

**NOTICE OF INTENT
REPLACEMENT WATER SUPPLY WELL INSTALLATION AND TESTING
FOUR MILE VILLAGE
BOXFORD, MASSACHUSETTS**

Prepared For:

Boxford Friendship Foundation
Four Mile Village
Boxford, Massachusetts

Prepared By:

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Littleton, Massachusetts
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June 30, 2021

GeoInsight Project 11156-000

\\Geomao\MAO_Projects\11156 Four Mile Village, Boxford\Notice Of Intent\Rpt-NOI_2021-06-30.Docx

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NOTICE OF INTENT FORMS



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
Boxford
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):

<u>50 Four Mlle Village</u> a. Street Address	<u>Boxford</u> b. City/Town	<u>01921</u> c. Zip Code
Latitude and Longitude:		
<u>19</u> f. Assessors Map/Plat Number	<u>42.685449</u> d. Latitude	<u>-71.003303</u> e. Longitude
	<u>2-18</u> g. Parcel /Lot Number	

2. Applicant:

<u>Boxford Friendship Foundation</u> a. First Name	<u>Boxford Friendship Foundation</u> b. Last Name	
<u>50 Four Mlle Village</u> c. Organization		
<u>50 Four Mlle Village</u> d. Street Address		
<u>Boxford</u> e. City/Town	<u>MA</u> f. State	<u>01921</u> g. Zip Code
<u></u> h. Phone Number	<u></u> i. Fax Number	<u></u> j. Email Address

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

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

4. Representative (if any):

<u>David G.</u> a. First Name	<u>Harwood</u> b. Last Name	
<u>Geolnsight, Inc.</u> c. Company		
<u>One Monarch Drive, Suite 201</u> d. Street Address		
<u>Littleton</u> e. City/Town	<u>MA</u> f. State	<u>01460</u> g. Zip Code
<u>978 679 1600</u> h. Phone Number	<u>dgharwood@geoinc.com</u> j. Email address	<u></u> i. Fax Number

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

<u>\$1050.00</u> a. Total Fee Paid	<u>\$537.50</u> b. State Fee Paid	<u>\$512.50</u> c. City/Town Fee Paid
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A. General Information (continued)

6. General Project Description:

Replacement of a failed overburden public water supply well with a bedrock well to supply safe, reliable drinking water to the residents of Four Mile Village elderly housing. As a result of DEP setback requirements, there is no feasible location outside wetland resource areas for the well.

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

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

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

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

Public water supply well replacement. DEP New Source Approval Process is in progress.

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

Southern Essex

a. County

7680

c. Book

b. Certificate # (if registered land)

504

d. Page Number

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

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

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



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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	2200 (buffer - temporary) 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: 54,235
square feet

4. Proposed alteration of the Riverfront Area:
0
 a. total square feet b. square feet within 100 ft. c. square feet between 100 ft. and 200 ft.

- 5. Has an alternatives analysis been done and is it attached to this NOI? Yes No
- 6. Was the lot where the activity is proposed created prior to August 1, 1996? Yes No

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

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



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

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

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

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment

	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	

	1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	1. square feet	

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

_____ a. square feet of BVW _____ b. square feet of Salt Marsh

5. Project Involves Stream Crossings

_____ a. number of new stream crossings _____ b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

- 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**

On-line maps
(June 2021)

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*

- Percentage/acreage of property to be altered:

(a) within wetland Resource Area	<0.1% (temporary in buffer zone only)
	percentage/acreage
(b) outside Resource Area	<0.1% (temporary)
	percentage/acreage

- Assessor's Map or right-of-way plan of site

- 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/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.

7/1/21

11156 Boxford NOI



LITTLETON
451 KING ST
LITTLETON, MA 01460-9998
(800)275-8777

7017 3380 0000 1866 7502

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CERTIFIED MAIL® RECEIPT**
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Westborough, MA 01581

OFFICIAL USE

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Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy) \$2.85

Return Receipt (electronic) \$0.00

Certified Mail Restricted Delivery \$0.00

Adult Signature Required \$0.00

Adult Signature Restricted Delivery \$

Postage \$3.20

Total Postage and Fees \$7.65

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

Postmark Here
LITTLETON MA 01460
JUL 1 2021
8666-01460
07/01/2021

PS Form 3800, April 2019 Edition (7502) 508587 Instructions

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope Westborough, MA 01581 Weight: 0 lb 11.60 oz Estimated Delivery Date Tue 07/06/2021	1		\$3.20
Certified Mail® Tracking #: 7017338000018667502			\$3.60
Return Receipt Tracking #: 9590 9402 5927 0049 7927 38			\$2.85
Total			\$9.65

Grand Total: \$9.65

Credit Card Remitted \$9.65

Card Name: MasterCard
Account #: XXXXXXXXXXXX6016
Approval #: 65394J
Transaction #: 483
AID: A0000000041010 Chip
AL: Mastercard
PIN: Not Required Mastercard

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or scan this code with your mobile device.



THE BACK OF THIS DOCUMENT INCLUDES MICROPRINTED ENDORSEMENT LINES

Pentucket Bank
Haverhill, Massachusetts 01830

53-7006/2113

17780

17780

Boxford Friendship Foundation
Four Mile Village
c/o BCS
10 Phoenix Row
Haverhill, MA 01832

DATE

AMOUNT

Jun 30, 2021

*****\$300.00

Three Hundred and 00/100 Dollars

PAY
TO THE
ORDER OF *National Heritage NHESP*



Memo:



Boxford Friendship Foundation Four Mile Village
Haverhill, MA 01832

17780

NOI Meeting July 2

300.00

6/30/21 17780 National Heritage NHESP

\$300.00



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

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

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

(d) Vegetation cover type map of site

(e) Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

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

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

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

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

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

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

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

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).



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

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

- 4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
 a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
 b. ACEC

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

D. Additional Information

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

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

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

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



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D. Additional Information (cont'd)

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

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

Site Plan, Replacement Well, Four Mile Village(24x36)

a. Plan Title

Geolnsight, Inc.

b. Prepared By

Not Applicable

c. Signed and Stamped by

June 2021

d. Final Revision Date

1"=20'

e. Scale

Compiled Wetland Resource Area (Scale 1" = 60'; Prepared and Stamped by Hancock Associates)

February 2012

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:

17778

2. Municipal Check Number

06/30/2021

3. Check date

17777

4. State Check Number

06/30/2021

5. Check date

Boxford Friendship Foundation

6. Payor name on check: First Name

7. Payor name on check: Last Name



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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.

	07-01-2021
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	07-01-2021
5. Signature of Representative (if any)	6. Date

For Conservation Commission:

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

For MassDEP:

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

Other:

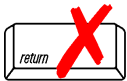
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

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



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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:

50 Four Mile Village	Boxford
a. Street Address	b. City/Town
_____	_____
c. Check number	d. Fee amount
_____	_____

2. Applicant Mailing Address:

_____	_____	
a. First Name	b. Last Name	
Boxford Friendship Foundation		
c. Organization		
50 Four Mile Village		
d. Mailing Address		
Boxford	MA	01921
e. City/Town	f. State	g. Zip Code
_____	_____	_____
h. Phone Number	i. Fax Number	j. Email Address
_____	_____	_____

3. Property Owner (if different):

_____	_____	
a. First Name	b. Last Name	

c. Organization		

d. Mailing Address		
_____	_____	_____
e. City/Town	f. State	g. Zip Code
_____	_____	_____
h. Phone Number	i. Fax Number	j. Email Address
_____	_____	_____

B. Fees

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.

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



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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Water Supply Development	1	\$1050	\$1050
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Step 5/Total Project Fee:			\$1050
Step 6/Fee Payments:			
Total Project Fee:			\$1050
State share of filing Fee:			\$537.50
City/Town share of filing Fee:			\$512.50
			a. Total Fee from Step 5
			b. 1/2 Total Fee less \$12.50
			c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

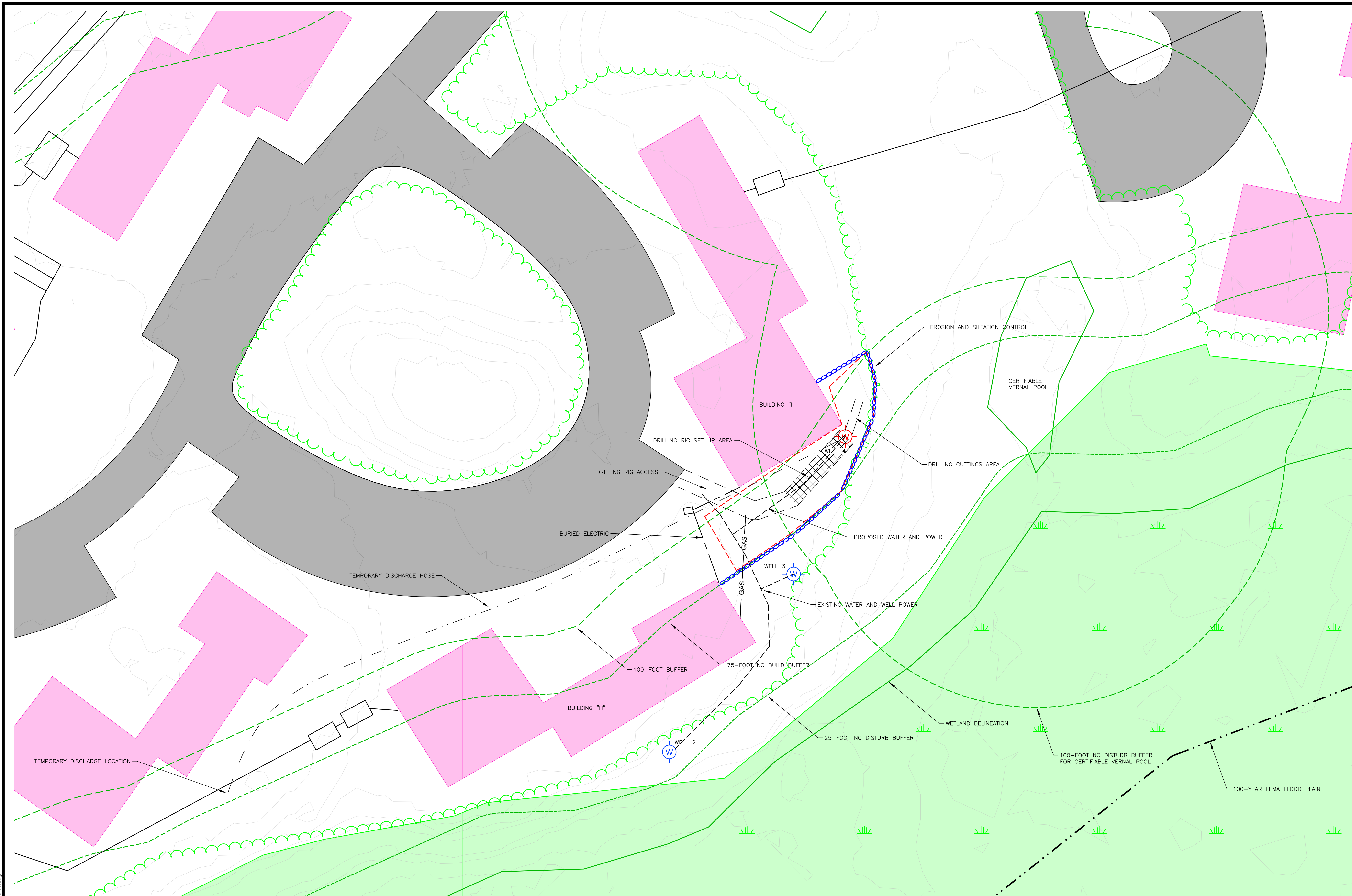
- a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

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.)

**SITE PLAN
 FOUR MILE VILLAGE**



LEGEND

- WELL 3 EXISTING WELL
- WELL 4 PROPOSED WELL
- TREELINE
- SEPTIC PIPING
- TOPOGRAPHIC CONTOUR (2-FOOT INTERVAL)
- AREA OF DISTURBANCE
- SITE DELINEATED RESOURCES AND BUFFERS (DASHED) AS NOTED
- PAVEMENT
- BUILDINGS
- ESTIMATED AND PRIORITY HABITAT

NOTES:

THIS FIGURE WAS BASED UPON MASS GIS DATA, AND THE FOLLOWING PLANS BY OTHERS:
 EXHIBIT PLAN SHOWING COMPILED WETLAND RESOURCE AREA LIMITS BY HANCOCK ASSOCIATES DATED 1/25/2011.
 SEWAGE DISPOSAL SYSTEM, BUILDINGS I, J, K & L BY HANCOCK ASSOCIATES DATED 10/03/2007.
 SEWAGE DISPOSAL SYSTEM, BUILDINGS A & B BY HANCOCK ASSOCIATES DATED 08/06/2012
 SEWAGE DISPOSAL SYSTEM BY BERGMAN AND ASSOCIATES DATED 08/28/2015.

WETLAND RESOURCES BASED UPON 1/25/2011 HANCOCK ASSOCIATES PLAN WHICH NOTES "WETLAND RESOURCE AREAS WERE COMPILED FROM PLANS AND DOCUMENTS USED IN PREVIOUS FILINGS WITH BOXFORD CONSERVATION COMMISSION AND MASSACHUSETTS DEP."

GEOSIGHT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE SOURCES USED FOR THE PREPARATION OF THIS PLAN. THE LOCATION OF FEATURES SHOULD BE CONSIDERED APPROXIMATE. BURIED UTILITIES ARE APPROXIMATE AND MUST BE FIELD VERIFIED.

FOR PERMITTING ONLY. NOT FOR CONSTRUCTION.

BOXFORD FRIENDSHIP FOUNDATION
 50 FOUR MILE VILLAGE, MAP/LOT: 19-2-18, BOOK/PAGE: 7680/504



REVISIONS		
NO.	DATE	DESCRIPTION

DWG SCALE: 1"=20' PREPARED BY: DGH
 DATE ISSUED: 06/30/21 CHECKED BY: DAM
 PROJECT #: 11156 APPROVED BY: DAM

DRAWING TITLE:
**REPLACEMENT
 WELL**

DRAWING NUMBER:
C1

NOTES:

1) ALL STRUCTURES ON THE PROPERTY AS SHOWN WERE COMPILED FROM A PARTIAL FIELD SURVEY AND EXISTING PLANS. BUILDINGS C, D, E, F, I, J, K, L, THE COMMUNITY CENTER AND PORTIONS OF BUILDINGS B, G, AND H AND SURROUNDING PAVEMENT AREAS WERE FIELD LOCATED. ALL OTHER BUILDINGS AND PAVEMENT AREAS WERE COMPILED FROM EXISTING PLANS (LISTED BELOW).

2) LIMITS OF WETLAND RESOURCE AREAS WERE COMPILED FROM PLANS AND DOCUMENTS USED IN PREVIOUS FILINGS WITH BOXFORD CONSERVATION COMMISSION AND MASSACHUSETTS DEP.

REFERENCES:

SEE PLAN ENTITLED "PLAN OF LAND IN BOXFORD, MA PROPERTY OF ROY C. & BARBARA M. CARLSON, JR.", PREPARED BY HANCOCK SURVEY ASSOCIATES, INC., MAY 2, 1984, REVISED OCT. 12, 1984.

LEGEND

- BEARING & DISTANCE ALONG BOUNDARY
- LIGATURE TO INDICATE CONTINUOUS OWNERSHIP ACROSS LINES
- EDGE OF PAVEMENT
- BUILDING, STEPS & OVERHANG
- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF NON-JURISDICTIONAL WETLAND RESOURCE AREA
- LIMIT OF 100-FOOT WETLAND BUFFER ZONE
- LIMIT OF 75-FOOT NO-BUILD ZONE
- LIMIT OF 100-FOOT WETLAND BUFFER ZONE
- LIMIT OF 100-FOOT NO-DISTURB ZONE

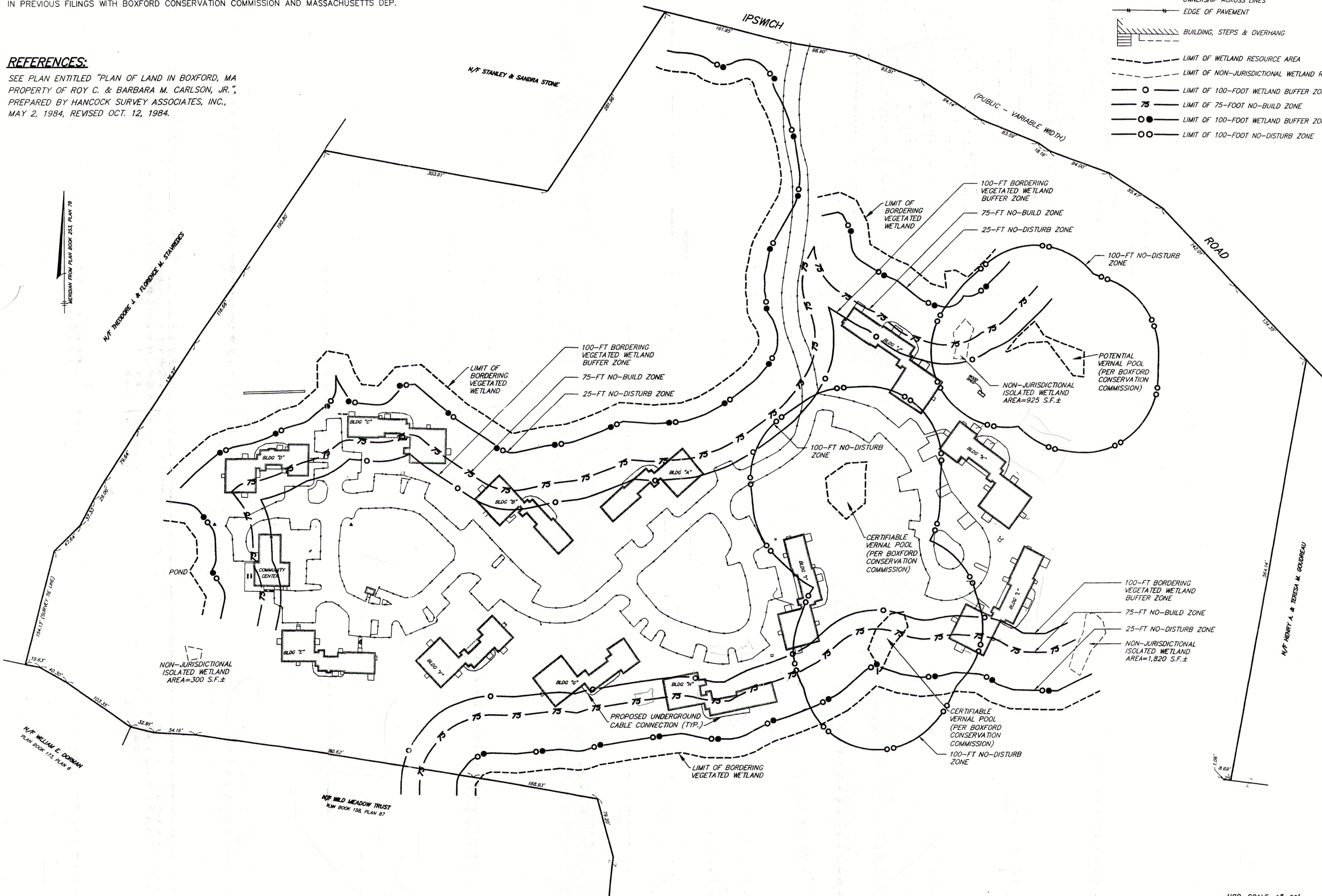


EXHIBIT PLAN

SHOWING COMPILED WETLAND RESOURCE AREA LIMITS

AT
Four Mile Village
Boxford, Massachusetts 01921

PREPARED FOR:
Boxford Friendship Foundation
c/o
Bethany Community Services
10 Phoenix Road
Haverhill, Massachusetts 01832

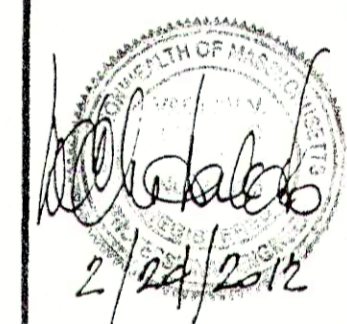
HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



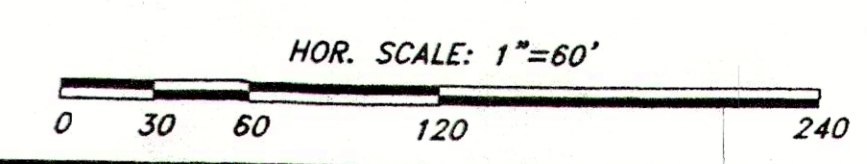
NO.	BY	APP.	DATE	ISSUE/REVISION	DESCRIPTION

DATE: 01/25/2011
SCALE: 1"=60'
DRAWN BY: RCA
APPRVD BY: VVT CHECK BY: VVT

SITE PLAN

PLOT DATE: Feb 24, 2012 10:08 am
PATH: F:\land Projects\2012\2330\dwg\Engineering\main\

DWG: 2330EP3.dwg
LAYOUT: EP
SHEET: 1 OF 1





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.

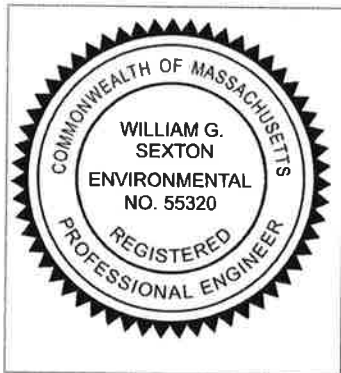
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



7/01/2021

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

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

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

Standard 6: Critical Areas

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



Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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



Checklist for Stormwater Report

Checklist (continued)

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

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

Standard 9: Operation and Maintenance Plan

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

Standard 10: Prohibition of Illicit Discharges

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



Stormwater Management Report

The work proposed at the site is within jurisdiction of the Wetlands Protection Act (WPA) and therefore a Notice of Intent (NOI) has been prepared. As part of the NOI submission, stormwater mitigation must be addressed. This report has been prepared to address the ten standards outlined in the Massachusetts Stormwater Handbook, last revised January 2008, and how the project is meeting them.

The proposed work will occur in the Bordering Vegetated Wetland (BVW) buffer zone that was compiled by Hancock Associates as shown on the attached plans. There is no proposed work in the wetlands and the project does not create any new impervious surface. All finished grading will re-establish grades to original elevations prior to construction activities and will not alter any of the existing stormwater drainage patterns that exist on the site.

This project represents a “Redevelopment” under the MassDEP Stormwater Management Standards and therefore is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions. This report is organized into sections that correspond to the categories listed in the “Massachusetts Stormwater Report Checklist”.

The stormwater management is generally accomplished by “country” drainage where stormwater runs off the roadway and sheet flows over vegetated areas into adjacent woodlands and bordering vegetated wetlands. Due to the limited available area, and intent of the project to preserve the existing conditions, the continued use of non-structural measures and maintenance of existing vegetation along the edge of the roadway will be pursued.

Standard 1: No New Untreated Discharges *(Meeting to the maximum extent practicable)*

The MA Stormwater Handbook requires that the project demonstrates that there are no new untreated discharges and that new discharges will not cause erosion or scour to downstream wetlands.

The proposed project does not create any new stormwater discharges that would discharge untreated discharge or cause erosion or scour to downstream wetlands. The proposed project will re-establish grades to original elevations prior to construction activities and will not alter any of the existing stormwater drainage patterns that exist on the site.

Standard 2: Peak Rate Attenuation *(Meeting to the maximum extent practicable)*

Standard 2 requires that stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates. This project does not involve any increase in impervious surfaces and it is assumed that HydroCAD calculations showing this standard is met are not necessary.

Standard 3: Stormwater Recharge *(Meeting to the maximum extent practicable)*

Standard 3 requires that three computations or demonstrations be fulfilled in order to satisfy the stormwater recharge requirements, they are as follows:

- Impervious Area
- Required Recharge Volume
- Bottom Area Sizing for Infiltration Structures

As stated previously, this project is a redevelopment project and needs to meet Standard 3 to the maximum extent practicable. This project results in no net increase in impervious surfaces and no corresponding increase or decrease in recharge rates and/or infiltration rates. Typical practices used to infiltrate recharge volumes were evaluated but due to the limited available area and close proximity to bordering vegetated wetlands, installation of recharge infiltration practices would not be practicable. This project results in no net increase in impervious surfaces and will meet this Standard to the maximum extent practicable.

Standard 4: Water Quality *(Not-applicable)*

Standard 4 requires that all stormwater management systems be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). The MA Stormwater Handbook states that this standard is met when:

- a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
- b. Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

As stated previously, this project is a redevelopment project and will meet this standard to the maximum extent practicable.

Long term pollution prevention plan

A Long term pollution prevention plan is addressed in the Long-Term Operation and Maintenance Plan as required in Standard 9.

Water quality treatment volume *(Not-applicable)*

This project site is located within a “critical area” as defined in the MA Stormwater Management Handbook; therefore it would be subject to a Water Quality Depth of one inch (1.0) when computing the required water quality volume. As stated previously the installation of structural

BMPs is not practicable due to the limited available area due to close proximity to bordering vegetated wetlands, and preserving existing conditions to the maximum extent practicable. It will be important to preserve the existing vegetated filter strips and woodland around the project area that provide treatment prior to discharging to adjacent wetlands. The proposed project will mimic existing conditions and will maintain the overland flow of runoff throughout the site.

There are no new impervious surface being created that would increase the water quality volume; treating for water quality is not necessary.

TSS Removal Computations (*Not-applicable*)

Standard 4 requires that a minimum of 80% Total Suspended Solids (TSS) removal rate be achieved in the proposed condition. Existing vegetated filter strips adjacent to the roadway will remain and be maintained on a regular schedule. Since no new impervious areas are being constructed the need to treat for TSS removal is not necessary.

Standard 5: Land Uses with Higher Potential Pollutant Loads (*Not-applicable*)

The site is not considered a Land Use with Higher Potential Pollutant Loads (LUHPPL) and therefore Standard 5 is not applicable.

Standard 6: Critical Areas (*Meeting to the maximum extent practicable*)

Standard 6 requires stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near any other critical area require the use of the specific source control and pollution prevention measures. The, Massachusetts Stormwater Handbook provides specific stormwater best management practices as determined by the Department to be suitable for managing discharges to such areas.

Delineations of state and federal wetland boundaries in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00; as revised, June, 1995) and the manual *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act: A Handbook* (1995) were compiled and stamped by Hancock Associates. Resource areas identified on site are BVW and its associated buffer zones, two certifiable vernal pools and a potential vernal pool.

An area designated as an Estimated Habitat of Rare Wildlife and a Priority Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP) is present on a portion of the project parcel. These habitats appear to be coincident with the wetland area on the eastern side of the property.

Standard 7: Redevelopment (*Meeting to the maximum extent practicable*)

The project is considered a Redevelopment Area and therefore Standard 7 is applicable to this project. Standard 7 requires the development to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent

practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

As stated previously, the proposed project does not create any new stormwater discharges that would discharge untreated discharge or cause erosion or scour to downstream wetlands. The proposed project will re-establish grades to original grades following completion of construction activities and will not alter any of the existing stormwater drainage patterns that exist on the site.

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

Construction period pollution prevention and erosion and sedimentation control measures will be implemented at the project site to control construction related impacts during construction and land disturbance activities. The general contractor for the project will be responsible for implementation of the construction period controls.

Refer to the design plans provided.

The projects will not disturb a cumulative total of more than one acre of land during the construction process and will not require a NPDES Construction General Permit issued by the Environmental Protection Agency.

Below is a description of some of the erosion and sediment control measures that will be employed at the project and that will be included in the SWPPP.

Erosion and Sediment Control Measures

Minimize Disturbed Area and Protect Natural Features and Soil

The contractor is responsible for the maintenance and repair of all erosion control devices on-site. All erosion control devices will be regularly inspected. At no time will silt-laden water be allowed to enter sensitive areas (wetlands). Any runoff from disturbed surfaces will be directed through a sedimentation process prior to being discharged to the existing vegetated filter strips and adjacent woodlands.

The contractor will establish a staging area(s) on area to be disturbed, for the overnight storage of equipment and stockpiling of materials.

In the staging area, the contractor will have a stockpile of materials required to control erosion on-site to be used to supplement or repair erosion control devices. These materials will include, but are not limited to; silt fence, straw wattles, erosion control matting, and crushed stone. As mentioned previously, erosion and sedimentation controls will be employed to minimize the erosion and transport of sediment into resource areas during the earthwork and construction phases of the Project. Erosion and sedimentation control measures will be installed prior to site excavation or disturbance and will be maintained throughout the construction period.

The contractor is responsible for erosion control on the site and will utilize erosion control measures where needed, regardless of whether the measures are specified on the construction plans.

Primary erosion control techniques proposed include silt fence & straw wattle barriers, preserving existing vegetated filter strips, erosion control blanket, mulch and netting, preserving natural vegetation, permanent seeding and topsoiling. A detailed description of each technique is discussed below.

Protect Existing Vegetated Filter Strip

A vegetated filter strip is an area of vegetation for runoff to flow through before it leaves the disturbed site. It improves water quality by removing sediment and other pollutants from runoff as it flows through the filter strip. Some of the sediment and pollutants are removed by filtering, absorption, adsorption and settling as the velocity of flow is reduced.

The existing vegetated filter strip located along the roadway will be preserved and all soil disturbances in these areas will receive loam and seed following completion of construction activities.

Inspection and Maintenance Considerations:

- Filter strips should be maintained as natural areas once the vegetation is established. The filter strip should be protected from damage by fire, grazing, traffic, and dense weed growth.
- Fertilizers should not be added to soils in areas upgradient or in wetland areas, critical areas or well protection areas.
- The filter strip should be inspected periodically and after every major rainstorm to determine if the entrance conditions are still uniform and level and to see if rills have formed. Any problem areas should be repaired promptly to prevent further deterioration.

Concrete Washout

General Description:

A concrete washout is used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solids for easier disposal and prevention of runoff of liquids and solids off a project site or into waters of the state. The washout shall be sized to handle solids, wash water, and rainfall to prevent overflow. For large site, a washout should be 10 feet wide and sized to contain all liquid and solid wastes expected to be generated. All washouts are to be designed with a minimum of 12-inches of freeboard, be at least 12-inches deep and lined with a plastic sheeting of at least 10-mil thickness to prevent leaching of liquids into the ground.

The washout should not be placed within 50 feet of storm drains, open ditches or water bodies and far enough away from other construction traffic to help prevent accidental damage and spills.

A concrete washout will be used at all points where concrete will be placed on the construction site.

Inspection and Maintenance Considerations:

- Daily check washout to determine if it has been filled to 75 percent capacity. If washout has been filled to 75 percent capacity, materials must be removed.

- Daily check plastic linings to ensure they are intact and sidewalls have not been damaged. Repair any plastic linings that have been damaged.
- The washout is designed to promote evaporation, however, if stored liquids have not evaporated and the washout is nearing capacity, vacuum and dispose of the liquid in an approved manner – check with local sanitary sewer authority if there are any special disposal requirements for concrete wash water.
- Remove liquids or cover the washouts before predicted rainstorms to prevent overflows.
- Hardened solids can be reused onsite or hauled away for recycling. Coordinate with Owner on their preference or check with local recycling agency to identify opportunities for concrete recycling.
- After removal of materials, build a new structure, or if structure is still intact, inspect for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears.

Erosion Control Blanket

Erosion Control Blankets are porous fabrics manufactured by weaving or bonding fibers into blankets for erosion prevention. Some erosion control blankets are also manufactured from biodegradable materials such as mulch matting and netting. Mulch blankets are jute or other wood fibers that have been formed into sheets and are more stable than normal mulch. Netting is typically made from jute, other wood fiber, plastic, paper, or cotton and can be used to hold the mulching and matting to the ground. Netting can also be used alone to stabilize soils while the plants are growing.

Erosion control blankets can be used as matting, which is used to stabilize the flow of channels or swales or to protect seedlings on recently planted slopes until they become established.

Erosion control blankets aid in plant growth by holding seeds, and topsoil in place until the seeds have a chance to take root.

North American Green SC150BN will be installed on all slopes with a slope steeper than 3H:1V. Erosion control blankets will be a temporary and permanent stabilization method to help prevent soil erosion into adjacent woodland and wetland areas.

Inspection and Maintenance Considerations:

- Erosion control blankets will be inspected weekly and after heavy rains and inspected for cracks, tears, or breaches in the fabric; the fabric should make continuous contact with the soil; repair and/or replace sections of damaged erosion control blanket and install additional stakes (or pins) when necessary.
- If undermining, erosion or gulying has occurred beneath the blankets, immediately fill in the deteriorated area with loam, seed, and install blanket over affected area. Ensure the blanket makes continuous contact with the soil, if properly toed in, and properly anchor the fabric.
- It is critical when protecting a cut slope with erosion control blanket, to properly anchor the blanket to the soil. This will ensure that it will not be undermined by a storm event.
- If there is no contact with the soil, the material will not hold the soil and erosion will occur underneath the material.

Mulch and Netting

Mulching is a temporary erosion control practice in which materials such as grass, hay, wood chips, wood fibers, straw, or gravel are placed on exposed or recently planted soil surfaces. When used in combination with seeding or planting, mulching can aid plant growth by holding seeds, and topsoil in place, preventing birds from eating seeds, retaining moisture, and insulating plant roots against extreme temperatures.

Mulches are applied in areas which have been seeded either for temporary or permanent cover, and are placed immediately after seeding.

Mulches also enhance plant establishment by conserving moisture and moderating soil temperatures. Mulch helps hold fertilizer, seed, and topsoil in place in the presence of wind, rain, and runoff and maintains moisture near the soil surface. Mulching also helps reduce the speed of storm water runoff over an area.

Mulching and netting should be installed as indicated in the project specifications.

Inspection and Maintenance Considerations:

- Inspect after rainstorms to check for movement of mulch or erosion. If washout, breakage, or erosion occurs, repair surface, reseed, remulch, and install new netting.
- Straw or grass mulches that blow or wash away should be repaired promptly.
- Blanket mulch that is displaced by flowing water should be repaired as soon as possible.
- If plastic netting is used to anchor mulch, care should be taken during initial mowings to keep the mower height high. Otherwise, the netting can wrap up on the mower blade shafts. After a period of time, the netting degrades and becomes less of a problem.
- Continue inspections until vegetation is well established.

Preserving Natural Vegetation

Minimizing exposed soils and consequent erosion by clearing only where construction will occur. Natural vegetation is to be preserved whenever possible, but especially on steep slopes, near perennial and intermittent watercourses or swales, floodplains, wetlands, and on building sites in wooded areas. Trees and natural vegetation will be preserved in natural clumps or as individual trees, shrubs and vines by clearly flagging or marking around the vegetation or trees to be saved.

Vegetation and trees to be preserved are called out on the design plans and as specified in the areas outside of the Limits of Disturbance.

Inspection and Maintenance Considerations:

- Verify that protective measures remain in place. Restore damaged protection measures immediately.
- Serious tree injuries shall be attended to by an arborist.
- Cleanly remove the ends of damaged roots with a smooth cut.
- If bark damage occurs, cut back all loosened bark into the undamaged area, with the cut tapered at the top and bottom and drainage provided at the base of the wood. Limit cutting the undamaged area as much as possible.

- Damaged vegetation should be repaired or replaced immediately to maintain the integrity of the natural system.

Silt Fence

A temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts and entrenched in the ground between the support posts. The silt fence is constructed of stakes and synthetic filter fabric with a rigid wire fence backing where necessary for support when silt fence is to be installed in or within 100 feet of any water body, including wetlands. Silt fence intercepts and detains small amounts of sediment from disturbed areas during construction operations and reduced runoff velocity down a slope. Silt fence decreases the velocity of sheet flow to prevent sediment from leaving the site, entering existing drainage channels, or adjacent wetland areas.

Silt fence will be installed at the toe of all slopes and around topsoil stockpiles as called out on the design plans, as specified in the details.

Inspection and Maintenance Considerations:

- A silt fence requires a great deal of maintenance. Silt fences should be inspected immediately after each rainfall and at least daily during prolonged rainfall to ensure that they are intact and that there are no gaps at the fence-ground interface or tears along the length of the fence.
- If gaps or tears are found, they should be repaired or the fabric should be replaced immediately.
- Accumulated sediments should be removed from the fence base when the sediment reaches one-third to one-half the height of the fence to provide adequate storage volume for the next rain and to reduce pressure on fence. Take care to avoid undermining fence during cleanout.
- If the fabric tears, decomposes, or in any way becomes ineffective, replace it immediately.
- Remove all fencing materials after the contributing drainage area has been properly stabilized. Sediment deposits remaining after the fabric has been removed should be graded to conform to the existing topography and vegetated.

Seeding, Permanent

The establishment of perennial vegetative cover such as grass, trees and shrubs on disturbed areas is to provide stabilization to the soil by holding soil particles in place. The vegetation reduces sediments and runoff to downstream areas by slowing the velocity of runoff and permitting greater infiltration of the runoff. Vegetation also filters sediments, helps the soil absorb water, improves wildlife habitats, and enhances the aesthetics of the site.

Permanent seeding will applied to all disturbed areas upon establishment of finished grades as shown on the plans.

Inspection and Maintenance Considerations:

- Grasses should emerge within 4-28 days and legumes 5-28 days after seeding, with legumes following grasses. A successful stand should exhibit the following:
 - Vigorous dark green or bluish green seedling, not yellow.
 - Uniform density, with nurse plants, legumes, and grasses well intermixed.

- Green leaves – perennials should remain green throughout the summer, at least at the plant bases.
- Inspect seeded areas for failure and make necessary repairs and reseed immediately. Conduct or follow-up survey after one year and replace failed plants where necessary.
- If vegetative cover is inadequate to prevent rill erosion, overseed in accordance with soil test results.
- If vegetation fails to grow, soil should be tested to determine if low pH or nutrient imbalances are responsible.
- If a stand has less than 40% cover, reevaluate the choice of plant materials and quantities of lime. Re-establish the stand following seedbed preparation and seeding recommendations, omitting lime in the absence of soil test results. If the season prevents resowing, mulch or jute netting, or erosion control blanket is an effective temporary cover.

Slope Stabilization

The smallest practicable area of land will be exposed at a time. Slopes greater than three-to-one (horizontal to vertical) will be stabilized with seed, organic mulch, jute fabric, or rip-rap, as appropriate, to prevent erosion during construction. After disturbed areas have been stabilized, the temporary erosion control measures will be removed and accumulated sediment will be removed and disposed of in an appropriate location. Disturbed areas will be stabilized with appropriate ground cover as soon as possible. After the removal of temporary erosion control measures, disturbed areas will receive a layer of topsoil for stabilization.

Stabilized Staging Area

A temporary stabilized staging area will be constructed at any point where construction equipment will be stored or refueled on-site. The staging area will be stabilized with an 8-inch thick layer of 1 to 3-inch stone, reclaimed stone, or recycled concrete on a geotextile filter fabric to be placed between the stone fill and the earth surface below. A silt fence & straw wattle barrier will be installed down-gradient of the staging area to contain any sediment-laden runoff.

Inspection and Maintenance Considerations:

- The staging area will be inspected weekly and after heavy rains or heavy use.
- The area will be top dressed with new stone if a significant amount of mud or sediment accumulates.
- Any vegetative filter strips will be maintained to insure a vigorous stand of vegetation at all times.
- The pad will be reshaped as needed.
- Staging area and temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved.

Straw Wattle

A straw wattle is a coir (coconut fiber), straw, or excelsior woven roll encased in netting of jute, nylon, or burlap used to dissipate energy along channels and bodies of water and reduce sheet flow on slopes. When wattles are placed at the toe and on the face of slopes, they intercept runoff, reduce the flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff.

Straw wattles will be installed adjacent to the silt fence to add additional strength where the silt fence geotextile is trenched into the ground as called out on the design plans and specified in the details.

Inspection and Maintenance Considerations:

- Due to the susceptibility of plant materials to the physical constraints of the site, climatic conditions, and animal populations, it is necessary to inspect installations frequently.
- Repair or replace split, torn, unraveling, or slumping wattles.
- Plant materials missing or damaged should be replaced as soon as possible.
- Sloughs or breaks in drainage pattern should be reestablished for the site as quickly as possible to maintain stability.
- Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface.

Topsoiling

Preserving and using topsoil to provide a suitable growth medium and enhance final site stabilization with vegetation where a sufficient supply of quality topsoil is available. Topsoiling is accomplished by stripping, stockpiling, and reapplying topsoil, or importing topsoil.

Topsoil is to be preserved by stripping in the immediate construction areas for reuse by stockpiling. Stripping and topsoiling will occur and the contractor will stockpile topsoil in an area outside of the wetlands and surround the stockpile with a continuous ring of silt fence as specified in the details.

Inspection and Maintenance Considerations:

- Maintain protective cover on stockpiles until needed.
- Maintain perimeter sediment control measures around stockpiles until needed.

Construction Period Pollution Prevention

Good Housekeeping BMPs

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

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer

- Whenever possible, all of a product will be used up before disposing of the container
- Manufacturer's recommendations for proper use and disposal will be followed
- The contractor will inspect daily to ensure proper use and disposal of materials
- The contractor will be required in the Contract documents to control dust.

Allowable Non-Stormwater Discharge Management

Certain types of discharges are allowed under the NPDES General Permit for Construction Activity, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come into contact with the water prior to or after its discharge. The control measures that have been outlined previously in this report will be strictly followed to ensure that no contamination of these non-stormwater discharges takes place. The following non-stormwater discharges that may occur from the job site include:

- Discharges from fire-fighting activities
- Fire Hydrant flushings
- Waters used to wash vehicles where detergents are not used
- Water used to control dust in accordance with off-site vehicle tracking
- Potable water including uncontaminated water line flushings
- Routine external building wash down that does not use detergents
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used
- Uncontaminated air conditioner compressor condensate
- Uncontaminated ground water or spring water
- Foundation or footing drains where flows are not contaminated with process materials such as solvents
- Uncontaminated excavation dewatering
- Landscape Irrigation

Standard 9: Operation and Maintenance Plan

The goal of the Operation and Maintenance (O&M) plan is not only to protect resources on-site or nearby, but also to protect resources in the region that may be affected by the activities at the site. Such a plan is not applicable to this project which creates no new impervious surface nor contains storage of any chemicals.

Standard 10: Prohibition of Illicit Discharges

Standard 10 of the Massachusetts Stormwater Handbook prohibits illicit discharges to stormwater management systems. As stated in the handbook, “The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including stormwater best management practices and any pipes intended to transport stormwater to the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater.”

Proponents of projects within Wetlands jurisdiction must demonstrate compliance with this requirement by submitting to the issuing authority an Illicit Discharge Compliance Statement verifying that no illicit discharges exist on the site and by including in the pollution prevention plan measures to prevent illicit discharges to the stormwater management system.

All stormwater runoff discharges via overland flow and there are no closed piped systems therefore illicit discharges are not applicable to this project.

1.0 PROJECT DESCRIPTION

This Notice of Intent (NOI) is being submitted to the Boxford Conservation Commission pursuant to the Massachusetts Wetlands Protection Act (WPA) Regulations for work within the 100-foot Buffer Zone of Bordering Vegetated Wetlands (BVW) and pursuant to the Town of Boxford (the Town) Wetlands Bylaw (hereinafter referred to as the local bylaw). A site locus is given as Figure 1 and a property area plan is given as Figure 2.

1.1 LIMITED PROJECT PROVISIONS

This project meets the criteria of the Limited Project provisions of the WPA listed in 310 CMR 10.53(3)(i): the maintenance, repair, and improvements (but not substantial enlargement) of structures, which existed on the effective date of 310 CMR 10.51 through 10.60.

1.2 EXISTING CONDITIONS

The upland areas of the parcel are developed with elderly housing buildings and parking areas. There are two public water supply wells serving the facility. Wastewater is disposed of on-site through several groundwater discharges. Surrounding the developed upland are large wetland areas (Figure 2)

1.3 PROPOSED CONDITIONS

This project involves several activities related to the Massachusetts Department of Environmental Protection (MADEP) permitting requirements for a new municipal water supply. First is the installation of a 6-inch bedrock well. Second is the discharge of approximately 10 gallons per minute from the well for a period of 48 hours to verify the source is sustainable and to collect samples for laboratory testing of water quality. The water is to be discharged to an erosion control structure in the buffer zone. After MADEP permitting, power and water piping will be connected to the new well. Work will not occur in wetland resource areas. There will not be a change in impervious area. This is discussed further in Appendix B Stormwater Management Report. Work will occur in previously disturbed existing landscaped areas in the buffer zone only.

1.4 PROJECT PLAN LIST

The following plan sheets are included with this NOI:

<u>Sheet</u>	<u>Title</u>	<u>Date</u>
C1	Site Plan	July 2021
n/a	Compiled Wetland Resource Areas	February 2012

2.0 RESOURCE AREAS

The project site contains BVW and is located within the 100-foot Buffer Zone.

2.1 WETLAND RESOURCE AREAS

The wetland Resource Areas on the project site are regulated under a Federal, State, and Local regulatory programs including:

- Section 404 of the Clean Water Act (CWA), which is administered by the U.S. Army Corps of Engineers (ACOE);
- Section 401 of the CWA, which is overseen by the MADEP;
- WPA and 310 CMR 10.00, which is administered by the Local Conservation Commission or (upon appeal) by MADEP; and
- the Town has its own local bylaw.

Delineations of State and Federal wetland boundaries in accordance with the WPA Regulations (310 CMR 10.00; as revised, June, 1995) and the manual *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act: A Handbook* (1995) were compiled by Hancock Associates. Resource areas identified on site are BVW and its associated buffer zones, two certifiable vernal pools, and a potential vernal pool.

2.2 PROJECT IMPACTS

2.2.1 Direct Impacts

Direct impacts to wetland resources for the proposed work are not anticipated.

2.2.1.1 Bordering Vegetated Wetlands

Work will not be conducted within BVW.

10.55(4)(d) Impact to Rare Species Habitat:

An area designated as an Estimated Habitat of Rare Wildlife and a Priority Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP) is present on a portion of the project parcel. These habitats appear to be generally coincident with the wetland area on the eastern side of the property. Work is not proposed in this area.

10.55(4)(e) Impact to Area of Critical Environmental Concern:

The project is not located within an Area of Critical Environmental Concern (ACEC).

2.2.1.2 100-Foot Buffer

The limit of the buffer zone is the area horizontally offset 100 feet from the vegetated wetland line. The limit of disturbance for the project is located within buffer area.

2.2.2 Temporary Impacts

Temporary impacts to wetland resource areas during construction of the project will be avoided through the implementation of erosion and sediment control measures. These measures are shown on the attached Site Plan (Attachment C).

2.3 STORMWATER MANAGEMENT

A Stormwater Management Report is included in Appendix B of this report.

2.4 RARE SPECIES

An area designated as an Estimated Habitat of Rare Wildlife and a Priority Habitat of Rare Species by the NHESP is present on a portion of the project parcel. These habitats appear to be generally coincident with the wetland area on the eastern side of the property. Work is not proposed in this area.

2.5 WATER QUALITY

The subject resource areas are not classified as Outstanding Resource Waters, according to the Massachusetts Surface Water Quality Standards (2007).

2.6 AREA OF CRITICAL ENVIRONMENTAL CONCERN

According to ACEC Program located on the Department of Conservation and Recreation website, the project area is not located within an ACEC.

2.7 MITIGATION MEASURES

2.7.1 Erosion and Sediment Control

To protect the resource areas during construction, a straw wattle barrier is proposed in the location shown in the plans. The erosion control will be maintained in good condition until on-site soils are stabilized. The barrier is proposed to withstand the weight of any sedimentation, and also provides an area for reclamation of sediment. Any accumulated sediment against the barrier will be removed and stabilized prior to removing the erosion control barrier. The drilling rig will be

located as shown on the plan. The drilling cuttings will be contained in the buffer zone. Drilling mud and cuttings are contained in a shallow trench dug with a mini excavator.

MADEP requires the discharge of the water to be downgradient and at least 250 feet from the well. The location of the discharge is shown on the plans. The discharge of water from the well during the 48-hour pumping test will be directed through a temporary hose onto a sheet of plywood. The discharge rate will be 10 gallons per minute, which is comparable to that from a garden hose and scouring of the ground is not expected. The well discharge will be cleared of sediment prior to the pumping test.

2.7.2 Wetland Mitigation

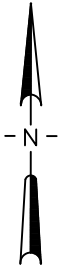
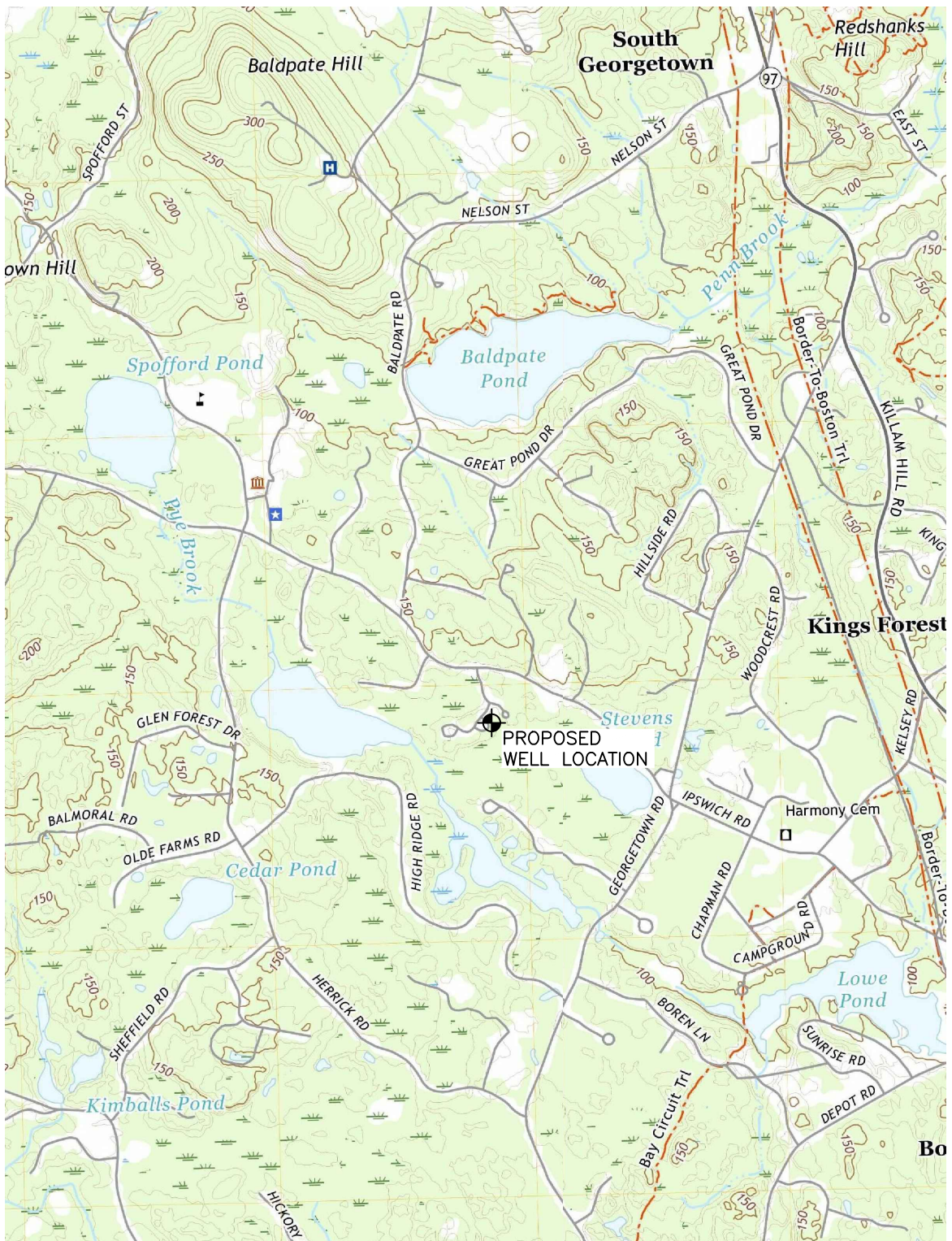
Mitigation is not required.

3.0 CONSTRUCTION SEQUENCING

Installation of the bedrock well and performance of the pumping test is anticipated to commence in the late summer of 2021. Drilling will likely be completed in a week. After the well is installed, a temporary pump is installed, and a 48-hour pumping test is conducted.

Connecting power and water piping to the well is anticipated to be in the winter of 2021 but may occur as late as the spring of 2022. Power and piping connections should be completed in a week.

FIGURES

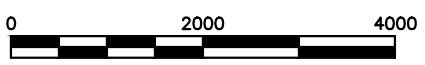


PLOT DATE: 6-30-21
 FILE: M:\11156 Four Mile Village, Boxford\Figures\locus.dwg

SOURCE:


USGS SOUTH GROVELAND AND GEORGETOWN QUADS
 DATED 2021.

CONTOUR INTERVAL: 10 FEET



APPROX. SCALE IN FEET

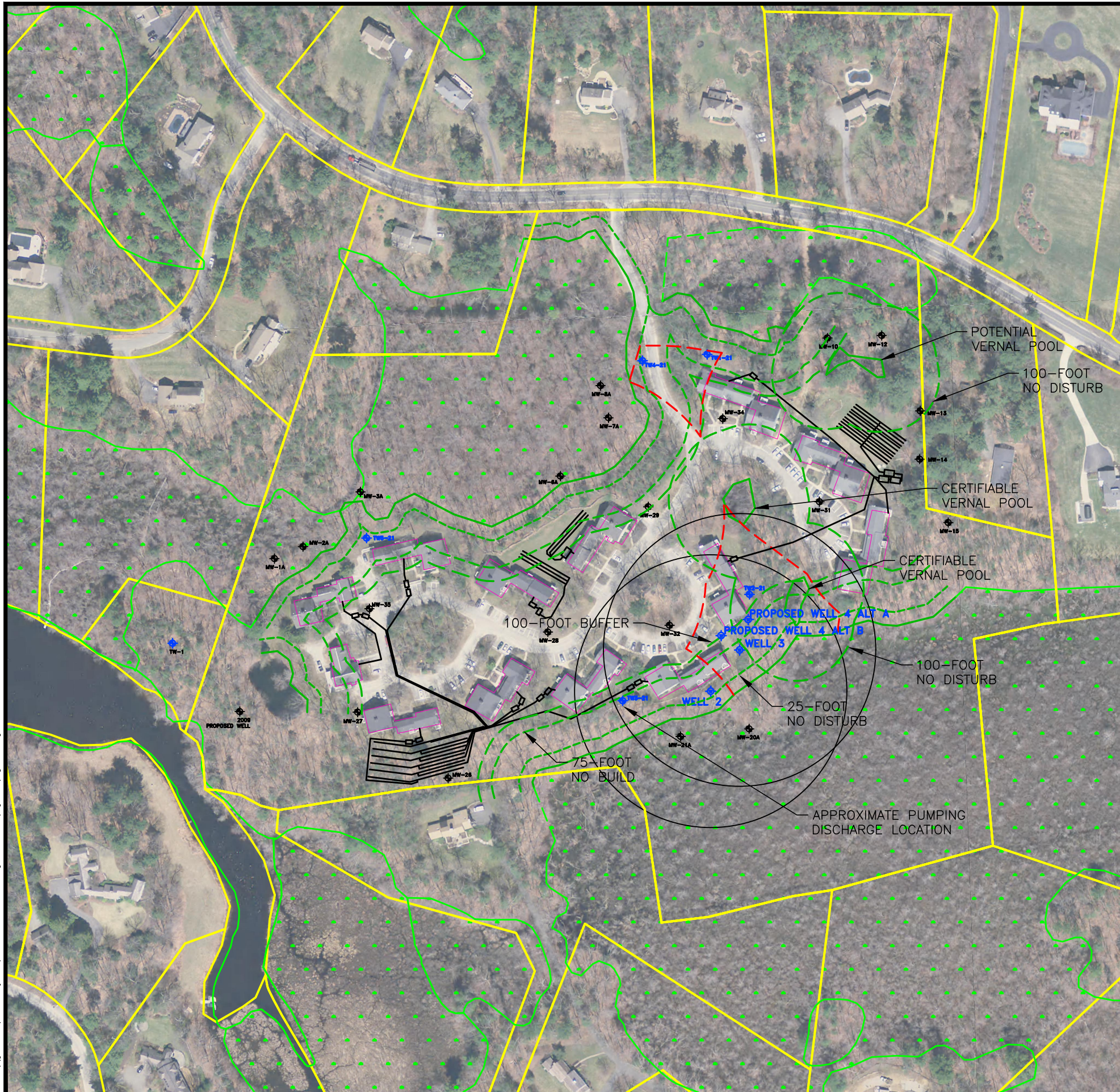
CLIENT: BOXFORD FRIENDSHIP FOUNDATION			
PROJECT: WELL REPLACEMENT			
TITLE: SITE LOCUS			
DESIGNED: DGH	DRAWN: DGH	CHECKED: DAM	APPROVED: DAM
SCALE: 1" = 2000'	DATE: 06/25/21	FILE NO.: 11156-LOCUS	PROJECT NO.: 11156







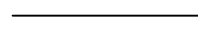
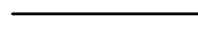


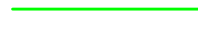

GeoInsight
Practical in Nature

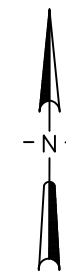
FIGURE NO.: 1

PLOT DATE: 6-3-21
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LEGEND

-  EXISTING SUPPLY WELL
-  OVERBURDEN TEST WELL
-  EXISTING MONITORING WELL
-  250-FOOT SETBACK FROM PROPERTY BOUNDARY AND WASTEWATER DISPOSAL FIELDS
-  EXISTING ZONE I
-  SEPTIC PIPING
-  GIS PROPERTY LINE
-  GIS BUILDING FOOTPRINTS
-  GIS WETLAND (OMITTED WHERE SITE DELINEATED)
-  SITE DELINEATED RESOURCES AND BUFFERS (DASHED) AS NOTED



NOTES:

THIS FIGURE WAS BASED UPON MASS GIS DATA, AND THE FOLLOWING PLANS BY OTHERS:

"EXHIBIT PLAN SHOWING COMPILED WETLAND RESOURCE AREA LIMITS" BY HANCOCK ASSOCIATES DATED 1/25/2011.

"SEWAGE DISPOSAL SYSTEM, BUILDINGS I, J, K & L" BY HANCOCK ASSOCIATES DATED 10/03/2007.


"SEWAGE DISPOSAL SYSTEM, BUILDINGS A & B" BY HANCOCK ASSOCIATES DATED 08/06/2012"

"SEWAGE DISPOSAL SYSTEM" BY BERGMAN AND ASSOCIATES DATED 08/28/2015.

MONITORING WELLS PLAN BY CARR RESEARCH LABS 06/2005.

"PROPOSED WELL CONCEPT PLAN" BY DUFFIELD ENGINEERING DATED 4/8/2009



CLIENT:		FOUR MILE VILLAGE		 GeoInsight <i>Practical in Nature</i>
PROJECT:		REPLACEMENT WELL		
TITLE:		SITE PLAN		
DESIGNED:	DRAWN:	CHECKED:	APPROVED:	
DGH	DGH	DAM	DAM	
SCALE:	DATE:	FILE NO.:	PROJECT NO.:	FIGURE NO.:
1" = 200'	06/03/21	11156D001	11156	2

APPENDIX A
CERTIFIED LIST OF ABUTTERS

TOWN OF BOXFORD ABUTTER LIST

**50 FOUR MILE VILLAGE
PARCEL ID# 19-2-18
CONSERVATION COMMISSION - 250FT**

Parcel ID	Location	Owner	Owner 2	Owner Address	Owner City/Town	Owner State	Zip Code
19-02-15-1	8 FIELDSTONE WAY	NETLAND GREGORY A TE	HOLLIDAY KIMBERLY A	8 FIELDSTONE WAY	BOXFORD	MA	01921
19-02-15-10	50 FOUR MILE VILLAGE	BOXFORD FRIENDSHIP	FOUNDATION INC	50 FOUR MILE VILLAGE	BOXFORD	MA	01921
19-02-15-2	10 FIELDSTONE WAY	MCAVENEY ROBERT E	MCAVENEY LORI A	10 FIELDSTONE WAY	BOXFORD	MA	01921
19-02-16	240 IPSWICH RD	SAWYER JR CHARLES	HOYT CHERYL L	240 IPSWICH RD	BOXFORD	MA	01921
19-02-18	50 FOUR MILE VILLAGE	BOXFORD FRIENDSHIP FOUNDATION		50 FOUR MILE VILLAGE	BOXFORD	MA	01921
19-02-18-E	50 FOUR MILE VILLAGE	BOXFORD FRIENDSHIP FOUND		50 FOUR MILE VILLAGE	BOXFORD	MA	01921
19-02-19	218 IPSWICH RD	ANNUNZIATO DAVID JT	ANNUNZIATO DIANE	P O BOX 101	BOXFORD	MA	01921
19-02-20	IPSWICH RD	BTA/BOLT INC		P O BOX 95	BOXFORD	MA	01921
19-02-22	210 IPSWICH RD	PANCHOLI ARVIND K TE	PANCHOLI NILA A	210 IPSWICH RD	BOXFORD	MA	01921
19-02-23	216 IPSWICH RD	APOSTOLOPOULOS CHARLES TE	APOSTOLOPOULOS MARIA E	216 IPSWICH RD	BOXFORD	MA	01921
19-03-02	227 IPSWICH RD	COVINO MAURICE M TE	COVINO DONNA R	227 IPSWICH RD	BOXFORD	MA	01921
19-03-03	229 IPSWICH RD	TSOLIAS PAUL & AGATHI	TSOLIAS KRISTINA	229 IPSWICH RD	BOXFORD	MA	01921
19-03-04	233 IPSWICH RD	JEWETT DONNA M TR	JEWETT FAMILY REALTY TRUST	233 IPSWICH RD	BOXFORD	MA	01921
19-03-05	239 IPSWICH RD	BARNES JAMES H TE	BARNES BARBARA G	239 IPSWICH RD	BOXFORD	MA	01921
19-03-36	219A IPSWICH RD	CHAN TAK KEI, WONG KWAI YING	CHAN-JACKSON SZE YUEN JTWROS	219A IPSWICH ROAD	BOXFORD	MA	01921
19-03-37	219C IPSWICH RD	FLATHER CHARLES		219C IPSWICH RD	BOXFORD	MA	01921
19-03-38	219B IPSWICH RD	PENAFIEL RICK	PENAFIEL ELLEN	219B IPSWICH RD	BOXFORD	MA	01921
24-04-09-39	48 HIGH RIDGE RD	WALTER GLEN V & ELIZABETH G TR	48 HIGH RIDGE ROAD REALTY TRUST	48 HIGH RIDGE RD	BOXFORD	MA	01921
24-04-09-40	44 HIGH RIDGE RD	KINNEY KATHRYN S TR	KINNEY RAYMOND J JR TR	44 HIGH RIDGE RD	BOXFORD	MA	01921
24-04-34	37 BATCHELDER RD	SPIRO GREGG	SPIRO JANE B	37 BATCHELDER RD	BOXFORD	MA	01921
24-04-35	43B BATCHELDER RD	GATTI CHRISTOPHER W	BARTZ MELISSA A	43B BATCHELDER RD	BOXFORD	MA	01921
24-04-36	43A BATCHELDER RD	YEATON ROBERT P TE	JOLINE M YEATON	43 A BATCHELDER ROAD	BOXFORD	MA	01921
24-04-37	45 BATCHELDER RD	STERNER ROBERT	STERNER PATRICIA A	45 BATCHELDER RD	BOXFORD	MA	01921

Lisa Benecke

CERTIFIED COPY

6/8/2021

APPENDIX B
STORMWATER MANAGEMENT REPORT



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.

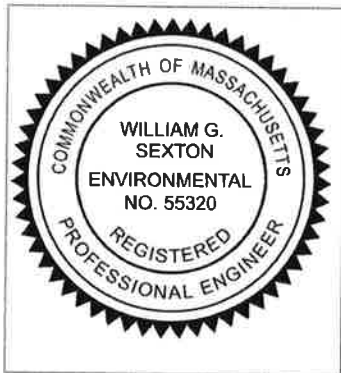
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



7/01/2021

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

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

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

Standard 6: Critical Areas

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



Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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



Checklist for Stormwater Report

Checklist (continued)

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

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

Standard 9: Operation and Maintenance Plan

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

Standard 10: Prohibition of Illicit Discharges

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



Stormwater Management Report

The work proposed at the site is within jurisdiction of the Wetlands Protection Act (WPA) and therefore a Notice of Intent (NOI) has been prepared. As part of the NOI submission, stormwater mitigation must be addressed. This report has been prepared to address the ten standards outlined in the Massachusetts Stormwater Handbook, last revised January 2008, and how the project is meeting them.

The proposed work will occur in the Bordering Vegetated Wetland (BVW) buffer zone that was compiled by Hancock Associates as shown on the attached plans. There is no proposed work in the wetlands and the project does not create any new impervious surface. All finished grading will re-establish grades to original elevations prior to construction activities and will not alter any of the existing stormwater drainage patterns that exist on the site.

This project represents a “Redevelopment” under the MassDEP Stormwater Management Standards and therefore is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions. This report is organized into sections that correspond to the categories listed in the “Massachusetts Stormwater Report Checklist”.

The stormwater management is generally accomplished by “country” drainage where stormwater runs off the roadway and sheet flows over vegetated areas into adjacent woodlands and bordering vegetated wetlands. Due to the limited available area, and intent of the project to preserve the existing conditions, the continued use of non-structural measures and maintenance of existing vegetation along the edge of the roadway will be pursued.

Standard 1: No New Untreated Discharges *(Meeting to the maximum extent practicable)*

The MA Stormwater Handbook requires that the project demonstrates that there are no new untreated discharges and that new discharges will not cause erosion or scour to downstream wetlands.

The proposed project does not create any new stormwater discharges that would discharge untreated discharge or cause erosion or scour to downstream wetlands. The proposed project will re-establish grades to original elevations prior to construction activities and will not alter any of the existing stormwater drainage patterns that exist on the site.

Standard 2: Peak Rate Attenuation *(Meeting to the maximum extent practicable)*

Standard 2 requires that stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates. This project does not involve any increase in impervious surfaces and it is assumed that HydroCAD calculations showing this standard is met are not necessary.

Standard 3: Stormwater Recharge *(Meeting to the maximum extent practicable)*

Standard 3 requires that three computations or demonstrations be fulfilled in order to satisfy the stormwater recharge requirements, they are as follows:

- Impervious Area
- Required Recharge Volume
- Bottom Area Sizing for Infiltration Structures

As stated previously, this project is a redevelopment project and needs to meet Standard 3 to the maximum extent practicable. This project results in no net increase in impervious surfaces and no corresponding increase or decrease in recharge rates and/or infiltration rates. Typical practices used to infiltrate recharge volumes were evaluated but due to the limited available area and close proximity to bordering vegetated wetlands, installation of recharge infiltration practices would not be practicable. This project results in no net increase in impervious surfaces and will meet this Standard to the maximum extent practicable.

Standard 4: Water Quality *(Not-applicable)*

Standard 4 requires that all stormwater management systems be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). The MA Stormwater Handbook states that this standard is met when:

- a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
- b. Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

As stated previously, this project is a redevelopment project and will meet this standard to the maximum extent practicable.

Long term pollution prevention plan

A Long term pollution prevention plan is addressed in the Long-Term Operation and Maintenance Plan as required in Standard 9.

Water quality treatment volume *(Not-applicable)*

This project site is located within a “critical area” as defined in the MA Stormwater Management Handbook; therefore it would be subject to a Water Quality Depth of one inch (1.0) when computing the required water quality volume. As stated previously the installation of structural

BMPs is not practicable due to the limited available area due to close proximity to bordering vegetated wetlands, and preserving existing conditions to the maximum extent practicable. It will be important to preserve the existing vegetated filter strips and woodland around the project area that provide treatment prior to discharging to adjacent wetlands. The proposed project will mimic existing conditions and will maintain the overland flow of runoff throughout the site.

There are no new impervious surface being created that would increase the water quality volume; treating for water quality is not necessary.

TSS Removal Computations (*Not-applicable*)

Standard 4 requires that a minimum of 80% Total Suspended Solids (TSS) removal rate be achieved in the proposed condition. Existing vegetated filter strips adjacent to the roadway will remain and be maintained on a regular schedule. Since no new impervious areas are being constructed the need to treat for TSS removal is not necessary.

Standard 5: Land Uses with Higher Potential Pollutant Loads (*Not-applicable*)

The site is not considered a Land Use with Higher Potential Pollutant Loads (LUHPPL) and therefore Standard 5 is not applicable.

Standard 6: Critical Areas (*Meeting to the maximum extent practicable*)

Standard 6 requires stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near any other critical area require the use of the specific source control and pollution prevention measures. The, Massachusetts Stormwater Handbook provides specific stormwater best management practices as determined by the Department to be suitable for managing discharges to such areas.

Delineations of state and federal wetland boundaries in accordance with the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00; as revised, June, 1995) and the manual *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act: A Handbook* (1995) were compiled and stamped by Hancock Associates. Resource areas identified on site are BVW and its associated buffer zones, two certifiable vernal pools and a potential vernal pool.

An area designated as an Estimated Habitat of Rare Wildlife and a Priority Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP) is present on a portion of the project parcel. These habitats appear to be coincident with the wetland area on the eastern side of the property.

Standard 7: Redevelopment (*Meeting to the maximum extent practicable*)

The project is considered a Redevelopment Area and therefore Standard 7 is applicable to this project. Standard 7 requires the development to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent

practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

As stated previously, the proposed project does not create any new stormwater discharges that would discharge untreated discharge or cause erosion or scour to downstream wetlands. The proposed project will re-establish grades to original grades following completion of construction activities and will not alter any of the existing stormwater drainage patterns that exist on the site.

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

Construction period pollution prevention and erosion and sedimentation control measures will be implemented at the project site to control construction related impacts during construction and land disturbance activities. The general contractor for the project will be responsible for implementation of the construction period controls.

Refer to the design plans provided.

The projects will not disturb a cumulative total of more than one acre of land during the construction process and will not require a NPDES Construction General Permit issued by the Environmental Protection Agency.

Below is a description of some of the erosion and sediment control measures that will be employed at the project and that will be included in the SWPPP.

Erosion and Sediment Control Measures

Minimize Disturbed Area and Protect Natural Features and Soil

The contractor is responsible for the maintenance and repair of all erosion control devices on-site. All erosion control devices will be regularly inspected. At no time will silt-laden water be allowed to enter sensitive areas (wetlands). Any runoff from disturbed surfaces will be directed through a sedimentation process prior to being discharged to the existing vegetated filter strips and adjacent woodlands.

The contractor will establish a staging area(s) on area to be disturbed, for the overnight storage of equipment and stockpiling of materials.

In the staging area, the contractor will have a stockpile of materials required to control erosion on-site to be used to supplement or repair erosion control devices. These materials will include, but are not limited to; silt fence, straw wattles, erosion control matting, and crushed stone. As mentioned previously, erosion and sedimentation controls will be employed to minimize the erosion and transport of sediment into resource areas during the earthwork and construction phases of the Project. Erosion and sedimentation control measures will be installed prior to site excavation or disturbance and will be maintained throughout the construction period.

The contractor is responsible for erosion control on the site and will utilize erosion control measures where needed, regardless of whether the measures are specified on the construction plans.

Primary erosion control techniques proposed include silt fence & straw wattle barriers, preserving existing vegetated filter strips, erosion control blanket, mulch and netting, preserving natural vegetation, permanent seeding and topsoiling. A detailed description of each technique is discussed below.

Protect Existing Vegetated Filter Strip

A vegetated filter strip is an area of vegetation for runoff to flow through before it leaves the disturbed site. It improves water quality by removing sediment and other pollutants from runoff as it flows through the filter strip. Some of the sediment and pollutants are removed by filtering, absorption, adsorption and settling as the velocity of flow is reduced.

The existing vegetated filter strip located along the roadway will be preserved and all soil disturbances in these areas will receive loam and seed following completion of construction activities.

Inspection and Maintenance Considerations:

- Filter strips should be maintained as natural areas once the vegetation is established. The filter strip should be protected from damage by fire, grazing, traffic, and dense weed growth.
- Fertilizers should not be added to soils in areas upgradient or in wetland areas, critical areas or well protection areas.
- The filter strip should be inspected periodically and after every major rainstorm to determine if the entrance conditions are still uniform and level and to see if rills have formed. Any problem areas should be repaired promptly to prevent further deterioration.

Concrete Washout

General Description:

A concrete washout is used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solids for easier disposal and prevention of runoff of liquids and solids off a project site or into waters of the state. The washout shall be sized to handle solids, wash water, and rainfall to prevent overflow. For large site, a washout should be 10 feet wide and sized to contain all liquid and solid wastes expected to be generated. All washouts are to be designed with a minimum of 12-inches of freeboard, be at least 12-inches deep and lined with a plastic sheeting of at least 10-mil thickness to prevent leaching of liquids into the ground.

The washout should not be placed within 50 feet of storm drains, open ditches or water bodies and far enough away from other construction traffic to help prevent accidental damage and spills.

A concrete washout will be used at all points where concrete will be placed on the construction site.

Inspection and Maintenance Considerations:

- Daily check washout to determine if it has been filled to 75 percent capacity. If washout has been filled to 75 percent capacity, materials must be removed.

- Daily check plastic linings to ensure they are intact and sidewalls have not been damaged. Repair any plastic linings that have been damaged.
- The washout is designed to promote evaporation, however, if stored liquids have not evaporated and the washout is nearing capacity, vacuum and dispose of the liquid in an approved manner – check with local sanitary sewer authority if there are any special disposal requirements for concrete wash water.
- Remove liquids or cover the washouts before predicted rainstorms to prevent overflows.
- Hardened solids can be reused onsite or hauled away for recycling. Coordinate with Owner on their preference or check with local recycling agency to identify opportunities for concrete recycling.
- After removal of materials, build a new structure, or if structure is still intact, inspect for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears.

Erosion Control Blanket

Erosion Control Blankets are porous fabrics manufactured by weaving or bonding fibers into blankets for erosion prevention. Some erosion control blankets are also manufactured from biodegradable materials such as mulch matting and netting. Mulch blankets are jute or other wood fibers that have been formed into sheets and are more stable than normal mulch. Netting is typically made from jute, other wood fiber, plastic, paper, or cotton and can be used to hold the mulching and matting to the ground. Netting can also be used alone to stabilize soils while the plants are growing.

Erosion control blankets can be used as matting, which is used to stabilize the flow of channels or swales or to protect seedlings on recently planted slopes until they become established.

Erosion control blankets aid in plant growth by holding seeds, and topsoil in place until the seeds have a chance to take root.

North American Green SC150BN will be installed on all slopes with a slope steeper than 3H:1V. Erosion control blankets will be a temporary and permanent stabilization method to help prevent soil erosion into adjacent woodland and wetland areas.

Inspection and Maintenance Considerations:

- Erosion control blankets will be inspected weekly and after heavy rains and inspected for cracks, tears, or breaches in the fabric; the fabric should make continuous contact with the soil; repair and/or replace sections of damaged erosion control blanket and install additional stakes (or pins) when necessary.
- If undermining, erosion or gulying has occurred beneath the blankets, immediately fill in the deteriorated area with loam, seed, and install blanket over affected area. Ensure the blanket makes continuous contact with the soil, if properly toed in, and properly anchor the fabric.
- It is critical when protecting a cut slope with erosion control blanket, to properly anchor the blanket to the soil. This will ensure that it will not be undermined by a storm event.
- If there is no contact with the soil, the material will not hold the soil and erosion will occur underneath the material.

Mulch and Netting

Mulching is a temporary erosion control practice in which materials such as grass, hay, wood chips, wood fibers, straw, or gravel are placed on exposed or recently planted soil surfaces. When used in combination with seeding or planting, mulching can aid plant growth by holding seeds, and topsoil in place, preventing birds from eating seeds, retaining moisture, and insulating plant roots against extreme temperatures.

Mulches are applied in areas which have been seeded either for temporary or permanent cover, and are placed immediately after seeding.

Mulches also enhance plant establishment by conserving moisture and moderating soil temperatures. Mulch helps hold fertilizer, seed, and topsoil in place in the presence of wind, rain, and runoff and maintains moisture near the soil surface. Mulching also helps reduce the speed of storm water runoff over an area.

Mulching and netting should be installed as indicated in the project specifications.

Inspection and Maintenance Considerations:

- Inspect after rainstorms to check for movement of mulch or erosion. If washout, breakage, or erosion occurs, repair surface, reseed, remulch, and install new netting.
- Straw or grass mulches that blow or wash away should be repaired promptly.
- Blanket mulch that is displaced by flowing water should be repaired as soon as possible.
- If plastic netting is used to anchor mulch, care should be taken during initial mowings to keep the mower height high. Otherwise, the netting can wrap up on the mower blade shafts. After a period of time, the netting degrades and becomes less of a problem.
- Continue inspections until vegetation is well established.

Preserving Natural Vegetation

Minimizing exposed soils and consequent erosion by clearing only where construction will occur. Natural vegetation is to be preserved whenever possible, but especially on steep slopes, near perennial and intermittent watercourses or swales, floodplains, wetlands, and on building sites in wooded areas. Trees and natural vegetation will be preserved in natural clumps or as individual trees, shrubs and vines by clearly flagging or marking around the vegetation or trees to be saved.

Vegetation and trees to be preserved are called out on the design plans and as specified in the areas outside of the Limits of Disturbance.

Inspection and Maintenance Considerations:

- Verify that protective measures remain in place. Restore damaged protection measures immediately.
- Serious tree injuries shall be attended to by an arborist.
- Cleanly remove the ends of damaged roots with a smooth cut.
- If bark damage occurs, cut back all loosened bark into the undamaged area, with the cut tapered at the top and bottom and drainage provided at the base of the wood. Limit cutting the undamaged area as much as possible.

- Damaged vegetation should be repaired or replaced immediately to maintain the integrity of the natural system.

Silt Fence

A temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts and entrenched in the ground between the support posts. The silt fence is constructed of stakes and synthetic filter fabric with a rigid wire fence backing where necessary for support when silt fence is to be installed in or within 100 feet of any water body, including wetlands. Silt fence intercepts and detains small amounts of sediment from disturbed areas during construction operations and reduced runoff velocity down a slope. Silt fence decreases the velocity of sheet flow to prevent sediment from leaving the site, entering existing drainage channels, or adjacent wetland areas.

Silt fence will be installed at the toe of all slopes and around topsoil stockpiles as called out on the design plans, as specified in the details.

Inspection and Maintenance Considerations:

- A silt fence requires a great deal of maintenance. Silt fences should be inspected immediately after each rainfall and at least daily during prolonged rainfall to ensure that they are intact and that there are no gaps at the fence-ground interface or tears along the length of the fence.
- If gaps or tears are found, they should be repaired or the fabric should be replaced immediately.
- Accumulated sediments should be removed from the fence base when the sediment reaches one-third to one-half the height of the fence to provide adequate storage volume for the next rain and to reduce pressure on fence. Take care to avoid undermining fence during cleanout.
- If the fabric tears, decomposes, or in any way becomes ineffective, replace it immediately.
- Remove all fencing materials after the contributing drainage area has been properly stabilized. Sediment deposits remaining after the fabric has been removed should be graded to conform to the existing topography and vegetated.

Seeding, Permanent

The establishment of perennial vegetative cover such as grass, trees and shrubs on disturbed areas is to provide stabilization to the soil by holding soil particles in place. The vegetation reduces sediments and runoff to downstream areas by slowing the velocity of runoff and permitting greater infiltration of the runoff. Vegetation also filters sediments, helps the soil absorb water, improves wildlife habitats, and enhances the aesthetics of the site.

Permanent seeding will applied to all disturbed areas upon establishment of finished grades as shown on the plans.

Inspection and Maintenance Considerations:

- Grasses should emerge within 4-28 days and legumes 5-28 days after seeding, with legumes following grasses. A successful stand should exhibit the following:
 - Vigorous dark green or bluish green seedling, not yellow.
 - Uniform density, with nurse plants, legumes, and grasses well intermixed.

- Green leaves – perennials should remain green throughout the summer, at least at the plant bases.
- Inspect seeded areas for failure and make necessary repairs and reseed immediately. Conduct or follow-up survey after one year and replace failed plants where necessary.
- If vegetative cover is inadequate to prevent rill erosion, overseed in accordance with soil test results.
- If vegetation fails to grow, soil should be tested to determine if low pH or nutrient imbalances are responsible.
- If a stand has less than 40% cover, reevaluate the choice of plant materials and quantities of lime. Re-establish the stand following seedbed preparation and seeding recommendations, omitting lime in the absence of soil test results. If the season prevents resowing, mulch or jute netting, or erosion control blanket is an effective temporary cover.

Slope Stabilization

The smallest practicable area of land will be exposed at a time. Slopes greater than three-to-one (horizontal to vertical) will be stabilized with seed, organic mulch, jute fabric, or rip-rap, as appropriate, to prevent erosion during construction. After disturbed areas have been stabilized, the temporary erosion control measures will be removed and accumulated sediment will be removed and disposed of in an appropriate location. Disturbed areas will be stabilized with appropriate ground cover as soon as possible. After the removal of temporary erosion control measures, disturbed areas will receive a layer of topsoil for stabilization.

Stabilized Staging Area

A temporary stabilized staging area will be constructed at any point where construction equipment will be stored or refueled on-site. The staging area will be stabilized with an 8-inch thick layer of 1 to 3-inch stone, reclaimed stone, or recycled concrete on a geotextile filter fabric to be placed between the stone fill and the earth surface below. A silt fence & straw wattle barrier will be installed down-gradient of the staging area to contain any sediment-laden runoff.

Inspection and Maintenance Considerations:

- The staging area will be inspected weekly and after heavy rains or heavy use.
- The area will be top dressed with new stone if a significant amount of mud or sediment accumulates.
- Any vegetative filter strips will be maintained to insure a vigorous stand of vegetation at all times.
- The pad will be reshaped as needed.
- Staging area and temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved.

Straw Wattle

A straw wattle is a coir (coconut fiber), straw, or excelsior woven roll encased in netting of jute, nylon, or burlap used to dissipate energy along channels and bodies of water and reduce sheet flow on slopes. When wattles are placed at the toe and on the face of slopes, they intercept runoff, reduce the flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff.

Straw wattles will be installed adjacent to the silt fence to add additional strength where the silt fence geotextile is trenched into the ground as called out on the design plans and specified in the details.

Inspection and Maintenance Considerations:

- Due to the susceptibility of plant materials to the physical constraints of the site, climatic conditions, and animal populations, it is necessary to inspect installations frequently.
- Repair or replace split, torn, unraveling, or slumping wattles.
- Plant materials missing or damaged should be replaced as soon as possible.
- Sloughs or breaks in drainage pattern should be reestablished for the site as quickly as possible to maintain stability.
- Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface.

Topsoiling

Preserving and using topsoil to provide a suitable growth medium and enhance final site stabilization with vegetation where a sufficient supply of quality topsoil is available. Topsoiling is accomplished by stripping, stockpiling, and reapplying topsoil, or importing topsoil.

Topsoil is to be preserved by stripping in the immediate construction areas for reuse by stockpiling. Stripping and topsoiling will occur and the contractor will stockpile topsoil in an area outside of the wetlands and surround the stockpile with a continuous ring of silt fence as specified in the details.

Inspection and Maintenance Considerations:

- Maintain protective cover on stockpiles until needed.
- Maintain perimeter sediment control measures around stockpiles until needed.

Construction Period Pollution Prevention

Good Housekeeping BMPs

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

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer

- Whenever possible, all of a product will be used up before disposing of the container
- Manufacturer's recommendations for proper use and disposal will be followed
- The contractor will inspect daily to ensure proper use and disposal of materials
- The contractor will be required in the Contract documents to control dust.

Allowable Non-Stormwater Discharge Management

Certain types of discharges are allowed under the NPDES General Permit for Construction Activity, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come into contact with the water prior to or after its discharge. The control measures that have been outlined previously in this report will be strictly followed to ensure that no contamination of these non-stormwater discharges takes place. The following non-stormwater discharges that may occur from the job site include:

- Discharges from fire-fighting activities
- Fire Hydrant flushings
- Waters used to wash vehicles where detergents are not used
- Water used to control dust in accordance with off-site vehicle tracking
- Potable water including uncontaminated water line flushings
- Routine external building wash down that does not use detergents
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used
- Uncontaminated air conditioner compressor condensate
- Uncontaminated ground water or spring water
- Foundation or footing drains where flows are not contaminated with process materials such as solvents
- Uncontaminated excavation dewatering
- Landscape Irrigation

Standard 9: Operation and Maintenance Plan

The goal of the Operation and Maintenance (O&M) plan is not only to protect resources on-site or nearby, but also to protect resources in the region that may be affected by the activities at the site. Such a plan is not applicable to this project which creates no new impervious surface nor contains storage of any chemicals.

Standard 10: Prohibition of Illicit Discharges

Standard 10 of the Massachusetts Stormwater Handbook prohibits illicit discharges to stormwater management systems. As stated in the handbook, “The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including stormwater best management practices and any pipes intended to transport stormwater to the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater.”

Proponents of projects within Wetlands jurisdiction must demonstrate compliance with this requirement by submitting to the issuing authority an Illicit Discharge Compliance Statement verifying that no illicit discharges exist on the site and by including in the pollution prevention plan measures to prevent illicit discharges to the stormwater management system.

All stormwater runoff discharges via overland flow and there are no closed piped systems therefore illicit discharges are not applicable to this project.

APPENDIX C

SITE PHOTOS

SITE PHOTOGRAPHS
FOUR MILE VILLAGE
BOXFORD, MA



Photo # 1: Failed existing Well 2 to be abandoned.

Photo # 3: Reverse angle from Photo #2. Drill rig access and area of piping connections.



Photo # 2: Drill rig access area and area of piping connections. Existing Well 3 in foreground.

Photo # 4: Drill rig set up area.



SITE PHOTOGRAPHS
FOUR MILE VILLAGE
BOXFORD, MA



Photo # 5: Proposed Well 4 site.

Photo # 7: Slope where drill cuttings will be contained.



Photo # 6: Reverse angle of Photo #5. Proposed Well 4 site.

Photo # 8: Area of 10 gallon per minute discharge for 48 hours.



APPENDIX D

SITE PLANS

NOTES:

1) ALL STRUCTURES ON THE PROPERTY AS SHOWN WERE COMPILED FROM A PARTIAL FIELD SURVEY AND EXISTING PLANS. BUILDINGS C, D, E, F, I, J, K, L, THE COMMUNITY CENTER AND PORTIONS OF BUILDINGS B, G, AND H AND SURROUNDING PAVEMENT AREAS WERE FIELD LOCATED. ALL OTHER BUILDINGS AND PAVEMENT AREAS WERE COMPILED FROM EXISTING PLANS (LISTED BELOW).

2) LIMITS OF WETLAND RESOURCE AREAS WERE COMPILED FROM PLANS AND DOCUMENTS USED IN PREVIOUS FILINGS WITH BOXFORD CONSERVATION COMMISSION AND MASSACHUSETTS DEP.

REFERENCES:

SEE PLAN ENTITLED "PLAN OF LAND IN BOXFORD, MA PROPERTY OF ROY C. & BARBARA M. CARLSON, JR.", PREPARED BY HANCOCK SURVEY ASSOCIATES, INC., MAY 2, 1984, REVISED OCT. 12, 1984.

LEGEND

- BEARING & DISTANCE ALONG BOUNDARY
- LIGATURE TO INDICATE CONTINUOUS OWNERSHIP ACROSS LINES
- EDGE OF PAVEMENT
- BUILDING, STEPS & OVERHANG
- LIMIT OF WETLAND RESOURCE AREA
- LIMIT OF NON-JURISDICTIONAL WETLAND RESOURCE AREA
- LIMIT OF 100-FOOT WETLAND BUFFER ZONE
- LIMIT OF 75-FOOT NO-BUILD ZONE
- LIMIT OF 100-FOOT WETLAND BUFFER ZONE
- LIMIT OF 100-FOOT NO-DISTURB ZONE

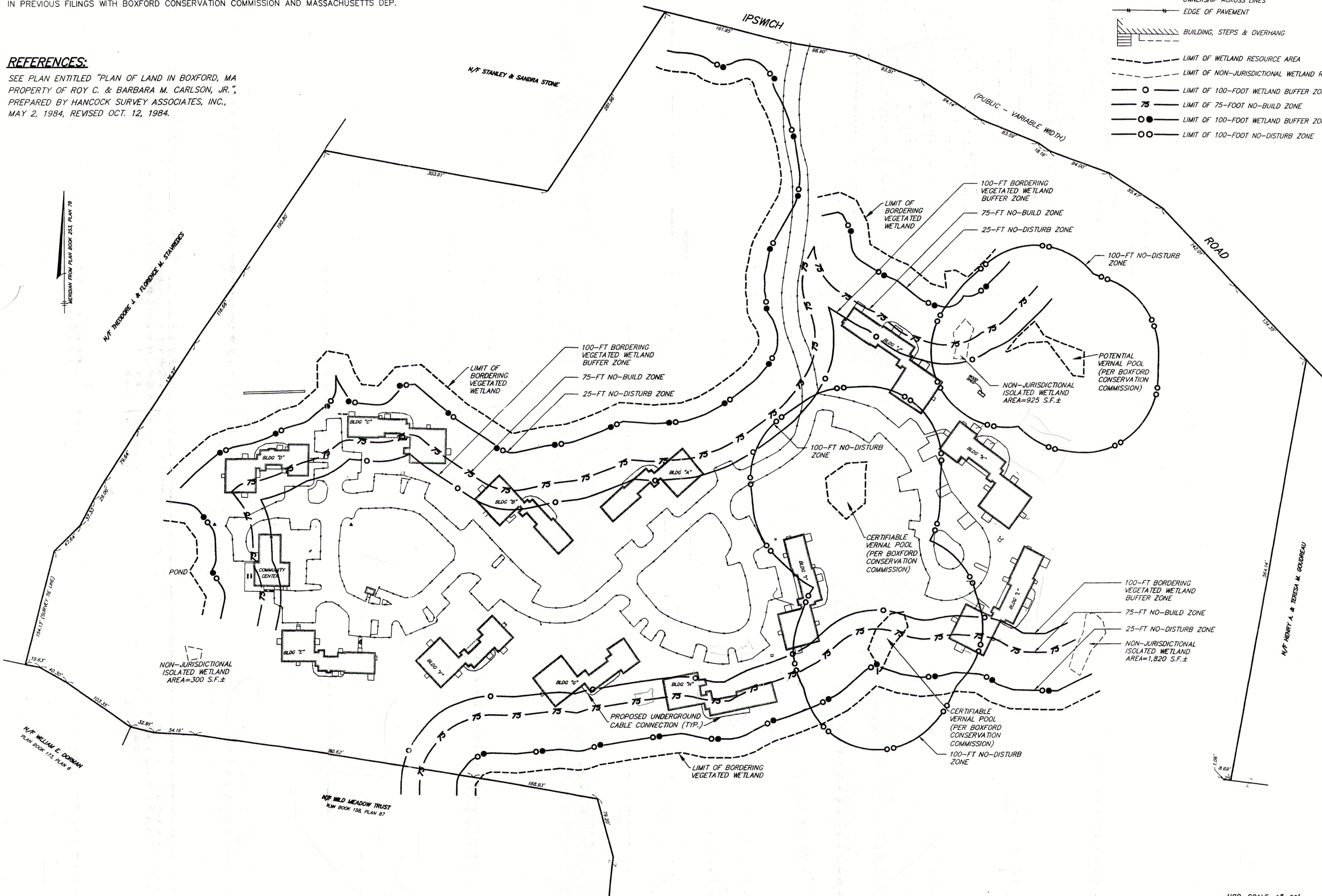


EXHIBIT PLAN

SHOWING COMPILED WETLAND RESOURCE AREA LIMITS

AT
Four Mile Village
Boxford, Massachusetts 01921

PREPARED FOR:
Boxford Friendship Foundation
c/o
Bethany Community Services
10 Phoenix Road
Haverhill, Massachusetts 01832

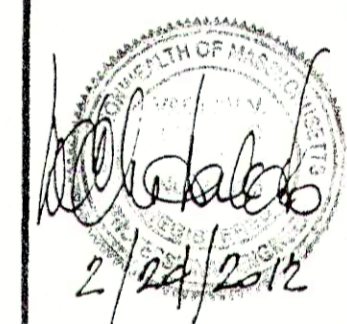
HANCOCK ASSOCIATES

Civil Engineers

Land Surveyors

Wetland Scientists

185 CENTRE STREET, DANVERS, MA 01923
VOICE (978) 777-3050, FAX (978) 774-7816
WWW.HANCOCKASSOCIATES.COM



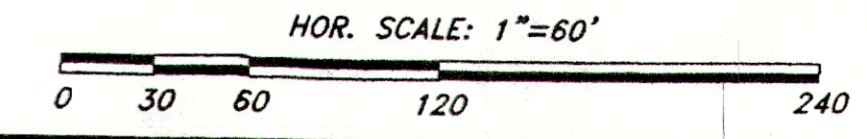
NO.	BY	APP.	DATE	ISSUE/REVISION	DESCRIPTION

DATE: 01/25/2011
SCALE: 1"=60'
DRAWN BY: RCA
APPRVD BY: VVT CHECK BY: VVT

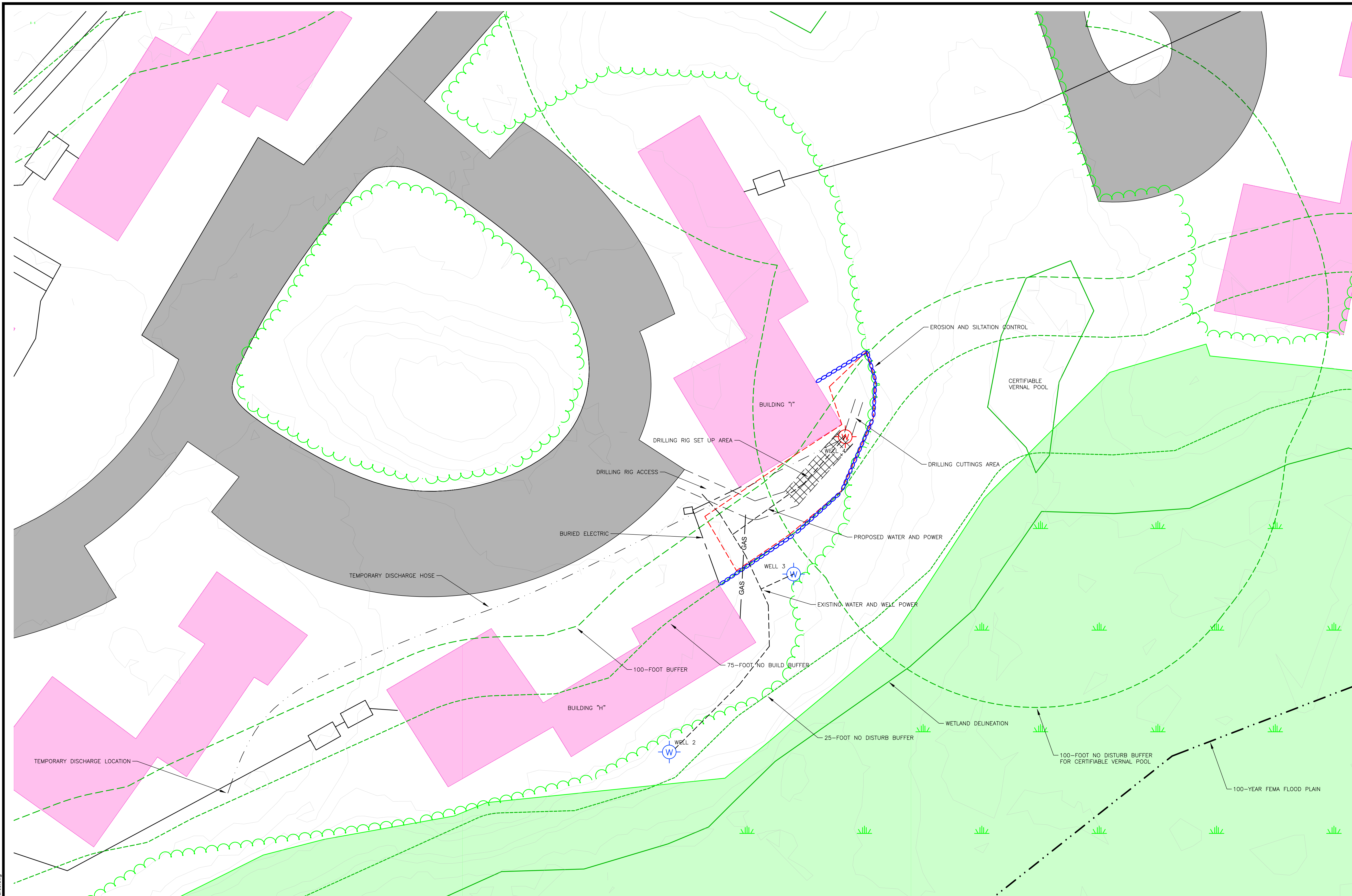
SITE PLAN

PLOT DATE: Feb 24, 2012 10:08 am
PATH: F:\land Projects\R2\2330\dwg\Engineering\main\

DWG: 2330EP3.dwg
LAYOUT: EP
SHEET: 1 OF 1



**SITE PLAN
 FOUR MILE VILLAGE**



LEGEND

- WELL 3 EXISTING WELL
- WELL 4 PROPOSED WELL
- TREELINE
- SEPTIC PIPING
- TOPOGRAPHIC CONTOUR (2-FOOT INTERVAL)
- AREA OF DISTURBANCE
- SITE DELINEATED RESOURCES AND BUFFERS (DASHED) AS NOTED
- PAVEMENT
- BUILDINGS
- ESTIMATED AND PRIORITY HABITAT

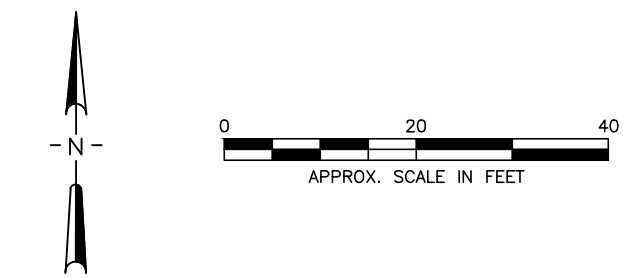
NOTES:

THIS FIGURE WAS BASED UPON MASS GIS DATA, AND THE FOLLOWING PLANS BY OTHERS:
 EXHIBIT PLAN SHOWING COMPILED WETLAND RESOURCE AREA LIMITS BY HANCOCK ASSOCIATES DATED 1/25/2011.
 SEWAGE DISPOSAL SYSTEM, BUILDINGS I, J, K & L BY HANCOCK ASSOCIATES DATED 10/03/2007.
 SEWAGE DISPOSAL SYSTEM, BUILDINGS A & B BY HANCOCK ASSOCIATES DATED 08/06/2012*
 SEWAGE DISPOSAL SYSTEM BY BERGMAN AND ASSOCIATES DATED 08/28/2015.

WETLAND RESOURCES BASED UPON 1/25/2011 HANCOCK ASSOCIATES PLAN WHICH NOTES "WETLAND RESOURCE AREAS WERE COMPILED FROM PLANS AND DOCUMENTS USED IN PREVIOUS FILINGS WITH BOXFORD CONSERVATION COMMISSION AND MASSACHUSETTS DEP."
 GEOSIGHT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE SOURCES USED FOR THE PREPARATION OF THIS PLAN. THE LOCATION OF FEATURES SHOULD BE CONSIDERED APPROXIMATE. BURIED UTILITIES ARE APPROXIMATE AND MUST BE FIELD VERIFIED.

FOR PERMITTING ONLY. NOT FOR CONSTRUCTION.

BOXFORD FRIENDSHIP FOUNDATION
 50 FOUR MILE VILLAGE, MAP/LOT: 19-2-18, BOOK/PAGE: 7680/504



REVISIONS		
NO.	DATE	DESCRIPTION

DWG SCALE: 1"=20' PREPARED BY: DGH
 DATE ISSUED: 06/30/21 CHECKED BY: DAM
 PROJECT #: 11156 APPROVED BY: DAM

DRAWING TITLE:
**REPLACEMENT
 WELL**

DRAWING NUMBER:
C1