NOTICE OF INTENT

Waterline Extension

Route 495

Bank Road & Western Ave.
Haverhill, MA

November 22, 2016

Prepared For:
Tenney Place Apartments II, LLC
1264 Main St.
Waltham, MA 02451

Prepared By:
LandTech Consultants, Inc.
515 Groton Road
Westford, MA 01886

LandTech Consultants
Engineering / Planning / Surveying / Permitting

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November 22, 2016

Haverhill Conservation Commission
4 Summer Street, Room 205, City Hall
Haverhill, MA 01830

Re.: Notice of Intent

Waterline Connection, Bank Road and Western Avenue at Route 495, Haverhill, MA

Dear Members of the Commission:

Please find attached two (2) copies of a Notice of Intent for the above referenced project. The project was previously approved under MassDEP File Number #33-1126 on July 21, 2004, and File No. 33-1260, issued in 2008, extended in 2011. The enclosed submittal is identical to the previous Notices of Intent with updated information and forms.

You may recall this project is part of an Affordable Housing Project approved by the Zoning Board of Appeals under M.G.L. Chapter 40B. Therefore, we are only filing in accordance with the Wetland Protection Act 310 CMR 10.00. No application is being made herewith for filing under the Rules and Regulations of the Haverhill Conservation Commission.

The project proposes water utility improvements for the City of Haverhill and includes the construction of approximately 1,300 linear feet of 12-inch waterline. The new waterline will be constructed under Interstate Highway Route 495 connecting the existing waterlines on Bank Road and Western Avenue. The majority of the work, 930 linear feet, will be within the right of way(s) for Bank Road and Western Avenue and would be installed using traditional trenching (approximately 5-feet wide) and backfilling construction techniques. The remaining 370 linear feet of waterline will be installed below Interstate Highway Route 495 using standard methods for directional drilling.

All of the work is proposed within the 200-foot Riverfront associated with the Merrimack River. A portion of the work, on Bank Road, would be located within the 100-feet Inner Riparian Zone, in an area that is currently paved. Sediment and erosion control devices have been proposed to prevent potential adverse effects to the Merrimack River during construction.

We look forward to presenting this project at the scheduled public hearing.

Sincerely,
LANDTECH CONSULTANTS, INC.

Matt Waterman, P.E.
Senior Project Engineer

cc: MADEP, Tenney Place Apartments II, LLC

Rt. 495 - Haverhill, MA

Table of Contents

1.0 Existing Conditions

1.1 SITE DESCRIPTION

The property is located on the north side of the Merrimack River in Haverhill Massachusetts. Bank Road runs east to west, parallel to the Merrimack River, and terminates at Interstate Route 495. Route 495 runs north to south perpendicular to the Merrimack River. Western Avenue is to the east of Route 495, running west to east and parallel to the Merrimack River, terminating at Route 495. The locus property is within the Right-of-Ways for Bank Road, Western Avenue and Route 495.

Municipal utilities are present in Bank Road including, sewer, stormwater drainage and overhead wires. Locations of these utilities are shown on accompanying plan.

The Western Avenue portion of the site, approximately 500 linear feet, is presently paved and relatively flat. The area to the north and east of the road slopes upward away from the road to the north and contains several single-family dwellings. Most of the vegetation within the right-of-way exists as lawn with some scattered trees and paved driveways. To the south of the paved road, the terrain slopes down to the Merrimack River, is heavily wooded and is used as open space. At its closest point, the edge of pavement is approximately 85 feet from the bank of the Merrimack River.

Municipal utilities are present in Western Avenue including, sewer, stormwater drainage and overhead wires. Locations of these utilities are shown on accompanying plan.

Interstate Route 495 is a 400-foot wide Right of way, running north to south in between Bank Road and Western Avenue and crosses the Merrimack River to the south of the proposed work area. The roadway surface of the two travel lanes is approximately 20 feet higher than the elevations of Bank Road and Western Avenue. A 100-foot wide grass strip separates the two travel lanes. The grass strip is approximately 14-feet lower than the two travel lanes. A 20-foot wide rip-rap lined swale, running parallel to the southbound travel lane, is located to the west of the right of way.

1.2 TOPOGRAPHIC FEATURES AND VEGETATION

The Bank Road portion of the site, approximately 400 linear feet, is presently paved and relatively flat. The terrain to the north and west slopes upward from the road. The vegetation in this area is mainly grass, with very few trees. There are no residential dwellings in this area, just a single business (a car dealership) located on the northerly side of the road. To the south of the paved portion of the right-of-way, the terrain slopes downward to the Merrimack River. The areas between Bank Road and the Merrimack River is heavily wooded and used as open space. At its closest point, the edge of pavement is approximately 50 feet from the bank of the Merrimack River.

1.3 SOILS AND SUBSURFACE CONDITIONS

The Soil Conservation Service (SCS) mapping and soil descriptions have been studied for planning purposes, and the on-site soil types are:

- Udorthents, smoothed (UD)* – Areas which soil material has been excavated and deposited. The original soils are typically excessively drained to moderately well drained and ranged from nearly level to very steep. The depth of excavation ranges from 2 to 20 feet in depth. The permeability ranges from slow to very rapid. Cobbles and gravel are abundant in some areas. Since the soil has been disturbed there is no associated hydrologic group.
- Unadilla Very Fine Sandy Loam (UnB)* – A deep, gently sloping, well drained, fine sandy loam which can be found in farmland and in residential and urban areas. The permeability of the soil is moderate and is classified in hydrologic group "B".
- Urban Land (Ur)* – Nearly level to moderately steep areas where the soils have been altered or obscured by urban works and structures. The characteristics of this unit are so variable that it has not been assigned a capability subclass.

* As per Soil Survey Report, Essex County, Massachusetts, Northern Part, issued February 1981.

1.4 RESOURCE AREAS

Resource areas near the site include the Merrimack River, with its associated Riparian Zones, as well as Estimated Habitats for a variety of species, as described by Natural Heritage (see ACEC map and letter from Natural Heritage included herein.)

2.0 PROPOSED WORK

2.1 PROJECT DESCRIPTION

The proposed work will consist of connecting the two existing 12-inch waterlines, with approximately 1,300 linear feet of 12-inch schedule-80 PVC pipe. The work would be located entirely within the Riverfront Area of the Merrimack River. Approximately 1,150 linear feet would be within the outer, 200 foot outer Riparian zone, and approximately 150 linear feet would be located within the inner 100 foot Riparian Zone. One of the lines terminates on one side of Route 495 in Western Avenue, and the other terminates in Bank Road.

Within Bank Road, the waterline will be installed along the northern edge of the pavement. The waterline will be installed by digging a trench, approximately 5 feet wide, and up to 10 feet deep laying in the waterline and then back filling the trench. All surface features will be restored to pre-construction condition upon installation of the line. At its closets point, construction will be approximately 90 feet from the edge of the Merrimack River.

Within Western Avenue, the waterline will be installed in the northern portion of the pavement. The waterline will be installed by digging a trench, approximately 5 feet wide, laying in the waterline and then back filling the trench. All surface features will be restored to pre-construction condition upon installation of the line. At its closets point, construction will be approximately 120 feet from the edge of the Merrimack River.

The portion of work below Route 495 will require horizontal directional drilling. To install the pipe, a boring pit, approximately 10 feet by 26 feet and 15 feet deep, would be created on the eastern side of route 495, at the end of Bank road. To the west of Route 495, at the end of Western Avenue, a receiving pit, approximately 10 feet by 24 feet and 12 feet deep, would be created. From the pit on Bank Road, the waterline would be installed using horizontal directional drilling trenchless construction methods, as follows:

First, a pilot bore is created, 370 feet long, approximately 27 feet below the roadway of Route 495. Reamers are then successively pulled back to obtain a hole large enough to install the pipe. Simultaneously, drilling mud is pumped into the hole to stabilize it and to prevent soil collapse. The pipe is then installed by pulling it back through the hole.

Piping materials used for this technology include a fusible pvc pipe. The process includes butt-fusing the pipe together resulting in a flexible continuous length of pipe with a high pulling force strength[1]. The two boring pits, located outside the 100 foot Riparian Zone, receive the drilling mud. The pits would be surrounded by orange construction fencing and siltation fencing for erosion control measures. Additionally, orange traffic barrels with blinking lights will be placed at the end of Western Avenue, west of the receiving pit for traffic safety.

The proposed work is limited to previously altered areas within the riverfront areas. Any areas currently paved will be repaved upon completion. Only a minimal amount of vegetated areas, consisting of light brush and grass would be disturbed. Those areas would be loamed and seeded upon completion. Tree removal would not be required to complete the work.

[1] Uni-Bell PVC Pipe Association. *Developments in North American PVC Piping Products for Trenchless Applications*. Dallas, Texas: Shah Rahman, Author.

2.2 STORMWATER MANAGEMENT

Although no new impervious area, buildings, or resource area alteration is proposed, this project is still subject to Stormwater Policy.

Whereas the proposed earth disturbance is temporary, the only stormwater to be managed is the temporary water and mud in the boring pits. These are to be managed with appropriate erosion and siltation controls surrounding them, while the effluent water would be pumped out and removed off site, thereby preventing any possible contamination to the Merrimack.

The work has been designed to fulfill the requirements of Massachusetts Stormwater Policy, including TSS removal, groundwater recharge and operation and maintenance requirements. However, since this project is a simply a utility connection, the majority of the standards do not apply with the exception of the Construction Period Pollution Prevention and Erosion & Sedimentation Control. The following address that standard (see Stormwater Checklist Appendix E).

Site Specific Construction Period Pollution Prevention and Erosion & Sedimentation Control

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

The project will disturb less than one acre of land during the construction process and will therefore NOT require a NPDES Construction General Permit issued by the Environmental Protection Agency.

Without proper erosion and sediment control measures, grading and filling may cause erosion and sedimentation, resulting in temporarily increased turbidity and suspended solid loads. Runoff from construction sites may also transport sediment to downstream watercourses, where sediment deposition and accumulation will occur as flow velocities decrease.

Erosion and sedimentation controls will be employed to prevent the erosion and transport of sediment into resource areas during the earthwork and construction phases of the project. Erosion and sedimentation control measures will be installed prior to site excavation or disturbance and will be maintained throughout the construction period.

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

Silt Fence and Straw Wattles

Prior to any ground disturbance, a professional engineer or land surveyor will certify that a barrier of staked straw wattles and silt fence is in place at the down gradient limit of work in accordance

with the site plan. The barrier will be placed to trap sediment transported by runoff before it reaches the drainage system or leaves the construction site. The silt fence is a semi-permeable barrier made of a synthetic porous fabric which provides additional protection when used with straw wattles. When necessary, additional silt fence barriers will be installed immediately down gradient of erosion-prone areas, such as the base of steep exposed slopes and around the base of stockpiles, throughout the construction phase of the project. The barriers will be entrenched into the substrate to prevent underflow.

The erosion control barriers will be inspected weekly and after every storm event. Any sediment that collects behind the barriers will be removed and will be either reused at the site or disposed of at a suitable offsite location. Any damaged sections of silt fence or wattles will be repaired or replaced. The underside of the straw wattles will be kept in close contact with the earth and reset as necessary. Straw wattles and silt fences will be maintained and cleaned until slopes have healthy stands of grass.

Dust Control

Fugitive dust from large areas of unstabilized soil can be a problem during construction. On dry and windy days when dust generation is a concern, a water truck will traverse the site and spray water as necessary to prevent dust from forming.

Slope Stabilization

The smallest practicable area of land will be exposed at a time. A temporary vegetative cover will be established on areas of exposed soils (including stockpiles) that remain inactive and unstabilized for a period of more than 30 days for slopes, and in the case of inclement weather. The seeded surfaces will be covered with a layer of hay mulch or hydro mulch as described above.

Upon completion of final grading, any areas not covered by pavement, other forms of stabilization, or other methods of landscaping will be seeded with an erosion control seed mix. On slopes 4:1 and greater, loamed and seeded areas will be mulched with hay to prevent erosion prior to germination of the seed. After disturbed areas have been stabilized, the temporary erosion control measures will be removed and accumulated sediment will be removed and disposed of in an appropriate location.

3.0 Development Impacts

3.1 RESOURCE AREA

The work associated with this proposed project will take place within the Riverfront Riparian Zone associated with the Merrimack River. The wetland resource areas on the project site are regulated under a State and Local regulatory programs including:

- Massachusetts Wetlands Protection Act (WPA) and 310 CMR 10.00 which is administered by the Local Conservation Commission or (upon appeal) by DEP
- The City of Haverhill Wetlands Bylaw

The wetland resource areas in the vicinity of the site are identified in Section 1.5. The proposed work has been designed to prevent any impact to these areas. The proposed project will not result in any alteration of the resource area, nor will it disturb previously undisturbed areas. To help control runoff during construction, erosion and sediment control measures have been proposed.

3.2 MITIGATION MEASURES AND CONSTRUCTION SEQUENCE

Provided that the Construction Sequence is followed and the Sediment and Erosion Control devices are implemented, the resource area in question would not be adversely impacted by the project.

To minimize possible adverse impacts to the Merrimack River, the following sequence of work should be utilized:

1. At least 72 hours prior to the onset of construction, dig safe should be contacted at (888-344-7233) to locate any and all subsurface utilities.
2. The contractor shall stake the siltation fencing and construction fencing in the locations shown on the ***Waterline Connection Plan Bank Road and Western Avenue*** (Appendix C). Silt sacks should be installed in all catch basins depicted on the attached plan. These measures are to be installed prior to any site alteration. The location of these lines are to be verified and approved by the City of Haverhill Conservation Commission before construction is to begin.
3. The waterline in Bank Road is to be installed. Excavate from the trench shall be stockpiled outside of the 100 foot Riparian Zone, within the Right-Of-Way and encircled in siltation fencing. The trenches are to be backfilled at the end of each work day.
4. The boring pit is to be constructed at the end of Bank Road. All excavate from the pit construction is to be stored outside of the 100 foot riparian zone and encircled in staked siltation fencing. The area around the pit is to be encircled in siltation fence and orange construction fence throughout the entire construction process.

5. The receiving pit is to be constructed at the end of Western Avenue. All excavate from the pit construction is to be stored outside of the 100 foot riparian zone and encircled in staked siltation fencing. The area around the pit is to be encircled in siltation fence and orange construction fence.
6. Traffic barrels with blinking lights are to be placed on Western Avenue, to the west of the receiving pit, as shown on the ***Waterline Connection Plan Bank Road and Western Avenue Plan***. These are to remain in place until the receiving pit is backfilled and the boring operation has ended.
7. The waterline in Western Avenue is to be installed. Excavate from the trench shall be stockpiled outside of the 100 foot riparian zone, within the Right-Of-Way and encircled in siltation fencing. The trenches are to be backfilled as soon as possible.
8. As construction proceeds, permanent seeding shall be implemented on all finished graded areas; loam base shall be a minimum of 4". Mulching will be utilized on all slopes in excess of 10%. Geotextile fabric will be used on all slopes in excess of 15%, or where mulching proves ineffective.
9. All paved areas disturbed for trench construction are to be re-paved.
10. Upon stabilization of all areas and satisfactory completion of work, the engineer shall certify to the work and request that the local Conservation Commission issue a certificate of compliance. Once the Commission gives final approval, the siltation fencing may be removed. Any sediment deposits found at the siltation fence line shall be removed.

3.3 WILDLIFE

The project site is located within an Estimated Habitat of Rare Wildlife or a Priority Habitat of Rare Species as shown on MassGIS on-line mapping (print included herein). As determined by Natural Heritage, the proposed project is not expected to have an adverse effect on the local wildlife. The construction site will be kept clean, and any waste will be disposed of in accordance with local and state regulations. The site will also be inspected daily, and any trash will be removed at once so as not to impact wildlife habitat in the immediate surrounding areas.

ALTERNATIVES ANALYSIS

Background:

Bank Road and Western Avenue were formerly known as “River Street”. In the 1960’s when Route 495 was constructed, River Street was split into Western Avenue and Bank Road. Since the construction of Route 495, a 12-inch waterline was constructed within Bank Road (to within 350 feet of Route 495) and a separate a 12-inch waterline was constructed Western Avenue (to within 550 feet of Route 495). The waterlines were never connected due to the significant cost and expense having to bore under Route 495. Additionally, in the 1980’s, a sewer line was constructed in similar fashion to this proposal below Route 495 and is shown on the enclosed plans.

In recent years the western side, west of 495, of Haverhill has seen an increase in development. This increase in development has increased the demand on the exiting water distribution system. To accommodate this increase, portions of the existing water distribution system in Haverhill have been recently updated. It was recommended by the City of Haverhill Water Department that adding a new waterline connection across Route 495, in this location would help to strengthen the volume and pressure being supplied to the western side of the City Haverhill.

No Build Alternative:

If the waterline connection is not completed, other, more expensive water distribution improvements would be necessary. These would include water booster stations and/or a water tower or storage tank. These alternatives would not be economically feasible from a construction and cost standpoint and would add an additional maintenance cost to the City of Haverhill’s budget. Therefore, the “No-Build” alternative would not be a substantially equivalent Economic Alternative.

Alternative Sites:

Alternative water connection locations were reviewed by the City of Haverhill Water Department. However; those locations were ruled out because they weren’t as beneficial to the City’s water distribution system. Although other locations could be utilized in the immediate future, given the current demand on the water system, and the growth rate in this part of the city, the proposed connection would be required at a later date. The proposed connection would best serve the City’s current water needs and was recommended as the best alternative for the City of Haverhill.

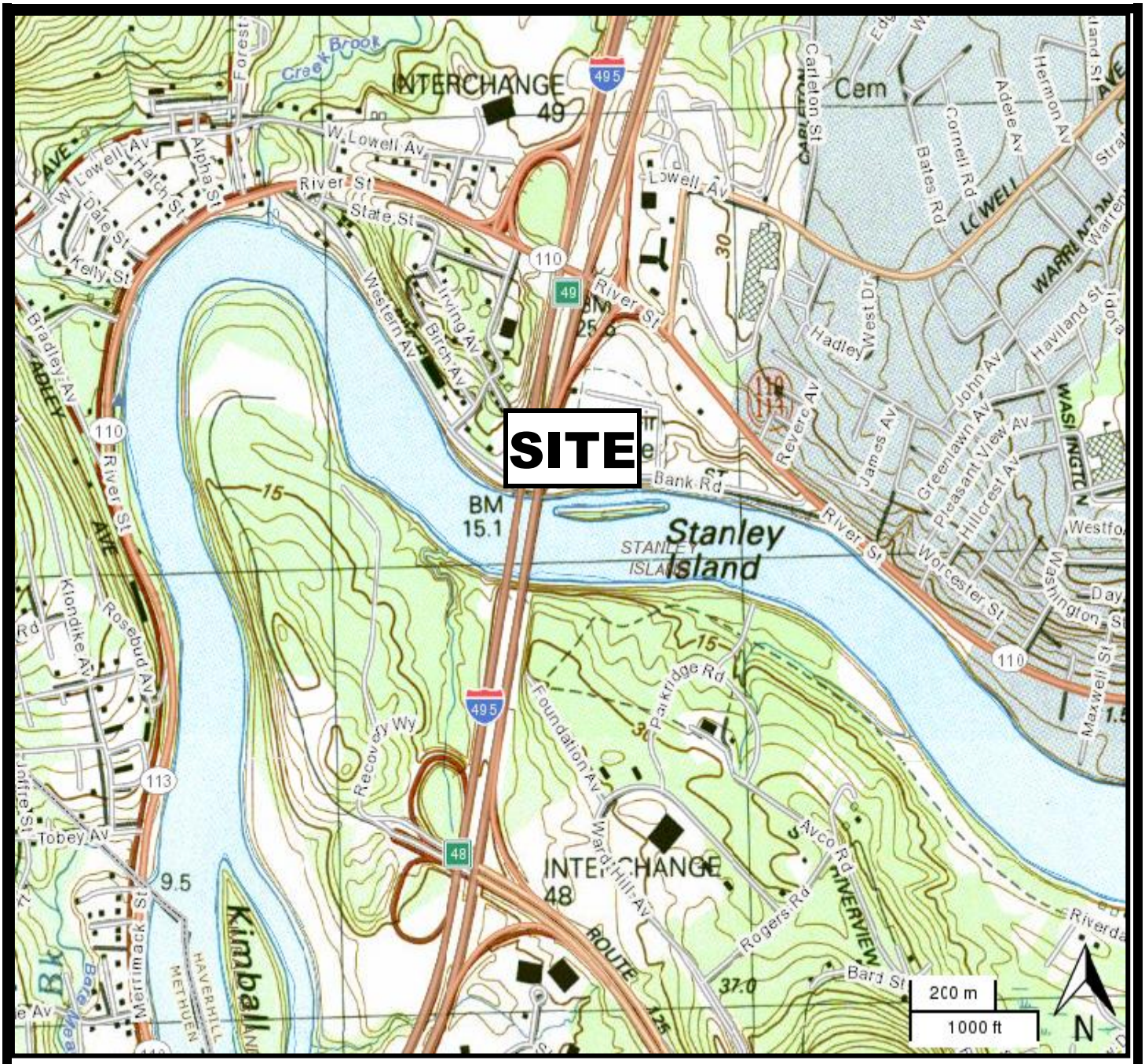
Site Layout Alternatives:

An alternative to boring below the highway would be to hang the waterline from the bridge girders. There are several reasons that this was not the chosen option for construction. The first reason was constructability. By hanging the pipe, additional trenching and alteration to the riverfront area would be required. This method would also require more intensive man hours to install which would increase the cost of the project. Additionally, with people working in close proximity to the highway, worker safety during construction is a concern.

Recommended Alternative

With the proposed design of horizontal directional drilling, the constructablity is increased since the water line will be installed in a straight line, with no large vertical or horizontal bends, minimizing costs by reducing the pipe length. Using a boring machine also drastically reduces the amount of alteration within the riverfront area by reducing the amount of trenching needed. The majority of the waterline construction occurs outside of the 100 foot Riparian Zone to the Merrimac River, with no work proposed within 90 feet.

APPENDIX A. Locus Map (USGS)



USGS LOCUS MAP

ROUTE 495
BANK ROAD, WESTERN AVE.

Prepared for: Tenney Place, LLC
1 Jefferson Drive
Londonderry, NH 03053

LandTech Consultants
Engineering / Planning / Surveying / Permitting

515 Groton Road, Westford, MA 01886
Ph: (978) 692-6100 - landtechinc.com

Draft: ASK

Job No. 10-185

APPENDIX B. WPA Form 3 - Notice of Intent and NOI Wetland Fee Transmittal Form

APPENDIX C. Supporting Information

Flood Insurance Rate Map (FIRM)

NHESP Map

Soils Map

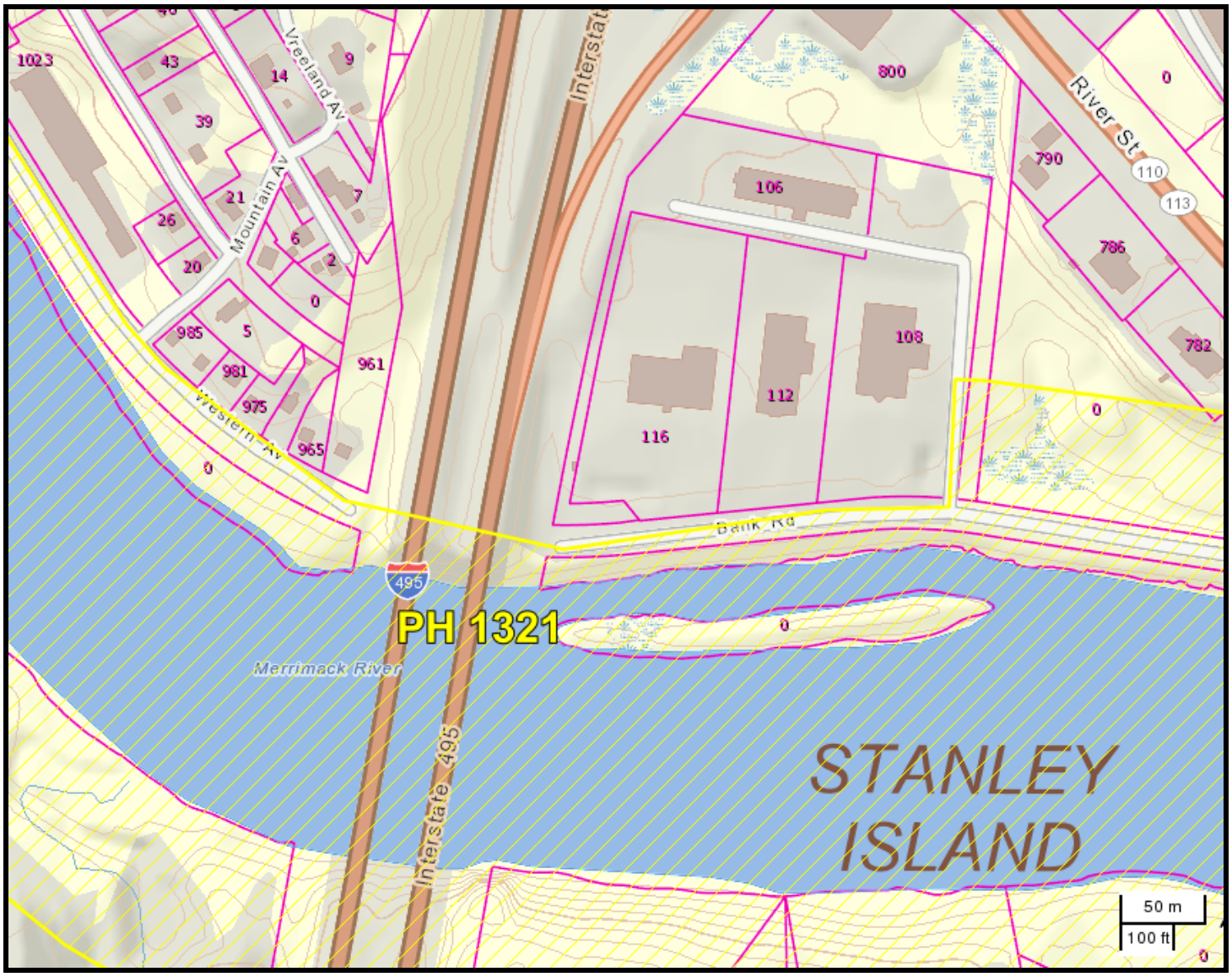
Assessors Map

Rt. 495 - Haverhill, MA

Flood Insurance Rate Map (FIRM)

Rt. 495 - Haverhill, MA

NHESP Map



NHESP HABITAT MAP

ROUTE 495
BANK ROAD, WESTERN AVE.

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1 Jefferson Drive
Londonderry, NH 03053

Draft: ASK

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Soils Map

Rt. 495 - Haverhill, MA

Assessors Map

APPENDIX D. Additional Formwork

Certified Abutter's List

Abutter Notification Letter

Copy of Filing Fee Checks

Rt. 495 - Haverhill, MA

Abutter's List

Rt. 495 - Haverhill, MA

Abutter Notification Letter

LandTech Consultants
Engineering / Planning / Surveying / Permitting

Notification to Abutters Under the Massachusetts Wetlands Protection Act

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

A. The name of the applicant is Tenney Place Apartments II, L.L.C.

B. The applicant has filed a Notice of Intent with the Conservation Commission for the municipality of Haverhill seeking permission to remove, fill, dredge or alter an Area Subject to Protection Under the Wetlands Protection Act (General Laws Chapter 131, Section 40).

C. The address where the activity is proposed is Bank Road, Western Avenue and Route 495, Haverhill MA

D. Copies of the Notice of Intent may be examined at Haverhill Conservation Commission between the hours of 9:00 am and 3:00 pm on the following days of the week: Monday – Friday
For more information, call (978) – 374 - 2334 Check One: This is the applicant ☐, representative ☐, or other ☒ (specify): Approving Authority.

E. Copies of the Notice of Intent may be obtained from either (check one) the applicant ☐, or the applicant's representative ☒, by calling this telephone number (978) – 692 - 6100 between the hours of 9am and 4pm on the following days of the week: Monday – Friday.

F. Information regarding the date, time, and place of the public hearing may be obtained from: Haverhill Conservation Commission by calling this telephone number (978) – 374 - 2334 between the hours of 9:00 am and 4:00 pm on the following days of the week: Monday - Friday This is the applicant ☐, representative ☐, or other ☒ (specify): Approving Authority

NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the Haverhill Gazette.
(name of newspaper)

NOTE: Notice of the public hearing, including its date, time, and place will be posted in the City or Town Hall not less than forty-eight (48) hours in advance.

NOTE: You also may contact your local Conservation Commission or the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetland Protection Act. To contact DEP, call: Northeast Region: 617-654-6500

Sincerely,
LANDTECH CONSULTANTS, INC.

Matthew A. Waterman, P.E.
Senior Project Engineer

Copy of Filing Fee Checks

wpaform

Copy of Order of Conditions