Narrative

1.1 Project Description

The Town of Amherst proposes to install approximately 2,300 linear feet of new 12-inch ductile iron water main under Cushman Road and Teawaddle Hill Road in Leverett, MA. The new water main will extend from the Amherst/Leverett town line on Cushman Road to just past the bridge over the Cushman Brook on Teawaddle Hill Road. See Figure 1 – Locus Map. In addition to the main, the project includes installation of all associated service connections, valves, fittings, hydrants and appurtenances. The project also includes directional drilling under the Cushman Brook on Teawaddle Hill Road.

Currently, the Town of Leverett is providing bottled water to residents located west of the town transfer station off January Hills Road, and east of the Cushman Brook due to groundwater contamination affecting their private drinking water wells. The Town of Leverett has requested to expand the Town of Amherst's water distribution system on East Leverett Road into Leverett and continuing on Teawaddle Hill Road just past Cushman Brook. The project is necessary to provide clean drinking water to the residents of Leverett that are impacted by the groundwater contamination.

In addition to the water main work in Leverett, this project involves installing new water main under East Leverett Road in Amherst. The proposed project has been designed, and is anticipated, to only have temporary impacts to resource areas in the Town of Leverett. The Town of Leverett is assuming the costs of construction, and after the water main is installed the Town of Amherst will assume ownership of the service.

1.2 Area Description & Resource Areas

Cushman Road and Teawaddle Hill Road (project site) are rural residential roads, primarily wooded, with some farm fields and open meadow. The Cushman Brook is located east of the site and flows under a bridge on Teawaddle Hill Road. Resource areas in the vicinity of the project site were delineated by EcoTec Inc., a certified Professional Wetland Scientist in March 2019. Resource areas include Riverfront for the Cushman Brook, bordering vegetated wetlands (BVW), Bank along a roadside swale, and bordering land subject to flooding (BLSF) in the vicinity of the Cushman Brook. The full delineation report (for both work in Amherst & Leverett) and figures are provided in Appendix A, and the delineation points for Leverett are presented on Drawings C-4 and C-5 of the plan set in Appendix B. The Massachusetts Department of Environmental Protection (MassDEP) Bordering Vegetated Wetlands Field Data Forms, prepared by EcoTec, are included in Appendix A. Project work will occur within Riverfront and BLSF, but occurs only in buffer zone to BVW and Bank.

The majority of the work in Leverett is located within the Natural Heritage and Endangered Species Program (NHESP) Estimated and Priority Habitat mapping (PH 1541). See Appendix A for the NHESP figure. The Town has been in contact with the NHESP regarding the endangered species present at or near the site. Correspondence from NHESP lists the species present as the Wood Turtle (*Glyptemys Insculpta*) and the Eastern Box Turtle (*Terrapene Caroling*). The letter received form NHESP is attached in Appendix C. In accordance with the requirements of the streamlined NOI review process, a copy of this NOI has been sent to the NHESP for review and comment. The project is not located within an Area of Critical Concern (ACEC) and does not include any Certified Vernal Pools (CVPs).

A small portion of the proposed work adjacent to the Cushman Brook is located within the Federal Emergency Management Agency (FEMA) Zone A floodplain, as mapped by the current FEMA Flood Insurance Rate Map Community Panel No. 250156005C dated December 15th 1983. The FEMA floodplain mapping is shown on figures included in Appendix A. The resource area BLSF is defined as the land within the extent of floodwaters from a 100-year storm, i.e. FEMA FIRM Zone A.

1.3 Work Description & Impact to Resource Areas

The work consists of installing approximately 2,300 linear feet of 12-inch ductile iron water main under Cushman Road and Teawaddle Hill Road in Leverett, MA. The work will extend from the Amherst/Leverett town line to just past Cushman Brook on Teawaddle Hill Road. The work will include installation of associated service lines, valves, fittings, and hydrants, and directional drilling under the Cushman Brook.

A standard excavator will be used to excavate an approximately six (6) foot wide trench for the water main within the existing roadway. Pavement will be cut for the trench, the rest of the road will remain paved. The trenching needs to be six feet wide to accommodate a trench box. The trench will be backfilled with processed gravel, some of the original excavated material, and repaved. The total length of the trench is approximately 2,300 linear feet. Similar to the main line trench, the service lines and hydrant lines off the main line will be trenched.

The project also includes directional drilling under the Cushman Brook where it flows under Teawaddle Hill Road. The directional drilling involves digging two excavation pits on either side of the bridge, one is the pilot hole bore in and the other is the bore out. The excavation pits are expected to be no more than six by six feet in dimension, and located approximately fifty (50) feet from the river bank on either side. The boring of the pilot hole will be done using a drill head and drilling fluid. Once the pilot hole is complete a reamer will be used to expand the pilot hole to the required size. Once the hole is the correct size the water main will be attached to the reamer and pulled from the bore out pit to the bore in pit. The pits will be backfilled in a similar fashion to the trenching.

Although portions of the proposed work will occur within Riverfront, BLSF, and NHESP Estimated and Priority Habitat resource areas, all the impacts in Leverett are temporary, consisting of trenching that will be backfilled and repaved. Therefore, the proposed project is considered a negligible disturbance. No new impervious area will result from this project. Significant care will be taken to minimize the potential impacts to the resource areas, as discussed below in Avoidance, Minimization, and Mitigation Measures.

1.4 Avoidance, Minimization, & Mitigation Measures

In accordance with 310 CMR 10.53(3)(d), the proposed project is considered a Limited Project: Construction, reconstruction, operation and maintenance of underground public utilities, such as water distribution. The proposed project has been designed with the priorities of avoidance, minimization, and mitigation. The Town of Amherst intends to minimize the amount of temporary and permanent disturbance associated with construction using the following measures.

Avoidance

In order to avoid wetland impacts, the project was designed to bring the water line under the Cushman Brook using directional drilling methods. This construction method was chosen because it does not impact Bank or LUWW resource areas. In addition, the project was designed to be primarily within the existing roadway, and to use the minimum trench width, that still allows for worker safety, of six feet. Refueling of all construction equipment, and construction equipment and materials storage will be outside of resource areas and their buffer zones. Prior to commencing work, the contractor will be required to provide a detailed work plan and associated procedures for review.

Minimization

Erosion controls, including straw bales or compost wattles and silt fence, will be installed along the limit of work to mitigate the migration of sediment, as shown on Drawings C-4 and C-5, in Appendix B. Erosion controls will be maintained, repaired and/or replaced if damaged, for the duration of the project. All erosion control measures will be removed and properly disposed of at the completion of construction, following approval by the Conservation Commission. Excavation trenches will be backfilled daily with the material removed during excavation.

If trench dewatering is required during construction, water pumped from the excavation will be pumped to a temporary sedimentation basin to prevent the discharge of sediment-laden water to resource areas. In addition, any excess drilling fluid will be pumped into a temporary sedimentation basin.

Mitigation

The temporary impacts from trenching will be mitigated by backfilling, paving, and loam and seeding to return the area to its original state. No mitigation measures are proposed for the temporary impacts.

1.5 Rare Species Protection

Prior to the commencement of work, erosion control measures (previously described above) will be installed along the perimeter of the project area to isolate the Eastern Box Turtle and Wood Turtle, the localized state-listed species of "Special Concern", from the work area. The erosion controls will include a gap large enough for equipment passage where necessary, and will be closed each night. An anticipated construction work plan for construction scheduled during the turtle active season (March 15th – October 30th annually) is included below. This is a general plan which will be finalized based on the review and response of the NOI by NHESP.

Construction Work Plan – Habitat Locations

This plan applies to all work proposed for the East Leverett Rd/Cushman Rd/Teawaddle Hill Rd project during the Eastern Box Turtle and Wood Turtle active season.

1. Notify local Conservation Commission and Natural Heritage and Endangered Species Program (NHESP) prior to the start of construction.

2. Install erosion control measures along the perimeter of the work zone.

3. Notify the local Conservation Commission and NHESP for inspection of the erosion control measures.

4. The work area within the erosion control measures shall be surveyed by a biologist with specific expertise in rare species mitigation to locate and remove Eastern Box Turtles and Wood Turtles. The turtles will be relocated away from the work area. A record of all species sightings will be maintained and submitted to NHESP.

5. A biologist with specific expertise in rare species mitigation will conduct onsite training of construction crews for the identification of species of concern and protocol to be used if any animal is located.

6. After the survey is complete, construction activities will begin.

7. The work area shall remain isolated from the surrounding area by maintaining the erosion control measures.

1.6 Alternatives Analysis

Currently, the Town of Leverett is providing bottled water to residents located west of the town transfer station off January Hills Road, and east of the Cushman Brook due to groundwater contamination affecting their private drinking water wells. The proposed project entails installing approximately 2,300 linear feet of water main from Amherst into Leverett to provide clean drinking water to the impacted households. The project is considered a Limited Project under 10.53(3)(d), and has been designed using avoidance, minimization, and mitigation resulting in a project with very minimal temporary impacts.

1.6.1 Alternative 1 – Deeper Private Wells

The Town of Leverett looked into the option of installing new deeper wells at the affected residences. The groundwater investigation and hydrogeological analysis completed determined that this option is not a viable solution.

1.6.2 Alternative 2 – No Action

The remaining alternative option to the water main project is no action, which would result in the Town of Leverett having to continue to provide bottled water to the affected residences. This is also not a long term, viable solution to the problem. The proposed project is the most effective and practical alternative for the Town of Leverett to provide safe drinking water to the households impacted by contaminated private wells.

E Leverett/Cushman Rds.
Water Main Extension

Town of Amherst

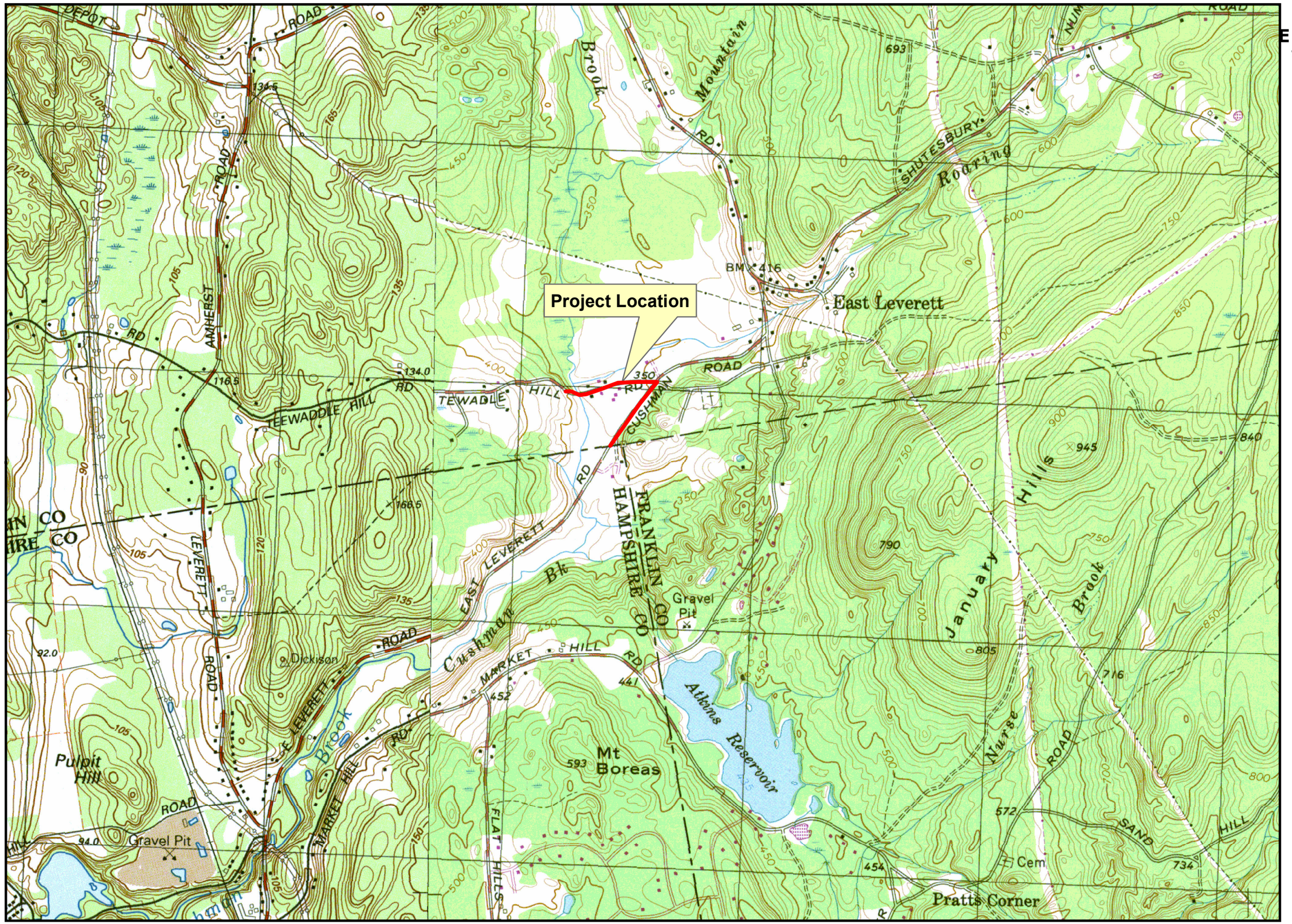

Figure 1: Site Locus

Horizontal Datum: MA Stateplane Coordinate System, Zone 4151, Datum NAD83, Feet

Planimetric basemap features compiled at 1"=40' and 1"=100' scale from April, 1999 Aerial Photography.
Aerial Photography: April, 2004.
Parcels compiled through a "best-fit" methodology to match the basemap; revisions are ongoing.
Property Lines are not for conveyance purposes.

The Town of Amherst and its mapping contractors assume no legal responsibility for the information contained herein.

0 625 1,250 Feet

1 inch = 1,250 feet

APPENDIX A

Wetland Delineation Report

EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES
102 Grove Street
Worcester, MA 01605-2629
508-752-9666 – Fax: 508-752-9494

April 9, 2019

Meagan Heslin, PE
Tata & Howard
67 Forest Street
Marlborough, MA 01752

RE: Wetland Resource Evaluation; East Leverett Road, Amherst; Cushman Road & Teawaddle Hill Road, Leverett, MA

Dear Meagan:

On March 13, 2019, EcoTec, Inc. inspected the above-referenced project area for the presence of wetland resources as defined by: (1) the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40; the "Act") and its implementing regulations (310 CMR 10.00 *et seq.*; the "Regulations"); and (2) the U.S. Clean Water Act (i.e., Section 404 and 401 wetlands). Arthur Allen, CPSS, CWS conducted the inspection.

The subject site consists of approximately one-mile along the above-referenced roadways extending between Amherst and Leverett. The upland portions of the site include paved public roadways, landscaped yards and upland field and forest. The wetland resources observed on the site are described below.

Methodology

The site was inspected, and areas suspected to qualify as wetland resources were identified. The boundary of Bordering Vegetated Wetlands or, in the absence of Bordering Vegetated Wetlands, Bank was delineated in the field in accordance with the definitions set forth in the regulations at 310 CMR 10.55(2)(c) and 310 CMR 10.54(2). Section 10.55(2)(c) states that "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." Section 10.54(2)(c) states that "The upper boundary of Bank is the first observable break in the slope or the mean annual flood level, whichever is lower." The methodology used to delineate Bordering Vegetated Wetlands is further described in: (1) the BVW Policy "*BVW: Bordering Vegetated Wetlands Delineation Criteria and Methodology*," issued March 1, 1995; and (2) "*Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook*," produced by the Massachusetts

Department of Environmental Protection, dated March 1995. The plant taxonomy used in this report is based on the *National List of Plant Species that Occur in Wetlands: Massachusetts* (Fish and Wildlife Service, U.S. Department of the Interior, 1988). Federal wetlands were presumed to have boundaries conterminous with the delineated Bordering Vegetated Wetlands and Bank. Two sets of US Army Corps Wetland Delineation Field Data Forms completed for observation plots located in the wetlands and uplands near flags AC-3 and AG-1 are attached. The table below provides the Flag Numbers, Flag Type, and Wetland Types and Locations for the delineated wetland resources.

Flag Numbers	Flag Type	Wetland Types and Locations
A-1 to A-7	Blue Flags	Boundary of Bordering Vegetated Wetlands located across East Leverett Road from #270 that is associated with Cushman Brook.
B-1 to B-9	Blue Flags	Boundary of Bordering Vegetated Wetlands located across East Leverett Road from #260 that is associated with an unmapped, intermittent stream draining from the AB-series wetland to Cushman Brook.
C-0.5 to C-7	Blue Flags	Boundary of Bordering Vegetated Wetlands located across East Leverett Road from #190 that is associated with an unmapped, intermittent stream draining to Cushman Brook.
D-1 to D-7	Blue Flags	Boundary of Bordering Vegetated Wetlands located south of C-series wetland that is associated with an unmapped, intermittent stream draining to Cushman Brook.
E-1 to E-7	Blue Flags	Boundary of Bordering Vegetated Wetlands located south of D-series wetland that is associated with an unmapped, intermittent stream draining from the AA-series wetland to Cushman Brook.
F-1 to F-14	Blue Flags	Boundary of Bordering Vegetated Wetlands located between #135 and East Leverett Road that is associated with an unmapped, intermittent stream draining to Cushman Brook.
G-1 to G-4	Blue Flags	Boundary of Bordering Vegetated Wetlands located north of #84-#86 that is associated with an unmapped, intermittent stream draining to a culvert under East Leverett Road and flowing to Cushman Brook.
H1 to H5	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the Cushman Brook Conservation Area that is associated with an unmapped, intermittent stream draining to the G-series wetland.
I-1 to I-11	Blue Flags	Boundary of Bordering Vegetated Wetlands located across East Leverett Road from the Haskins Meadow Conservation Area that is associated with an

		unmapped, intermittent stream draining to the AD-series wetland.
J-1 to J-5	Blue Flags	Boundary of unmapped, intermittent stream Bank in a roadside swale located on the north side of Teawaddle Hill Road that drains a wetland located east of Cushman Road.
K-1 to K-7	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the east side of Cushman Road that drains under Cushman Road to the AF-series wetland.
L-1 to L-6	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the northeast side of, and associated with, Cushman Brook.
AA-1 to AA-8	Blue Flags	Boundary of unmapped, intermittent stream Bank in a roadside swale located on the west side of East Leverett Road that drains to the E-series wetland.
AB-1 to AB-8	Blue Flags	Boundary of unmapped, intermittent stream Bank in a roadside swale located on the north side of East Leverett Road that drains to the B-series wetland.
AC-1 to AC-9	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the south side of East Leverett Road that is associated with Cushman Brook.
AD-1 to AD-13	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the Haskins Meadow Conservation Area that drains from the I-series wetland.
AE-1 to AE-5	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the southeast side of East Leverett Road, at the Cushman Brook bridge, that is associated with Cushman Brook.
AF-1 to AF-10	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the west side of Cushman Road that is associated with an unmapped, intermittent stream draining to Cushman Brook.
AG-1 to AG-14	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the west side of Cushman Road (south of the AF-series wetland) that is associated with an unmapped, intermittent stream draining to Cushman Brook.
RA-1 to RA-43	Red Flags	Mean Annual High-water Line (MAHWL) of Cushman Brook in the vicinity of #234.
RB-1 to RB-12	Red Flags	Mean Annual High-water Line (MAHWL) of Cushman Brook in the vicinity of #180. **NOTE: RB-12 stops at steep, icy slope that was unsafe to flag further south. Locate from aerials, etc.**
RC-1 to RC-24	Red Flags	Mean Annual High-water Line (MAHWL) on east side of Cushman Brook in the vicinity of #101-#102 Teawaddle Hill Road.
RD-1 to RD-5	Red Flags	Mean Annual High-water Line (MAHWL) of Cushman

		Brook on east side of East Leverett Road, south of bridge.
RE-1 to RE-5	Red Flags	Mean Annual High-water Line (MAHWL) of Cushman Brook on east side of East Leverett Road.
RF-1 to RF-4	Red Flags	Mean Annual High-water Line (MAHWL) of Cushman Brook on west side of East Leverett Road.
RG-1 to RG-4	Red Flags	Mean Annual High-water Line (MAHWL) on east side of Cushman Brook at Teawaddle Hill Road bridge.
Unflagged Isolated Flood Area	No Flags	Seasonal ponding area in lawn that extends between #597 & #599 East Leverett Road. No flags. May be Isolated Land Subject to Flooding (need calculations to confirm). Ponding approximately 20-feet from edge of pavement.
Non-Wetland Drain Swale	No Flags	Roadside drainage swale at 102 Teawaddle Hill Road. Not a wetland, no flags, drains to Cushman Brook. Locate & protect during construction.

Findings

Wetlands B, C, D, E, F, G, H, I, J, K, L, AA, AB, AD, AF & AG consist of wooded swamps and wet meadows located in various parts of the project site that are associated with intermittent streams. Plant species observed include red maple (*Acer rubrum*), yellow birch (*Betula alleghaniensis*), gray birch (*Betula populifolia*), swamp tupelo (*Nyssa sylvatica*), willow (*Salix* spp.) and American elm (*Ulmus americana*) trees and/or saplings; poison ivy (*Toxicodendron radicans*) climbing woody vines; highbush blueberry (*Vaccinium corymbosum*), common winterberry (*Ilex verticillata*), arrow-wood (*Viburnum dentatum*), withe-rod (*Viburnum cassinoides*), northern spicebush (*Lindera benzoin*), swamp rose (*Rosa palustris*), speckled alder (*Alnus rugosa*), silky dogwood (*Cornus amomum*), maleberry (*Lyonia ligustrina*), fetter-bush (*Leucothoe racemosa*), glossy buckthorn (*Rhamnus frangula*), swamp azalea (*Rhododendron viscosum*), and American elderberry (*Sambucus nigra*) shrubs; and sheep-laurel (*Kalmia angustifolia*), bristly blackberry (*Rubus hispidus*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), sensitive fern (*Onoclea sensibilis*), subarctic lady fern (*Athyrium filix-femina*), marsh fern (*Thelypteris thelypteroides*), Massachusetts fern (*Thelypteris simulata*), spinulose woodfern (*Dryopteris spinulosa*), skunk-cabbage (*Symplocarpus foetidus*), swamp Jack-in-the-pulpit (*Arisaema triphyllum*), Alaska goldthread (*Coptis trifolia*), spotted touch-me-not (*Impatiens capensis*), and sphagnum moss (*Sphagnum sp*.) ground cover. Evidence of wetland hydrology, including hydric soils, high groundwater, saturated soils, pore linings, evidence of flooding, and drainage patterns, was observed within the delineated wetlands. These vegetated wetlands border intermittent streams; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands and the intermittent streams would be regulated as Bank under the Act. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Act.

Wetlands A, L, AC & AE consist of wooded swamps and wet meadows located in various parts of the site that are associated with a perennial stream. Plant species observed include most of these referenced-above. Evidence of wetland hydrology, including hydric soils, high groundwater, saturated soils, pore linings, evidence of flooding, and drainage patterns, was observed within the delineated wetlands. These vegetated wetlands border a perennial stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands and the perennial stream would be regulated as Bank and Land Under Water Bodies and Waterways under the Act. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Act.

An undelineated, seasonal ponding area was observed within mowed lawn at 597 and 599 East Leverett Road, Amherst. This area does not border a creek, stream, river, pond, or lake; accordingly, it would not be regulated as Bordering Vegetated Wetlands under the Act. Section 10.57(2)(b)1. states that "Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area that at least once per year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches." Engineering calculations should be performed in accordance with 310 CMR 10.57(2)(b) and the ILSF Definition Policy issued January 25, 1985 and revised March 1, 1995 to determine if this area meets the definition of Isolated Land Subject to Flooding under the Act. If the calculations demonstrate that this area qualifies, it would be regulated as Isolated Land Subject to Flooding under the Act. Section 10.57(2)(b)3. states that "The boundary of Isolated Land Subject to Flooding is the perimeter of the largest observed or recorded volume of water confined in said area. In the event of a conflict of opinion regarding the extent of water confined in an Isolated Land Subject to Flooding, the applicant may submit an opinion by a registered professional engineer, supported by engineering calculations, as to the probable extent of said water." If this area does not qualify as Isolated Land Subject to Flooding, it would not be subject to jurisdiction under the Act. Isolated Land Subject to Flooding does not have a 100-foot Buffer Zone under the Act. Depending upon the proximity of this area to a Bordering Vegetated Wetlands, this area may be subject to jurisdiction as a federal wetland. Federal wetlands do not have a Buffer Zone.

Bordering Land Subject to Flooding is an area that floods due to a rise in floodwaters from a bordering waterway or water body. Where flood studies have been completed, the boundary of Bordering Land Subject to Flooding is based upon flood profile data prepared by the National Flood Insurance Program. Section 10.57(2)(a)3. states that "The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm." The project engineer should evaluate the most recent National Flood Insurance Program flood profile data to determine the extent and/or elevation of Bordering Land Subject to Flooding on the site. Bordering Land Subject to Flooding would occur in areas where the 100-year flood elevation is located outside of or upgradient of the delineated Bordering Vegetated Wetlands or Bank boundary. Bordering Land Subject to Flooding does not have a Buffer Zone under the Act.

The Massachusetts Rivers Protection Act amended the Act to establish an additional wetland resource area: Riverfront Area. Based upon a review of the current USGS Map (attached), two streams (AKA: Cushman Brook & Doolittle Brook) that are shown as perennial are located in the vicinity of East Leverett Road, Amherst and Teawaddle Hill Road, Leverett. Streams that are shown as perennial on the current USGS map are designated perennial under the Massachusetts Wetlands Protection Act regulations. Unless this perennial designation is overcome, Riverfront Area is presumed to extend 200 feet horizontally upgradient from the mean annual high-water line of the stream. Section 10.58(2)(a)2. states that the "Mean annual high-water line of a river is the line that is apparent from visible markings or changes in the character of soils or vegetation due to prolonged presence of water and that distinguishes between predominantly aquatic and predominantly terrestrial land. Field indicators of bankfull conditions shall be used to determine the mean annual high-water line. Bankfull field indicators include but are not limited to: changes in slope, changes in vegetation, stain lines, top of pointbars, changes in bank materials, or bank undercuts." Section 10.58(2)(a)2.a. states that "In most rivers, the first observable break in slope is coincident with bankfull conditions and the mean annual high-water line." The mean annual high-water line of the stream was delineated in the field with flag series RA, RB, RC based upon the above-referenced regulation. Furthermore, based upon a review of the current USGS Map and observations made during the site inspection, the other streams present within 200 feet of the site are unmapped and have watersheds of less than 0.5 square miles. Accordingly, except as noted above, Riverfront Area would not occur on the site. Riverfront Area does not have a Buffer Zone under the Act, but may overlap other wetland resources and their Buffer Zones.

The Regulations require that no project may be permitted that will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures set forth at 310 CMR 10.59. Based upon a review of the *Massachusetts Natural Heritage Atlas*, 14th edition, Priority Habitats and Estimated Habitats from the NHESP Interactive Viewer, valid from August 1, 2017, and Certified Vernal Pools from MassGIS, there are no Certified Vernal Pools on or in the immediate vicinity of the site. However, the site is located within an Estimated Habitat and a Priority Habitat. A copy of this map is attached. The Regulations at 310 CMR 10.59 state that projects proposed within an Estimated Habitat as indicated on the most recent map published by the Natural Heritage and Endangered Species Program require a fully completed copy of any required Notice of Intent filed under the Act and Regulations (including all plans, reports, and other required materials) to be submitted to the Natural Heritage and Endangered Species Program no later than the date of filing with the issuing authority. In addition, in July 2005, the Massachusetts Endangered Species Act (M.G.L. Ch. 131A; "MESA") regulations (321 CMR 10.00 *et seq*.; the "MESA Regulations") were revised to provide formal review procedures for projects and activities proposed within a Priority Habitat. For nonexempt projects or activities proposed within a Priority Habitat, an additional filing beyond that required under 310 CMR 10.59 for a project proposed within an Estimated Habitat, or a consolidated filing that meets the requirements under 321 CMR 10.20 and 310 CMR 10.59, must be made with the Natural Heritage and Endangered Species Program to allow the project or activity to be reviewed under MESA or under MESA and the Act, respectively.

The reader should be aware that the regulatory authority for determining wetland jurisdiction rests with local, state, and federal authorities. A brief description of my experience and qualifications is attached. If you have any questions, please feel free to contact me at any time.

Cordially,
ECOTEC, INC.

Arthur Allen, CWS, CPSS
Vice President

Attachments (5, 17 pages)

AA/Wetland/Amherst Leverett EcoTec Wet Report 4.9.2019

EcoTec, Inc.

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Arthur Allen, CPSS, CWS, CESSWI
Vice President
Soil & Wetland Scientist

Arthur Allen is the Vice President of EcoTec, Inc. and has been a senior environmental scientist there since 1995. His work with EcoTec has involved wetland delineation, wildlife habitat evaluation, environmental permitting (federal, state and local), environmental monitoring, expert testimony, peer reviews, contaminated site assessment and the description, mapping and interpretation of soils. His clients have included private landowners, developers, major corporations and regulatory agencies. Prior to joining EcoTec, Mr. Allen mapped and interpreted soils in Franklin County, MA for the U.S.D.A. Natural Resources Conservation Service (formerly Soil Conservation Service) and was a research soil scientist at Harvard University's Harvard Forest. Since 1994, Mr. Allen has assisted the Massachusetts Department of Environmental Protection and the Massachusetts Association of Conservation Commissions as an instructor in the interpretation of soils for wetland delineation and for the Title V Soil Evaluator program.

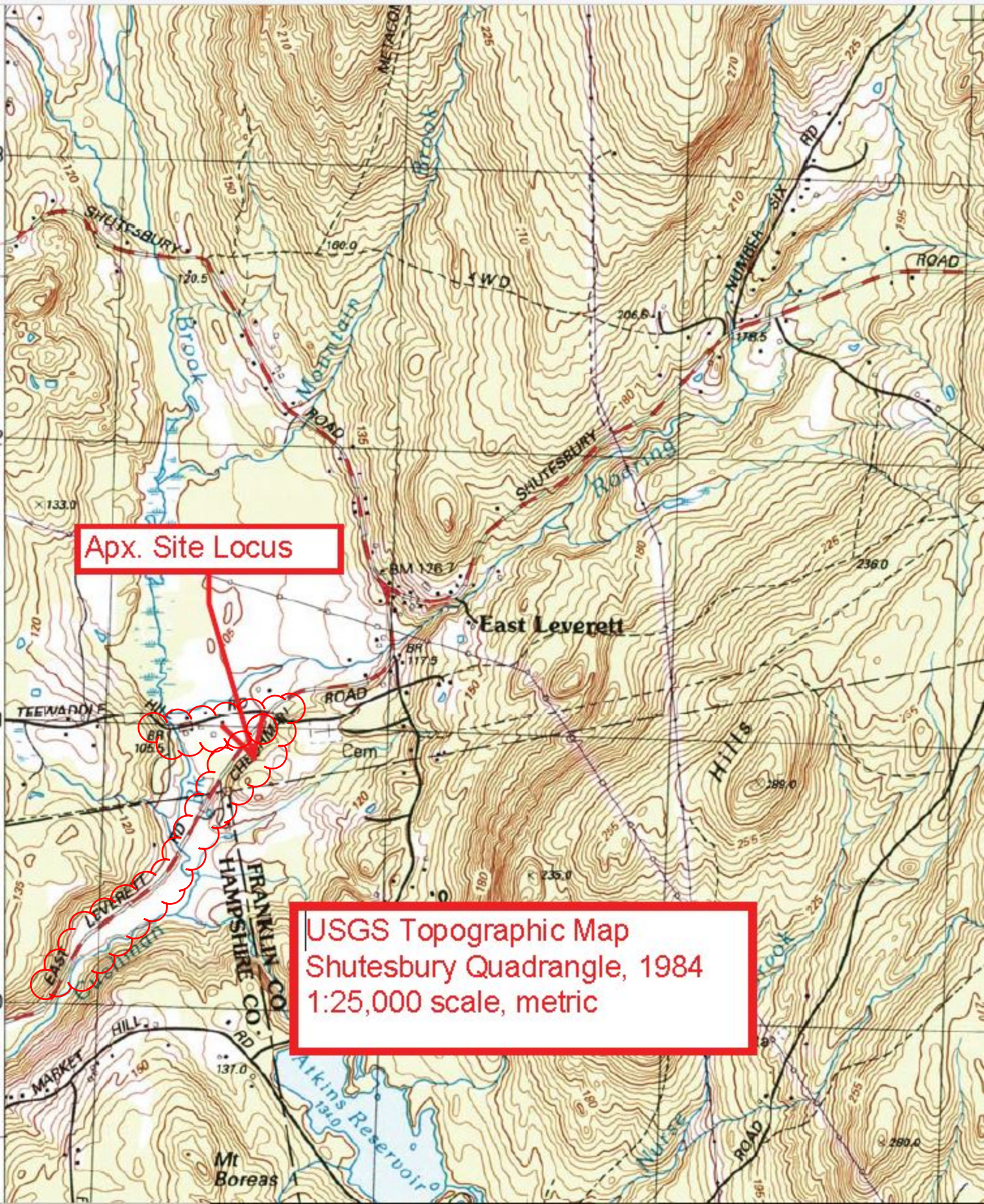
Mr. Allen has a civil service rating as a soil scientist, an undergraduate degree in Natural Resource Studies and a graduate certificate in Soil Studies. His work on the Franklin County soil survey involved interpretation of landscape-soil-water relationships, classifying soils and drainage, and determining use and limitation of the soil units that he delineated. As a soil scientist at the Harvard Forest, Mr. Allen was involved in identifying the legacies of historical land-use in modern soil and vegetation at a number of study sites across southern New England. He has a working knowledge of the chemical and physical properties of soil and water and how these properties interact with the plants that grow on a given site. While at Harvard Forest he authored and presented several papers describing his research results which were later published. In addition to his aforementioned experience, Mr. Allen was previously employed by the Trustees of Reservations as a land manager and by the Town of North Andover, MA as a conservation commission intern.

Education:
1993-Graduate Certificate in Soil Studies, University of New Hampshire
1982-Bachelor of Science in Natural Resource Studies, University of Massachusetts

Professional Affiliations:
Certified Professional Soil Scientist (ARCPACS CPSS #22529)
New Hampshire Certified Wetland Scientist (#19)
Registered Professional Soil Scientist – Society of Soil Scientists of SNE [Board Member (2000-2006)]
Certified Erosion, Sediment & Stormwater Inspector (#965)
Massachusetts Approved Soil Evaluator (#13764)
Massachusetts Arborists Association-Certified Arborist (1982 – 1998)
New England Hydric Soils Technical Committee member
Massachusetts Association of Conservation Commissions member
Society of Wetland Scientists member

Refereed Publications:

Soil Science and Survey at Harvard Forest. A.Allen. *In*: Soil Survey Horizons. Vol. 36, No. 4, 1995, pp. 133-142.
Controlling Site to Evaluate History: Vegetation Patterns of a New England Sand Plain. G.Motzkin, D.Foster, A.Allen, J.Harrod, & R.Boone. *In*: Ecological Monographs 66(3), 1996, pp. 345-365.
Vegetation Patterns in Heterogeneous Landscapes: The Importance of History and Environment. G.Motzkin, P.Wilson, D.R.Foster & A.Allen. In: Journal of Vegetation Science 10, 1999, pp. 903-920.


Apx. Site Locus
USGS Topographic Map
Shutesbury Quadrangle, 1984
1:25,000 scale, metric
East Leverett
SHUTESBURY
ROAD
Mountain
Brook
Roaring
Brook
METACOMET
NUMBER SIX RD
HILLS
Cem
FRANKLIN CO
HAMPSHIRE CO
Atkins Reservoir
Mt Boreas
MARKET HILL RD
EAST LEVERETT RD
TEEWADDLE HILL RD
4WD
BM 126.7
133.0
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206.6
178.5
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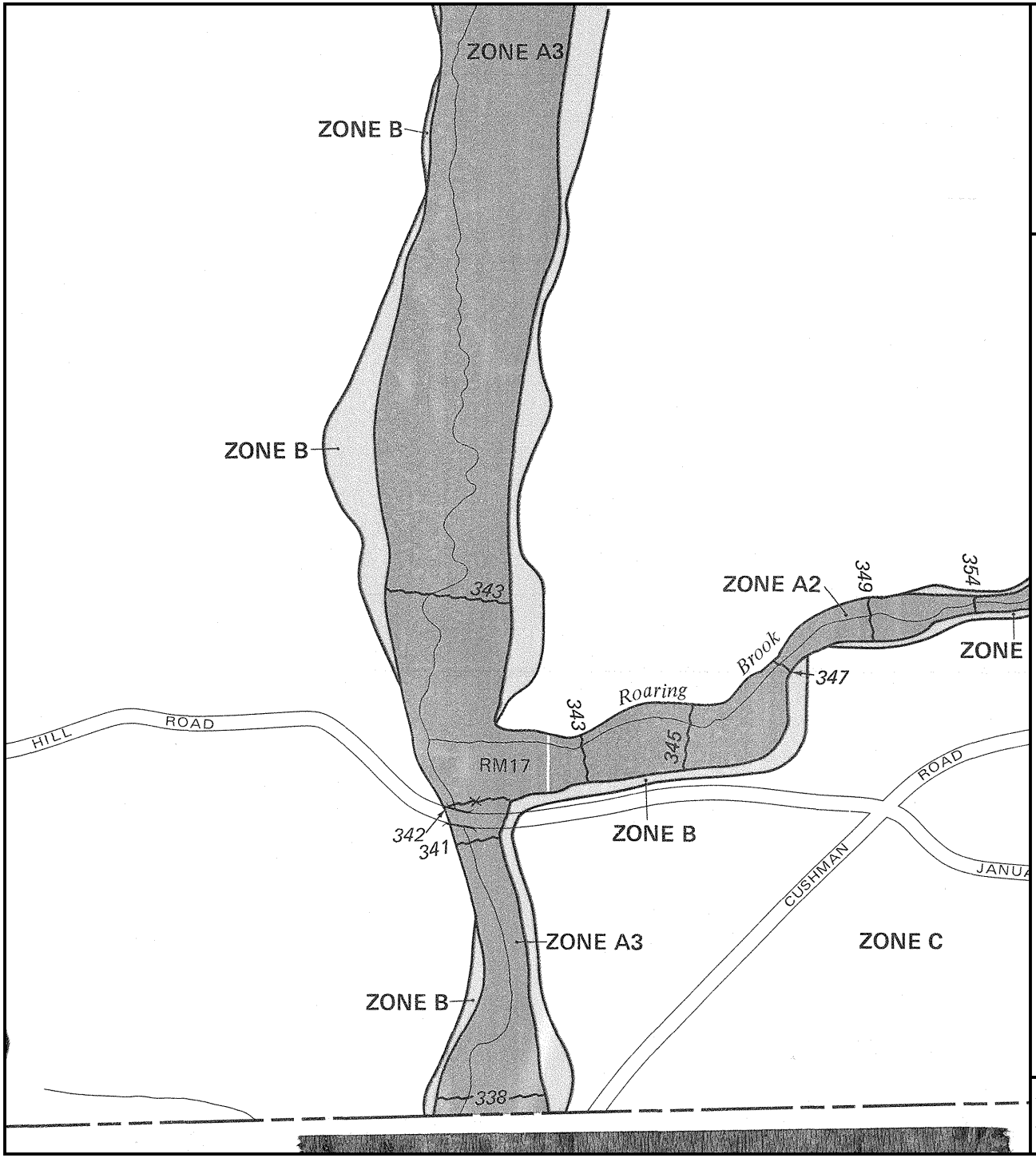
105.6
117.5



N

APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

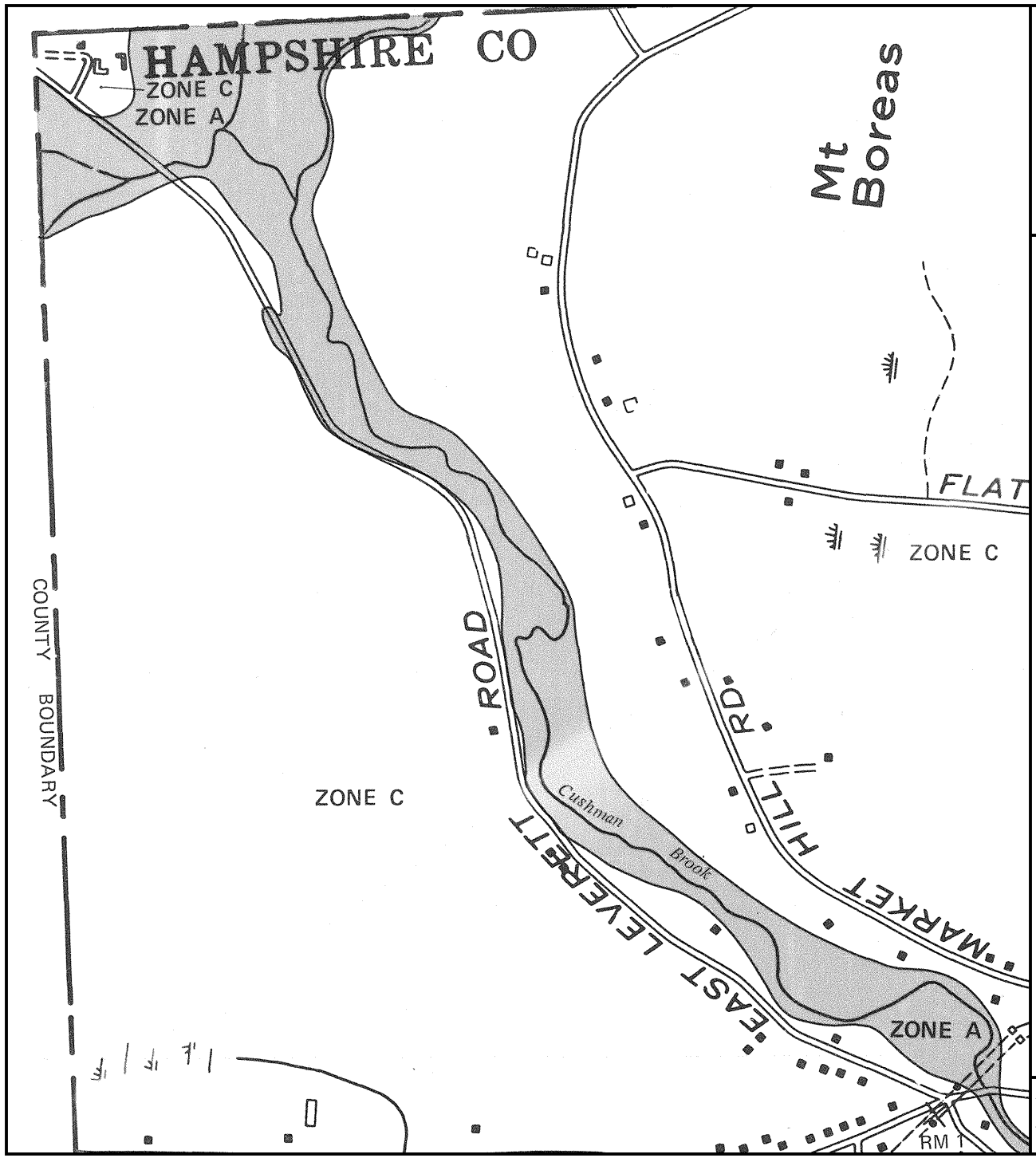
TOWN OF
LEVERETT,
MASSACHUSETTS
FRANKLIN COUNTY

PANEL 6 OF 7
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
250120 0006 B

EFFECTIVE DATE:
JUNE 4, 1980

U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION



N

APPROXIMATE SCALE

800 0 800 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

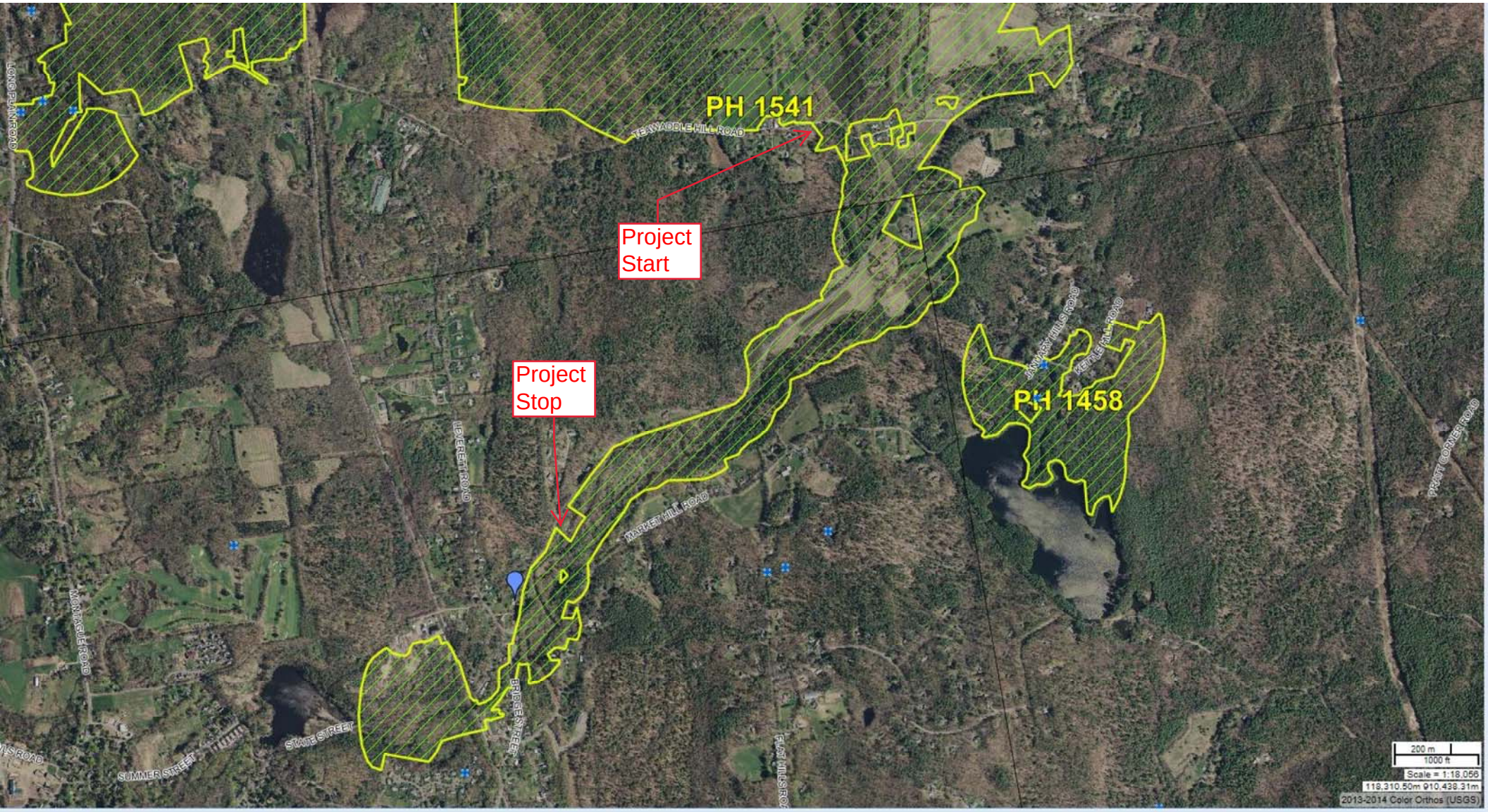
TOWN OF
AMHERST,
MASSACHUSETTS
HAMPSHIRE COUNTY

PANEL 5 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
250156 0005 C

MAP REVISED:
DECEMBER 15, 1983

Federal Emergency Management Agency



Natural Heritage Atlas Online Viewer
March 12, 2019
Amherst & Leverett, East Leverett Road

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: East Leverett Road City/County: Amherst Sampling Date: 3/13/2019

Applicant/Owner: State: MA Sampling Point: TPU@AC3

Investigator(s): Arthur Allen, EcoTec, Inc. Section, Township, Range:

Landform (hillside, terrace, etc.): footslope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 42.428314 Long: -72.496347 Datum: WGS 84

Soil Map Unit Name: NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: TPU@AC3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					Loamy/Clayey	
16-20	10YR 4/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

VEGETATION – Use scientific names of plants.

Sampling Point: TPU@AC3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus americana*	10	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Carpinus caroliniana*	30	Yes	FAC
2. *Rosa multiflora*	30	Yes	FACU
3. *Ulmus americana*	10	No	FACW
4. *Pinus strobus*	10	No	FACU
5.			
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1. *Vitis labrusca*	20	Yes	FACU
2.			
3.			
4.			
	20	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: East Leverett Road City/County: Amherst Sampling Date: 3/13/2019

Applicant/Owner: State: MA Sampling Point: TPW@AC3

Investigator(s): Arthur Allen, EcoTec, Inc. Section, Township, Range:

Landform (hillside, terrace, etc.): footslope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 42.428314 Long: -72.496347 Datum: WGS 84

Soil Map Unit Name: NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 2	
Water Table Present?	Yes	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):	**Wetland Hydrology Present?** **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: TPW@AC3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Loamy/Clayey	
10-16	10YR 6/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

VEGETATION – Use scientific names of plants. Sampling Point: TPW@AC3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Acer rubrum*	30	Yes	FAC
3. *Ulmus americana*	20	Yes	FACW
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Carpinus caroliniana*	20	Yes	FAC
2. *Rosa multiflora*	10	No	FACU
3. *Aronia prunifolia*	20	Yes	FACW
4. *Pinus strobus*	10	No	FACU
5. *Berberis thunbergii*	20	Yes	FACU
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Onoclea sensibilis*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: East Leverett Road City/County: Amherst Sampling Date: 3/13/2019

Applicant/Owner: State: MA Sampling Point: TPU@AG1

Investigator(s): Arthur Allen, EcoTec, Inc. Section, Township, Range:

Landform (hillside, terrace, etc.): footslope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 42.434827 Long: -72.489856 Datum: WGS 84

Soil Map Unit Name: NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: TPU@AG1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Loamy/Clayey	
6-15	10YR 5/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

VEGETATION – Use scientific names of plants. Sampling Point: TPU@AG1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	80	Yes	FAC
2. *Pinus strobus*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Prunus serotina*	30	Yes	FACU
2. *Acer saccharum*	10	No	FACU
3. *Carpinus caroliniana*	20	Yes	FAC
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex pensylvanica*	80	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: East Leverett Road City/County: Amherst Sampling Date: 3/13/2019

Applicant/Owner: State: MA Sampling Point: TPW@AG1

Investigator(s): Arthur Allen, EcoTec, Inc. Section, Township, Range:

Landform (hillside, terrace, etc.): footslope Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 42.434827 Long: -72.489856 Datum: WGS 84

Soil Map Unit Name: NWI classification: PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: TPW@AG1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					Muck	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

VEGETATION – Use scientific names of plants.

Sampling Point: TPW@AG1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Acer rubrum*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Viburnum lentago*	30	Yes	FAC
4. *Sambucus nigra*	10	Yes	FACW
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Osmunda cinnamomea*	40	Yes	FACW
2. *Symplocarpus foetidus*	20	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

APPENDIX B

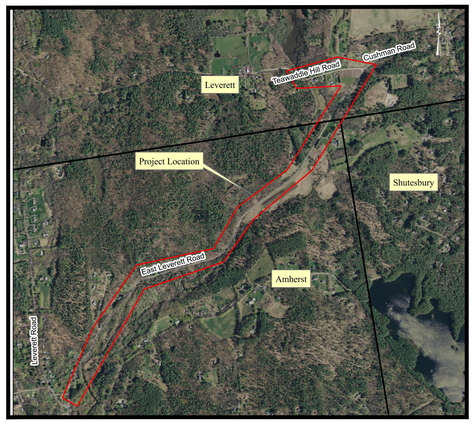
Design Plan Set

TOWN OF LEVERETT, MASSACHUSETTS

EAST LEVERETT ROAD WATER MAIN

DWSRF ID NO. 6841

CONTRACT NO. 1



LOCATION PLAN
NO SCALE

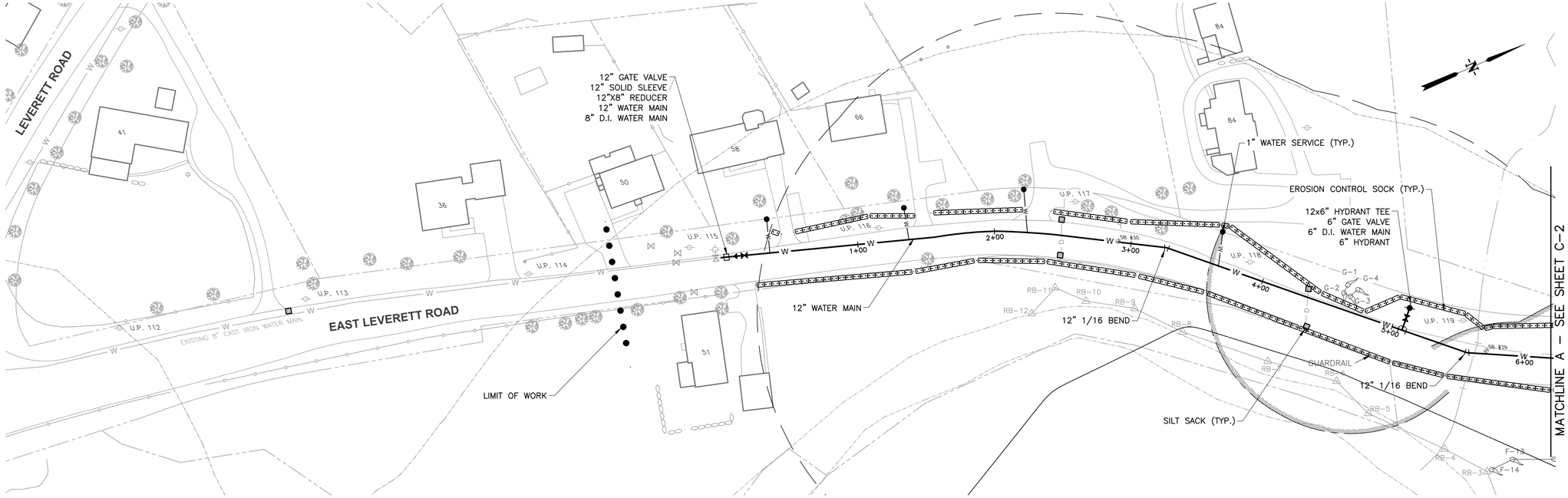
SHEET INDEX

TATA & HOWARD

COMMONWEALTH OF MASSACHUSETTS
JUSTINE M. CARROLL
CIVIL
No. 42858
REGISTERED PROFESSIONAL ENGINEER

MASSDEP & CONSERVATION COMMISSION SUBMISSION JANUARY 2021

TATA & HOWARD, INC. • CONSULTING ENGINEERS • MARLBOROUGH, MA



EAST LEVERETT ROAD STA. 0+00 TO STA. 6+19
SCALE: 1" = 40'

LEGEND

EXISTING	DESCRIPTION	PROPOSED
W	WATER MAIN	W
W	WATER SERVICE	W W
	GATE VALVE	
	REDUCER	
	SOLID SLEEVE	
	TRANSITION COUPLING	
	PIPE FITTINGS	
	CAP	
	THRUST BLOCK	
	FIRE HYDRANT	
	CURB STOP	
W	WATER MANHOLE	
D	DRAIN MANHOLE	
	CATCH BASIN	
D	DRAIN	
OHE	ELEC. OH. WIRE	
C	COMM. MANHOLE	
C	COMMUNICATIONS BOX	
C	COMMUNICATIONS LINE	
	UTILITY POLE	
	LIGHT	
	TREE LINE	
	TREE	
	WETLANDS	
WF-1	WETLAND FLAG	
	WETLAND BUFFER	
	EDGE OF WATER	
	DITCH / SWALE	
	200 FOOT RIVERFRONT BUFFER ZONE	
	FEMA FLOODZONE	
	LIMIT OF WORK	
SB 1	BORING/PROBE	
	SILT SACK	
	EROSION CONTROL SOCK	
HW-1	HIGH-WATER LINE	
	STATIONING	0+00
	FENCE – CHAIN LINK	
	STONE WALL	
	GUARD RAIL	
	BOLLARD	
	SIGN POST	
	BUILDING	
	ASPHALT ROAD	
	RIGHT-OF-WAY	
	PROPERTY LINE	
HWL	WATER LEVEL	

ABBREVIATIONS

APPROX.	APPROXIMATE
CB	CATCH BASIN
CI	CAST IRON
CONC.	CONCRETE
DI	DUCTILE IRON
DIA.	DIAMETER
DMH	DRAIN MANHOLE
DWGS	DRAWINGS
ELEV.	ELEVATION
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT
INV.	INVERT
MAX.	MAXIMUM
MIN.	MINIMUM
MJ	MECHANICAL JOINT
PE	POLYETHYLENE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
TYP.	TYPICAL
VERT.	VERTICAL

GENERAL NOTES

1. THE WATER MAIN SHALL BE CONNECTED TO THE TOWN OF AMHERST WATER SYSTEM. THEREFORE, ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF AMHERST. ALL EXCAVATION AND RESTORATION SHALL MEET TOWN SPECIFICATIONS.
2. THE OWNER OR ENGINEER MAY DIRECT THE CONTRACTOR TO VARY THE PROPOSED WORK DURING CONSTRUCTION TO MEET EXISTING CONDITIONS.
3. THE SITE IS NOT LOCATED WITHIN A FLOOD ZONE.
4. THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE INTENDED ONLY TO ADVISE THE CONTRACTOR OF THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING THE ACTUAL LOCATIONS OF ALL EXISTING UTILITIES, INCLUDING SERVICES. CALL "DIG SAFE" (1-888-344-7233) FOR FIELD LOCATIONS OF ALL EXISTING UTILITIES. IN ADDITION, THE CONTRACTOR SHALL CONTACT THE TOWN OF AMHERST AND THE TOWN OF LEVERETT FOR ANY WATER, SEWER AND DRAIN LINE LOCATIONS.
5. STATIONING ALONG THE LENGTH OF THE WATER MAIN IS INTENDED FOR GENERAL REFERENCE. WHERE PRECISE GROUND LOCATION IS REQUIRED, REFER TO ACTUAL FIELD MEASUREMENTS FOR ACTUAL DISTANCES FROM EXISTING GROUND FEATURES.
6. AREAS WITHIN THE 100-FOOT BUFFER ZONE OF A BORDERING VEGETATED WETLAND ARE SUBJECT TO AN ORDER OF CONDITIONS, ONE ISSUED BY THE AMHERST CONSERVATION COMMISSION AND ONE BY THE LEVERETT CONSERVATION COMMISSION.
7. THE CONTRACTOR SHALL ESTABLISH A STAGING AREA OUTSIDE OF THE 100-FOOT BUFFER ZONE, FOR THE OVERNIGHT STORAGE OF EQUIPMENT AND STOCKPILING OF MATERIALS. NO STORAGE OF GASOLINE, OIL OR OTHER FUEL OR HAZARDOUS MATERIALS IS PERMITTED WITHIN THE 100-FOOT BUFFER ZONE. STAGING AREA LOCATIONS SHALL BE COORDINATED WITH AND APPROVED BY THE TOWN OF LEVERETT AND THE TOWN OF AMHERST.
8. STOCKPILES SHALL BE LOCATED AS NEEDED, WITHIN THE LIMIT OF WORK, IN AREAS OF MINIMAL IMPACT.
9. IF SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH HAY, TACKIFIELD WOOD CHIPS OR OTHER METHODS SHALL BE PROVIDED.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AND SHALL PROVIDE ALL NECESSARY CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE AND STRENGTH TO PREVENT ACCESS TO ALL OPEN EXCAVATIONS AT THE COMPLETION OF EACH WORK DAY.
11. THE CONTRACTOR AT HIS EXPENSE SHALL BRACE UTILITY POLES IF REQUIRED, AND REPAIR ANY DAMAGE TO EXISTING SIDEWALKS, CURBS, PAVING, SHRUBS, TREES, STONE WALLS, LAWNS, ETC. ALL EXCAVATED MATERIALS SHALL BE RETURNED TO EQUAL OR BETTER THAN PRIOR CONDITION BY THE CONTRACTOR.
12. ALL EXISTING CONCRETE AND ASPHALT PAVEMENT SHALL BE SAW-CUT PRIOR TO EXCAVATION IN ORDER TO PROVIDE UNIFORM ASPHALT REPLACEMENT.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF PAVEMENT MARKINGS, TRAFFIC SIGN LOOPS, STRIPING, ARROWS, CROSSWALKS, ETC.
14. WETLAND FLAGGING AND HIGH-WATER LINE LABEL DETAILS ARE IN THE WETLAND REPORT WHICH CAN BE FOUND IN APPENDIX D. WETLANDS WERE FLAGGED 3/13/2019 BY ECOTEC, INC.
15. BASE MAP INFORMATION BASED UPON TOWN OF AMHERST GIS DATA SUPPLEMENTED BY FIELD VERIFICATION.

GENERAL NOTES CONT.

16. PROJECT IS LOCATED IN NHESP AREAS AS IS SHOW IN APPENDIX B-ORDER OF CONDITIONS AND NHESP CORRESPONDENCE.
17. THE STAGING AREA SHALL BE OUTSIDE OF THE 100-FOOT BUFFER ZONE TO ANY WETLANDS, 200-FOOT BUFFER ZONE TO ANY RIVERFRONT AREA AND OUTSIDE OF ANY RESOURCE AREAS.
18. DEWATERING SHALL BE OUTSIDE OF THE 100-FOOT BUFFER ZONE TO ANY WETLANDS, 200-FOOT BUFFER ZONE TO ANY RIVERFRONT AREA AND OUTSIDE OF ANY RESOURCE AREAS.
19. FEMA 100-YEAR FLOOD ZONE DATA IS PRELIMINARY AND HAS NOT BEEN CERTIFIED.

EROSION & SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF ALL EROSION CONTROL DEVICES ON-SITE INCLUDING SILT FENCE, EROSION CONTROL SOCKS AND SILT SACKS INSTALLED UNDER THIS CONTRACT AND SILT FENCE AND SILT SACKS INSTALLED BY OTHER, REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED IN THE ORDER OF CONDITIONS. ALL EROSION CONTROL DEVICES SHALL BE REGULARLY INSPECTED. ANY SEDIMENTS REMOVED FROM THE CONTROL DEVICES SHALL BE DISPOSED OF ON THE UPLAND SIDE OF THE EROSION CONTROL LINE.
2. IN THE STAGING AREA, THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, HAY BALES, EROSION CONTROL SOCKS, SILT FENCE AND CRUSHED STONE.
3. IF A STOCKPILE IS LOCATED ON A SLOPE, THE RUNOFF SHALL BE DIRECTED AWAY FROM THE PILE. STOCKPILES SHALL BE CONTAINED WITHIN STRAW DIKES.
4. AT NO TIME SHALL SILT-LADEN WATER BE ALLOWED TO ENTER SENSITIVE AREAS (WETLANDS, OFF-SITE AREA AND DRAINAGE SYSTEMS). ANY RUNOFF FROM DISTURBED SURFACES SHALL BE DIRECTED THROUGH SETTLING BASINS AND EROSION CONTROL BARRIERS PRIOR TO ENTERING ANY SENSITIVE AREAS.
5. NO MATERIALS SHALL BE DISPOSED OF INTO ANY WETLANDS OR EXISTING OR PROPOSED DRAINAGE SYSTEMS.
6. ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL TAKE PLACE OUTSIDE OF ANY 100-FOOT BUFFER ZONE TO ANY WETLANDS, 200-FOOT BUFFER ZONE TO ANY RIVERFRONT AREA AND OUTSIDE OF ANY RESOURCE AREAS.
7. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL STRAW DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE UTILIZED. ADDITIONAL TEMPORARY SETTLING BASINS ARE REQUIRED TO BE LOCATED WITHIN THE DISTRIBUTED AREA, TO MINIMIZE THE TRIBUTARY AREAS.

GEOTECHNICAL NOTES

1. BORINGS WERE DRILLED FOR PURPOSES OF DESIGN AND INDICATE SUBSURFACE CONDITIONS AT BORING LOCATION ONLY. SUBSURFACE CONDITIONS MAY VARY FROM THOSE SHOWN IN THE BORING LOGS.
2. BORING LOCATIONS ARE SHOWN ON THE PLANS AND BORING LOGS ARE IN THE GEOTECHNICAL DATA REPORT BOUND IN APPENDIX C OF THESE SPECIFICATIONS.
3. FOR EARTH EXCAVATION, BACKFILL, FILL AND GRADING, SEE SPECIFICATION 02222.
4. FOR DEWATERING SEE SPECIFICATION 02140.
5. FOR TEMPORARY EXCAVATION SUPPORT SYSTEM SEE SPECIFICATION 02160.

WATER MAIN NOTES

1. THE CONTRACTOR SHALL MAKE EVERY EFFORT NOT TO DISTURB THE EXISTING WATER SYSTEM. NO ADDITIONAL PAYMENT SHALL BE MADE FOR DAMAGE CREATED FOR THE CONVENIENCE OF THE CONTRACTOR.
2. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE NEW WATER MAIN SHALL PASS UNDER EXISTING UTILITIES.
3. ALL WATER MAINS ARE TO BE LAID WITH A MINIMUM OF 5'-0" COVER.
4. ALL BENDS, TEE, CAPS AND HYDRANTS SHALL BE BACKED WITH CONCRETE THRUST BLOCKS AS INDICATED ON THE CONTRACT DRAWINGS. ALL BENDS, TEE, CAPS, VALVES AND MISCELLANEOUS FITTINGS SHALL BE RESTRAINED AS SPECIFIED.
5. CONTRACTOR SHALL USE A WATER TIGHT PLUG DURING THE WATER MAIN INSTALLATION. PLUG SHALL REMAIN IN PLACE AT ALL TIMES.
6. THE CONTRACTOR SHALL NOT CONNECT TO THE EXISTING WATER MAIN UNTIL IT HAS BEEN PRESSURE TESTED AND CHLORINATED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL PROVIDE ADDITIONAL TAPS IF REQUIRED FOR CHLORINATING AND HYDROSTATIC TESTING AT HIS EXPENSE. TAPS SHALL BE REMOVED AND THE WATER MAIN PLUGGED AFTER TESTING IS COMPLETE.
8. THERE ARE NO EXISTING WATER SERVICES ON EAST LEVERETT ROAD AND TEAWADDLE HILL ROAD WHERE NEW WATER MAIN IS BEING INSTALLED.
9. INSTALL NEW WATER SERVICES TO PROPERTY LINE AND CAP. CONTRACTOR SHALL ASSUME THAT UP TO FIVE SERVICES IN LEVERETT WILL BE INSTALLED ON PRIVATE PROPERTY FROM THE CURB STOP INTO THE HOME AND CONNECTED TO THE EXISTING PLUMBING SYSTEM. THE HOMES TO BE CONNECTED TO THE WATER MAIN WILL BE DETERMINED BY THE TOWN OF LEVERETT PRIOR TO CONSTRUCTION.

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

EAST LEVERETT ROAD
STA. 0+00 TO STA. 6+19

Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

Approved By: JMC
Checked By: JMG
Designed By: MTG
Drawn By: MTG

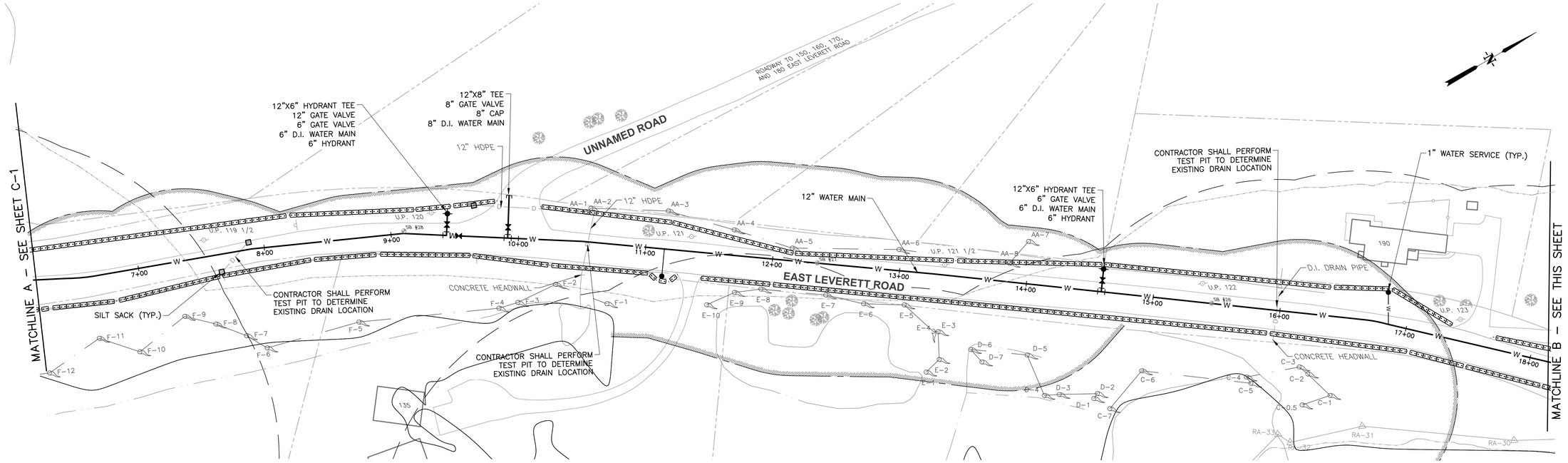
COMMONWEALTH OF MASSACHUSETTS
JUSTIN M. CARROLL
No. 49485
REGISTERED PROFESSIONAL ENGINEER

TATA & HOWARD

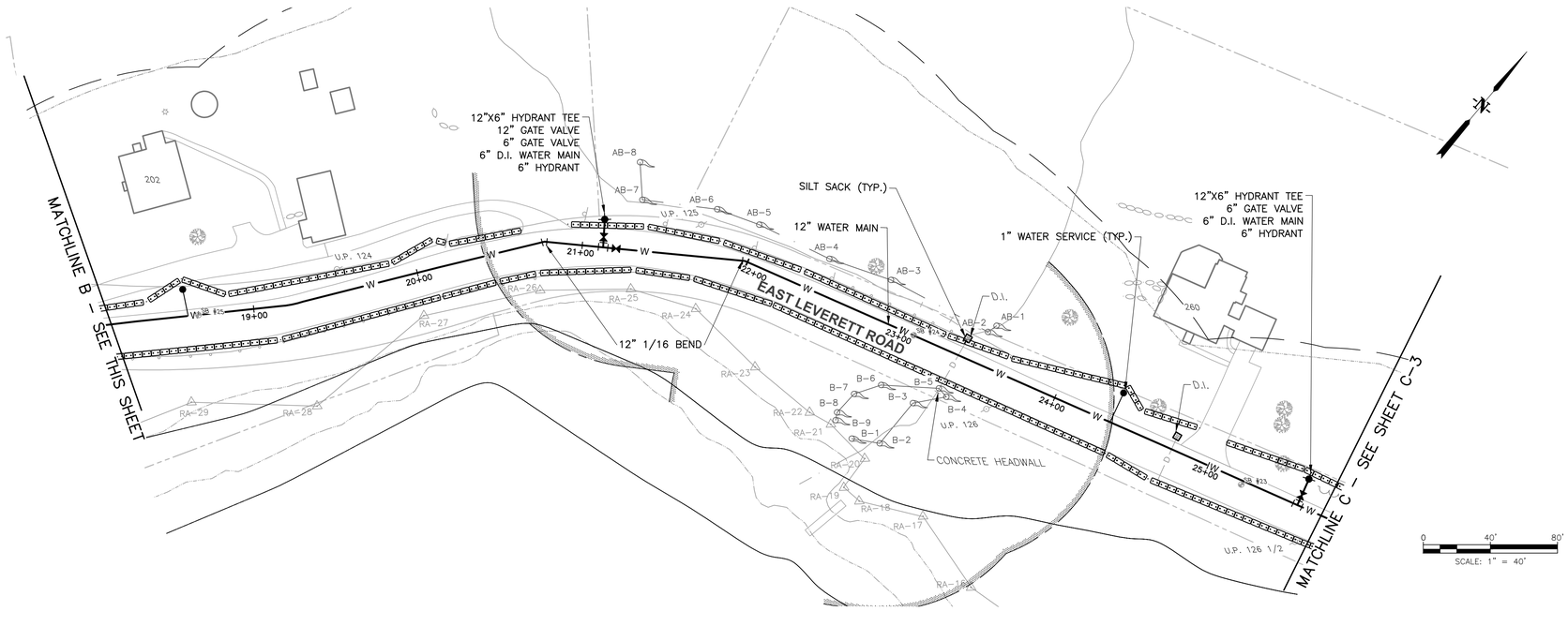
T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

C-1

P:\Amherst MA\5793-Leverett Rd WM Design\CAD\Sheets\C-1 thru C-7.dwg 1/26/2021 9:33 AM MORON



EAST LEVERETT ROAD STA. 6+19 TO STA. 18+15
SCALE: 1" = 40'



EAST LEVERETT ROAD STA. 18+15 TO STA. 25+74
SCALE: 1" = 40'

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

EAST LEVERETT ROAD
STA. 6+19 TO STA. 25+74

Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

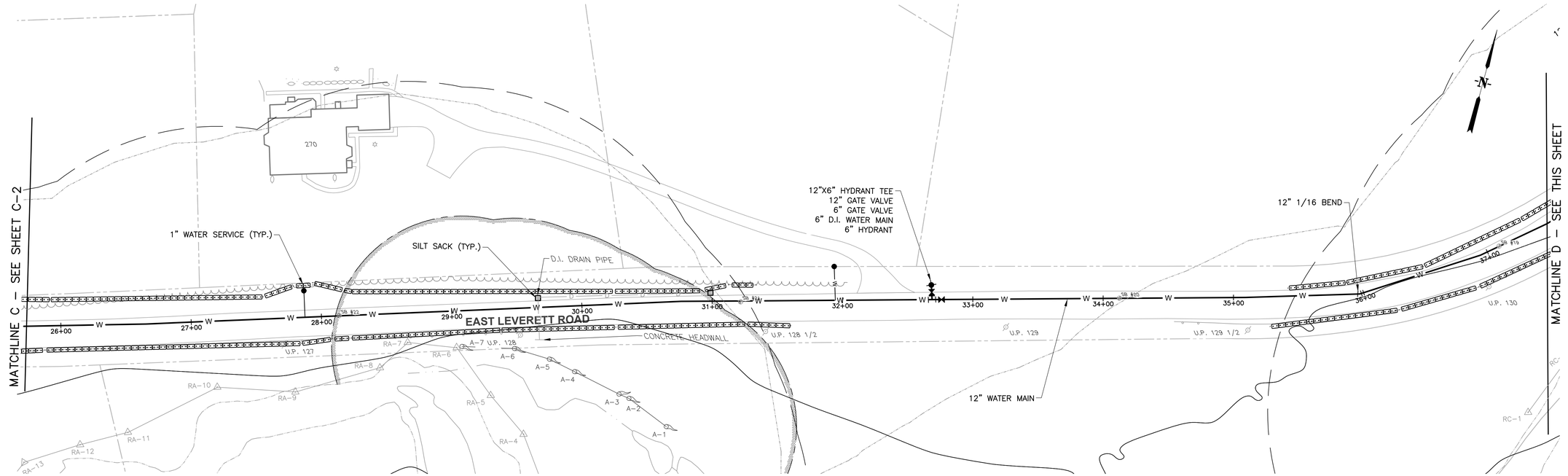
Designed By: MTG
Drawn By: MTG
Checked By: JMC
Approved By: JMC

JUSTIN M. CARROLL
No. 49283
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

TATA & HOWARD

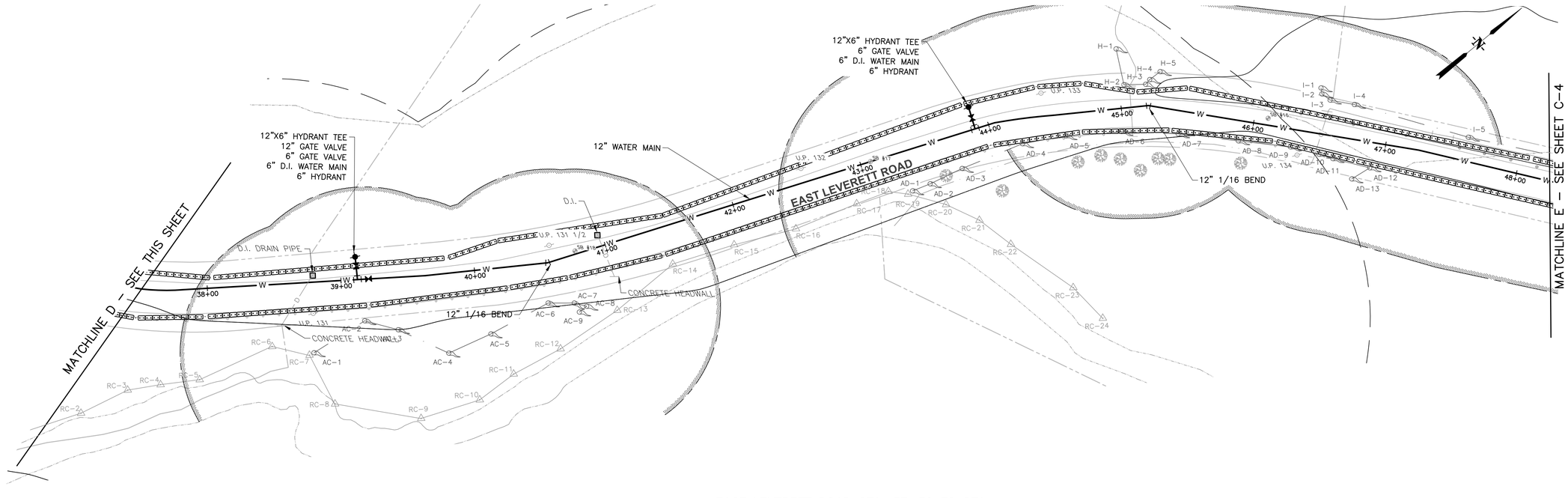
T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

C-2



EAST LEVERETT ROAD STA. 25+74 TO STA. 37+50
SCALE: 1" = 40'

0 40' 80'
SCALE: 1" = 40'



EAST LEVERETT ROAD STA. 37+50 TO STA. 48+26
SCALE: 1" = 40'

0 40' 80'
SCALE: 1" = 40'

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

EAST LEVERETT ROAD
STA. 25+74 TO STA. 48+26

Drawn By: MTG
Designed By: MTG
Checked By: JMC
Approved By: JMC

Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

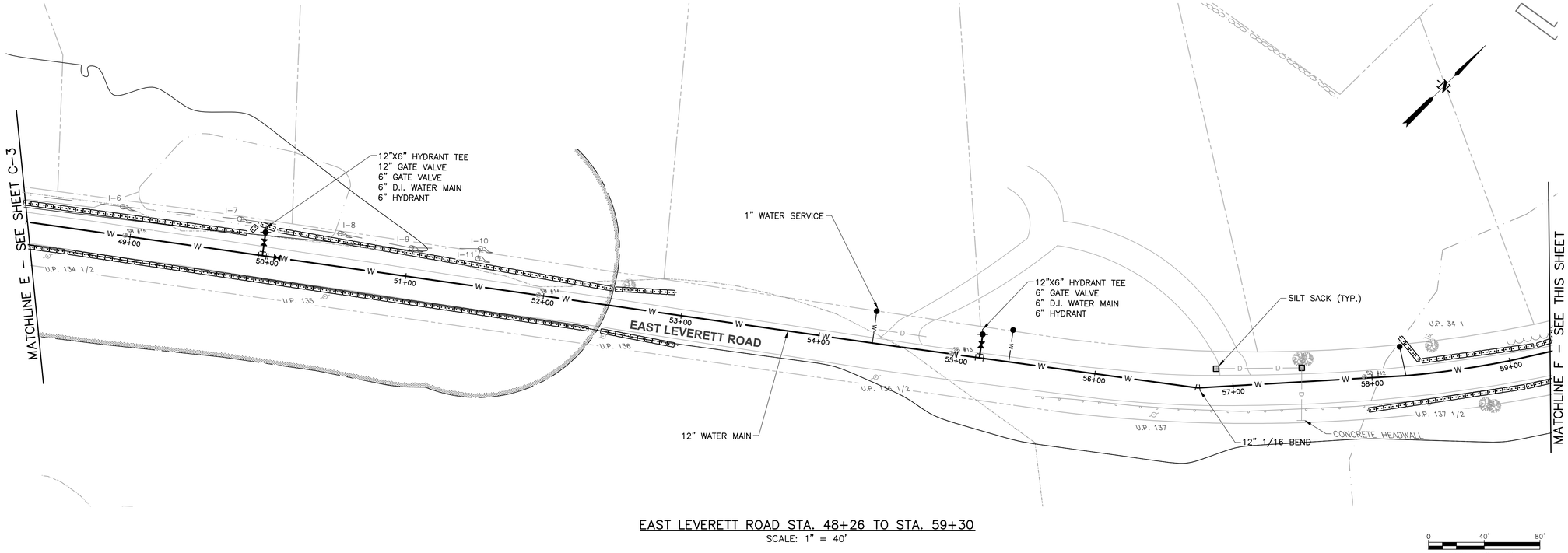
JUSTINE M. CARROLL 39181 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

TATA & HOWARD

T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

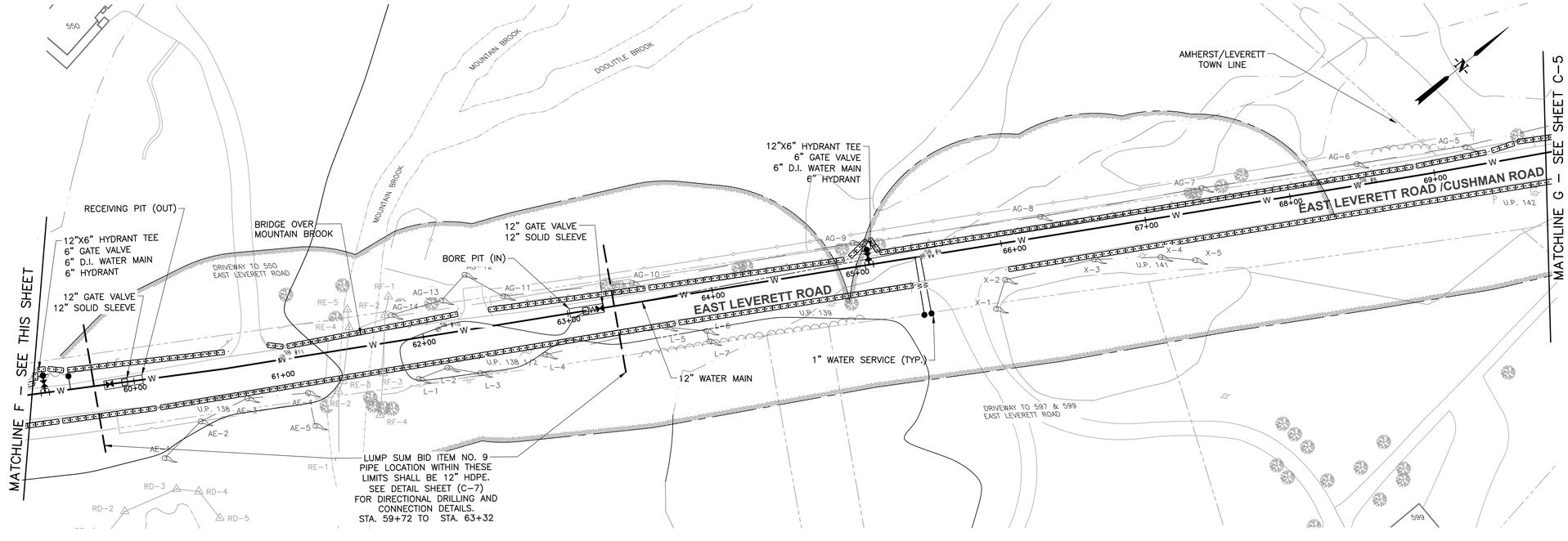
C-3

P:\Amherst MA\5759-Leverett Rd WM Design\CAD\Sheets\C-1 thru C-7.dwg 1/26/2021 9:34 AM MGARON



EAST LEVERETT ROAD STA. 48+26 TO STA. 59+30
SCALE: 1" = 40'

0 40' 80'
SCALE: 1" = 40'



EAST LEVERETT ROAD STA. 59+30 TO STA. 69+77
SCALE: 1" = 40'

0 40' 80'
SCALE: 1" = 40'

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

EAST LEVERETT ROAD
STA. 48+26 TO STA. 69+77

Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

Designed By: MTG
Drawn By: MTG
Checked By: JMC
Approved By: JMC

JUSTIN M. CARROLL
No. 49875
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

TATA & HOWARD

T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

C-4

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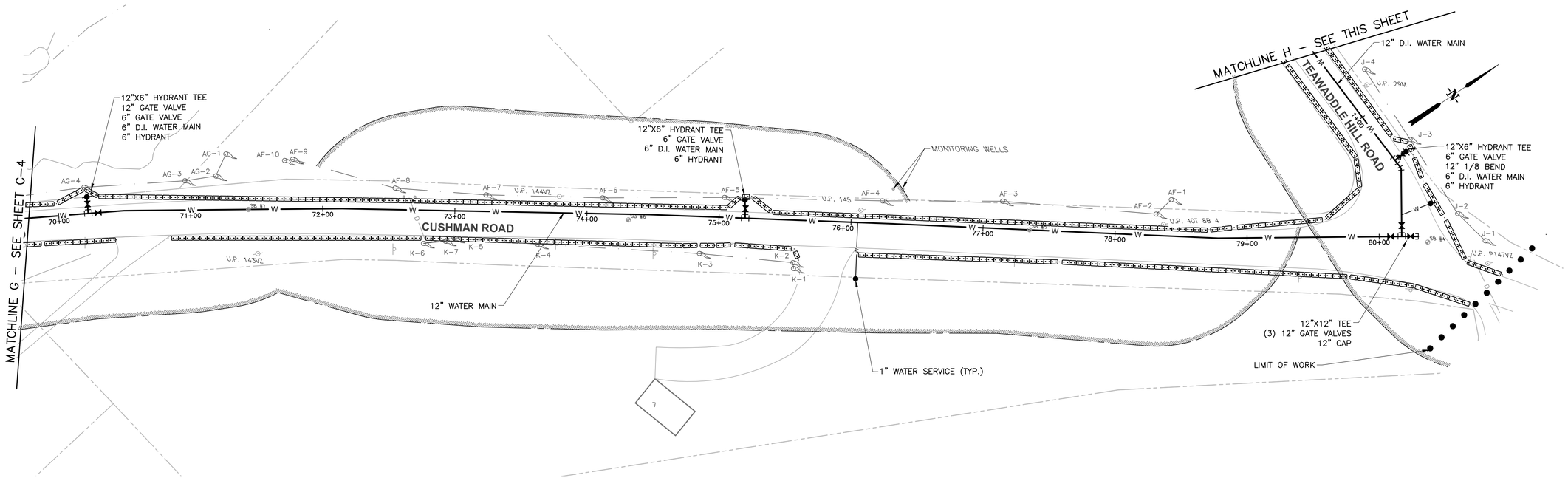
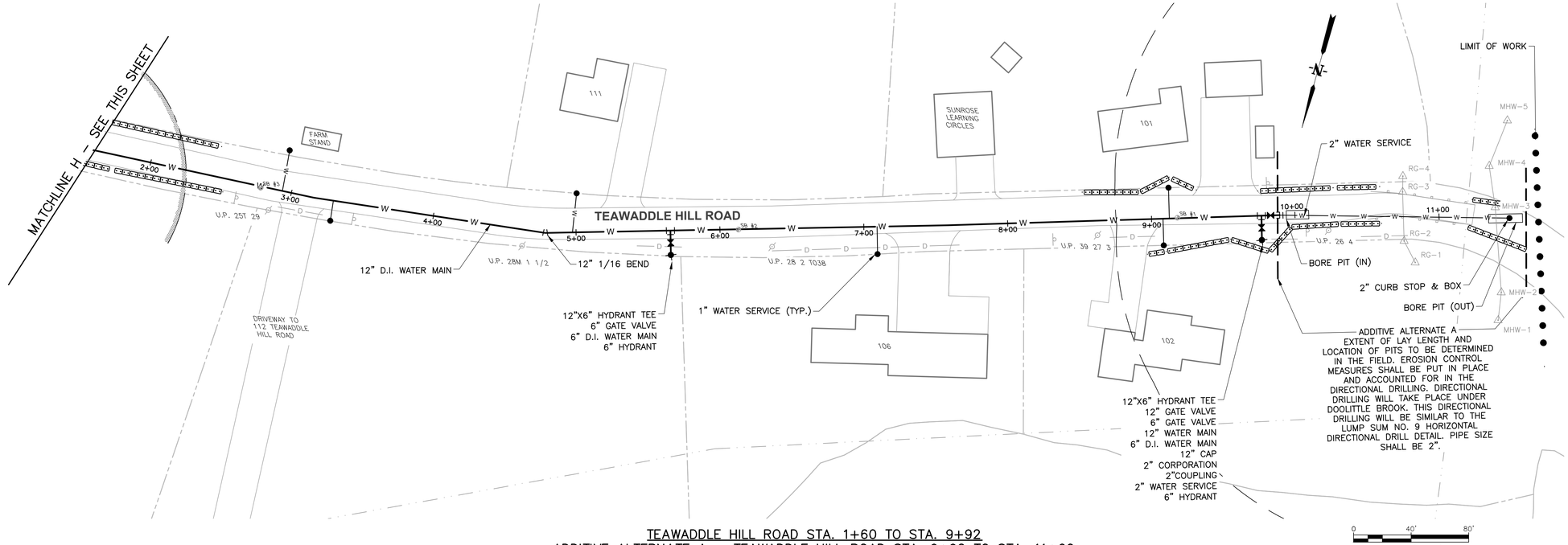


EAST LEVERETT ROAD STA. 69+77 TO STA. 80+30
AND TEAWADDLE HILL ROAD STA. 0+00 TO 1+60
SCALE: 1" = 40'



TEAWADDLE HILL ROAD STA. 1+60 TO STA. 9+92
ADDITIVE ALTERNATE A – TEAWADDLE HILL ROAD STA. 9+92 TO STA. 11+60
SCALE: 1" = 40'

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

EAST LEVERETT ROAD STA. 69+77 TO STA. 80+30 AND TEAWADDLE HILL ROAD STA. 0+00 TO STA. 9+92 ADDITIVE ALTERNATE A - TEAWADDLE HILL ROAD STA. 9+92 TO STA. 11+60

Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

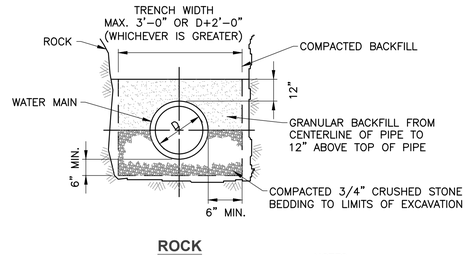
Approved By: JMC
Checked By: JWG
Designed By: MTG
Drawn By: MTG

COMMONWEALTH OF MASSACHUSETTS
JUSTIN M. CARROLL
No. 49855
REGISTERED PROFESSIONAL ENGINEER

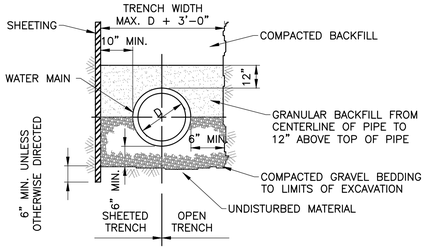
TATA & HOWARD

T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

C-5



ROCK



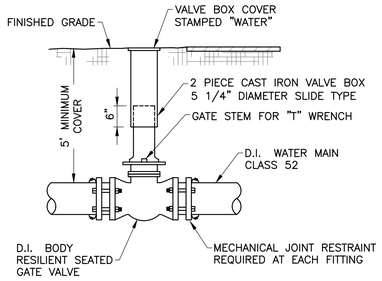
EARTH

NOTES:

1. CONTRACTOR SHALL MAINTAIN A MINIMUM COVER OF 5'-0" FROM THE TOP OF PIPE.

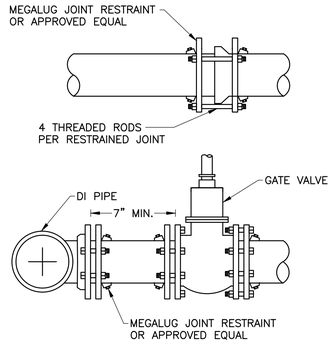
TYPICAL WATER MAIN TRENCH SECTIONS

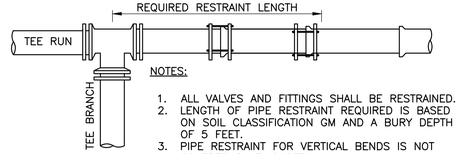
SCALE: NONE



GATE VALVE

SCALE: NONE





NOTES:

1. ALL VALVES AND FITTINGS SHALL BE RESTRAINED.
2. LENGTH OF PIPE RESTRAINT REQUIRED IS BASED ON SOIL CLASSIFICATION GM AND A BURY DEPTH OF 5 FEET.
3. PIPE RESTRAINT FOR VERTICAL BENDS IS NOT COVERED BY THIS DETAIL.
4. ALL JOINTS THAT FALL WITHIN THE REQUIRED RESTRAINT LENGTH SHALL BE MECHANICALLY RESTRAINED.

MINIMUM LENGTH OF PIPE TO BE RESTRAINED (IN FEET)									
PIPE SIZE (IN)	1/4 BEND (90°)	1/8 BEND (45°)	1/16 BEND (22°)	PLUG/ CAP	TEE* (2')	TEE* (5')	TEE* (10')	TEE* (15')	TEE* (20')
6"	12	5	3	21	18	10	1	1	1
8"	16	7	4	28	24	16	4	1	1
12"	22	10	5	40	37	28	16	4	1
16"	29	12	6	51	48	39	27	15	3
20"	37	16	8	87	78	66	45	25	4
24"	43	18	9	102	93	81	60	39	18
36"	59	25	12	144	136	123	101	79	58

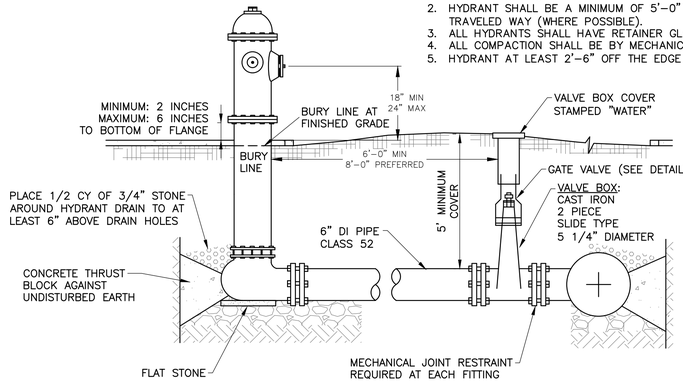
*The values in parenthesis (X') indicate the required restraint length for each side of the Tee Run.
The values in the column are the required restraint length for the Tee Branch.

MECHANICAL JOINT RESTRAINT

SCALE: NONE

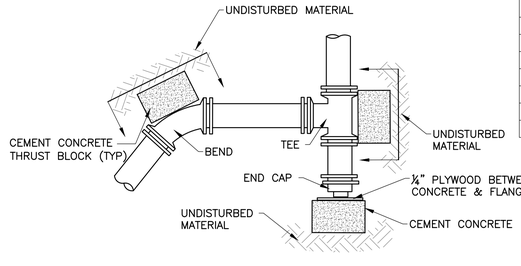
NOTES:

1. THRUST BLOCKS BACKED AGAINST UNDISTURBED SOIL AT HYDRANT & ANCHOR TEE.
2. HYDRANT SHALL BE A MINIMUM OF 5'-0" FROM EDGE OF TRAVELED WAY (WHERE POSSIBLE).
3. ALL HYDRANTS SHALL HAVE RETAINER GLANDS.
4. ALL COMPACTION SHALL BE BY MECHANICAL MEANS.
5. HYDRANT AT LEAST 2'-6" OFF THE EDGE OF THE ROAD.



HYDRANT UNIT DETAIL

SCALE : NONE



PLAN

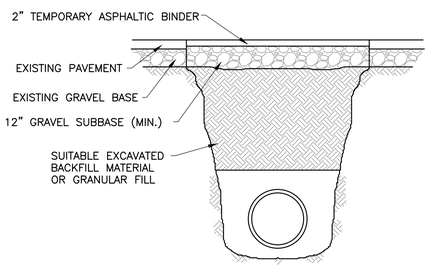
CONCRETE BACKING

SCALE: NONE

MINIMUM BEARING FACE AREA (SQ. FT.)				
PIPE SIZE (IN)	1/4 BEND (90°)	1/8 BEND (45°)	1/16 BEND (22°)	PLUG/ TEE
6"	6.0	3.0	2.5	4.5
8"	9.0	5.0	2.5	6.5
12"	13.3	6.7	3.7	9.6
16"	24.0	11.8	3.7	17.0
20"	26.2	14.2	7.2	18.5
24"	35.0	16.0	10.0	25.0
36"	85.0	46.0	23.4	60.7

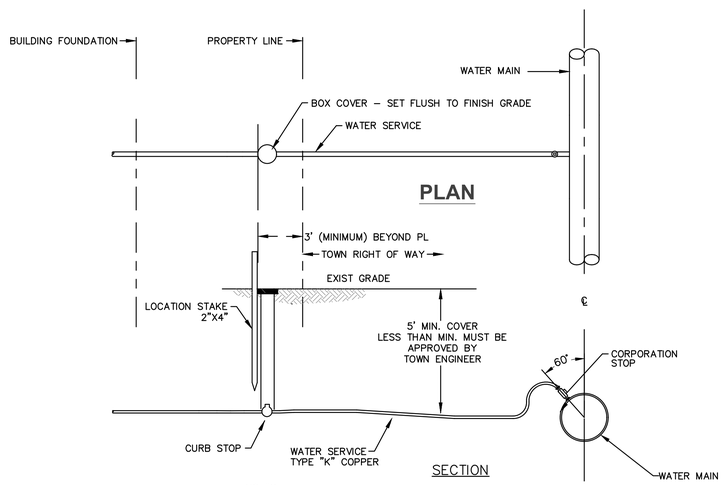
NOTES:

1. CONCRETE SHALL BE 3,000 PSI MINIMUM AT 28 DAYS.
2. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED MATERIAL WHENEVER POSSIBLE.
3. ALL FITTINGS SHALL BE SUPPORTED IN CONCRETE.
4. FOR FIRE HYDRANT THRUSTING SEE HYDRANT DETAIL.
5. SEE VERTICAL BEND DETAIL FOR RESTRAINED PIPE REQUIREMENTS FOR VERTICAL BENDS.
6. POURED CONCRETE NOT TO COME WITHIN 6" OF MECHANICAL JOINTS.
7. BEARING FACE AREA CALCULATED ASSUMING 250 PSI AND 1.5 TON/S.F. ALLOWABLE SOIL BEARING CAPACITY.



TRENCH PAVEMENT

SCALE : NONE

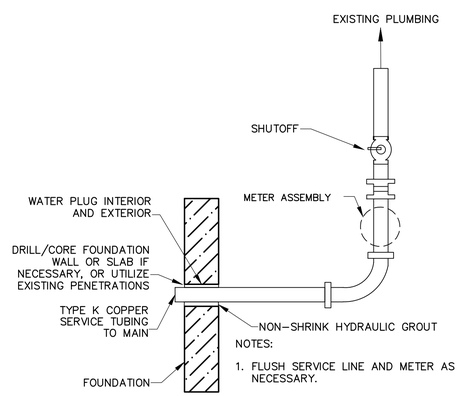


NOTES:

1. WATER SERVICE TO BE A MINIMUM 1" DIAMETER.
2. MINIMUM BURY DEPTH = 5 FEET.
3. SELECT SERVICES IN LEVERETT WILL BE INSTALLED INTO THE BUILDING THROUGH THE FOUNDATION.
4. SERVICES ON EAST LEVERETT ROAD WILL BE CAPPED AFTER THE CURB STOP FOR FUTURE CONNECTION.

SERVICE CONNECTION

SCALE: NONE



NOTES:

1. FLUSH SERVICE LINE AND METER AS NECESSARY.

BASEMENT PENETRATION

SCALE: NONE

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

DETAIL SHEET

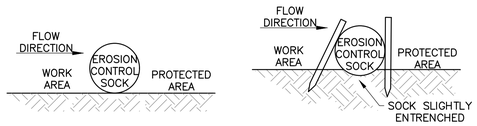
Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

Approved By: JMC
Checked By: JMC
Designed By: MTG
Drawn By: MTG

JUSTINE M. CARROLL
No. 49562
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
TATA & HOWARD

T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

C-6



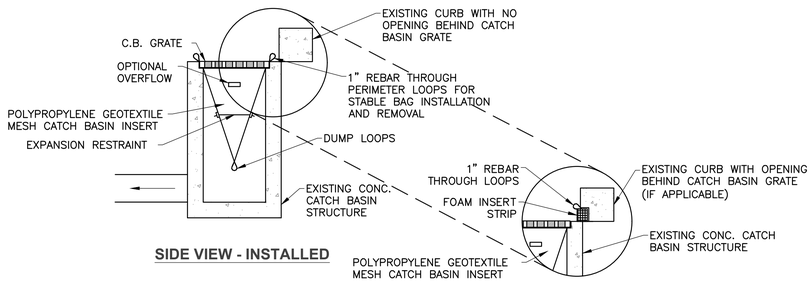
CONVENTIONAL INSTALLATION **STAKED INSTALLATION**

NOTES:

1. SOCK INSTALLED IN VEGETATED AREAS AND IN AREAS WITH MINIMAL SLOPES AND A LOW RISK OF RUNOFF SHALL BE CONVENTIONAL INSTALLATION.
2. SOCKS INSTALLED IN AREAS WITH A MODERATE RISK OF RUNOFF AND MODERATE SLOPES SHALL BE INSTALLED WITH A SLIGHT ENTRENCHMENT WITH NO STAKING.
3. SOCKS INSTALLED IN AREAS WITH A HIGH RISK OF RUNOFF OR STEEP SLOPES SHALL BE INSTALLED WITH ENTRENCHMENT AND STAKING.
4. FINAL INSTALLATION TECHNIQUES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND AS DIRECTED BY THE ENGINEER.

EROSION CONTROL SOCK

SCALE: NONE

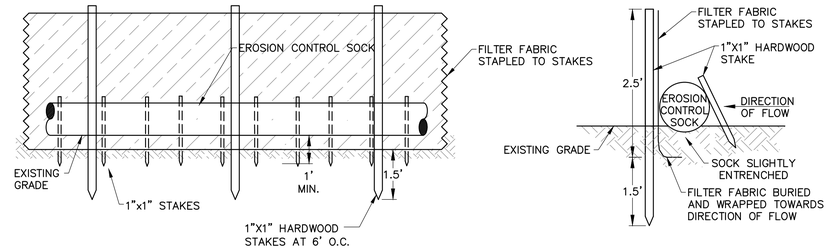


SIDE VIEW - INSTALLED

SIDE VIEW - INSTALLED FOR CURBS WITH OPENINGS BEHIND C.B.

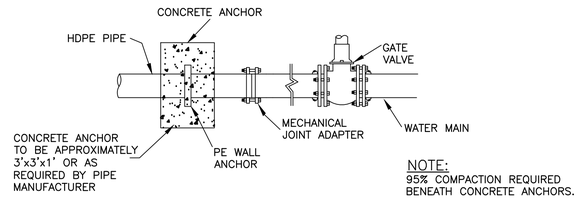
CATCH BASIN SILTATION CONTROL INSERT

SCALE: NONE



SILT FENCE EROSION CONTROL

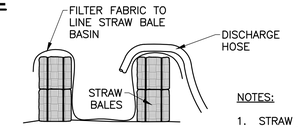
SCALE: NONE



NOTE:
95% COMPACTION REQUIRED BENEATH CONCRETE ANCHORS.

HDPE PIPE CONNECTION

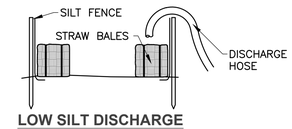
SCALE: NONE



HIGH SILT DISCHARGE

NOTES:

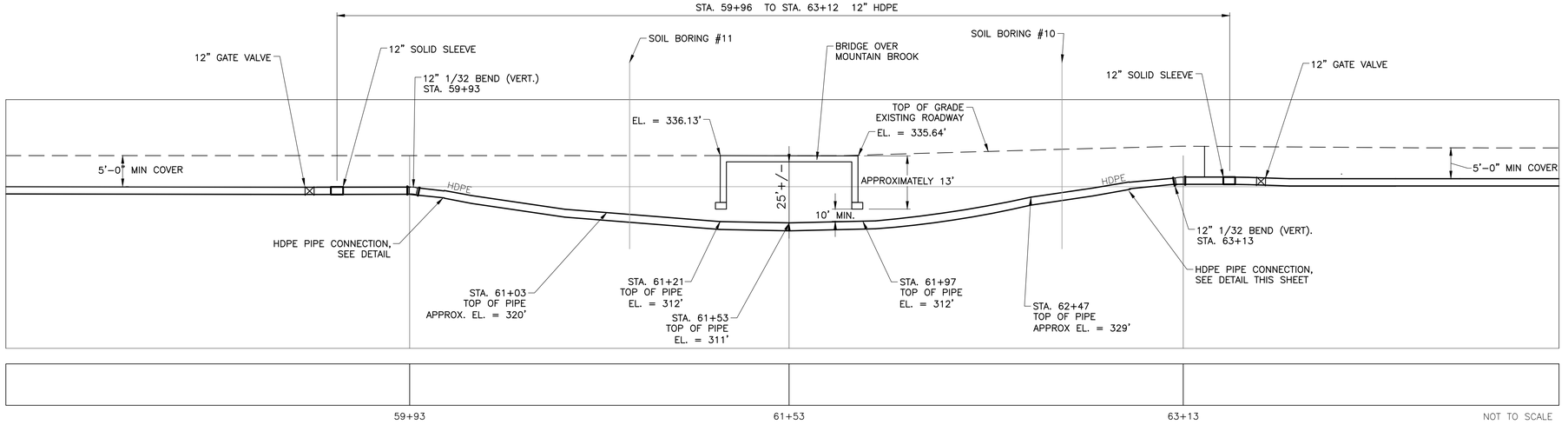
1. STRAW BALES SHALL BE STACKED 1 OR 2 ROWS HIGH AS REQUIRED TO MITIGATE THE FLOW.
2. THE BASIN SHALL BE SIZED TO FILTER THE FLOW BEING DISCHARGED TO THE BASIN.



LOW SILT DISCHARGE

SEDIMENTATION DISCHARGE CONTROL BASIN

SCALE: NONE



LUMP SUM BID ITEM NO. 9 HORIZONTAL DIRECTIONAL DRILLING

STA 59+72 TO STA. 63+32 12"

TOWN OF LEVERETT
MASSACHUSETTS

EAST LEVERETT ROAD
WATER MAIN

DETAIL SHEET CONT.

Rev.	Date	Description
1	1/2021	MassDEP and Conservation Commission Submission

Drawn By: MTG
Designed By: MTG
Checked By: JMC
Approved By: JMC

JUSTINE M. CARROLL 2021 No. 49825 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

TATA & HOWARD

T&H NO.: 5918
DATE: JANUARY 2021
SCALE: AS NOTED

C-7

APPENDIX C

NHESP Species Letter

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

March 13, 2019

Meagan Heslin
Tata & Howard, Inc
67 Forest Street
Marlborough MA 01752

RE: Project Location: East Leverett Road & Teawaddle Hill Road
Town: AMHERST, LEVERETT
NHESP Tracking No.: 19-38393

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 1541* (PH 1541) and *Estimated Habitat 1090* (EH 1090) as indicated in the *Massachusetts Natural Heritage Atlas* (14th Edition) for the following state-listed rare species:

Scientific name	Common Name	Taxonomic Group	State Status
Glyptemys insculpta	Wood Turtle	Reptile	Special Concern
Terrapene carolina	Eastern Box Turtle	Reptile	Special Concern

The species listed above are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.mass.gov/nhesp).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)
If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: https://www.mass.gov/how-to/wpa-form-3-wetlands-notice-of-intent.

MA Endangered Species Act (MESA)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: https://www.mass.gov/regulatory-review.

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (https://ecos.fws.gov/ipac). If you have any questions regarding this letter please contact Emily Holt, Endangered Species Review Assistant, at (508) 389-6385.

Sincerely,

Jonathan V. Regosin, Ph.D.
Deputy Director

APPENDIX D

Abutters List, Site Photographs,

Copy of NHESP Check

ABUTTERS LIST (100') COMPILED FOR PROPERTIES LOCATED ALONG TEAWADDLE HILL ROAD AND CUSHMAN ROAD IN LEVERETT, MA 01054 (WATER MAIN PROJECT – SEE ATTACHED MAP)

NAME AND MAILING ADDRESS	LOCATION	MAP AND PARCEL
John A. & Paul D. Kosloski P.O. Box714 Leverett, MA 01054	Teawaddle Hill Road	7-174
Suzanne C. Pacheco 111 Teawaddle Hill Road Leverett, MA 01054	111 Teawaddle Hill Road	7-172
Virginia M. Goodale 101 Teawaddle Hill Road Leverett, MA 01054	101 Teawaddle Hill Road	7-169
Maurille J. & Janice P. Fournier Tr of the Maurille J. Fournier Living Trust Tr of the Janice P. Fournier Living Trust 95 Teawaddle Hill Road Leverett, MA 01054	95 Teawddle Hill Road	7-166A
Thomas L. Eddy Jr. et at c/o Thomas L. & Harriet R. Eddy 102 Teawaddle Hill Road Leverett, MA 01054	102 Teawaddle Hill Road	7-177
Deutsche Bank National Trust Co. Tr Morgan Stanley Dean Witter Capital 1 Inc. 1661 Worthington Road Suite 100 West Palm Beach, FL 33409	106 Teawaddle Hill Road	7-176
Joseph Sincuk Laura Jones 112 Teadwaddle Hill Road Leverett, MA 01054	112 Teawaddle Hill Road	7-175
Leverett Conservation Commission P.O. Box 300 9 Montague Road Leverett, MA 01054	Teawaddle Hill Road	7-178
Chester Cramer 20 Cushman Road Leverett, MA 01054	20 Cushman Road	8-131

ABUTTERS LIST (100') COMPILED FOR PROPERTIES LOCATED ALONG TEAWADDLE HILL ROAD AND CUSHMAN ROAD IN LEVERETT, MA 01054 (WATER MAIN PROJECT – SEE ATTACHED MAP)

NAME AND MAILING ADDRESS	LOCATION	MAP AND PARCEL
Diana D. Kallio 24 Greenleaves Drive Amherst, MA 01002	Cemetery Road	8-132A
Town of Leverett P.O. Box 300 9 Montague Road Leverett, MA 01054	Cemetery Road	8-136
Patricia E. Duffy 7 Cushman Road Leverett, MA 01054	7 Cushman Road	8-135

Compiled by Linda Bevan
January 25, 2021

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

MESA Project Review Checklist

Massachusetts Endangered Species Act M.G.L. c.131A and Regulations (321 CMR 10.00)

1) Project Location:

East Leverett Road	Amherst	01002
Street Address/Location	City/Town	Zip Code
Various	N/A	
Assessors Map/Plat Number	Parcel /Lot Number	

Property recorded at the Registry of Deeds for:

Hampshire	
County	Certificate # (if registered land)
N/A	N/A
Book	Page Number

2) Applicant:

Town of Amherst DPW		
First Name	Last Name	Company
586 South Pleasant St.		
Mailing Address		
Amherst	MA	01002
City/Town	State	Zip Code
413-259-3104	413-259-2414	willsone@amherstma.gov
Phone Number	Fax Number	Email address

3) Property owner (if different from applicant):

First Name	Last Name	Company
Mailing Address		
City/Town	State	Zip Code
Phone Number	Fax Number	Email address

4) Representative (if any):

Company		
Contact Person First Name	Contact Person Last Name	
Mailing Address		
City/Town	State	Zip Code
Phone Number	Fax Number	Email address

Additional Information

1. Will this project require a filing with the Conservation Commission and/or DEP? ☐ No ☑ Yes
2. Has this project previously been issued a NHESP Tracking Number (either by previous NOI Submittal or MESA Information Request Form)? ☑ No ☐ Yes, if Yes -Tracking No._____

Project Description (attach separate sheet, as needed)

Please note, certain projects or activities are exempt from review, see 321 CMR 10.14. The MESA does not allow project segmentation. Your filing must reflect all anticipated work associated with the proposed project (CMR 321 10.16).

The project consists of the installation of 9,500 linear feet of public drinking water main under East Leverett Rd, Cushman Rd, and Teawaddle Hill Rd in the towns of Amherst and Leverett, MA. The water main is being extended in order to provide clean drinking water to Leverett residents who's private wells are contaminated. The eastern portion of the site is located within an area mapped for both Priority Habitat and Estimated Habitat by NHESP. See attached NOI and Design Plan Set.

Include the Following Information:

ALL Applicants must submit:

- USGS map (1:24,000 or 1:25,000) with property boundary clearly outlined
- Project plans for entire site (including wetland Resource Areas, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work)
- Assessor's map or right-of-way plan of site
- Statement/proof that applicant is the Record Owner or that applicant is a person authorized in writing by the record owner to submit this filing
- Photographs representative of the site

Projects altering 10 or more acres, must also submit:

- A vegetation cover type map of the site
- Project plans showing Priority Habitat boundaries

The NHESP may request additional information, such as, but not limited to, species and habitat surveys, wetland reports, soil map and reports, and stormwater management reports (321 CMR 10.16). The NHESP will notify the applicant within 30 days if the materials submitted do not satisfy requirements for a filing and request submission of any missing materials (321 CMR 10.18(1)).

Filing Fee, Payable to Comm. of MA - NHESP (see website for fee information)

a. Total MESA Fee Paid $300.00 b. Acreage of Disturbance 1.3 c. Total Site Acreage 6.5

Required Signatures

I hereby certify under the penalties of perjury that the foregoing MESA filing and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

Andrew S Morgan II for the Town of Amherst 1/25/2021

Signature of Property Owner/Record Owner of Property Date

Superintendent of Public Works

Signature of Applicant (if different from Owner) Date

T ACCEPT UNLESS THIS CHECK IS PRINTED WITH A COLOR BACKGROUND, CONTAINS A VOID PANTOGRAPH IN REVERSE, AND HAS A BLUE SECURITY STRIP WITH THE WORDS VOID

Town of Amherst
Amherst, Massachusetts 01002

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53-7177/2118

Vendor Number	Check Date	Check Number
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VOID 180 DAYS FROM DATE OF ISSUE

$300.00

Three Hundred Dollars and 00 Cents

The
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NHESP
MA DIVISION OF FISH & WILDLIFE
1 RABBIT HILL RD
WESTOBROUGH, MA 01581

Treasurer

MP

⑈00251078⑈ ⑆211871772⑆ 10565345721⑈

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City, State, ZIP+4: Westborough, MA 01002

PS Form 3800, June 2002 — See Reverse for Instructions