

# Notice of Intent Application

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August 23, 2017

Subject Property

10 Toupi Lane  
Parcel ID: 39-5743-10  
Lowell, Massachusetts

Applicant and Property Owner

Antonio Viola  
80 Main Street  
Malden, MA 02148

**LEC Environmental Consultants, Inc.**

380 Lowell Street  
Suite 101  
Wakefield, MA 01880  
781-245-2500  
781-245-6677 fax

*[www.lecenvironmental.com](http://www.lecenvironmental.com)*



August 23, 2017

**Hand Delivery**

Lowell Conservation Commission  
Lowell City Hall  
375 Merrimack Street  
2<sup>nd</sup> Floor, Room 51  
Lowell, MA 01852

**Re: Notice of Intent Application**  
**10 Toupi Lane**  
**Parcel ID: 39-5743-10**  
**Lowell, Massachusetts**

[LEC File #: VioA\17-082.04]

Dear Members of the Conservation Commission:

On behalf of the Applicant and Property Owner, Antonio Viola, LEC Environmental Consultants, Inc., (LEC) is filing the enclosed Notice of Intent (NOI) Application with the Lowell Conservation Commission to restore altered portions of the 100-foot Buffer Zone and to construct a single-family dwelling and pervious paver driveway at 10 Toupi Lane in Lowell, Massachusetts. Portions of the proposed activities are located within the Buffer Zone to Bordering Vegetated Wetlands (BVW). The Applicant proposes to implement erosion controls to minimize the potential for impacts to the resource areas, and implement Buffer Zone Restoration and Wetland Replication to restore previously-altered Buffer Zone areas and increase the area of BVW on the site.

LEC was retained to identify Wetland Resource Areas protectable under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40, the *Act*), its implementing Regulations (310 CMR 10.00, the *Act Regulations*), and the *City of Lowell Wetlands Ordinance* (Chapter 280, the *Ordinance*) and to prepare this NOI Application. Hannigan Engineering, Inc., has prepared the *Proposed Site Plan* dated July 24, 2017 (Appendix C, *Plan*). Details of the proposed Buffer Zone Restoration and Wetland Replication are depicted on the *Buffer Zone Restoration Planting Plan* and *Wetland Restoration Planting Plan* both dated July 10, 2017 (revised through August 22, 2017) and prepared by LEC Environmental Consultants, Inc. (Appendix B).

Enclosed please find two checks made payable to the City of Lowell in the amounts of Two-Hundred, Sixty-Two Dollars and Fifty Cents (\$262.50) and Fifty Dollars (\$50.00) for the purpose of filing this NOI Application under State and Local guidelines, respectively. Also included is a copy of a check payable to the Commonwealth of Massachusetts in the amount of Two-Hundred, Thirty-Seven Dollars and Fifty Cents (\$237.50).

**LEC Environmental Consultants, Inc.**

[www.lecenvironmental.com](http://www.lecenvironmental.com)

12 Resnik Road  
Suite 1  
Plymouth, MA 02360  
508-746-9491  
508-746-9492 (Fax)

**PLYMOUTH, MA**

380 Lowell Street  
Suite 101  
Wakefield, MA 01880  
781-245-2500  
781-245-6677 (Fax)

**WAKEFIELD, MA**

100 Grove Street  
Suite 302  
Worcester, MA 01605  
508-753-3077  
508-753-3177 (Fax)

**WORCESTER, MA**

P. O. Box 590  
Rindge, NH 03461  
603-899-6726  
603-899-6726 (Fax)

**RINDGE, NH**



Thank you for your consideration of this Application. We look forward to meeting with you at the September 13, 2017 Public Hearing. Should you have any questions, please do not hesitate to contact me in our Wakefield office at 781-245-2500 or at rkirby@lecenvironmental.com.

Sincerely,

**LEC Environmental Consultants, Inc.**

A handwritten signature in black ink, appearing to read "Richard Kirby", with a long horizontal flourish extending to the right.

Richard A. Kirby  
Senior Wetland Scientist

cc: DEP, Northeast Region  
Antonio Viola

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rak: projects\17-082.04 VioA\NOI Report.doc

- i. WPA Form 3 – Notice of Intent
- ii. WPA Appendix B – Wetland Fee Transmittal Form
- iii. Land Use Board: Main Application Form
- iv. Copy of Filing Fees
- v. Affidavit of Service
- vi. Letter to Abutters
- vii. Abutter Notification Form
- viii. Certified List of Abutters (to be provided)

**NOI Report**

|           |                                                                    |          |
|-----------|--------------------------------------------------------------------|----------|
| <b>1.</b> | <b>Introduction</b>                                                | <b>1</b> |
| <b>2.</b> | <b>General Site Description</b>                                    | <b>1</b> |
| 2.1       | Natural Heritage and Endangered Species Program Designation        | 2        |
| 2.2       | Floodplain Designation                                             | 2        |
| <b>3.</b> | <b>Wetland Resource Areas</b>                                      | <b>3</b> |
| 3.1       | Bordering Vegetated Wetlands                                       | 3        |
| <b>4.</b> | <b>Proposed Single-Family Dwelling and Pervious Paver Driveway</b> | <b>3</b> |
| <b>5.</b> | <b>Mitigation Measures</b>                                         | <b>4</b> |
| 5.1       | Erosion and Sedimentation Control                                  | 4        |
| 5.2       | Buffer Zone Restoration                                            | 5        |
| 5.3       | Wetland Replication                                                | 5        |
| <b>7.</b> | <b>Summary</b>                                                     | <b>6</b> |

**Literature Cited**

**Appendices**

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**Appendix A**

Locus Maps

Figure 1: USGS Topographic Quadrangle & NHESP Estimated Habitat Map

Figure 2: FEMA Flood Insurance Rate Map

Figure 3: MassGIS Orthophoto

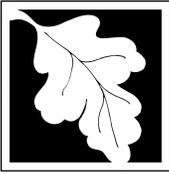
**Appendix B**

*Wetland Restoration Planting Plan* dated July 10, 2017 (revised through August 22, 2017) prepared by LEC Environmental Consultants, Inc.

*Buffer Zone Restoration Planting Plan* dated July 10, 2017 (revised through August 22, 2017) prepared by LEC Environmental Consultants, Inc.

**Appendix C**

*Proposed Site Plan* dated July 24, 2017 prepared by Hannigan Engineering, Inc.



# WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
City of Lowell Wetlands Ordinance (Chapter 280)

**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>10 Toupi Lane</u><br>a. Street Address                    | <u>Lowell</u><br>b. City/Town       | <u>01854</u><br>c. Zip Code |
| Latitude and Longitude:                                      |                                     |                             |
| <u>42.651264 N</u><br>d. Latitude                            | <u>-71.358801 W</u><br>e. Longitude |                             |
| <u>Parcel ID: 39-5743-10</u><br>f. Assessors Map/Plat Number | <u>g. Parcel /Lot Number</u>        |                             |

2. Applicant:

|                                            |                              |                                                   |
|--------------------------------------------|------------------------------|---------------------------------------------------|
| <u>Antonio</u><br>a. First Name            | <u>Viola</u><br>b. Last Name |                                                   |
| <u>c. Organization</u>                     |                              |                                                   |
| <u>80 Main Street</u><br>d. Street Address |                              |                                                   |
| <u>Malden</u><br>e. City/Town              | <u>MA</u><br>f. State        | <u>02148</u><br>g. Zip Code                       |
| <u>617-431-0391</u><br>h. Phone Number     | <u>n/a</u><br>i. Fax Number  | <u>violacpcp2@verizon.net</u><br>j. Email Address |

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

Same as Applicant  
a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town f. State g. Zip Code

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

4. Representative (if any):

|                                                          |                                      |                                                        |
|----------------------------------------------------------|--------------------------------------|--------------------------------------------------------|
| <u>Richard</u><br>a. First Name                          | <u>Kirby</u><br>b. Last Name         |                                                        |
| <u>LEC Environmental Consultants, Inc.</u><br>c. Company |                                      |                                                        |
| <u>380 Lowell Street, Suite 101</u><br>d. Street Address |                                      |                                                        |
| <u>Wakefield</u><br>e. City/Town                         | <u>MA</u><br>f. State                | <u>01880</u><br>g. Zip Code                            |
| <u>781-245-2500</u><br>h. Phone Number                   | <u>781-245-6677</u><br>i. Fax Number | <u>rkirby@lecenvironmental.com</u><br>j. Email address |

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

|                                      |                                      |                                          |
|--------------------------------------|--------------------------------------|------------------------------------------|
| <u>\$500.00</u><br>a. Total Fee Paid | <u>\$237.50</u><br>b. State Fee Paid | <u>\$262.50</u><br>c. City/Town Fee Paid |
|--------------------------------------|--------------------------------------|------------------------------------------|



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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
City of Lowell Wetlands Ordinance (Chapter 280)

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Lowell

City/Town

## A. General Information (continued)

### 6. General Project Description:

The Applicant proposes to restore previously-altered portions of the Buffer Zone and construct a single-family dwelling and a pervious paver driveway at 10 Toupi Lane in Lowell, Massachusetts. The proposed activities will be located within the 100-foot Buffer Zone to Bordering Vegetated Wetland (BVW). The Applicant proposes to implement erosion controls to minimize the potential for impacts to the resource areas, and Buffer Zone restoration and wetland replication to improve existing conditions and mitigate for the proposed construction.

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

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

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

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

#### 2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR 10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

### 8. Property recorded at the Registry of Deeds for:

Middlesex

a. County

29945

c. Book

n/a

b. Certificate # (if registered land)

056

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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| City/Town                   |

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

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

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

| Resource Area                                                  | Size of Proposed Alteration         | Proposed Replacement (if any) |
|----------------------------------------------------------------|-------------------------------------|-------------------------------|
| d. <input type="checkbox"/> Bordering Land Subject to Flooding | 1. square feet                      | 2. square feet                |
|                                                                | 3. cubic feet of flood storage lost | 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.  Riverfront Area
- Name of Waterway (if available) - **specify coastal or inland**
  - Width of Riverfront Area (check one):
    - 25 ft. - Designated Densely Developed Areas only
    - 100 ft. - New agricultural projects only
    - 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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



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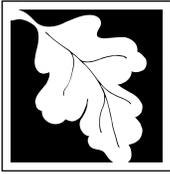
City/Town

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

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

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

| <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. <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 BVW                                                                                                                                                                                                 | b. square feet of Salt Marsh           |
| 5. <input type="checkbox"/> Project Involves Stream Crossings     |                                                                                                                                                                                                                       |                                        |



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a. number of new stream crossings

b. number of replacement stream crossings

## 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](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**

2017  
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\*

- 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

- 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)

\* 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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(b)  Photographs representative of the site

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

(c)  MESA filing fee (fee information available at [http://www.mass.gov/dfwele/dfw/nhesp/regulatory\\_review/ mesa/ mesa\\_fee\\_schedule.htm](http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/ mesa/ mesa_fee_schedule.htm)).  
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, [http://www.mass.gov/dfwele/dfw/nhesp/regulatory\\_review/ mesa/ mesa\\_exemptions.htm](http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/ mesa/ mesa_exemptions.htm); the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

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

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

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

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

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

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

Division of Marine Fisheries -  
Southeast Marine Fisheries Station  
Attn: Environmental Reviewer  
1213 Purchase Street – 3rd Floor  
New Bedford, MA 02740-6694  
Email: [DMF.EnvReview-South@state.ma.us](mailto:DMF.EnvReview-South@state.ma.us)

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -  
North Shore Office  
Attn: Environmental Reviewer  
30 Emerson Avenue  
Gloucester, MA 01930  
Email: [DMF.EnvReview-North@state.ma.us](mailto:DMF.EnvReview-North@state.ma.us)

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.



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Lowell

City/Town

**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



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to the boundaries of each affected resource area.

|                             |
|-----------------------------|
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| City/Town                   |

## D. Additional Information (cont'd)

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

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

Proposed Site Plan

a. Plan Title

Hannigan Engineering, Inc.

Larry Sabean

b. Prepared By

c. Signed and Stamped by

July 24, 2017

1 inch= 20 feet

d. Final Revision Date

e. Scale

Wetland and Buffer Zone Restoration/Replication Plans prepared by  
LEC Environmental Consultants, Inc.

7/10/17 (revised  
8/22/17)

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:

1614

2. Municipal Check Number

8-22-17

3. Check date

1617

4. State Check Number

8-22-17

5. Check date

Antonio

6. Payor name on check: First Name

Viola

7. Payor name on check: Last Name



# 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

Lowell

City/Town

## F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant

2. Date

8-22-17

3. Signature of Property Owner (if different)

4. Date

8/22/17

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.

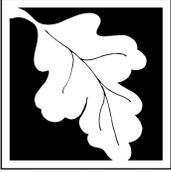
### For MassDEP:

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.



**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:

|                      |                 |
|----------------------|-----------------|
| <u>10 Toupi Lane</u> | <u>Lowell</u>   |
| a. Street Address    | b. City/Town    |
| <u>1617</u>          | <u>\$237.50</u> |
| c. Check number      | d. Fee amount   |

2. Applicant Mailing Address:

|                       |               |                               |
|-----------------------|---------------|-------------------------------|
| <u>Antonio</u>        | <u>Viola</u>  |                               |
| a. First Name         | b. Last Name  |                               |
| <u></u>               |               |                               |
| c. Organization       |               |                               |
| <u>80 Main Street</u> |               |                               |
| d. Mailing Address    |               |                               |
| <u>Malden</u>         | <u>MA</u>     | <u>02148</u>                  |
| e. City/Town          | f. State      | g. Zip Code                   |
| <u>617-431-0391</u>   | <u>n/a</u>    | <u>violacpdc2@verizon.net</u> |
| h. Phone Number       | i. Fax Number | j. Email Address              |

3. Property Owner (if different):

|                          |               |                  |
|--------------------------|---------------|------------------|
| <u>Same as Applicant</u> | <u></u>       |                  |
| a. First Name            | b. Last Name  |                  |
| <u></u>                  |               |                  |
| c. Organization          |               |                  |
| <u></u>                  |               |                  |
| d. Mailing Address       |               |                  |
| <u></u>                  | <u></u>       | <u></u>          |
| e. City/Town             | f. State      | g. Zip Code      |
| <u></u>                  | <u></u>       | <u></u>          |
| 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.

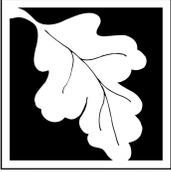
**Step 3/Individual Activity Fee:** Identify each activity fee from the six project categories listed in the instructions.

**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 2a. Construction of a Single-family Dwelling | 1                           | \$500.00                       | \$500.00                             |
| _____                                            | _____                       | _____                          | _____                                |
| _____                                            | _____                       | _____                          | _____                                |
| _____                                            | _____                       | _____                          | _____                                |
| _____                                            | _____                       | _____                          | _____                                |
| _____                                            | _____                       | _____                          | _____                                |
| _____                                            | _____                       | _____                          | _____                                |
| _____                                            | _____                       | _____                          | _____                                |
| <b>Step 5/Total Project Fee:</b>                 |                             |                                | \$500.00                             |
| <b>Step 6/Fee Payments:</b>                      |                             |                                |                                      |
| Total Project Fee:                               |                             |                                | \$500.00                             |
| State share of filing Fee:                       |                             |                                | \$237.50                             |
| City/Town share of filing Fee:                   |                             |                                | \$262.50                             |
|                                                  |                             |                                | a. Total Fee from Step 5             |
|                                                  |                             |                                | b. 1/2 Total Fee <b>less</b> \$12.50 |
|                                                  |                             |                                | c. 1/2 Total Fee <b>plus</b> \$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.)



## LAND USE BOARD: MAIN APPLICATION

The following application is made to the City of Lowell Division of Development Services in accordance with the provisions of The Code of Ordinances, City of Lowell, Massachusetts, Chapter 270, Zoning Code.

**1. Application Information** **Date:** August 22, 2017

Address of Property Location: 10 Toupi Lane

Owner: Antonio Viola Telephone No. 617-431-0391 Email: violacpdc2@verizon.net

Address (if different) 80 Main Street City: Malden State: MA Zip Code: 02148

Second Owner (if applicable): \_\_\_\_\_ Telephone No. \_\_\_\_\_ Email: \_\_\_\_\_

Address (if different) \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Applicant: (If different from Owner): Same as Property Owner Telephone No: \_\_\_\_\_

Email: \_\_\_\_\_ Title (Tenant/Lessee/Purchaser/Etc.): \_\_\_\_\_

Address \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Owner's Agent (if applicable): Richard Kirby Telephone No. 781-245-2500

Email: rkirby@lecenvironmental.com Title: (Attorney/Architect/Contractor/Etc.): Senior Wetland Scientist

Address 380 Lowell Street, Suite 101 City: Wakefield State: MA Zip Code: 01880

**2. Please check all Board/Commission Approval(s) sought:**

- The applicant is requesting the following from the Planning Board (Please also complete and attach the appropriate form)
- Site Plan Review (See Site Plan Review Supplement Form)
  - Special Permit (See Main Special Permit Supplement Form)
  - Preliminary Subdivision Approval (See Preliminary Subdivision Supplement Form)
  - Definitive Subdivision Approval (See Definitive Subdivision Supplement Form)
  - Planned Residential Development
  - Endorsement of a Plan thought not to Require Approval (ANR) (See Main Special Permit Supplement Form)
  - Repetitive Petition (See Main Special Permit Supplement Form)
- The applicant is requesting the following from the Zoning Board (Please also complete and attach the appropriate form)
- Special Permit (See Main Special Permit Supplement Form)
  - Variance (See Variance Supplement Form)
  - Appeal of Building Commissioner's Determination
- The applicant is requesting approval from the Historic Board (Please also complete and attach the appropriate form):
- Downtown District
  - Acre District
  - Other Neighborhood District - Please Specify: \_\_\_\_\_
- The applicant is requesting the following from the Conservation Commission (Please also complete and attach the appropriate form):
- Request for Determination of Applicability (RDA)
  - Notice of Intent (NOI)

\_\_\_\_\_ Abbreviated Notice of Resource Area Delineation (ANRAD)  
\_\_\_\_\_ Certificate of Compliance (COC)  
\_\_\_\_\_ Other (Please Specify): \_\_\_\_\_

**3. Property Information** (Applies to Planning Board and Zoning Board applicants only):

Zoning District of Property: \_\_\_\_\_

Type of Structures (Existing and Proposed on Property):

Residential: E \_\_\_\_\_ P \_\_\_\_\_ Commercial: E \_\_\_\_\_ P \_\_\_\_\_ Industrial: E \_\_\_\_\_ P \_\_\_\_\_

Institutional: E \_\_\_\_\_ P \_\_\_\_\_ Other: \_\_\_\_\_

Parking Spaces: Existing \_\_\_\_\_ Proposed \_\_\_\_\_ Estimated Project Cost: \_\_\_\_\_

Land Area Square Feet: \_\_\_\_\_ Building Area Square Feet: \_\_\_\_\_

Number of Stories: \_\_\_\_\_ Number Of Dwelling Units: E \_\_\_\_\_ P \_\_\_\_\_ Ave. Unit Size (sqft) \_\_\_\_\_

Occupied: \_\_\_\_\_ Partially Occupied: \_\_\_\_\_ Vacant: \_\_\_\_\_ Vacant Land: \_\_\_\_\_

**4. Notification Requirements: Mailing of Abutter Notices**

All applicants will be responsible for submitting abutters notice mailings to meet notification requirements under MGL Ch. 40A. Certificate of Mailing(s) notice shall be submitted to Development Services staff at least two weeks prior to the scheduled public hearing. It is the applicant/petitioner's responsibility to obtain a list of certified abutters and must apply for the list with the Assessor's Office. The Assessor's Office will prepare and certify the list of abutters located within a 300-foot radius\*. The applicant will be notified by the Assessor's Office when the list is ready. There is an administrative fee for the certified abutters list.

**Request for Permit Signs**

All of the following applications are required to post a Request for Permit Sign:

- Special Permit, Site Plan Review and Subdivision Applications from the Planning Board
- Special Permit and Variance Applications from the Zoning Board of Appeals
- New Construction Projects from the Historic Board

Request for Permit Signs must meet the following standards:

- The sign shall include the following information:  
NOTICE: REQUEST FOR PERMIT  
Address of Property:  
Type of Permit: (special permit, site plan review, subdivision, variance, etc.)  
Specific information about the project: (type of use, number of units, size of commercial space, etc.)  
Proposed Use of Property:  
Date, Time and Place of a Public Hearing.  
For additional information, contact the City of Lowell at:  
Division of Development Services, City Hall, Room 51, 375 Merrimack Street, Lowell, MA 01852  
Phone: (978) 674-4252,  
City Website: [www.lowellma.gov](http://www.lowellma.gov)
- The sign shall include a copy of the site plan or plot plan submitted with the permit application.
- The sign shall be made of wood or metal. Size of said sign shall be a minimum of 3 feet by 4 feet.
- The applicant shall notify the City of Lowell in writing that the sign has been erected and where located.
- The sign shall be posted 14 days prior to the opening of the public hearing.

**Submit all required materials to:**

Division of Development Services, City Hall, Room 51, 375 Merrimack Street, Lowell, MA 01852

NOTE: Projects greater than 1 acre (43,560 square feet) is required to apply for a NPDES Permit. Please refer to <http://cfpub.epa.gov/npdes/> for more information.

\* Radius is different for Linear Projects or projects on land greater than 50 acres filing a Notice of Intent. If falling under this, please discuss with Development Services prior to ordering an Abutters List from the Assessors Office.

DEVELOPMENT SERVICES DIVISION

TAX STATUS CERTIFICATION

Master Parcel Address: 10 Toupi Lane (Parcel ID: 39-5743-10)

Property Owner: Antonio Viola

Municipal Charge Liens for fees/ violations:

No Outstanding Charge Liens

Charge Lien Outstanding

Charge Lien Paid, Not Yet Discharged                      Date Paid: \_\_\_\_\_

Clerk Initials: \_\_\_\_\_

Date: \_\_\_\_\_

**TREASURERS OFFICE USE ONLY**

\_\_\_\_\_ Taxes are current on the property

\_\_\_\_\_ Customer has made a payment plan and is current on payments

\_\_\_\_\_ Customer is in TAX TITLE and has NOT made any payment plan with the Treasurer

\_\_\_\_\_ Water and Sewer are current on this property

\_\_\_\_\_ Parking Tickets/Excise Tax on this customer are current

OTHER: \_\_\_\_\_

\_\_\_\_\_

Copy of Filing Fees

ANTONIO VIOLA 53-139/113 1614  
80 MAIN STREET  
MALDEN, MA 02148  
DATE 8-22-17

PAY TO City of Lowell \$ 262 50/100  
THE ORDER OF TWO HUNDRED SIXTY TWO 50/100  
DOLLARS

**Century Bank**  
Malden, Massachusetts 02148

MEMO \_\_\_\_\_ MP

⑆011301390⑆ ⑆21 62530 ⑆ 1614

ANTONIO VIOLA 53-139/113 1616  
80 MAIN STREET  
MALDEN, MA 02148  
DATE 8-22-17

PAY TO City of Lowell \$ 50 00/100  
THE ORDER OF FIFTY 00/100  
DOLLARS

**Century Bank**  
Malden, Massachusetts 02148

MEMO \_\_\_\_\_ MP

⑆011301390⑆ ⑆21 62530 ⑆ 1616

ANTONIO VIOLA 53-139/113 1617  
80 MAIN STREET  
MALDEN, MA 02148  
DATE 8-22-17

PAY TO Common Abmit of Halls currt \$ 237 50/100  
THE ORDER OF TWO HUNDRED THIRTY SEVEN 50/100  
DOLLARS

**Century Bank**  
Malden, Massachusetts 02148

MEMO \_\_\_\_\_ MP

⑆011301390⑆ ⑆21 62530 ⑆ 1617

## **AFFIDAVIT OF SERVICE**

Under the *Massachusetts Wetlands Protection Act*  
and the  
City of *Lowell Wetlands Ordinance*

I, Sharon A. Sullivan, on behalf of Antonio Viola, hereby certify under the pains and penalties of perjury that on August XX, 2017 I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and 310 CMR 10.05 (4) (a), in connection with the following matter:

A Notice of Intent filed under the *Massachusetts Wetlands Protection Act* and the *City of Lowell Wetlands Ordinance* by LEC Environmental Consultants, Inc., on behalf of Antonio Viola, with the City of Lowell Conservation Commission on August 23, 2017 for property located at 10 Toupi Lane.

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

---

Sharon A. Sullivan  
Permitting Technician

---

Date

August XX, 2017

**CERTIFIED MAIL**

«Name»

«Name2»

«Address»

«City», «State» «Zip»

**Re: Notice of Intent Application  
10 Toupi Lane  
Lowell, Massachusetts**

[LEC File #: VioA\17-082.04]

Dear Abutter:

On behalf of the Applicant, Antonio Viola, LEC Environmental Consultants, Inc. (LEC) has filed a Notice of Intent (NOI) Application with the Lowell Conservation Commission to restore previously-altered portions of the 100-foot Buffer Zone and to construct a single-family dwelling and pervious paver driveway at 10 Toupi Lane. Portions of the proposed activities are located within the 100-foot Buffer Zone to Bordering Vegetated Wetlands, as protected under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40) and its implementing Regulations (310 CMR 10.00), and the *City of Lowell Wetlands Ordinance*. The Applicant proposes to implement erosion controls to minimize the potential for impacts to the resource areas, and Buffer Zone restoration and Wetland replication to improve existing site conditions.

The report entitled *Notice of Intent Application* and accompanying site plans are available for review by the public at the Lowell Conservation Commission. The Public Hearing will be held in the City Council Chamber, Second Floor, in Lowell City Hall, 375 Merrimack Street, on September 13, 2017 at 7:00 p.m., in accordance with the provisions of the *Massachusetts Wetlands Protection Act* (M.G.L. Ch. 131, s. 40, as amended), its implementing Regulations (310 CMR 10.00), and the *City of Lowell Wetlands Ordinance*. Notice of the Public Hearing, including its date, time, and place, will be published at least five (5) days in advance in *The Lowell Sun*. Notice of the Public Hearing also will be posted at the Lowell City Hall at least 48 hours in advance.

Please do not hesitate to review the materials and/or attend the public hearing should you have questions or concerns about the proposed project.

Sincerely,

**LEC Environmental Consultants, Inc.**

Richard A. Kirby  
Senior Wetland Scientist

enclosure

**Notification to Abutters Under the**  
*Massachusetts Wetlands Protection Act*  
and the  
*City of Lowell Wetlands Ordinance*

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40 and the *City of Lowell Wetlands Ordinance*, you are hereby notified of the following:

- A. The name of the Applicant is Antonio Viola, 80 Main Street, Malden, MA 02148.
- B. The Applicant has filed a Notice of Intent with the Conservation Commission for the municipality of Lowell, Massachusetts seeking permission to restore previously-altered portions of the 100-foot Buffer Zone and to construct a single-family dwelling and pervious paver driveway. Portions of the proposed activities are located within the 100-foot Buffer Zone to Bordering Vegetated Wetlands, as protected under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40) and its implementing Regulations (310 CMR 10.00), and the *City of Lowell Wetlands Ordinance*.
- C. The address of the lot where the activity is proposed is 10 Toupi Lane (Assessor's Parcel ID: 0039-5743-0010), Lowell, Massachusetts.
- D. Copies of the Notice of Intent may be examined by contacting the Lowell Conservation Commission at (978) 674-4144.
- E. Copies of the Notice of Intent may be obtained from LEC Environmental Consultants, Inc. (the applicant's representative) by calling (781) 245-2500 between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. A fee may be charged for each copy requested.
- F. Information regarding the Public Hearing may be obtained from the Lowell Conservation Commission (the regulatory agency) by calling (978) 674-4144.

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

NOTE: Notice of the Public Hearing will also be posted at the Lowell City Hall not less than 48 hours in advance.

NOTE: You also may contact the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact DEP, call:

**Northeast Region: 978-694-3200**



**Notice of Intent Application**

10 Toupi Lane  
Assessor's Parcel ID: 39-5743-10  
Lowell, Massachusetts

August 23, 2017

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## 1. Introduction

On behalf of the Applicant and Property Owner, Antonio Viola, LEC Environmental Consultants, Inc., (LEC) is filing the enclosed Notice of Intent (NOI) Application with the Lowell Conservation Commission under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, s. 40, the *Act*), its implementing *Regulations* (310 CMR 10.00, the *Act Regulations*), and the *City of Lowell Wetlands Ordinance* (Chapter 280, the *Ordinance*). The Applicant is filing this NOI Application to restore altered portions of the 100-foot Buffer Zone and construct a single-family dwelling and pervious paver driveway. The proposed activities are located within the 100-foot Buffer Zone to Bordering Vegetated Wetlands (BVW).

As part of this filing, the Applicant proposes to implement mitigation measures, including the installation of erosion controls to protect the adjacent BVW during construction; Buffer Zone restoration to mitigate for vegetation clearing within the 100-foot Buffer Zone; and Wetland Replication designed to mitigate for the proximity of the proposed development to the BVW. The existing conditions and proposed activities are depicted on the *Proposed Site Plan* dated July 24, 2017 (*Plan*, Appendix C) prepared by Hannigan Engineering, Inc. Details of the proposed Buffer Zone Restoration and Wetland Replication are depicted on the *Buffer Zone Restoration Planting Plan* and *Wetland Restoration Planting Plan* both dated July 10, 2017 (revised through August 22, 2017) and prepared by LEC Environmental Consultants, Inc. (Appendix B).

LEC met with the Lowell Conservation Commission during their March 12 and June 28, 2017 Public Hearings to review and discuss the Buffer Zone alteration and restoration; site stabilization; and the proposed construction of a single-family dwelling on the property. This NOI Application reflects these discussions and is intended to propose appropriate site restoration and mitigation to allow for the construction of the dwelling.

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## 2. General Site Description

The 42,497± square foot, undeveloped property is located southwest of the Toupi Lane/Newbridge Road intersection, north of Aegean Lane, and east of Coburn Drive, within the northwestern portion of Lowell, Massachusetts. Single-family dwellings and residential development associated with Toupi Lane, Newbridge Road, and Coburn Drive generally surround the property (Appendix A, Figures 1 and 3). Topography within the

site gradually descends gradually southerly from Toupi Lane toward the BVW, with an elevation gradient of roughly 8± feet.

A forested wetland bordering on an intermittent stream is centrally located within the property, generally surrounded by forested uplands located within the 100-foot Buffer Zone extending from the BVW boundary. A drainage easement extending from Newbridge Road contains a portion of the stream. Uplands within the northern portion of the site were cleared of vegetation during the winter of 2016/2017. The remaining upland forest contains patches of big tooth aspen (*Populus grandidentata*), quaking aspen (*Populus tremuloides*), red maple (*Acer rubrum*), and eastern white pine (*Pinus strobus*). The understory contains saplings from the canopy, sapling sassafras (*Sassafras albidum*), sapling black cherry (*Prunus serotina*), and entanglements of Oriental bittersweet (*Celastrus orbiculatus*). The groundcover contains patches of hay-scented fern (*Dennstaedtia punctilobula*), pachysandra (*Pachysandra* sp.), entanglements of grape (*Vitis* sp.), Canada mayflower (*Maianthemum canadense*), and individuals of Japanese barberry (*Berberis thunbergii*).

Utilizing a hand-held, Dutch-style auger, LEC inspected soil conditions within the upland areas along the BVW boundary and observed an 8 to 12-inch thick, fine sandy loam historic fill layer (C horizon) with a soil matrix color of 10YR 2/2. The fill material is underlain by a native topsoil material (A horizon) with a soil matrix color of 10YR 2/1 up to 20 inches deep.

## 2.1 **Natural Heritage and Endangered Species Program Designation**

According to the 14<sup>th</sup> edition of the *Massachusetts Natural Heritage Atlas*, no areas of Estimated Habitat for Rare Wildlife or Certified Vernal Pools exist on the site (Appendix A, Figure 3).

## 2.2 **Floodplain Designation**

According to the June 4, 2010 *Federal Emergency Management Agency Flood Insurance Rate Map* for Middlesex County, Massachusetts (Map No: 25017C0138E), the entire property is located within Zone X [unshaded]: *Areas determined to be outside the 0.2% annual chance floodplain* (Appendix A, Figure 2).

### 3. Wetland Resource Areas

LEC conducted a site evaluation on March 28, 2017, to identify and characterize existing protectable Wetland Resource Areas as delineated by others. The extent of Wetland Resource Areas was determined through observations of existing plant communities and hydrologic indicators in accordance with the *Act*, its implementing *Regulations*, and the *Ordinance*. The BVW boundary was delineated with sequentially-numbered, safety blue surveyor's tape numbered 1A through 35A.

#### 3.1 Bordering Vegetated Wetlands

BVW is defined at 310 CMR 10.55(2) as: *freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes...Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants...The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist.*

The forested wetland contains a canopy of red maple and eastern white pine. The understory contains patches of saplings from the canopy, sapling honey locust (*Gleditsia triacanthus*), sapling Norway maple (*Acer platanoides*), and European buckthorn (*Frangula alnus*), with individual highbush blueberry (*Vaccinium corymbosum*), Japanese barberry (*Berberis thunbergii*), and entanglements of grape (*Vitis* sp.). The groundcover contains patches of sensitive fern (*Onoclea sensibilis*), royal fern (*Osmunda regalis*), cinnamon fern (*Osmunda cinnamomea*), poison ivy (*Toxicodendron radicans*), and Canada mayflower.

LEC inspected soils within the BVW using a hand-held, Dutch-style auger and observed an 8-inch thick fine, sandy loam topsoil (A horizon) with a soil matrix color of 10YR 2/1. The topsoil is underlain by a depleted, loamy fine sand subsoil (Bg horizon) with a soil matrix color of 2.5Y 6/2 to a depth of 20 inches. Redoximorphic concentrations with a soil color of 10YR 5/8 were observed throughout the wetland soil profile.

### 4. Proposed Single-Family Dwelling and Pervious Paver Driveway

The Applicant proposes to construct a modestly-sized, 26-foot by 30-foot single-family dwelling within the northeast portion of the site as depicted on the *Plan*. This 780

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square-foot dwelling has been sited on the lot to meet the City of Lowell's 25-foot front-yard and side-yard setback requirements. The dwelling will include a 2-car garage on the first floor, accessed from Toupi Lane via a pervious paver driveway.

Minor site grading, including up to 1.5 feet of fill material will be required to accommodate the proposed dwelling. The lawn and landscaped area surrounding the dwelling is limited to that required for construction, with roughly 12 feet of lawn extending from the rear of the dwelling, roughly 20 feet extending from the western façade of the dwelling, and roughly 25 feet of lawn along the eastern and northern dwelling façades.

When considering the location and placement of the dwelling and driveway, it was determined that there is no location on the property where the dwelling could be sited without encroaching on the 50-foot No Disturbance Zone. This was discussed with the Commission during the June 28, 2017 Public Hearing. During this discussion, the Commission had suggested that wetlands would need to be filled and replaced in order to locate the proposed dwelling greater than 50 feet from the BVW boundary. While no wetlands are proposed to be filled as part of this project, the Applicant proposes to create roughly 4,000 square feet of additional wetlands on the site. This 4,000± square-foot area mitigates for the area of wetlands that would theoretically need to be filled (roughly 3,565 square feet) in order to site the dwelling greater than 50 feet from the BVW boundary. Please note the "Theoretical 50-foot No Disturbance Zone" line on the *Plan* for a visual explanation of this concept. Details of the proposed Wetland Replication design are provided below in Section 5.3.

---

## **5. Mitigation Measures**

The Applicant intends to implement erosion controls, Buffer Zone Restoration, and Wetland Replication to protect the adjacent wetland resource areas during construction, restore previously-altered portions of the Buffer Zone, and provide Wetland Replication for the area of wetland that would otherwise require filling to site the dwelling greater than 50 feet from the BVW boundary. A description of each of these mitigating measures is provided below.

### **5.1 Erosion and Sedimentation Control**

The Applicant proposes to implement an erosion control program to protect the adjacent Wetland Resource Areas from sedimentation during construction activities. The plan for

the control of potential impacts to the adjacent Wetland Resource Areas is based on DEP guidelines and will be comprised of staked, 12-inch diameter compost filter tubes and entrenched siltation fencing. These erosion controls will be installed along the Limit-of-Work line as depicted on the *Plan*, and all erosion control measures will remain in place until disturbed areas are stabilized by vegetation.

5.2

**Buffer Zone Restoration**

In order to mitigate for the vegetation clearing that occurred within the northern portion of the site, the Applicant has committed to restoring roughly 4,335 square feet of the altered Buffer Zone. This restoration area is located to the east and south of the proposed development and is depicted on the *Buffer Zone Restoration Planting Plan* (Appendix B). This *Plan* specifies that the existing wood chips will be removed from the site, followed by planting of 29 native sapling trees and 78 native shrubs. LEC also anticipates that many of the trees that were cut within the Buffer Zone will sucker and re-grow. Following the installation of woody plant stock, areas of exposed soil will be seeded with the *New England Conservation and Wildlife Seed Mix* available from New England Wetland Plants, Inc. ([www.newp.com](http://www.newp.com)) or similar native restoration seed mixture if unavailable.

The proposed lawn edge will be marked with permanent, soil-anchored survey markers with caps stamped with the words “Conservation Area – Do Not Disturb.” These markers will inform future property owners that the naturally vegetated areas beyond the lawn are protected and should not be disturbed.

5.3

**Wetland Replication**

The Applicant proposes to create roughly 4,000 square feet of wetlands along the southern BVW boundary near wetland flags 20A through 28A and 30A through 35A. Access to the Wetland Replication Area will be provided via a 12-foot wide temporary access-way, which will be restored following wetland creation. The Wetland Replication will be created by clearing existing vegetation and excavation of soil to roughly 1-foot below the elevation of the adjacent BVW in order to intercept the groundwater table associated with the adjacent wetland system. Based on our observations, this will require removal of 1 to 3 feet of soil material. A Wetland Scientist shall inspect the WRA during excavation to determine subgrades and during the introduction of wetland soils to ensure that wetland hydrology will be established.

---

Following excavation to the appropriate subgrade, the wetland replication area will be backfilled with 12 inches of wetland topsoil. In order to create the wetland topsoil, excavated topsoil will be mixed at a 1:1 ratio of leaf compost acquired from an off-site source, as approved by the Wetland Scientist.

The included *Wetland Restoration Planting Plan* (Appendix B) specifies that the Replication Area will be planted with 19 native sapling trees and 94 native sapling shrubs. Following the installation of woody plant stock, the entire Replication Area will be seeded with the Northeast Wetland Diversity Seed Mix available from Southern Tier Consulting, Inc. ([www.southerntierconsulting.com](http://www.southerntierconsulting.com)) or similar native wetland seed mixture if unavailable.

The Wetland Replication Area will be monitored by a Wetland Scientist during and following installation, for two growing seasons. Monitoring reports describing the relative health of the plantings will be submitted to the Conservation Commission with recommendations for supplemental plantings, if necessary.

---

## 7. Summary

On behalf of the Applicant and Property Owner, Antonio Viola, LEC is filing the enclosed NOI Application with the Lowell Conservation Commission to restore portions of the 100-foot Buffer Zone that were previously altered, and to construct a single-family dwelling and pervious paver driveway. The proposed activities will occur within the 100-foot Buffer Zone to BVW as jurisdictional under the *Act*, its implementing *Regulations*, and the *Ordinance*. While it is not possible to site a dwelling outside the Commission's 50-foot No Disturbance Zone, the Applicant proposes to create roughly 4,000 square feet of wetlands. This effort is to mitigate for the wetland filling that theoretically would be required to site the dwelling greater than 50 feet from the BVW boundary. Erosion controls are proposed along the Limit-of-Work line to protect the BVW during construction, and Buffer Zone Restoration and Wetland replication are also proposed. As a result, the Applicant requests that the Commission issue an Order of Conditions approving the project as proposed herein.

Lowell Conservation Commission, *Lowell Wetlands Ordinance* (Chapter 280), and *Conservation Commission Rules and Regulations*. City of Lowell, Massachusetts.

Massachusetts Wetlands Protection Act (M.G.L. c. 131, §. 40), [www.state.ma.us/dep](http://www.state.ma.us/dep)

Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), [www.state.ma.us/dep](http://www.state.ma.us/dep)

Massachusetts Natural Heritage and Endangered Species Program Atlas of Estimated Habitat of State-listed Rare Wetlands Wildlife. 14<sup>th</sup> Edition, 2017. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, Route 135, Westborough, MA 01581, [www.state.ma.us/dfwele/dfw](http://www.state.ma.us/dfwele/dfw)

Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways 1995. *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, A Handbook*. 89 pp.

National Flood Insurance Program, Federal Emergency Management Agency Flood Insurance Rate Map, City of Lowell, Massachusetts, Middlesex County, June 4, 2010.

New England Hydric Soils Technical Committee. 20017, 4<sup>th</sup> ed., *Field Indicators for Identifying Hydric Soils in New England*.

Reed, P.B. 1988. *National List of Plant Species that Occur in Wetlands: 1988 Massachusetts*. U.S. Department of the Interior, Fish and Wildlife Service. NERC-88/18.21

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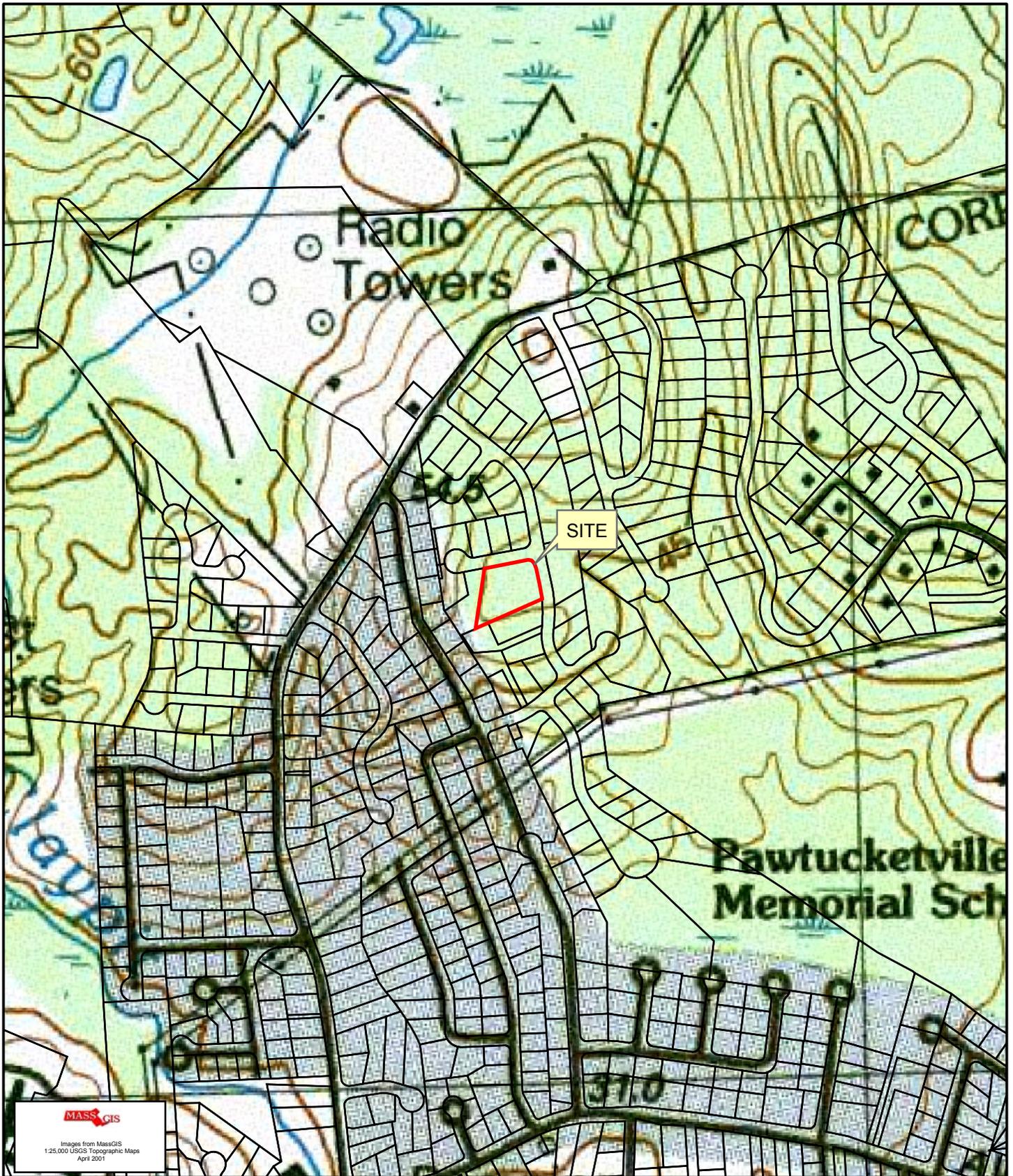
## Appendix A

### Locus Maps

Figure 1: USGS Topographic Quadrangle

Figure 2: FEMA Flood Insurance Rate Map

Figure 3: MassGIS Orthophoto & NHESP Estimated Habitat Map



**LEC**

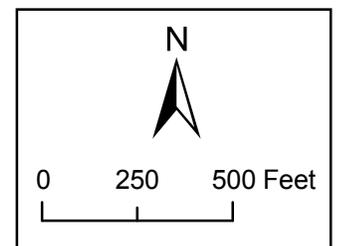
Environmental Consultants, Inc.

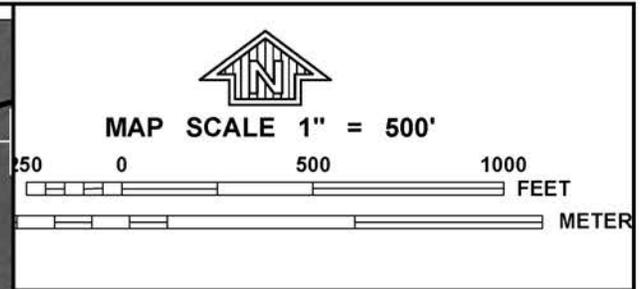
Wakefield, MA  
781.245.2500

[www.lecenvironmental.com](http://www.lecenvironmental.com)

Figure 1: USGS Topographic Map  
10 Toupi Lane  
Lowell, MA

August 22, 2017





NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0138E

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**MIDDLESEX COUNTY,**  
**MASSACHUSETTS**  
 (ALL JURISDICTIONS)

**PANEL 138 OF 656**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY           | NUMBER | PANEL | SUFFIX |
|---------------------|--------|-------|--------|
| CHELMSFORD, TOWN OF | 250188 | 0138  | E      |
| DRACUT, TOWN OF     | 250190 | 0138  | E      |
| LOWELL, CITY OF     | 250201 | 0138  | E      |

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER**  
**25017C0138E**

**EFFECTIVE DATE**  
**JUNE 4, 2010**

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

Figure 2: FEMA Flood Insurance Rate Map

# LEGEND



**SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

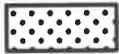
The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



**OTHER FLOOD AREAS**

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



**OTHER AREAS**

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.



**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**



**OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.



1% annual chance floodplain boundary



0.2% annual chance floodplain boundary



Floodway boundary



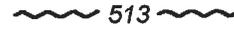
Zone D boundary



CBRS and OPA boundary



Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.



513  
(EL 987)

Base Flood Elevation line and value; elevation in feet\*

Base Flood Elevation value where uniform within zone; elevation in feet\*

\* Referenced to the North American Vertical Datum of 1988



Cross section line



Transect line

87°07'45", 32°22'30"

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

2476<sup>000</sup>mN

1000-meter Universal Transverse Mercator grid values, zone 19

600000 FT

5000-foot grid values: Massachusetts State Plane coordinate system, Mainland zone (FIPZONE 2001), Lambert Conformal Conic projection

DX5510 x

Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5

River Mile

MAP REPOSITORY  
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE  
FLOOD INSURANCE RATE MAP  
June 4, 2010

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL



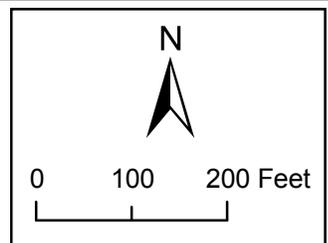
Environmental Consultants, Inc.

Wakefield, MA  
781.245.2500

www.lecenvironmental.com

Figure 3: MassGIS Orthophoto & NHESP Map  
10 Toupi Lane  
Lowell, MA

August 22, 2017



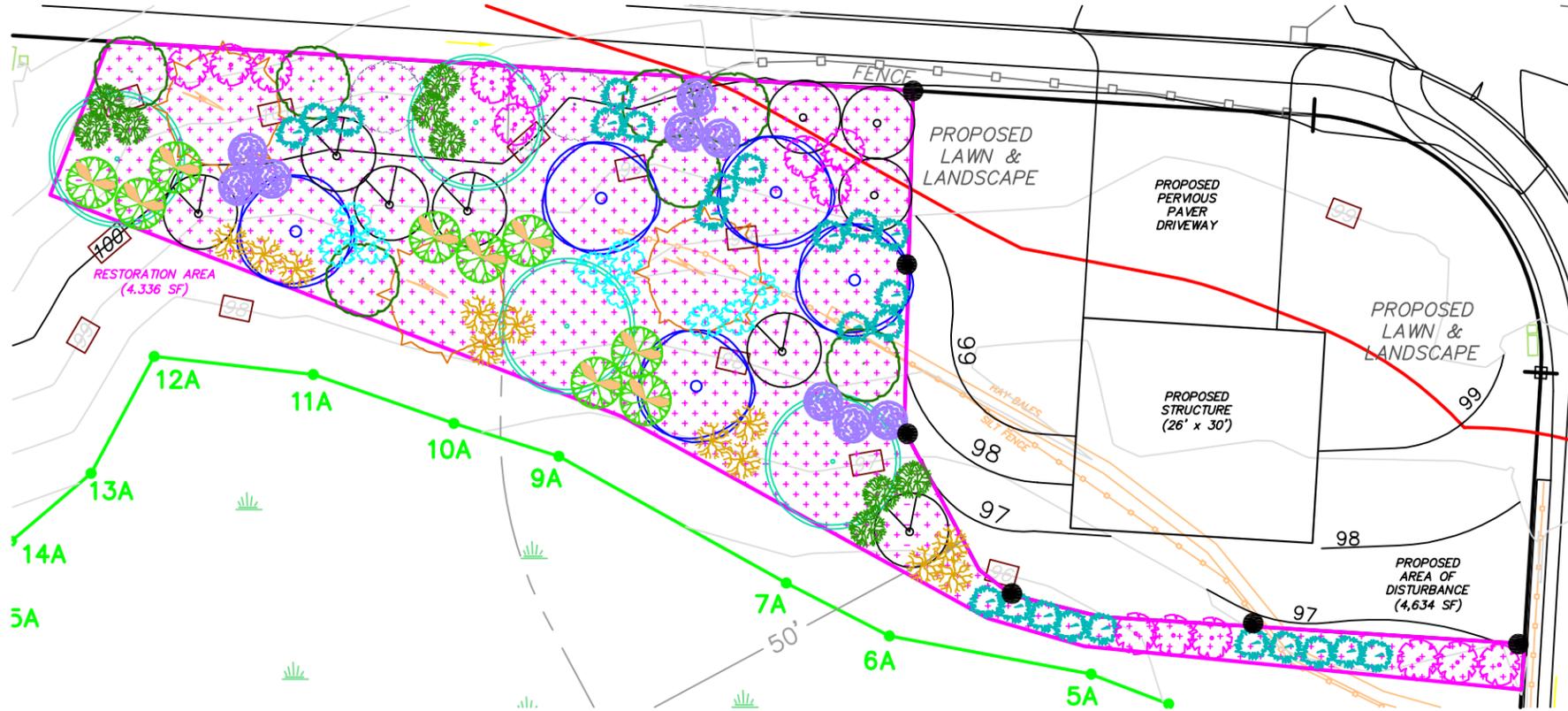
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## **Appendix B**

*Wetland Restoration Planting Plan*, dated July 10, 2017 (revised through August 22, 2017),  
prepared by LEC Environmental Consultants, Inc.

*Buffer Zone Restoration Planting Plan*, dated July 10, 2017 (revised through August 22, 2017),  
prepared by LEC Environmental Consultants, Inc.

## Buffer Zone Planting Area



### NOTES

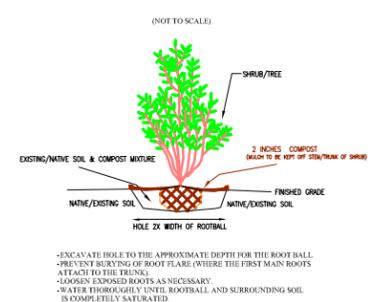
- ALL PLANTINGS SHALL BE NATIVE VARIETIES WITH NO LANDSCAPE CULTIVARS PROPOSED.
- SPECIFIC PLACEMENT OF SHRUBS AND TREES WITHIN THE PLANTING AREA APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD.
- THE PROPOSED MITIGATION WORK ACTIVITY SHALL BE MONITORED BY A WETLAND SCIENTIST.
- IF NECESSARY, ANY REQUIRED SUBSTITUTE NATIVE SHRUBS OR TREES SHALL BE REVIEWED BY THE WETLAND SCIENTIST PRIOR TO INSTALLATION. PROPOSED PLANTINGS SHALL BE INSPECTED ON-SITE BY THE WETLAND SCIENTIST PRIOR TO INSTALLATION WITHIN THE REPLICATION AREA. UNHEALTHY PLANTS MAY BE REJECTED BY THE WETLAND SCIENTIST.
- IMPLEMENTATION OF A WATERING SCHEDULE FOR THE PLANTINGS IS RECOMMENDED TO ENSURE ESTABLISHMENT OF PLANTINGS.

### BUFFER ZONE RESTORATION

- IF TOPSOIL IS ABSENT, APPROXIMATELY 6 INCHES OF CLEAN TOPSOIL (LEAF COMPOST AND LOAM MIXTURE) SHALL BE ESTABLISHED WITHIN THE BUFFER ZONE PLANTING AREAS. COMPACTED SOILS SHALL BE TILLED/LOOSENED AS NEEDED. APPROXIMATELY 10 % ORGANIC MATTER CONTENT IS RECOMMENDED FOR ANY ADDED TOPSOIL FROM OFF-SITE.
- BIODEGRADABLE NETTING IS RECOMMENDED ON SLOPES (E.G. 3:1 OR GREATER) WITHIN THE RESTORATION AREA WHERE APPLICABLE OR AS RECOMMENDED BY THE WETLAND SCIENTIST MONITOR OR PROJECT ENGINEER.
- DISTURBED AREAS SHALL BE SEEDED WITH THE NEW ENGLAND CONSERVATION AND WILDLIFE SEEDMIX OR EQUIVALENT NATIVE MIX APPROVED BY THE WETLAND SCIENTIST.
- THE PROPOSED NATIVE SEEDMIX SHALL BE LIGHTLY RAKED INTO THE SURFACE AND APPLIED ACCORDING TO THE SUPPLIERS INSTRUCTIONS.
- A ONE TIME APPLICATION OF COMPOST MULCH SHALL BE APPLIED TO THE DRIP LINE OF THE INSTALLED SHRUBS AND TREES.



### PLANTING DETAIL



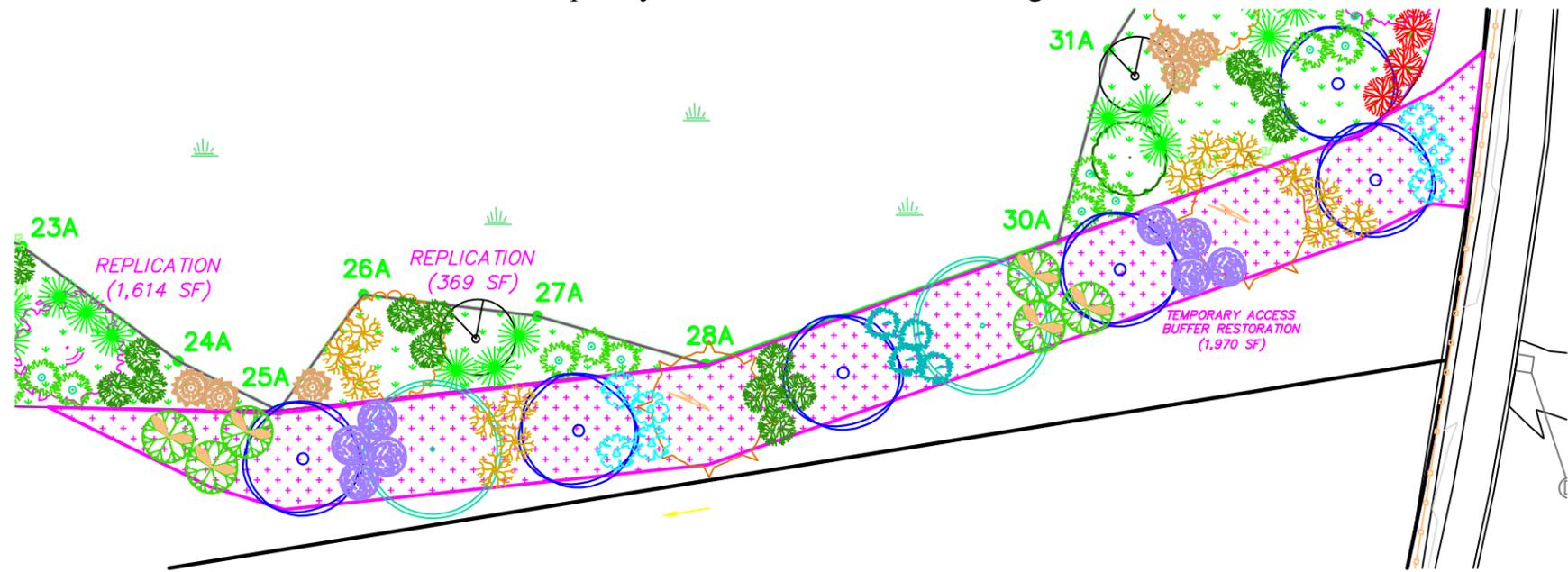
### New England Conservation and Wildlife Mix

(Application Rate: 30 lbs./acre; 1450 sq. ft./lb.)  
(New England Wetland Plants, Inc.)

SPECIES: Virginia Wild Rye, (*Elymus virginicus*), Little Bluestem, (*Schizachyrium scoparium*), Big Bluestem, (*Andropogon gerardii*), Creeping Red Fescue, (*Festuca rubra*), Switch Grass, (*Panicum virgatum*), Partridge Pea, (*Chamaecrista fasciculata*), Deer Tongue, (*Panicum clandestinum*), Indian Grass, (*Sorghastrum nutans*), Ox Eye Sunflower, (*Helopsis helianthoides*), Common Milkweed, (*Asclepias syriaca*), Spotted Joe Pye Weed, (*Eupatorium maculatum*), Grass Leaved Goldenrod, (*Euthamia graminifolia*), Blue Vervain, (*Verbena hastata*), New England Aster, (*Aster novae-angliae*), Early Goldenrod, (*Solidago juncea*).

● Proposed FENO Markers With Caps Stamped  
"Conservation Area Do Not Disturb"

## Temporary Access/Buffer Zone Planting Area



### Buffer Zone Planting Areas - Plant List

| Common Name        | Genus/Species                  | Size        | Planting Specifications       | No. |
|--------------------|--------------------------------|-------------|-------------------------------|-----|
| <b>Trees</b>       |                                |             |                               |     |
| serviceberry       | <i>Liriodendron tulipifera</i> | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 7   |
| black gum          | <i>Nyssa sylvatica</i>         | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 10  |
| sugar maple        | <i>Acer saccharum</i>          | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 6   |
| gray birch         | <i>Betula populifolia</i>      | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 2   |
| eastern red cedar  | <i>Juniperus virginiana</i>    | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 3   |
| northern red oak   | <i>Quercus rubra</i>           | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 5   |
| American hornbeam  | <i>Carpinus caroliniana</i>    | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 5   |
| <b>Shrubs</b>      |                                |             |                               |     |
| black chokeberry   | <i>Photinia melanocarpa</i>    | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 15  |
| gray dogwood       | <i>Cornus racemosa</i>         | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 13  |
| northern arrowwood | <i>Viburnum dentatum</i>       | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 17  |
| witchhazel         | <i>Hamamelis virginiana</i>    | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 15  |
| nannyberry         | <i>Viburnum lentago</i>        | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 20  |
| American hazelnut  | <i>Corylus americana</i>       | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 16  |
| sweet pepperbush   | <i>Clethra alnifolia</i>       | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 29  |

Total: 163

## Buffer Zone Restoration Planting Plan

10 Toupi Lane  
Lowell, MA

July 10, 2017  
Revised 8-22-17

PREPARED BY:

**LEC**  
Environmental Consultants, Inc.

12 Resnik Road  
Suite 1  
Plymouth, MA 02360  
508.746.9491  
508.746.9492 fax  
email: southlec@leceenvironmental.com  
www.leceenvironmental.com



SCALE: 1" = 20'  
(11 x 17" Print Size)

LEC File: VioA17-082.04

SHEET: 1 of 2



Plan adapted by:  
LEC Environmental Consultants, Inc.  
from draft plan;

PROPOSED SITE PLAN

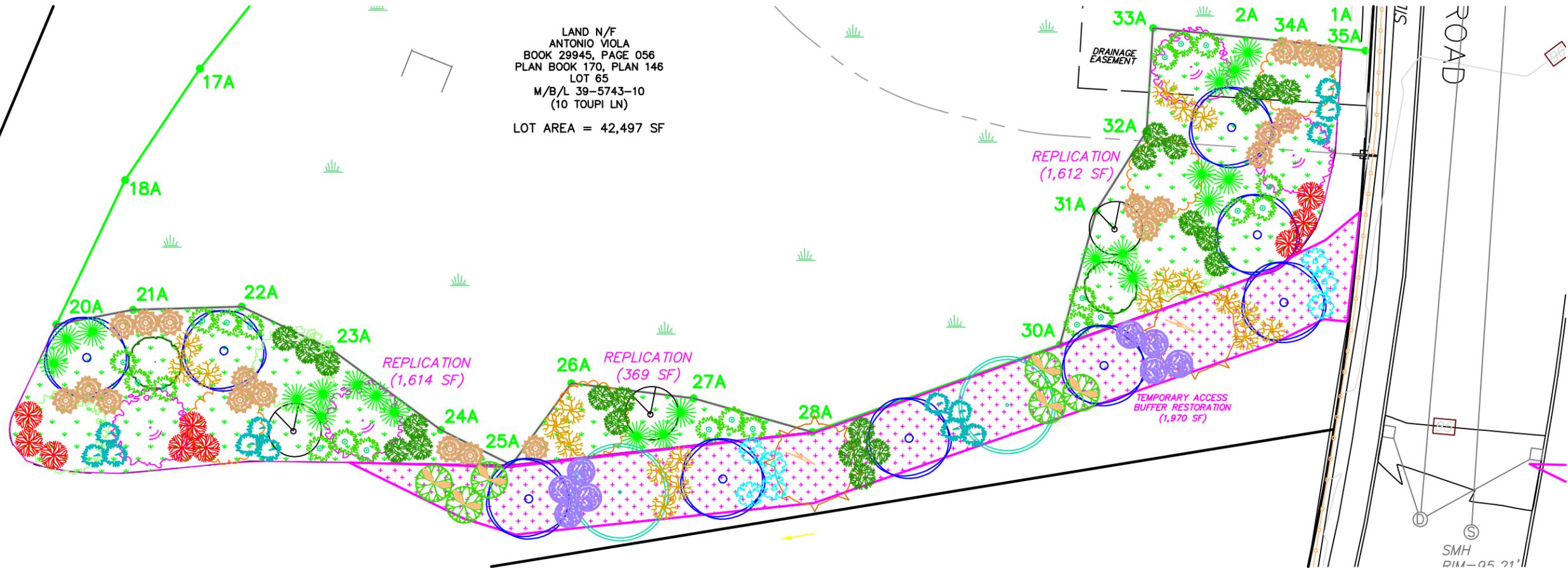
Prepared by:

**HANNIGAN ENGINEERING, INC.**  
Soil, Engineers & Land Surveyors  
1000 ROUTE 1  
LOWELL, MASSACHUSETTS 01850  
(978) 451-1234 (F)  
(978) 451-0999 (O)

Dated: July 21, 2017

# Wetland Planting Areas

LAND N/F  
ANTONIO VIOLA  
BOOK 29945, PAGE 056  
PLAN BOOK 170, PLAN 146  
LOT 65  
M/B/L 39-5743-10  
(10 TOUPI LN)  
LOT AREA = 42,497 SF



## Wetland Restoration Planting Plan

10 Toupi Lane  
Lowell, MA

July 10, 2017  
Revised 8-22-17

PREPARED BY:

**LEC**  
Environmental Consultants, Inc.

12 Resnik Road  
Suite 1  
Plymouth, MA 02360  
508.746.9491  
508.746.9492 fax  
email: southlec@leceenvironmental.com  
www.leceenvironmental.com

SCALE: 1" = 20'  
(11 x 17" Print Size)

LEC File: VioA\17-082.04

SHEET: 2 of 2

### Wetland Planting Areas - Plant List

| Common Name        | Genus/Species                 | Size        | Planting Specifications       | No. |
|--------------------|-------------------------------|-------------|-------------------------------|-----|
| <b>Trees</b>       |                               |             |                               |     |
| American elm       | <i>Ulmus americana</i>        | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 2   |
| black gum          | <i>Nyssa sylvatica</i>        | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 4   |
| red maple          | <i>Acer rubrum</i>            | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 4   |
| green ash          | <i>Fraxinus americana</i>     | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 4   |
| American hornbeam  | <i>Carpinus caroliniana</i>   | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 3   |
| serviceberry       | <i>Amelanchier canadensis</i> | 4 - 6' min. | singles, 10 - 20 feet o.c.    | 2   |
| <b>Shrubs</b>      |                               |             |                               |     |
| highbush blueberry | <i>Vaccinium corymbosum</i>   | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 21  |
| nannyberry         | <i>Viburnum lentago</i>       | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 12  |
| gray dogwood       | <i>Cornus racemosa</i>        | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 18  |
| spicebush          | <i>Lindera benzoin</i>        | 2 - 3' min. | clusters 3-7, 4 - 6 feet o.c. | 21  |
| winterberry        | <i>Ilex verticillata</i>      | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 9   |
| swamp azalea       | <i>Rhododendron viscosum</i>  | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 21  |
| sweet pepperbush   | <i>Clethra alnifolia</i>      | 2 - 3' min. | clusters 3-5, 4 - 6 feet o.c. | 9   |

Total: 130

### GROUND COVER

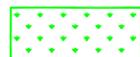
IN ADDITION TO THE NATIVE WETMIX, GROUND COVER WITHIN THE REPLICATION AREA TO BE ENHANCED WITH 2' PLUGS FROM THE BELOW LIST SPACED THROUGHOUT THE PLANTING AREA.

CINNA ARUNDINACEA (STOUT WOOD-REEDGRASS) -ONE FLAT OF 50 PLUGS  
GLYCERIA STRIATA (CAREX STRICTA) -ONE FLAT OF 50 PLUGS

IN ADDITION, 6 OSTRICH FERNS AND 6 NEW YORK FERNS SHALL BE INSTALLED THROUGHOUT THE REPLICATION AREA. FERNS SHALL BE ONE GALLON POTS .

### NOTES

- ALL PLANTINGS SHALL BE NATIVE VARIETIES WITH NO LANDSCAPE CULTIVARS PROPOSED.
- SPECIFIC PLACEMENT OF SHRUBS AND TREES WITHIN THE PLANTING AREA APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD.
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- IMPLEMENTATION OF A WATERING SCHEDULE FOR THE PLANTINGS IS RECOMMENDED TO ENSURE ESTABLISHMENT OF PLANTINGS.



PROPOSED WETLAND SEED MIX

### Northeast Wetland Diversity Mix

(1 pound = 8000 seeds, 1.25 sq. ft. @ 100' seeds per sq. ft.)  
Southern Tier Consulting, Inc.

|                           |                        |
|---------------------------|------------------------|
| Scirpus atrovirens        | green bulrush          |
| Juncus effusus            | soft rush              |
| Mimulus ringens           | monkey flower          |
| Carex vulpinoidea         | fox sedge              |
| Poa annua                 | ditch stone crop       |
| Glyceria grandis          | reed meadow grass      |
| Scirpus cyperinus         | wool grass             |
| Verbena hastata           | blue vervain           |
| Eupatorium perfoliatum    | boneset                |
| Leersia oryzoides         | rice cut grass         |
| Helenium autumnale        | common sneezewood      |
| Glyceria canadensis       | Canada manna grass     |
| Eupatorium maculatum      | Joe pye weed           |
| Aster novae-angliae       | New England aster      |
| Alisma plantago-aquatica  | water plantain         |
| Euthamia graminifolia     | grassleaf goldenrod    |
| Solidago rugosa           | wrinkled goldenrod     |
| Cyperus strigosus         | straw stemmed aster    |
| Aster puniceus            | purple stemmed aster   |
| Cephalanthus occidentalis | buttonbush             |
| Scirpus tabernaemontani   | soft stem bulrush      |
| Aster umbellatus          | flat-top white aster   |
| Carex comosa              | beaked sedge           |
| Carex crinita             | fringed sedge          |
| Solidago gigantea         | giant goldenrod        |
| Bidens cernua             | deercorn               |
| Panicum clandestinum      | water parsnip          |
| Stium suave               | small fruited bulrush  |
| Scirpus microcarpus       | nodding beggar-ticks   |
| Cicuta maculata           | water hemlock          |
| Elymus canadensis         | wild rye               |
| Bidens frondosa           | devil's beggar-ticks   |
| Angelica atropurpurea     | purple-stem angelica   |
| Rumex verticillatus       | water dock             |
| Carex lurida              | shallow sedge          |
| Polygonum pennsylvanicum  | Pennsylvania smartweed |
| Asclepias incarnata       | swamp milkweed         |
| Elymus riparius           | riverbank wild rye     |
| Carex lupulina            | hop sedge              |
| Iris versicolor           | blue flag              |

### WETLAND REPLICATION

- THE LIMITS OF THE WETLAND REPLICATION AREAS SHALL BE STAKED IN THE FIELD PRIOR TO CONSTRUCTION AND CERTIFIED TO BE ACCURATELY LOCATED BY A PLS.
- SILT FENCE OR SIX INCH COMPOST/MULCH LOG SHALL BE ESTABLISHED BETWEEN THE REPLICATION AREA AND THE WETLAND.
- A PORTION OF WOODY MATERIAL FROM CLEARING ACTIVITY SHALL BE PRESERVED AND STOCKPILED FOR USE AS COARSE WOODY DEBRIS WITHIN THE REPLICATION AREA.
- MECHANICAL EQUIPMENT WILL BE USED TO EXCAVATE TO A SUB-GRADE ELEVATION APPROXIMATELY 12 INCHES BELOW THE PROPOSED FINAL ELEVATIONS. FINAL ELEVATIONS SHALL MIMIC EXISTING GRADES WITHIN THE ADJACENT WETLAND.
- APPROXIMATELY 12 INCHES OF ORGANIC TOP SOIL SHALL BE ESTABLISHED IN THE WETLAND REPLICATION AREA.
- THE PROPOSED SOIL SHALL BE COMPRISED OF PROPERLY DECOMPOSED CLEAN LEAF COMPOST AND MINERAL SOIL MIXTURE, AND SHALL HAVE APPROXIMATELY 16-20 % ORGANIC MATTER CONTENT (10-12 % ORGANIC CARBON). THE SOIL SOURCE SHALL BE APPROVED BY THE MONITORING WETLAND SCIENTIST AND PROJECT ENGINEER. THE SOIL SHALL BE INSPECTED BY THE WETLAND SCIENTIST BEFORE PLACEMENT IN THE REPLICATION AREA.
- EFFORT SHALL BE MADE TO THE EXTENT PRACTICABLE TO DETERMINE THAT THE SOIL SOURCE SUPPLIER MINIMIZES LIKELIHOOD OF INPUT OF INVASIVE SPECIES MATERIAL.
- PIT AND MOUND MICRO-TOPOGRAPHY SHALL BE ESTABLISHED IN THE WETLAND REPLICATION AREA UNDER THE OVERSIGHT OF THE WETLAND SCIENTIST.
- THE WETLAND SCIENTIST MONITOR SHALL BE ON-SITE DURING EXCAVATION TO ENSURE ADEQUATE SUBGRADES ARE ACHIEVED TO INTERCEPT WETLAND HYDROLOGY. THE WETLAND SCIENTIST SHALL BE ON-SITE DURING ESTABLISHMENT OF FINAL GRADING OF THE WETLAND REPLICATION AREA.
- ANY DISTURBED AREAS WITHIN THE BUFFER ZONE CAUSED BY EQUIPMENT ACCESSING THE REPLICATION AREA SHALL BE SEEDDED WITH THE NEW ENGLAND CONSERVATION AND WILDLIFE SEEDMIX. EFFORT SHALL BE MADE TO MINIMIZE DISTURBANCE ASSOCIATED WITH ACCESS TO THE REPLICATION AREA.
- THE NATIVE SEED MIX USED SHALL IN THE REPLICATION AREA SHALL BE THE NORTHEAST WETLAND DIVERSITY SEEDMIX OR EQUIVALENT AND SHALL BE APPROVED BY THE MONITORING WETLAND SCIENTIST PRIOR TO SPREADING OF THE MIX.
- EFFORT SHALL BE MADE TO MINIMIZE SOIL COMPACTION DURING CONSTRUCTION.
- COARSE WOODY MATERIAL SUCH AS LOGS, STUMPS, SMALL BRANCHES, AND STANDING SNAGS SHALL BE PLACED WITHIN APPROXIMATELY 4 % OF THE SURFACE OF THE MITIGATION AREAS. LARGE STONES AND SMALL BOULDERS (12" TO 3' IN DIAMETER) MAY ALSO BE ADDED TO THE MITIGATION AREAS UNDER THE DIRECTION OF THE MONITORING WETLAND SCIENTIST.
- THE WETLAND REPLICATION AREA WILL BE MONITORED DURING AND FOLLOWING CONSTRUCTION, INCLUDING AT THE END OF THE FIRST AND SECOND GROWING SEASONS BY A QUALIFIED WETLAND SCIENTIST. MONITORING REPORTS DESCRIBING THE RELATIVE HEALTH OF THE PLANTINGS WILL BE SUBMITTED TO THE CONSERVATION COMMISSION WITH PHOTOGRAPHIC DOCUMENTATION AND RECOMMENDATIONS FOR SUPPLEMENTAL PLANTINGS, IF NECESSARY. THE MONITORING WILL INCLUDE AN ASSESSMENT OF THE DENSITY OF THE VEGETATION TO ENSURE 75 % COVERAGE BY WETLAND INDICATOR PLANTS WITHIN TWO GROWING SEASONS. IT IS ANTICIPATED THAT OPPORTUNISTIC INVASIVE WETLAND PLANTS MAY ENTER AND COLONIZE THE PLANTING AREA; HOWEVER, EFFORTS WILL BE MADE TO DISCOURAGE COLONIZATION BY EXOTIC INVASIVES TO THE EXTENT PRACTICABLE.



Plan adapted by:  
LEC Environmental Consultants, Inc.  
from draft plan;

PROPOSED SITE PLAN

Prepared by:

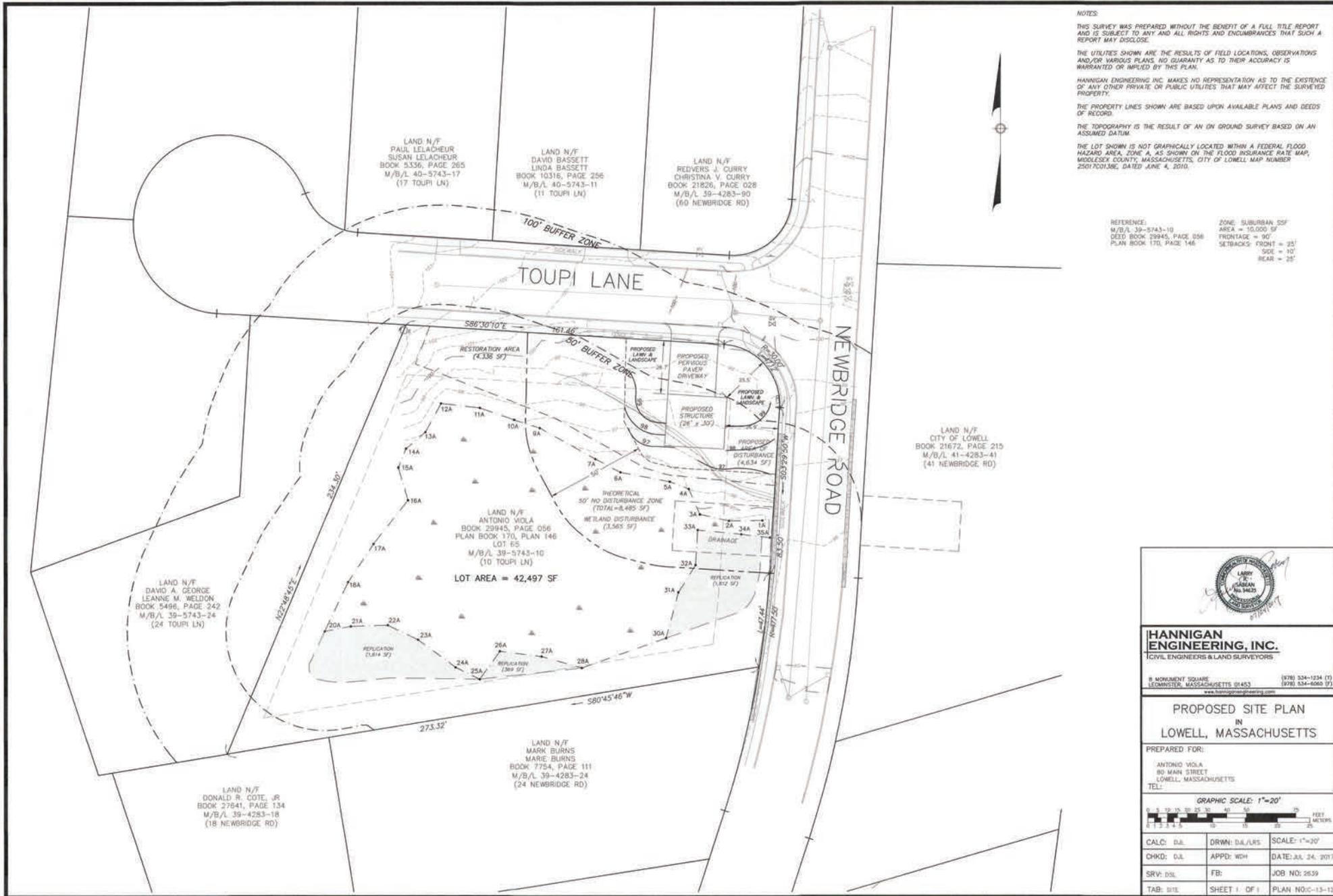
**HANNIGAN ENGINEERING, INC.**  
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LOWELL, MA 01854  
(978) 451-2000  
(978) 451-2000

Dated: July 21, 2017

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**Appendix C**

*Proposed Site Plan*, dated July 24, 2017, prepared by Hannigan Engineering, Inc.



NOTES:

THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A FULL TITLE REPORT AND IS SUBJECT TO ANY AND ALL RIGHTS AND ENCUMBRANCES THAT SUCH A REPORT MAY DISCLOSE.

THE UTILITIES SHOWN ARE THE RESULTS OF FIELD LOCATIONS, OBSERVATIONS AND/OR VARIOUS PLANS. NO GUARANTEE AS TO THEIR ACCURACY IS WARRANTED OR IMPLIED BY THIS PLAN.

HANNIGAN ENGINEERING INC. MAKES NO REPRESENTATION AS TO THE EXISTENCE OF ANY OTHER PRIVATE OR PUBLIC UTILITIES THAT MAY AFFECT THE SURVEYED PROPERTY.

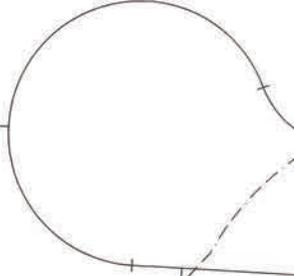
THE PROPERTY LINES SHOWN ARE BASED UPON AVAILABLE PLANS AND DEEDS OF RECORD.

THE TOPOGRAPHY IS THE RESULT OF AN ON GROUND SURVEY BASED ON AN ASSUMED DATUM.

THE LOT SHOWN IS NOT GRAPHICALLY LOCATED WITHIN A FEDERAL FLOOD HAZARD AREA, ZONE A, AS SHOWN ON THE FLOOD INSURANCE RATE MAP, MIDDLESEX COUNTY, MASSACHUSETTS, CITY OF LOWELL MAP NUMBER 2501700138E, DATED JUNE 4, 2010.

REFERENCE: M/B/L 39-5743-10 DEED BOOK 29945, PAGE 258 PLAN BOOK 170, PAGE 146

ZONE: SUBURBAN 35F AREA = 15,000 SF FRONTAGE = 90' SETBACKS: FRONT = 25' SIDE = 10' REAR = 25'



LAND N/F  
DAVID A. GEORGE  
LEANNIE M. WELDON  
BOOK 5496, PAGE 242  
M/B/L 39-5743-24  
(24 TOUPI LN)

LAND N/F  
PAUL LELACHEUR  
SUSAN LELACHEUR  
BOOK 5336, PAGE 265  
M/B/L 40-5743-17  
(17 TOUPI LN)

LAND N/F  
DAVID BASSETT  
LINDA BASSETT  
BOOK 10316, PAGE 256  
M/B/L 40-5743-11  
(11 TOUPI LN)

LAND N/F  
REDDERS J. CURRY  
CHRISTINA V. CURRY  
BOOK 21826, PAGE 028  
M/B/L 39-4283-90  
(60 NEWBRIDGE RD)

LAND N/F  
CITY OF LOWELL  
BOOK 21672, PAGE 215  
M/B/L 41-4283-41  
(41 NEWBRIDGE RD)

LAND N/F  
ANTONIO VIOLA  
BOOK 23945, PAGE 056  
PLAN BOOK 170, PLAN 146  
LOT 65  
M/B/L 39-5743-10  
(10 TOUPI LN)  
**LOT AREA = 42,497 SF**

LAND N/F  
DONALD R. COTE, JR  
BOOK 27841, PAGE 134  
M/B/L 39-4283-18  
(18 NEWBRIDGE RD)

LAND N/F  
MARK BURNS  
MARIE BURNS  
BOOK 7754, PAGE 111  
M/B/L 39-4283-24  
(24 NEWBRIDGE RD)



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(978) 534-6660 (TX)

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**PROPOSED SITE PLAN**  
IN  
**LOWELL, MASSACHUSETTS**

PREPARED FOR:  
ANTONIO VIOLA  
80 MAIN STREET  
LOWELL, MASSACHUSETTS

TEL: \_\_\_\_\_

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GRAPHIC SCALE: 1"=20'




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|              |                   |                    |
|--------------|-------------------|--------------------|
| CALC: D.S.L. | DRWN: D.A./L.R.S. | SCALE: 1"=20'      |
| CHKD: D.S.L. | APPD: W.D.H.      | DATE: JUL 24, 2011 |
| SRV: D.S.L.  | FB:               | JOB NO: 2639       |
| TAB: SITE    | SHEET 1 OF 1      | PLAN NO: C-13-13   |