



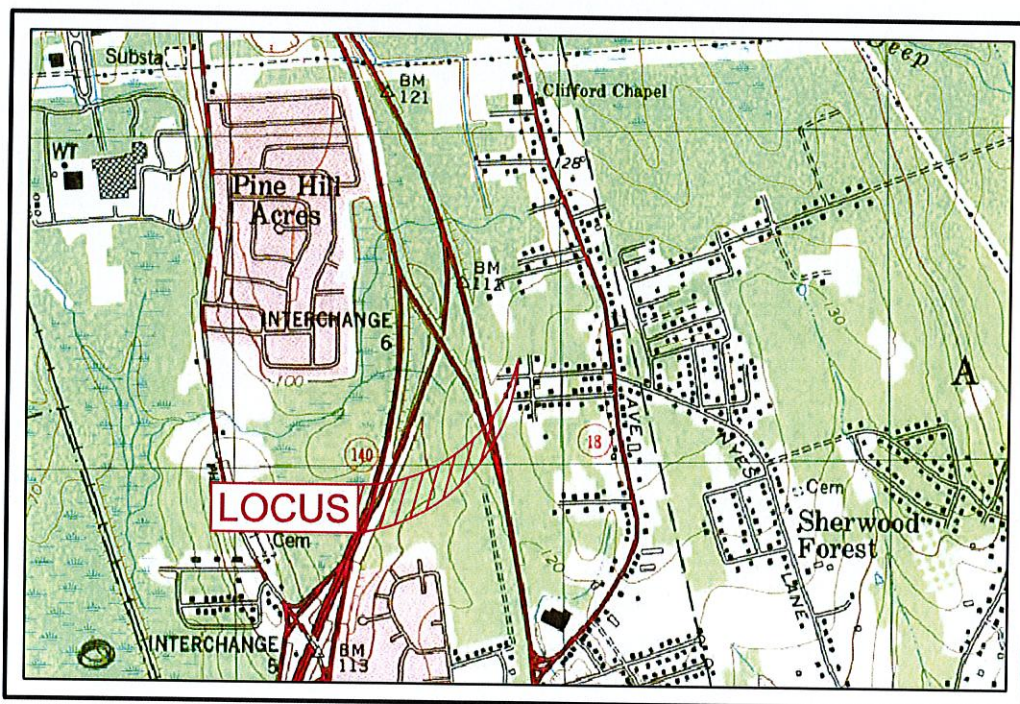
ENGINEERING A BETTER TOMORROW

ENGINEERING | SITE WORK | LAND SURVEYING

NOTICE OF INTENT

SITE PLAN

ASSESSORS MAP 134 - LOT 299 & 305
1265 BARTLETT STREET
NEW BEDFORD, MASSACHUSETTS



PREPARED FOR:

AMANDIO & JOSE ARAUJO
P.O. BOX 91
ROCHESTER, MA 02770

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NOTICE OF INTENT
(WPA FORM 3)



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

New Bedford

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):

1265 Bartlett Street

a. Street Address

New Bedford

b. City/Town

02745

c. Zip Code

Latitude and Longitude:

41°42'40.96" N

d. Latitude

70°56'12.09" W

e. Longitude

Map 134

f. Assessors Map/Plat Number

Lot 299 & 305

g. Parcel /Lot Number

2. Applicant:

Amandio & Jose

a. First Name

Araujo

b. Last Name

c. Organization

P.O. Box 91

d. Street Address

Rochester

e. City/Town

MA

f. State

02770

g. Zip Code

774-930-5168

h. Phone Number

i. Fax Number

joearaujo9@gmail.com

j. Email Address

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

☐ Check if more than one owner

a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Christopher

a. First Name

Gilbert

b. Last Name

Farland Corp. Inc.

c. Company

21 Ventura Drive

d. Street Address

Dartmouth

e. City/Town

MA

f. State

02747

g. Zip Code

508-717-3479

h. Phone Number

i. Fax Number

cgilbert@farlandcorp.com

j. Email address

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

\$1,050

a. Total Fee Paid

\$512.50

b. State Fee Paid

\$537.50

c. City/Town Fee Paid



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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WPA Form 3 – Notice of Intent

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

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New Bedford

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A. General Information (continued)

6. General Project Description:

Construction of a roadway within a wetland buffer.

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

- | | |
|---|--|
| 1. <input type="checkbox"/> Single Family Home | 2. <input checked="" type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Commercial/Industrial | 4. <input type="checkbox"/> Dock/Pier |
| 5. <input type="checkbox"/> Utilities | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input type="checkbox"/> Transportation |
| 9. <input type="checkbox"/> 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 CMR 10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

Bristol South

a. County

11182

c. Book

b. Certificate # (if registered land)

346

d. Page Number

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

- ☒ 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.
- ☐ 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

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

Provided by MassDEP:

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New Bedford

City/Town

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

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

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

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

2. Width of Riverfront Area (check one):

- ☐ 25 ft. - Designated Densely Developed Areas only
- ☐ 100 ft. - New agricultural projects only
- ☐ 200 ft. - All other projects

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

square feet

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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WPA Form 3 – Notice of Intent

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

MassDEP File Number _____

Document Transaction Number _____

New Bedford

City/Town

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW _____

b. square feet of Salt Marsh _____

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____

b. number of replacement stream crossings _____



Massachusetts Department of Environmental Protection
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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

a. — Yes ☒ No

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

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

Mass GIS

b. Date of map

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

- c. Submit Supplemental Information for Endangered Species Review*

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

(a) within wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

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

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

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

(b) — Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <https://www.mass.gov/mas-endangered-species-act-mesa-regulatory-review>).

Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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New Bedford
City/Town

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:

North Shore - Hull to New Hampshire border:

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

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

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

c. ☐ Is this an aquaculture project?

d. ☐ Yes ☒ No

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



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Provided by MassDEP:

WPA Form 3 – Notice of Intent

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

MassDEP File Number _____

Document Transaction Number _____

New Bedford

City/Town

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

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

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

D. Additional Information

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

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

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

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



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Provided by MassDEP:

WPA Form 3 – Notice of Intent

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

MassDEP File Number

Document Transaction Number

New Bedford

City/Town

D. Additional Information (cont'd)

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

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

Definitive Subdivision Plan, 1265 Bartlett Street, New Bedford, MA (Sheet 1 through 7)

a. Plan Title

Farland Corp. Inc.

Christian A. Farland

b. Prepared By

January 5, 2021

c. Signed and Stamped by

1"=20'

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.
6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
8. ☒ Attach NOI Wetland Fee Transmittal Form
9. ☒ Attach Stormwater Report, if needed.

E. Fees

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

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

128

2. Municipal Check Number

129

4. State Check Number

Amandio & Jose

6. Payor name on check: First Name

1/20/21

3. Check date

1/20/21

5. Check date

Araujo

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

New Bedford

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 [Signature]

2. Date 1/20/21

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any) [Signature]

6. Date 1/20/21

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.

NOI FEE TRANSMITTAL FORMS



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

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



A. Applicant Information

1. Location of Project:

1265 Bartlett Street

a. Street Address

New Bedford

b. City/Town

c. Check number

d. Fee amount

2. Applicant Mailing Address:

Amandio & Jose

a. First Name

Araujo

b. Last Name

c. Organization

P.O. Box 91

d. Mailing Address

Rochester

e. City/Town

MA

f. State

02770

g. Zip Code

774-930-5168

h. Phone Number

i. Fax Number

joearaujo9@gmail.com

j. Email Address

3. Property Owner (if different):

a. First Name

b. Last Name

c. Organization

d. Mailing Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email Address

B. Fees

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

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

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

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

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

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

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

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



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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Roadway Construction	1	\$1,050	\$1,050

Step 5/Total Project Fee:

Step 6/Fee Payments:

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

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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



MAYOR
JON MITCHELL

**City of New Bedford Conservation Commission •
Department of Environmental Stewardship**

133 William Street • Room 304 • New Bedford, Massachusetts 02740

Telephone: (508) 991.6188

Conservation • Environmental Stewardship • Resilience

CITY OF NEW BEDFORD, MASSACHUSETTS

**CONSERVATION COMMISSION
2020 FILING FEE CALCULATION WORKSHEET***

PROJECT LOCATION: 1265 Bartlett Street

MAP(S) 134 **LOT(S)** 299 & 305

APPLICANT: Amandio & Jose Araujo

CONSERVATION COMMISSION APPLICATION TYPE:

- () REQUEST FOR DETERMINATION OF APPLICABILITY
(X) NOTICE OF INTENT
() AMENDED ORDER OF CONDITIONS
() EXTENSION PERMIT
() CERTIFICATE OF COMPLIANCE

(A) ALTERATION FEES:

Application and field review of a project proposed in a Wetland Resource Area or its Buffer Zone is \$200.00 plus the applicable alteration fee as follows:

	AMOUNT DUE:
• Application and Field Review Fee (\$200.00)	<u>\$200.00</u>
• \$0.50 X _____ SF Wetland Resource Area Fee shall not exceed \$2000.00 per project	\$ _____
• \$0.05 X _____ SF of Isolated Land Subject to Flooding, Bordering Land Subject to Flooding or Land Subject to Coastal Storm Flowage Fee shall not exceed \$500.00	\$ _____
• \$0.50 X _____ SF of altered 25' Riverfront Area Fee shall not exceed \$1,500.00	\$ _____
• \$1.00 X _____ SF of undeveloped 25' Riverfront Area Fee shall not exceed \$2000.00	\$ _____
• \$5.00 X _____ LF of Coastal or Inland Bank Fee shall not exceed \$750.00	\$ _____



133 William Street-Room 304, New Bedford, MA 02740 - Telephone 508-991-6188

- \$0.10 X 4,230 SF of Buffer Zone altered \$ 423
Fee shall not exceed \$6,500.00
- \$10.00 X _____ LF of dock \$ _____
- \$10.00 X _____ acres of aquaculture \$ _____

(B) EXTENSION OF AN ORDER OF CONDITIONS:

- Single family dwelling, or minor project (house addition, in ground pool dock etc.) = \$200.00 \$ _____
- Subdivision, commercial or industrial project = \$400.00 \$ _____

(C) AMENDING A PERMIT

- Single family dwelling or minor project (house addition, in ground pool dock etc.) = \$200.00 + new alteration fee – refer to (A) above \$ _____
- Subdivision, commercial or industrial project = \$500.00 + new alteration fee – refer to (A) above \$ _____

(D) WETLAND DELINEATION VERIFICATION (with or without proposed alteration)

- ½ acre or less
- ½ acre to 2 acres = \$500.00 (\$100/acre thereafter) not to exceed \$3,500 \$ _____

(E) CERTIFICATES OF COMPLIANCE

- One new house = \$250.00 \$ _____
- One activity at an existing house = \$150.00 \$ _____
- Residential or Commercial docks = \$200.00 \$ _____
- Commercial & Industrial Facilities = \$1,500.00 \$ _____
- New Roadways & Associated Stormwater Mgt. Systems = \$1,500.00 \$ _____

Partial Certificates of Compliance have the same fee as a Certificate of Compliance, But you only pay the fee once (you do not pay double to obtain a full Certificate of Compliance).

(F) AFTER THE FACT FILING FEE

- Notice of Intent or Amended Order of Conditions = \$500.00 \$ _____
- Request for a Determination of Applicability = \$250.00 \$ _____

TOTAL AMOUNT DUE: \$ 623

Notes:

*Please refer to the Conservation Commission fee schedule – dated 02/2020

Please make check or Money Order payable to the City of New Bedford
Cash is not accepted.



AFFADAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

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

I, Christopher Gilbert hereby certify under the pains and penalties of perjury
that in January of 2021, I gave notification to abutters in compliance with
the second paragraph of Massachusetts General Laws Chapter 131, Section
40, and the DEP Guide to Abutter Notification dated April 8, 1994, in
connection with the following matter:

A Notice of Intent filed under the Massachusetts Wetlands
Protection Act by Amandio and Jose Araujo with the New
Bedford Conservation Commission in January of 2021 for
property located at 1265 Bartlett Street – New Bedford, MA.

Chris R. Deif
Name

1/13/21
Date

CERTIFIED ABUTTERS LIST



City of New Bedford REQUEST for a CERTIFIED ABUTTERS LIST

This information is needed so that an official abutters list as required by MA General Law may be created and used in notifying abutters. You, as applicant, are responsible for picking up and paying for the certified abutters list from the assessor's office (city hall, room #109).

SUBJECT PROPERTY			
MAP #	134	LOT(S)#	299 & 305
ADDRESS: 1265 Bartlett Street			
OWNER INFORMATION			
NAME: Amandio & Jose Araujo			
MAILING ADDRESS: P.O. Box 91- Rochester, MA 02770			
APPLICANT/CONTACT PERSON INFORMATION			
NAME (IF DIFFERENT):			
MAILING ADDRESS (IF DIFFERENT):			
TELEPHONE #	774-930-5168		
EMAIL ADDRESS:	joearaujo9@gmail.com		
REASON FOR THIS REQUEST: <i>Check appropriate</i>			
<input type="checkbox"/>	ZONING BOARD OF APPEALS APPLICATION		
<input type="checkbox"/>	PLANNING BOARD APPLICATION		
<input checked="" type="checkbox"/>	CONSERVATION COMMISSION APPLICATION		
<input type="checkbox"/>	LICENSING BOARD APPLICATION		
<input type="checkbox"/>	OTHER (<i>Please explain</i>):		

Once obtained, the Certified List of Abutters must be attached to this Certification Letter.

Submit this form to the Planning Division Room 303 in City Hall, 133 William Street. You, as applicant, are responsible for picking up and paying for the certified abutters list from the assessor's office (city hall, room #109).

Official Use Only:

As Administrative Assistant to the City of New Bedford's Board of Assessors, I do hereby certify that the names and addresses as identified on the attached "abutters list" are duly recorded and appear on the most recent tax.

Michael J. Motta

Printed Name

Signature

1/8/2021

Date

Amount Due

\$5.00

Date Paid

1/7/2021

Confirmation Number

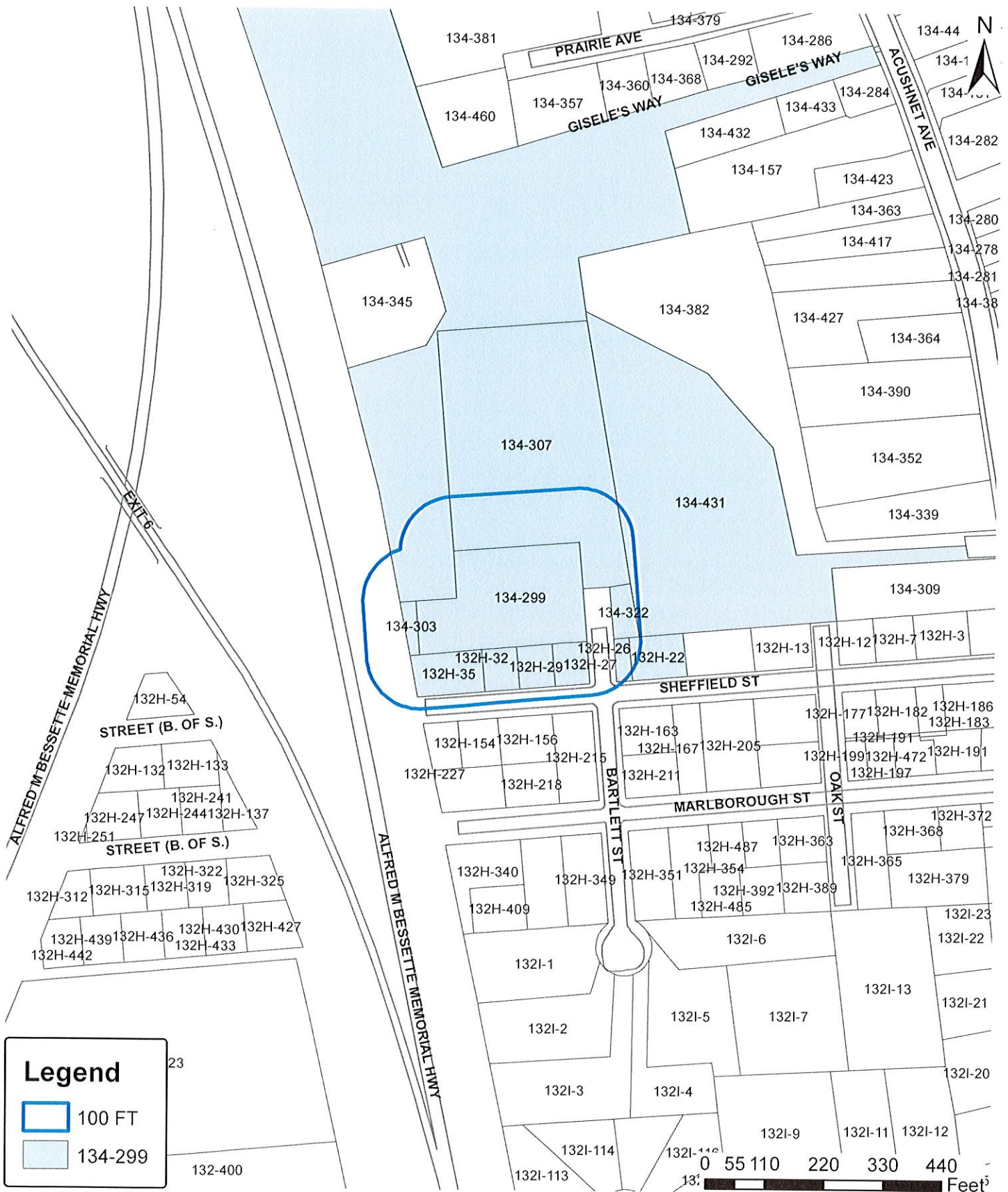
7643985

January 5, 2021
Dear Applicant,

Please find below the List of Abutters within 100 feet of the property known as 1265 Bartlett Street (Map: 134, Lot: 299). The current ownership listed herein must be checked and verified by the City of New Bedford Assessor's Office. Following said verification, the list shall be considered a Certified List of Abutters.

Please note that multiple listed properties with identical owner name and mailing address shall be considered duplicates and shall require only 1 mailing. Additionally, City of New Bedford-Owned properties shall not require mailed notice.

Parcel	Location	Owner and Mailing Address
134-431	3411 ACUSHNET AVE	GOMES MANUEL V, GOMES ALZIRA A 3411 ACUSHNET AVENUE NEW BEDFORD, MA 02745
132H-35	1103 SHEFFIELD ST	LORD PAUL P JR, 1103 SHEFFIELD STREET NEW BEDFORD, MA 02745
132H-32	1089 SHEFFIELD ST	PAULINO JOSE S, 1089 SHEFFIELD STREET NEW BEDFORD, MA 02745
132H-29	1081 SHEFFIELD ST	MURRAS DOMINGOS F, MURRAS FRANCISCA G 1081 SHEFFIELD STREET NEW BEDFORD, MA 02745
132H-27	1255 BARTLETT ST	FLORES NELSON MANFREDO, 1255 BARTLETT STREET NEW BEDFORD, MA 02745
132H-26	SHEFFIELD ST	SYLVIA ROBERT, SYLVIA WILLIAM 2 TROUT FARM WAY W. WAREHAM, MA 02576
132H-22	1055 SHEFFIELD ST	MARQUES RUSSELL A, P O BOX 174 FAIRHAVEN, MA 02719
134-303	BARTLETT ST	WOODIS WALLACE, 1 HIGH HILL ROAD NORTH DARTMOUTH, MA 02747
134-322	1260 BARTLETT ST	TIVEY ROBERT C, 1260 BARTLETT STREET NEW BEDFORD, MA 02745
134-299	1265 BARTLETT ST	ARAUJO AMANDIO, ARAUJO JOSE 224 NYES LANE ACUSHNET, MA 02743
134-307	BARTLETT ST	NEW HOMES BY CASTELO INC, 1815 ACUSHNET AVENUE NEW BEDFORD, MA 02745
134-314	68 GISELE'S WAY	OLIVEIRA STACY 5 ARCHER'S WAY ACUSHNET, MA 02743



City of New Bedford, Massachusetts
Department of City Planning

Parcel within 100FT



January 2021

WETLAND DELINEATION SKETCH AND FIELD DATA FORMS



Bartlett St. New B MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant:

Prepared by: Ecosystem Solutions

Project Location: Bartlett St. New Bedford

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.

Observation Plot Number: U		Transect #: A7		Date: 12/28/2020		
Common Name	Scientific Name	Percent Cover	Percent Dominance	Dominant Plant?	Wetland Indicator Plant?	Wetland Indicator Category
Ground	Goldenrod	20.5	66	YES	NO	FACU
	American holly	10.5	34	YES	NO	FACU+
Shrub	Honeysuckle*	38	78	YES	YES	FAC
	American holly	10.5	22	YES	NO	FACU+
Vine	Oriental bittersweet	20.5	100	YES	NO	NI
Tree	American holly	63	39	YES	NO	FACU+
	Northern Red Oak	38	24	YES	NO	FACU-
	Red maple*	38	24	YES	YES	FAC
	Eastern white pine	10.5	7	NO	NO	FACU
	Unidentified tree	10.5	7	NO	NO	NI

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:

1

Number of dominant non-wetland indicator plants:

6

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

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

Title/date:

Bristol County South, 1981

Map number:

Accessed via Web Soil Survey

Soil type mapped:

310A—Woodbridge fsl, 0-3% slopes

Hydric soil inclusions:

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: 18"
- ☐ 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:

2. Soil Description

Horizon	Depth	Color	Redox
A	0-6	10YR 3/4 (fsl)	-
Bw	6-14	10YR 5/6 (sl)	-
C1	14-18	10YR 4/6 (sl)	-
C2	18-20	7.5YR 4/6 (sl)	5YR 3/4

Remarks:

3. Other:

Conclusion: Is soil hydric? No

Vegetation & Hydrology Conclusion		YES	NO
Number of wetland indicator plants ≥ # of non-wetland indicator plants		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland hydrology present			
Hydric soil		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other indicators of hydrology		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample location is in a BVW		NO	

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

Applicant:

Prepared by: Ecosystem Solutions

Project Location: Bartlett St. New Bedford

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.

Observation Plot Number: W Transect #: A7 Date: 12/28/2020

Common Name	Scientific Name	Percent Cover	Percent Dominance	Dominant Plant?	Wetland Indicator Plant?	Wetland Indicator Category
Ground	Sedge*					
	Carex spp.	20.5	38	YES	YES	FACW
	Pennsylvania sedge					
	Carex pennsylvanica	20.5	38	YES	NO	NI
Shrub	Hair-capped moss					
	Polytrichum spp.	10.5	19	NO	NO	NI
	Sphagnum moss*					
	Sphagnum spp.	3	6	NO	YES	OBL
Vine	Sweet pepperbush*					
	Clethra alnifolia	20.5	49	YES	YES	FAC+
	Honeysuckle*					
	Lonicera spp.	10.5	25	YES	YES	FAC
Tree	Northern arrow-wood*					
	Viburnum recognitum	10.5	25	YES	YES	FACW-
	Common greenbrier*					
	Smilax rotundifolia	10.5	100	YES	YES	FAC
	Red maple*					
	Acer rubrum	63	86	YES	YES	FAC
	Black gum*					
	Nyssa sylvatica	10.5	14	NO	YES	FAC

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:

1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

YES

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?

Title/date:

Map number:

Soil type mapped: **71A—Ridgebury fsl, 0-3% slopes, ext. stony**

Hydric soil inclusions:

Yes

Bristol County South, 1981**Accessed via Web Soil Survey**

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

- ☒ Site Inundated:
- ☒ Depth to free water in observation hole: **8"**
- ☒ Depth to soil saturation in observation hole: **4"**

☐ 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: **Hummocks**

2. Soil Description

Horizon	Depth	Color	Redox
A	0-14	10YR 2/1 (fsl)	-
Cg	4-14	2.5Y 5/1 (stsl)	7.5YR 4/6
Cr	14+	Refusal	

Remarks:

3. Other: **break in slope**Conclusion: Is soil hydric? **Yes**

Vegetation & Hydrology Conclusion		
	YES	NO
Number of wetland indicator plants ≥ # of non-wetland indicator plants	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wetland hydrology present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydric soil	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other indicators of hydrology	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample location is in a BVW		
YES		

CITY OF NEW BEDFORD
PROOF OF OWNERSHIP



CITY OF NEW BEDFORD

OFFICE OF THE CITY SOLICITOR

133 William Street, Room 203
New Bedford, MA 02740-6163

Tel.# (508) 979-1460

Fax.# (508) 979-1515

MEMORANDUM

TO: Planning Board
Zoning Board of Appeals
Conservation Commission
Board of Health
Licensing Department
Traffic Division

FROM: Irene B. Schall, City Solicitor

SUBJECT: APPLICATION INFORMATION

DATE: September 28, 2006

Effective immediately all applications for any permits issued by your respective boards must be accompanied by documentation showing the nature of the property interest(s) affected by the permit(s). Required will be: copies of deeds, certificates of title, leases and purchase and sales agreements and most recent plan or record showing the affected lot or lots. In addition, for ZBA applications, also include a copy of the deed or deeds of abutting parcels, if said parcels have been held in common ownership with the subject parcel at any time since January 1, 1976. If the applicant is not the owner, a signed and notarized letter from the record owner (or authorized representative) which authorizes the applicant to submit an application for the parcel or parcels affected will be required. If you are not provided with the necessary information or you require clarification on ownership, please contact this office.

This change should immediately be reflected in a change to your applications and may be attached to the Application as an Appendix (submitted herewith) or incorporated directly into the application itself.

Your cooperation will be greatly appreciated.

IBS/bar

Appendix

(1) Owner's/Landlord's Name: Amandio & Jose Araujo

(2) Title Reference to Property: Book 11182 Page 346

(Attach copy of Deed, Certificate of Title & most recent Recorded Plans showing affected lot or lots)

(3) If the Applicant is Not the Owner:

Provide:

1. Notarized authorization letter from owner to tenant or buyer for application for this permit (on letterhead);
2. Copy of Purchase & Sale agreement or lease, where applicable;

(In addition, for ZBA only)

3. Copy of the deed or deeds of abutting parcels if said parcels have been held in common ownership with the subject property at any time since January 1, 1976.

QUITCLAIM DEED

I, JEAN H. SANFORD, of 157 Elm Street, Pembroke, Massachusetts 02359

for consideration paid, and in full consideration of One Hundred Fifteen Thousand Dollars (\$115,000.00)

grant to AMANDIO ARAUJO and JOSE ARAUJO, of 224 Nycs Lane, Acushnet, Massachusetts 02743

held as tenants in common

with QUITCLAIM COVENANTS

the land, with any building(s) thereon, located in New Bedford, Bristol County, Massachusetts, more particularly bounded and described as follows:

PARCEL I:

BEGINNING at the southeast corner thereof, at a point in the west line of Bartlett Street, also known as Rowe Street on plan of Parkman Grove filed with the Bristol County (S.D.) Registry of Deeds in Plan Book 14, Page 62, said point being seventy-nine and 80/100 (79.80) feet north of the north line of Sheffield Street, as shown on said plan;

Thence northerly in the westerly line of said Bartlett Street, one hundred eighty (180) feet;

Thence westerly by land now or formerly of Ginevra A. White, two hundred forty-five (245) feet;

Thence southerly, one hundred eighty (180) feet to said Parkman Grove; and

Thence easterly by the northerly line of Parkman Grove, two hundred forty-five (245) feet to the point of beginning.

CONTAINING one acre, more or less.

PARCEL II:

BEGINNING at the southeast corner thereof at a point two hundred forty-five (245) feet west of the westerly line of Bartlett Street;

Thence northerly ninety-six (96) feet;

Thence westerly seventy-five (75) feet to land now or formerly of Wallace Woodis;

Thence southerly in line of last named land, ninety-six (96) feet to the northerly line of land shown on plan of Parkman Grove filed with the Bristol County (S.D.) Registry of Deeds in Plan Book 14, Page 62;

Thence easterly in line of said Parkman Grove, seventy-five (75) feet to the point of beginning.

CONTAINING 26.44 rods, more or less.

Property Address: 1265 Bartlett Street, New Bedford, Massachusetts 02745.

The grantor herein hereby releases any and all homestead rights that she may have in the above-described property, and certifies that no other person is entitled to claim the benefit of an existing estate of homestead.

Being the same premises described in a deed from Helen M. Woodis dated January 9, 1998, and recorded at the Bristol County (S.D.) Registry of Deeds in Book 4022, Page 317. The said Helen M. Woodis died on May 5, 2013 (see Death Certificate recorded herewith).

WITNESS my hand and seal this 26 day of September, 2014.

Witness

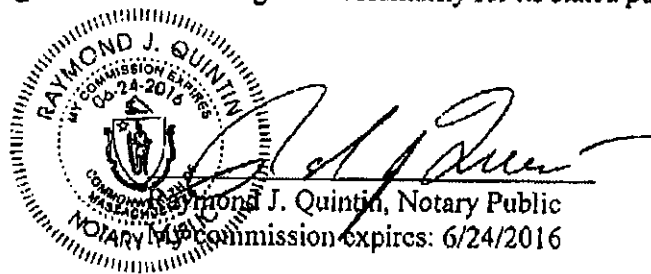
JEAN H. SANFORD

COMMONWEALTH OF MASSACHUSETTS

BRISTOL, ss.

September 26, 2014

Then personally appeared the above-named JEAN H. SANFORD, who proved to me through satisfactory evidence of identification which was M.A. M...ie to be the person whose name is signed on this document, and acknowledged to me that she signed it voluntarily for its stated purpose before me,



WITNESS MY HAND AND SEAL
ATTESTATION OF LAW
AND RECORDS AT
NOTARY PUBLIC

REG OF DEEDS
REG NOT
BRISTOL S
09/26/14 12:23 PM
000000 40248
FEE \$524.00
CASH \$524.00

COPIES OF FEES

STORMWATER CHECKLIST



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 8²
- 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.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

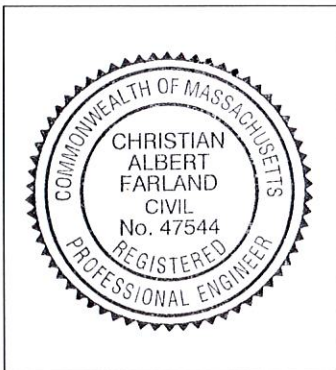
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



 
Signature and Date

Checklist

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

- ☒ New development
- ☐ Redevelopment
- ☐ Mix of New Development and Redevelopment



Checklist for Stormwater Report

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 Field¹
- ☒ 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 proprietary BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- ☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

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

Standard 6: Critical Areas

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



Checklist for Stormwater Report

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.



ENGINEERING A BETTER TOMORROW

ENGINEERING | SITE WORK | LAND SURVEYING

STORMWATER REPORT

SITE PLAN

ASSESSORS MAP 134 – LOTS 299, 305
& A PORTION OF 314
1265 BARTLETT STREET
NEW BEDFORD, MASSACHUSETTS



PREPARED FOR:

AMANDIO & JOSE ARAUJO
P.O. BOX 91
ROCHESTER, MA 02770

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STORMWATER MANAGEMENT REPORT AND HYDROLOGIC ANALYSIS

SECTION 1: Project Summary

The project area associated with the proposed development is located on the west side of Bartlett Street. The site is identified as Assessors Map 134, Lots 299, 305, and a portion of 314, and is located at #1265 Bartlett Street. The total area of the proposed site is approximately 60,168 square feet. The site is located entirely within the Residence A (RA) zoning district.

The site is currently a vacant wooded lot. To the south, the property abuts several small residential lots. To the west, the property abuts Route 140. To the north, the property abuts two large residential lots. The site is not located within an area identified by the Natural Heritage and Endangered Species Program as a Priority Habitat of Rare Species or an Estimated Habitat of Rare Wildlife, however, there are wetlands to the northeast of the locus that extend over a small portion of the northeast corner of the locus. The site is not located within a mapped FEMA Special Flood Hazard Area Zone.

The applicant is seeking permission to construct the roadway, utilities, and subsurface recharge system for a 5 lot subdivision as shown on Definitive Subdivision Plan dated January 5, 2021. The project will tie into municipal water and sewer available in Sheffield Street and Bartlett Street. In order to provide water quality treatment and recharge of stormwater runoff generated by the proposed impervious site coverage, stormwater management practices have been proposed. Proposed structural BMP's include proprietary separators, and a subsurface infiltration BMP.

SECTION 2: Methodology

Drainage computations were performed using the Natural Resources Conservation Services (NRCS) TR-20 method and HydroCAD® Drainage Calculation Software to determine the change in the existing and post-development runoff rates from each drainage area for the 2-, 10-, and 100-year 24 hour storm events. The limits of the work proposed to complete the project fall within an area subject to protection by the Wetlands Protection Act, therefore, compliance with DEP Stormwater Management Standards is required. Sketches of the existing and proposed watershed areas, HydroCAD® Report, and copies of the calculation sheets are included as appendices to this report.

SECTION 3: Existing Conditions

The soils underlying the proposed development site are identified in the Natural Resources Conservation Service (NRCS) Soil Survey of Bristol County (*see Exhibit D*). The site soils are classified as 310A (Woodbridge Fine Sandy Loam [Hydrologic Soils

Group "C/D"]), 311B (Wood Bridge Fine Sandy Loam, [HSG "C/D"]) and 71A (Ridgebury Fine Sandy Loam, [HSG "D"]).

Soil testing was performed by Farland Corp., under the direction of John Marchand (SE# 2994) to confirm the soil survey and to determine soil suitability for on-site stormwater management purposes (**See Exhibit H**). The locations of these test holes are shown on the Subdivision Plan. Deep test-holes were performed to depths varying from approximately 7 to 9 feet. Soil mottling, indicating depths of seasonal high groundwater, varied throughout the site, with greater depths encountered in the western portion of the site. Sandy loam material was encountered throughout the site, indicating an NRCS Hydrologic Soil Group "B".

SECTION 4: Stormwater Management Overview

Existing Conditions:

Two design points have been analyzed for this project: (1) the limit of the bordering vegetated wetlands in the northeast corner of the site. The design point receives runoff from subcatchment area (S-1). (2) the western boundary of the site. The design point receives runoff from subcatchment area (S-2). There are no existing stormwater attenuation structures on-site designed to capture and detain on-site runoff. Stormwater runoff from the site flows either overland northeasterly toward the wetland or overland westerly.

Proposed Conditions:

Under proposed conditions, the same design points have been analyzed. A total of 3 subcatchment areas contribute runoff to the design points in proposed conditions. (1) the limit of the bordering vegetated wetlands in the northeast corner of the site. The design point receives runoff from subcatchment area (S-1). (2) the western boundary of the site at Route 140. The design point receives runoff from subcatchment areas (S-2) & (S-3).

The proposed infiltration basin and other structural stormwater BMPs have been designed in accordance with the DEP Stormwater Handbook to provide appropriate water quality treatment, groundwater recharge, and peak rate attenuation for all storms, including the 100-year storm event.

SECTION 5: Stormwater Management Standards

Standard 1:

- Under proposed conditions, there will be no new untreated discharges or erosion in wetland areas. The drainage outfall from the proposed infiltration basins which discharge toward the westerly deign points are provided with rip-rap outlet protection (12" max. graded rock size) to help control velocity and erosion at the outlet. Maximum velocity from the Infiltration Basin is 3.0 feet per second (8" pipe @ 0.66 cfs).

Table A-3.3: Permissible Velocities for Rock Lined Channels

NSA No.	Graded Rock Size (In.)			Permissible Velocity* (fps)
	Max.	D ₅₀	Min.	
R-1	1.5	0.75	No. 8	2.5
R-2	3	1.5	1	4.5
R-3	6	3	2	6.5
R-4	12	6	3	9
R-5	18	9	5	11.5
R-6	24	12	7	13
R-7	30	15	12	14.5

*Permissible velocities based on rock at 165 lbs. per cubic foot. Adjust velocities for other rock weights used.

Source: Pa DER Bureau of Soil and Water Conservation, April 1990. Erosion and Sedimentation Control Program Manual. Please refer to this document for additional information and stipulations.

Stormwater discharges have been held below erodible velocities. This standard has been met.

Standard 2:

- The design of the stormwater system was designed for the post-development conditions to handle all storms' peak discharges and runoff volume to include the 2, 10, and 100-year storm events. The site drainage system was designed in consideration of the structural standards and techniques of the Best Management Practices (BMP) and Low Impact Development (LID) outlined in the "Stormwater Management Handbook".

The results of site drainage calculations are presented in the following Table. The results are based upon evaluation of Pre-development conditions and the design of proposed surface drainage systems for the Post-development condition. These results show the Post-Development offsite runoff rates are reduced to less than the Pre-development conditions, thus meeting the BMP guidelines for this site development. This standard has been met.

Table 1 - Comparison of Pre- versus Post-Development Offsite Runoff				
Storm Frequency	Pre-Development		Post-Development	
	Rate (cfs)	Volume (af)	Rate (cfs)	Volume (af)
2-Year Storm				
To Northerly B.V.W.	0.10	0.017	0.09	0.012
To Western Boundary	0.34	0.051	0.20	0.022
10-Year Storm				
To Northerly B.V.W.	0.34	0.044	0.31	0.028
To Western Boundary	0.83	0.112	0.63	0.052
100-Year Storm				
To Northerly B.V.W.	0.87	0.100	0.75	0.062
To Western Boundary	1.78	0.228	1.48	0.187

Standard 3:

- The site is comprised entirely of soils belonging to Hydrologic Soils Groups "B" per on site soil testing and is therefore required to meet the recharge requirements of Standard 3. The proposed infiltration basin has been designed to recharge some of the anticipated stormwater runoff from the new impervious areas. The required Recharge Volume has been calculated using the Static Method and calculations are provided in **Exhibit F**. Drawdown calculations have also been provided in **Exhibit G**.

Standard 4:

- The proposed stormwater management systems for this project have been designed to remove 80% of the average annual post construction load of Total Suspended Solids in accordance with this standard, as shown in calculations provided in **Exhibit K**. Suitable practices for source control and pollution prevention have been identified in a long-term pollution prevention plan in **Exhibit L**. Structural BMPs have been designed to capture the required water quality volume (**Exhibit I**) determined in accordance with the Stormwater Handbook (**Exhibit J**). This standard has been met.

Standard 5:

- The use associated with this project is not classified as a Land Use with Higher Potential Pollutant Load (LUHPPL); therefore, this standard does not apply.

Standard 6:

- The site does not discharge within the Zone II or IWPA of a public water supply, nor does it discharge near or to any critical areas. This standard does not apply.

Standard 7:

- The project is not a redevelopment project. This standard does not apply.

Standard 8:

- Where there will be over one acre of disturbance, an EPA Construction General Permit must be obtained and a Storm Water Pollution Prevention Plan (SWPPP) is required. Construction period sedimentation and erosion controls have been incorporated in the Site Plans as shown on Sheet 4 of 7 (Grading and Utilities). Safeguards have been incorporated into the design to ensure proper operation and maintenance and to prevent negative impacts to the off-site wetland resource areas. Additional erosion controls and pollutant source controls will be provided in the Stormwater Pollution Prevention Plan that will be completed prior to land disturbance. This standard will be met upon submittal of the final SWPPP and Construction General Permit filing.

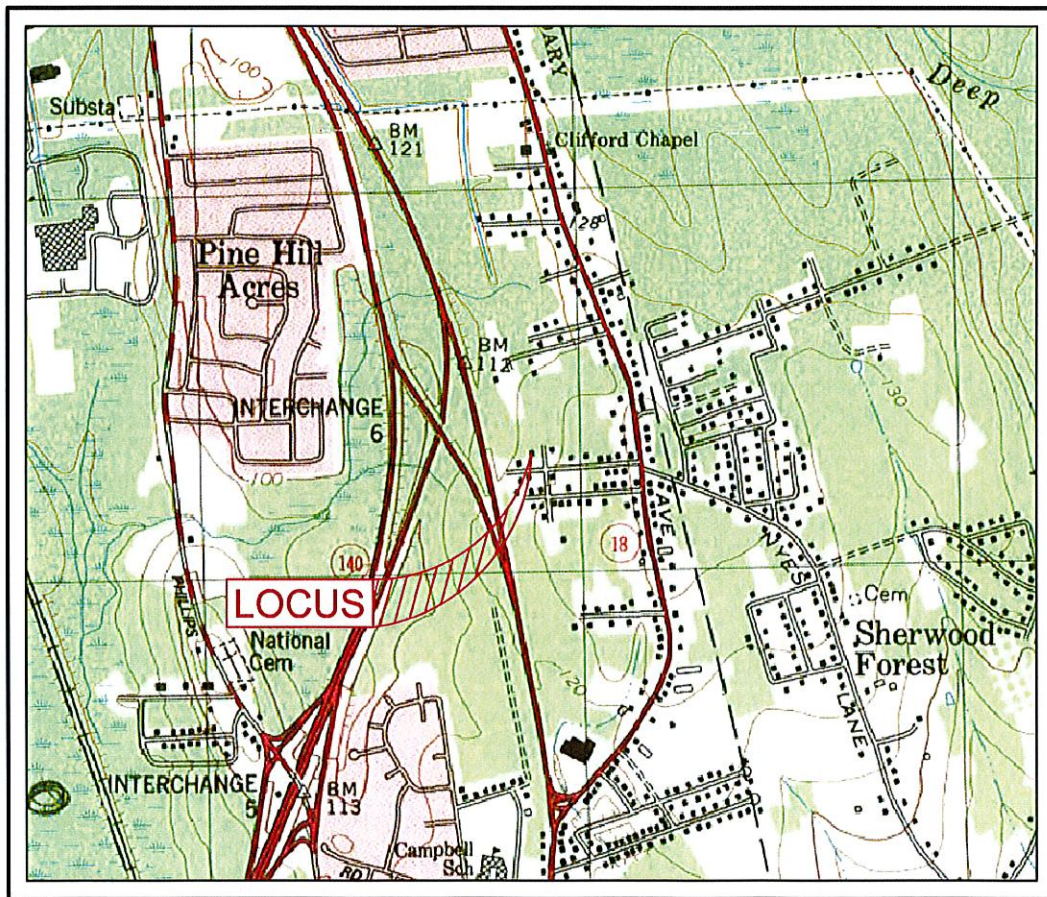
Standard 9:

- A long-term operation and maintenance plan has been prepared to ensure that stormwater management systems function as designed. (*Exhibit L*)

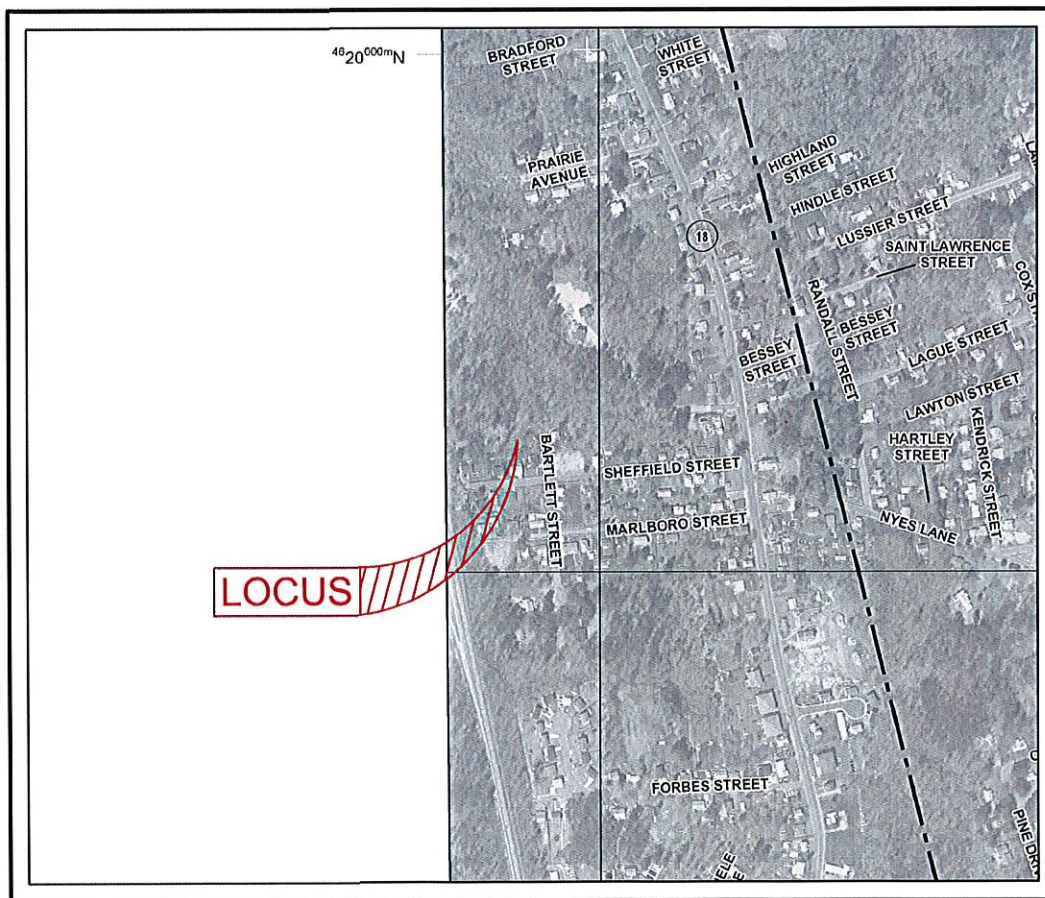
Standard 10:

- We are not proposing any illicit discharges as defined in the Stormwater Management Regulations. See attached letter in *Exhibit M*

TOPO! VERSION 2.1.0



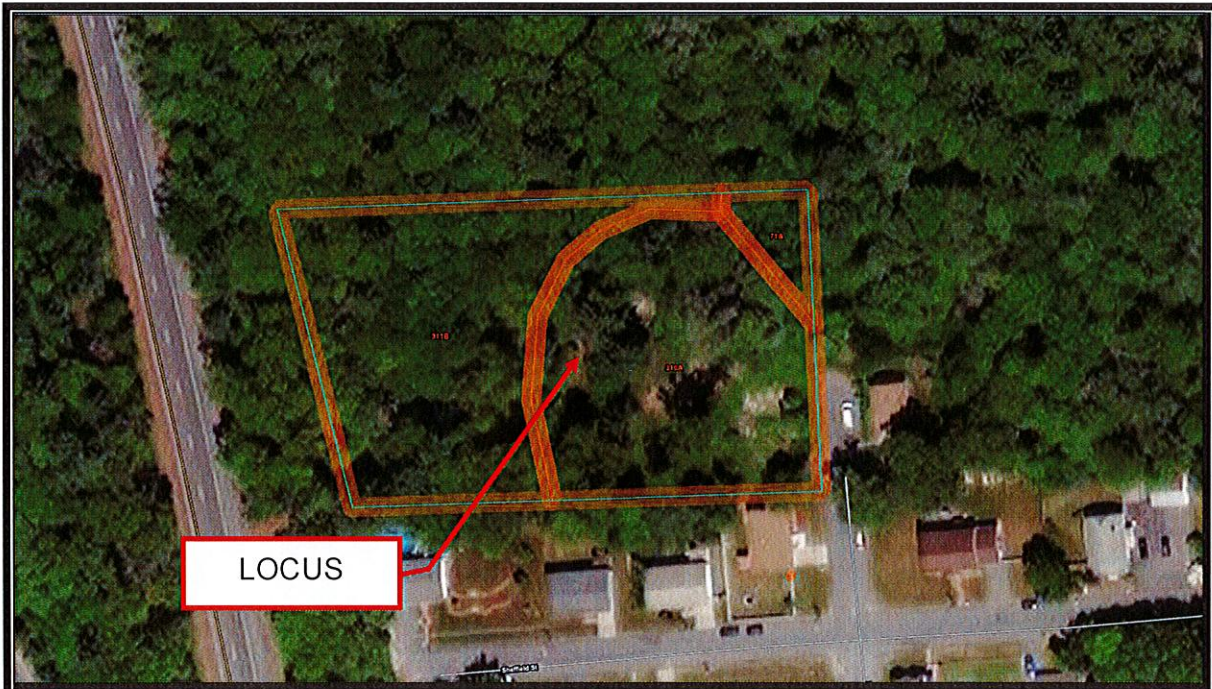
FIRM MAP
PANEL # 25005C0383G
EFFECTIVE DATE: JULY 16, 2014



NHESP PRIORITY & ESTIMATED HABITAT MAP 2017



NRCS SOIL MAP



HYDROLOGIC CALCULATIONS (STANDARD #2)



Tributary to West



Tributary to North



Routing Diagram for 17038PRE
Prepared by MAP 134 LOT 472

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17038PRE

Prepared by MAP 134 LOT 472

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.880	65	Woods/grass comb., Fair, HSG B (S-2)
0.497	58	Woods/grass comb., Good, HSG B (S-1)
1.378	62	TOTAL AREA

Summary for Subcatchment S-1: Tributary to North

Runoff = 0.10 cfs @ 12.45 hrs, Volume= 0.017 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
21,664	58	Woods/grass comb., Good, HSG B
21,664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
5.7	179	0.0110	0.52		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	229	Total			

Summary for Subcatchment S-2: Tributary to West

Runoff = 0.34 cfs @ 12.51 hrs, Volume= 0.051 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
38,345	65	Woods/grass comb., Fair, HSG B
38,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.8	161	0.0230	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
30.5	211	Total			

Summary for Subcatchment S-1: Tributary to North

Runoff = 0.34 cfs @ 12.35 hrs, Volume= 0.044 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

Area (sf)	CN	Description
21,664	58	Woods/grass comb., Good, HSG B
21,664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
5.7	179	0.0110	0.52		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	229	Total			

Summary for Subcatchment S-2: Tributary to West

Runoff = 0.83 cfs @ 12.47 hrs, Volume= 0.112 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

Area (sf)	CN	Description
38,345	65	Woods/grass comb., Fair, HSG B
38,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.8	161	0.0230	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
30.5	211	Total			

Summary for Subcatchment S-1: Tributary to North

Runoff = 0.87 cfs @ 12.31 hrs, Volume= 0.100 af, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

Area (sf)	CN	Description
21,664	58	Woods/grass comb., Good, HSG B
21,664		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	50	0.0100	0.05		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
5.7	179	0.0110	0.52		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.5	229	Total			

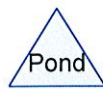
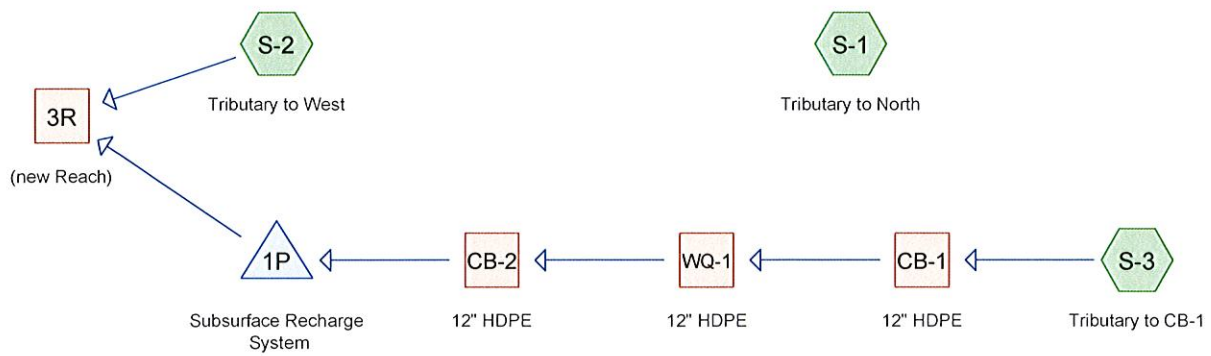
Summary for Subcatchment S-2: Tributary to West

Runoff = 1.78 cfs @ 12.44 hrs, Volume= 0.228 af, Depth= 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

Area (sf)	CN	Description
38,345	65	Woods/grass comb., Fair, HSG B
38,345		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0100	0.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
28.8	161	0.0230	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"
30.5	211	Total			



Routing Diagram for 17038POST

Prepared by Farland Corp.

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17038POST

Type III 24-hr 2-yr Rainfall=3.40"

Prepared by Farland Corp.

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S-1: Tributary to North Runoff Area=12,494 sf 0.00% Impervious Runoff Depth=0.49"
Flow Length=160' Tc=9.7 min CN=60 Runoff=0.09 cfs 0.012 af

Subcatchment S-2: Tributary to West Runoff Area=21,932 sf 0.00% Impervious Runoff Depth=0.53"
Flow Length=203' Tc=7.5 min CN=61 Runoff=0.20 cfs 0.022 af

Subcatchment S-3: Tributary to CB-1 Runoff Area=25,583 sf 29.79% Impervious Runoff Depth=1.06"
Tc=6.0 min CN=72 Runoff=0.68 cfs 0.052 af

Reach 3R: (new Reach) Inflow=0.20 cfs 0.022 af
Outflow=0.20 cfs 0.022 af

Reach CB-1: 12" HDPE Avg. Flow Depth=0.30' Max Vel=3.50 fps Inflow=0.68 cfs 0.052 af
12.0" Round Pipe n=0.013 L=25.0' S=0.0100 '/' Capacity=3.56 cfs Outflow=0.68 cfs 0.052 af

Reach CB-2: 12" HDPE Avg. Flow Depth=0.28' Max Vel=3.79 fps Inflow=0.68 cfs 0.052 af
12.0" Round Pipe n=0.013 L=8.0' S=0.0125 '/' Capacity=3.98 cfs Outflow=0.68 cfs 0.052 af

Reach WQ-1: 12" HDPE Avg. Flow Depth=0.23' Max Vel=5.13 fps Inflow=0.68 cfs 0.052 af
12.0" Round Pipe n=0.013 L=87.0' S=0.0293 '/' Capacity=6.10 cfs Outflow=0.68 cfs 0.052 af

Pond 1P: Subsurface Recharge System Peak Elev=119.63' Storage=1,253 cf Inflow=0.68 cfs 0.052 af
Discarded=0.03 cfs 0.044 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.044 af

Total Runoff Area = 1.378 ac Runoff Volume = 0.086 af Average Runoff Depth = 0.75"
87.30% Pervious = 1.203 ac 12.70% Impervious = 0.175 ac

Summary for Subcatchment S-1: Tributary to North

Runoff = 0.09 cfs @ 12.18 hrs, Volume= 0.012 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
10,658	61	>75% Grass cover, Good, HSG B
1,836	55	Woods, Good, HSG B
12,494	60	Weighted Average
12,494		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
1.4	70	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	40	0.0136	0.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.7	160	Total			

Summary for Subcatchment S-2: Tributary to West

Runoff = 0.20 cfs @ 12.14 hrs, Volume= 0.022 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

Area (sf)	CN	Description
17,932	61	>75% Grass cover, Good, HSG B
4,000	60	Woods, Fair, HSG B
21,932	61	Weighted Average
21,932		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
2.0	153	0.0326	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.5	203	Total			

Summary for Subcatchment S-3: Tributary to CB-1

Runoff = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.40"

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Type III 24-hr 2-yr Rainfall=3.40"

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Area (sf)	CN	Description
7,620	98	Paved parking, HSG B
17,963	61	>75% Grass cover, Good, HSG B
25,583	72	Weighted Average
17,963		70.21% Pervious Area
7,620		29.79% Impervious Area

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

Summary for Reach 3R: (new Reach)

Inflow Area = 1.091 ac, 16.04% Impervious, Inflow Depth = 0.24" for 2-yr event
 Inflow = 0.20 cfs @ 12.14 hrs, Volume= 0.022 af
 Outflow = 0.20 cfs @ 12.14 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Summary for Reach CB-1: 12" HDPE

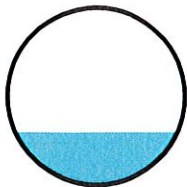
Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 1.06" for 2-yr event
 Inflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af
 Outflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Max. Velocity= 3.50 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 1.38 fps, Avg. Travel Time= 0.3 min

Peak Storage= 5 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.30'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.56 cfs

12.0" Round Pipe
 n= 0.013
 Length= 25.0' Slope= 0.0100 '
 Inlet Invert= 121.50', Outlet Invert= 121.25'



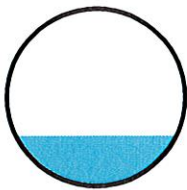
Summary for Reach CB-2: 12" HDPE

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 1.06" for 2-yr event
Inflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 3.79 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.48 fps, Avg. Travel Time= 0.1 min

Peak Storage= 1 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.98 cfs

12.0" Round Pipe
n= 0.013
Length= 8.0' Slope= 0.0125 '/'
Inlet Invert= 118.70', Outlet Invert= 118.60'

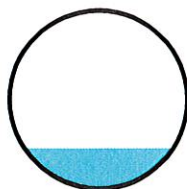
**Summary for Reach WQ-1: 12" HDPE**

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 1.06" for 2-yr event
Inflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 5.13 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.00 fps, Avg. Travel Time= 0.7 min

Peak Storage= 12 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.10 cfs

12.0" Round Pipe
n= 0.013
Length= 87.0' Slope= 0.0293 '/'
Inlet Invert= 121.25', Outlet Invert= 118.70'



Summary for Pond 1P: Subsurface Recharge System

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 1.06" for 2-yr event
 Inflow = 0.68 cfs @ 12.10 hrs, Volume= 0.052 af
 Outflow = 0.03 cfs @ 11.81 hrs, Volume= 0.044 af, Atten= 96%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.81 hrs, Volume= 0.044 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
 Peak Elev= 119.63' @ 16.63 hrs Surf.Area= 1,201 sf Storage= 1,253 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 374.3 min (1,239.9 - 865.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.10'	1,357 cf	30.25'W x 39.70'L x 5.00'H Field A 6,005 cf Overall - 2,611 cf Embedded = 3,393 cf x 40.0% Voids
#2A	118.60'	2,611 cf	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 40 Chambers in 4 Rows Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		3,969 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	118.10'	1.020 in/hr Exfiltration over Surface area
#2	Primary	122.00'	8.0" Round Culvert L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 122.00' / 121.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

Discarded OutFlow Max=0.03 cfs @ 11.81 hrs HW=118.15' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.10' TW=0.00' (Dynamic Tailwater)
 ↑ **2=Culvert** (Controls 0.00 cfs)

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Type III 24-hr 10-yr Rainfall=4.80"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S-1: Tributary to North Runoff Area=12,494 sf 0.00% Impervious Runoff Depth=1.19"
Flow Length=160' Tc=9.7 min CN=60 Runoff=0.31 cfs 0.028 af

Subcatchment S-2: Tributary to West Runoff Area=21,932 sf 0.00% Impervious Runoff Depth=1.25"
Flow Length=203' Tc=7.5 min CN=61 Runoff=0.63 cfs 0.052 af

Subcatchment S-3: Tributary to CB-1 Runoff Area=25,583 sf 29.79% Impervious Runoff Depth=2.05"
Tc=6.0 min CN=72 Runoff=1.39 cfs 0.100 af

Reach 3R: (new Reach) Inflow=0.63 cfs 0.052 af
Outflow=0.63 cfs 0.052 af

Reach CB-1: 12" HDPE Avg. Flow Depth=0.43' Max Vel=4.25 fps Inflow=1.39 cfs 0.100 af
12.0" Round Pipe n=0.013 L=25.0' S=0.0100 '/' Capacity=3.56 cfs Outflow=1.39 cfs 0.100 af

Reach CB-2: 12" HDPE Avg. Flow Depth=0.41' Max Vel=4.62 fps Inflow=1.39 cfs 0.100 af
12.0" Round Pipe n=0.013 L=8.0' S=0.0125 '/' Capacity=3.98 cfs Outflow=1.39 cfs 0.100 af

Reach WQ-1: 12" HDPE Avg. Flow Depth=0.32' Max Vel=6.29 fps Inflow=1.39 cfs 0.100 af
12.0" Round Pipe n=0.013 L=87.0' S=0.0293 '/' Capacity=6.10 cfs Outflow=1.39 cfs 0.100 af

Pond 1P: Subsurface Recharge System Peak Elev=121.58' Storage=3,027 cf Inflow=1.39 cfs 0.100 af
Discarded=0.03 cfs 0.046 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.046 af

Total Runoff Area = 1.378 ac Runoff Volume = 0.181 af Average Runoff Depth = 1.58"
87.30% Pervious = 1.203 ac 12.70% Impervious = 0.175 ac

Summary for Subcatchment S-1: Tributary to North

Runoff = 0.31 cfs @ 12.15 hrs, Volume= 0.028 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

Area (sf)	CN	Description
10,658	61	>75% Grass cover, Good, HSG B
1,836	55	Woods, Good, HSG B
12,494	60	Weighted Average
12,494		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
1.4	70	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	40	0.0136	0.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.7	160	Total			

Summary for Subcatchment S-2: Tributary to West

Runoff = 0.63 cfs @ 12.12 hrs, Volume= 0.052 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

Area (sf)	CN	Description
17,932	61	>75% Grass cover, Good, HSG B
4,000	60	Woods, Fair, HSG B
21,932	61	Weighted Average
21,932		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
2.0	153	0.0326	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.5	203	Total			

Summary for Subcatchment S-3: Tributary to CB-1

Runoff = 1.39 cfs @ 12.09 hrs, Volume= 0.100 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.80"

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Type III 24-hr 10-yr Rainfall=4.80"

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Area (sf)	CN	Description
7,620	98	Paved parking, HSG B
17,963	61	>75% Grass cover, Good, HSG B
25,583	72	Weighted Average
17,963		70.21% Pervious Area
7,620		29.79% Impervious Area

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

Summary for Reach 3R: (new Reach)

Inflow Area = 1.091 ac, 16.04% Impervious, Inflow Depth = 0.58" for 10-yr event
 Inflow = 0.63 cfs @ 12.12 hrs, Volume= 0.052 af
 Outflow = 0.63 cfs @ 12.12 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Summary for Reach CB-1: 12" HDPE

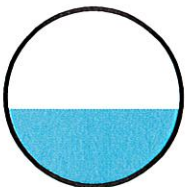
Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 2.05" for 10-yr event
 Inflow = 1.39 cfs @ 12.09 hrs, Volume= 0.100 af
 Outflow = 1.39 cfs @ 12.09 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Max. Velocity= 4.25 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 1.60 fps, Avg. Travel Time= 0.3 min

Peak Storage= 8 cf @ 12.09 hrs
 Average Depth at Peak Storage= 0.43'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.56 cfs

12.0" Round Pipe
 n= 0.013
 Length= 25.0' Slope= 0.0100 '
 Inlet Invert= 121.50', Outlet Invert= 121.25'



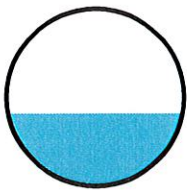
Summary for Reach CB-2: 12" HDPE

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 2.05" for 10-yr event
Inflow = 1.39 cfs @ 12.10 hrs, Volume= 0.100 af
Outflow = 1.39 cfs @ 12.10 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 4.62 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.73 fps, Avg. Travel Time= 0.1 min

Peak Storage= 2 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.98 cfs

12.0" Round Pipe
n= 0.013
Length= 8.0' Slope= 0.0125 '/'
Inlet Invert= 118.70', Outlet Invert= 118.60'

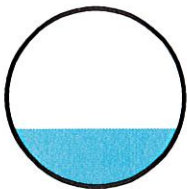
**Summary for Reach WQ-1: 12" HDPE**

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 2.05" for 10-yr event
Inflow = 1.39 cfs @ 12.09 hrs, Volume= 0.100 af
Outflow = 1.39 cfs @ 12.10 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 6.29 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.33 fps, Avg. Travel Time= 0.6 min

Peak Storage= 19 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.10 cfs

12.0" Round Pipe
n= 0.013
Length= 87.0' Slope= 0.0293 '/'
Inlet Invert= 121.25', Outlet Invert= 118.70'



Summary for Pond 1P: Subsurface Recharge System

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 2.05" for 10-yr event
 Inflow = 1.39 cfs @ 12.10 hrs, Volume= 0.100 af
 Outflow = 0.03 cfs @ 11.36 hrs, Volume= 0.046 af, Atten= 98%, Lag= 0.0 min
 Discarded = 0.03 cfs @ 11.36 hrs, Volume= 0.046 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
 Peak Elev= 121.58' @ 19.84 hrs Surf.Area= 1,201 sf Storage= 3,027 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 363.5 min (1,208.8 - 845.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.10'	1,357 cf	30.25'W x 39.70'L x 5.00'H Field A 6,005 cf Overall - 2,611 cf Embedded = 3,393 cf x 40.0% Voids
#2A	118.60'	2,611 cf	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 40 Chambers in 4 Rows Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		3,969 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	118.10'	1.020 in/hr Exfiltration over Surface area
#2	Primary	122.00'	8.0" Round Culvert L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 122.00' / 121.90' S= 0.0100 ' /' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

Discarded OutFlow Max=0.03 cfs @ 11.36 hrs HW=118.15' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=118.10' TW=0.00' (Dynamic Tailwater)
 ↑**2=Culvert** (Controls 0.00 cfs)

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Type III 24-hr 100-yr Rainfall=7.00"

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Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment S-1: Tributary to North Runoff Area=12,494 sf 0.00% Impervious Runoff Depth=2.60"
Flow Length=160' Tc=9.7 min CN=60 Runoff=0.75 cfs 0.062 af

Subcatchment S-2: Tributary to West Runoff Area=21,932 sf 0.00% Impervious Runoff Depth=2.70"
Flow Length=203' Tc=7.5 min CN=61 Runoff=1.48 cfs 0.113 af

Subcatchment S-3: Tributary to CB-1 Runoff Area=25,583 sf 29.79% Impervious Runoff Depth=3.83"
Tc=6.0 min CN=72 Runoff=2.64 cfs 0.187 af

Reach 3R: (new Reach) Inflow=1.48 cfs 0.187 af
Outflow=1.48 cfs 0.187 af

Reach CB-1: 12" HDPE Avg. Flow Depth=0.64' Max Vel=4.97 fps Inflow=2.64 cfs 0.187 af
12.0" Round Pipe n=0.013 L=25.0' S=0.0100 '/' Capacity=3.56 cfs Outflow=2.64 cfs 0.187 af

Reach CB-2: 12" HDPE Avg. Flow Depth=0.59' Max Vel=5.42 fps Inflow=2.64 cfs 0.187 af
12.0" Round Pipe n=0.013 L=8.0' S=0.0125 '/' Capacity=3.98 cfs Outflow=2.64 cfs 0.187 af

Reach WQ-1: 12" HDPE Avg. Flow Depth=0.46' Max Vel=7.48 fps Inflow=2.64 cfs 0.187 af
12.0" Round Pipe n=0.013 L=87.0' S=0.0293 '/' Capacity=6.10 cfs Outflow=2.64 cfs 0.187 af

Pond 1P: Subsurface Recharge System Peak Elev=122.53' Storage=3,695 cf Inflow=2.64 cfs 0.187 af
Discarded=0.03 cfs 0.049 af Primary=0.66 cfs 0.074 af Outflow=0.68 cfs 0.123 af

Total Runoff Area = 1.378 ac Runoff Volume = 0.363 af Average Runoff Depth = 3.16"
87.30% Pervious = 1.203 ac 12.70% Impervious = 0.175 ac

Summary for Subcatchment S-1: Tributary to North

Runoff = 0.75 cfs @ 12.14 hrs, Volume= 0.062 af, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

Area (sf)	CN	Description
10,658	61	>75% Grass cover, Good, HSG B
1,836	55	Woods, Good, HSG B
12,494	60	Weighted Average
12,494		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.0100	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
1.4	70	0.0136	0.82		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.1	40	0.0136	0.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
9.7	160	Total			

Summary for Subcatchment S-2: Tributary to West

Runoff = 1.48 cfs @ 12.11 hrs, Volume= 0.113 af, Depth= 2.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

Area (sf)	CN	Description
17,932	61	>75% Grass cover, Good, HSG B
4,000	60	Woods, Fair, HSG B
21,932	61	Weighted Average
21,932		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
2.0	153	0.0326	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.5	203	Total			

Summary for Subcatchment S-3: Tributary to CB-1

Runoff = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.00"

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Type III 24-hr 100-yr Rainfall=7.00"

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Area (sf)	CN	Description
7,620	98	Paved parking, HSG B
17,963	61	>75% Grass cover, Good, HSG B
25,583	72	Weighted Average
17,963		70.21% Pervious Area
7,620		29.79% Impervious Area

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

Summary for Reach 3R: (new Reach)

Inflow Area = 1.091 ac, 16.04% Impervious, Inflow Depth = 2.06" for 100-yr event
 Inflow = 1.48 cfs @ 12.11 hrs, Volume= 0.187 af
 Outflow = 1.48 cfs @ 12.11 hrs, Volume= 0.187 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Summary for Reach CB-1: 12" HDPE

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 3.83" for 100-yr event
 Inflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af
 Outflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3

Max. Velocity= 4.97 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 1.84 fps, Avg. Travel Time= 0.2 min

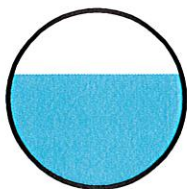
Peak Storage= 13 cf @ 12.09 hrs
 Average Depth at Peak Storage= 0.64'
 Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.56 cfs

12.0" Round Pipe

n= 0.013

Length= 25.0' Slope= 0.0100 '/'

Inlet Invert= 121.50', Outlet Invert= 121.25'



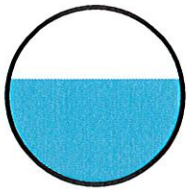
Summary for Reach CB-2: 12" HDPE

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 3.83" for 100-yr event
Inflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af
Outflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 5.42 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 1.99 fps, Avg. Travel Time= 0.1 min

Peak Storage= 4 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.59'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.98 cfs

12.0" Round Pipe
n= 0.013
Length= 8.0' Slope= 0.0125 '/'
Inlet Invert= 118.70', Outlet Invert= 118.60'

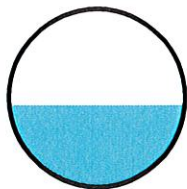
**Summary for Reach WQ-1: 12" HDPE**

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 3.83" for 100-yr event
Inflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af
Outflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 7.48 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.69 fps, Avg. Travel Time= 0.5 min

Peak Storage= 31 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.10 cfs

12.0" Round Pipe
n= 0.013
Length= 87.0' Slope= 0.0293 '/'
Inlet Invert= 121.25', Outlet Invert= 118.70'



Summary for Pond 1P: Subsurface Recharge System

Inflow Area = 0.587 ac, 29.79% Impervious, Inflow Depth = 3.83" for 100-yr event
 Inflow = 2.64 cfs @ 12.09 hrs, Volume= 0.187 af
 Outflow = 0.68 cfs @ 12.49 hrs, Volume= 0.123 af, Atten= 74%, Lag= 23.5 min
 Discarded = 0.03 cfs @ 10.18 hrs, Volume= 0.049 af
 Primary = 0.66 cfs @ 12.49 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 3
 Peak Elev= 122.53' @ 12.49 hrs Surf.Area= 1,201 sf Storage= 3,695 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 168.3 min (995.4 - 827.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	118.10'	1,357 cf	30.25'W x 39.70'L x 5.00'H Field A 6,005 cf Overall - 2,611 cf Embedded = 3,393 cf x 40.0% Voids
#2A	118.60'	2,611 cf	Cultec R-902HD x 40 Inside #1 Effective Size= 69.8"W x 48.0"H => 17.65 sf x 3.67'L = 64.7 cf Overall Size= 78.0"W x 48.0"H x 4.10'L with 0.44' Overlap 40 Chambers in 4 Rows Cap Storage= +2.8 cf x 2 x 4 rows = 22.1 cf
		3,969 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	118.10'	1.020 in/hr Exfiltration over Surface area
#2	Primary	122.00'	8.0" Round Culvert L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 122.00' / 121.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

Discarded OutFlow Max=0.03 cfs @ 10.18 hrs HW=118.15' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.65 cfs @ 12.49 hrs HW=122.53' TW=0.00' (Dynamic Tailwater)
 ↑2=Culvert (Barrel Controls 0.65 cfs @ 3.00 fps)

RECHARGE CALCULATIONS (STANDARD #3)



STANDARD 3: RECHARGE CALCULATIONS

REQUIRED:

Recharge Volume Required ("A" Soils)	= [Impervious Area x (Recharge Depth inches/12)] = [0 sf x (0.60"/12)] = <u>0 cf</u> (Required Volume)
Recharge Volume Required ("B" Soils)	= [Impervious Area x (Recharge Depth inches/12)] = [7,620 sf x (0.35"/12)] = <u>223 cf</u> (Required Volume)
Recharge Volume Required ("C" Soils)	= [Impervious Area x (Recharge Depth inches/12)] = [0 sf x (0.25"/12)] = <u>0 cf</u> (Required Volume)
Recharge Volume Required ("D" Soils)	= [Impervious Area x (Recharge Depth inches/12)] = [0 sf x (0.10"/12)] = <u>0 cf</u> (Required Volume)
Total Required Recharge Volume	= <u>223 cf</u>

CAPTURE AREA ADJUSTMENT:

Total On-Site Impervious Area	= 0.18 acres
Total On-Site Impervious Area Directed to Infiltration BMP	= 0.18 acres
Adjustment Ratio (0.18 ac. / 0.18 ac.)	= 1.00
Adjusted Required Recharge Volume (223 c.f. x 1.00)	= <u>223 cf</u>
	= <u>0.005 acre-feet</u>

STATIC METHOD:

- Assume the entire Required Recharge Volume is discharged into the infiltration device before infiltration begins.

PROVIDED:

Infiltration Basin #1:

- Cumulative Volume below the lowest outlet (Elev.=122.00) = 3,358 c.f.

Total Recharge Volume Provided = 3,358 c.f. (0.077 acre-feet)

DRAWDOWN CALCULATIONS (STANDARD #3)



ENGINEERING A BETTER TOMORROW

ENGINEERING | SITE WORK | LAND SURVEYING

STANDARD 3: DRAWDOWN CALCULATIONS

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)}$$

Where:

Rv = Required Storage Volume = (F)(impervious area)

K = Saturated Hydraulic Conductivity

For "Static" and "Simple Dynamic" Methods, use Rawls Rate (see Table 2.3.3).

For "Dynamic Field" Method, use 50% of the in-situ saturated hydraulic conductivity.

INFILTRATION BASIN #1

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)} = 2.18 \text{ hours}$$

Rv = 223 C.F. (Recharge Volume Provided)

K = 1.02 inch/hr.

BA = 1,201 S.F. (Max bottom area at outlet elevation)

TABLE 2.3.3

Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate Inches/Hour
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	B	1.02
Loam	B	0.52
Silt Loam	C	0.27
Sandy Clay	C	0.17
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

SOIL LOGS
(STANDARD #3)



ENGINEERING A BETTER TOMORROW

ENGINEERING | SITE WORK | LAND SURVEYING

LOCATION: 1265 Bartlett Street - New Bedford, MA

PROJECT #: 17-038

DATE: 8/15/18 & 12/6/18

REV:

SOIL LOGS:

Test Hole #1
Elevation=122.0

0-8"
OA HORIZON SANDY LOAM 10YR 3/3
8-22"
B HORIZON SANDY LOAM 2.5Y 5/1
22-108"
C HORIZON SANDY LOAM 2.5Y 5/4
REDOX @ 60" ELEV.=117.0

Test Hole #2
Elevation=115.5

0-7"
OA HORIZON SANDY LOAM 10YR 3/3
7-20"
B HORIZON SANDY LOAM 10YR 5/6
20-48"
C1 HORIZON SANDY LOAM 2.5Y 5/4
48-96"
C2 HORIZON SANDY LOAM 2.5Y 5/3
REDOX @ 40" ELEV.=123.2

Test Hole #3
Elevation=112.5

0-6"
OA HORIZON SANDY LOAM 10YR 3/3
6-20"
B HORIZON SANDY LOAM 10YR 5/6
20-48"
C1 HORIZON SANDY LOAM 2.5Y 5/4
48-88"
C2 HORIZON SANDY LOAM 2.5Y 5/3
REDOX @ 28" ELEV.=125.2

Date:

8/15/18

Performed By:

John Marchand

Witness:

12/6/18

John Marchand

12/6/18

John Marchand

WATER QUALITY VOLUME
CALCULATIONS
(STANDARD #4)



ENGINEERING A BETTER TOMORROW
ENGINEERING | SITE WORK | LAND SURVEYING

LOCATION: 1265 Bartlett Street - New Bedford, MA

PROJECT #: 17-038

DATE: 1/5/21

REV:

STANDARD 4: WATER QUALITY VOLUME:

Note:

Water Quality Volume calculations are based on new impervious areas only. Existing impervious areas have not been included.

Water Quality Treatment Volume Formula:

$$V_{WQ} = D_{WQ} \times (1 \text{ ft.} / 12 \text{ in.}) \times A_{I,SP}$$

Where,

V_{WQ} = Required Water Quality Volume (in cubic feet)

D_{WQ} = Water Quality Depth: one-inch for discharges within a Zone II or IWPA, to or near another critical area, runoff from a LUHPPL, or exfiltration to soils with infiltration rate greater than 2.4 inches/hour; 1/2 -inch for discharges near or to other areas

$A_{I,SP}$ = Impervious Area (in cubic feet)

STORM WATER OUTFALL: Outlet from Subsurface Recharge System

CONTRIBUTING IMPERVIOUS AREA ($A_{I,SP}$) = 7,620 S.F.

$$V_{WQ} = 0.5 \text{ inch} \times 1 \text{ ft} / 12 \text{ in.} \times 7,620 \text{ s.f.} = 318 \text{ c.f.}$$

STRUCTURAL BMP TREATMENT:

Subsurface Recharge System (Below lowest outlet invert)

$$\text{*Refer to Hydrology Calculations} = 3,358 \text{ c.f.}$$

$$\text{TOTAL WATER QUALITY VOLUME PROVIDED IN BMP TREATMENT} = 3,358 \text{ c.f.}$$

TSS REMOVAL CALCULATIONS (STANDARD #4)



ENGINEERING A BETTER TOMORROW
ENGINEERING | SITE WORK | LAND SURVEYING

LOCATION: 1265 Bartlett Street - New Bedford, MA

PROJECT #: 17-038

DATE: 1/5/21

REV:

STANDARD 4: TSS REMOVAL CALCULATIONS:

STORM WATER OUTFALL: OUTLET FROM INFILTRATION BASIN #1

PRETREATMENT (for infiltration BMP in area with rapid infiltration, Zone II or IWPA, discharges to critical areas, and LUHPPL's)

<u>A</u> BMP	<u>B</u> TSS Removal Rate	<u>C</u> Starting TSS Load*	<u>D</u> Amount Removed (BXC)	<u>E</u> Remaining Load (C-D)
Proprietary Separator (CDS 2015)	44%	1.00	0.44	0.56
Total TSS Removal=			0.44	

TREATMENT

<u>A</u> BMP	<u>B</u> TSS Removal Rate	<u>C</u> Starting TSS Load*	<u>D</u> Amount Removed (BXC)	<u>E</u> Remaining Load (C-D)
Infiltration Basin (with 44% pre-treatment)	80%	1.00	0.80	0.20
Total TSS Removal=			0.80	

LONG TERM POLLUTION PREVENTION
PLAN
(STANDARD #4)



ENGINEERING A BETTER TOMORROW
ENGINEERING | SITE WORK | LAND SURVEYING

Long Term Pollution Prevention Plan

Definitive Subdivision Plan 1265 Bartlett Street New Bedford, MA 02339

January 5, 2021

Record Owner(s):

Assessor's Map 134 Lot 299 & 305
Amandio & Jose Araujo
224 Nyes Lane
Acushnet, MA 02743

Assessor's Map 134 Portion of Lot 314
Stacy Oliveira
5 Archer's Way
Acushnet, MA 02743

Prepared For:

Amandio & Jose Araujo
P.O. Box 91
Rochester, MA 02770

Prepared By:

Farland Corp.
Project No. 17-038

Long Term Pollution Prevention Plan

This Long Term Pollution Prevention Plan serves to outline good housekeeping practices in order to prevent pollution of the wetland resource areas and surrounding environment. The Long Term Operation & Maintenance Plan shall be taken as part of this document as it is a critical part of this plan and shall be adhered to. Proper operation and maintenance records shall be kept on file at all times.

Snow disposal shall be carried out by the owner. The owner should follow DEP guideline #BWR G2015-01 for all snow removal requirements. For this site, it is anticipated that snow will be plowed from the roadway and piled along the shoulders of the roadway areas. Snow on individual lots is anticipated to be removed by shovel or snow blower by homeowners.

Snow disposal in the following areas are prohibited:

- Dumping snow in the bordering vegetated wetlands is prohibited.
- Dumping of snow on top of storm drain catch basins or in stormwater drainage basin is prohibited. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A high volume of sand, sediment, and litter released from melting snow also may be quickly transported through the system into surface water.

Illicit discharges to the stormwater management system are prohibited. Illicit discharges are those that are not entirely comprised of stormwater. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities; firefighting, water line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, individual residence car washing, flows from riparian habitats and wetlands, de-chlorinated water from swimming pools, water used for street washing, and water used to clean residential buildings without detergents. Measures are provided below to prevent illicit discharges to the stormwater management system.

In the event of oil, gasoline or other hazardous waste spill on-site, the New Bedford Fire Department, DEP and the Conservation Agent shall be notified immediately. For spills of less than ¼ gallon, clean-up with absorbent materials or other appropriate means, unless circumstances dictate that the spill should be treated by a professional emergency response contractor. Spills which exceed the reportable quantities of substances mentioned in 40 CFR 110, 40 CFR 117, or 40 CFR 302 must be immediately reported to the EPA National Response Center (800) 242-8802. Any drainage inlet that may be affected by the spill shall be covered immediately with a spill protector drain cover or similar product, or a spill berm placed around the perimeter of the opening to prevent any contamination into the drainage system. Proper cleanup and disposal of hazardous wastes must follow all applicable local and state regulations and must be carried out by a qualified contractor.

The maintenance of all lawns, gardens and landscaped areas shall be performed by the owner. Good housekeeping practices should include proper storage and minimal use of cleaning products and fertilizers. Homeowners should consult with a professional landscaper for proper maintenance of lawns and landscaped areas.

OPERATION & MAINTENANCE
PLAN & LOGS
(STANDARD #9)



ENGINEERING A BETTER TOMORROW
ENGINEERING | SITE WORK | LAND SURVEYING

Long Term Operation and Maintenance Plan

Definitive Subdivision Plan 1265 Bartlett Street New Bedford, MA 02339

January 5, 2021

Record Owner(s):

Assessor's Map 134 Lot 299 & 305
Amandio & Jose Araujo
224 Nyes Lane
Acushnet, MA 02743

Assessor's Map 134 Portion of Lot 314
Stacy Oliveira
5 Archer's Way
Acushnet, MA 02743

Prepared For:

Amandio & Jose Araujo
P.O. Box 91
Rochester, MA 02770

Prepared By:

Farland Corp.
Project No. 17-038

The Operator, Owner, and Party Responsible for Operation and Maintenance of the Stormwater BMP's will be the City of New Bedford.

The responsible party shall:

- a) Maintain an operation and maintenance log for at least three years, including inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and disposal location);
- b) Make this log available to MassDEP and the Conservation Commission upon request during normal business hours; and
- c) Allow members and agents of the MassDEP and the Conservation Commission to enter and inspect the premises to evaluate and ensure that the responsible party complies with the Operation and Maintenance Plan requirements for each BMP.

Street Sweeping

It shall be the responsibility of the owner to:

Inspections:

Inspect sediment deposit accumulations on the parking lots quarterly.

Maintenance:

Sweep parking lots at least annually, during March or April before spring rains wash residual sand from winter applications into stormwater systems.

Dispose of the accumulated sediment and hydrocarbons in accordance with local, state, and federal guidelines and regulations.

Stone/ Rip Rap Areas

The rip rap areas are to be inspected and maintained by the owner.

It shall be the responsibility of the owner to:

Inspections:

Inspect the rip rapped areas quarterly.

Maintenance:

Remove accumulated sediment, trash, leaves and debris at least annually. Check for signs of erosion and repair as need. Replace any damaged areas with new rip rap of the same size.

Dispose of the accumulated sediment and hydrocarbons in accordance with local, state, and federal guidelines and regulations.

Drain Manholes

The manholes are to be inspected and maintained by the owner.
It shall be the responsibility of the owner to:

Inspections:

Inspect the manholes quarterly.

Maintenance:

Remove accumulated sediment, trash, leaves and debris when the depth of deposits is greater than or equal to one half the depth from the bottom invert of the lowest pipe in the manhole to the bottom elevation of the manhole.

Dispose of the accumulated sediment and hydrocarbons in accordance with local, state, and federal guidelines and regulations.

CDS® Units

The units are to be inspected and maintained by the owner.

CDS Units are proprietary products and must comply with manufacturer's inspection and maintenance requirements. Refer to the attached CDS Inspection and Maintenance Guide.

In the event of a spill, refer to Long Term Pollution Prevention Plan for necessary procedures to prevent discharge of petroleum product into the infiltration system.

It shall be the responsibility of the owner to:

Inspections:

Inspect the units quarterly.

Prepare inspection reports as part of each inspection and include the following information:

1. Date of inspection
2. Maintenance personnel
3. Location of unit (GPS coordinates if possible)
4. Time since last rainfall
5. Installation deficiencies (missing parts, incorrect installation of parts)
6. Structural Deficiencies (concrete cracks, broken parts)
7. Operational deficiencies (leaks, blockages)
8. Presence of oil sheen or depth of oil layer
9. Estimate of depth/ volume of floatables (trash, leaves) captured
10. Sediment depth measured
11. Recommendations for any repairs and/ or maintenance for the units

12. Estimation of time before maintenance is required if not required at time of inspection.

Maintenance:

Cleaning should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method for removing pollutants from the system. The screen should be power washed to ensure it is free of trash and debris.

The CDS® Unit shall be cleaned once the sediment depth reaches 75% of the storage capacity.

If upon inspection, evidence of hydrocarbons is observed, such material shall be immediately removed and disposed of in accordance with local, state, and federal guidelines and regulations.

To remove oil and other hydrocarbons that accumulate, it may be preferable to use adsorbent pads.

Dispose of the accumulated sediment and hydrocarbons in accordance with local, state, and federal guidelines and regulations.

Subsurface Infiltration Chambers

The subsurface infiltration chambers are to be inspected and maintained by the owner. Subsurface infiltration chambers do not rely on standing pool of water, and have been designed to dewater within 72 hours after precipitation. Therefore, mosquito control is not required for the drainage system.

It shall be the responsibility of the owner to:

Inspections:

Inspect subsurface structures at least twice annually.

Maintenance:

If inspection of infiltration system shows that it does not dewater completely within 72 hours of a storm event, the owner shall take immediate steps to restore the function of the system, based on the recommendations of a qualified stormwater professional. Notice shall be provided to the Town of any such corrective action.

Any debris which may clog the system must be removed. Cleaning may be done by vacuum truck. All sediment and hydrocarbons shall be

properly disposed of in accordance with local, state, and federal guidelines and regulations.

Drain Lines

After construction, the drain lines shall be inspected after every major storm for the first few months to ensure proper functions. Presence of accumulated sand and silt would indicate more frequent maintenance of the pre-treatment devices is required. Thereafter, the drain lines shall be inspected at least once per year. Accumulated silt shall be removed by a vactor truck or other method preferred.

Landscaping

Inspections:

- Inspect weekly
- Remove debris and litter as necessary
- Prune and fertilize bi-annually
- Mow lawn as necessary
- Fertilize quarterly

**“Definitive Subdivision Plan”
“1265 Bartlett Street”
Operation & Maintenance Log Form**

STRUCTURAL SEDIMENT CONTROL BMPS

BMP	DATE INSPECTED	SEDIMENT BUILDUP (YES/NO)	IF SEDIMENT BUILDUP, DATE CLEANED
WQ-1			
DMH-1			
DMH-2			
Subsurface Recharge System			
OTHER:			

Maintenance Notes:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

ILLICIT DISCHARGE STATEMENT (STANDARD #10)





Illicit Discharge Compliance Statement (IDCS)

This Illicit Discharge Compliance Statement is intended to verify that no illicit discharges exist on the site or are proposed. We have included, in the pollution prevention plan, measures to prevent illicit discharges to the stormwater management system, including wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

The site plan identifies the location of any systems for conveying wastewater and/or groundwater on the site and show that there are no connections between the stormwater and wastewater management systems and the location of any measures taken to prevent the entry of illicit discharges into the stormwater management system.

Farland Corporation, Inc.

Christian A. Farland, P.E., LEED AP
Principal Engineer and President

WATERSHED PLANS

