NOTICE OF INTENT
UNDER THE TOWN OF WEYMOUTH
WETLANDS PROTECTION ORDINANCE, CHAPTER 7, SECTION 301

1. Project Location 158 Park Ave West
2. Town of Weymouth Atlas Reference (Parcel #) 44-512-1
3. Project Description _____
4. County, Norfolk: Book 35558 Page 422
5. *Applicant Michael Grehan *Telephone# 617 828 5056
6. *Applicant Address 76 Norton Road, Quincy, MA
7. Property Owner Michael Grehan
8. Representative Kenneth Thomson Telephone# 781 929 1203
9. Representative's Address 134 Spring Street, Rockland, MA
10. Billing Party for Legal Notice (All info is required):
    Name: Kenneth Thomson
    Address: 134 Spring Street, Rockland, MA 02370
    Home Phone: _____ Cell: 781 929 1203
    Email address 5wetlands@gmail.com
11. Has the Conservation Commission received the **original** material **plus six (6) copies** of the Notice of Intent form, 8.5"X11", U.S.G.S. locus and 8.5"x11" sheet clearly showing the proposed site and work in addition to labeled resource areas? YES X NO _____
12. Are the following additional interests relevant to the proposed project? If so, Notice of Intent must include a discussion of these interests. Aesthetics _____ Wildlife _____ Recreation _____ Erosion Control X
13. Have you filed your Local Wetland Fees? State Fees? YES X NO _____
14. Have you filed the Abutters' Notification and Affidavit of Service? YES X NO _____

I, THE UNDERSIGNED, HEREBY APPLY FOR A PERMIT PURSUANT TO THE CODE OF ORDINANCES, TOWN OF WEYMOUTH, CHAPTER 7, SECTION 301

Signature

6/6/2022
Date

*THE WEYMOUTH CONSERVATION OFFICE WILL SUBMIT THE NECESSARY LEGAL AD, AND THE APPLICANT WILL BE BILLED DIRECTLY BY THE PATRIOT LEDGER. FOR BILLING PURPOSES, THE PATRIOT LEDGER REQUIRES THAT THE TELEPHONE NUMBER SUBMITTED MUST BE THE DIRECT CONTACT NUMBER THAT MATCHES THE NAME AND ADDRESS OF THE APPLICANT, OTHERWISE THE LEGAL AD WILL NOT BE PUBLISHED AND THE HEARING WILL BE DELAYED.

SITE ACCESS AUTHORIZATION

DATE: 5/30/2023

PROJECT: 158 Park Ave West

TO: **Weymouth Conservation Commission and Conservation Administrator**

FROM: Michael Grehan

LOCATION: !58 Park Ave West

(Hereafter referred to as the property)

I (We) hereby authorize the Individual members of the Conservation Commission and its agents to enter upon the property for the purpose of gathering information prior to issuing a Determination of Applicability or an Order of Conditions and for the purpose of enforcing the Order of Conditions prior to the issuance of a Certificate of Compliance.

TIME: FROM THE PRESENT TO DATE OF ISSUANCE OF CERTIFICATE OF COMPLIANCE

PROPERTY OWNER: [signature] **DATE:** 6/6/2023

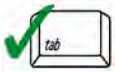
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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
Weymouth
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):

154 Park Ave West — a. Street Address
Weymouth — b. City/Town
02190 — c. Zip Code

Latitude and Longitude:
42.17822 — d. Latitude
70.96201 — e. Longitude

44 — f. Assessors Map/Plat Number
512-1 — g. Parcel /Lot Number

2. Applicant:

Michael — a. First Name
Grehan — b. Last Name
c. Organization
76 Norton Road — d. Street Address
Quincy — e. City/Town
MA — f. State
02169 — g. Zip Code
617 828 5056 — h. Phone Number
i. Fax Number
rocky1965@comcast.net — j. Email Address

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

Same — 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):

Kenneth — a. First Name
Thomson — b. Last Name
5 Wetlands — c. Company
134 Spring Street — d. Street Address
Rockland — e. City/Town
MA — f. State
02370 — g. Zip Code
781 929 1203 — h. Phone Number
i. Fax Number
5wetlands@gmail.com — j. Email address

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

$3150.00 — a. Total Fee Paid
$1562.50 — b. State Fee Paid
$1587.50 — 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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A. General Information (continued)

6. General Project Description:

The construction of 3 buildings each as a 3-unit multi-family buiding, for a total of 9 units. In addition to the buildings, parking, utilities and a stormwater infiltration system will be constructed.

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 Checklistand Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Norfolk	
c. Book	d. Page Number
35558	422

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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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

Mill River - Inland
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: 13,735 square feet

4. Proposed alteration of the Riverfront Area:

3019	53	2966
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.

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

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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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 tohttp://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

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

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

b. Date of map

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

c. Submit Supplemental Information for Endangered Species Review*

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

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

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

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

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

(b) ☐ Photographs representative of the site

*Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review(seehttps://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
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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 - Cohasset to Rhode Island border, and the Cape & Islands:

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

North Shore - Hull to New Hampshire border:

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

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

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

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

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Provided by MassDEP:

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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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.

Layout 154 Park Ave West Weymouth, MA
a. Plan Title

Hardy + Man Design Group
b. Prepared By

Shawn Hardy
c. Signed and Stamped by

5/24/2023
d. Final Revision Date

1"=20'
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

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

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

2. Municipal Check Number

6/5/2023
3. Check date

4. State Check Number

6/5/2023
5. Check date

Hardy Man Design Group PC
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant

2. Date 6/6/2023

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any)

6. Date 6/6/2023

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.

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Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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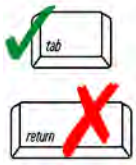


A. Applicant Information

1. Location of Project:

154 Park Ave West	Weymouth
a. Street Address	b. City/Town
1861	$1562.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Micheal	Grehan
a. First Name	b. Last Name

c. Organization

76 Norton Road
d. Mailing Address

Quincy	MA	02169
e. City/Town	f. State	g. Zip Code

617 828 5056		rock1965@comcast.net
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

Same	
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
Category 3b	$1050.00	3	$3150.00

Step 5/Total Project Fee: $3150.00

Step 6/Fee Payments:

Total Project Fee:	$3150.00 a. Total Fee from Step 5
State share of filing Fee:	$1562.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$1587.50 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.)

Existing Conditions

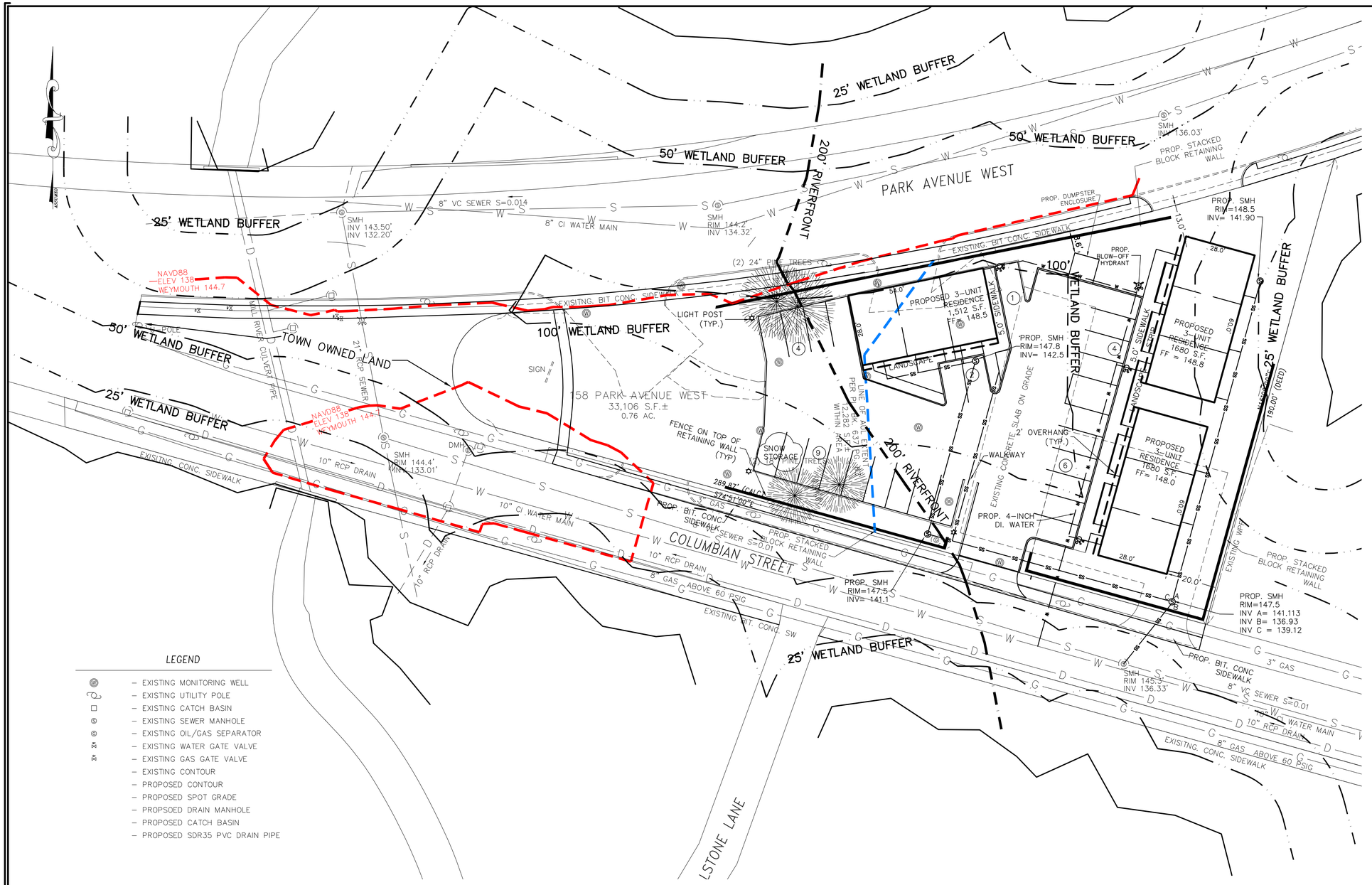
The property is 0.79 acres of undeveloped land located at the intersection of Park Avenue West and Columbian Street. The Mill River, a blue-line perennial stream, is located to the west of the property and flows to the north under the roadways. The river was estimated to be 20 feet wide. A very large wetland complex associated with the river is located to the north of Park Avenue West and south of Columbian Street. It has several habitats including forested wetlands, shrub swamp and emergent marsh. Located to the east of the property is a small area of red maple swamp, dominated by red maple and winterberry holly. It drains to the north by way a culvert under Park Avenue West.

Historically the property has been a gas station and childcare center. The western portion of the property has an Activity Use Limitation (AUL) as the result of the gas station (DEP # 4-0022777).

Proposed Project

The project proposes to construct three residential buildings, which contain 3 unit in each building. In addition to the buildings, parking, utilities and stormwater infiltration system, see attached stormwater report.

The property is located within 10,716 square feet of the *Riverfront* of the Mill River. The project is proposed as a **redevelopment project** under the *Riverfront* regulations. The project proposes to impact 3,019 square feet of degraded *Riverfront* with parking. To mitigate for the impact, the project proposes to develop a 6,090 square foot native planting within the riverfront area, see Sheet C-1.



LEGEND

- Ⓦ – EXISTING MONITORING WELL
- – EXISTING UTILITY POLE
- □ – EXISTING CATCH BASIN
- Ⓢ – EXISTING SEWER MANHOLE
- Ⓖ – EXISTING OIL/GAS SEPARATOR
- ⋈ – EXISTING WATER GATE VALVE
- ⋈ – EXISTING GAS GATE VALVE
- – EXISTING CONTOUR
- – PROPOSED CONTOUR
- – PROPOSED SPOT GRADE
- – PROPSOED DRAIN MANHOLE
- – PROPOSED CATCH BASIN
- – PROPOSED SDR35 PVC DRAIN PIPE

GRAPHIC SCALE
20 10 0 FEET 20 40
5 2.5 0 METERS 5 10

OWNER/APPLICANT:
MICHAEL GREHAN
76 NORTON ROAD
QUINCY, MA 02169

ARCHITECT:
FISHER ASSOCIATES
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WEYMOUTH,, MA 02190
(781) 337-3409

LAND SURVEYOR:
CIVIL ENVIRONMENTAL CONSULTANTS
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PEABODY, MA 01960
(978) 531-1191

CIVIL ENGINEER:
HARDY + MAN DESIGN GROUP PC
1285 WASHINGTON STREET
WEYMOUTH, MA 02189
(781) 335-1464

GENERAL NOTES:

1. TOPOGRAPHIC DATA, PROPERTY LINE INFORMATION, AND EXISTING SITE FEATURES WERE OBTAINED FROM CIVIL ENVIRONMENTAL CONSULTANTS, DATED OCTOBER 26, 2017.
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13. ELEVATIONS REFER TO TOWN OF WEYMOUTH DATUM.

DIMENSIONAL REQUIREMENTS

ZONING ITEM	BUS 2	EXISTING	PROPOSED
MIN. LOT AREA	NONE	33,041 SF	33,041 SF
MIN. LOT WIDTH	NONE	N/A	N/A
MIN. YARD – FRONT	NONE	N/A	N/A
MIN. YARD – SIDE	NONE	N/A	N/A
MIN. YARD – REAR	20 FT	N/A	20 FT
MAX. BUILDING HEIGHT	6 ST/80 FT	N/A	2 ST
MAX. LOT COVERAGE	NONE	N/A	N/A
REQ. PARKING SPACES	2/DU (18)	N/A	26

REVISIONS:		
NO.:	COMMENTS:	DATE:
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2.	BUILDING MOVED:	01/06/2023
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4.	ZBA COMMENTS	03/31/2023
5.	LIGHT POST LOC.	04/25/2023
6.	CONSERVATION COMMISION FILING	5/24/2023

LAYOUT
158 PARK AVE WEST
WEYMOUTH, MASSACHUSETTS

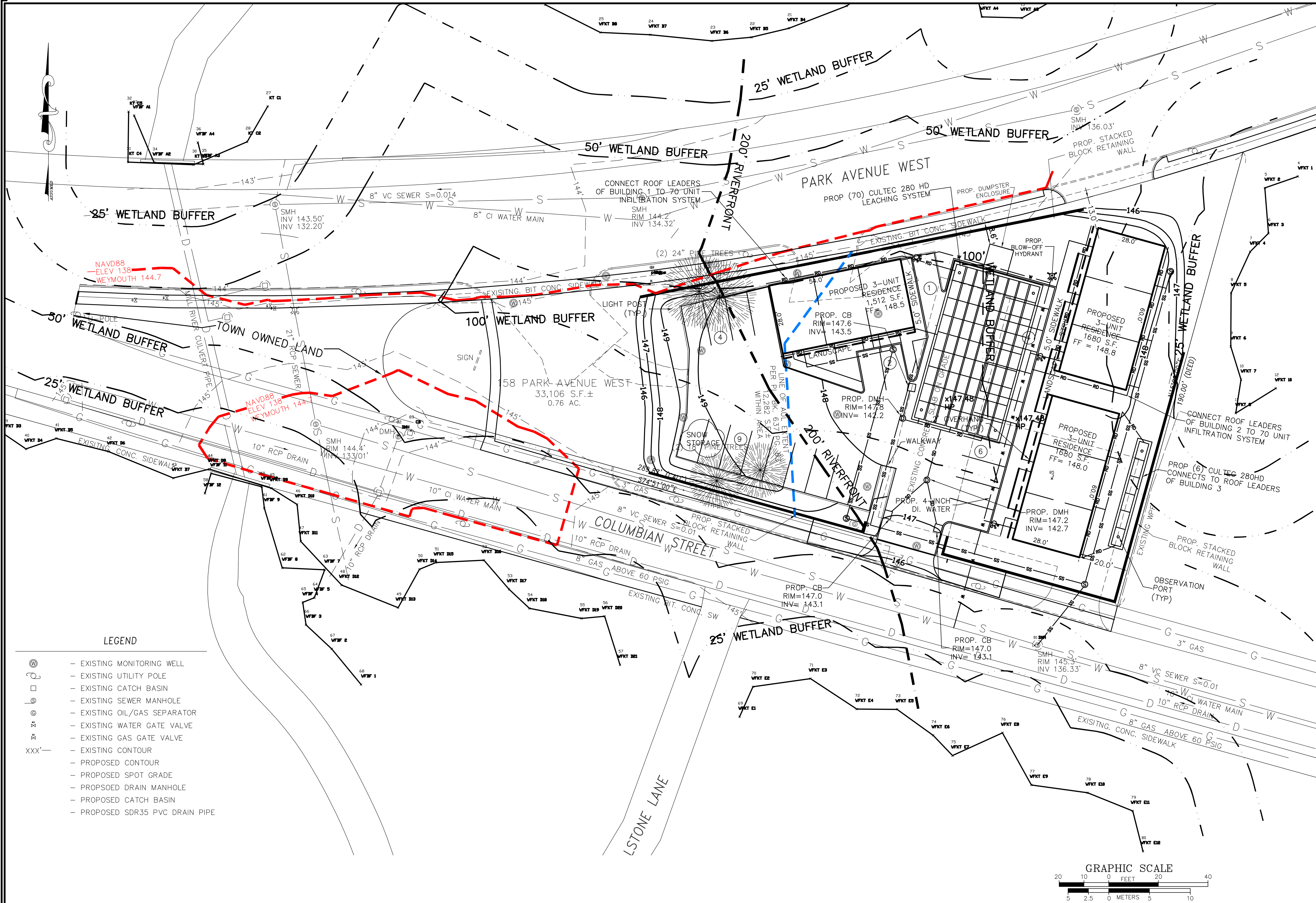
DRAWN BY: TCN
DESIGNED BY: SPH
CHECKED BY: SPH
DATE: 10-14-2022

HARDY + MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING

1285 WASHINGTON STREET
WEYMOUTH, MA
(781) 335-1464

PREPARED FOR:
MICHAEL GREHAN

SHEET
C-1



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ZONING ITEM	BUS 2	EXISTING	PROPOSED
MIN. LOT AREA	NONE	33,041 SF	33,041 SF
MIN. LOT WIDTH	NONE	N/A	N/A
MIN. YARD - FRONT	NONE	N/A	N/A
MIN. YARD - SIDE	NONE	N/A	N/A
MIN. YARD - REAR	20 FT	74.8 FT	20 FT
MAX. BUILDING HEIGHT	6 ST/80 FT	3 ST/29.5 FT	3 ST/29.5 FT
MAX. LOT COVERAGE	NONE	N/A	N/A
REQ. PARKING SPACES	2/DU (24)	0	26 + 2 HC

REVISIONS:

NO.:	COMMENTS:	DATE:
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GRADING AND DRAINAGE PLAN
158 PARK AVE WEST
WEYMOUTH, MASSACHUSETTS

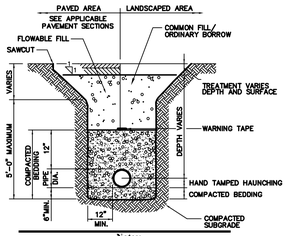
DRAWN BY: TCN
DESIGNED BY: SPH
CHECKED BY: SPH

DATE: 10-14-2022

HARDY + MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING
1285 WASHINGTON STREET
WEYMOUTH, MA
(781) 335-1464

PREPARED FOR:
MICHAEL GREHAN

SHEET
C-2

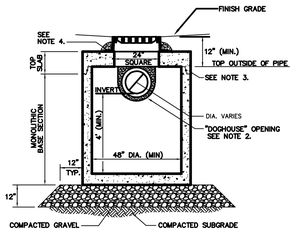


Notes:

1. WHERE UTILITY TRENCHES ARE CONSTRUCTED THROUGH DETENTION BASIN BERMS OR OTHER SUCH SPECIAL SECTIONS, PLACE TRENCH BACKFILL WITH MATERIALS SIMILAR TO THE SPECIAL SECTION REQUIREMENTS.
2. USE METALLIC TRACING/WARNING TAPE OVER ALL PIPES.
3. PAVEMENT SECTION TO CONFORM TO TOWN OF BRAINTREE DEPARTMENT OF PUBLIC WORKS (DPW) SPECIFICATION.

Utility Trench

N.T.S.

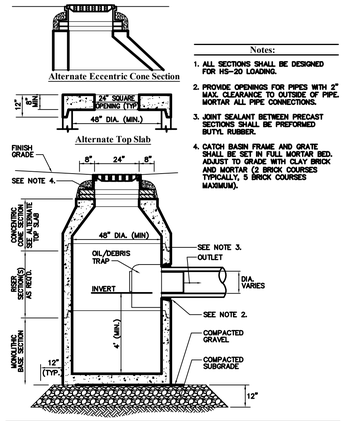


Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE (4"DEPTH) SHALL BE SET IN FULL MORTAR BED.
5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.

Catch Basin (CB) Shallow Cover

N.T.S.

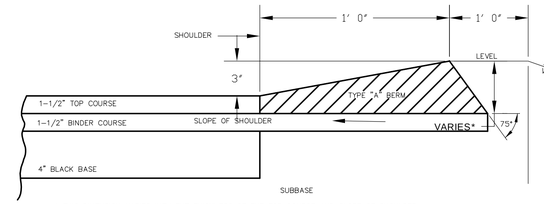


Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

Catch Basin (CB) With Oil/Debris Trap

N.T.S.



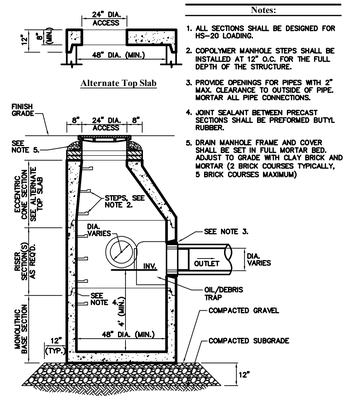
* THIS DIMENSION VARIES WITH THE THICKNESS OF THE TOP COURSE AND SLOPE OF SHOULDER
** SEE TYPICAL SECTIONS FOR PROJECT

BITUMINOUS CONCRETE BERM DETAIL

N.T.S.

CULTEC RECHARGER 280HD

N.T.S.



Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

Drain Manhole (DMH) with Oil Debris/Trap

N.T.S.

CULTEC RECHARGER 280HD

N.T.S.

Cultec Observation Port

N.T.S.

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DETAILS
158 PARK AVE WEST
WEYMOUTH, MASSACHUSETTS

DRAWN BY: TCN
DESIGNED BY: SPH
CHECKED BY: SPH
DATE: 10-14-2022

HARDY + MAN DESIGN GROUP, PC
CIVIL ENGINEERING & LAND DEVELOPMENT CONSULTING
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WEYMOUTH, MA
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PREPARED FOR:
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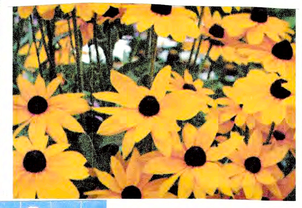
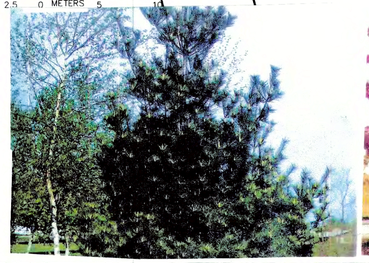
C-3





Qty.	Latin Name	Common Name	Size	Features
8	Acer rubrum 'October Glory'	October Glory Red Maple	2.5-3"c.	NATIVE, drought resistant, bright fall leaves, oval canopy
2	Amelanchier Canadensis	Shadblow Serviceberry	6-7'	NATIVE, drought resistant, white spring flowers, not too large
13	Ilex glabra compacta	Compact Inkberry	3 Gal.	NATIVE, drought resistant, staying smaller, hardy evergreen
10	Itea 'Little Henry'	Sweet Spire	2 Gal.	NATIVE, drought resistant, dwarf variety, white summer color
20	Hemmerocalis Stella	Stella D' Oro Daylily	1 Gal.	Super hardy, yellow flowers for 60-90 days, no care
8	Juniperus communis	Common Juniper	4-5'	NATIVE, drought resistant, evergreen, super hardy
1	Hydrangea paniculata PEE GEE	Pee Gee Hydrangea Tree	15 Gal.	White flowers from July to frost, super hardy, drought tolerant
3	Hydrangea paniculata VANILLA STRAW.	Vanilla Strawberry Hydrangea	10 Gal.	4-6'H, white and pink flowers from July to frost, super hardy
2	Malus prarifire	Prarie Fire Pink Crabapple	2" cal.	NATIVE,True Red flowers in early spring, ornamental tree
20	Pennistetum alopecuroides HAMELN	Dwarf Fountaint Grass	2 Gal.	Super hardy, stays about 18"H, no care, cut back in the winter
10	Physocrapus	Ninebark	5 Gal.	NATIVE, drought resistant, white clustered flowers, no care
8	Picea glauca	White Spruce	7-8'	NATIVE, evergreen, super hardy, dense, great color
6	Pinus strobus	Eastern White Pine	8-9'	NATIVE, very haryd evergreen, no care, fast growing
2	Pyrus calleryana CLEVELAND SELECT	Cleveland Select Pear	3"c.	Hardy variety, no branch breakage, white spring flowers,
52	Rudbeckia Goldstrum	Black Eyed Susan	1 Gal.	NATIVe, Yellow flowers, dark center, 24"H, sun, Aug-Sept.
10	Rhododendron maximum	Maximum Rhododendron	30"	NATIVE, pink flowers in late spring, evergreen, hardy
23	Thuja plicata	Green Giant Arborvitae	7-8'	NATIVE,Fast growing, dense evergreen tree, upright, dark
15	Sedum AUTUMN JOY	Sedum	1 Gal.	Super drought tolerant, fall flowers, great leaves, 12"H
16	Spirea GOLDMOUND	Goldmound Spirea	2 Gal.	Super hardy, pink summer flowers, drought tolerant, no care

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HARDY + MAN DESIGN GROUP PC
1285 WASHINGTON STREET
WEYMOUTH, MA 02189
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LANDSCAPE DESIGN:
CMG DESIGN
CARIN GOSSELIN

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(781) 335-1464

PREPARED FOR:
MICHAEL GREHAN

SHEET
C-1

Drainage Report

For:

158 Park Avenue West
Weymouth, MA

Prepared For:

Michael Grehan
76 Norton Road
Quincy, MA 02169

Prepared By:

Hardy + Man Design Group, PC
1285 Washington Street
Weymouth, MA 02189

May 24, 2023

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

Checklist for Stormwater Report

A. Introduction

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

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

The Stormwater Report must include:

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

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

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

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

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

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

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

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

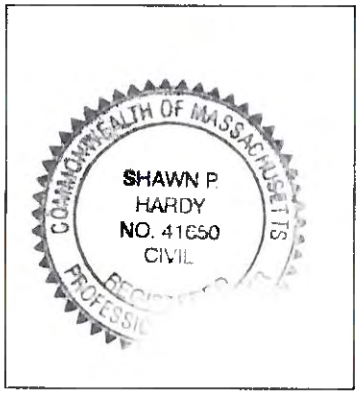
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



Signature and Date 5/24/2023

Checklist

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

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

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

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

Standard 1: No New Untreated Discharges

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

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

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

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

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

Standard 3: Recharge

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

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

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

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

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

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

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

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

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

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

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

Standard 4: Water Quality

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

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

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

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

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

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

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

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

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

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

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

☐ All exposure has been eliminated.

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

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

Standard 6: Critical Areas

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

Standard 9: Operation and Maintenance Plan

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

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

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

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

Standard 10: Prohibition of Illicit Discharges

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

☐ An Illicit Discharge Compliance Statement is attached;

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

Existing Site Conditions

The existing site is a 33,106 SF parcel of land located on the intersection of Park Avenue West and Columbian Street in Weymouth, Massachusetts. The parcel currently contains a concrete slab on grade and broken bituminous pavement.

The topography of the site is relatively flat, sloping at less than 1% toward the western corner from an approximate elevation of 145 feet (Town of Weymouth Datum) at the northeasterly and southeasterly corner of the site to 144 feet at the western corner of the site. No stormwater controls exist on the site and the topography directs the stormwater to the west.

According to soils information derived from on-site test pits, the soils on site consist of fill gravel, boulders, and fine silty Sandy Loam material. According to the on-site test pits results, weeping occurs at 44 inches, 52 inches, and 72 inches.

Methodology

This drainage analysis utilized TR-55 drainage guidelines which is an industry standard for urban hydrology small watersheds. The accompanying calculations analyze the increase in runoff from the proposed site development under a 100-year, 25-year, 10-year, and 2-year storm events.

Proposed Conditions

The applicant proposes the construction of 3 buildings, each as a 3-unit multi-family building, for a total of 9 units. The existing curb cuts shall be closed and restored, while a new curb cut is proposed on Columbian Street.

The proposed impervious coverage on the site will increase from 8,688 SF to 17,631 SF, resulting in 8,943 SF of new impervious area. Runoff from proposed buildings 1 & 2 roof and the parking area will be routed to a stormwater detention system located under the proposed parking lot. The system consists of 70 Cultec R-280 HD Chambers. Runoff from the other building (3) is to be routed to a separate infiltration system behind the easterly buildings, consisting of 6 Cultec R-280 HD Chambers.

The proposed chambers will provide a total of 5,506 cubic feet of storage and were sized or reduce existing peak flowrates and volumes for the 2-year, 10-year, 25-year, and 100-year rainfall events.

The following table depicts the peak runoff rates and volumes for the existing and proposed conditions for the four different storm events.

Peak Discharge Rates (cfs)

	2-year	10-year	25-year	100-year
Existing Conditions	0.85	1.70	2.34	3.25
Proposed Conditions	0.22	0.54	0.79	1.17

Runoff Volume (af)

	2-year	10-year	25-year	100-year
Existing Conditions	0.060	0.120	0.163	0.225
Proposed Conditions	0.019	0.040	0.057	0.082

Erosion and Sedimentation Control Measures

Erosion control measures to be employed include a staked "Filter Sock" erosion control barrier as depicted in the site plan. The barrier shall be inspected daily and be kept in place until such time that disturbed areas are re-vegetated or paved and are no longer a potential source of siltation.

Conclusion

The stormwater management system will reduce the stormwater runoff flowrate and volume by two on-site infiltration systems. These systems have been sized to decrease existing peak flowrates and runoff volumes for the 2-year, 10-year, 25-year, and 100-year rainfall events.

During construction, the proposed erosion control measures protect sedimentation from construction activities from migrating from the site onto the public street and abutting properties.

The proposed stormwater management and erosion control design of the proposed development will meet the Town of Weymouth Requirements.

Supporting Calculations

Infiltration Structure Sizing Calculations

100-year storm = 6.8 inches

Volume of Infiltration Systems (per HydroCAD)

Infiltration System (70 Cultec 280 HD Chambers): Chamber Storage+Stone Storage = 4,847 CF

Infiltration System (6 Cultec 280 HD Chambers): Chamber Storage+Stone Storage = 498 CF

Total Storage Provided: 5,345 CF

Massachusetts Stormwater Standards - Required Recharge Volume

Rv = F x Impervious Area

Where:

Rv = Required Recharged Volume

F = Target Depth Factor, for Type B Soils = 0.35"

Impervious Area =17,631 sf

Rv = 0.35 inches x 1 ft/12 inches x 17,631 sf = 514.2 CF

514.2 CF << 5,345 CF Meets Standard

Massachusetts Stormwater Standards - Required Water Quality Volume

Vwq = F x Impervious Area

Where:

Vwq = Required Water Quality Volume

Dwq = Water Quality Depth = 0.5"

Impervious Area =17,631 sf

Vwq = 0.5 inches x 1 ft/12 inches x 17,631 sf = 734.6 CF

734.6 CF << 5,345 CF Meets Standard

Time to Infiltrate – Simple Dynamic Method

See HydroCAD Hydrographs (attached)

70 chamber system 37.5 hours < 72 hours Meets Standard

6 chamber system 36.0 hours < 72 hours Meets Standard

Hydrograph for Pond CS: Cultec System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	143.00	0.00
1.50	0.00	0	143.00	0.00
3.00	0.01	3	143.00	0.01
4.50	0.02	8	143.01	0.02
6.00	0.03	13	143.01	0.02
7.50	0.04	23	143.02	0.04
9.00	0.08	59	143.06	0.06
10.50	0.14	303	143.32	0.06
12.00	**1.72**	1,897	144.20	0.07
13.50	**0.16**	4,561	145.91	0.10
15.00	0.10	**4,701**	**146.05**	**0.10**
16.50	0.06	4,588	145.93	0.10
18.00	0.04	4,352	145.69	0.09
19.50	0.04	4,065	145.43	0.09
21.00	0.03	3,766	145.23	0.09
22.50	0.03	3,457	145.04	0.08
24.00	0.02	3,139	144.85	0.08
25.50	0.00	2,713	144.62	0.08
27.00	0.00	2,297	144.40	0.08
28.50	0.00	1,897	144.20	0.07
30.00	0.00	1,513	144.01	0.07
31.50	0.00	1,142	143.82	0.07
33.00	0.00	785	143.65	0.06
34.50	0.00	441	143.47	0.06
36.00	0.00	117	143.12	0.06
37.50	0.00	0	143.00	0.00
39.00	0.00	0	143.00	0.00
40.50	0.00	0	143.00	0.00
42.00	0.00	0	143.00	0.00
43.50	0.00	0	143.00	0.00
45.00	0.00	0	143.00	0.00
46.50	0.00	0	143.00	0.00
48.00	0.00	0	143.00	0.00
49.50	0.00	0	143.00	0.00
51.00	0.00	0	143.00	0.00
52.50	0.00	0	143.00	0.00
54.00	0.00	0	143.00	0.00
55.50	0.00	0	143.00	0.00
57.00	0.00	0	143.00	0.00
58.50	0.00	0	143.00	0.00
60.00	0.00	0	143.00	0.00
61.50	0.00	0	143.00	0.00
63.00	0.00	0	143.00	0.00
64.50	0.00	0	143.00	0.00
66.00	0.00	0	143.00	0.00
67.50	0.00	0	143.00	0.00
69.00	0.00	0	143.00	0.00
70.50	0.00	0	143.00	0.00
72.00	0.00	0	143.00	0.00

Hydrograph for Pond 4P: Cultec System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	143.00	0.00
1.50	0.00	0	143.00	0.00
3.00	0.00	1	143.01	0.00
4.50	0.00	2	143.01	0.00
6.00	0.00	2	143.02	0.00
7.50	0.01	3	143.03	0.01
9.00	0.01	9	143.08	0.01
10.50	0.02	37	143.35	0.01
12.00	**0.18**	207	144.27	0.01
13.50	**0.02**	**479**	**146.03**	**0.01**
15.00	0.01	**488**	**146.11**	**0.01**
16.50	0.01	471	145.95	0.01
18.00	0.00	442	145.68	0.01
19.50	0.00	408	145.40	0.01
21.00	0.00	373	145.18	0.01
22.50	0.00	337	144.97	0.01
24.00	0.00	301	144.76	0.01
25.50	0.00	254	144.51	0.01
27.00	0.00	208	144.27	0.01
28.50	0.00	164	144.05	0.01
30.00	0.00	122	143.84	0.01
31.50	0.00	82	143.64	0.01
33.00	0.00	43	143.41	0.01
34.50	0.00	7	143.07	0.01
36.00	0.00	0	143.00	0.00
37.50	0.00	0	143.00	0.00
39.00	0.00	0	143.00	0.00
40.50	0.00	0	143.00	0.00
42.00	0.00	0	143.00	0.00
43.50	0.00	0	143.00	0.00
45.00	0.00	0	143.00	0.00
46.50	0.00	0	143.00	0.00
48.00	0.00	0	143.00	0.00
49.50	0.00	0	143.00	0.00
51.00	0.00	0	143.00	0.00
52.50	0.00	0	143.00	0.00
54.00	0.00	0	143.00	0.00
55.50	0.00	0	143.00	0.00
57.00	0.00	0	143.00	0.00
58.50	0.00	0	143.00	0.00
60.00	0.00	0	143.00	0.00
61.50	0.00	0	143.00	0.00
63.00	0.00	0	143.00	0.00
64.50	0.00	0	143.00	0.00
66.00	0.00	0	143.00	0.00
67.50	0.00	0	143.00	0.00
69.00	0.00	0	143.00	0.00
70.50	0.00	0	143.00	0.00
72.00	0.00	0	143.00	0.00

Soil Data

Commonwealth of Massachusetts
City/Town of Weymouth

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (*minimum of two holes required at every proposed primary and reserve disposal area)*

Deep Observation Hole Number: 1 (Hole #) | 8/20/21 (Date) | 8:00 AM (Time) | clouds/rain 80 (Weather) | _____ (Latitude) | _____ (Longitude)

1. Land Use: vacant (e.g., woodland, agricultural field, vacant lot, etc.) | weeds brush (Vegetation) | few (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 2% (Slope (%))

   Description of Location: _____

2. Soil Parent Material: _____ | _____ (Landform) | _____ (Position on Landscape (SU, SH, BS, FS, TS))

3. Distances from: Open Water Body _____ feet | Drainage Way _____ feet | Wetlands >100 feet
   Property Line +/- 20 feet | Drinking Water Well _____ feet | Other _____ feet

4. Unsuitable Materials Present: ☒ Yes ☐ No If Yes: ☐ Disturbed Soil ☒ Fill Material ☐ Weathered/Fractured Rock ☐ Bedrock

5. Groundwater Observed: ☒ Yes ☐ No If yes: 52" Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-55	Fill			49"							Gravel
55-62											Boulders/gravel
62-84		SL (silty)	2.5Y 5/2								

Additional Notes: _____

Commonwealth of Massachusetts
City/Town of Weymouth

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (*minimum of two holes required at every proposed primary and reserve disposal area)*

Deep Observation Hole Number: 2 (Hole #) | 8/20/21 (Date) | 8:00 (Time) | cloud/rain 80 (Weather) | _____ (Latitude) | _____ (Longitude:)

1. Land Use: vacant (e.g., woodland, agricultural field, vacant lot, etc.) | weeds brush (Vegetation) | few (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 2 (Slope (%))

Description of Location: _____

2. Soil Parent Material: _____ | _____ (Landform) | _____ (Position on Landscape (SU, SH, BS, FS, TS))

3. Distances from: Open Water Body _____ feet | Drainage Way _____ feet | Wetlands +/-50 feet
Property Line +/-20 feet | Drinking Water Well _____ feet | Other _____ feet

4. Unsuitable Materials Present: ☒ Yes ☐ No If Yes: ☐ Disturbed Soil ☒ Fill Material ☐ Weathered/Fractured Rock ☐ Bedrock

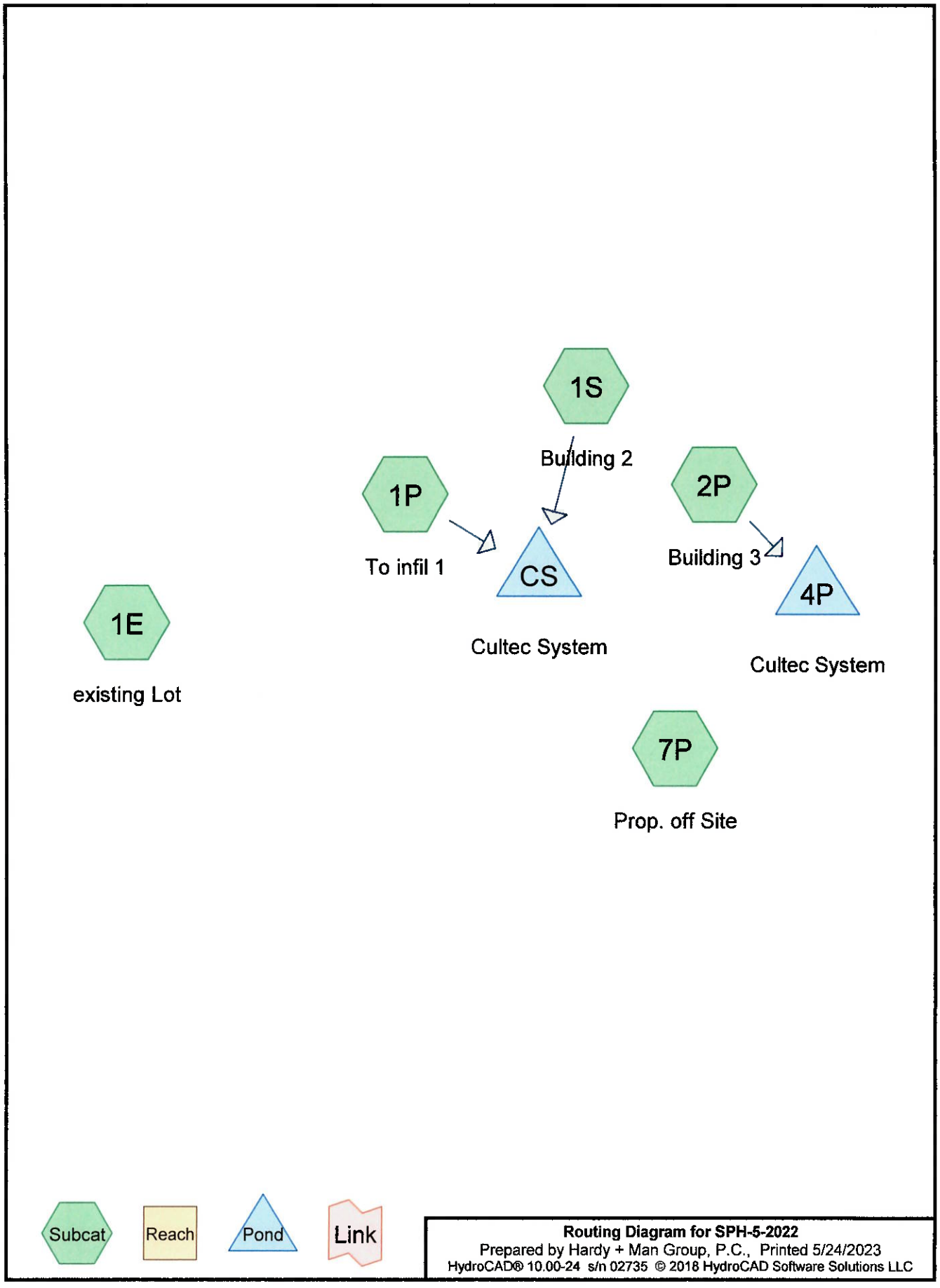
5. Groundwater Observed: ☒ Yes ☐ No If yes: 72 Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-62	Fill										gravel/boulders/metal
62-75	organics										
75-93		SL (silty)	2.5Y 5/2								
93-120	C	SL	10YR 5-4				5-10				

Additional Notes: _____

HydroCAD Documentation



Routing Diagram for SPH-5-2022
Prepared by Hardy + Man Group, P.C., Printed 5/24/2023
HydroCAD® 10.00-24 s/n 02735 © 2018 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.03 hrs, 2401 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 1E: existing Lot Runoff Area=33,106 sf 26.24% Impervious Runoff Depth=1.00"
Tc=5.0 min CN=71 Runoff=0.85 cfs 0.063 af

Subcatchment 1P: To infil 1 Runoff Area=14,714 sf 88.79% Impervious Runoff Depth=2.74"
Tc=5.0 min CN=94 Runoff=1.06 cfs 0.077 af

Subcatchment 1S: Building 2 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=3.17"
Tc=5.0 min CN=98 Runoff=0.13 cfs 0.010 af

Subcatchment 2P: Building 3 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=3.17"
Tc=5.0 min CN=98 Runoff=0.13 cfs 0.010 af

Subcatchment 7P: Prop. off Site Runoff Area=15,032 sf 8.02% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=64 Runoff=0.22 cfs 0.019 af

Pond 4P: Cultec System Peak Elev=144.18' Storage=191 cf Inflow=0.13 cfs 0.010 af
Outflow=0.01 cfs 0.010 af

Pond CS: Cultec System Peak Elev=144.11' Storage=1,723 cf Inflow=1.20 cfs 0.087 af
Outflow=0.07 cfs 0.087 af

Total Runoff Area = 1.520 ac Runoff Volume = 0.180 af Average Runoff Depth = 1.42"
60.25% Pervious = 0.916 ac 39.75% Impervious = 0.604 ac

Summary for Subcatchment 1E: existing Lot

Runoff = 0.85 cfs @ 12.09 hrs, Volume= 0.063 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2 year Rainfall=3.40"

	Area (sf)	CN	Description
	3,460	96	Gravel surface, HSG B
*	2,920	98	concrete slab
*	5,768	98	paved
	20,958	56	Brush, Fair, HSG B
	33,106	71	Weighted Average
	24,418		73.76% Pervious Area
	8,688		26.24% Impervious Area

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

Summary for Subcatchment 1P: To infil 1

Runoff = 1.06 cfs @ 12.07 hrs, Volume= 0.077 af, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2 year Rainfall=3.40"

	Area (sf)	CN	Description
	1,512	98	Roofs, HSG B
*	10,359	98	paved
	1,649	61	>75% Grass cover, Good, HSG B
*	1,194	98	walks
	14,714	94	Weighted Average
	1,649		11.21% Pervious Area
	13,065		88.79% Impervious Area

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

Summary for Subcatchment 1S: Building 2

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2 year Rainfall=3.40"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 2P: Building 3

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2 year Rainfall=3.40"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 7P: Prop. off Site

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.019 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 2 year Rainfall=3.40"

	Area (sf)	CN	Description
	13,826	61	>75% Grass cover, Good, HSG B
*	350	98	paved
*	216	98	walkway
*	640	98	top of walls
	15,032	64	Weighted Average
	13,826		91.98% Pervious Area
	1,206		8.02% Impervious Area

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

Summary for Pond 4P: Cultec System

Inflow Area = 0.039 ac,100.00% Impervious, Inflow Depth = 3.17" for 2 year event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 0.010 af
Outflow = 0.01 cfs @ 13.54 hrs, Volume= 0.010 af, Atten= 94%, Lag= 88.1 min
Discarded = 0.01 cfs @ 13.54 hrs, Volume= 0.010 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 144.18' @ 13.54 hrs Surf.Area= 266 sf Storage= 191 cf

Plug-Flow detention time= 200.7 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 200.7 min (954.9 - 754.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	237 cf	**5.92'W x 45.00'L x 3.21'H Field A** 854 cf Overall - 261 cf Embedded = 593 cf x 40.0% Voids
#2A	143.50'	261 cf	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		498 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.01 cfs @ 13.54 hrs HW=144.18' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.01 cfs)

Summary for Pond CS: Cultec System

Inflow Area = 0.376 ac, 89.94% Impervious, Inflow Depth = 2.78" for 2 year event
Inflow = 1.20 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 0.07 cfs @ 13.73 hrs, Volume= 0.087 af, Atten= 94%, Lag= 99.4 min
Discarded = 0.07 cfs @ 13.73 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 144.11' @ 13.73 hrs Surf.Area= 2,366 sf Storage= 1,723 cf

Plug-Flow detention time= 220.1 min calculated for 0.087 af (100% of inflow)
Center-of-Mass det. time= 220.0 min (1,000.8 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	1,830 cf	**32.42'W x 73.00'L x 3.21'H Field A** 7,592 cf Overall - 3,018 cf Embedded = 4,575 cf x 40.0% Voids
#2A	143.50'	3,018 cf	**Cultec R-280HD** x 70 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 7 rows
		4,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.07 cfs @ 13.73 hrs HW=144.11' (Free Discharge)
↑**1=Exfiltration** (Controls 0.07 cfs)

Time span=0.00-72.00 hrs, dt=0.03 hrs, 2401 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 1E: existing Lot Runoff Area=33,106 sf 26.24% Impervious Runoff Depth=1.89"
Tc=5.0 min CN=71 Runoff=1.70 cfs 0.120 af

Subcatchment 1P: To infil 1 Runoff Area=14,714 sf 88.79% Impervious Runoff Depth=4.01"
Tc=5.0 min CN=94 Runoff=1.53 cfs 0.113 af

Subcatchment 1S: Building 2 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.18 cfs 0.014 af

Subcatchment 2P: Building 3 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=4.46"
Tc=5.0 min CN=98 Runoff=0.18 cfs 0.014 af

Subcatchment 7P: Prop. off Site Runoff Area=15,032 sf 8.02% Impervious Runoff Depth=1.39"
Tc=5.0 min CN=64 Runoff=0.54 cfs 0.040 af

Pond 4P: Cultec System Peak Elev=144.76' Storage=300 cf Inflow=0.18 cfs 0.014 af
Outflow=0.01 cfs 0.014 af

Pond CS: Cultec System Peak Elev=144.67' Storage=2,811 cf Inflow=1.71 cfs 0.127 af
Outflow=0.08 cfs 0.127 af

Total Runoff Area = 1.520 ac Runoff Volume = 0.301 af Average Runoff Depth = 2.38"
60.25% Pervious = 0.916 ac 39.75% Impervious = 0.604 ac

Summary for Subcatchment 1E: existing Lot

Runoff = 1.70 cfs @ 12.08 hrs, Volume= 0.120 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10 year Rainfall=4.70"

	Area (sf)	CN	Description
	3,460	96	Gravel surface, HSG B
*	2,920	98	concrete slab
*	5,768	98	paved
	20,958	56	Brush, Fair, HSG B
	33,106	71	Weighted Average
	24,418		73.76% Pervious Area
	8,688		26.24% Impervious Area

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

Summary for Subcatchment 1P: To infil 1

Runoff = 1.53 cfs @ 12.07 hrs, Volume= 0.113 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10 year Rainfall=4.70"

	Area (sf)	CN	Description
	1,512	98	Roofs, HSG B
*	10,359	98	paved
	1,649	61	>75% Grass cover, Good, HSG B
*	1,194	98	walks
	14,714	94	Weighted Average
	1,649		11.21% Pervious Area
	13,065		88.79% Impervious Area

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

Summary for Subcatchment 1S: Building 2

Runoff = 0.18 cfs @ 12.07 hrs, Volume= 0.014 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10 year Rainfall=4.70"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 2P: Building 3

Runoff = 0.18 cfs @ 12.07 hrs, Volume= 0.014 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10 year Rainfall=4.70"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 7P: Prop. off Site

Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.040 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 10 year Rainfall=4.70"

	Area (sf)	CN	Description
	13,826	61	>75% Grass cover, Good, HSG B
*	350	98	paved
*	216	98	walkway
*	640	98	top of walls
	15,032	64	Weighted Average
	13,826		91.98% Pervious Area
	1,206		8.02% Impervious Area

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

Summary for Pond 4P: Cultec System

Inflow Area = 0.039 ac,100.00% Impervious, Inflow Depth = 4.46" for 10 year event
Inflow = 0.18 cfs @ 12.07 hrs, Volume= 0.014 af
Outflow = 0.01 cfs @ 14.05 hrs, Volume= 0.014 af, Atten= 95%, Lag= 119.0 min
Discarded = 0.01 cfs @ 14.05 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 144.76' @ 14.05 hrs Surf.Area= 266 sf Storage= 300 cf

Plug-Flow detention time= 303.9 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 303.9 min (1,052.0 - 748.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	237 cf	**5.92'W x 45.00'L x 3.21'H Field A** 854 cf Overall - 261 cf Embedded = 593 cf x 40.0% Voids
#2A	143.50'	261 cf	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		498 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.01 cfs @ 14.05 hrs HW=144.76' (Free Discharge)
↳**1=Exfiltration** (Controls 0.01 cfs)

Summary for Pond CS: Cultec System

Inflow Area = 0.376 ac, 89.94% Impervious, Inflow Depth = 4.06" for 10 year event
Inflow = 1.71 cfs @ 12.07 hrs, Volume= 0.127 af
Outflow = 0.08 cfs @ 14.40 hrs, Volume= 0.127 af, Atten= 95%, Lag= 139.7 min
Discarded = 0.08 cfs @ 14.40 hrs, Volume= 0.127 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 144.67' @ 14.40 hrs Surf.Area= 2,366 sf Storage= 2,811 cf

Plug-Flow detention time= 340.0 min calculated for 0.127 af (100% of inflow)
Center-of-Mass det. time= 340.0 min (1,111.4 - 771.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	1,830 cf	**32.42'W x 73.00'L x 3.21'H Field A** 7,592 cf Overall - 3,018 cf Embedded = 4,575 cf x 40.0% Voids
#2A	143.50'	3,018 cf	**Cultec R-280HD** x 70 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 7 rows
		4,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.08 cfs @ 14.40 hrs HW=144.67' (Free Discharge)
↑**1=Exfiltration** (Controls 0.08 cfs)

Time span=0.00-72.00 hrs, dt=0.03 hrs, 2401 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 1E: existing Lot Runoff Area=33,106 sf 26.24% Impervious Runoff Depth=2.58"
Tc=5.0 min CN=71 Runoff=2.35 cfs 0.163 af

Subcatchment 1P: To infil 1 Runoff Area=14,714 sf 88.79% Impervious Runoff Depth=4.90"
Tc=5.0 min CN=94 Runoff=1.84 cfs 0.138 af

Subcatchment 1S: Building 2 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=5.36"
Tc=5.0 min CN=98 Runoff=0.22 cfs 0.017 af

Subcatchment 2P: Building 3 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=5.36"
Tc=5.0 min CN=98 Runoff=0.22 cfs 0.017 af

Subcatchment 7P: Prop. off Site Runoff Area=15,032 sf 8.02% Impervious Runoff Depth=1.98"
Tc=5.0 min CN=64 Runoff=0.79 cfs 0.057 af

Pond 4P: Cultec System Peak Elev=145.22' Storage=381 cf Inflow=0.22 cfs 0.017 af
Outflow=0.01 cfs 0.017 af

Pond CS: Cultec System Peak Elev=145.13' Storage=3,618 cf Inflow=2.06 cfs 0.155 af
Outflow=0.09 cfs 0.155 af

Total Runoff Area = 1.520 ac Runoff Volume = 0.393 af Average Runoff Depth = 3.10"
60.25% Pervious = 0.916 ac 39.75% Impervious = 0.604 ac

Summary for Subcatchment 1E: existing Lot

Runoff = 2.35 cfs @ 12.08 hrs, Volume= 0.163 af, Depth= 2.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25 year Rainfall=5.60"

	Area (sf)	CN	Description
	3,460	96	Gravel surface, HSG B
*	2,920	98	concrete slab
*	5,768	98	paved
	20,958	56	Brush, Fair, HSG B
	33,106	71	Weighted Average
	24,418		73.76% Pervious Area
	8,688		26.24% Impervious Area

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

Summary for Subcatchment 1P: To infil 1

Runoff = 1.84 cfs @ 12.07 hrs, Volume= 0.138 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25 year Rainfall=5.60"

	Area (sf)	CN	Description
	1,512	98	Roofs, HSG B
*	10,359	98	paved
	1,649	61	>75% Grass cover, Good, HSG B
*	1,194	98	walks
	14,714	94	Weighted Average
	1,649		11.21% Pervious Area
	13,065		88.79% Impervious Area

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

Summary for Subcatchment 1S: Building 2

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25 year Rainfall=5.60"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 2P: Building 3

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25 year Rainfall=5.60"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 7P: Prop. off Site

Runoff = 0.79 cfs @ 12.08 hrs, Volume= 0.057 af, Depth= 1.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 25 year Rainfall=5.60"

	Area (sf)	CN	Description
	13,826	61	>75% Grass cover, Good, HSG B
*	350	98	paved
*	216	98	walkway
*	640	98	top of walls
	15,032	64	Weighted Average
	13,826		91.98% Pervious Area
	1,206		8.02% Impervious Area

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

Summary for Pond 4P: Cultec System

Inflow Area = 0.039 ac,100.00% Impervious, Inflow Depth = 5.36" for 25 year event
Inflow = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af
Outflow = 0.01 cfs @ 14.42 hrs, Volume= 0.017 af, Atten= 96%, Lag= 141.3 min
Discarded = 0.01 cfs @ 14.42 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 145.22' @ 14.42 hrs Surf.Area= 266 sf Storage= 381 cf

Plug-Flow detention time= 368.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 368.7 min (1,113.9 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	237 cf	**5.92'W x 45.00'L x 3.21'H Field A** 854 cf Overall - 261 cf Embedded = 593 cf x 40.0% Voids
#2A	143.50'	261 cf	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		498 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.01 cfs @ 14.42 hrs HW=145.22' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Summary for Pond CS: Cultec System

Inflow Area = 0.376 ac, 89.94% Impervious, Inflow Depth = 4.95" for 25 year event
Inflow = 2.06 cfs @ 12.07 hrs, Volume= 0.155 af
Outflow = 0.09 cfs @ 14.78 hrs, Volume= 0.155 af, Atten= 96%, Lag= 162.8 min
Discarded = 0.09 cfs @ 14.78 hrs, Volume= 0.155 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 145.13' @ 14.78 hrs Surf.Area= 2,366 sf Storage= 3,618 cf

Plug-Flow detention time= 415.1 min calculated for 0.155 af (100% of inflow)
Center-of-Mass det. time= 415.1 min (1,181.9 - 766.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	1,830 cf	**32.42'W x 73.00'L x 3.21'H Field A** 7,592 cf Overall - 3,018 cf Embedded = 4,575 cf x 40.0% Voids
#2A	143.50'	3,018 cf	**Cultec R-280HD** x 70 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 7 rows
		4,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.09 cfs @ 14.78 hrs HW=145.13' (Free Discharge)
↑**1=Exfiltration** (Controls 0.09 cfs)

Time span=0.00-72.00 hrs, dt=0.03 hrs, 2401 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 1E: existing Lot Runoff Area=33,106 sf 26.24% Impervious Runoff Depth=3.56"
Tc=5.0 min CN=71 Runoff=3.25 cfs 0.225 af

Subcatchment 1P: To infil 1 Runoff Area=14,714 sf 88.79% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=94 Runoff=2.26 cfs 0.171 af

Subcatchment 1S: Building 2 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=6.56"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.021 af

Subcatchment 2P: Building 3 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=6.56"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.021 af

Subcatchment 7P: Prop. off Site Runoff Area=15,032 sf 8.02% Impervious Runoff Depth=2.85"
Tc=5.0 min CN=64 Runoff=1.17 cfs 0.082 af

Pond 4P: Cultec System Peak Elev=146.12' Storage=488 cf Inflow=0.26 cfs 0.021 af
Outflow=0.01 cfs 0.021 af

Pond CS: Cultec System Peak Elev=146.05' Storage=4,701 cf Inflow=2.53 cfs 0.193 af
Outflow=0.10 cfs 0.193 af

Total Runoff Area = 1.520 ac Runoff Volume = 0.521 af Average Runoff Depth = 4.11"
60.25% Pervious = 0.916 ac 39.75% Impervious = 0.604 ac

Summary for Subcatchment 1E: existing Lot

Runoff = 3.25 cfs @ 12.08 hrs, Volume= 0.225 af, Depth= 3.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100 year Rainfall=6.80"

	Area (sf)	CN	Description
	3,460	96	Gravel surface, HSG B
*	2,920	98	concrete slab
*	5,768	98	paved
	20,958	56	Brush, Fair, HSG B
	33,106	71	Weighted Average
	24,418		73.76% Pervious Area
	8,688		26.24% Impervious Area

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

Summary for Subcatchment 1P: To infil 1

Runoff = 2.26 cfs @ 12.07 hrs, Volume= 0.171 af, Depth= 6.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100 year Rainfall=6.80"

	Area (sf)	CN	Description
	1,512	98	Roofs, HSG B
*	10,359	98	paved
	1,649	61	>75% Grass cover, Good, HSG B
*	1,194	98	walks
	14,714	94	Weighted Average
	1,649		11.21% Pervious Area
	13,065		88.79% Impervious Area

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

Summary for Subcatchment 1S: Building 2

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 6.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100 year Rainfall=6.80"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 2P: Building 3

Runoff = 0.26 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 6.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100 year Rainfall=6.80"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 7P: Prop. off Site

Runoff = 1.17 cfs @ 12.08 hrs, Volume= 0.082 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr 100 year Rainfall=6.80"

	Area (sf)	CN	Description
	13,826	61	>75% Grass cover, Good, HSG B
*	350	98	paved
*	216	98	walkway
*	640	98	top of walls
	15,032	64	Weighted Average
	13,826		91.98% Pervious Area
	1,206		8.02% Impervious Area

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

Summary for Pond 4P: Cultec System

Inflow Area = 0.039 ac,100.00% Impervious, Inflow Depth = 6.56" for 100 year event
Inflow = 0.26 cfs @ 12.07 hrs, Volume= 0.021 af
Outflow = 0.01 cfs @ 14.66 hrs, Volume= 0.021 af, Atten= 96%, Lag= 155.2 min
Discarded = 0.01 cfs @ 14.66 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 146.12' @ 14.66 hrs Surf.Area= 266 sf Storage= 488 cf

Plug-Flow detention time= 438.8 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 438.9 min (1,181.3 - 742.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	237 cf	**5.92'W x 45.00'L x 3.21'H Field A** 854 cf Overall - 261 cf Embedded = 593 cf x 40.0% Voids
#2A	143.50'	261 cf	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		498 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.01 cfs @ 14.66 hrs HW=146.12' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Summary for Pond CS: Cultec System

Inflow Area = 0.376 ac, 89.94% Impervious, Inflow Depth = 6.14" for 100 year event
Inflow = 2.53 cfs @ 12.07 hrs, Volume= 0.193 af
Outflow = 0.10 cfs @ 14.99 hrs, Volume= 0.193 af, Atten= 96%, Lag= 175.0 min
Discarded = 0.10 cfs @ 14.99 hrs, Volume= 0.193 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 146.05' @ 14.99 hrs Surf.Area= 2,366 sf Storage= 4,701 cf

Plug-Flow detention time= 496.0 min calculated for 0.192 af (100% of inflow)
Center-of-Mass det. time= 496.1 min (1,258.1 - 762.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	1,830 cf	**32.42'W x 73.00'L x 3.21'H Field A** 7,592 cf Overall - 3,018 cf Embedded = 4,575 cf x 40.0% Voids
#2A	143.50'	3,018 cf	**Cultec R-280HD** x 70 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 7 rows
		4,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.10 cfs @ 14.99 hrs HW=146.05' (Free Discharge)
↑**1=Exfiltration** (Controls 0.10 cfs)

Time span=0.00-72.00 hrs, dt=0.03 hrs, 2401 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 1E: existing Lot Runoff Area=33,106 sf 26.24% Impervious Runoff Depth=2.07"
Tc=5.0 min CN=71 Runoff=1.87 cfs 0.131 af

Subcatchment 1P: To infil 1 Runoff Area=14,714 sf 88.79% Impervious Runoff Depth=4.25"
Tc=5.0 min CN=94 Runoff=1.61 cfs 0.120 af

Subcatchment 1S: Building 2 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=4.70"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment 2P: Building 3 Runoff Area=1,680 sf 100.00% Impervious Runoff Depth=4.70"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment 7P: Prop. off Site Runoff Area=15,032 sf 8.02% Impervious Runoff Depth=1.54"
Tc=5.0 min CN=64 Runoff=0.60 cfs 0.044 af

Pond 4P: Cultec System Peak Elev=144.88' Storage=321 cf Inflow=0.19 cfs 0.015 af
Outflow=0.01 cfs 0.015 af

Pond CS: Cultec System Peak Elev=144.79' Storage=3,023 cf Inflow=1.80 cfs 0.135 af
Outflow=0.08 cfs 0.135 af

Total Runoff Area = 1.520 ac Runoff Volume = 0.325 af Average Runoff Depth = 2.57"
60.25% Pervious = 0.916 ac 39.75% Impervious = 0.604 ac

Summary for Subcatchment 1E: existing Lot

Runoff = 1.87 cfs @ 12.08 hrs, Volume= 0.131 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=4.94"

	Area (sf)	CN	Description
	3,460	96	Gravel surface, HSG B
*	2,920	98	concrete slab
*	5,768	98	paved
	20,958	56	Brush, Fair, HSG B
	33,106	71	Weighted Average
	24,418		73.76% Pervious Area
	8,688		26.24% Impervious Area

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

Summary for Subcatchment 1P: To infil 1

Runoff = 1.61 cfs @ 12.07 hrs, Volume= 0.120 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=4.94"

	Area (sf)	CN	Description
	1,512	98	Roofs, HSG B
*	10,359	98	paved
	1,649	61	>75% Grass cover, Good, HSG B
*	1,194	98	walks
	14,714	94	Weighted Average
	1,649		11.21% Pervious Area
	13,065		88.79% Impervious Area

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

Summary for Subcatchment 1S: Building 2

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.015 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=4.94"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 2P: Building 3

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.015 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=4.94"

Area (sf)	CN	Description
1,680	98	Roofs, HSG B
1,680		100.00% Impervious Area

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

Summary for Subcatchment 7P: Prop. off Site

Runoff = 0.60 cfs @ 12.08 hrs, Volume= 0.044 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=4.94"

	Area (sf)	CN	Description
	13,826	61	>75% Grass cover, Good, HSG B
*	350	98	paved
*	216	98	walkway
*	640	98	top of walls
	15,032	64	Weighted Average
	13,826		91.98% Pervious Area
	1,206		8.02% Impervious Area

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

Summary for Pond 4P: Cultec System

Inflow Area = 0.039 ac,100.00% Impervious, Inflow Depth = 4.70" for Custom event
Inflow = 0.19 cfs @ 12.07 hrs, Volume= 0.015 af
Outflow = 0.01 cfs @ 14.15 hrs, Volume= 0.015 af, Atten= 95%, Lag= 124.7 min
Discarded = 0.01 cfs @ 14.15 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 144.88' @ 14.15 hrs Surf.Area= 266 sf Storage= 321 cf

Plug-Flow detention time= 321.8 min calculated for 0.015 af (100% of inflow)
Center-of-Mass det. time= 321.9 min (1,069.1 - 747.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	237 cf	**5.92'W x 45.00'L x 3.21'H Field A** 854 cf Overall - 261 cf Embedded = 593 cf x 40.0% Voids
#2A	143.50'	261 cf	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 1 rows
		498 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.01 cfs @ 14.15 hrs HW=144.88' (Free Discharge)
↑**1=Exfiltration** (Controls 0.01 cfs)

Summary for Pond CS: Cultec System

Inflow Area = 0.376 ac, 89.94% Impervious, Inflow Depth = 4.30" for Custom event
Inflow = 1.80 cfs @ 12.07 hrs, Volume= 0.135 af
Outflow = 0.08 cfs @ 14.52 hrs, Volume= 0.135 af, Atten= 96%, Lag= 147.0 min
Discarded = 0.08 cfs @ 14.52 hrs, Volume= 0.135 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.03 hrs
Peak Elev= 144.79' @ 14.52 hrs Surf.Area= 2,366 sf Storage= 3,023 cf

Plug-Flow detention time= 360.8 min calculated for 0.135 af (100% of inflow)
Center-of-Mass det. time= 360.8 min (1,130.8 - 770.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.00'	1,830 cf	**32.42'W x 73.00'L x 3.21'H Field A** 7,592 cf Overall - 3,018 cf Embedded = 4,575 cf x 40.0% Voids
#2A	143.50'	3,018 cf	**Cultec R-280HD** x 70 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 7 rows
		4,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	143.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 139.00'

Discarded OutFlow Max=0.08 cfs @ 14.52 hrs HW=144.79' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.08 cfs)

Operation and Maintenance Plan

Stormwater Operation and Maintenance Plan

158 Park Avenue West
Weymouth, MA
May 24, 2023

Stormwater Management System Owner:

Property Owner

The following Operation and Maintenance Plan is intended as a guide for maintaining the structural and non-structural BMP's post-construction. In order to document maintenance activities, the attached maintenance log should be kept on site. A minimum of two years' worth of records should be up to date and available for review and inspection, if requested by Town officials. The transfer of ownership (e.g. from developer to condo association) also includes the transfer of the maintenance obligation to the new owners. In order to ensure the proposed stormwater management system continues to function as designed and to prevent any adverse impacts down-gradient, proper maintenance is required. This maintenance plan shall be recorded at the Norfolk Registry of Deeds.

Operation and Maintenance Plan During Construction

All erosion and sediment control measures must be in place prior to any disturbance.

Inlet Protection: catch basins shall be protected from siltation during construction through the use of siltation fabric. The siltation fabric must be installed under the catch basin grates and the grates must be secured to prevent untreated seepage. The fabric should be inspected daily and immediately after a rainstorm. Sediment deposits must be removed promptly and fabric must be repaired as necessary.

Perimeter Silt Protection: A "Silt Sock" (or approved equal) perimeter fence must be installed around the perimeter of work limits and material stockpiles. Installation shall be in accordance with manufacturer specifications and Site Plan details. Silt fence shall be inspected daily. Trapped sediments shall be removed and repairs shall be made promptly.

Operation and Maintenance Activities

Catch Basin, Inspection and Cleaning: Catch basins shall be inspected at least four (4) times per year and cleaned a minimum of two (2) times per year. Inspections should include the frame and grate, outlet pipe, hood and overall structure. Cleaning of catch basins shall be conducted in the early spring (after winter sanding and before spring rains), if there are 18-inches of accumulated sediments or if a noticeable hydrocarbon sheen is present. The sumps shall be cleaned utilizing a vacuum or clamshell type device.

Infiltration Basin Inspection and Cleaning: The subsurface infiltration basins do not require regular maintenance if pretreatment devices (catch basins) are properly

maintained. The system has inspection ports that should be inspected when the other on-site stormwater devices are inspected. If sediment build-up within the retention system is found during inspection, the sediment shall be removed by vacuumed method through the inspection ports.

Snow and Ice: During winter snow season, snow shall be mechanically removed. Snow shall be stockpiled at the landscape areas on-site where it can naturally melt. Snow melt runoff can then be slowly infiltrated into the ground or treated by the stormwater management system. If excessive snow encountered, the excessive snow shall be removed by a private contractor for off-site disposal. At no time snow shall be pushed off site to the public right of way of abutting lands.

General Housekeeping

Hazardous Materials: All hazardous material, chemical such as cleaning agents shall be stored in secured place.

Household Waste: All household waste to be kept in designated bins or dumpster, secured and covered.

Landscape: Landscape shall be regularly maintained. All yard waste shall be collected and disposed of according to the local and state regulations.

Winter Deicer: Salt and chemical for snow de-icing shall be kept in secured place. The use of deicer shall be kept to minimum.

Operation and Maintenance Budget

Annually Maintenance Budget: The annually maintenance budget is estimated to be $ 3,000 per year.

Shawn Hardy
Hardy Man Design Group
1285 Washington Street
Weymouth, MA 02189

INTRODUCTION

Ken Thomson, *Botanist* conducted wetland delineation at the 158 Park Avenue West on November 2, 2021. The property is 0.79 acres of undeveloped land located at the intersection of Park Avenue West and Columbian Street.

The Mill River, a blue-line perennial stream, is located to the west of the property and flows to the north under the roadways. The river was estimated to be 20 feet wide. A very large wetland complex is located to the north of Park Avenue West and south of Columbian Street. It has several habitats including forested wetlands, shrub swamp and emergent marsh. Soils associated with the river and wetlands include Freetown muck North of Park Avenue. Freetown series consists of very deep, very poorly drained organic soils formed in more than 51 inches of highly decomposed organic material. Located to the south ofColumbian Street was mapped as Saco silt loam. The Saco series consists of very deep, very poorly drained soils formed in silty alluvial deposits. They are nearly level soils on flood plains and subject to frequent flooding.

Located to the west of the property is a small area of red maple swamp, dominated by red maple and winterberry holly. It drains to the north by way a culvert under Park Avenue. FEMA 100 year floodplain (Zone AE) covers the entire property, see attached firmette. The parcel is located within the Whitman Pond Public Water Supply Watershed is regulated as *Outstand Resource Waters*.

WETLAND DELINEATION

Kenneth Thomson (Botanist/Wetland Scientist) identified and delineated wetlands subject to regulatory jurisdiction under Section 404 of the Clean Water Act (33 U.S.C. 1344) or the Massachusetts Wetlands Protection Act, M.G.L., Chapter 131, Section 40. Fieldwork was conducted on November 22, 2021. The predominance of hydrophytic vegetation, evidence of hydric soils, and wetland hydrology were used to define the boundary of vegetated wetlands following the Interim Regional Supplement to the 1987 Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, January 2012, and the 1995 MA DEP Delineation Manual Guidelines. Pink flags are tied to woody vegetation marking the extent of vegetated wetlands, 1 to 10, A1 to A5, B1 to B9, C1 to C5, D1 to D21 and E1 to E15. Wetland Determination Data Forms were

completed for plots located up-gradient and down-gradient of wetland flag #kt-5. Bankfull (BF) indicators for Wildcat Brook are numbered BF1 to BF12 south of Columbian Street and BF-A1 to BF-A4 north of Park Avenue.

MassGIS OLIVER REVIEW

MassGIS data maps were reviewed for wetlands, floodplain, outstanding resource waters (ORWs), surface water protection, groundwater protection and Area of Environmental Concern (ACEC) and MA Natural Heritage data. The following data layers are associated with the site under review.

Present	Absent	
		Natural Heritage
☐	☒	Certified Vernal Pools
☐	☒	Potential Vernal Pools
☐	☒	Estimated Habitat
☐	☒	Priority Habitat
		Ground Water Protection
☐	☒	Interim Well Head Protection
☐	☒	Zone 2
		Surface Water Protection
☐	☒	Zone A
☐	☒	Zone B
☐	☒	Zone C
		Wetlands
☒	☐	DEP Wetland Layer
☐	☒	2005 Human Alter Layer
☒	☐	Perennial Stream - ***Mill River***
		Floodplain
☒	☐	FEMA Flood Hazard Data - ***Zone AE***
		Out Standing Resource Waters (ORW)
☒	☐	ORW – ***Whitman Pond Public Water Supply Watershed***
		Area of Environmental Concern (ACEC)
☐	☒	ACEC

<u>Massachusetts Wetland Resource Areas</u>

Wetland resource areas on the site regulated under the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and its Regulations (310 CMR 10.00) include:

- *Bank*
- *Land Under Water Bodies and Waterways*
- *Bordering Vegetated Wetlands*

- *Bordering Land Subject to Flooding*
- *Riverfront*

A 100-foot buffer zone extends landward from the limit of the *Bordering Vegetated Wetlands* and *or Bank. Riverfront* resource extends 200 feet from the bankfull indicators of the brook.

Sincerely,

5 Wetlands

Kenneth Thomson
Botanist

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

Applicant: **Hardy-Man Design** Prepared by: **Ken Thomson / Botanist** Project location: **158 Park Ave West, Weymouth, MA** DEP File:

Check all that apply:

- ☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I.

Vegetation	Observation Plot Number: **Wetland**		Transect Number: **WF#5**	Date of Delineation: **11/2/2021**
A. Sample Layer & 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 TOTAL = 45%				
Red Maple, *Acer rubrum*	35	(35/45) *100=78%	Yes	FAC*
White Pine, *Pinus strobes*	10	(10/45) *100=22%	Yes	FACU
SAPLING TOTAL = 10%				
Red Maple, *Acer rubrum*	5	(5/10) *100=50%	Yes	FAC*
Red Oak, *Quercus rubra*	5	(5/10) *100=50%	Yes	FACU
SHRUB TOTAL = 65%				
Sweet Pepperbush, *Clethra alnifolia*	45	(45/65) *100=69%	Yes	FAC*
Winterberry, *Ilex verticillata*	20	(20/65) *100=31%	Yes	FACW*
GROUND COVER TOTAL = N/A				
VINE TOTAL =N/A				

** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the 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: MassGIS
map number:
soil type mapped: Ridgebury Fine Sandy Loam
hydric soil inclusions:

Are field observations consistent with soil survey? YES NO

Remarks:

2. Soil Description

Horizon	Depth (in)	Matrix Color	Mottles Color
Oa	12-0	10YR2/1 Muck	
Bw1	0-10	2.5Y4/2 FSL	

Remarks:
Very Fine Sandy Loam=VFSL
Fine Sandy Loam=FSL
Silt Loam = SiL

3. Other:

Conclusion: Is soil hydric? YES NO

Other Indicators of Hydrology: (check all that apply & 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 (streams, lake, or tidal gauge; aerial photo; other):

_____
_____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ # of non-wetland indicator plants	_X___	____
Wetland hydrology present:		
Hydric soil present	_X___	_____
Other indicators of hydrology present	_X___	_____
Sample location is in a BVW	_X___	_____

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

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

Applicant: **Hardy-Man Design** Prepared by: **Ken Thomson / Botanist** Project location: **158 Park Ave West, Weymouth, MA** DEP File:

Check all that apply:

- ☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I.

Vegetation	Observation Plot Number: **Upland**		Transect Number: **WF#5**	Date of Delineation: **11/2/2021**
A. Sample Layer & 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 TOTAL = 55%				
Red Maple, *Acer rubrum*	35	(35/55) *100=64%	Yes	FAC*
Black Birch, *Betula lenta*	15	(15/55) *100=27%	Yes	FACU
Black Cherry, *Prunus serotina*	5	(5/55) *100=9%	No	
SAPLING TOTAL = 35%				
Grey Willow, *Salix bebbiana*	10	(10/35) *100=29%	Yes	FACW*
Red Maple, *Acer rubrum*	5	(5/35) *100=14%	Yes	FAC*
Black Cherry, *Prunus serotina*	5	(5/35) *100=14%	Yes	FACU
White Ash, *Fraxinus americana*	5	(5/35) *100=14%	Yes	FACU
Siberian Apple, *Malus baccata*	5	(5/35) *100=14%	Yes	FACU
European Buckthorn, *Rhamnus cathartica*	5	(5/35) *100=14%	Yes	FAC*
SHRUB TOTAL = 56%				
Sweet Pepperbush, *Clethra alnifolia*	30	(30/56) *100=54%	Yes	FAC*
Multiflora Rose, *Rosa multiflora*	10	(10/56) *100=18%	No	
Black Cherry, *Prunus serotina*	5	(5/56) *100=9%	No	
Highbush Blueberry, *Vaccinium corymbosum*	5	(5/56) *100=9%	No	
Red Oak, *Quercus rubra*	4	(4/56) *100=7%	No	
Meadowsweet, *Spiraea alba*	2	(2/56) *100=4%	No	
GROUND COVER TOTAL = 55%				
White Wood Aster, *Eurybia divaricata*	35	(35/55) *100=64%	Yes	FACU
Sweet Pepperbush, *Clethra alnifolia*	20	(20/55) *100=36%	Yes	FACW*
VINE TOTAL = 5%				

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

Vegetation conclusion:

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

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: MassGIS
map number:
soil type mapped: Udorthents Wet Substratum
hydric soil inclusions:

Are field observations consistent with soil survey? YES (NO)

Remarks: ***FILL***

2. Soil Description

Horizon	Depth (in)	Matrix Color	Mottles Color
A	0-4	10YR2/1 FSL	
Bw1	4-18	2.5Y4/4 FSL	

FILL

Remarks:
Very Fine Sandy Loam=VFSL
Fine Sandy Loam=FSL
Silt Loam = SiL

3. Other:

Conclusion: Is soil hydric? YES (NO)

Other Indicators of Hydrology: (check all that apply & 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 (streams, lake, or tidal gauge; aerial photo; other):

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥ # of non-wetland indicator plants	_X___	____
Wetland hydrology present:		
Hydric soil present	____	_X____
Other indicators of hydrology present	____	_X____
Sample location is in a BVW	____	_X____

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

Town of Weymouth

ABUTTERS LIST ORDER FORM
for CONSERVATION COMMISSION

Date: 5/23/203

1) Subject Identification (Address and Parcel #) 158 Park Ave West
44-512-1

2) Type of filing (check one)

- ☒ **Conservation Commission (all filings)**
- ☐ **Planning Board - Subdivision (Definitive or Preliminary)**
- ☐ **Board of Appeals (all applications)**
- ☐ **Licensing** ☐ **Will establishment sell or serve alcohol?**
- ☐ **Town Council**

3) Contact Person Kenneth Thomson

4) Telephone Number 781 929 1203

5wetlands@gmail.com

NOTE:

- **Abutters List fee is $15.00; checks are payable to *Town of Weymouth*. Lists are requested in the Collector's Office , 1st Floor***
- **You will be notified when list is ready (usually within a week)**
- **Completed requests must be picked up in the Conservation Office, 3rd Floor***

***75 Middle Street (Mon-Fri 8:30-4:30)**

PAID
MAY 23 2023
By MW
283 $15.00

REV. 01/2018

S:\ABUTTERS\ORDER FORMS\Abutters List Order Form
5/22/2019

5/24/2023

PARCEL #	LOCATION	OWNER NAME/ADDRESS	CERTIFIED YES	CERTIFIED NO
MAP: 44 BLOCK: 511 LOT: 2 EXT: 0	0 COLUMBIAN ST	MASSACHUSETTS ELECTRIC CO PROPERTY TAX DEPT 40 SYLVAN RD WALTHAM, MA, 02451-2286	X	
MAP: 45 BLOCK: 512 LOT: 21 EXT: 0	241 COLUMBIAN ST	BISSON MICHELLE C 241 COLUMBIAN ST WEYMOUTH, MA, 02190	X	
MAP: 45 BLOCK: 512 LOT: 22 EXT: 0	251 COLUMBIAN ST	VILA BERT & ANDONJETA 251 COLUMBIAN ST WEYMOUTH, MA, 02190	X	
MAP: 44 BLOCK: 513 LOT: 49 EXT: 0	0 MILLSTONE LN	MILLSTONE ASSOCIATION 88 NEVIN RD S WEYMOUTH, MA, 02190	X	
MAP: 44 BLOCK: 513 LOT: 43 EXT: 0	10 MILLSTONE LN	MCCLOSKEY STEVEN & KELLY MARIE 10 MILLSTONE LN WEYMOUTH, MA, 02190	X	
MAP: 45 BLOCK: 513 LOT: 42 EXT: 0	16 MILLSTONE LN	MCFADDEN WILLIAM R & MENGYU D TBE 16 MILLSTONE LN WEYMOUTH, MA, 02190	X	
MAP: 45 BLOCK: 514 LOT: 23 EXT: 0	0 PARK AVE WEST	SOUTH WEYMOUTH SAVINGS BANK C/O SOUTH SHORE SAVINGS BANK 1530 MAIN ST S WEYMOUTH, MA, 02190-1310	X	
MAP: 45 BLOCK: 488 LOT: 5 EXT: 0	139 PARK AVE WEST	NARDONE TRACEY C & JOSEPH J NARDONE FAMILY REALTY TRUST 139 PARK AVE WEST WEYMOUTH, MA, 02190	X	
MAP: 44 BLOCK: 488 LOT: 42 EXT: 0	147 PARK AVE WEST	RICHARDSON MICHAEL J RICHARDSON CHRISTINE TBE 147 PARK AVE WEST S WEYMOUTH, MA, 02190	X	
MAP: 44 BLOCK: 512 LOT: 1 EXT: 0	158 PARK AVE WEST	GREHAN MICHAEL 76 NORTON RD QUINCY, MA, 02169	X	

5/24/2023

PARCEL #		LOCATION	OWNER NAME/ADDRESS	CERTIFIED YES	CERTIFIED NO
MAP:	44	169 PARK AVE WEST	TANNER JOSEPHINE		
BLOCK:	488				
LOT:	6			[X]	[ ]
EXT:	0		169 PARK AVE WEST		
			WEYMOUTH, MA, 02190		

This list of abutters is a certified copy of the Town of Weymouth's tax records for fiscal year 2023.
The record of ownership is accurate through November 2022.

Prepared by: 5/24/23

Reviewed by:

BISSON MICHELLE C
241 COLUMBIAN ST
WEYMOUTH, MA 02190

GREHAN MICHAEL
76 NORTON RD
QUINCY, MA 02169

MASSACHUSETTS ELECTRIC CO
PROPERTY TAX DEPT
40 SYLVAN RD
WALTHAM, MA 02451-2286

MCCLOSKEY STEVEN & KELLY MARIE
10 MILLSTONE LN
WEYMOUTH, MA 02190

MCFADDEN WILLIAM R & MENGYU D
TBE
16 MILLSTONE LN
WEYMOUTH, MA 02190

MILLSTONE ASSOCIATION
88 NEVIN RD
S WEYMOUTH, MA 02190

NARDONE TRACEY C & JOSEPH J
NARDONE FAMILY REALTY TRUST
139 PARK AVE WEST
WEYMOUTH, MA 02190

RICHARDSON MICHAEL J
RICHARDSON CHRISTINE TBE
147 PARK AVE WEST
S WEYMOUTH, MA 02190

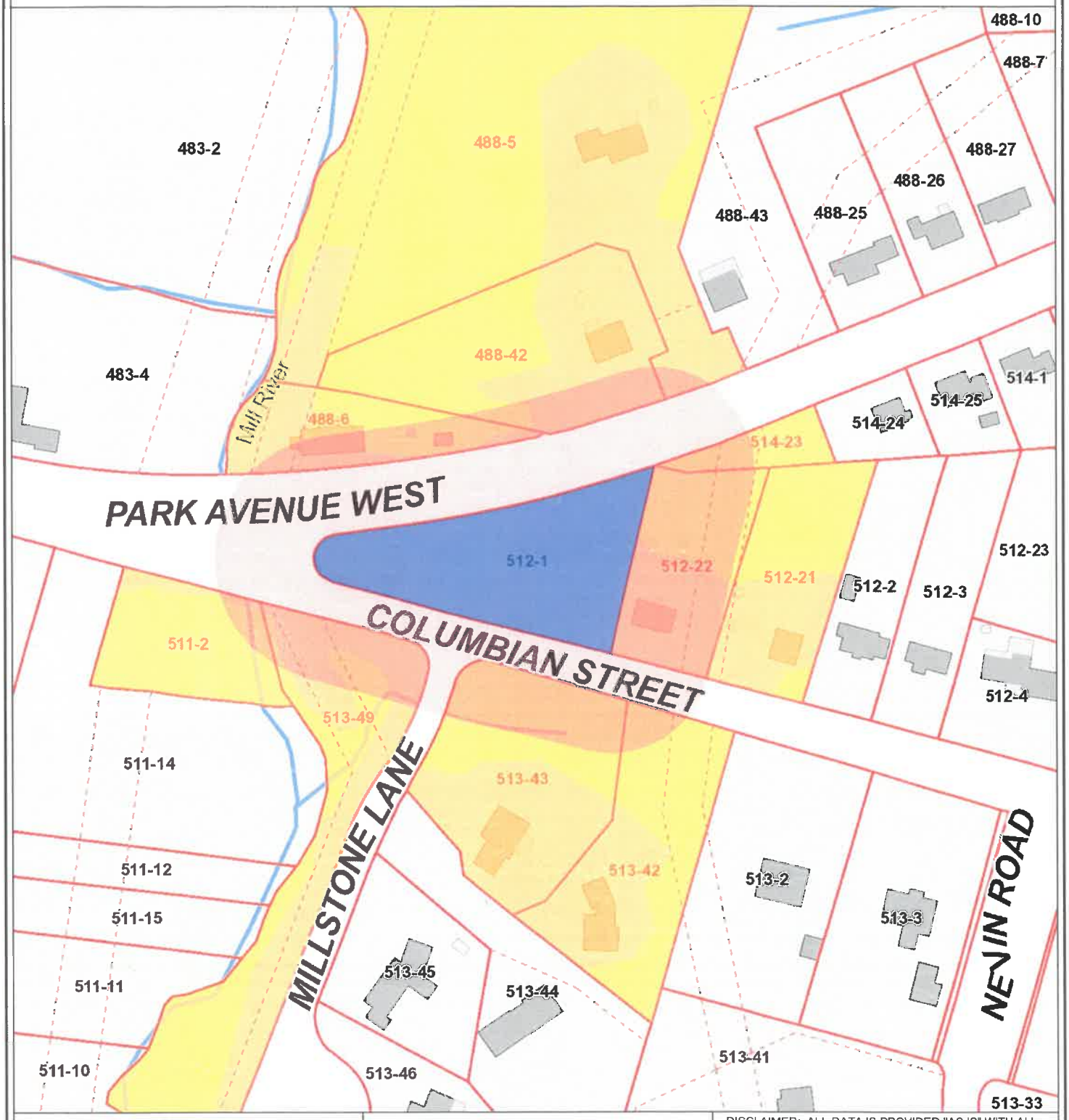
SOUTH WEYMOUTH SAVINGS BANK
C/O SOUTH SHORE SAVINGS BANK
1530 MAIN ST
S WEYMOUTH, MA 02190-1310

TANNER JOSEPHINE
169 PARK AVE WEST
WEYMOUTH, MA 02190

VILA BERT & ANDONJETA
251 COLUMBIAN ST
WEYMOUTH, MA 02190

Weymouth Printable Map

May 24, 2023



Easemen
Assessors Parcels
Buildings
BUILDING
DECK
OTHER
SHED
Base Map
Roads - Layout
PUB/PRIV TRAVELWAYS
PAPER
Hydrography
Streams
Ponds / Major Streams
Towns
Built-Up Areas

1" = 139 ft

N

WESSAGUSSET - 1622
LABORARE EST VINCERE
MASSACHUSETTS
WEYMOUTH-1635

DISCLAIMER: ALL DATA IS PROVIDED "AS IS" WITH ALL FEATURES, IF ANY. THE TOWN OF WEYMOUTH EXPRESSLY DISCLAIMS ALL WARRANTIES OF ANY TYPE, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTLY AS TO THE ACCURACY OF THE DATA, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

TOWN OF WEYMOUTH

NOTIFICATION TO ABUTTERS UNDER THE MASSACHUSETTS WETLANDS PROTECTION ACT AND LOCAL WETLANDS PROTECTION ORDINANCE, CHAPTER 7, SECTION 301

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

A. The name of the applicant is Michael Grehan

B. The applicant has filed: ☒ Notice of Intent, *or* ☐ OOC Amendment Request, *or* ☐ Request for Determination with the Conservation Commission for the municipality of Weymouth seeking permission to remove, fill, dredge or alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, Section 40).

C. The address of the lot where the activity is proposed and a brief description including square footage and/or dimensions of proposed project:

158 Park Ave West - The construction of 3 buildings, each as a 3 unit multi family building, for a total of 9 units. Inaddition to the buildings, parking, utilities a subsurface stormwater infiltration system will be constructed.

D. Copies of the Notice of Intent or OOC Amendment Request or Request for Determination may be examined at The Weymouth Conservation Commission Office, Weymouth Town Hall, between the hours of 8:30 and 4:30, Monday through Friday (it is recommended to call for an appointment first at 781 340 5007). Copies may also be viewed on the Town of Weymouth Website, on the conservation page under the current and past cases tab at: https://www.weymouth.ma.us/conservation-commission/pages/current-and-past-cases-partial-list

E. Copies of the Notice of Intent or OOC Amendment Request or Request for Determination may be obtained from (check one):

☐ the Applicant **or** ☒ the Applicant's Representative

by calling this telephone number 781 929 1203 contact person Kenneth Thomson
5wetlands@gmail.com
between the hours of: 8am to 5pm on the following days of the week: Mon-Fri

F. Information regarding the date, time, and place of the public hearing may be obtained from:

Weymouth Conservation Commission

By calling this telephone number: **781-340-5007**
Between the hours of: **8:30 – 4:30 Mon. though Friday**

G. Check One:
This is the Applicant
This is the Applicant's Representative
Other (specify) Town of Weymouth Conservation Commission

NOTE: Notice of the public hearing/meeting, including its date, time and place will be published at least five days in advance in the Patriot Ledger, and will also be posted on the Town website at www.weymouth.ma.us not less than forty-eight hours in advance. You may also contact the Weymouth Conservation Commission or the Department of Environment Protection Regional office for more information about this application or the Wetland Protection Act. To contact DEP, call 508-946-2700.

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act and
Code of Ordinances, Town of Weymouth, Chapter 7, Section 301

(To be submitted to the Massachusetts Department of Environmental Protection and the **Weymouth Conservation Commission** when filing a Notice of Intent or Request for Determination)

I Kenneth Thomson hereby certify under the pains and penalties of perjury that on 6/6/2023 (date)
I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, and **Town of Weymouth**, in connection with the following matter:

A Notice of Intent or Request for Determination filed under the Massachusetts Wetlands Protection Act by

_____

With the **Town of Weymouth Conservation Commission** on 6/6/2023 (Date)

For property located at 158 Park Ave WEst

Shown on Assessors Map# 44 Block # 512 Lot# 1

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

Kenneth Thomson
Name

6/6/2023
Date

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
5 Wetlands 134 Spring Street Rockland, MA 02370			
	Postmaster, per *(name of receiving employee)*		

	USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)
1.	158 Park Ave West Weymouth	SOUTH WEYMOUTH SAVINGS BANK C/0 SOUTH SHORE SAVINGS BANK 1530 MAIN ST S WEYMOUTH, MA, 02190
2.		NARDONE TRACEY C & JOSEPH J NARDONE FAMILY REALTY TRUST 139 PARK AVE WEST S WEYMOUTH, MA, 02190
3.		RICHARDSON MICHAEL J RICHARDSON CHRISTINE TBE 147 PARK AVE WEST S WEYMOUTH, MA, 02190
4.		TANNER JOSEPHINE 169 PARK AVE WEST WEYMOUTH, MA, 02190
5.		
6.		

UNITED STATES POSTAL SERVICE® RDC 99

U.S. POSTAGE PAID
FCM LETTER
HOLBROOK, MA
02343
JUN 06, 23
AMOUNT
$1.85

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FCM LETTER
HOLBROOK, MA
02343
JUN 06, 23
AMOUNT
$1.85
R2303S103930-15

UNITED STATES POSTAL SERVICE® RDC 99

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FCM LETTER
HOLBROOK, MA
02343
JUN 06, 23
AMOUNT
$1.85
R2303S103930-15

UNITED STATES POSTAL SERVICE® RDC 99

U.S. POSTAGE PAID
FCM LETTER
HOLBROOK, MA
02343
JUN 06, 23
AMOUNT
$1.85
R2303S103930-15

See Reverse for Instructions

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender

5 Wetlands

134 Spring Street
Rockland, MA 02370

TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™

Postmaster, per *(name of receiving employee)*

Affix Stamp Here
Postmark with Date of Receipt.

JUN-6 2023

	USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)
1.	158 Park Ave West Weymouth	Massachusetts Electric Company PROPERTY TAX DEPT 40SYLVAN RD WALTHAM, MA, 02451-2286
2.		BISSON MICHELLE C 241 COLUMBIAN ST WEYMOUTH, MA, 02190
3.		VILA BERT & ANDONJETA 251 COLUMBIAN ST WEYMOUTH, MA, 02190
4.		MILLSTONE ASSOCIATION 88 NEVIN RD S WEYMOUTH, MA, 02190
5.		MCCLOSKEY STEVEN & KELLY MARIE 10 MILLSTONE LN WEYMOUTH, MA, 02190
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JUN 06, 23
AMOUNT
$1.85

RDC 99 R2303S103930-15 $1.85 JUN 06, 23 AMOUNT
RDC 99 R2303S103930-15 $1.85 JUN 06, 23 AMOUNT
RDC 99 R2303S103930-15 $1.85 JUN 06, 23 AMOUNT
RDC 99 R2303S103930-15 $1.85 JUN 06, 23 AMOUNT
U.S. POSTAGE PAID FCM LETTER HOLBROOK, MA 02343

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Domestic Mail Only

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Boston, MA 02211

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Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $0.00
- ☐ Return Receipt (electronic) $0.00
- ☐ Certified Mail Restricted Delivery $0.00
- ☐ Adult Signature Required $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $0.63

Total Postage and Fees $8.13

0343
15

Postmark Here
JUN-6 2023

06/06/2023

7015 1730 0000 4684 8323

Sent To

Street and Apt

City, State, Z

MA DEP
PO Box 4062
Boston, Ma 02211

PS Form 3800, Apr

erse for Instructions