

**HANCOCK**  
ASSOCIATES**Notice of Intent**

56 &amp; 60 Main Street

Wenham, Massachusetts

18 July 2016

Prepared for: Wenham Pines LLCPrepared by: Hancock AssociatesSubmitted to: Wenham Conservation Commission**Find Attached:**

- WPA Form 3 Notice of Intent
- Notice of Intent Fee Calculation Form
- Project Narrative
- Fee Calculation Memorandum
- Copy of Checks
- Owner's Authorization to Submit Applications
- List of Abutters (300')
- Abutter Notification
- Affidavit of Service
- Locus Map
- Grading and Drainage Plan

**\*Refer to accompanied "DATA REPORT" for Complete Stormwater Analysis and Calculations.\***

DANVERS, MA  
185 Centre Street  
Danvers, MA 01923  
Phone: (978) 777-3050  
Fax: (978) 774-7816

MARLBOROUGH, MA  
315 Elm Street  
Marlborough, MA 01752  
Phone: (508) 460-1111  
Fax: (508) 460-1121

CHELMSFORD, MA  
34 Chelmsford Street, Unit 2  
Chelmsford, MA 01824  
Phone: (978) 244-0110  
Fax: (978) 244-1133

PRINCETON, MA  
P.O. Box 97  
206 Worcester Road  
Princeton, MA 01541  
Phone: (978) 464-5890  
Fax: (978) 464-5383

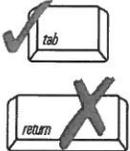
SALEM, NH  
P.O. Box 205  
403 Main Street, Unit 202  
Salem, NH 03079  
Phone: (603) 898-4701



**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  
Wenham  
 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):

56 & 60 Main Street Wenham 01984  
 a. Street Address b. City/Town c. Zip Code

Latitude and Longitude: \_\_\_\_\_  
 d. Latitude e. Longitude

Map 27 Lots 36 & 44  
 f. Assessors Map/Plat Number g. Parcel /Lot Number

2. Applicant:

Anthony Tambone  
 a. First Name b. Last Name

Wenham Pines LLC  
 c. Organization

6 Kimball Lane  
 d. Street Address

Lynnfield MA 01940  
 e. City/Town f. State g. Zip Code

\_\_\_\_\_ h. Phone Number \_\_\_\_\_ i. Fax Number \_\_\_\_\_ j. Email Address

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

Janice Flynn  
 a. First Name b. Last Name

(Personal Representative of the Estate of William J. Flynn)  
 c. Organization

5 Barker Road  
 d. Street Address

Boxford MA 01921  
 e. City/Town f. State g. Zip Code

\_\_\_\_\_ h. Phone Number \_\_\_\_\_ i. Fax Number \_\_\_\_\_ j. Email address

4. Representative (if any):

Kyle Lally  
 a. First Name b. Last Name

Hancock Associates  
 c. Company

185 Centre Street  
 d. Street Address

Danvers MA 01923  
 e. City/Town f. State g. Zip Code

978-777-3050 978-774-7816 klally@hancockassociates.com  
 h. Phone Number i. Fax Number j. Email address

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

\$5,125 - Does not include local \$2,550 \$2,575  
 bylaw fees b. State Fee Paid c. City/Town Fee Paid



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

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## A. General Information (continued)

6. General Project Description:

Site preparation for the construction of a residential subdivision. Construction includes 3 buildings within bufferzone. Stream crossing as a limited project.

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)

310CMR 10.53(3)(e) - Construction of a roadway/driveway where no other alternative is viable

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

5982

c. Book

b. Certificate # (if registered land)

439, 444, 445

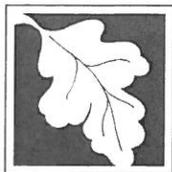
d. Page Number

## 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)

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	na 1. square feet	
	na 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	na 1. square feet	na 2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	na 1. square feet	na 2. cubic yards dune nourishment
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	na 1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	na 1. square feet	
h. <input type="checkbox"/> Salt Marshes	na 1. square feet	na 2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	na 1. square feet	
	na 2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	na 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	
	na 1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	na 1. square feet	
4. <input type="checkbox"/> 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 BWV	b. square feet of Salt Marsh
5. <input checked="" type="checkbox"/> Project Involves Stream Crossings		
	1	
	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 Notice of Intent – Required Actions (310 CMR 10.11).

### Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

12 July 2016

b. Date of map

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

- c. Submit Supplemental Information for Endangered Species Review\*

1.  Percentage/acreage of property to be altered:

(a) within wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

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

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

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

(b)  Photographs representative of the site

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

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





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

**Online Users:**

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

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

## D. Additional Information

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

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

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

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



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## D. Additional Information (cont'd)

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

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

### Grading and Drairage

a. Plan Title

Hancock Associates

Vaclav V. Talacko

b. Prepared By

c. Signed and Stamped by

15 July 2016

1" = 50'

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

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

## E. Fees

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

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

3731

2. Municipal Check Number

29 June 2016

3. Check date

3730

4. State Check Number

29 June 2016

5. Check date

Atlantic

6. Payor name on check: First Name

Tambone

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

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City/Town

### F. Signatures and Submittal Requirements

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

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

*[Handwritten Signature]*

1. Signature of Applicant

*6/29/16*

2. Date

*See "Owner's Authorization to Submit Applications"*

3. Signature of Property Owner (if different)

4. Date

*[Handwritten Signature]*

5. Signature of Representative (if any)

*15 July 2016*

6. Date

#### For Conservation Commission:

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

#### For MassDEP:

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

#### Other:

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

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



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

**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:

56 and 60 Main Street Wenham  
 a. Street Address b. City/Town  
total = \$5,125  
 c. Check number d. Fee amount

2. Applicant Mailing Address:

Anthony Tambone  
 a. First Name b. Last Name  
Wenham Pines LLC  
 c. Organization  
6 Kimball Lane  
 d. Mailing Address  
Lynnfield MA 01940  
 e. City/Town f. State g. Zip Code  
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

Janice Flynn  
 a. First Name b. Last Name  
(Personal Representative of the Estate of William J. Flynn)  
 c. Organization  
5 Barker Road  
 d. Mailing Address  
Boxford MA 01921  
 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
Cat.3b construction of each building	3	\$1,050	\$3,675
Cat. 4a Limited project crossing	1	\$1,450	\$1,450
_____	_____	_____	_____
(Does not include local bylaw fees)	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
<b>Step 5/Total Project Fee:</b>			\$5,125
<b>Step 6/Fee Payments:</b>			
Total Project Fee:			\$5,125
			a. Total Fee from Step 5
State share of filing Fee:			\$2,550
			b. 1/2 Total Fee less \$12.50
City/Town share of filling Fee:			\$2,575
			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.)

Wenham Conservation Commission  
138 Main Street  
Wenham, Massachusetts 01984  
**56 & 60 Main Street Project Narrative**

**15 July 2016**

### **Introduction**

On behalf of Wenham Pines LLC (Applicant), Hancock Associates is hereby filing this Notice of Intent (NOI) for the proposed site development within jurisdictional proximity to wetland resource areas, in accordance with the Massachusetts Wetlands Protection Act (MA WPA) and Town of Wenham Wetlands Protection Bylaw, at 56 & 60 Main Street (Map 27/Lots 36 & 44 on the Town of Wenham Assessor's Maps).

The proposed project located at 56 & 60 Main Street consist of the construction of 23 town house units, composed of ten, 55+, two family dwellings and one three family dwelling, on what is currently the 32.4 acre, Lakeview Golf Course. Also included in the proposed construction, is an addition to the existing residence located at 56 Main Street which will provide two affordable housing units. For a total of 25 housing units.

Currently, the site consist of maintained fairways and greens, typical of a functioning and active golf course. There are three bordering vegetated wetlands jurisdictional under the Massachusetts Wetland Protection Act (MAWPA) and one wetland jurisdictional only under the Wenham, local wetland bylaw. There is an intermittent stream flowing from the north to the south, which empties into an unnamed tributary of the Miles River. The unnamed Miles River tributary is accompanied by a 200' riverfront area, under the MA WPA.

### **Wetland Delineation Methodology**

Prior to performing field wetland delineations, a desktop review of the subject property was performed using available MassGIS datalayers, Wehnam municipal GIS, NRCS soil survey data, aerial photography, and FEMA Flood Insurance Rate Maps.

Following desktop review, a qualified Professional Wetland Scientist (PWS) from Hancock Associates conducted field wetland delineations in accordance with protocols outlined in the guidance document *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act* published by the MassDEP Division of Wetlands and Waterways in March 1995.

A Hancock Associates wetland scientist transected the subject property on foot and placed sequentially numbered flagging tape to identify the jurisdictional limits of Bordering Vegetated Wetlands (BVW) and other wetland resource areas. All flags were located and plotted by Hancock professional land surveyors following the field delineation.

According to the desktop review, no Massachusetts Natural Heritage and Endangered Species Program (NHESP) Priority or Estimated Rare Species Habitats were identified within or in proximity to the survey area. The site is not within any listed Area of Critical Environmental Concern (ACEC). There are two potential vernal pools northerly of the site, both of which are over 1,100' from any proposed work. There is a third potential vernal pool, offsite, ~ 600' from proposed work. There are no mapped certified vernal pools within jurisdictional proximity to the site.

Based on the results of the field wetland delineation and desktop assessment, three (4) wetland resource areas as defined under the MA WPA were identified within the survey area; Bordering Vegetated Wetland (BVW), Riverfront Area, Inland Bank, and Bordering Land Subject to Flooding. These resources areas and associated buffer zones under the MA WPA and Town of Wenham Wetlands Protection Bylaw are described herein.

### **Bordering Vegetated Wetland (BVW)**

In accordance with the MA WPA implementing regulations 310 CMR 10.55(2)(a), Bordering Vegetated Wetland is defined as, "*freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants*". The limit of BVW is further defined as, "*the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. Wetland indicator plants shall include but not necessarily be limited to those plant species identified in the Act. Wetland indicator plants are also those classified in the indicator categories of Facultative, Facultative+, Facultative Wetland-, Facultative Wetland, Facultative Wetland+, or Obligate Wetland in the National List of Plant Species That Occur in Wetlands: Massachusetts (Fish & Wildlife Service, U.S. Department of the Interior, 1988) or plants exhibiting physiological or morphological adaptations to life in saturated or inundated conditions*".

In accordance with these parameters, all BVW was field delineated in accordance with protocols outlined in the guidance document *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act* published by the MassDEP Division of Wetlands and Waterways in March 1995. The site contains three jurisdictional Bordering Vegetated Wetlands under the Massachusetts Wetland Protection Act (MA WPA) and one wetland jurisdictional only under the local Wenham bylaw.

There is a 6" PVC pipe currently connecting two BVW's (wetland B & C series) Along with site work within the buffer zone, it is also proposed that the existing 6" PVC pipe be replaced by a 10" ductile iron pipe. Water flows through the pipe from the northerly, C-series wetland, southwards, to the B-series wetland.

Dominant vegetation within the wetland boundaries of the wetland BVW areas includes; *Lythrum salicaria* (purple loosestrife - OBL), *Juncus effuses* (soft rush - OBL), *Epibolium sp.* (willowherbs - FACW), *Onoclea sensibilis* (sensitive fern - FACW), *Vaccinium corybosum* (highbush blueberry – FACW-), *Rosa multiflora* (multiflora rose - FACU), *Toxicodendron radicans* (poison ivy, climbing - FAC), *Acer rubrum* (red maple - FAC), *Phalaris arundinacia* (common canary grass - FACU), *Rubus multifloris* (variable blackberry - FAC) *Carex* sedges (FACW), and *Cornus foemina* (stiff dogwood - FACW).

### **Riverfront Area**

In accordance with the MA WPA implementing regulations 310 CMR 10.58(2)(a), Riverfront Area is defined as, *“the area of land between a river’s mean annual high water line and a parallel line measured horizontally. The riverfront area may include or overlap other resource areas or their buffer zones. The riverfront area does not have a buffer zone”*. The jurisdictional horizontal distance of Riverfront Area for this location is measured as 200-feet.

The 200-foot riverfront area on this site extends 200 feet from the mean annual high water line of an unnamed tributary of the Miles River. The riverfront area is not associated with a 100-foot buffer zone (10.58(2)). The tributary flows from the west to the east.

### **Inland Bank**

In accordance with the MA WPA implementing regulations 310 CMR 10.54(2)(a), Bank is defined as, *“the portion of the land surface which normally abuts and confines a waterbody. It occurs between a water body and a vegetated bordering wetland and adjacent floodplain, or, in the absence of these, it occurs between a water body and an upland”*. The upper boundary of Inland Bank is further defined as, *“the first observable break in the slope or the mean annual flood level, whichever is lower”*.

#### *10.54 - Bank*

There is an intermittent stream onsite. The stream flows from the north and empties into the BVW to the tributary of the Miles River. A stream crossing is proposed for the purpose of the construction of a roadway.

Under 310CMR 10.53(3)(e), the construction of, and the maintenance of a new roadway or driveway is permitted as a limited project.

10.53(3)(e) reads as the following;

*“(e) The construction and maintenance of a new roadway or driveway of minimum legal and practical width acceptable to the planning board, where reasonable alternative means of access from a public way to an upland area of the same owner is unavailable. Such roadway or driveway shall be constructed in a manner which does not restrict the flow of water.”*

There is no other reasonable means of access to the site, other than crossing the intermittent stream, as the stream navigates from the northernmost reaches of the site to the southernmost reaches of the site. The surrounding properties are privately owned and the tributary to the Miles River is at the southern area of the site.

All stream crossing provisions set forth under 10.54(4) will be met.

10.54(4):

*“(4) General Performance Standard. (a) Where the presumption set forth in 310 CMR 10.54(3) is not overcome, any proposed work on a Bank shall not impair the following:*

- 1. The physical stability of the Bank;*
- 2. The water carrying capacity of the existing channel within the Bank;*
- 3. Ground water and surface water quality;*
- 4. The capacity of the Bank to provide breeding habitat, escape cover and food for fisheries;*
- 5. The capacity of the Bank to provide important wildlife habitat functions.”*

### **Bordering Land Subject to Flooding**

In accordance with the MA WPA implementing regulations 310 CMR 10.57(2)(a)3., Bordering Land Subject to Flooding is defined as, *“the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP, currently administered by the Federal Emergency Management Agency, successor to the U.S. Department of Housing and Urban Development)”*.

A portion of the site is considered to be Bordering Land Subject to flooding. The extent of the mapped 100-year floodplain has been shown on the attached Grading and Drainage plan.

### **Buffer Zones**

Under the MA WPA, Bordering Vegetated Wetlands are associated with a 100' buffer zone extending outwards from the resource area's jurisdictional line.

### **Zone A**

The proposed project site is partially within the Zone A to Wenham Lake, which is classified as a Class A drinking water supply. The Zone A is defined, under **310CMR 22.02**, the **Massachusetts Drinking Water Regulations**, as;

- “(a) the land area between the Surface Water Source and the upper boundary of the Bank;*  
*(b) the land area within a 400 foot lateral distance from the upper boundary of the Bank of a Class A Surface Water Source, as defined in 314 CMR 4.05(3)(a): Class A; and*  
*(c) the land area within a 200 foot lateral distance from the upper boundary of the Bank of a Tributary or associated Surface Water body.”*

No work is proposed within the Zone A, nor does the Zone A have a buffer zone. The onsite, unnamed tributary to the Miles River is not considered to be a Class A Outstanding Resource Water, as it is not a tributary to Wenham Lake.

310CMR 22.02 defines a tributary as the following;

*“Tributary means any body of running, or intermittently running, water which moves in a definite channel, naturally or artificially created, in the ground due to a hydraulic gradient, and which ultimately flows into a Class A Surface Water Source, as defined in 314 CMR 4.05(3)(a): Class A.”*

The unnamed tributary is a tributary to the Miles River, but does not flow into Wenham Lake, rather, it flows easterly, out of Wenham Lake. This flow pattern is confirmed by field elevation measurements.

### **CONCLUSION**

All wetland resource areas under the Massachusetts Wetlands Protection Act have been identified within the subject survey area in accordance with wetland delineation methodologies developed and published by the MassDEP Wetlands and Waterways Program. Therefore, the Applicant respectfully requests that the Wenham Conservation Commission issue an Order of Conditions (OOC) for this filing.

**State fee calculation:**

We have reference to Grading and Drainage plan, and to 310CMR 4.10(8)(n)4. The latter sets forth categories by which filing fees are calculated.

There are three buildings (2/4, 6/8 and no. 56 Main) located in the Riverfront Area and/or hundred-foot buffer. Each of these is subject to Category 3.b., which allows for all appurtenant grading and infrastructure except a Limited Project roadway crossing.

We have one such crossing, subject to Category 4.a.

The Riverfront multiplier (1.5x) is applicable to 'activities in another resource area or the buffer zone...for each of the proposed activities within the Riverfront Area'. Only 56 Main lies in both RA and the buffer zone, and is thus subject to the multiplier.

The crossing is in Bank and Bordering Land Subject to Flooding, but is not in RA.

Thus the fee for the crossing is \$1,450.00, and the fees for the three buildings are \$ 1,050.00 x 2 (for each building in RA only) and \$ 1,575.00 for number 56 Main.

Total state fees: \$5,125.00

\$ 2,550 for the Commonwealth of Massachusetts and \$ 2,575.00 for Town of Wenham

**Wenham Bylaw fee calculation:**

The Bylaw provides a tabular fee calculation sheet, but very little else in guidance.

There appears to be no Riverfront multiplier under the Bylaw.

Category 3.b. requires \$ 500.00 for 'each building'. Only three buildings are in RA or buffer (and thus subject to jurisdiction).  $3 \times 500 = 1,500$

Category 4.a. requires \$ 700.00 for each crossing.

Total Bylaw fee is \$ 2,200.00

THIS CHECK IS VOID WITHOUT A COLORED BACKGROUND AND AN ARTIFICIAL WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW

**Atlantic Tambone**

6 Kimball Lane  
Suite 300  
Lynnfield, MA 01940  
781-245-1515

Salem Five Bank  
210 Essex Street  
Salem, MA 01970

**3730**

6/29/2016

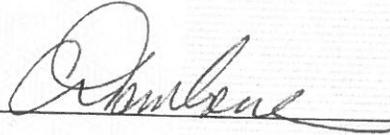
Pay to the  
Order of

Commonwealth of Mass

\$2,550 .00

Two Thousand Five Hundred Fifty and 00/100\*\*\*\*\*DOLLARS

Commonwealth of Mass



⑈003730⑈ ⑆211370558⑆ 0899068605⑈

THIS CHECK IS VOID WITHOUT A COLORED BACKGROUND AND AN ARTIFICIAL WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW

**Atlantic Tambone**

6 Kimball Lane  
Suite 300  
Lynnfield, MA 01940  
781-245-1515

Salem Five Bank  
210 Essex Street  
Salem, MA 01970

**3731**

6/29/2016

Pay to the  
Order of

Town of Wenham

\$2,575 .00

Two Thousand Five Hundred Seventy-Five and 00/100\*\*\*\*\*DOLLARS

Town of Wenham  
138 Main St  
Wenham, MA 01984



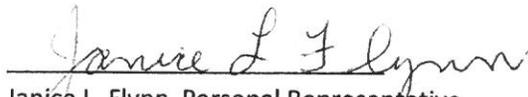
⑈003731⑈ ⑆211370558⑆ 0899068605⑈

## AUTHORIZATION

**RE: Owner Assent to Submit Applications – 56 and 60 Main Street, Wenham**

To whom it may concern:

The undersigned, being the owner of the premises commonly known as 56 and 60 Main Street, Wenham, MA (being shown as Parcels 36 and 44 on Assessor's Map 27), hereby authorize **Wenham Pines, LLC** to submit applications relating to the permitting of a proposed Flexible Development residential project at the site to various agencies, boards and commissions of the Town of Wenham and Commonwealth of Massachusetts, including without limitation, Wenham Conservation Commission, Planning Board, Wenham Historic District Commission, Wenham Board of Health, Wenham Public Works Department, Wenham Building Department, Massachusetts Department of Transportation and Massachusetts Historical Commission.

  
Janice L. Flynn, Personal Representative  
of the Estate of William J. Flynn

July 6, 2016

ALEXANDER CURTIS L TR  
THE 36 MAIN ST REALTY TRU  
36 MAIN ST  
WENHAM, MA 01984

LEGACY DEVELOPMENT INC  
532 LOWELL STREET  
PEABODY, MA 01960

BACHELDER ROBERT A  
HOPE A BACHELDER  
28 MAIN ST  
WENHAM, MA 01984

SALEM-BEVERLY  
WATER BOARD  
ARLINGTON AVE  
BEVERLY, MA 01915

COLT ELIZABETH R ETAL  
LARCH ROW RLTY TR  
18 LARCH ROW  
WENHAM, MA 01984

SEWALL ALICE  
62 MAIN STREET  
WENHAM, MA 01984

DUPEE WILLIAM B & MYRNA E  
57 MAIN ST  
WENHAM, MA 01984

SEXTON BERNARD T & JAYNE  
6 FISKE RD  
WENHAM, MA 01984

*Archer Stephen C*  
FISCHER STEPHEN  
LOIS J FISCHER  
59 MAIN ST  
WENHAM, MA 01984

SHANNEHAN F ROBERT  
LYNNE CRAM  
10 FISKE RD  
WENHAM, MA 01984

*Archer Stephen C*  
FISCHER STEPHEN K  
LOIS J FISCHER  
61 MAIN ST  
WENHAM, MA 01984

SHEEHAN TIMOTHY G & MARY  
THE 692 TREMONT UNIT 4 RL  
34 MAIN ST  
WENHAM, MA 01984

FLYNN WILLIAM J  
DBA FLYNNS LAKEVIEW GOLF  
5 BARKER ROAD  
BOXFORD, MA 01921

TARR REALTY TRUST  
92 MAIN ST  
WENHAM, MA 01984

FULLER BRUCE E & ANNE S T  
OTRA REALTY TRUST  
720 OLD KENNEL RD  
AIKEN, SC 29805

TOWN OF WENHAM  
CEMETARY  
64 MAIN ST  
WENHAM, MA 01984

HARNISCH DAVID M  
KRISTEN A HARNISCH  
9 DUFFYS LANE  
DARIEN, CT 06820

Tarr Realty Trust  
Tarr F S & RC Etal Trsts.  
94 Main Street  
Wenham, MA 01984

KURJA EDWARD B  
AMY K KURJA  
7 FISKE RD  
WENHAM, MA 01984

## Notification to Abutters

In accordance with the Massachusetts Wetlands Protection Act, MGL, Ch. 131, s. 40, and the Wenham Water Resources Protection Bylaw, Ch. XVIII, you are hereby notified that a

Notice of Intent

has been filed with the Wenham Conservation Commission seeking permission to remove, fill, dredge, or alter an Area Subject to Protection under the Act/Bylaw and/or to work within the 100-foot buffer zone.

OR

Request for Determination of Applicability

has been filed with the Wenham Conservation Commission seeking a determination of jurisdiction, and or confirmation of the delineation of Area(s) Subject to Protection under the Act / Bylaw and or determination of possible impact to Area (s) Subject to Protection

OR

Abbreviated Notice of Resource Area Delineation

Has been filed with the Wenham Conservation Commission seeking confirmation of the delineation of Area(s) Subject to Protection under the Act / Bylaw

The Application was filed by Atlantic Tambone  
(represented by Hancock Associates) \_\_\_\_\_ for property  
located at 56 & 60 Main Street,  
Assessor's Map 27, Lot 36 & 44.

The Application is on file at the Conservation Commission Office, Town Hall, Wenham MA and may be reviewed Monday – Friday (9:00 AM to 1:00 PM) or by calling Emilie Cademartori at (978) 468-5520 ext 8 to arrange an appointment.

Notice of the public hearing, including date, time and place, will be posted in the Wenham Town Hall and will be published in the Hamilton-Wenham Chronicle at least five days in advance of the hearing.

Date of hearing ( if known) 8 August 2016

You may also contact the DEP Northeast Regional Office at (978) 694-3200 for more information about this application or about the Wetlands Protection Act and Water Resources Protection Bylaw.

**AFFIDAVIT OF SERVICE**

Under the Massachusetts Wetlands Protection Act  
And  
The Wenham Water Resources Protection Bylaw

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

I, Kyle Lally, hereby certify under  
(Name of person making the Affidavit)  
the pains and penalties of perjury that on 15 July 2016 I gave  
(date)  
notification to abutters in compliance with the second paragraph of Massachusetts  
General Laws, Chapter 131, Section 40, and the "DEP Guide to Abutter Notification"  
dated April 8, 1994, and the Wenham General Bylaws, Ch. XVIII, s. 5, in connection  
with the following matter:

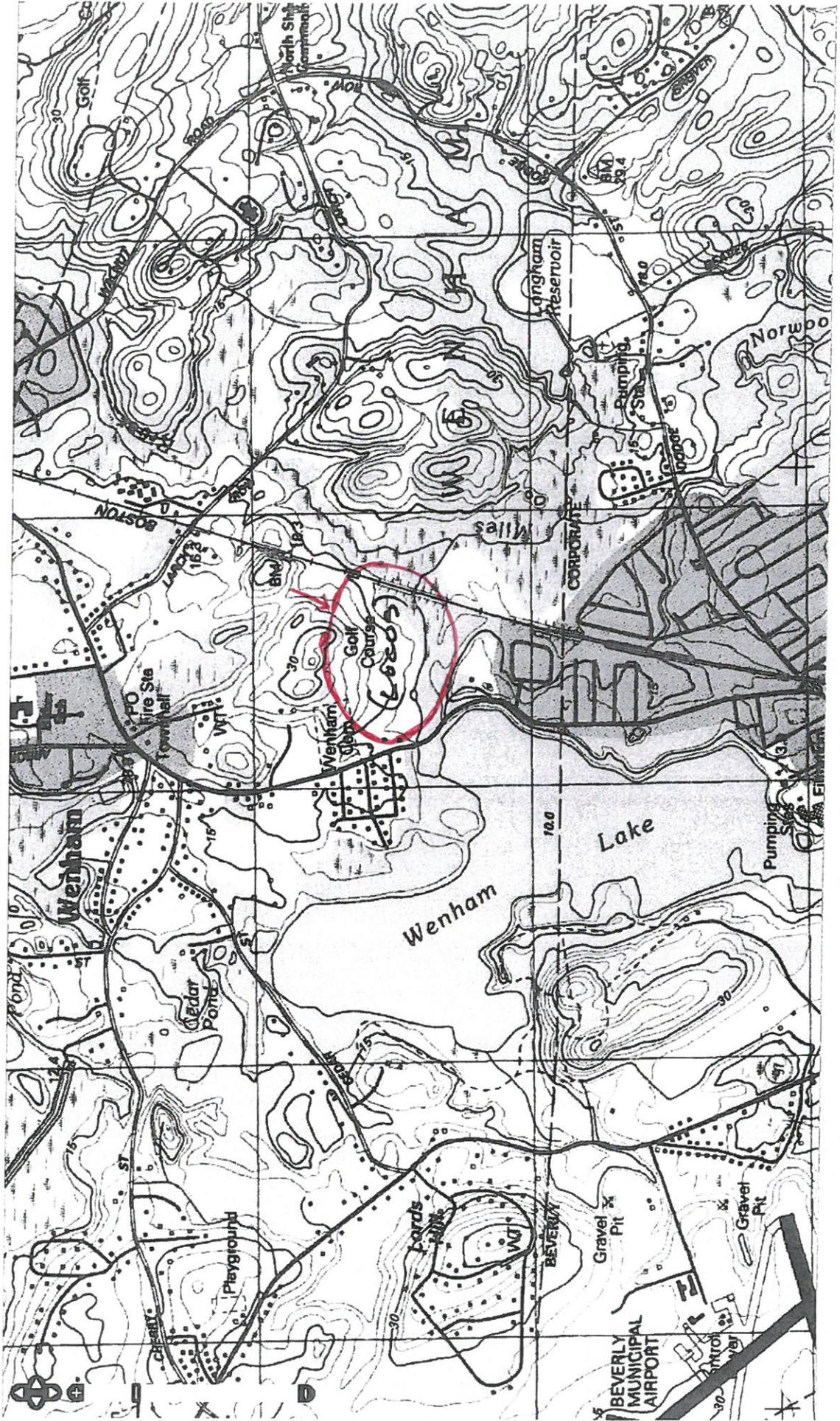
A Notice of Intent filed under the Massachusetts Wetlands Protection Act by \_\_\_\_\_  
Wenham Pines LLC with the Wenham Conservation  
(Applicant's name)  
Commission on 15 July 2016 for property located at 56 & 60 Main Street  
(date) (street address)  
Assessor's Map 27, Lot 36 & 44.

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

  
\_\_\_\_\_  
Signature

15 July 2016  
Date

Zoom to a town



# HANCOCK

## ASSOCIATES

# Data Report

56 & 60 Main Street

Wenham, Massachusetts

18 July 2016

Prepared for: Wenham Pines LLC

Prepared by: Hancock Associates

Submitted to: Wenham Planning Board

Find Attached:

- Locus Map
- Project Narrative
- Grading and Drainage Plan
- Stormwater Checklist
- Stormwater Calculations
- HydroCAD report

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**Appendix A: Soil Maps**

**Appendix B: Pre-Development & Post-Development Watershed Maps**

**Appendix C: Soil Test Results**

**Appendix D: Stormwater Checklist**

**Appendix E: Stormwater Calculations**

**Appendix F: Grading and Drainage Plan**

**Appendix G: Pre-Development HydroCAD Output**

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Table 2-1: Table of Flood Storage Compensation Calculations

Table 5-1: Peak Discharge Summary

## 1.0 GENERAL INFORMATION

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### 1.1 Project Summary

Project Name: Wenham Pines

Location: The project site is located at 56/60 Main Street (Rt. 1A)  
Wenham, MA.

### 1.2 Development Team

**Proponent:** Wenham Pines LLC  
6 Kimball Lane  
Lynnfield, MA 01940  
Mr. Anthony Tambone  
Vice President

**Civil Engineers  
Surveyors**

**Wetland Scientists:** Hancock Associates  
185 Centre Street  
Danvers, MA 01923  
978-777-3050  
Mr. Roy A. Tiano

**Architects:** Grazado Velleco Architects  
10 Doaks Lane  
Marblehead, MA 01945  
781-631-4949  
Mr. James Velleco

**Landscape Architect:** Ryan Associates  
144 Moody Street  
Building 4  
Waltham, MA 02453  
781-314-0401  
Alan Aukeman, ASLA

**Attorney:** Glovsky & Glovsky LLC  
8 Washington Street  
Beverly, MA 01915  
978-720-3122  
Ms. Miranda P. Gooding, Esq.

## **2.0 EXISTING SITE CONDITIONS**

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### **2.1 Project Site**

The existing project site is currently an active 9 hole public golf course, containing approximately 32.4 acres. The existing farm house still stands on the site at 56/60 Main Street and is being used as a 2 family residence. Additionally, there are several more recent outbuildings, a small clubhouse, and a parking lot for the golf course.

Topographically, the site rises from the intermittent stream and Alewife Brook to the northeast with approximately 60' of elevation change across the site. There are two bordering vegetative wetlands near the northeast corner. They are connected by a 6" drain.

The Alewife Brook flows across the southern edge of the site from Wenham Lake to the east, to the Miles River. The Brook is the outlet from Wenham Lake, but today flows over an overflow/spillway of a small dam built in 1872 to increase the lake's capacity as a reservoir. The brook flows through a culvert under Route 1A/Main Street across the site from west to east to the Miles River. The FEMA Zone follows the 39' contour on either side of the brook with the wetland area generally falling within the 35' contour. Although no development is anticipated on the south side of the brook, the golf course has four paths crossing the brook that access several tees and greens located there together with maintenance paths and course irrigation equipment. Of historical interest, it is worth noting that a rail spur used to transport ice from Wenham Lake formerly crossed the site on the south side of the brook. Some earthwork from the spur is still evident. A 36" water main also crosses the site on the south side of brook; again, these areas will not be disturbed.

In addition to Alewife Brook, an intermittent stream flows from north to south to the Alewife Brook across the site roughly 250' to the east and parallel to Main Street. The flow of this stream comes from a drainage area which includes the Main Street Cemetery and a portion of the Wenham County Club to the north. It currently flows through a culvert located at the property line shared with the private residence located at 62 Main Street between the site and the cemetery. The culvert is reportedly undersized and will need to be replaced. Additionally, a bridge crossing is proposed over the intermittent stream for primary site access. Mitigation for this crossing will occur on southeast section of the site, to replicate the flood plain area taken by the bridge crossing.

The project site is situated on the east side of Main Street/Route 1A at a slight bend in the road where it skirts the lake just past the Wenham/Beverly town line. Beyond the Course to the north on the way to the town center is the Main Street Cemetery and the 18 hole Wenham Country Club. Both are also on the east side of the street and both abut the Lakeview Golf Course. The road itself has an ample paved shoulder in both directions that can serve as a bike lane. There is also a sidewalk on the east side of the street which extends from Beverly, past the site, the cemetery, the country club, and on into the town center.

Fiske Road is directly across Main Street to the west. It is part of a small neighborhood of about 30 homes together with Patti Lane and Lake Avenue. Two single family residences abut the property to the south and there is one single family residence located to the north at 62 Main Street between the clubhouse area and the Main Street Cemetery. The cemetery also abuts the property to the north along with the Wenham County Club which extends around the property to the east along with the commuter rail line. The MBTA tracks run along end of a panhandle shaped portion of the site at its easternmost edge. This panhandle area is nearly entire wetlands with the Alewife Brook flowing through the though its center.

The development area strategy is one of locating eleven individual building sites with a total of 23 units and the redevelopment of 2 existing units for a grand total of 25 units. With the trees between fairways being preserved, the buildings can sit comfortably within the existing grades, and the homes can be oriented towards the open space. The site plan also accounts for effective life safety and fire safety access with an adequate layout of public and private utilities, along with vehicular and pedestrian circulation.

## 2.2 Soils

According to the National Resources Conservation Service (NRCS) website, the soils on the site are classified as follows:

NRCS SOIL LEGEND	
SOIL ID	SOIL NAME
32A	WAREHAM LOAMY SAND, 0 TO 3 PERCENT SLOPES
51A	SWANSEA MUCK, 0 TO 1 PERCENT SLOPES
242B	HINCKLEY GRAVELLY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
242C	HINCKLEY GRAVELLY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES
242D	HINCKLEY GRAVELLY FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES
260A	SUDBURY FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES
421B	CANTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES, VERY STONY
421C	CANTON FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES, VERY STONY

## 2.3 Floodplain Analysis

The 100 year FEMA floodplain is elevation 39.0, based on NGVD29 and is delineated on the permit site plan. All flood plain volume filled by construction activity within the floodplain has been replicated on a foot per foot basis and can be seen on the permit site plan. Table 2-1 shows the pre-conditions versus the post-development flood compensation tabulations.

**Table 2-1: Table of Flood Storage Compensation Calculations**

<b>Flood Storage Volume Calculations</b>			
<b>Increment</b>	<b>Required</b>	<b>Provided</b>	<b>Change - Flood Storage Increase</b>
37-38	2761	2791	30
38-39	4259	4289	30
39-40	2320	2340	20
Total Flood Storage Volume Increase			80

Notes:

1. "Existing" denotes the amount of flood storage available on-site under current conditions.
2. "Total Required" denotes the existing flood storage volume plus the volume displaced by the proposed bridge construction.
3. "Provided" denotes the amount of flood storage volume available under the proposed on-site grading.
4. "Change - Flood Storage Increase" denotes the amount of flood storage under proposed conditions less the amount of flood storage under existing conditions (the increase in on-site flood storage volume). Note that there will be additional flood storage volume on site during all storm events.
5. All volumes are shown in ft<sup>3</sup>.

### **3.0 PROPOSED PROJECT CONDITIONS**

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The proposed development consists of 23 luxury condominiums and 2 moderate priced condominiums all for residents that will be 55 years old or older.

#### **3.1 Drainage System**

The proposed drainage system will consist of 14 catch basin units, 8 drain manholes, as well as 1 vortech unit. All of the roof runoff is directed towards subsurface infiltration basins adjacent to each housing unit. All stormwater collected by the catch basins will be deposited into two detention basins before being released into the wetlands on-site.

Due to the large increase in impervious area from pre development to post development, detention basins were designed to reduce the peak runoff rates during 24 hour storm events. See **Table 2-1**.

#### **3.2 Sewer Collection System**

The proposed sewer collection system will collect sewage within the new building and flow by gravity into a tank at the designated low point then pumped to an Oakson septic field in the center of the site.

#### **3.3 Water Distribution System**

The proposed water distribution system will be connected to the existing water main located in School Street and five new hydrants will be placed as required by the Wenham Fire Department. Each of the 25 units have a domestic service line within the building and the new building will have a fire suppression system.

#### **3.4 Electric, Cable, and Telephone**

Approximate locations of utilities have been indicated on the plans. Final locations and construction details for the utilities will be coordinated with the respective provider prior to construction.

#### **3.5 Natural Gas**

The proposed gas service will be from an existing gas main located in Main Street. The gas company will design the final gas connections.

## 4.0 ZONING REGULATIONS

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The site is located in the Town of Wenham - Residential Zone for Flexible Development.

**Table 4-1: Table of Dimensional Requirements**

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<i>Dimensional Requirement</i>	<i>Required</i>	<i>Flexible Development</i>	<i>Provided</i>
Min Lot Size	40,000 sf	Flex	1,411,000 sf
Min Street Frontage	170 ft	Flex	519 ft
Min Front Yard	20 ft	Flex	20 ft
Min Side Yard	15 ft	7.5 ft	20 ft
Min Rear Yard	15 ft	7.5 ft	50 ft
Max Building Height	35 ft	Flex	35 ft

## 5.0 WATER QUALITY/STORMWATER

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### 5.1 Stormwater Management Standards

The Massachusetts Department of Environmental Protection presumes that projects meeting the Stormwater Management Standards satisfy regulatory requirements. When one or more of the Standards cannot be met, an applicant may demonstrate that an equivalent level of environmental protection will be provided. See attached Stormwater Checklist.

1. No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

**The proposed project is a new development. Runoff from impervious areas heading toward the on-site wetland will be treated with sweeping, deep sump catch basins and infiltration basins with proprietary treatment devices.**

2. Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates with the exception that flows to tidal waters do not need to meet these criteria.

**The proposed stormwater management system described herein discharges to the on-site wetland and has been designed to not exceed the pre-development peak discharge rates during the 25 and 100-year storms. See Appendix C and Table 5-1.**

3. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types.

**The proposed system provides the required recharge to groundwater via subsurface infiltration basins for roof runoff and meets the requirement. Infiltration basins are designed to hold stormwater from roof runoff and allow it to infiltrate into the soil while reducing local and downstream flooding**

For new development, stormwater management systems must be designed to remove 80% of the average annual load (post-development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:

Suitable non-structural practices for source control and pollution prevention are implemented.

**Implementation of an operations and maintenance program has been included in the stormwater management system. See section 7.0 and TSS removal spread sheet.**

- b. Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and

**The stormwater management system is sized to capture the volume required to be treated and provides a minimum 80% TSS removal. (See TSS removal spreadsheet)**

- c. Stormwater management BMPs are maintained as designed.

**The implementation of the Stormwater Operation and Maintenance Plan will be the responsibility of the Condo/Homeowners Association to ensure proper long-term function of the BMPs.**

4. Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs. The use of infiltration practices without pretreatment is prohibited.

**The proposed site is not considered a higher potential pollutant load area.**

5. Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold-water fisheries and recharge areas for public water supplies.

**The proposed site does not discharge to a critical area.**

6. Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.

**The site is considered a new development and meets all of the appropriate Stormwater Management Standards.**

7. Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

**A comprehensive Erosion and Sedimentation Control Plan is included in this report and will be implemented during construction.**

8. All stormwater management systems must have an operation and maintenance plan to ensure that systems function as designed.

**A comprehensive Stormwater Operation and Maintenance Plan is included in this report.**

9. All illicit discharges to the stormwater management system are prohibited.

**The responsible parties shall ensure no illicit discharges shall be made to the stormwater management system.**

## 5.2 Post-Development Peak Discharge Rates

To meet Standard 2, controls must be developed for the 2-year, 10-year 25-year and the 100-year 24-hour storm events.

The stormwater management system has been designed to capture the runoff in the detention basins before discharging to the existing on-site wetland.

These BMPs provide the required treatment of discharge. The following table is a summary of the hydrologic calculations performed using HydroCAD® v.10.0 a USSCS TR-20 modeling system. Runoff calculations for impervious roof areas were performed separately and are not reflected in the HydroCAD model.

**Table 5-1: Peak Discharge Summary**

Q = Peak Discharge Rate (cubic feet per second)

V = Volume of Runoff (acre feet)

### Design Point #1A - Wetlands

	Rainfall (in)	Existing Conditions		Proposed Conditions		Proposed - Existing (Difference)	
		Q	V	Q	V	Q	V
2 Year	3.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
10 Year	4.60	0.4	0.2	0.2	0.2	-0.2	<0.1
25 Year	5.40	1.8	0.4	1.3	0.3	-0.5	-0.1
100 Year	6.50	5.2	0.9	3.9	0.6	-1.3	-0.3

### Design Point #1B - Wetlands

	Rainfall (in)	Existing Conditions		Proposed Conditions		Proposed - Existing (Difference)	
		Q	V	Q	V	Q	V
2 Year	3.10	1.4	0.1	1.2	0.1	-0.2	<0.1
10 Year	4.60	2.5	0.2	1.8	0.1	-0.7	-0.1
25 Year	5.40	3.1	0.2	2.4	0.2	-0.7	<0.1
100 Year	6.50	3.9	0.3	2.9	0.2	-1.0	-0.1

### Design Point #2 – To East

	Rainfall (in)	Existing Conditions		Proposed Conditions		Proposed - Existing (Difference)	
		Q	V	Q	V	Q	V
2 Year	3.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
10 Year	4.60	0.2	0.1	<0.1	<0.1	-0.1	-0.1
25 Year	5.40	0.7	0.2	0.1	<0.1	-0.6	-0.2
100 Year	6.50	2.4	0.5	0.3	0.1	-2.1	-0.4

### Design Point #3 – To South

	Rainfall (in)	Existing Conditions		Proposed Conditions		Proposed - Existing (Difference)	
		Q	V	Q	V	Q	V
2 Year	3.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
10 Year	4.60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
25 Year	5.40	0.1	<0.1	0.1	<0.1	<0.1	<0.1
100 Year	6.50	0.4	0.1	0.4	0.1	<0.1	<0.1

Q = Peak Discharge Rate (cubic feet per second)

V = Volume of Runoff (acre feet)

### 5.3 Recharge to Groundwater

The stormwater runoff volume to be recharged to groundwater has been determined using the existing site (pre-development) soil conditions from on-site evaluation is as follows:

***Hydrologic Group Volume to Recharge (x Added Impervious Area)***

C 0.25 inches of runoff      95,606 SF of proposed impervious area =  
1,992 CF of recharge required

11,912 CF of volume in Infiltration Basin #1 below the lowest outlet

30,795 CF of volume in Infiltration Basin #2 below the lowest outlet

42,707 CF total recharge volume provided on-site

**42,707 CF > 1,992 CF**

#### **5.4 Removal of 80% Total Suspended Solids**

The project is a new development; therefore the required TSS removal of 80% must be achieved.

The proposed system has two treatment trains. The first one utilizes deep sump hooded catch basins, sediment forebays, and an infiltration basin (89%). The second one utilizes deep sump hooded catch basins as well as a proprietary separator Vortecnic Unit (85%). The TSS removal spreadsheet in Appendix B shows that 80% TSS removal has been achieved.

## **6.0 EROSION AND SEDIMENTATION PLAN**

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Best management practices (BMP) for erosion and sedimentation control consist of siltation barriers, such as hay bales, and hydroseeding. Many stormwater BMP technologies (e.g., infiltration technologies) are not designed to handle the high concentrations of sediments typically found in construction runoff and must be protected from construction-related sediment loadings. Construction BMPs **must** be maintained.

In developing the proposed project certain measures will be implemented to minimize impacts erosion and sedimentation could have on the surrounding resource areas. This section addresses items that involve proper construction techniques, close surveillance of workmanship, and immediate response to emergency situations. The developer must be prepared to provide whatever reasonable measures are necessary to protect the environment during construction and to stabilize all disturbed areas as soon as construction ends.

### **6.1 Pre-Construction**

1. The contractor shall install a siltation barrier as approved by the Wenham Conservation Commission.
2. The contractor shall have a stockpile of materials required to control erosion on-site to be used to supplement or repair erosion control devices. These materials shall include but are not limited to filter socks and crushed stone, and may include hay bales and silt fencing.
3. The contractor is responsible for erosion control on site and shall utilize erosion control measures where needed, regardless of whether the measures are specified on the plan or in the order of conditions.

### **6.2 Preliminary Site Work**

1. Contractor shall be responsible to construct and maintain a stabilized construction entrance at the Main Street entrance, beyond the existing pavement, to minimize the transport of sediment onto the adjacent roadway.
2. Excavated materials should be stockpiled, separating the topsoil for future use on the site. All stockpiled materials shall be located outside of the 100ft buffer zone and be surrounded by siltation barriers. Any soil stockpiles shall be seeded if left for more than 14 days.
3. If intense rainfall is anticipated, the installation of supplemental filter socks, hay bale dikes, silt fences, or armored dikes shall be considered.
4. The contractor shall inspect the existing drain inlet and flood gate near wetland flag WF A2 and clean it as needed. The inlet shall be protected and cleaned as needed during construction until the site is stabilized.

### **6.3 Drainage System**

1. The drainage system shall be installed from the downstream end up.

2. Riprap shall be installed at the pipe outlets immediately upon the placement of the pipe. If intense rainfall is predicted before all tributary areas are stabilized, all drainage structures shall be inspected and cleared of all sediment and debris. A siltation barrier shall protect all completed catch basins.
3. Filter fabric shall be installed between the Catch Basin grates and frames to intercept runoff from unstabilized surfaces. Contractor shall be responsible for monitoring sediment accumulation in each structure.
4. At the end of all construction activity, drainage structures and pipes are to be cleaned of all sediment and debris.
5. A certified maintenance provider will do the following for the Vortsentry-HS Stormwater Treatment unit:
  - Inspect and maintain systems in accordance to the manufacturer's specifications, as needed.
  - Utilize only OEM replacement cartridges
  - Provide quality reports to system owners

#### **6.4 Landscaping**

1. Landscaping shall occur as soon as possible to provide permanent stabilization of disturbed surfaces.
2. Contractor shall utilize a variety of slope stabilization methods and materials that shall be adjusted to the site conditions. Erosion control blankets or Mirafi Miramat (or similar products) shall be available on site.
3. If the season or adverse weather conditions do not allow the establishment of vegetation, temporary mulching with hay, wood chips weighted with snow fence or branches, or other methods shall be provided.
4. A minimum of 4 inches of topsoil shall be placed and its surface smoothed to the specified grades.
5. The use of herbicides is strongly discouraged. Contractor shall carefully read the Order of Conditions issued by the Quincy Conservation Commission for any other restrictions on the application of fertilizers.
6. Hydroseeding and mulching is encouraged for steep slopes.

## **7.0 STORMWATER OPERATION AND MAINTENANCE PLAN**

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Stormwater management system owner: Atlantic Tambone

The party responsible for operation and maintenance: Atlantic Tambone

After construction is completed the homeowner's association will be responsible for the operation and maintenance of the stormwater management system.

### **7.1 Operation**

Stormwater management facilities as designed do not require detailed operation procedures. All stormwater management structures are fixed and flow by gravity.

### **7.2 Pavement Sweeping**

Pavement sweeping efforts shall be performed by Vacuum Sweepers and should occur four (4) times per year, one of these shall be during the late spring, the period immediately following winter snowmelt.

### **7.3 Inspection and Routine Maintenance**

The drainage systems shall be inspected in early May and the second half of October, except for catch basins which shall be inspected quarterly, and following any rainfall event equal to or greater than 2 inches in 24 hours. The following components and conditions shall be inspected:

#### **7.3.1 Infiltration Basins**

Inspect the infiltration basins for any debris. Remove any silt, mulch, or debris from the basins.

#### **7.3.2 Catch Basins and Drainage Inlets and Outlets**

If silt and debris reaches within 12" of outlet and inlet inverts or halfway up the stones in the rock apron then the structures should be cleaned, but not less than annually in May. Structures shall be cleaned by vacuum trucks. Riprap aprons shall be inspected after any rainfall event that exceeds 2" in 24 hours. Remove silt as needed, repair erosion and re-seed if required. Cut any vegetation that may obstruct flow in the aprons.

#### **7.3.3 Water Level**

Note water levels relative to a permanently fixed, recoverable point such as pipe (top or invert), or structure rim. If structure is dry, note any apparent high water marks such as a debris line or discolored vegetation relative to a fixed point.

#### **7.3.4 Silt Level**

Note the level of silt, sand or debris in structures and outlets, relative to a fixed point. Inspect riprap aprons and remove silt if it reaches half way up the stones.

#### **7.3.5 Debris and Possible Pollutants**

Note type of debris. Inspect for evidence of pollutants.

#### **7.3.6 Erosion**

Note any settlement or erosion around riprap aprons. Replenish stones to level apron and enlarge if needed. Stabilize any eroded areas.

### **7.4 Maintenance, and Silt and Debris Removal**

The catch basins, and drain outlets shall be cleaned annually or as otherwise required after inspection. All inspections shall be logged using the attached Drainage Inspection Logs. Specifically, the following measures shall be employed:

1. Where cleanup work may impact jurisdictional wetland resource areas, contact the local Conservation Commission prior to commencement.
2. At structures, protect inlet and outlet pipes from plugging during silt removal operation using pipe plugs, silt fabric or other measures. Sand and silt shall be removed when levels rise to elevations stated under *routine maintenance section 7.3.2*.
3. Remove all debris, leaves and branches from bottom of structures. Remove sand and silt using hand tools, power sweeper, clamshell/boom rig, suction or other measures. Remove sand and silt to sump bottom. Care should be taken so as not to disturb structures so that water tightness is maintained. Also, care should be taken so as not to disturb or remove riprap, sand filter and stone present.
4. Remove all debris, leaves and branches from inlet and outlet pipes, if they are present.
5. The stone in the riprap apron shall be replenished if the aprons settle or are no longer level. Stones shall be added if needed to maintain the integrity of the aprons or if signs of erosion are noted. Any saplings or other woody vegetation shall be removed.
6. Properly dispose of all collected waste.



## APPENDIX A: SOIL MAPS

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**APPENDIX B: PRE-DEVELOPMENT & POST-  
DEVELOPMENT WATERSHED MAPS**

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## APPENDIX C: SOIL TEST RESULTS

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## APPENDIX D: STORMWATER CHECKLIST

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## APPENDIX E: STORMWATER CALCULATIONS

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## APPENDIX F: GRADING AND DRAINAGE PLAN

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APPENDIX G: PRE-DEVELOPMENT HYDROCAD  
OUTPUT

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## APPENDIX H: POST-DEVELOPMENT HYDROCAD OUTPUT

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## APPENDIX I: COMBINED UTILITIES PLAN

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