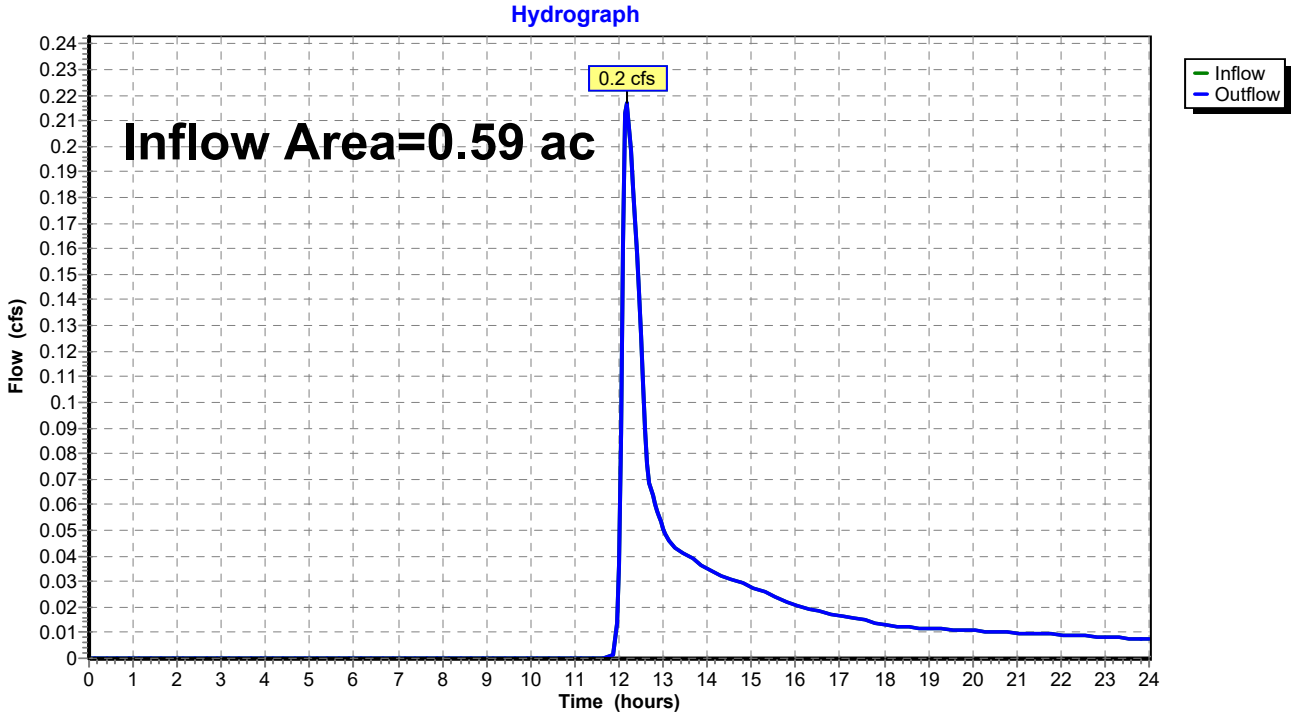


Summary for Reach 6R: N. Main Street

Inflow Area = 0.59 ac, 11.86% Impervious, Inflow Depth > 0.52" for 2-Year event
Inflow = 0.2 cfs @ 12.18 hrs, Volume= 0.025 af
Outflow = 0.2 cfs @ 12.18 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: N. Main Street



Summary for Pond 7P: Isolated Wetland

Inflow Area = 5.11 ac, 22.31% Impervious, Inflow Depth > 0.40" for 2-Year event
Inflow = 0.6 cfs @ 12.39 hrs, Volume= 0.172 af
Outflow = 0.3 cfs @ 15.46 hrs, Volume= 0.169 af, Atten= 55%, Lag= 183.8 min
Discarded = 0.3 cfs @ 15.46 hrs, Volume= 0.169 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 162.53' @ 15.46 hrs Surf.Area= 6,146 sf Storage= 2,456 cf

Plug-Flow detention time= 130.5 min calculated for 0.169 af (98% of inflow)
Center-of-Mass det. time= 121.2 min (1,021.1 - 899.9)

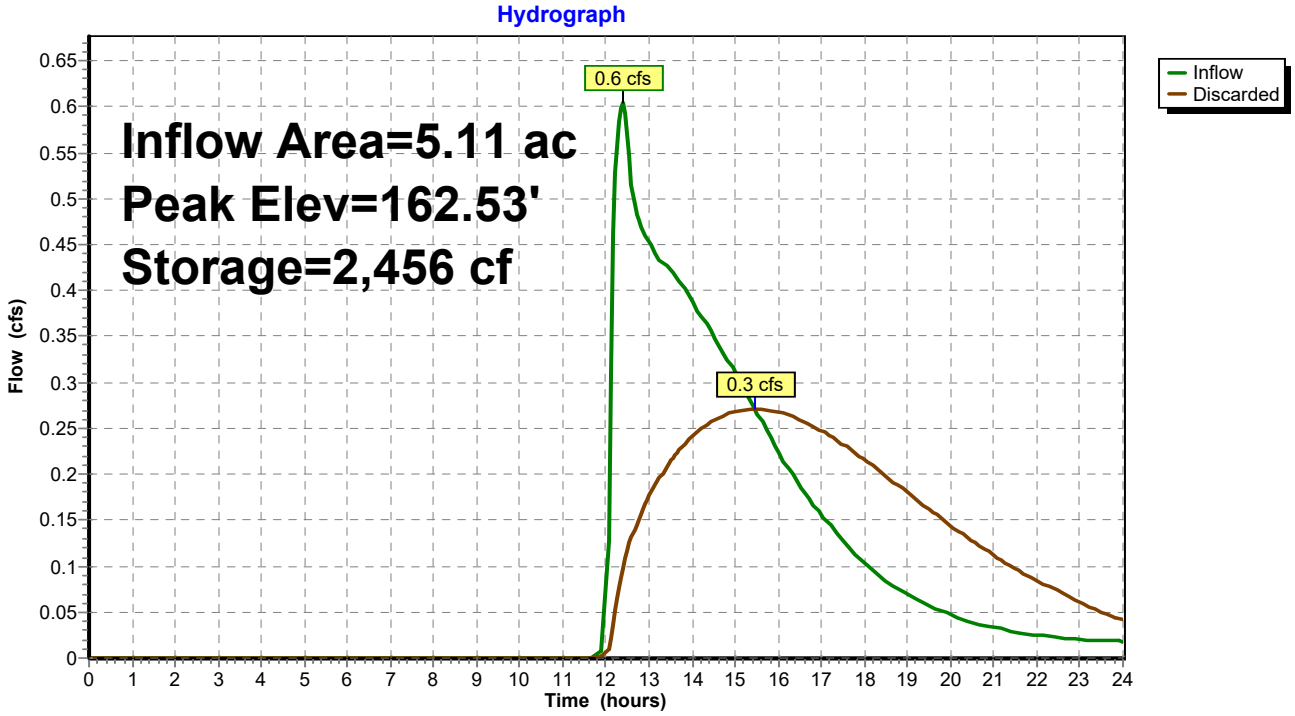
Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	23,352 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.50	0	0.0	0	0	0
162.00	2,098	196.0	350	350	3,057
163.00	11,415	520.0	6,136	6,485	21,522
164.00	22,986	651.0	16,866	23,352	33,743

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.50'	**1.020 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 156.00'

Discarded OutFlow Max=0.3 cfs @ 15.46 hrs HW=162.53' (Free Discharge)
1=Exfiltration (Controls 0.3 cfs)

Pond 7P: Isolated Wetland



Summary for Pond 10P: Infiltration Basin

Inflow Area = 3.49 ac, 29.80% Impervious, Inflow Depth > 0.98" for 2-Year event
Inflow = 3.2 cfs @ 12.16 hrs, Volume= 0.285 af
Outflow = 0.5 cfs @ 12.93 hrs, Volume= 0.283 af, Atten= 83%, Lag= 46.3 min
Discarded = 0.2 cfs @ 12.93 hrs, Volume= 0.165 af
Primary = 0.3 cfs @ 12.93 hrs, Volume= 0.117 af
Routed to Pond 7P : Isolated Wetland

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 164.64' @ 12.93 hrs Surf.Area= 7,995 sf Storage= 4,456 cf

Plug-Flow detention time= 112.3 min calculated for 0.283 af (99% of inflow)
Center-of-Mass det. time= 107.1 min (974.9 - 867.8)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	43,180 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

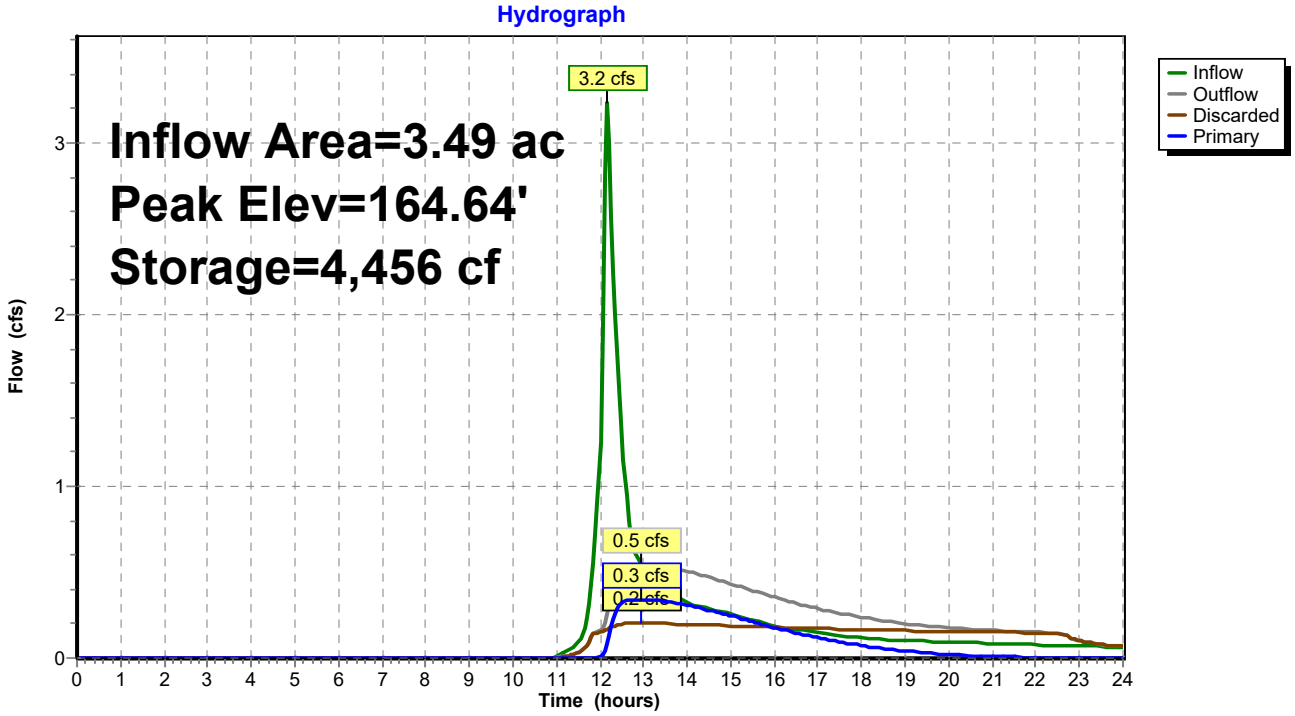
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
164.00	5,990	781.0	0	0	5,990
164.70	8,200	800.0	4,946	4,946	8,444
167.70	14,556	851.0	33,681	38,627	15,587
168.00	15,801	872.0	4,552	43,180	18,478

Device	Routing	Invert	Outlet Devices
#1	Discarded	164.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 156.00'
#2	Primary	164.00'	**6.0" Round Culvert** L= 24.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 164.00' / 164.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Primary	167.50'	**20.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.2 cfs @ 12.93 hrs HW=164.64' (Free Discharge)
└**1=Exfiltration** (Controls 0.2 cfs)

Primary OutFlow Max=0.3 cfs @ 12.93 hrs HW=164.64' (Free Discharge)
├**2=Culvert** (Barrel Controls 0.3 cfs @ 1.76 fps)
└**3=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 10P: Infiltration Basin



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 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 1S: Subarea DA Runoff Area=0.59 ac 11.86% Impervious Runoff Depth>1.32"
Flow Length=288' Tc=9.9 min CN=63 Runoff=0.7 cfs 0.065 af

Subcatchment 8S: Subarea DC Runoff Area=1.76 ac 0.00% Impervious Runoff Depth>1.45"
Flow Length=148' Tc=13.8 min CN=65 Runoff=2.2 cfs 0.213 af

Subcatchment 9S: Subarea DB-1 Runoff Area=3.49 ac 29.80% Impervious Runoff Depth>2.04"
Flow Length=280' Tc=10.1 min CN=73 Runoff=7.1 cfs 0.594 af

Subcatchment 12S: Subarea DB-2 Runoff Area=1.62 ac 6.17% Impervious Runoff Depth>1.13"
Flow Length=364' Slope=0.0700 '/' Tc=9.0 min CN=60 Runoff=1.7 cfs 0.152 af

Reach 5R: Wetland Line Inflow=2.2 cfs 0.213 af
Outflow=2.2 cfs 0.213 af

Reach 6R: N. Main Street Inflow=0.7 cfs 0.065 af
Outflow=0.7 cfs 0.065 af

Pond 7P: Isolated Wetland Peak Elev=163.10' Storage=7,733 cf Inflow=2.1 cfs 0.506 af
Outflow=0.6 cfs 0.460 af

Pond 10P: Infiltration Basin Peak Elev=165.35' Storage=10,662 cf Inflow=7.1 cfs 0.594 af
Discarded=0.3 cfs 0.217 af Primary=0.8 cfs 0.354 af Outflow=1.0 cfs 0.571 af

Total Runoff Area = 7.46 ac Runoff Volume = 1.024 af Average Runoff Depth = 1.65"
83.78% Pervious = 6.25 ac 16.22% Impervious = 1.21 ac

Summary for Subcatchment 1S: Subarea DA

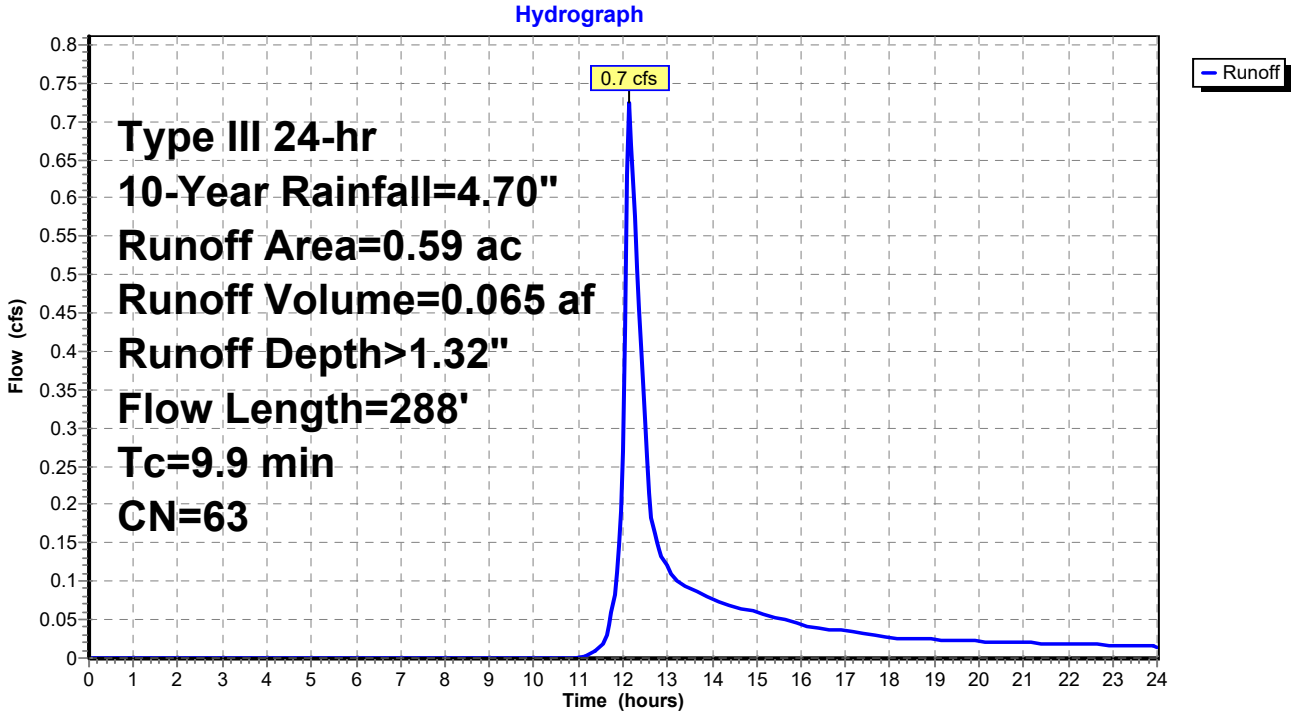
Runoff = 0.7 cfs @ 12.16 hrs, Volume= 0.065 af, Depth> 1.32"
Routed to Reach 6R : N. Main Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
0.07	98	Paved parking, HSG B
0.52	58	Woods/grass comb., Good, HSG B
0.59	63	Weighted Average
0.52		88.14% Pervious Area
0.07		11.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.1	46	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	95	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	97	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.9	288	Total			

Subcatchment 1S: Subarea DA



Summary for Subcatchment 8S: Subarea DC

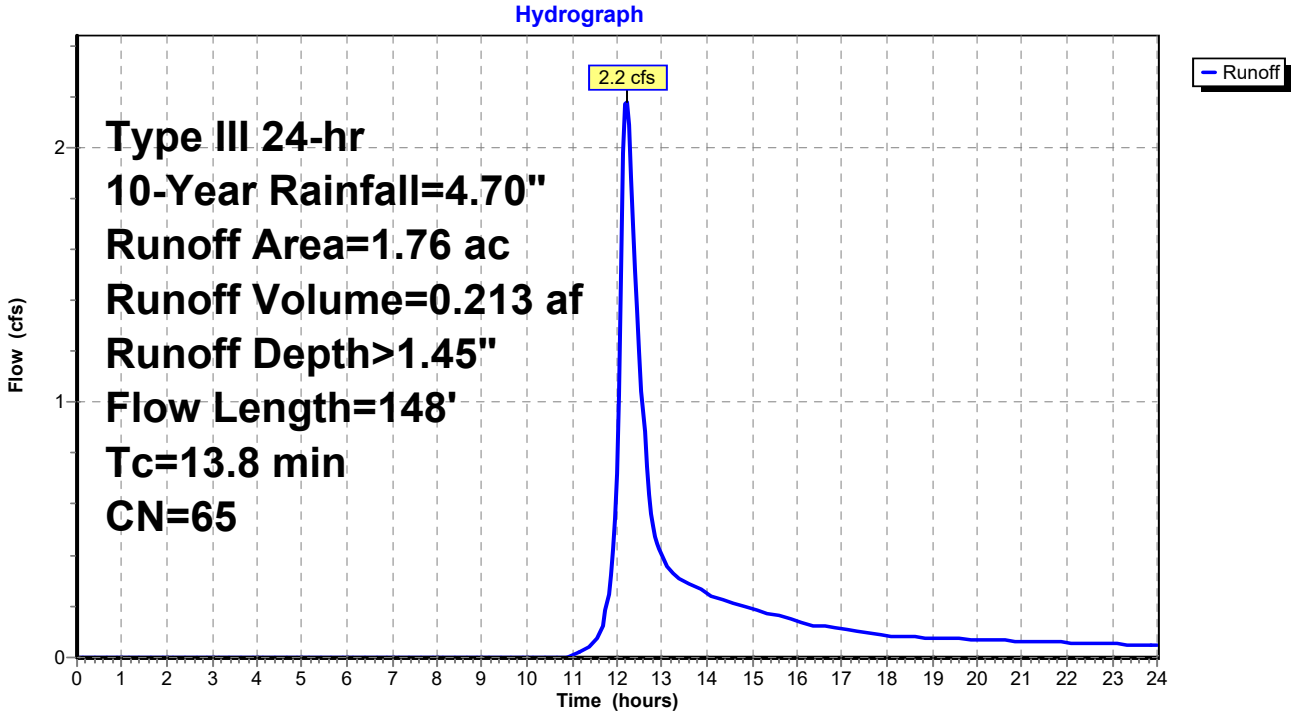
Runoff = 2.2 cfs @ 12.21 hrs, Volume= 0.213 af, Depth> 1.45"
Routed to Reach 5R : Wetland Line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
0.06	61	>75% Grass cover, Good, HSG B
0.16	80	>75% Grass cover, Good, HSG D
0.91	55	Woods, Good, HSG B
0.63	77	Woods, Good, HSG D
1.76	65	Weighted Average
1.76		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.5	98	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	148	Total			

Subcatchment 8S: Subarea DC



Summary for Subcatchment 9S: Subarea DB-1

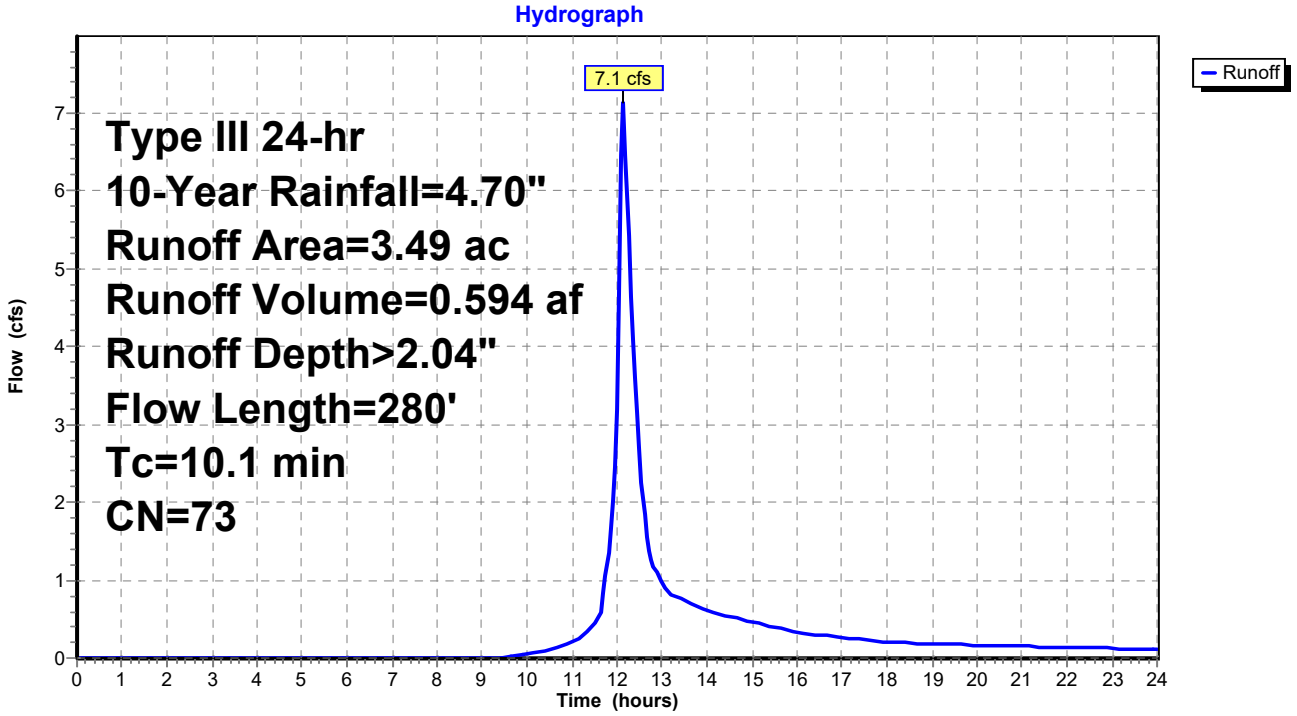
Runoff = 7.1 cfs @ 12.15 hrs, Volume= 0.594 af, Depth> 2.04"
Routed to Pond 10P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
0.51	98	Paved parking, HSG B
0.53	98	Roofs, HSG B
1.86	58	Woods/grass comb., Good, HSG B
0.59	79	Woods/grass comb., Good, HSG D
3.49	73	Weighted Average
2.45		70.20% Pervious Area
1.04		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
2.0	210	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	280	Total			

Subcatchment 9S: Subarea DB-1



Summary for Subcatchment 12S: Subarea DB-2

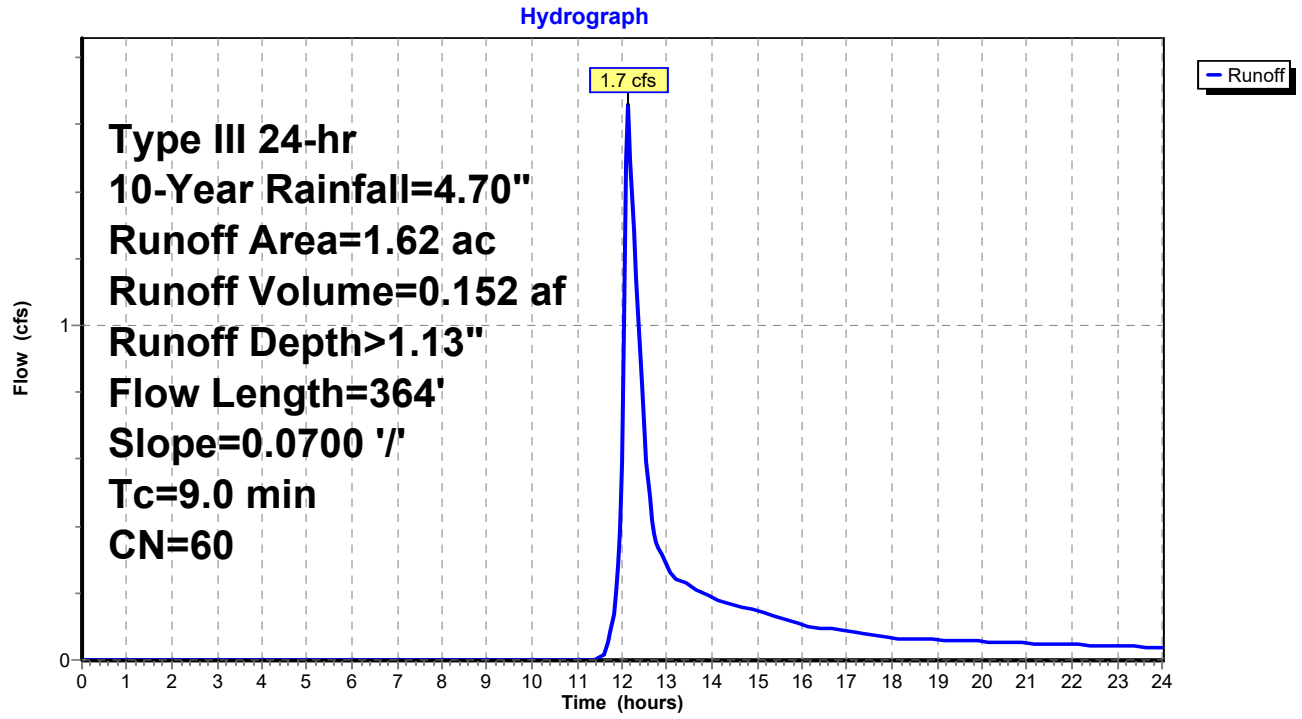
Runoff = 1.7 cfs @ 12.15 hrs, Volume= 0.152 af, Depth> 1.13"
Routed to Pond 7P : Isolated Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (ac)	CN	Description
0.10	98	Roofs, HSG B
1.52	58	Woods/grass comb., Good, HSG B
1.62	60	Weighted Average
1.52		93.83% Pervious Area
0.10		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0700	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
4.0	314	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	364	Total			

Subcatchment 12S: Subarea DB-2

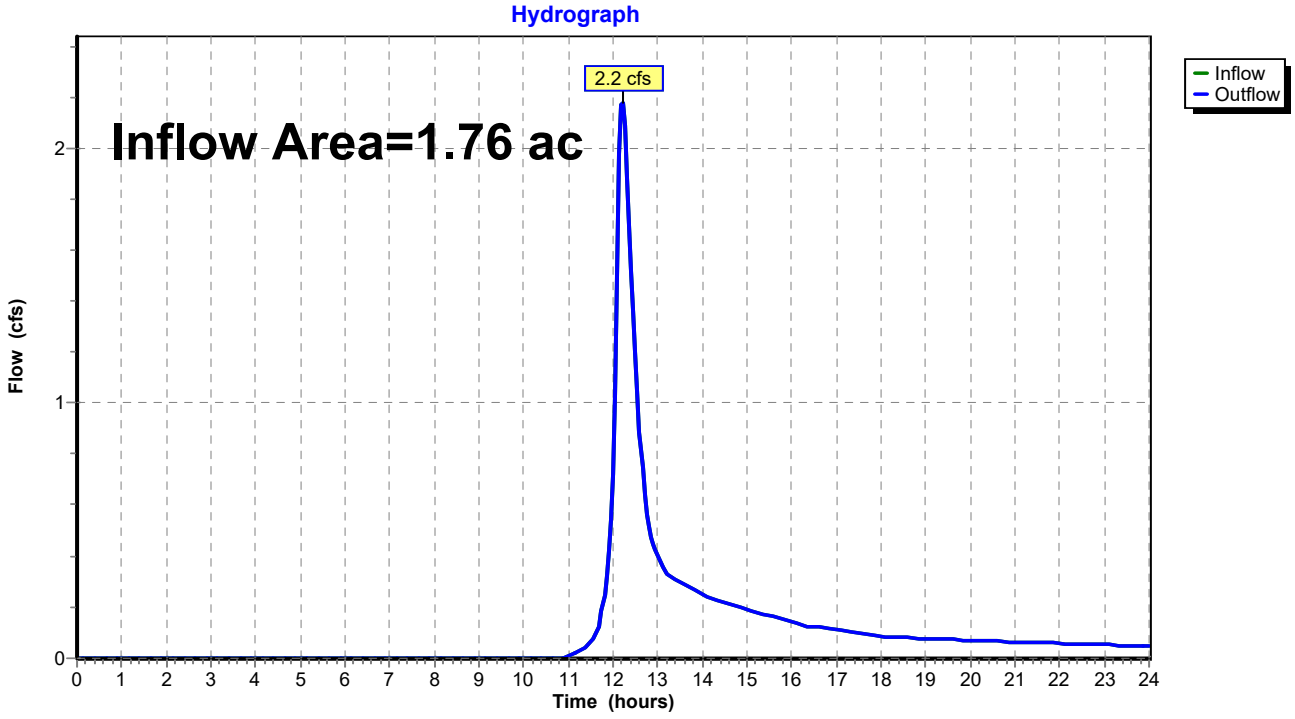


Summary for Reach 5R: Wetland Line

Inflow Area = 1.76 ac, 0.00% Impervious, Inflow Depth > 1.45" for 10-Year event
Inflow = 2.2 cfs @ 12.21 hrs, Volume= 0.213 af
Outflow = 2.2 cfs @ 12.21 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 5R: Wetland Line

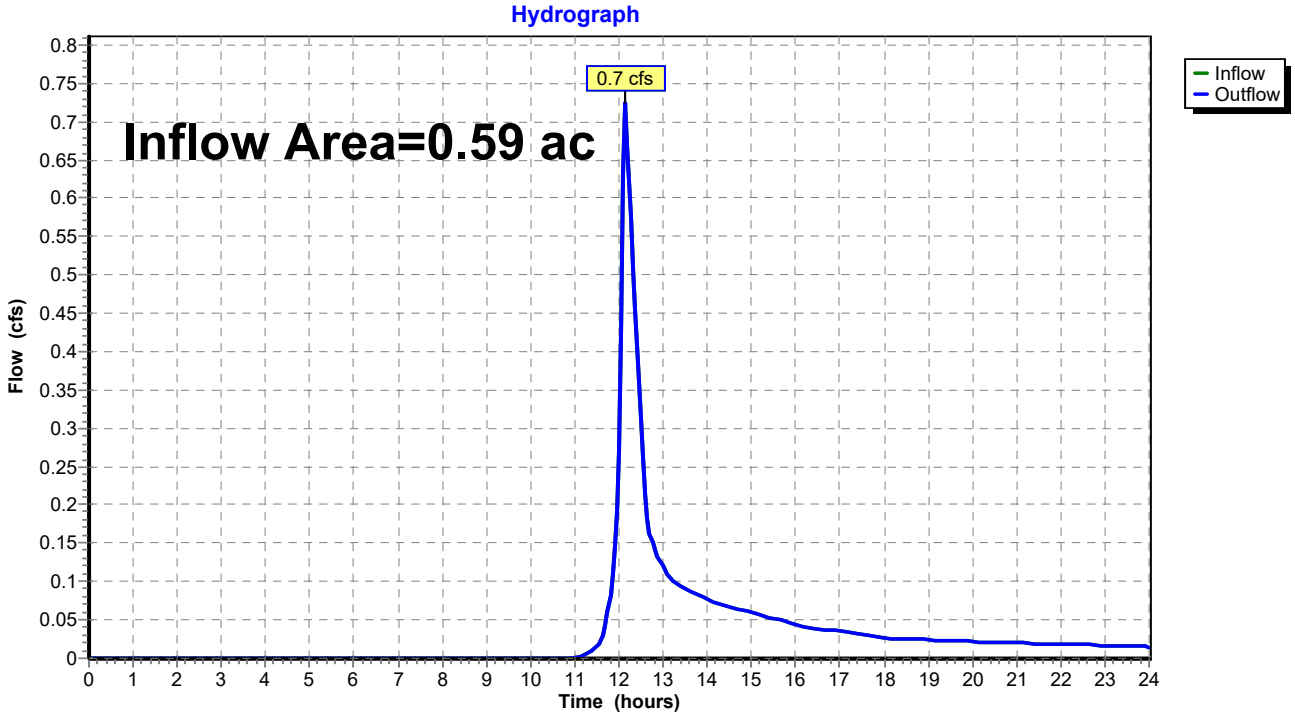


Summary for Reach 6R: N. Main Street

Inflow Area = 0.59 ac, 11.86% Impervious, Inflow Depth > 1.32" for 10-Year event
Inflow = 0.7 cfs @ 12.16 hrs, Volume= 0.065 af
Outflow = 0.7 cfs @ 12.16 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: N. Main Street



Summary for Pond 7P: Isolated Wetland

Inflow Area = 5.11 ac, 22.31% Impervious, Inflow Depth > 1.19" for 10-Year event
Inflow = 2.1 cfs @ 12.16 hrs, Volume= 0.506 af
Outflow = 0.6 cfs @ 16.42 hrs, Volume= 0.460 af, Atten= 72%, Lag= 255.4 min
Discarded = 0.6 cfs @ 16.42 hrs, Volume= 0.460 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 163.10' @ 16.42 hrs Surf.Area= 12,438 sf Storage= 7,733 cf

Plug-Flow detention time= 177.0 min calculated for 0.460 af (91% of inflow)
Center-of-Mass det. time= 140.5 min (1,060.0 - 919.4)

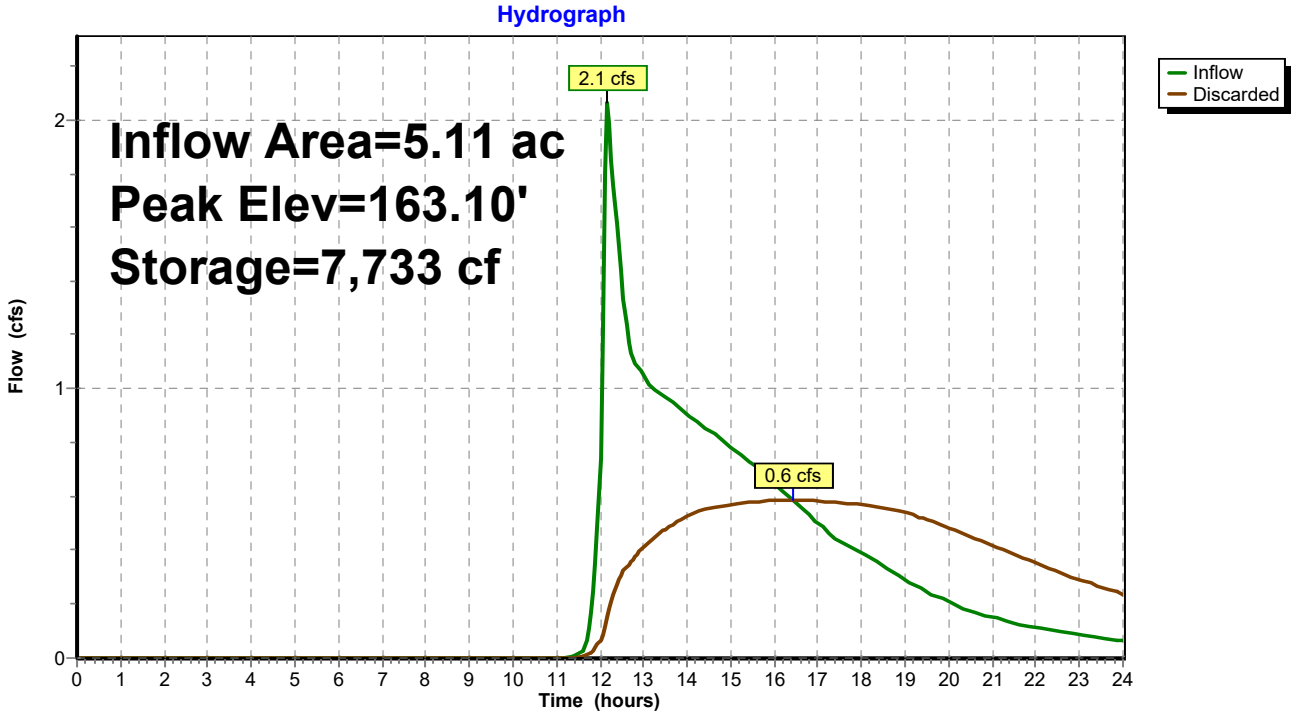
Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	23,352 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.50	0	0.0	0	0	0
162.00	2,098	196.0	350	350	3,057
163.00	11,415	520.0	6,136	6,485	21,522
164.00	22,986	651.0	16,866	23,352	33,743

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.50'	**1.020 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 156.00'

Discarded OutFlow Max=0.6 cfs @ 16.42 hrs HW=163.10' (Free Discharge)
1=Exfiltration (Controls 0.6 cfs)

Pond 7P: Isolated Wetland



Summary for Pond 10P: Infiltration Basin

Inflow Area = 3.49 ac, 29.80% Impervious, Inflow Depth > 2.04" for 10-Year event
Inflow = 7.1 cfs @ 12.15 hrs, Volume= 0.594 af
Outflow = 1.0 cfs @ 12.95 hrs, Volume= 0.571 af, Atten= 86%, Lag= 47.8 min
Discarded = 0.3 cfs @ 12.95 hrs, Volume= 0.217 af
Primary = 0.8 cfs @ 12.95 hrs, Volume= 0.354 af
Routed to Pond 7P : Isolated Wetland

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 165.35' @ 12.95 hrs Surf.Area= 9,422 sf Storage= 10,662 cf

Plug-Flow detention time= 142.4 min calculated for 0.570 af (96% of inflow)
Center-of-Mass det. time= 121.0 min (966.7 - 845.7)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	43,180 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

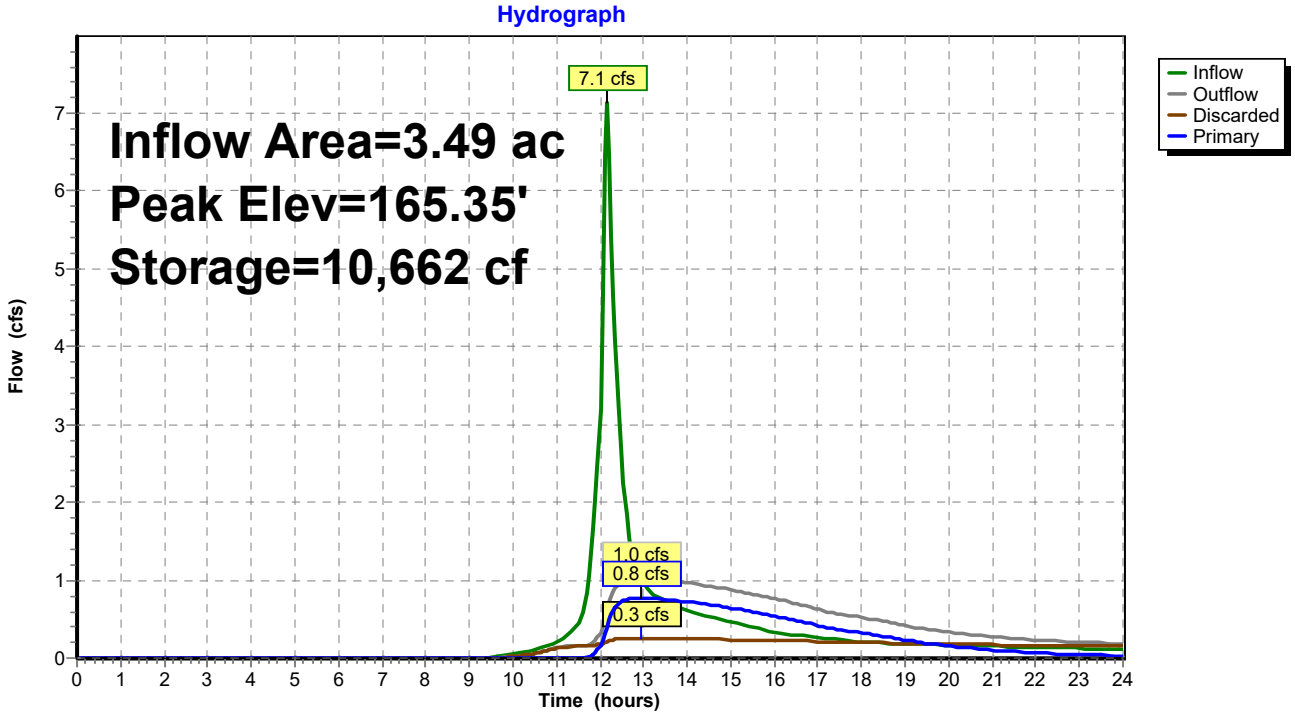
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
164.00	5,990	781.0	0	0	5,990
164.70	8,200	800.0	4,946	4,946	8,444
167.70	14,556	851.0	33,681	38,627	15,587
168.00	15,801	872.0	4,552	43,180	18,478

Device	Routing	Invert	Outlet Devices
#1	Discarded	164.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 156.00'
#2	Primary	164.00'	**6.0" Round Culvert** L= 24.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 164.00' / 164.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Primary	167.50'	**20.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.3 cfs @ 12.95 hrs HW=165.35' (Free Discharge)
└**1=Exfiltration** (Controls 0.3 cfs)

Primary OutFlow Max=0.8 cfs @ 12.95 hrs HW=165.35' (Free Discharge)
└**2=Culvert** (Barrel Controls 0.8 cfs @ 3.90 fps)
└**3=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 10P: Infiltration Basin



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 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 1S: Subarea DA Runoff Area=0.59 ac 11.86% Impervious Runoff Depth>2.67"
Flow Length=288' Tc=9.9 min CN=63 Runoff=1.6 cfs 0.131 af

Subcatchment 8S: Subarea DC Runoff Area=1.76 ac 0.00% Impervious Runoff Depth>2.86"
Flow Length=148' Tc=13.8 min CN=65 Runoff=4.5 cfs 0.420 af

Subcatchment 9S: Subarea DB-1 Runoff Area=3.49 ac 29.80% Impervious Runoff Depth>3.67"
Flow Length=280' Tc=10.1 min CN=73 Runoff=13.0 cfs 1.068 af

Subcatchment 12S: Subarea DB-2 Runoff Area=1.62 ac 6.17% Impervious Runoff Depth>2.39"
Flow Length=364' Slope=0.0700 '/' Tc=9.0 min CN=60 Runoff=3.9 cfs 0.323 af

Reach 5R: Wetland Line Inflow=4.5 cfs 0.420 af
Outflow=4.5 cfs 0.420 af

Reach 6R: N. Main Street Inflow=1.6 cfs 0.131 af
Outflow=1.6 cfs 0.131 af

Pond 7P: Isolated Wetland Peak Elev=163.77' Storage=18,355 cf Inflow=4.7 cfs 1.044 af
Outflow=0.8 cfs 0.762 af

Pond 10P: Infiltration Basin Peak Elev=166.38' Storage=21,456 cf Inflow=13.0 cfs 1.068 af
Discarded=0.3 cfs 0.290 af Primary=1.1 cfs 0.722 af Outflow=1.5 cfs 1.012 af

Total Runoff Area = 7.46 ac Runoff Volume = 1.942 af Average Runoff Depth = 3.12"
83.78% Pervious = 6.25 ac 16.22% Impervious = 1.21 ac

Summary for Subcatchment 1S: Subarea DA

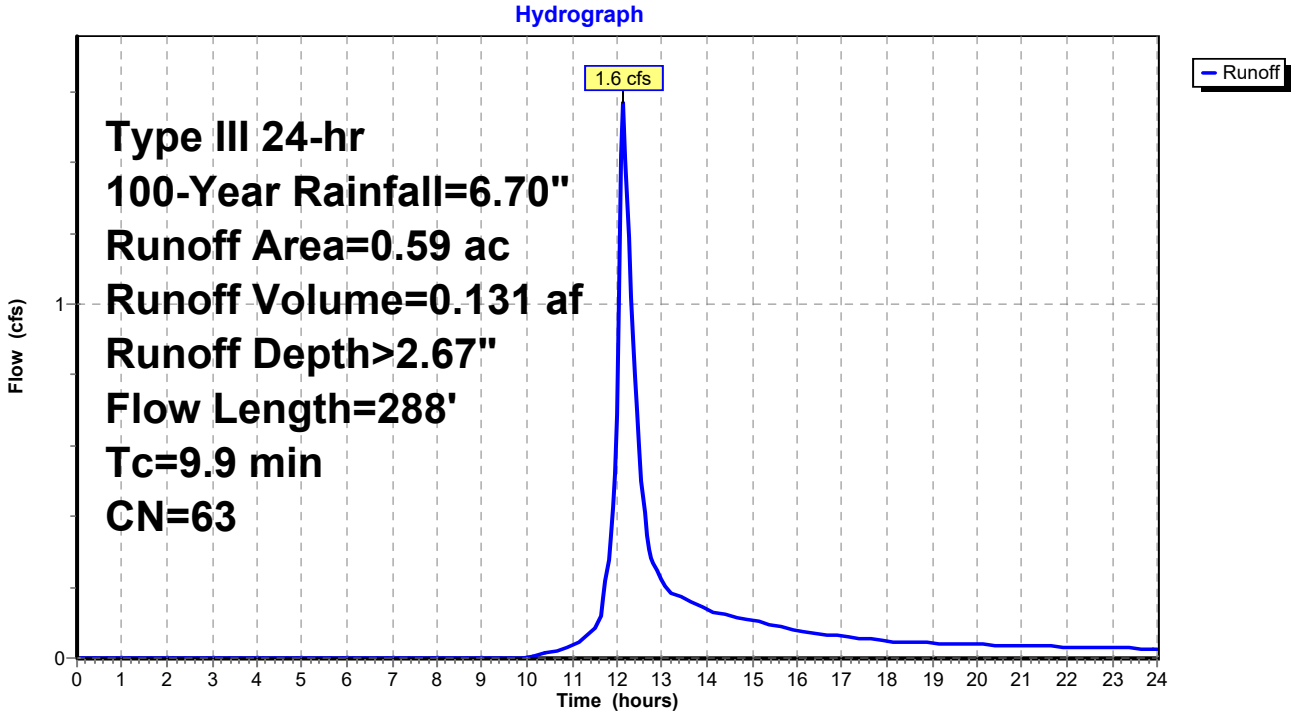
Runoff = 1.6 cfs @ 12.15 hrs, Volume= 0.131 af, Depth> 2.67"
Routed to Reach 6R : N. Main Street

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
0.07	98	Paved parking, HSG B
0.52	58	Woods/grass comb., Good, HSG B
0.59	63	Weighted Average
0.52		88.14% Pervious Area
0.07		11.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.1	46	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	95	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	97	0.0100	4.54	3.56	**Pipe Channel, RCP_Round 12"** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.9	288	Total			

Subcatchment 1S: Subarea DA



Summary for Subcatchment 8S: Subarea DC

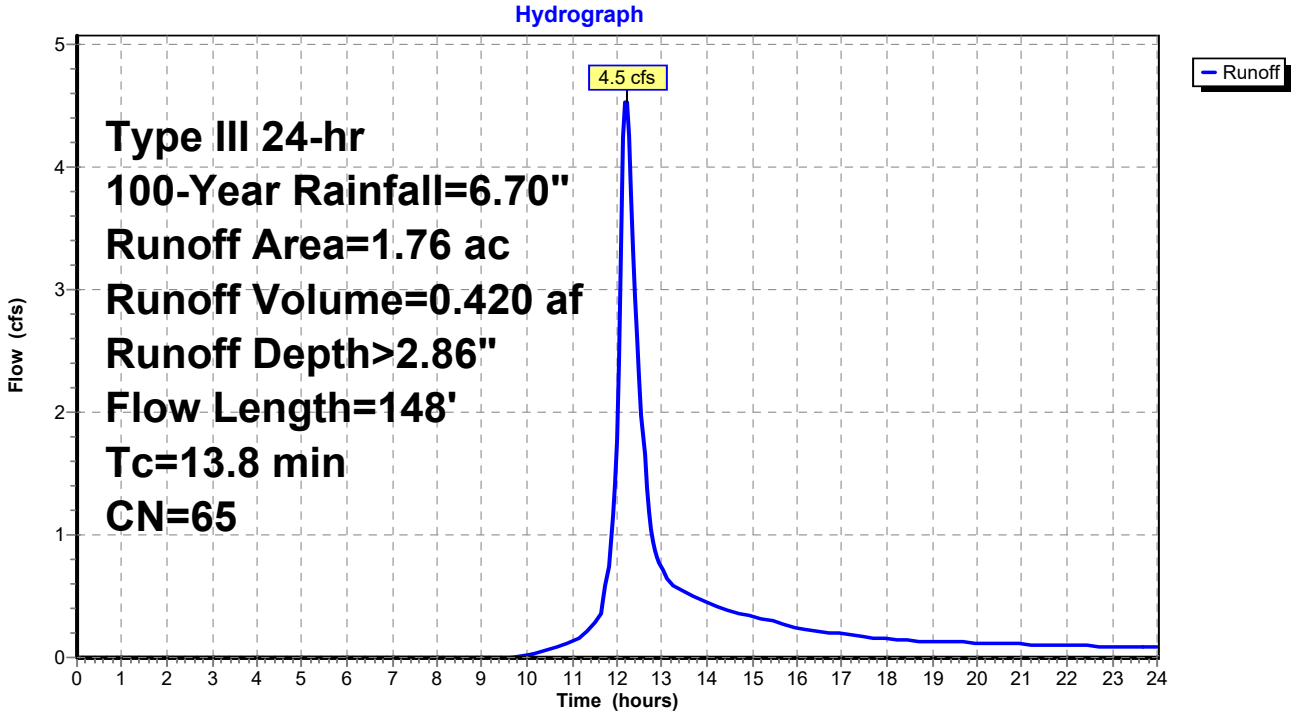
Runoff = 4.5 cfs @ 12.20 hrs, Volume= 0.420 af, Depth> 2.86"
Routed to Reach 5R : Wetland Line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
0.06	61	>75% Grass cover, Good, HSG B
0.16	80	>75% Grass cover, Good, HSG D
0.91	55	Woods, Good, HSG B
0.63	77	Woods, Good, HSG D
1.76	65	Weighted Average
1.76		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
1.5	98	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.8	148	Total			

Subcatchment 8S: Subarea DC



Summary for Subcatchment 9S: Subarea DB-1

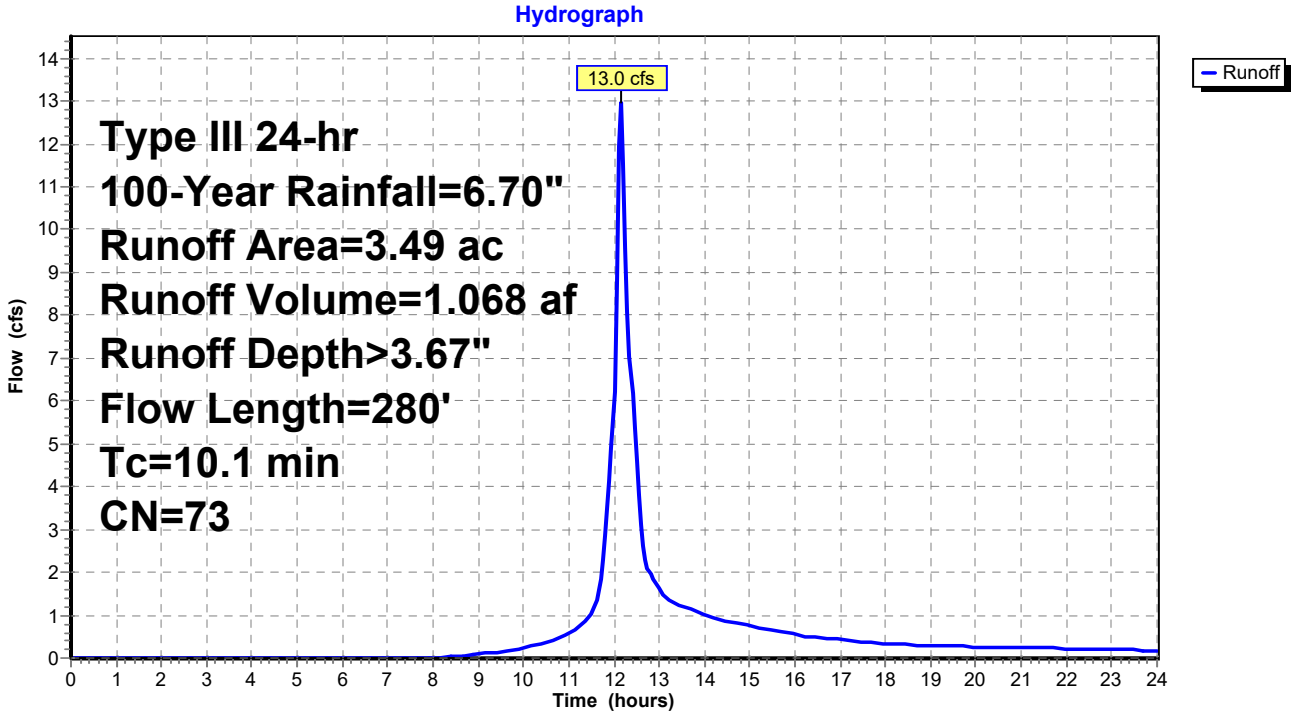
Runoff = 13.0 cfs @ 12.15 hrs, Volume= 1.068 af, Depth> 3.67"
Routed to Pond 10P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
0.51	98	Paved parking, HSG B
0.53	98	Roofs, HSG B
1.86	58	Woods/grass comb., Good, HSG B
0.59	79	Woods/grass comb., Good, HSG D
3.49	73	Weighted Average
2.45		70.20% Pervious Area
1.04		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
2.0	210	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.1	280	Total			

Subcatchment 9S: Subarea DB-1



Summary for Subcatchment 12S: Subarea DB-2

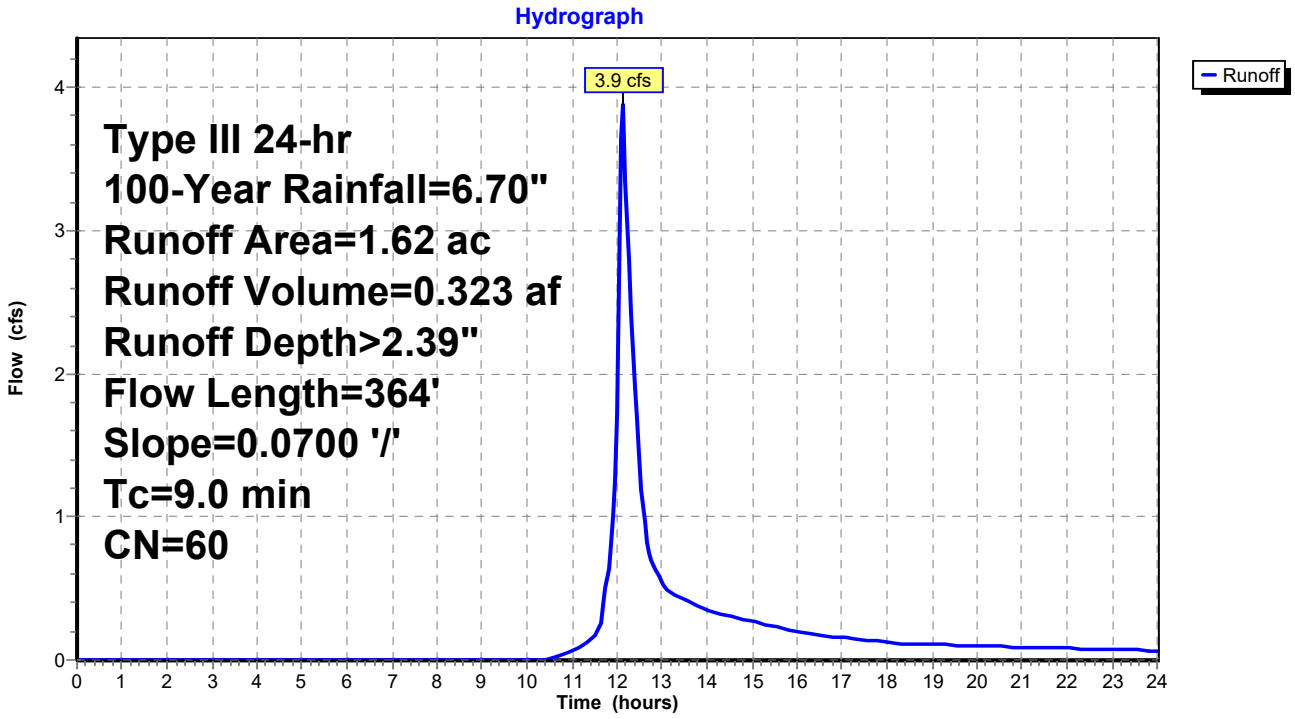
Runoff = 3.9 cfs @ 12.14 hrs, Volume= 0.323 af, Depth> 2.39"
Routed to Pond 7P : Isolated Wetland

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (ac)	CN	Description
0.10	98	Roofs, HSG B
1.52	58	Woods/grass comb., Good, HSG B
1.62	60	Weighted Average
1.52		93.83% Pervious Area
0.10		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0700	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
4.0	314	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	364	Total			

Subcatchment 12S: Subarea DB-2

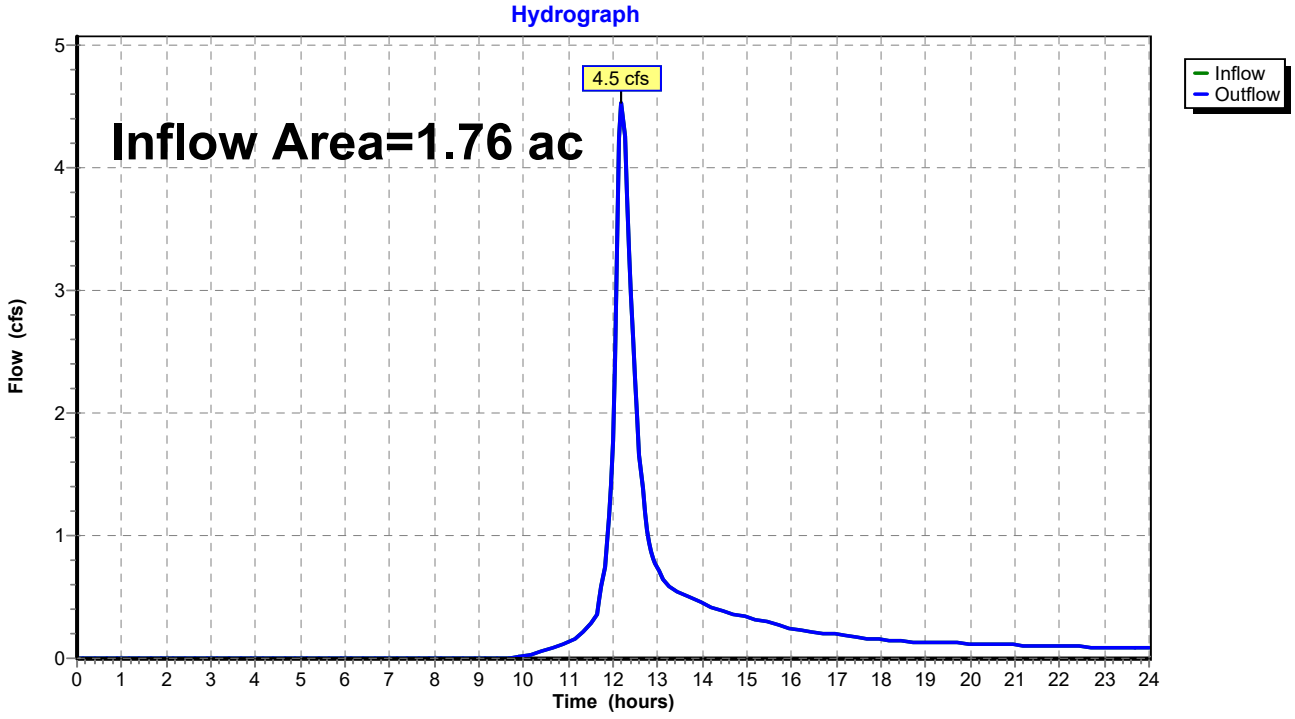


Summary for Reach 5R: Wetland Line

Inflow Area = 1.76 ac, 0.00% Impervious, Inflow Depth > 2.86" for 100-Year event
Inflow = 4.5 cfs @ 12.20 hrs, Volume= 0.420 af
Outflow = 4.5 cfs @ 12.20 hrs, Volume= 0.420 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 5R: Wetland Line

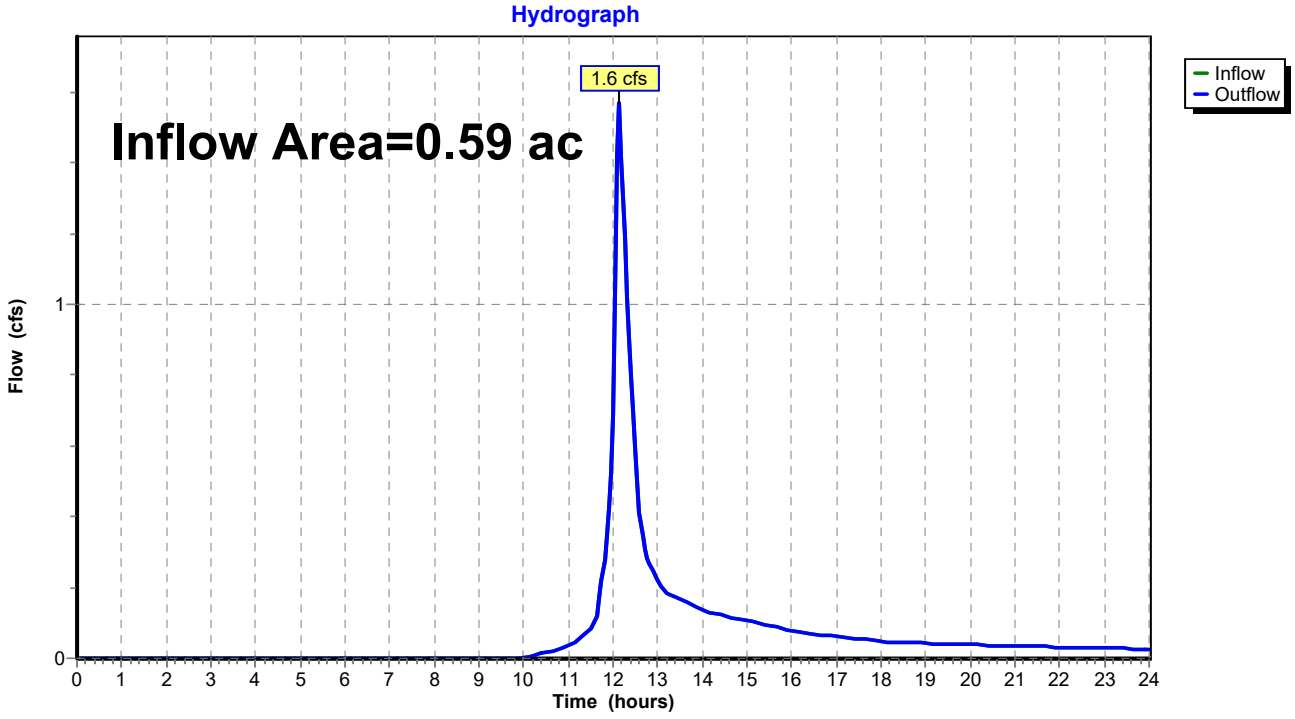


Summary for Reach 6R: N. Main Street

Inflow Area = 0.59 ac, 11.86% Impervious, Inflow Depth > 2.67" for 100-Year event
Inflow = 1.6 cfs @ 12.15 hrs, Volume= 0.131 af
Outflow = 1.6 cfs @ 12.15 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: N. Main Street



Summary for Pond 7P: Isolated Wetland

Inflow Area = 5.11 ac, 22.31% Impervious, Inflow Depth > 2.45" for 100-Year event
Inflow = 4.7 cfs @ 12.15 hrs, Volume= 1.044 af
Outflow = 0.8 cfs @ 18.44 hrs, Volume= 0.762 af, Atten= 82%, Lag= 377.9 min
Discarded = 0.8 cfs @ 18.44 hrs, Volume= 0.762 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 163.77' @ 18.44 hrs Surf.Area= 19,931 sf Storage= 18,355 cf

Plug-Flow detention time= 241.2 min calculated for 0.762 af (73% of inflow)
Center-of-Mass det. time= 144.5 min (1,089.1 - 944.6)

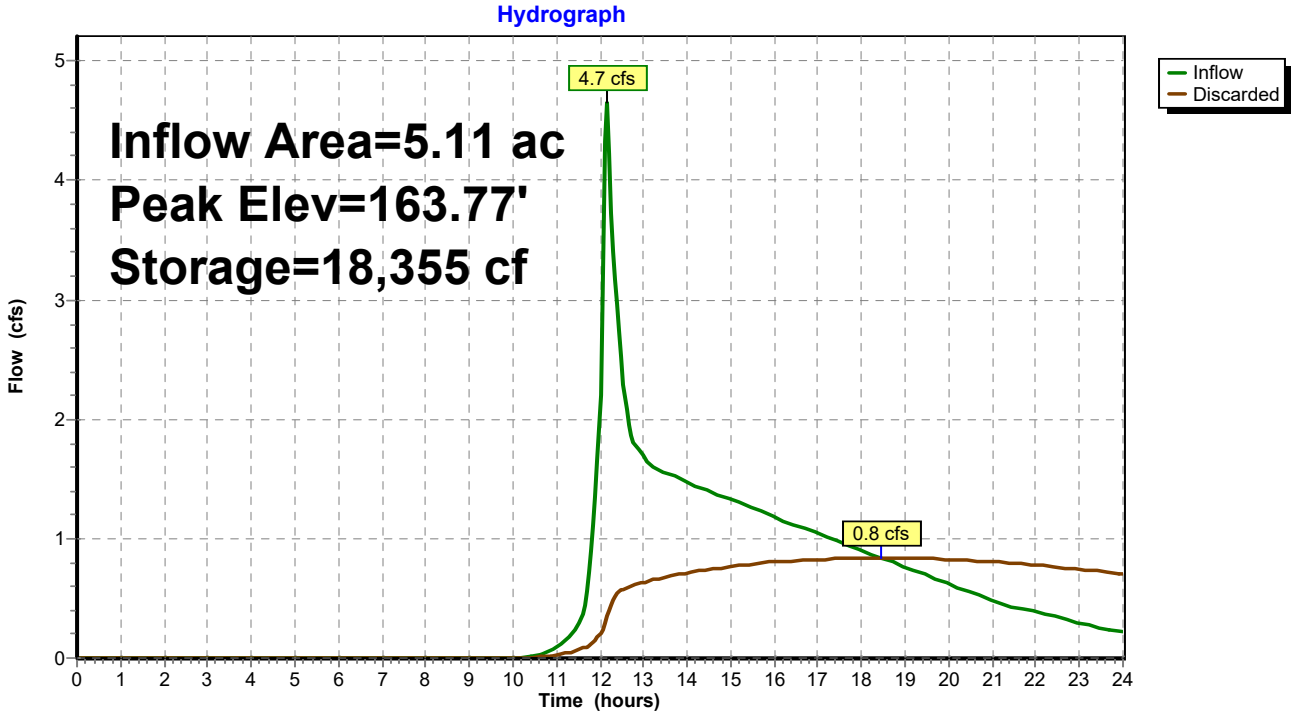
Volume	Invert	Avail.Storage	Storage Description
#1	161.50'	23,352 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
161.50	0	0.0	0	0	0
162.00	2,098	196.0	350	350	3,057
163.00	11,415	520.0	6,136	6,485	21,522
164.00	22,986	651.0	16,866	23,352	33,743

Device	Routing	Invert	Outlet Devices
#1	Discarded	161.50'	**1.020 in/hr Exfiltration over Wetted area** Conductivity to Groundwater Elevation = 156.00'

Discarded OutFlow Max=0.8 cfs @ 18.44 hrs HW=163.77' (Free Discharge)
1=Exfiltration (Controls 0.8 cfs)

Pond 7P: Isolated Wetland



Summary for Pond 10P: Infiltration Basin

Inflow Area = 3.49 ac, 29.80% Impervious, Inflow Depth > 3.67" for 100-Year event
Inflow = 13.0 cfs @ 12.15 hrs, Volume= 1.068 af
Outflow = 1.5 cfs @ 13.09 hrs, Volume= 1.012 af, Atten= 89%, Lag= 56.5 min
Discarded = 0.3 cfs @ 13.09 hrs, Volume= 0.290 af
Primary = 1.1 cfs @ 13.09 hrs, Volume= 0.722 af
Routed to Pond 7P : Isolated Wetland

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 166.38' @ 13.09 hrs Surf.Area= 11,538 sf Storage= 21,456 cf

Plug-Flow detention time= 184.6 min calculated for 1.012 af (95% of inflow)
Center-of-Mass det. time= 156.5 min (985.4 - 828.9)

Volume	Invert	Avail.Storage	Storage Description
#1	164.00'	43,180 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

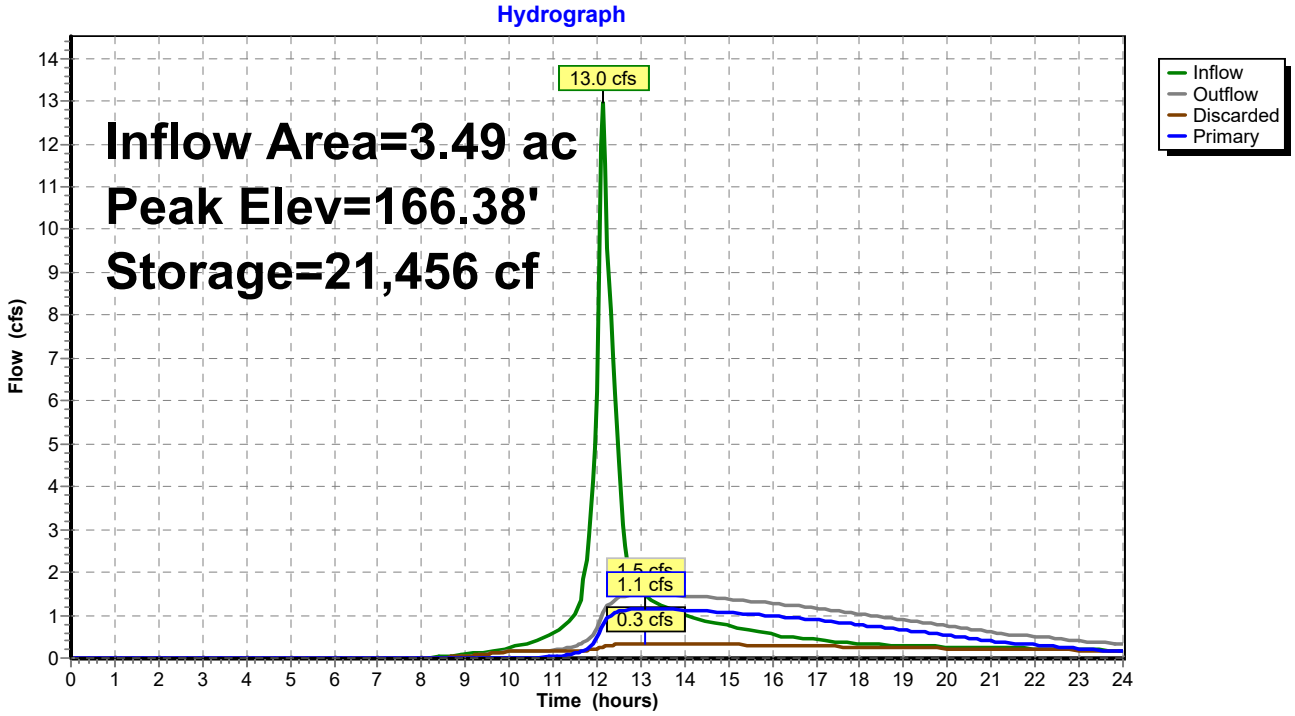
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
164.00	5,990	781.0	0	0	5,990
164.70	8,200	800.0	4,946	4,946	8,444
167.70	14,556	851.0	33,681	38,627	15,587
168.00	15,801	872.0	4,552	43,180	18,478

Device	Routing	Invert	Outlet Devices
#1	Discarded	164.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 156.00'
#2	Primary	164.00'	**6.0" Round Culvert** L= 24.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 164.00' / 164.00' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Primary	167.50'	**20.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Discarded OutFlow Max=0.3 cfs @ 13.09 hrs HW=166.38' (Free Discharge)
└**1=Exfiltration** (Controls 0.3 cfs)

Primary OutFlow Max=1.1 cfs @ 13.09 hrs HW=166.38' (Free Discharge)
├**2=Culvert** (Barrel Controls 1.1 cfs @ 5.80 fps)
└**3=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 10P: Infiltration Basin



APPENDIX B – Preliminary Storm Water Worksheets

Required Recharge Volume Worksheet

TSS Removal Worksheet

Conversion of Required Water Quality Volume to Discharge Rate Worksheet

Stormceptor Brochure

Required Recharge Volume Worksheet

PROJECT LOCATION: **Trowel Shop Pond Condominiums**
DATE: 3-Oct-22
PROJECT NUMBER: 20-0179

SCS Soil Type Hydrologic Group	*Target Depth Factor (in)*	*Total Impervious Area (acre)*	*Required Volume to Recharge (ac-ft)*
Roofs & Parking, HSG B	0.35	1.20	0.0350
		TOTAL:	**0.0350**

Infiltration Basin

Required Recharge Volume		
	0.0350	ac-ft

Volume Recharged		
Volume of pond	0.9913	ac-ft

Drawdown Within 72 hours	
Soil Type:	Sandy Loam
RAWLS Rate (in/hr):	1.02
Infiltration Area (sf):	5,990
Drawdown Time (hours):	3.0

Capture Area Adjustment		
Total impervious area:	1.18	acres
Impervious areas to basin:	1.11	acres
Percentage to basin:	**94%**	meets 65% standard
Ratio of total site area to area draining to recharge facility	**106%**	
Adjusted minimum required recharge volume (ac-ft)	**0.0372**	Infiltration basin meets standard

TSS REMOVAL WORKSHEET

PROJECT LOCATION: **Trowel Shop Pond Condominiums**
DATE: 3-Oct-22
PROJECT NUMBER: 20-0179

DB-1

Impervious Area =	0.48	acres
Runoff depth to be treated =	0.50	inches
Runoff volume to be treated =	0.0200	ac-ft

BMP	*TSS Removal Rate*	*Starting TSS Load*	*Amount Removed*	*Remaining Load*
Deep Sump and Hooded CB	0.25	1.00	0.25	0.75
Stormcepter	0.8	0.75	0.60	0.15
Infiltration Basin w/forebay	0.8	0.15	0.12	0.03
TOTAL TSS REMOVED =				**97 %**

DA

Impervious Area =	0.07	acres
Runoff depth to be treated =	0.50	inches
Runoff volume to be treated =	0.0029	ac-ft

BMP	*TSS Removal Rate*	*Starting TSS Load*	*Amount Removed*	*Remaining Load*
Stormcepter	0.8	1.00	0.8	0.20
TOTAL TSS REMOVED =				**80 %**

Weighted TSS Removal= **95%**

PROJECT LOCATION:	Trowel Shop Pond Condominium Sharon, MA		
DATE:	12/15/22		
PROJECT NUMBER:	20-0179		
Within or Near a Critical Area:	No		
WQV:	0.5	inch	

Structure Location: CB#3 - Subarea DA

Impervious Area =	0.000438	square miles	
Runoff Curve Number - CN =	63		
Time of Concentration - Tc =	10.0	min	
Unit Peak Discharge - qu =	677	csm/inch	see Table in Figure 2
Computed Flow Rate (0.5" of Runoff) $Q_{0.5}$ =	0.15	cfs	STC 450i can accept 0.40 cfs

Structure Location: CB#2 - Subarea DB-1

Impervious Area =	0.002750	square miles	
Runoff Curve Number - CN =	73		
Time of Concentration - Tc =	10.0	min	
Unit Peak Discharge - qu =	677	csm/inch	see Table in Figure 2
Computed Flow Rate (0.5" of Runoff) $Q_{0.5}$ =	0.93	cfs	STC 2400 can accept 1.58 cfs

Structure Location: CB#1 - Subarea DB-1

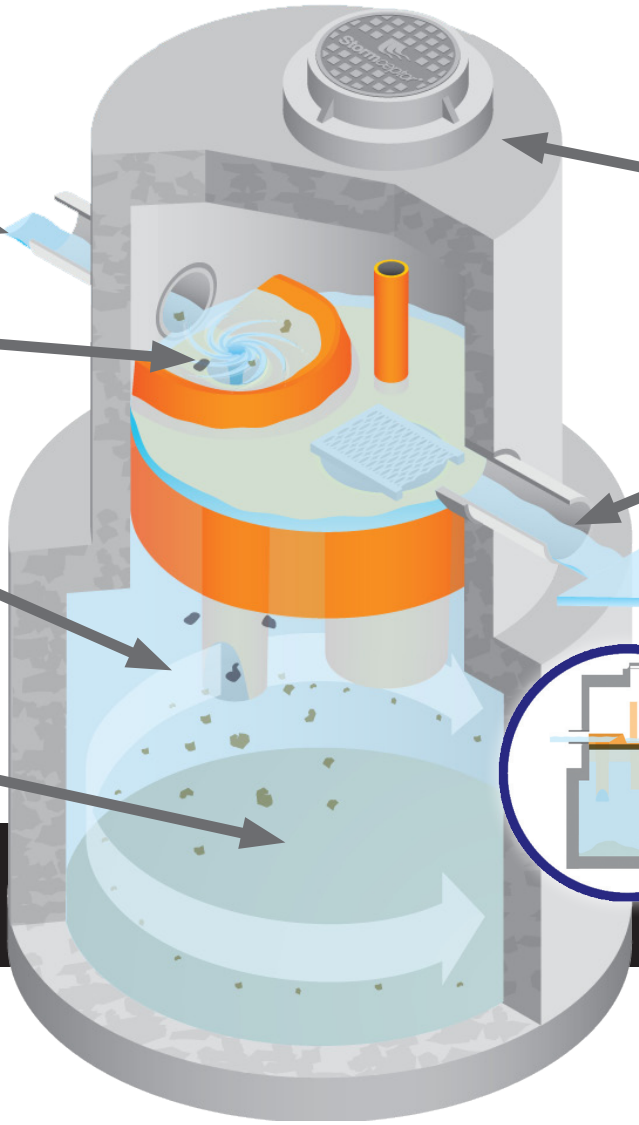
Impervious Area =	0.001891	square miles	
Runoff Curve Number - CN =	73		
Time of Concentration - Tc =	10.0	min	
Unit Peak Discharge - qu =	677	csm/inch	see Table in Figure 2
Computed Flow Rate (0.5" of Runoff) $Q_{0.5}$ =	0.64	cfs	STC 900 can accept 0.89 cfs

Using Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices, September 10, 2013

Stormceptor®

Stormwater Treatment Made Simple!

TSS & Oil Removal ■ *Scour Prevention* ■ *Small Footprint*



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Proven Performance

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that exceed your client's needs!

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Rinker MATERIALS™

Stormceptor® STC

Stormceptor® is an underground stormwater quality treatment device that is unparalleled in its effectiveness for pollutant capture and retention. With thousands of systems operating worldwide, Stormceptor delivers protection every day in every storm.

With patented technology, optimal treatment occurs by allowing free oil to rise and sediment to settle. The Stormceptor design prohibits scour and release of previously captured pollutants, ensuring superior treatment and protection during even the most extreme storm events.

Stormceptor is very easy to design and provides flexibility under varying site constraints such as tight right-of-ways, zero lot lines and retrofit projects. Design flexibility allows for a cost-effective approach to stormwater treatment. Stormceptor has proven performance backed by the longest record of lab and field verification in the industry.

Tested Performance

- Fine particle capture
- Prevents scour or release
- 95%+ Oil removal

Massachusetts – Water Quality (Q) Flow Rate

Stormceptor STC Model	Inside Diameter	Typical Depth Below Inlet Pipe Invert [1]	Water Quality Flow Rate Q [2]	Peak Conveyance Flow Rate [3]	Hydrocarbon Capacity [4]	Maximum Sediment Capacity [4]
	(ft)	(in)	(cfs)	(cfs)	(Gallons)	(ft^3)
STC 450i	4	68	0.40	5.5	86	46
STC 900	6	63	0.89	22	251	89
STC 2400	8	104	1.58	22	840	205
STC 4800	10	140	2.47	22	909	543
STC 7200	12	148	3.56	22	1,059	839
STC 11000	2 x 10	142	4.94	48	2,792	1,086
STC 16000	2 x 12	148	7.12	48	3,055	1,677

[1] Depth Below Pipe Inlet Invert to the Bottom of Base Slab, and Maximum Sediment Capacity can vary to accommodate specific site designs and pollutant loads. Depths can vary to accommodate special designs or site conditions. Contact your local representative for assistance.
[2] Water Quality Flow Rate (Q) is based on 80% annual average TSS removal of the OK110 particle size distribution.
[3] Peak Conveyance Flow Rate is based upon ideal velocity of 3 feet per second and outlet pipe diameters of 18-inch, 36-inch, and 54-inch diameters.
[4] Hydrocarbon & Sediment capacities can be modified to accommodate specific site design requirements, contact your local representative for assistance.

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Manufacturing Plant: Westfield, MA
Phone: (413) 562-3647
11-22-13-R13-802 MDEP

APPENDIX C – SOIL EVALUATION DATA

NRCS Soil Report

Soil Evaluator Forms

Laboratory Material Test Report

United States Department of Agriculture

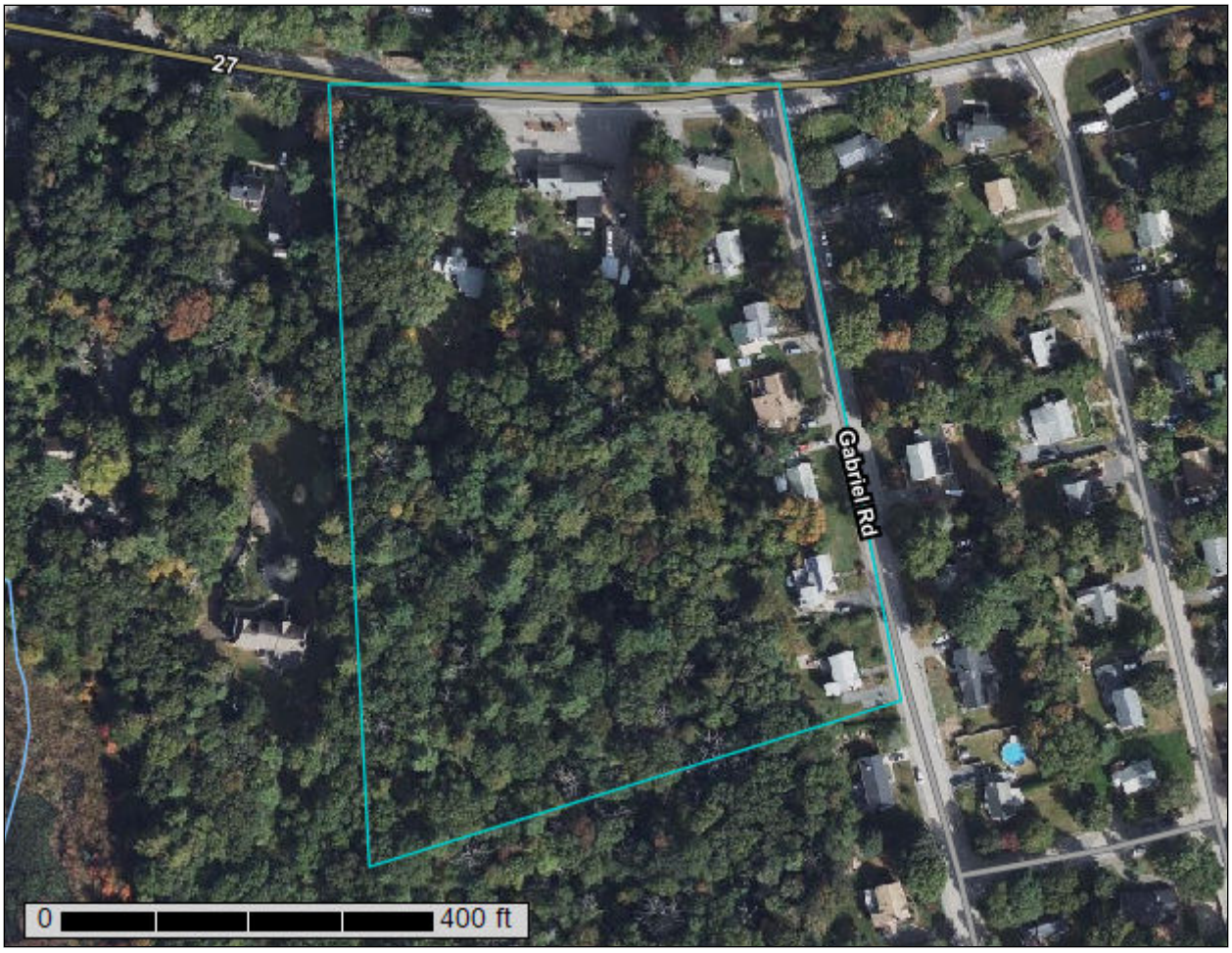
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Norfolk and Suffolk Counties, Massachusetts

299-303 North Main Street Sharon



November 1, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,490 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

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 17, Sep 3, 2021

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

Date(s) aerial images were photographed: Sep 25, 2020—Oct 4, 2020

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
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	1.3	14.1%
420B	Canton fine sandy loam, 3 to 8 percent slopes	5.4	58.6%
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	2.5	27.4%
Totals for Area of Interest		**9.2**	**100.0%**

Map Unit Descriptions

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, 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 and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils 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. Other minor components, however, have properties and behavioral 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*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one 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.

Norfolk and Suffolk Counties, Massachusetts

71B—Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w69c
Elevation: 0 to 1,290 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ridgebury, extremely stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Extremely Stony

Setting

Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam
Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Drainage class: Poorly 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 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Woodbridge, extremely stony

Percent of map unit: 10 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Whitman, extremely stony

Percent of map unit: 8 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Paxton, extremely stony

Percent of map unit: 2 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

420B—Canton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w81b
Elevation: 0 to 1,180 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Canton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Landform: Hills, moraines, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: gravelly fine sandy loam
2C - 26 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Scituate

Percent of map unit: 10 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Montauk

Percent of map unit: 5 percent
Landform: Moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Swansea

Percent of map unit: 1 percent
Landform: Marshes, depressions, bogs, swamps, kettles
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

422C—Canton fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w815
Elevation: 0 to 1,310 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

Canton, extremely stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Scituate, extremely stony

Percent of map unit: 6 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Montauk, extremely stony

Percent of map unit: 5 percent
Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Charlton, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Hollis, extremely stony

Percent of map unit: 4 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

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No. 21-0179

Date: August 24, 2021

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: Richard Leslie Date: August 24, 2021

Witnessed By: Kevin Davis

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Building #8) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Ridgebury Fine SL

Drainage Class C Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month July, 2021

Range: Above Normal ☑ Normal ☐ Below Normal ☐

Other References Reviewed: _____

Location Address or Lot No. 303 North Main Street

On-site Review

Deep Hole Number: TP #1 Date: 8/24/2021 Time: 0930 Weather: 75°/Raining

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 7"	A	SL	10YR3/2		
7" - 24"	B	SL	10YR5/6		
24" - 60"	C1	SL	2.5Y5/3		Gravelly, Cobbly, Stones, Dense
60" - 145"	C2	Sand	2.5Y5/4		Gravelly, Cobbly, Stones, Coarse

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 140" Weeping from Pit Face: 132"

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street

On-site Review

Deep Hole Number: TP #2 Date: 8/24/2021 Time: 1000 Weather: 75°/Raining

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 7"	A	SL	10YR3/2		
7" - 26"	B	SL	10YR5/6		
26" - 60"	C1	SL	2.5Y5/3		Gravelly, Cobbly, Stones, Dense
60" - 147"	C2	Sand	2.5Y5/4		Gravelly, Cobbly, Stones, Coarse

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 140" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street

On-site Review

Deep Hole Number: TP #3 Date: 8/24/2021 Time: 1030 Weather: 75°/Raining

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body >200' Drainageway >100'

Possible Wet Area >100' Property Line 25'+/-

Drinking Water Well >100' Other

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 6"	A	SL	10YR3/2		
6" - 26"	B	SL	10YR5/6		
26" - 60"	C1	SL	2.5Y6/3		Gravelly, Cobbly, Few Stones, Dense
60" - 144"	C2	Sand	2.5Y5/4		Gravelly, Cobbly, Few Stones, Coarse

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 137" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street

On-site Review

Deep Hole Number: TP #4 Date: 8/24/2021 Time: 1100 Weather: 75°/Raining

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 7"	A	SL	10YR3/2		
7" - 24"	B	SL	10YR5/6		
24" - 144"	C	Sand	2.5Y5/4		Gravelly, Cobbly, Few Stones, Coarse

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 137" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street

Commonwealth of Massachusetts

Sharon , Massachusetts

Percolation Test*		
Date: August 24, 2021	Time: 1145	
Observation Hole #	TP #3	TP #4
Depth of Perc	69"	42"
Start Pre-soak	1144	1240
End Pre-soak	1159	1255
Time at 12"	1159	1255
Time at 9"	1203	1259
Time at 6"	1210	1305
Time (9" – 6")	7	6
Rate Min./Inch	3	2

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☑ Site Failed ☐

Performed By: Richard Leslie

Witnessed By: Kevin Davis

Comments:

Location Address or Lot No. 303 North Main Street

Determination for Seasonal High Water Table

Method Used:

- [x] Depth observed standing in observation hole 140 inches
- [ ] Depth weeping from side of observation hole _____ inches
- [ ] Depth to soil mottles _____ inches
- [ ] Ground water adjustment _____ feet

Index Well Number _____ Reading Date _____ Index well level _____

Adjustment factor _____ Adjusted groundwater level

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material? _____

Certification

I certify that on April, 1997 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training expertise and experience described in 310 CMR 15.017.

Signature _____ Date 11/11/2021

No. 21-0179 Date: August 24, 2021

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: Richard Leslie Date: August 24, 2021

Witnessed By: Kevin Davis

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Building #4) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Canton Fine SL

Drainage Class B Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month July, 2021

Range: Above Normal ☑ Normal ☐ Below Normal ☐

Other References Reviewed: _____

Location Address or Lot No. 303 North Main Street (Building #4)

On-site Review

Deep Hole Number: TP #5 Date: 8/24/2021 Time: 1130 Weather: 75°/Raining

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 5"	A	SL	10YR3/2		
5" - 29"	B	SL	10YR5/6		
29" - 105"	C	LS	2.5Y6/2		Gravelly, Cobbly, Few Stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 105"

Depth to Groundwater Standing Water in Hole: Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street (Building #4)

On-site Review

Deep Hole Number: TP #6 Date: 8/24/2021 Time: 1200 Weather: 75°/Raining

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 6"	A	SL	10YR3/2		
6" - 30"	B	SL	10YR5/6		
30" - 120"	C	LS	2.5Y6/2		Gravelly, Cobbly, Few Stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 120"

Depth to Groundwater Standing Water in Hole: _____ Weeping from Pit Face: _____

Estimated Seasonal High Groundwater: _____

Location Address or Lot No. 303 North Main Street (Building #4)

Commonwealth of Massachusetts

Sharon , Massachusetts

Percolation Test*		
Date: August 24, 2021	Time: 0900	
Observation Hole #	TP #6	
Depth of Perc	44"	
Start Pre-soak	1339	
End Pre-soak	1354	
Time at 12"	1354	
Time at 9"	1400	
Time at 6"	1410	
Time (9" – 6")	10	
Rate Min./Inch	4	

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☑ Site Failed ☐

Performed By: Richard Leslie

Witnessed By: Kevin Davis

Comments:

Location Address or Lot No. 303 North Main Street (Building #4)

Determination for Seasonal High Water Table

Method Used:

- [x] Depth observed standing in observation hole >120" inches
- [ ] Depth weeping from side of observation hole _____ inches
- [ ] Depth to soil mottles _____ inches
- [ ] Ground water adjustment _____ feet

Index Well Number _____ Reading Date _____ Index well level _____

Adjustment factor _____ Adjusted groundwater level

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material?_____

Certification

I certify that on April, 1997 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training expertise and experience described in 310 CMR 15.017.

Signature _____ Date 11/11/2021

No. 21-0179 Date: August 25, 2021

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: Richard Leslie Date: August 25, 2021

Witnessed By: Kevin Davis

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Building #6) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Canton Fine SL

Drainage Class B Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month July, 2021

Range: Above Normal ☑ Normal ☐ Below Normal ☐

Other References Reviewed: _____

Location Address or Lot No. 303 North Main Street

On-site Review

Deep Hole Number: TP #7 Date: 8/25/2021 Time: 0800 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 4"	A	SL	10YR3/2		
4" - 28"	B	SL	10YR5/6		
28" - 108"	C	SL	2.5Y6/2		Gravelly, Cobbly, Stones Pockets of fine sand

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 99" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street

On-site Review

Deep Hole Number: TP #8 Date: 8/25/2021 Time: 0830 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 5"	A	SL	10YR3/2		
5" - 26"	B	SL	10YR5/6		
26" - 65"	C1	SL	2.5Y6/1		Gravelly, Cobbly, Stones
65" - 112"	C2	SL	2.5Y6/2		Gravelly, Cobbly, Stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 112"

Depth to Groundwater Standing Water in Hole: 99" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street

Commonwealth of Massachusetts

Sharon , Massachusetts

Percolation Test*		
Date: August 25, 2021	Time: 0900	
Observation Hole #	TP #7	
Depth of Perc	42"	
Start Pre-soak	0911	
End Pre-soak	0926	
Time at 12"	0926	
Time at 9"	0945	
Time at 6"	1025	
Time (9" – 6")	40	
Rate Min./Inch	14	

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☑ Site Failed ☐

Performed By: Richard Leslie

Witnessed By: Kevin Davis

Comments:

Location Address or Lot No. 303 North Main Street

Determination for Seasonal High Water Table

Method Used:

- [x] Depth observed standing in observation hole 99 inches
- [ ] Depth weeping from side of observation hole _____ inches
- [ ] Depth to soil mottles _____ inches
- [ ] Ground water adjustment _____ feet

Index Well Number _____ Reading Date _____ Index well level _____

Adjustment factor _____ Adjusted groundwater level

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material? _____

Certification

I certify that on April, 1997 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training expertise and experience described in 310 CMR 15.017.

Signature _____ Date 11/11/2021

No. 21-0179 Date: August 25, 2021

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: Richard Leslie Date: August 25, 2021

Witnessed By: Kevin Davis

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Building #2) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Canton Fine SL

Drainage Class B Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month July, 2021

Range: Above Normal ☑ Normal ☐ Below Normal ☐

Other References Reviewed: _____

Location Address or Lot No. 303 North Main Street (Building #2)

On-site Review

Deep Hole Number: TP #9 Date: 8/25/2021 Time: 0900 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Yard Slope (%) 1% Surface Stones None

Vegetation Grass

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 4"	A	SL	10YR3/2		
4" - 30"	B	SL	10YR5/6		
30" - 120"	C	SL	2.5Y6/2		Gravelly, Cobbly, Few Stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 120"

Depth to Groundwater Standing Water in Hole: _____ Weeping from Pit Face: _____

Estimated Seasonal High Groundwater: _____

Location Address or Lot No. 303 North Main Street (Building #2)

On-site Review

Deep Hole Number: TP #10 Date: 8/25/2021 Time: 0930 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Yard Slope (%) 1% Surface Stones None

Vegetation Grass

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 4"	A	SL	10YR3/2		
4" - 22"	B	SL	10YR5/6		
22" - 84"	C	SL	2.5Y6/2		Gravelly, Cobbly, Many Many Stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 84"

Depth to Groundwater Standing Water in Hole: _____ Weeping from Pit Face: _____

Estimated Seasonal High Groundwater: _____

Location Address or Lot No. 303 North Main Street (Building #2)

Commonwealth of Massachusetts

Sharon , Massachusetts

Percolation Test*		
Date: August 25, 2021	Time: 1045	
Observation Hole #	TP #9	
Depth of Perc	42"	
Start Pre-soak	1056	
End Pre-soak	1111	
Time at 12"	1111	
Time at 9"	1127	
Time at 6"	1149	
Time (9" – 6")	22	
Rate Min./Inch	8	

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☑ Site Failed ☐

Performed By: Richard Leslie

Witnessed By: Kevin Davis

Comments:

Location Address or Lot No. 303 North Main Street (Building #2)

Determination for Seasonal High Water Table

Method Used:

- [x] Depth observed standing in observation hole >120" inches
- [ ] Depth weeping from side of observation hole _____ inches
- [ ] Depth to soil mottles _____ inches
- [ ] Ground water adjustment _____ feet

Index Well Number _____ Reading Date _____ Index well level _____

Adjustment factor _____ Adjusted groundwater level

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material? _____

Certification

I certify that on April, 1997 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training expertise and experience described in 310 CMR 15.017.

Signature _____ Date 11/11/2021

No. 21-0179

Date: August 25, 2021

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: Richard Leslie Date: August 25, 2021

Witnessed By: Kevin Davis

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Building #1) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Canton Fine SL

Drainage Class B Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month July, 2021

Range: Above Normal ☑ Normal ☐ Below Normal ☐

Other References Reviewed: _____

Location Address or Lot No. 303 North Main Street (Building #1)

On-site Review

Deep Hole Number: TP #11 Date: 8/25/2021 Time: 1000 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Parking Area Slope (%) 1% Surface Stones None

Vegetation None

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
					No "A" Layer
0" - 20"	B	SL	10YR5/6		
20" - 110"	C	LS	2.5Y5/4		Gravelly, Cobbly, Few Stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 110"

Depth to Groundwater Standing Water in Hole: 90" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street (Building #1)

On-site Review

Deep Hole Number: TP #12 Date: 8/25/2021 Time: 1030 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Parking Area Slope (%) 1% Surface Stones None

Vegetation None

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-48"	old septic system				hit edge of old septic system
48"-105"	C	LS	2.5Y5/4		gravelly, cobbly, few stones

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock: 105"

Depth to Groundwater Standing Water in Hole: 85" Weeping from Pit Face:

Estimated Seasonal High Groundwater: 85"

Location Address or Lot No. 303 North Main Street (Building #1)

Commonwealth of Massachusetts

Sharon , Massachusetts

Percolation Test*		
Date: August 25, 2021	Time: 1115	
Observation Hole #	TP #11	
Depth of Perc	35"	
Start Pre-soak	1115	
End Pre-soak	1130	
Time at 12"	1130	
Time at 9"	1136	
Time at 6"	1147	
Time (9" – 6")	11	
Rate Min./Inch	4	

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☑ Site Failed ☐

Performed By: Richard Leslie

Witnessed By: Kevin Davis

Comments:

Location Address or Lot No. 303 North Main Street (Building #1)

Determination for Seasonal High Water Table

Method Used:

- [x] Depth observed standing in observation hole 90" inches
- [ ] Depth weeping from side of observation hole _____ inches
- [ ] Depth to soil mottles _____ inches
- [ ] Ground water adjustment _____ feet

Index Well Number _____ Reading Date _____ Index well level _____

Adjustment factor _____ Adjusted groundwater level

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material? _____

Certification

I certify that on April, 1997 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training expertise and experience described in 310 CMR 15.017.

Signature _____ Date 11/11/2021

No. 20-0179 Date: August 25, 2021

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: Richard Leslie Date: August 25, 2021

Witnessed By: Kevin Davis

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Drainage) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Canton Fine SL

Drainage Class B Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month August, 2021

Range: Above Normal ☑ Normal ☐ Below Normal ☐

Other References Reviewed: Highest ever recorded this month in Lakeville well (LKW14)

Location Address or Lot No. 303 North Main Street (Drainage)

On-site Review

Deep Hole Number: TP D1 Date: 8/25/2021 Time: 1100 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 6"	A	SL	10YR3/2		
6" - 25"	B	SL	10YR5/6		
25" - 101"	C	LS	2.5Y6/1		Gravelly, Cobbly, Few Stones Variegated colors thru out

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 90" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street (Drainage)

On-site Review

Deep Hole Number: TP D2 Date: 8/25/2021 Time: 1130 Weather: 80°/Sunny

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>100'	Property Line	25'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 7"	A	SL	10YR3/2		
7" - 28"	B	SL	10YR5/6		
28" - 110"	C	SL	2.5Y6/1		Gravelly, Cobbly, Pockets of fine sand Variegated colors thru out

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 96" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

No. 20-0179 Date: November 9, 2022

Commonwealth of Massachusetts

Sharon , Massachusetts

Soil Suitability Assessment for On-Site Sewage Disposal

Performed By: William Buckley, Jr. Date: November 9, 2022

Witnessed By: _____

Location Address or Lot #:	Owner's Name, Address, and , Telephone #:
303 North Main Street (Drainage) Sharon, MA 02067 New Construction: ☑ Repair ☐	Yuriy Lande 1 Richard Road Marblehead, MA 01945 781.718.2728

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1989 Publication Scale 1:25,000 Soil Map Unit Canton Fine SL

Drainage Class B Soil Limitations Bedrock

Surficial Geology Report Available: No ☐ Yes ☑

Year Published 1992 Publication Scale 1:250,000

Geologic Material (Map Unit) Thin Till

Landform Glacial Till Deposits

Flood Insurance Rate Map:

Above 500 year flood boundary No ☐ Yes ☑

Within 500 year flood boundary No ☑ Yes ☐

Within 100 year flood boundary No ☑ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) _____

Wetlands Conservancy Program Map (map unit) _____

Current Water Resource Conditions (USGS): Month October 2022

Range: Above Normal ☐ Normal ☑ Below Normal ☐

Other References Reviewed: _____

Location Address or Lot No. 303 North Main Street (Drainage)

On-site Review

Deep Hole Number: TP D3 Date: 11/9/2022 Time: 0700 Weather: 30°/Sunny

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body	>200'	Drainageway	>100'
Possible Wet Area	>50'	Property Line	100'+/-
Drinking Water Well	>100'	Other	

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 12"	A	SL	10YR3/2		
12" - 25"	B	SL	10YR6/8		
25" - 96"	C	Sand	10YR6/4		Loose, coarse, v-gravelly

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 75" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Location Address or Lot No. 303 North Main Street (Drainage)

On-site Review

Deep Hole Number: TP D4 Date: 11/9/2022 Time: 0700 Weather: 30°/Sunny

Location (identify on site plan) See site plan

Land Use Woods Slope (%) 3% Surface Stones Many

Vegetation Forest

Landform Glacial Outwash Plain

Position on landscape (sketch on back) See site plan

Distances from:

Open Water Body >200' Drainageway >100'

Possible Wet Area >50' Property Line 100'+/-

Drinking Water Well >100' Other

DEEP OBSERVATION HOLE LOG*

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0" - 10"	A	SL	10YR3/2		
10" - 26"	B	SL	10YR6/8		
26" - 88"	C1	SL	10YR6/4		Friable, some cobbles & stones
88"-103"	C2	LS	10YR5/3		Loose, coarse, v-gravelly

*MINIMUM OF TWO HOLES REQUIRED AT EVERY DISPOSAL AREA

Parent Material (geologic) Glacial outwash Depth to Bedrock:

Depth to Groundwater Standing Water in Hole: 100" Weeping from Pit Face:

Estimated Seasonal High Groundwater:

Professional Service Industries, Inc.
480 Neponset Street, Suite 9C
Canton, MA 02021

Phone: (781) 821-2355
Fax: (781) 821-6276

Report No: DFR:0446516-44/1
Issue No: 1

Daily Field Report

Client: BAY COLONY GROUP
4 SCHOOL ST.
P.O. BOX 9136
FOXBORO, MA 02035

CC:

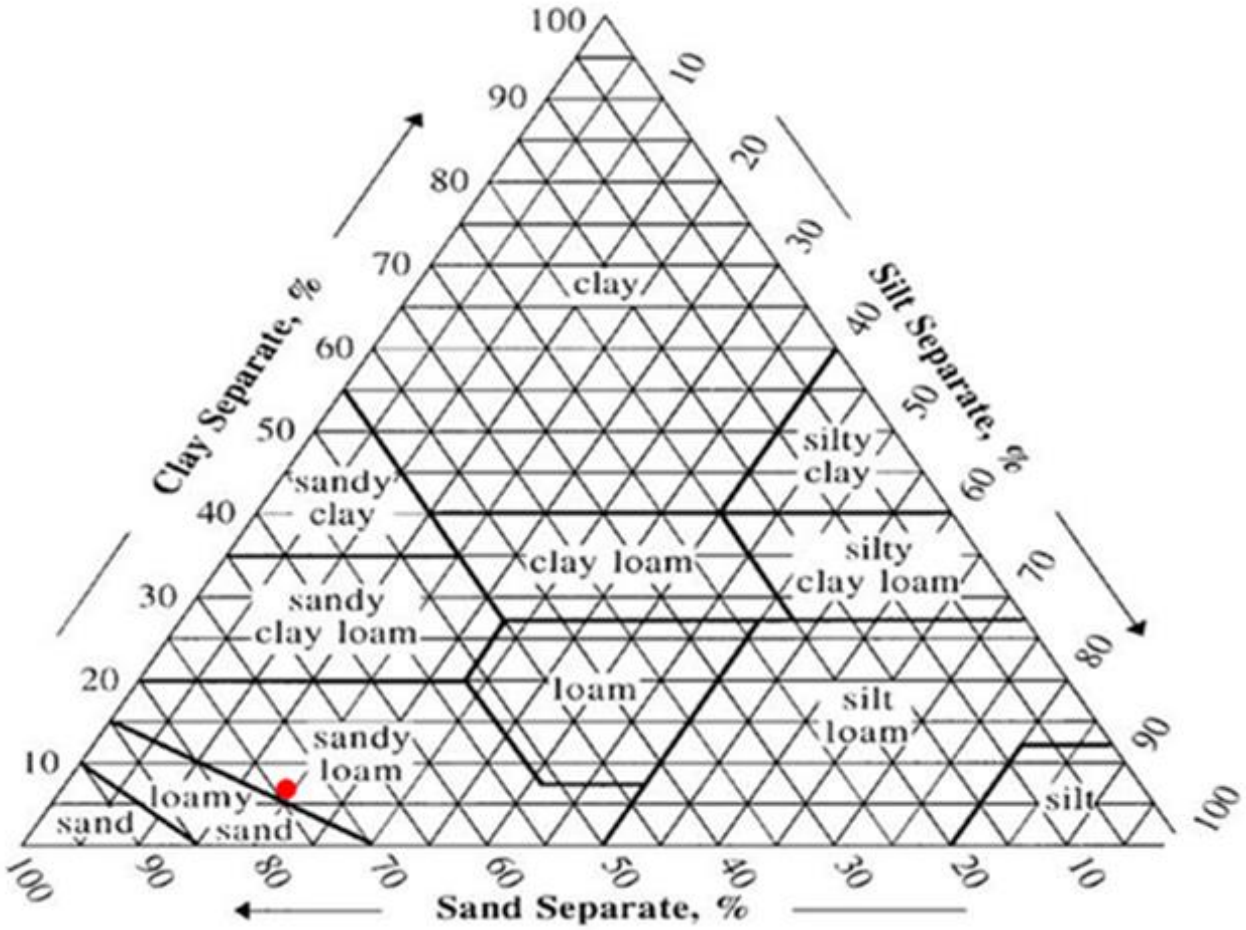
Project: BAY COLONY GROUP - LAB TESTIN
CANTON, MA

Approved Signatory: Yannick Lastennet (Department Manager)
Date of Issue: 9/16/2021

Date: 8/25/2021

Technician:

Soil Texture Triangle



SOIL DATA						
	Source	Sample No.	Percentages From Material Passing a #10 Sieve			Classification
			Sand	Silt	Clay	
●	TP D-2: 80"; 303 N. Main St, Sharon MA	S1	73.91	19.57	6.52	Sandy Loam

Professional Service Industries, Inc.
480 Neponset Street, Suite 9C
Canton, MA 02021

Phone: (781) 821-2355
Fax: (781) 821-6276

Report No: MAT:0446516-44-S1
Issue No: 1

Material Test Report

Client: BAY COLONY GROUP
4 SCHOOL ST., P.O. BOX 9136
FOXBORO, MA 02035

CC:

Project: BAY COLONY GROUP - LAB TESTING
CANTON, MA

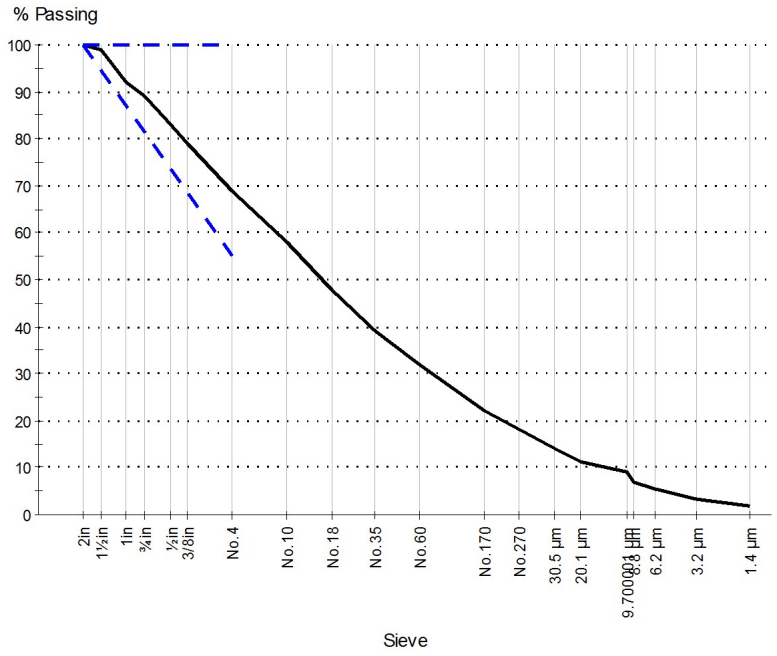
Approved Signatory: Yannick Lastennet (Department Manager)
Date of Issue: 9/16/2021

Sample Details

Sample ID:	0446516-44-S1
Client Sample ID:	
Date Sampled:	08/25/21
Sampled By:	Client
Specification:	Title V Hydrometer
Supplier:	
Source:	TP - D2, 80"
Material:	
Sampling Method:	
General Location:	303 North Main St. - Sharon, MA

Sample Description:

Particle Size Distribution



COBBLES	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
(0.0%)	(11.5%)	(19.4%)	(11.3%)	(20.7%)	(16.6%)	(16.1%)	(4.5%)

Grading: ASTM D 422

Date Tested: 9/16/2021
Tested By: Gary Brooks

Sieve Size	% Passing	Limits
2in (50.0mm)	100	100
1½in (37.5mm)	99	
1in (25.0mm)	92	
¾in (19.0mm)	89	
½in (12.5mm)	83	
3/8in (9.5mm)	79	
No.4 (4.75mm)	69	55 to 100
No.10 (2.0mm)	58	
No.18 (1.0mm)	48	
No.35 (500µm)	39	
No.60 (250µm)	32	
No.170 (90µm)	22	
No.270 (53µm)	18	
30.5 µm	14.0	
20.1 µm	11.3	
9.7 µm	9.0	
8.8 µm	6.8	
6.2 µm	5.4	
3.2 µm	3.2	
1.4 µm	1.8	

D85: 14.3722 **D60:** 2.3406 **D50:** 1.1487
D30: 0.2038 **D15:** 0.0350 **D10:** 0.0133
Cu: 175.79 **Cc:** 1.33

Professional Service Industries, Inc.
480 Neponset Street, Suite 9C
Canton, MA 02021

Phone: (781) 821-2355
Fax: (781) 821-6276

Report No: MAT:0446516-44-S1
Issue No: 1

Material Test Report

Client: BAY COLONY GROUP
4 SCHOOL ST., P.O. BOX 9136
FOXBORO, MA 02035

CC:

Project: BAY COLONY GROUP - LAB TESTING
CANTON, MA

Approved Signatory: Yannick Lastennet (Department Manager)
Date of Issue: 9/16/2021

Sample Details

Sample ID: 0446516-44-S1
Client Sample ID:
Date Sampled: 08/25/21
Sampled By: Client
Specification: Title V Hydrometer
Supplier:
Source: TP - D2, 80"
Material:
Sampling Method:
General Location: 303 North Main St. - Sharon, MA

Other Test Results

Description	Method	Result	Limits
Dispersion device	ASTM D 422	Dispersant by hand	
Dispersion time (min)			
Shape			
Hardness			

Comments

N/A

Professional Service Industries, Inc.
480 Neponset Street, Suite 9C
Canton, MA 02021

Phone: (781) 821-2355
Fax: (781) 821-6276

Report No: DFR:0446516-70/1
Issue No: 1

Daily Field Report

Client: BAY COLONY GROUP
4 SCHOOL ST.
P.O. BOX 9136
FOXBORO, MA 02035

CC:

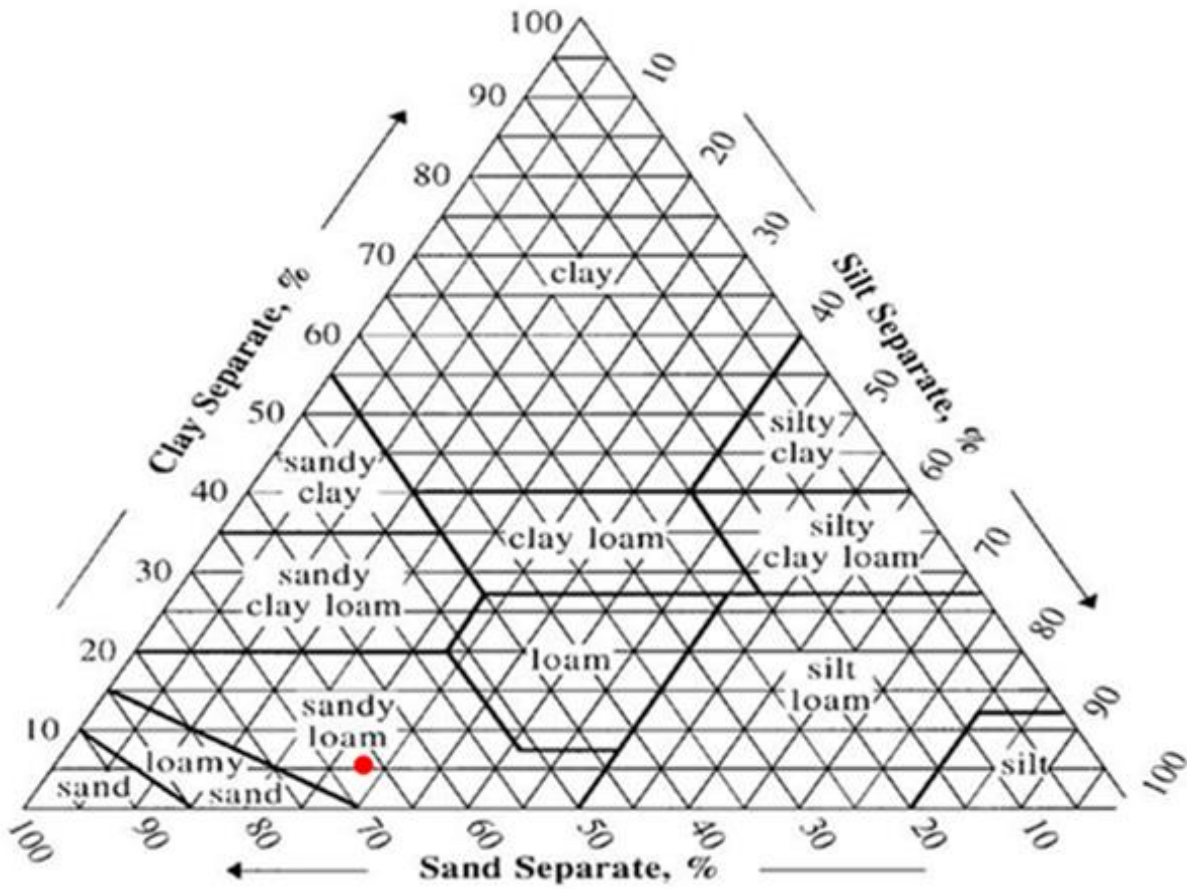
Project: BAY COLONY GROUP - LAB TESTIN
CANTON, MA

Approved Signatory: Yannick Lastennet (Department Manager)
Date of Issue: 11/18/2022

Date: 11/10/2022

PSI Representative:

Soil Texture Triangle



SOIL DATA						
	Source	Sample No.	Percentages From Material Passing a #10 Sieve			Classification
			Sand	Silt	Clay	
●	303 North Main St. - Sharon, MA (TP #D4 @ 70")	S1	66.67	28.03	5.3	Sandy Loam

Professional Service Industries, Inc.
480 Neponset Street, Suite 9C
Canton, MA 02021

Phone: (781) 821-2355
Fax: (781) 821-6276

Report No: MAT:0446516-70-S1
Issue No: 1

Material Test Report

Client: BAY COLONY GROUP
4 SCHOOL ST., P.O. BOX 9136
FOXBORO, MA 02035

CC:

Project: BAY COLONY GROUP - LAB TESTING
CANTON, MA

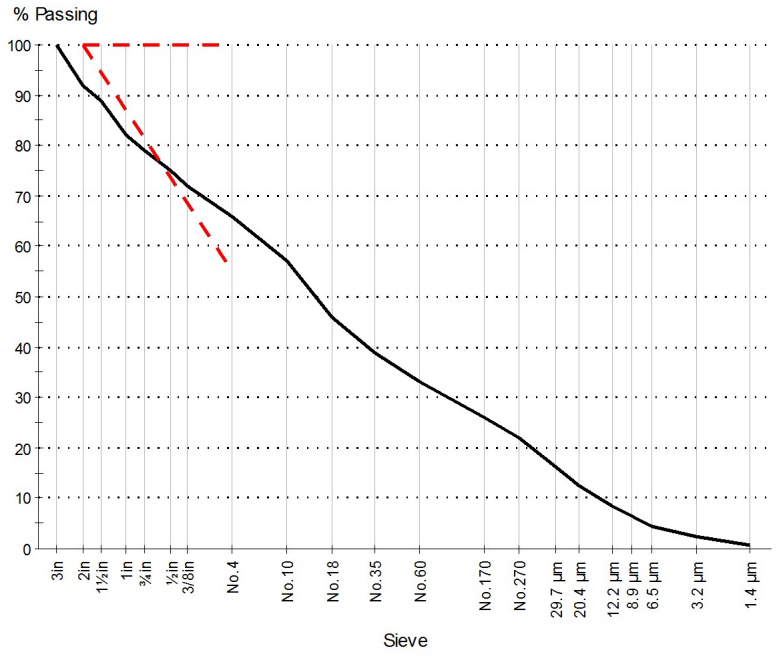
Approved Signatory: Yannick Lastennet (Department Manager)
Date of Issue: 11/18/2022

Sample Details

Sample ID:	0446516-70-S1
Client Sample ID:	
Date Sampled:	
Sampled By:	Others
Specification:	Title V Hydrometer
Supplier:	
Source:	
Material:	
Sampling Method:	
General Location:	303 North Main St. - Sharon, MA
Location:	TP #D4 @ 70"
Lift:	

Sample Description:

Particle Size Distribution



COBBLES	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
(0.0%)	(21.4%)	(13.1%)	(8.9%)	(19.3%)	(13.4%)	(20.5%)	(3.5%)

Grading: ASTM D 422

Date Tested: 11/16/2022
Tested By: Gary Brooks

Sieve Size	% Passing	Limits
3in (75.0mm)	100	
2in (50.0mm)	92*	100
1½in (37.5mm)	89	
1in (25.0mm)	82	
¾in (19.0mm)	79	
½in (12.5mm)	75	
3/8in (9.5mm)	72	
No.4 (4.75mm)	66	55 to 100
No.10 (2.0mm)	57	
No.18 (1.0mm)	46	
No.35 (500µm)	39	
No.60 (250µm)	33	
No.170 (90µm)	26	
No.270 (53µm)	22	
29.7 µm	16.3	
20.4 µm	12.4	
12.2 µm	8.5	
8.9 µm	6.5	
6.5 µm	4.5	
3.2 µm	2.4	
1.4 µm	0.7	

D85: 29.7446 **D60:** 2.6684 **D50:** 1.2867
D30: 0.1614 **D15:** 0.0262 **D10:** 0.0149
Cu: 179.48 **Cc:** 0.66

Professional Service Industries, Inc.
480 Neponset Street, Suite 9C
Canton, MA 02021

Phone: (781) 821-2355
Fax: (781) 821-6276

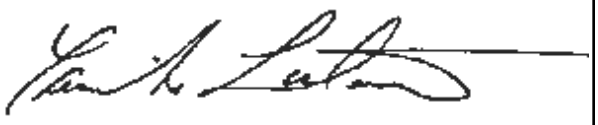
Report No: MAT:0446516-70-S1
Issue No: 1

Material Test Report

Client: BAY COLONY GROUP
4 SCHOOL ST., P.O. BOX 9136
FOXBORO, MA 02035

CC:

Project: BAY COLONY GROUP - LAB TESTING
CANTON, MA



Approved Signatory: Yannick Lastennet (Department Manager)
Date of Issue: 11/18/2022

Sample Details

Sample ID: 0446516-70-S1
Client Sample ID:
Date Sampled:
Sampled By: Others
Specification: Title V Hydrometer
Supplier:
Source:
Material:
Sampling Method:
General Location: 303 North Main St. - Sharon, MA
Location: TP #D4 @ 70"
Lift:

Other Test Results

Description	Method	Result	Limits
Dispersion device	ASTM D 422	Dispersant by hand	
Dispersion time (min)			
Shape			
Hardness			

Comments

* = Result does not meet the specification

APPENDIX D – Operation & Maintenance Plan

O&M Plan - During Construction

O&M Plan - Post Construction

Long-Term Pollution Prevention Plan

Appendix D: OPERATION AND MAINTENANCE PLAN FOR STORMWATER BMPs

	During Construction	**Post-construction**
BMP Owner:	**Developer**	**Condo Assoc**
Party of Plan Responsibility:	**Developer**	**Condo Assoc**

References:

- Site Development Plan
- Stormwater Pollution Prevention Plan for Construction Activities – Trowel Pond Shop Condominiums (to be published)

Operation and Maintenance – During Construction

Item 1: During construction, weekly inspection of the crushed stone construction entrance pad and erosion control silt socks shall be conducted by a qualified staff member of the responsible party or an independent sediment and erosion control expert hired by the responsible party. Any displaced barriers shall be restored or repaired immediately. All barriers shall be installed, where possible, a minimum of 50' from the edge of the bordering vegetated wetlands and, where possible, 5 ft from the property line.

Item 2: The catch basins within the project site shall be set to base course grade so that they are functional throughout the project. They shall be inspected before and after rain storms, if the basins are filled with sediment to half of its depth, these basins shall be cleaned out with an orange peel bucket or some other means. Silt sacks shall be installed within the catch basins to ensure that siltation does not enter the catch basin. Any debris in basins should be cleaned out. The roadway will be swept as necessary.

Item 3: Inspect storm water basin after every major storm (1.0 inches in 24 hours) and if necessary, take corrective action. At least twice a year, mow the buffer area, side slopes, and emergency spillway. Remove trash and debris at the same time

Item 5: Sediment basins shall be inspected after every storm and weekly. Clean out sediment when it reaches half of the depth of the basin. Scarify basement bottom after each clean out. Repair any damage to the sides and rip-rap outlet structure.

Operation and Maintenance – Post Construction

Item 1: The catch basins shall be inspected four times a year: beginning of summer, after leaf fall, before the arrival of hurricane season, and in the early or mid-spring after the snow melt and road sweeping. Any debris in basins should be cleaned out. The roadway will be swept twice a year: once after leaf fall, the other in the spring after snow melt.

Item 2: Inspect the storm water basin at least once per year for the following:

- Signs of differential settlement
- Cracking
- Erosion
- Leakage in the embankments
- Tree growth on the embankments
- Condition of riprap
- Damage to the emergency spillway
- Emergence of invasive species

If necessary, restore infiltration of the basin through aeration or some other suitable method.

Item 3: Stormceptor Separator: Inspect Stormceptor structure in accordance with the latest manufacturer's maintenance manual, which can be found at Stormceptor-STC-Maintenance-Guide.pdf (conteches.com)

Item 4: Estimated Operations and Maintenance Budget: The following is an estimate of the O&M Budget, post construction.

Inspections – infiltration basin, Cascade, catch basins (3 times per year): $420
Cleaning catch basins (4 times per year): $1,500
Mowing/cleaning basin (2 times per year): $320
Lot Sweeping (2 times per year): $800

Long Term Pollution Prevention Plan

Item 1 - Good housekeeping practices: The site is to be kept clean of trash and debris. No trash or uncovered materials is to be left outside.
Item 2 - Provisions for storing materials and waste products inside or under cover: All waste materials will be stored in enclosed trash containers and removed by a licensed solid waste company. No waste products will be stored outside unless in trash containers.
Item 3 - Vehicle washing controls: Vehicles will not be washed on this site.
Item 4 - Requirements for routine inspections and maintenance of stormwater BMPs: Refer to the maintenance schedule provided in the Operation and Maintenance Plan – Post Construction. .
Item 5 - Spill prevention and response plans: A spill prevention and response plan will be developed and implemented by the condominium association.
Item 6 - Provisions for maintenance of planters, gardens, parks and other landscaped areas: Condo Association will maintain surrounding landscaped area with the purpose of retaining the landscaped as designed.
Item 7 - Requirements for storage and use of fertilizers, herbicides, and pesticides: If present, fertilizers, herbicides and pesticides shall be stored in their appropriate containers within the buildings. They shall be handled and used in accordance with the manufacturer's recommendations. It is anticipated that a landscape contractor will have the responsibility of maintaining the property and these materials will be stored off site.
Item 8 - Pet waste management provisions: Owners will be responsible for removal of waste to trash receptacles.
Item 9 - Provisions for solid waste management: If present, solid waste material shall be placed in outdoor enclosed containers until emptied by licensed waste management company.
Item 10 - Snow disposal and plowing plans: A snow removal plan will be developed and implemented by the Condo Association - see draft plan.
Item 11 - Winter Road Salt/or Sand Use and Storage restriction: See item above.
Item 12 - Sweeping schedules: See Operations and Maintenance Plan – Post Construction.
Item 13 - Training for staff or personnel involved with the implementing Long Term Pollution Prevention Plan: The Condo Association will be responsible for training subcontractors to the implement the plan.
Item 14 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan: TBD

APPENDIX E – Stormwater Pollution Prevention Plan

Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Trowel Shop Pond Condominiums
303 North Main Street
Sharon, MA
Telephone: TBD

SWPPP Prepared For:

Trowel Shop Pond, LLC
1 Richard Road
Marblehead, MA 01945
xxxxxxxx

SWPPP Prepared By:

Bay Colony Group, Inc.
4 School Street
Foxborough, MA 02035
508.543.3939
508.543.8866 fax

SWPPP Preparation Date:

February, 2024

Estimated Project Dates:

Project Start Date: Summer, 2024
Project Completion Date: Fall, 2025

Contents

SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s):

A. Trowel Shop Pond, LLC
1 Richard Road
Marblehead, MA 01945
xxxxxxx

General Contractor:

Subcontractor(s):

Insert Company or Organization Name:
Insert Name:
Insert Address:
Insert City, State, Zip Code:
Insert Telephone Number:
Insert Fax/Email:
Insert area of control (if more than one operator at site):

[Repeat as necessary.]

Emergency 24-Hour Contact:

A. Insert name address, telephone number

1.2 Stormwater Team

Insert Role or Responsibility: **Project Manager**
Insert Position: **Project Manager**
Insert Name: **Name**
Insert Telephone Number: **number**
Insert Email: **email**

Insert Role or Responsibility:
Insert Position:
Insert Name:
Insert Telephone Number:
Insert Email:

Insert Role or Responsibility:
Insert Position:
Insert Name:
Insert Telephone Number:
Insert Email:

[Repeat as necessary.]

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 *Project/Site Information*

Project Name and Address

Project/Site Name: **Trowel Shop Pond Condominiums**
Project Street/Location: **303 North Main Street**
City: **Sharon**
State: **MA**
ZIP Code: **02067**
County or Similar Subdivision: **Norfolk**

Project Latitude/Longitude

(Use **one** of three possible formats, and specify method)

Latitude:	Longitude:
1. **42 ° 08 ' 07.5" N** (degrees, minutes, seconds)	1. **71 ° 09 ' 45.8" W** (degrees, minutes, seconds)
2. _ _ ° _ _ . _ _ ' N (degrees, minutes, decimal)	2. _ _ ° _ _ . _ _ ' W (degrees, minutes, decimal)
3. _ _ . _ _ _ _ ° N (decimal)	3. _ _ . _ _ _ _ ° W (decimal)

Method for determining latitude/longitude:
☐ USGS topographic map (specify scale: _____) ☐ EPA Web site ☒ GPS
☐ Other (please specify): _____

Horizontal Reference Datum:
☐ NAD 27 ☒ NAD 83 or WGS 84 ☐ Unknown

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

Additional Project Information

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

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

If you are conducting earth-disturbing activities in response to a public emergency, document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services: N/A

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

2.2 *Discharge Information*

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

Are there any surface waters that are located within 50 feet of your construction disturbances?
☐ Yes ☒ No

Table 1 – Names of Receiving Waters

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)
1. Massapoag Brook
2.
3.
4.
5.
6.

Table 2 – Impaired Waters / TMDLs (Answer the following for each surface water listed in Table 1 above)

	Is this surface water listed as "impaired"?	If you answered yes, then answer the following:			
		What pollutant(s) are causing the impairment?	Has a TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
1.	☒ YES ☐ NO	**Pondweed, Fanwort,Benthic Macroinvertebrates**	☐ YES ☒ NO	**Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle**	
2.	☐ YES ☐ NO		☐ YES ☐ NO		
3.	☐ YES ☐ NO		☐ YES ☐ NO		
4.	☐ YES ☐ NO		☐ YES ☐ NO		
5.	☐ YES ☐ NO		☐ YES ☐ NO		
6.	☐ YES ☐ NO		☐ YES ☐ NO		

[Include additional rows as necessary.]

Describe the method(s) you used to determine whether or not your project/site discharges to an impaired water: Review of the MassDEP 2022 Integrated List of Waters.
Massapoag Briook is listed as Category 5 – Waters Requiring a TMDL

Table 3 – Tier 2, 2.5, or 3 Waters (Answer the following for each surface water listed in Table 1 above)

	Is this surface water designated as a Tier 2, Tier 2.5, or Tier 3 water? (see Appendix F)	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
1.	☐ YES ☒ NO	INSERT "Tier 2", "Tier 2.5", or "Tier 3"
2.	☐ YES ☐ NO	INSERT "Tier 2", "Tier 2.5", or "Tier 3"
3.	☐ YES ☐ NO	INSERT "Tier 2", "Tier 2.5", or "Tier 3"
4.	☐ YES ☐ NO	INSERT "Tier 2", "Tier 2.5", or "Tier 3"
5.	☐ YES ☐ NO	INSERT "Tier 2", "Tier 2.5", or "Tier 3"

2.3 *Nature of the Construction Activity*

General Description of Project

Provide a general description of the construction project:

Construction of a multi-family development consisting of five 3-unit condominiums with associated utilities, septic systems and storm water systems.

Size of Construction Project

What is the size of the property (in acres), the total area expected to be disturbed by the construction activities (in acres), and the maximum area expected to be disturbed at any one time?

INSERT SIZE OF PROPERTY – 11.7+/- acres

INSERT TOTAL AREA OF CONSTRUCTION DISTURBANCES – 3.5+/- acres

INSERT MAXIMUM AREA TO BE DISTURBED AT ANY ONE TIME – 3.5+/- acres

[Repeat as necessary for individual project phases.]

Construction Support Activities (only provide if applicable)

Describe any construction support activities for the project (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas)

INSERT DESCRIPTION OF CONSTRUCTION SUPPORT ACTIVITY

INSERT CONTACT INFORMATION FOR CONSTRUCTION SUPPORT ACTIVITY (Name, Telephone No., Email Address)

INSERT LOCATION INFORMATION FOR CONSTRUCTION SUPPORT ACTIVITY (Address and/or Latitude/Longitude)

[Repeat as necessary.]

2.4 *Sequence and Estimated Dates of Construction Activities*

Phase I

Clearing of building site and storm water basins, installation of erosion controls, and grubbing of wooded areas, and storm water basins.

- INSERT ESTIMATED START AND END DATES OF CONSTRUCTION DISTURBANCES ASSOCIATED WITH THIS PHASE
- FOR EACH STORMWATER CONTROL, INSERT ESTIMATED DATE(s) OF INSTALLATION OF EACH STORMWATER CONTROL
- FOR AREAS OF THE SITE REQUIRED TO BE STABILIZED, INSERT ESTIMATED DATE(s) OF APPLICATION OF STABILIZATION MEASURES
- INSERT ESTIMATED DATE(s) WHEN STORMWATER CONTROLS WILL BE REMOVED

Phase II

Import and placement of material to bring buildings and parking to subbase elevation. Construction of storm water basin. Installation of drainage and water mains within site.

- INSERT ESTIMATED START AND END DATES OF CONSTRUCTION DISTURBANCES ASSOCIATED WITH THIS PHASE

- FOR EACH STORMWATER CONTROL, INSERT ESTIMATED DATE(s) OF INSTALLATION OF EACH STORMWATER CONTROL
- FOR AREAS OF THE SITE REQUIRED TO BE STABILIZED, INSERT ESTIMATED DATE(s) OF APPLICATION OF STABILIZATION MEASURES
- INSERT ESTIMATED DATE(s) WHEN STORMWATER CONTROLS WILL BE REMOVED

Phase III

Installation of base course of driveway and parking and construction of buildings.

- INSERT ESTIMATED START AND END DATES OF CONSTRUCTION DISTURBANCES ASSOCIATED WITH THIS PHASE
- FOR EACH STORMWATER CONTROL, INSERT ESTIMATED DATE(s) OF INSTALLATION OF EACH STORMWATER CONTROL
- FOR AREAS OF THE SITE REQUIRED TO BE STABILIZED, INSERT ESTIMATED DATE(s) OF APPLICATION OF STABILIZATION MEASURES
- INSERT ESTIMATED DATE(s) WHEN STORMWATER CONTROLS WILL BE REMOVED

Phase IV

Construct landscaping, finish buildings, place finished course of pavement. Remove storm water erosion controls.

- INSERT ESTIMATED START AND END DATES OF CONSTRUCTION DISTURBANCES ASSOCIATED WITH THIS PHASE
- FOR EACH STORMWATER CONTROL, INSERT ESTIMATED DATE(s) OF INSTALLATION OF EACH STORMWATER CONTROL
- FOR AREAS OF THE SITE REQUIRED TO BE STABILIZED, INSERT ESTIMATED DATE(s) OF APPLICATION OF STABILIZATION MEASURES
- INSERT ESTIMATED DATE(s) WHEN STORMWATER CONTROLS WILL BE REMOVED
-

[Repeat as needed.]

2.5 *Allowable Non-Stormwater Discharges*

List of Allowable Non-Stormwater Discharges Present at the Site

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

(Note: You are reminded of the requirement to identify the likely locations of these allowable non-stormwater discharges on your site map. See Section 2.6, below, of the SWPPP Template.)

2.6 *Site Maps*

See Site Development Plan of NasKart by Bay Colony Group, Inc.

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

Eligibility Criterion

Under which criterion listed in Appendix D are you eligible for coverage under this permit?

☒ **A** ☐ **B** ☐ **C** ☐ **D** ☐ **E**

For reference purposes, the eligibility criteria listed in Appendix D are as follows:

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

Criterion B. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

Criterion C. Federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.

Criterion D. Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion E. Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

i. a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or

ii. written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated habitat.

You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Criterion F. Your construction activities are authorized through the issuance of a permit under section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D, as follows:

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the permit). Check the applicable source of information you relied upon:

- ☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service. INSERT DATE OF COMMUNICATION AND WHO YOU SPOKE WITH
- ☒ Publicly available species list. MASS GIS Website – NHESP Tabs
- ☐ Other source: INSERT SPECIFIC SOURCE

For criterion B, provide the Tracking Number from the other operator's notification of permit authorization: INSERT AUTHORIZATION TRACKING NUMBER FROM OTHER OPERATOR'S NOTIFICATION LETTER/EMAIL

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F: INSERT TEXT HERE

For criterion C, provide the following information:

- INSERT LIST OF FEDERALLY-LISTED SPECIES OR FEDERALLY-DESIGNATED CRITICAL HABITAT LOCATED IN YOUR ACTION AREA
- INSERT DISTANCE BETWEEN YOUR SITE AND THE LISTED SPECIES OR CRITICAL HABITAT (in miles)

Also, provide a brief summary of the basis used for determining that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat: INSERT TEXT HERE

For criterion D, E, or F, attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities. INSERT COPIES OF LETTERS OR OTHER COMMUNICATIONS HERE

3.2 Historic Preservation

Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- ☐ Dike
- ☐ Berm
- ☒ Catch Basin
- ☒ Pond
- ☐ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☒ Culvert
- ☐ Other type of ground-disturbing stormwater control: INSERT SPECIFIC TYPE OF STORMWATER CONTROL

(Note: If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for Section 3.2 of the Template.)

Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties? ☐ YES ☒ NO

- If yes, no further documentation is required for Section 3.2 of the Template.
- If no, proceed to Appendix E, Step 3.

Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? ☒ YES ☐ NO

If yes, provide documentation of the basis for your determination. **Reference to the Massachusetts Cultural Resources Information System shows no historical areas, buildings, burial grounds, objects or structures on or near the site.**

If no, proceed to Appendix E, Step 4.

Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties? ☐ YES ☐ NO

If no, no further documentation is required for Section 3.2 of the Template.

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions. INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☐ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls. INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☐ Other: INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

3.3 *Safe Drinking Water Act Underground Injection Control Requirements*

Do you plan to install any of the following controls? Check all that apply below.

☒ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

If yes, INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE STATE AGENCY OR EPA REGIONAL OFFICE - **no correspondence undertaken. Project is permitted under the MassDEP Stormwater Regulations which are enforced by the local Conservation Commissions. A Notice of Intent will be filed and an Order of Conditions issued before the project can proceed.**

SECTION 4: EROSION AND SEDIMENT CONTROLS

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives

Are there any surface waters within 50 feet of your project's earth disturbances? ☐ YES ☒ NO

(Note: If no, no further documentation is required for the SWPPP Template.)

Check the compliance alternative that you have chosen:

☐ I will provide and maintain a 50-foot undisturbed natural buffer.

(Note (1): You must show the 50-foot boundary line of the natural buffer on your site map.)

(Note (2): You must show on your site map how all discharges from your construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)

☐ I will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

(Note (1): You must show the boundary line of the natural buffer on your site map.)

(Note (2): You must show on your site map how all discharges from your construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)

- INSERT WIDTH OF NATURAL BUFFER TO BE RETAINED
- INSERT EITHER ONE OF THE FOLLOWING:

  (1) THE ESTIMATED SEDIMENT REMOVAL FROM A 50-FOOT BUFFER USING APPLICABLE TABLES IN APP. G, ATTACHMENT 1. INCLUDE INFORMATION ABOUT THE BUFFER VEGETATION AND SOIL TYPE THAT PREDOMINATE AT YOUR SITE

  OR

  (2) IF YOU CONDUCTED A SITE-SPECIFIC CALCULATION FOR THE ESTIMATED SEDIMENT REMOVAL OF A 50-FOOT BUFFER, PROVIDE THE SPECIFIC REMOVAL EFFICIENCY, AND INFORMATION YOU RELIED UPON TO MAKE YOUR SITE-SPECIFIC CALCULATION.
- INSERT DESCRIPTION OF ADDITIONAL EROSION AND SEDIMENT CONTROLS TO BE USED IN COMBINATION WITH NATURAL BUFFER AREA
- INSERT THE FOLLOWING INFORMATION:
  - (1) SPECIFY THE MODEL OR OTHER TOOL USED TO ESTIMATE SEDIMENT LOAD REDUCTIONS FROM THE COMBINATION OF THE BUFFER AREA AND ADDITIONAL EROSION AND SEDIMENT CONTROLS INSTALLED AT YOUR SITE, AND
  - (2) INCLUDE THE RESULTS OF CALCULATIONS SHOWING THAT THE COMBINATION OF YOUR BUFFER AREA AND THE ADDITIONAL EROSION AND SEDIMENT CONTROLS INSTALLED AT YOUR SITE WILL MEET OR EXCEED THE SEDIMENT REMOVAL EFFICIENCY OF A 50-FOOT BUFFER

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

- DESCRIPTION OF WHY IT IS NOT FEASIBLE
- INSERT EITHER ONE OF THE FOLLOWING:

  (1) THE ESTIMATED SEDIMENT REMOVAL FROM A 50-FOOT BUFFER USING APPLICABLE TABLES IN APP. G, ATTACHMENT 1. INCLUDE INFORMATION ABOUT THE BUFFER VEGETATION AND SOIL TYPE THAT PREDOMINATE AT YOUR SITE

  OR

  (2) IF YOU CONDUCTED A SITE-SPECIFIC CALCULATION FOR THE ESTIMATED SEDIMENT REMOVAL OF A 50-FOOT BUFFER, PROVIDE THE SPECIFIC REMOVAL EFFICIENCY, AND INFORMATION YOU RELIED UPON TO MAKE YOUR SITE-SPECIFIC CALCULATION.
- INSERT DESCRIPTION OF ADDITIONAL EROSION AND SEDIMENT CONTROLS TO BE USED IN COMBINATION WITH NATURAL BUFFER AREA
- INSERT THE FOLLOWING INFORMATION:
  - (1) SPECIFY THE MODEL OR OTHER TOOL USED TO ESTIMATE SEDIMENT LOAD REDUCTIONS FROM THE EROSION AND SEDIMENT CONTROLS INSTALLED AT YOUR SITE, AND
  - (2) INCLUDE THE RESULTS OF CALCULATIONS SHOWING THAT THE ADDITIONAL EROSION AND SEDIMENT CONTROLS INSTALLED AT YOUR SITE WILL MEET OR EXCEED THE SEDIMENT REMOVAL EFFICIENCY OF A 50-FOOT BUFFER

☐ I qualify for one of the exceptions in Part 2.1.2.1.e. (If you have checked this box, provide information on the applicable buffer exception that applies, below.)

Buffer Exceptions
Which of the following exceptions to the buffer requirements applies to your site?

☐ There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.

(Note: If this exception applies, no further documentation is required for Section 4.1 of the Template.)

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

(Note (1): If this exception applies, no further documentation is required for Section 4.1 of the Template.)

(Note (2): Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, you must still comply with the one of the CGP Part 2.1.2.1.a compliance alternatives.)

☐ For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible for me to meet any of the CGP Part 2.1.2.1.a compliance alternatives. INCLUDE DOCUMENTATION HERE OF THE FOLLOWING: (1) WHY IT IS INFEASIBLE FOR YOU TO MEET ONE OF THE BUFFER COMPLIANCE ALTERNATIVES, AND (2) BUFFER WIDTH RETAINED AND/OR SUPPLEMENTAL EROSION AND SEDIMENT CONTROLS TO TREAT DISCHARGES TO THE SURFACE WATER

☐ The project qualifies as "small residential lot" construction (defined in Part 2.1.2.1.e.iv and in Appendix A).

For Alternative 1 (see Appendix G, Part G.2.3.2.a):

- INSERT WIDTH OF NATURAL BUFFER TO BE RETAINED
- INSERT APPLICABLE REQUIREMENTS BASED ON TABLE G-1
- INSERT DESCRIPTION OF HOW YOU WILL COMPLY WITH THESE REQUIREMENTS

For Alternative 2 (see Appendix G, Part G.2.3.2.b):

- INSERT (1) THE ASSIGNED RISK LEVEL BASED ON APPLICABLE TABLE IN APP. G, PART G.2.3.2.b, AND (2) THE PREDOMINANT SOIL TYPE AND AVERAGE SLOPE AT YOUR SITE
- INSERT APPLICABLE REQUIREMENTS BASED ON APP. G, TABLE G-7
- INSERT DESCRIPTION OF HOW YOU WILL COMPLY WITH THESE REQUIREMENTS

☐ Buffer disturbances are authorized under a CWA Section 404 permit. INSERT DESCRIPTION OF ANY EARTH DISTURBANCES THAT WILL OCCUR WITHIN THE BUFFER AREA

(Note (1): If this exception applies, no further documentation is required for Section 4.1 of the Template.)

(Note (2): This exception only applies to the limits of disturbance authorized under the Section 404 permit, and does not apply to any upland portion of the construction project.)

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail). INSERT DESCRIPTION OF ANY EARTH DISTURBANCES THAT WILL OCCUR WITHIN THE BUFFER AREA

(Note (1): If this exception applies, no further documentation is required for Section 4.1 of the Template.)

4.2 Perimeter Controls

General

- **The perimeter of the site where the proposed work is located within 100' of the wetlands will contain a silt sock barrier that will capture siltation and runoff.**

Specific Perimeter Controls

Perimeter Control # 1

Perimeter Control Description

- **Silt sock barrier**
- **See SWPP Plan – Appendix A and Site Plan**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Weekly inspection and removal of sediment once it reaches at least ½ way up the barrier.**

[Repeat as needed for individual perimeter controls.]

4.3 Sediment Track-Out

General

- Rip rap stabilized construction entrance.

Specific Track-Out Controls

Track-Out Control # 1

Track-Out Control Description

- Rip rap stabilized construction entrances at points where they meet existing Commerce Blvd pavement
- See SWPP Plan – Appendix A and Site Plan

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Monitor and maintain the Stabilized Construction Entrance shown on the SWPPP Plan to ensure that it is cleaned and functioning correctly to prevent tracking of sediment by construction that exit the Site.**
- **Where sediment has been tracked-out from the site onto the surface of off-site streets, other paved areas, and sidewalks, you must remove the deposited sediment by the end of the same work day in which the track-out occurs or by the end of the next work day if track-out occurs on a non-work day. You must remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. Hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.") is prohibited.**

[Repeat as needed for individual track-out controls.]

4.4 Stockpiled Sediment or Soil

General

- Stockpiled Material will be at least 100' from any wetlands and will be encircled with a silt sock and construction fence in accordance with detail on Sheet 6.2

Specific Stockpile Controls

Stockpile Control # 1

Stockpiled Sediment/Soil Control Description

- Silt sock and construction fence will be placed around the perimeter of the stockpiled material.
- A tarp or mulch or temporary seeding may also be used to cover stockpiles.
- See SWPP Plan – Appendix A and Site Plan

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Inspect barriers weekly or after a rain storm and remove sediment if it has reached ½ way up the barrier.**

[Repeat as needed for individual stockpile controls.]

4.5 Minimize Dust

General

- **A water truck will be used for dust control.**

Specific Dust Controls

Dust Control # 1
Dust Control Description

- **A water truck will be used for dust control.**

Installation

- **n/a**

Maintenance Requirements

- **n/a**

[Repeat as needed for individual dust controls.]

4.6 Minimize the Disturbance of Steep Slopes

General

- **There are no steep slopes on the project site.**

Specific Steep Slope Controls

Steep Slope Control # 1
Steep Slope Control Description

- INSERT DESCRIPTION OF STEEP SLOPE CONTROL TO BE INSTALLED
- INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE STEEP SLOPE CONTROL

[Repeat as needed for individual steep slope controls.]

4.7 Topsoil

General

- **The existing topsoil will stripped and stockpiled on the site and reused in areas of the site where it is appropriate: lawns, road side slopes, storm water basin slopes, etc. The remainder will be removed from the site to locations TBD.**

Specific Topsoil Controls

Topsoil Control # 1

Topsoil Control Description

- **Topsoil will be stripped and stockpiled on the site and handled in accordance with the specifications of other stockpiles**
- **See Section 4.4**
- **See SWPP Plan – Appendix A**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Same as Section 4.4**

[Repeat as needed for individual topsoil controls.]

4.8 Soil Compaction

General

- **Areas of landscaping will be handled in accordance with local landscaping practice. Storm water basin construction will be handled in accordance with the guidance in the MA DEP Stormwater standards.**

Specific Soil Compaction Controls

Soil Compaction Control # 1

Soil Compaction Control Description

- **Storm water basin construction will be in accordance with MA DEP Stormwater standards.**
- **See definitive plans – Appendix A**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Storm water basins will be cleaned on an annual basis, or more if necessary.**
-

[Repeat as needed for individual soil compaction controls.]

4.9 Storm Drain Inlets

General

- Storm drain inlets will be protected through the use of silt socks within drainage swales. Catch basins will protected by silt socks around the grates or with silt bags inserted in the structure.

Specific Storm Drain Inlet Controls

Storm Drain Inlet Control # 1
Storm Drain Inlet Control Description
- Silt socks in drainage swales
- See SWPP Plan – Appendix A

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements
- Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

Storm Drain Inlet Control # 2
Storm Drain Inlet Control Description
- Silt socks around grates or silt sacks in catch basins
- See SWPP Plan – Appendix A

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements
- Clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same work day in which it is found or by the end of the following work day if removal by the same work day is not feasible.

[Repeat as needed for individual storm drain inlet controls.]

4.10 Constructed Stormwater Conveyance Channels

General
- Rip rap devices will be used at all outlets.

Specific Conveyance Channel Controls

Stormwater Conveyance Channel Control # 1
Stormwater Conveyance Channel Control Description
- Rip rap outlet to drain outlet pipes

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Rip rap shall be inspected weekly and after every rainstorm. If erosion is taking place the stone shall be replenished.**

[Repeat as needed for individual stormwater conveyance channel controls.]

4.11 Sediment Basins

General

- **Sediment basins will be used as necessary during construction. Once construction is completed they will be revegetated as necessary to bring them in compliance with the permit.**

Specific Sediment Basin Controls

Sediment Basin Control # 1

Sediment Basin Control Description

- **Sediment basins will be used as necessary during construction. Once construction is completed they will be revegetated as necessary to bring them in compliance with the permit.**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Sediment basins will be inspected weekly and after every rain event greater than 0.5". Once the sediment in the forebay reaches 18" of depth the sediment will be removed.**
- **Once construction has stopped and the site is fully stabilized the basin will be revegetated as necessary to bring it into compliance with the definitive plans.**
  (Note: At a minimum, you must comply with following requirement in CGP Part 2.1.3.2.b: "Keep in effective operating condition and remove accumulated sediment to maintain at least ½ of the design capacity of the sediment basin at all times.")

[Repeat as needed for individual sediment basin controls.]

4.12 Chemical Treatment

Soil Types

List all the soil types (including soil types expected to be found in fill material) that are expected to be exposed during construction and that will be discharged to locations where chemicals will be applied: **None anticipated**

Treatment Chemicals

List all treatment chemicals that will be used at the site and explain why these chemicals are suited to the soil characteristics: INSERT TEXT HERE

Describe the dosage of all treatment chemicals you will use at the site or the methodology you will use to determine dosage: INSERT TEXT HERE

Provide information from any applicable Material Safety Data Sheets (MSDS): INSERT TEXT HERE

Describe how each of the chemicals will stored: INSERT TEXT HERE

Include references to applicable state or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems: INSERT TEXT HERE

Special Controls for Cationic Treatment Chemicals (if applicable)
If you have been authorized by your applicable Regional Office to use cationic treatment chemicals, include the official EPA authorization letter or other communication, and identify the specific controls and implementation procedures you are required to implement to ensure that your use of cationic treatment chemicals will not lead to a violation of water quality standards: INSERT (1) ANY LETTERS OR OTHER DOCUMENTS SENT FROM THE EPA REGIONAL OFFICE CONCERNING YOUR USE OF CATIONIC TREATMENT CHEMICALS, AND (2) DESCRIPTION OF ANY SPECIFIC CONTROLS YOU ARE REQUIRED TO IMPLEMENT

Schematic Drawings of Stormwater Controls/Chemical Treatment Systems
Provide schematic drawings of any chemically-enhanced stormwater controls or chemical treatment systems to be used for application of treatment chemicals: INSERT TEXT HERE

Training
Describe the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to the use of treatment chemicals: INSERT TEXT HERE

4.13 Dewatering Practices

General

- **Dewatering is not expected to be necessary**

Specific Dewatering Practices

Dewatering Practice # 1
Dewatering Practice Description

- **Installation of a sump pipe with trash pump in the area of the excavation**
- **Discharge will take place in the area designated on the SWPP Plan, which will allow the water to infiltrate into the ground away from the wetlands.**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- **Water removed by dewatering will be discharged to an upland area at least 100' away from the wetlands. Create a stone sump if necessary to ameliorate velocity and to encourage infiltration. If necessary, use silt socks or hay bales to contain.**

[Repeat as needed for individual dewatering practices.]

4.14 Other Stormwater Controls

General

- INSERT GENERAL DESCRIPTION OF THE PROBLEM THIS CONTROL IS DESIGNED TO ADDRESS

Specific Stormwater Control Practices

Stormwater Control Practice # 1

Description

- INSERT DESCRIPTION OF PRACTICE TO BE INSTALLED
- IF APPLICABLE INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE STORMWATER CONTROL PRACTICE

[Repeat as needed.]

4.15 Site Stabilization

Site Stabilization Practice (only use this if you are not located in an arid, semi-arid, or drought-stricken area)
☒ *Vegetative* ☐ *Non-Vegetative*
☒ *Temporary* ☐ *Permanent*

Description of Practice
- **Temporary stabilization of disturbed areas.**
- **No later than 14 days after initiation of soil stabilization measures the portion of the site in question will be planted with temporary cover using either standard seeding or hydroseeding.**
- **Seed mixture shall be based on the Massachusetts Conservation Guide Vol. II – Vegetated Practices in Site Development Table 1 – Seedings for Temporary Cover and is dependent on the time of year and the weather conditions.**

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION
- INSERT APPROXIMATE COMPLETION DATE CONSISTENT WITH CGP PART 2.2.1.2

Maintenance Requirements
Seeded areas should be refertilized with ½ of the establishment amount in the second growing season and subsequently as needed.

[Repeat as needed for additional stabilization practices.]

Site Stabilization Practice (only use this if you are located in an arid, semi-arid, or drought-stricken area)
☒ *Vegetative* ☐ *Non-Vegetative*
☐ *Temporary* ☒ *Permanent*

Description of Practice
- **Permanent stabilization of disturbed areas.**
- **Final stabilization in areas to be vegetated will be done in accordance Section 2.2.2 of the general permit.**
- **Seed mixture shall be based on the Massachusetts Conservation Guide Vol. II – Vegetated Practices in Site Development Table 2 – Seed Mixtures for Permanent Cover and is dependent on the time of year and the weather conditions.**
-

Installation
- FOR VEGETATIVE STABILIZATION IN ARID OR SEMI-ARID AREAS, INDICATE THE BEGINNING AND ENDING DATES OF THE SEASONALLY DRY PERIOD AND DESCRIBE YOUR SITE CONDITIONS
- INSERT APPROXIMATE DATE OF INSTALLATION
- INSERT APPROXIMATE COMPLETION DATE CONSISTENT WITH CGP PART 2.2.1.3

Maintenance Requirements
Seeded areas should be refertilized with ½ of the establishment amount in the second growing season and subsequently as needed.

[Repeat as needed for additional stabilization practices.]

Site Stabilization Practice (only use this if uncontrollable circumstances have delayed the initiation or completion of stabilization)

(Note: You will not be able to include this information in your initial SWPPP. If you are affected by circumstances such as those described in CGP Part 2.2.1.3.b, you will need to modify your SWPPP to include this information.)

☐ *Vegetative* ☐ *Non-Vegetative*
☐ *Temporary* ☐ *Permanent*

Justification

- INSERT DESCRIPTION OF CIRCUMSTANCES THAT PREVENT YOU FROM MEETING THE DEADLINES REQUIRED IN CGP PARTS 2.2.1.1 AND/OR 2.2.1.2 AND THE SCHEDULE YOU WILL FOLLOW FOR INITIATING AND COMPLETING STABILIZATION

Description of Practice

- INSERT DESCRIPTION OF STABILIZATION PRACTICE TO BE INSTALLED
- NOTE HOW DESIGN WILL MEET REQUIREMENTS OF PART 2.2.2.1 OR 2.2.2.2, WHICHEVER APPLIES
- INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation

- INSERT DATES OF INITIATION AND COMPLETION OF NON-VEGETATIVE STABILIZATION CONTROLS (must be completed within 14 days of the cessation of construction)

Maintenance Requirements

INSERT MAINTENANCE REQUIREMENTS FOR THE STABILIZATION PRACTICE

[Repeat as needed for additional stabilization practices.]

SECTION 5: POLLUTION PREVENTION STANDARDS

5.1 Potential Sources of Pollution

Construction Site Pollutants

Pollutant-Generating Activity	**Pollutants or Pollutant Constituents** (that could be discharged if exposed to stormwater)	**Location on Site** (or reference SWPPP site map where this is shown)
Fueling of vehicles	Gasoline or diesel	Only on paved surfaces, to include existing Commerce Boulevard

[Include additional rows as necessary.]

5.2 Spill Prevention and Response

Any spills of petroleum products will be cleaned using available sorbent material, to include sand, gravel, earth, or other dry clean up measures. If the spill is so large that it enters a catch basin then ensure that the basin is properly emptied so that the materials do not exit the structure. If necessary, contact the Wrentham Fire Department at 911 and direct them to the project site.

5.3 Fueling and Maintenance of Equipment or Vehicles

General

- Fueling will only take place on pavement where spills can be readily cleaned-up. Ensure that adequate absorbent, spill clean-up materials are available on the site. If necessary, drip pans will be used under vehicles that leak. Those vehicles shall be removed from the site and repaired before being allowed to return. No storage of fuels or lubricants will take place on site. No maintenance will take place on site.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description

- Fueling will only take place on pavement and adequate absorbent, spill clean-up materials will be available on site.

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- Ensure that adequate materials are maintained on site.

[Repeat as needed.]

5.4 Washing of Equipment and Vehicles

General

- No washing of equipment or vehicles will be done on site.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description

- INSERT DESCRIPTION OF PRACTICE TO BE INSTALLED
- IF APPLICABLE INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

5.5 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

5.5.1 Building Products

(Note: Examples include asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures.)

General

- **Building products not designed to come in contact with rain will be stored under cover.**

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1

Description

- **Building products not designed to come in contact with rain will be stored under cover.**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials

General

- **Shall not be stored on site. Application shall be done at a rate and in amounts consistent with the manufacturer's specifications.**

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1

Description

- **Application shall be done at a rate and in amounts consistent with the manufacturer's specifications.**
- **See manufacturer's specifications**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

General

- **No fuels or petroleum products will be stored on site.**

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description
- INSERT DESCRIPTION OF PRACTICE TO BE INSTALLED
- IF APPLICABLE INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements
- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

5.5.4 Hazardous or Toxic Waste

(Note: Examples include paints, solvents, petroleum-based products, wood preservatives, additives, curing compounds, acids.)

General
- INSERT GENERAL DESCRIPTION OF HOW YOU WILL COMPLY WITH CGP PART 2.3.3.3.d

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description
- INSERT DESCRIPTION OF PRACTICE TO BE INSTALLED
- IF APPLICABLE INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements
- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

5.5.5 Construction and Domestic Waste

(Note: Examples include packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials.)

General
- **Dumpsters will be used for waste from the commercial building construction.**

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description

- Dumpsters will be used for materials waste for building construction. The location of the dumpsters will be determined on a case by case basis as the building is built.
-

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements
- Remove from site when full.

[Repeat as needed.]

5.5.6 Sanitary Waste

General
- Porta-johns will be used on the site for human waste.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description
- Porta-johns will be used on the site as necessary. The number of porta-johns will be based on the worker population. Typically, one will be sufficient.

Installation
- They will be used on the site from the start to the end of construction.

Maintenance Requirements
- Typical maintenance will involve pumping and cleaning once per week depending on the population size.

[Repeat as needed.]

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

General
- Direct all washwater into leak proof containers designed so that no overflows can occur. Do not dump liquid wastes in storm sewers. Remove and dispose of hardened concrete in accordance with other solid wastes generated on site.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description
- INSERT DESCRIPTION OF PRACTICE TO BE INSTALLED
- IF APPLICABLE INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation
- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements
- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

5.7 Fertilizers

General

- **Shall not be stored on site. Application shall be done at a rate and in amounts consistent with the manufacturer's specifications.**

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description

- **Application shall be done at a rate and in amounts consistent with the manufacturer's specifications.**

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed for individual fertilizer practices.]

5.8 Other Pollution Prevention Practices

General

- INSERT GENERAL DESCRIPTION OF THE PROBLEM THIS CONTROL IS DESIGNED TO ADDRESS

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1
Description

- INSERT DESCRIPTION OF PRACTICE TO BE INSTALLED
- IF APPLICABLE INCLUDE COPIES OF DESIGN SPECIFICATIONS HERE

Installation

- INSERT APPROXIMATE DATE OF INSTALLATION

Maintenance Requirements

- INSERT MAINTENANCE REQUIREMENTS FOR THE POLLUTION PREVENTION PRACTICE

[Repeat as needed.]

SECTION 6: INSPECTION AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Personnel Responsible for Inspections

INSERT NAMES OF PERSONNEL OR TYPES OF PERSONNEL WHO WILL BE CONDUCTING SITE INSPECTIONS HERE

Note: All personnel conducting inspections must be considered a "qualified person." CGP Part 4.1.1 clarifies that a "qualified person" is a person knowledgeable in the principles and practices of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact stormwater quality, and the skills to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

Inspection Schedule

Specific Inspection Frequency

Inspections will take place once every 7 days or more often if a rain event greater then 0.25" has occurred.

Rain Gauge Location (if applicable)

SPECIFY LOCATION(S) OF RAIN GAUGE TO BE USED FOR DETERMINING WHETHER A RAIN EVENT OF 0.25 INCHES OR GREATER HAS OCCURRED (only applies to inspections conducted for Part 4.1.2.2, 4.1.3, or 4.1.4.2)

Reductions in Inspection Frequency (if applicable)

- For the reduction in inspections resulting from stabilization: SPECIFY (1) LOCATIONS WHERE STABILIZATION STEPS HAVE BEEN COMPLETED AND (2) DATE THAT THEY WERE COMPLETED
  (Note: It is likely that you will not be able to include this in your initial SWPPP. If you qualify for this reduction (see CGP Part 4.1.4.1), you will need to modify your SWPPP to include this information.)

- For the reduction in inspections in arid, semi-arid, or drought-stricken areas: INSERT BEGINNING AND ENDING DATES OF THE SEASONALLY-DEFINED ARID PERIOD FOR YOUR AREA OR THE VALID PERIOD OF DROUGHT

- For reduction in inspections due to frozen conditions: INSERT BEGINNING AND ENDING DATES OF FROZEN CONDITIONS ON YOUR SITE

Inspection Report Forms

See Appendix D

6.2 *Corrective Action*

Personnel Responsible for Corrective Actions

INSERT NAMES OF PERSONNEL OR TYPES OF PERSONNEL RESPONSIBLE FOR CORRECTIVE ACTIONS

Corrective Action Forms

See Appendix E

6.3 *Delegation of Authority*

Duly Authorized Representative(s) or Position(s):

Insert Company or Organization Name:
Insert Name:
Insert Position:
Insert Address:
Insert City, State, Zip Code:
Insert Telephone Number:
Insert Fax/Email:

SECTION 7: TRAINING

Table 7-1: Documentation for Completion of Training

Name	Date Training Completed
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
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INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE
INSERT NAME OF PERSONNEL HERE	INSERT COMPLETION DATE HERE

SECTION 8: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

[Repeat as needed for multiple construction operators at the site.]

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

Appendix A – Site Maps

Appendix B – Copy of 2022 CGP

Appendix C – NOI and EPA Authorization Email

Appendix D – Inspection Forms
- ***Stormwater Construction Site Inspection Report***
- ***Checklist for Catch Basin***
- ***Checklist for Infiltration Basin***
- ***Checklist for Cascade***

Appendix E – Corrective Action Form

Appendix F – SWPPP Amendment Log

Appendix G – Subcontractor Certifications/Agreements

Appendix H – Grading and Stabilization Activities Log

Appendix I – Training Log

Appendix J – Delegation of Authority

Appendix K – Endangered Species Documentation

Appendix L – Historic Preservation Documentation

Appendix A – Site Maps

INSERT SITE MAPS CONSISTENT WITH TEMPLATE SECTION 2.6

Appendix B – Copy of 2022 CGP

INSERT COPY OF 2022 CGP

Appendix C – Copy of NOI and EPA Authorization email

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

Appendix D – Copy of Inspection Form

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

Stormwater Construction Site Inspection Report

General Information			
Project Name	Trowel Shop Pond Condominiums		
NPDES Tracking No.		**Location**	303 North Main Street Sharon, MA
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			

Type of Inspection:
❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event

Weather Information

Has there been a storm event since the last inspection? ❑Yes ❑No
If yes, provide:
Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):

Weather at time of this inspection?
❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds
❑ Other: Temperature:

Have any discharges occurred since the last inspection? ❑Yes ❑No
If yes, describe:

Are there any discharges at the time of inspection? ❑Yes ❑No
If yes, describe:

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1	Stabilized Construction Entrances	❑Yes ❑No	❑Yes ❑No	
2	Silt socks	❑Yes ❑No	❑Yes ❑No	
3	Silt sacks – Catch Basins	❑Yes ❑No	❑Yes ❑No	
4	Sediment Basins	❑Yes ❑No	❑Yes ❑No	
5	Soil Stabilization	❑Yes ❑No	❑Yes ❑No	
6	Material Piles	❑Yes ❑No	❑Yes ❑No	
7	General Housekeeping	❑Yes ❑No	❑Yes ❑No	
9		❑Yes ❑No	❑Yes ❑No	
10		❑Yes ❑No	❑Yes ❑No	
11		❑Yes ❑No	❑Yes ❑No	
12		❑Yes ❑No	❑Yes ❑No	
13		❑Yes ❑No	❑Yes ❑No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
6	Are material piles covered or seeded and surrounded by sediment control barrier?	❑Yes ❑No	❑Yes ❑No	
		❑Yes ❑No	❑Yes ❑No	
		❑Yes ❑No	❑Yes ❑No	
		❑Yes ❑No	❑Yes ❑No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature: _____ **Date:** _____

Appendix E – Copy of Corrective Action Form

INSERT COPY OF CORRECTIVE ACTION FORMS YOU WILL USE

CHECKLIST FOR INSPECTION OF INFILTRATION BASIN			
Location:			
Inspector:			
Date/Time:			
Weather:			
Date of Last Rainfall:			
Amount of Last Rainfall:			
Inspection Items:	**Satisfactory (S) or Unsatisfactory (U)**		**Comments/ Corrective Actions**
Signs of differential settlement	S	U	
Cracking	S	U	
Erosion	S	U	
Leakage in the embankments	S	U	
Tree growth on the embankments	S	U	
Condition of inlet rip rap	S	U	
Sediment in forebay	S	U	
Damage to forebay outlet	S	U	
Damage to emergency spillway	S	U	
Emergence of invasive species	S	U	
Evidence of standing water 72 hrs after rainfall	S	U	
Corrective Action Needed			**Due Date**
1			
2			
3			
4			
5			

CHECKLIST FOR INSPECTION OF CATCH BASIN			
Location:			
Inspector:			
Date/Time:			
Weather:			
Date of Last Rainfall:			
Amount of Last Rainfall:			
Inspection Items:	**Satisfactory (S) or Unsatisfactory (U)**		**Comments/ Corrective Actions**
Damage to frame/cover	S	U	
Settlement of frame/cover	S	U	
Depth of sediment in basin	S	U	
Condition of water quality hood	S	U	
Condition of inlet from Tree Box Filter	S	U	
Corrective Action Needed			**Due Date**
1			
2			
3			
4			
5			

CHECKLIST FOR INSPECTION OF STORMCEPTOR			
Location:			
Inspector:			
Date/Time:			
Weather:			
Date of Last Rainfall:			
Amount of Last Rainfall:			
Inspection Items:	**Satisfactory (S) or Unsatisfactory (U)**		**Comments/ Corrective Actions**
Damage to frame or cover	S	U	
Settlement of frame/cover	S	U	
Check for presence of oil	S	U	
Depth of sediment in sump	S	U	
Corrective Action Needed			**Due Date**
1			
2			
3			
4			
5			

Note: Inspection and maintenance shall be in accordance with the most recent Stormceptor Inspection and Maintenance information which can be found at https://www.conteches.com/Portals/0/Documents/Maintenance Guides/Stormceptor-STC-Maintenance-Guide.pdf?ver=2020-05-21-114420-030. Inspector shall use that document during the inspection and follow the recomendations therein.

Appendix F –SWPPP Amendment Log

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

Appendix G – *Sample* Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix H –Grading and Stabilization Activities Log

Date Grading Activity Initiated	**Description of Grading Activity**	**Description of Stabilization Measure and Location**	**Date Grading Activity Ceased** (Indicate Temporary or Permanent)	**Date When Stabilization Measures Initiated**

Appendix I –SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Sediment and Erosion Controls**
- ❑ **Emergency Procedures**
- ❑ **Stabilization Controls**
- ❑ **Inspections/Corrective Actions**
- ❑ **Pollution Prevention Measures**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Appendix J –Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix K – Endangered Species Documentation

INSERT DOCUMENTATION CONSISTENT WITH SWPPP TEMPLATE SECTION 3.1

Appendix L – Historic Properties Documentation

INSERT DOCUMENTATION CONSISTENT WITH SWPPP TEMPLATE SECTION 3.2